

TSV05

TSV05 CTRL LT4  
CVTSDBO

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FICHE 01 OF 02

JUL 1984  
digital  
Made In USA



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IDENTIFICATION

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## 1.0 GENERAL INFORMATION

### 1.1 PROGRAM ABSTRACT

THIS IS A PDP 11/23 RESIDENT DIAGNOSTIC WHICH CHECKS THE FUNCTIONALITY OF A TSV05 MAGTAPE SUBSYSTEM WHILE CONNECTED TO A PDP-11/23 SYSTEM (Q BUS). THE PROGRAM PROVIDES ERROR MESSAGES WHICH IDENTIFY FAILING FUNCTIONS THAT AID IN THE REPAIR OF THE DEVICE. THIS DIAGNOSTIC CONSIST OF EIGHT TEST WHICH ARE EXECUTED IN SEQUENCE.

THIS DIAGNOSTIC HAS BEEN WRITTEN FOR USE WITH THE DIAGNOSTIC RUNTIME SERVICES SOFTWARE (SUPERVISOR). THESE SERVICES PROVIDE THE INTERFACE TO THE OPERATOR AND TO THE SOFTWARE ENVIRONMENT. THIS PROGRAM CAN BE USED WITH XXDP., ACT, APT, SLIDE AND PAPER TAPE. FOR A COMPLETE DESCRIPTION OF THE RUNTIME SERVICES, REFER TO THE XXDP. USER'S MANUAL. THERE IS A BRIEF DESCRIPTION OF THE RUNTIME SERVICES IN SECTION 2 OF THIS DOCUMENT.

### 1.2 SYSTEM REQUIREMENTS

PDP-11/23 PROCESSOR AND MEMORY  
CAUTION: DIAGNOSTIC REQUIRES 32K WORDS OF MEMORY  
(28K USEABLE AND 4K RESERVED FOR I/O PAGE)  
TSV05 MAGTAPE SUBSYSTEM (DRIVE AND CONTROLLER)  
CONSOLE TERMINAL  
PDP-11 DIAGNOSTIC SUPERVISOR (MSAAA.SYS VERSION 34 OR LATER)  
PDP 11 DIAGNOSTIC LOADER/MONITOR (XXDP.)

### 1.3 RELATED DOCUMENTS AND STANDARDS

#### DIGITAL EQUIPMENT CORPORATION DOCUMENTS:

1. CHQUS XXDP. USERS MANUAL; DOCUMENT NUMBER AC F348E MC  
DATE: 14 JULY 1980.
2. TSV05 TRANSPORT SUBSYSTEM USER'S GUIDE; DOCUMENT NUMBER EK TSV05 UG-001  
DATE: AUGUST 1982
3. TSV05 TRANSPORT SUBSYSTEM TECHNICAL MANUAL; DOCUMENT NUMBER EK TSV05 TM 001  
DATE: AUGUST 1982
4. TSV05 TRANSPORT SUBSYSTEM INSTALLATION MANUAL; DOCUMENT NUMBER EK TSV05-IN 001  
DATE: AUGUST 1982

### 1.4 DIAGNOSTIC HIERARCHY PREREQUISITES

FUNCTIONAL PDP 11/23 CENTRAL PROCESSOR AND MEMORY  
FUNCTIONAL CONSOLE TERMINAL  
FUNCTIONAL STANDALONE DIAGNOSTIC SUPERVISOR  
FUNCTIONAL DIAGNOSTIC LOADER/MONITOR (XXDP.)

## 1.5 ASSUMPTIONS

ALL HARDWARE EXCEPT THE HARDWARE UNDER TEST IS ASSUMED TO WORK PROPERLY OR FALSE ERRORS CAN BE REPORTED.  
THE TAPE BEING USED ON THE TS05 TRANSPORT IS A KNOWN GOOD REEL OF TAPE.  
CVTSAA, CVTSBA AND CVTSCA HAVE SUCCESSFULLY RUN.

## 2.0 OPERATING INSTRUCTIONS

THIS SECTION CONTAINS A BRIEF DESCRIPTION OF THE RUNTIME SERVICES. FOR DETAILED INFORMATION, REFER TO THE XXDP, USER'S MANUAL (CHQUS).

## 2.1 COMMANDS

THERE ARE ELEVEN LEGAL COMMANDS FOR THE DIAGNOSTIC RUNTIME SERVICES (SUPERVISOR). THIS SECTION LISTS THE COMMANDS AND GIVES A VERY BRIEF DESCRIPTION OF THEM. THE XXDP, USER'S MANUAL HAS MORE DETAILS.

| COMMAND  | EFFECT                                                                            |
|----------|-----------------------------------------------------------------------------------|
| START    | START THE DIAGNOSTIC FROM AN INITIAL STATE                                        |
| RESTART  | START THE DIAGNOSTIC WITHOUT INITIALIZING                                         |
| CONTINUE | CONTINUE AT TEST THAT WAS INTERRUPTED (AFTER *C)                                  |
| PROCEED  | CONTINUE FROM AN ERROR HALT                                                       |
| EXIT     | RETURN TO XXDP, MONITOR (XXDP, OPERATION ONLY!)                                   |
| ADD      | ACTIVATE A UNIT FOR TESTING (ALL UNITS ARE CONSIDERED TO BE ACTIVE AT START TIME) |
| DROP     | DEACTIVATE A UNIT                                                                 |
| PRINT    | PRINT STATISTICAL INFORMATION (IF IMPLEMENTED BY THE DIAGNOSTIC - SECTION 4.0)    |
| DISPLAY  | TYPE A LIST OF ALL DEVICE INFORMATION                                             |
| FLAGS    | TYPE THE STATE OF ALL FLAGS (SEE SECTION 2.3)                                     |
| ZFLAGS   | CLEAR ALL FLAGS (SEE SECTION 2.3)                                                 |

A COMMAND CAN BE RECOGNIZED BY THE FIRST THREE CHARACTERS. SO YOU MAY, FOR EXAMPLE, TYPE 'STA' INSTEAD OF "START".

## 2.1.1 OPERATOR COMMANDS

THE TSV05 DIAGNOSTIC IS A PDP 11/23 DIAGNOSTIC SUPERVISOR COMPATIBLE PROGRAM. ALL LOADING AND RUNTIME INSTRUCTIONS CAN BE REFERENCED IN THE CHQUS XXDP, USER'S MANUAL, DOCUMENT NUMBER AC F348E MC. THE USER ENTRY IS IN QUOTES.

## BOOT THE DIAGNOSTIC XXDP MEDIA

```
.R VTSD??
DIAG. RUN-TIME SERVICES REV D. APR 79
CVTSD B-0
****TSV05 LOGIC DIAGNOSTIC****
UNIT IS TSV05
>DR
```



## 2.2 SWITCHES

THERE ARE SEVERAL SWITCHES WHICH ARE USED TO MODIFY SUPERVISOR OPERATION. THESE SWITCHES ARE APPENDED TO THE LEGAL COMMANDS. ALL OF THE LEGAL SWITCHES ARE TABULATED BELOW WITH A BRIEF DESCRIPTION OF EACH. IN THE DESCRIPTIONS BELOW, A DECIMAL NUMBER IS DESIGNATED BY "DDDDD".

| SWITCH      | EFFECT                                                                                                                                                                                               |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| /TESTS:LIST | EXECUTE ONLY THOSE TESTS SPECIFIED IN THE LIST. LIST IS A STRING OF TEST NUMBERS, FOR EXAMPLE - /TESTS:1:5:7-10. THIS LIST WILL CAUSE TESTS 1,5,7,8,9,10 TO BE RUN. ALL OTHER TESTS WILL NOT BE RUN. |
| /PASS:DDDDD | EXECUTE DDDDD PASSES (DDDDD = 1 TO 64000)                                                                                                                                                            |
| /FLAGS:FLGS | SET SPECIFIED FLAGS. FLAGS ARE DESCRIBED IN SECTION 2.3.                                                                                                                                             |
| /EOP:DDDDD  | REPORT END OF PASS MESSAGE AFTER EVERY DDDDD PASSES ONLY. (DDDDD = 1 TO 64000)                                                                                                                       |
| /UNITS:LIST | TEST/ADD/DROP ONLY THOSE UNITS SPECIFIED IN THE LIST. LIST EXAMPLE - /UNITS:0:5:10-12 USE UNITS 0,5,10,11,12 (UNIT NUMBERS = 0-63)                                                                   |

## EXAMPLE OF SWITCH USAGE:

START/TESTS:1-5/PASS:1000/EOP:100

THE EFFECT OF THIS COMMAND WILL BE: 1) TESTS 1 THROUGH 5 WILL BE EXECUTED, 2) ALL UNITS WILL TESTED 1000 TIMES AND 3) THE END OF PASS MESSAGES WILL BE PRINTED AFTER EACH 100 PASSES ONLY. A SWITCH CAN BE RECOGNIZED BY THE FIRST THREE CHARACTERS. YOU MAY, FOR EXAMPLE, TYPE "/TES:1-5" INSTEAD OF "/TESTS:1 5".

BELOW IS A TABLE THAT SPECIFIES WHICH SWITCHES CAN BE USED BY EACH COMMAND.

|          | TESTS | PASS | FLAGS | EOP | UNITS |
|----------|-------|------|-------|-----|-------|
| START    | X     | X    | X     | X   | X     |
| RESTART  | X     | X    | X     | X   | X     |
| CONTINUE |       | X    | X     | X   |       |
| PROCEED  |       |      | X     |     |       |
| DROP     |       |      |       |     | X     |
| ADD      |       |      |       |     | X     |
| PRINT    |       |      |       |     |       |
| DISPLAY  |       |      |       |     | X     |
| FLAGS    |       |      |       |     |       |
| ZFLAGS   |       |      |       |     |       |
| EXIT     |       |      |       |     |       |

## 2.3 FLAGS

FLAGS ARE USED TO SET UP CERTAIN OPERATIONAL PARAMETERS SUCH AS LOOPING ON ERROR. ALL FLAGS ARE CLEARED AT STARTUP AND REMAIN CLEARED UNTIL EXPLICITLY SET USING THE FLAGS SWITCH. FLAGS

ARE ALSO CLEARED AFTER A START COMMAND UNLESS SET USING THE FLAG SWITCH. THE ZFLAGS COMMAND MAY ALSO BE USED TO CLEAR ALL FLAGS. WITH THE EXCEPTION OF THE START AND ZFLAGS COMMANDS, NO COMMANDS AFFECT THE STATE OF THE FLAGS; THEY REMAIN SET OR CLEARED AS SPECIFIED BY THE LAST FLAG SWITCH.

| FLAG | EFFECT                                                                                                          |
|------|-----------------------------------------------------------------------------------------------------------------|
| MOE  | HALT ON ERROR CONTROL IS RETURNED TO<br>RUNTIME SERVICES COMMAND MODE                                           |
| LOE  | LOOP ON ERROR                                                                                                   |
| IER* | INHIBIT ALL ERROR REPORTS                                                                                       |
| IBR* | INHIBIT ALL ERROR REPORTS EXCEPT<br>FIRST LEVEL (FIRST LEVEL CONTAINS<br>ERROR TYPE, NUMBER, PC, TEST AND UNIT) |
| IXE* | INHIBIT EXTENDED ERROR REPORTS (THOSE<br>CALLED BY PRINTX MACRO'S)                                              |
| PRI  | DIRECT MESSAGES TO LINE PRINTER                                                                                 |
| PNT  | PRINT TEST NUMBER AS TEST EXECUTES                                                                              |
| BOE  | "BELL" ON ERROR                                                                                                 |
| UAM  | UNATTENDED MODE (NO MANUAL INTERVENTION)                                                                        |
| ISR  | INHIBIT STATISTICAL REPORTS (DOES NOT<br>APPLY TO DIAGNOSTICS WHICH DO NOT SUPPORT<br>STATISTICAL REPORTING)    |
| IDR  | INHIBIT PROGRAM DROPPING OF UNITS                                                                               |
| ADR  | EXECUTE AUTODROP CODE                                                                                           |
| LOT  | LOOP ON TEST                                                                                                    |

\*ERROR MESSAGES ARE DESCRIBED IN SECTION 3.1

SEE THE XXDP. USER'S MANUAL FOR MORE DETAILS ON FLAGS. YOU MAY SPECIFY MORE THAN ONE FLAG WITH THE FLAG SWITCH. FOR EXAMPLE, TO CAUSE THE PROGRAM TO LOOP ON ERROR, INHIBIT ERROR REPORTS AND TYPE A 'BELL' ON ERROR, YOU MAY USE THE FOLLOWING STRING:

```
/FLAGS:LOE:IER:BOE
```

## 2.4 HARDWARE QUESTIONS

WHEN A DIAGNOSTIC IS STARTED, THE RUNTIME SERVICES WILL PROMPT THE USER FOR HARDWARE INFORMATION BY TYPING 'CHANGE HW (L) ?' YOU MUST ANSWER 'Y' AFTER A START COMMAND UNLESS THE HARDWARE INFORMATION HAS BEEN "PRELOADED" USING THE SETUP UTILITY (SEE CHAPTER 14 OF THE XXDP. USER'S MANUAL). WHEN YOU ANSWER THIS QUESTION WITH A 'Y', THE RUNTIME SERVICES WILL ASK FOR THE NUMBER OF UNITS (IN DECIMAL).

AFTER INITIAL STARTING OF THE PROGRAM (START COMMAND TO THE DIAGNOSTIC SUPERVISOR), THE PROGRAM WILL ISSUE THE "CHANGE HW?" QUESTION TO ASK IF THE HARDWARE PARAMETERS ARE TO BE CHANGED (BY THE OPERATOR).

ON A 'N' (NO) RESPONSE TO THE 'CHANGE HW?' QUESTION, THE DIAGNOSTIC WILL RUN USING THE DEFAULT VALUES FOR ALL QUESTIONS. THE DEFAULT ADDRESS AND VECTOR ARE:

TSBA/TSDB = 172520, VECTOR = 224

ON A "Y" (YES) RESPONSE TO THE QUESTION, THE FOLLOWING QUESTIONS WILL THEN BE ASKED TO ALLOW THE OPERATOR TO SELECT THE UNITS TO BE TESTED. A VALUE, IF PRESENT, LOCATED TO THE LEFT OF THE QUESTION MARK IS THE DEFAULT VALUE THAT WILL BE TAKEN IF ONLY A CARRIAGE RETURN IS TYPED AS A RESPONSE. A "(D)" IN A QUESTION INDICATES THAT A DECIMAL NUMBER IS REQUIRED AS A RESPONSE. AN "(O)" INDICATES AN OCTAL NUMBER IS BEING SOLICITED. AN "(L)" INDICATES THAT A LOGICAL RESPONSE IS TO BE MADE: "Y" FOR YES, "N" FOR NO.

# UNITS (D) ? <ENTER THE NUMBER OF M7196 CONTROLLERS  
PRESENT TO BE TESTED>

UNIT 0

DEVICE ADDRESS (O) 172520 ? <ENTER THE ADDRESS OF THE  
TSBA/TSDB REGISTER>

VECTOR (O) 224 ? <ENTER ADDRESS OF INTERRUPT  
VECTOR>

THE ADDRESS AND VECTOR QUESTIONS WILL BE ASKED FOR EACH OF THE NUMBER OF UNITS (CONTROLLERS) SPECIFIED IN THE "# UNITS?" QUESTION. LOGICAL UNIT NUMBERS ARE ASSIGNED IN ORDER, BEGINNING AT 0. UP TO FOUR UNITS CAN BE SELECTED FOR TESTING AS FOLLOWS:

UP TO 4 TSV05 CONTROLLERS PER 11/23 AND UP TO 2 DRIVES PER CONTROLLER

## 2.5 SOFTWARE QUESTIONS

AFTER YOU HAVE ANSWERED THE HARDWARE QUESTIONS OR AFTER A RESTART OR CONTINUE COMMAND, THE RUNTIME SERVICES WILL ASK FOR SOFTWARE PARAMETERS. THESE PARAMETERS WILL GOVERN SOME DIAGNOSTIC SPECIFIC OPERATION MODES. YOU WILL BE PROMPTED BY "CHANGE SW (L) ?" IF YOU WISH TO CHANGE ANY PARAMETERS, ANSWER BY TYPING "Y". THE SOFTWARE QUESTIONS AND THE DEFAULT VALUES ARE DESCRIBED IN THE NEXT PARAGRAPH(S).

THE FOLLOWING QUESTIONS ARE ASKED ON A START, RESTART, OR CONTINUE. THEY ALLOW FLEXIBILITY IN THE WAY THE PROGRAM BEHAVES.

CHANGE SW (L) ? <TYPE Y TO CAUSE THE FOLLOWING  
QUESTIONS TO BE ASKED>

INHIBIT ITERATIONS (L) N ? <TYPE "Y" TO PREVENT MULTIPLE  
ITERATIONS OF CERTAIN TESTS.  
THIS CAUSES EACH TEST PASS TO  
RUN AS QUICKLY AS POSSIBLE.  
ONLY QUICK RUNNING LOGIC  
TESTS USE MULTIPLE  
ITERATIONS.>

## 2.6 EXTENDED P TABLE DIALOGUE

WHEN YOU ANSWER THE HARDWARE QUESTIONS, YOU ARE BUILDING ENTRIES



IN A TABLE THAT DESCRIBES THE DEVICES UNDER TEST. THE SIMPLEST WAY TO BUILD THIS TABLE IS TO ANSWER ALL QUESTIONS FOR EACH UNIT TO BE TESTED. IF YOU HAVE A MULTIPLEXED DEVICE SUCH AS A MASS STORAGE CONTROLLER WITH SEVERAL DRIVES OR A COMMUNICATION DEVICE WITH SEVERAL LINES, THIS BECOMES TEDIOUS SINCE MOST OF THE ANSWERS ARE REPETITIOUS.

TO ILLUSTRATE A MORE EFFICIENT METHOD, SUPPOSE YOU ARE TESTING A DEVICE, THE XY11. SUPPOSE THIS DEVICE CONSISTS OF A CONTROL MODULE WITH EIGHT UNITS (SUB-DEVICES) ATTACHED TO IT. THESE UNITS ARE DESCRIBED BY THE OCTAL NUMBERS 0 THROUGH 7. THERE IS ONE HARDWARE PARAMETER THAT CAN VARY AMONG UNITS CALLED THE Q FACTOR. THIS Q FACTOR MAY BE 0 OR 1. BELOW IS A SIMPLE WAY TO BUILD A TABLE FOR ONE XY11 WITH EIGHT UNITS.

# UNITS (0) ? 8<CR>

UNIT 1  
CSR ADDRESS (0) ? 160000<CR>  
SUB DEVICE # (0) ? 0<CR>  
Q FACTOR (0) 0 ? 1<CR>

UNIT 2  
CSR ADDRESS (0) ? 160000<CR>  
SUB DEVICE # (0) ? 1<CR>  
Q FACTOR (0) 1 ? 0<CR>

UNIT 3  
CSR ADDRESS (0) ? 160000<CR>  
SUB DEVICE # (0) ? 2<CR>  
Q FACTOR (0) 0 ? <CR>

UNIT 4  
CSR ADDRESS (0) ? 160000<CR>  
SUB DEVICE # (0) ? 3<CR>  
Q-FACTOR (0) 0 ? <CR>

UNIT 5  
CSR ADDRESS (0) ? 160000<CR>  
SUB DEVICE # (0) ? 4<CR>  
Q-FACTOR (0) 0 ? <CR>

UNIT 6  
CSR ADDRESS (0) ? 160000<CR>  
SUB-DEVICE # (0) ? 5<CR>  
Q-FACTOR (0) 0 ? <CR>

UNIT 7  
CSR ADDRESS (0) ? 160000<CR>  
SUB-DEVICE # (0) ? 6<CR>  
Q-FACTOR (0) 0 ? 1<CR>

UNIT 8  
CSR ADDRESS (0) 160000<CR>  
SUB DEVICE # (0) ? 7<CR>  
Q FACTOR (0) 1 ? <CR>

NOTICE THAT THE DEFAULT VALUE FOR THE Q FACTOR CHANGES WHEN A NON DEFAULT RESPONSI. IS GIVEN. BE CAREFUL WHEN SPECIFYING MULTIPLE UNITS!

AS YOU CAN SEE FROM THE ABOVE EXAMPLE, THE HARDWARE PARAMETERS DO NOT VARY SIGNIFICANTLY FROM UNIT TO UNIT. THE PROCEDURE SHOWN IS NOT VERY EFFICIENT.

THE RUNTIME SERVICES CAN TAKE MULTIPLE UNIT SPECIFICATIONS HOWEVER. LET'S BUILD THE SAME TABLE USING THE MULTIPLE SPECIFICATION FEATURE.

```
* UNITS (0) ? 8<CR>

UNIT 1
CSR ADDRESS (0) ? 160000<CR>
SUB-DEVICE # (0) ? 0,1<CR>
Q-FACTOR (0) 0 ? 1,0<CR>

UNIT 3
CSR ADDRESS (0) ? 160000<CR>
SUB DEVICE # (0) ? 2,5<CR>
Q-FACTOR (0) 0 ? 0<CR>

UNIT 7
CSR ADDRESS (0) ? 160000<CR>
SUB DEVICE # (0) ? 6,7<CR>
Q-FACTOR (0) 0 ? 1<CR>
```

AS YOU CAN SEE IN THE ABOVE DIALOGUE, THE RUNTIME SERVICES WILL BUILD AS MANY ENTRIES AS IT CAN WITH THE INFORMATION GIVEN IN ANY ONE PASS THROUGH THE QUESTIONS. IN THE FIRST PASS, TWO ENTRIES ARE BUILT SINCE TWO SUB-DEVICES AND Q-FACTORS WERE SPECIFIED. THE SERVICES ASSUME THAT THE CSR ADDRESS IS 160000 FOR BOTH SINCE IT WAS SPECIFIED ONLY ONCE. IN THE SECOND PASS, FOUR ENTRIES WERE BUILT. THIS IS BECAUSE FOUR SUB-DEVICES WERE SPECIFIED. THE "-" CONSTRUCT TELLS THE RUNTIME SERVICES TO INCREMENT THE DATA FROM THE FIRST NUMBER TO THE SECOND. IN THIS CASE, SUB-DEVICES 2, 3, 4 AND 5 WERE SPECIFIED. (IF THE SUB-DEVICE WERE SPECIFIED BY ADDRESSES, THE INCREMENT WOULD BE BY 2 SINCE ADDRESSES MUST BE ON AN EVEN BOUNDARY.) THE CSR ADDRESSES AND Q-FACTORS FOR THE FOUR ENTRIES ARE ASSUMED TO BE 160000 AND 0 RESPECTIVELY SINCE THEY WERE ONLY SPECIFIED ONCE. THE LAST TWO UNITS ARE SPECIFIED IN THE THIRD PASS.

THE WHOLE PROCESS COULD HAVE BEEN ACCOMPLISHED IN ONE PASS AS SHOWN BELOW.

```
* UNITS (0) ? 8<CR>

UNIT 1
CSR ADDRESS (0) ? 160000<CR>
SUB-DEVICE # (0) ? 0,7<CR>
Q-FACTOR (0) 0 ? 0,1,0,...,1,1<CR>
```

AS YOU CAN SEE FROM THIS EXAMPLE, NULL REPLIES (COMMAS ENCLOSING A NULL FIELD) TELL THE RUNTIME SERVICES TO REPEAT THE LAST REPLY.

## 2.7 QUICK START UP PROCEDURE (XXDP.)

TO START UP THIS PROGRAM:

1. BOOT XXDP.
2. GIVE THE DATE AND ANSWER THE LSI AND 50MHZ (IF THERE IS A CLOCK) QUESTIONS
3. TYPE 'R NAME', WHERE NAME IS THE NAME OF THE BIN OR BIC FILE FOR THIS PROGRAM
4. TYPE 'START'
5. ANSWER THE 'CHANGE HW' QUESTION WITH 'Y'
6. ANSWER ALL THE HARDWARE QUESTIONS
7. ANSWER THE "CHANGE SW" QUESTION WITH 'N'

WHEN YOU FOLLOW THIS PROCEDURE YOU WILL BE USING ONLY THE DEFAULTS FOR FLAGS AND SOFTWARE PARAMETERS. THESE DEFAULTS ARE DESCRIBED IN SECTIONS 2.3 AND 2.5.

## 3.0 ERROR INFORMATION

### 3.1 TYPES OF ERROR MESSAGES

THERE ARE THREE LEVELS OF ERROR MESSAGES THAT MAY BE ISSUED BY A DIAGNOSTIC: GENERAL, BASIC AND EXTENDED. GENERAL ERROR MESSAGES ARE ALWAYS PRINTED UNLESS THE "IER" FLAG IS SET (SECTION 2.3). THE GENERAL ERROR MESSAGE IS OF THE FORM:

NAME TYPE NUMBER ON UNIT NUMBER TST NUMBER PC:xxxxxx  
ERROR MESSAGE

WHERE: NAME = DIAGNOSTIC NAME  
TYPE = ERROR TYPE (SYS FATAL, DEV FATAL, HARD OR SOFT)  
NUMBER = ERROR NUMBER  
UNIT NUMBER = 0 - N (N IS LAST UNIT IN PTABLE)  
TST NUMBER = TEST AND SUBTEST WHERE ERROR OCCURRED  
PC:xxxxxx = ADDRESS OF ERROR MESSAGE CALL

BASIC ERROR MESSAGES ARE MESSAGES THAT CONTAIN SOME ADDITIONAL INFORMATION ABOUT THE ERROR. THESE ARE ALWAYS PRINTED UNLESS THE "IER" OR "IBR" FLAGS ARE SET (SECTION 2.3). THESE MESSAGES ARE PRINTED AFTER THE ASSOCIATED GENERAL MESSAGE.

EXTENDED ERROR MESSAGES CONTAIN SUPPLEMENTARY ERROR INFORMATION SUCH AS REGISTER CONTENTS OR GOOD/BAD DATA. THESE ARE ALWAYS PRINTED UNLESS THE "IER", "IBR" OR "IXE" FLAGS ARE SET (SECTION 2.3). THESE MESSAGES ARE PRINTED AFTER THE ASSOCIATED GENERAL ERROR MESSAGE AND ANY ASSOCIATED BASIC ERROR MESSAGES.

### 3.2 SPECIFIC ERROR MESSAGES

BELOW ARE SAMPLE ERROR MESSAGES. EACH ERROR MESSAGE REPRESENTS DIFFERENT TYPES OF ERRORS DETECTED BY THIS DIAGNOSTIC.

#### ERROR MESSAGE EXAMPLE 1

THIS ERROR IS INDICATIVE OF AN INCORRECT REGISTER OR STATUS WORD RETURNED TO THE DIAGNOSTIC. THE FIRST PART DEFINES THE TEST FUNCTION AND UNIT THAT FAILED. THE SECOND PART PROVIDES THE REGISTER BITS AND THEIR MNEMONICS FOR THE INCORRECT REGISTER OR STATUS WORDS. THE THIRD PART IS THE EXPECTED AND RECEIVED DATA.

TST: 016 FIFO EXERCISER TEST  
CVTSD HRD ERR 01610 ON UNIT 00 TST 016 SUB 002 PC: 040624  
FIFO STATUS (IN WORD 9) INCORRECT AFTER WRITE FIFO

TAPE BUS SIGNALS IN WORD #8: - DESIGNATOR <BIT #>  
PARERR<15> IEOT <12> IFMK <9> IRDY<6> IRWD<2>  
IRESV2<14> IIDENT<11> IHER <8> IONL<5> IFBY<1>  
IRESV1<13> ICER <10> ISPEED<7> ILDP<4> IFPT<0>

TAPE BUS SIGNALS IN WORD #9:  
DATMIS<7> ILW<6> OUTRDY<5> INRDY<4>

MESSAGE BUFFER ADDRESS = 047352

MESSAGE BUFFER CONTENTS:

|               |        |       |        |      |        |
|---------------|--------|-------|--------|------|--------|
| WORD #0 EXPD: | 100020 | RECV: | 100020 | XOR: | 000000 |
| WORD #1 EXPD: | 000012 | RECV: | 000012 | XOR: | 000000 |
| WORD #2 EXPD: | 000000 | RECV: | 000000 | XOR: | 000000 |
| WORD #3 EXPD: | 000010 | RECV: | 000010 | XOR: | 000000 |
| WORD #4 EXPD: | 000000 | RECV: | 000000 | XOR: | 000000 |
| WORD #5 EXPD: | 000000 | RECV: | 000000 | XOR: | 000000 |
| WORD #6 EXPD: | 000000 | RECV: | 000000 | XOR: | 000000 |
| WORD #7 EXPD: | 000000 | RECV: | 000000 | XOR: | 000000 |
| WORD #8 EXPD: | 070217 | RECV: | 070217 | XOR: | 000000 |
| WORD #9 EXPD: | 000074 | RECV: | 000034 | XOR: | 000040 |

#### ERROR MESSAGE EXAMPLE 2

THIS ERROR SHOWS A FATAL FUNCTION ERROR FROM THE TAPE DRIVE. IN THIS INSTANCE A UNRECOVERABLE ERROR OCCURED WHICH INDICATES THAT THE CONTROLLER MAY BE DEFECTIVE.

CVTSD HRD ERR 00159 ON UNIT 00 TST 001 SUB 005 PC: 026202  
TSSR NOT CORRECT AFTER SPACE RECORDS COMMAND

TSSR = 100214

TSSR BITS SET: SC, SSR

TERMINATION CLASS CODE = UNRECOVERABLE ERROR

PACKET ADDRESS = 026420

PACKET WORD # = 140010

PACKET WORD # = 000010

PACKET WORD # = 000000

PACKET WORD # = 000024

#### ERROR MESSAGE EXAMPLE 3



THIS ERROR SHOWS THAT THE MOTION BIT DID NOT GET SET WHILE DOING A REWIND WITH EXTENDED FEATURES MODE ENABLED.

CVISD WRD ERR 00'21 ON UNIT 00 TST 001 SUB 002 PC: 023306  
MOT BIT (XST0) NOT SET DURING REWIND (EXTENDED FEATURES MODE)  
EXPD: 000312 RECV: 000112 XOR: 000200

#### 4.0 PERFORMANCE AND PROGRESS REPORTS

AT THE END OF EACH PASS, THE PASS COUNT IS GIVEN ALONG WITH THE TOTAL NUMBER OF ERRORS REPORTED SINCE THE DIAGNOSTIC WAS STARTED. THE 'EOP' SWITCH CAN BE USED TO CONTROL HOW OFTEN THE END OF PASS MESSAGE IS PRINTED. SECTION 2.2 DESCRIBES SWITCHES.

SUCCESSFUL RUN EXAMPLE (PDP 11/23)

DR>STA/FLA:PNT:HOE

UNITS (D) ? 1

UNIT 0

DEVICE ADDRESS (0) 172520 ? <CR>

VECTOR (0) 224 ? <CR>

CHANGE SW (L) ? N<CR>

THE ABOVE COMMAND WILL START THE DIAGNOSTIC. THE COMMAND HAS TWO SWITCHES ON WHICH ARE "PRINT EACH TEST NBR AS EXECUTED" AND "HALT ON ERROR".

TST: 001 SKIP TAPE MARKS TEST  
TST: 002 NO-OP AND INITIALIZE TEST  
TST: 003 ERASE AND OPERATION INCOMPLETE TEST  
TST: 004 DATA PARITY TEST  
TST: 005 TEST OF OPERATIONS AT EOT TEST  
TST: 006 EXTENDED-MODE FUNCTIONS TEST  
TST: 007 RECORD BUFFERING TEST  
TST: 008 FUNCTION TIMING TEST

0 ERRORS

NOTE: THE DIAGNOSTIC WILL RUN CONTINUOUSLY UNLESS A PASS NUMBER LIMIT HAS BEEN SPECIFIED WITH THE /PASS: SWITCH.

#### PROGRAM RUN TIMES

THE AVERAGE RUN TIMES OF THE PROGRAM ARE LISTED BELOW. THESE FIGURES ARE TO BE USED AS A GUIDE. THE TIMING WAS DONE ON A PDP 11/23 PROCESSOR WITH A LA34 CONSOLE.

THE PROGRAM RUNS IN TWO MODES; NO ITERATIONS AND DEFAULT MODE. IN THE NO ITERATIONS MODE, EACH TEST IS RUN ONCE, WITH NO ITERATIONS. IN THE DEFAULT MODE EACH TEST IS REPEATED BY THE NUMBER OF TIMES INDICATED BY THE ITERATION COUNT. NO ITERATIONS MODE IS SELECTED BY ANSWERING THE INHIBIT ITERATIONS QUESTION WITH A "Y" (YES).

| TEST<br>NUMBER | N/I<br>SECS. | NUMBER<br>ITER | DEF<br>SECS. |
|----------------|--------------|----------------|--------------|
| 1              | 1            | 2              | 1            |
| 2              | 1            | 1              | 0            |
| 3              | 1            | 1              |              |
| 4              | 1            | 1              |              |
| 5              | 1            | 1              | 0            |
| 6              | 1            | 1              | 0            |
| 7              | 1            | 1              | 0            |
| 8              | 1            | 1              | 0            |

THE TIMES REQUIRED TO RUN TESTS 1 THROUGH 37 IN ONE COMMAND:

Q.V. 15 SECONDS  
DEFAULT 16 SECONDS

#### 5.0 DEVICE IN "HMA" LOW TABLES

WHENEVER THE PROGRAM IS STARTED, VIA THE START COMMAND, THE SUPERVISOR FIRST, THE FOLLOWING P-TABLES PARAMETER CHANGES:

CHANGE HW (L) ?

# UNITS (0) ? <ENTER THE NUMBER OF M7196 CONTROLLERS  
PRESENT TO BE TESTED>

UNIT 0

DEVICE ADDRESS (0) 172520 ? <ENTER THE ADDRESS OF THE  
TSBA/TSDB REGISTER>

VECTOR (0) 224 ? <ENTER ADDRESS OF INTERRUPT  
VECTOR>

THE ADDRESS AND VECTOR QUESTIONS WILL BE ASKED FOR EACH OF THE NUMBER OF UNITS (CONTROLLERS) SPECIFIED IN THE # UNITS? QUESTION. LOGICAL UNIT NUMBERS ARE ASSIGNED IN ORDER, BEGINNING AT 0. UP TO FOUR UNITS CAN BE SELECTED FOR TESTING.

IN ADDITION, ON A START, RESTART OR CONTINUE THE SUPERVISOR REQUESTS CHANGES TO THE SOFTWARE OPERATING PARAMETERS, AS FOLLOWS:

CHANGE SW (L) ?

INHIBIT ITERATIONS (L) N ?

## 6.0 TEST SUMMARIES

### TEST 1: WRITE TAPE MARK RETRY

THIS TEST VERIFIES PROPER OPERATION OF THE WRITE TAPE MARK RETRY COMMAND (SPACE REVERSE, ERASE, WRITE TAPE MARK).

### TEST 2: SKIP TAPE MARKS

THIS TEST VERIFIES PROPER OPERATION OF THE SKIP TAPE MARKS FORWARD AND SKIP TAPE MARKS REVERSE COMMANDS. PROPER OPERATION UNDER CONTROL OF ALL COMBINATIONS OF THE ENABLE SKIP TAPE MARKS STOP (E'S) AND ENABLE TAPE MARKS STOP OFF BOT (ENB) BITS SPECIFIED BY THE WRITE CHARACTERISTICS COMMAND.

### TEST 3: NO-OP ("CLEAN TAPE") AND INITIALIZE

THIS TEST VERIFIES PROPER OPERATION OF THE NO OP ( CLEAN TAPE' ) AND INITIALIZE COMMAND (SPACE REVERSE, ERASE, WRITE DATA)

### TEST 4: ERASE AND OPERATION INCOMPLETE

VERIFIES THAT AN ERASE COMMAND ISSUED WHEN THE TAPE IS POSITIONED AT BOT OPERATES PROPERLY AND ACTUALLY ERASES TAPE.

### TEST 5: DATA PARTY TEST

THIS TEST VERIFIES THAT THE DATA PARITY CIRCUITRY IN BOTH THE CONTROLLER AND THE TRANSPORT IS OPERATING PROPERLY BY FORCING DATA RECORDS WITH WRONG PARITY TO BE WRITTEN ONTO TAPE AND CHECKING THE RESULTS OBTAINED WHEN THE DATA IS READ.

### TEST 6: OPERATIONS AT EOT

THIS TEST VERIFIES PROPER OPERATION OF THE WRITE DATA RETRY COMMAND (SPACE REVERSE, ERASE, WRITE DATA)

### TEST 7: EXTENDED MODE FEATURES

THIS TEST VERIFIES THE OPERATION OF COMMANDS ONLY AVAILABLE WHEN THE CONTROLLER IS IN THE EXTENDED FEATURES MODE. THESE COMMANDS ARE:

REWIND WITH IMMEDIATE INTERRUPT

IF THE CONTROLLER IS NOT ALREADY IN EXTENDED FEATURES MODE, IT IS PLACED THERE VIA A WRITE SUBSYSTEM MEMORY COMMAND.

#### TEST 8: RECORD BUFFERING

THIS TEST VERIFIES THAT RECORD BUFFERING, USED FOR WRITE DATA AND READ NEXT COMMANDS, OPERATES PROPERLY AND IS PROPERLY CONTROLLED BY THE EXTENDED CHARACTERISTICS DATA WORD. IF THE M7196 CONTROLLER MODULE IS NOT ALREADY IN EXTENDED FEATURES MODE (AS CONTROLLED BY THE DIP SWITCH ON THE MODULE), IT IS PLACED INTO THAT MODE BY INVERTING THE SENSE OF THE SWITCH USING THE WRITE SUBSYSTEM MEMORY COMMAND. NOTE THAT RECORD BUFFERING HAS BEEN ENABLED IN PREVIOUS TESTS OF READ AND WRITE AND SO HAS BEEN PARTIALLY TESTED ALREADY. THIS TEST VERIFIES THAT BUFFERING IS ACTUALLY OPERATING.

#### TEST 9: FUNCTION TIMING

THIS TEST VERIFIES THAT THE TAPE TRANSPORT SEEMS TO BE WRITING RECORDS, GAPS, AND EXTENDED GAPS OF THE PROPER LENGTH. BOTH LOW AND HIGH SPEED MODES ARE TESTED. IT IS ALSO VERIFIED THAT A SKIP TAPE MARKS COMMAND WITH A COUNT OF 6 OR MORE, OPERATE THE TAPE IN HIGH-SPEED MODE. THIS TEST CAN ONLY BE RUN IF A REAL-TIME CLOCK IS AVAILABLE ON THE SYSTEM. THE TEST OPERATES BY TIMING VARIOUS TAPE-MOTION OPERATIONS, USING A NUMBER OF DIFFERENT TEST RECORD LENGTHS.

#### 7.0 MAINTENANCE HISTORY

REVISION A - MARCH 1982

REVISION B - APRIL 1983

- FIXED TWO PROBLEMS, ONE IN TEST 1 AND THE OTHER IN TEST 8.  
REF. DOYLE TO GRASKY "TSV05 CVTSDA DIAGNOSTIC PATCH"; 23 DEC 82.

```

2          .TITLE  TSV2  PROGRAM HEADER
3          .SBTTL  PROGRAM HEADER
4
10         .MCALL  SVC
11 000000   SVC                      ; INITIALIZE SUPERVISOR MACROS
12         .ENABLE LC
13         .MLIST  BEX,CND
19 000000   .ENABL  ABS,AMA
20         .=2000
21 000000   BGNMOD  TSV2
22         TSV2::
23
24         ;
25         ; THE PROGRAM HEADER IS THE INTERFACE BETWEEN
26         ; THE DIAGNOSTIC PROGRAM AND THE SUPERVISOR.
27         ;
28 002000   POINTER BGNSW,BGNSFT,BGNAU,BGNDU,BGNRPT
29 002000   HEADER  CVTSD,B,0,655.,0
002000     L$NAME::                      ;DIAGNOSTIC NAME
002000     .ASCII  /C/
002001     .ASCII  /V/
002002     .ASCII  /T/
002003     .ASCII  /S/
002004     .ASCII  /D/
002005     .BYTE   0
002006     .BYTE   0
002007     .BYTE   0
002010     L$REV::                      ;REVISION LEVEL
002010     .ASCII  /B/
002011     L$DEPO::                      ;0
002011     .ASCII  /O/
002012     L$UNIT::                      ;NUMBER OF UNITS
002012     .WORD    0
002014     L$TIML::                      ;LONGEST TEST TIME
002014     .WORD    655.
002016     L$MPCP::                      ;POINTER TO H.W. QUES.
002016     .WORD    L$HARD
002020     L$SPCP::                      ;POINTER TO S.W. QUES.
002020     .WORD    L$SOFT
002022     L$MPTP::                      ;PTR. TO DEF. H.W. PTABLE
002022     .WORD    L$HW
002024     L$SPTP::                      ;PTR. TO S.W. PTABLE
002024     .WORD    L$SW
002026     L$LADP::                      ;DIAG. END ADDRESS
002026     .WORD    L$LAST
002030     L$STA::                      ;RESERVED FOR APT STATS
002030     .WORD    0
002032     L$CO::                      ;DIAGNOSTIC TYPE
002032     .WORD    0
002034     L$DTYP::                      ;DIAGNOSTIC TYPE
002034     .WORD    0
002036     L$APT::                      ;APT EXPANSION
002036     .WORD    0
002040     L$DTP::                      ;PTR. TO DISPATCH TABLE
002040     .WORD    L$DISPATCH
002042     L$PRIO::                      ;DIAGNOSTIC RUN PRIORITY

```

TSV2 PROGRAM HEADER MACRO M1113 06 FEB 84 18:04  
PROGRAM HEADER

SEQ 017

|        |        |           |       |             |                                  |
|--------|--------|-----------|-------|-------------|----------------------------------|
| 002042 | 000000 |           | .WORD | 0           |                                  |
| 002044 |        | L\$ENVI:: |       |             | ;FLAGS DESCRIBE HOW IT WAS SETUP |
| 002044 | 000000 |           | .WORD | 0           |                                  |
| 002046 |        | L\$EXP1:: |       |             | ;EXPANSION WORD                  |
| 002046 | 000000 |           | .WORD | 0           |                                  |
| 002050 |        | L\$MREV:: |       |             | ;SVC REV AND EDIT #              |
| 002050 | 003    |           | .BYTE | C\$REVISION |                                  |
| 002051 | 003    |           | .BYTE | C\$EDIT     |                                  |
| 002052 |        | L\$EF::   |       |             | ;DIAG. EVENT FLAGS               |
| 002052 | 000000 |           | .WORD | 0           |                                  |
| 002054 | 000000 |           | .WORD | 0           |                                  |
| 002056 |        | L\$SPC::  |       |             |                                  |
| 002056 | 000000 |           | .WORD | 0           |                                  |
| 002060 |        | L\$DEVP:: |       |             | ; POINTER TO DEVICE TYPE LIST    |
| 002060 | 003374 |           | .WORD | L\$DVTYP    |                                  |
| 002062 |        | L\$REPP:: |       |             | ;PTR. TO REPORT CODE             |
| 002062 | 022744 |           | .WORD | L\$RPT      |                                  |
| 002064 |        | L\$EXP4:: |       |             |                                  |
| 002064 | 000000 |           | .WORD | 0           |                                  |
| 002066 |        | L\$EXP5:: |       |             |                                  |
| 002066 | 000000 |           | .WORD | 0           |                                  |
| 002070 |        | L\$AUT::  |       |             | ;PTR. TO ADD UNIT CODE           |
| 002070 | 022432 |           | .WORD | L\$AU       |                                  |
| 002072 |        | L\$DUT::  |       |             | ;PTR. TO DROP UNIT CODE          |
| 002072 | 022530 |           | .WORD | L\$DU       |                                  |
| 002074 |        | L\$LUN::  |       |             | ;LUN FOR EXERCISERS TO FILL      |
| 002074 | 000000 |           | .WORD | 0           |                                  |
| 002076 |        | L\$DESP:: |       |             | ;POINTER TO DIAG. DESCRIPTION    |
| 002076 | 003402 |           | .WORD | L\$DESC     |                                  |
| 002100 |        | L\$LOAD:: |       |             | ;GENERATE SPECIAL AUTOLOAD EMT   |
| 002100 | 104035 |           | EMT   | E\$LOAD     |                                  |
| 002102 |        | L\$ETP::  |       |             | ;POINTER TO ERRIBL               |
| 002102 | 000000 |           | .WORD | 0           |                                  |
| 002104 |        | L\$ICP::  |       |             | ;PTR. TO INIT CODE               |
| 002104 | 021636 |           | .WORD | L\$INIT     |                                  |
| 002106 |        | L\$CCP::  |       |             | ;PTR. TO CLEAN UP CODE           |
| 002106 | 022716 |           | .WORD | L\$CLEAN    |                                  |
| 002110 |        | L\$ACP::  |       |             | ;PTR. TO AUTO CODE               |
| 002110 | 022636 |           | .WORD | L\$AUTO     |                                  |
| 002112 |        | L\$PRT::  |       |             | ;PTR. TO PROTECT TABLE           |
| 002112 | 021626 |           | .WORD | L\$PROT     |                                  |
| 002114 |        | L\$TEST:: |       |             | ;TEST NUMBER                     |
| 002114 | 000000 |           | .WORD | 0           |                                  |
| 002116 |        | L\$DLY::  |       |             | ;DELAY COUNT                     |
| 002116 | 000000 |           | .WORD | 0           |                                  |
| 002120 |        | L\$HIME:: |       |             | ;PTR. TO HIGH MEM                |
| 002120 | 000000 |           | .WORD | 0           |                                  |



```
31 .SBTTL DISPATCH TABLE
32
33 ;**
34 ; THE DISPATCH TABLE CONTAINS THE STARTING ADDRESS OF EACH TEST.
35 ; IT IS USED BY THE SUPERVISOR TO DISPATCH TO EACH TEST.
36 ;
37
38 002122 DISPATCH 9
002122 000011 .WORD 9
002124 L$DISPATCH:
002124 023526 .WORD T1
002126 032334 .WORD T2
002130 041432 .WORD T3
002132 046770 .WORD T4
002134 053046 .WORD T5
002136 056042 .WORD T6
002140 063414 .WORD T7
002142 073344 .WORD T8
002144 101120 .WORD T9
39
```

TSV2 PROGRAM HEADER MACRO M1113 06 FEB 84 18:04  
 DEFAULT HARDWARE P TABLE

SEQ 019

```

41          .SBTTL  DEFAULT HARDWARE P TABLE
42
43          ;**
44          ; THE DEFAULT HARDWARE P-TABLE CONTAINS DEFAULT VALUES OF
45          ; THE TEST-DEVICE PARAMETERS.  THE STRUCTURE OF THIS TABLE
46          ; IS IDENTICAL TO THE STRUCTURE OF THE RUN-TIME P TABLE.
47          ;
48 002146      BGNHW      DFPTBL      ;DEFAULT HARD P TABLE
          002146      000003
          002150
          002150      L$HW::
          DFPTBL::
49
50 002150      172520      .WORD      172520      ; 1ST (OF 2) REGISTERS.
51 002152      000224      .WORD      224        ; INTERRUPT VECTOR
52 002154      000200      .WORD      PRI04       ; INTERRUPT PRIORITY.
53 002156      ENDHW
          002156      L10000:

```

TSV2 PROGRAM HEADER MACRO M1113 06 FEB 84 18:04  
SOFTWARE P-TABLE

SEQ 020

```

55          .SBTTL  SOFTWARE P-TABLE
56
57          ;**
58          ; THE SOFTWARE P-TABLE CONTAINS THE VALUES OF THE PROGRAM
59          ; PARAMETERS THAT CAN BE CHANGED BY THE OPERATOR.
60          ;--
61 002156      BGNSW  SFPTBL
        002156 000004  .WORD  L10001-L$SW/2
        002160
        002160
62
63 002160 000000  TRANSTST::      .WORD  0          ; ENABLE TEST OF TRANSPORT(S) IF =1
64 002162 000000  NOITS::        .WORD  0          ; INHIBIT ITERATION OPTION.
65                                     ; ... 0 = ITERATE.
66                                     ; ...NZ = INHIBIT ITERATE.
67 002164 000017  LERRMAX::      .WORD  15.         ; LOCAL (PER TEST) ERROR LIMIT
68 002166 000310  GERRMAX::      .WORD  200.        ; GLOBAL (PER UNIT) ERROR LIMIT
69 002170
        002170      ENDSW
70      L10001:
71 002170
          ENDMOD

```

TSV3 - GLOBAL AREAS  
SOFTWARE P TABLE

MACRO M1113 06 FEB 84 18:04

SEQ 021

7  
8  
13  
19  
20 002170  
002170  
21  
22  
23  
24  
25  
26  
27  
28  
32 002170

.TITLE TSV3 - GLOBAL AREAS  
.SBTTL GLOBAL EQUATES SECTION

BGNMOD TSV3  
TSV3::

.SBTTL GLOBAL EQUATES SECTION

\*\*\*  
; THE GLOBAL EQUATES SECTION CONTAINS PROGRAM EQUATES THAT  
; ARE USED IN MORE THAN ONE TEST.  
;--

EQUALS ; GET STANDARD EQUATES.

; BIT DEFINITIONS

|        |         |        |
|--------|---------|--------|
| 100000 | BIT15-- | 100000 |
| 040000 | BIT14-- | 40000  |
| 020000 | BIT13-- | 20000  |
| 010000 | BIT12-- | 10000  |
| 004000 | BIT11-- | 4000   |
| 002000 | BIT10-- | 2000   |
| 001000 | BIT09-- | 1000   |
| 000400 | BIT08-- | 400    |
| 000200 | BIT07-- | 200    |
| 000100 | BIT06-- | 100    |
| 000040 | BIT05-- | 40     |
| 000020 | BIT04-- | 20     |
| 000010 | BIT03-- | 10     |
| 000004 | BIT02-- | 4      |
| 000002 | BIT01-- | 2      |
| 000001 | BIT00-- | 1      |
| 001000 | BIT9--  | BIT09  |
| 000400 | BIT8--  | BIT08  |
| 000200 | BIT7--  | BIT07  |
| 000100 | BIT6--  | BIT06  |
| 000040 | BIT5--  | BIT05  |
| 000020 | BIT4--  | BIT04  |
| 000010 | BIT3--  | BIT03  |
| 000004 | BIT2--  | BIT02  |
| 000002 | BIT1--  | BIT01  |
| 000001 | BIT0--  | BIT00  |

; EVENT FLAG DEFINITIONS  
; EF32:EF17 RESERVED FOR SUPERVISOR TO PROGRAM COMMUNICATION

|        |               |     |                                  |
|--------|---------------|-----|----------------------------------|
| 000040 | EF.START--    | 32. | ; START COMMAND WAS ISSUED       |
| 000037 | EF.RESTART--  | 31. | ; RESTART COMMAND WAS ISSUED     |
| 000036 | EF.CONTINUE-- | 30. | ; CONTINUE COMMAND WAS ISSUED    |
| 000035 | EF.NEW--      | 29. | ; A NEW PASS HAS BEEN STARTED    |
| 000034 | EF.PWR--      | 28. | ; A POWER FAIL/POWER UP OCCURRED |

; PRIORITY LEVEL DEFINITIONS

TSV3 - GLOBAL AREAS  
GLOBAL EQUATES SECTION

MACRO M1113 06 FEB 84 18:04

SEQ 022

```

000340      ;
000300      PRI07== 340
000240      PRI06== 300
000200      PRI05== 240
000140      PRI04== 200
000100      PRI03== 140
000040      PRI02== 100
000000      PRI01== 40
000000      PRI00== 0

```

```

;
;OPERATOR FLAG BITS

```

```

000004      EVL==      4
000010      LOT==     10
000020      ADR==     20
000040      IDU==     40
000100      ISR==    100
000200      UAM==    200
000400      BOE==    400
001000      PNT==   1000
002000      PRI==   2000
004000      IXE==   4000
010000      IBE==  10000
020000      IER==  20000
040000      LOE==  40000
100000      MOE== 100000

```

33

34 002170

```

                                KT11
.SBTL  MEMORY MANAGEMENT DEFINITIONS
;*KT11 VECTOR ADDRESS
MMVEC= 250
;*KT11 STATUS REGISTER ADDRESSES
SR0= 177572
SR1= 177574
SR2= 177576
SR3= 172516
.IF NB
;*USER "I" PAGE DESCRIPTOR REGISTERS
UIPDR0= 177600
UIPDR1= 177602
UIPDR2= 177604
UIPDR3= 177606
UIPDR4= 177610
UIPDR5= 177612
UIPDR6= 177614
UIPDR7= 177616
.IF NB
;*USER "D" PAGE DESCRIPTOR REGISTORS
UDPDR0= 177620
UDPDR1= 177622
UDPDR2= 177624
UDPDR3= 177626
UDPDR4= 177630
UDPDR5= 177632
UDPDR6= 177634
UDPDR7= 177636
.ENDC

```

```

;DEFINE MEMORY MANAGEMENT REGISTERS

```

```
; *USER "I" PAGE ADDRESS REGISTERS
UIPAR0= 177640
UIPAR1= 177642
UIPAR2= 177644
UIPAR3= 177646
UIPAR4= 177650
UIPAR5= 177652
UIPAR6= 177654
UIPAR7= 177656
. IF NB
; *USER "D" PAGE ADDRESS REGISTERS
UDPAR0= 177660
UDPAR1= 177662
UDPAR2= 177664
UDPAR3= 177666
UDPAR4= 177670
UDPAR5= 177672
UDPAR6= 177674
UDPAR7= 177676
. ENDC
. ENDC
. IF NB
; *SUPERVISOR "I" PAGE DESCRIPTOR REGISTERS
SIPDR0= 172200
SIPDR1= 172202
SIPDR2= 172204
SIPDR3= 172206
SIPDR4= 172210
SIPDR5= 172212
SIPDR6= 172214
SIPDR7= 172216
. IF NB
; *SUPERVISOR "D" PAGE DESCRIPTOR REGISTERS
SDPDR0= 172220
SDPDR1= 172222
SDPDR2= 172224
SDPDR3= 172226
SDPDR4= 172230
SDPDR5= 172232
SDPDR6= 172234
SDPDR7= 172236
. ENDC
; *SUPERVISOR "I" PAGE ADDRESS REGISTERS
SIPAR0= 172240
SIPAR1= 172242
SIPAR2= 172244
SIPAR3= 172246
SIPAR4= 172250
SIPAR5= 172252
SIPAR6= 172254
SIPAR7= 172256
. IF NB
; *SUPERVISOR "D" PAGE ADDRESS REGISTERS
SDPAR0= 172260
SDPAR1= 172262
SDPAR2= 172264
SDPAR3= 172266
```



```
SDPAR4= 172270
SDPAR5= 172272
SDPAR6= 172274
SDPAR7= 172276
.ENDC
.ENDC
; *KERNEL "I" PAGE DESCRIPTOR REGISTERS
172300 KIPDR0= 172300
172302 KIPDR1= 172302
172304 KIPDR2= 172304
172306 KIPDR3= 172306
172310 KIPDR4= 172310
172312 KIPDR5= 172312
172314 KIPDR6= 172314
172316 KIPDR7= 172316
; IF NB
; *KERNEL "D" PAGE
DESCRIPTOR REGISTERS
KDPDR0= 172320
KDPDR1= 172322
KDPDR2= 172324
KDPDR3= 172326
KDPDR4= 172330
KDPDR5= 172332
KDPDR6= 172334
KDPDR7= 172336
.ENDC
; *KERNEL "I" PAGE ADDRESS REGISTERS
172340 KIPAR0= 172340
172342 KIPAR1= 172342
172344 KIPAR2= 172344
172346 KIPAR3= 172346
172350 KIPAR4= 172350
172352 KIPAR5= 172352
172354 KIPAR6= 172354
172356 KIPAR7= 172356
; IF NB
; *KERNEL "D" PAGE ADDRESS REGISTERS
KDPAR0= 172360
KDPAR1= 172362
KDPAR2= 172364
KDPAR3= 172366
KDPAR4= 172370
KDPAR5= 172372
KDPAR6= 172374
KDPAR7= 172376
.ENDC
```



```

39          .SBTTL  TSV05 REGISTER AND PACKET DEFINITIONS
40
41          ;
42          ; SOME GENERAL EQUATES.
43          ;
44
45          000004      ERRVEC==      4          ; POINTER TO ERROR VECTOR FOR BUS TIME OUT.
46          000060      TTIVEC==     60          ; INTERRUPT VECTOR FOR CONSOLE INPUT
47          177560      TTICSR==     177560       ; BUS ADDRESS OF CONSOLE INPUT
48          177562      TTIBFR==     177562       ; CONSOLE INPUT DATA BUFFER
49          177520      BDVPCR==     177520       ; BDV11 PAGE CONTROL REGISTER
50
51          ;*
52          ;BIT DEFINITIONS FOR TSSR REGISTER
53          ;*
54
55          100000      SC=      BIT15          ;SPECIAL CONDITION
56          040000      BIE=      BIT14          ;BUS INTERFACE ERROR
57          020000      SCE=      BIT13          ;SANITY CHECK ERROR
58          010000      RMR=      BIT12          ;MODIFICATION REFUSED
59          004000      NXM=      BIT11          ;NONEXISTANT MEMORY ERROR
60          002000      NBA=      BIT10          ;NEED BUFFER ADDRESS
61          001400      HIADDR= BIT9!BIT8        ;EXTENDED ADDRESS BITS
62          000200      SSR=      BIT7          ;SUB SYSTEM READY
63          000100      OFL=      BIT6          ;OFF LINE BIT
64          000060      FATERR= BIT4!BIT5        ;FATAL TERMINATION ERROR CODES
65          000016      TERCLS= BIT3!BIT2!BIT1    ;TERMINATION CODES
66
67          ;*
68          ;
69          ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 0
70          ;(XST0)
71          ;
72          ;*
73
74          100000      XSOTMK= BIT15          ;TAPE MARK DETECTED
75          040000      XSORLS= BIT14          ;RECORD LENGTH SHORT
76          020000      XSOLET= BIT13          ;LOGICAL END OF TAPE
77          010000      XSORLL= BIT12          ;RECORD LENGTH LONG
78          004000      XSOWLE= BIT11          ;WRITE LOCK ERROR
79          002000      XSONEF= BIT10          ;NON EXECUTABLE FUNCTION
80          001000      XS0ILC= BIT9          ;ILLEGAL COMMAND
81          000400      XS0ILA= BIT8          ;ILLEGAL ADDRESS
82          000200      XSOMOT= BIT7          ;TAPE IN MOTION
83          000100      XS0ONL= BIT6          ;TRANSPORT ON LINE
84          000040      XS0IE=  BIT5          ;INTERRUPT ENABLE
85          000020      XS0VCK= BIT4          ;VOLUME CHECK BIT
86          000010      XSOPED= BIT3          ;PHASE ENCODED DRIVE
87          000004      XSOWLK= BIT2          ;WRITE LOCKED
88          000002      XS0BOT= BIT1          ;BEGINNING OF TAPE
89          000001      XS0EOT= BIT0          ;END OF TAPE
90
91          ;*
92          ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 1
93          ;(XST1)
94          ;
95          100000      X1.DLT = BIT15          ;DATA LATE

```

```

96      040000      X1.SPARE= BIT14      ;NOT USED
97      020000      X1.COR = BIT13      ;CORRECTABLE DATA ERROR
98      017375      X1.MBZ = BIT 9.BIT11.BIT10.BIT9.BIT7.BIT6.BIT5.BIT4.BIT3.BIT2.BIT0 ;ALWAYS 0
99      000000      X1.RBP = BIT7      ;READ BUS PARITY ERROR
100     000002      X1.UNC = BIT11      ;UNCORRECTABLE DATA OR HARD ERROR
101
102
103      ;*
104      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 2
105      ;(XST2)
106
107      100000      X2.OPM = BIT15      ;OPERATION IN PROGRESS (TAPE MOVING)
108      040000      X2.RCE = BIT14      ;RAM CHECKSUM ERROR
109      035400      X2.SPARE= BIT13.BIT12.BIT11.BIT9.BIT8 ;NOT USED BY TSV05 (ALWAYS=0)
110      002000      X2.WCF = BIT10      ;WRITE CLOCK FAILURE (FIFO NOT EMPTIED BY TRANSPORT)
111      000200      X2.EXTF = BIT7      ;IF WRITE CHAR CMD THEN = EXTENDED FEATURES ENABLED
112      000100      X2.BUFE = BIT6      ;IF WRITE CHAR CMD THEN = BUFFERING ENABLED
113      000077      X2.PRV = 000077    ;IF WRITE CHAR CMD THEN = MICROCODE REVISION LEVEL
114      000007      X2.UNIT = BIT2.BIT1.BIT0 ;IF GET STATUS THEN = CURRENTLY SELECTED UNIT NO.
115
116      ;*
117      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 3
118      ;(XST3)
119
120      177400      X3.MDE = 177400      ;MICRO-DIAGNOSTIC ERROR CODE
121      000200      X3.SPARE= BIT7      ;NOT USED BY TSV05
122      000100      X3.OPI = BIT6      ;OPERATION INCOMPLETE
123      000040      X3.REV = BIT5      ;REVERSE
124      000020      X3.TRF = BIT4      ;TRANSPORT RESPONSE FAILURE
125      000010      X3.DCK = BIT3      ;DENSITY CHECK
126      000006      X3.MBZ =BIT2.BIT1 ;NOT USED ALWAYS 0
127      000001      X3.RIB = BIT0      ;REVERSE INTO BIT
128
129      ;*
130      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 4
131      ;(XST4)
132
133      100000      X4.HSP = BIT15      ;HIGH SPEED
134      040000      X4.RCE = BIT14      ;RETRY COUNT EXCEEDED
135      020000      X4.TSM = BIT13      ;TRANSPORT SPECIAL MODE
136      017400      X4.MBZ = BIT12.BIT11.BIT10.BIT9.BIT8 ;NOT USED ALWAYS 0
137      000377      X4.WRC = 000377    ;WRITE RETRY COUNT FIELD
138
139      ;*
140      ;TSR TERMINATION CODES (BIT 0 2)
141      ;
142      ;
143
144      000006      TSREJ= 3*2          ;COMMAND REJECTED
145      000006      UNREC= 6           ;UNRECOVERABLE ERROR
146
147      ;*
148      ;
149      ;DEVICE REGISTER OFFSETS
150      ;
151      ;
152

```

```

153      000000      TSBA== 0
154      000000      TSDB== 0      ;TSDB/TSBA REGISTER
155      000001      TSBAH== 1
156      000001      TSDBH== 1      ;TSDB/TSBA REGISTER HIGH BYTE
157      000002      TSSR== 2      ;TSSR REGISTER
158      000003      TSSRH== 3      ;TSSR REGISTER HIGH BYTE
159
160      ;
161      ; TSDB ADDRESS BIT DEFINITIONS
162      ;
163      000003      A1716 = BIT1:BIT0      ;ADDRESS BITS 17:16 ARE IN 1:0
164
165      ;
166      ; COMMAND DEFINITIONS
167      ;
168      000017      P.GETSTAT = 17      ;GET STATUS
169      000013      P.INIT = 13      ;INITIALIZE
170      000012      P.CONTROL = 12      ;CONTROL COMMANDS
171      000011      P.FORMAT = 11      ;FORMAT
172      000010      P.POSITION = 10      ;POSITION
173      000006      P.WRTSUB = 6      ;SUBSYSTEM WRITE
174      000005      P.WRITE = 5      ;WRITE
175      000004      P.WRTCHAR = 4      ;WRITE CHARACTERISTICS
176      000001      P.READ = 1      ;READ
177
178      ;
179      ; COMMAND PACKET HEADER WORD BIT DEFINITIONS
180      ;
181      100000      P.ACK = BIT15      ;BUFFER AVAIL FOR CONTROLLER
182      040000      P.CVC = BIT14      ;CLEAR VOLUME CHECK
183      020000      P.OPP = BIT13      ;REVERSE SEQUENCE OF DATA BITS
184      010000      P.SWB = BIT12      ;SWAP BYTES IN MEMORY
185      007400      P.MODE = BIT11:BIT10:BIT9:BIT8 ;EXTENDED COMMAND MODE FIELD
186      000200      P.IE = BIT7      ;INTERRUPT ENABLE
187      000140      P.FMT = BIT6:BIT5      ;PACKET HEADER TYPE (ALWAYS=0)
188      000037      P.CMD = 37      ;MAJOR COMMAND FIELD
189
190      ;
191      ; CONTROL COMMAND MODE CODES
192      ;
193      000000      PC.RELEASE = 0*256.      ;RELEASE BUFFER
194      000400      PC.REWIND = 1*256.      ;REWIND
195      001000      PC.NOOP = 2*256.      ;NO OP
196      002000      PC.IEREW = 4*256.      ;REWIND IMMEDIATE INTERRUPT
197      002400      PC.ERASE = 5*256.      ;SECURITY ERASE
198
199      ;
200      ; CONTROLLER RAM DEFINITIONS
201      ;
202      000167      RMCHBEG = 167      ;CHARACTERISTICS IO DATA BEGIN RAM ADDRESS
203      000200      RMCHEND = 200      ;CHARACTERISTICS IO DATA END RAM ADDRESS
204      000201      RMPKTBEG = 201      ;COMMAND PACKET BEGIN RAM ADDRESS
205      000210      RMPKTEND = 210      ;COMMAND PACKET END RAM ADDRESS
206      000215      RMMSGBEG = 215      ;MESSAGE BUFFER BEGIN RAM ADDRESS
207      000234      RMMSGEND = 234      ;MESSAGE BUFFER END RAM ADDRESS
208
209      ;
210      ; REGISTER DEFINITIONS IN THE MESSAGE BUFFER

```

```

210      ;
211      ;
212      ;
213      000006      XST0== 6      ;EXTENDED STATUS REGISTER 0 (WORD 4)
214      000010      XST1== 8.      ;EXTENDED STATUS REGISTER 1 (WORD 5)
215      000012      XST2== 10.      ;EXTENDED STATUS REGISTER 2 (WORD 6)
216      000014      XST3== 12.      ;EXTENDED STATUS REGISTER 3 (WORD 7)
217      000016      XST4== 14.      ;EXTENDED STATUS REGISTER 4 (WORD 8)
218      ;
219      ;
220      ;
221      ;OFFSETS TO WORD LOCATIONS IN PACKET DEFINITIONS
222      ;
223      ;
224      ;
225      000002      PKLOW = 2      ;LOW ORDER CHARACTERISTIC DATA POINTER
226      000004      PKHI = 4      ;HIGH ORDER CHARACTERISTIC DATA POINTER
227      000006      PKBCNT = 6      ;NUMBER OF BYTES IN DATA PACKET
228      ;
229      000010      EXBCNT=10      ;NUMBER OF BYTES IN EXTENDED DATA PACKET
230      ;
231      ;
232      ;DATA PACKET OFFSETS FOR WRITE SUBSYSTEM COMMAND
233      ;
234      000000      BSELO = 0      ;BYTE 0
235      000001      BSEL1 = 1      ;BYTE 1
236      000002      SEL2 = 2      ;WORD 2
237      000004      SELDATA = 4      ;WORD 3
238      ;
239      ;
240      ;BSELO SELECT CODES FOR WRITE SUBSYSTEM COMMAND
241      ;
242      000000      PW.NOP = 0      ;NO-OP
243      000001      PW.RDRAM = 1      ;READ RAM
244      000002      PW.WTRAM = 2      ;WRITE RAM
245      000003      PW.RFIFO = 3      ;READ FIFO
246      000004      PW.WFIFO = 4      ;WRITE FIFO
247      000005      PW.RDSTAT = 5      ;READ STATUS
248      000006      PW.WCTL = 6      ;WRITE TAPE CONTROL
249      000007      PW.WFMT = 7      ;WRITE TAPE FORMAT
250      000010      PW.WMISC = 10      ;WRITE MISCELLANEOUS
251      000011      PW.WNPR = 11      ;WRITE NPR CONTROL
252      000020      PW.D22 = 20      ;DO MICROTEST 22
253      000021      PW.D11 = 21      ;DO MICROTEST 11
254      000022      PW.D13 = 22      ;DO MICROTEST 13
255      000023      PW.NO1311 = 23      ;DISABLE MICROTEST 11 AND 13
256      000024      PW.RDEXT = 24      ;READ EXT. TAPE STATUS (NOT SUPPORTED BY ALL TRANSPORTS)
257      ;
258      ;
259      ;BSEL1 CODES FOR WRITE TAPE CONTROL
260      ;
261      000200      WC.IFAD = BIT7      ;IFAD FORMATTER ADDRESS
262      000100      WC.IOTAD = BIT6      ;ITADO - TRANSPORT ADDRESS BIT 0
263      000040      WC.I1TAD = BIT5      ;ITAD1 - TRANSPORT ADDRESS BIT 1
264      000020      WC.ISRESV = BIT4      ;IRESV5 - RESERVED #5
265      000010      WC.IREW = BIT3      ;IREW REWIND
266      000004      WC.IRWU = BIT2      ;IRWU REWIND AND UNLOAD

```

```

267      000002      WC.IFEN      - BIT11      ;IFEN      FORMATTER ENABLE
268      000001      WC.IGO       - BIT0       ;IGO
269
270      ;
271      ;BSEL1 CODES FOR WRITE FORMAT
272      ;
273      000200      WF.IHISP       - BIT7       ;IHISP      - HIGH SPEED
274      000100      WF.IWRT       - BIT6       ;IWRT       - WRITE
275      000040      WF.IREV       - BIT5       ;IREV       - REVERSE
276      000020      WF.IWFM       - BIT4       ;IWFM       - WRITE FILE MARK
277      000010      WF.IEDIT      - BIT3       ;IEDIT      - EDIT
278      000004      WF.IERASE     - BIT2       ;IERASE     - ERASE
279      000002      WF.I3RESV     - BIT1       ;IRESV3     - RESERVED #3
280      000001      WF.I4RESV     - BIT0       ;IRESV4     - RESERVED #4
281
282      ;
283      ;BSEL1 CODES FOR WRITE MISCELLANEOUS SUBCOMMAND
284      ;
285      000200      MS.EXT         - BIT7       ;INVERT SENSE OF EXTENDED FEATURES SWITCH
286      000020      MS.RSFIFO     - BIT4       ;RESET FIFO AND INPUT PARITY ERRORR
287      000010      MS.RSTAPE     - BIT3       ;RESET TAPE STATUS IN 2 FLIP-FLOPS
288      000006      MS.ATTN       - BIT2:BIT1  ;ATTENTION TRIGGER FIELD
289      000001      MS.RSD        - BIT0       ;RESET TIMER A,B THEN DELAY TIMES IN SEL2
290
291      ;
292      ; MS.ATTN SUBCODES
293      ;
294      000000      MSA.NOP        - 0*2       ;NO-OP (NOTHING TRIGGERED)
295      000002      MSA.VOL        - 1*2       ;SIMULATE ON-LINE/OFF-LINE TRANSISTION
296      000004      MSA.NRAM      - 2*2       ;FORCE NON-FATAL RAM ERROR (FORCES ERRCODE 54)
297      000006      MSA.FRAME      - 3*2       ;FORCE FATAL RAM ERROR (CAUSES SCE TO SET)
298
299      ;
300      ; WRITE SUBSYSTEM WRITE NPR BSEL1 BIT DEFINITIONS
301      ;
302      000200      NP.IR          - BIT7       ;INTERRUPT REQUEST (0 1 TRANSITION)
303      000100      NP.OUT        - BIT6       ;TAPE DATA DIRECTION OUT (0= IN)
304      000040      NP.LOOP       - BIT5       ;ENABLE TRANSPORT LOOPBACK
305      000020      NP.WRP        - BIT4       ;WRITE CORRECT PARITY (SET=0 TO WRITE WRONG)
306
307      ;
308      ; READ STATUS MESSAGE BUFFER BIT DEFINITIONS
309      ;
310      000200      S2.DIM         - BIT7       ;WORD #9 BYTE 2 DATA IN MISS
311      000100      S2.ILW        - BIT6       ;ILW M
312      000040      S2.OUTRDY     - BIT5       ;OUT RDY M
313      000020      S2.INRDY      - BIT4       ;IN RDY M
314      000010      S2.ATIMR      - BIT3       ;TIMER A FLAG M
315      000004      S2.BTIMR      - BIT2       ;TIMER B FLAG M
316      000003      S2.UNDEF      - BIT1:BIT0  ;(UNDEFINED)
317      100000      S1.PARIN       - BIT15     ;WORD #8 BYTE 1 PARIN M
318      040000      S1.I2RESV     - BIT14     ;I2RESV
319      020000      S1.I1RESV     - BIT13     ;I1RESV
320      010000      S1.IEOT       - BIT12     ;IEOT L
321      004000      S1.IIDENT     - BIT11     ;IIDENT M
322      002000      S1.ICER       - BIT10     ;ICER M
323      001000      S1.IFMK       - BIT9      ;IFMK M
324      000400      S1.IHER       - BIT8      ;IHER M
325      000200      S0.ISPEED     - BIT7      ;WORD #8 BYTE 0 ISPEED M

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324      000100      SO.IRDY      • BIT6      ;      IRDY L
325      000040      SO.IOML      • BIT5      ;      IOML L
326      000020      SO.ILOP      • BIT4      ;      ILOP L
327      000010      SO.IDBY      • BIT3      ;      IDBY L
328      000004      SO.IRWD      • BIT2      ;      IRWD L
329      000002      SO.IF8Y      • BIT1      ;      IF8Y L
330      000001      SO.IFPT      • BIT0      ;      IFPT L
331                                     .SBTTL SPECIAL MACROS AND OPDEFS.
332
333      ;*
334      ;SAVE GENERAL REGS 1 TO 5
335      ;
336
337      .MACRO SAVREG
338      JSR      R5,REGSAV
339      .ENDM
340
341      ;*
342      ; MACRO TO FORCE AN ERROR
343      ;-
344      .MACRO FORCERROR      TAG,NOTSSR
345      .NLIST
346      .IIF NDF LISTALL, .NLIST
347      .LIST
348      .IF B NOTSSR
349      MOV      TSSR(R5),R1      ;READ TSSR
350      .ENDC
351      MOV      FORCER,FORCER      ;IS FORCER SET? (LEAVE C BIT ALONE)
352      BNE      TAG      ;BR IF YES
353      .NLIST
354      .IIF NDF LISTALL, .LIST
355      .LIST
356      .ENDM
357
358      ;*
359      ; MACRO TO FORCE AN EXIT TO AVOID SECTION ITERATIONS
360      ; WILL EXIT TO A LABEL IF FORCER IS NEGATIVE
361      ; SO TO FORCE ERRORS AND EXIT ON 1 ERROR SET
362      ; FORCER TO 177777
363      ; TO FORCE ERRORS AND ITERATIONS SET FORCER TO 1.
364      ;
365      .MACRO FORCEEXIT      TAG
366      .NLIST
367      .IIF NDF LISTALL, .NLIST
368      .LIST
369      MOV      FORCER,FORCER      ;IS FORCER NEGATIVE?
370      BMI      TAG      ;BR IF YES
371      .NLIST
372      .IIF NDF LISTALL, .LIST
373      .LIST
374      .ENDM
375      ;*
376      ; MACRO TO INCREMENT ERROR COUNTS
377      ;
378      .MACRO NEXT.ERRNO
379      .NLIST
380      ;.IIF NDF LISTALL, .NLIST

```



```

381          ERRNO=ERRNO+1
382      ;;;.IIF NOF LISTALL, .LIST
383      .LIST
384      .ENDM
385
386      ;*
387      ;MACRO TO PERFORM XOR
388      ;
389
390          .MACRO XOR      A,B
391          MOV      A,-(SP)
392          BIC      B,(SP)
393          BIC      A,B
394          BIS      (SP)+,B
395          .ENDM
396
397          000000          EN=0          ; INITIALIZE ERROR NUMBER
398          .SBTTL  FORCER - FORCE ERROR FLAG
399
400      ;
401      ; THE FOLLOWING LOCATIONS MAY BE PATCHED BY THE USER
402      ; TO OBTAIN THE RESULTS DESCRIBED FOR EACH.
403      ;
404
405 002170 000000  FORCER::          0          ; FORCE TYPE ALL HARD ERRORS (THE ONES CALLED
406          ; - BY THE MACRO "IFERROR"). AN ERROR NEED NOT
407          ; - EXIST, JUST ASSUME AND TYPE THE MESSAGE.
408          .SBTTL  GLOBAL DATA SECTION
409
410      ;**
411      ;THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
412      ;IN MORE THAN ONE TEST.
413      ;
414
415      ;
416      ;THE FOLLOWING DATA ARE SET FOR EACH UNIT AT INIT TIME.
417      ;SINGLE UNIT DEFAULTS (LISTED) ARE IN THE DEFAULT P TABLE.
418      ;
419 002172 000000  EPRTSW::          .WORD  0          ;PRINT SWITCH
420 002174 000000  UNITN::          .WORD  0          ;UNIT # UNDER TEST.
421 002176 000000  QVP::          .WORD  0          ;QUICK VERIFY FLAG.
422 002200 000000  CSRADDR::        .WORD  0          ;ADDRESS OF CSR FOR CURRENT DEVICE
423 002202 000224  IVEC::          .WORD  224        ;INTERRUPT VECTOR
424 002204 000200  IPRI::          .WORD  PRI04      ;INTERRUPT PRIORITY.
425 002206 000000  TSTCNT::        .WORD  0          ;NUMBER OF TESTS RUN IN THIS PASS
426 002210 000000  LOOPCNT::       .WORD  0          ;REMAINING ITERATION COUNT FOR TEST
427 002212 000000  DEVCNT::       .WORD  0          ;NUMBER OF DEVICE UNDER TEST
428 002214 000000  FATFLG::       .WORD  0          ;SET IF FATAL ERROR IS DETECTED IN TEST
429 002216 000000  INTRECV::      .WORD  0          ;SET IF TAPE INTERRUPT WAS RECEIVED
430 002220 000000  EXTFEA::       .WORD  0          ;EXTENDED FEATURES SOFTWARE SW 0=OFF;1=ON
431 002222 000000  BENBSW::       .WORD  0          ;BUFFER ENABLE SWITCH SW 0=OFF;1=ON
432 002224 000000  EXPD::         .WORD  0          ;EXPECTED RAM DATA FOR PRAMPKT ROUTINE
433 002226 000000  RECV::         .WORD  0          ;RECEIVED RAM DATA FOR PRAMPKT ROUTINE
434 002230 000000  ERRHI::        .WORD  0          ;HIGH ADDRESS MEMORY ERROR
435 002232 000000  ERRLO::        .WORD  0          ;LOW ADDRESS MEMORY ERROR
436 002234          RAMDATA::      .BLKW  16.        ;DATA READ FROM RAM PACKET OR MESSAGE BLF ARE 1
437 002274 000000  RAMSIZ::       .WORD  0          ;RAM DATA SIZE FOR PRAMPKT ROUTINE

```

TSV3 GLOBAL AREAS  
GLOBAL DATA SECTION

MACRO M1113 06 FEB 84 18:04

SEQ 032

```

438 002276 000000 RCVHIADD:: .WORD 0 ;RECEIVED BUFFER HIGH ADDRESS
439 002300 000000 RCVLOADD:: .WORD 0 ;RECEIVED BUFFER LOW ADDRESS
440 002302 000000 COUNT:: .WORD 0 ;TEST COUNT PATTERN
441 002304 000000 DATA:: .WORD 0 ;TEST DATA
442 002306 000000 TSTFLAG:: .WORD 0 ;TEST FLAG WORD
443 002310 000000 TSTPTR:: .WORD 0 ;TSTBLK POINTER
444 002312 000000 PRMNO:: .WORD 0 ;PRINT ROUTINE TEMP
445 002314 EXPMSG:: .BLKB 100. ;EXPECTED MESSAGE BUFFER DATA
446 002460 RECMSG:: .BLKB 100. ;RECEIVED MESSAGE BUFFER DATA
447 002624 TMPBFR:: .BLKB 80. ;TEMPORARY STORAGE FOR PRINT
448 .SBTTL TSTBLK - TEST DATA TABLE
449
450 ;
451 ;
452 ;THIS TABLE CONTAINS TEST DATA USED IN SEVERAL TESTS
453 ;
454 ;IN SEQUENCE THE DATA IS:
455 ;
456 ; ALL ZEROS
457 ; ALL ONES
458 ; WALKING ONES
459 ; WALKING ZEROS
460 ; ALTERNATING ONES AND ZEROS
461 ;
462 ;
463
464 002744 TSTBLK::
465 002744 000000 .WORD 0 ;ALL ZEROS
466 002746 177777 .WORD 177777 ;ALL ONES
467 002750 000001 .WORD BIT0 ;DATA FOR WALKING ONES
468 002752 000002 .WORD BIT1
469 002754 000004 .WORD BIT2
470 002756 000010 .WORD BIT3
471 002760 000020 .WORD BIT4
472 002762 000040 .WORD BIT5
473 002764 000100 .WORD BIT6
474 002766 000200 .WORD BIT7
475 002770 000400 .WORD BIT8
476 002772 001000 .WORD BIT9
477 002774 002000 .WORD BIT10
478 002776 004000 .WORD BIT11
479 003000 010000 .WORD BIT12
480 003002 020000 .WORD BIT13
481 003004 040000 .WORD BIT14
482 003006 100000 .WORD BIT15
483 003010 177776 .WORD *CBIT0 ;DATA FOR WALKING ZEROS
484 003012 177775 .WORD *CBIT1
485 003014 177773 .WORD *CBIT2
486 003016 177767 .WORD *CBIT3
487 003020 177757 .WORD *CBIT4
488 003022 177737 .WORD *CBIT5
489 003024 177677 .WORD *CBIT6
490 003026 177577 .WORD *CBIT7
491 003030 177377 .WORD *CBIT8
492 003032 176777 .WORD *CBIT9
493 003034 175777 .WORD *CBIT10
494 003036 173777 .WORD *CBIT11

```



TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
TSTBLK TEST DATA TABLE

SEQ 033

```

495 003040 167777 .WORD +CBIT12
496 003042 157777 .WORD +CBIT13
497 003044 137777 .WORD +CBIT14
498 003046 077777 .WORD +CBIT15
499 003050 125252 .WORD 125252 ;ALTERNATING ONES, ZEROS
500 003052 052525 .WORD 052525 ;ALTERNATING ONES, ZERO OPPOSITE FROM ABOVE
501 003054 003054
502
503
504
505
506 003054 000000 100000 000000 DUMMY: 0,100000,0,0 ;DUMMY DEVICE REGISTERS...
507 003064 000000 000000 000000 0,0,0,0,0,0,0,0,0
508
509 ;...FOR MULTI-UNIT CHECKOUT.
510 003104 000000 DUFLG:: .WORD 0 ;"DROPPED UNIT" FLAG.
511 ;INHIBITS CODE IN "CLEAN UP".
512 003106 000000 NODEV:: .WORD 0 ;FLAG TO SAY NO DEVICE.
513
514 003110 000000 TEMP1:: .WORD 0 ;SOME TEMP LOCATIONS.
515 003112 000000 TEMP2:: .WORD 0
516 003114 000000 XXCOMM:: .WORD 0 ;XXDP, COMM BLOCK POINTER.
517 003116 000000 FREE:: .WORD 0 ;1ST FREE MEMORY ADDRESS...
518 003120 000000 FRESIZ:: .WORD 0 ;...AND SIZE (IN WORDS).
519 003122 000000 FREEHI: .WORD 0 ;LAST WORD IN FREE SPACE
520 003124 000000 KTFLG:: .WORD 0 ;KT11, MEM AVAIL FLAG
521 ;- .WORD 0 = <24K OR NO KT
522 ;- NZ = >24K AND KT.
523 003126 000000 KTENABLE:: .WORD 0 ;SET BY TEST ROUTINES TO FLAG >28K UNDER TEST
524 003130 000000 NXMFLG:: .WORD 0 ;SET IF WE CAN TEST CLEARED OTHERWISE
525 003132 000000 NXMLO:: .WORD 0 ;NXM LO ADDRESS BITS
526 003134 000000 NXMHI:: .WORD 0 ;NXM HI ADDRESS BITS FOR DAL 5 16 21
527 003136 000000 T23A:: .WORD 0 ;11/23A FLAG
528 003140 000000 T23B:: .WORD 0 ;11/23B FLAG
529 003142 000000 T38FLG:: .WORD 0 ;TEST 38 FLAG +0
530 003144 002000 PST32W:: .WORD 2000 ;32W BLOCK ADDRESS FOR 32K START
531 003146 000000 SIFLAG:: .WORD 0
532 003150 000000 BADDAT:: .WORD 0 ;ACTUAL DATA
533 003152 000000 GDDAT:: .WORD 0 ;EXPECTED DATA
534 003154 000000 LOOPFL:: .WORD 0
535 003156 CTAB:: ;CONFIGURATION TABLES.
536 003156 000000 CTABM:: .WORD 0 ;CONFIG WORK.
537 003160 .WORD 0
538 003162 000000 .WORD 0
539 003164 000000 .WORD 0
540 003166 177777 .WORD 0
541 003170 .WORD 1 ;END OF MEM TABLE.
542
543
544
545
546
547
548
549
550
551 003170

```

CTABE::  
;ERROR STATISTICS TABLE (1 WORD PER UNIT), 64 UNITS MAX:  
;  
; 0 = UNIT NOT TESTED  
; 100000 = UNIT ONLINE, NO ERRORS  
; 10XXXX = UNIT ONLINE, ENCOUNTERED XXXX ERRORS  
; 160000 = UNIT DROPPED, NON-EXISTENT DEVICE REGISTER  
; 160001 = UNIT DROPPED, NOT IDLE AT START  
; 14XXXX = UNIT DROPPED, ENCOUNTERED XXXX ERRORS  
;  
ERTABL: .BLKW 64.

I3

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
GLOBAL ENVIRONMENT STORAGE

SEQ 034

552 003370 000000  
553  
554 003372 000000

ERTABE: .WORD 0

SKIPT: .WORD 0

;1-SKIP SUBTEST 0-NO SKIP OF SUBTEST

TSV3 GLOBAL AREAS  
GLOBAL TEXT MESSAGES

MACRO M1113 06 FEB 84 18:04

SEQ 035

```

556 .SBTTL GLOBAL TEXT MESSAGES
557
558 ;*
559 ; THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
560 ; MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
561 ; MORE THAN ONE TEST.
562 ;
563 ;*
564 ; NAMES OF DEVICES SUPPORTED
565 ;-
566
567 003374 DEVTYP <TSV05>
003374 L$DVT,P::
003374 124 123 126 .ASCIZ /TSV05/
.EVEN

568
589 ;*
590 ; TEST DESCRIPTION
591 ;-
592 003402 DESCRIPT <**** TSV05 LOGIC DIAGNOSTIC CHECK TRANSPORT IF ERROR ****>
003402 L$DESC::
003402 052 052 052 .ASCIZ /**** TSV05 LOGIC DIAGNOSTIC - CHECK TRANSPORT IF ERROR ****/
.EVEN

594
595 ;*
596 ; BIT TO ASCII CONVERSION FOR TSSR REGISTER
597 ;-
598
599 003476 003536 003541 003545 TSSRBIT:: .WORD 1$,2$,3$,4$,5$,6$,7$,8$
600 003516 003577 003603 003607 .WORD 9$,10$,11$,12$,13$,14$,15$,16$
601 003536 123 103 000 1$: .ASCIZ 'SC'
602 003541 102 111 105 2$: .ASCIZ 'BIE'
603 003545 123 103 105 3$: .ASCIZ 'SCE'
604 003551 122 115 122 4$: .ASCIZ 'RMR'
605 003555 116 130 115 5$: .ASCIZ 'NXM'
606 003561 116 102 101 6$: .ASCIZ 'NBA'
607 003565 102 111 124 7$: .ASCIZ 'BIT9'
608 003572 102 111 124 8$: .ASCIZ 'BIT8'
609 003577 123 123 122 9$: .ASCIZ 'SSR'
610 003603 117 106 114 10$: .ASCIZ 'OFL'
611 003607 102 111 124 11$: .ASCIZ 'BIT5'
612 003614 102 111 124 12$: .ASCIZ 'BIT4'
613 003621 102 111 124 13$: .ASCIZ 'BIT3'
614 003626 102 111 124 14$: .ASCIZ 'BIT2'
615 003633 102 111 124 15$: .ASCIZ 'BIT1'
616 003640 102 111 124 16$: .ASCIZ 'BIT0'
617 .EVEN
618 003646 124 123 123 SFIERR: .ASCIZ 'TSSR ERROR AFTER SOFT INIT'
619 003701 124 123 123 SFERRR: .ASCIZ 'TSSR ERROR AFTER BUS RESET'
620 003734 040 040 116 NXR: .ASCIZ / NON-EXISTANT DEVICE REGISTER/
621 003773 045 101 040 NXRX: .ASCIZ /#A ADDRESS: #06/
622 004014 045 101 040 TSSX: .ASCII /#A TSBA,TSSR EXP D: #06#A,#06#N/
623 004054 045 101 040 .ASCIZ /#A TSBA,TSSR REC D: #06#A,#06/
624 004113 045 116 045 FUSI: .ASCII /#N#A/
625 004117 040 040 125 USI: .ASCIZ / UNEXPECTED INTERRUPT/
626 004146 040 040 111 NSI: .ASCIZ / INTERRUPT EXPECTED, NOT RECEIVED/
627 004211 045 116 045 FNOINTR: .ASCII /#N#A/

```

```
628 004215      040      040      116 NOINTR: .ASCIZ / NO INTERRUPT WAS GENERATED/
629 004252      040      040      111 IFAULT: .ASCIZ / INTERRUPT FAULT/
630 004274      045      101      040 INTX: .ASCIZ /%A CPU PC: %06%A TSBA: %06/
631 004331      040      040      042 NOINIT: .ASCIZ / "BUS-INIT" DIDN'T INITIALIZE CONTROLLER/
632 004403      040      040      042 NSINIT: .ASCIZ / "SOFT INIT" DIDN'T INITIALIZE THE DPU/
633 004453      040      040      042 BRINIT: .ASCIZ / "BUS-RESET" DIDN'T INITIALIZE THE DPU/
634
635 004523      000
636 004524      045      116      000 NULCR: .ASCIZ /%N/
637 004527      045      101      040 EXPGOT: .ASCIZ /%A EXP'D: %06%A, REC'D: %06/
638 004563      045      116      045 EXPGT2: .ASCIZ /%N%A EXP'D: %06%A, %06%N%A REC'D: %0%A, %06/
639 004637      045      101      040 DUAD12: .ASCIZ /%A REG(W) WRITTEN TO: %06%A REG(R) READ; EXP'D: %06%A, REC D: %06/
640 004741      122      101      115 PKTRAM: .ASCIZ 'RAM Contents Do Not Match Packet Sent'
641 005007      040      040      103 SCME: .ASCIZ / CONFIG DOESN'T MATCH MFG. MASTER/
642 005052      127      122      111 WRTMSG: .ASCIZ 'WRITE CHARACTERISTICS Failed'
643 005107      124      123      123 WRTERR: .ASCIZ 'TSSR Incorrect After WRITE Command, More Bits Set Than SSR'
644 005202      124      123      123 RDERR: .ASCIZ 'TSSR Incorrect After READ Command, More Bits Set Than SSR'
645 005274      106      101      124 SCHERR: .ASCIZ 'FATAL ERROR IN SUBTEST - CHECK TAPE,CABLES,TRANSPORT etc.'
646 005366      105      122      122 RETERR: .ASCIZ 'ERROR IN SUBTEST - WRITE DATA RETRY FIVE TIMES FAILED'
647 005454      045      116      045 NOMEM: .ASCIZ '%N%A ***** NO NXM ADDRESS--CANNOT TEST NXM TIMEOUT. *****N'
648 005550      045      116      045 M8186: .ASCIZ '%N%A ***** 11/23A SYSTEM *****N'
649 005641      045      116      045 M8189: .ASCIZ '%N%A ***** 11/23B SYSTEM *****N'
650 .EVEN
651 .SBTTL GLOBAL ERROR REPORT SECTION
652
653
654
655
656
657
658
659 005732      BGNMSG NXRERR ;NON EXISTANT DEVICE REGISTER.
005732
660 005732      PRINTX %NXRX,NODEV ;NODEV = NEXM ADDRESS.
005732 013746 003106      MOV NODEV, (SP)
005736 012746 003773      MOV %NXRX, (SP)
005742 012746 000002      MOV #2, (SP)
005746 010600      MOV SP,RO
005750 104415      TRAP C$PNTX
005752 062706 000006      ADD #6,SP
661 005756 004737 005764      JSR PC,EXTEND ; PRINT EXTENSION IF REQUIRED.
662 005762      ENDMMSG
005762
005762 104423      L10002: TRAP C$MSG
663
664
665
666
667
668 005764 005727
669 005766 000000
670 005770 001402
671 005772 004777 177770
672 005776
005776 012746 004524
006002 012746 000001
006006 010600
```

```
***
; THE GLOBAL ERROR REPORT SECTION CONTAINS THE PRINTB AND PRINTX
; CALLS THAT ARE USED IN MORE THAN ONE TEST.
; ASCII TEXT STRINGS ARE FOUND IN THE GLOBAL TEXT SECTION.
---
```

```

NXRERR: BGNMSG NXRERR ;NON EXISTANT DEVICE REGISTER.
PRINTX %NXRX,NODEV ;NODEV = NEXM ADDRESS.
MOV NODEV, (SP)
MOV %NXRX, (SP)
MOV #2, (SP)
MOV SP,RO
TRAP C$PNTX
ADD #6,SP
JSR PC,EXTEND ; PRINT EXTENSION IF REQUIRED.
ENDMSG
L10002: TRAP C$MSG
```

```

;
; THIS ROUTINE APPENDS A UNIQUE EXTENSION (IF REQUIRED)
; TO ANY OF THE ABOVE ERROR SIGNATURES.
```

```

EXTEND: TST (PC)+
EXTA: 0 ; 0 NO EXTENSION.
BEQ 1$
JSR PC,@EXTA ; APPEND EXTENSION TEXT.
1$: PRINTX %NULCR ; PRINT A BLANK LINE
MOV %NULCR, (SP)
MOV #1, (SP)
MOV SP,RO
```

L3

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
GLOBAL ERROR REPORT SECTION

SEQ 037

|            |        |        |      |        |
|------------|--------|--------|------|--------|
| 006010     | 104415 |        | TRAP | C:PNTX |
| 006012     | 062706 | 000004 | ADD  | 44.SP  |
| 6-3 006016 | 000207 |        | RTS  | PC     |

```

675 .SBTTL PRITSSR PRINT TSSR CONTENTS
676
677 ;*
678 ;
679 ;ROUTINE TO DISPLAY THE CONTENTS, AND BIT DEFINITIONS, OF
680 ;THE TSSR REGISTER. THIS ROUTINE IS NORMALLY CALLED ONLY
681 ;BY A MESSAGE PRINTING ROUTINE
682 ;
683 ;INPUTS:
684 ;
685 ; R1 CONTENTS OF TSSR
686 ;
687 ;SUBORDINATE ROUTINES:
688 ;
689 ; CHKAMB CHECK FOR AMBIGUOUS CONTENTS
690 ;
691 ;
692
693 PRITSSR:
694 SAVREG ;SAVE GENERAL REGISTERS
695 MOV R1,R4 ;SAVE THE TSSR CONTENTS
696 PRINTB @TSSRFOR,R4 ;PRINT THE CONTENTS OF TSSR
697 MOV R4,-(SP)
698 MOV @TSSRFOR,(SP)
699 MOV @2,-(SP)
700 MOV SP,R0
701 TRAP C:PNTB
702 ADD @6,SP
703 MOV R4,R0 ;GET TSSR BACK FOR CHKAMB
704 JSR PC,CHKAMB ;ARE CONTENTS AMBIGUOUS ?
705 BCS 5$ ;BRANCH IF NOT
706 PRINTX @AMBTSSR ;SHOW CONTENTS ARE AMBIGUOUS
707 MOV @AMBTSSR,-(SP)
708 MOV @1,-(SP)
709 MOV SP,R0
710 TRAP C:PNTX
711 ADD @4,SP
712 5$: MOV R4,R3 ;CONTENTS OF TSSR
713 BIC @HIADDR!FATERR!TERCLS,R3 ;CLEAR ALL MULTIPLE BIT FIELDS
714 BEQ 20$ ;NO BITS ARE SET
715 MOV @TMPBFR,R2 ;TEMPORARY ASCII BUFFER
716 MOV @TSSRBIT,R1 ;ASCII EQUIVALENT OF BITS
717 10$: TST R3 ;REMAINING BITS TO CONVERT
718 BEQ 15$ ;BRANCH WHEN ALL ARE DONE
719 CLC ;CLEAR CARRY FOR SHIFT
720 ROL R3 ;SHIFT NEXT BIT TO CARRY
721 BCC 13$ ;BRANCH IF BIT NOT SET
722 MOV (R1),R0 ;POINTER TO BIT DEFINITION
723 11$: MOVB (R0)+,(R2)+ ;MOVE ASCII TO BUFFER
724 BNE 11$ ;MOVE ALL BITS
725 MOVB @'-1(R2) ;INSERT A COMMA TO TERMINATE
726 13$: TST (R1)+ ;POINT TO NEXT DESCRIPTION
727 BR 10$ ;GET THE REMAINING BITS
728 15$: CLRB (R2) ;TERMINATE THE LINE
729 PRINTX @TSSDEF,@TMPBFR ;PRINT THE BIT DEFINITIONS
730 MOV @TMPBFR,-(SP)
731 MOV @TSSDEF,(SP)

```



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 PRITSSR - PRINT TSSR CONTENTS

SEQ 039

```

006104 012746 000002      MOV    #2,-(SP)
006170 010600      MOV    SP,R0
006172 104415      TRAP   C$PNTX
006174 062706 000006      ADD    #6,SP

719
720 006200 010403      20$:  MOV    R4,R3      ;GET THE TSSR CONTENTS
721 006202 042703 177761 BIC    #1CTERCLS,R3 ;CLEAR ALL BUT TERMINATION
722 006206 016303 006754 MOV    TCOCOD(R3),R3 ;GET THE TERMINATION CODE MEANING
723 006212      PRINTX  #TCOASC,R3 ;PRINT THE TERMINATION CODE
      006212 010346      MOV    R3,-(SP)
      006214 012746 006554 MOV    #TCOASC,-(SP)
      006220 012746 000002 MOV    #2,-(SP)
      006224 010600      MOV    SP,R0
      006226 104415      TRAP   C$PNTX
      006230 062706 000006 ADD    #6,SP
724 006234 010403      MOV    R4,R3      ;TSSR CONTENTS AGAIN
725 006236 042703 177717 BIC    #1CFATERR,R3 ;CLEAR ALL BUT FATAL TERMINATION
726 006242 001416      BEQ     25$      ;DON'T PRINT IF ZERO
727 006244 006203      ASR     R3
728 006246 006203      ASR     R3
729 006250 006203      ASR     R3
730 006252 016303 007314 MOV    TSFCOD(R3),R3 ;ALINE TERMINATION CODE FOR INDEX
731 006256      PRINTX  #TFCASC,R3 ;GET THE FATAL TERMINATION CODE
      006256 010346      MOV    R3,-(SP) ;PRINT THE FATAL TERMINATION CODE
      006260 012746 006615 MOV    #TFCASC,-(SP)
      006264 012746 000002 MOV    #2,-(SP)
      006270 010600      MOV    SP,R0
      006272 104415      TRAP   C$PNTX
      006274 062706 000006 ADD    #6,SP
732 006300 042704 176377      25$: BIC    #1CHIADDR,R4 ;CLEAR ALL BUT EXTENDED ADDRESS
733 006304 001411      BEQ     30$      ;DON'T PRINT IF ZERO
734 006306      PRINTX  #TEXASC,R4 ;PRINT THE EXTENDED ADDRESS BITS
      006306 010446      MOV    R4,-(SP)
      006310 012746 006513 MOV    #TEXASC,-(SP)
      006314 012746 000002 MOV    #2,-(SP)
      006320 010600      MOV    SP,R0
      006322 104415      TRAP   C$PNTX
      006324 062706 000006 ADD    #6,SP
735 006330 013703 002172      30$: MOV    EPRTSW,R3      ;PRINT MESSAGE BUFFER ADDRESS
736 006334      PRINTX  R3      ;PRINT PROPER MESSAGE
      006334 010346      MOV    R3,-(SP)
      006336 012746 000001 MOV    #1,-(SP)
      006342 010600      MOV    SP,R0
      006344 104415      TRAP   C$PNTX
      006346 062706 000004 ADD    #4,SP
737 006352 000207      RTS     PC      ;RETURN TO CALLER
738

753 006354      045      116      045 EPRT1: .ASCIIZ  'NSA *****CHECK TRANSPORT*****
754 006413      045      116      045 EPRT2: .ASCIIZ  'NSA *****CHECK PARITY SWITCH IN TRANSPORT*****
756 006473      045      116      045 TSSRFOR: .ASCIIZ  'NSA TSSR = #06
757 006513      045      116      045 TEXASC: .ASCIIZ  'NSA Extended Address Bits = #06
758 006554      045      116      045 TCOASC: .ASCIIZ  'NSA Termination Class Code = #1
759 006615      045      116      045 TFCASC: .ASCIIZ  'NSA Fatal Termination Class Code = #1
760 006664      045      116      045 TSSDEF: .ASCIIZ  'NSA TSSR Bits Set: #1
761 006713      045      116      045 AMBTSSR: .ASCIIZ  'NSA TSSR Contents Are Ambiguous
762
763 006754 006774 007017 007045 TCOCOD: .EVEN
      .WORD  1$,2$,3$,4$,5$,6$,7$,8$

```

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 PRITSSR PRINT TSSR CONTENTS

SEQ 040

|     |        |        |        |        |         |        |                                                       |
|-----|--------|--------|--------|--------|---------|--------|-------------------------------------------------------|
| 764 | 006774 | 116    | 157    | 162    | 18:     | .ASCIZ | 'Normal Termination                                   |
| 765 | 007017 | 124    | 145    | 162    | 21:     | .ASCIZ | 'Termination Condition'                               |
| 766 | 007045 | 124    | 141    | 160    | 31:     | .ASCIZ | 'Tape Status Alert'                                   |
| 767 | 007067 | 106    | 165    | 156    | 41:     | .ASCIZ | 'Function Reject'                                     |
| 768 | 007107 | 122    | 145    | 143    | 51:     | .ASCIZ | 'Recoverable Error - Tape Position One Record Down    |
| 769 | 007171 | 122    | 145    | 143    | 61:     | .ASCIZ | 'Recoverable Error - Tape Was Not Moved               |
| 770 | 007240 | 125    | 156    | 162    | 71:     | .ASCIZ | 'Unrecoverable Error'                                 |
| 771 | 007264 | 106    | 141    | 164    | 81:     | .ASCIZ | 'Fatal Controller Error'                              |
| 772 |        |        |        |        |         | .EVEN  |                                                       |
| 773 |        |        |        |        |         |        |                                                       |
| 774 | 007314 | 007324 | 007360 | 007371 | TSFCOD: | .WORD  | 18,21,31,41                                           |
| 775 | 007324 | 111    | 156    | 164    | 11:     | .ASCIZ | 'Internal Diagnostic Failure'                         |
| 776 | 007360 | 122    | 145    | 163    | 21:     | .ASCIZ | 'Reserved'                                            |
| 777 | 007371 | 102    | 165    | 163    | 31:     | .ASCIZ | 'Bus Interface or Sanity Check Error'                 |
| 778 | 007435 | 122    | 145    | 163    | 41:     | .ASCIZ | 'Reserved'                                            |
| 779 |        |        |        |        |         | .EVEN  |                                                       |
| 780 |        |        |        |        |         | .SBTTL | PRIPKT - PRINT THE ADDRESS/CONTENTS OF COMMAND PACKET |
| 781 |        |        |        |        |         |        |                                                       |
| 782 |        |        |        |        |         |        |                                                       |
| 783 |        |        |        |        |         |        |                                                       |
| 784 |        |        |        |        |         |        |                                                       |
| 785 |        |        |        |        |         |        |                                                       |
| 786 |        |        |        |        |         |        |                                                       |
| 787 |        |        |        |        |         |        |                                                       |
| 788 |        |        |        |        |         |        |                                                       |
| 789 |        |        |        |        |         |        |                                                       |
| 790 |        |        |        |        |         |        |                                                       |
| 791 |        |        |        |        |         |        |                                                       |
| 792 |        |        |        |        |         |        |                                                       |
| 793 |        |        |        |        |         |        |                                                       |
| 794 |        |        |        |        |         |        |                                                       |
| 795 | 007446 |        |        |        |         |        |                                                       |
| 796 | 007446 |        |        |        |         |        |                                                       |
| 797 | 007452 | 010005 |        |        |         |        |                                                       |
| 798 | 007454 | 005737 | 003126 |        |         |        |                                                       |
| 799 | 007460 | 001001 |        |        |         |        |                                                       |
| 800 | 007462 | 005003 |        |        |         |        |                                                       |
| 801 | 007464 | 010301 |        |        |         |        |                                                       |
| 802 | 007466 | 010400 |        |        |         |        |                                                       |
| 803 | 007470 | 006100 |        |        |         |        |                                                       |
| 804 | 007472 | 006101 |        |        |         |        |                                                       |
| 805 | 007474 |        |        |        |         |        |                                                       |
|     | 007474 | 010446 |        |        |         |        |                                                       |
|     | 007476 | 010146 |        |        |         |        |                                                       |
|     | 007500 | 012746 | 007632 |        |         |        |                                                       |
|     | 007504 | 012746 | 000003 |        |         |        |                                                       |
|     | 007510 | 010600 |        |        |         |        |                                                       |
|     | 007512 | 104414 |        |        |         |        |                                                       |
|     | 007514 | 062706 | 000010 |        |         |        |                                                       |
| 806 | 007520 | 010300 |        |        |         |        |                                                       |
| 807 | 007522 | 001404 |        |        |         |        |                                                       |
| 808 | 007524 | 010401 |        |        |         |        |                                                       |
| 809 | 007526 | 004737 | 017376 |        |         |        |                                                       |
| 810 | 007532 | 010004 |        |        |         |        |                                                       |
| 811 | 007534 | 005001 |        |        |         |        |                                                       |
| 812 | 007536 | 012402 |        |        |         |        |                                                       |
| 813 | 007540 |        |        |        |         |        |                                                       |

```

;
; THIS ROUTINE PRINTS THE ADDRESS AND CONTENTS OF A COMMAND PACKET.
; THIS ROUTINE IS NORMALLY ONLY CALLED FROM A PRINT ROUTINE.
;
; INPUT:
;
;   R0      NUMBER OF WORDS IN PACKET
;   R3      HIGH ORDER COMMAND PACKET ADDRESS
;   R4      ADDRESS OF COMMAND PACKET
;
; NOTE:    R3 IS IGNORED IF THE KTENABLE FLAG IS CLEAR.
;
PRIPKT::
    SAVREG
    MOV     R0,R5
    TST     KTENABLE
    BNE     101
    CLR     R3
    MOV     R3,R1
    MOV     R4,R0
    ROL     R0
    ROL     R1
    PRINTB  @PKTADD,R1,R4
    MOV     R4,(SP)
    MOV     R1,(SP)
    MOV     @PKTADD,(SP)
    MOV     @3,(SP)
    MOV     SP,R0
    TRAP    C1PNTB
    ADD     @10,SP
151:    MOV     R3,R0
    BEQ     201
    MOV     R4,R1
    JSR     PC,SETMAP
    MOV     R0,R4
    CLR     R1
201:    MOV     (R4),R2
251:    PRINTB @PKTFRM,R1,R2
;
; SAVE THE REGISTERS
; SAVE NO. OF WORDS IN PACKET
; ABOVE 28K UNDER TEST?
; BR IF YES
; SET HIGH ORDER ADDRESS TO 0
; COPY HIGH ORDER ADDRESS
; GET LOWER ADDRESS
; SHIFT BIT 15 INTO C BIT
; AND INTO HIGH ORDER.
; PRINT PACKET ADDRESS
;
; GET HIGH ORDER ADDRESS
; BR IF NOT ABOVE 28K.
; GET LOW ORDER ADDRESS
; SETUP PAR6 MAPPING FOR 18 BIT ADDRESS
; GET RETURNED PAR6 ADDRESS BIAS
; SAVE WORD NUMBER
; GET PACKET CONTENTS
; PRINT THE DATA

```



TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 PRIPKT PRINT THE ADDRESS/CONTENTS OF COMMAND PACKET

SEQ 041

```

007540 010246      MOV      R2, (SP)
007542 010146      MOV      R1, -(SP)
007544 012746 007574  MOV      @PKTFRM, -(SP)
007550 012746 000003  MOV      @3, -(SP)
007554 010600      MOV      SP, R0
007556 104414      TRAP     C:PNTB
007560 062706 000010  ADD      @10, SP
814 007564 005201      INC      R1          ;NEXT WORD NUMBER
815 007566 020105      CMP      R1, R5        ;DONE ALL PACKET WORDS?
816 007570 002762      BLT      254        ;LOOP TILL ALL DONE
817 007572 000207      RTS       PC          ;RETURN
818
819 007574      045      116      045  PKTFRM: .ASCIIZ  'NMA Packet Word #01#A - #06'
820 007632      045      116      045  PKTADD: .ASCIIZ  'NMA Packet Address - #01#05'
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840 007670
841 007670
842 007674 010203
843 007676
844 007706 012700 177400
845 007712 040001
846 007714 040002
847 007716 040003
848 007720
      007720 010346
      007722 010146
      007724 010246
      007726 012746 007752
      007732 012746 000004
      007736 010600
      007740 104414
      007742 062706 000012
849 007746 010300
850 007750 000207
851
852 007752      045      116      045  XORBFOR: .ASCIIZ  'NMA EXPD: #03#A RECV: #03#A XOR: #03'
853
854
855

```

.SBTTL PRIEXOR PRINT EXPD, RECV AND XOR BYTE  
 ;  
 ;PRINT EXPECTED DATA, RECEIVED DATA, AND XOR OF THE DATA BYTE  
 ;THIS ROUTINE IS NORMALLY CALLED ONLY FOR PRINT ROUTINES.  
 ;  
 ;INPUTS:  
 ;  
 ; R1 RECEIVED DATA  
 ; R2 EXPECTED DATA  
 ;  
 ;OUTPUT:  
 ;  
 ; R0 XOR OF EXPECTED/RECEIVED DATA  
 ;  
 ;  
 PRIEXOR:;  
 SAVREG  
 MOV R2, R3 ;SAVE THE REGISTERS  
 MOV R1, R3 ;EXPECTED DATA  
 XOR R1, R3 ;FORM THE EXCLUSIVE OR  
 MOV @C<377>, R0 ;BYTE MASK  
 BIC R0, R1 ;SAVE LOW BYTE RECV  
 BIC R0, R2 ;SAVE LOW BYTE EXPD  
 BIC R0, R3 ;SAVE LOW BYTE XOR  
 PRINTB @XORBFOR, R2, R1, R3 ;PRINT THE MESSAGE  
 MOV R3, (SP)  
 MOV R1, (SP)  
 MOV R2, (SP)  
 MOV @XORBFOR, (SP)  
 MOV @4, (SP)  
 MOV SP, R0  
 TRAP C:PNTB  
 ADD @12, SP  
 MOV R3, R0 ;R0 HAS XOR ON RETURN  
 RTS PC ;RETURN TO CALLER

```

856      ;
857      ;
858      ;PRINT EXPECTED DATA, RECEIVED DATA, AND XOR OF THE TWO
859      ;THIS ROUTINE IS NORMALLY CALLED ONLY FOR PRINT ROUTINES.
860      ;
861      ;INPUTS:
862      ;
863      ;      R1      RECEIVED DATA
864      ;      R2      EXPECTED DATA
865      ;
866      ;OUTPUT:
867      ;
868      ;      R0      XOR OF EXPECTED/RECEIVED DATA
869      ;
870      ;
871      ;
872      010020      PR XOR::
873      010020      SAVREG      ;SAVE THE REGISTERS
874      010024      MOV      R2,R3      ;EXPECTED DATA
875      010026      XOR      R1,R3      ;FORM THE EXCLUSIVE OR
876      010036      PRINTB      @XORFOR,R2,R1,R3 ;PRINT THE MESSAGE
877      010036      MOV      R3,-(SP)
878      010040      MOV      R1,-(SP)
879      010042      MOV      R2,-(SP)
880      010044      MOV      @XORFOR,-(SP)
881      010050      MOV      @4,-(SP)
882      010054      MOV      SP,R0
883      010056      TRAP      C:PNTB
884      010060      ADD      @12,SP
885      010064      MOV      R3,R0      ;R0 HAS XOR ON RETURN
886      010066      RTS      PC      ;RETURN TO CALLER
887      010070      045      116      045      XORFOR: .ASCIZ 'N#A EXPD: #06#A RECV: #06#A XOR: #06'
888      .EVEN
889      .SBTTL      PRIEQU      PRINT BIT NUMBERS AS ASCII EQUIVALENT
890      ;
891      ;
892      ;ROUTINE TO CONVERT BIT VALUES TO ASCII AND PRINT THE STRING
893      ;THIS ROUTINE IS NORMALLY CALLED FROM A PRINT ROUTINE
894      ;
895      ;INPUTS:
896      ;
897      ;      R0      OCTAL VALUE TO CONVERT
898      ;      R1      TABLE OF POINTERS TO ASCII EQUIVALENT
899      ;
900      ;
901      ;
902      010136      PRIEQU:
903      010136      SAVREG      ;SAVE THE REGISTERS
904      010142      RTS      PC      ;RETURN TO CALLER
905      .SBTTL      PRI RAM      PRINT RAM ADDRESS
906      ;
907      ;
908      ;PRINT CONTROLLER RAM ADDRESS.
909      ;THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.

```

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 PRIAM PRINT RAM ADDRESS

SEQ 043

```

905
906      ; INPUTS:
907      ;
908      ;      R4      RAM ADDRESS
909      ;
910      ;
911      ; PRIAM:
912      ; SAVREG      ;SAVE R1-R5 UNTIL NEXT RETURN
913      ; PRINTB      ;PRINT RAM ADDRESS IN ERROR
914      ; RAMFOR,R4
915      ; MOV      R4,-(SP)
916      ; MOV      RAMFOR,-(SP)
917      ; MOV      #2,(SP)
918      ; MOV      SP,R0
919      ; TRAP      C:PNTB
920      ; ADD      #6,SP
921      ; RTS      PC      ;RETURN
922
923      045 RAMFOR: .ASCIZ 'NWA CONTROLLER RAM ADDRESS = #06'
924      ; .EVEN
925      ; .SBTTL PRIADD - PRINT MEMORY ERROR ADDRESS
926      ;
927      ; PRINT MEMORY ADDRESS
928      ; THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.
929      ;
930      ; IMPLICIT INPUTS
931      ;
932      ; ERRHI - HIGH ORDER ADDRESS
933      ; ERRLO - LOW ORDER ADDRESS
934      ;
935      ; PRIADD:
936      ; SAVREG      ;SAVE R1-R5 UNTIL NEXT RETURN
937      ; MOV      ERRHI,R0      ;GET HIGH ADDRESS
938      ; MOV      ERRLO,R1      ;GET LOW ADDRESS
939      ; MOV      R1,R2      ;COPY LOW ADDRESS
940      ; ROL      R1      ;SHIFT BIT 15 TO C BIT
941      ; ROL      R0      ;SHIFT INTO HIGH ORDER
942      ; PRINTB      PRIA0,R0,R2      ;PRINT MEMORY ADDRESS IN ERROR
943      ; MOV      R2,(SP)
944      ; MOV      R0,-(SP)
945      ; MOV      PRIA0,(SP)
946      ; MOV      #3,-(SP)
947      ; MOV      SP,R0
948      ; TRAP      C:PNTB
949      ; ADD      #10,SP
950      ; RTS      PC      ;RETURN
951
952      045 PRIA0: .ASCIZ 'NWA MEMORY ERROR ADDRESS = #01#05'
953      ; .EVEN
954      ; .SBTTL PRITADD PRINT MEMORY TEST ADDRESS
955      ;
956      ; PRINT MEMORY ADDRESS
957      ; THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.

```

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 PRITADD PRINT MEMORY TEST ADDRESS

SEQ 044

```

949
950 ; IMPLICIT INPUTS
951 ;
952 ; ERRHI HIGH ORDER ADDRESS
953 ; ERRLO - LOW ORDER ADDRESS
954 ;
955 ;
956 010352 PRITADD: SAVREG ;SAVE R1-R5 UNTIL NEXT RETURN
957 010352 MOV ERRHI,R2 ;GET HIGH ADDRESS
958 010356 013702 002230 MOV ERRLO,R1 ;GET LOW ADDRESS
959 010362 013701 002232 ;MOV R1,R2 ;COPY LOW ADDRESS
960 ;ROL R1 ;SHIFT BIT 15 TO C BIT
961 ;ROL R0 ;SHIFT INTO HIGH ORDER
962 ;PRINTB @PRIT0,R1 ;PRINT MEMORY ADDRESS LOW IN ERROR
963 010366 MOV R1,-(SP)
010370 012746 010434 MOV @PRIT0,-(SP)
010374 012746 000002 MOV @2,-(SP)
010400 010600 MOV SP,R0
010402 104414 TRAP C:PNTB
010404 062706 000006 ADD @6,SP
964 010410 PRINTB @PRIT1,R2 ;PRINT MEMORY ADDRESS HIGH IN ERROR
010410 010246 MOV R2,-(SP)
010412 012746 010477 MOV @PRIT1,-(SP)
010416 012746 000002 MOV @2,-(SP)
010422 010600 MOV SP,R0
010424 104414 TRAP C:PNTB
010426 062706 000006 ADD @6,SP
965 010432 000207 RTS PC ;RETURN
966
967 010434 045 116 045 PRIT0: .ASCIZ 'NWA MEMORY TEST ADDRESS LOW = #06'
968 010477 045 116 045 PRIT1: .ASCIZ 'NWA MEMORY TEST ADDRESS HIGH = #06'
969 .EVEN
970 .SBTTL SPACE - SPACE RECORDS (FORWARD AND REVERSE) COMMAND
971
972 ;*
973 ;
974 ;ROUTINE TO ISSUE A SPACE RECORDS
975 ;COMMAND (FORWARD OR REVERSE)
976 ;
977 ;INPUT:
978 ;
979 ; R3 NUMBER OF RECORDS TO BE SPACED OVER
980 ; BIT15 CONTROLS DIRECTION
981 ; BIT15 = 0 IS FORWARD
982 ; BIT15 = 1 IS REVERSE
983 ; R5 FIRST DEVICE UNIBUS ADDRESS
984 ;
985 ; REQUIRES A WRITE CHARACTERISTICS DONE PREVIOUSLY
986 ;
987 ;OUTPUT:
988 ;
989 ; CARRY SET - SPACE RECORDS COMMAND OK
990 ; CLR - SPACE RECORDS FAILED
991 ;
992 ;
993 ; R0 THE CONTENTS OF R4 IS MOVED TO R0

```

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 SPACE SPACE RECORDS (FORWARD AND REVERSE) COMMAND

SEQ 045

```

994
995
996      ;IMPLICIT OUTPUT:
997
998      ;      TAPE HAS BEEN MOVED
999
1000     ;SIDE EFFECTS:
1001
1002
1003
1004
1005 010544      SPACE::
1006 010544      SAVREG
1007 010550 012737 000764 010740      MOV      #500.,SDELAY      ;SAVE THE GENERAL REGISTERS
1008 010556 012737 140010 010730      MOV      #140010.80$      ;SET UP DELAY
1009 010564 005703      TST      R3      ;SET UP COMMAND, SPACE FORWARD
1010 010566 100403      BMI      5$      ;CHECK FOR DIRECTION
1011 010570 010337 010732      MOV      R3,90$      ;BR, IF REVERSE INDICATED
1012 010574 000407      BR      10$      ;LOAD UP NUMBER OF RECORDS TO SPACE
1013 010576 042703 100000      5$:      BIC      #BIT15,R3      ;GO DO COMMAND
1014 010602 010337 010732      MOV      R3,90$      ;CLEAR DIRECTION BIT
1015 010606 052737 000400 010730      BIS      #BIT8.80$      ;LOAD UP NUMBER OF RECORDS TO SPACE
1016 010614 012704 010730      10$:      MOV      #80$,R4      ;SET REVERSE BIT IN COMMAND PACKET
1017 010620 010465 000000      MOV      R4,TSSD(R5)      ;SET UP R4 WITH PACKET ADDRESS
1018 010624 004737 016330      15$:      JSR      PC,WAITF      ;SEND OUT COMMAND
1019 010630 103420      BCS      20$      ;WAIT FOR SSR
1020 010632      DELAY      250      ;BR, IF SSR IS SET AND OK
1021 010632 012727 000250      MOV      #250,(PC).      ;DELAY ABOUT .25 SECONDS
1022 010636 000000      .WORD      0
1023 010640 013727 002116      MOV      L$DLY,(PC).
1024 010644 000000      .WORD      0
1025 010646 005367 177772      DEC      -6(PC)
1026 010652 001375      BNE      .-4
1027 010654 005367 177756      DEC      -22(PC)
1028 010660 001367      BNE      .-20
1029 010662 005337 010740      DEC      SDELAY      ;BUMP DELAY COUNTER DOWN
1030 010666 001356      BNE      15$      ;BR, IF MORE DELAY
1031 010670 000411      BR      60$      ;BR IF TROUBLE CARRY = CLEAR
1032 010672 016501 000002      20$:      MOV      TSSR(R5),R1      ;READ TSSR
1033 010676 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
1034 010702 020201      25$:      CMP      R2,R1      ;ARE THEY OK
1035 010704 001401      BEQ      40$      ;BR, IF EQUAL = OK
1036 010706 000402      BR      60$      ;TROUBLE EXIT
1037 010710 000261      40$:      SEC      ;SET CARRY NO TROUBLE
1038 010712 000401      BR      70$      ;EXIT
1039 010714 000241      60$:      CLC      ;CARRY CLEAR = ERROR
1040 010716      70$:      MOV      R4,R0      ;PASS PACKET ADDRESS
1041 010720      RTS      PC      ;RETURN

```

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 SPACE SPACE RECORDS (FORWARD AND REVERSE) COMMAND

SEQ 046

```

1036      ;
1037      ;
1038      ;
1039      ; PACKET FOR SPACE COMMAND
1040      ;
1041      ;
1042      ;      .=<..10>E177770
1043      ;
1044      ;
1045      ; COMMAND WORD
1046      80$: .WORD
1047      ; NUMBER OF RECORDS TO BE SPACED OVER WORD
1048      90$: .WORD
1049      ;
1050      ;
1051      SDELAY: .WORD 0 ; DELAY COUNTER
1052      ;
1053      ;
1054      ;
1055      ;
1056      ;
1057      ; ROUTINE TO ISSUE A WRITE CHARACTERISTICS
1058      ; COMMAND SO THAT OTHER COMMANDS WILL BE ACCEPTED
1059      ;
1060      ; INPUT:
1061      ;
1062      ;      R4      ADDRESS OF PACKET FROM TEST
1063      ;      R5      FIRST DEVICE UNIBUS ADDRESS
1064      ;      REQUIRES A CALL TO SOFINIT BE DONE PREVIOUSLY
1065      ;
1066      ; OUTPUT:
1067      ;
1068      ;      R0      TSSR CONTENTS
1069      ;      CARRY   SET - WRITE CHARACTERISTICS COMMAND OK
1070      ;              CLR - WRITE CHARACTERISTICS FAILED
1071      ;
1072      ; IMPLICIT OUTPUT:
1073      ;
1074      ;      MESSAGE BUFFER AND OTHER BUFFERS ALL SET UP
1075      ;      SOFTWARE SWITCHES SET AS FOLLOWS:
1076      ;              EXTFEA = EXTENDED FEATURES PRESENT
1077      ;              BENBSW = BUFFER ENABLE SWITCH ON OR OFF
1078      ;
1079      ;
1080      ; SIDE EFFECTS:
1081      ;
1082      ;
1083      ; -
1084      ;
1085      010742      WRTCMR:
1086      010742      SAVREG      ; SAVE THE GENERAL REGISTERS
1087      010746      005037      002222      CLR      BENBSW      ; CLEAR BUFFER ENABLE SWITCH
1088      010752      005037      002220      CLR      EXTFEA      ; CLEAR EXTENDED FEATURES SW SWITCH
1089      010756      010465      000000      10$: MOV      R4,TSDB(R5) ; SEND OUT COMMAND
1090      010762      004737      016416      JSR      PC,CHKTSSR    ; WAIT FOR SSR
1091      010766      103401      BCS      20$      ; BR, IF SSR IS SET AND OK
1092      010770      000435      BR      60$      ; BR IF TROUBLE CARRY = CLEAR
1093      010772      016501      000002      20$: MOV      TSSR(R5),R1 ; READ TSSR
1094      010776      012702      000200      MOV      @SSR,R2      ; SET UP EXPECTED

```



TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 RTCHR WRITE CHARACTERISTICS COMMAND

SEQ 047

```

1095 011002 032701 000100      BIT    #OFL,R1      ;WAS OFF LINE SET IN TSSR
1096 011006 001402              BEQ    25$          ;BR, IF NO OFL SET
1097 011010 052702 000100      BIS    #OFL,R2      ;MAKE THEM LOOK ALIKE
1098 011014 020201              25$: CMP    R2,R1      ;ARE THEY OK
1099 011016 001401              BEQ    40$          ;BR, IF EQUAL = OK
1100 011020 000421              BR     60$          ;TROUBLE EXIT
1101 011022 062704 000010      40$: ADD    #8.,R4      ;POINT TO WRT CHARA DATA PACKET
1102 011026 011403              MOV    (R4),R3      ;GET ADDRESS OF MESSAGE BUFFER
1103 011030 032763 000200 000012  BIT    #X2.EXTF,XST2(R3) ;EXTENDED FEATURES BIT SET?
1104 011036 001402              BEQ    45$          ;BR IF NO
1105 011040 005237 002220      INC     EXTFEA      ;SET EXTENDED FEATURES SW SWITCH
1106 011044              45$:
1107 011044 032763 000100 000012  BIT    #X2.BUFE,XST2(R3) ;BUFFER ENABLE SWITCH SET
1108 011052 001402              BEQ    50$          ;BR, IF SWITCH NOT SET
1109 011054 005237 002222      INC     BENBSW      ;SET SOFTWARE SWITCH FOR ENABLED
1110 011060              50$:
1111 011060 000261              SEC                ;SET CARRY NO TROUBLE
1112 011062 000401              BR     70$          ;EXIT
1113 011064 000241              60$: CLC                ;CARRY CLEAR = ERROR
1114 011066 016500 000002      70$: MOV    TSSR(R5),R0 ;RETURN TSSR CONTENTS
1115 011072 000207              RTS     PC          ;RETURN
1116              .SBTTL  REWIND - POSITION TAPE (REWIND) COMMAND
1117
1118      ;*
1119      ;
1120      ;THIS ROUTINE WILL REWIND THE SELECTED TAPE.
1121      ;
1122      ;    CAUTION: THE ROUTINE DOES NOT WAIT FOR BOT
1123      ;                TO ARRIVE. ALSO THE CALLER MUST CHECK FOR
1124      ;                SSR TO SET IN THE TSSR
1125      ;
1126      ;
1127      ;CALLING SEQUENCE:
1128      ;
1129      ;    DO A SOFT INIT
1130      ;    DO A WRITE CHARACTERISTICS
1131      ;    JSR    PC,REWIND
1132      ;
1133      ;INPUT:
1134      ;
1135      ;    R5      FIRST DEVICE UNIBUS ADDRESS
1136      ;
1137      ;
1138      ;OUTPUT
1139      ;
1140      ;    R0      THE CONTENTS OF R4 IS PASSED TO R0
1141      ;
1142      ;
1143      ;
1144      ;REWIND::
1145      ;
1146      ;    SAVREG
1147      ;    MOV    #RWPACK,R4      ;SAVE R1-R5 UNTIL NEXT RETURN
1148      ;    MOV    R4,TSD8(R5)    ;GET PACKET ADDRESS
1149      ;    MOV    #360.,R3      ;SEND PACKET ADDRESS TO EXECUTE
1150      ;    JSR    PC,WAITF      ;ENOUGH TIME FOR 2400' REEL TO REWIND
1151      ;    BCS    20$          ;WAIT FOR SSR TO SET
1152      ;    DELAY  250.         ;LEAVE WHEN SSR IS SET
1153      ;                          ;WAIT FOR .25 SECONDS

```

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 REWIND POSITION TAPE (REWIND) COMMAND

SEQ 048

```

011122 012727 000372      MOV      #250.,(PC).
011126 000000      .WORD      0
011130 013727 002116      MOV      L$DLY,(PC).
011134 000000      .WORD      0
011136 005367 177772      DEC      6(PC)
011142 001375      BNE      . 4
011144 005367 177756      DEC      -22(PC)
011150 001367      BNE      . 20
1152 011152 005303      DEC      R3      ;BUMP COUNTER DOWN
1153 011154 001357      BNE      10$      ;KEEP GOING
1154 011156 000241      CLC      ;CLEAR CARRY TO SET ERROR
1155 011160 010400      20$: MOV      R4,R0      ;PASS THE PACKET ADDRESS
1156 011162 000207      RTS      PC      ;RETURN
1157
1159      011170
1161 011170      RWPACK: .-<..*10>E177770
1162 011170 102010      .WORD      102010      ;POSTION COMMAND (REWIND)
1163 011172 000000      .WORD      0      ;NOT USED
1164      .SBTTL      CKRAM - COMPARE RAM TO I/O PACKET
1165
1166      ;*
1167      ;
1168      ;ROUTINE TO READ THE FIRST 8 BYTES FROM RAM
1169      ;MEMORY AND COMPARE THIS DATA TO A COMMAND PACKET.
1170      ;
1171      ;INPUT:
1172      ;
1173      ;      R4      ADDRESS OF THE COMMAND PACKET
1174      ;      R5      FIRST DEVICE UNIBUS ADDRESS
1175      ;
1176      ;OUTPUT:
1177      ;
1178      ;      CARRY    SET - RAM MATCHES PACKET
1179      ;              CLR - RAM DOES NOT MATCH PACKET
1180      ;
1181      ;IMPLICIT OUTPUT:
1182      ;
1183      ;      THE TABLE RAMDATA IS FILLED WITH THE
1184      ;      DATA HELD IN RAM.
1185      ;      RAMSIZ IS SET TO 8. FOR PRAMPKT ROUTINE
1186      ;
1187      ;SIDE EFFECTS:
1188      ;
1189      ;      THE SUBSYSTEM IS LEFT IN MAINTENANCE MODE
1190      ;
1191      ;
1192
1193 011174      CKRAM::
1194 011174      SAVREG
1195 011200 012701 002234      MOV      @RAMDATA,R1      ;SAVE THE GENERAL REGISTERS
1196 011204 012702 000201      MOV      @RMPKTBEG,R2      ;ADDRESS TO SAVE THE RAM DATA
1197 011210 005003      CLR      R3      ;BYTE ADDRESS OF FIRST RAM DATA
1198 011212 004737 016416      JSR      PC,CHKTSSR      ;CLEAR THE ERROR FLAG
1199 011216 112765 000000 000000      MOVB      #0,TSDB(R5)      ;WAIT FOR SSR
1200 011224 004737 016416      10$: JSR      PC,CHKTSSR      ;SET MAINTENANCE MODE
1201 011230 010265 000000      MOV      R2,TSDB(R5)      ;WAIT FOR SSR TO SET
1202 011234 004737 016416      JSR      PC,CHKTSSR      ;SELECT NEXT RAM ADDRESS
                                ;WAIT FOR SSR TO SET

```



| Address | Object Code | Symbolic Code | Symbolic Comment    |
|---------|-------------|---------------|---------------------|
| 1203    | 011240      | 116511        | 000000              |
| 1204    | 011244      | 122124        |                     |
| 1205    | 011246      | 001401        |                     |
| 1206    | 011250      | 005203        |                     |
| 1207    | 011252      | 005202        | 20\$:               |
| 1208    | 011254      | 020227        | 000210              |
| 1209    | 011260      | 003761        |                     |
| 1210    | 011262      | 005703        |                     |
| 1211    | 011264      | 001402        |                     |
| 1212    | 011266      | 000241        |                     |
| 1213    | 011270      | 000401        |                     |
| 1214    | 011272      | 000261        | 30\$:               |
| 1215    | 011274      | 012737        | 000010 002274 50\$: |
| 1216    | 011302      | 000207        |                     |
| 1217    |             |               |                     |
| 1218    |             |               |                     |
| 1219    |             |               |                     |
| 1220    |             |               |                     |
| 1221    |             |               |                     |
| 1222    |             |               |                     |
| 1223    |             |               |                     |
| 1224    |             |               |                     |
| 1225    |             |               |                     |
| 1226    |             |               |                     |
| 1227    |             |               |                     |
| 1228    |             |               |                     |
| 1229    |             |               |                     |
| 1230    |             |               |                     |
| 1231    |             |               |                     |
| 1232    |             |               |                     |
| 1233    |             |               |                     |
| 1234    |             |               |                     |
| 1235    |             |               |                     |
| 1236    |             |               |                     |
| 1237    |             |               |                     |
| 1238    |             |               |                     |
| 1239    |             |               |                     |
| 1240    |             |               |                     |
| 1241    |             |               |                     |
| 1242    |             |               |                     |
| 1243    |             |               |                     |
| 1244    |             |               |                     |
| 1245    | 011304      |               |                     |
| 1246    | 011304      |               |                     |
| 1247    | 011310      | 012701        | 002234              |
| 1248    | 011314      | 012702        | 000167              |
| 1249    | 011320      | 005003        |                     |
| 1250    | 011322      | 004737        | 016416              |
| 1251    | 011326      | 112765        | 000000 000000       |
| 1252    | 011334      | 004737        | 016416 10\$:        |
| 1253    | 011340      | 010265        | 000000              |
| 1254    | 011344      | 004737        | 016416              |
| 1255    | 011350      | 116511        | 000000              |
| 1256    | 011354      | 122124        |                     |
| 1257    | 011356      | 001401        |                     |
| 1258    | 011360      | 005203        |                     |
| 1259    | 011362      | 005202        | 20\$:               |

| Address | Offset | Hex    | Dec    | Label  | Instruction                                      | Comment                                |
|---------|--------|--------|--------|--------|--------------------------------------------------|----------------------------------------|
| 1260    | 011364 | 012737 | 000010 | 002274 | MOV #8.,RAMSIZ                                   | ;ASSUME EXTFEA NOT SET                 |
| 1261    | 011372 | 005737 | 002220 |        | TST EXTFEA                                       | ;IS THE SOFTWARE EXTENDED FEATURES SET |
| 1262    | 011376 | 001407 |        |        | BEQ 25\$                                         | ;BR, IF NOT SET                        |
| 1263    | 011400 | 012737 | 000012 | 002274 | MOV #10.,RAMSIZ                                  | ;SET RAMSIZ FOR EXTEND FEATURES        |
| 1264    | 011406 | 020227 | 000200 |        | CMP R2,ARMCHEND                                  | ;AT END OF EXTENDED BUFFER             |
| 1265    | 011412 | 003750 |        |        | BLE 10\$                                         | ;BR, IF NOT AT END YET                 |
| 1266    | 011414 | 000403 |        |        | BR 27\$                                          | ;AT END BRANCH                         |
| 1267    | 011416 | 020227 | 000176 | 25\$:  | CMP R2,ARMCHEND 2                                | ;REACHED END YET ?                     |
| 1268    | 011422 | 003744 |        |        | BLE 10\$                                         | ;BRANCH TILL ALL READ                  |
| 1269    | 011424 | 005703 |        | 27\$:  | TST R3                                           | ;WAS AN ERROR FOUND ?                  |
| 1270    | 011426 | 001402 |        |        | BEQ 30\$                                         | ;BRANCH IF NOT                         |
| 1271    | 011430 | 000241 |        |        | CLC                                              | ;CLEAR CARRY TO SHOW ERROR             |
| 1272    | 011432 | 000401 |        |        | BR 50\$                                          | ;AND EXIT                              |
| 1273    | 011434 | 000261 |        | 30\$:  | SEC                                              | ;SHOW GOOD COMPARE                     |
| 1274    | 011436 | 000207 |        | 50\$:  | RTS PC                                           | ;RETURN                                |
| 1275    |        |        |        |        | .SBTTL CKMSG COMPARE WRITE CHAR. MESSAGE BUFFERS |                                        |
| 1276    |        |        |        |        |                                                  |                                        |
| 1277    |        |        |        |        |                                                  |                                        |
| 1278    |        |        |        |        |                                                  |                                        |
| 1279    |        |        |        |        |                                                  |                                        |
| 1280    |        |        |        |        |                                                  |                                        |
| 1281    |        |        |        |        |                                                  |                                        |
| 1282    |        |        |        |        |                                                  |                                        |
| 1283    |        |        |        |        |                                                  |                                        |
| 1284    |        |        |        |        |                                                  |                                        |
| 1285    |        |        |        |        |                                                  |                                        |
| 1286    |        |        |        |        |                                                  |                                        |
| 1287    |        |        |        |        |                                                  |                                        |
| 1288    |        |        |        |        |                                                  |                                        |
| 1289    |        |        |        |        |                                                  |                                        |
| 1290    |        |        |        |        |                                                  |                                        |
| 1291    |        |        |        |        |                                                  |                                        |
| 1292    |        |        |        |        |                                                  |                                        |
| 1293    |        |        |        |        |                                                  |                                        |
| 1294    |        |        |        |        |                                                  |                                        |
| 1295    |        |        |        |        |                                                  |                                        |
| 1296    |        |        |        |        |                                                  |                                        |
| 1297    |        |        |        |        |                                                  |                                        |
| 1298    |        |        |        |        |                                                  |                                        |
| 1299    |        |        |        |        |                                                  |                                        |
| 1300    | 011440 |        |        |        |                                                  |                                        |
| 1301    | 011440 |        |        |        |                                                  |                                        |
| 1302    | 011444 | 010037 | 002276 |        |                                                  |                                        |
| 1303    | 011450 | 010137 | 002300 |        |                                                  |                                        |
| 1304    | 011454 | 005737 | 003126 |        |                                                  |                                        |
| 1305    | 011460 | 001403 |        |        |                                                  |                                        |
| 1306    | 011462 | 004737 | 017376 |        |                                                  |                                        |
| 1307    | 011466 | 010001 |        |        |                                                  |                                        |
| 1308    | 011470 | 005004 |        |        |                                                  |                                        |
| 1309    | 011472 | 005003 |        |        |                                                  |                                        |
| 1310    | 011474 | 010205 |        |        |                                                  |                                        |
| 1311    | 011476 | 011264 | 002314 |        |                                                  |                                        |
| 1312    | 011502 | 011164 | 002460 |        |                                                  |                                        |
| 1313    | 011506 | 022221 |        |        |                                                  |                                        |
| 1314    | 011510 | 001401 |        |        |                                                  |                                        |
| 1315    | 011512 | 005203 |        |        |                                                  |                                        |
| 1316    | 011514 | 062704 | 000002 |        |                                                  |                                        |

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
CKMSG COMPARE WRITE CHAR. MESSAGE BUFFERS

SEQ 051

```

1317 011520 020427 000014      CMP      R4,#14      ;DONE FIRST 7 WORDS?
1318 011524 003764              BLE      15$      ;BR IF NO
1319 011526 032765 000200 000012  BIT      #X2.EXTF,XST2(R5);IS EXTENDED FEATURES SET IN EXPD?
1320 011534 001403              BEQ      50$      ;BR IF NO
1321 011536 020427 000016      CMP      R4,#16      ;DONE EXTENDED FEATURES WORD?
1322 011542 003755              BLE      15$      ;BR IF NO
1323 011544 005703 50$:      TST      R3      ;ANY ERRORS SEEN?
1324 011546 001402              BEQ      55$      ;BR IF NO
1325 011550 000241              CLC              ;SET FAILURE
1326 011552 000401              BR       60$      ;
1327 011554 000261 55$:      SEC              ;SET SUCCESS
1328 011556 000207 60$:      RTS       PC      ;RETURN
1329                      .SBTTL  CKMSG2 - COMPARE EXPD RECV MESSAGE BUFFERS
1330                      ;*
1331                      ;
1332                      ;ROUTINE TO COMPARE AN EXPECTED AND RECEIVED MESSAGE
1333                      ;BUFFER. THE EXPECTED AND RECEIVED BUFFERS ARE STORED FOR
1334                      ;ERROR PRINT ROUTINES.
1335                      ;
1336                      ;INPUT:
1337                      ;
1338                      ;      R0      RECV MESSAGE BUFFER HIGH ORDER ADDRESS
1339                      ;      R1      RECV MESSAGE BUFFER LOW ORDER ADDRESS
1340                      ;      R2      EXPD MESSAGE BUFFER ADDRESS
1341                      ;      R3      NUMBER OF BYTES TO COMPARE
1342                      ;
1343                      ;OUTPUT:
1344                      ;
1345                      ;      CARRY  SET - MESSAGE BUFFERS MATCH
1346                      ;      CLR    - MESSAGE BUFFERS DON'T MATCH
1347                      ;
1348                      ;IMPLICIT OUTPUT:
1349                      ;
1350                      ;      EXPMSG  BUFFER IS SET TO EXPD DATA
1351                      ;      RECVMSG  BUFFER IS SET TO RECV DATA
1352                      ;      RCVHIADD SET TO HIGH ORDER ADDRESS OF RECV
1353                      ;      RCVLOADD SET TO LOW ORDER ADDRESS OF RECV
1354                      ;
1355                      ;-
1356 011560      CKMSG2::
1357 011560      SAVREG              ;SAVE R1-R5 UNTIL NEXT RETURN
1358 011564 020327 000144      CMP      R3,#RECVMSG-EXPMSG;000 IS COUNT ABOVE MAX ALLOWED?
1359 011570 003412              BLE      5$      ;000 BR IF NO
1360 011572 012703 000144      MOV      #RECVMSG-EXPMSG,R3;000
1361 011576      PRINTF      #DEJGMSG      ;000
1362 011576 012746 011712      MOV      #DEBUGMSG,-(SP)
1363 011602 012746 000001      MOV      #,-(SP)
1364 011606 010600              MOV      SP,R0
1365 011610 104417              TRAP     C$PNTF
1366 011612 062706 000004      ADD      #4,SP
1367 011616 010037 002276 5$:      MOV      R0,RCVHIADD      ;SAVE RECV HIGH ADDRESS
1368 011622 010137 002300      MOV      R1,RCVLOAD      ;SAVE RECV LOW ADDRESS
1369 011626 005737 003126      TST      KTENABLE      ;TESTING ABOVE 28K?
1370 011632 001403              BEQ      10$      ;BR IF NO
1371 011634 004737 017376      JSR      PC,SETMAP      ;RETURN ADDRESS BIASED TO PAR6 IN R0
1372 011640 010001              MOV      R0,R1      ;GET RETURNED ADDRESS BIASED TO PAR6
1373 011642 005004 10$:      CLR      R4      ;WORD IN BUFFER

```

N4

TSV3 GLOBAL AREAS MACRO M1113 06-FEB-84 18:04  
CKMSG2 COMPARE EXPD RECV MESSAGE BUFFERS

SEQ 052

```

1369 011644 005005          CLR      R5          ;CLEAR ERROR SEEN FLAG
1370 011646 111264 002314 15$:  MOVB    (R2),EXPMSG(R4) ;SAVE EXPD FOR ERROR REPORT
1371 011652 111164 002460          MOVB    (R1),RECVMSG(R4) ;SAVE RECV FOR ERROR REPORT
1372 011656 122221          CMPB    (R2)+,(R1)+ ;EXPD EQUAL RECV?
1373 011660 001401          BEQ      25$          ;BR IF YES
1374 011662 005205          INC      R5          ;SET ERROR SEEN FLAG
1375 011664 062704 000001 25$:  ADD     @1,R4      ;POINT TO NEXT BYTE
1376 011670 020403          CMP      R4,R3      ;DONE ALL BYTES?
1377 011672 002001          BGE      50$          ;BR IF YES
1378 011674 000764          BR       15$          ;DO NEXT BYTE
1379 011676 005705          50$:  TST     R5          ;ANY ERRORS SEEN?
1380 011700 001402          BEQ      55$          ;BR IF NO
1381 011702 000241          CLC          ;SET FAILURE
1382 011704 000401          BR       60$          ;
1383 011706 000261          55$:  SEC          ;SET SUCCESS
1384 011710 000207          60$:  RTS     PC          ;RETURN
1385
1386 011712 120 122 117 DEBUGMSG: .ASCIZ 'PROGRAM INTERNAL ERROR C MSG2 MESSAGE BUFFER EXCEEDED ;@@D
1387 012002 045 116 045 FERCM: .ASCII /NMA ***/
1388 012013 040 040 124 ERCM: .ASCIZ / TSSR ERROR CODE REC D * /
1389 012046 056 056 056 SIMSG: .ASCIZ /... AFTER DOING SOFT INIT/
1390 012101 124 105 123 TINERR: .ASCIZ /TEST: .../
1391
1392
1393
1394
1395 ;PRINT ROUTINE TO FATAL SOFT INIT ERRORS
1396 ;
1397 ;INPUT:
1398 ;
1399 ; R1 CONTENTS OF TSSR AT ERROR
1400 ;
1401 ;SIDE EFFECTS:
1402 ;
1403 ; EXECUTES DROP UNIT TO CEASE TESTING
1404 ;
1405 ;
1406
1407 012114          BGNMSG  SFMSG
1408 012114 004737 006020 SFMSG:  JSR     PC,PRITJSR ;PRINT CONTENTS OF TSSR REGISTER
1409 012120 004737 017262      JSR     PC,CKDROP ;DROP UNIT, IF ALLOWED
1410 012124          ENDMSC
1411 012124 104423 L10003:  TRAP    CMSG
1412
1413 ;PRINT ROUTINE TO PRINT THE CONTENTS OF
1414 ;TSSR AND A COMMAND PACKET OTHER THAN GET STATUS COMMAND PACKET.
1415 ;
1416 ;INPUTS:
1417 ;
1418 ; R1 TSSR CONTENTS
1419 ; R4 ADDRESS OF COMMAND PACKET
1420 ;
1421 ;
1422

```

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
CKMSG2 COMPARE EXPD RECV MESSAGE BUFFERS

SEQ 053

```

1423 012126          BGNMSG  PKTSSR
      012126          PKTSSR::
1424 012126 004737 006020      JSR    PC,PRITSSR      ;PRINT THE CONTENTS OF TSSR REGISTER
1425 012132 012700 000004      MOV    #4,R0          ;NO. OF WORDS IN PACKET
1426 012136 004737 007446      JSR    PC,PRIPKT      ;PRINT THE CONTENTS OF COMMAND PACKET
1427 012142          ENDMSG
      012142          L10004:
      012142 104423          TRAP    CMSG

1428
1429
1430          ;PRINT ROUTINE TO PRINT THE CONTENTS OF
1431          ;TSSR AND A GET STATUS COMMAND PACKET.
1432          ;
1433          ;INPUTS:
1434          ;
1435          ;      R1      TSSR CONTENTS
1436          ;      R4      ADDRESS OF COMMAND PACKET
1437          ;
1438          ;
1439          ;
1440 012144          BGNMSG  PKTGETS
      012144          PKTGETS::
1441 012144 004737 006020      JSR    PC,PRITSSR      ;PRINT THE CONTENTS OF TSSR REGISTER
1442 012150 012700 000002      MOV    #2,R0          ;NO. OF WORDS IN GET STATUS PACKET
1443 012154 004737 007446      JSR    PC,PRIPKT      ;PRINT THE CONTENTS OF COMMAND PACKET
1444 012160          ENDMSG
      012160          L10005:
      012160 104423          TRAP    CMSG

1445
1446          ;PRINT TSSR ERRORS FOR INITIALIZATION TESTS
1447          ;
1448          ;INPUTS:
1449          ;
1450          ;      R1      TSSR CONTENTS
1451          ;      R4      ADDRESS OF COMMAND PACKET
1452          ;
1453          ;
1454          ;
1455 012162          BGNMSG  SFFMSG
      012162          SFFMSG::
1456 012162 004737 006020      JSR    PC,PRITSSR      ;PRINT CONTENTS OF TSSR REGISTER
1457 012166          ENDMSG
      012166          L10006:
      012166 104423          TRAP    CMSG

1458          .SBTTL  PKTIMES  PRINT TSSR AND MESSAGE BUFFER
1459          ;
1460          ;PRINT ROUTINE TO PRINT THE CONTENTS OF TSSR AND MESSAGE
1461          ;BUFFER FOR ERROR REPORTS
1462          ;
1463          ;INPUTS:
1464          ;
1465          ;      R1      CONTENTS OF TSSR
1466          ;      R2      LOW ORDER MESSAGE BUFFER
1467          ;      R3      HIGH ORDER MESSAGE BUFFER ADDRESS
1468          ;
1469          ;      NOTE: R3 IS IGNORED IF KTENABLE FLAG IS CLEAR
1470          ;

```

C5

TSV3 GLOBAL AREAS MACRO M1113.06 FEB 84 18:04  
PKTMS PRINT TSSR AND MESSAGE BUFFER

SEQ 054

```

1471
1472 012170
1473 012170 004737 006020
1474 012174 010200
1475 012176 010301
1476 012200 004737 014322
1477 012204
1478 012204 104423
1479
1480
1481
1482
1483
1484
1485
1486
1487
1488
1489
1490 012206
1491 012206 004737 010352
1492 012212 016501 000002
1493 012216 004737 006020
1494 012222
1495 012222 104423
1496
1497
1498
1499
1500
1501
1502
1503
1504
1505
1506
1507
1508 012224
1509 012224 012700 000007
1510 012230 005737 002220
1511 012234 001402
1512 012236 012700 000010
1513 012242 004737 014632
1514 012246
1515 012246 104423
1516
1517
1518

;
; BGNMSG PKTMS
PKTMS::
; JSR PC,PRITSSR ;PRINT CONTENTS OF TSSR
; MOV R2,R0 ;LOW ORDER ADDRESS
; MOV R3,R1 ;HIGH ORDER ADDRESS
; JSR PC,PRMESS ;PRINT THE MESSAGE BUFFER
; ENDMSG
L10007:
; TRAP CMSG
; .SBTTL ADDSSR PRINT TEST ADDRESS AND TSSR
;
; PRINT ROUTINE TO PRINT THE CONTENTS OF
; TSSR AND A MEMORY TEST ADDRESS
;
; INPUTS:
;
; R5 FIRST DEVICE UNIBUS ADDRESS
; ERRHI HIGH ORDER MEMORY TEST ADDRESS
; ERRLO LOW ORDER MEMORY TEST ADDRESS
;
;
; BGNMSG ADDSSR
ADDSSR::
; JSR PC,PRITADD ;PRINT MEMORY TEST ADDRESS
; MOV TSSR(R5),R1 ;GET CURRENT TSSR
; JSR PC,PRITSSR ;PRINT THE CONTENTS OF SSR REGISTER
; ENDMSG
L10010:
; TRAP CMSG
;
; .SBTTL MSGEXP - PRINT WRITE CHAR. EXPD RECV MESSAGE BUFFERS
;
; PRINT ROUTINE TO PRINT WRITE CHARACTERISTIC MESSAGE BUFFER
;
; IMPLICIT INPUTS:
;
; EXPMSG - EXPECTED MESSAGE BUFFER
; RECHMSG - RECEIVED MESSAGE BUFFER
; RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
; RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
;
;
; BGNMSG MSGEXP
MSGEXP::
; MOV #7,R0 ;ASSUME NO EXT FEATURES
; TST EXTFEA ;EXT FEATURES SET?
; BEQ S1 ;BR IF NO
; MOV #8.,R0 ;EXT FEATURE BUFFER IS 8 WORDS
; JSR PC,PRMSGEXP ;PRINT EXPD/RECV MESSAGE BUFFERS
; ENDMSG
S1:
L10011:
; TRAP CMSG
; .SBTTL FIFEXP PRINT FIFO EXP/RECV DATA
;
; PRINT ROUTINE TO PRINT FIFO EXP/RECV DATA

```



```

1519      ;
1520      ;      R1      BYTE COUNT
1521      ;
1522      ;IMPLICIT INPUTS:
1523      ;
1524      ;      EXPMSG - EXPECTED MESSAGE BUFFER (CONTAINS FIFO DATA ONLY)
1525      ;      RECMMSG - RECEIVED MESSAGE BUFFER (CONTAINS FIFO DATA ONLY)
1526      ;
1527      BGNMSG FIFEXP
1528      FIFEXP:
1529      PRINTX #FIF1MSG,R1      ;PRINT BYTES TRANSFERRED
1530      MOV     R1,-(SP)
1531      MOV     #FIF1MSG,-(SP)
1532      MOV     #2,-(SP)
1533      MOV     SP,R0
1534      TRAP    C$PNTX
1535      ADD     #6,SP
1536      PRINTX #FIF2MSG      ;PRINT HEADER MSG
1537      MOV     #FIF2MSG,-(SP)
1538      MOV     #1,-(SP)
1539      MOV     SP,R0
1540      TRAP    C$PNTX
1541      ADD     #4,SP
1542      MOV     R1,R0      ;GET BYTE COUNT
1543      JSR     PC,PRBYTEXP ;PRINT FIFO BYTES IN ERROR
1544      ENDMSG
1545      L10012:
1546      TRAP    C$MSG
1547      FIF1MSG: .ASCIZ 'NUMBER OF BYTES TRANSFERRED - #02'
1548      FIF2MSG: .ASCIZ 'NUMBER FIFO DATA BYTES IN ERROR:'
1549      .EVEN
1550      .SBTTL MSGSTAT - PRINT STATUS HEADER AND MESSAGE BUFFERS
1551      ;
1552      ;
1553      ;PRINT ROUTINE TO PRINT MESSAGE BUFFER EXPD/RECV
1554      ;
1555      ;IMPLICIT INPUTS:
1556      ;
1557      ;      EXPMSG - EXPECTED MESSAGE BUFFER
1558      ;      RECMMSG - RECEIVED MESSAGE BUFFER
1559      ;      RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
1560      ;      RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
1561      ;
1562      BGNMSG MSGSTAT
1563      MSGSTAT:
1564      MOV     #STATCOD,R1      ;ASCII ADDRESS TABLE
1565      MOV     (R1)+,R0      ;DONE ALL MSG LINES?
1566      BEQ     20$,          ;BR IF YES
1567      PRINTX  R0      ;PRINT STATUS BIT NAMES
1568      MOV     R0,-(SP)
1569      MOV     #1,-(SP)
1570      MOV     SP,R0
1571      TRAP    C$PNTX
1572      ADD     #4,SP
1573      BR      10$
1574      10$:    MOV     #10,,R0      ;DO ANOTHER MSG LINE
1575      ;NUMBER OF WORDS IN A READ STATUS BUFFER

```

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
MSGSTAT PRINT STATUS HEADER AND MESSAGE BUFFERS

SEQ 056

```

1556 012464 004737 014632      JSR    PC,PRMSGEXP      ;PRINT EXPD/RCV MESSAGE BUFFERS
1557 012470      ENDMSG
      012470      L10013:
      012470 104423      TRAP    C#MSG
1558
1559 012472 012510 012552 012643 STATCOD:      .WORD    1#,2#,3#,4#,5#,6#,0
1560 012510      045      116      045 1#:.ASCIZ  '###A Tape Bus Signals in Word #8:'
1561 012552      045      116      045 2#:.ASCIZ  '###A PARERR<15> IEOT <12> IFMK <9> IRDY<6> IRWD<2>'
1562 012643      045      116      045 3#:.ASCIZ  '###A IRESV2<14> IIDENT<11> IHER <8> IONL<5> IFBY<1>'
1563 012734      045      116      045 4#:.ASCIZ  '###A IRESV1<13> ICER <10> ISPEED<7> ILDP<4> IFPT<0>'
1564 013025      045      116      045 5#:.ASCIZ  '###A Tape Bus Signals in Word #9:'
1565 013067      045      116      045 6#:.ASCIZ  '###A DATMIS<7> ILW<6> OUTRDY<5> INRDY<4>'
1566      .EVEN
1567
1568      .SBITL MSGLOOP PRINT LOOPBACK HEADER AND MESSAGE BUFFERS
1569
1570      ;*
1571      ;PRINT ROUTINE TO PRINT MESSAGE BUFFER EXPD/RCV
1572      ;
1573      ;IMPLICIT INPUTS:
1574      ;
1575      ; EXPMSG - EXPECTED MESSAGE BUFFER
1576      ; RECMMSG - RECEIVED MESSAGE BUFFER
1577      ; RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
1578      ; RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
1579      ;
1580      BGNMSG MSGLOOP
1581 013144 012701 013206      MSGLOOP:
1582 013150 012100      MOV      @LOOPCOD,R1      ;ASCII ADDRESS TABLE
1583 013152 001410      10#: MOV      (R1),R0      ;DONE ALL MSG LINES?
1584 013154      BEQ      20#      ;BR IF YES
1585 013154 010046      PRINTX   R0      ;PRINT STATUS BIT NAMES
1586 013156 012746 000001      MOV      R0,(SP)
1587 013162 010600      MOV      #1,-(SP)
1588 013164 104415      MOV      SP,R0
1589 013166 062706 000004      TRAP    C#PNTX
1590 013172 000766      ADD      #4,SP
1591 013174 012700 000012      BR      10#      ;DO ANOTHER MSG LINE
1592 013200 004737 014632      20#: MOV      #10,R0      ;NUMBER OF WORDS IN A READ STATUS BUFFER
1593 013204      JSR      PC,PRMSGEXP      ;PRINT EXPD/RCV MESSAGE BUFFERS
1594 013204      ENDMSG
1595 013204 104423      L10014:
1596 013204      TRAP    C#MSG
1597
1598      LOOPCOD:      .WORD    1#,2#,3#,4#,5#,6#,7#,0
1599 013226      045      116      045 1#:.ASCIZ  '###A Tape Bus Loopback Signals in Word #8:'
1600 013301      045      116      045 2#:.ASCIZ  '###A PARERR<15> IRESV2<14> IRESV1<13>
1601 013407      045      116      045 3#:.ASCIZ  '###A IHISP=>IEOT<12> IWRT=>IIDENT<11> IREV =>ICER <10>
1602 013477      045      116      045 4#:.ASCIZ  '###A IWMF =>IFMK<09> IEDIT=>IHER <08> IFAD =>ISPEED<07>
1603 013576      045      116      045 5#:.ASCIZ  '###A ITADO=>IRDY<06> ITAD1=>IONL <05> IERASE=>ILDP <04>
1604 013675      045      116      045 6#:.ASCIZ  '###A IREW =>IDBY<03> IRWU =>IRWD <02> IFEN =>IFBY <01>
1605 013774      045      116      045 7#:.ASCIZ  '###A IGO =>IFPT<00>'
1606      .EVEN
1607      .SBITL MSGSUB - PRINT WRITE SUBSYSTEM MESSAGE BUFFER
1608
1609      ;*
1610      ;PRINT ROUTINE TO PRINT MESSAGE BUFFER EXPD/RCV

```



```

1603      ;
1604      ;
1605      ;IMPLICIT INPUTS:
1606      ;
1607      ;      EXPMSG - EXPECTED MESSAGE BUFFER
1608      ;      RECMMSG - RECEIVED MESSAGE BUFFER
1609      ;      RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
1610      ;      RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
1611      ;
1612      014022      BGNMSG MSGSUB
1613      014022      MSGSUB:
1614      014026      012700 000012      MOV      #10.,R0      ;SIZE OF WRITE SUBSYSTEM BUFFER
1615      014032      004737 014632      JSR      PC,PRMSGEXP      ;PRINT EXPD/RCV MESSAGE BUFFERS
1616      014032      104423      ENDMMSG
1617      L10015:
1618      TRAP      C$MSG
1619      .SBTTL MEMADD PRINT MEMORY ADDRESS DATA ERROR
1620      ;
1621      ;PRINT ROUTINE TO PRINT MEMORY ADDRESS DATA COMPARE ERROR
1622      ;
1623      ;IMPLICIT INPUTS:
1624      ;
1625      ;      ERRHI - MEMORY ERROR HIGH ORDER ADDRESS
1626      ;      ERRLO - MEMORY ERROR LOW ORDER ADDRESS
1627      ;      EXP - EXPECTED DATA
1628      ;      RECV - RECEIVED DATA
1629      ;
1630      014034      BGNMSG MEMADD
1631      014034      MEMADD:
1632      014040      004737 010236      JSR      PC,PRIADD      ;PRINT MEMORY ADDRESS IN ERROR
1633      014044      013701 002224      MOV      EXPD,R1      ;GET EXPD DATA
1634      014050      013702 002226      MOV      RECV,R2      ;GET RECEIVED DATA
1635      014054      004737 010020      JSR      PC,PRIXOR      ;PRINT EXPD/RCV
1636      014054      ENDMMSG
1637      L10016:
1638      TRAP      C$MSG
1639      .SBTTL PRAMPKT PRINT RAM AND PACKET DATA
1640      ;
1641      ;PRINT ROUTINE TO DISPLAY RAM/PACKET DATA
1642      ;WHEN THE RAM DATA DOES NOT MATCH.
1643      ;
1644      ;INPUTS:
1645      ;
1646      ;      R4 POINTER TO COMMAND PACKET
1647      ;
1648      ;IMPLICIT INPUTS:
1649      ;
1650      ;      RAMDATA DATA AS READ FROM THE RAM
1651      ;      RAMSIZ NUMBER OF BYTES IN PACKET
1652      ;              IF RAMSIZ=0 THEN DEFAULT TO 8.
1653      ;IMPLICIT OUTPUTS:
1654      ;
1655      ;      RAMSIZ SET TO 0

```

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
PRAMPKT PRINT RAM AND PACKET DATA

SEQ 058

```

1654
1655
1656 014056
1657 014056
1658 014062 012701 002234
1659 014066 005002
1660 014070 122124
1661 014072 001005
1662 014074
1663 014104 000436
1664 014106 116105 177777
1665 014112 116403 177777
1666 014116
1667 014126 042703 177400
1668 014132 116137 177777 002226
1669 014140 116437 177777 002224
1670 014146
    014146 010346
    014150 013746 002224
    014154 013746 002226
    014160 010246
    014162 012746 014236
    014166 012746 000005
    014172 010600
    014174 104414
    014176 062706 000014
1671 014202 005202
1672 014204 005737 002274
1673 014210 001404
1674 014212 020237 002274
1675 014216 003724
1676 014220 000403
1677 014222 020227 000010
1678 014226 002720
1679 014230 005037 002274
1680 014234 000207
1681
1682 014236 045 116 045 RAMASC: .ASCIZ 'NMA BYTE: #D2#A RAM: #03#A Packet: #03#A XOR: #03
1683 .EVEN
1684 .SBTTL PRMESS PRINT CONTENTS OF MESSAGE BUFFER
1685 ;*
1686 ;
1687 ;THIS ROUTINE PRINTS THE CONTENTS OF
1688 ;THE 7 OR 8 WORD MESSAGE BUFFER RETURNED BY THE
1689 ;TSV-05.
1690 ;
1691 ;INPUT:
1692 ;
1693 ; R0 LOW ORDER ADDRESS OF MESSAGE BUFFER
1694 ; R1 HIGH ORDER ADDRESS OF MESSAGE BUFFER
1695 ; NOTE: R1 IS IGNORED IF KTENABLE FLAG IS CLEAR
1696 ;
1697 ;THIS ROUTINE IS NORMALLY CALLED FROM A PRINT ROUTINE
1698 ;
1699 ;
1700
1701 014322 PRMESS:

```

```

PRAMPKT:
    SAVREG
    MOV #RAMDATA,R1
    CLR R2
    5$: CMPB (R1),R4
    BNE 7$
    FORCERROR 7$,NOTSR
    BR 10$
    7$: MOVB -1(R1),R5
    MOVB -1(R4),R3
    XOR R5,R3
    BIC #177400,R3
    MOVB -1(R1),RECV
    MOVB -1(R4),EXPD
    PRINTB #RAMASC,R2,RECV,EXPD,R3
    MOV R3,-(SP)
    MOV EXPD,-(SP)
    MOV RECV,-(SP)
    MOV R2,-(SP)
    MOV #RAMASC,-(SP)
    MOV #5,-(SP)
    MOV SP,R0
    TRAP C#PNTB
    ADD #14,SP
    10$: INC R2
    TST RAMSIZ
    BEQ 15$
    CMP R2,RAMSIZ
    BLE 5$
    BR 25$
    15$: CMP R2,#8
    20$: BLT 5$
    25$: CLR RAMSIZ
    RTS PC
;SAVE R1-R5 UNTIL NEXT RETURN
;DATA FROM THE RAM
;INIT BYTE NUMBER
;COMPARE EXPECTED, RECEIVED
;BR IF NO MATCH
;880
;GET RECV RAM DATA
;GET EXPD PACKET DATA
;XOR EXPD/RECV
;LOW BYTE ONLY
;GET RECEIVED RAM DATA
;GET EXPECTED RAM DATA
;UPDATE BYTE COUNT
;DEFAULT TO 8.?
;BR IF YES
;DONE ALL BYTES?
;BR IF NO
;
;DONE DEFAULT NUMBER OF BYTES?
;BR IF NO
;SET DEFAULT RAMSIZ
;RETURN

```

```

1702 014322 SAVREG ;SAVE THE REGISTERS
1703 014326 010005 MOV R0,R5 ;SAVE LOW ORDER ADDRESS
1704 014330 005737 003126 TST KTENAB E ;ADDRESS ABOVE 28K?
1705 014334 001001 BNE 10$ ;BR IF YES
1706 014336 005001 CLR R1 ;SET HIGH ORDER ADDRESS TO 0
1707 014340 010103 10$: MOV R1,R3 ;SAVE HIGH ORDER ADDRESS
1708 014342 006100 ROL R0 ;SHIFT BIT15 TO C BIT
1709 014344 006101 ROL R1 ;SHIFT TO HIGH ORDER FOR PRINTOUT
1710 014346 PRINTX @PROASC,R1,R5 ;PRINT MESSAGE BUFFER ADDRESS
      014346 010546 MOV R5,-(SP)
      014350 010146 MOV R1,-(SP)
      014352 012746 014500 MOV @PROASC,-(SP)
      014356 012746 000003 MOV @3,-(SP)
      014362 010600 MOV SP,R0
      014364 104415 TRAP C$PNTX
      014366 062706 000010 ADD @10,SP
1711 014372 PRINTX @PRIASC ;PRINT HEADER FOR CONTENTS
      014372 012746 014545 MOV @PRIASC,-(SP)
      014376 012746 000001 MOV @1,-(SP)
      014402 010600 MOV SP,R0
      014404 104415 TRAP C$PNTX
      014406 062706 000004 ADD @4,SP
1712 014412 005004 CLR R4 ;NUMBER OF THE NEXT WORD
1713 014414 010501 MOV R5,R1 ;COPY LOW ORDER ADDRESS
1714 014416 010300 MOV R3,R0 ;COPY HIGH ORDER ADDRESS
1715 014420 001403 BEQ 20$ ;BR IF NOT ABOVE 28K
1716 014422 004737 017376 JSR PC,SETMAP ;SETUP PAR ADDRESS IN R0
1717 014426 010005 MOV R0,R5 ;GET PAR FORMAT ADDRESS ABOVE 28K
1718 014430 20$: PRINTX @PRASC,R4,(R5) ;PRINT THE CONTENTS OF MEMORY BUFFER
      014430 012546 MOV (R5),-(SP)
      014432 010446 MOV R4,-(SP)
      014434 012746 014603 MOV @PRASC,-(SP)
      014440 012746 000003 MOV @3,-(SP)
      014444 010600 MOV SP,R0
      014446 104415 TRAP C$PNTX
      014450 062706 000010 ADD @10,SP
1719 014454 005204 INC R4 ;NUMBER OF THE NEXT
1720 014456 020427 000007 CMP R4,@7 ;DONE ALL YET ?
1721 014462 003005 BGT 50$ ;BRANCH IF ALL DONE
1722 014464 002761 BLT 20$ ;PRINT FIRST 7 WORDS
1723 014466 032763 000200 000012 BIT @X2.EXTF,XST2(R3);EXTENDED FEATUTES ON ?
1724 014474 001355 BNE 20$ ;PRINT EXTENDED STATUS WORD
1725 014476 000207 50$: RTS PC ;RETURN
1726
1727 014500 045 116 045 PROASC: .ASCIZ 'N$A Message Buffer Address = #01#05'
1728 014545 045 116 045 PRIASC: .ASCIZ 'N$A Message Buffer Contents:'
1729 014603 045 116 045 PRASC: .ASCIZ 'N$A Word#D1#A: #0'
1730 .EVEN
1731 .SBTTL PRMSGEXP - PRINT EXPD/RECV MESSAGE BUFFERS
1732 ;
1733 ;
1734 ;ROUTINE TO PRINT EXPECTED AND RECEIVED MESSAGE BUFFERS
1735 ;
1736 ; R0 NUMBER OF WORDS IN BUFFER
1737 ;
1738 ;IMPLICIT INPUTS:
1739 ;

```

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PRMSGEXP PRINT EXPD/RCV MESSAGE BUFFERS

SEQ 060

```

1740      EXPMSG - EXPECTED MESSAGE BUFFER
1741      RECMMSG - RECEIVED MESSAGE BUFFER
1742      RCVHIADD RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
1743      RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
1744
1745 014632 PRMSGEXP::
1746 014632 SAVREG          ;SAVE R1-R5 UNTIL NEXT RETURN
1747 014636 010005 MOV      R0,R5          ;SAVE NUMBER OF WORDS
1748 014640 013700 002300 MOV      RCVLOADD,R0      ;GET RCV LOW ADDRESS
1749 014644 010004 MOV      R0,R4          ;COPY LOW ADDRESS
1750 014646 013701 002276 MOV      RCVHIADD,R1      ;GET RCV HIGH ADDRESS
1751 014652 006100 ROL      R0          ;SHIFT BIT15 TO C BIT
1752 014654 006101 ROL      R1          ;SHIFT TO HIGH ORDER FOR PRINTOUT
1753 014656 PRINTX  #PRMSG0,R1,R4      ;PRINT MESSAGE BUFFER ADDRESS
      014656 010446 MOV      R4,-(SP)
      014660 010146 MOV      R1,(SP)
      014662 012746 015012 MOV      #PRMSG0,-(SP)
      014666 012746 000003 MOV      #3,-(SP)
      014672 010600 MOV      SP,R0
      014674 104415 TRAP     C:PNTX
      014676 062706 000010 ADD      #10,SP
1754 014702 PRINTX  #PRMSG1          ;PRINT HEADER FOR CONTENTS
      014702 012746 015057 MOV      #PRMSG1,-(SP)
      014706 012746 000001 MOV      #1,-(SP)
      014712 010600 MOV      SP,R0
      014714 104415 TRAP     C:PNTX
      014716 062706 000004 ADD      #4,SP
1755 014722 005004 CLR      R4          ;NUMBER OF THE CURRENT WORD
1756 014724 012701 002314 MOV      #EXPMSG,R1      ;GET EXPD BUFFER ADDRESS
1757 014730 012702 002460 MOV      #RECMMSG,R2      ;GET RCV BUFFER ADDRESS
1758 014734 011100 20$: MOV      (R1),R0      ;GET EXPD
1759 014736 011203 MOV      (R2),R3      ;GET RCV
1760 014740 XOR      R0,R3          ;XOR EXPD/RCV
1761 014750 PRINTX  #PRMSG2,R4,(R1),,(R2),,R3
      014750 010346 MOV      R3,-(SP)
      014752 012246 MOV      (R2),-(SP)
      014754 012146 MOV      (R1),-(SP)
      014756 010446 MOV      R4,-(SP)
      014760 012746 015115 MOV      #PRMSG2,-(SP)
      014764 012746 000005 MOV      #5,(SP)
      014770 010600 MOV      SP,R0
      014772 104415 TRAP     C:PNTX
      014774 062706 000014 ADD      #14,SP
1762 015000 005204 INC      R4          ;NUMBER OF THE NEXT
1763 015002 020405 CMP      R4,R5          ;DONE ALL YET?
1764 015004 002001 BGE      50$          ;BR IF YES
1765 015006 000752 BR       20$          ;DO ANOTHER
1766 015010 000207 50$: RTS      PC          ;RETURN
1767
1768 015012 045 116 045 PRMSG0: .ASCIIZ 'NMA Message Buffer Address = #01#05'
1769 015057 045 116 045 PRMSG1: .ASCIIZ 'NMA Message Buffer Contents:
1770 015115 045 116 045 PRMSG2: .ASCIIZ 'NMA WORD #02#A EXPD: #06#A RCV: #06#A XOR: #06
1771 .EVEN
1772 .SBTTL PRBYTEXP PRINT ERROR BYTES IN EXP/REC MESSAGE BUFFER
1773
1774
1775 ;ROUTINE TO PRINT ERROR BYTES IN MESSAGE BUFFERS

```

```

1776      ;      ONLY THE FIRST 8 ERRORS ENCOUNTERED ARE PRINTED DUE TO SCREEN SPACE
1777      ;
1778      ;      R0      NUMBER OF BYTES IN BUFFER
1779      ;
1780      ;IMPLICIT INPUTS:
1781      ;
1782      ;      EXPMSG   - EXPECTED MESSAGE BUFFER
1783      ;      RECMSG   - RECEIVED MESSAGE BUFFER
1784      ;
1785 015202 PRBYTEXP::
1786 015202      SAVREG      ;SAVE R1-R5 UNTIL NEXT RETURN
1787 015206      MOV        R0,R5      ;SAVE NUMBER OF BYTES
1788 015210      CLR        PRMNO      ;INIT ERROR COUNT
1789 015214      CLR        R4        ;NUMBER OF THE CURRENT BYTE
1790 015216      MOV        @EXPMSG,R1 ;GET EXPD BUFFER ADDRESS
1791 015222      MOV        @RECMSG,R2 ;GET RECV BUFFER ADDRESS
1792 015226      20$:      MOV      (R1),R0 ;GET EXPD BYTE
1793 015230      BIC        @C<377>,R0 ;CLEAR UPPER BYTE
1794 015234      MOV      R0,PRBEXP ;SAVE FOR ERROR REPORT
1795 015240      MOV      (R2),R3 ;GET RECV BYTE
1796 015242      BIC        @C<377>,R3 ;CLEAR UPPER BYTE
1797 015246      MOV      R3,PRBREC ;FOR ERROR REPORT
1798 015252      XOR        R0,R3 ;XOR EXPD/RECV
1799 015262      CMP      (R1)+,(R2)+ ;EXPD = RECV?
1800 015264      BEQ        30$ ;BR IF YES
1801 015266      INC        PRMNO ;UPDATE ERROR COUNT
1802 015272      CMP      PRMNO,@8. ;PRINTED 8?
1803 015300      BHI        30$ ;BR IF YES
1804 015302      27$:      PRINTX @PRBMSG,R4,PRBEXP,PRBREC,R3
1805      015302      MOV      R3,-(SP)
1806      015304      MOV      PRBREC,-(SP)
1807      015310      MOV      PRBEXP,-(SP)
1808      015314      MOV      R4,-(SP)
1809      015316      MOV      @PRBMSG,-(SP)
1810      015322      MOV      @5,-(SP)
1811      015326      MOV      SP,R0
1812      015330      TRAP      C$PNTX
1813      015332      ADD      @14,SP
1814      015336      FORCEXIT 50$ ;@@D
1815      015346      BR        35$ ;@D
1816      30$:      FORCERROR 27$,NOTSSR ;@D
1817      35$:      INC        R4 ;NUMBER OF THE NEXT
1818      015360      CMP      R4,R5 ;DONE ALL YET?
1819      015362      BGE      50$ ;BR IF YES
1820      015364      BR        20$ ;DO ANOTHER
1821      015366      50$:      PRINTX @PRBTOT,PRMNO ;PRINT TOTAL ERROR COUNT
1822      015370      MOV      PRMNO,(SP)
1823      015374      MOV      @PRBTOT,(SP)
1824      015400      MOV      @2,-(SP)
1825      015404      MOV      SP,R0
1826      015406      TRAP      C$PNTX
1827      015410      ADD      @6,SP
1828      015414      RTS        PC ;RETURN
1815 015414 000207
1816
1817 015416      045      116      045 PRBMSG: .ASCIZ 'NNA BYTE 02A EXPD: 03A RECV: 03A XOR: 03

```

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 PRBEXP PRINT ERROR BYTES IN EXP/REC MESSAGE BUFFER

SEQ 062

```

1818 015503      045      116      045 PRBTOT: .ASCIZ 'NUMBER OF BYTES IN ERROR = #D2'
1819                                     .EVEN
1820 015550 000000 PRBEXP: .WORD 0 ;EXPD
1821 015552 000000 PRBREC: .WORD 0 ;RECV
1822                                     .SBTTL EXPREC - PRINT EXPD/RECV WORD DATA
1823                                     ;*
1824                                     ;
1825                                     ;PRINT ROUTINE TO DISPLAY EXPD/RECV DATA
1826                                     ;
1827                                     ;INPUTS:
1828                                     ;
1829                                     ;      R1      RECEIVED DATA
1830                                     ;      R2      EXPECTED DATA
1831                                     ;
1832                                     ;
1833                                     ;
1834 015554      BGNMSG EXPREC
1835 015554 004737 010020 EXPREC:: JSR PC,PRIXOR ;PRINT THE DATA
1836 015560      ENDMMSG
1837 015560 104423 L10017: TRAP C$MSG
1838                                     .SBTTL EXPBREC - PRINT EXPD/RECV BYTE DATA
1839                                     ;*
1840                                     ;
1841                                     ;PRINT ROUTINE TO DISPLAY BYTE EXPD/RECV DATA
1842                                     ;
1843                                     ;INPUTS:
1844                                     ;
1845                                     ;      R1      RECEIVED DATA BYTE
1846                                     ;      R2      EXPECTED DATA BYTE
1847                                     ;
1848                                     ;
1849                                     ;
1850 015562      BGNMSG EXPBREC
1851 015562 004737 007670 EXPBREC:: JSR PC,PRIBXOR ;PRINT THE DATA
1852 015566      ENDMMSG
1853 015566 104423 L10020: TRAP C$MSG
1854                                     ;
1855                                     .SBTTL RAMERR PRINT RAM AND PACKET DATA
1856                                     ;*
1857                                     ;
1858                                     ;PRINT ROUTINE TO DISPLAY RAM/PACKET DATA
1859                                     ;
1860                                     ;INPUTS:
1861                                     ;
1862                                     ;      R4      POINTER TO COMMAND PACKET
1863                                     ;
1864                                     ;IMPLICIT INPUTS
1865                                     ;
1866                                     ;      RAMDATA      DATA AS READ FROM THE RAM
1867                                     ;      RAMSIZ      NUMBER OF BYTES IN PACKET
1868                                     ;      IF RAMSIZ=0 THEN DEFAULT TO 8.

```



```

1869
1870      ;IMPLICIT OUTPUTS:
1871      ;
1872      ;      RAMSIZ  SET TO 0
1873      ;
1874
1875      BGNMSG  RAMERR
1876      RAMERR: JSR      PC,PRAMPKT      ;PRINT RAM/PACKET DATA
1877      ENDMSG
1878      L10021: TRAP      C$MSG
1879      .SBTTL  RAMTADD  PRINT TEST ADDRESS, RAM AND PACKET DATA
1880      ;*
1881      ;PRINT ROUTINE TO DISPLAY RAM/PACKET DATA
1882      ;
1883      ;INPUTS:
1884      ;
1885      ;      R4      POINTER TO COMMAND PACKET
1886      ;
1887      ;IMPLICIT INPUTS:
1888      ;
1889      ;      RAMDATA  DATA AS READ FROM THE RAM
1890      ;      RAMSIZ  NUMBER OF BYTES IN PACKET
1891      ;               IF RAMSIZ=0 THEN DEFAULT TO 8.
1892      ;      ERRHI   HIGH ORDER TEST ADDRESS
1893      ;      ERRLO   LOW ORDER TEST ADDRESS
1894      ;
1895      ;IMPLICIT OUTPUTS:
1896      ;
1897      ;      RAMSIZ  SET TO 0
1898      ;
1899      ;
1900
1901      BGNMSG  RAMTADD
1902      RAMTADD: JSR      PC,PRITADD      ;PRINT TEST ADDRESS
1903      JSR      PC,PRAMPKT      ;PRINT RAM/PACKET DATA
1904      ENDMSG
1905      L10022: TRAP      C$MSG
1906      .SBTTL  RAMEXP  PRINT RAM EXPD/RECV DATA
1907      ;*
1908      ;PRINT ROUTINE TO DISPLAY EXPD/RECV DATA
1909      ;
1910      ;INPUTS:
1911      ;
1912      ;      R1      RECEIVED DATA
1913      ;      R2      EXPECTED DATA
1914      ;      R4      CONTROLLER RAM ADDRESS
1915      ;
1916      ;
1917
1918      BGNMSG  RAMEXP
1919      RAMEXP:

```

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 RAMEXP PRINT RAM EXPD/RECV DATA

SEQ 064

```

1919 015610 042701 177400      BIC      #C<377>,R1      ;SAVE EXPD RAM DATA BYTE
1920 015614 042702 177400      BIC      #C<377>,R2      ;SAVE EXPD RAM DATA BYTE
1921 015620 004737 010144      JSR      PC,PRIRAM      ;PRINT THE RAM ADDRESS
1922 015624 004737 010020      JSR      PC,PRIXOR      ;PRINT THE DATA
1923 015630      ENDMMSG
      015630      L10023:      TRAP      C#MSG
      015630 104423      .SBTTL  TIMEXP - PRINT TIMER A,B AND EXP/REC
1924
1925
1926      ;
1927      ;
1928      ;PRINT ROUTINE TO DISPLAY EXPD/RECV DATA
1929      ;AND TIMER A,B HEADER MESSAGE
1930      ;
1931      ;INPUTS:
1932      ;
1933      ;      R1      RECEIVED DATA
1934      ;      R2      EXPECTED DATA
1935      ;
1936
1937 015632      BGNMSG  TIMEXP
      015632      TIMEXP::
1938 015632      PRINTX  #TIMSGO      ;PRINT HEADER
      015632 012746 015660      MOV      #TIMSGO,-(SP)
      015636 012746 000001      MOV      #1,(SP)
      015642 010600      MOV      SP,R0
      015644 104415      TRAP      C#PNTX
      015646 062706 000004      ADD      #4,SP
1939 015652 004737 010020      JSR      PC,PRIXOR      ;PRINT THE DATA
1940 015656      ENDMMSG
      015656      L10024:      TRAP      C#MSG
      015656 104423
1941
1942 015660      045      116      045  TIMSGO: .ASCIZ  'TIMER A STATUS IS IN BIT 3'
1943      .EVEN      ;TIMER B STATUS IS IN BIT 2
1944      .SBTTL  BADSSR PRINT TSSR ERRORS ON DATA TRANSFERS
1945
1946      ;
1947      ;
1948      ;PRINT ROUTINE FOR TSSR ERRORS ON DATA TRANSFERS
1949      ;
1950      ;INPUTS:
1951      ;
1952      ;      R1      CONTENTS OF TSSR
1953      ;      R2      DATA WRITTEN (8 BITS)
1954      ;
1955      ;
1956
1957 015760      BGNMSG  BADSSR
      015760      BADSSR::
1958 015760 010246      MOV      R2,-(SP)      ;SAVE DATA TRANSFERRED
1959 015762 042702 177400  BIC      #177400,R2      ;GET JUST ONE BYTE
1960 015766      PRINTB  #XFERASC,R2
      015766 010246      MOV      R2,-(SP)
      015770 012746 016020      MOV      #XFERASC,-(SP)
      015774 012746 000002      MOV      #2,-(SP)
      016000 010600      MOV      SP,R0

```



TSV3 GLOBAL AREAS MACRO M1113 06 FEB-84 18:04  
RADSSR PRINT TSSR ERRORS ON DATA TRANSFERS

SEQ 065

```

016002 104414          TRAP  C$PNTB
016004 062706 000006    ADD   #6 SP
1961 016010 012602      MOV   (SP)+,R2          ;RESTORE R2
1962 016012 004737 006020 JSR   PC,PRITSSR          ;DECODE TSSR CONTENTS
1963 016016          ENDMMSG
016016          L10025:
016016 104423          TRAP  C$MSG
1964 016020 045      116      045  XFERASC: .ASCIZ 'NBA Data Transferred - #03'
1965          .SBTTL GLOBAL SUBROUTINES SECTION
1966
1967          ;**
1968          ; THE GLOBAL SUBROUTINES SECTION CONTAINS THE SUBROUTINES
1969          ; THAT ARE USED IN MORE THAN ONE TEST.
1970          ;...
1971          .SBTTL SOFINIT - SO T INITIALIZE OF CONTROLLER
1972
1973          ;*
1974          ;
1975          ;ROUTINE TO DO A SOFT INITIALIZE OF THE CONTROLLER
1976          ;BY WRITING INTO THE TSSR REGISTER. AFTER THE INIT,
1977          ;THE TSSR REGISTER IS TESTED FOR ERRORS. ANY ERRORS
1978          ;DETECTED SHOULD BE TREATED AS DEVICE FATAL ERRORS.
1979          ;
1980          ;INPUTS:
1981          ;
1982          ;      R5      ADDRESS OF FIRST REGISTER
1983          ;
1984          ;OUTPUTS
1985          ;
1986          ;      R0      CONTENTS OF TSSR, IF ERROR
1987          ;      CARRY    SET IF INIT WAS OKAY
1988          ;              CLEAR IF FATAL ERROR
1989          ;
1990          ;CALLING SEQUENCE:
1991          ;
1992          ;      MOV     #ADDRESS,R5
1993          ;      JSR     PC,SOFINIT
1994          ;      BCS     CONTINUE
1995          ;      ERROF          ;REPORT FATAL ERROR
1996          ;
1997          ;-
1998
1999 016054          SOFINIT::
2000 016054          SAVREG          ; SAVE THE REGISTERS
2001 016060 012765 000000 000002    MOV     #0,TSSR(R5)          ; DO THE INIT.
2002 016066 004737 016330          JSR     PC,WRITE          ; WAIT FOR SSR
2003 016072 016500 000002          MOV     TSSR(R5),R0          ;GET THE TSSR REGISTER
2004 016076 010004          MOV     R0,R4          ;TSSR CONTENTS
2005 016100 042704 76277          BIC     #C<HIADDR!OFL>,R4
2006 016104 052704 002200          BIS     #SSR!NBA,R4          ;R4 HAS EXPECTED CONTENTS
2007 016110 020400          CMP     R4,R0          ;ONLY EXPECTED BITS SET ?
2008 016112 001402          BEQ     S$          ;BRANCH IF OKAY
2009 016114 000241          CLC          ;CLEAR THE CARRY FOR ERROR
2010 016116 000401          BR      10$          ;GO TO EXIT
2011 016120 000261          S$: SEC          ;SET THE CARRY BIT
2012 016122 000207          10$: RTS     PC          ;RETURN TO CALLER
2013          .SBTTL CHKAMB CHECK TSSR FOR AMBIGUITY

```

TSV3 GLOBAL AREAS MACRO M1113 06-FEB-84 18:04  
CHKAMB CHECK TSSR FOR AMBIGUITY

SEQ 066

```

2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033 016124
2034 016124
2035 016130 010004
2036 016132 032700 100000
2037 016136 001004
2038 016140 032700 174077
2039 016144 001023
2040 016146 000424
2041 016150 032700 000200
2042 016154 001011
2043 016156 032700 000040
2044 016162 001414
2045 016164 042704 177761
2046 016170 020427 000016
2047 016174 001007
2048 016176 000410
2049 016200 032700 000040
2050 016204 001405
2051 016206 032700 000006
2052 016212 001002
2053 016214 000241
2054 016216 000401
2055 016220 000261
2056 016222 000207
2057
2058
2059
2060
2061
2062
2063
2064
2065
2066 000200
2067 000001
2068
2069
2070 016224 000

;
;
; THIS ROUTINE TESTS THE CONTENTS OF THE TSSR REGISTER
; FOR AMBIGUITY
;
; INPUT:
;
;      RO      CONTENTS OF TSSR
;
; OUTPUT:
;
;      RO      CONTENTS OF TSSR
;
;      CARRY   SET - NO AMBIGUITY
;              CLR - AMBIGUOUS CONTENTS
;
;
CHKAMB:
    SAVREG                ;SAVE THE GENERAL REGISTERS
    MOV      RO,R4        ;CONTENTS OF TSSR
    BIT      #SC,RO       ;IS BIT 15 SET ?
    BNE      50           ;BRANCH IF YES
    BIT      #C<NBA!OFL!SSR!MIADDR>,RO ;ANY OTHER BITS SET ?
    BNE      40           ;MUST BE AN ERROR
    BR       45           ;RETURN WITH SUCCESS
    BIT      #SSR,RO      ;IS READY BIT SET ?
    BNE      10           ;BRANCH IF READY BIT IS SET.
    BIT      #BIT5,RO     ;IS FATAL ERROR BIT SET ?
    BEQ      40           ;ERROR IF NOT
    BIC      #CTERCLS,R4  ;CLEAR ALL BUT TERMINATION CODE
    CMP      R4,#16       ;ALL THREE BITS MUST BE SET
    BNE      40           ;ERROR IF NOT SET
    BR       45           ;OK I. ALL ARE SET
    BIT      #BIT5,RO     ;IS FATAL ERROR BIT SET ?
    BEQ      45           ;ERROR IF BIT IS SET WITH SSR
    BIT      #BIT2!BIT1,RO ;IS THIS A FUNCTION REJECT
    BNE      45           ;BR. IF TSSR IS OK
    CLC                    ;AMBIGUOUS CONTENTS
    BR       50
    SEC                    ;SHOW SUCCESS - NO AMBIGUITY
    RTS      PC           ;RETURN TO CALLER
    .SBITL   ENAINT,DSBINT - ENABLE/DISABLE INTERRUPTS
;
; DEFAULT DISPLAY INTERRUPT HANDLERS.
; IF DISPLAY TIME-OUT, REPORT DEV FATAL, AND ABORT PASS.
; OTHERWISE, SAVE DPU REGISTERS AND DISMISS.
;
; BIT DEFINITIONS FOR "INTMASK" AND "INTFLAG" BYTES:
;
;      IOKCKIN=BIT7      ; DON'T CHECK FOR BAD INTERRUPTS - TEST WILL.
;      IOKSTP=BIT0       ; EXPECT "STOP" INTERRUPT.
;
; INTERRUPT MASK - SAYS EXPECTING INTERRUPTS
INTMASK: .BYTE 0

```

```

2071      ; INTERRUPT FLAG - SAYS WE GOT ONE (IF POSITIVE)
2072 016225 000      INTFLAG: .BYTE 0
2073
2074      ; SAVED INTERRUPT VECTOR:
2075 016226 000000      INTVEC: .WORD 0
2076      ; SAVE CPU PC
2077 016230 000000      INTCPC: .WORD 0
2078
2079      ; SUBROUTINE TO ENABLE INTERRUPTS:
2080 016232 010040      ENABINT: MOV RO, -(SP)      ; SAVE RO
2081 016234 0137C0 002202      MOV IVEC, RO      ; GET POINTER TO VECTORS
2082 016240 012720 016276      MOV @INTR, (RO),      ; SET UP INTERRUPT VECTOR
2083 016244 012720 000340      MOV @PRI07, (RO),
2084 016250 012600      MOV (SP), RO      ; RESTORE RO
2085 016252 011646      MOV (SP), -(SP)
2086 016254 012766 000000 000002      MOV @0, 2(SP)      ; SET CPU TO LEVEL 0
2087 016262 000002      RTI
2088
2089      ; SUBROUTINE TO DISABLE INTERRUPTS (RAISE PRIORITY TO LEVEL 7)
2090 016264 011646      DSBINT: MOV (SP), -(SP)
2091 016266 012766 000340 000002      MOV @PRI07, 2(SP)
2092 016274 000002      RTI
2093
2094      .SBTTL INTR      INTERRUPT HANDLERS
2095 016276      BGNSRV INTR      ; DEFINE INTERRUPT ENTRY
2096 016276      INTR::      MOV @1, INTRECV      ; SET FLAG TO SHOW INTERRUPT RECEIVED
2097 016304 105037 016225      CLRB INTFLAG      ; CLEAR FLAG TO SAY WE GOT INTERRUPT
2098 016310 132737 000001 016224      BITB @IOKSTP, INTMASK      ; EXPECTING STOP INTERRUPT?
2099 016316 001003      BNE 1$      ; BR IF YES
2100 016320 152737 000001 016225      BISB @IOKSTP, INTFLAG      ; NO. SET THE ERROR FLAG.
2101
2102      ; SAVE REGISTERS, MSG BUFFER, ETC.
2103 016326      1$:
2104 016326      ENDSRV
2105 016326      L10026:
2106 016326      RTI
2107 016326      .SBTTL WAITF      WAIT FOR SUBSYSTEM READY
2108
2109      ; SUBROUTINE TO WAIT FOR THE SUBSYSTEM READY FLAG
2110      ; INPUTS:
2111      ; R5      ADDRESS OF FIRST DEVICE REGISTER
2112      ; OUTPUTS:
2113      ; R0      CONTENTS OF LAST TSSR READ
2114      ; CARRY    SET READY BIT SET
2115      ;          CLR TIMEOUT WAITING FOR READY
2116
2117      ; WAITF:: BR 1$      ; NOP WHEN SUPER FIXED
2118      BREAK      ; DO A SUPVSR BREAK FIRST.
2119 016330 000401      TRAP C$BRK
2120 016332 104422      1$: MOV @11000, (SP)      ; 25 APRIL 83 REV B - 1100 MSEC TIMER
2121 016334 012746 011000      2$: MOV TSSR(R5), R0      ; READ THE TSSR REGISTER
2122 016340 016500 000002      TSTB R0      ; TEST FOR READY BIT SET
2123 016344 105700

```

TSSV GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 WAITF WAIT FOR SUBSYSTEM READY

SEQ 068

```

2124
2125 016346 100420      BMI 3$          ; EXIT ON STOP FLAG.
2126 016350      DELAY 1          ; WAIT 100 USEC
      016350 012727 000001      MOV #1,(PC),
      016354 000000      .WORD 0
      016356 013727 002116      MOV L$DLY,(PC),
      016362 000000      .WORD 0
      016364 005367 177772      DEC -6(PC)
      016370 001375      BNE -4
      016372 005367 177756      DEC -22(PC)
      016376 001367      BNE -20
2127 016400 005316      DEC (SP)          ;REDUCE DELAY COUNT
2128 016402 001356      BNE 2$          ;RETRY UNTIL TIMER EXPIRES
2129 016404 000241      CLC          ; C = 0, CONTROLLER STILL RUNNING...
2130 016406 000401      BR 4$          ;...OR HUNG-UP AFTER 300 MSEC.
2131 016410 000261      3$: SEC          ; C = 1, CONTROLLER IS STOPPED.
2132 016412 005326      4$: DEC (SP),    ;RESTORE STACK WITHOUT CHANGING CARRY BIT
2133 016414 000207      RTS PC
2134      .SBTTL CHKISSR CHECK TSSR FOR READY
2135
2136      ;
2137      ;
2138      ;THIS ROUTINE WAITS FOR READY IN THE TSSR
2139      ;AND TESTS FOR AMBIGUOUS BIT SETTINGS IN TSSR.
2140      ;
2141      ;INPUT:
2142      ;
2143      ; R5 ADDRESS OF CSR REGISTERS
2144      ;
2145      ;OUTPUT:
2146      ;
2147      ; R0 CONTENTS OF TSSR
2148      ; CARRY SET - OKAY
2149      ; CLR - NOT READY AMBIGUOUS, OR SC SET
2150      ;
2151      ;
2152      ;
2153 016416      CHKISSR:
2154 016416 004737 016330      JSR PC,WAITF          ;WAIT FOR READY
2155 016422 103014      BCC 20$          ;BRANCH IF TIME OUT
2156 016424 004737 016124      JSR PC,CHKAMB        ;TSSR AMBIGUOUS?
2157 016430 103006      BCC 10$          ;BR IF YES
2158 016432 032700 100000      BIT #SC,R0          ;SPECIAL CONDITION SET?
2159 016436 001405      BEQ 15$          ;BR IF NO
2160 016440 032700 074000      BIT #<SCE!BIE!RMR!NXM>,R0 ;ANY ERROR BITS SET?
2161 016444 001402      BEQ 15$          ;BR IF NO
2162 016446 000241      10$: CLC          ;SET FAILURE
2163 016450 000401      BR 20$
2164 016452 000261      15$: SEC          ;SET SUCCESS
2165 016454 000207      20$: RTS PC          ;RETURN TO CALLER
2166      .SBTTL XNXM CHECK FOR NONEXISTENT MEMORY
2167
2168      ;
2169      ; ROUTINE TO TEST FOR A NEXM IN THE RANGE (R1) THRU (R2).
2170      ; ON RETURN, IF "C" = 1, (R1) = NEXM ADDRESS.
2171      ; "C" = 0, ALL ADDRESSES OK.
2172      ;
      ;CALL: MOV ADR1,R1

```

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 XNXM CHECK FOR NONEXISTENT MEMORY

SEQ 069

```

2173      ;      MOV ADR2,R2
2174      ;      JSR PC,NXM
2175      ;      RETURN      ;TEST "C" AND PROCEED.
2176      ;
2177 016456 012737 016510 000004 XNXM: MOV    #21,004      ; SET BUSERR VECTOR.
2178 016464 012737 000200 000006      MOV    #PRI04,006
2179 016472 005003      CLR    R3      ;FLAG.
2180 016474 005711      1$:    TST    (R1)      ;TEST THE ADDRESS(ES).
2181      ;      ;IF ANY TRAP, CONTINUE AT 2$.
2182 016476 020102      CMP    R1,R2      ;OTHERWISE, CONTINUE HERE.
2183 016500 001407      BEQ    3$      ;BR IF FINISHED (NO NEXM'S).
2184 016502 062701 000002      ADD    #2,R1      ;SET NEXT ADDRESS...
2185 016506 000772      BR     1$      ;...AND CONTINUE.
2186      ;
2187 016510 005103      2$:    COM    R3      ;GOT ONE, SET FLAG...
2188 016512 012716 016520      MOV    #3$,(SP)
2189 016516 000002      RTI      ;...AND DISMISS INTERRUPT...
2190 016520      3$:    CLRVEC  #4      ;...AND GIVE BACK THE VECTOR.
      016520 012700 000004      MOV    #4,R0
      016524 104436      TRAP   C$CVEC
2191 016526 005703      TST    R3      ;DID WE CATCH ONE ??
2192 016530 001401      BEQ    .+4      ;NO, "C" = 0, SKIP NEXT.
2193 016532 000261      SEC      ;YES, "C" = 1, (R1) = NEXM ADDR.
2194 016534 000207      RTS     PC
2195      ;
2196      ;
2197      .SBTTL  TSTLOOP - CHECK ITERATION COUNT
2198      ;
2199      ; SUBROUTINE TO EXECUTE TEST ITERATIONS.
2200      ; EXIT WITH "C" SET IF LOOPS ALLOWED AND LOOP COUNT NON ZERO.
2201      ; LOOP COUNTER IS SET BY "BEGIN.TEST" MACRO.
2202      ;
2203      ; CALL: LOOPTO ARG
2204      ;
2205 016536      TSTLOOP:;
2206 016536 005737 002162      TST    NOITS      ; ITERATIONS INHIBITED?
2207 016542 001006      BNE     1$      ; YES.
2208 016544 005737 002176      TST    QVP      ; NO.
2209 016550 100403      BMI     1$      ;LOOPS DISALLOWED IN QUICK PASS.
2210 016552 005337 002210      DEC    LOOPCNT      ; BUMP LOOP COUNTER.
2211 016556 001002      BNE     2$
2212 016560 000241      1$:    CLC      ;LOOP DISALLOWED, OR DONE.
2213 016562 000401      BR     3$
2214 016564 000261      2$:    SEC      ;LOOP ENABLED.
2215 016566 000207      3$:    RTS     PC
2216      ;
2217      .SBTTL  TSTSETUP  PRINT TEST NAME AND INIT ERROR COUNTS
2218      ;
2219      ; PRINT THE NUMBER AND NAME OF EACH TEST AS WE GO ALONG.
2220      ; INCREMENT "TESTK" TO INDICATE THE NUMBER OF TESTS
2221      ; IN THE CURRENT RUN SEQUENCE.
2222      ; CLEAR THE ERROR COUNTER AND SIGNATURE EXTENSION FLAGS.
2223      ;
2224      ; INPUT:
2225      ;
2226      ;      R0      POINTER TO TEST ID ASCIZ STRING
2227      ;

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2228      ;OUTPUT:
2229      ;
2230      ;      R5      ADDRESS OF FIRST DEVICE REGISTER
2231      ;
2232      ;IMPLICIT OUTPUTS:
2233      ;
2234      ;      TSTCNT  UPDATED TO COUNT TESTS PERFORMED SINCE START OR RESTART
2235      ;
2236      ;SIDE EFFECTS:
2237      ;
2238      ;      INTERRUPT LEVEL IS RASIED TO LEVEL OF
2239      ;      THE DEVICE UNDER TEST
2240      ;
2241      ;
2242      ;
2243      TSTSETUP::
2244      016570      MOV      R0,-(SP)      ;SAVE THE TEST ID MESSAGE
2245      016572      005037      003146      CLR      SIFLAG      ; CLEAR "SOFT INIT" FLAG
2246      016576      005037      017036      CLR      ERRK      ; CLEAR LOCAL ERROR COUNTER.
2247      016602      005037      005766      CLR      EXT4      ; CLEAR ERROR EXTENSION FLAG.
2248      016606      105037      016224      CLRB     INTMASK     ; CLEAR INTERRUPT MASK (CHECK ERROR)
2249      016612      013700      002174      MOV      UNITN,R0    ; GET THE UNIT NUMBER.
2250      016616      006300      ASL      R0      ; ... AND MAKE IT A WORD OFFSET.
2251      016620      005737      003106      TST      NODEV      ; DID STARTUP FIND THE DEVICE?
2252      016624      001430      BEQ      4$      ; BR IF YES
2253      016626      100010      BPL      3$      ; BR IF NOT IDLE
2254      016630      052760      160000      003170      BIS      0160000,ERTABL(R0) ; FLAG ERROR IN THE ERROR TABLE
2255      016636      ERRDF      1,NXR,NXRERR      ; NO DEVICE HERE - PRINT IT
2256      016646      000407      BR      2$
2257      016650      052760      160001      003170      3$:    BIS      0160001,ERTABL(R0) ; FLAG ERROR IN THE ERROR TABLE
2258      016656      104455      ERRDF      2,NOINIT      ; DEVICE NOT IDLE
2259      016666      012737      177777      003104      2$:    MOV      0-1,DUFLG      ; DROP THE UNIT
2260      016674      013700      002174      DODU      UNITN
2261      016702      104451      MOV      UNITN,R0
2262      016704      000423      TRAP      C$DODU
2263      016706      104421      DOCLN      ; ABORT THE PASS
2264      016710      032700      001000      4$:    TRAP      C$DOCLN
2265      016714      001412      RFLAGS     R0      ; GET THE OPERATOR FLAGS.
2266      016716      011600      TRAP      C$RFLA
2267      016720      010046      BIT      0PNT,R0      ; PRINT THE TES' NUMBERS?
2268      016722      012746      016764      BEQ      1$      ; BR IF NO
2269      016726      012746      000002      MOV      (SP),R0    ;GET THE ID MESSAGE
2270      016732      010600      PRINTF     0TNAM,R0      ;DISPLAY THE TEST ID
2271      016734      010600      MOV      R0,-(SP)
2272      016736      010600      MOV      0TNAM,-(SP)
2273      016738      010600      MOV      02,-(SP)
2274      016740      010600      MOV      SP,R0

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TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 TSTSETUP PRINT TST NAME AND INIT ERROR COUNTS

SEQ 071

```

016734 104417          TRAP C:PNTF
016736 062706 000006    ADD  #6,SP
2269 016742 005237 002206 1$: INC TSTCNT ; BUMP TEST COUNTER.
2270 016746          SETPRI IPRI ; PRIORITY THAT OF DEVICE
016746 013700 002204    MOV IPRI,RO
016752 104441          TRAP C:SPRI
2271 016754 005726 5$: TST (SP); ; FIX UP THE STACK
2272 016756 013705 002200    MOV CSRADDR,R5 ; ADDRESS OF TSV REGISTERS ON UNIBUS
2273 016762 000207      RTS PC
2274 016764 045 123 045 TNAM: .ASCIZ 'SATA Test'
2275          .EVEN
2276          .SBTTL TSTEND - PRINT ERRORS RECEIVED
2277
;
; AT END OF EACH TEST, PRINT THE NUMBER OF ERRORS RECEIVED
; IF NORMAL ERROR REPORTING IS DISABLED (FLA:IER).
;
2281 017000          TSTEND: RFLAGS RO
017000 104421          TRAP C:RFLA
2282 017002 030027 020000    BIT RO,#IER
2283 017006 001412          BEQ 1$ ; BR IF "IER" NOT SET.
2284 017010          PRINTF #ESUM,ERRK ; PRINT ERROR COUNT.
017010 013746 017036    MOV ERRK,(SP)
017014 012746 017040    MOV #ESUM,-(SP)
017020 012746 000002    MOV #2,-(SP)
017024 010600          MOV SP,RO
017026 104417          TRAP C:PNTF
017030 062706 000006    ADD #6,SP
2285 017034 000207 1$: RTS PC
2286
2287 017036 000000      ERRK: 0 ; LOCAL ERROR COUNT.
2288 017040 045 101 040 ESUM: .ASCIZ /#A #D#A ERRORS/
2289 017057 105 122 122 EMAXDU: .ASCIZ /ERROR LIMIT REACHED DROPPING UNIT/
2290          .EVEN
2291
;
; .SBTTL INCERK INCREMENT LOCAL ERROR COUNT
2292          .SBTTL INCERK INCREMENT LOCAL ERROR COUNT
2293
;
; ROUTINES TO INCREMENT LOCAL ERROR COUNT AND CHECK FOR LIMIT:
;
2296 017124 005237 017036 INCERK: INC ERRK ; INCREMENT LOCAL ERROR COUNT
2297 017130 010046          MOV RO,-(SP) ; SAVE RO
2298 017132 013700 002174          MOV UNITN,RO ; GET UNIT NUMBER.
2299 017136 006300          ASL RO ; ... AND MAKE IT A WORD OFFSET.
2300 017140 062700 003170          ADD #ERTABL,RO ; RO GETS ADDRESS OF ERROR TABLE ENTRY.
2301 017144 005210          INC (RO) ; INCREMENT THE DEVICE ERROR COUNT
2302 017146 032710 007777          BIT #7777,(RO) ; DID WE OVERFLOW THE FIELD?
2303 017152 001001          BNE 1$ ; BR IF NO.
2304 017154 005310          DEC (RO) ; YES -- BACK IT UP TO 7777.
2305 017156 012600 1$: MOV (SP)+,RO ; RESTORE RO
2306 017160 000207          RTS PC ; RETURN TO CALLER.
2307
2308 017162 010046          CKEMAX: MOV RO,(SP) ; SAVE RO
2309 017164 013700 002174          MOV UNITN,RO ; GET UNIT NUMBER
2310 017170 006300          ASL RO ; ... AND MAKE IT A WORD OFFSET
2311 017172 016000 003170          MOV ERTABL(RO),RO ; GET ERROR TABLE ENTRY
2312 017176 042700 170000          BIC #170000,RO ; EXTRACT ERROR COUNT FIELD
2313 017202 020037 002166          CMP RO,GERRMAX ; IS GLOBAL LIMIT EXCEEDED FOR THIS UNIT?
2314 017206 103004          BHIS 1$ ; BR IF YES

```

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB 84 18:04  
 INCERK INCREMENT LOCAL ERROR COUNT

SEQ 072

```

2315 017210 023737 017036 002164      CMP      ERRK,LERRMAX      ; IS LOCAL LIMIT EXCEEDED FOR THIS TEST?
2316 017216 103417                      BLN      2$              ; BR IF NO
2317 017220                      1$:  RFLAGS   RO              ; GET OPERATOR FLAGS
      017220 104421                      TRAP    C$RFLA
2318 017222 032700 000040              BIT      @IDU,RO          ; IS DROPPING INHIBITED?
2319 017226 001013                      BNE     2$              ; BR IF YES.
2320 017230 012737 177777 003104      MOV      @-1,DUFLG      ; NO -- DROP THE UNIT
2321 017236                      ERRDF    4,EMAXDU
      017236 104455                      TRAP    C$ERDF
      017240 000004                      .WORD   4
      017242 017057                      .WORD   EMAXDU
      017244 000000                      .WORD   0
2322 017246                      DODU     UNITN
      017246 013700 002174              MOV      UNITN,RO
      017252 104451                      TRAP    C$DODU
2323 017254                      DOCLN
      017254 104444                      TRAP    C$DCLN
2324 017256 012600                      2$:  MOV      (SP)+,RO      ; RESTORE RO
2325 017260 000207                      RTS      PC              ; RETURN TO CALLER
2326                      .SBTTL    CKDROP - CHECK IF UNIT SHOULD BE DROPPED
2327                      ;
2328                      ; CHECK IF UNIT SHOULD BE DROPPED
2329                      ;
2330 017262 010046                      CKDROP: MOV      RO,-(SP)
2331 017264                      FORCERROR 1$,NOTSSR
2332 017274                      RFLAGS   RO
      017274 104421                      TRAP    C$RFLA
2333 017276 032700 000040              BIT      @IDU,RO
2334 017302 001010                      BNE     1$
2335 017304 011600                      MOV      (SP),RO
2336 017306 012737 177777 003104      MOV      @-1,DUFLG
2337 017314                      DODU     UNITN
      017314 013700 002174              MOV      UNITN,RO
      017320 104451                      TRAP    C$DODU
2338 017322                      DOCLN
      017322 104444                      TRAP    C$DCLN
      ;ABORT THE PASS
2339 017324 012600                      1$:  MOV      (SP)+,RO
2340 017326 000207                      RTS      PC
2341
2342                      .SBTTL    CONFIG  DETERMINE CONFIGURATION OF SYSTEM
2343
2344                      ;
2345                      ; SUBROUTINE  DETERMINE CONFIGURATION OF TSV05 SYSTEM.
2346                      ;
2347 017330                      CONFIG:
2348 017330 004737 016054              JSR      PC,SOFINIT
2349 017334 000207                      RTS      PC
2350                      .SBTTL    KTON,KTOFF - ENABLE/DISABLE MEMORY MANAGEMENT
2351
2352                      ;
2353                      ; SUBROUTINE  ENABLE MEM MGT.
2354                      ;
2354 017336 005737 003124              KTON:  TST      KTFLG      ; GOT KT?
2355 017342 001403                      BEQ      1$              ; NO.
2356 017344 012737 000001 177572      MOV      @1,SRO      ; YES. ENABLE KT11.
2357 017352 000207                      1$:  RTS      PC
2358
2359                      ;

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2360      ; SUBROUTINE  DISABLE MEM MGT.
2361      ;
2362 017354 005737 003124      KTOFF:  TST      KTFLG      ; GOT KT11?
2363 017360 001405              BEQ      1$          ; NO.
2364 017362 00024C              NOP
2365 017364 000240              NOP
2366 017366 012737 000000 177572  MOV     #0,SRO      ; DISABLE KT.
2367 017374 000207      1$:      RTS      PC
2368      .SBTTL  SETMAP      SETUP PAR6 MAPPING
2369
2370      ;*
2371      ;
2372      ; THIS ROUTINE SETS UP KERNEL PAR6 TP HANDLE
2373      ; AN 18 BIT ADDRESS. THE OFFSET INTO THE PAGE
2374      ; IS RETURNED BIASED TO PAR6.
2375      ;
2376      ; INPUTS:
2377      ;
2378      ;      R0      HIGH ORDER ADDRESS BITS
2379      ;      R1      LOW ORDER ADDRESS BITS
2380      ;
2381      ; OUTPUTS:
2382      ;
2383      ;      R0      OFFSET INTO BLOCK WITH PAR6 BIAS (I.E. THE ADDRESS)
2384      ;      CARRY   SET IF SUCCESS
2385      ;              CLR IF ERROR
2386      ;
2387      ; SETMAP:
2388      ; SAVREG
2389 017376 005737 003124      TST      KTFLG      ; SAVE R1 R4 UNTIL NEXT RETURN
2390 017402 001433              BEQ      10$        ; SYSTEM HAVE ABOVE 28K?
2391 017410 010102              MOV     R1,R2      ; BR IF NO
2392      000006              .REPT     6          ; SAVE LOW ORDER BITS
2393      ASR      R0      ; CONVERT WORD ADDRESS TO 32W BLOCKS
2394      ROR      R1      ; MAKE IT DOUBLE PRECISION
2395      .ENDR
2396 017442 042701 000177      BIC      #177,R1    ; ALINE FOR LOWER 4K BOUNDARY
2397 017446 020137 003124      CMP      R1,KTFLG   ; HIGHER THAN EXISTING MEMORY?
2398 017452 103011              BMIS     10$        ; BR IF YES
2399 017454 010137 172354      MOV     R1,#*IPAR6  ; SETUP MAPPING REGISTER PAR6
2400 017460 042702 160000      BIC      #160000,R2 ; SETUP DISPLACEMENT IN PAGE
2401 017464 062702 140000      ADD     #140000,R2 ; ADD IN PAR6 BIAS
2402 017470 010200              MOV     R2,R0      ; RETURN IN R0
2403 017472 000261              SEC              ; SET SUCCESS
2404 017474 000401              BR      15$        ;
2405 017476 000241      10$:      CLC              ; SET FAILURE
2406 017500 000207      15$:      RTS      PC      ; RETURN
2407      .SBTTL  FILLMEM      FILL MEMORY WITH BACKGROUND PATTERN
2408      ;*
2409      ; FILL MEMORY WITH A BACKGROUND PATTERN
2410      ;
2411      ; INPUTS:
2412      ;
2413      ;      R0 = BACKGROUND PATTERN
2414      ;      FREE   = FIRST LOCATION AVAILABLE TO DIAGNOSTIC
2415      ;      KTFLG  = SET TO HIGHEST MEMORY LOCATION IF > 28K.
2416      ;

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```

2417      ; OUTPUTS:
2418      ;
2419      ;     NONE
2420      ;
2421      ;
2422      FILLMEM:
2423      SAVREG
2424      JSR PC,KTOFF      ;SAVE R1 R5 UNTIL NEXT RETURN
2425      MOV R0,R3        ;DISABLE KT.
2426      MOV FREE,R1      ;COPY TEST PATTERN
2427      MOV FRESIZ,R2    ;GET FIRST FREE LOCAT.
2428      MOV R3,(R1).     ;SIZE OF FREE SPACE BELOW 28K.
2429      DEC R2           ;STORE A BACKGROUND WORD
2430      BGT 10$          ;DONE ALL MEMORY IN FREE SPACE?
2431      TST KTFLG        ;BR IF NO
2432      BEQ 55$          ; GOT KT?
2433      JSR PC,KTON      ; NO. GET OUT.
2434      CLR R0           ; YES. ENABLE KT.
2435      MOV PST32W,R1    ;HIGH ORDER ADDRESS START
2436      .REPT 6          ;GET >28K START ADDRESS (IN 32W BLOCKS)
2437      CLC              ;CLEAR C BIT
2438      ROL R1           ;CONVERT BLOCKS TO WORDS
2439      ROL R0           ;MAKE IT DOUBLE PRECISION
2440      .ENDR
2441      JSR PC,SETMAP    ;SETUP PAR6 MAPPING REGISTER
2442      MOV R3,(R0).     ;STORE TEST PATTERN IN >28K ADDRESS
2443      CMP R0,#160000   ;END OF PAR6 MAPPING AREA?
2444      BLO 30$          ;BR IF NO
2445      SUB #20000,R0    ;BACKUP INTO PAR6 MAPPING BEGIN
2446      ADD #200,#KIPAR6 ;POINT TO NEXT 4K BLOCK >28K.
2447      CMP #KIPAR6,KTFLG ;END OF MEMORY?
2448      BEQ 50$          ;BR IF YES
2449      TST T23A        ;11/23A?
2450      BEQ 35$          ;NO KEEP GOING
2451      MOV SRO,R4       ;GET SRO CONTENTS
2452      BIC #177761,R4   ;CLEAR ALL BUT PAGE NUMBER
2453      CMP #16,R4      ;SEE IF PAGE 7
2454      BEQ 50$          ;EXIT IF THERE
2455      TST T23B        ;11/23B?
2456      BEQ 45$          ;NO KEEP GOING
2457      CMP #KIPAR6,#7600 ;REACHED 18 BITS?
2458      BHIS 40$        ;YES
2459      BR 45$           ;NO KEEP GOING
2460      MOV #20,SRO      ;SET 22 BIT RELOCATION
2461      JMP 30$          ;KEEP GOING ON ETC.
2462      JSR PC,KTOFF    ;DISABLE KT.
2463      RTS PC
2464      .SBTTL CMPMEM    COMPARE MEMORY TO BACKGROUND PATTERN
2465      ;
2466      ; COMPARE MEMORY WITH A BACKGROUND PATTERN
2467      ;
2468      ; INPUTS:
2469      ;
2470      ;     R0 = BACKGROUND PATTERN
2471      ;     FREE = FIRST LOCATION AVAILABLE TO DIAGNOSTIC
2472      ;     KTFLG = SET TO HIGHEST MEMORY LOCATION IF > 28K.
2473      ;

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2474      ; OUTPUTS:
2475      ;
2476      ;      CARRY   - SET IF NO ERROR
2477      ;      CARRY   - CLR IF ERROR
2478      ;
2479      ; IMPLICIT OUTPUTS:
2480      ;
2481      ;      ERRHI    ERROR HIGH ADDRESS
2482      ;      ERRLO    - ERROR LOW ADDRESS
2483      ;      EXPD     - EXPECTED DATA
2484      ;      RECV     RECEIVED DATA
2485      ;
2486 017740  ; CMPMEM:
2487 017740      SAVREG
2488 017744 010003      MOV     R0,R3      ;SAVE R1-R5 UNTIL NEXT RETURN
2489 017746 004737 017354      JSR     PC,KTOFF      ;COPY TEST PATTERN
2490 017752 013701 003116      MOV     FREE,R1      ;DISABLE KT.
2491 017756 013702 003120      MOV     FRESIZ,R2     ;GET FIRST FREE LOCATION
2492 017762 020311      10$:      CMP     R3,(R1)      ;SIZE OF FREE SPACE BELOW 28K.
2493 017764 001411      BEQ     15$      ;FREE SPACE LOCATION EQUAL TO EXPD?
2494 017766 010137 002232      MOV     R1,ERRLO      ;BR IF YES
2495 017772 005037 002230      CLR     ERRHI      ;SAVE ADDRESS IN ERROR
2496 017776 010337 002224      MOV     R3,EXPD      ;NO HIGH ADDRESS
2497 020002 011137 002226      MOV     (R1),RECV     ;SAVE EXPD FOR ERROR REPORT
2498 020006 000474      MOV     (R1),RECV     ;SAVE RECV FOR ERROR REPORT
2499 020010 005721      BR      50$      ;
2500 020012 005302      15$:      TST     (R1)      ;POINT TO NEXT ADDRESS
2501 020014 003362      DEC     R2      ;DONE ALL MEMORY IN FREE SPACE?
2502 020016 005737 003124      BGT     10$      ;BR IF NO
2503 020022 001472      TST     KTFLG      ; GOT KT?
2504 020024 004737 017336      BEQ     55$      ; NO. GET OUT.
2505 020030 005000      JSR     PC,KTON      ; YES. ENABLE KT.
2506 020032 013701 003144      CLR     R0      ;HIGH ORDER ADDRESS START
2507      000006      MOV     PST32W,R1      ;GET >28K START ADDRESS (IN 32W BLOCKS)
2508      .REPT     6
2509      ROL     R1
2510      ROL     R0      ;CONVERT BLOCKS TO WORDS
2511      .ENDR      ;MAKE IT DOUBLE PRECISION
2512 020066 042701 000177      BIC     #177,R1
2513 020072 010046      MOV     R0,(SP)      ;ALINE 4K BOUNDARY
2514 020074 010146      MOV     R1,(SP)      ;SAVE HIGH ORDER
2515 020102 010004      JSR     PC,SETMAP      ;SAVE LOW ORDER
2516 020104 012601      MOV     R0,R4      ;SETUP PAR6 MAPPING REGISTER
2517 020106 012600      MOV     (SP)+,R1      ;COPY ADDRESS BIASED TO PAR6
2518 020110 020314      MOV     (SP)+,R0      ;RESTORE LOW ORDER IN NON PAR6 FORMAT
2519 020112 001411      30$:      CMP     R3,(R4)      ;RESTORE HIGH ORDER IN NON PAR6 FORMAT
2520 020114 010037 002230      BEQ     32$      ;ABOVE 28K LOCATION EQUAL EXPD?
2521 020120 010137 002232      MOV     R0,ERRHI      ;BR IF YES
2522 020124 010337 002224      MOV     R1,ERRLO      ;SAVE HIGH ORDER IN ERROR
2523 020130 011437 002226      MOV     R3,EXPD      ;SAVE LOW ORDER IN ERROR
2524 020134 000421      MOV     (R4),RECV     ;SAVE EXPD FOR ERROR REPORT
2525 020136 062701 000002      BR      50$      ;SAVE RECV FOR ERROR REPORT
2526 020142 005500      32$:      ADD     #2,R1      ;UPDATE NON PAR6 ADDRESS
2527 020144 062704 000002      ADC     R0      ;MAKE IT DOUBLE PRECISION ADD
2528 020150 020427 160000      ADD     #2,R4      ;UPDATE PAR6 MAPPING ADDRESS
2529 020154 103755      CMP     R4,#160000      ;END OF PAR6 MAPPING AREA?
2530 020156 162704 020000      BLO     30$      ;PR IF NO
2530      SUB     #20000,R4      ;BACKUP INTO PAR6 MAPPING BEGIN

```

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
CMPMEM COMPARE MEMORY TO BACKGROUND PATTERN

SEQ 076

```

2531 020162 062737 000200 172354      ADD    #200,0<IPAR6 ;POINT TO NEXT 4K BLOCK >28K.
2532 020170 023737 172354 003124      CMP    #<IPAR6,KTFLG ;END OF MEMORY?
2533 020176 101744                BLUS    30$ ;BR IF NO
2534 020200 004737 017354      50$: JSR    PC,KTOFF ;TURN OFF MEMORY MAPPING
2535 020204 000241                CLC                ;SET FAILURE
2536 020206 000403                BR     60$                ;
2537 020210 004737 017354      55$: JSR    PC,KTOFF ;TURN OFF MEMORY MAPPING
2538 020214 000261                SEC                ;SET SUCCESS
2539 020216 000207      60$: RTS    PC
2540                .SBTTL REGSAV      SAVE R1 R5 ON STACK
2541                ;
2542                ;
2543                ;ROUTINE TO
2544                ;SAVE R1 THROUGH R5 ON THE STACK
2545                ;
2546                ;CALLING SEQUENCE:
2547                ;
2548                ;      JSR    R5,REGSAV
2549                ;
2550                ;THIS IS A COOROUTINE WHICH TRANSFER CONTROL BACK TO
2551                ;THE CALLING ROUTINE. AT THE END OF THE CALLING ROUTINE,
2552                ;THE RTS PC RETURNS CONTROL TO THIS ROUTINE TO RESTORE
2553                ;REGISTERS.
2554                ;
2555                ;THIS ROUTINE SHOULD ONLY BE CALLED FROM ROUTINES WHICH ARE
2556                ;CALLED VIA A JSR PC INSTRUCTION
2557                ;
2558                ;
2559                ;
2560 020220      REGSAV:
2561 020220 010446      MOV    R4, (SP)
2562 020222 010346      MOV    R3, -(SP)
2563 020224 010246      MOV    R2, (SP)
2564 020226 010146      MOV    R1, -(SP)
2565 020230 010546      MOV    R5, -(SP)
2566 020232 016605 000012      MOV    10.(SP),R5
2567 020236 004736      JSR    PC,8(SP)+
2568 020240 012601      MOV    (SP)+,R1
2569 020242 012602      MOV    (SP)+,R2
2570 020244 012603      MOV    (SP)+,R3
2571 020246 012604      MOV    (SP)+,R4
2572 020250 012605      MOV    (SP)+,R5
2573 020252 000207      RTS    PC
2574                .SBTTL GETPAT      GET 8 BIT PATTERN FROM OPERATOR
2575                ;
2576                ;
2577                ;ROUTINE TO REQUEST AN 8 BIT DATA PATTERN FROM THE OPERATOR
2578                ;
2579                ;INPUTS:
2580                ;
2581                ;      NONE.
2582                ;
2583                ;OUTPUTS:
2584                ;
2585                ;      R0      OCTAL NUMBER FROM THE OPERATOR
2586                ;
2587                ;CALLING SEQUENCE:

```

```

2588      ;
2589      ;      JSR      PC,GETPAT
2590      ;
2591      ;
2592
2593      GETPAT::
2594      020254      SAVREG                      ;SAVE THE GENERAL REGISTERS
2595      020254      1$:      GMANID  DATASC,PATDAT,0,377,0,377,NO
2596      020260      TRAP      C$GMAN
2597      020262      104443      BR      10000$
2598      020264      000406      .WORD  PATDAT
2599      020266      020310      .WORD  T$CODE
2600      020268      000022      .WORD  DATASC
2601      020270      020312      .WORD  377
2602      020272      000377      .WORD  T$LOLIM
2603      020274      000000      .WORD  T$HILIM
2604      020276      000377
2605      020300      10000$:
2606      020300      BNCOMPLETE      1$      ;RETRY IF ERROR
2607      020302      103367      BCC      1$
2608      020304      013700      MOV      PATDAT,R0      ;DATA PATTERN FROM OPERATOR
2609      020306      000207      RTS      PC      ;RETURN TO CALLER
2610
2611      ;*
2612      ;LOCAL DATA AREA
2613      ;-
2614      020310      000000      PATDAT: .WORD  0      ;TEMPORARY STORAGE FOR DATA
2615      020312      105      116      124      DATASC: .ASCIZ  'ENTER DATA PATTERN'
2616      .EVEN
2617      .SBTTL  GETSEL      ISSUE MENU AND GET OPERATOR RESPONSE
2618
2619      ;*
2620      ;ROUTINE TO ISSUE A MENU AND GET
2621      ;THE OPERATOR'S RESPONSE.
2622      ;
2623      ;INPUTS:
2624      ;
2625      ;      R0      ADDRESS OF ASCIZ STRING OF MENU
2626      ;      R1      MAXIMUM ALLOWABLE OPERATOR RESPONSE
2627
2628      ;OUTPUTS:
2629      ;
2630      ;      R0      NUMBER OF THE OPERATOR S SELECTION
2631      ;
2632      ;-
2633
2634      GETSEL::
2635      020336      SAVREG                      ;SAVE GENERAL REGISTERS
2636      020336      MOV      R0,R2      ;SAVE THE MENU ADDRESS
2637      020342      010002      MOV      R2,R3      ;START OF MENU STRING
2638      020344      010203      1$:      TST      (R3)      ;END OF ASCII ?
2639      020346      005713      2$:      BEQ      3$      ;BRANCH IF ALL LINES DISPLAYED
2640      020350      001412      PRINTF  #SELASC,(R3)+      ;DISPLAY THE MENU
2641      020352      012346      MOV      (R3)+,-(SP)
2642      020354      012746      MOV      #SELASC,(SP)
2643      020360      012746      MOV      #2,-(SP)
2644      020364      010600      MOV      SP,R0

```

N6

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 GETSEL ISSUE MENU AND GET OPERATOR RESPONSE

SEQ 078

```

    020366 104417
    020370 062706 000006
2631 020374 000764
2632 020376
    020376 104443
    020400 000406
    020402 020556
    020404 000042
    020406 020527
    020410 177777
    020412 000000
    020414 177777
    020416
2633 020416
    020416 103352
2634 020420 013700 020556
2635 020424 020001
2636 020426 101411
2637 020430
    020430 012746 020454
    020434 012746 000001
    020440 010600
    020442 104417
    020444 062706 000004
2638 020450 000735
2639 020452 000207
2640 020454 045 116 045
2641 020522 045 116 045
2642 020527 105 156 164
2643
2644 020556 000000
2645
2646
2647
2648
2649
2650
2651
2652
2653
2654
2655
2656
2657
2658
2659
2660
2661
2662
2663
2664
2665
2666
2667 020560
2668 020560
2669 020564
    020564 104450

    TRAP C$PNTF
    ADD #6,SP
    BR 2$
3$: GMANID MENASC,MENRES,D. 1,0, 1,NO
    TRAP C$GMAN
    BR 10001$
    .WORD MENRES
    .WORD T$CODE
    .WORD MENASC
    .WORD -1
    .WORD T$LOLIM
    .WORD T$HILIM
10001$: BNCOMPLETE 1$ ;RETRY IF ERROR
    BCC 1$
    MOV MENRES,R0 ;GET THE OPERATOR'S REPLY
    CMP R0,R1 ;COMPARE TO MAXIMUM ALLOWED
    BLOS 5$ ;BRANCH IF OK
    PRINTF #MENERR ;DISPLAY ERROR MESSAGE
    MOV #MENERR,-(SP)
    MOV #1,-(SP)
    MOV SP,R0
    TRAP C$PNTF
    ADD #4,SP
    BR 1$ ;RETRY
5$: RTS PC ;RETURN TO CALLER
    MENERR: .ASCIZ 'MNA *** Menu Selection Too Large ***'
    SELASC: .ASCIZ 'MNT'
    MENASC: .ASCIZ 'Enter Menu Selection: '
    .EVEN
MENRES: .WORD 0
    .SBTTL CHKMAN - CHECK MANUAL INTERVENTION LEGALITY
;
;
;ROUTINE TO TEST FOR MANUAL INTERVENTION LEGALITY.
;
;INPUT:
;
; NONE.
;
;OUTPUT:
;
; CARRY 0 MANUAL INTERVENTION NOT ALLOWED
; 1 MANUAL INTERVENTION IS OK
;
;SIDE EFFECTS:
;
; A MESSAGE IS DISPLAYED WARNING THAT TEST IS
; NOT EXECUTED IF MANUAL INTERVENTION IS NOT
; ALLOWED.
;
;
CHKMAN:
    SAVREG
    MANUAL
    TRAP C$MANI ;SAVE THE REGISTERS
;SEE IF MANUAL INTERVENTION OK

```



TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
 CHKMAN CHECK MANUAL INTERVENTION LEGALITY

SEQ 079

```

2670 020566          BCOMPLETE 11          ;BRANCH IF ALLOWED
      020566 103411  BCS 11
2671 020570          PRINTF #NOMAN          ;PRINT THE WARNING MESSAGE
      020570 012746 020614  MOV #NOMAN, (SP)
      020574 012746 000001  MOV #1, -(SP)
      020600 010600  MOV SP, R0
      020602 104417  TRAP C$PNTF
      020604 062706 000004  ADD #4, SP
2672 020610 000241  CLC          ;CLEAR CARRY FOR ERROR
2673 020612 000207  11: RTS PC          ;RETURN
2674
2675 020614 045 116 045 NOMAN: .ASCIZ 'ANNA *** Manual Intervention not Allowed Test Aborted ***'
2676
2677 .even
2678 .SBTTL ENVIRN - SETUP FREE DIAGNOSTIC SPACE
2679
2680 ; SUBROUTINE TO SET-UP VARIOUS ENVIRONMENTAL PARAMETERS.
2681 ;
2681 020710          ;ENVIRN: MEMORY R0
      020710 104431  TRAP C$MEM
2682 020712 010037 003116  MOV R0, FREE          ; GET 1ST FREE ADDRESS...
2683 020716 062737 000002 003116  ADD #2, FREE
2684 020724 011037 003120  MOV (R0), FRESIZ          ;...AND WORD COUNT.
2685 020730 162737 000004 003120  SUB #4, FRESIZ
2686 020736 013702 002012  MOV L$UNIT, R2          ; GET NUMBER OF UNITS
2687 020742 162737 000007 003120 101: SUB #7, FRESIZ          ; TAKE AWAY 7 WORDS PER UNIT
2688 020750 005302  DEC R2
2689 020752 001373  BNE 101
2690 020754 013700 003116  MOV FREE, R0          ;GET FIRST FREE ADDRESS
2691 020760 063700 003120  ADD FRESIZ, R0          ;POINT TO LAST FREE ADDRESS
2692 020764 162700 000002  SUB #2, R0          ;BACKUP 1 WORD
2693 020770 010037 003122  MOV R0, FREEHI          ;STORE LAST FREE ADDRESS
2694 020774 000240  NOP          ;*****
2695 020776 012701 177520  MOV #BDVPCR, R1          ;GET BDV11 PCR ADDRESS
2696 021002 010102  MOV R1, R2          ;COPY TO R2
2697 021004 062702 000002  ADD #2, R2          ;SET THE RANGE
2698 021010 004737 016456  JSR PC, XNXM          ;SEE IF WE HAVE ONE
2699 021014 103001  BCC 151          ;OK TO SET FLAGS
2700 021016 000445  BR 401          ;RETURN WITH FLAGS CLEAR
2701 021020 013701 177520 151: MOV BDVPCR, R1          ;SAVE PCR CONTENTS
2702 021024 062701 000001  ADD #1, R1          ;ADD ONE TO IT
2703 021030 012702 177520  MOV #BDVPCR, R2          ;GET BDV11 PCR ADDRESS
2704 021034 005212  INC (R2)          ;TRY TO WRITE TO IT
2705 021036 013703 177520  MOV BDVPCR, R3          ;GET RESULTS
2706 021042 020103  CMP R1, R3          ;DID IT CHANGE?
2707 021044 001017  BNE 201          ;NO, MUST BE 11/23B
2708 021046 005237 003136  INC T23A          ;SET THE FLAG
2709 021052 042737 170000 002120  BIC #170000, L$HIME          ;SUPERVISOR COULD BE WRONG
2710 021060 000240  NOP          ;BR 401 FOR RELEASE
2711 021062          PRINTF #M8186          ;TELL THE SYSTEM TYPE
      021062 012746 005550  MOV #M8186, -(SP)
      021066 012746 000001  MOV #1, -(SP)
      021072 010600  MOV SP, R0
      021074 104417  TRAP C$PNTF
      021076 062706 000004  ADD #4, SP
2712 021102 000413  BR 401          ;RETURN
2713 021104 005237 003140 201: INC T23B          ;SET THE FLAG
2714 021110 000240  NOP          ;BR 401 FOR RELEASE

```

```

2715 021112          PRINTF  #M8189      ; TELL THE SYSTEM TYPE
      021112 012746 005641      MOV      #M8189, (SP)
      021116 012746 000001      MOV      #1, (SP)
      021122 010600          MOV      SP, R0
      021124 104417          TRAP      C$PRINTF
      021126 062706 000004      ADD      #4, SP
2716 021132 000207      40$:      RTS      PC      ; RETURN
2717          .SB11L      KTINIT      SETUP KT11 MEMORY MANAGEMENT REGISTERS
2718          ;
2719          ;
2720          ; ROUTINE TO INIT KT 11
2721          ;
2722          ;
2723          ;
2724 021134          KTINIT:
2725 021134 005037 003124      CLR      KTFLG      ; INIT >28K MEMORY FLAG
2726 021140 005037 003126      CLR      KTENABLE   ; INIT TEST >28K FLAG
2727 021144 023727 002120 001577  CMP      L$HIME, #1577 ; GOT ENOUGH MEMORY (>28K)?
2728 021152 101444          BLOS      9$          ; NO.
2729 021154 013700 000004      MOV      @ERRVEC, R0 ; SAVE OLD ERR VEC PTR.
2730 021160 012737 021252 000004  MOV      #2$, @ERRVEC ; SET ERR VEC PTR.
2731 021166 005737 177572      TST      @SRO      ; GOT KT11?
2732 021172 000240          NOP                ; (TRAP IF NO).
2733 021174 013737 002120 003124  MOV      L$HIME, KTFLG ; YES. SET KT FLAG.
2734 021202 042737 000177 003124  BIC      #177, KTFLG
2735 021210 010037 000004      MOV      R0, @ERRVEC ; RESTORE OLD ERR VEC PTR.
2736 021214 005000          CLR      R0          ; R0 = AR DATA.
2737 021216 012701 172340      MOV      #KIPAR0, R1 ; R1 = KI REGS PTR.
2738 021222 012761 077406 177740 1$:      MOV      #77406, -40(R1) ; SET DESCRIPTOR REG.
2739 021230 010021          MOV      R0, (R1) ; SET KIPAR REG.
2740 021232 062700 000200      ADD      #200, R0 ; BUMP AR DATA BY "4K".
2741 021236 020027 002000      CMP      R0, #2000 ; AT "I/O"?
2742 021242 001367          BNE      1$          ; NO.
2743 021244 012741 177600      MOV      #177600, -(R1) ; YES. SET KIPAR7 FOR I/O.
2744 021250 000405          BR      9$
2745          ;
2746 021252 012716 021260      2$:      MOV      #6$, (SP) ; SET UP RETURN
2747 021256 000002          RTI                ; RTI TO NEXT LOCATION
2748          ;
2749 021260 010037 000004      6$:      MOV      R0, @ERRVEC ; RESTORE OLD ERR VEC PTR.
2750          ;
2751 021264 000207      9$:      RTS      PC
2752          ;
2753          ; SUBROUTINE TO SET EXTENDED FEATURES SWITCH
2754          ;
2755          ; Requires that S0$INIT and WATCHR have been done previous to call.
2756          ;
2757          ;
2758          ; INPUTS:
2759          ; R5      CURRENT UNIT NUMBER
2760          ; OUTPUTS:
2761          ; The Extended Features Switch is set.
2762          ;
2763          ;
2764          ;
2765 021266          INVERT::
2766          ;

```



TSV3 GLOBAL AREAS MACRO M1113 06-FEB-84 18:04  
 KINIT SETUP RT11 MEMORY MANAGEMENT REGISTERS

SEQ 081

```

2767 021266 005737 002220      TST      EXTFEA      ; IS SWITCH SET?
2768 021272 001020      BNE      1$      ; YES, EXIT STAGE RIGHT! (or the next one outa town!)
2769 021274 012737 100206 021340  MOV      @100206,CMDPKT  ; WRT SUB SYS MEM CMD
2770 021302 012737 021350 021342  MOV      @WSMBK,CMDPKT+2  ; MSG BUF ADDR
2771 021310 012737 000006 021346  MOV      @6,CMDPKT+6    ; BYTE COUNT
2772 021316 012737 100010 021350  MOV      @100010,WSMBK  ; INVERT THE SWITCH
2773 021324 012704 021340      MOV      @CMDPKT,R4      ; SET CMDPKT INTO R4
2774 021330 004737 010742      JSR      PC,WRTCHR      ; DO IT
2775 021334 000207      1$:      RTS      PC      ; RETURN
2776
2777      ;      COMMAND PACKET.
2778
2779      021340      .      *      <...3>E177774      ;MUST BE ON MOD 4 BOUNDARY.
2780
2781 021340 000000      CMDPKT:: 0      ;1ST WORD IS TS05 COMMAND.
2782 021342 000000      0      ;2ND WORD IS THE BUFFER LOW ADDRESS.
2783 021344 000000      0      ;3RD WORD IS THE BUFFER HIGH ADDRESS.
2784 021346 000000      0      ;4TH WORD IS THE BYTE/RECORD/FILE COUNT.
2785
2786      ;      WRITE SUB SYSTEM MEMORY CHARACTERISTIC BLOCK.
2787
2788 021350 000000      WSMBK:: 0      ;1ST WORD:: SEL 0
2789 021352 000000      0      ;2ND WORD:: SEL 2
2790 021354 000000      0      ;3RD WORD:: SEL 4
2791      .EVEN
2792
2793      ;*      SUBROUTINE TO CHECK WETHER OR NOT WE'LL TEST NXM
2794      ;
2795      ;
2796      ;INPUTS:
2797      ;OUTPUTS:
2798      ;      The NXMFLG is set if we can test.
2799      ;      The NXMLO and NXMMI addresses are setup.
2800      ;
2801      ;
2802 021356      MEMCK::
2803
2804 021356      SAVREG      ;SAVE THE REGISTERS
2805 021362 005037 003130      CLR      NXMFLG      ;CLEAR THE FLAG
2806 021366 005037 003132      CLR      NXMLO      ;CLEAR THE TEST ADDRESS LO
2807 021372 005037 003134      CLR      NXMMI      ;CLEAR THE TEST ADDRESS HI
2808 021376 005737 003140      TST      T23B      ;IS IT A 11/23B?
2809 021402 001407      BEQ      1$      ;NO
2810 021404 023727 002120 007777      CMP      L$HIME,@7777      ; GREATER THAN 128K
2811 021412 103406      BLO      2$      ; NO
2812 021414 004737 021532      JSR      PC,NXMTST      ;SETUP THE ADDRESS
2813 021420 000427      BR      13$      ;SET THE FLAG AND EXIT
2814 021422 005737 003136      1$:      TST      T23A      ;IS IT A 11/23A?
2815 021426 001413      BEQ      4$      ;NO
2816 021430 023727 002120 005777      2$:      CMP      L$HIME,@5777      ;GREATER THAN 96K
2817 021436 101023      BHI      14$      ;YES,23A/23B WITH 128K MEMORY
2818 021440 023727 002120 003777      CMP      L$HIME,@3777      ;GREATER THAN 64K BUT LESS THAN 92K?
2819 021446 103403      BLO      4$      ;NO, CHECK 24K
2820 021450 004737 021532      JSR      PC,NXMTST      ;SETUP THE ADDRESS
2821 021454 000411      BR      13$      ;SET THE FLAG AND EXIT
2822 021456 023727 002120 001577      4$:      CMP      L$HIME,@1577      ;GREATER THAN 24K BUT LESS THAN 64K?
2823 021464 103410      BLO      14$      ;NO, TELL THEM AND EXIT WITH FLAG CLEAR

```

TSV3 GLOBAL AREAS MACRO M1113 06 FEB 84 18:04  
KTINIT SETUP KT11 MEMORY MANAGEMENT REGISTERS

SEQ 082

```

2824 021466 004737 021532      JSR      PC,NXMTST      ;SETUP THE ADDRESS
2825 021472 062737 000077 003134  ADD      #77,NXMMHI    ;FOOL THE 11/02 & 11/03
2826 021500 005237 003130      INC      NXMFLG      ;SET THE FLAG
2827 021504 000411              BR       15$      ;EXIT
2828 021506 000410              BR       15$      ;NOP FOR PRINTOUT
2829 021510              PRINTF  #NOMEM          ;TELL THEM & EXIT ***NO PRINT*****
      021510 012746 005454      MOV      #NOMEM, (SP)
      021514 012746 000001      MOV      #1,-(SP)
      021520 010600              MOV      SP,R0
      021522 104417              TRAP     C$PNTF
      021524 062706 000004      ADD      #4,SP
2830 021530 000207      15$:    RTS      PC          ;RETURN
2831
2832      ;*
2833      ;      SUBROUTINE TO SETUP THE NXM ADDRESS FOR TESTING
2834      ;
2835      ;OUTPUTS: NXMLO,NXMMHI      ;SETUP WITH NXM ADDRESS
2836      ;
2837      ;-
2838
2839 021532 013701 002120  NXMTST: MOV      L$HIME,R1      ;GET TOP OF MEMORY
2840 021536 062701 000200      ADD      #200,R1      ;MAKE IT I/O BLOCK OR OTHER NXM
2841 021542 042701 000177      BIC      #177,R1
2842 021546 C10102              MOV      R1,R2      ;RESAVE RESULTS
2843              000006      .REPT      6
2844              ASL      R1      ;PUT IN PLACE FOR XFER
2845              .ENDR
2846 021564 010137 003132      MOV      R1,NXMLO      ;SAVE TEST ADDRESS LOW
2847              000012      .REPT      10
2848              ASR      R2      ;PUT IN PLACE FOR XFER
2849              .ENDR
2850 021614 042702 177700      BIC      #177700,R2      ;DON'T WANT ILA!
2851 021620 010237 003134      MOV      R2,NXMMHI    ;SAVE TEST ADDRESS HIGH
2852 021624 000207      RTS      PC          ;RETURN
2853
2854
2855
2856 021626      ENDMOD

```

F7

TSV4 MISCELLANEOUS SECTIONS MACRO M1113 06 FEB 84 18:04  
KTINIT SETUP KT11 MEMORY MANAGEMENT REGISTERS

SEQ 083

|    |        |        |      |                        |
|----|--------|--------|------|------------------------|
| 7  |        | .TITLE | TSV4 | MISCELLANEOUS SECTIONS |
| 8  |        |        |      |                        |
| 9  | 021626 | BGNMOD | TSV4 |                        |
|    | 021626 | TSV4:: |      |                        |
| 10 |        |        |      |                        |

TSV4 - MISCELLANEOUS SECTIONS    MACRO M1113    06-FEB 84 18:04  
PROTECTION TABLE

SEQ 084

```
17  
18 021626                    .SBTTL PROTECTION TABLE  
    021626                   BGNPROT  
19 021626 177777 177777 177777 L$PROT::  
20 021636                   .WORD -1. 1. 1. 1  
                             ENDPROT
```

;NO DEVICE PROTECTION REQUIRED.

## .SBTTL INITIALIZE SECTION

```

22                                     ;**
23                                     ;THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
24                                     ;AT THE BEGINNING OF EACH PASS.
25                                     ;
26                                     ;IF "START" OR "RESTART", SET QUICK-PASS FLAG AND BUS-INIT.
27                                     ;IF "CONTINUE", NOTHING IS REQUIRED.
28                                     ;
29                                     ;
30                                     ;
31                                     ;
32                                     ;*
33                                     ;INSERT TEMPORARY JUMP TO ODT
34                                     ;
35 021636                                BGNINIT
    021636                                L$INIT::
36 021636 005037 002220                    40$: CLR      EXTFEA
37 021642 005037 003130                    CLR      NXMFLG
38 021646 012737 006354 002172            MOV      @EPRT1,EPRTSW                ;SET UP PRIMARY MESSAGE FOR REPLACEMENT
39 021654 005037 003146                    CLR      SIFLAG                    ;CLEAR "SOFT INIT" FLAG
40 021660 005037 003126                    CLR      KTENABLE                  ;CLEAR TEST ABOVE 28K FLAG
41 021664 005037 002274                    CLR      RAMSIZ                    ;CLEAR RAM SIZE FOR RAMERR ROUTINE
42 021670                                READDEF  @EF.CONTINUE
    021670 012700 000036                    MOV      @EF.CONTINUE,RO
    021674 104447                    TRAP      C$REFG
43 021676                                BNCOMPLETE 1$
    021676 103023                    BCC      1$
44 021700 023737 002174 002012            CMP      UNITN,L$UNIT                ;UNIT IN RANGE?
45 021706 103070                    BMIS     4$                            ;BR IF NO.
46 021710 005737 003104                    TST      DUFLG                    ;DROPPED UNIT?
47 021714 100472                    BMI      NXTU                            ;BR IF YES
48 021716 013701 002174                    MOV      UNITN,R1
49 021722 006301                    ASL      R1
50 021724 005761 003170                    TST      ERTABL(R1)
51 021730 001516                    BEQ      SETU
52 021732 032761 040000 003170            BIT      @BIT14,ERTABL(R1)        ;DROPPED?
53 021740 001060                    BNE      NXTU
54 021742                                EXIT      INIT                        ;DO NOTHING IF 'CONTINUE'.
    021742 104432                    TRAP      C$EXIT
    021744 000416                    .WORD     L10030-.
55 021746                                1$: READDEF  @EF.NEW
    021746 012700 000035                    MOV      @EF.NEW,RO
    021752 104447                    TRAP      C$REFG
56 021754                                BNCOMPLETE NXTU                    ;TAKE NEXT UNIT IF NOT NEW PASS.
    021754 103052                    BCC      NXTU
57 021756                                READDEF  @EF.START
    021756 012700 000040                    MOV      @EF.START,RO
    021762 104447                    TRAP      C$REFG
58 021764                                BCOMPLETE 2$
    021764 103404                    BCS      2$
59 021766                                READDEF  @EF.RESTART
    021766 012700 000037                    MOV      @EF.RESTART,RO
    021772 104447                    TRAP      C$REFG
60 021774                                BNCOMPLETE 31$
    021774 103031                    BCC      31$
61 021776                                2$: BRESET
62 021776                                TRAP      C$RESET                ;1ST PASS, BUS INIT...
    021776 104433                                ;BUS RESET.

```

|     |        |        |        |         |            |              |            |                                          |
|-----|--------|--------|--------|---------|------------|--------------|------------|------------------------------------------|
| 63  | 022000 | 005037 | 002206 |         | CLR        | TSTCNT       |            | ;NUMBER OF TESTS RUN IN PASS             |
| 64  | 022004 | 005037 | 002214 |         | CLR        | FATFLG       |            | ;CLEAR FATAL ERROR COUNT                 |
| 65  | 022010 | 005037 | 003136 |         | CLR        | T23A         |            | ;CLEAR 11/23A FLAG                       |
| 66  | 022014 | 005037 | 003140 |         | CLR        | T23B         |            | ;CLEAR 11/23B FLAG                       |
| 67  |        |        |        |         | MOV        | #340, (SP)   |            |                                          |
| 68  |        |        |        |         | MOV        | #208, (SP)   |            | ;RETURN TO DEBUGGER                      |
| 69  |        |        |        |         | JMP        | 0.00T        |            | ;ENTER THE DEBUGGER                      |
| 70  | 022020 | 005037 | 003372 |         | CLR        | SKIPT        |            | ;CLEAR THE SUBTEST "SKIPPER"             |
| 71  | 022024 |        |        | 208:    |            |              |            |                                          |
| 72  | 022024 | 012737 | 177777 | 002176  | MOV        | #-1 QVP      |            | ;...QUICK VERIFY...                      |
| 73  | 022032 | 004737 | 020710 |         | JSR        | PC,ENVIRN    |            | ;SET ENVIRONMENT.                        |
| 74  | 022036 | 004737 | 021134 |         | JSR        | PC,KTINIT    |            | ;INITIALIZE KT MEMORY MANAGEMENT         |
| 75  | 022042 | 012700 | 003170 |         | MOV        | #ERTABL,RO   |            |                                          |
| 76  | 022046 | 005020 |        | 308:    | CLR        | (RO).        |            | ;CLEAR THE ERROR TABLE                   |
| 77  | 022050 | 020027 | 003370 |         | CMP        | RO,#ERTABE   |            |                                          |
| 78  | 022054 | 103774 |        |         | BLO        | 308          |            |                                          |
| 79  | 022056 | 000404 |        |         | BR         | 48           |            |                                          |
| 80  | 022060 | 005037 | 002176 | 318:    | CLR        | QVP          |            |                                          |
| 81  | 022064 | 000137 | 022134 |         | JMP        | PASRPT       |            | ;GO REPORT THE STATUS                    |
| 82  |        |        |        |         |            |              |            |                                          |
| 83  | 022070 |        |        | 48:     |            |              |            |                                          |
| 84  | 022070 | 012737 | 177777 | 002174  | NEWPAS:    | MOV          | #-1,UNITN. | ;INIT UNIT NUMBER...                     |
| 85  | 022076 | 005037 | 002212 |         | CLR        | DEVCNT       |            | ;CLEAR COUNT OF DEVICES RUNNING.         |
| 86  | 022102 |        |        | NXTU:   | BREAK      |              |            |                                          |
|     | 022102 | 104422 |        |         | TRAP       | C#BRK        |            |                                          |
| 87  | 022104 | 005237 | 002174 |         | INC        | UNITN        |            | ;...AND SET NEXT UNIT NUMBER.            |
| 88  | 022110 | 023737 | 002174 | 002012  | CMP        | UNITN,L#UNIT |            |                                          |
| 89  | 022116 | 103423 |        |         | BLO        | SETU         |            |                                          |
| 90  | 022120 | 012737 | 177777 | 003104  | MOV        | #1,DUFLG     |            |                                          |
| 91  | 022126 | 000401 |        |         | BR         | 118          |            |                                          |
| 92  | 022130 |        |        |         | DOCLN      |              |            | ;ABORT, NO MORE UNITS.                   |
|     | 022130 | 104444 |        |         | TRAP       | C#DCLN       |            |                                          |
| 93  | 022132 | 000240 |        | 118:    | NOP        |              |            |                                          |
| 94  | 022134 |        |        | PASRPT: |            |              |            |                                          |
| 95  | 022134 | 023727 | 002012 | 000001  | CMP        | L#UNIT,#1    |            | ;HOW MANY UNITS SELECTED?                |
| 96  | 022142 | 101752 |        |         | BLOS       | NEWPAS       |            | ;BR IF ONLY 1                            |
| 97  | 022144 | 005737 | 002212 |         | TST        | DEVCNT       |            | ;ARE ANY STILL RUNNING?                  |
| 98  | 022150 | 001747 |        |         | BEQ        | NEWPAS       |            | ;BR IF NO                                |
| 99  | 022152 |        |        |         | RFLAGS     | RO           |            |                                          |
|     | 022152 | 104421 |        |         | TRAP       | C#RFLA       |            |                                          |
| 100 | 022154 | 032700 | 000100 |         | BIT        | #ISR,RO      |            | ;SHOULD WE PRINT STATISTICS              |
| 101 | 022160 | 001343 |        |         | BNE        | NEWPAS       |            | ;BR IF NO                                |
| 102 |        |        |        |         |            |              |            |                                          |
| 103 | 022162 |        |        |         | DORPT      |              |            |                                          |
|     | 022162 | 104424 |        |         | TRAP       | C#DRPT       |            |                                          |
| 104 | 022164 | 000741 |        |         | BR         | NEWPAS       |            |                                          |
| 105 | 022166 |        |        | 108:    |            |              |            |                                          |
| 106 |        |        |        |         |            |              |            |                                          |
| 107 | 022166 |        |        | SETU:   | GPHARD     | UNITN,RO     |            | ;GET UNIT N P TABLE POINTER.             |
|     | 022166 | 013700 | 002174 |         | MOV        | UNITN,RO     |            |                                          |
|     | 022172 | 104442 |        |         | TRAP       | C#GPHRD      |            |                                          |
| 108 | 022174 |        |        |         | BNCOMPLETE | NXTU         |            | ;BR IF UNIT NOT AVAILABLE.               |
|     | 022174 | 103342 |        |         | BCC        | NXTU         |            |                                          |
| 109 | 022176 | 005037 | 003104 |         | CLR        | DUFLG        |            | ;CLEAR "DROPPED" FLAG.                   |
| 110 | 022202 | 005237 | 002212 |         | INC        | DEVCNT       |            |                                          |
| 111 | 022206 | 012001 |        |         | MOV        | (RO),R1      |            | ;GET 1ST REGISTER ADDRESS.               |
| 112 | 022210 | 010137 | 002200 |         | MOV        | R1,CSRADDR   |            | ;ADDRESS OF REGISTERS OF UNIT UNDER TEST |



```
113
114 022214 012001      MOV      (R0),R1      ;GET VECTOR ADDRESS.
115                   ;MOV      (R0),R2      ;GET INTERRUPT PRIORITY.
116                   ;MOV      R2,IPRI      ;SET INTERRUPT PRIORITY.
117 022216 010137 002202 MOV      R1,IVEC      ;SET INTERRUPT VECTOR POINTER...
118 022222 012721 016276 MOV      @INTR,(R1).  ;...VECTOR...
119 022226 013721 002204 MOV      IPRI,(R1).  ;...AND PRIORITY.
120
121 022232             1$:
122                   ; TST      QVP          ;1ST PASS ??
123                   ; BEQ      5$          ;NO. SKIP THE PASS 1 STUFF.
124
125                   ;
126                   ;1ST PASS. CHECK THAT DEVICE ADDRESSES ARE VALID, AND
127                   ;THAT THE DISPLAY STATUS IS PROPERLY INITIALIZED.
128                   ;
129 022232 013701 002174      MOV      UNITN,R1
130 022236 006301            ASL      R1
131 022240 052761 100000 003170 BIS      @BIT15,ERTABL(R1)      ;SAY DEVICE RUNNING
132 022246 005037 005766      CLR      EXTA      ;CLEAR ERROR EXTENSION FLAG.
133 022252 023727 002012 000001 CMP      L$UNIT,#1      ;ARE WE TESTING MULTIPLE UNITS?
134 022260 101416            BLOS     10$      ;BR IF NO.
135 022262            RFLAGS     R0      ;YES - GET OPERATOR FLAGS.
136 022264 032700 001000      TRAP     C$RFLA
137 022270 001412            BIT      @PNT,R0      ;SHOULD WE PRINT UNIT #?
138 022272            BEQ      10$      ;BR IF NOT.
139 022272            PRINTF     @PUNIT,UNITN      ;PRINT THE UNIT #
140 022272 013746 002174      MOV      UNITN,(SP)
141 022276 012746 022364      MOV      @PUNIT,(SP)
142 022302 012746 000002      MOV      #2,(SP)
143 022306 010600            MOV      SP,R0
144 022310 104417            TRAP     C$PNTF
145 022312 062706 000006      ADD      @6,SP
146 022316            10$:
147 022316 005037 003106      CLR      NODEV
148 022322 013701 002200      MOV      CSRADDR,R1      ;ADDRESS OF FIRST REGISTER
149 022326 010102            MOV      R1,R2      ;START OF REGISTERS
150 022330 062702 000002      ADD      @TSSR,R2      ;ADDRESS OF TSSR REGISTER
151 022334 004737 016456      JSR      PC,XNXM      ;TEST BOTH CONTROLLER REGISTERS...
152 022340 103005            BCC      2$      ;...AND BR IF ALL OK.
153 022342 010137 003106      MOV      R1,NODEV      ;FLAG DEVICE AS NON EXISTENT
154 022346 012737 177777 003104 MOV      #!,DUFLG      ;DROP THIS UNIT.
155 022354            2$:
156                   ;
157                   ;FINALLY. SET CPU PRIORITY AND WE'RE DONE.
158                   ;
159                   ;
160 022354            5$:      SETPRI     @PRI00      ;ENABLE INTERRUPTS.
161 022354 012700 000000      MOV      @PRI0C,R0
162 022360 104441            TRAP     C$SPRI
163 022362            ENDINIT
164 022362            L10030:
165 022362 104411            TRAP     C$INIT
166
167 022364 045 116 045 PUNIT: .ASCIZ  /##### TESTING UNIT #02#A #####/
168 .EVEN
```

## .SBTTL ADD AND DROP UNITS SECTIONS

```
158
159
160
161
162
163
164
165 022432
022432
166 022432 010001
167 022434 006301
168 022436 052761 100000 003170
169 022444 042761 040000 003170
170 022452
022452 010046
022454 012746 022500
022460 012746 000002
022464 010600
022466 104417
022470 062706 000006
171 022474
022474 000167
022476 000026
172 022500 045 116 045 16:
173
174
175 022526
022526
022526 104452
176
177
178
179
180
181
182
183
184
185
186
187 022530
022530
188 022530 012737 177777 003104
189 022536 010001
190 022540 006301
191 022542 052761 140000 003170
192 022550 000240 000240 000240
193 022556
022556 010046
022560 012746 022604
022564 012746 000002
022570 010600
022572 104417
022574 062706 000006
194 022600
022600 000167
022602 000030
```

```

; THE ADD UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
; TO BE (A) ADDED TO THE TEST LIST FOR THE FIRST TIME,
; OR (B) RE-INSERTED IF IT HAD BEEN PREVIOUSLY DROPPED.
;
BGNAU
L$AU::
MOV R0,R1 ; GET UNIT TO BE ADDED (R0)
ASL R1 ; MAKE IT A WORD INDEX
BIS #100000,ERTABL(R1) ; SET THE 'ACTIVE' BIT
BIC #40000,ERTABL(R1) ; CLEAR THE 'DROPPED' BIT
PRINTF #18,R0
MOV R0,-(SP)
MOV #18,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP C$PNTF
ADD #6,SP
EXIT AU
WORD J$JMP
WORD L10031-2-
.ASCIZ /%VA UNIT %DA ADDED/
.EVEN

ENDAU ; UNUSED.
L10031-
TRAP C$AU

; THE DROP UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
; TO BE REMOVED FROM THE TEST LIST.
;
; SUPVSR DOES THE "DROPPING". THIS IS JUST TO TELL THE MAN.
; "DROPPED" UNITS ARE RE-SELECTED ON OPERATOR "STA" OR "ADD"
; COMMAND. OTHERWISE REMAIN INACTIVE. THE "DISPLAY" COMMAND
; WILL PRINT ALL DROPPED UNITS AND THE P-TABLES OF THOSE
; WHICH ARE STILL ACTIVE.
; UPON ENTRY, R0 CONTAINS THE UNIT TO BE DROPPED.
;
BGNDU
L$DU::
MOV #1,DUFLG
MOV R0,R1
ASL R1
BIS #140000,ERTABL(R1) ; SAY DROPPED
240,240,240 ; ?????????
PRINTF #18,R0
MOV R0,-(SP)
MOV #18,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP C$PNTF
ADD #6,SP
EXIT DU
WORD J$JMP
WORD L10032-2-
```



```
195 022604      045      116      045 1$: .ASCIZ /UNDA UNIT DDA DROPPED/
196                                     .EVEN
197 022634                                     ENDCJ
    022634                                     L10032:
    022634 104453                                     TRAP      C$DU
198
199                                     ;**
200                                     ; AUTO-DROP CODE SECTION.
201                                     ;
    022636                                     BGNALTO
    022636                                     L$ALTO:
202 022636 013705 002200                                     MOV      CSRADDR,R5                                     ;POINT TO DEVICE REGISTER
203 022642 012703 000550                                     MOV      #360.,R3                                     ;ENOUGH TIME FOR 2400 REEL TO REWIND
204 022646 004737 016330 10$: JSR      PC,WAITF                                     ;WAIT FOR SSR TO SET
205 022652 103420                                     BCS      20$                                     ;LEAVE WHEN SSR IS SET
206 022654                                     DELAY     250.                                     ;WAIT FOR .25 SECONDS
    022654 012727 000372                                     MOV      #250.,(PC).
    022660 000000                                     .WORD     0
    022662 013727 002116                                     MOV      L$DLY,(PC).
    022666 000000                                     .WORD     0
    022670 005367 177772                                     DEC      -6(PC)
    022674 001375                                     BNE      .-4
    022676 005367 177756                                     DEC      -22(PC)
    022702 001367                                     BNE      .-20
207 022704 005303                                     DEC      R3                                     ;BUMP COUNTER DOWN
208 022706 001357                                     BNE      10$                                     ;KEEP GOING
209 022710 004737 017262                                     JSR      PC,CKDROP                                     ;TRY AND DROP UNIT
210 022714
211 022714                                     20$:
    022714                                     ENDAUTO
    022714 104461                                     L10033:
    022714                                     TRAP      C$AUTO
                                     ; UNUSED.
```

```

213                                     .SBTTL CLEAN UP AND REPORT CODING SECTIONS
214
215
216     ;**
217     ; THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS
218     ; EXECUTED AT THE END OF EACH PASS (OR SUB PASS).
219     ; USE TO RETURN DEVICE UNDER TEST TO A NEUTRAL STATE.
220
220 022716                                     BGNCLN
221 022716 013705 002200     L$CLEAN::
222 022722 005737 003104     MOV     CSRADDR,R5           ;POINT TO DEVICE REGISTER
223 022726 100405           TST     DUFLG                 ; DROPPED" FLAG IS SET ON...
224                                     BMI     1$           ;...AND GROSS CONTROLLER FAULT...
225                                     ;...DON'T TRY TO XCT CLEANUP CODE.
226 022730 012765 000000 000002     MOV     #0,TSSR(R5)    ;DO SOFT INIT
227 022736 004737 016330           JSR     PC,WAITF
228 022742
229 022742           1$:
229 022742           2$:     ENDCLN
229 022742 104412     L10034:     TRAP     C$CLEAN
230
231     ;**
232     ; THE REPORT CODING SECTION CONTAINS THE
233     ; "PRINTS" CALLS THAT GENERATE STATISTICAL REPORTS.
234
234 022744                                     BGNRPT
235 022744     L$RPT::
235 022744 012746 023206     PRINTS  #DEVSUM
235 022744 012746 000001     MOV     #DEVSUM,-(SP)
235 022750 012746 000001     MOV     #1,-(SP)
235 022754 010600           MOV     SP,R0
235 022756 104416           TRAP     C$PNTS
235 022760 062706 000004     ADD     #4,SP
236 022764 010246           MOV     R2,-(SP)
237 022766 010346           MOV     R3,-(SP)
238 022770 010446           MOV     R4,-(SP)
239 022772 012704 003170     MOV     #ERTABL,R4           ; GET START OF ERROR TABLE.
240 022776 005003           CLR     R3                     ; CLEAR UNIT NUMBER
241 023000 011402           1$:  MOV     (R4),R2           ; GET ERROR TABLE ENTRY & TEST IT.
242 023002 001467           BEQ     4$                     ; ZERO IF UNIT NOT RUN
243 023004 100066           BPL     4$
244 023006 032702 040000     BIT     #BIT14,R2           ; WAS UNIT DROPPED?
245 023012 001015           BNE     2$                     ; BR IF YES
246 023014 042702 170000     BIC     #C7777,R2           ; GET ERROR COUNT FIELD
247 023020           PRINTS  #DEVONL,R3,R2               ; PRINT
247 023020 010246           MOV     R2,-(SP)
247 023022 010346           MOV     R3,-(SP)
247 023024 012746 023243     MOV     #DEVONL,-(SP)
247 023030 012746 000003     MOV     #3,-(SP)
247 023034 010600           MOV     SP,R0
247 023036 104416           TRAP     C$PNTS
247 023040 062706 000010     ADD     #10,SP
248 023044 000446           BR      4$
249 023046 020227 160000     2$:  CMP     R2,#160000       ; WAS UNIT NON-EXISTENT?
250 023052 001012           BNE     3$                     ; BR IF NO
251 023054           PRINTS  #DEVNXR,R3
251 023054 010346           MOV     R3,-(SP)
251 023056 012746 023313     MOV     #DEVNXR,-(SP)

```

N7

TSV4 MISCELLANEOUS SECTIONS MACRO M1113 06 FEB 84 18:04  
CLEAN UP AND REPORT CODING SECTIONS

SEQ 091

```

023062 012746 000002      MOV      #2,-(SP)
023066 010600      MOV      SP,R0
023070 104416      TRAP     C$PNTS
023072 062706 000006      ADD      #6,SP
252 023076 000431      BR      4$
253 023100 020227 160001  3$:    CMP      R2,#160001      ; WAS UNIT NOT READY AT STARTUP?
254 023104 001012      BNE     30$      ; BR IF NO.
255 023106      PRINTS   #DEVNRD,R3
023106 010346      MOV      R3,-(SP)
023110 012746 023375      MOV      #DEVNRD,-(SP)
023114 012746 000002      MOV      #2,-(SP)
023120 010600      MOV      SP,R0
023122 104416      TRAP     C$PNTS
023124 062706 000006      ADD      #6,SP
256 023130 000414      BR      4$
257 023132 042702 170000  30$:   BIC      #C7777,R2
258 023136      PRINTS   #DEVDR0,R3,R2
023136 010246      MOV      R2,-(SP)
023140 010346      MOV      R3,-(SP)
023142 012746 023456      MOV      #DEVDR0,-(SP)
023146 012746 000003      MOV      #3,-(SP)
023152 010600      MOV      SP,R0
023154 104416      TRAP     C$PNTS
023156 062706 000010      ADD      #10,SP
259 023162 062704 000002  4$:    ADD      #2,R4
260 023166 005203      INC      R3
261 023170 020427 003370      CMP      R4,#ERTABE
262 023174 103701      BLO     1$
263 023176 012604      MOV      (SP)+,R4
264 023200 012603      MOV      (SP)+,R3
265 023202 012602      MOV      (SP)+,R2
266 023204      ENDRPT      ; UNUSED.
023204      L10035:
023204 104425      TRAP     C$RPT
267
268 023206      045      116      045  DEVSUM: .ASCIZ  /#N#ADEVICE STATUS SUMMARY:#N/
269 023243      045      101      040  DEVONL: .ASCIZ  /#A UNIT #D3#A  ONLINE,  ERRORS = #D#N/
270 023313      045      101      040  DEVNXR: .ASCIZ  /#A UNIT #D3#A  DROPPED, NON-EXISTENT REGISTER#N/
271 023375      045      101      040  DEVNRD: .ASCIZ  /#A UNIT #D3#A  DROPPED, NOT READY AT STARTUP#N/
272 023456      045      101      040  DEVDR0: .ASCIZ  /#A UNIT #D3#A  DROPPED, ERRORS = #D#N/
273      .EVEN
274
275 023526      ENDMOD
276

```

B8

TSV4 MISCELLANEOUS SECTIONS MACRO M1113 06 FEB 84 18:04  
CLEAN UP AND REPORT CODING SECTIONS

SEQ 092

1  
2  
3

.TITLE TEST 1 HARDWARE TEST 1 8 TESTS

10

11 023526

BGNMOD TSV7B

12 023526

TSV7B::

13

TEST 1: HARDWARE TEST 1 & TEST MACRO M1113 06 FEB 84 18:04  
 TEST 1: WRITE TAPE MARK RETRY

SEQ 093

```

26          .SBTTL TEST 1: WRITE TAPE MARK RETRY
27
28          ;
29          ; THIS TEST VERIFIES PROPER OPERATION OF THE WRITE TAPE MARK RETRY COMMAND (SPACE
30          ; REVERSE, ERASE, WRITE TAPE MARK). SUBTESTS ARE AS FOLLOWS:
31          ;
32          ;
33          ; THE TEST CONSISTS OF THE FOLLOWING 4 SUBTESTS
34          ;
35          ;
36          ;
37          ;
38          BGNTST
39          023526 012737 006354 002172      MOV    #EPRT1,EPRTSW      ;PRIMARY ERROR MESSAGE
40          023526 012700 032117              MOV    #TST29ID,RO      ;ASCII MESSAGE TO IDENTIFY TEST
41          023540 004737 016570              JSR    PC,TSTSETUP      ;DO INITIAL TEST SETUP
42          023544 012737 000005 002210      MOV    #5,LOOPCNT      ;PERFORM 5 ITERATIONS
43          023552 005037 026474              CLR     T29CNT          ;CLEAR TAPE RECORD COUNTER
44          023556
45          T29LOOP:
46          ;
47          ; TEST 1. SUBTEST 1
48          ;
49          ; VERIFIES THAT A WRITE TAPE MARK RETRY COMMAND ISSUED WHILE THE
50          ; TAPE IS POSITIONED AT BOT CAUSES FUNCTION REJECT TERMINATION, WITH THE
51          ; NON-EXECUTABLE FUNCTION (NEF) ERROR BIT SET.
52          ;
53          ;
54          ;
55          ;
56          ;
57          ;
58          ;
59          ;
60          BGNSUB
61          023556 104402 032146              JSR    PC,T29REST      ;SET COMMAND PACKET
62          023560 004737 032240              JSR    PC,T29RT2      ;SET UP OTHER COMMAND PACKET
63          023564 004737 032302              JSR    PC,T29RT3      ;SET UP OTHER COMMAND PACKET
64          023570 012737 023420 026500      MOV    #10000.,T29DLY    ;SET UP DELAY ROUTINE
65          023574 004737 016054 101:        JSR    PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
66          023602 103426              BCS     201      ;BR IF INIT WAS OK
67          023610              DELAY    250      ;DELAY ABOUT .25 SECONDS
68          023610 012727 000250              MOV    #250,(PC).
69          023614 000000              .WORD    0
70          023616 013727 002116              MOV    L#DLY,(PC).
71          023622 000000              .WORD    0
72          023624 005367 177772              DEC     -6(PC)
73          023630 001375              BNE     . 4
74          023632 005367 177756              DEC     22(PC)
75          023636 001367              BNE     . 20
76          023640 005337 026500              DEC     T29DLY
77          023644 001356              BNE     101
78          023646 005237 002214              INC     FATFLG
79          023652 010001              MOV     RO,R1
80          023654              ERROF    ERRNO,SF IERR,SF MSG
81          023654 104455              TRAP    C#ERDF
82          023656 000145              .WORD    101
83          023660 003646              .WORD    SF IERR

```

[illegible]



TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 1: WRITE TAPE MARK RETRY

SEQ 095

|     |        |        |               |                                                                            |                      |                                 |          |
|-----|--------|--------|---------------|----------------------------------------------------------------------------|----------------------|---------------------------------|----------|
| 125 | 024100 | 016501 | 000002        | MOV                                                                        | TSSR(R5),R1          | ;GET TSSR CONTENTS              |          |
| 126 | 024104 | 012702 | 100206        | MOV                                                                        | #SSR!SC!BIT1!BIT2,R2 | ;SET UP EXPECTED                |          |
| 127 | 024110 | 020102 |               | CMP                                                                        | R1,R2                | ;ARE THEY EQUAL                 |          |
| 128 | 024112 | 001406 |               | BEQ                                                                        | 75:                  | ;BR, IF OK                      |          |
| 129 | 024114 | 005237 | 002214        | INC                                                                        | FATFLG               | ;ERROR COUNT                    |          |
| 133 | 024120 |        |               | ERRHRD                                                                     | ERRNO,T29WDE,PKTSSR  | ;TSSR INCORRECT AFTER READ DATA |          |
|     | 024120 | 104456 |               |                                                                            |                      | TRAP                            | C\$ERHRD |
|     | 024122 | 000152 |               |                                                                            |                      | .WORD                           | 106      |
|     | 024124 | 027562 |               |                                                                            |                      | .WORD                           | T29WDE   |
|     | 024126 | 012126 |               |                                                                            |                      | .WORD                           | PKTSSR   |
| 134 | 024130 |        |               | 75:                                                                        | CKLOOP               | ;LOOP IF SELECTED               |          |
|     | 024130 | 104406 |               |                                                                            |                      | TRAP                            | C\$CLP1  |
| 135 | 024132 | 013701 | 026350        | MOV                                                                        | T29BFR*6,R1          | ;GET XSTO STATUS WORD           |          |
| 136 | 024135 | 010102 |               | MOV                                                                        | R1,R2                | ;SET UP EXPECTED                |          |
| 137 | 024140 | 052702 | 002000        | BIS                                                                        | #BIT10,R2            | ;SET THE NEF BIT                |          |
| 138 | 024144 | 020102 |               | CMP                                                                        | R1,R2                | ;ARE THEY EQUAL                 |          |
| 139 | 024146 | 001406 |               | BEQ                                                                        | 170:                 | ;BR, IF EQUAL (GOOD)            |          |
| 140 | 024150 | 005237 | 002214        | INC                                                                        | FATFLG               | ;ERROR COUNT                    |          |
| 144 | 024154 |        |               | ERRHRD                                                                     | ERRNO,T29NEF,EXPREC  | ;NEF SHOULD BE SET              |          |
|     | 024154 | 104456 |               |                                                                            |                      | TRAP                            | C\$ERHRD |
|     | 024156 | 000153 |               |                                                                            |                      | .WORD                           | 107      |
|     | 024160 | 026630 |               |                                                                            |                      | .WORD                           | T29NEF   |
|     | 024162 | 015554 |               |                                                                            |                      | .WORD                           | EXPREC   |
| 145 | 024164 |        |               | 170:                                                                       |                      |                                 |          |
| 146 | 024164 | 005103 |               | COM                                                                        | R3                   | ;RESET THE SWITCH               |          |
| 147 | 024166 | 001273 |               | BNE                                                                        | 26:                  | ;BR, IF FIRST TIME THROUGH HERE |          |
| 148 | 024170 |        |               | ENDSUB                                                                     |                      |                                 |          |
|     | 024170 |        |               |                                                                            |                      | L10037:                         |          |
|     | 024170 | 104403 |               |                                                                            |                      | TRAP                            | C\$ESUB  |
| 149 | 024172 | 023727 | 002214 000017 | CMP                                                                        | FATFLG,#15.          | ;IS ERROR COUNT AT 25           |          |
| 150 | 024200 | 103402 |               | BLO                                                                        | 999:                 | ;BR, IF LESS THAN 25            |          |
| 151 | 024202 | 004737 | 017262        | JSR                                                                        | PC,CKDROP            | ;TRY TO DROP THE UNIT           |          |
| 152 | 024206 |        |               | 999:                                                                       |                      |                                 |          |
| 153 |        |        |               | ;                                                                          |                      |                                 |          |
| 154 |        |        |               | ;                                                                          |                      |                                 |          |
| 155 |        |        |               | ;TEST 1. SUBTEST 2                                                         |                      |                                 |          |
| 156 |        |        |               | ;                                                                          |                      |                                 |          |
| 157 |        |        |               | ;VERIFIES THAT A WRITE TAPE MARK RETRY COMMAND ISSUED WHILE THE TAPE       |                      |                                 |          |
| 158 |        |        |               | ;IS POSITIONED BEFORE THE FIRST RECORD ON TAPE (BUT NOT AT BOT) RESULTS IN |                      |                                 |          |
| 159 |        |        |               | ;TAPE STATUS ALERT TERMINATION, WITH THE REVERSE INTO BOT (RIB) STATUS BIT |                      |                                 |          |
| 160 |        |        |               | ;SET.                                                                      |                      |                                 |          |
| 161 |        |        |               | ;                                                                          |                      |                                 |          |
| 162 |        |        |               | ;                                                                          |                      |                                 |          |
| 163 |        |        |               | ;                                                                          |                      |                                 |          |
| 164 |        |        |               | ;-                                                                         |                      |                                 |          |
| 165 | 024206 |        |               | BGNSUB                                                                     |                      | ;***** BEGIN SUBTEST *****      |          |
|     | 024206 |        |               |                                                                            |                      | T1.2:                           |          |
|     | 024206 | 104402 |               |                                                                            |                      | TRAP                            | C\$BSUB  |
| 166 | 024210 | 004737 | 032146        | JSR                                                                        | PC,T29REST           | ;SET COMMAND PACKET             |          |
| 167 | 024214 | 004737 | 032240        | JSR                                                                        | PC,T29RT2            | ;SET UP OTHER COMMAND PACKET    |          |
| 168 | 024220 | 004737 | 032302        | JSR                                                                        | PC,T29RT3            | ;SET UP OTHER COMMAND PACKET    |          |
| 169 | 024224 | 004737 | 016054        | JSR                                                                        | PC,SOFINIT           | ;DO INITIALIZE ON CONTROLLER    |          |
| 170 | 024230 | 103407 |               | BCS                                                                        | 20:                  | ;BR IF INIT WAS OK              |          |
| 171 | 024232 | 005237 | 002214        | INC                                                                        | FATFLG               | ;ERROR COUNT                    |          |
| 175 | 024236 | 010001 |               | MOV                                                                        | R0,R1                | ;CONTENTS OF TSSR REGISTER      |          |
| 176 | 024240 |        |               | ERRDF                                                                      | ERRNO,SFIERR,SFMSG   | ;FATAL ERROR TSSR WAS NOT OK    |          |
|     | 024240 | 104455 |               |                                                                            |                      | TRAP                            | C\$ERDF  |

|     |        |        |        |        |       |        |                     |       |                                  |
|-----|--------|--------|--------|--------|-------|--------|---------------------|-------|----------------------------------|
|     | 024242 | 000154 |        |        |       |        |                     | .WORD | 108                              |
|     | 024244 | 003646 |        |        |       |        |                     | .WORD | SFIERR                           |
|     | 024246 | 012114 |        |        |       |        |                     | .WORD | SFIMSG                           |
| 177 | 024250 | 013737 | 002174 | 026340 | 20\$: | MOV    | UNITN,T29DSW        |       | ;SET UP UNIT NUMBER              |
| 178 |        |        |        |        |       |        |                     |       |                                  |
| 179 | 024256 | 012704 | 026320 |        |       | MOV    | #T29PACKET,R4       |       | ;SUBROUTINE NEEDS PACKET ADDRESS |
| 180 | 024262 | 004737 | 010742 |        |       | JSR    | PC,WRTCHR           |       | ;ISSUE WRITE CHARACTERISTICS     |
| 181 | 024266 | 103407 |        |        |       | BCS    | 25\$                |       | ;BR, IF COMMAND ISSUED OK        |
| 182 | 024270 | 005237 | 002214 |        |       | INC    | FATFLG              |       | ;ERROR COUNT                     |
| 186 | 024274 | 010001 |        |        |       | MOV    | R0,R1               |       | ;SAVE CONTENTS OF TSSR           |
| 187 | 024276 |        |        |        |       | ERRHRD | ERRNO,WRTMSG,SFIMSG |       | ;WRITE CHARACTERISTISC FAILED    |
|     | 024276 | 104456 |        |        |       |        |                     | TRAP  | C\$ERHRD                         |
|     | 024300 | 000155 |        |        |       |        |                     | .WORD | 109                              |
|     | 024302 | 005052 |        |        |       |        |                     | .WORD | WRTMSG                           |
|     | 024304 | 012114 |        |        |       |        |                     | .WORD | SFIMSG                           |
| 188 | 024306 |        |        |        | 25\$: | CKLOOP |                     |       | ;LOOP IF SELECTED                |
|     | 024306 | 104406 |        |        |       |        |                     | TRAP  | C\$CLP1                          |
| 189 | 024310 | 004737 | 011074 |        | 26\$: | JSR    | PC,REWIND           |       | ;CALL TAPE REWIND COMMAND        |
| 190 | 024314 | 016501 | 000002 |        |       | MOV    | TSSR(R5),R1         |       | ;GET TSSR                        |
| 191 | 024320 | 012702 | 000200 |        |       | MOV    | #SSR,R2             |       | ;SET UP EXPECTED TSSR            |
| 192 | 024324 | 103407 |        |        |       | BCS    | 30\$                |       | ;BR, IF NO PROBLEM               |
| 193 | 024326 | 010004 |        |        |       | MOV    | R0,R4               |       | ;PACKET ADDRESS SET UP           |
| 194 | 024330 | 005237 | 002214 |        |       | INC    | FATFLG              |       | ;ERROR COUNT                     |
| 198 | 024334 |        |        |        |       | ERRHRD | ERRNO,T29RWN,PKTSSR |       | ;REWIND NOT ACCEPTED             |
|     | 024334 | 104456 |        |        |       |        |                     | TRAP  | C\$ERHRD                         |
|     | 024336 | 000156 |        |        |       |        |                     | .WORD | 110                              |
|     | 024340 | 030305 |        |        |       |        |                     | .WORD | T29RWN                           |
|     | 024342 | 012126 |        |        |       |        |                     | .WORD | PKTSSR                           |
| 199 | 024344 |        |        |        | 30\$: | CKLOCP |                     |       | ;LOOP IF SELECTED                |
|     | 024344 | 104406 |        |        |       |        |                     | TRAP  | C\$CLP1                          |
| 200 | 024346 | 013701 | 026350 |        |       | MOV    | T29BFR+6,R1         |       | ;PICK UP XSTO                    |
| 201 | 024352 | 010102 |        |        |       | MOV    | R1,R2               |       | ;SET UP EXPECTED                 |
| 202 | 024354 | 052702 | 000002 |        |       | BIS    | #BIT1,R2            |       | ;SET BOT BIT IN EXPECTED         |
| 203 | 024360 | 020102 |        |        |       | CMP    | R1,R2               |       | ;DOES EXP = REC'D                |
| 204 | 024362 | 001406 |        |        |       | BEQ    | 40\$                |       | ;BR, IF EQUAL (OK)               |
| 205 | 024364 | 005237 | 002214 |        |       | INC    | FATFLG              |       | ;ERROR COUNT                     |
| 209 | 024370 |        |        |        |       | ERRHRD | ERRNO,T29BOT,EXPREC |       | ;TAPE NOT AT BOT AFTER REWIND    |
|     | 024370 | 104456 |        |        |       |        |                     | TRAP  | C\$ERHRD                         |
|     | 024372 | 000157 |        |        |       |        |                     | .WORD | 111                              |
|     | 024374 | 027776 |        |        |       |        |                     | .WORD | T29BOT                           |
|     | 024376 | 015554 |        |        |       |        |                     | .WORD | EXPREC                           |
| 210 | 024400 | 012737 | 000001 | 026442 | 40\$: | MOV    | #1,T29RB            |       | ;NUMBER OF RECORDS TO SPACE OVER |
| 211 | 024406 | 012737 | 000400 | 026446 |       | MOV    | #256.,T29SZ         |       | ;SET UP RECORD SIZE              |
| 212 | 024414 | 012737 | 140005 | 026440 |       | MOV    | #140005,T29PK3      |       | ;WRITE FORWARD,CVC=1,ACK COMMAND |
| 213 | 024422 | 012704 | 026440 |        |       | MOV    | #T29PK3,R4          |       | ;SET UP R4 WITH PACKET ADDRESS   |
| 214 | 024426 | 010465 | 000000 |        |       | MOV    | R4,TSD8(R5)         |       | ;ISSUE COMMAND                   |
| 215 | 024432 | 004737 | 016330 |        |       | JSR    | PC,WAITF            |       | ;WAIT FOR SSR TO SET             |
| 216 | 024436 | 016501 | 000002 |        |       | MOV    | TSSR(R5),R1         |       | ;GET TSSR CONTENTS               |
| 217 | 024442 | 012702 | 000200 |        |       | MOV    | #SSR,R2             |       | ;SET UP EXPECTED                 |
| 218 | 024446 | 020102 |        |        |       | CMP    | R1,R2               |       | ;ARE THEY EQUAL                  |
| 219 | 024450 | 001420 |        |        |       | BEQ    | 75\$                |       | ;BR, IF OK                       |
| 220 | 024452 | 013703 | 026350 |        |       | MOV    | T29BFR+6,R3         |       | ;PICK UP XTSO                    |
| 221 | 024456 | 032703 | 000004 |        |       | BIT    | #4,R3               |       | ;IS UNIT WRITE-LOCKED?           |
| 222 | 024462 | 001405 |        |        |       | BEQ    |                     |       |                                  |



| Line | Address | Hex | Label | Op | Op2 | Op3 | Op4 | Op5 | Op6 | Op7 | Op8 | Op9 | Op10 | Op11 | Op12 | Op13 | Op14 | Op15 | Op16 | Op17 | Op18 | Op19 | Op20 | Op21 | Op22 | Op23 | Op24 | Op25 | Op26 | Op27 | Op28 | Op29 | Op30 | Op31 | Op32 | Op33 | Op34 | Op35 | Op36 | Op37 | Op38 | Op39 | Op40 | Op41 | Op42 | Op43 | Op44 | Op45 | Op46 | Op47 | Op48 | Op49 | Op50 | Op51 | Op52 | Op53 | Op54 | Op55 | Op56 | Op57 | Op58 | Op59 | Op60 | Op61 | Op62 | Op63 | Op64 | Op65 | Op66 | Op67 | Op68 | Op69 | Op70 | Op71 | Op72 | Op73 | Op74 | Op75 | Op76 | Op77 | Op78 | Op79 | Op80 | Op81 | Op82 | Op83 | Op84 | Op85 | Op86 | Op87 | Op88 | Op89 | Op90 | Op91 | Op92 | Op93 | Op94 | Op95 | Op96 | Op97 | Op98 | Op99 | Op100 | Op101 | Op102 | Op103 | Op104 | Op105 | Op106 | Op107 | Op108 | Op109 | Op110 | Op111 | Op112 | Op113 | Op114 | Op115 | Op116 | Op117 | Op118 | Op119 | Op120 | Op121 | Op122 | Op123 | Op124 | Op125 | Op126 | Op127 | Op128 | Op129 | Op130 | Op131 | Op132 | Op133 | Op134 | Op135 | Op136 | Op137 | Op138 | Op139 | Op140 | Op141 | Op142 | Op143 | Op144 | Op145 | Op146 | Op147 | Op148 | Op149 | Op150 | Op151 | Op152 | Op153 | Op154 | Op155 | Op156 | Op157 | Op158 | Op159 | Op160 | Op161 | Op162 | Op163 | Op164 | Op165 | Op166 | Op167 | Op168 | Op169 | Op170 | Op171 | Op172 | Op173 | Op174 | Op175 | Op176 | Op177 | Op178 | Op179 | Op180 | Op181 | Op182 | Op183 | Op184 | Op185 | Op186 | Op187 | Op188 | Op189 | Op190 | Op191 | Op192 | Op193 | Op194 | Op195 | Op196 | Op197 | Op198 | Op199 | Op200 | Op201 | Op202 | Op203 | Op204 | Op205 | Op206 | Op207 | Op208 | Op209 | Op210 | Op211 | Op212 | Op213 | Op214 | Op215 | Op216 | Op217 | Op218 | Op219 | Op220 | Op221 | Op222 | Op223 | Op224 | Op225 | Op226 | Op227 | Op228 | Op229 | Op230 | Op231 | Op232 | Op233 | Op234 | Op235 | Op236 | Op237 | Op238 | Op239 | Op240 | Op241 | Op242 | Op243 | Op244 | Op245 | Op246 | Op247 | Op248 | Op249 | Op250 | Op251 | Op252 | Op253 | Op254 | Op255 | Op256 | Op257 | Op258 | Op259 | Op260 | Op261 | Op262 | Op263 | Op264 | Op265 | Op266 | Op267 | Op268 | Op269 | Op270 | Op271 | Op272 | Op273 | Op274 | Op275 | Op276 | Op277 | Op278 | Op279 | Op280 | Op281 | Op282 | Op283 | Op284 | Op285 | Op286 | Op287 | Op288 | Op289 | Op290 | Op291 | Op292 | Op293 | Op294 | Op295 | Op296 | Op297 | Op298 | Op299 | Op300 | Op301 | Op302 | Op303 | Op304 | Op305 | Op306 | Op307 | Op308 | Op309 | Op310 | Op311 | Op312 | Op313 | Op314 | Op315 | Op316 | Op317 | Op318 | Op319 | Op320 | Op321 | Op322 | Op323 | Op324 | Op325 | Op326 | Op327 | Op328 | Op329 | Op330 | Op331 | Op332 | Op333 | Op334 | Op335 | Op336 | Op337 | Op338 | Op339 | Op340 | Op341 | Op342 | Op343 | Op344 | Op345 | Op346 | Op347 | Op348 | Op349 | Op350 | Op351 | Op352 | Op353 | Op354 | Op355 | Op356 | Op357 | Op358 | Op359 | Op360 | Op361 | Op362 | Op363 | Op364 | Op365 | Op366 | Op367 | Op368 | Op369 | Op370 | Op371 | Op372 | Op373 | Op374 | Op375 | Op376 | Op377 | Op378 | Op379 | Op380 | Op381 | Op382 | Op383 | Op384 | Op385 | Op386 | Op387 | Op388 | Op389 | Op390 | Op391 | Op392 | Op393 | Op394 | Op395 | Op396 | Op397 | Op398 | Op399 | Op400 | Op401 | Op402 | Op403 | Op404 | Op405 | Op406 | Op407 | Op408 | Op409 | Op410 | Op411 | Op412 | Op413 | Op414 | Op415 | Op416 | Op417 | Op418 | Op419 | Op420 | Op421 | Op422 | Op423 | Op424 | Op425 | Op426 | Op427 | Op428 | Op429 | Op430 | Op431 | Op432 | Op433 | Op434 | Op435 | Op436 | Op437 | Op438 | Op439 | Op440 | Op441 | Op442 | Op443 | Op444 | Op445 | Op446 | Op447 | Op448 | Op449 | Op450 | Op451 | Op452 | Op453 | Op454 | Op455 | Op456 | Op457 | Op458 | Op459 | Op460 | Op461 | Op462 | Op463 |  |
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TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
TEST 1: WRITE TAPE MARK RETRY

SEQ 099

|     |        |        |        |        |        |                     |  |                                          |         |
|-----|--------|--------|--------|--------|--------|---------------------|--|------------------------------------------|---------|
| 313 | 025076 | 004737 | 011074 |        | JSR    | PC,REWIND           |  | ;CALL TAPE REWIND COMMAND                |         |
| 314 | 025102 | 103411 |        |        | BCS    | 308                 |  | ;BR, IF NO PROBLEM                       |         |
| 315 | 025104 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |  | ;GET TSSR                                |         |
| 316 | 025110 | 010004 |        |        | MOV    | R0,R4               |  | ;SAVE PACKET ADDRESS                     |         |
| 317 | 025112 | 005237 | 002214 |        | INC    | FATFLG              |  | ;ERROR COUNT                             |         |
| 321 | 025116 |        |        |        | ERRMRD | ERRNO,T29RWN,PKTSSR |  | ;REWIND NOT ACCEPTED                     |         |
|     | 025116 | 104456 |        |        |        |                     |  | TRAP                                     | C8ERMRD |
|     | 025120 | 000166 |        |        |        |                     |  | .WORD                                    | 118     |
|     | 025122 | 030305 |        |        |        |                     |  | .WORD                                    | T29RWN  |
|     | 025124 | 012126 |        |        |        |                     |  | .WORD                                    | PKTSSR  |
| 322 | 025126 |        |        | 308:   | CKLOOP |                     |  | ;LOOP IF SELECTED                        |         |
|     | 025126 | 104406 |        |        |        |                     |  | TRAP                                     | C8CLP1  |
| 323 | 025130 | 013701 | 026350 |        | MOV    | T29RFR+6,R1         |  | ;PICK UP XSTO                            |         |
| 324 | 025134 | 010102 |        |        | MOV    | R1,R2               |  | ;SET UP EXPECTED                         |         |
| 325 | 025136 | 052702 | 000002 |        | BIS    | #BIT1,R2            |  | ;SET BOT BIT IN EXPECTED                 |         |
| 326 | 025142 | 020102 |        |        | CMP    | R1,R2               |  | ;DOES EXP = REC 0                        |         |
| 327 | 025144 | 001406 |        |        | BEQ    | 408                 |  | ;BR, IF EQUAL (OK)                       |         |
| 328 | 025146 | 005237 | 002214 |        | INC    | FATFLG              |  | ;ERROR COUNT                             |         |
| 332 | 025152 |        |        |        | ERRMRD | ERRNO,T29BOT,EXPREC |  | ;TAPE NOT AT BOT AFTER REWIND            |         |
|     | 025152 | 104456 |        |        |        |                     |  | TRAP                                     | C8ERMRD |
|     | 025154 | 000167 |        |        |        |                     |  | .WORD                                    | 119     |
|     | 025156 | 027776 |        |        |        |                     |  | .WORD                                    | T29BOT  |
|     | 025160 | 015554 |        |        |        |                     |  | .WORD                                    | EXPREC  |
| 333 | 025162 |        |        | 408:   | CKLOOP |                     |  | ;LOOP IF SELECTED                        |         |
|     | 025162 | 104406 |        |        |        |                     |  | TRAP                                     | C8CLP1  |
| 334 | 025164 | 012737 | 140011 | 026440 | MOV    | #140011,T29PK3      |  | ;WRITE TAPE MARK,ACK,CVC=1 COMMAND       |         |
| 335 | 025172 | 012704 | 026440 |        | MOV    | #T29PK3,R4          |  | ;SET UP R4 WITH PACKET ADDRESS           |         |
| 336 | 025176 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |  | ;ISSUE COMMAND                           |         |
| 337 | 025202 | 004737 | 016330 |        | JSR    | PC,WAITE            |  | ;WAIT FOR SSR TO SET                     |         |
| 338 | 025206 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |  | ;GET TSSR CONTENTS                       |         |
| 339 | 025212 | 012702 | 000200 |        | MOV    | #SSR,R2             |  | ;SET UP EXPECTED                         |         |
| 340 | 025216 | 020102 |        |        | CMP    | R1,R2               |  | ;ARE THEY EQUAL                          |         |
| 341 | 025220 | 001406 |        |        | BEQ    | 708                 |  | ;BR, IF OK                               |         |
| 342 | 025222 | 005237 | 002214 |        | INC    | FATFLG              |  | ;ERROR COUNT                             |         |
| 346 | 025226 |        |        |        | ERRMRD | ERRNO,T29WDC,PKTSSR |  | ;TSSR INCORRECT AFTER WRITE TAPE MARK    |         |
|     | 025226 | 104456 |        |        |        |                     |  | TRAP                                     | C8ERMRD |
|     | 025230 | 000170 |        |        |        |                     |  | .WORD                                    | 120     |
|     | 025232 | 030677 |        |        |        |                     |  | .WORD                                    | T29WDC  |
|     | 025234 | 012126 |        |        |        |                     |  | .WORD                                    | PKTSSR  |
| 347 | 025236 |        |        | 708:   | CKLOOP |                     |  | ;LOOP IF SELECTED                        |         |
|     | 025236 | 104406 |        |        |        |                     |  | TRAP                                     | C8CLP1  |
| 348 | 025240 | 012703 | 000001 |        | MOV    | #1.,R3              |  | ;NUMBER OF RECORDS TO WRITE TM           |         |
| 349 | 025244 | 012737 | 141011 | 026440 | MOV    | #141011,T29PK3      |  | ;WRITE TAPE MARK RETRY,ACK,CVC=1 COMMAND |         |
| 350 | 025252 | 012704 | 026440 |        | MOV    | #T29PK3,R4          |  | ;SET UP R4 WITH PACKET ADDRESS           |         |
| 351 | 025256 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |  | ;ISSUE COMMAND                           |         |
| 352 | 025262 | 004737 | 016330 |        | JSR    | PC,WAITE            |  | ;WAIT FOR SSR TO SET                     |         |
| 353 | 025266 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |  | ;PICK UP TSSR                            |         |
| 354 | 025272 | 012702 | 000200 |        | MOV    | #SSR,R2             |  | ;SET UP EXPECTED (SSR ONLY)              |         |
| 355 | 025276 | 020102 |        |        | CMP    | R1,R2               |  | ;WAS STATUS GOOD                         |         |
| 356 | 025300 | 001406 |        |        | BEQ    | 1658                |  | ;BR, IF TERMINATION WAS GOOD             |         |
| 357 | 025302 | 005237 | 002214 |        | INC    | FATFLG              |  | ;ERROR COUNT                             |         |
| 361 | 025306 |        |        |        | ERRMRD | ERRNO,T29WDC,PKTSSR |  | ;TSSR NOT CORRECT AFTER WRT TAPE M.      |         |
|     | 025306 | 104456 |        |        |        |                     |  | TRAP                                     | C8ERMRD |
|     | 025310 | 000171 |        |        |        |                     |  | .WORD                                    | 121     |
|     | 025312 | 030677 |        |        |        |                     |  | .WORD                                    | T29WDC  |
|     | 025314 | 012126 |        |        |        |                     |  | .WORD                                    | PKTSSR  |
| 362 | 025316 |        |        | 1658:  | CKLOOP |                     |  | ;LOOP IF SELECTED                        |         |

| Line | Address | Offset | Label  | Operation | Comments                                        |                                   |
|------|---------|--------|--------|-----------|-------------------------------------------------|-----------------------------------|
| 363  | 025316  | 104406 |        | MOV       | #140401,T29PK3 ;READ REVERSE,ACK, COMMAND       |                                   |
| 364  | 025320  | 012737 | 140401 | MOV       | FREE,T29RB ;NUMBER OF RECORDS TO SPACE BACK     |                                   |
| 365  | 025326  | 013737 | 003116 | MOV       | #T29PK3,R4 ;SET UP R4 WITH PACKET ADDRESS       |                                   |
| 366  | 025334  | 012704 | 026440 | MOV       | R4,TSD8(R5) ;ISSUE COMMAND                      |                                   |
| 367  | 025340  | 010465 | 000000 | JSR       | PC,WAITF ;WAIT FOR SSR TO SET                   |                                   |
| 368  | 025344  | 004737 | 016330 | MOV       | TSSR(R5),R1 ;GET TSSR CONTENTS                  |                                   |
| 369  | 025350  | 016501 | 000002 | MOV       | #SSR!SC!BIT2,R2 ;SET UP EXPECTED                |                                   |
| 370  | 025354  | 012702 | 100204 | MOV       | R1,R2 ;ARE THEY EQUAL                           |                                   |
| 371  | 025360  | 020102 |        | CMP       | 222\$ ;BR, IF OK                                |                                   |
| 372  | 025362  | 001406 |        | BEQ       | 222\$ ;ERROR COUNT                              |                                   |
| 373  | 025364  | 005237 | 002214 | INC       | FATFLG ;TSSR INCORRECT AFTER SPACE CMD.         |                                   |
| 374  | 025370  |        |        | ERRHRD    | ERRNO,T29RDG,PKTSSR                             |                                   |
| 375  | 025370  | 104456 |        |           |                                                 |                                   |
| 376  | 025372  | 000172 |        |           |                                                 |                                   |
| 377  | 025374  | 031643 |        |           |                                                 |                                   |
| 378  | 025376  | 012126 |        |           |                                                 |                                   |
| 379  | 025400  |        | 222\$: | CKLOOP    | ;LOOP IF SELECTED                               |                                   |
| 380  | 025400  | 104406 |        |           |                                                 |                                   |
| 381  | 025402  | 013701 | 026350 | MOV       | T29RFR+6,R1 ;PICK UP XSTO                       |                                   |
| 382  | 025406  | 010102 |        | MOV       | R1,R2 ;SET UP EXPECTED                          |                                   |
| 383  | 025410  | 052702 | 100000 | BIS       | #BIT15,R2 ;TMK SHOULD BE SET                    |                                   |
| 384  | 025414  | 020102 |        | CMP       | R1,R2 ;IS TMK SET                               |                                   |
| 385  | 025416  | 001406 |        | BEQ       | 226\$ ;BR, IF TMK WAS SET (GOOD)                |                                   |
| 386  | 025420  | 005237 | 002214 | INC       | FATFLG ;ERROR COUNT                             |                                   |
| 387  | 025424  |        |        | ERRHRD    | ERRNO,T29RRN,EXPREC ;TMK NOT SET AFTER READ REV |                                   |
| 388  | 025424  | 104456 |        |           |                                                 |                                   |
| 389  | 025426  | 000173 |        |           |                                                 |                                   |
| 390  | 025430  | 032024 |        |           |                                                 |                                   |
| 391  | 025432  | 015554 |        |           |                                                 |                                   |
| 392  | 025434  |        | 226\$: | CKLOOP    | ;LOOP IF SELECTED                               |                                   |
| 393  | 025434  | 104406 |        |           |                                                 |                                   |
| 394  | 025436  |        |        | ENDSUB    | ;***** END SUBTEST *****                        |                                   |
| 395  | 025436  |        |        |           |                                                 |                                   |
| 396  | 025436  | 104403 |        |           |                                                 |                                   |
| 397  | 025440  | 023727 | 002214 | 000017    | CMP                                             | FATFLG,#15. ;IS ERROR COUNT AT 25 |
| 398  | 025446  | 103402 |        |           | BLO                                             | 999\$ ;BR, IF LESS THAN 25        |
| 399  | 025450  | 004737 | 017262 |           | JSR                                             | PC,CKDROP ;TRY TO DROP THE UNIT   |
| 400  | 025454  |        | 999\$: |           |                                                 |                                   |
| 401  | 025454  |        |        |           |                                                 |                                   |
| 402  | 025454  |        |        |           |                                                 |                                   |
| 403  | 025454  |        |        |           |                                                 |                                   |
| 404  | 025454  |        |        |           |                                                 |                                   |
| 405  | 025454  |        |        |           |                                                 |                                   |
| 406  | 025454  |        |        |           |                                                 |                                   |
| 407  | 025454  |        |        |           |                                                 |                                   |
| 408  | 025454  |        |        |           |                                                 |                                   |
| 409  | 025454  |        |        |           |                                                 |                                   |
| 410  | 025454  |        |        |           |                                                 |                                   |
| 411  | 025454  |        |        |           |                                                 |                                   |
| 412  | 025454  |        |        |           |                                                 |                                   |
| 413  | 025454  |        |        |           |                                                 |                                   |
| 414  | 025454  |        |        |           |                                                 |                                   |
| 415  | 025454  |        |        |           |                                                 |                                   |
| 416  | 025454  |        |        |           |                                                 |                                   |
| 417  | 025454  |        |        |           |                                                 |                                   |
| 418  | 025454  |        |        |           |                                                 |                                   |
| 419  | 025454  |        |        |           |                                                 |                                   |
| 420  | 025454  |        |        |           |                                                 |                                   |
| 421  | 025454  |        |        |           |                                                 |                                   |
| 422  | 025454  |        |        |           |                                                 |                                   |
| 423  | 025454  |        |        |           |                                                 |                                   |
| 424  | 025454  |        |        |           |                                                 |                                   |
| 425  | 025454  |        |        |           |                                                 |                                   |
| 426  | 025454  |        |        |           |                                                 |                                   |
| 427  | 025454  |        |        |           |                                                 |                                   |
| 428  | 025454  |        |        |           |                                                 |                                   |
| 429  | 025454  |        |        |           |                                                 |                                   |
| 430  | 025454  |        |        |           |                                                 |                                   |
| 431  | 025454  |        |        |           |                                                 |                                   |
| 432  | 025454  |        |        |           |                                                 |                                   |
| 433  | 025454  |        |        |           |                                                 |                                   |
| 434  | 025454  |        |        |           |                                                 |                                   |
| 435  | 025454  |        |        |           |                                                 |                                   |
| 436  | 025454  |        |        |           |                                                 |                                   |
| 437  | 025454  |        |        |           |                                                 |                                   |
| 438  | 025454  |        |        |           |                                                 |                                   |
| 439  | 025454  |        |        |           |                                                 |                                   |
| 440  | 025454  |        |        |           |                                                 |                                   |
| 441  | 025454  |        |        |           |                                                 |                                   |
| 442  | 025454  |        |        |           |                                                 |                                   |
| 443  | 025454  |        |        |           |                                                 |                                   |
| 444  | 0       |        |        |           |                                                 |                                   |

| Address | Hex | Dec | Label | Op | Op2 | Op3 | Op4 | Op5 | Op6 | Op7 | Op8 | Op9 | Op10 | Op11 | Op12 | Op13 | Op14 | Op15 | Op16 | Op17 | Op18 | Op19 | Op20 | Op21 | Op22 | Op23 | Op24 | Op25 | Op26 | Op27 | Op28 | Op29 | Op30 | Op31 | Op32 | Op33 | Op34 | Op35 | Op36 | Op37 | Op38 | Op39 | Op40 | Op41 | Op42 | Op43 | Op44 | Op45 | Op46 | Op47 | Op48 | Op49 | Op50 | Op51 | Op52 | Op53 | Op54 | Op55 | Op56 | Op57 | Op58 | Op59 | Op60 | Op61 | Op62 | Op63 | Op64 | Op65 | Op66 | Op67 | Op68 | Op69 | Op70 | Op71 | Op72 | Op73 | Op74 | Op75 | Op76 | Op77 | Op78 | Op79 | Op80 | Op81 | Op82 | Op83 | Op84 | Op85 | Op86 | Op87 | Op88 | Op89 | Op90 | Op91 | Op92 | Op93 | Op94 | Op95 | Op96 | Op97 | Op98 | Op99 | Op100 | Op101 | Op102 | Op103 | Op104 | Op105 | Op106 | Op107 | Op108 | Op109 | Op110 | Op111 | Op112 | Op113 | Op114 | Op115 | Op116 | Op117 | Op118 | Op119 | Op120 | Op121 | Op122 | Op123 | Op124 | Op125 | Op126 | Op127 | Op128 | Op129 | Op130 | Op131 | Op132 | Op133 | Op134 | Op135 | Op136 | Op137 | Op138 | Op139 | Op140 | Op141 | Op142 | Op143 | Op144 | Op145 | Op146 | Op147 | Op148 | Op149 | Op150 | Op151 | Op152 | Op153 | Op154 | Op155 | Op156 | Op157 | Op158 | Op159 | Op160 | Op161 | Op162 | Op163 | Op164 | Op165 | Op166 | Op167 | Op168 | Op169 | Op170 | Op171 | Op172 | Op173 | Op174 | Op175 | Op176 | Op177 | Op178 | Op179 | Op180 | Op181 | Op182 | Op183 | Op184 | Op185 | Op186 | Op187 | Op188 | Op189 | Op190 | Op191 | Op192 | Op193 | Op194 | Op195 | Op196 | Op197 | Op198 | Op199 | Op200 | Op201 | Op202 | Op203 | Op204 | Op205 | Op206 | Op207 | Op208 | Op209 | Op210 | Op211 | Op212 | Op213 | Op214 | Op215 | Op216 | Op217 | Op218 | Op219 | Op220 | Op221 | Op222 | Op223 | Op224 | Op225 | Op226 | Op227 | Op228 | Op229 | Op230 | Op231 | Op232 | Op233 | Op234 | Op235 | Op236 | Op237 | Op238 | Op239 | Op240 | Op241 | Op242 | Op243 | Op244 | Op245 | Op246 | Op247 | Op248 | Op249 | Op250 | Op251 | Op252 | Op253 | Op254 | Op255 | Op256 | Op257 | Op258 | Op259 | Op260 | Op261 | Op262 | Op263 | Op264 | Op265 | Op266 | Op267 | Op268 | Op269 | Op270 | Op271 | Op272 | Op273 | Op274 | Op275 | Op276 | Op277 | Op278 | Op279 | Op280 | Op281 | Op282 | Op283 | Op284 | Op285 | Op286 | Op287 | Op288 | Op289 | Op290 | Op291 | Op292 | Op293 | Op294 | Op295 | Op296 | Op297 | Op298 | Op299 | Op300 | Op301 | Op302 | Op303 | Op304 | Op305 | Op306 | Op307 | Op308 | Op309 | Op310 | Op311 | Op312 | Op313 | Op314 | Op315 | Op316 | Op317 | Op318 | Op319 | Op320 | Op321 | Op322 | Op323 | Op324 | Op325 | Op326 | Op327 | Op328 | Op329 | Op330 | Op331 | Op332 | Op333 | Op334 | Op335 | Op336 | Op337 | Op338 | Op339 | Op340 | Op341 | Op342 | Op343 | Op344 | Op345 | Op346 | Op347 | Op348 | Op349 | Op350 | Op351 | Op352 | Op353 | Op354 | Op355 | Op356 | Op357 | Op358 | Op359 | Op360 | Op361 | Op362 | Op363 | Op364 | Op365 | Op366 | Op367 | Op368 | Op369 | Op370 | Op371 | Op372 | Op373 | Op374 | Op375 | Op376 | Op377 | Op378 | Op379 | Op380 | Op381 | Op382 | Op383 | Op384 | Op385 | Op386 | Op387 | Op388 | Op389 | Op390 | Op391 | Op392 | Op393 | Op394 | Op395 | Op396 | Op397 | Op398 | Op399 | Op400 | Op401 | Op402 | Op403 | Op404 | Op405 | Op406 | Op407 | Op408 | Op409 | Op410 | Op411 | Op412 | Op413 | Op414 | Op415 | Op416 | Op41 |
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TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 1: WRITE TAPE MARK RETRY

SEQ 102

|     |        |        |        |        |        |                     |                                          |
|-----|--------|--------|--------|--------|--------|---------------------|------------------------------------------|
| 453 | 025710 | 012737 | 140011 | 026440 | MOV    | #140011,T29PK3      | ;WRITE TAPE MARK,ACK,CVC=1 COMMAND       |
| 454 | 025716 | 012704 | 026440 |        | MOV    | #T29PK3,R4          | ;SET UP R4 WITH PACKET ADDRESS           |
| 455 | 025722 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         | ;ISSUE COMMAND                           |
| 456 | 025726 | 004737 | 016330 |        | JSR    | PC,WAITF            | ;WAIT FOR SSR TO SET                     |
| 457 | 025732 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         | ;GET TSSR CONTENTS                       |
| 458 | 025736 | 012702 | 000200 |        | MOV    | #SSR,R2             | ;SET UP EXPECTED                         |
| 459 | 025742 | 020102 |        |        | CMP    | R1,R2               | ;ARE THEY EQUAL                          |
| 460 | 025744 | 001406 |        |        | BEQ    | 70\$                | ;BR, IF OK                               |
| 461 | 025746 | 005237 | 002214 |        | INC    | FATFLG              | ;ERROR COUNT                             |
| 465 | 025752 |        |        |        | ERRHRD | ERRNO,T29WDC,PKTSSR | ;TSSR INCORRECT AFTER WRITE TAPE MARK    |
|     | 025752 | 104456 |        |        |        |                     | TRAP C\$ERHRD                            |
|     | 025754 | 000200 |        |        |        |                     | .WORD 128                                |
|     | 025756 | 030677 |        |        |        |                     | .WORD T29WDC                             |
|     | 025760 | 012126 |        |        |        |                     | .WORD PKTSSR                             |
| 466 | 025762 |        |        | 70\$:  | CKLOOP |                     | ;LOOP IF SELECTED                        |
|     | 025762 | 104406 |        |        |        |                     | TRAP C\$CLP1                             |
| 467 | 025764 | 012703 | 000012 | 150\$: | MOV    | #10.,R3             | ;NUMBER OF RECORDS TO WRITE TM           |
| 468 | 025770 | 012737 | 000001 | 026442 | MOV    | #1,T29RB            | ;SET UP PACKET                           |
| 469 | 025776 | 012737 | 141011 | 026440 | MOV    | #141011,T29PK3      | ;WRITE TAPE MARK RETRY,ACK,CVC=1 COMMAND |
| 470 | 026004 | 012704 | 026440 |        | MOV    | #T29PK3,R4          | ;SET UP R4 WITH PACKET ADDRESS           |
| 471 | 026010 | 010465 | 000000 | 155\$: | MOV    | R4,TSD8(R5)         | ;ISSUE COMMAND                           |
| 472 | 026014 | 004737 | 016330 |        | JSR    | PC,WAITF            | ;WAIT FOR SSR TO SET                     |
| 473 | 026020 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         | ;PICK UP TSSR                            |
| 474 | 026024 | 012702 | 000200 |        | MOV    | #SSR,R2             | ;SET UP EXPECTED (SSR ONLY)              |
| 475 | 026030 | 020102 |        |        | CMP    | R1,R2               | ;WAS STATUS GOOD                         |
| 476 | 026032 | 001406 |        |        | BEQ    | 165\$               | ;BR, IF TERMINATION WAS GOOD             |
| 477 | 026034 | 005237 | 002214 |        | INC    | FATFLG              | ;ERROR COUNT                             |
| 481 | 026040 |        |        |        | ERRHRD | ERRNO,T29WDC,PKTSSR | ;TSSR NOT CORRECT AFTER WRT TAPE M.      |
|     | 026040 | 104456 |        |        |        |                     | TRAP C\$ERHRD                            |
|     | 026042 | 000201 |        |        |        |                     | .WORD 129                                |
|     | 026044 | 030677 |        |        |        |                     | .WORD T29WDC                             |
|     | 026046 | 012126 |        |        |        |                     | .WORD PKTSSR                             |
| 482 | 026050 |        |        | 165\$: | CKLOOP |                     | ;LOOP IF SELECTED                        |
|     | 026050 | 104406 |        |        |        |                     | TRAP C\$CLP1                             |
| 483 | 026052 | 005303 |        |        | DEC    | R3                  | ;BUMP COUNTER DOWN                       |
| 484 | 026054 | 001355 |        |        | BNE    | 155\$               | ;BR, IF LESS THAN 10 TAPE MARKS          |
| 485 | 026056 | 012737 | 140410 | 026440 | MOV    | #140410,T29PK3      | ;SPACE REVERSE,ACK,CVC=1. COMMAND        |
| 486 | 026064 | 012737 | 000001 | 026442 | MOV    | #1,T29RB            | ;NUMBER OF RECORDS TO SPACE BACK         |
| 487 | 026072 | 012704 | 026440 |        | MOV    | #T29PK3,R4          | ;SET UP R4 WITH PACKET ADDRESS           |
| 488 | 026076 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         | ;ISSUE COMMAND                           |
| 489 | 026102 | 004737 | 016330 |        | JSR    | PC,WAITF            | ;WAIT FOR SSR TO SET                     |
| 490 | 026106 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         | ;GET TSSR CONTENTS                       |
| 491 | 026112 | 012702 | 100204 |        | MOV    | #SSR!SC!BIT2,R2     | ;SET UP EXPECTED                         |
| 492 | 026116 | 020102 |        |        | CMP    | R1,R2               | ;ARE THEY EQUAL                          |
| 493 | 026120 | 001406 |        |        | BEQ    | 222\$               | ;BR, IF OK                               |
| 494 | 026122 | 005237 | 002214 |        | INC    | FATFLG              | ;ERROR COUNT                             |
| 498 | 026126 |        |        |        | ERRHRD | ERRNO,T29WDE,PKTSSR | ;TSSR INCORRECT AFTER SPACE CMD.         |
|     | 026126 | 104456 |        |        |        |                     | TRAP C\$ERHRD                            |
|     | 026130 | 000202 |        |        |        |                     | .WORD 130                                |
|     | 026132 | 027562 |        |        |        |                     | .WORD T29WDE                             |
|     | 026134 | 012126 |        |        |        |                     | .WORD PKTSSR                             |
| 499 | 026136 |        |        | 222\$: | CKLOOP |                     | ;LOOP IF SELECTED                        |
|     | 026136 | 104406 |        |        |        |                     | TRAP C\$CLP1                             |
| 500 | 026140 | 012737 | 100410 | 026440 | MOV    | #100410,T29PK3      | ;SPACE REVERSE,ACK. COMMAND              |
| 501 | 026146 | 012737 | 000005 | 026442 | MOV    | #5,T29RB            | ;NUMBER OF RECORDS TO SPACE BACK         |
| 502 | 026154 | 012704 | 026440 |        | MOV    | #T29PK3,R4          | ;SET UP R4 WITH PACKET ADDRESS           |
| 503 | 026160 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         | ;ISSUE COMMAND                           |



SEQ 103

| Line | Address | Offset | Label      | Operation | Comments |
|------|---------|--------|------------|-----------|----------|
| 504  | 026164  | 004737 | 016330     |           |          |
| 505  | 026170  | 016501 | 000002     |           |          |
| 506  | 026174  | 012702 | 100204     |           |          |
| 507  | 026200  | 020102 |            |           |          |
| 508  | 026202  | 001406 |            |           |          |
| 509  | 026204  | 005237 | 002214     |           |          |
| 513  | 026210  |        |            |           |          |
|      | 026210  | 104456 |            |           |          |
|      | 026212  | 000203 |            |           |          |
|      | 026214  | 031643 |            |           |          |
|      | 026216  | 012126 |            |           |          |
| 514  | 026220  |        | 260\$:     | CKLOOP    |          |
|      | 026220  | 104406 |            |           |          |
| 515  | 026222  | 013701 | 026356     |           |          |
| 516  | 026226  | 010102 |            |           |          |
| 517  | 026230  | 052702 | 000001     |           |          |
| 518  | 026234  | 020102 |            |           |          |
| 519  | 026236  | 001406 |            |           |          |
| 520  | 026240  | 005237 | 002214     |           |          |
| 524  | 026244  |        |            |           |          |
|      | 026244  | 104456 |            |           |          |
|      | 026246  | 000204 |            |           |          |
|      | 026250  | 031724 |            |           |          |
|      | 026252  | 015554 |            |           |          |
| 525  | 026254  |        | 270\$:     | CKLOOP    |          |
|      | 026254  | 104406 |            |           |          |
| 526  | 026256  |        | 330\$:     | CKLOOP    |          |
|      | 026256  | 104406 |            |           |          |
| 527  | 026260  |        |            | ENDSUB    |          |
|      | 026260  |        |            |           |          |
|      | 026260  | 104403 |            |           |          |
| 528  | 026262  | 023727 | 002214     | 000017    |          |
| 529  | 026270  | 103402 |            |           |          |
| 530  | 026272  | 004737 | 017262     |           |          |
| 531  | 026276  |        | 999\$:     |           |          |
| 532  |         |        | :          |           |          |
| 533  |         |        | :          |           |          |
| 534  |         |        | :          |           |          |
| 535  | 026276  | 004737 | 016536     |           |          |
| 536  | 026302  | 103002 |            |           |          |
| 537  | 026304  | 000137 | 023556     |           |          |
| 538  | 026310  |        | 163\$:     |           |          |
|      | 026310  | 104432 |            |           |          |
|      | 026312  | 004020 |            |           |          |
| 539  |         |        |            |           |          |
| 540  |         |        |            |           |          |
| 541  |         |        |            |           |          |
| 543  |         | 026320 |            |           |          |
| 545  | 026320  |        | T29PACKET: |           |          |
| 546  | 026320  | 014004 |            |           |          |
| 547  | 026322  | 026330 |            |           |          |
| 548  | 026324  | 000000 |            |           |          |
| 549  | 026326  | 000012 |            |           |          |
| 550  | 026330  |        | T29DATA:   |           |          |
| 551  | 026330  | 026342 |            |           |          |
| 552  | 026332  | 000000 |            |           |          |
| 553  | 026334  | 000024 |            |           |          |

TEST 1 - HARDWARE TEST 1-8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 1: WRITE TAPE MARK RETRY

SEQ 104

```

554 026336 000000          .WORD 0
555 026340 000000      T29DSW: .WORD 0          ;SELECT DRIVE 0
556 026342          T29BFR: .BLKW 25.          ;MESSAGE BUFFER
557
558          ;WRITE SUBSYSTEM MEMORY COMMAND PACKET
559
561          026430          .=<..+10>E177770
563 026430      T29PK2:          .WORD 100006          ;WRITE SUB SYS MEM COMMAND, AND ACK
564 026430          .WORD T29BF2          ;ADDRESS OF SELECT BLOCK DATA
565 026432 026450          .WORD 0
566 026434 000000          .WORD 6.          ;SIZE OF DATA PACKET
567 026436 000006
568
572 026440      T29PK3:          .WORD 140005          ;WRITE TAPE MARK RETRY COMMAND, CVC=1 AND ACK
573 026440 140005      T29RB:
574 026442      T29WB:          .WORD FREE          ;ADDRESS OF WRITE BUFFER
575 026442 003116          .WORD 0
576 026444 000000          .WORD 0
577 026446 000000      T29SZ:          .WORD 0          ;SIZE OF BUFFER (EXTENT)
578          .EVEN
579
580
581
582 026450      T29BF2:
583 026450          .BYTE 10          ;BSEL0 AREA
584 026451          .BYTE 200          ;BSEL1 AREA
585 026452 000000      T29S2:          .WORD 0          ;SEL 2 AREA
586 026454 000000      T29S3:          .WORD 0          ;DATA AREA
587
588
589          .EVEN
590          ;TAPE MOTION PACKET COMMAND VALUES
591
592 026456 140001      T29RN:          .WORD 140001          ;READ DATA
593 026460 140401      T29WC:          .WORD 140401          ;READ DATA REVERSE
594 026462 141001      T29CON:          .WORD 141001          ;READ PREVIOUS OPP=0
595 026464 161001          .WORD 161001          ;READ PREVIOUS OPP=1
596 026466 141401          .WORD 141401          ;WRITE TAPE MARK RETRY NEXT OPP=0
597 026470 161401          .WORD 161401          ;WRITE TAPE MARK RETRY NEXT OPP=1
598 026472 177777          .WORD 177777          ;END OF DATA
599
600
601 026474 000000      T29CNT:          .WORD 0          ;TAPE RECORD COUNTER STORAGE AREA
602
603 026476 000000      T29RSZ:          .WORD 0          ;RECORD STORAGE SIZE AREA
604 026500 000000      T29DLY:          .WORD          ;DELAY COUNTER STORAGE AREA
605
606          ;LOCAL TEXT MESSAGES FOR TEST
607
608
609 026502          104          162          151      T29OFL: .ASCIZ 'Drive is OFFLINE
610 026523          124          141          160      T29WNG: .ASCIZ 'Tape Position Incorrect After WRITE TAPE MARK RETRY Previous (OPP=1)
611 026630          127          122          111      T29NEF: .ASCIZ 'WRITE TAPE MARK RETRY, At BOT, Failed To Set NEF (XSTO)
612 026720          124          123          123      T29RDF: .ASCIZ 'TSSR Incorrect After READ DATA Command
613 026767          127          122          111      T29RRF: .ASCIZ 'WRITE TAPE MARK RETRY Previous (Space Reverse, Read Forward) Command Failed
614 027103          127          122          111      T29RRG: .ASCIZ 'WRITE TAPE MARK RETRY Previous (Read Forward, Space Reverse) Command Failed
615 027217          120          117          123      T29SC: .ASCIZ 'POSITION (Space Command) Failed, TSSR Not Correct

```



TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 1: WRITE TAPE MARK RETRY

SEQ 105

|     |        |     |     |     |         |        |                                                                          |
|-----|--------|-----|-----|-----|---------|--------|--------------------------------------------------------------------------|
| 616 | 027301 | 122 | 111 | 102 | T29LOR: | .ASCIZ | 'RIB NOT SET AFTER READ REVERSE INTO BOT'                                |
| 617 | 027351 | 124 | 123 | 123 | T29WOF: | .ASCIZ | 'TSSR Not Correct After Illegal Mode Bits Set'                           |
| 618 | 027426 | 111 | 154 | 154 | T29LOQ: | .ASCIZ | 'Illegal Mode Bits, Failed To Set ILC Bit In XST0'                       |
| 619 | 027507 | 127 | 122 | 111 | T29SSR: | .ASCIZ | 'WRITE TAPE MARK RETRY COMMAND Not Accepted'                             |
| 620 | 027562 | 124 | 123 | 123 | T29WDE: | .ASCIZ | 'TSSR Not Correct After SPACE REVERSE DATA Command'                      |
| 621 | 027644 | 052 | 052 | 052 | T29WLK: | .ASCIZ | '*****TAPE IS WRITE-LOCKED AND WILL CAUSE ERRORS*****'                   |
| 622 | 027731 | 124 | 123 | 123 | T29WRT: | .ASCIZ | 'TSSR Not Correct After WRITE Command'                                   |
| 623 | 027776 | 124 | 141 | 160 | T29BOT: | .ASCIZ | 'Tape Not At BOT After REWIND Command'                                   |
| 624 | 030043 | 104 | 141 | 164 | T29DTA: | .ASCIZ | 'Data Written To Tape Not Equal To Data Read From Tape'                  |
| 625 | 030131 | 127 | 122 | 111 | T29EOT: | .ASCIZ | 'WRITE TAPE MARK RETRY DATA OVER EOT GAVE NO TAPE STATUS ALERT'          |
| 626 | 030227 | 124 | 123 | 123 | T29TM:  | .ASCIZ | 'TSSR Not Correct After SPACE REVERSE Into BOT'                          |
| 627 | 030305 | 122 | 145 | 167 | T29RWI: | .ASCIZ | 'Rewind (POSITION) Command Not Accepted'                                 |
| 628 | 030354 | 122 | 101 | 115 | T29RNC: | .ASCIZ | 'RAM Error, Correct Data Pattern Not In Ram'                             |
| 629 | 030427 | 124 | 123 | 123 | T29AM3: | .ASCIZ | 'TSSR Init. Failed After WRITE TAPE MARK RETRY COMMAND'                  |
| 630 | 030515 | 104 | 162 | 151 | T29OF7: | .ASCIZ | 'Drive 7 Select Failed To Set "OFL" In TSSR'                             |
| 631 | 030570 | 124 | 123 | 123 | T29WDD: | .ASCIZ | 'TSSR Not Correct After WRITE TAPE MARK RETRY DATA Command, SWB Bit Set' |
| 632 | 030677 | 124 | 123 | 123 | T29WDC: | .ASCIZ | 'TSSR Not Correct After WRITE TAPE MARK RETRY DATA Command'              |
| 633 | 030771 | 103 | 126 | 103 | T29VCK: | .ASCIZ | 'CVC Set, Didn't Reset VCK In Message Buffer'                            |
| 634 | 031044 | 124 | 123 | 102 | T29BA:  | .ASCIZ | 'TSBA Not Correct After WRITE TAPE MARK RETRY DATA Command'              |
| 635 | 031135 | 127 | 122 | 111 | T29WSS: | .ASCIZ | 'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'                 |
| 636 | 031225 | 122 | 145 | 141 | T29LON: | .ASCIZ | 'Reading Long Record Failed To Set RLL Bit In XST0'                      |
| 637 | 031307 | 122 | 145 | 141 | T29LOP: | .ASCIZ | 'Reading Long Record Failed To Set RLS Bit In XST0'                      |
| 638 | 031371 | 122 | 145 | 163 | T29PBP: | .ASCIZ | 'Residual Byte Count Incorrect After Short Record Read'                  |
| 639 | 031457 | 122 | 145 | 141 | T29TRL: | .ASCIZ | 'Reading Long Record Failed To Give Tape Status Alert'                   |
| 640 | 031545 | 104 | 141 | 164 | T29NEQ: | .ASCIZ | 'Data WRITE TAPE MARK RETRY From Tape Not Correct, After SWB=1'          |
| 641 | 031643 | 124 | 123 | 123 | T29RDG: | .ASCIZ | 'TSSR Incorrect After READ REVERSE Into Tape Mark'                       |
| 642 | 031724 | 127 | 122 | 111 | T29RIB: | .ASCIZ | 'WRITE TAPE MARK RETRY At First Record, Failed To Set RIB (XST3)'        |
| 643 | 032024 | 124 | 115 | 113 | T29RRN: | .ASCIZ | 'TMK (XST0) Failed To Set After READ REVERSE Into Tape Mark'             |
| 644 | 032117 | 127 | 162 | 151 | T29ID:  | .ASCIZ | 'Write Tape Mark Retry'                                                  |

.EVEN

645  
 646  
 647  
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 671  
 672

T29REST:

SAVREG

MOV #T29PACKET,R1  
 MOV #140004,(R1).  
 MOV #T29DATA,(R1).  
 CLR (R1).  
 MOV #10.,(R1).  
 MOV #T29BFR,(R1).  
 CLR (R1).  
 MOV #20.,(R1).  
 CLR (R1).  
 MOV #0,(R1)  
 MOV #24.,R2  
 MOV #177777,T29BFR(R2)  
 TST (R2)  
 CMP R2,#0  
 BNE 648  
 RTS PC

SAVE THE REGISTERS  
 START OF THE PACKET  
 WRITE SUBSYSTEM MEM. WITH ACK, CVC=1  
 ADDRESS OF CHARACTERISTICS DATA BLOCK  
 EXTENDED ADDRESS  
 SIZE OF DATA BLOCK IN BYTES  
 ADDRESS OF MESSAGE BUFFER  
 LENGTH OF MESSAGE BUFFER  
 SELECT DRIVE ZERO (0)  
 NUMBER OF LOCATIONS TO BE CLEARED  
 ALL ONES TO MESSAGE BUFFER  
 NEXT LOCATION  
 CHECK FOR END OF LOOP  
 KEEP GOING UNTIL DONE  
 RETURN

T29RT2:

L10036: TRAP C8E1S1

.SBTTL TEST 2: SKIP TAPE MARKS

THIS TEST VERIFIES PROPER OPERATION OF THE SKIP TAPE MARKS FORWARD AND SKIP TAPE MARKS REVERSE COMMANDS. PROPER OPERATION UNDER CONTROL OF ALL COMBINATIONS OF THE ENABLE SKIP TAPE MARKS STOP (ESS) AND ENABLE TAPE MARKS STOP OFF BOT (ENB) BITS SPECIFIED BY THE WRITE CHARACTERISTICS COMMAND. THE TEST CONSISTS OF THE FOLLOWING SUBTESTS (FOR EACH SUBTEST, THE TAPE IS FIRST WRITTEN WITH AN APPROPRIATE SERIES OF DATA RECORDS AND/OR TAPE MARKS AND/OR DOUBLE TAPE MARKS.

THE TEST CONSISTS OF THE FOLLOWING 11 SUBTESTS

BGNIST

T2::  
MESSAGE  
TO IDENTIFY TEST  
SETUP  
RATIONS

TEST 2, SUBTEST 1

```

;VERIFIES THAT A SKIP TAPE MARKS FORWARD COMMAND WITH
;A TAPE MARK COUNT OF 1 OPERATES PROPERLY. THE TAPE
;IS FIRST REWOUND, THEN WRITTEN WITH SEVERAL "FILES";
;EACH FILE CONSISTS OF A NUMBER OF DATA RECORDS
;FOLLOWED BY A TAPE MARK. THE FINAL FILE IS
;TERMINATED BY A DOUBLE TAPE MARK. EACH DATA RECORD

```

```

731      ;CONTAINS A FILE NUMBER AND THE RECORD NUMBER WITHIN
732      ;THE FILE SO THAT TAPE POSITION CAN BE SUBSEQUENTLY
733      ;VERIFIED BY READING THE DATA. THE TAPE IS AGAIN
734      ;REWOUND AND A SERIES OF SKIP TAPE MARKS FORWARD
735      ;COMMANDS ARE ISSUED AND THE RESULTS (TAPE STATUS ALERT
736      ;TERMINATION, TMK=1 STATUS, TAPE POSITION VIA READ
737      ;COMMAND) IS CHECKED. PRIOR TO ISSUANCE OF EACH SKIP
738      ;COMMAND, A WRITE CHARACTERISTICS COMMAND IS ISSUED TO
739      ;SET UP THE ESS AND ENB CONTROL BITS. ALL
740      ;COMBINATIONS OF ESS AND ENB ARE USED (00,01,10,
741      ;11); OPERATION SHOULD BE THE SAME IN EACH CASE FOR
742      ;THIS SUBTEST.
743      ;
744      ;
745      ;
746
747      T30LOOP:
748          BGNSUB                                ;>>>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>>>
              T2.1:
              TRAP        C1BSUB
749      032360    004737    041252                JSR        PC,T3OREST            ;SET COMMAND PACKET
750      032366    005037    036654                CLR        T30FCN            ;CLEAR FILE COUNTER
751      032372    004737    041344                JSR        PC,T3ORT2            ;SET UP OTHER COMMAND PACKET
752      032376    004737    041406                JSR        PC,T3OR*3           ;SET UP OTHER COMMAND PACKET
753      032402    012737    176750    036656       MOV        #65000.,T3ODLY     ;SET UP DELAY COUNTER
754      032410    004737    016054    101:         JSR        PC,SOFINIT        ;DO INITIALIZE ON CONTROLLER
755      032414    103426                                     BCS        201             ;BR IF INIT WAS OK
756      032416                                     DELAY        250             ;DELAY ROUTINE CALL
              MOV        #250,(PC).
              .WORD      0
              MOV        L$DLY,(PC).
              .WORD      0
              DEC        -6(PC)
              BNE        -.4
              DEC        -22(PC)
              BNE        -.20
757      032446    005337    036656                DEC        T3ODLY            ;BUMP COUNTER
758      032452    001356                BNE        101             ;BR, IF MORE COUNTING TO DO
759      032454    005237    002214                INC        FATFLG         ;ERROR COUNT
763      032460    010001                MOV        R0,R1           ;CONTENTS OF TSSR REGISTER
764      032462                                     ERDRF        ERRNO,SFIERR,SFIMSG   ;FATAL ERROR TSSR WAS NOT OK
              TRAP        C1ERDRF
              .WORD      201
              .WORD      SFIERR
              .WORD      SFIMSG
765      032472                                     201:
766      032472    013737    002174    036520       MOV        UNITN,T30DSW        ;SET UP UNIT NUMBER
767      032500    012704    036500                MOV        @T30PACKET,R4    ;SUBROUTINE NEEDS PACKET ADDRESS
768
769      ;*****
770      ;
771      ;ISSUE WRITE CHARACTERISTICS COMMAND
772      ;
773      ;*****
774
775      032504    004737    010742                JSR        PC,WRTCHR        ;ISSUE WRITE CHARACTERISTICS
776      032510    103407                                     BCS        231             ;BR, IF COMMAND ISSUED OK

```

TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 108

```

777 032512 005237 002214      INC      FATFLG      ;ERROR COUNT
781 032516 010001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
782 032520      ERRHRD  ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
      032520 104456      TRAP      C$ERHRD
      032522 000312      .WORD    202
      032524 005052      .WORD    WRTMSG
      032526 012114      .WORD    SFIMSG
783 032530      23$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
      032530 104406
784
785      ;*****
786      ;
787      ;ISSUE A REWIND TO TAPE DRIVE AND WAIT FOR SSR TO SET
788      ;
789      ;*****
790
791 032532 004737 011074      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
792 032536 103411      BCS      30$      ;BR. IF NO PROBLEM
793 032540 010004      MOV      R0,R4      ;GET PACKET ADDRESS
794 032542 016501 000002      MOV      TSSR(R5),R1      ;GET STATUS REGISTER
795 032546 005237 002214      INC      FATFLG      ;ERROR COUNT
799 032552      ERRHRD  ERRNO,T3ORWN,PKTSSR ;REWIND NOT ACCEPTED
      032552 104456      TRAP      C$ERHRD
      032554 000313      .WORD    203
      032556 040240      .WORD    T3ORWN
      032560 012126      .WORD    PKTSSR
800 032562      30$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
      032562 104406
801
802      ;*****
803      ;
804      ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
805      ;
806      ;*****
807
808 032564 013701 036530      MOV      T3OBFR+6,R1      ;PICK UP XSTO
809 032570 010102      MOV      R1,R2      ;SET UP EXPECTED
810 032572 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
811 032576 020102      CMP      R1,R2      ;DOES EXP = REC'D
812 032600 001406      BEQ      40$      ;BR. IF EQUAL (OK)
813 032602 005237 002214      INC      FATFLG      ;ERROR COUNT
817 032606      ERRHRD  ERRNO,T3OBOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
      032606 104456      TRAP      C$ERHRD
      032610 000314      .WORD    204
      032612 040041      .WORD    T3OBOT
      032614 015554      .WORD    EXPREC
818 032616      40$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
      032616 104406
819 032620 012737 000001 036654      MOV      #1.,T3OFCN      ;SET "FILE" COUNTER AT 1 DECIMAL
820 032626 012703 000001      64$:      MOV      #1,R3      ;ONE RECORD PER "FILE"
821 032632 013737 003116 036622      65$:      MOV      FREE,T3OWB      ;SET UP PACKETS S WRITE BUFFER
822 032640 012737 003720 036626      MOV      #2000.,T3OSZ      ;SET RECORD SIZE AT 2000 BYTES
823
824      ;*****
825      ;
826      ;WRITE DATA,ACK,CVC=1 COMMAND
827      ;

```

TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 109

```

828 ;*****
829
830 032646 012737 140005 036620      MOV      #140005,T30PK3      ;WRITE DATA,ACK,CVC=1 COMMAND
831 032654 012704 036620      MOV      #T30PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
832 032660 013702 036654      MOV      T30FCN,R2      ;GET FILE COUNTER
833 032664 000302      SWAB      R2      ;MOVE TO UPPER BYTE
834 032666 010301      MOV      R3,R1      ;GET RECORD COUNTER
835 032670 060201      ADD      R2,R1      ;FILE COUNTER IN UPPER, RECORD # LOW
836 032672 010177 150220      MOV      R1,#FREE      ;MOV TO OUT PUT BUFFER
837 032676 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
838 032702 004737 016330      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
839 032706 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
840 032712 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
841 032716 020102      CMP      R1,R2      ;ARE THEY EQUAL
842 032720 001406      BEQ      70$      ;BR, IF OK
843 032722 005237 002214      INC      FATFLG      ;ERROR COUNT
847 032726      ERRHRD      ERRNO,T30WDD,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
      032726 104456      TRAP      C$ERRHRD
      032730 000315      .WORD      205
      032732 037170      .WORD      T30WDD
      032734 012126      .WORD      PKTSSR
848 032736      70$:      CKLOOP      ;LOOP IF SELECTED
      032736 104406      TRAP      C$CLP1
849 032740 005203      INC      R3      ;COUNT THE RECORD COUNTER DOWN
850 032742 020327 000021      CMP      R3,#21      ;AT 20 YET
851 032746 001331      BNE      65$      ;BR, IF NOT AT 20 RECORDS WRITTEN
852 ;*****
853 ;
854 ;WRITE TAPE MARK,ACK,CVC=1 COMMAND
855 ;
856 ;*****
857
858
859 032750 012737 141011 036620      MOV      #141011,T30PK3      ;WRITE TAPE MARK,ACK,CVC=1 COMMAND
860 032756 012704 036620      MOV      #T30PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
861 032762 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
862 032766 004737 016330      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
863 032772 016501 000002      MOV      TSSR(R5),R1      ;PICK UP TSSR
864 032776 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED (SSR ONLY)
865 033002 020102      CMP      R1,R2      ;WAS STATUS GOOD
866 033004 001406      BEQ      160$      ;BR, IF TERMINATION WAS GOOD
867 033006 005237 002214      INC      FATFLG      ;ERROR COUNT
871 033012      ERRHRD      ERRNO,T30WDC,PKTSSR      ;TSSR NOT CORRECT AFTER WRT TAPE M.
      033012 104456      TRAP      C$ERRHRD
      033014 000316      .WORD      206
      033016 040362      .WORD      T30WDC
      033020 012126      .WORD      PKTSSR
872 033022      160$:      ;LOOP IF SELECTED
      033022 104406      TRAP      C$CLP1
873 033024 005237 036654      INC      T30FCN      ;COUNT THE "FILE" COUNTER DOWN
874 033030 023727 036654 000006      CMP      T30FCN,#6      ;WRITE 5 FILE TO TAPE
875 033036 001273      BNE      64$      ;BR, IF NOT AT 5 FILES WRITTEN
876 ;*****
877 ;
878 ;WRITE TAPE MARK,ACK,CVC=1 COMMAND
879 ;
880 ;

```

TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 110

```

881 ;*****
882
883 033040 012737 141011 036620      MOV      #141011,T3OPK3      ;WRITE TAPE MARK,ACK,CVC=1 COMMAND
884 033046 012704 036620      MOV      #T3OPK3,R4      ;SET UP R4 WITH PACKET ADDRESS
885 033052 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
886 033056 004737 016330      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
887 033062 016501 000002      MOV      TSSR(R5),R1      ;PICK UP TSSR
888 033066 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED (SSR ONLY)
889 033072 020102      CMP      R1,R2      ;WAS STATUS GOOD
890 033074 001406      BEQ      165$      ;BR, IF TERMINATION WAS GOOD
891 033076 005237 002214      INC      FATFLG      ;ERROR COUNT
895 033102      ERRHRD  ERRNO,T3OWDC,PKTSSR      ;TSSR NOT CORRECT AFTER WRT TAPE M.
      033102 104456      TRAP      C$ERHRD
      033104 000317      .WORD    207
      033106 040362      .WORD    T3OWDC
      033110 012126      .WORD    PKTSSR
896 033112      165$:  CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
      033112 104406
897
898 ;*****
899 ;
900 ;ISSUE A REWIND TO TAPE DRIVE AND WAIT FOR SSR TO SET
901 ;
902 ;*****
903
904 033114 004737 011074      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
905 033120 103411      BCS      170$      ;BR, IF NO PROBLEM
906 033122 010004      MOV      R0,R4      ;GET PACKET ADDRESS
907 033124 016501 000002      MOV      TSSR(R5),R1      ;GET STATUS REGISTER
908 033130 005237 002214      INC      FATFLG      ;ERROR COUNT
912 033134      ERRHRD  ERRNO,T3ORWN,PKTSSR      ;REWIND NOT ACCEPTED
      033134 104456      TRAP      C$ERHRD
      033136 000320      .WORD    208
      033140 040240      .WORD    T3ORWN
      033142 012126      .WORD    PKTSSR
913 033144      170$:  CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
      033144 104406
914
915 ;*****
916 ;
917 ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
918 ;
919 ;*****
920
921 033146 013701 036530      MOV      T3OBFR+6,R1      ;PICK UP XSTO
922 033152 010102      MOV      R1,R2      ;SET UP EXPECTED
923 033154 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
924 033160 020102      CMP      R1,R2      ;DOES EXP = REC'D
925 033162 001406      BEQ      180$      ;BR, IF EQUAL (OK)
926 033164 005237 002214      INC      FATFLG      ;ERROR COUNT
930 033170      ERRHRD  ERRNO,T3OBOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
      033170 104456      TRAP      C$ERHRD
      033172 000321      .WORD    209
      033174 040041      .WORD    T3OBOT
      033176 015554      .WORD    EXPREC
931 033200      180$:  CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
      033200 104406

```



TEST 1 - HARDWARE TEST 1-8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 111

```

932 033202 012703 036636      MOV    #T30IMV,R3      ;SET UP POINTER TO COMMAND TABLE
933 033206 013737 002174 036520  MOV    UNITN,T30DSW    ;SET UP UNIT NUMBER
934 033214 011337 036516      MOV    (R3),T30ETM    ;GET NEXT COMMAND
935 033220 012704 036500      MOV    #T30PACKET,R4    ;SUBROUTINE NEEDS PACKET ADDRESS
936
937      ;*****
938      ;
939      ;ISSUE WRITE CHARACTERISTICS COMMAND
940      ;
941      ;*****
942
943 033224 004737 010742      JSR     PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
944 033230 103407      BCS     188$      ;BR, IF COMMAND ISSUED OK
945 033232 005237 002214      INC     FATFLG      ;ERROR COUNT
949 033236 010001      MOV     R0,R1      ;SAVE CONTENTS OF TSSR
950 033240      ERRMRD  ERRNO,WRTMSG,SFMSG    ;WRITE CHARACTERISTICS FAILED
          033240 104456      TRAP     C$ERRMRD
          033242 000322      .WORD   210
          033244 005052      .WORD   WRTMSG
          033246 012114      .WORD   SFMSG
951 033250      188$: CKLOOP      ;LOOP IF SELECTED
          033250 104406      TRAP     C$CLP1
952
953      ;*****
954      ;
955      ;SKIP TAPE MARK,ACK,CVC=1 COMMAND
956      ;
957      ;*****
958
959 033252 012737 141010 036620      MOV    #141010,T30PK3    ;SKIP TAPE MARK,ACK,CVC=1 COMMAND
960 033260 012737 000001 036622      MOV    #1,T30RB      ;SET UP NUMBER TO SKIP
961 033266 012704 036620      MOV    #T30PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
962 033272 010465 000000      189$: MOV    R4,TSD8(R5)    ;ISSUE COMMAND
963 033276 012737 176750 036656      MOV    #65000.,T30DLY    ;SET UP DELAY COUNTER
964 033304 004737 016330      190$: JSR     PC,WAITF      ;WAIT FOR SSR TO SET
965 033310 016501 000002      MOV     TSSR(R5),R1    ;PICK UP TSSR
966 033314 032701 0C0200      BIT     #SSR,R1      ;IS SSR SET YET
967 033320 001017      BNE     191$      ;BR, IF SSR IS SET
968 033322      DELAY  250      ;CALL DELAY ROUTINE
          033322 012727 000250      MOV     #250,(PC)+
          033326 000000      .WORD   0
          033330 013727 002116      MOV     L$DLY,(PC)+
          033334 000000      .WORD   0
          033336 005367 177772      DEC     6(PC)
          033342 001375      BNE     . 4
          033344 005367 177756      DEC     22(PC)
          033350 001367      BNE     . 20
969 033352 005337 036656      DEC     T30DLY      ;BUMP DELAY ROUTINE
970 033356 001352      BNE     190$      ;BR, IF MORE DELAY TO GO
971 033360 012702 000200      191$: MOV    #SSR,R2      ;SET UP EXPECTED (SSR ONLY)
972 033364 020102      CMP     R1,R2      ;WAS STATUS GOOD
973 033366 001406      BEQ     192$      ;BR, IF TERMINATION WAS GOOD
974 033370 005237 002214      INC     FATFLG      ;ERROR COUNT
978 033374      ERRMRD  ERRNO,T30SKM,PKTSSR    ;TSSR NOT CORRECT AFTER SKIP TAPE M.
          033374 104456      TRAP     C$ERRMRD
          033376 000323      .WORD   211
          033400 037114      .WORD   T30SKM

```

TEST 1: HARDWARE TEST 1 & TEST MACRO M1113 06 FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 112

```

033402 012126
979 033404 1921: CKLOOP ;LOOP IF SELECTED .WORD PKTSSR
033404 104406 ;TRAP C8CLP1
980
981 ;*****
982 ;
983 ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
984 ;
985 ;*****
986
987 033406 013701 036530 MOV T308FR+6,R1 ;PICK UP XSTO
988 033412 010102 MOV R1,R2 ;SET UP EXPECTED
989 033414 052702 100000 BIS #BIT15,R2 ;SET TMK BIT IN EXPECTED
990 033420 020102 CMP R1,R2 ;DOES EXP = REC'D
991 033422 001406 BEQ 1951 ;BR, IF EQUAL (OK)
992 033424 005237 002214 INC FATFLG ;ERROR COUNT
996 033430 ERRHRD ERRNO,T30TMK,EXPHEC ;TMK NOT SET AFTER WRT TAPE MARK
033430 104456 TRAP C8ERHRD
033432 000324 .WORD 212
033434 040514 .WORD T30TMK
033436 015554 .WORD EXPREC
997 033440 1951: CKLOOP ;LOOP IF SELECTED TRAP C8CLP1
033440 104406 ;
998 033442 012700 177777 MOV #177777,R0 ;VALUE TO WRITTEN TO MEMORY
999 033446 004737 017502 JSR PC,FILLMEM ;FILL MEM WITH ALL ONES
1000 033452 013737 003116 036622 MOV FREE,T30RB ;STARTING READ BUFFER ADDRESS
1001
1002 ;*****
1003 ;
1004 ;READ FORWARD,ALK,CVC-1 COMMAND
1005 ;
1006 ;*****
1007
1008 033460 012737 140001 036620 MOV #140001,T30PK3 ;READ FORWARD,ACK,CVC-1 COMMAND
1009 033466 012704 036620 MOV #T30PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
1010 033472 012737 003720 036626 MOV #2000,T30SZ ;SET UP RECORD SIZE IN PACKET
1011 033500 010465 000000 MOV R4,T30B(R5) ;ISSUE COMMAND
1012 033504 004737 016330 JSR PC,WAITF ;WAIT FOR SSR TO SET
1013 033510 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
1014 033514 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
1015 033520 020102 CMP R1,R2 ;ARE THEY EQUAL
1016 033522 001406 BEQ 2001 ;BR, IF OK
1017 033524 005237 002214 INC FATFLG ;ERROR COUNT
1021 033530 ERRHRD ERRNO,T30RDF,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
033530 104456 TRAP C8ERHRD
033532 000325 .WORD 213
033534 037413 .WORD T30RDF
033536 012126 .WORD PKTSSR
1022 033540 2001: CKLOOP ;LOOP IF SELECTED TRAP C8CLP1
033540 104406 ;
1023 033542 017701 147350 MOV #FREE,R1 ;FIRST LOC IN READ BUFFER
1024 033546 012702 177777 MOV #177777,R2 ;EXPECTED IF NO DATA TRANS.
1025 033552 020102 CMP R1,R2 ;DID ANY DATA GET TRANSFERRED
1026 033554 001006 BNE 2201 ;BR, IF NO DATA TRANS (GOOD)
1027 033556 005237 002214 INC FATFLG ;ERROR COUNT
1031 033562 ERRHRD ERRNO,T30DTR,EXPHEC ;DATA TRANSFERRED ON READ TAPE MARK
033562 104456 TRAP C8ERHRD

```



TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

J9

SEQ 113

|      |        |        |        |        |                     |                                         |          |
|------|--------|--------|--------|--------|---------------------|-----------------------------------------|----------|
|      | 033564 | 000326 |        |        |                     | .WORD                                   | 214      |
|      | 033566 | 041070 |        |        |                     | .WORD                                   | T30DTR   |
|      | 033570 | 015554 |        |        |                     | .WORD                                   | EXPREC   |
| 1032 | 033572 |        | 220\$: | CKLOOP | ;LOOP IF SELECTED   |                                         |          |
|      | 033572 | 104406 |        |        |                     | TRAP                                    | C\$CLP1  |
| 1033 | 033574 | 012702 | 001001 | MOV    | #1001,R2            | ;SET UP RECORD NUMBER EXPECTED (FILE 2) |          |
| 1034 | 033600 | 017701 | 147312 | MOV    | BFREE,R1            | ;GET INFO FROM BUFFER                   |          |
| 1035 | 033604 | 020201 |        | CMP    | R2,R1               | ;ARE THEY EQUAL                         |          |
| 1036 | 033606 | 001406 |        | BEQ    | 228\$               | ;BR, IF EQUAL (OK)                      |          |
| 1037 | 033610 | 005237 | 002214 | INC    | FATFLG              | ;ERROR COUNT                            |          |
| 1041 | 033614 |        |        | ERRHRD | ERRNO,T30PTB,EXPREC | ;RECORD POSITION WAS NOT CORRECT        |          |
|      | 033614 | 10445  |        |        |                     | TRAP                                    | C\$ERHRD |
|      | 033616 | 000327 |        |        |                     | .WORD                                   | 215      |
|      | 033620 | 037242 |        |        |                     | .WORD                                   | T30PTB   |
|      | 033622 | 015554 |        |        |                     | .WORD                                   | EXPREC   |
| 1042 | 033624 |        | 228\$: | CKLOOP | ;LOOP IF SELECTED   |                                         |          |
|      | 033624 | 104406 |        |        |                     | TRAP                                    | C\$CLP1  |
| 1043 |        |        |        |        |                     |                                         |          |
| 1044 |        |        |        |        |                     |                                         |          |
| 1045 |        |        |        |        |                     |                                         |          |
| 1046 |        |        |        |        |                     |                                         |          |
| 1047 |        |        |        |        |                     |                                         |          |
| 1048 |        |        |        |        |                     |                                         |          |
| 1049 |        |        |        |        |                     |                                         |          |
| 1050 | 033626 | 004737 | 011074 | JSR    | PC,REWIND           | ;CALL TAPE REWIND COMMAND               |          |
| 1051 | 033632 | 103411 |        | BCS    | 230\$               | ;BR, IF NO PROBLEM                      |          |
| 1052 | 033634 | 010004 |        | MOV    | R0,R4               | ;SAVE PACKET ADDRESS                    |          |
| 1053 | 033636 | 016501 | 000002 | MOV    | TSSR(R5),R1         | ;GET TSSR STATUS                        |          |
| 1054 | 033642 | 005237 | 002214 | INC    | FATFLG              | ;ERROR COUNT                            |          |
| 1058 | 033646 |        |        | ERRHRD | ERRNO,T30RWN,PKTSSR | ;REWIND NOT ACCEPTED                    |          |
|      | 033646 | 104456 |        |        |                     | TRAP                                    | C\$ERHRD |
|      | 033650 | 000330 |        |        |                     | .WORD                                   | 216      |
|      | 033652 | 040240 |        |        |                     | .WORD                                   | T30RWN   |
|      | 033654 | 012126 |        |        |                     | .WORD                                   | PKTSSR   |
| 1059 | 033656 |        | 230\$: | CKLOOP | ;LOOP IF SELECTED   |                                         |          |
|      | 033656 | 104406 |        |        |                     | TRAP                                    | C\$CLP1  |
| 1060 |        |        |        |        |                     |                                         |          |
| 1061 |        |        |        |        |                     |                                         |          |
| 1062 |        |        |        |        |                     |                                         |          |
| 1063 |        |        |        |        |                     |                                         |          |
| 1064 |        |        |        |        |                     |                                         |          |
| 1065 |        |        |        |        |                     |                                         |          |
| 1066 |        |        |        |        |                     |                                         |          |
| 1067 | 033660 | 013701 | 036530 | MOV    | T30BFR+6,R1         | ;PICK UP XSTO                           |          |
| 1068 | 033664 | 010102 |        | MOV    | R1,R2               | ;SET UP EXPECTED                        |          |
| 1069 | 033666 | 052702 | 000002 | BIS    | #BIT1,R2            | ;SET BOT BIT IN EXPECTED                |          |
| 1070 | 033672 | 020102 |        | CMP    | R1,R2               | ;DOES EXP = REC'D                       |          |
| 1071 | 033674 | 001406 |        | BEQ    | 240\$               | ;BR, IF EQUAL (OK)                      |          |
| 1072 | 033676 | 005237 | 002214 | INC    | FATFLG              | ;ERROR COUNT                            |          |
| 1076 | 033702 |        |        | ERRHRD | ERRNO,T30BOT,EXPREC | ;TAPE NOT AT BOT AFTER REWIND           |          |
|      | 033702 | 104456 |        |        |                     | TRAP                                    | C\$ERHRD |
|      | 033704 | 000331 |        |        |                     | .WORD                                   | 217      |
|      | 033706 | 040041 |        |        |                     | .WORD                                   | T30BOT   |
|      | 033710 | 015554 |        |        |                     | .WORD                                   | EXPREC   |
| 1077 | 033712 |        | 240\$: | CKLOOP | ;LOOP IF SELECTED   |                                         |          |
|      | 033712 | 104406 |        |        |                     | TRAP                                    | C\$CLP1  |
| 1078 | 033714 | 005723 |        | TST    | (R3),               | ;POINT TO NEXT POSITION                 |          |

| Line | Address | Op | Op2 | Op3 | Op4 | Op5 | Op6 | Op7 | Op8 | Op9 | Op10 | Op11 | Op12 | Op13 | Op14 | Op15 | Op16 | Op17 | Op18 | Op19 | Op20 | Op21 | Op22 | Op23 | Op24 | Op25 | Op26 | Op27 | Op28 | Op29 | Op30 | Op31 | Op32 | Op33 | Op34 | Op35 | Op36 | Op37 | Op38 | Op39 | Op40 | Op41 | Op42 | Op43 | Op44 | Op45 | Op46 | Op47 | Op48 | Op49 | Op50 | Op51 | Op52 | Op53 | Op54 | Op55 | Op56 | Op57 | Op58 | Op59 | Op60 | Op61 | Op62 | Op63 | Op64 | Op65 | Op66 | Op67 | Op68 | Op69 | Op70 | Op71 | Op72 | Op73 | Op74 | Op75 | Op76 | Op77 | Op78 | Op79 | Op80 | Op81 | Op82 | Op83 | Op84 | Op85 | Op86 | Op87 | Op88 | Op89 | Op90 | Op91 | Op92 | Op93 | Op94 | Op95 | Op96 | Op97 | Op98 | Op99 | Op100 | Op101 | Op102 | Op103 | Op104 | Op105 | Op106 | Op107 | Op108 | Op109 | Op110 | Op111 | Op112 | Op113 | Op114 | Op115 | Op116 | Op117 | Op118 | Op119 | Op120 | Op121 | Op122 | Op123 | Op124 | Op125 | Op126 | Op127 | Op128 | Op129 | Op130 | Op131 | Op132 | Op133 | Op134 | Op135 | Op136 | Op137 | Op138 | Op139 | Op140 | Op141 | Op142 | Op143 | Op144 | Op145 | Op146 | Op147 | Op148 | Op149 | Op150 | Op151 | Op152 | Op153 | Op154 | Op155 | Op156 | Op157 | Op158 | Op159 | Op160 | Op161 | Op162 | Op163 | Op164 | Op165 | Op166 | Op167 | Op168 | Op169 | Op170 | Op171 | Op172 | Op173 | Op174 | Op175 | Op176 | Op177 | Op178 | Op179 | Op180 | Op181 | Op182 | Op183 | Op184 | Op185 | Op186 | Op187 | Op188 | Op189 | Op190 | Op191 | Op192 | Op193 | Op194 | Op195 | Op196 | Op197 | Op198 | Op199 | Op200 | Op201 | Op202 | Op203 | Op204 | Op205 | Op206 | Op207 | Op208 | Op209 | Op210 | Op211 | Op212 | Op213 | Op214 | Op215 | Op216 | Op217 | Op218 | Op219 | Op220 | Op221 | Op222 | Op223 | Op224 | Op225 | Op226 | Op227 | Op228 | Op229 | Op230 | Op231 | Op232 | Op233 | Op234 | Op235 | Op236 | Op237 | Op238 | Op239 | Op240 | Op241 | Op242 | Op243 | Op244 | Op245 | Op246 | Op247 | Op248 | Op249 | Op250 | Op251 | Op252 | Op253 | Op254 | Op255 | Op256 | Op257 | Op258 | Op259 | Op260 | Op261 | Op262 | Op263 | Op264 | Op265 | Op266 | Op267 | Op268 | Op269 | Op270 | Op271 | Op272 | Op273 | Op274 | Op275 | Op276 | Op277 | Op278 | Op279 | Op280 | Op281 | Op282 | Op283 | Op284 | Op285 | Op286 | Op287 | Op288 | Op289 | Op290 | Op291 | Op292 | Op293 | Op294 | Op295 | Op296 | Op297 | Op298 | Op299 | Op300 | Op301 | Op302 | Op303 | Op304 | Op305 | Op306 | Op307 | Op308 | Op309 | Op310 | Op311 | Op312 | Op313 | Op314 | Op315 | Op316 | Op317 | Op318 | Op319 | Op320 | Op321 | Op322 | Op323 | Op324 | Op325 | Op326 | Op327 | Op328 | Op329 | Op330 | Op331 | Op332 | Op333 | Op334 | Op335 | Op336 | Op337 | Op338 | Op339 | Op340 | Op341 | Op342 | Op343 | Op344 | Op345 | Op346 | Op347 | Op348 | Op349 | Op350 | Op351 | Op352 | Op353 | Op354 | Op355 | Op356 | Op357 | Op358 | Op359 | Op360 | Op361 | Op362 | Op363 | Op364 | Op365 | Op366 | Op367 | Op368 | Op369 | Op370 | Op371 | Op372 | Op373 | Op374 | Op375 | Op376 | Op377 | Op378 | Op379 | Op380 | Op381 | Op382 | Op383 | Op384 | Op385 | Op386 | Op387 | Op388 | Op389 | Op390 | Op391 | Op392 | Op393 | Op394 | Op395 | Op396 | Op397 | Op398 | Op399 | Op400 | Op401 | Op402 | Op403 | Op404 | Op405 | Op406 | Op407 | Op408 | Op409 | Op410 | Op411 | Op412 | Op413 | Op414 | Op415 | Op416 | Op417 | Op418 |
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TEST 1 - HARDWARE TEST 1-8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 115

```

1122
1123 ;*****
1124 ;
1125 ;ISSUE WRITE CHARACTERISTICS COMMAND
1126 ;
1127 ;*****
1128
1129 034076 004737 010742      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
1130 034102 103407           BCS      23$      ;BR, IF COMMAND ISSUED OK
1131 034104 005237 002214      INC      FATFLG      ;ERROR COUNT
1135 034110 010001           MOV      R0,R1      ;SAVE CONTENTS OF TSSR
1136 034112           ERRHRD  ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
                                TRAP      C$ERHRD
                                .WORD     219
                                .WORD     WRTMSG
                                .WORD     SFIMSG
                                034112 104456
                                034114 000333
                                034116 005052
                                034120 012114
1137 034122           23$:    CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                034122 104406
1138
1139 ;*****
1140 ;
1141 ;ISSUE A REWIND TO TAPE DRIVE AND WAIT FOR SSR TO SET
1142 ;
1143 ;*****
1144
1145 034124 004737 011074      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
1146 034130 103411           BCS      30$      ;BR, IF NO PROBLEM
1147 034132 010004           MOV      R0,R4      ;GET PACKET ADDRESS
1148 034134 016501 000002      MOV      TSSR(R5),R1 ;GET STATUS REGISTER
1149 034140 005237 002214      INC      FATFLG      ;ERROR COUNT
1153 034144           ERRHRD  ERRNO,T3ORWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD     220
                                .WORD     T3ORWN
                                .WORD     PKTSSR
                                034144 104456
                                034146 000334
                                034150 040240
                                034152 012126
1154 034154           30$:    CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                034154 104406
1155
1156 ;*****
1157 ;
1158 ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
1159 ;
1160 ;*****
1161
1162 034156 013701 036530      MOV      T3OBF+6,R1      ;PICK UP XSTO
1163 034162 010102           MOV      R1,R2      ;SET UP EXPECTED
1164 034164 052702 000002      BIS      @BIT1,R2      ;SET BOT BIT IN EXPECTED
1165 034170 020102           CMP      R1,R2      ;DOES EXP = RECD
1166 034172 001406           BEQ      40$      ;BR, IF EQUAL (OK)
1167 034174 005237 002214      INC      FATFLG      ;ERROR COUNT
1171 034200           ERRHRD  ERRNO,T3OBOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERHRD
                                .WORD     221
                                .WORD     T3OBOT
                                .WORD     EXPREC
                                034200 104456
                                034202 000335
                                034204 040041
                                034206 015554
1172 034210           40$:    CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                034210 104406

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TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB-84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 116

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1173 034212 012737 000001 036654      MOV    #1.,T30FCN      ;SET "FILE" COUNTER AT 1 DECIMAL
1174 034220 012703 000001      64$:  MOV    #1,R3          ;ONE RECORD PER "FILE"
1175 034224 013737 003116 036622      65$:  MOV    FREE,T30WB      ;SET UP PACKETS'S WRITE BUFFER
1176 034232 012737 000024 036626      MOV    #20.,T30SZ      ;SET RECORD SIZE AT 2000 BYTES
1177
1178      ;*****
1179      ;
1180      ;WRITE DATA,ACK,CVC=1 COMMAND
1181      ;
1182      ;*****
1183
1184 034240 012737 140005 036620      MOV    #140005,T30PK3      ;WRITE DATA,ACK,CVC=1 COMMAND
1185 034246 012704 036620      MOV    #T30PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
1186 034252 013702 036654      MOV    T30FCN,R2      ;GET FILE COUNTER
1187 034256 000302      SWAB    R2          ;MOVE TO UPPER BYTE
1188 034260 010301      MOV    R3,R1      ;GET RECORD COUNTER
1189 034262 060201      ADD     R2,R1      ;FILE COUNTER IN UPPER, RECORD # LOW
1190 034264 010177 146626      MOV    R1,#FREE      ;MOV TO OUT PUT BUFFER
1191 034270 010465 000000      MOV    R4,TSD8(R5)      ;ISSUE COMMAND
1192 034274 004737 016330      JSR     PC,WAITF      ;WAIT FOR SSR TO SET
1193 034300 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
1194 034304 012702 000200      MOV    #SSR,R2      ;SET UP EXPECTED
1195 034310 020102      CMP     R1,R2      ;ARE THEY EQUAL
1196 034312 001406      BEQ     70$          ;BR, IF OK
1197 034314 005237 002214      INC     FATFLG      ;ERROR COUNT
1201 034320      ERRHRD    ERRNO,T30WDD,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
      034320 104456      TRAP     C$ERHRD
      034322 000336      .WORD    222
      034324 037170      .WORD    T30WDD
      034326 012126      .WORD    PKTSSR
1202 034330      70$:  CKLOOP      ;LOOP IF SELECTED
      034330 104406      TRAP     C$CLP1
1203 034332 005203      INC     R3          ;COUNT THE RECORD COUNTER DOWN
1204 034334 020327 000021      CMP     R3,#21      ;AT 20 YET
1205 034340 001331      BNE     65$          ;BR, IF NOT AT 20 RECORDS WRITTEN
1206
1207      ;*****
1208      ;
1209      ;WRITE TAPE MARK,ACK,CVC=1 COMMAND
1210      ;
1211      ;*****
1212
1213 034342 012737 141011 036620      MOV    #141011,T30PK3      ;WRITE TAPE MARK,ACK,CVC=1 COMMAND
1214 034350 012704 036620      MOV    #T30PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
1215 034354 010465 000000      MOV    R4,TSD8(R5)      ;ISSUE COMMAND
1216 034360 004737 016330      JSR     PC,WAITF      ;WAIT FOR SSR TO SET
1217 034364 016501 000002      MOV    TSSR(R5),R1      ;PICK UP TSSR
1218 034370 012702 000200      MOV    #SSR,R2      ;SET UP EXPECTED (SSR ONLY)
1219 034374 020102      CMP     R1,R2      ;WAS STATUS GOOD
1220 034376 001406      BEQ     160$      ;BR, IF TERMINATION WAS GOOD
1221 034400 005237 002214      INC     FATFLG      ;ERROR COUNT
1225 034404      ERRHRD    ERRNO,T30WDC,PKTSSR      ;TSSR NOT CORRECT AFTER WRT TAPE M.
      034404 104456      TRAP     C$ERHRD
      034406 000337      .WORD    223
      034410 040362      .WORD    T30WDC
      034412 012126      .WORD    PKTSSR
1226 034414      160$:  CKLOOP      ;LOOP IF SELECTED

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TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 117

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1227 034414 104406                                TRAP      C$CLP1
1228 034416 005237 036654                        INC      T30FCN      ;COUNT THE "FILE" COUNTER DOWN
1229 034422 023727 036654 000031                CMP      T30FCN,#25.    ;WRITE 25 FILES TO TAPE
1230 034430 001273                                BNE      64$           ;BR. IF NOT AT 25 FILES WRITTEN
1231
1232 ;*****
1233 ;WRITE TAPE MARK,ACK,CVC=1 COMMAND
1234 ;
1235 ;*****
1236
1237 034432 012737 141011 036620                    MOV      #141011,T30PK3    ;WRITE TAPE MARK,ACK,CVC=1 COMMAND
1238 034440 012704 036620                        MOV      #T30PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
1239 034444 010465 000000                        MOV      R4,T30DB(R5)    ;ISSUE COMMAND
1240 034450 004737 016330                        JSR      PC,WAITF       ;WAIT FOR SSR TO SET
1241 034454 016501 000002                        MOV      T30SR(R5),R1    ;PICK UP T30SR
1242 034460 012702 000200                        MOV      #SSR,R2        ;SET UP EXPECTED (SSR ONLY)
1243 034464 020102                                CMP      R1,R2          ;WAS STATUS GOOD
1244 034466 001406                        BEQ      165$           ;BR. IF TERMINATION WAS GOOD
1245 034470 005237 002214                        INC      FATFLG         ;ERROR COUNT
1249 034474                                ERRMRD   ERRNO,T30WDC,PKTSSR ;T30SR NOT CORRECT AFTER WRT TAPE M.
1250 034474 104456                                TRAP      C$ERRMRD
1251 034476 000340                                .WORD     224
1252 034500 040362                                .WORD     T30WDC
1253 034502 012126                                .WORD     PKTSSR
1254 034504                                TRAP      C$CLP1
1255 034504 104406
1256
1257 ;*****
1258 ;ISSUE A REWIND TO TAPE DRIVE AND WAIT FOR SSR TO SET
1259 ;
1260 ;*****
1261 034506 004737 011074                        JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
1262 034512 103411                        BCS      170$           ;BR. IF NO PROBLEM
1263 034514 010004                        MOV      R0,R4          ;GET PACKET ADDRESS
1264 034516 016501 000002                        MOV      T30SR(R5),R1    ;GET STATUS REGISTER
1265 034522 005237 002214                        INC      FA FLG         ;ERROR COUNT
1266 034526                                ERRMRD   ERRNO,T30RWN,PKTSSR ;REWIND NOT ACCEPTED
1267 034526 104456                                TRAP      C$ERRMRD
1268 034530 000341                                .WORD     225
1269 034532 040240                                .WORD     T30RWN
1270 034534 012126                                .WORD     PKTSSR
1271 034536                                TRAP      C$CLP1
1272 034536 104406
1273
1274 ;*****
1275 ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
1276 ;
1277 ;*****
1278 034540 013701 036530                        MOV      T30BFR+6,R1    ;PICK UP XSTO
1279 034544 010102                        MOV      R1,R2          ;SET UP EXPECTED
1280 034546 052701 000002                        BIS      #BIT1,R2       ;SET BOT BIT IN EXPECTED
1281 034552 020102                        CMP      R1,R2          ;DOFS EXP = REC'D

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TEST 1 HARDWARE TEST 1 & TEST MACRO M1113 06 FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 118

|      |        |        |        |        |        |                       |  |                                    |              |
|------|--------|--------|--------|--------|--------|-----------------------|--|------------------------------------|--------------|
| 1279 | 034554 | 001406 |        |        | GEQ    | 1801                  |  | BR, IF EQUAL (OK)                  |              |
| 1280 | 034556 | 005237 | 002214 |        | INC    | FATFLG                |  | ERROR COUNT                        |              |
| 1284 | 034562 |        |        |        | ERRHRD | ERRNO, T30BOT, EXPREC |  | TAPE NOT AT BOT AFTER REWIND       |              |
|      | 034562 | 104456 |        |        |        |                       |  | TRAP                               | C1ERHRD      |
|      | 034564 | 000342 |        |        |        |                       |  | .WORD                              | 226          |
|      | 034566 | 040041 |        |        |        |                       |  | .WORD                              | T30BOT       |
|      | 034570 | 015554 |        |        |        |                       |  | .WORD                              | EXPREC       |
| 1285 | 034572 |        |        |        | 1801:  | CKLOOP                |  | LOOP IF SELECTED                   |              |
|      | 034572 | 104406 |        |        |        |                       |  | TRAP                               | C1CLP1       |
| 1286 | 034574 | 012737 | 000002 | 036654 | MOV    | #2, T30FCN            |  | SET TO NUMBER OF SKIP "FILES"      |              |
| 1287 | 034602 | 012703 | 036636 |        | MOV    | #T30IMV, R3           |  | SET UP POINTER TO COMMAND TABLE    |              |
| 1288 | 034606 | 013737 | 002174 | 036520 | MOV    | UNITN, T30DSW         |  | SET UP UNIT NUMBER                 |              |
| 1289 | 034614 | 011337 | 036516 |        | 1821:  | MOV (R3), T30ETM      |  | GET NEXT COMMAND                   |              |
| 1290 | 034620 | 012704 | 036500 |        | MOV    | #T30PACKET, R4        |  | SUBROUTINE NEEDS PACKET ADDRESS    |              |
| 1291 |        |        |        |        |        |                       |  |                                    |              |
| 1292 |        |        |        |        |        |                       |  |                                    |              |
| 1293 |        |        |        |        |        |                       |  |                                    |              |
| 1294 |        |        |        |        |        |                       |  |                                    |              |
| 1295 |        |        |        |        |        |                       |  |                                    |              |
| 1296 |        |        |        |        |        |                       |  |                                    |              |
| 1297 |        |        |        |        |        |                       |  |                                    |              |
| 1298 | 034624 | 004737 | 010742 |        | JSR    | PC, WRTCHR            |  | ISSUE WRITE CHARACTERISTICS        |              |
| 1299 | 034630 | 103407 |        |        | BCS    | 1881                  |  | BR, IF COMMAND ISSUED OK           |              |
| 1300 | 034632 | 005237 | 002214 |        | INC    | FATFLG                |  | ERROR COUNT                        |              |
| 1304 | 034636 | 010001 |        |        | MOV    | R0, R1                |  | SAVE CONTENTS OF TSSR              |              |
| 1305 | 034640 |        |        |        | ERRHRD | ERRNO, WRTMSG, SFMSG  |  | WRITE CHARACTERISTICS FAILED       |              |
|      | 034640 | 104456 |        |        |        |                       |  | TRAP                               | C1ERHRD      |
|      | 034642 | 000343 |        |        |        |                       |  | .WORD                              | 227          |
|      | 034644 | 005052 |        |        |        |                       |  | .WORD                              | WRTMSG       |
|      | 034646 | 012114 |        |        |        |                       |  | .WORD                              | SFMSG        |
| 1306 | 034650 |        |        |        | 1881:  | CKLOOP                |  | LOOP IF SELECTED                   |              |
|      | 034650 | 104406 |        |        |        |                       |  | TRAP                               | C1CLP1       |
| 1307 |        |        |        |        |        |                       |  |                                    |              |
| 1308 |        |        |        |        |        |                       |  |                                    |              |
| 1309 |        |        |        |        |        |                       |  |                                    |              |
| 1310 |        |        |        |        |        |                       |  |                                    |              |
| 1311 |        |        |        |        |        |                       |  |                                    |              |
| 1312 |        |        |        |        |        |                       |  |                                    |              |
| 1313 |        |        |        |        |        |                       |  |                                    |              |
| 1314 | 034652 | 012737 | 141010 | 036620 | MOV    | #141010, T30PK3       |  | SKIP TAPE MARK, ACK, CVC-1 COMMAND |              |
| 1315 | 034660 | 013737 | 036654 | 036622 | MOV    | T30FCN, T30RB         |  | SET UP NUMBER TO SKIP              |              |
| 1316 | 034666 | 012704 | 036620 |        | MOV    | #T30PK3, R4           |  | SET UP R4 WITH PACKET ADDRESS      |              |
| 1317 | 034672 | 010465 | 000000 |        | 1891:  | MOV R4, TSD8(R5)      |  | ISSUE COMMAND                      |              |
| 1318 | 034676 | 012737 | 176750 | 036656 | MOV    | #65000, T30DL1        |  | SET UP DELAY COUNTER               |              |
| 1319 | 034704 | 004737 | 016330 |        | 1901:  | JSR PC, WAIT          |  | WAIT FOR SSR TO SET                |              |
| 1320 | 034710 | 016501 | 000002 |        | MOV    | TSSR(R5), R1          |  | PICK UP TSSR                       |              |
| 1321 | 034714 | 032701 | 000200 |        | BIT    | #SSR, R1              |  | IS SSR SET YET                     |              |
| 1322 | 034720 | 001017 |        |        | BNE    | 1911                  |  | BR, IF SSR IS SET                  |              |
| 1323 | 034722 |        |        |        | DELAY  | 250                   |  | CALL DELAY ROUTINE                 |              |
|      | 034722 | 012727 | 000250 |        |        |                       |  | MOV                                | #250, (PC).  |
|      | 034726 | 000000 |        |        |        |                       |  | .WORD                              | 0            |
|      | 034730 | 013727 | 002116 |        |        |                       |  | MOV                                | L1DL1, (PC). |
|      | 034734 | 000000 |        |        |        |                       |  | .WORD                              | 0            |
|      | 034736 | 005367 | 177772 |        |        |                       |  | DEC                                | 6(PC)        |
|      | 034742 | 001375 |        |        |        |                       |  | BNE                                | .4           |
|      | 034744 | 005367 | 177756 |        |        |                       |  | DEC                                | 22(PC)       |
|      | 034750 | 001367 |        |        |        |                       |  | BNE                                | .20          |



TEST 1: HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 119

|      |        |        |        |        |        |                     |  |                                      |
|------|--------|--------|--------|--------|--------|---------------------|--|--------------------------------------|
| 1324 | 034752 | 005337 | 036656 |        | DEC    | T30DLY              |  | ;BUMP DELAY ROUTINE                  |
| 1325 | 034756 | 001352 |        |        | BNE    | 1901                |  | ;BR, IF MORE DELAY TO GO             |
| 1326 | 034760 | 2702   | 000200 | 1911:  | MOV    | #SSR,R2             |  | ;SET UP EXPECTED (SSR ONLY)          |
| 1327 | 034764 | 020102 |        |        | CMP    | R1,R2               |  | ;WAS STATUS GOOD                     |
| 1328 | 034766 | 001406 |        |        | BEQ    | 1921                |  | ;BR, IF TERMINATION WAS GOOD         |
| 1329 | 034770 | 005237 | 002214 |        | INC    | FATFLG              |  | ;ERROR COUNT                         |
| 1333 | 034774 |        |        |        | ERRHRD | ERRNO,T30SKM,PKTSSR |  | ;TSSR NOT CORRECT AFTER SKIP TAPE M. |
|      | 034774 | 104456 |        |        |        |                     |  | TRAP C1ERHRD                         |
|      | 034776 | 000344 |        |        |        |                     |  | .WORD 228                            |
|      | 035000 | 037114 |        |        |        |                     |  | .WORD T30SKM                         |
|      | 035002 | 012126 |        |        |        |                     |  | .WORD PKTSSR                         |
| 1334 | 035004 |        |        | 1921:  | CKLOOP |                     |  | ;LOOP IF SELECTED                    |
|      | 035004 | 104406 |        |        |        |                     |  | TRAP C1CLP1                          |
| 1335 |        |        |        |        |        |                     |  |                                      |
| 1336 |        |        |        |        |        |                     |  |                                      |
| 1337 |        |        |        |        |        |                     |  |                                      |
| 1338 |        |        |        |        |        |                     |  |                                      |
| 1339 |        |        |        |        |        |                     |  |                                      |
| 1340 |        |        |        |        |        |                     |  |                                      |
| 1341 |        |        |        |        |        |                     |  |                                      |
| 1342 | 035006 | 013701 | 036530 |        | MOV    | T30BFR+6,R1         |  | ;PICK UP XSTO                        |
| 1343 | 035012 | 010102 |        |        | MOV    | R1,R2               |  | ;SET UP EXPECTED                     |
| 1344 | 035014 | 052702 | 100000 |        | BIS    | #BIT15,R2           |  | ;SET TMK BIT IN EXPECTED             |
| 1345 | 035020 | 020102 |        |        | CMP    | R1,R2               |  | ;DOES EXP = REC'D                    |
| 1346 | 035022 | 001406 |        |        | BEQ    | 1951                |  | ;BR, IF EQUAL (OK)                   |
| 1347 | 035024 | 005237 | 002214 |        | INC    | FATFLG              |  | ;ERROR COUNT                         |
| 1351 | 035030 |        |        |        | ERRHRD | ERRNO,T30TMK,EXPREC |  | ;TMK NOT SET AFTER WRT TAPE MARK     |
|      | 035030 | 104456 |        |        |        |                     |  | TRAP C1ERHRD                         |
|      | 035032 | 000345 |        |        |        |                     |  | .WORD 229                            |
|      | 035034 | 040514 |        |        |        |                     |  | .WORD T30TMK                         |
|      | 035036 | 015554 |        |        |        |                     |  | .WORD EXPREC                         |
| 1352 | 035040 |        |        | 1951:  | CKLOOP |                     |  | ;LOOP IF SELECTED                    |
|      | 035040 | 104406 |        |        |        |                     |  | TRAP C1CLP1                          |
| 1353 | 035042 | 012700 | 177777 |        | MOV    | #177777,R0          |  | ;VALUE TO WRITTEN TO MEMORY          |
| 1354 | 035046 | 004737 | 017502 |        | JSR    | PC,FILLMEM          |  | ;FILL MEM WITH ALL ONES              |
| 1355 | 035052 | 013737 | 003116 | 036622 | MOV    | FREE,T30RB          |  | ;STARTING READ BUFFER ADDRESS        |
| 1356 |        |        |        |        |        |                     |  |                                      |
| 1357 |        |        |        |        |        |                     |  |                                      |
| 1358 |        |        |        |        |        |                     |  |                                      |
| 1359 |        |        |        |        |        |                     |  |                                      |
| 1360 |        |        |        |        |        |                     |  |                                      |
| 1361 |        |        |        |        |        |                     |  |                                      |
| 1362 |        |        |        |        |        |                     |  |                                      |
| 1363 | 035060 | 012737 | 140001 | 036620 | MOV    | #140001,T30PK3      |  | ;READ FORWARD,ACK,CVC=1 COMMAND      |
| 1364 | 035066 | 012704 | 036620 |        | MOV    | #T30PK3,R4          |  | ;SET UP R4 WITH PACKET ADDRESS       |
| 1365 | 035072 | 012737 | 000024 | 036626 | MOV    | #20.,T30SZ          |  | ;SET UP RECORD SIZE IN PACKET        |
| 1366 | 035100 | 010465 | 000000 |        | MOV    | R4,T30B(R5)         |  | ;ISSUE COMMAND                       |
| 1367 | 035104 | 004737 | 016330 |        | JSR    | PC,WAITF            |  | ;WAIT FOR SSR TO SET                 |
| 1368 | 035110 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |  | ;GET TSSR CONTENTS                   |
| 1369 | 035114 | 012702 | 000200 |        | MOV    | #SSR,R2             |  | ;SET UP EXPECTED                     |
| 1370 | 035120 | 020102 |        |        | CMP    | R1,R2               |  | ;ARE THEY EQUAL                      |
| 1371 | 035122 | 001406 |        |        | BEQ    | 2001                |  | ;BR, IF OK                           |
| 1372 | 035124 | 005237 | 002214 |        | INC    | FATFLG              |  | ;ERROR COUNT                         |
| 1376 | 035130 |        |        |        | ERRHRD | ERRNO,T30RDF,PKTSSR |  | ;TSSR INCORRECT AFTER WRITE DATA     |
|      | 035130 | 104456 |        |        |        |                     |  | TRAP C1ERHRD                         |
|      | 035132 | 000346 |        |        |        |                     |  | .WORD 230                            |
|      | 035134 | 037413 |        |        |        |                     |  | .WORD T30RDF                         |

TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 120

|      |        |        |        |       |        |                     |                                     |       |          |
|------|--------|--------|--------|-------|--------|---------------------|-------------------------------------|-------|----------|
| 1377 | 035136 | 012126 |        | 2004: | CKLOOP |                     | ;LOOP IF SELECTED                   | .WORD | PKTSSR   |
|      | 035140 | 104406 |        |       |        |                     |                                     | TRAP  | C\$CLP1  |
| 1378 | 035142 | 017701 | 145750 |       | MOV    | \$FREE,R1           | ;FIRST LOC IN READ BUFFER           |       |          |
| 1379 | 035146 | 012702 | 177777 |       | MOV    | #177777,R2          | ;EXPECTED IF NO DATA TRANS.         |       |          |
| 1380 | 035152 | 020102 |        |       | CMP    | R1,R2               | ;DID ANY DATA GET TRANSFERRED       |       |          |
| 1381 | 035154 | 001006 |        |       | BNE    | 2204                | ;BR, IF NO DATA TRANS (GOOD)        |       |          |
| 1382 | 035156 | 005237 | 002214 |       | INC    | FATFLG              | ;ERROR COUNT                        |       |          |
| 1386 | 035162 |        |        |       | ERRHRD | ERRNO,T30DTR,EXPREC | ;DATA TRANSFERRED ON READ TAPE MARK |       |          |
|      | 035162 | 104456 |        |       |        |                     |                                     | TRAP  | C\$ERHRD |
|      | 035164 | 000347 |        |       |        |                     |                                     | .WORD | 231      |
|      | 035166 | 041070 |        |       |        |                     |                                     | .WORD | T30DTR   |
|      | 035170 | 015554 |        |       |        |                     |                                     | .WORD | EXPREC   |
| 1387 | 035172 |        |        | 2204: | CKLOOP |                     | ;LOOP IF SELECTED                   |       |          |
|      | 035172 | 104406 |        |       |        |                     |                                     | TRAP  | C\$CLP1  |
| 1388 | 035174 | 013702 | 036654 |       | MOV    | T30FCN,R2           | ;GET NUMBER OF SKIPS                |       |          |
| 1389 | 035200 | 005202 |        |       | INC    | R2                  | ;SET TO SELECT FILE VALUE           |       |          |
| 1390 | 035202 | 000302 |        |       | SWAB   | R2                  | ;SWAP BY HALVES                     |       |          |
| 1391 | 035204 | 052702 | 000001 |       | BIS    | #BIT0,R2            | ;SET FOR WORD #1                    |       |          |
| 1392 | 035210 | 017701 | 145702 |       | MOV    | \$FREE,R1           | ;GET LINE FROM BUFFER               |       |          |
| 1393 | 035214 | 020201 |        |       | CMP    | R2,R1               | ;ARE THEY EQUAL                     |       |          |
| 1394 | 035216 | 001406 |        |       | BEQ    | 2284                | ;BR, IF EQUAL (OK)                  |       |          |
| 1395 | 035220 | 005237 | 002214 |       | INC    | FATFLG              | ;ERROR COUNT                        |       |          |
| 1399 | 035224 |        |        |       | ERRHRD | ERRNO,T30PTB,EXPREC | ;RECORD POSITION WAS NOT CORRECT    |       |          |
|      | 035224 | 104456 |        |       |        |                     |                                     | TRAP  | C\$ERHRD |
|      | 035226 | 000350 |        |       |        |                     |                                     | .WORD | 232      |
|      | 035230 | 037242 |        |       |        |                     |                                     | .WORD | T30PTB   |
|      | 035232 | 015554 |        |       |        |                     |                                     | .WORD | EXPREC   |
| 1400 | 035234 |        |        | 2284: | CKLOOP |                     | ;LOOP IF SELECTED                   |       |          |
|      | 035234 | 104406 |        |       |        |                     |                                     | TRAP  | C\$CLP1  |
| 1401 |        |        |        |       |        |                     |                                     |       |          |
| 1402 |        |        |        |       |        |                     |                                     |       |          |
| 1403 |        |        |        |       |        |                     |                                     |       |          |
| 1404 |        |        |        |       |        |                     |                                     |       |          |
| 1405 |        |        |        |       |        |                     |                                     |       |          |
| 1406 |        |        |        |       |        |                     |                                     |       |          |
| 1407 |        |        |        |       |        |                     |                                     |       |          |
| 1408 | 035236 | 004737 | 011074 |       | JSR    | PC,REWIND           | ;CALL TAPE REWIND COMMAND           |       |          |
| 1409 | 035242 | 103411 |        |       | BCS    | 2304                | ;BR, IF NO PROBLEM                  |       |          |
| 1410 | 035244 | 010004 |        |       | MOV    | R0,R4               | ;SAVE PACKET ADDRESS                |       |          |
| 1411 | 035246 | 016501 | 000002 |       | MOV    | TSSR(R5),R1         | ;GET TSSR STATUS                    |       |          |
| 1412 | 035252 | 005237 | 002214 |       | INC    | FATFLG              | ;ERROR COUNT                        |       |          |
| 1416 | 035256 |        |        |       | ERRHRD | ERRNO,T30RWN,PKTSSR | ;REWIND NOT ACCEPTED                |       |          |
|      | 035256 | 104456 |        |       |        |                     |                                     | TRAP  | C\$ERHRD |
|      | 035260 | 000351 |        |       |        |                     |                                     | .WORD | 233      |
|      | 035262 | 040210 |        |       |        |                     |                                     | .WORD | T30RWN   |
|      | 035264 | 012126 |        |       |        |                     |                                     | .WORD | PKTSSR   |
| 1417 | 035266 |        |        | 2304: | CKLOOP |                     | ;LOOP IF SELECTED                   |       |          |
|      | 035266 | 104406 |        |       |        |                     |                                     | TRAP  | C\$CLP1  |
| 1418 |        |        |        |       |        |                     |                                     |       |          |
| 1419 |        |        |        |       |        |                     |                                     |       |          |
| 1420 |        |        |        |       |        |                     |                                     |       |          |
| 1421 |        |        |        |       |        |                     |                                     |       |          |
| 1422 |        |        |        |       |        |                     |                                     |       |          |
| 1423 |        |        |        |       |        |                     |                                     |       |          |
| 1424 |        |        |        |       |        |                     |                                     |       |          |
| 1425 | 035270 | 013701 | 036530 |       | MOV    | T30BFR+6,R1         | ;PICK UP XSTO                       |       |          |



[illegible]

| Line | Address | Offset | Label  | Instruction                 | Comment                          | Trap  | Value        |
|------|---------|--------|--------|-----------------------------|----------------------------------|-------|--------------|
|      | 035440  | 000000 |        |                             |                                  |       | 0            |
|      | 035442  | 013727 | 002116 |                             |                                  | MOV   | L\$DLY,(PC)+ |
|      | 035446  | 000000 |        |                             |                                  | .WORD | 0            |
|      | 035450  | 005367 | 177772 |                             |                                  | DEC   | -6(PC)       |
|      | 035454  | 001375 |        |                             |                                  | BNE   | .-4          |
|      | 035456  | 005367 | 177756 |                             |                                  | DEC   | 22(PC)       |
|      | 035462  | 001367 |        |                             |                                  | BNE   | .-20         |
| 1475 | 035464  | 005337 | 036656 | DEC T30DLY                  | ;BUMP COUNTER                    |       |              |
| 1476 | 035470  | 001356 |        | BNE 10\$                    | ;BR, IF MORE COUNTING TO DO      |       |              |
| 1477 | 035472  | 005237 | 002214 | INC FATFLG                  | ;ERROR COUNT                     |       |              |
| 1481 | 035476  | 010001 |        | MOV R0,R1                   | ;CONTENTS OF TSSR REGISTER       |       |              |
| 1482 | 035500  |        |        | ERRDF ERRNO,SF IERR,SF IMSG | ;FATAL ERROR TSSR WAS NOT OK     |       |              |
|      | 035500  | 104455 |        |                             |                                  | TRAP  | C\$ERDF      |
|      | 035502  | 000353 |        |                             |                                  | .WORD | 235          |
|      | 035504  | 003646 |        |                             |                                  | .WORD | SF IERR      |
|      | 035506  | 012114 |        |                             |                                  | .WORD | SF IMSG      |
| 1483 | 035510  |        |        |                             |                                  |       |              |
| 1484 | 035510  | 013737 | 002174 | MOV UNITN,T30DSW            | ;SET UP UNIT NUMBER              |       |              |
| 1485 | 035516  | 012704 | 036500 | MOV @T30PACKET,R4           | ;SUBROUTINE NEEDS PACKET ADDRESS |       |              |
| 1486 |         |        |        |                             |                                  |       |              |
| 1487 |         |        |        |                             |                                  |       |              |
| 1488 |         |        |        |                             |                                  |       |              |
| 1489 |         |        |        |                             |                                  |       |              |
| 1490 |         |        |        |                             |                                  |       |              |
| 1491 |         |        |        |                             |                                  |       |              |
| 1492 |         |        |        |                             |                                  |       |              |
| 1493 | 035522  | 004737 | 010742 | JSR PC,WRTCHR               | ;ISSUE WRITE CHARACTERISTICS     |       |              |
| 1494 | 035526  | 103407 |        | BCS 23\$                    | ;BR, IF COMMAND ISSUED OK        |       |              |
| 1495 | 035530  | 005237 | 002214 | INC FATFLG                  | ;ERROR COUNT                     |       |              |
| 1499 | 035534  | 010001 |        | MOV R0,R1                   | ;SAVE CONTENTS OF TSSR           |       |              |
| 1500 | 035536  |        |        | ERRHRD ERRNO,WRTMSG,SF IMSG | ;WRITE CHARACTERISTICSC FAILED   |       |              |
|      | 035536  | 104456 |        |                             |                                  | TRAP  | C\$ERRRD     |
|      | 035540  | 000354 |        |                             |                                  | .WORD | 236          |
|      | 035542  | 005052 |        |                             |                                  | .WORD | WRTMSG       |
|      | 035544  | 012114 |        |                             |                                  | .WORD | SF IMSG      |
| 1501 | 035546  |        |        |                             |                                  |       |              |
|      | 035546  | 104406 |        |                             |                                  |       |              |
| 1502 |         |        |        |                             |                                  |       |              |
| 1503 |         |        |        |                             |                                  |       |              |
| 1504 |         |        |        |                             |                                  |       |              |
| 1505 |         |        |        |                             |                                  |       |              |
| 1506 |         |        |        |                             |                                  |       |              |
| 1507 |         |        |        |                             |                                  |       |              |
| 1508 |         |        |        |                             |                                  |       |              |
| 1509 | 035550  | 004737 | 011074 | JSR PC,REWIND               | ;CALL TAPE REWIND COMMAND        |       |              |
| 1510 | 035554  | 103411 |        | BCS 30\$                    | ;BR, IF NO PROBLEM               |       |              |
| 1511 | 035556  | 010004 |        | MOV R0,R4                   | ;GET PACKET ADDRESS              |       |              |
| 1512 | 035560  | 016501 | 000002 | MOV TSSR(R5),R1             | ;GET STATUS REGISTER             |       |              |
| 1513 | 035564  | 005237 | 002214 | INC FATFLG                  | ;ERROR COUNT                     |       |              |
| 1517 | 035570  |        |        | ERRHRD ERRNO,T30RWN,PKTSSR  | ;REWIND NOT ACCEPTED             |       |              |
|      | 035570  | 104456 |        |                             |                                  | TRAP  | C\$ERRRD     |
|      | 035572  | 000355 |        |                             |                                  | .WORD | 237          |
|      | 035574  | 040240 |        |                             |                                  | .WORD | T30RWN       |
|      | 035576  | 012126 |        |                             |                                  | .WORD | PKTSSR       |
| 1518 | 035600  |        |        |                             |                                  |       |              |
|      | 035600  | 104406 |        |                             |                                  |       |              |
| 1519 |         |        |        |                             |                                  |       |              |

TEST 1: HARDWARE TEST 1 & TEST MACRO M1113 06 FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 123

```

1520 ;*****
1521 ;
1522 ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
1523 ;
1524 ;*****
1525
1526 035602 013701 036530      MOV      T30BFR+6,R1      ;PICK UP XSTO
1527 035606 010102      MOV      R1,R2      ;SET UP EXPECTED
1528 035610 052702 000002      BIS      @BIT1,R2      ;SET BOT BIT IN EXPECTED
1529 035614 020102      CMP      R1,R2      ;DOES EXP = REC'D
1530 035616 001406      BEQ      40$      ;BR, IF EQUAL (OK)
1531 035620 005237 002214      INC      FATFLG      ;ERROR COUNT
1535 035624      ERRMRD ERRNO,T30BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
      035624 104456      TRAP      C$ERRMRD
      035626 000356      .WORD    238
      035630 040041      .WORD    T30BOT
      035632 015554      .WORD    EXPREC
1536 035634      40$: CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
      035634 104406
1537 035636 012737 000001 036622      MOV      @1,T30WB      ;SET # OF TM TO SKIP
1538
1539 ;*****
1540 ;
1541 ;SKIP TAPE MARK REVERSE,ACK,CVC=1 COMMAND
1542 ;
1543 ;*****
1544
1545 035644 012737 141410 036620      MOV      @141410,T30PK3      ;SKIP TAPE MARK REVERSE,ACK,CVC=1 CMD
1546 035652 012704 036620      MOV      @T30PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
1547 035656 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
1548 035662 004737 016330      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
1549 035666 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
1550 035672 012702 100206      MOV      @SSR!SC!BIT1!BIT2,R2      ;SET UP EXPECTED
1551 035676 020102      CMP      R1,R2      ;ARE THEY EQUAL
1552 035700 001406      BEQ      70$      ;BR, IF OK
1553 035702 005237 002214      INC      FATFLG      ;ERROR COUNT
1557 035706      ERRMRD ERRNO,T30IBT,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
      035706 104456      TRAP      C$ERRMRD
      035710 000357      .WORD    239
      035712 037031      .WORD    T30IBT
      035714 012126      .WORD    PKTSSR
1558 035716      70$: CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
      035716 104406
1559
1560 ;*****
1561 ;
1562 ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
1563 ;
1564 ;*****
1565
1566 035720 013701 036530      MOV      T30BFR+6,R1      ;PICK UP XSTO
1567 035724 010102      MOV      R1,R2      ;SET UP EXPECTED
1568 035726 052702 002000      BIS      @BIT10,R2      ;SET NEF BIT IN EXPECTED
1569 035732 020102      CMP      R1,R2      ;DOES EXP = REC'D
1570 035734 001406      BEQ      180$      ;BR, IF EQUAL (OK)
1571 035736 005237 002214      INC      FATFLG      ;ERROR COUNT
1575 035742      ERRMRD ERRNO,T30NEF,EXPREC      ;TAPE NOT AT NEF

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H10

TEST 1: HARDWARE TEST 1 & TEST MACRO M1113 06 FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 124

|        |        |        |        |        |                                                       |                          |                              |
|--------|--------|--------|--------|--------|-------------------------------------------------------|--------------------------|------------------------------|
| 035742 | 104456 |        |        |        |                                                       | TRAP                     | C\$ERHRD                     |
| 035744 | 000360 |        |        |        |                                                       | .WORD                    | 240                          |
| 035746 | 040576 |        |        |        |                                                       | .WORD                    | T3ONEF                       |
| 035750 | 015554 |        |        |        |                                                       | .WORD                    | EXPREC                       |
| 1576   | 035752 |        |        | 1804:  | CKLOOP                                                |                          | ;LOOP IF SELECTED            |
|        | 035752 | 104406 |        |        | ENDSUB                                                | TRAP                     | C\$CLP1                      |
| 1577   | 035754 |        |        |        |                                                       | ;***** END SUBTEST ***** |                              |
|        | 035754 |        |        |        |                                                       | L10046:                  |                              |
|        | 035754 | 104403 |        |        |                                                       | TRAP                     | C\$ESUB                      |
| 1578   | 035756 | 023727 | 002214 | 000017 | CMP                                                   | FATFLG,015.              | ;IS ERROR COUNT AT 25        |
| 1579   | 035764 | 103402 |        |        | BLO                                                   | 9994                     | ;BR, IF LESS THAN 25         |
| 1580   | 035766 | 004737 | 017262 |        | JSR                                                   | PC,CKDROP                | ;TRY TO DROP THE UNIT        |
| 1581   | 035772 |        |        |        | 9994:                                                 |                          |                              |
| 1582   |        |        |        |        | ;                                                     |                          |                              |
| 1583   |        |        |        |        | ;                                                     |                          |                              |
| 1584   |        |        |        |        | ;TEST 2. SUBTEST 4                                    |                          |                              |
| 1585   |        |        |        |        | ;                                                     |                          |                              |
| 1586   |        |        |        |        | ;                                                     |                          |                              |
| 1587   |        |        |        |        | ;VERIFIES THAT A SKIP TAPE MARKS REVERSE COMMAND      |                          |                              |
| 1588   |        |        |        |        | ;ISSUED WHILE THE TAPE IS POSITIONED JUST BEFORE THE  |                          |                              |
| 1589   |        |        |        |        | ;FIRST RECORD ON ON TAPE (BUT NOT AT BOT) CAUSES TAPE |                          |                              |
| 1590   |        |        |        |        | ;STATUS ALERT TERMINATION, WITH THE REVERSE INTO BOT  |                          |                              |
| 1591   |        |        |        |        | ;(RIB) STATUS BIT SET.                                |                          |                              |
| 1592   |        |        |        |        | ;                                                     |                          |                              |
| 1593   |        |        |        |        | ;                                                     |                          |                              |
| 1594   |        |        |        |        | ;                                                     |                          |                              |
| 1595   |        |        |        |        | ;                                                     |                          |                              |
| 1596   |        |        |        |        | ;                                                     |                          |                              |
| 1597   |        |        |        |        | ;                                                     |                          |                              |
| 1598   | 035772 |        |        |        | BGNSUB                                                |                          | ;***** BEGIN SUBTEST *****   |
|        | 035772 |        |        |        |                                                       | T2.4:                    |                              |
|        | 035772 | 104402 |        |        |                                                       | TRAP                     | C\$BSUB                      |
| 1599   | 035774 | 004737 | 041252 |        | JSR                                                   | PC,T3OREST               | ;SET COMMAND PACKET          |
| 1600   | 036000 | 005037 | 036654 |        | CLR                                                   | T30FCN                   | ;CLEAR FILE COUNTER          |
| 1601   | 036004 | 004737 | 041344 |        | JSR                                                   | PC,T3ORT2                | ;SET UP OTHER COMMAND PACKET |
| 1602   | 036010 | 004737 | 041406 |        | JSR                                                   | PC,T3ORT3                | ;SET UP OTHER COMMAND PACKET |
| 1603   | 036014 | 012737 | 176750 | 036656 | MOV                                                   | #65000.,T3ODLY           | ;SET UP DELAY COUNTER        |
| 1604   | 036022 | 004737 | 016054 |        | JSR                                                   | PC,SOFINIT               | ;DO INITIALIZE ON CONTROLLER |
| 1605   | 036026 | 103426 |        | 104:   | BCS                                                   | 204                      | ;BR IF INIT WAS OK           |
| 1606   | 036030 |        |        |        | DELAY                                                 | 250                      | ;DELAY ROUTINE CALL          |
|        | 036030 | 012727 | 000250 |        |                                                       | MOV                      | #250.(PC).                   |
|        | 036034 | 000000 |        |        |                                                       | .WORD                    | 0                            |
|        | 036036 | 013727 | 002116 |        |                                                       | MOV                      | L\$DLY.(PC).                 |
|        | 036042 | 000000 |        |        |                                                       | .WORD                    | 0                            |
|        | 036044 | 005367 | 177772 |        |                                                       | DEC                      | 6(PC)                        |
|        | 036050 | 001375 |        |        |                                                       | BNE                      | .4                           |
|        | 036052 | 005367 | 177756 |        |                                                       | DEC                      | -22(PC)                      |
|        | 036056 | 001367 |        |        |                                                       | BNE                      | .20                          |
| 1607   | 036060 | 005337 | 036656 |        | DEC                                                   | T3ODLY                   | ;BUMP COUNTER                |
| 1608   | 036064 | 001356 |        |        | BNE                                                   | 104                      | ;BR, IF MORE COUNTING TO DO  |
| 1609   | 036066 | 005237 | 002214 |        | INC                                                   | FATFLG                   | ;ERROR COUNT                 |
| 1613   | 036072 | 010001 |        |        | MOV                                                   | RO,R1                    | ;CONTENTS OF TSSR REGISTER   |
| 1614   | 036074 |        |        |        | ERRDF                                                 | ERRNO,SF IERR,SF IMSG    | ;FATAL ERROR TSSR WAS NOT OK |
|        | 036074 | 104455 |        |        |                                                       | TRAP                     | C\$ERDF                      |
|        | 036076 | 000361 |        |        |                                                       | .WORD                    | 241                          |
|        | 036100 | 003646 |        |        |                                                       | .WORD                    | SF IERR                      |
|        | 036102 | 012114 |        |        |                                                       | .WORD                    | SF IMSG                      |

TEST 1: HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 125

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1615 036104
1616 036104 013737 002174 036520 201:  MOV    UNITN,T30DSW      ;SET UP UNIT NUMBER
1617 036112 012704 036500      MOV    @T30PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
1618
1619      ;*****
1620      ;
1621      ;ISSUE WRITE CHARACTERISTICS COMMAND
1622      ;
1623      ;*****
1624
1625 036116 004737 010742      JSR     PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
1626 036122 103407      BCS     231      ;BR, IF COMMAND ISSUED OK
1627 036124 005237 002214      INC     FATFLG      ;ERROR COUNT
1631 036130 010001      MOV     R0,R1      ;SAVE CONTENTS OF TSSR
1632 036132      ERRHRD  ERRNO,WRTMSG,SFMSG      ;WRITE CHARACTERISTICS FAILED
1633 036142      231:      CKLOOP      ;LOOP IF SELECTED
1634 036142 104406      TRAP     C:ERHRD 242
1635      .WORD  WRTMSG
1636      .WORD  SFMSG
1637
1638      ;*****
1639      ;
1640      ;ISSUE A REWIND TO TAPE DRIVE AND WAIT FOR SSR TO SET
1641      ;
1642      ;*****
1643 036144 004737 011074      JSR     PC,REWIND      ;CALL TAPE REWIND COMMAND
1644 036150 103411      BCS     301      ;BR, IF NO PROBLEM
1645 036152 010004      MOV     R0,R4      ;GET PACKET ADDRESS
1646 036154 016501 000002      MOV     TSSR(R5),R1      ;GET STATUS REGISTER
1647 036160 005237 002214      INC     FATFLG      ;ERROR COUNT
1648 036164      ERRHRD  ERRNO,T30RWN,PKTSSR      ;REWIND NOT ACCEPTED
1649 036164 104456      TRAP     C:ERHRD 243
1650 036166 000367      .WORD  T30RWN
1651 036170 040240      .WORD  PKTSSR
1652 036172 012126
1653 036174      301:      CKLOOP      ;LOOP IF SELECTED
1654 036174 104406      TRAP     C:CLP1
1655
1656      ;*****
1657      ;
1658      ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
1659      ;
1660      ;*****
1661 036176 013701 036530      MOV     T30BFR+6,R1      ;PICK UP XSTO
1662 036202 010102      MOV     R1,R2      ;SET UP EXPECTED
1663 036204 052702 000002      BIS     @BIT1,R2      ;SET BOT BIT IN EXPECTED
1664 036210 020102      CMP     R1,R2      ;DOES EXP = REC 0
1665 036212 001406      BEQ     401      ;BR, IF EQUAL (OK)
1666 036214 005237 002214      INC     FATFLG      ;ERROR COUNT
1667 036220      ERRHRD  ERRNO,T30BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
1668 036220 104456      TRAP     C:ERHRD 244
1669 036222 000364      .WORD  T30BOT
1670 036224 040041

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TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 126

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1668 036226 015554
036230 104406
1669 036232 013737 003116 036622
1670 036240 012737 000400 036626
1671
1672
1673
1674
1675
1676
1677
1678 036246 012737 140005 036620
1679 036254 012704 036620
1680 036260 010465 000000
1681 036264 004737 016330
1682 036270 016501 000002
1683 036274 012702 000200
1684 036300 020102
1685 036302 001406
1686 036304 005237 002214
1690 036310
036310 104456
036312 000365
036314 037170
036316 012126
1691 036320
036320 104406
1692
1693
1694
1695
1696
1697
1698
1699 036322 012737 000001 036622
1700 036330 012737 141410 036620
1701 036336 012704 036620
1702 036342 010465 000000
1703 036346 004737 016330
1704 036352 016501 000002
1705 036356 012702 100204
1706 036362 020102
1707 036364 001406
1708 036366 005237 002214
1712 036372
036372 104456
036374 000366
036376 036660
036400 012126
1713 036402
036402 104406
1714
1715
1716
1717
1718

40$: CKLOOP                                ;LOOP IF SELECTED
;*****
;WRITE DATA,ACK,CVC=1 COMMAND
;*****
MOV #140005,T30PK3                        ;WRITE DATA,ACK,CVC=1 COMMAND
MOV #T30PK3,R4                            ;SET UP R4 WITH PACKET ADDRESS
MOV R4,TSD8(R5)                          ;ISSUE COMMAND
JSR PC,WAITF                             ;WAIT FOR SSR TO SET
MOV TSSR(R5),R1                          ;GET TSSR CONTENTS
MOV #SSR,R2                              ;SET UP EXPECTED
CMP R1,R2                                ;ARE THEY EQUAL
BEQ 70$                                  ;BR, IF OK
INC FATFLG                               ;ERROR COUNT
ERRHRD ERRNO,T30WDD,PKTSSR              ;TSSR INCORRECT AFTER WRITE DATA
TRAP C$ERRHRD
;WORD 245
;WORD T30WDD
;WORD PKTSSR

70$: CKLOOP                                ;LOOP IF SELECTED
;*****
;SKIP TAPE MARK REVERSE,ACK,CVC=1 COMMAND
;*****
MOV #1,T30WB                             ;# OF TM TO SKIP
MOV #141410,T30PK3                       ;SKIP TAPE MARK REVERSE,ACK,CVC=1 CMD
MOV #T30PK3,R4                           ;SET UP R4 WITH PACKET ADDRESS
MOV R4,TSD8(R5)                          ;ISSUE COMMAND
JSR PC,WAITF                             ;WAIT FOR SSR TO SET
MOV TSSR(R5),R1                          ;PICK UP TSSR
MOV #SSR!BIT2!SC,R2                     ;SET UP EXPECTED (SSR AND SC ONLY)
CMP R1,R2                                ;WAS STATUS GOOD
BEQ 160$                                ;BR, IF TERMINATION WAS GOOD
INC FATFLG                               ;ERROR COUNT
ERRHRD ERRNO,T30IBU,PKTSSR              ;TSSR NOT CORRECT AFTER WRT TAPE M.
TRAP C$ERRHRD
;WORD 246
;WORD T30IBU
;WORD PKTSSR

160$: CKLOOP                                ;LOOP IF SELECTED
;*****
;GET EXTENDED STATUS REGISTER ZERO (XST3) FROM MESSAGE BUFFER
;*****

```



TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 127

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1719 ;*****
1720
1721 036404 013701 036536      MOV      T30BFR+14,R1      ;PICK UP XST3
1722 036410 010102            MOV      R1,R2          ;SET UP EXPECTED
1723 036412 052702 000001      BIS      #BIT0,R2        ;SET RIB BIT IN EXPECTED
1724 036416 020102            CMP      R1,R2          ;DOES EXP = REC'D
1725 036420 001406            BEQ      170$           ;BR, IF EQUAL (OK)
1726 036422 005237 002214      INC      FATFLG          ;ERROR COUNT
1730 036426            ERRMRD  ERRNO,T30RIB,EXPREC      ;TAPE NOT AT RIB
      036426 104456
      036430 000367
      036432 036745
      036434 015554
1731 036436            170$:  CKLOOP          ;LOOP IF SELECTED
      036436 104406
1732 036440            ENDSUB
      036440
      036440 104403
1733 036442 023727 002214 000017      CMP      FATFLG,#15.      ;IS ERROR COUNT AT 25
1734 036450 103402            BLO      999$           ;BR, IF LESS THAN 25
1735 036452 004737 017262      JSR      PC,CKDROP        ;TRY TO DROP THE UNIT
1736 036456            999$:
1737 ;SUBTEST END
1738 ;
1739 ;
1740 036456 004737 016536      JSR      PC,TSTLOOP        ;DO WE NEED TO ITERATE TEST
1741 036462 103002            BCC      400$           ;BR, IF NO LOOP REQUIRED
1742 036464 000137 032360      JMP      T30LOOP        ;EXECUTE AGAIN
1743 036470            400$:  EXIT      TST          ;ALL DONE THIS TEST
      036470 104432
      036472 002736
      TRAP      C$EXIT
      .WORD     L10043
1744 ;
1745 ;LOCAL STORAGE FOR THIS TEST
1746 ;
1748 036500
1750 036500      T30PACKET:  .<+.10>E177770
      036500 100004      .WORD     100004      ;COMMAND PACKET FOR TEST
1751 036500 036510      .WORD     T30DATA      ;WRITE CHARACTERISTICS COMMAND, WITH , ACK
1752 036502 000000      .WORD     0          ;ADDRESS OF CHARACTERISTICS BLOCK
1753 036504 000012      .WORD     10.         ;STARTING VALUE OF BLOCK SIZE
1754 036506 036522      T30DATA:  .WORD     T30BFR      ;CHARACTERISTICS DATA BLOCK
1755 036510 000000      .WORD     0          ;ADDRESS OF MESSAGE BUFFER
1756 036512 000024      .WORD     20.         ;LENGTH OF MESSAGE BUFFER
1757 036514 000000      T30ETM:  .WORD     0          ;SKIP TAPE MARK CONTROL
1758 036516 000000      T30DSW:  .WORD     0          ;SELECT DRIVE 0
1759 036520 000000      T30BFR:  .BLKW     25.         ;MESSAGE BUFFER
1760 036522
1761 ;
1762 ;WRITE SUBSYSTEM MEMORY COMMAND PACKET
1763 ;
1764 036610
1766 036610      T30PK2:  .<+.10>E177770
      036610 100006      .WORD     100006      ;WRITE SUB SYS MEM COMMAND, AND ACK
1768 036610 036630      .WORD     T30BF2      ;ADDRESS OF SELECT BLOCK DATA
1769 036612 000000      .WORD     0          ;SIZE OF DATA PACKET
1770 036614 000006      .WORD     6.
1771 036616
1772 036616
1773

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TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB-84 18:04  
 TEST 2: SKIP TAPE MARKS

SEQ 128

|             |        |     |                                    |         |        |                                                            |
|-------------|--------|-----|------------------------------------|---------|--------|------------------------------------------------------------|
| 1777 036620 |        |     | T30PK3:                            |         |        |                                                            |
| 1778 036620 | 100205 |     |                                    | .WORD   | 100205 | ;REREAD COMMAND, IE AND ACK                                |
| 1779 036622 |        |     | T30RB:                             |         |        |                                                            |
| 1780 036622 | 003116 |     | T30WB:                             | .WORD   | FREE   | ;ADDRESS OF WRITE BUFFER                                   |
| 1781 036624 | 000000 |     |                                    | .WORD   | 0      |                                                            |
| 1782 036626 | 000000 |     | T30SZ:                             | .WORD   | 0      | ;SIZE OF BUFFER (EXTENT)                                   |
| 1783        |        |     |                                    | .EVEN   |        |                                                            |
| 1784        |        |     | :                                  |         |        |                                                            |
| 1785        |        |     | :                                  |         |        |                                                            |
| 1786        |        |     | :                                  |         |        |                                                            |
| 1787 036630 |        |     | T30BF2:                            |         |        |                                                            |
| 1788 036630 | 010    |     | T30BS0:                            | .BYTE   | 10     | ;BSELO AREA                                                |
| 1789 036631 | 200    |     | T30BS1:                            | .BYTE   | 200    | ;BSEL1 AREA                                                |
| 1790 036632 | 000000 |     | T30S2:                             | .WORD   | 0      | ;SEL 2 AREA                                                |
| 1791 036634 | 000000 |     | T30S3:                             | .WORD   | 0      | ;DATA AREA                                                 |
| 1792        |        |     | :                                  |         |        |                                                            |
| 1793        |        |     | :                                  |         |        |                                                            |
| 1794        |        |     |                                    | .EVEN   |        |                                                            |
| 1795        |        |     | ;TAPE MOTION PACKET COMMAND VALUES |         |        |                                                            |
| 1796        |        |     | T30IMV:                            |         |        |                                                            |
| 1797 036636 |        |     | T30RN:                             |         |        |                                                            |
| 1798 036636 |        |     |                                    | .WORD   | 000000 | ;NEITHER EWB NOR ESS                                       |
| 1799 036636 | 000000 |     |                                    | .WORD   | 000100 | ;EWB SET                                                   |
| 1800 036640 | 000100 |     |                                    | .WORD   | 000200 | ;ESS SET                                                   |
| 1801 036642 | 000200 |     |                                    | .WORD   | 000300 | ;BOTH EWB AND ESS SE                                       |
| 1802 036644 | 000300 |     |                                    | .WORD   | 177777 | ;END OF DATA                                               |
| 1803 036646 | 177777 |     |                                    |         |        |                                                            |
| 1804        |        |     | :                                  |         |        |                                                            |
| 1805        |        |     | T30CNT:                            | .WORD   | 0      | ;TAPE TIMER COUNTER STORAGE AREA                           |
| 1806 036650 | 000000 |     | T30CNU:                            | .WORD   | 0      | ;TAPE TIMER COUNTER STORAGE AREA                           |
| 1807 036652 | 000000 |     | T30FCN:                            | .WORD   | 0      | ;FILE NUMBER COUNTER                                       |
| 1808 036654 | 000000 |     | T30DLY:                            | .WORD   | 0      | ;DELAY COUNTER STORAGE                                     |
| 1809 036656 | 000000 |     | :                                  |         |        |                                                            |
| 1810        |        |     | :                                  |         |        |                                                            |
| 1811        |        |     | ;LOCAL TEXT MESSAGES FOR TEST      |         |        |                                                            |
| 1812        |        |     | ;-                                 |         |        |                                                            |
| 1813        |        |     |                                    |         |        |                                                            |
| 1814 036660 | 124    | 123 | 123                                | T30IBU: | .ASCIZ | 'TSSR Incorrect After SKIP TAPE MARK REVERSE Into BOT      |
| 1815 036745 | 122    | 111 | 102                                | T30RIB: | .ASCIZ | 'RIB Bit (XST3) Failed To Set After Reverse Into BOT'      |
| 1816 037031 | 124    | 123 | 123                                | T30IBT: | .ASCIZ | 'TSSR Incorrect After SKIP TAPE MARK REVERSE At BOT'       |
| 1817 037114 | 124    | 123 | 123                                | T30SKM: | .ASCIZ | 'TSSR Incorrect After SKIP TAPE MARK Command'              |
| 1818 037170 | 124    | 123 | 123                                | T30WDD: | .ASCIZ | 'TSSR Not Correct After WRITE DATA Command'                |
| 1819 037242 | 124    | 141 | 160                                | T30PTB: | .ASCIZ | 'Tape Not Positioned On Correct Record After READ REVERSE' |
| 1820 037333 | 124    | 141 | 160                                | T30TPB: | .ASCIZ | 'Tape Not Positioned On Second File First Record'          |
| 1821 037413 | 124    | 123 | 123                                | T30RDF: | .ASCIZ | 'TSSR Incorrect After READ FORWARD Into "File"'            |
| 1822 037471 | 124    | 123 | 123                                | T30RDG: | .ASCIZ | 'TSSR Incorrect After SPACE Command Into TAPE MARK'        |
| 1823 037553 | 124    | 123 | 123                                | T30WDF: | .ASCIZ | 'TSSR Not Correct After Illegal Mode Bits Set'             |
| 1824 037630 | 111    | 154 | 154                                | T30LOQ: | .ASCIZ | 'Illegal Mode Bits, Failed To Set ILC Bit In XST0'         |
| 1825 037711 | 127    | 102 | 111                                | T30SSR: | .ASCIZ | 'WRITE MISCELLANEOUS Command Not Accepted'                 |
| 1826 037762 | 124    | 123 | 123                                | T30WDE: | .ASCIZ | 'TSSR Not Correct After SKIP TAPE MARKS, At BOT'           |
| 1827 040041 | 124    | 141 | 160                                | T30BOT: | .ASCIZ | 'Tape Not At BOT After REWIND Command'                     |
| 1828 040106 | 124    | 123 | 123                                | T30TM:  | .ASCIZ | 'TSSR Not Correct After SPACE FORWARD Command'             |
| 1829 040163 | 124    | 123 | 123                                | T30TM2: | .ASCIZ | 'TSSR Not Correct After SPACE REVERSE Command'             |
| 1830 040240 | 122    | 145 | 167                                | T30RWN: | .ASCIZ | 'Rewind (POSITION) Command Not Accepted'                   |
| 1831 040307 | 104    | 162 | 151                                | T30OFL: | .ASCIZ | 'Drive 7 Select Failed To Set "OFL" In TSSR'               |
| 1832 040362 | 124    | 123 | 123                                | T30WDC: | .ASCIZ | 'TSSR Not Correct After WRITE TAPE MARK Command'           |
| 1833 040441 | 103    | 126 | 103                                | T30VCK: | .ASCIZ | 'CVC Set, Didr.'t Reset VCK In Message Buffer'             |



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1834 040514      124      115      113 T30TMK: .ASCIZ 'TMK Not Set After WRITE TAPE MARK (RETRY) Command'
1835 040576      123      113      111 T30NEF: .ASCIZ 'SKIP TAPE MARKS, At BCT, Failed To Set NEF Bit'
1836 040655      124      115      113 T30RRM: .ASCIZ 'TMK Not Set After READ REVERSE Into TAPE MARK'
1837 040733      124      115      113 T30RRN: .ASCIZ 'TMK Not Set After SPACE REVERSE Into TAPE MARK'
1838 041012      124      115      113 T30RRP: .ASCIZ 'TMK Not Set After READ FORWARD Into TAPE MARK'
1839 041070      116      117      040 T30DTR: .ASCIZ 'NO Data Transferred On READ FORWARD'
1840 041134      104      141      164 T30DTA: .ASCIZ 'Data Compare Error, Data Read From Tape Not Equal To Written'
1841 041231      123      153      151 TST30ID: .ASCIZ 'Skip Tape Marks'
1842                                     .EVEN
1843                                     ;+
1844                                     ;
1845                                     ;ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES
1846                                     ;WRITE SUBSYSTEM MEMORY COMMAND
1847                                     ;
1848                                     ;-
1849
1850 041252      T30REST:
1851 041252      SAVREG                                     ;SAVE THE REGISTERS
1852 041252      MOV                                     ;START OF THE PACKET
1853 041252      MOV                                     ;WRITE SUBSYSTEM MEM. WITH ACK.
1854 041252      MOV                                     ;ADDRESS OF CHARACTERISTICS DATA BLOCK
1855 041252      CLR                                     ;EXTENDED ADDRESS
1856 041252      MOV                                     ;SIZE OF DATA BLOCK IN BYTES
1857 041252      MOV                                     ;ADDRESS OF MESSAGE BUFFER
1858 041252      CLR                                     ;
1859 041252      MOV                                     ;LENGTH OF MESSAGE BUFFER
1860 041252      CLR                                     ;
1861 041252      MOV                                     ;SELECT DRIVE ZERO
1862 041252      MOV                                     ;NUMBER OF LOCATIONS TO BE CLEARED
1863 041252      MOV                                     ;ALL ONES TO MESSAGE BUFFER
1864 041252      TST                                     ;NEXT LOCATION
1865 041252      CMP                                     ;CHECK R2 FOR DONE
1866 041252      BNE                                     ;KEEP GOING UNTIL DONE
1867 041252      RTS                                     ;RETURN
1868
1869 041344      T30RT2:
1870 041344      SAVREG                                     ;SAVE THE REGISTERS
1871 041344      MOV                                     ;START OF THE PACKET
1872 041344      MOV                                     ;WRITE SUBSYSTEM MEM. WITH ACK.
1873 041344      MOV                                     ;ADDRESS OF DATA BLOCK
1874 041344      CLR                                     ;EXTENDED ADDRESS
1875 041344      MOV                                     ;SIZE OF DATA BLOCK IN BYTES
1876 041344      CLR                                     ;
1877 041344      MOV                                     ;POINT TO DATA SEL AREA
1878 041344      CLR                                     ;
1879 041344      CLR                                     ;
1880 041344      RTS                                     ;RETURN
1881 041406      T30RT3:
1882 041406      SAVREG                                     ;SAVE REGISTERS
1883 041406      MOV                                     ;SET UP POINTER ADDRESS
1884 041406      CLR                                     ;COMMAND SPACE
1885 041406      CLR                                     ;ADDRESS OF DATA BLOCK
1886 041406      CLR                                     ;EXTENDED ADDRESS
1887 041406      CLR                                     ;SIZE OF DATA TRANSFER BLOCK
1888 041406      RTS                                     ;RETURN
1889 041430      ENDTST
041430

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L10043:





TEST 1: HARDWARE TEST 1: A TEST MACRO M1113 06 FEB 84 18:04  
 TEST 3: NO OP ("CLEAN TAPE") AND INITIALIZE

SEQ 132

|      |        |        |        |        |        |                     |                                 |                     |
|------|--------|--------|--------|--------|--------|---------------------|---------------------------------|---------------------|
| 1989 | 041742 | 012737 | 000144 | 043316 | MOV    | #100.,T31SZ         | SET UP RECORD SIZE IN PACKET    |                     |
| 1990 | 041750 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         | ISSUE COMMAND                   |                     |
| 1991 | 041754 | 004737 | 016330 |        | JSR    | PC,WAITF            | WAIT FOR SSR TO SET             |                     |
| 1992 | 041760 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         | GET TSSR CONTENTS               |                     |
| 1993 | 041764 | 012702 | 000200 |        | MOV    | #SSR,R2             | SET UP EXPECTED                 |                     |
| 1994 | 041770 | 020102 |        |        | CMP    | R1,R2               | ARE THEY EQUAL                  |                     |
| 1995 | 041772 | 001406 |        |        | BEQ    | 801                 | BR, IF OK                       |                     |
| 1996 | 041774 | 005237 | 002214 |        | INC    | FATFLG              | ERROR COUNT                     |                     |
| 2000 | 042000 |        |        |        | ERRMRD | ERRNO,T31WDC,PKTSSR | TSSR INCORRECT AFTER WRITE DATA |                     |
|      | 042000 | 104456 |        |        |        |                     | TRAP                            | C\$ERRMRD           |
|      | 042002 | 000461 |        |        |        |                     | .WORD                           | 305                 |
|      | 042004 | 045230 |        |        |        |                     | .WORD                           | T31WDC              |
|      | 042006 | 012126 |        |        |        |                     | .WORD                           | PKTSSR              |
| 2001 | 042010 |        |        |        | 801:   | CKLOOP              | LOOP IF SELECTED                |                     |
|      | 042010 | 104406 |        |        |        |                     | TRAP                            | C\$CLP1             |
| 2002 | 042012 | 004737 | 011074 |        | JSR    | PC,REWIND           | CALL TAPE REWIND COMMAND        |                     |
| 2003 | 042016 | 103407 |        |        | BCS    | 2301                | BR, IF NO PROBLEM               |                     |
| 2004 | 042020 | 010001 |        |        | MOV    | R0,R1               | SAVE TSSR                       |                     |
| 2005 | 042022 | 005237 | 002214 |        | INC    | FATFLG              | ERROR COUNT                     |                     |
| 2009 | 042026 |        |        |        | ERRMRD | ERRNO,T31RWN,EXPREC | REWIND NOT ACCEPTED             |                     |
|      | 042026 | 104456 |        |        |        |                     | TRAP                            | C\$ERRMRD           |
|      | 042030 | 000462 |        |        |        |                     | .WORD                           | 306                 |
|      | 042032 | 044674 |        |        |        |                     | .WORD                           | T31RWN              |
|      | 042034 | 015554 |        |        |        |                     | .WORD                           | EXPREC              |
| 2010 | 042036 |        |        |        | 2301:  | CKLOOP              | LOOP IF SELECTED                |                     |
|      | 042036 | 104406 |        |        |        |                     | TRAP                            | C\$CLP1             |
| 2011 | 042040 | 013701 | 043220 |        | MOV    | T31BFR+6,R1         | PICK UP XSTO                    |                     |
| 2012 | 042044 | 010102 |        |        | MOV    | R1,R2               | SET UP EXPECTED                 |                     |
| 2013 | 042046 | 052702 | 000002 |        | BIS    | #BIT1,R2            | SET BOT BIT IN EXPECTED         |                     |
| 2014 | 042052 | 020102 |        |        | CMP    | R1,R2               | DOES EXP = REC'D                |                     |
| 2015 | 042054 | 001406 |        |        | BEQ    | 2401                | BR, IF EQUAL (OK)               |                     |
| 2016 | 042056 | 005237 | 002214 |        | INC    | FATFLG              | ERROR COUNT                     |                     |
| 2020 | 042062 |        |        |        | ERRMRD | ERRNO,T31BOT,EXPREC | TAPE NOT AT BOT AFTER REWIND    |                     |
|      | 042062 | 104456 |        |        |        |                     | TRAP                            | C\$ERRMRD           |
|      | 042064 | 000463 |        |        |        |                     | .WORD                           | 307                 |
|      | 042066 | 044345 |        |        |        |                     | .WORD                           | T31BOT              |
|      | 042070 | 015554 |        |        |        |                     | .WORD                           | EXPREC              |
| 2021 | 042072 |        |        |        | 2401:  | CKLOOP              | LOOP IF SELECTED                |                     |
|      | 042072 | 104406 |        |        |        |                     | TRAP                            | C\$CLP1             |
| 2022 | 042074 | 012737 | 041012 | 043310 | 2651:  | MOV                 | #041012,T31PK3                  | NO-OP,CVC=1 COMMAND |
| 2023 | 042102 | 012704 | 043310 |        | MOV    | #T31PK3,R4          | SET UP R4 WITH PACKET ADDRESS   |                     |
| 2024 | 042106 | 010337 | 043316 |        | MOV    | R3,T31SZ            | SET UP RECORD SIZE IN PACKET    |                     |
| 2025 | 042112 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         | ISSUE COMMAND                   |                     |
| 2026 | 042116 | 004737 | 016330 |        | JSR    | PC,WAITF            | WAIT FOR SSR TO SET             |                     |
| 2027 | 042122 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         | GET TSSR CONTENTS               |                     |
| 2028 | 042126 | 012702 | 000200 |        | MOV    | #SSR,R2             | SET UP EXPECTED                 |                     |
| 2029 | 042132 | 020102 |        |        | CMP    | R1,R2               | ARE THEY EQUAL                  |                     |
| 2030 | 042134 | 001406 |        |        | BEQ    | 2801                | BR, IF OK                       |                     |
| 2031 | 042136 | 005237 | 002214 |        | INC    | FATFLG              | ERROR COUNT                     |                     |
| 2035 | 042142 |        |        |        | ERRMRD | ERRNO,T31RDF,PKTSSR | TSSR INCORRECT AFTER READ DATA  |                     |
|      | 042142 | 104456 |        |        |        |                     | TRAP                            | C\$ERRMRD           |
|      | 042144 | 000464 |        |        |        |                     | .WORD                           | 308                 |
|      | 042146 | 043543 |        |        |        |                     | .WORD                           | T31RDF              |
|      | 042150 | 012126 |        |        |        |                     | .WORD                           | PKTSSR              |
| 2036 | 042152 |        |        |        | 2801:  | CKLOOP              | LOOP IF SELECTED                |                     |
|      | 042152 | 104406 |        |        |        |                     | TRAP                            | C\$CLP1             |
| 2037 | 042154 | 013701 | 043220 |        | MOV    | T31BFR+6,R1         | PICK UP XSTO                    |                     |

| Line | Address | Offset | Hex    | Label  | Operation                                                  | Comments                        | Trap  | Code     |
|------|---------|--------|--------|--------|------------------------------------------------------------|---------------------------------|-------|----------|
| 2038 | 042160  | 010102 |        |        | MOV R1,R2                                                  | ;SET UP EXPECTED                |       |          |
| 2039 | 042162  | 052702 | 000002 |        | BIS #BIT1,R2                                               | ;SET BOT BIT IN EXPECTED        |       |          |
| 204  | 042166  | 020102 |        |        | CMP R1,R2                                                  | ;DID S EXP = REC'D              |       |          |
| 2041 | 042170  | 001406 |        |        | BEQ 2851                                                   | ;BR, IF EQUAL (OK)              |       |          |
| 2042 | 042172  | 005237 | 002214 |        | INC FATFLG                                                 | ;ERROR COUNT                    |       |          |
| 2046 | 042176  |        |        |        | ERRHRD ERRNO,T31BOT,EXPREC                                 | ;TAPE NOT AT BOT AFTER REWIND   |       |          |
|      | 042176  | 104456 |        |        |                                                            |                                 | TRAP  | C\$ERHRD |
|      | 042200  | 000465 |        |        |                                                            |                                 | .WORD | 309      |
|      | 042202  | 044345 |        |        |                                                            |                                 | .WORD | T31BOT   |
|      | 042204  | 015554 |        |        |                                                            |                                 | .WORD | EXPREC   |
| 2047 | 042206  |        |        | 2851:  | CKLOOP                                                     | ;LOOP IF SELECTED               |       |          |
|      | 042206  | 104406 |        |        |                                                            |                                 | TRAP  | C\$CLP1  |
| 2048 | 042210  | 012737 | 140001 | 043310 | MOV #140001,T31PK3                                         | ;READ,ACK,CVC=1 COMMAND         |       |          |
| 2049 | 042216  | 012704 | 043310 |        | MOV #T31PK3,R4                                             | ;SET UP R4 WITH PACKET ADDRESS  |       |          |
| 2050 | 042222  | 012737 | 000144 | 043316 | MOV #100.,T31SZ                                            | ;SET UP RECORD SIZE IN PACKET   |       |          |
| 2051 | 042230  | 010465 | 000000 |        | MOV R4,TSD8(R5)                                            | ;ISSUE COMMAND                  |       |          |
| 2052 | 042234  | 004737 | 016330 |        | JSR PC,WAITF                                               | ;WAIT FOR SSR TO SET            |       |          |
| 2053 | 042240  | 016501 | 000002 |        | MOV TSSR(R5),R1                                            | ;GET TSSR CONTENTS              |       |          |
| 2054 | 042244  | 012702 | 000200 |        | MOV #SSR,R2                                                | ;SET UP EXPECTED                |       |          |
| 2055 | 042250  | 020102 |        |        | CMP R1,R2                                                  | ;ARE THEY EQUAL                 |       |          |
| 2056 | 042252  | 001406 |        |        | BEQ 2901                                                   | ;BR, IF OK                      |       |          |
| 2057 | 042254  | 005237 | 002214 |        | INC FATFLG                                                 | ;ERROR COUNT                    |       |          |
| 2061 | 042260  |        |        |        | ERRHRD ERRNO,T31RDE,PKTSSR                                 | ;TSSR INCORRECT AFTER READ DATA |       |          |
|      | 042260  | 104456 |        |        |                                                            |                                 | TRAP  | C\$ERHRD |
|      | 042262  | 000466 |        |        |                                                            |                                 | .WORD | 310      |
|      | 042264  | 043344 |        |        |                                                            |                                 | .WORD | T31RDE   |
|      | 042266  | 012126 |        |        |                                                            |                                 | .WORD | PKTSSR   |
| 2062 | 042270  |        |        | 2901:  | CKLOOP                                                     | ;LOOP IF SELECTED               |       |          |
|      | 042270  | 104406 |        |        |                                                            |                                 | TRAP  | C\$CLP1  |
| 2063 | 042272  | 017701 | 140620 |        | MOV #FREE,R1                                               | ;GET DATA READ                  |       |          |
| 2064 | 042276  | 012702 | 000144 |        | MOV #100.,R2                                               | ;READ EXPECTED                  |       |          |
| 2065 | 042302  | 020102 |        |        | CMP R1,R2                                                  | ;DID TAPE STAY POSITIONED       |       |          |
| 2066 | 042304  | 001406 |        |        | BEQ 3301                                                   | ;BR, IF EXPD = RECD             |       |          |
| 2067 | 042306  | 005237 | 002214 |        | INC FATFLG                                                 | ;ERROR COUNT                    |       |          |
| 2071 | 042312  |        |        |        | ERRHRD ERRNO,T31WNG,EXPREC                                 | ;TAPE DATA NOT CORRECT          |       |          |
|      | 042312  | 104456 |        |        |                                                            |                                 | TRAP  | C\$ERHRD |
|      | 042314  | 000467 |        |        |                                                            |                                 | .WORD | 311      |
|      | 042316  | 043471 |        |        |                                                            |                                 | .WORD | T31WNG   |
|      | 042320  | 015554 |        |        |                                                            |                                 | .WORD | EXPREC   |
| 2072 | 042322  |        |        | 3301:  |                                                            |                                 |       |          |
| 2073 | 042322  |        |        |        | ENDSUB                                                     | ;***** END SUBTEST *****        |       |          |
|      | 042322  |        |        |        |                                                            |                                 |       |          |
|      | 042322  | 104403 |        |        |                                                            |                                 |       |          |
| 2074 | 042324  | 023727 | 002214 | 000017 | CMP FATFLG,#15.                                            | ;IS ERROR COUNT AT 25           | TRAP  | C\$ESUB  |
| 2075 | 042332  | 103402 |        |        | BLO 9991                                                   | ;BR, IF LESS THAN 25            |       |          |
| 2076 | 042334  | 004737 | 017262 |        | JSR PC,CKDROP                                              | ;TRY TO DROP THE UNIT           |       |          |
| 2077 | 042340  |        |        | 9991:  |                                                            |                                 |       |          |
| 2078 |         |        |        |        | ;*                                                         |                                 |       |          |
| 2079 |         |        |        |        | ;                                                          |                                 |       |          |
| 2080 |         |        |        |        | ;TEST 3, SUBTEST 2                                         |                                 |       |          |
| 2081 |         |        |        |        | ;                                                          |                                 |       |          |
| 2082 |         |        |        |        | ;                                                          |                                 |       |          |
| 2083 |         |        |        |        | ;                                                          |                                 |       |          |
| 2084 |         |        |        |        | VERIFIES THAT THE INITIALIZE COMMAND OPERATES AS A NO OP,  |                                 |       |          |
| 2085 |         |        |        |        | ASSUMING NO MICRODIAGNOSTIC ERRORS ARE PRESENT (THEY WOULD |                                 |       |          |
| 2086 |         |        |        |        | ALREADY HAVE BEEN DETECTED IN PREVIOUS TESTS). THE TEST    |                                 |       |          |
| 2087 |         |        |        |        | SEQUENCE IS SIMILAR TO THAT USED IN SUBTEST 1.             |                                 |       |          |

| Address | Instruction | Comments | Labels | Registers | Operands                   | Flow Control | Trap | Word | Byte |
|---------|-------------|----------|--------|-----------|----------------------------|--------------|------|------|------|
| 2088    |             |          |        |           |                            |              |      |      |      |
| 2089    |             |          |        |           |                            |              |      |      |      |
| 2090    |             |          |        |           |                            |              |      |      |      |
| 2091    | 042340      |          |        |           | BGNSUB                     |              |      |      |      |
|         | 042340      |          |        |           |                            |              |      |      |      |
|         | 042340      | 104402   |        |           |                            |              |      |      |      |
| 2092    | 042342      | 004737   | 046610 |           | JSR PC,T31REST             |              |      |      |      |
| 2093    | 042346      | 004737   | 046702 |           | JSR PC,T31RT2              |              |      |      |      |
| 2094    | 042352      | 004737   | 046744 |           | JSR PC,T31RT3              |              |      |      |      |
| 2095    | 042356      | 004737   | 016054 |           | JSR PC,SOFINIT             |              |      |      |      |
| 2096    | 042362      | 103407   |        |           | BCS 20\$                   |              |      |      |      |
| 2097    | 042364      | 005237   | 002214 |           | INC FATFLG                 |              |      |      |      |
| 2101    | 042370      | 010001   |        |           | MOV R0,R1                  |              |      |      |      |
| 2102    | 042372      |          |        |           | ERRDF ERRNO,SFIERR,SFIMSG  |              |      |      |      |
|         | 042372      | 104455   |        |           |                            |              |      |      |      |
|         | 042374      | 000470   |        |           |                            |              |      |      |      |
|         | 042376      | 003646   |        |           |                            |              |      |      |      |
|         | 042400      | 012114   |        |           |                            |              |      |      |      |
| 2103    | 042402      | 013737   | 002174 | 043210    | 20\$: MOV UNITN,T31DSW     |              |      |      |      |
| 2104    | 042410      | 012704   | 043170 |           | MOV #T31PACKET,R4          |              |      |      |      |
| 2105    | 042414      | 004737   | 010742 |           | JSR PC,WRCHWR              |              |      |      |      |
| 2106    | 042420      | 103407   |        |           | BCS 23\$                   |              |      |      |      |
| 2107    | 042422      | 005237   | 002214 |           | INC FATFLG                 |              |      |      |      |
| 2111    | 042426      | 010001   |        |           | MOV R0,R1                  |              |      |      |      |
| 2112    | 042430      |          |        |           | ERRHRD ERRNO,WRMSG,SFIMSG  |              |      |      |      |
|         | 042430      | 104456   |        |           |                            |              |      |      |      |
|         | 042432      | 000471   |        |           |                            |              |      |      |      |
|         | 042434      | 005052   |        |           |                            |              |      |      |      |
|         | 042436      | 012114   |        |           |                            |              |      |      |      |
| 2113    | 042440      |          |        |           | 23\$: CKLOOP               |              |      |      |      |
|         | 042440      | 104406   |        |           |                            |              |      |      |      |
| 2114    | 042442      | 004737   | 011074 |           | JSR PC,REWIND              |              |      |      |      |
| 2115    | 042446      | 103407   |        |           | BCS 30\$                   |              |      |      |      |
| 2116    | 042450      | 010004   |        |           | MOV R0,R4                  |              |      |      |      |
| 2117    | 042452      | 005237   | 002214 |           | INC FATFLG                 |              |      |      |      |
| 2121    | 042456      |          |        |           | ERRHRD ERRNO,T31RWN,PKTSSR |              |      |      |      |
|         | 042456      | 104456   |        |           |                            |              |      |      |      |
|         | 042460      | 000472   |        |           |                            |              |      |      |      |
|         | 042462      | 044674   |        |           |                            |              |      |      |      |
|         | 042464      | 012126   |        |           |                            |              |      |      |      |
| 2122    | 042466      |          |        |           | 30\$: CKLOOP               |              |      |      |      |
|         | 042466      | 104406   |        |           |                            |              |      |      |      |
| 2123    | 042470      | 013701   | 043220 |           | MOV T31BFR+6,R1            |              |      |      |      |
| 2124    | 042474      | 010102   |        |           | MOV R1,R2                  |              |      |      |      |
| 2125    | 042476      | 052702   | 000002 |           | BIS #BIT1,R2               |              |      |      |      |
| 2126    | 042502      | 020102   |        |           | CMP R1,R2                  |              |      |      |      |
| 2127    | 042504      | 001406   |        |           | BEQ 40\$                   |              |      |      |      |
| 2128    | 042506      | 005237   | 002214 |           | INC FATFLG                 |              |      |      |      |
| 2132    | 042512      |          |        |           | ERRHRD ERRNO,T31BOT,EXPREC |              |      |      |      |
|         | 042512      | 104456   |        |           |                            |              |      |      |      |
|         | 042514      | 000473   |        |           |                            |              |      |      |      |



TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 3: NO-OP ("CLEAN TAPE") AND INITIALIZE

SEQ 135

|      |        |        |        |        |        |                     |                |                                  |
|------|--------|--------|--------|--------|--------|---------------------|----------------|----------------------------------|
| 2136 | 042540 | 012704 | 043310 |        | MOV    | #T31PK3,R4          |                | ;SET UP R4 WITH PACKET ADDRESS   |
| 2137 | 042544 | 012700 | 000144 |        | MOV    | #100.,R0            |                | ;SET PATTERN IN CORRECT REGISTER |
| 2138 | 042550 | 004737 | 017502 |        | JSR    | PC,FILLMEM          |                | ;FILL MEMORY WITH RECORD SIZE    |
| 2139 | 042554 | 012737 | 000144 | 043316 | MOV    | #100.,T31SZ         |                | ;SET UP RECORD SIZE IN PACKET    |
| 2140 | 042562 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |                | ;ISSUE COMMAND                   |
| 2141 | 042566 | 004737 | 016330 |        | JSR    | PC,WAITF            |                | ;WAIT FOR SSR TO SET             |
| 2142 | 042572 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |                | ;GET TSSR CONTENTS               |
| 2143 | 042576 | 012702 | 000200 |        | MOV    | #SSR,R2             |                | ;SET UP EXPECTED                 |
| 2144 | 042602 | 020102 |        |        | CMP    | R1,R2               |                | ;ARE THEY EQUAL                  |
| 2145 | 042604 | 001406 |        |        | BEQ    | 80\$                |                | ;BR, IF OK                       |
| 2146 | 042606 | 005237 | 002214 |        | INC    | FATFLG              |                | ;ERROR COUNT                     |
| 2150 | 042612 |        |        |        | ERRHRD | ERRNO,T31WDC,PKTSSR |                | ;TSSR INCORRECT AFTER WRITE DATA |
|      | 042612 | 104456 |        |        |        |                     | TRAP           | C\$ERHRD                         |
|      | 042614 | 000474 |        |        |        |                     | .WORD          | 316                              |
|      | 042616 | 045230 |        |        |        |                     | .WORD          | T31WDC                           |
|      | 042620 | 012126 |        |        |        |                     | .WORD          | PKTSSR                           |
| 2151 | 042622 |        |        | 80\$:  | CKLOOP |                     |                | ;LOOP IF SELECTED                |
|      | 042622 | 104456 |        |        |        |                     | TRAP           | C\$CLP1                          |
| 2152 | 042624 | 004737 | 011074 |        | JSR    | PC,REWIND           |                | ;CALL TAPE REWIND COMMAND        |
| 2153 | 042630 | 103407 |        |        | BCS    | 230\$               |                | ;BR, IF NO PROBLEM               |
| 2154 | 042632 | 010001 |        |        | MOV    | R0,R1               |                | ;SAVE TSSR                       |
| 2155 | 042634 | 005237 | 002214 |        | INC    | FATFLG              |                | ;ERROR COUNT                     |
| 2159 | 042640 |        |        |        | ERRHRD | ERRNO,T31RWN,EXPREC |                | ;REWIND NOT ACCEPTED             |
|      | 042640 | 104456 |        |        |        |                     | TRAP           | C\$ERHRD                         |
|      | 042642 | 000475 |        |        |        |                     | .WORD          | 317                              |
|      | 042644 | 044674 |        |        |        |                     | .WORD          | T31RWN                           |
|      | 042646 | 015554 |        |        |        |                     | .WORD          | EXPREC                           |
| 2160 | 042650 |        |        | 230\$: | CKLOOP |                     |                | ;LOOP IF SELECTED                |
|      | 042650 | 104406 |        |        |        |                     | TRAP           | C\$CLP1                          |
| 2161 | 042652 | 013701 | 043220 |        | MOV    | T31BFR*6,R1         |                | ;PICK UP XSTO                    |
| 2162 | 042656 | 010102 |        |        | MOV    | R1,R2               |                | ;SET UP EXPECTED                 |
| 2163 | 042660 | 052702 | 000002 |        | BIS    | #BIT1,R2            |                | ;SET BOT BIT IN EXPECTED         |
| 2164 | 042664 | 020102 |        |        | CMP    | R1,R2               |                | ;DOES EXP = REC'D                |
| 2165 | 042666 | 001406 |        |        | BEQ    | 240\$               |                | ;BR, IF EQUAL (OK)               |
| 2166 | 042670 | 005237 | 002214 |        | INC    | FATFLG              |                | ;ERROR COUNT                     |
| 2170 | 042674 |        |        |        | ERRHRD | ERRNO,T31BOT,EXPREC |                | ;TAPE NOT AT BOT AFTER REWIND    |
|      | 042674 | 104456 |        |        |        |                     | TRAP           | C\$ERHRD                         |
|      | 042676 | 000476 |        |        |        |                     | .WORD          | 318                              |
|      | 042700 | 044345 |        |        |        |                     | .WORD          | T31BOT                           |
|      | 042702 | 015554 |        |        |        |                     | .WORD          | EXPREC                           |
| 2171 | 042704 |        |        | 240\$: | CKLOOP |                     |                | ;LOOP IF SELECTED                |
|      | 042704 | 104406 |        |        |        |                     | TRAP           | C\$CLP1                          |
| 2172 | 042706 | 012737 | 041012 | 043310 | 265\$: | MOV                 | #041012,T31PK3 | ;INITIALIZE,CVC=1 COMMAND        |
| 2173 | 042714 | 012704 | 043310 |        | MOV    | #T31PK3,R4          |                | ;SET UP R4 WITH PACKET ADDRESS   |
| 2174 | 042720 | 010337 | 043316 |        | MOV    | R3,T31SZ            |                | ;SET UP RECORD SIZE IN PACKET    |
| 2175 | 042724 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |                | ;ISSUE COMMAND                   |
| 2176 | 042730 | 004737 | 016330 |        | JSR    | PC,WAITF            |                | ;WAIT FOR SSR TO SET             |
| 2177 | 042734 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |                | ;GET TSSR CONTENTS               |
| 2178 | 042740 | 012702 | 000200 |        | MOV    | #SSR,R2             |                | ;SET UP EXPECTED                 |
| 2179 | 042744 | 020102 |        |        | CMP    | R1,R2               |                | ;ARE THEY EQUAL                  |
| 2180 | 042746 | 001406 |        |        | BEQ    | 280\$               |                | ;BR, IF OK                       |
| 2181 | 042750 | 005237 | 002214 |        | INC    | FATFLG              |                | ;ERROR COUNT                     |
| 2185 | 042754 |        |        |        | ERRHRD | ERRNO,T31RDF,PKTSSR |                | ;TSSR INCORRECT AFTER READ DATA  |
|      | 042754 | 104156 |        |        |        |                     | TRAP           | C\$ERHRD                         |
|      | 042756 | 000477 |        |        |        |                     | .WORD          | 319                              |
|      | 042760 | 043543 |        |        |        |                     | .WORD          | T31RDF                           |
|      | 042762 | 012126 |        |        |        |                     | .WORD          | PKTSSR                           |

|      |        |        |        |        |                            |                                       |       |          |
|------|--------|--------|--------|--------|----------------------------|---------------------------------------|-------|----------|
| 2186 | 042764 |        |        | 280\$: | CKLOOP                     | ;LOOP IF SELECTED                     |       |          |
|      | 042764 | 104406 |        |        |                            |                                       | TRAP  | C\$CLP1  |
| 2187 | 042766 | 013701 | 043220 |        | MOV T31BFR+6,R1            | ;PICK UP XSTO                         |       |          |
| 2188 | 042772 | 010102 |        |        | MOV R1,R2                  | ;SET UP EXPECTED                      |       |          |
| 2189 | 042774 | 052702 | 000002 |        | BIS #BIT1,R2               | ;SET BOT BIT IN EXPECTED              |       |          |
| 2190 | 043000 | 020102 |        |        | CMP R1,R2                  | ;DOES EXP = REC'D                     |       |          |
| 2191 | 043002 | 001406 |        |        | BEQ 285\$                  | ;BR, IF EQUAL (OK)                    |       |          |
| 2192 | 043004 | 005237 | 002214 |        | INC FATFLG                 | ;ERROR COUNT                          |       |          |
| 2196 | 043010 |        |        |        | ERRMRD ERRNO,T31BOT,EXPREC | ;TAPE NOT AT BOT AFTER REWIND         |       |          |
|      | 043010 | 104456 |        |        |                            |                                       | TRAP  | C\$ERHRD |
|      | 043012 | 000500 |        |        |                            |                                       | .WORD | 320      |
|      | 043014 | 044345 |        |        |                            |                                       | .WORD | T31BOT   |
|      | 043016 | 015554 |        |        |                            |                                       | .WORD | EXPREC   |
| 2197 | 043020 |        |        | 285\$: | CKLOOP                     | ;LOOP IF SELECTED                     |       |          |
|      | 043020 | 104406 |        |        |                            |                                       | TRAP  | C\$CLP1  |
| 2198 | 043022 | 012737 | 140001 | 043310 | MOV #140001,T31PK3         | ;READ,ACK,CVC=1 COMMAND               |       |          |
| 2199 | 043030 | 012704 | 043310 |        | MOV #T31PK3,R4             | ;SET UP R4 WITH PACKET ADDRESS        |       |          |
| 2200 | 043034 | 012737 | 000144 | 043316 | MOV #100.,T31SZ            | ;SET UP RECORD SIZE IN PACKET         |       |          |
| 2201 | 043042 | 010465 | 000000 |        | MOV R4,TSDR(R5)            | ;ISSUE COMMAND                        |       |          |
| 2202 | 043046 | 004737 | 016330 |        | JSR PC,WAITF               | ;WAIT FOR SSR TO SET                  |       |          |
| 2203 | 043052 | 016501 | 000002 |        | MOV TSSR(R5),R1            | ;GET TSSR CONTENTS                    |       |          |
| 2204 | 043056 | 012702 | 000200 |        | MOV #SSR,R2                | ;SET UP EXPECTED                      |       |          |
| 2205 | 043062 | 020102 |        |        | CMP R1,R2                  | ;ARE THEY EQUAL                       |       |          |
| 2206 | 043064 | 001406 |        |        | BEQ 290\$                  | ;BR, IF OK                            |       |          |
| 2207 | 043066 | 005237 | 002214 |        | INC FATFLG                 | ;ERROR COUNT                          |       |          |
| 2211 | 043072 |        |        |        | ERRMRD ERRNO,T31RDE,PKTSSR | ;TSSR INCORRECT AFTER READ DATA       |       |          |
|      | 043072 | 104456 |        |        |                            |                                       | TRAP  | C\$ERHRD |
|      | 043074 | 000501 |        |        |                            |                                       | .WORD | 321      |
|      | 043076 | 043344 |        |        |                            |                                       | .WORD | T31RDE   |
|      | 043100 | 012126 |        |        |                            |                                       | .WORD | PKTSSR   |
| 2212 | 043102 |        |        | 290\$: | CKLOOP                     | ;LOOP IF SELECTED                     |       |          |
|      | 043102 | 104406 |        |        |                            |                                       | TRAP  | C\$CLP1  |
| 2213 | 043104 | 017701 | 140006 |        | MOV @FREE,R1               | ;GET DATA READ                        |       |          |
| 2214 | 043110 | 012702 | 000144 |        | MOV #100.,R2               | ;READ EXPECTED                        |       |          |
| 2215 | 043114 | 020102 |        |        | CMP R1,R2                  | ;DID TAPE STAY POSITIONED             |       |          |
| 2216 | 043116 | 001406 |        |        | BEQ 330\$                  | ;BR, IF EXPD = RECD                   |       |          |
| 2217 | 043120 | 005237 | 002214 |        | INC FATFLG                 | ;ERROR COUNT                          |       |          |
| 2221 | 043124 |        |        |        | ERRMRD ERRNO,T31WNH,EXPREC | ;TAPE POSITION NOT CORRECT AFTER INIT |       |          |
|      | 043124 | 104456 |        |        |                            |                                       | TRAP  | C\$ERHRD |
|      | 043126 | 000502 |        |        |                            |                                       | .WORD | 322      |
|      | 043130 | 043410 |        |        |                            |                                       | .WORD | T31WNH   |
|      | 043132 | 015554 |        |        |                            |                                       | .WORD | EXPREC   |
| 2222 | 043134 |        |        | 330\$: |                            |                                       |       |          |
| 2223 | 043134 |        |        |        | ENDSUB                     | ;***** END SUBTEST *****<br>L10052:   |       |          |
|      | 043134 | 104403 |        |        |                            |                                       | TRAP  | C\$ESUB  |
| 2224 | 043136 | 023727 | 002214 | 000017 | CMP FATFLG,#15.            | ;IS ERROR COUNT AT 25                 |       |          |
| 2225 | 043144 | 103402 |        |        | BLO 999\$                  | ;BR, IF LESS THAN 25                  |       |          |
| 2226 | 043146 | 004737 | 017262 |        | JSR PC,CKDROP              | ;TRY TO DROP THE UNIT                 |       |          |
| 2227 | 043152 |        |        | 999\$: |                            |                                       |       |          |
| 2228 |        |        |        | :      |                            |                                       |       |          |
| 2229 |        |        |        | :      |                            |                                       |       |          |
| 2230 |        |        |        | :      |                            |                                       |       |          |
| 2231 | 043152 | 004737 | 016536 |        | JSR PC,TSTLOOP             | ;DO WE NEED TO ITERATE TEST           |       |          |
| 2232 | 043156 | 103002 |        |        | BCC 163\$                  | ;BR, IF NO LOOP REQUIRED              |       |          |
| 2233 | 043160 | 000137 | 041462 |        | JMP T31LOOP                | ;EXECUTE AGAIN                        |       |          |
| 2234 | 043164 |        |        | 163\$: | EXIT TST                   | ;ALL DONE THIS TEST                   |       |          |



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043164 104432 TRAP C$EXIT
043166 003600 .WORD L10050 .
2235 ;*
2236 ;LOCAL STORAGE FOR THIS TEST
2237 ;
2241 043170 T31PACKET: ;COMMAND PACKET FOR TEST
2242 043170 100004 .WORD 100004 ;WRITE CHARACTERISTICS COMMAND, WITH , ACK
2243 043172 043200 .WORD T31DATA ;ADDRESS OF CHARACTERISTICS BLOCK
2244 043174 000000 .WORD 0
2245 043176 000012 .WORD 10. ;STARTING VALUE OF BLOCK SIZE
2246 043200 T31DATA: ;CHARACTERISTICS DATA BLOCK
2247 043200 043212 .WORD T31BFR ;ADDRESS OF MESSAGE BUFFER
2248 043202 000000 .WORD 0
2249 043204 000024 .WORD 20. ;LENGTH OF MESSAGE BUFFER
2250 043206 000000 .WORD 0
2251 043210 000000 T31DSW: .WORD 0 ;SELECT DRIVE 0
2252 043212 T31BFR: .BLKW 25. ;MESSAGE BUFFER
2253 ;
2254 ;WRITE SUBSYSTEM MEMORY COMMAND PACKET
2255 ;
2257 043300 .-<.10>E177770
2259 043300 T31PK2:
2260 043300 100006 .WORD 100006 ;WRITE SUB SYS MEM COMMAND, AND ACK
2261 043302 043320 .WORD T31BF2 ;ADDRESS OF SELECT BLOCK DATA
2262 043304 000000 .WORD 0
2263 043306 000006 .WORD 6. ;SIZE OF DATA PACKET
2264 ;
2268 043310 T31PK3:
2269 043310 100005 .WORD 100005 ;REREAD COMMAND, AND ACK
2270 043312 T31RB:
2271 043312 003116 T31WB: .WORD FREE ;ADDRESS OF WRITE BUFFER
2272 043314 000000 .WORD 0
2273 043316 000000 T31SZ: .WORD 0 ;SIZE OF BUFFER (EXTENT)
2274 ;EVEN
2275 ;
2276 ;
2277 ;
2278 043320 T31BF2:
2279 043320 010 T31BS0: .BYTE 10 ;BSEL0 AREA
2280 043321 200 T31BS1: .BYTE 200 ;BSEL1 AREA
2281 043322 000000 T31S2: .WORD 0 ;SEL 2 AREA
2282 043324 000000 T31S3: .WORD 0 ;DATA AREA
2283 ;
2284 ;
2285 .EVEN
2286 ;TAPE MOTION PACKET COMMAND VALUES
2287 ;
2288 043326 100205 T31RN: .WORD 100205 ;REREAD DATA (NEXT)
2289 043330 100605 T31WR: .WORD 100605 ;REREAD DATA RETRY
2290 043332 102205 T31CON: .WORD 102205 ;WRITE CONTINUOUS
2291 043334 177777 .WORD 177777 ;END OF DATA
2292 ;
2293 ;
2294 043336 000000 T31CNT: .WORD 0 ;TAPE TIMER COUNTER STORAGE AREA
2295 043340 000000 T31CNU: .WORD 0 ;TAPE TIMER COUNTER STORAGE AREA
2296 043342 000000 T31DLT: .WORD 0 ;DELAY COUNTER
2297 ;

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TEST 1: HARDWARE TEST 1.8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 3: NO OP ("CLEAN TAPE") AND INITIALIZE

SEQ 138

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2298 ;LOCAL TEXT MESSAGES FOR TEST
2299 ;
2300
2301 043344 124 123 123 T31RDE: .ASCIZ 'TSSR Not Correct After READ Command'
2302 043410 124 141 160 T31WNH: .ASCIZ 'Tape Position Incorrect After INITIALIZE Command'
2303 043471 124 141 160 T31WNG: .ASCIZ 'Tape Position Incorrect After NO? Command'
2304 043543 124 123 123 T31RDF: .ASCIZ 'TSSR Incorrect After READ DATA Command'
2305 043612 122 105 122 T31RRF: .ASCIZ 'REREAD Previous (Space Reverse, Read Forward) Command Failed'
2306 043707 120 117 123 T31SC: .ASCIZ 'POSITION (Space Command) Failed, TSSR Not Correct'
2307 043771 122 111 102 T31LOR: .ASCIZ 'RIB NOT SET AFTER READ REVERSE INTO BOT'
2308 044041 124 123 123 T31WDF: .ASCIZ 'TSSR Not Correct After Illegal Mode Bits Set'
2309 044116 111 154 154 T31LOQ: .ASCIZ 'Illegal Mode Bits, Failed To Set ILC Bit In XSTO'
2310 044177 122 105 122 T31SSR: .ASCIZ 'REREAD COMMAND Not Accepted'
2311 044233 124 123 123 T31WDE: .ASCIZ 'TSSR Not Correct After NO-OP ("CLEAN TAPE") AND INITIALIZE Command, At BOT'
2312 044345 124 141 160 T31BOT: .ASCIZ 'Tape Not At BOT After REWIND Command (BOT Not Set In XSTO)'
2313 044440 116 117 055 T31TIM: .ASCIZ 'NO-OP ("CLEAN TAPE") AND INITIALIZE''S Erase Tape Not Long Enough'
2314 044540 122 105 122 T31EOT: .ASCIZ 'REREAD DATA OVER EOT GAVE NO TAPE STATUS ALERT'
2315 044617 124 123 123 T31TM: .ASCIZ 'TSSR Not Correct After REREAD COMMAND Reject'
2316 044674 122 145 167 T31RWN: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
2317 044743 122 101 115 T31RNC: .ASCIZ 'RAM Error, Correct Data Pattern Not In Ram'
2318 045016 124 123 123 T31AM3: .ASCIZ 'TSSR Init. Failed After REREAD COMMAND'
2319 045065 104 162 151 T31OFL: .ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
2320 045140 124 123 123 T31WDD: .ASCIZ 'TSSR Not Correct After REREAD DATA Command, SWB Bit Set'
2321 045230 124 123 123 T31WDC: .ASCIZ 'TSSR Not Correct After REREAD DATA Command'
2322 045303 103 126 103 T31VCK: .ASCIZ 'CVC Set, Didn't Reset VCK In Message Buffer'
2323 045356 124 123 102 T31BA: .ASCIZ 'TSBA Not Correct After REREAD DATA Command'
2324 045431 127 122 111 T31WSS: .ASCIZ 'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'
2325 045520 122 145 141 T31LON: .ASCIZ 'Reading Long Record Failed To Set RLL Bit In XSTO'
2326 045602 122 145 141 T31LOP: .ASCIZ 'Reading Long Record Failed To Set RLS Bit In XSTO'
2327 045664 122 145 163 T31PBP: .ASCIZ 'Residual Byte Count Incorrect After Short Record Read'
2328 045752 122 145 141 T31TRL: .ASCIZ 'Reading Long Record Failed To Give Tape Status Alert'
2329 046040 116 117 055 T31NEF: .ASCIZ 'NO OP ("CLEAN TAPE") AND INITIALIZE, At First Record, Failed To Set RIB Bit'
x
2330 046161 124 123 123 T31SCF: .ASCIZ 'TSSR Not Correct After SPACE RECORDS Command'
2331 046236 124 123 123 T31TSA: .ASCIZ 'TSSR Not Correct After NO OP ("CLEAN TAPE") AND INITIALIZE, Into BOT'
2332 046343 124 123 123 T31WRF: .ASCIZ 'TSSR Not Correct After NO-OP ("CLEAN TAPE") AND INITIALIZE Command'
2333 046446 104 141 164 T31DTA: .ASCIZ 'Data Compare Error, Data Read From Tape Not Equal To Written'
2334 046543 116 117 055 T31ID: .ASCIZ 'NO OP ("Clean Tape") And INITIALIZE'
2335 .EVEN
2336 ;
2337 ;
2338 ;ROUTINE TO RESTORE COMMAND PACKET TO START UP (DEFAULT) VALUES
2339 ;WRITE SUBSYSTEM MEMORY COMMAND
2340 ;
2341 ;
2342 ;
2343 046610 T31REST:
2344 046610 SAVREG ;SAVE THE REGISTERS
2345 046614 012701 043170 MOV #T31PACKET,R1 ;START OF THE PACKET
2346 046620 012721 100004 MOV #100004,(R1). ;WRITE SUBSYSTEM MEM. WITH ACK.
2347 046624 012721 043200 MOV #T31DATA,(R1). ;ADDRESS OF CHARAISTICS DATA BLOCK
2348 046630 005021 CLR (R1). ;EXTENDED ADDRESS
2349 046632 012721 000012 MOV #10.,(R1). ;SIZE OF DATA BLOCK IN BYTES
2350 046636 012721 043212 MOV #T31BFR,(R1). ;ADDRESS OF MESSAGE BUFFER
2351 046642 005021 CLR (R1). ;
2352 046644 012721 000024 MOV #20.,(R1). ;LENGTH OF MESSAGE BUFFER
2353 046650 005021 CLR (R1). ;
2354 046652 012711 000000 MOV #0,(R1) ;SELECT DRIVE ZERO

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TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 3: NO-OP ("CLEAN TAPE") AND INITIALIZE

SEQ 139

|      |        |        |                    |         |                    |                                    |
|------|--------|--------|--------------------|---------|--------------------|------------------------------------|
| 2355 | 046656 | 012702 | 000030             | MOV     | #24.,R2            | ;NUMBER OF LOCATIONS TO BE CLEARED |
| 2356 | 046662 | 012762 | 177777 043212 64#: | MOV     | #177777,T31BFR(R2) | ;ALL ONES TO MESSAGE BUFFER        |
| 2357 | 046670 | 005742 |                    | TST     | -(R2)              | ;NEXT LOCATION                     |
| 2358 | 046672 | 022702 | 000000             | CMP     | #0,R2              | ;AT END OF LOOP YET                |
| 2359 | 046676 | 001371 |                    | BNE     | 64#                | ;KEEP GOING UNTIL DONE             |
| 2360 | 046700 | 000207 |                    | RTS     | PC                 | ;RETURN                            |
| 2361 |        |        |                    |         |                    |                                    |
| 2362 | 046702 |        |                    | T31RT2: |                    |                                    |
| 2363 | 046702 |        |                    | SAVREG  |                    | ;SAVE THE REGISTERS                |
| 2364 | 046706 | 012701 | 043300             | MOV     | #T31PK2,R1         | ;START OF THE PACKET               |
| 2365 | 046712 | 012721 | 100006             | MOV     | #100006,(R1).      | ;WRITE SUBSYSTEM MEM. WITH ACK.    |
| 2366 | 046716 | 012721 | 043320             | MOV     | #T31BF2,(R1).      | ;ADDRESS OF DATA BLOCK             |
| 2367 | 046722 | 005021 |                    | CLR     | (R1).              | ;EXTENDED ADDRESS                  |
| 2368 | 046724 | 012721 | 000006             | MOV     | #6.,(R1).          | ;SIZE OF DATA BLOCK IN BYTES       |
| 2369 | 046730 | 005021 |                    | CLR     | (R1).              |                                    |
| 2370 | 046732 | 012701 | 043320             | MOV     | #T31BF2,R1         | ;POINT TO DATA SEL AREA            |
| 2371 | 046736 | 005021 |                    | CLR     | (R1).              |                                    |
| 2372 | 046740 | 005011 |                    | CLR     | (R1)               |                                    |
| 2373 | 046742 | 000207 |                    | RTS     | PC                 | ;RETURN                            |
| 2374 | 046744 |        |                    | T31RT3: |                    |                                    |
| 2375 | 046744 |        |                    | SAVREG  |                    | ;SAVE REGISTERS                    |
| 2376 | 046750 | 012701 | 043310             | MOV     | #T31PK3,R1         | ;SET UP POINTER ADDRESS            |
| 2377 | 046754 | 005021 |                    | CLR     | (R1).              | ;COMMAND SPACE                     |
| 2378 | 046756 | 005021 |                    | CLR     | (R1).              | ;ADDRESS OF DATA BLOCK             |
| 2379 | 046760 | 005021 |                    | CLR     | (R1).              | ;EXTENDED ADDRESS                  |
| 2380 | 046762 | 005011 |                    | CLR     | (R1)               | ;SIZE OF DATA TRANSFER BLOCK       |
| 2381 | 046764 | 000207 |                    | RTS     | PC                 | ;RETURN                            |
| 2382 | 046766 |        |                    | ENDTST  |                    |                                    |
|      | 046766 |        |                    |         |                    |                                    |
|      | 046766 | 104401 |                    |         |                    |                                    |
| 2383 |        |        |                    |         |                    |                                    |
| 2384 |        |        |                    |         |                    |                                    |
| 2385 |        |        |                    |         |                    |                                    |
| 2386 |        |        |                    |         |                    |                                    |
| 2387 |        |        |                    |         |                    |                                    |
| 2388 |        |        |                    |         |                    |                                    |
| 2389 |        |        |                    |         |                    |                                    |
| 2390 |        |        |                    |         |                    |                                    |
| 2391 |        |        |                    |         |                    |                                    |
| 2392 |        |        |                    |         |                    |                                    |
| 2393 |        |        |                    |         |                    |                                    |
| 2394 |        |        |                    |         |                    |                                    |
| 2395 |        |        |                    |         |                    |                                    |
| 2396 |        |        |                    |         |                    |                                    |
| 2397 |        |        |                    |         |                    |                                    |
| 2398 |        |        |                    |         |                    |                                    |
| 2399 |        |        |                    |         |                    |                                    |
| 2400 |        |        |                    |         |                    |                                    |
| 2401 |        |        |                    |         |                    |                                    |
| 2402 |        |        |                    |         |                    |                                    |
| 2403 |        |        |                    |         |                    |                                    |
| 2404 |        |        |                    |         |                    |                                    |
| 2405 |        |        |                    |         |                    |                                    |
| 2406 |        |        |                    |         |                    |                                    |
| 2407 |        |        |                    |         |                    |                                    |
| 2408 |        |        |                    |         |                    |                                    |
| 2409 |        |        |                    |         |                    |                                    |

L10050: TRAP C\$ETST

.SBTTL TEST 4: Erase And Operation Incomplete

VERIFIES THAT AN ERASE COMMAND ISSUED WHEN THE TAPE IS  
 POSITIONED AT BOT OPERATES PROPERLY AND ACTUALLY ERASES TAPE.  
 THE FOLLOWING TEST SEQUENCE IS PERFORMED:

1. THE TAPE IS FIRST REWOUND, SEVERAL TEST RECORDS ARE WRITTEN, AND THE TAPE IS REWOUND AGAIN.
2. AN ERASE COMMAND IS ISSUED, WHICH SHOULD ERASE A NUMBER OF THE TEST RECORDS.
3. NORMAL TERMINATION IS VERIFIED AND STATUS IS CHECKED (BOT SHOULD BE 0).
4. A READ REVERSE COMMAND IS ISSUED. IT IS VERIFIED THAT THE COMMAND TERMINATES WITH TAPE STATUS ALERT, THAT THE REVERSE INTO BOT (RIB) STATUS BIT IS SET, AND THAT NO DATA IS TRANSFERRED. THIS DEMONSTRATES THAT NO DATA WAS ENCOUNTERED IN THE AREA ERASED BY THE ERASE COMMAND.

|      |        |        |        |        |                                                                     |                                     |
|------|--------|--------|--------|--------|---------------------------------------------------------------------|-------------------------------------|
| 2410 |        |        |        | :      |                                                                     |                                     |
| 2411 |        |        |        | :      |                                                                     |                                     |
| 2412 |        |        |        | :      |                                                                     |                                     |
| 2413 |        |        |        | :      | THE TEST CONSISTS OF THE FOLLOWING 3 SUBTESTS                       |                                     |
| 2414 |        |        |        | :      |                                                                     |                                     |
| 2415 |        |        |        | :      |                                                                     |                                     |
| 2416 |        |        |        | :      |                                                                     |                                     |
| 2417 |        |        |        | :      |                                                                     |                                     |
| 2418 | 046770 |        |        | :      | BGNTST                                                              |                                     |
|      | 046770 |        |        | :      |                                                                     | T4::                                |
| 2419 | 046770 | 012737 | 006354 | 002172 | MOV EPRT1,EPRTSW                                                    | ;PRIMARY ERROR MESSAGE              |
| 2424 | 046776 | 012700 | 052640 |        | MOV TST32ID,R0                                                      | ;ASCII MESSAGE TO IDENTIFY TEST     |
| 2425 | 047002 | 004737 | 016570 |        | JSR PC,TSTSETUP                                                     | ;DO INITIAL TEST SETUP              |
| 2426 | 047006 | 012737 | 000005 | 002210 | MOV #5,LOOPCNT                                                      | ;PERFORM 5 ITERATIONS               |
| 2427 | 047014 | 005037 | 051510 |        | CLR T32CNT                                                          | ;CLEAR TAPE RECORD COUNTER          |
| 2428 |        |        |        | :      |                                                                     |                                     |
| 2429 |        |        |        | :      |                                                                     |                                     |
| 2430 |        |        |        | :      | TEST 4, SUBTEST 1                                                   |                                     |
| 2431 |        |        |        | :      |                                                                     |                                     |
| 2432 |        |        |        | :      |                                                                     |                                     |
| 2433 |        |        |        | :      | VERIFIES THAT A Erase And Operation Incomplete COMMAND ISSUED WHILE |                                     |
| 2434 |        |        |        | :      | THE TAPE IS POSITIONED AT BOT CAUSES FUNCTION REJECT                |                                     |
| 2435 |        |        |        | :      | TERMINATION, WITH THE NON-EXECUTABLE FUNCTION (NEF)                 |                                     |
| 2436 |        |        |        | :      | ERROR BIT SET.                                                      |                                     |
| 2437 |        |        |        | :      |                                                                     |                                     |
| 2438 |        |        |        | :      |                                                                     |                                     |
| 2439 |        |        |        | :      |                                                                     |                                     |
| 2440 |        |        |        | :      |                                                                     |                                     |
| 2441 | 047020 |        |        | :      | T32LOOP:                                                            |                                     |
| 2442 |        |        |        | :      |                                                                     |                                     |
| 2443 |        |        |        | :      |                                                                     |                                     |
| 2444 |        |        |        | :      |                                                                     |                                     |
| 2445 | 047020 |        |        | :      | BGNSUB                                                              | ;>>>>>>>>>> BEGIN SUBTEST >>>>>>>>> |
|      | 047020 |        |        | :      |                                                                     | T4.1:                               |
|      | 047020 | 104402 |        |        |                                                                     | TRAP C\$BSUB                        |
| 2446 | 047022 | 004737 | 052700 |        | JSR PC,T32REST                                                      | ;SET COMMAND PACKET                 |
| 2447 | 047026 | 004737 | 052772 |        | JSR PC,T32RT2                                                       | ;SET UP OTHER COMMAND PACKET        |
| 2448 | 047032 | 004737 | 053022 |        | JSR PC,T32RT3                                                       | ;SET UP OTHER COMMAND PACKET        |
| 2449 | 047036 | 012737 | 176750 | 051514 | MOV #65000.,T32DLY                                                  | ;SET UP DELAY COUNTER               |
| 2450 | 047044 | 004737 | 016054 | 10\$:  | JSR PC,SOFINIT                                                      | ;DO INITIALIZE ON CONTROLLER        |
| 2451 | 047050 | 103426 |        |        | BCS 20\$                                                            | ;BR IF INIT WAS OK                  |
| 2452 | 047052 |        |        |        | DELAY 250                                                           | ;DELAY ABOUT .25 SEC                |
|      | 047052 | 012727 | 000250 |        |                                                                     | MOV #250,(PC).                      |
|      | 047056 | 000000 |        |        |                                                                     | .WORD 0                             |
|      | 047060 | 013727 | 002116 |        |                                                                     | MOV L\$DLY,(PC).                    |
|      | 047064 | 000000 |        |        |                                                                     | .WORD 0                             |
|      | 047066 | 005367 | 177772 |        |                                                                     | DEC -6(PC)                          |
|      | 047072 | 001375 |        |        |                                                                     | BNE -.4                             |
|      | 047074 | 005367 | 177756 |        |                                                                     | DEC -22(PC)                         |
|      | 047100 | 001367 |        |        |                                                                     | BNE . 20                            |
| 2453 | 047102 | 005337 | 051514 |        | DEC T32DLY                                                          | ;BUMP COUNTER                       |
| 2454 | 047106 | 001356 |        |        | BNE 10\$                                                            | ;BR, IF COUNTER NOT DONE            |
| 2455 | 047110 | 005237 | 002214 |        | INC FATFLG                                                          | ;ERROR COUNT                        |
| 2459 | 047114 | 010001 |        |        | MOV R0,R1                                                           | ;CONTENTS OF TSSR REGISTER          |
| 2460 | 047116 |        |        |        | ERRDF ERNO,SFIERR,SFIMSC                                            | ;FATAL ERROR TSSR WAS NOT OK        |
|      | 047116 | 104455 |        |        |                                                                     | TRAP C\$ERDF                        |
|      | 047120 | 000621 |        |        |                                                                     | .WORD 401                           |

| Address | Offset | Label  | OpCode | OpName | OpData | Comment                    | Trap  | TrapData                         |
|---------|--------|--------|--------|--------|--------|----------------------------|-------|----------------------------------|
| 047122  | 003646 |        |        |        |        |                            | .WORD | SFIERR                           |
| 047124  | 012114 |        |        |        |        |                            | .WORD | SFIMSG                           |
| 2461    | 047126 | 013737 | 002174 | 051350 | 20\$:  | MOV UNITN,T32DSW           |       | ;SET UP DRIVE NUMBER             |
| 2462    | 047134 | 012704 | 051330 |        |        | MOV #T32PACKET,R4          |       | ;SUBROUTINE NEEDS PACKET ADDRESS |
| 2463    | 047140 | 004737 | 010742 |        |        | JSR PC,WRTCHR              |       | ;ISSUE WRITE CHARACTERISTICS     |
| 2464    | 047144 | 103407 |        |        |        | BCS 25\$                   |       | ;BR, IF COMMAND ISSUED OK        |
| 2465    | 047146 | 005237 | 002214 |        |        | INC FATFLG                 |       | ;ERROR COUNT                     |
| 2469    | 047152 | 010001 |        |        |        | MOV R0,R1                  |       | ;SAVE CONTENTS OF TSSR           |
| 2470    | 047154 |        |        |        |        | ERRHRD ERRNO,WRTMSG,SFIMSG |       | ;WRITE CHARACTERISTICS FAILED    |
|         | 047154 | 104456 |        |        |        |                            | TRAP  | C\$ERHRD                         |
|         | 047156 | 000622 |        |        |        |                            | .WORD | 402                              |
|         | 047160 | 005052 |        |        |        |                            | .WORD | WRTMSG                           |
|         | 047162 | 012114 |        |        |        |                            | .WORD | SFIMSG                           |
| 2471    | 047164 |        |        |        | 25\$:  | CKLOOP                     |       | ;LOOP IF SELECTED                |
|         | 047164 | 104406 |        |        |        |                            | TRAP  | C\$CLP1                          |
| 2472    | 047166 | 004737 | 011074 |        |        | JSR PC,REWIND              |       | ;CALL TAPE REWIND COMMAND        |
| 2473    | 047172 | 103411 |        |        |        | BCS 26\$                   |       | ;BR, IF NO PROBLEM               |
| 2474    | 047174 | 010004 |        |        |        | MOV R0,R4                  |       | ;SET UP REWIND PACKET ADDRESS    |
| 2475    | 047176 | 016501 | 000002 |        |        | MOV TSSR(R5),R1            |       | ;GET TSSR CONTENTS               |
| 2476    | 047202 | 005237 | 002214 |        |        | INC FATFLG                 |       | ;ERROR COUNT                     |
| 2480    | 047206 |        |        |        |        | ERRHRD ERRNO,T32RWN,PKTSSR |       | ;REWIND NOT ACCEPTED             |
|         | 047206 | 104456 |        |        |        |                            | TRAP  | C\$ERHRD                         |
|         | 047210 | 000623 |        |        |        |                            | .WORD | 403                              |
|         | 047212 | 051700 |        |        |        |                            | .WORD | T32RWN                           |
|         | 047214 | 012126 |        |        |        |                            | .WORD | PKTSSR                           |
| 2481    | 047216 |        |        |        | 26\$:  | CKLOOP                     |       | ;LOOP IF SELECTED                |
|         | 047216 | 104406 |        |        |        |                            | TRAP  | C\$CLP1                          |
| 2482    | 047220 | 012703 | 000400 |        |        | MOV #256.,R3               |       | ;STARTING RECORD SIZE            |
| 2483    | 047224 | 013737 | 003116 | 051452 |        | MOV FREE,T32WB             |       | ;STARTING WRITE BUFFER ADDRESS   |
| 2484    | 047232 | 012737 | 140005 | 051450 |        | MOV #140005,T32PK3         |       | ;WRITE DATA CVC=1,ACK COMMAND    |
| 2485    | 047240 | 012704 | 051450 |        |        | MOV #T32PK3,R4             |       | ;SET UP R4 W. H PACKET ADDRESS   |
| 2486    | 047244 | 010337 | 051456 |        | 27\$:  | MOV R3,T32SZ               |       | ;SET UP RECORD SIZE IN PACKET    |
| 2487    | 047250 | 010465 | 000000 |        |        | MOV R4,TSD0(R5)            |       | ;ISSUE COMMAND                   |
| 2488    | 047254 | 004737 | 016330 |        |        | JSR PC,WAITF               |       | ;WAIT FOR SSR TO SET             |
| 2489    | 047260 | 016501 | 000002 |        |        | MOV TSSR(R5),R1            |       | ;GET TSSR CONTENTS               |
| 2490    | 047264 | 012702 | 000200 |        |        | MOV #SSR,R2                |       | ;SET UP EXPECTED                 |
| 2491    | 047270 | 020102 |        |        |        | CMP R1,R2                  |       | ;ARE THEY EQUAL                  |
| 2492    | 047272 | 001406 |        |        |        | BEQ 28\$                   |       | ;BR, IF OK                       |
| 2493    | 047274 | 005237 | 002214 |        |        | INC FATFLG                 |       | ;ERROR COUNT                     |
| 2497    | 047300 |        |        |        |        | ERRHRD ERRNO,T32WDC,PKTSSR |       | ;TSSR INCORRECT AFTER WRITE DATA |
|         | 047300 | 104456 |        |        |        |                            | TRAP  | C\$ERHRD                         |
|         | 047302 | 000624 |        |        |        |                            | .WORD | 404                              |
|         | 047304 | 052536 |        |        |        |                            | .WORD | T32WDC                           |
|         | 047306 | 012126 |        |        |        |                            | .WORD | PKTSSR                           |
| 2498    | 047310 |        |        |        | 28\$:  | CKLOOP                     |       | ;LOOP IF SELECTED                |
|         | 047310 | 104406 |        |        |        |                            | TRAP  | C\$CLP1                          |
| 2499    | 047312 | 005723 |        |        |        | TST (R3),                  |       | ;BUMP RECORD COUNTER             |
| 2500    | 047314 | 020327 | 001002 |        |        | CMP R3,#514.               |       | ;AT MAX SIZE YET                 |
|         |        |        |        |        |        |                            |       |                                  |

| Address     | Offset | Label | Operation | Comments            | Trap  | Word     |
|-------------|--------|-------|-----------|---------------------|-------|----------|
| 047346      | 051700 |       |           |                     |       | T32RWN   |
| 047350      | 012126 |       |           |                     |       | PKTSSR   |
| 2511 047352 | 104406 | 30\$: | CKLOOP    | ;LOOP IF SELECTED   | TRAP  | C\$CLP1  |
| 047352      | 013701 |       | MOV       | T32BFR+6,R1         |       |          |
| 2512 047354 | 010102 |       | MOV       | R1,R2               |       |          |
| 2513 047360 | 052702 |       | BIS       | #BIT1,R2            |       |          |
| 2514 047362 | 020102 |       | CMP       | R1,R2               |       |          |
| 2515 047366 | 001406 |       | BEQ       | 40\$                |       |          |
| 2516 047370 | 005237 |       | INC       | FATFLG              |       |          |
| 2517 047372 | 002214 |       | ERRHRD    | ERRNO,T32BOE,EXPREC |       |          |
| 2521 047376 | 104456 |       |           |                     | TRAP  | C\$ERHRD |
| 047376      | 000626 |       |           |                     | .WORD | 406      |
| 047400      | 052366 |       |           |                     | .WORD | T32BOE   |
| 047402      | 015554 |       |           |                     | .WORD | EXPREC   |
| 2522 047406 | 104406 | 40\$: | CKLOOP    | ;LOOP IF SELECTED   | TRAP  | C\$CLP1  |
| 047406      | 012737 |       | MOV       | #140411,T32PK3      |       |          |
| 2523 047410 | 012704 |       | MOV       | #T32PK3,R4          |       |          |
| 2524 047416 | 010465 |       | MOV       | R4,TSDB(R5)         |       |          |
| 2525 047422 | 004737 |       | JSR       | PC,WAITF            |       |          |
| 2526 047426 | 016501 |       | MOV       | TSSR(R5),R1         |       |          |
| 2527 047432 | 012702 |       | MOV       | #SSR,R2             |       |          |
| 2528 047436 | 020102 |       | CMP       | R1,R2               |       |          |
| 2529 047442 | 001406 |       | BEQ       | 50\$                |       |          |
| 2530 047444 | 005237 |       | INC       | FATFLG              |       |          |
| 2531 047446 | 002214 |       | ERRHRD    | ERRNO,T32ERA,PKTSSR |       |          |
| 2535 047452 | 104456 |       |           |                     | TRAP  | C\$ERHRD |
| 047452      | 000627 |       |           |                     | .WORD | 407      |
| 047454      | 052016 |       |           |                     | .WORD | T32ERA   |
| 047456      | 012126 |       |           |                     | .WORD | PKTSSR   |
| 2536 047462 | 104406 | 50\$: | CKLOOP    | ;LOOP IF SELECTED   | TRAP  | C\$CLP1  |
| 047462      | 013701 |       | MOV       | T32BFR+6,R1         |       |          |
| 2537 047464 | 010102 |       | MOV       | R1,R2               |       |          |
| 2538 047470 | 042702 |       | BIC       | #BIT1,R2            |       |          |
| 2539 047472 | 020102 |       | CMP       | R1,R2               |       |          |
| 2540 047476 | 001406 |       | BEQ       | 55\$                |       |          |
| 2541 047500 | 005237 |       | INC       | FATFLG              |       |          |
| 2542 047502 | 002214 |       | ERRHRD    | ERRNO,T32BOE,EXPREC |       |          |
| 2546 047506 | 104456 |       |           |                     | TRAP  | C\$ERHRD |
| 047506      | 000630 |       |           |                     | .WORD | 408      |
| 047510      | 052366 |       |           |                     | .WORD | T32BOE   |
| 047512      | 015554 |       |           |                     | .WORD | EXPREC   |
| 2547 047516 | 104406 | 55\$: | CKLOOP    | ;LOOP IF SELECTED   | TRAP  | C\$CLP1  |
| 047516      | 003116 |       | MOV       | FREE,T32RB          |       |          |
| 2548 047520 | 012737 |       | MOV       | #140401,T32PK3      |       |          |
| 2549 047526 | 012737 |       | MOV       | #256.,T32SZ         |       |          |
| 2550 047534 | 012704 |       | MOV       | #T32PK3,R4          |       |          |
| 2551 047542 | 010465 |       | MOV       | R4,TSDB(R5)         |       |          |
| 2552 047546 | 004737 |       | JSR       | PC,WAITF            |       |          |
| 2553 047552 | 016501 |       | MOV       | TSSR(R5),R1         |       |          |
| 2554 047556 | 012702 |       | MOV       | #SSR!SC!BIT2,R2     |       |          |
| 2555 047562 | 020102 |       | CMP       | R1,R2               |       |          |
| 2556 047566 | 001406 |       | BEQ       | 180\$               |       |          |
| 2557 047570 | 005237 |       | INC       | FATFLG              |       |          |
| 2558 047572 | 002214 |       |           |                     |       |          |



3

| Address | Label | Op | Op2 | Op3 | Op4 | Op5 | Op6 | Op7 | Op8 | Op9 | Op10 | Op11 | Op12 | Op13 | Op14 | Op15 | Op16 | Op17 | Op18 | Op19 | Op20 | Op21 | Op22 | Op23 | Op24 | Op25 | Op26 | Op27 | Op28 | Op29 | Op30 | Op31 | Op32 | Op33 | Op34 | Op35 | Op36 | Op37 | Op38 | Op39 | Op40 | Op41 | Op42 | Op43 | Op44 | Op45 | Op46 | Op47 | Op48 | Op49 | Op50 | Op51 | Op52 | Op53 | Op54 | Op55 | Op56 | Op57 | Op58 | Op59 | Op60 | Op61 | Op62 | Op63 | Op64 | Op65 | Op66 | Op67 | Op68 | Op69 | Op70 | Op71 | Op72 | Op73 | Op74 | Op75 | Op76 | Op77 | Op78 | Op79 | Op80 | Op81 | Op82 | Op83 | Op84 | Op85 | Op86 | Op87 | Op88 | Op89 | Op90 | Op91 | Op92 | Op93 | Op94 | Op95 | Op96 | Op97 | Op98 | Op99 | Op100 | Op101 | Op102 | Op103 | Op104 | Op105 | Op106 | Op107 | Op108 | Op109 | Op110 | Op111 | Op112 | Op113 | Op114 | Op115 | Op116 | Op117 | Op118 | Op119 | Op120 | Op121 | Op122 | Op123 | Op124 | Op125 | Op126 | Op127 | Op128 | Op129 | Op130 | Op131 | Op132 | Op133 | Op134 | Op135 | Op136 | Op137 | Op138 | Op139 | Op140 | Op141 | Op142 | Op143 | Op144 | Op145 | Op146 | Op147 | Op148 | Op149 | Op150 | Op151 | Op152 | Op153 | Op154 | Op155 | Op156 | Op157 | Op158 | Op159 | Op160 | Op161 | Op162 | Op163 | Op164 | Op165 | Op166 | Op167 | Op168 | Op169 | Op170 | Op171 | Op172 | Op173 | Op174 | Op175 | Op176 | Op177 | Op178 | Op179 | Op180 | Op181 | Op182 | Op183 | Op184 | Op185 | Op186 | Op187 | Op188 | Op189 | Op190 | Op191 | Op192 | Op193 | Op194 | Op195 | Op196 | Op197 | Op198 | Op199 | Op200 | Op201 | Op202 | Op203 | Op204 | Op205 | Op206 | Op207 | Op208 | Op209 | Op210 | Op211 | Op212 | Op213 | Op214 | Op215 | Op216 | Op217 | Op218 | Op219 | Op220 | Op221 | Op222 | Op223 | Op224 | Op225 | Op226 | Op227 | Op228 | Op229 | Op230 | Op231 | Op232 | Op233 | Op234 | Op235 | Op236 | Op237 | Op238 | Op239 | Op240 | Op241 | Op242 | Op243 | Op244 | Op245 | Op246 | Op247 | Op248 | Op249 | Op250 | Op251 | Op252 | Op253 | Op254 | Op255 | Op256 | Op257 | Op258 | Op259 | Op260 | Op261 | Op262 | Op263 | Op264 | Op265 | Op266 | Op267 | Op268 | Op269 | Op270 | Op271 | Op272 | Op273 | Op274 | Op275 | Op276 | Op277 | Op278 | Op279 | Op280 | Op281 | Op282 | Op283 | Op284 | Op285 | Op286 | Op287 | Op288 | Op289 | Op290 | Op291 | Op292 | Op293 | Op294 | Op295 | Op296 | Op297 | Op298 | Op299 | Op300 | Op301 | Op302 | Op303 | Op304 | Op305 | Op306 | Op307 | Op308 | Op309 | Op310 | Op311 | Op312 | Op313 | Op314 | Op315 | Op316 | Op317 | Op318 | Op319 | Op320 | Op321 | Op322 | Op323 | Op324 | Op325 | Op326 | Op327 | Op328 | Op329 | Op330 | Op331 | Op332 | Op333 | Op334 | Op335 | Op336 | Op337 | Op338 | Op339 | Op340 | Op341 | Op342 | Op343 | Op344 | Op345 | Op346 | Op347 | Op348 | Op349 | Op350 | Op351 | Op352 | Op353 | Op354 | Op355 | Op356 | Op357 | Op358 | Op359 | Op360 | Op361 | Op362 | Op363 | Op364 | Op365 | Op366 | Op367 | Op368 | Op369 | Op370 | Op371 | Op372 | Op373 | Op374 | Op375 | Op376 | Op377 | Op378 | Op379 | Op380 | Op381 | Op382 | Op383 | Op384 | Op385 | Op386 | Op387 | Op388 | Op389 | Op390 | Op391 | Op392 | Op393 | Op394 | Op395 | Op396 | Op397 | Op398 | Op399 | Op400 | Op401 | Op402 | Op403 | Op404 | Op405 | Op406 | Op407 | Op408 | Op409 | Op410 | Op411 | Op412 | Op413 | Op414 | Op415 | Op416 | Op417 | Op418 | Op419 | Op420 | Op421 | Op422 | Op423 | Op424 | Op425 | Op426 | Op427 | Op428 | Op429 | Op430 | Op431 | Op432 | Op433 | Op434 | Op435 | Op436 | Op437 | Op438 | Op439 | Op440 | Op441 | Op442 | Op443 | Op444 | Op445 | Op446 | Op447 | Op448 | Op449 | Op450 | Op451 | Op452 | Op453 | Op454 | Op455 | Op456 | Op457 | Op458 | Op459 | Op460 | Op461 | Op462 | Op463 | Op464 | Op46 |
|---------|-------|----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
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TEST 1: HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 4: ERASE AND OPERATION INCOMPLETE

SEQ 145

|      |        |        |        |              |        |                     |       |                                  |
|------|--------|--------|--------|--------------|--------|---------------------|-------|----------------------------------|
| 2659 | 050052 | 004737 | 017502 |              | JSR    | PC,FILLMEM          |       | ;CALL MEMORY FILLER              |
| 2660 | 050056 | 013737 | 003116 | 051452       | MOV    | FREE,T32WB          |       | ;STARTING WRITE BUFFER ADDRESS   |
| 2661 | 050064 | 012737 | 140005 | 051450 654:  | MOV    | #140005,T32PK3      |       | ;WRITE DATA,CVC=1,ACK COMMAND    |
| 2662 | 050072 | 012704 | 051450 |              | MOV    | #T32PK3,R4          |       | ;SET UP R4 WITH PACKET ADDRESS   |
| 2663 | 050076 | 010300 |        |              | MOV    | R3,R0               |       | ;SET PATTERN IN CORRECT REGISTER |
| 2664 | 050100 | 004737 | 017502 |              | JSR    | PC,FILLMEM          |       | ;FILL MEMORY WITH RECORD SIZE    |
| 2665 | 050104 | 010337 | 051456 |              | MOV    | R3,T32SZ            |       | ;SET UP RECORD SIZE IN PACKET    |
| 2666 | 050110 | 010465 | 000000 |              | MOV    | R4,TSD8(R5)         |       | ;ISSUE COMMAND                   |
| 2667 | 050114 | 004737 | 016330 |              | JSR    | PC,WAITF            |       | ;WAIT FOR SSR TO SET             |
| 2668 | 050120 | 016501 | 000002 |              | MOV    | TSSR(R5),R1         |       | ;GET TSSR CONTENTS               |
| 2669 | 050124 | 012702 | 000200 |              | MOV    | #SSR,R2             |       | ;SET UP EXPECTED                 |
| 2670 | 050130 | 020102 |        |              | CMP    | R1,R2               |       | ;ARE THEY EQUAL                  |
| 2671 | 050132 | 001406 |        |              | BEQ    | 804                 |       | ;BR. IF OK                       |
| 2672 | 050134 | 005237 | 002214 |              | INC    | FATFLG              |       | ;ERROR COUNT                     |
| 2676 | 050140 |        |        |              | ERRHRD | ERRNO,T32WDC,PKTSSR |       | ;TSSR INCORRECT AFTER WRITE DATA |
|      | 050140 | 104456 |        |              |        |                     | TRAP  | C\$ERHRD                         |
|      | 050142 | 000637 |        |              |        |                     | .WORD | 415                              |
|      | 050144 | 052536 |        |              |        |                     | .WORD | T32WDC                           |
|      | 050146 | 012126 |        |              |        |                     | .WORD | PKTSSR                           |
| 2677 | 050150 |        |        | 804:         | CKLOOP |                     |       | ;LOOP IF SELECTED                |
|      | 050150 | 104406 |        |              |        |                     | TRAP  | C\$CLP1                          |
| 2678 | 050152 | 005723 |        |              | TST    | (R3),               |       | ;BUMP RECORD SIZE COUNTER        |
| 2679 | 050154 | 020327 | 000156 |              | CMP    | R3,#110.            |       | ;AT 160 SIZE YET                 |
| 2680 | 050160 | 001341 |        |              | BNE    | 654                 |       | ;BR. IF MORE RECORDS TO WRITE    |
| 2681 | 050162 | 004737 | 011074 |              | JSR    | PC,REWIND           |       | ;CALL TAPE REWIND COMMAND        |
| 2682 | 050166 | 103407 |        |              | BCS    | 2304                |       | ;BR. IF NO PROBLEM               |
| 2683 | 050170 | 010001 |        |              | MOV    | R0,R1               |       | ;SAVE TSSR                       |
| 2684 | 050172 | 005237 | 002214 |              | INC    | FATFLG              |       | ;ERROR COUNT                     |
| 2688 | 050176 |        |        |              | ERRHRD | ERRNO,T32RWN,EXPREC |       | ;REWIND NOT ACCEPTED             |
|      | 050176 | 104456 |        |              |        |                     | TRAP  | C\$ERHRD                         |
|      | 050200 | 000640 |        |              |        |                     | .WORD | 416                              |
|      | 050202 | 051700 |        |              |        |                     | .WORD | T32RWN                           |
|      | 050204 | 015554 |        |              |        |                     | .WORD | EXPREC                           |
| 2689 | 050206 |        |        | 2304:        | CKLOOP |                     |       | ;LOOP IF SELECTED                |
|      | 050206 | 104406 |        |              |        |                     | TRAP  | C\$CLP1                          |
| 2690 | 050210 | 013701 | 051360 |              | MOV    | T32BFR+6,R1         |       | ;PICK UP XSTO                    |
| 2691 | 050214 | 010102 |        |              | MOV    | R1,R2               |       | ;SET UP EXPECTED                 |
| 2692 | 050216 | 052702 | 000002 |              | BIS    | #BIT1,R2            |       | ;SET BOT BIT IN EXPECTED         |
| 2693 | 050222 | 020102 |        |              | CMP    | R1,R2               |       | ;DOES EXP = REC'D                |
| 2694 | 050224 | 001406 |        |              | BEQ    | 2404                |       | ;BR. IF EQUAL (OK)               |
| 2695 | 050226 | 005237 | 002214 |              | INC    | FATFLG              |       | ;ERROR COUNT                     |
| 2699 | 050232 |        |        |              | ERRHRD | ERRNO,T32BOT,EXPREC |       | ;TAPE NOT AT BOT AFTER REWIND    |
|      | 050232 | 104456 |        |              |        |                     | TRAP  | C\$ERHRD                         |
|      | 050234 | 000641 |        |              |        |                     | .WORD | 417                              |
|      | 050236 | 051516 |        |              |        |                     | .WORD | T32BOT                           |
|      | 050240 | 015554 |        |              |        |                     | .WORD | EXPREC                           |
| 2700 | 050242 |        |        | 2404:        | CKLOOP |                     |       | ;LOOP IF SELECTED                |
|      | 050242 | 104406 |        |              |        |                     | TRAP  | C\$CLP1                          |
| 2701 | 050244 | 012703 | 000001 |              | MOV    | #1,R3               |       | ;SET UP FOR SPACE COMMAND        |
| 2702 | 050250 | 004737 | 010544 |              | JSR    | PC,SPACE            |       | ;ISSUE SPACE COMMAND 1 FORWARD   |
| 2703 | 050254 | 012737 | 140411 | 051450 2654: | MOV    | #140411,T32PK3      |       | ;ERASE DATA,ACK COMMAND          |
| 2704 | 050262 | 012704 | 051450 |              | MOV    | #T32PK3,R4          |       | ;SET UP R4 WITH PACKET ADDRESS   |
| 2705 | 050266 | 010465 | 000000 |              | MOV    | R4,TSD8(R5)         |       | ;ISSUE COMMAND                   |
| 2706 | 050272 | 004737 | 016330 |              | JSR    | PC,WAITF            |       | ;WAIT FOR SSR TO SET             |
| 2707 | 050276 | 016501 | 000002 |              | MOV    | TSSR(R5),R1         |       | ;GET TSSR CONTENTS               |
| 2708 | 050302 | 012702 | 000200 |              | MOV    | #SSR,R2             |       | ;SET UP EXPECTED                 |
| 2709 | 050306 | 020102 |        |              | CMP    | R1,R2               |       | ;ARE THEY EQUAL                  |

| Line | Address | Offset | Label  | Operation | Comments            |
|------|---------|--------|--------|-----------|---------------------|
| 2710 | 050310  | 001406 |        | BEQ       | 280\$               |
| 2711 | 050312  | 005237 | 002214 | INC       | FATFLG              |
| 2715 | 050316  |        |        | ERRHRD    | ERRNO,T32ERA,PKTSSR |
|      | 050316  | 104456 |        |           |                     |
|      | 050320  | 000642 |        |           |                     |
|      | 050322  | 052016 |        |           |                     |
|      | 050324  | 012126 |        |           |                     |
| 2716 | 050326  |        | 280\$: | CKLOOP    |                     |
|      | 050326  | 104406 |        |           |                     |
| 2717 | 050330  | 013737 | 003116 | MOV       | FREE,T32RB          |
| 2718 | 050336  | 012737 | 140401 | MOV       | 0140401,T32PK3      |
| 2719 | 050344  | 012737 | 000144 | MOV       | 0100.,T32SZ         |
| 2720 | 050352  | 012704 | 051450 | MOV       | 0T32PK3,R4          |
| 2721 | 050356  | 010465 | 000000 | MOV       | R4,TSDB(R5)         |
| 2722 | 050362  | 004737 | 016330 | JSR       | PC,WAITF            |
| 2723 | 050366  | 016501 | 000002 | MOV       | TSSR(R5),R1         |
| 2724 | 050372  | 012702 | 000200 | MOV       | 0SSR,R2             |
| 2725 | 050376  | 020102 |        | CMP       | R1,R2               |
| 2726 | 050400  | 001406 |        | BEQ       | 290\$               |
| 2727 | 050402  | 005237 | 002214 | INC       | FATFLG              |
| 2731 | 050406  |        |        | ERRHRD    | ERRNO,T32TSA,PKTSSR |
|      | 050406  | 104456 |        |           |                     |
|      | 050410  | 000643 |        |           |                     |
|      | 050412  | 052311 |        |           |                     |
|      | 050414  | 012126 |        |           |                     |
| 2732 | 050416  |        | 290\$: | CKLOOP    |                     |
|      | 050416  | 104406 |        |           |                     |
| 2733 | 050420  | 017701 | 132472 | MOV       | 0FREE,R1            |
| 2734 | 050424  | 012702 | 000144 | MOV       | 0100.,R2            |
| 2735 | 050430  | 020102 |        | CMP       | R1,R2               |
| 2736 | 050432  | 001406 |        | BEQ       | 300\$               |
| 2737 | 050434  | 005237 | 002214 | INC       | FATFLG              |
| 2741 | 050440  |        |        | ERRHRD    | ERRNO,T32ECF,EXPREC |
|      | 050440  | 104456 |        |           |                     |
|      | 050442  | 000644 |        |           |                     |
|      | 050444  | 052455 |        |           |                     |
|      | 050446  | 015554 |        |           |                     |
| 2742 | 050450  |        | 300\$: | CKLOOP    |                     |
|      | 050450  | 104406 |        |           |                     |
| 2743 | 050452  |        | 330\$: |           |                     |
| 2744 | 050452  |        |        | ENDSUB    |                     |
|      | 050452  |        |        |           |                     |
|      | 050452  | 104403 |        |           |                     |
| 2745 | 050454  | 023727 | 002214 | CMP       | FATFLG,015.         |
| 2746 | 050462  | 103402 |        | BLO       | 999\$               |
| 2747 | 050464  | 004737 | 017262 | JSR       | PC,CKDROP           |
| 2748 | 050470  |        | 999\$: |           |                     |
| 2749 |         |        |        |           |                     |
| 2750 |         |        |        |           |                     |
| 2751 |         |        |        |           |                     |
| 2752 |         |        |        |           |                     |
| 2753 |         |        |        |           |                     |
| 2754 |         |        |        |           |                     |
| 2755 |         |        |        |           |                     |
| 2756 |         |        |        |           |                     |
| 2757 |         |        |        |           |                     |
| 2758 |         |        |        |           |                     |



TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 4: ERASE AND OPERATION INCOMPLETE

SEQ 148

|      |        |        |        |        |        |                     |                |                                  |          |
|------|--------|--------|--------|--------|--------|---------------------|----------------|----------------------------------|----------|
| 2805 | 050612 | 012704 | 051330 |        | MOV    | #T32PACKET,R4       |                | ;SUBROUTINE NEEDS PACKET ADDRESS |          |
| 2806 | 050616 | 004737 | 010742 |        | JSR    | PC,WRTCHR           |                | ;ISSUE WRITE CHARACTERISTICS     |          |
| 2807 | 050622 | 103407 |        |        | BCS    | 23:                 |                | ;BR, IF COMMAND ISSUED OK        |          |
| 2808 | 050624 | 005237 | 002214 |        | INC    | FATFLG              |                | ;ERROR COUNT                     |          |
| 2812 | 050630 | 010001 |        |        | MOV    | R0,R1               |                | ;SAVE CONTENTS OF TSSR           |          |
| 2813 | 050632 |        |        |        | ERRHRD | ERRNO,WRTMSG,SFMSG  |                | ;WRITE CHARACTERISTICS FAILED    |          |
|      | 050632 | 104456 |        |        |        |                     |                | TRAP                             | C\$ERHRD |
|      | 050634 | 000646 |        |        |        |                     |                | .WORD                            | 422      |
|      | 050636 | 005052 |        |        |        |                     |                | .WORD                            | WRTMSG   |
|      | 050640 | 012114 |        |        |        |                     |                | .WORD                            | SFMSG    |
| 2814 | 050642 |        |        | 23:    | CKLOOP |                     |                | ;LOOP IF SELECTED                |          |
|      | 050642 | 104406 |        |        |        |                     |                | TRAP                             | C\$CLP1  |
| 2815 | 050644 | 004737 | 011074 |        | JSR    | PC,REWIND           |                | ;CALL TAPE REWIND COMMAND        |          |
| 2816 | 050650 | 103411 |        |        | BCS    | 30:                 |                | ;BR, IF NO PROBLEM               |          |
| 2817 | 050652 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |                | ;GET TSSR CONTENTS               |          |
| 2818 | 050656 | 010004 |        |        | MOV    | R0,R4               |                | ;GET PACKET ADDRESS              |          |
| 2819 | 050660 | 005237 | 002214 |        | INC    | FATFLG              |                | ;ERROR COUNT                     |          |
| 2823 | 050664 |        |        |        | ERRHRD | ERRNO,T32RWN,PKTSSR |                | ;REWIND NOT ACCEPTED             |          |
|      | 050664 | 104456 |        |        |        |                     |                | TRAP                             | C\$ERHRD |
|      | 050666 | 000647 |        |        |        |                     |                | .WORD                            | 423      |
|      | 050670 | 051700 |        |        |        |                     |                | .WORD                            | T32RWN   |
|      | 050672 | 012126 |        |        |        |                     |                | .WORD                            | PKTSSR   |
| 2824 | 050674 |        |        | 30:    | CKLOOP |                     |                | ;LOOP IF SELECTED                |          |
|      | 050674 | 104406 |        |        |        |                     |                | TRAP                             | C\$CLP1  |
| 2825 | 050676 | 013701 | 051360 |        | MOV    | T32BFR+6,R1         |                | ;PICK UP XSTO                    |          |
| 2826 | 050702 | 010102 |        |        | MOV    | R1,R2               |                | ;SET UP EXPECTED                 |          |
| 2827 | 050704 | 052702 | 000002 |        | BIS    | #BIT1,R2            |                | ;SET BOT BIT IN EXPECTED         |          |
| 2828 | 050710 | 020102 |        |        | CMP    | R1,R2               |                | ;DOES EXP = REC'D                |          |
| 2829 | 050712 | 001406 |        |        | BEQ    | 40:                 |                | ;BR, IF EQUAL (OK)               |          |
| 2830 | 050714 | 005237 | 002214 |        | INC    | FATFLG              |                | ;ERROR COUNT                     |          |
| 2834 | 050720 |        |        |        | ERRHRD | ERRNO,T32BOT,EXPREC |                | ;TAPE NOT AT BOT AFTER REWIND    |          |
|      | 050720 | 104456 |        |        |        |                     |                | TRAP                             | C\$ERHRD |
|      | 050722 | 000650 |        |        |        |                     |                | .WORD                            | 424      |
|      | 050724 | 051516 |        |        |        |                     |                | .WORD                            | T32BOT   |
|      | 050726 | 015554 |        |        |        |                     |                | .WORD                            | EXPREC   |
| 2835 | 050730 |        |        | 40:    | CKLOOP |                     |                | ;LOOP IF SELECTED                |          |
|      | 050730 | 104406 |        |        |        |                     |                | TRAP                             | C\$CLP1  |
| 2836 | 050732 | 012737 | 140411 | 051450 | 65:    | MOV                 | #140411,T32PK3 | ;ERASE DATA,CVC=1,ACK COMMAND    |          |
| 2837 | 050740 | 012704 | 051450 |        | MOV    | #T32PK3,R4          |                | ;SET UP R4 WITH PACKET ADDRESS   |          |
| 2838 | 050744 | 010337 | 051456 |        | MOV    | R3,T32SZ            |                | ;SET UP RECORD SIZE IN PACKET    |          |
| 2839 | 050750 | 010465 | 000000 |        | MOV    | R4,T32DB(R5)        |                | ;ISSUE COMMAND                   |          |
| 2840 | 050754 | 004737 | 016330 |        | JSR    | PC,WAITF            |                | ;WAIT FOR SSR TO SET             |          |
| 2841 | 050760 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |                | ;GET TSSR CONTENTS               |          |
| 2842 | 050764 | 012702 | 000200 |        | MOV    | #SSR,R2             |                | ;SET UP EXPECTED                 |          |
| 2843 | 050770 | 020102 |        |        | CMP    | R1,R2               |                | ;ARE THEY EQUAL                  |          |
| 2844 | 050772 | 001757 |        |        | BEQ    | 65:                 |                | ;BR, IF OK                       |          |
| 2845 | 050774 | 032701 | 000004 |        | BIT    | #BIT2,R1            |                | ;CHECK FOR TAPE STATUS ALERT     |          |
| 2846 | 051000 | 001006 |        |        | BNE    | 80:                 |                | ;BR, IF TAPE STATUS ALERT SET    |          |
| 2847 | 051002 | 005237 | 002214 |        | INC    | FATFLG              |                | ;ERROR COUNT                     |          |
| 2851 | 051006 |        |        |        | ERRHRD | ERRNO,T32WDC,PKTSSR |                | ;TSSR INCORRECT AFTER WRITE DATA |          |
|      | 051006 | 104456 |        |        |        |                     |                | TRAP                             | C\$ERHRD |
|      | 051010 | 000651 |        |        |        |                     |                | .WORD                            | 425      |
|      | 051012 | 052536 |        |        |        |                     |                | .WORD                            | T32WDC   |
|      | 051014 | 012126 |        |        |        |                     |                | .WORD                            | PKTSSR   |
| 2852 | 051016 |        |        | 80:    | CKLOOP |                     |                | ;LOOP IF SELECTED                |          |
|      | 051016 | 104406 |        |        |        |                     |                | TRAP                             | C\$CLP1  |
| 2853 | 051020 | 013701 | 051360 |        | MOV    | T32BFR+6,R1         |                | ;PICK UP XSTO                    |          |

TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
TEST 4: ERASE AND OPERATION INCOMPLETE

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|      |        |        |        |        |                      |             |                                       |              |
|------|--------|--------|--------|--------|----------------------|-------------|---------------------------------------|--------------|
| 2854 | 051024 | 010102 |        | MOV    | R1,R2                |             | ;SET UP EXPECTED                      |              |
| 2855 | 051026 | 052702 | 000001 | BIS    | #BIT0,R2             |             | ;SET EOT BIT IN EXPECTED              |              |
| 2856 | 051032 | 020102 |        | CMP    | R1,R2                |             | ;DOES EXP = REC'D                     |              |
| 2857 | 051034 | 001406 |        | BEQ    | 240\$                |             | ;BR. IF EQUAL (OK)                    |              |
| 2858 | 051036 | 005237 | 002214 | INC    | FATFLG               |             | ;ERROR COUNT                          |              |
| 2862 | 051042 |        |        | ERRHRD | ERRNO,T32EOT,EXPREC  |             | ;TAPE NOT AT EOT AFTER ERASE COMMANDS |              |
|      | 051042 | 104456 |        |        |                      |             | TRAP                                  | C\$ERHRD     |
|      | 051044 | 000652 |        |        |                      |             | .WORD                                 | 426          |
|      | 051046 | 051611 |        |        |                      |             | .WORD                                 | T32EOT       |
|      | 051050 | 015554 |        |        |                      |             | .WORD                                 | EXPREC       |
| 2863 | 051052 |        |        | 240\$: | CKLOOP               |             | ;LOOP IF SELECTED                     |              |
|      | 051052 | 104406 |        |        |                      |             | TRAP                                  | C\$CLP1      |
| 2864 | 051054 | 012703 | 051460 | MOV    | #T32CMD,R3           |             | ;STARTING RECORD SIZE                 |              |
| 2865 | 051060 | 013737 | 003116 | MOV    | FREE,T32RB           |             | ;STARTING READ BUFFER ADDRESS         |              |
| 2866 | 051066 | 011337 | 051450 | 265\$: | MOV                  | (R3),T32PK3 | ;READ DATA,ACK COMMAND                |              |
| 2867 | 051072 | 012704 | 051450 | MOV    | #T32PK3,R4           |             | ;SET UP R4 WITH PACKET ADDRESS        |              |
| 2868 | 051076 | 012700 | 177777 | MOV    | #177777,R0           |             | ;SET PATTERN IN CORRECT REGISTER      |              |
| 2869 | 051102 | 004737 | 017502 | JSR    | PC,FILLMEM           |             | ;FILL MEMORY WITH ALL ONES            |              |
| 2870 | 051106 | 012737 | 000144 | MOV    | #100.,T32SZ          |             | ;SET UP RECORD SIZE IN PACKET         |              |
| 2871 | 051114 | 010465 | 000000 | MOV    | R4,TSD8(R5)          |             | ;ISSUE COMMAND                        |              |
| 2872 | 051120 | 012737 | 000062 | MOV    | #50.,T32DLY          |             | ;SET UP DELAY COUNTER                 |              |
| 2873 | 051126 | 004737 | 016330 | 270\$: | JSR                  | PC,WAITF    | ;WAIT FOR SSR TO SET                  |              |
| 2874 | 051132 | 016501 | 000002 | MOV    | TSSR(R5),R1          |             | ;GET TSSR CONTENTS                    |              |
| 2875 | 051136 | 012702 | 100214 | MOV    | #SSR!SC!BIT2!BIT3,R2 |             | ;SET UP EXPECTED                      |              |
| 2876 | 051142 | 020102 |        | CMP    | R1,R2                |             | ;ARE THEY EQUAL                       |              |
| 2877 | 051144 | 001425 |        | BEQ    | 280\$                |             | ;BR. IF OK                            |              |
| 2878 | 051146 |        |        | DELAY  | 250                  |             | ;DELAY FOR SSR TO BE SET              |              |
|      | 051146 | 012727 | 000250 |        |                      |             | MOV                                   | #250,(PC)+   |
|      | 051152 | 000000 |        |        |                      |             | .WORD                                 | 0            |
|      | 051154 | 013727 | 002116 |        |                      |             | MOV                                   | L\$DLY,(PC)+ |
|      | 051160 | 000000 |        |        |                      |             | .WORD                                 | 0            |
|      | 051162 | 005367 | 177772 |        |                      |             | DEC                                   | 6(PC)        |
|      | 051166 | 001375 |        |        |                      |             | BNE                                   | . 4          |
|      | 051170 | 005367 | 177756 |        |                      |             | DEC                                   | 22(PC)       |
|      | 051174 | 001367 |        |        |                      |             | BNE                                   | . 20         |
| 2879 | 051176 | 005337 | 051514 | DEC    | T32DLY               |             | ;COUNT DELAY ROUTINE DOWN             |              |
| 2880 | 051202 | 001351 |        | BNE    | 270\$                |             | ;BR. IF DELAY HAS NOT ENDED           |              |
| 2881 | 051204 | 005237 | 002214 | INC    | FATFLG               |             | ;ERROR COUNT                          |              |
| 2885 | 051210 |        |        | ERRHRD | ERRNO,T32ECF,PKTSSR  |             | ;TSSR INCORRECT AFTER READ DATA       |              |
|      | 051210 | 104456 |        |        |                      |             | TRAP                                  | C\$ERHRD     |
|      | 051212 | 000653 |        |        |                      |             | .WORD                                 | 427          |
|      | 051214 | 052455 |        |        |                      |             | .WORD                                 | T32ECF       |
|      | 051216 | 012126 |        |        |                      |             | .WORD                                 | PKTSSR       |
| 2886 | 051220 |        |        | 280\$: | CKLOOP               |             | ;LOOP IF SELECTED                     |              |
|      | 051220 | 104406 |        |        |                      |             | TRAP                                  | C\$CLP1      |
| 2887 | 051222 | 013701 | 051366 | MOV    | T32BFR+14,R1         |             | ;PICK UP XST3                         |              |
| 2888 | 051226 | 010102 |        | MOV    | R1,R2                |             | ;SET UP EXPECTED                      |              |
| 2889 | 051230 | 052702 | 000100 | BIS    | #BIT6,R2             |             | ;SET OPI BIT IN EXPECTED              |              |
| 2890 | 051234 | 020102 |        | CMP    | R1,R2                |             | ;IS OPI BIT SET                       |              |
| 2891 | 051236 | 001406 |        | BEQ    | 290\$                |             | ;BR. IF BIT IS SET                    |              |
| 2892 | 051240 | 005237 | 002214 | INC    | FATFLG               |             | ;ERROR COUNT                          |              |
| 2896 | 051244 |        |        | ERRHRD | ERRNO,T32OPI,EXPREC  |             | ;OPI BIT NOT SET                      |              |
|      | 051244 | 104456 |        |        |                      |             | TRAP                                  | C\$ERHRD     |
|      | 051246 | 000654 |        |        |                      |             | .WORD                                 | 428          |
|      | 051250 | 052603 |        |        |                      |             | .WORD                                 | T32OPI       |
|      | 051252 | 015554 |        |        |                      |             | .WORD                                 | EXPREC       |
| 2897 | 051254 |        |        | 290\$: | CKLOOP               |             | ;LOOP IF SELECTED                     |              |

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| Line | Address | Offset | Value         | Label            | Comment                     |
|------|---------|--------|---------------|------------------|-----------------------------|
| 2898 | 051254  | 104406 |               |                  |                             |
| 2899 | 051256  | 005723 |               |                  |                             |
| 2900 | 051260  | 021327 | 177777        | TST (R3),        | ;BUMP COMMAND POINTER       |
| 2901 | 051264  | 001300 |               | CMP (R3),#177777 | ;AT END OF TABLE YET        |
| 2902 | 051266  |        |               | BNF 263          | ;BR, KEEP TRYING COMMANDS   |
| 2903 | 051266  |        |               | END B            | ;***** END SUBTEST *****    |
| 2904 | 051266  | 104403 |               |                  | L10056:                     |
| 2905 | 051270  | 023727 | 002214 000017 | CMP FATFLG,#15.  | TRAP C\$FSUB                |
| 2906 | 051276  | 103402 |               | BLO 999          | ;IS ERROR COUNT AT 25       |
| 2907 | 051300  | 004737 | 017262        | JSR PC,CKDROP    | ;BR, IF LESS THAN 25        |
| 2908 | 051304  |        |               |                  | ;TRY TO DROP THE UNIT       |
| 2909 | 051304  |        |               | 999:             |                             |
| 2910 | 051304  | 004737 | 016536        | JSR PC,TSTLOOP   |                             |
| 2911 | 051310  | 103002 |               | BCC 163          | ;DO WE NEED TO ITERATE TEST |
| 2912 | 051312  | 000137 | 047020        | JMP T32LOOP      | ;BR, IF NO LOOP REQUIRED    |
| 2913 | 051316  |        |               | EXIT TST         | ;EXECUTE AGAIN              |
| 2914 | 051316  | 104432 |               |                  | ;ALL DONE THIS TEST         |
| 2915 | 051320  | 001524 |               |                  | TRAP C\$EXIT                |
| 2916 | 051320  |        |               |                  | .WORD L10053                |
| 2917 | 051330  |        |               |                  |                             |
| 2918 | 051330  |        |               |                  |                             |
| 2919 | 051330  | 100004 |               |                  |                             |
| 2920 | 051332  | 051340 |               |                  |                             |
| 2921 | 051334  | 000000 |               |                  |                             |
| 2922 | 051336  | 000012 |               |                  |                             |
| 2923 | 051340  |        |               |                  |                             |
| 2924 | 051340  | 051352 |               |                  |                             |
| 2925 | 051342  | 000000 |               |                  |                             |
| 2926 | 051344  | 000024 |               |                  |                             |
| 2927 | 051346  | 000000 |               |                  |                             |
| 2928 | 051350  | 000000 |               |                  |                             |
| 2929 | 051352  |        |               |                  |                             |
| 2930 | 051352  |        |               |                  |                             |
| 2931 | 051440  |        |               |                  |                             |
| 2932 | 051440  | 100006 |               |                  |                             |
| 2933 | 051442  | 000000 |               |                  |                             |
| 2934 | 051444  | 000000 |               |                  |                             |
| 2935 | 051446  | 000006 |               |                  |                             |
| 2936 | 051450  |        |               |                  |                             |
| 2937 | 051450  | 100005 |               |                  |                             |
| 2938 | 051452  |        |               |                  |                             |
| 2939 | 051452  | 003116 |               |                  |                             |
| 2940 | 051454  | 000000 |               |                  |                             |
| 2941 | 051456  | 000000 |               |                  |                             |
| 2942 | 051456  |        |               |                  |                             |
| 2943 | 051456  |        |               |                  |                             |
| 2944 | 051456  |        |               |                  |                             |
| 2945 | 051456  |        |               |                  |                             |
| 2946 | 051456  |        |               |                  |                             |
| 2947 | 051456  |        |               |                  |                             |
| 2948 | 051456  |        |               |                  |                             |
| 2949 | 051456  |        |               |                  |                             |
| 2950 | 051456  |        |               |                  |                             |
| 2951 | 051456  |        |               |                  |                             |
| 2952 | 051456  |        |               |                  |                             |
| 2953 | 051456  |        |               |                  |                             |
| 2954 | 051456  |        |               |                  |                             |
| 2955 | 051456  |        |               |                  |                             |
| 2956 | 051456  |        |               |                  |                             |



TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 4: ERASE AND OPERATION INCOMPLETE

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2957
2958
2959
2960
2961 051460
2962 051460 140410
2963 051462 141410
2964 051464 140401
2965 051466 141001
2966 051470 161401
2967 051472 161001
2968 051474 141401
2969 051476 140001
2970 051500 141410
2971 051502 141010
2972 051504 141005
2973 051506 177777
2974
2975
2976 051510 000000
2977 051512 000000
2978 051514 000000
2979
2980
2981
2982
2983 051516 124 141 160
2984 051611 124 141 160
2985 051700 122 145 167
2986 051747 124 123 123
2987 052016 124 123 123
2988 052063 124 123 102
2989 052136 122 105 101
2990 052234 124 123 123
2991 052311 124 123 123
2992 052366 102 117 124
2993 052455 105 122 101
2994 052536 124 123 123
2995 052603 117 120 111
2996 052640 105 162 141
2997
2998
2999
3000
3001
3002
3003
3004
3005 052700
3006 052700
3007 052704 012701 051330
3008 052710 012721 100004
3009 052714 012721 051340
3010 052720 005021
3011 052722 012721 000012
3012 052726 012721 051352
3013 052732 005021

;
; .EVEN
; TAPE MOTION PACKET COMMAND VALUES
T32CMD:
; .WORD 140410 ; SPACE RECORDS REVERSE
; .WORD 141410 ; SKIP TAPE MARKS REVERSE
; .WORD 140401 ; READ REVERSE
; .WORD 141001 ; REREAD PREVIOUS (OPP=0)
; .WORD 161401 ; REREAD NEXT (OPP=1)
; .WORD 161001 ; REREAD PREVIOUS (OPP=1)
; .WORD 141401 ; REREAD NEXT (OPP=0)
; .WORD 140001 ; READ NEXT
; .WORD 141410 ; SKIP TAPE MARKS REVERSE
; .WORD 141010 ; SKIP RECORDS FORWARD
; .WORD 141005 ; WRITE DATA RETRY
; .WORD 177777 ; END OF DATA

;
T32CNT: .WORD 0 ; TAPE TIMER COUNTER STORAGE AREA
T32CNU: .WORD 0 ; TAPE TIMER COUNTER STORAGE AREA
T32DLY: .WORD 0 ; DELAY COUNTER
; *
; LOCAL TEXT MESSAGES FOR TEST
; -
T32BOT: .ASCIZ 'Tape Not At BOT After REWIND Command (BOT Not Set In XST0)'
T32EOT: .ASCIZ 'Tape Status Alert During Erase To EOT, But EOT Not Set'
T32RWN: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
T32AM3: .ASCIZ 'TSSR Init. Failed After REREAD COMMAND'
T32ERA: .ASCIZ 'TSSR Not Correct After ERASE Command'
T32BA: .ASCIZ 'TSBA Not Correct After REREAD DATA Command'
T32RIB: .ASCIZ 'READ REVERSE, After ERASE From BOT, Failed To Set RIB In XST3'
T32SCF: .ASCIZ 'TSSR Not Correct After SPACE RECORDS Command'
T32TSA: .ASCIZ 'TSSR Not Correct After READ REVERSE Into BOT'
T32BOE: .ASCIZ 'BOT (XST0) Still Set After Erase From Tape's BOT Marker'
T32ECF: .ASCIZ 'ERASE Failed To Clear Tape (Erase) Tape Properly'
T32WDC: .ASCIZ 'TSSR Not Correct After ERASE Command'
T32OPI: .ASCIZ 'OPI Bit (XST3) Failed To Set'
T32ID: .ASCIZ 'Erase And Operation Incomplete'
; .EVEN
; *
; ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES
; WRITE SUBSYSTEM MEMORY COMMAND
;
;
T32REST:
; SAVREG
; MOV #T32PACKET,R1 ; SAVE THE REGISTERS
; MOV #100004,(R1) ; START OF THE PACKET
; MOV #T32DATA,(R1) ; WRITE SUBSYSTEM MEM. WITH ACK.
; CLR (R1) ; ADDRESS OF CHARAISTICS DATA BLOCK
; MOV #10,(R1) ; EXTENDED ADDRESS
; MOV #T32BFR,(R1) ; SIZE OF DATA BLOCK IN BYTES
; CLR (R1) ; ADDRESS OF MESSAGE BUFFER

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TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 4: ERASE AND OPERATION INCOMPLETE

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3014 052734 012721 000024      MOV      #20.,(R1),      ;LENGTH OF MESSAGE BUFFER
3015 052740 005021              CLR      (R1),
3016 052742 012711 000000      MOV      #0,(R1)      ;SELECT DRIVE ZERO
3017 052746 012702 000030      MOV      #24.,R2      ;NUMBER OF LOCATIONS TO BE CLEARED
3018 052752 012762 177777 051352 64$: MOV      #177777,T32BFR(R2) ;ALL ONES TO MESSAGE BUFFER
3019 052760 005742              TST      -(R2)      ;NEXT LOCATION
3020 052762 022702 000000      CMP      #0,R2      ;AT END OF LOOP YET
3021 052766 001371              BNE      64$      ;KEEP GOING UNTIL DONE
3022 052770 000207              RTS      PC      ;RETURN
3023
3024 052772              T32RT2:
3025 052772              SAVREG      ;SAVE THE REGISTERS
3026 052776 012701 051440      MOV      #T32PK2,R1      ;START OF THE PACKET
3027 053002 012721 100006      MOV      #100006,(R1),      ;WRITE SUBSYSTEM MEM. WITH ACK,
3028 053006 005021              CLR      (R1),      ;ADDRESS OF DATA BLOCK
3029 053010 005021              CLR      (R1),      ;EXTENDED ADDRESS
3030 053012 012721 000006      MOV      #6.,(R1),      ;SIZE OF DATA BLOCK IN BYTES
3031 053016 005021              CLR      (R1),
3032 053020 000207              RTS      PC      ;RETURN
3033 053022              T32RT3:
3034 053022              SAVREG      ;SAVE REGISTERS
3035 053026 012701 051450      MOV      #T32PK3,R1      ;SET UP POINTER ADDRESS
3036 053032 005021              CLR      (R1),      ;COMMAND SPACE
3037 053034 005021              CLR      (R1),      ;ADDRESS OF DATA BLOCK
3038 053036 005021              CLR      (R1),      ;EXTENDED ADDRESS
3039 053040 005011              CLR      (R1),      ;SIZE OF DATA TRANSFER BLOCK
3040 053042 000207              RTS      PC      ;RETURN
3041 053044
3042 053044 104401              L10053:
3043 053044              TRAP      C$ETST
3044
3045              .SBTTL TEST 5: DATA PARITY TEST
3046
3047
3048
3049 ;TEST 5 -- Data Parity Test
3050
3051 ;
3052 ;This test verifies that the data parity circuitry in both the controller and the
3053 ;transport is operating properly by forcing data records with wrong parity to be
3054 ;written onto tape and checking the results obtained when the data is read. The
3055 ;following test sequence is performed:
3056 ;
3057 ; 1. A Write Characteristics command is issued and the resulting status is
3058 ; examined to determine the states of the Extended Features and Buffering
3059 ; Enable switches on the controller module. If buffering is disabled, no
3060 ; further actions need be taken in this step and the program proceeds to
3061 ; the next step. If buffering is enabled, it is disabled via the Buffer
3062 ; Control field in the extended characteristics data word supplied by a
3063 ; Write Characteristics command. (The module must be in Extended mode,
3064 ; so if it is not already, a Write Subsystem Memory command is issued to
3065 ; change the logical sense of the Extended Features switch.)
3066 ;
3067 ; 2. The Write Subsystem Memory command is used to set the Force Wrong
3068 ; Parity control flip flop.

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TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 5: DATA PARITY TEST

SEQ 154

|      |        |        |        |        |        |                      |                                  |                     |
|------|--------|--------|--------|--------|--------|----------------------|----------------------------------|---------------------|
| 3127 | 053136 | 004737 | 016054 | 10%:   | JSR    | PC,SOFINIT           | ;DO INITIALIZE ON CONTROLLER     |                     |
| 3128 | 053142 | 103426 |        |        | BCS    | 20%                  | ;BR IF INIT WAS OK               |                     |
| 3129 | 053144 |        |        |        | DELAY  | 250                  | ;DELAY ABOUT .25 SEC             |                     |
|      | 053144 | 012727 | 000250 |        |        |                      | MOV                              | #250,(PC)+          |
|      | 053150 | 000000 |        |        |        |                      | .WORD                            | 0                   |
|      | 053152 | 013727 | 002116 |        |        |                      | MOV                              | L\$DLY,(PC)+        |
|      | 053156 | 000000 |        |        |        |                      | .WORD                            | 0                   |
|      | 053160 | 005367 | 177772 |        |        |                      | DEC                              | -6(PC)              |
|      | 053164 | 001375 |        |        |        |                      | BNE                              | .-4                 |
|      | 053166 | 005367 | 177756 |        |        |                      | DEC                              | -22(PC)             |
|      | 053172 | 001367 |        |        |        |                      | BNE                              | .-20                |
| 3130 | 053174 | 005337 | 054722 |        | DEC    | T33DLY               | ;BUMP COUNTER                    |                     |
| 3131 | 053200 | 001356 |        |        | BNE    | 10%                  | ;BR, IF COUNTER NOT DONE         |                     |
| 3132 | 053202 | 005237 | 002214 |        | INC    | FATFLG               | ;ERROR COUNT                     |                     |
| 3136 | 053206 | 010001 |        |        | MOV    | R0,R1                | ;CONTENTS OF TSSR REGISTER       |                     |
| 3137 | 053210 |        |        |        | ERRDF  | ERRNO,SF IERR,SFIMSG | ;FATAL ERROR TSSR WAS NOT OK     |                     |
|      | 053210 | 104455 |        |        |        |                      | TRAP                             | C\$ERDF             |
|      | 053212 | 000765 |        |        |        |                      | .WORD                            | 501                 |
|      | 053214 | 003646 |        |        |        |                      | .WORD                            | SF IERR             |
|      | 053216 | 012114 |        |        |        |                      | .WORD                            | SFIMSG              |
| 3138 | 053220 | 013737 | 002174 | 054570 | 20%:   | MOV                  | UNITN,T33DSW                     | ;SET UP UNIT NUMBER |
| 3139 |        |        |        |        |        |                      |                                  |                     |
| 3140 | 053226 | 012704 | 054550 |        | MOV    | #T33PACKET,R4        | ;SUBROUTINE NEEDS PACKET ADDRESS |                     |
| 3141 | 053232 | 004737 | 010742 |        | JSR    | PC,WRTCHR            | ;ISSUE WRITE CHARACTERISTICS     |                     |
| 3142 | 053236 | 103407 |        |        | BCS    | 23%                  | ;BR, IF COMMAND ISSUED OK        |                     |
| 3143 | 053240 | 005237 | 002214 |        | INC    | FATFLG               | ;ERROR COUNT                     |                     |
| 3147 | 053244 | 010001 |        |        | MOV    | R0,R1                | ;SAVE CONTENTS OF TSSR           |                     |
| 3148 | 053246 |        |        |        | ERRHRD | ERRNO,WRTMSG,SFIMSG  | ;WRITE CHARACTERISTICS FAILED    |                     |
|      | 053246 | 104456 |        |        |        |                      | TRAP                             | C\$ERHRD            |
|      | 053250 | 000766 |        |        |        |                      | .WORD                            | 502                 |
|      | 053252 | 005052 |        |        |        |                      | .WORD                            | WRTMSG              |
|      | 053254 | 012114 |        |        |        |                      | .WORD                            | SFIMSG              |
| 3149 | 053256 |        |        | 23%:   | CKLOOP |                      | ;LOOP IF SELECTED                |                     |
|      | 053256 | 104406 |        |        |        |                      | TRAP                             | C\$CLP1             |
| 3150 | 053260 | 004737 | 011074 |        | JSR    | PC,REWIND            | ;CALL TAPE REWIND COMMAND        |                     |
| 3151 | 053264 | 103411 |        |        | BCS    | 30%                  | ;BR, IF NO PROBLEM               |                     |
| 3152 | 053266 | 016501 | 000002 |        | MOV    | TSSR(R5),R1          | ;GET TSSR CONTENTS               |                     |
| 3153 | 053272 | 010004 |        |        | MOV    | R0,R4                | ;GET PACKET ADDRESS              |                     |
| 3154 | 053274 | 005237 | 002214 |        | INC    | FATFLG               | ;ERROR COUNT                     |                     |
| 3158 | 053300 |        |        |        | ERRHRD | ERRNO,T33RWN,PKTSSR  | ;REWIND NOT ACCEPTED             |                     |
|      | 053300 | 104456 |        |        |        |                      | TRAP                             | C\$ERHRD            |
|      | 053302 | 000767 |        |        |        |                      | .WORD                            | 503                 |
|      | 053304 | 055420 |        |        |        |                      | .WORD                            | T33RWN              |
|      | 053306 | 012126 |        |        |        |                      | .WORD                            | PKTSSR              |
| 3159 | 053310 |        |        | 30%:   | CKLOOP |                      | ;LOOP IF SELECTED                |                     |
|      | 053310 | 104406 |        |        |        |                      | TRAP                             | C\$CLP1             |
| 3160 | 053312 | 013701 | 054600 |        | MOV    | T33BFR+6,R1          | ;PICK UP XSTO                    |                     |
| 3161 | 053316 | 010102 |        |        | MOV    | R1,R2                | ;SET UP EXPECTED                 |                     |
| 3162 | 053320 | 052702 | 000002 |        | BIS    | #BIT1,R2             | ;SET BOT BIT IN EXPECTED         |                     |
| 3163 | 053324 | 020102 |        |        | CMP    | R1,R2                | ;DOES EXP = REC'D                |                     |
| 3164 | 053326 | 001406 |        |        | BEQ    | 40%                  | ;BR, IF EQUAL (OK)               |                     |
| 3165 | 053330 | 005237 | 002214 |        | INC    | FATFLG               | ;ERROR COUNT                     |                     |
| 3169 | 053334 |        |        |        | ERRHRD | ERRNO,T33BOT,EXPREC  | ;TAPE NOT AT BOT AFTER REWIND    |                     |
|      | 053334 | 104456 |        |        |        |                      | TRAP                             | C\$ERHRD            |
|      | 053336 | 000770 |        |        |        |                      | .WORD                            | 504                 |
|      | 053340 | 055325 |        |        |        |                      | .WORD                            | T33BOT              |
|      | 053342 | 015554 |        |        |        |                      | .WORD                            | EXPREC              |

| Line | Address | Offset | Hex    | Label  | Operation                  | Comment                                    |
|------|---------|--------|--------|--------|----------------------------|--------------------------------------------|
| 3170 | 053344  | 104406 | 40\$:  | CKLOOP |                            | ;LOOP IF SELECTED                          |
|      | 053344  | 005737 |        |        |                            | TRAP C\$CLP1                               |
| 3171 | 053346  | 001025 | 002220 | 42\$:  | TST EXTFEA                 | ;CHECK FOR EXTENDED FEATURES SW SWITCH     |
| 3172 | 053352  | 112737 | 000200 | 054701 | BNE 55\$                   | ;BR IF SWITCH IS ON                        |
| 3173 | 053354  | 112737 | 000010 | 054700 | MOVB #200,T33BS1           | ;WRITE MISCELLANEOUS CONT/READ STATUS      |
| 3174 | 053362  | 012704 | 054660 |        | MOVB #10,T33BS0            | ;FUNC. SEL. BIT (TURN ON EXTFEA SWITCH)    |
| 3175 | 053370  | 010465 | 000000 |        | MOV #T33PK2,R4             | ;WRITE SUBSYS MEM PACKET                   |
| 3176 | 053374  | 004737 | 016416 |        | MOV R4,TSD8(R5)            | ;ISSUE COMMAND                             |
| 3177 | 053400  | 103407 |        |        | JSR PC,CHKTSSR             | ;WAIT FOR SSR                              |
| 3178 | 053404  | 010001 |        |        | BCS 50\$                   | ;BR, IF NO ERROR                           |
| 3179 | 053406  | 005237 | 002214 |        | MOV R0,R1                  | ;ERROR, SAVE TSSR                          |
| 3180 | 053410  | 012126 |        |        | INC FATFLG                 | ;ERROR COUNT                               |
| 3184 | 053414  | 104456 |        |        | ERRHRD ERRNO,T33SSR,PKTSSR | ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS |
|      | 053414  | 000771 |        |        |                            | TRAP C\$ERHRD                              |
|      | 053416  | 055241 |        |        |                            | .WORD 505                                  |
|      | 053420  | 012126 |        |        |                            | .WORD T33SSR                               |
|      | 053422  |        |        |        |                            | .WORD PKTSSR                               |
| 3185 | 053424  | 104406 | 50\$:  | CKLOOP |                            | ;LOOP IF SELECTED                          |
|      | 053424  | 005737 | 002222 | 55\$:  | TST BENBSW                 | TRAP C\$CLP1                               |
| 3186 | 053426  | 001426 |        |        | BEQ 70\$                   | ;CHECK FOR BUFFER ENABLED                  |
| 3187 | 053432  | 013737 | 002174 | 054570 | MOV UNITN,T33DSW           | ;BR, IF BUFFERING NOT ENABLED              |
| 3188 | 053442  | 042737 | 000020 | 05457C | BIC #BIT4,T33DSW           | ;SET UP UNIT NUMBER                        |
| 3189 | 053450  | 052737 | 000010 | 054570 | BIS #BIT3,T33DSW           | ;BUFFER DISABLE                            |
| 3190 | 053456  | 012704 | 054550 |        | MOV #T33PACKET,R4          | ;BUFFER DISABLE SEND 01 TO BITS 4 AND 3    |
| 3191 | 053462  | 004737 | 010742 |        | JSR PC,WRTCHR              | ;SUBROUTINE NEEDS PACKET ADDRESS           |
| 3192 | 053466  | 103407 |        |        | BCS 60\$                   | ;ISSUE WRITE CHARACTERISTICS               |
| 3193 | 053470  | 005237 | 002214 |        | INC FATFLG                 | ;BR, IF COMMAND ISSUED OK                  |
| 3194 | 053474  | 010001 |        |        | MOV R0,R1                  | ;ERROR COUNT                               |
| 3198 | 053476  | 104456 |        |        | ERRHRD ERRNO,WRTMSG,SFMSG  | ;SAVE CONTENT OF TSSR                      |
| 3199 | 053476  | 000772 |        |        |                            | ;WRITE CHARACTERISTICS FAILED              |
|      | 053500  | 005052 |        |        |                            | TRAP C\$ERHRD                              |
|      | 053502  | 012114 |        |        |                            | .WORD 506                                  |
|      | 053504  |        |        |        |                            | .WORD WRTMSG                               |
|      | 053506  |        |        |        |                            | .WORD SFMSG                                |
| 3200 | 053506  | 104406 | 60\$:  | CKLOOP |                            | ;LOOP IF SELECTED                          |
|      | 053506  | 112737 | 000100 | 054701 |                            | TRAP C\$CLP1                               |
| 3201 | 053510  | 112737 | 000011 | 054700 | MOVB #100,T33BS1           | ;WRITE MISCELLANEOUS CONT/READ STATUS      |
| 3202 | 053516  | 012704 | 054660 |        | MOVB #11,T33BS0            | ;FUNC. SEL. BIT (SET WRONG PARITY)         |
| 3203 | 053524  | 010465 | 000000 |        | MOV #T33PK2,R4             | ;WRITE SUBSYS MEM PACKET                   |
| 3204 | 053530  | 004737 | 016416 |        | MOV R4,TSD8(R5)            | ;ISSUE COMMAND                             |
| 3205 | 053534  | 103407 |        |        | JSR PC,CHKTSSR             | ;WAIT FOR SSR                              |
| 3206 | 053540  | 010001 |        |        | BCS 80\$                   | ;BR, IF NO ERROR                           |
| 3207 | 053542  | 005237 | 002214 |        | MOV R0,R1                  | ;ERROR, SAVE TSSR                          |
| 3208 | 053544  | 012126 |        |        | INC FATFLG                 | ;ERROR COUNT                               |
| 3209 | 053550  | 104456 |        |        | ERRHRD ERRNO,T33SSR,PKTSSR | ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS |
| 3213 | 053550  | 000773 |        |        |                            | TRAP C\$ERHRD                              |
|      | 053552  | 055241 |        |        |                            | .WORD 507                                  |
|      | 053554  | 012126 |        |        |                            | .WORD T33SSR                               |
|      | 053556  |        |        |        |                            | .WORD PKTSSR                               |
| 3214 | 053560  | 104406 | 80\$:  | CKLOOP |                            | ;LOOP IF SELECTED                          |
|      | 053560  | 012703 | 000026 |        |                            | TRAP C\$CLP1                               |
| 3215 | 053562  | 013737 | 003116 | 054672 | MOV #22,R3                 | ;NUMBER OF RECORDS TO BE WRITTEN           |
| 3216 | 053566  | 005037 | 054720 |        | MOV FREE,T33WB             | ;STARTING WRITE BUFFER ADDRESS             |
| 3217 | 053574  | 012737 | 140005 | 054670 | CLR T33CNU                 | ;MAKE SURE ITS CLEAR                       |
| 3218 | 053600  | 012704 | 054670 | 110\$: | MOV #140005,T33PK3         | ;WRITE DATA,ACK,CVC=1 COMMAND              |
| 3219 | 053606  | 012704 | 054670 |        | MOV #T33PK3,R4             | ;SET UP R4 WITH PACKET ADDRESS             |

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 TEST 5: DATA PARITY TEST

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|      |        |        |        |        |               |                     |                                    |          |
|------|--------|--------|--------|--------|---------------|---------------------|------------------------------------|----------|
| 3220 | 053612 | 012737 | 000024 | 054676 | MOV           | #20.,T33SZ          | ;SET UP RECORD SIZE IN PACKET      |          |
| 3221 | 053620 | 013777 | 054720 | 127270 | MOV           | T33CNU,BFREE        | ;MEMORY FILLED WITH DATA IN RECORD |          |
| 3222 | 053626 | 005237 | 054720 |        | INC           | T33CNU              | ;READY FOR NEXT RECORD             |          |
| 3223 | 053632 | 010465 | 000000 |        | MOV           | R4 TSD8(R5)         | ;ISSUE COMMAND                     |          |
| 3224 | 053636 | 004737 | 016330 |        | JSR           | PC,WAITF            | ;WAIT FOR SCR TO SET               |          |
| 3225 | 053642 | 016501 | 000002 |        | MOV           | TSSR(R5),R1         | ;GET TSSR CONTENTS                 |          |
| 3226 | 053646 | 012702 | 100210 |        | MOV           | #SSR!SC!BIT3,R2     | ;SET UP EXPECTED                   |          |
| 3227 | 053652 | 020102 |        |        | CMP           | R1,R2               | ;ARE THEY EQUAL                    |          |
| 3228 | 053654 | 001406 |        |        | BEQ           | 120\$               | ;BR, IF OK                         |          |
| 3229 | 053656 | 005237 | 002214 |        | INC           | FATFLG              | ;ERROR COUNT                       |          |
| 3233 | 053662 |        |        |        | ERRHRD        | ERRNO,T33WPW,PKTSSR | ;TSSR INCORRECT AFTER WRITE DATA   |          |
|      | 053662 | 104456 |        |        |               |                     | TRAP                               | C\$ERHRD |
|      | 053664 | 000774 |        |        |               |                     | .WORD                              | 508      |
|      | 053666 | 055002 |        |        |               |                     | .WORD                              | T33WPW   |
|      | 053670 | 012126 |        |        |               |                     | .WORD                              | PKTSSR   |
| 3234 | 053672 |        |        |        | 120\$: CKLOOP |                     | ;LOOP IF SELECTED                  |          |
|      | 053672 | 104406 |        |        |               |                     | TRAP                               | C\$CLP1  |
| 3235 | 053674 | 013701 | 054602 |        | MOV           | T33BFR+10,R1        | ;PICK UP XST1                      |          |
| 3236 | 053700 | 010102 |        |        | MOV           | R1,R2               | ;SET UP EXPECTED                   |          |
| 3237 | 053702 | 052702 | 000002 |        | BIS           | #BIT1,R2            | ;SET UNC BIT IN EXPECTED           |          |
| 3238 | 053706 | 020102 |        |        | CMP           | R1,R2               | ;DOES EXP = REC'D                  |          |
| 3239 | 053710 | 001406 |        |        | BEQ           | 130\$               | ;BR, IF EQUAL (OK)                 |          |
| 3240 | 053712 | 005237 | 002214 |        | INC           | FATFLG              | ;ERROR COUNT                       |          |
| 3244 | 053716 |        |        |        | ERRHRD        | ERRNO,T33UNC,EXPREC | ;TAPE NOT AT BOT AFTER REWIND      |          |
|      | 053716 | 104456 |        |        |               |                     | TRAP                               | C\$ERHRD |
|      | 053720 | 000775 |        |        |               |                     | .WORD                              | 509      |
|      | 053722 | 055062 |        |        |               |                     | .WORD                              | T33UNC   |
|      | 053724 | 015554 |        |        |               |                     | .WORD                              | EXPREC   |
| 3245 | 053726 |        |        |        | 130\$: CKLOOP |                     | ;LOOP IF SELECTED                  |          |
|      | 053726 | 104406 |        |        |               |                     | TRAP                               | C\$CLP1  |
| 3246 | 053730 | 005303 |        |        | DEC           | R3                  | ;DEC RECORD COUNTER                |          |
| 3247 | 053732 | 001322 |        |        | BNE           | 110\$               | ;BR, IF MORE RECORDS TO WRITE      |          |
| 3248 | 053734 | 004737 | 011074 |        | JSR           | PC,REWIND           | ;CALL TAPE REWIND COMMAND          |          |
| 3249 | 053740 | 103411 |        |        | BCS           | 140\$               | ;BR, IF NO PROBLEM                 |          |
| 3250 | 053742 | 016501 | 000002 |        | MOV           | TSSR(R5),R1         | ;GET TSSR CONTENTS                 |          |
| 3251 | 053746 | 010004 |        |        | MOV           | R0,R4               | ;GET PACKET ADDRESS                |          |
| 3252 | 053750 | 005237 | 002214 |        | INC           | FATFLG              | ;ERROR COUNT                       |          |
| 3256 | 053754 |        |        |        | ERRHRD        | ERRNO,T33RWN,PKTSSR | ;REWIND NOT ACCEPTED               |          |
|      | 053754 | 104456 |        |        |               |                     | TRAP                               | C\$ERHRD |
|      | 053756 | 000776 |        |        |               |                     | .WORD                              | 510      |
|      | 053760 | 055420 |        |        |               |                     | .WORD                              | T33RWN   |
|      | 053762 | 012126 |        |        |               |                     | .WORD                              | PKTSSR   |
| 3257 | 053764 |        |        |        | 140\$: CKLOOP |                     | ;LOOP IF SELECTED                  |          |
|      | 053764 | 104406 |        |        |               |                     | TRAP                               | C\$CLP1  |
| 3258 | 053766 | 013701 | 054600 |        | MOV           | T33BFR+5,R1         | ;PICK UP XST0                      |          |
| 3259 | 053772 | 010102 |        |        | MOV           | R1,R2               | ;SET UP EXPECTED                   |          |
| 3260 | 053774 | 052702 | 000002 |        | BIS           | #BIT1,R2            | ;SET BOT BIT IN EXPECTED           |          |
| 3261 | 054000 | 020102 |        |        | CMP           | R1,R2               | ;DOES EXP = REC'D                  |          |
| 3262 | 054002 | 001406 |        |        | BEQ           | 150\$               | ;BR, IF EQUAL (OK)                 |          |
| 3263 | 054004 | 005237 | 002214 |        | INC           | FATFLG              | ;ERROR COUNT                       |          |
| 3267 | 054010 |        |        |        | ERRHRD        | ERRNO,T33BOT,EXPREC | ;TAPE NOT AT BOT AFTER REWIND      |          |
|      | 054010 | 104456 |        |        |               |                     | TRAP                               | C\$ERHRD |
|      | 054012 | 000777 |        |        |               |                     | .WORD                              | 511      |
|      | 054014 | 055325 |        |        |               |                     | .WORD                              | T33BOT   |
|      | 054016 | 015554 |        |        |               |                     | .WORD                              | EXPREC   |
| 3268 | 054020 |        |        |        | 150\$: CKLOOP |                     | ;LOOP IF SELECTED                  |          |
|      | 054020 | 104406 |        |        |               |                     | TRAP                               | C\$CLP1  |

TEST 1 HARDWARE TEST 1-8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 5: DATA PARITY TEST

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|      |        |        |        |        |        |                     |                |                                    |
|------|--------|--------|--------|--------|--------|---------------------|----------------|------------------------------------|
| 3269 | 054022 | 005037 | 054720 |        | CLR    | T33CNU              |                | ;CLEAR DATA VALUE IN RECORD        |
| 3270 | 054026 | 012703 | 000024 |        | MOV    | #20,,R3             |                | ;RECORD SIZE                       |
| 3271 | 054032 | 013737 | 003116 | 054672 | 1554:  | MOV                 | FREE,T33RB     | ;STARTING WRITE BUFFER ADDRESS     |
| 3272 | 054040 | 012737 | 140001 | 054670 |        | MOV                 | #140001,T33PK3 | ;READ DATA,CVC=1,ACK COMMAND       |
| 3273 | 054046 | 012704 | 054670 |        | MOV    | #T33PK3,R4          |                | ;SET UP R4 WITH PACKET ADDRESS     |
| 3274 | 054052 | 012737 | 000024 | 054676 |        | MOV                 | #20,,T33SZ     | ;SET UP RECORD SIZE IN PACKET      |
| 3275 | 054060 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |                | ;ISSUE COMMAND                     |
| 3276 | 054064 | 004737 | 016330 |        | JSR    | PC,WAITF            |                | ;WAIT FOR SSR TO SET               |
| 3277 | 054070 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |                | ;GET TSSR CONTENTS                 |
| 3278 | 054074 | 012702 | 100210 |        | MOV    | #SSR!SC!BIT3,R2     |                | ;SET UP EXPECTED                   |
| 3279 | 054100 | 020102 |        |        | CMP    | R1,R2               |                | ;ARE THEY EQUAL                    |
| 3280 | 054102 | 001406 |        |        | BEQ    | 1604                |                | ;BR, IF OK                         |
| 3281 | 054104 | 005237 | 002214 |        | INC    | FATFLG              |                | ;ERROR COUNT                       |
| 3285 | 054110 |        |        |        | ERRHRD | ERRNO,T33WDC,PKTSSR |                | ;TSSR INCORRECT AFTER WRITE DATA   |
|      | 054110 | 104456 |        |        |        |                     | TRAP           | C1ERRHRD                           |
|      | 054112 | 001000 |        |        |        |                     | .WORD          | 512                                |
|      | 054114 | 055467 |        |        |        |                     | .WORD          | T33WDC                             |
|      | 054116 | 012126 |        |        |        |                     | .WORD          | PKTSSR                             |
| 3286 | 054120 |        |        | 1604:  | CKLOOP |                     |                | ;LOOP IF SELECTED                  |
|      | 054120 | 104406 |        |        |        |                     | TRAP           | C1CLP1                             |
| 3287 | 054122 | 013701 | 054602 |        | MOV    | T33BFR+10,R1        |                | ;PICK UP XST1                      |
| 3288 | 054126 | 010102 |        |        | MOV    | R1,R2               |                | ;SET UP EXPECTED                   |
| 3289 | 054130 | 052702 | 000002 |        | BIS    | #BIT1,R2            |                | ;SET UNC BIT IN EXPECTED           |
| 3290 | 054134 | 020102 |        |        | CMP    | R1,R2               |                | ;DOES EXP = REC'D                  |
| 3291 | 054136 | 001406 |        |        | BEQ    | 1704                |                | ;BR, IF EQUAL (OK)                 |
| 3292 | 054140 | 005237 | 002214 |        | INC    | FATFLG              |                | ;ERROR COUNT                       |
| 3296 | 054144 |        |        |        | ERRHRD | ERRNO,T33UND,EXPREC |                | ;UNC BIT NOT SET AFTER READ CMD.   |
|      | 054144 | 104456 |        |        |        |                     | TRAP           | C1ERRHRD                           |
|      | 054146 | 001001 |        |        |        |                     | .WORD          | 513                                |
|      | 054150 | 055152 |        |        |        |                     | .WORD          | T33UND                             |
|      | 054152 | 015554 |        |        |        |                     | .WORD          | EXPREC                             |
| 3297 | 054154 |        |        | 1704:  | CKLOOP |                     |                | ;LOOP IF SELECTED                  |
|      | 054154 | 104406 |        |        |        |                     | TRAP           | C1CLP1                             |
| 3298 | 054156 | 013701 | 054602 |        | MOV    | T33BFR+10,R1        |                | ;PICK UP XST1                      |
| 3299 | 054162 | 010102 |        |        | MOV    | R1,R2               |                | ;SET UP EXPECTED                   |
| 3300 | 054164 | 052702 | 000400 |        | BIS    | #BIT8,R2            |                | ;SET RBP BIT IN EXPECTED           |
| 3301 | 054170 | 020102 |        |        | CMP    | R1,R2               |                | ;DOES EXP = REC'D                  |
| 3302 | 054172 | 001406 |        |        | BEQ    | 1804                |                | ;BR, IF EQUAL (OK)                 |
| 3303 | 054174 | 005237 | 002214 |        | INC    | FATFLG              |                | ;ERROR COUNT                       |
| 3307 | 054200 |        |        |        | ERRHRD | ERRNO,T33RBP,EXPREC |                | ;READ BUS PARITY ERROR BIT NOT SET |
|      | 054200 | 104456 |        |        |        |                     | TRAP           | C1ERRHRD                           |
|      | 054202 | 001002 |        |        |        |                     | .WORD          | 514                                |
|      | 054204 | 054724 |        |        |        |                     | .WORD          | T33RBP                             |
|      | 054206 | 015554 |        |        |        |                     | .WORD          | EXPREC                             |
| 3308 | 054210 |        |        | 1804:  | CKLOOP |                     |                | ;LOOP IF SELECTED                  |
|      | 054210 | 104406 |        |        |        |                     | TRAP           | C1CLP1                             |
| 3309 | 054212 | 017701 | 126700 |        | MOV    | #FREE,R1            |                | ;GET DATA READ                     |
| 3310 | 054216 | 013702 | 054720 |        | MOV    | T33CNU,R2           |                | ;GET PATTERN                       |
| 3311 | 054222 | 020102 |        |        | CMP    | R1,R2               |                | ;ARE THEY EQUAL                    |
| 3312 | 054224 | 001406 |        |        | BEQ    | 1824                |                | ;BR, IF OK                         |
| 3313 | 054226 | 005237 | 002214 |        | INC    | FATFLG              |                | ;ERROR COUNT                       |
| 3317 | 054232 |        |        |        | ERRHRD | ERRNO,T33DTA,EXPREC |                | ;DATA NOT CORRECT                  |
|      | 054232 | 104456 |        |        |        |                     | TRAP           | C1ERRHRD                           |
|      | 054234 | 001003 |        |        |        |                     | .WORD          | 515                                |
|      | 054236 | 055550 |        |        |        |                     | .WORD          | T33DTA                             |
|      | 054240 | 015554 |        |        |        |                     | .WORD          | EXPREC                             |
| 3318 | 054242 |        |        | 1824:  | CKLOOP |                     |                | ;LOOP IF SELECTED                  |

| PC | PC+1 | PC+2 | PC+3 | PC+4 | PC+5 | PC+6 | PC+7 | PC+8 | PC+9 | PC+10 | PC+11 | PC+12 | PC+13 | PC+14 | PC+15 | PC+16 | PC+17 | PC+18 | PC+19 | PC+20 | PC+21 | PC+22 | PC+23 | PC+24 | PC+25 | PC+26 | PC+27 | PC+28 | PC+29 | PC+30 | PC+31 | PC+32 | PC+33 | PC+34 | PC+35 | PC+36 | PC+37 | PC+38 | PC+39 | PC+40 | PC+41 | PC+42 | PC+43 | PC+44 | PC+45 | PC+46 | PC+47 | PC+48 | PC+49 | PC+50 | PC+51 | PC+52 | PC+53 | PC+54 | PC+55 | PC+56 | PC+57 | PC+58 | PC+59 | PC+60 | PC+61 | PC+62 | PC+63 | PC+64 | PC+65 | PC+66 | PC+67 | PC+68 | PC+69 | PC+70 | PC+71 | PC+72 | PC+73 | PC+74 | PC+75 | PC+76 | PC+77 | PC+78 | PC+79 | PC+80 | PC+81 | PC+82 | PC+83 | PC+84 | PC+85 | PC+86 | PC+87 | PC+88 | PC+89 | PC+90 | PC+91 | PC+92 | PC+93 | PC+94 | PC+95 | PC+96 | PC+97 | PC+98 | PC+99 | PC+100 | PC+101 | PC+102 | PC+103 | PC+104 | PC+105 | PC+106 | PC+107 | PC+108 | PC+109 | PC+110 | PC+111 | PC+112 | PC+113 | PC+114 | PC+115 | PC+116 | PC+117 | PC+118 | PC+119 | PC+120 | PC+121 | PC+122 | PC+123 | PC+124 | PC+125 | PC+126 | PC+127 | PC+128 | PC+129 | PC+130 | PC+131 | PC+132 | PC+133 | PC+134 | PC+135 | PC+136 | PC+137 | PC+138 | PC+139 | PC+140 | PC+141 | PC+142 | PC+143 | PC+144 | PC+145 | PC+146 | PC+147 | PC+148 | PC+149 | PC+150 | PC+151 | PC+152 | PC+153 | PC+154 | PC+155 | PC+156 | PC+157 | PC+158 | PC+159 | PC+160 | PC+161 | PC+162 | PC+163 | PC+164 | PC+165 | PC+166 | PC+167 | PC+168 | PC+169 | PC+170 | PC+171 | PC+172 | PC+173 | PC+174 | PC+175 | PC+176 | PC+177 | PC+178 | PC+179 | PC+180 | PC+181 | PC+182 | PC+183 | PC+184 | PC+185 | PC+186 | PC+187 | PC+188 | PC+189 | PC+190 | PC+191 | PC+192 | PC+193 | PC+194 | PC+195 | PC+196 | PC+197 | PC+198 | PC+199 | PC+200 | PC+201 | PC+202 | PC+203 | PC+204 | PC+205 | PC+206 | PC+207 | PC+208 | PC+209 | PC+210 | PC+211 | PC+212 | PC+213 | PC+214 | PC+215 | PC+216 | PC+217 | PC+218 | PC+219 | PC+220 | PC+221 | PC+222 | PC+223 | PC+224 | PC+225 | PC+226 | PC+227 | PC+228 | PC+229 | PC+230 | PC+231 | PC+232 | PC+233 | PC+234 | PC+235 | PC+236 | PC+237 | PC+238 | PC+239 | PC+240 | PC+241 | PC+242 | PC+243 | PC+244 | PC+245 | PC+246 | PC+247 | PC+248 | PC+249 | PC+250 | PC+251 | PC+252 | PC+253 | PC+254 | PC+255 | PC+256 | PC+257 | PC+258 | PC+259 | PC+260 | PC+261 | PC+262 | PC+263 | PC+264 | PC+265 | PC+266 | PC+267 | PC+268 | PC+269 | PC+270 | PC+271 | PC+272 | PC+273 | PC+274 | PC+275 | PC+276 | PC+277 | PC+278 | PC+279 | PC+280 | PC+281 | PC+282 | PC+283 | PC+284 | PC+285 | PC+286 | PC+287 | PC+288 | PC+289 | PC+290 | PC+291 | PC+292 | PC+293 | PC+294 | PC+295 | PC+296 | PC+297 | PC+298 | PC+299 | PC+300 | PC+301 | PC+302 | PC+303 | PC+304 | PC+305 | PC+306 | PC+307 | PC+308 | PC+309 | PC+310 | PC+311 | PC+312 | PC+313 | PC+314 | PC+315 | PC+316 | PC+317 | PC+318 | PC+319 | PC+320 | PC+321 | PC+322 | PC+323 | PC+324 | PC+325 | PC+326 | PC+327 | PC+328 | PC+329 | PC+330 | PC+331 | PC+332 | PC+333 | PC+334 | PC+335 | PC+336 | PC+337 | PC+338 | PC+339 | PC+340 | PC+341 | PC+342 | PC+343 | PC+344 | PC+345 | PC+346 | PC+347 | PC+348 | PC+349 | PC+350 | PC+351 | PC+352 | PC+353 | PC+354 | PC+355 | PC+356 | PC+357 | PC+358 | PC+359 | PC+360 | PC+361 | PC+362 | PC+363 | PC+364 | PC+365 | PC+366 | PC+367 | PC+368 | PC+369 | PC+370 | PC+371 | PC+372 | PC+373 | PC+374 | PC+375 | PC+376 | PC+377 | PC+378 | PC+379 | PC+380 | PC+3 |
|----|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
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TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 5: DATA PARITY TEST

SEQ 160

```

3427                                     .EVEN
3428                                     ;
3429                                     ;
3430                                     ;
3431 054700 T33BF2:
3432 054700      010 T33BS0: .BYTE 10 ;BSEL0 AREA
3433 054701      200 T33BS1: .BYTE 200 ;BSEL1 AREA
3434 054702 000000 T33S2: .WORD 0 ;SEL 2 AREA
3435 054704 000000 T33S3: .WORD 0 ;DATA AREA
3436                                     ;
3437                                     ;
3438                                     .EVEN
3439 ;TAPE MOTION PACKET COMMAND VALUES
3440
3441 054706 100205 T33RN: .WORD 100205 ;REREAD DATA (NEXT)
3442 054710 100605 T33WDR: .WORD 100605 ;REREAD DATA RETRY
3443 054712 102205 T33CON: .WORD 102205 ;WRITE CONTINUOUS
3444 054714 177777      .WORD 177777 ;END OF DATA
3445
3446                                     ;
3447 054716 000000 T33CNT: .WORD 0 ;TAPE TIMER COUNTER STORAGE AREA
3448 054720 000000 T33CNU: .WORD 0 ;TAPE TIMER COUNTER STORAGE AREA
3449 054722 000000 T33DLY: .WORD 0 ;DELAY COUNTER
3450                                     ;
3451 ;LOCAL TEXT MESSAGES FOR TEST
3452 ;
3453
3454 054724      122      145      141 T33RBP: .ASCIIZ 'Read Bus Parity Bit Not Set (XST1), Should Be
3455 055002      124      123      123 T33WPW: .ASCIIZ 'TSSR Incorrect After Wrong Parity Write Command'
3456 055062      125      116      103 T33UNC: .ASCIIZ 'UNC Bit (XST1) Not Set After Wrong Parity WRITE Command'
3457 055152      125      116      103 T33UND: .ASCIIZ 'UNC Bit (XST1) Not Set After Wrong Parity READ Command'
3458 055241      127      122      111 T33SSR: .ASCIIZ 'WRITE MISCELLANEOUS CONT/READ COMMAND Not Accepted'
3459 055325      124      141      160 T33BOT: .ASCIIZ 'Tape Not At BOT After REWIND Command (BOT Not Set In XST0)'
3460 055420      122      145      167 T33RWN: .ASCIIZ 'Rewind (POSITION) Command Not Accepted'
3461 055467      124      123      123 T33WDC: .ASCIIZ 'TSSR Not Correct After READ Wrong Parity Command'
3462 055550      104      141      164 T33DTA: .ASCIIZ 'Data Compare Error, Data Read From Tape Not Equal To Written'
3463 055645      104      141      164 T33ID: .ASCIIZ 'Data Parity'
3464                                     .EVEN
3465                                     ;
3466                                     ;
3467 ;ROUTINE TO RESTORE COMMAND PACKET TO START UP (DEFAULT) VALUES
3468 ;WRITE SUBSYSTEM MEMORY COMMAND
3469 ;
3470 ;
3471 ;
3472 055662 T33REST:
3473 055662      SAVREG
3474 055666 012701 054550      MOV #T33PACKET,R1 ;SAVE THE REGISTERS
3475 055672 012721 100004      MOV #100004,(R1). ;START OF THE PACKET
3476 055676 012721 054560      MOV #T33DATA,(R1). ;WRITE SUBSYSTEM MEM. WITH ACK,
3477 055702 005021      CLR (R1). ;ADDRESS OF CHARAISTICS DATA BLOCK
3478 055704 012721 000012      MOV #10.,(R1). ;EXTENDED ADDRESS
3479 055710 012721 054572      MOV #T33BFR,(R1). ;SIZE OF DATA BLOCK IN BYTES
3480 055714 005021      CLR (R1). ;ADDRESS OF MESSAGE BUFFER
3481 055716 012721 000024      MOV #20.,(R1). ;LENGTH OF MESSAGE BUFFER
3482 055722 005021      CLR (R1).
3483 055724 012711 000000      MOV #0,(R1) ;SELECT DRIVE ZERO

```



TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 5: DATA PARITY TEST

SEQ 161

```

3484 055730 012702 000030      MOV      #24.,R2      ;NUMBER OF LOCATIONS TO BE CLEARED
3485 055734 012762 177777 054572 64$: MOV      #177777,T33BFR(R2) ;ALL ONES TO MESSAGE BUFFER
3486 055742 005742      TST      (R2)      ;NEXT LOCATION
3487 055744 022702 000000      CMP      #0,R2      ;AT END OF LOOP YET
3488 055750 001371      BNE      64$      ;KEEP GOING UNTIL DONE
3489 055752 000207      RTS      PC      ;RETURN
3490
3491 055754      T33RT2:
3492 055754      SAVREG      ;SAVE THE REGISTERS
3493 055760 012701 054660      MOV      #T33PK2,R1      ;START OF THE PACKET
3494 055764 012721 100006      MOV      #100006,(R1).      ;WRITE SUBSYSTEM MEM. WITH ACK.
3495 055770 012721 054700      MOV      #T33BF2,(R1).      ;ADDRESS OF DATA BLOCK
3496 055774 005021      CLR      (R1).      ;EXTENDED ADDRESS
3497 055776 012721 000006      MOV      #6.,(R1).      ;SIZE OF DATA BLOCK IN BYTES
3498 056002 005021      CLR      (R1).
3499 056004 012701 054700      MOV      #T33BF2,R1      ;POINT TO DATA SEL AREA
3500 056010 005021      CLR      (R1).
3501 056012 005011      CLR      (R1)
3502 056014 000207      RTS      PC      ;RETURN
3503 056016      T33RT3:
3504 056016      SAVREG      ;SAVE REGISTERS
3505 056022 012701 054670      MOV      #T33PK3,R1      ;SET UP POINTER ADDRESS
3506 056026 005021      CLR      (R1).      ;COMMAND SPACE
3507 056030 005021      CLR      (R1).      ;ADDRESS OF DATA BLOCK
3508 056032 005021      CLR      (R1).      ;EXTENDED ADDRESS
3509 056034 005011      CLR      (R1)      ;SIZE OF DATA TRANSFER BLOCK
3510 056036 000207      RTS      PC      ;RETURN
3511 056040      ENDTST
3512 056040      L10057:
3513 056040      TRAP      C$ETST
3514 104401
3515      .SBTTL TEST 6: OPERATIONS AT EOT
3516 ;*
3517 ;
3518 ;THIS TEST VERIFIES PROPER OPERATION OF THE WRITE DATA RETRY
3519 ;COMMAND (SPACE REVERSE, ERASE, WRITE DATA)
3520 ;
3521 ;
3522 ;THE TEST CONSISTS OF THE FOLLOWING 1 SUBTEST
3523 ;
3524 ;-
3525 056042      BGNTST
3526 056042
3527 056042 012737 006354 002172      MOV      #EPR11,EPR1SW      ;PRIMARY ERROR MESSAGE
3528 056050 012700 063207      MOV      #TST34ID,R0      ;ASCII MESSAGE TO IDENTIFY TEST
3529 056054 004737 016570      JSR      PC,TSTSETUP      ;DO INITIAL TEST SETUP
3530 056060 012737 000005 002210      MOV      #5,LOOPCNT      ;PERFORM 5 ITERATIONS
3531 056066 005037 060672      CLR      T34CNT      ;CLEAR TAPE RECORD COUNTER
3532
3533 ;*
3534 ;
3535 ;TEST 6, SUBTEST 1
3536 ;
3537 ;
3538 ;
3539 ;THIS TEST VERIFIES THAT THE EOT STATUS IS HANDLED PROPERLY BY
3540 ;THE VARIOUS TAPE MOTION COMMANDS. THE FOLLOWING TEST SEQUENCE
3541 ;IS PERFORMED:

```



|      |        |        |        |              |                                                        |                                      |
|------|--------|--------|--------|--------------|--------------------------------------------------------|--------------------------------------|
| 3599 |        |        |        | :            | :TEST 6, SUBTEST 1                                     |                                      |
| 3600 |        |        |        | :            |                                                        |                                      |
| 3601 |        |        |        | :            |                                                        |                                      |
| 3602 |        |        |        | :            | ;VERIFIES THAT WRITING OVER THE END-OF-TAPE (EOT)      |                                      |
| 3603 |        |        |        | :            | ;MARKER CAUSES TAPE STATUS ALERT TERMINATION. IF THE   |                                      |
| 3604 |        |        |        | :            | ;TAPE TRANSPORT DOES NOT RECOGNIZE THE EOT MARKER, THE |                                      |
| 3605 |        |        |        | :            | ;TAPE WILL RUN OFF THE END OF THE REEL, CAUSING THE    |                                      |
| 3606 |        |        |        | :            | ;PROGRAM SEQUENCE TO BE ABORTED WITH A FATAL ERROR     |                                      |
| 3607 |        |        |        | :            | ;INDICATION. IN THIS CASE, CORRECTIVE MAINTENANCE      |                                      |
| 3608 |        |        |        | :            | ;MUST BE PERFORMED USING THE TRANSPORT'S BUILT IN      |                                      |
| 3609 |        |        |        | :            | ;MAINTENANCE ROUTINE AVAILIABLE VIA THE FRONT PANEL.   |                                      |
| 3610 |        |        |        | :            | ;IF THE CONTROLLER DOES NOT RECOGNIZE THE EOT, THE     |                                      |
| 3611 |        |        |        | :            | ;TRANSPORT WILL FAULT BUT THE TAPE WILL NOT RUN OFF    |                                      |
| 3612 |        |        |        | :            | ;THE END OF THE REEL BUT THE TRANSPORT MUST BE         |                                      |
| 3613 |        |        |        | :            | ;MANUALLY PLACED BACK ON-LINE TO BE USABLE. THIS IS A  |                                      |
| 3614 |        |        |        | :            | ;FATAL DIAGNOSTIC ERROR.                               |                                      |
| 3615 |        |        |        | :            |                                                        |                                      |
| 3616 |        |        |        | :            |                                                        |                                      |
| 3617 |        |        |        | :            |                                                        |                                      |
| 3618 |        |        |        | :            |                                                        |                                      |
| 3619 |        |        |        | :            |                                                        |                                      |
| 3620 |        |        |        | :            |                                                        |                                      |
| 3621 | 056072 |        |        | BGNSUB       |                                                        | ;>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>> |
|      | 056072 |        |        |              |                                                        | T6.1:                                |
|      | 056072 | 104402 |        |              |                                                        | TRAP C\$BSUB                         |
| 3622 | 056074 | 004737 | 063232 | JSR          | PC,T34REST                                             | ;SET COMMAND PACKET                  |
| 3623 | 056100 | 004737 | 063366 | JSR          | PC,T34RT3                                              | ;RESTORE PACKET                      |
| 3624 | 056104 | 004737 | 063324 | JSR          | PC,T34RT2                                              | ;SET UP OTHER COMMAND PACKET         |
| 3625 | 056110 | 012737 | 176750 | MOV          | #65000.,T34DLY                                         | ;SET UP COUNTER                      |
| 3626 | 056116 | 004737 | 016054 | JSR          | PC,SOFINIT                                             | ;DO INITIALIZE ON CONTROLLER         |
| 3627 | 056122 | 103433 |        | BCS          | 20\$                                                   | ;BR IF INIT WAS OK                   |
| 3628 | 056124 |        |        | DELAY        | 250                                                    | ;DELAY A WHILE                       |
|      | 056124 | 012727 | 000250 |              |                                                        | MOV #250.(PC).                       |
|      | 056130 | 000000 |        |              |                                                        | .WORD 0                              |
|      | 056132 | 013727 | 002116 |              |                                                        | MOV L\$DLY,(PC).                     |
|      | 056136 | 000000 |        |              |                                                        | .WORD 0                              |
|      | 056140 | 005367 | 177772 |              |                                                        | DEC -6(PC)                           |
|      | 056144 | 001375 |        |              |                                                        | BNE . 4                              |
|      | 056146 | 005367 | 177756 |              |                                                        | DEC -22(PC)                          |
|      | 056152 | 001367 |        |              |                                                        | BNE . -20                            |
| 3629 | 056154 | 016501 | 000002 | MOV          | TSSR(R5),R1                                            | ;GET TSSR STATUS                     |
| 3630 | 056160 | 032701 | 000200 | BIT          | #SSR,R1                                                | ;CHECK FOR SSR SET                   |
| 3631 | 056164 | 001012 |        | BNE          | 20\$                                                   | ;BR. WHEN SSR IS SET                 |
| 3632 | 056166 | 005337 | 060674 | DEC          | T34DLY                                                 | ;BUMP COUNTER DOWN                   |
| 3633 | 056172 | 001351 |        | BNE          | 10\$                                                   | ;BR. IF MORE DELAY REQUIRED          |
| 3634 | 056174 | 005237 | 002214 | INC          | FATFLG                                                 | ;ERROR COUNT                         |
| 3638 | 056200 | 010001 |        | MOV          | R0,R1                                                  | ;CONTENTS OF TSSR REGISTER           |
| 3639 | 056202 |        |        | ERRDF        | ERRNO,SFIERR,SFIMSG                                    | ;FATAL ERROR TSSR WAS NOT OK         |
|      | 056202 | 104455 |        |              |                                                        | TRAP C\$ERDF                         |
|      | 056204 | 001131 |        |              |                                                        | .WORD 601                            |
|      | 056206 | 003646 |        |              |                                                        | .WORD SFIERR                         |
|      | 056210 | 012114 |        |              |                                                        | .WORD SFIMSG                         |
| 3640 | 056212 |        |        | 20\$: CKLOOP |                                                        | ;LOOP IF SELECTED                    |
|      | 056212 | 104406 |        |              |                                                        | TRAP C\$CLP1                         |
| 3641 | 056214 | 013737 | 002174 | MOV          | UNITN,T34DSW                                           | ;SET UP DRIVE NUMBER                 |
| 3642 | 056222 | 052737 | 000040 | BIS          | #BITS,T34DSW                                           | ;TURN ON HIGH SPEED TO SAVE TIME     |
| 3643 | 056230 | 012704 | 060540 | MOV          | #T34PACKET,R4                                          | ;SUBROUTINE NEEDS PACKET ADDRESS     |

TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 6: OPERATIONS AT EOT

SEQ 164

|      |        |        |        |        |        |                     |             |                                    |          |
|------|--------|--------|--------|--------|--------|---------------------|-------------|------------------------------------|----------|
| 3644 | 056234 | 004737 | 010742 |        | JSR    | PC,WRCHR            |             | ;ISSUE WRITE CHARACTERISTICS       |          |
| 3645 | 056240 | 103407 |        |        | BCS    | 30\$                |             | ;BR, IF COMMAND ISSUED OK          |          |
| 3646 | 056242 | 005237 | 002214 |        | INC    | FATFLG              |             | ;ERROR COUNT                       |          |
| 3650 | 056246 | 010001 |        |        | MOV    | R0,R1               |             | ;SAVE CONTENTS OF TSSR             |          |
| 3651 | 056250 |        |        |        | ERRHRD | ERRNO,WRMSG,SFMSG   |             | ;WRITE CHARACTERISTICS FAILED      |          |
|      | 056250 | 104456 |        |        |        |                     |             | TRAP                               | C\$ERHRD |
|      | 056252 | 001132 |        |        |        |                     |             | .WORD                              | 602      |
|      | 056254 | 005052 |        |        |        |                     |             | .WORD                              | WRMSG    |
|      | 056256 | 012114 |        |        |        |                     |             | .WORD                              | SFMSG    |
| 3652 | 056260 |        |        | 30\$:  | CKLOOP |                     |             | ;LOOP IF SELECTED                  |          |
|      | 056260 | 104406 |        |        |        |                     |             | TRAP                               | C\$CLP1  |
| 3653 | 056262 | 004737 | 011074 |        | JSR    | PC,REWIND           |             | ;REWIND CALL                       |          |
| 3654 | 056266 | 103411 |        |        | BCS    | 35\$                |             | ;BR, IF TSSR IS OK (GOOD)          |          |
| 3655 | 056270 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |             | ;GET TSSR                          |          |
| 3656 | 056274 | 010004 |        |        | MOV    | R0,R4               |             | ;SET UP PACKET                     |          |
| 3657 | 056276 | 005237 | 002214 |        | INC    | FATFLG              |             | ;ERROR COUNT                       |          |
| 3661 | 056302 |        |        |        | ERRHRD | ERRNO,T34RWN,PKTSSR |             | ;TSSR IS INCORRECT AFTER REWIND    |          |
|      | 056302 | 104456 |        |        |        |                     |             | TRAP                               | C\$ERHRD |
|      | 056304 | 001133 |        |        |        |                     |             | .WORD                              | 603      |
|      | 056306 | 062337 |        |        |        |                     |             | .WORD                              | T34RWN   |
|      | 056310 | 012126 |        |        |        |                     |             | .WORD                              | PKTSSR   |
| 3662 | 056312 |        |        | 35\$:  | CKLOOP |                     |             | ;LOOP IF SELECTED                  |          |
|      | 056312 | 104406 |        |        |        |                     |             | TRAP                               | C\$CLP1  |
| 3663 | 056314 | 012737 | 140005 | 060660 | MOV    | #140005,T34PK3      |             | ;WRITE DATA, ACK, CVC=1            |          |
| 3664 | 056322 | 012703 | 176750 |        | MOV    | #65000.,R3          |             | ;SET MAX NUMBER OF WRITES          |          |
| 3665 | 056326 | 013737 | 003116 | 060662 | MOV    | FREE,T34WB          |             | ;SET UP WRITE BUFFER ADDRESS       |          |
| 3666 | 056334 | 012737 | 006654 | 060666 | MOV    | #3500.,T34SZ        |             | ;SET UP BUFFER SIZE (4K BYTES)     |          |
| 3667 | 056342 | 012704 | 060660 |        | MOV    | #T34PK3,R4          |             | ;R4 = POINTER TO PACKET            |          |
| 3668 | 056346 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |             | ;ISSUE COMMAND                     |          |
| 3669 | 056352 | 004737 | 016330 |        | JSR    | PC,WAITF            |             | ;WAIT FOR SSR TO SET               |          |
| 3670 | 056356 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |             | ;GET TSSR CONTENTS                 |          |
| 3671 | 056362 | 012702 | 000200 |        | MOV    | #SSR,R2             |             | ;SET UP EXPECTED                   |          |
| 3672 | 056366 | 020102 |        |        | CMP    | R1,R2               |             | ;ARE THEY EQUAL                    |          |
| 3673 | 056370 | 001010 |        |        | BNE    | 50\$                |             | ;BR, IT MIGHT BE END OF TAPE       |          |
| 3674 | 056372 | 005303 |        |        | DEC    | R3                  |             | ;DEC RECORD COUNTER                |          |
| 3675 | 056374 | 001364 |        |        | BNE    | 40\$                |             | ;BR, IF MORE TO GO                 |          |
| 3676 | 056376 | 005237 | 002214 |        | INC    | FATFLG              |             | ;ERROR COUNT                       |          |
| 3680 | 056402 |        |        |        | ERRDF  | ERRNO,T34ET,PKTSSR  |             | ;EOT NOT FOUND (USE SHORTER TAPE?) |          |
|      | 056402 | 104455 |        |        |        |                     |             | TRAP                               | C\$ERDF  |
|      | 056404 | 001134 |        |        |        |                     |             | .WORD                              | 604      |
|      | 056406 | 062116 |        |        |        |                     |             | .WORD                              | T34ET    |
|      | 056410 | 012126 |        |        |        |                     |             | .WORD                              | PKTSSR   |
| 3681 | 056412 | 032701 | 000004 |        | 50\$:  | BIT                 | #BIT2,R1    | ;CHECK FOR TAPE STATUS ALERT       |          |
| 3682 | 056416 | 001001 |        |        | BNE    | 60\$                |             | ;BR, IF SET                        |          |
| 3683 | 056420 | 000752 |        |        | BR     | 40\$                |             | ;KEEP GOING                        |          |
| 3684 | 056422 | 013701 | 060570 |        | 60\$:  | MOV                 | T34BFR+6,R1 | ;PICK UP XST0                      |          |
| 3685 | 056426 | 010102 |        |        | MOV    | R1,R2               |             | ;SET UP EXPECTED                   |          |
| 3686 | 056430 | 052702 | 000001 |        | BIS    | #BIT0,R2            |             | ;SET THE EOT BIT ON IN EXPECTED    |          |
| 3687 | 056434 | 020102 |        |        | CMP    | R1,R2               |             | ;WAS THE BIT ON                    |          |
| 3688 | 056436 | 001402 |        |        | BEQ    | 80\$                |             | ;BR, IF EOT WAS FOUND              |          |
| 3689 | 056440 | 000137 | 056346 |        | JMP    | 40\$                |             | ;KEEP LOOKING                      |          |
| 3690 | 056444 |        |        | 80\$:  | CKLOOP |                     |             | ;LOOP IF SELECTED                  |          |
|      | 056444 | 104406 |        |        |        |                     |             | TRAP                               | C\$CLP1  |
| 3691 | 056446 | 012737 | 140005 | 060660 | MOV    | #140005,T34PK3      |             | ;WRITE DATA, ACK, CVC=1            |          |
| 3692 | 056454 | 013737 | 003116 | 060662 | MOV    | FREE,T34WB          |             | ;SET UP WRITE BUFFER ADDRESS       |          |
| 3693 | 056462 | 012737 | 006654 | 060666 | MOV    | #3500.,T34SZ        |             | ;SET UP BUFFER SIZE (4K BYTES)     |          |
| 3694 | 056470 | 012704 | 060660 |        | MOV    | #T34PK3,R4          |             | ;R4 = POINTER TO PACKET            |          |

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|      |        |        |        |        |        |                     |       |                                           |
|------|--------|--------|--------|--------|--------|---------------------|-------|-------------------------------------------|
| 3695 | 056474 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |       | ;ISSUE COMMAND                            |
| 3696 | 056500 | 004737 | 016330 |        | JSR    | PC,WAITF            |       | ;WAIT FOR SSR TO SET                      |
| 3697 | 056504 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |       | ;GET TSSR CONTENTS                        |
| 3698 | 056510 | 012702 | 100204 |        | MOV    | #SC!SSR!BIT2,R2     |       | ;SET UP EXPECTED                          |
| 3699 | 056514 | 020102 |        |        | CMP    | R1,R2               |       | ;ARE THEY EQUAL                           |
| 3700 | 056516 | 001406 |        |        | BEQ    | 90\$                |       | ;BR, IF THEY ARE OK                       |
| 3701 | 056520 | 005237 | 002214 |        | INC    | FATFLG              |       | ;ERROR COUNT                              |
| 3705 | 056524 |        |        |        | ERRHRD | ERRNO,T34ET2,PKTSSR |       | ;WRITE TAPE AT EOT FAILED TO SET TSA      |
|      | 056524 | 104456 |        |        |        |                     | TRAP  | C\$ERHRD                                  |
|      | 056526 | 001135 |        |        |        |                     | .WORD | 605                                       |
|      | 056530 | 061367 |        |        |        |                     | .WORD | T34ET2                                    |
|      | 056532 | 012126 |        |        |        |                     | .WORD | PKTSSR                                    |
| 3706 | 056534 |        |        | 90\$:  | CKLOOP |                     |       | ;LOOP IF SELECTED                         |
|      | 056534 | 104406 |        |        |        |                     | TRAP  | C\$CLP1                                   |
| 3707 | 056536 | 013701 | 060570 |        | MOV    | T34BFR+6,R1         |       | ;PICK UP XST0                             |
| 3708 | 056542 | 010102 |        |        | MOV    | R1,R2               |       | ;SET UP EXPECTED                          |
| 3709 | 056544 | 052702 | 000001 |        | BIS    | #BIT0,R2            |       | ;SET THE EOT BIT ON IN EXPECTED           |
| 3710 | 056550 | 020102 |        |        | CMP    | R1,R2               |       | ;WAS THE BIT ON                           |
| 3711 | 056552 | 001406 |        |        | BEQ    | 100\$               |       | ;BR, IF EOT WAS FOUND                     |
| 3712 | 056554 | 005237 | 002214 |        | INC    | FATFLG              |       | ;ERROR COUNT                              |
| 3716 | 056560 |        |        |        | ERRHRD | ERRNO,T34ETN,EXPREC |       | ;EOT BIT (XST0) NOT SET                   |
|      | 056560 | 104456 |        |        |        |                     | TRAP  | C\$ERHRD                                  |
|      | 056562 | 001136 |        |        |        |                     | .WORD | 606                                       |
|      | 056564 | 061451 |        |        |        |                     | .WORD | T34ETN                                    |
|      | 056566 | 015554 |        |        |        |                     | .WORD | EXPREC                                    |
| 3717 | 056570 |        |        | 100\$: | CKLOOP |                     |       | ;LOOP IF SELECTED                         |
|      | 056570 | 104406 |        |        |        |                     | TRAP  | C\$CLP1                                   |
| 3718 | 056572 | 012737 | 140011 | 060660 | MOV    | #140011,T34PK3      |       | ;WRITE TAPE MARK, ACK, CVC=1 COMMAND      |
| 3719 | 056600 | 012704 | 060660 |        | MOV    | #T34PK3,R4          |       | ;R4 = POINTER TO PACKET                   |
| 3720 | 056604 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |       | ;ISSUE COMMAND                            |
| 3721 | 056610 | 004737 | 016330 |        | JSR    | PC,WAITF            |       | ;WAIT FOR SSR TO SET                      |
| 3722 | 056614 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |       | ;GET TSSR CONTENTS                        |
| 3723 | 056620 | 012702 | 100204 |        | MOV    | #SC!SSR!BIT2,R2     |       | ;SET UP EXPECTED                          |
| 3724 | 056624 | 020102 |        |        | CMP    | R1,R2               |       | ;ARE THEY EQUAL                           |
| 3725 | 056626 | 001406 |        |        | BEQ    | 110\$               |       | ;BR, IF STATUS IS GOOD (OK)               |
| 3726 | 056630 | 005237 | 002214 |        | INC    | FATFLG              |       | ;ERROR COUNT                              |
| 3730 | 056634 |        |        |        | ERRHRD | ERRNO,T34WTM,PKTSSR |       | ;EOT NOT FOUND (USE SHORTER TAPE?)        |
|      | 056634 | 104456 |        |        |        |                     | TRAP  | C\$ERHRD                                  |
|      | 056636 | 001137 |        |        |        |                     | .WORD | 607                                       |
|      | 056640 | 061300 |        |        |        |                     | .WORD | T34WTM                                    |
|      | 056642 | 012126 |        |        |        |                     | .WORD | PKTSSR                                    |
| 3731 | 056644 |        |        | 110\$: | CKLOOP |                     |       | ;LOOP IF SELECTED                         |
|      | 056644 | 104406 |        |        |        |                     | TRAP  | C\$CLP1                                   |
| 3732 | 056646 | 013701 | 060570 |        | MOV    | T34BFR+6,R1         |       | ;PICK UP XST0                             |
| 3733 | 056652 | 010102 |        |        | MOV    | R1,R2               |       | ;SET UP EXPECTED                          |
| 3734 | 056654 | 052702 | 000001 |        | BIS    | #BIT0,R2            |       | ;SET THE EOT BIT ON IN EXPECTED           |
| 3735 | 056660 | 020102 |        |        | CMP    | R1,R2               |       | ;WAS THE BIT ON                           |
| 3736 | 056662 | 001406 |        |        | BEQ    | 120\$               |       | ;BR, IF EOT WAS FOUND                     |
| 3737 | 056664 | 005237 | 002214 |        | INC    | FATFLG              |       | ;ERROR COUNT                              |
| 3741 | 056670 |        |        |        | ERRHRD | ERRNO,T34ETO,EXPREC |       | ;EOT BIT (XST0) NOT SET                   |
|      | 056670 | 104456 |        |        |        |                     | TRAP  | C\$ERHRD                                  |
|      | 056672 | 001140 |        |        |        |                     | .WORD | 608                                       |
|      | 056674 | 061002 |        |        |        |                     | .WORD | T34ETO                                    |
|      | 056676 | 015554 |        |        |        |                     | .WORD | EXPREC                                    |
| 3742 | 056700 |        |        | 120\$: | CKLOOP |                     |       | ;LOOP IF SELECTED                         |
|      | 056700 | 104406 |        |        |        |                     | TRAP  | C\$CLP1                                   |
| 3743 | 056702 | 012737 | 141410 | 060660 | MOV    | #141410,T34PK3      |       | ;SKIP TAPE MARK REVERSE ACK,CVC=1 COMMAND |

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|      |        |        |        |        |        |                     |                                        |          |
|------|--------|--------|--------|--------|--------|---------------------|----------------------------------------|----------|
| 3744 | 056710 | 012737 | 000001 | 060662 | MOV    | #1,T34WB            | ;SET NUMBER (1) OF TMS TO SKIP         |          |
| 3745 | 056716 | 012704 | 060660 |        | MOV    | #T34PK3,R4          | ;R4 = PCINTER TO PACKET                |          |
| 3746 | 056722 | 010465 | 000000 |        | MOV    | R4,TSDB(R5)         | ;ISSUE COMMAND                         |          |
| 3747 | 056726 | 004737 | 016330 |        | JSR    | PC,WAITF            | ;WAIT FOR SSR TO SET                   |          |
| 3748 | 056732 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         | ;GET TSSR CONTENTS                     |          |
| 3749 | 056736 | 012702 | 000200 |        | MOV    | #SSR,R2             | ;SET UP EXPECTED                       |          |
| 3750 | 056742 | 020102 |        |        | CMP    | R1,R2               | ;ARE THEY EQUAL                        |          |
| 3751 | 056744 | 001406 |        |        | BEQ    | 130\$               | ;BR, IF STATUS IS GOOD (OK)            |          |
| 3752 | 056746 | 005237 | 002214 |        | INC    | FATFLG              | ;ERROR COUNT                           |          |
| 3756 | 056752 |        |        |        | ERRHRD | ERRNO,T34STM,PKTSSR | ;SKIP TAPE MARK REV. DIDN'T SET TSA    |          |
|      | 056752 | 104456 |        |        |        |                     | TRAP                                   | C\$ERHRD |
|      | 056754 | 001141 |        |        |        |                     | .WORD                                  | 609      |
|      | 056756 | 061700 |        |        |        |                     | .WORD                                  | T34STM   |
|      | 056760 | 012126 |        |        |        |                     | .WORD                                  | PKTSSR   |
| 3757 | 056762 |        |        | 130\$: | CKLOOP |                     | ;LOOP IF SELECTED                      |          |
|      | 056762 | 104406 |        |        |        |                     | TRAP                                   | C\$CLP1  |
| 3758 | 056764 | 013701 | 060570 |        | MOV    | T34BFR+6,R1         | ;PICK UP XSTO                          |          |
| 3759 | 056770 | 010102 |        |        | MOV    | R1,R2               | ;SET UP EXPECTED                       |          |
| 3760 | 056772 | 052702 | 000001 |        | BIS    | #BIT0,R2            | ;SET THE EOT BIT ON IN EXPECTED        |          |
| 3761 | 056776 | 020102 |        |        | CMP    | R1,R2               | ;WAS THE BIT ON                        |          |
| 3762 | 057000 | 001406 |        |        | BEQ    | 140\$               | ;BR, IF EOT WAS FOUND                  |          |
| 3763 | 057002 | 005237 | 002214 |        | INC    | FATFLG              | ;ERROR COUNT                           |          |
| 3767 | 057006 |        |        |        | ERRHRD | ERRNO,T34ETN,EXPREC | ;EOT BIT (XSTO) NOT SET                |          |
|      | 057006 | 104456 |        |        |        |                     | TRAP                                   | C\$ERHRD |
|      | 057010 | 001142 |        |        |        |                     | .WORD                                  | 610      |
|      | 057012 | 061451 |        |        |        |                     | .WORD                                  | T34ETN   |
|      | 057014 | 015554 |        |        |        |                     | .WORD                                  | EXPREC   |
| 3768 | 057016 |        |        | 140\$: | CKLOOP |                     | ;LOOP IF SELECTED                      |          |
|      | 057016 | 104406 |        |        |        |                     | TRAP                                   | C\$CLP1  |
| 3769 | 057020 | 013701 | 060570 |        | MOV    | T34BFR+6,R1         | ;PICK UP XSTO                          |          |
| 3770 | 057024 | 010102 |        |        | MOV    | R1,R2               | ;SET UP EXPECTED                       |          |
| 3771 | 057026 | 052702 | 100000 |        | BIS    | #BIT15,R2           | ;SET THE TMK BIT ON IN EXPECTED        |          |
| 3772 | 057032 | 020102 |        |        | CMP    | R1,R2               | ;WAS THE BIT ON                        |          |
| 3773 | 057034 | 001406 |        |        | BEQ    | 150\$               | ;BR, IF TMK WAS FOUND                  |          |
| 3774 | 057036 | 005237 | 002214 |        | INC    | FATFLG              | ;ERROR COUNT                           |          |
| 3778 | 057042 |        |        |        | ERRHRD | ERRNO,T34TMK,EXPREC | ;EOT BIT (XSTO) NOT SET                |          |
|      | 057042 | 104456 |        |        |        |                     | TRAP                                   | C\$ERHRD |
|      | 057044 | 001143 |        |        |        |                     | .WORD                                  | 611      |
|      | 057046 | 061763 |        |        |        |                     | .WORD                                  | T34TMK   |
|      | 057050 | 015554 |        |        |        |                     | .WORD                                  | EXPREC   |
| 3779 | 057052 |        |        | 150\$: | CKLOOP |                     | ;LOOP IF SELECTED                      |          |
|      | 057052 | 104406 |        |        |        |                     | TRAP                                   | C\$CLP1  |
| 3780 | 057054 | 012737 | 140410 | 060660 | MOV    | #140410,T34PK3      | ;SPACE RECORDS REVERSE, ACK, CVC=1 CMD |          |
| 3781 | 057062 | 012737 | 000001 | 060662 | MOV    | #1,T34WB            | ;SPACE ONE RECORD REVERSE              |          |
| 3782 | 057070 | 012704 | 060660 |        | MOV    | #T34PK3,R4          | ;R4 = POINTER TO PACKET                |          |
| 3783 | 057074 | 010465 | 000000 |        | MOV    | R4,TSDB(R5)         | ;ISSUE COMMAND                         |          |
| 3784 | 057100 | 004737 | 016330 |        | JSR    | PC,WAITF            | ;WAIT FOR SSR TO SET                   |          |
| 3785 | 057104 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         | ;GET TSSR CONTENTS                     |          |
| 3786 | 057110 | 012702 | 100204 |        | MOV    | #SC!SSR!BIT2,R2     | ;SET UP EXPECTED                       |          |
| 3787 | 057114 | 020102 |        |        | CMP    | R1,R2               | ;ARE THEY EQUAL                        |          |
| 3788 | 057116 | 001006 |        |        | BNE    | 160\$               | ;BR, IT MIGHT BE END OF TAPE           |          |
| 3789 | 057120 | 005237 | 002214 |        | INC    | FATFLG              | ;ERROR COUNT                           |          |
| 3793 | 057124 |        |        |        | ERRHRD | ERRNO,T34POS,PKTSSR | ;EOT NOT FOUND (USE SHORTER TAPE?)     |          |
|      | 057124 | 104456 |        |        |        |                     | TRAP                                   | C\$ERHRD |
|      | 057126 | 001144 |        |        |        |                     | .WORD                                  | 612      |
|      | 057130 | 060714 |        |        |        |                     | .WORD                                  | T34POS   |
|      | 057132 | 012126 |        |        |        |                     | .WORD                                  | PKTSSR   |



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| Address | Offset | Label  | Operation | Comments                           |
|---------|--------|--------|-----------|------------------------------------|
| 3794    | 057134 | 160\$: | CKLOOP    | ;LOOP IF SELECTED                  |
|         | 057134 | 104406 |           | TRAP C\$CLP1                       |
| 3795    | 057136 | 013701 | MOV       | T34BFR+6,R1                        |
| 3796    | 057142 | 010102 | MOV       | R1,R2                              |
| 3797    | 057144 | 052702 | BIS       | #BIT0,R2                           |
| 3798    | 057150 | 020102 | CMP       | R1,R2                              |
| 3799    | 057152 | 001406 | BEQ       | 163\$                              |
| 3800    | 057154 | 005237 | INC       | FATFLG                             |
| 3804    | 057160 | 002214 | ERRHRD    | ERRNO,T34ETN,EXPREC                |
|         | 057160 | 104456 |           | ;EOT BIT (XSTO) NOT SET            |
|         | 057162 | 001145 |           | TRAP C\$ERHRD                      |
|         | 057164 | 061451 |           | .WORD 613                          |
|         | 057166 | 015554 |           | .WORD T34ETN                       |
| 3805    | 057170 |        |           | .WORD EXPREC                       |
|         | 057170 | 104406 | 163\$:    | CKLOOP                             |
|         | 057170 |        |           | ;LOOP IF SELECTED                  |
|         | 057170 |        |           | TRAP C\$CLP1                       |
| 3806    | 057172 | 013701 | MOV       | T34BFR+6,R1                        |
| 3807    | 057176 | 010102 | MOV       | R1,R2                              |
| 3808    | 057200 | 042702 | BIC       | #BIT15,R2                          |
| 3809    | 057204 | 020102 | CMP       | R1,R2                              |
| 3810    | 057206 | 001406 | BEQ       | 165\$                              |
| 3811    | 057210 | 005237 | INC       | FATFLG                             |
| 3815    | 057214 | 002214 | ERRHRD    | ERRNO,T34TMK,EXPREC                |
|         | 057214 | 104456 |           | ;EOT BIT (XSTO) NOT SET            |
|         | 057216 | 001146 |           | TRAP C\$ERHRD                      |
|         | 057220 | 061763 |           | .WORD 614                          |
|         | 057222 | 015554 |           | .WORD T34TMK                       |
| 3816    | 057224 |        |           | .WORD EXPREC                       |
|         | 057224 | 104406 | 165\$:    | CKLOOP                             |
|         | 057224 |        |           | ;LOOP IF SELECTED                  |
|         | 057224 |        |           | TRAP C\$CLP1                       |
| 3817    | 057226 | 012737 | MOV       | #140410,T34PK3                     |
| 3818    | 057234 | 012737 | MOV       | #1,T34WB                           |
| 3819    | 057242 | 012704 | MOV       | #T34PK3,R4                         |
| 3820    | 057246 | 010465 | MOV       | R4,TSD8(R5)                        |
| 3821    | 057252 | 004737 | JSR       | PC,WAITF                           |
| 3822    | 057256 | 016501 | MOV       | TSSR(R5),R1                        |
| 3823    | 057262 | 012702 | MOV       | #SSR,R2                            |
| 3824    | 057266 | 020102 | CMP       | R1,R2                              |
| 3825    | 057270 | 001406 | BFQ       | 167\$                              |
| 3826    | 057272 | 005237 | INC       | FATFLG                             |
| 3830    | 057276 | 002214 | ERRHRD    | ERRNO,T34POS,PKTSSR                |
|         | 057276 | 104456 |           | ;EOT NOT FOUND (USE SHORTER TAPE?) |
|         | 057300 | 001147 |           | TRAP C\$ERHRD                      |
|         | 057302 | 060714 |           | .WORD 615                          |
|         | 057304 | 012126 |           | .WORD T34POS                       |
| 3831    | 057306 |        |           | .WORD PKTSSR                       |
|         | 057306 | 104406 | 167\$:    | CKLOOP                             |
|         | 057306 |        |           | ;LOOP IF SELECTED                  |
|         | 057306 |        |           | TRAP C\$CLP1                       |
| 3832    | 057310 | 013701 | MOV       | T34BFR+6,R1                        |
| 3833    | 057314 | 010102 | MOV       | R1,R2                              |
| 3834    | 057316 | 042702 | BIC       | #BIT0,R2                           |
| 3835    | 057322 | 020102 | CMP       | R1,R2                              |
| 3836    | 057324 | 001400 | BEQ       | 170\$                              |
| 3837    | 057326 |        | CKLOOP    | 170\$:                             |
|         | 057326 | 104406 |           | ;LOOP IF SELECTED                  |
|         | 057326 |        |           | TRAP C\$CLP1                       |
| 3838    | 057330 | 012737 | MOV       | #140010,T34PK3                     |
| 3839    | 057336 | 012737 | MOV       | #2,T34WB                           |
| 3840    | 057344 | 012704 | MOV       | #T34PK3,R4                         |
| 3841    | 057350 | 010465 | MOV       | R4,TSD8(R5)                        |
| 3842    | 057354 | 004737 | JSR       | PC,WAITF                           |
|         |        |        |           | ;SPACE RECORDS FORWARD, ACK, CVC=1 |
|         |        |        |           | ;SPACE TWO RECORDS                 |
|         |        |        |           | ;R4 = POINTER TO PACKET            |
|         |        |        |           | ;ISSUE COMMAND                     |
|         |        |        |           | ;WAIT FOR SSR TO SET               |

TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 6: OPERATIONS AT EOT

SEQ 168

|      |        |        |        |        |        |                     |       |                                    |
|------|--------|--------|--------|--------|--------|---------------------|-------|------------------------------------|
| 3843 | 057360 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |       | ;GET TSSR CONTENTS                 |
| 3844 | 057364 | 012702 | 000200 |        | MOV    | #SSR,R2             |       | ;SET UP EXPECTED                   |
| 3845 | 057370 | 020102 |        |        | CMP    | R1,R2               |       | ;ARE THEY EQUAL                    |
| 3846 | 057372 | 001406 |        |        | BEQ    | 190\$               |       | ;BR, IT MIGHT BE END OF TAPE       |
| 3847 | 057374 | 005237 | 002214 |        | INC    | FATFLG              |       | ;ERROR COUNT                       |
| 3851 | 057400 |        |        |        | ERRHRD | ERRNO,T34POS,PKTSSR |       | ;EOT NOT FOUND (USE SHORTER TAPE?) |
|      | 057400 | 104456 |        |        |        |                     | TRAP  | C\$ERHRD                           |
|      | 057402 | 001150 |        |        |        |                     | .WORD | 616                                |
|      | 057404 | 060714 |        |        |        |                     | .WORD | T34POS                             |
|      | 057406 | 012126 |        |        |        |                     | .WORD | PKTSSR                             |
| 3852 | 057410 |        |        | 190\$: | CKLOOP |                     |       | ;LOOP IF SELECTED                  |
|      | 057410 | 104406 |        |        |        |                     | TRAP  | C\$CLP1                            |
| 3853 | 057412 | 013701 | 060570 |        | MOV    | T34BFR+6,R1         |       | ;PICK UP XST0                      |
| 3854 | 057416 | 010102 |        |        | MOV    | R1,R2               |       | ;SET UP EXPECTED                   |
| 3855 | 057420 | 052702 | 000001 |        | BIS    | #BIT0,R2            |       | ;SET THE EOT BIT ON IN EXPECTED    |
| 3856 | 057424 | 020102 |        |        | CMP    | R1,R2               |       | ;WAS THE BIT ON                    |
| 3857 | 057426 | 001406 |        |        | BEQ    | 200\$               |       | ;BR, IF EOT WAS FOUND              |
| 3858 | 057430 | 005237 | 002214 |        | INC    | FATFLG              |       | ;ERROR COUNT                       |
| 3862 | 057434 |        |        |        | ERRHRD | ERRNO,T34ETS,EXPREC |       | ;EOT BIT (XST0) NOT SET            |
|      | 057434 | 104456 |        |        |        |                     | TRAP  | C\$ERHRD                           |
|      | 057436 | 001151 |        |        |        |                     | .WORD | 617                                |
|      | 057440 | 061530 |        |        |        |                     | .WORD | T34ETS                             |
|      | 057442 | 015554 |        |        |        |                     | .WORD | EXPREC                             |
| 3863 | 057444 |        |        | 200\$: | CKLOOP |                     |       | ;LOOP IF SELECTED                  |
|      | 057444 | 104406 |        |        |        |                     | TRAP  | C\$CLP1                            |
| 3864 | 057446 | 012737 | 140401 | 060660 | MOV    | #140401,T34PK3      |       | ;READ REVERSE, ACK, CVC=1          |
| 3865 | 057454 | 013737 | 003116 | 060662 | MOV    | FREE,T34RB          |       | ;SET UP WRITE BUFFER ADDRESS       |
| 3866 | 057462 | 012704 | 060660 |        | MOV    | #T34PK3,R4          |       | ;R4 = POINTER TO PACKET            |
| 3867 | 057466 | 010465 | 000000 |        | MOV    | R4,TSDB(R5)         |       | ;ISSUE COMMAND                     |
| 3868 | 057472 | 004737 | 016330 |        | JSR    | PC,WAITF            |       | ;WAIT FOR SSR TO SET               |
| 3869 | 057476 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |       | ;GET TSSR CONTENTS                 |
| 3870 | 057502 | 012702 | 000200 |        | MOV    | #SSR,R2             |       | ;SET UP EXPECTED                   |
| 3871 | 057506 | 020102 |        |        | CMP    | R1,R2               |       | ;ARE THEY EQUAL                    |
| 3872 | 057510 | 001406 |        |        | BEQ    | 205\$               |       | ;BR, ONLY SSR IS SET               |
| 3873 | 057512 | 005237 | 002214 |        | INC    | FATFLG              |       | ;ERROR COUNT                       |
| 3877 | 057516 |        |        |        | ERRHRD | ERRNO,T34RRE,PKTSSR |       | ;EOT NOT FOUND (USE SHORTER TAPE?) |
|      | 057516 | 104456 |        |        |        |                     | TRAP  | C\$ERHRD                           |
|      | 057520 | 001152 |        |        |        |                     | .WORD | 618                                |
|      | 057522 | 061066 |        |        |        |                     | .WORD | T34RRE                             |
|      | 057524 | 012126 |        |        |        |                     | .WORD | PKTSSR                             |
| 3878 | 057526 |        |        | 205\$: | CKLOOP |                     |       | ;LOOP IF SELECTED                  |
|      | 057526 | 104406 |        |        |        |                     | TRAP  | C\$CLP1                            |
| 3879 | 057530 | 012737 | 140401 | 060660 | MOV    | #140401,T34PK3      |       | ;READ REVERSE, ACK, CVC=1          |
| 3880 | 057536 | 013737 | 003116 | 060662 | MOV    | FREE,T34RB          |       | ;SET UP WRITE BUFFER ADDRESS       |
| 3881 | 057544 | 012704 | 060660 |        | MOV    | #T34PK3,R4          |       | ;R4 = POINTER TO PACKET            |
| 3882 | 057550 | 010465 | 000000 |        | MOV    | R4,TSDB(R5)         |       | ;ISSUE COMMAND                     |
| 3883 | 057554 | 004737 | 016330 |        | JSR    | PC,WAITF            |       | ;WAIT FOR SSR TO SET               |
| 3884 | 057560 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |       | ;GET TSSR CONTENTS                 |
| 3885 | 057564 | 012702 | 000200 |        | MOV    | #SSR,R2             |       | ;SET UP EXPECTED                   |
| 3886 | 057570 | 020102 |        |        | CMP    | R1,R2               |       | ;ARE THEY EQUAL                    |
| 3887 | 057572 | 001406 |        |        | BEQ    | 210\$               |       | ;BR, IT MIGHT BE END OF TAPE       |
| 3888 | 057574 | 005237 | 002214 |        | INC    | FATFLG              |       | ;ERROR COUNT                       |
| 3892 | 057600 |        |        |        | ERRHRD | ERRNO,T34RRE,PKTSSR |       | ;EOT NOT FOUND (USE SHORTER TAPE?) |
|      | 057600 | 104456 |        |        |        |                     | TRAP  | C\$ERHRD                           |
|      | 057602 | 001153 |        |        |        |                     | .WORD | 619                                |
|      | 057604 | 061066 |        |        |        |                     | .WORD | T34RRE                             |
|      | 057606 | 012126 |        |        |        |                     | .WORD | PKTSSR                             |



TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 6: OPERATIONS AT EOT

SEQ 169

|      |        |        |        |        |        |                     |  |  |                                         |       |          |
|------|--------|--------|--------|--------|--------|---------------------|--|--|-----------------------------------------|-------|----------|
| 3893 | 057610 |        |        | 210\$: | CKLOOP |                     |  |  | ;LOOP IF SELECTED                       |       |          |
|      | 057610 | 104406 |        |        |        |                     |  |  |                                         | TRAP  | C\$CLP1  |
| 3894 | 057612 | 012737 | 140001 | 060660 | MOV    | #140001,T34PK3      |  |  | ;READ DATA, ACK, CVC=1                  |       |          |
| 3895 | 057620 | 013737 | 003116 | 060662 | MOV    | FREE,T34RB          |  |  | ;SET UP WRITE BUFFER ADDRESS            |       |          |
| 3896 | 057626 | 012737 | 006654 | 060666 | MOV    | #3500.,T34SZ        |  |  | ;SET UP BUFFER SIZE (4K BYTES)          |       |          |
| 3897 | 057634 | 012704 | 060660 |        | MOV    | #T34PK3,R4          |  |  | ;R4 = POINTER TO PACKET                 |       |          |
| 3898 | 057640 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |  |  | ;ISSUE COMMAND                          |       |          |
| 3899 | 057644 | 004737 | 016330 |        | JSR    | PC,WAITF            |  |  | ;WAIT FOR SSR TO SET                    |       |          |
| 3900 | 057650 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |  |  | ;GET TSSR CONTENTS                      |       |          |
| 3901 | 057654 | 012702 | 000200 |        | MOV    | #SSR,R2             |  |  | ;SET UP EXPECTED                        |       |          |
| 3902 | 057660 | 020102 |        |        | CMP    | R1,R2               |  |  | ;ARE THEY EQUAL                         |       |          |
| 3903 | 057662 | 001406 |        |        | BEQ    | 230\$               |  |  | ;BR, IT MIGHT BE END OF TAPE            |       |          |
| 3904 | 057664 | 005237 | 002214 |        | INC    | FATFLG              |  |  | ;ERROR COUNT                            |       |          |
| 3908 | 057670 |        |        |        | ERRHRD | ERRNO,T34RRE,PKTSSR |  |  | ;EOT NOT FOUND (USE SHORTER TAPE?)      |       |          |
|      | 057670 | 104456 |        |        |        |                     |  |  |                                         | TRAP  | C\$ERHRD |
|      | 057672 | 001154 |        |        |        |                     |  |  |                                         | .WORD | 620      |
|      | 057674 | 061066 |        |        |        |                     |  |  |                                         | .WORD | T34RRE   |
|      | 057676 | 012126 |        |        |        |                     |  |  |                                         | .WORD | PKTSSR   |
| 3909 | 057700 |        |        | 230\$: | CKLOOP |                     |  |  | ;LOOP IF SELECTED                       |       |          |
|      | 057700 | 104406 |        |        |        |                     |  |  |                                         | TRAP  | C\$CLP1  |
| 3910 | 057702 | 012737 | 140001 | 060660 | MOV    | #140001,T34PK3      |  |  | ;READ DATA, ACK, CVC=1                  |       |          |
| 3911 | 057710 | 013737 | 003116 | 060662 | MOV    | FREE,T34RB          |  |  | ;SET UP WRITE BUFFER ADDRESS            |       |          |
| 3912 | 057716 | 012737 | 006654 | 060666 | MOV    | #3500.,T34SZ        |  |  | ;SET UP BUFFER SIZE (4K BYTES)          |       |          |
| 3913 | 057724 | 012704 | 060660 |        | MOV    | #T34PK3,R4          |  |  | ;R4 = POINTER TO PACKET                 |       |          |
| 3914 | 057730 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |  |  | ;ISSUE COMMAND                          |       |          |
| 3915 | 057734 | 004737 | 016330 |        | JSR    | PC,WAITF            |  |  | ;WAIT FOR SSR TO SET                    |       |          |
| 3916 | 057740 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |  |  | ;GET TSSR CONTENTS                      |       |          |
| 3917 | 057744 | 012702 | 000200 |        | MOV    | #SSR,R2             |  |  | ;SET UP EXPECTED                        |       |          |
| 3918 | 057750 | 020102 |        |        | CMP    | R1,R2               |  |  | ;ARE THEY EQUAL                         |       |          |
| 3919 | 057752 | 001406 |        |        | BEQ    | 235\$               |  |  | ;BR, IT MIGHT BE END OF TAPE            |       |          |
| 3920 | 057754 | 005237 | 002214 |        | INC    | FATFLG              |  |  | ;ERROR COUNT                            |       |          |
| 3924 | 057760 |        |        |        | ERRHRD | ERRNO,T34RRE,PKTSSR |  |  | ;EOT NOT FOUND (USE SHORTER TAPE?)      |       |          |
|      | 057760 | 104456 |        |        |        |                     |  |  |                                         | TRAP  | C\$ERHRD |
|      | 057762 | 001155 |        |        |        |                     |  |  |                                         | .WORD | 621      |
|      | 057764 | 061066 |        |        |        |                     |  |  |                                         | .WORD | T34RRE   |
|      | 057766 | 012126 |        |        |        |                     |  |  |                                         | .WORD | PKTSSR   |
| 3925 | 057770 |        |        | 235\$: | CKLOOP |                     |  |  | ;LOOP IF SELECTED                       |       |          |
|      | 057770 | 104406 |        |        |        |                     |  |  |                                         | TRAP  | C\$CLP1  |
| 3926 | 057772 | 013701 | 060570 |        | MOV    | T34BFR+6,R1         |  |  | ;PICK UP XSTO                           |       |          |
| 3927 | 057776 | 010102 |        |        | MOV    | R1,R2               |  |  | ;SET UP EXPECTED                        |       |          |
| 3928 | 060000 | 052702 | 000001 |        | BIS    | #BIT0,R2            |  |  | ;SET THE EOT BIT ON IN EXPECTED         |       |          |
| 3929 | 060004 | 020102 |        |        | CMP    | R1,R2               |  |  | ;WAS THE BIT ON                         |       |          |
| 3930 | 060006 | 001406 |        |        | BEQ    | 240\$               |  |  | ;BR, IF EOT WAS FOUND                   |       |          |
| 3931 | 060010 | 005237 | 002214 |        | INC    | FATFLG              |  |  | ;ERROR COUNT                            |       |          |
| 3935 | 060014 |        |        |        | ERRHRD | ERRNO,T34ETZ,EXPREC |  |  | ;EOT BIT (XSTO) NOT SET                 |       |          |
|      | 060014 | 104456 |        |        |        |                     |  |  |                                         | TRAP  | C\$ERHRD |
|      | 060016 | 001156 |        |        |        |                     |  |  |                                         | .WORD | 622      |
|      | 060020 | 061622 |        |        |        |                     |  |  |                                         | .WORD | T34ETZ   |
|      | 060022 | 015554 |        |        |        |                     |  |  |                                         | .WORD | EXPREC   |
| 3936 | 060024 |        |        | 240\$: | CKLOOP |                     |  |  | ;LOOP IF SELECTED                       |       |          |
|      | 060024 | 104406 |        |        |        |                     |  |  |                                         | TRAP  | C\$CLP1  |
| 3937 | 060026 | 012737 | 140410 | 060660 | MOV    | #140410,T34PK3      |  |  | ;SPACE RECORDS REVERSE, ACK, CVC=1 CMD. |       |          |
| 3938 | 060034 | 012737 | 000005 | 060662 | MOV    | #5,T34RB            |  |  | ;NUMBER OF RECORDS TO SPACE             |       |          |
| 3939 | 060042 | 012704 | 060660 |        | MOV    | #T34PK3,R4          |  |  | ;R4 = POINTER TO PACKET                 |       |          |
| 3940 | 060046 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |  |  | ;ISSUE COMMAND                          |       |          |
| 3941 | 060052 | 004737 | 016330 |        | JSR    | PC,WAITF            |  |  | ;WAIT FOR SSR TO SET                    |       |          |
| 3942 | 060056 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |  |  | ;GET TSSR CONTENTS                      |       |          |

```

;SET UP EXPECTED
;ARE THEY EQUAL
;BR, IT MIGHT BE END OF TAPE
;ERROR COUNT
;POSITION COMMAND DIDN'T WORK
                                TRAP
                                .WORD
                                .WORD
                                .WORD
                                CIERMRD
                                623
                                T34POS
                                PKTSSR

```

```

;LOOP IF SELECTED
;WORD
;PR133A
;TRAP
;C0CLP1

```

```

;PICK UP XSTO
;SET UP EXPECTED
;CLEAR THE EOT BIT ON IN EXPECTED
;WAS THE BIT ON
;BR. IF EOT WAS FOUND
;ERROR COUNT
;EOT BIT (XSTO) NOT CLEAR

```

```

TRAP      CIERHRD
WORD      624
WORD      T34ETC
WORD      EXPREC

```

```

;LOOP IF SELECTED                                TRAP      C:CLP1
;SPACE RECORDS FORWARD, ACK, CVC-1 CMD.
;NUMBER OF RECORDS TO SPACE
;R4 = POINTER TO PACKET
;ISSUE COMMAND
;WAIT FOR SSR TO SET
;GET TSSR CONTENTS
;SET UP EXPECTED
;ARE THEY EQUAL
;BR. IT MIGHT BE END OF TAPE
;ERROR COUNT
;TSSR NOT CORRECT

```

```

;TSSR NOT CORRECT
                                TRAP      C$ERRRD
                                .WORD     625
                                .WORD     T34ET
                                .WORD     PKTSSR
;LOOP IF SELECTED
                                TRAP      C$CLP1

```

```

;PICK UP XSTO
;SET UP EXPECTED
;SET THE EOT BIT ON IN EXPECTED
;WAS THE BIT ON
;BR. IF EOT WAS FOUND
;LOOP IF SELECTED

```

```

;LOOP IF SELECTED
                                TRAP      C1CLP1
;SKIP FILE MARKS REVERSE,ACK,CVC-1 COMMAND

```

```

:NUMBER OF FILE MARKS
:RA - POINTER TO PACKET
:ISSUE COMMAND
:SET UP DELAY COUNTER
:WAIT FOR SSR TO SET
:GET ISSR CONTENTS
:CHECK FOR SSR SET
:BR, WHEN SSR IS SET

```

SEQ 171

```

;WAIT ABOUT .25 SECONDS      MOV        #250,(PC).  
                                .WORD       0  
                                MOV         L$DL1,(PC).  
                                .WORD       0  
                                DEC          -6(PC)  
                                BNE         . 4  
                                DEC          22(PC)  
                                BNE         . 20  
  
;BUMP COUNTER  
;BR, IF MORE TO COUNT  
;SET UP EXPECTED  
;ARE THEY EQUAL  
;BR, IT MIGHT BE END OF TAPE  
;DEC RECORD COUNTER  
    ;ERROR COUNT  
;EOT NOT FOUND (USE SHORTER TAPE?)  
                                TRAP        C$ERMHD  
                                .WORD       626  
                                .WORD      T34ET  
                                .WORD     PKTSSR  
  
;CHECK FOR TAPE STATUS ALERT  
;PICK UP XSTO  
;SET UP EXPECTED  
;CLEAR THE EOT BIT IN EXPECTED  
;WAS THE BIT ON  
;BR, IF EOT WAS FOUND  
    ;ERROR COUNT  
;EOT BIT (XSTO) NOT CLEAR  
                                TRAP        C$ERMHD  
                                .WORD       627  
                                .WORD      T34ETC  
                                .WORD     EXPREC  
  
;LOOP IF SELECTED  
                                TRAP        C$CLP1  
  
;PICK UP XSTO  
;SET UP EXPECTED  
;SET THE BOT BIT ON IN EXPECTED  
;WAS THE BIT ON  
;BR, IF BOT WAS FOUND  
    ;ERROR COUNT  
;EOT BIT (xsto) NOT CLEAR  
                                TRAP        C$ERMHD  
                                .WORD       628  
                                .WORD      T34BOT  
                                .WORD     EXPREC  
  
;LOOP IF SELECTED  
                                TRAP        C$CLP1  
  
;>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>  
                        END SUBTEST >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>  
                            L10062:  
                                TRAP        C$ESUB  
                ;IS ERROR COUNT AT 25  
                ;BR, IF LESS THAN 25  
                ;TRY TO DROP THE UNIT  
  
;DO WE NEED TO ITERATE TEST
```

TEST 1: HARDWARE TEST 1.8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 6: OPERATIONS AT EOT

SEQ 172

|      |        |        |        |            |         |         |  |  |  |
|------|--------|--------|--------|------------|---------|---------|--|--|--|
| 4035 | 060520 | 103002 |        | BCC        | 1638    |         |  |  |  |
| 4036 | 060522 | 000137 | 056072 | JMP        | T34LOOP |         |  |  |  |
| 4037 | 060526 |        |        | 1638:      | EXIT    | TST     |  |  |  |
|      | 060526 | 104432 |        |            |         |         |  |  |  |
|      | 060530 | 002662 |        |            |         |         |  |  |  |
| 4038 |        |        |        |            |         |         |  |  |  |
| 4039 |        |        |        |            |         |         |  |  |  |
| 4040 |        |        |        |            |         |         |  |  |  |
| 4042 |        | 060540 |        |            |         |         |  |  |  |
| 4044 | 060540 |        |        | T34PACKET: |         |         |  |  |  |
| 4045 | 060540 | 100004 |        |            | .WORD   | 100004  |  |  |  |
| 4046 | 060542 | 060550 |        |            | .WORD   | T34DATA |  |  |  |
| 4047 | 060544 | 000000 |        |            | .WORD   | 0       |  |  |  |
| 4048 | 060546 | 000010 |        |            | .WORD   | 8.      |  |  |  |
| 4049 | 060550 |        |        | T34DATA:   |         |         |  |  |  |
| 4050 | 060550 | 060562 |        |            | .WORD   | T34BFR  |  |  |  |
| 4051 | 060552 | 000000 |        |            | .WORD   | 0       |  |  |  |
| 4052 | 060554 | 000012 |        |            | .WORD   | 10.     |  |  |  |
| 4053 | 060556 | 000000 |        |            | .WORD   | 0       |  |  |  |
| 4054 | 060560 | 000000 |        | T34DSW:    | .WORD   | 0       |  |  |  |
| 4055 | 060562 |        |        | T34BFR:    | .BLKW   | 25.     |  |  |  |
| 4056 |        |        |        |            |         |         |  |  |  |
| 4057 |        |        |        |            |         |         |  |  |  |
| 4058 |        |        |        |            |         |         |  |  |  |
| 4060 |        | 060650 |        |            |         |         |  |  |  |
| 4062 | 060650 |        |        | T34PK2:    |         |         |  |  |  |
| 4063 | 060650 | 100006 |        |            | .WORD   | 100006  |  |  |  |
| 4064 | 060652 | 060676 |        |            | .WORD   | T34BF2  |  |  |  |
| 4065 | 060654 | 000000 |        |            | .WORD   | 0       |  |  |  |
| 4066 | 060656 | 000006 |        |            | .WORD   | 6.      |  |  |  |
| 4067 |        |        |        |            |         |         |  |  |  |
| 4071 | 060660 |        |        | T34PK3:    |         |         |  |  |  |
| 4072 | 060660 | 100005 |        |            | .WORD   | 100005  |  |  |  |
| 4073 | 060662 |        |        | T34RB:     |         |         |  |  |  |
| 4074 | 060662 | 000000 |        | T34WB:     | .WORD   | 0       |  |  |  |
| 4075 | 060664 | 000000 |        |            | .WORD   | 0       |  |  |  |
| 4076 | 060666 | 000000 |        | T34SZ:     | .WORD   | 0       |  |  |  |
| 4077 |        |        |        |            | .EVEN   |         |  |  |  |
| 4078 |        |        |        |            |         |         |  |  |  |
| 4079 | 060670 | 000000 |        | T34RSZ:    | .WORD   | 0       |  |  |  |
| 4080 | 060672 | 000000 |        | T34CNT:    | .WORD   | 0       |  |  |  |
| 4081 | 060674 | 000000 |        | T34DLY:    | .WORD   | 0       |  |  |  |
| 4082 |        |        |        |            |         |         |  |  |  |
| 4083 |        |        |        |            |         |         |  |  |  |
| 4084 | 060676 |        |        | T34BF2:    |         |         |  |  |  |
| 4085 | 060676 | 010    |        | T34BS0:    | .BYTE   | 10      |  |  |  |
| 4086 | 060677 | 200    |        | T34BS1:    | .BYTE   | 200     |  |  |  |
| 4087 | 060700 | 000000 |        | T34S2:     | .WORD   | 0       |  |  |  |
| 4088 | 060702 | 000000 |        | T34S3:     | .WORD   | 0       |  |  |  |
| 4089 |        |        |        |            |         |         |  |  |  |
| 4090 |        |        |        |            |         |         |  |  |  |
| 4091 |        |        |        |            |         |         |  |  |  |
| 4092 |        |        |        |            |         |         |  |  |  |
| 4093 |        |        |        |            |         |         |  |  |  |
| 4094 | 060704 | 100005 |        | T34WD:     | .WORD   | 100005  |  |  |  |
| 4095 | 060706 | 100405 |        | T34WDR:    | .WORD   | 100405  |  |  |  |
| 4096 | 060710 | 102005 |        | T34CON:    | .WORD   | 102005  |  |  |  |

;BR, IF NO LOOP REQUIRED  
 ;EXECUTE AGAIN  
 ;ALL DONE THIS TEST

TRAP CEXIT  
 .WORD L10061..

;COMMAND PACKET FOR TEST  
 ;WRITE CHARACTERISTICS COMMAND, WITH ACK  
 ;ADDRESS OF CHARACTERISTICS BLOCK

;STARTING VALUE OF BLOCK SIZE  
 ;CHARACTERISTICS DATA BLOCK  
 ;ADDRESS OF MESSAGE BUFFER

;LENGTH OF MESSAGE BUFFER

;SELECT DRIVE 0  
 ;MESSAGE BUFFER

;WRITE SUB SYS MEM COMMAND, AND ACK  
 ;ADDRESS OF SELECT BLOCK DATA

;SIZE OF DATA PACKET

;WRITE COMMAND, AND ACK

;ADDRESS OF WRITE/READ BUFFER

;SIZE OF BUFFER (EXTENT)

;LARGEST TAPE RECORD IN BITES  
 ;TAPE RECORD COUNTER  
 ;DELAY COUNTER

;BSEL0 AREA  
 ;BSEL1 AREA  
 ;SEL 2 AREA  
 ;DATA AREA

;TAPE MOTION PACKET COMMAND VALUES

;WRITE DATA (NEXT)  
 ;WRITE DATA RETRY  
 ;WRITE CONTINUOUS

TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 6: OPERATIONS AT EOT

SEQ 173

```

4097 060712 177777 .WORD 177777 ;END OF DATA
4098
4099 ;LOCAL TEXT MESSAGES FOR TEST
4100 ;
4101
4102 060714 124 123 123 T34POS: .ASCIZ 'TSSR Incorrect After Position (SPACE RECORDS) Command'
4103 061002 127 122 111 T34ETO: .ASCIZ 'WRITE TAPE MARK At EOT Failed To Set EOT Bit (XSTO)'
4104 061066 122 105 101 T34RRE: .ASCIZ 'READ Command At EOT Didn't Give Normal Termination (TSSR)'
4105 061157 125 156 141 T34ETC: .ASCIZ 'Unable To Clear EOT Indication, (XSTO) Bit 0'
4106 061234 122 105 127 T34BOT: .ASCIZ 'REWIND Failed To Set BOT (XSTO) Bit'
4107 061300 127 122 111 T34WTM: .ASCIZ 'WRITE TAPE MARK At EOT Failed To Set Tape Status Alert'
4108 061367 127 122 111 T34ET2: .ASCIZ 'WRITE DATA At EOT Failed To Set Tape Status Alert'
4109 061451 127 122 111 T34ETN: .ASCIZ 'WRITE DATA At EOT Failed To Set EOT Bit (XSTO)'
4110 061530 123 120 101 T34ETS: .ASCIZ 'SPACE RECORDS FORWARD At EOT Failed To Set EOT Bit (XSTO)'
4111 061622 122 105 101 T34ETZ: .ASCIZ 'READ DATA At EOT Failed To Set EOT Bit (XSTO)'
4112 061700 124 123 123 T34STM: .ASCIZ 'TSSR Incorrect After SKIP TAPE MARK REVERSE At EOT'
4113 061763 120 117 123 T34TMK: .ASCIZ 'POSITION Command At EOT Onto Tape Mark Failed To Set TMK (XSTO)'
4114 062063 127 122 111 T34SSR: .ASCIZ 'WRITE Command Not Accepted'
4115 062116 105 117 124 T34ET: .ASCIZ 'EOT Not Found In 65000 3.5K Writes, (Use Shorter Tape)'
4116 062205 127 122 111 T34EOT: .ASCIZ 'WRITE DATA OVER EOT GAVE NO TAPE STATUS ALERT'
4117 062263 124 123 123 T34TM: .ASCIZ 'TSSR Not Correct After WRITE Command Reject'
4118 062337 122 145 167 T34RWN: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
4119 062406 122 101 115 T34RNC: .ASCIZ 'RAM Error, Correct Data Pattern Not In Ram'
4120 062461 124 123 123 T34AM3: .ASCIZ 'TSSR Init. Failed After WRITE Command'
4121 062527 104 162 151 T34OFL: .ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
4122 062602 124 123 123 T34WDD: .ASCIZ 'TSSR Not Correct After WRITE DATA Command, SWB Bit Set'
4123 062671 124 123 123 T34WDC: .ASCIZ 'TSSR Not Correct After WRITE DATA Command, Check For Tape Offline'
4124 062773 103 126 103 T34VCK: .ASCIZ 'CVC Set, Didn't Reset VCK In Message Buffer'
4125 063046 124 123 102 T34BA: .ASCIZ 'TSBA Not Correct After WRITE DATA Command'
4126 063120 127 122 111 T34WSS: .ASCIZ 'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'
4127 063207 117 160 145 TST34ID: .ASCIZ 'Operations At EOT'
4128 .EVEN
4129 ;
4130 ;
4131 ;ROUTINE TO RESTORE COMMAND PACKET TO START UP (DEFAULT) VALUES
4132 ;WRITE SUBSYSTEM MEMORY COMMAND
4133 ;
4134 ;
4135 ;
4136 063232 T34REST:
4137 063232 SAVREG
4138 063236 012701 060540 MOV #T34PACKET,R1 ;SAVE THE REGISTERS
4139 063242 012721 100004 MOV #100004,(R1) ;START OF THE PACKET
4140 063246 012721 060550 MOV #T34DATA,(R1) ;WRITE SUBSYSTEM MEM. WITH ACK
4141 063252 005021 CLR (R1) ;ADDRESS OF CHARAISTICS DATA BLOCK
4142 063254 012721 000012 MOV #10.,(R1) ;EXTENDED ADDRESS
4143 063260 012721 060562 MOV #T34BFR,(R1) ;SIZE OF DATA BLOCK IN BYTES
4144 063264 005021 CLR (R1) ;ADDRESS OF MESSAGE BUFFER
4145 063266 012721 000024 MOV #20.,(R1) ;LENGTH OF MESSAGE BUFFER
4146 063272 005021 CLR (R1)
4147 063274 012711 000000 MOV #0,(R1) ;SELECT DRIVE ZERO
4148 063300 012702 000030 MOV #24.,R2 ;NUMBER OF LOCATIONS TO BE CLEARED
4149 063304 012762 177777 060562 64: MOV #177777,T34BFR(R2) ;ALL ONES TO MESSAGE BUFFER
4150 063312 005742 TST -(R2) ;BUMP DOWN TO NEXT LOCATION
4151 063314 020227 000000 CMP R2,#0 ;R2 AT ZERO YET
4152 063320 001371 BNE 64: ;KEEP GOING UNTIL DONE
4153 063322 000207 RTS PC ;RETURN

```





|      |        |          |        |        |                                                                 |
|------|--------|----------|--------|--------|-----------------------------------------------------------------|
| 4212 |        | :        |        |        | IMMEDIATE TERMINATION BUT NO INTERRUPT. STATUS IN THE MESSAGE   |
| 4213 |        | :        |        |        | BUFFER IS CHECKED TO VERIFY THAT THE MOTION (MOT) AND OPERATION |
| 4214 |        | :        |        |        | IN PROGRESS (OPM) STATUS BITS ARE BOTH SET.                     |
| 4215 |        | :        |        |        |                                                                 |
| 4216 |        | :        |        |        |                                                                 |
| 4217 |        | :        |        |        |                                                                 |
| 4218 |        | :        |        |        |                                                                 |
| 4219 |        | :        |        |        |                                                                 |
| 4220 |        | :        |        |        |                                                                 |
| 4221 |        | :        |        |        |                                                                 |
| 4222 | 063444 | T35LOOP: |        |        |                                                                 |
| 4223 | 063444 | BGNSUB   |        |        | ; >>>>>>>>> BEGIN SUBTEST >>>>>>>>>                             |
|      | 063444 |          |        |        | T7.1:                                                           |
|      | 063444 | 104402   |        |        | TRAP C\$BSUB                                                    |
| 4224 | 063446 | 004737   | 073164 | JSR    | PC,T35REST ;SET COMMAND PACKET                                  |
| 4225 | 063452 | 005037   | 002216 | CLR    | INTRECV ;CLEAR INTERRUPT RECEIVED FLAG                          |
| 4226 | 063456 | 004737   | 073256 | JSR    | PC,T35RT2 ;SET UP OTHER COMMAND PACKET                          |
| 4227 | 063462 | 004737   | 073320 | JSR    | PC,T35RT3 ;SET UP OTHER COMMAND PACKET                          |
| 4228 | 063466 | 012737   | 176750 | MOV    | #65000.,T35DLY ;SET UP DELAY COUNTER                            |
| 4229 | 063474 | 005037   | 067536 | CLR    | T35CNT ;CLEAR COUNTER                                           |
| 4230 | 063500 | 004737   | 016054 | JSR    | PC,SOFINIT ;DO INITIALIZE ON CONTROLLER                         |
| 4231 | 063504 | 103426   |        | BCS    | 20\$ ;BR IF INIT WAS OK                                         |
| 4232 | 063506 |          |        | DELAY  | 250 ;DELAY ABOUT .25 SEC                                        |
|      | 063506 | 012727   | 000250 |        | MOV #250,(PC)+                                                  |
|      | 063512 | 000000   |        |        | .WORD 0                                                         |
|      | 063514 | 013727   | 002116 |        | MOV L\$DLY,(PC)+                                                |
|      | 063520 | 000000   |        |        | .WORD 0                                                         |
|      | 063522 | 005367   | 177772 |        | DEC 6(PC)                                                       |
|      | 063526 | 001375   |        |        | BNE .-4                                                         |
|      | 063530 | 005367   | 177756 |        | DEC 22(PC)                                                      |
|      | 063534 | 001367   |        |        | BNE .-20                                                        |
| 4233 | 063536 | 005337   | 067542 | DEC    | T35DLY ;BUMP COUNTER                                            |
| 4234 | 063542 | 001356   |        | BNE    | 10\$ ;BR, IF COUNTER NOT DONE                                   |
| 4235 | 063544 | 005237   | 002214 | INC    | FATFLG ;ERROR COUNT                                             |
| 4239 | 063550 | 010001   |        | MOV    | R0,R1 ;CONTENTS OF TSSR REGISTER                                |
| 4240 | 063552 |          |        | ERRDF  | ERRNO,SFIERR,SFMSG ;FATAL ERROR TSSR WAS NOT OK                 |
|      | 063552 | 104455   |        |        | TRAP C\$ERDF                                                    |
|      | 063554 | 001275   |        |        | .WORD 701                                                       |
|      | 063556 | 003646   |        |        | .WORD SFIERR                                                    |
|      | 063560 | 012114   |        |        | .WORD SFMSG                                                     |
| 4241 | 063562 | 013737   | 002174 | MOV    | UNITN,T35DSW ;SET UP DRIVE NUMBER                               |
| 4242 | 063570 | 012704   | 067370 | MOV    | #T35PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS                  |
| 4243 | 063574 | 004737   | 010742 | JSR    | PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS                          |
| 4244 | 063600 | 103407   |        | BCS    | 25\$ ;BR, IF COMMAND ISSUED OK                                  |
| 4245 | 063602 | 005237   | 002214 | INC    | FATFLG ;ERROR COUNT                                             |
| 4249 | 063606 | 010001   |        | MOV    | R0,R1 ;SAVE CONTENTS OF TSSR                                    |
| 4250 | 063610 |          |        | ERRHRD | ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTIC FAILED                 |
|      | 063610 | 104456   |        |        | TRAP C\$ERRHRD                                                  |
|      | 063612 | 001276   |        |        | .WORD 702                                                       |
|      | 063614 | 005052   |        |        | .WORD WRTMSG                                                    |
|      | 063616 | 012114   |        |        | .WORD SFMSG                                                     |
| 4251 | 063620 |          |        |        | ; LOOP IF SELECTED                                              |
|      | 063620 | 104406   |        |        | TRAP C\$CLP1                                                    |
| 4252 | 063622 | 004737   | 011074 | JSR    | PC,REWIND ;CALL TAPE REWIND COMMAND                             |
| 4253 | 063626 | 103411   |        | BCS    | 30\$ ;BR, IF NO PROBLEM                                         |
| 4254 | 063630 | 010004   |        | MOV    | R0,R4 ;SET UP REWIND PACKET ADDRESS                             |
| 4255 | 063632 | 016501   | 000002 | MOV    | TSSR(R5),R1 ;GET TSSR FOR PRINTOUT                              |

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 TEST 7: EXTENDED MODE FEATURES

SEQ 176

```

4256 063636 005237 002214          INC    FATFLG          ;ERROR COUNT
4260 063642          ERRHRD  ERRNO,T35RWN,PKTSSR          ;REWIND NOT ACCEPTED
      063642 104456
      063644 001277          TRAP    C$ERHRD
      063646 070644          .WORD  703
      063650 012126          .WORD  T35RWN
      063652          .WORD  PKTSSR
4261 063652          30$:  CKLOOP          ;LOOP IF SELECTED          TRAP    C$CLP1
      063652 104406
4262 063654 013701 067420          MOV    T35BFR+6,R1          ;PICK UP XSTO
4263 063660 010102          MOV    R1,R2          ;SET UP EXPECTED
4264 063662 052702 000002          BIS    @BIT1,R2          ;SET BOT BIT IN EXPECTED
4265 063666 020102          CMP    R1,R2          ;DOES EXP = REC'D
4266 063670 001406          BEQ    40$          ;BR, IF EQUAL (OK)
4267 063672 005237 002214          INC    FATFLG          ;ERROR COUNT
4271 063676          ERRHRD  ERRNO,T35BOT,EXPREC          ;TAPE NOT AT BOT AFTER REWIND
      063676 104456          TRAP    C$ERHRD
      063700 001300          .WORD  704
      063702 070340          .WORD  T35BOT
      063704 015554          .WORD  EXPREC
4272 063706          40$:  CKLOOP          ;LOOP IF SELECTED          TRAP    C$CLP1
      063706 104406
4273 063710 012703 000024          MOV    @20.,R3          ;NUMBER OF RECORDS
4274 063714 012737 000400 067516          MOV    @256.,T35SZ          ;SET UP RECORD SIZE
4275 063722 013737 003116 067512          MOV    FREE,T35WB          ;ADDRESS OF WRITE BUFFER
4276
4277          ;*****
4278          ;
4279          ;WRITE DATA,ACK,CVC=1 COMMAND
4280          ;
4281          ;*****
4282
4283 063730 012737 140005 067510          MOV    @140005,T35PK3          ;WRITE DATA,ACK,CVC=1 COMMAND
4284 063736 012704 067510          MOV    @T35PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
4285 06374 010465 000000          50$:  MOV    R4,T35DB(R5)          ;ISSUE COMMAND
4286 063746 004737 016330          JSR    PC,WAITF          ;WAIT FOR SSR TO SET
4287 063752 016501 000002          MOV    TSSR(R5),R1          ;GET TSSR CONTENTS
4288 063756 012702 000200          MOV    @SSR,R2          ;SET UP EXPECTED
4289 063762 020102          CMP    R1,R2          ;ARE THEY EQUAL
4290 063764 001406          BEQ    60$          ;BR, IF OK
4291 063766 005237 002214          INC    FATFLG          ;ERROR COUNT
4295 063772          ERRHRD  ERRNO,T35WDE,PKTSSR          ;TSSR INCORRECT AFTER WRITE DATA
      063772 104456          TRAP    C$ERHRD
      063774 001301          .WORD  705
      063776 070266          .WORD  T35WDE
      064000 012126          .WORD  PKTSSR
4296 064002          60$:  CKLOOP          ;LOOP IF SELECTED          TRAP    C$CLP1
      064002 104406
4297 064004 005303          DEC    R3          ;BUMP RECORD COUNTER
4298 064006 001355          BNE    50$          ;BR, IF MORE RECORDS TO COUNT
4299
4300          ;*****
4301          ;
4302          ;WAIT FOR TAPE TO STOP ALL MOTION
4303          ;
4304          ;*****
4305
4306 064010 012737 000012 067542          MOV    @10.,T35DLY          ;SET UP DELAY COUNTER

```



TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 7: EXTENDED MODE FEATURES

SEQ 177

```

4307 064016          70$:  DELAY  250          ;WAIT ABOUT .25 SEC
      064016 012727 000250
      064022 000000
      064024 013727 002116
      064030 000000
      064032 005367 177772
      064036 001375
      064040 005367 177756
      064044 001367
4308 064046 005337 067542          DEC      T35DLY          ;BUMP COUNTER DOWN
4309 064052 001361          BNE      70$          ;BR, IF MORE TO DELAY
4310 064054 005737 002220          TST      EXTFEA          ;CHECK FOR EXTENDED FEATURES SW SWITCH
4311 064060 001042          BNE      110$          ;BR IF SWITCH IS ON
4312 064062 112737 000200 067521      MOVB     #200,T35BS1      ;WRITE MISCELLANEOUS CONT/READ STATUS
4313 064070 112737 000010 067520      MOVB     #10,T35BS0      ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
4314 064076 012704 067500          MOV      #T35PK2,R4      ;WRITE SUBSYS MEM PACKET
4315 064102 010465 000000          MOV      R4,TSD8(R5)      ;ISSUE COMMAND
4316 064106 004737 016416          JSR      PC,CHKTSSR      ;WAIT FOR SSR
4317 064112 103407          BCS      90$          ;BR, IF NO ERROR
4318 064114 010001          MOV      R0,R1          ;ERROR, SAVE TSSR
4319 064116 005237 002214          INC      FATFLG          ;ERROR COUNT
4323 064122          ERRHRD  ERRNO,T35SSR,PKTSSR      ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
      064122 104456          TRAP      C$ERHRD
      064124 001302          .WORD     706
      064126 072422          .WORD     T35SSR
      064130 012126          .WORD     PKTSSR
4324 064132          90$:  CKLOOP          ;LOOP IF SELECTED
      064132 104406          TRAP      C$CLP1
4325 064134 012704 067370          MOV      #T35PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
4326 064140 004737 010742          JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
4327 064144 103407          BCS      100$          ;BR, IF COMMAND ISSUED OK
4328 064146 005237 002214          INC      FATFLG          ;ERROR COUNT
4332 064152 010001          MOV      R0,R1          ;SAVE CONTENTS OF TSSR
4333 064154          ERRHRD  ERRNO,WRTMSG,SFMSG      ;WRITE CHARACTERISTICS FAILED
      064154 104456          TRAP      C$ERHRD
      064156 001303          .WORD     707
      064160 005052          .WORD     WRTMSG
      064162 012114          .WORD     SFMSG
4334 064164          100$: CKLOOP          ;SCOPE LOOP
      064164 104406          TRAP      C$CLP1
4335 064166 012737 176750 067542 110$:  MOV      #65000.,T35DLY      ;SET UP DELAY COUNTER
4336 064174 005037 067536          CLR      T35CNT          ;DELAY COUNTER
4337
4338          ;*****
4339          ;
4340          ;REWIND IMED. INTERRUPT,ACK,CVC=1,IE=0 COMMAND
4341          ;
4342          ;*****
4343
4344 064200 012737 142012 067510      MOV      #142012,T35PK3      ;REWIND IMED. INTERRUPT,ACK,CVC=1,IE=0 COMMAND
4345 064206 012704 067510          MOV      #T35PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
4346 064212 010465 000000          MOV      R4,TSD8(R5)      ;ISSUE COMMAND
4347 064216 016501 000002          MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
4348 064222 032701 000200          BIT      #SSR,R1          ;CHECK FOR SSR SET
4349 064226 001021          BNE      130$          ;BR, WHEN SSR IS SET
4350 064230 005237 067536          INC      T35CNT          ;BUMP THE CYCLE COUNTER
4351 064234          DELAY  1          ;DELAY TO KEEP COUNTER DOWN

```

TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 7: EXTENDED MODE FEATURES

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|        |        |        |        |        |        |                     |                                  |
|--------|--------|--------|--------|--------|--------|---------------------|----------------------------------|
| 064234 | 012727 | 000001 |        |        |        | MOV                 | #1,(PC)+                         |
| 064240 | 000000 |        |        |        |        | .WORD               | 0                                |
| 064242 | 013727 | 002116 |        |        |        | MOV                 | L\$DLY,(PC)+                     |
| 064246 | 000000 |        |        |        |        | .WORD               | 0                                |
| 064250 | 005367 | 177772 |        |        |        | DEC                 | -6(PC)                           |
| 064254 | 001375 |        |        |        |        | BNE                 | .-4                              |
| 064256 | 005367 | 177756 |        |        |        | DEC                 | -22(PC)                          |
| 064262 | 001367 |        |        |        |        | BNE                 | . 20                             |
| 4352   | 064264 | 005337 | 067542 |        | DEC    | T35DLY              | ;DROP DEAD TIMER BUMP DOWN       |
| 4353   | 064270 | 001352 |        |        | BNE    | 120\$               | ;BR, IF MORE TIME TO GO          |
| 4354   | 064272 | 012702 | 000200 | 130\$: | MOV    | #SSR,R2             | ;SET UP EXPECTED                 |
| 4355   | 064276 | 020102 |        |        | CMP    | R1,R2               | ;ARE THEY EQUAL                  |
| 4356   | 064300 | 001406 |        |        | BEQ    | 140\$               | ;BR, IF OK                       |
| 4357   | 064302 | 005237 | 002214 |        | INC    | FATFLG              | ;ERROR COUNT                     |
| 4361   | 064306 |        |        |        | ERRHRD | ERRNO,T35RWE,PKTSSR | ;TSSR INCORRECT AFTER WRITE DATA |
|        | 064306 | 104456 |        |        |        |                     | TRAP                             |
|        | 064310 | 001304 |        |        |        |                     | .WORD                            |
|        | 064312 | 072770 |        |        |        |                     | .WORD                            |
|        | 064314 | 012126 |        |        |        |                     | .WORD                            |
| 4362   | 064316 |        |        | 140\$: | CKLOOP |                     | ;LOOP IF SELECTED                |
|        | 064316 | 104406 |        |        |        |                     | TRAP                             |
| 4363   | 064320 | 005737 | 002216 |        | TST    | INTRECV             | ;CHECK FOR INTERRUPTS            |
| 4364   | 064324 | 001410 |        |        | BEQ    | 150\$               | ;BR, IF NO INTERRUPTS DETECTED   |
| 4365   | 064326 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         | ;GET TSSR STATUS FOR PRINTOUT    |
| 4366   | 064332 | 005237 | 002214 |        | INC    | FATFLG              | ;ERROR COUNT                     |
| 4370   | 064336 |        |        |        | ERRHRD | ERRNO,T35INT,PKTSSR | ;INTERRUPT RECEIVED (BAD)        |
|        | 064336 | 104456 |        |        |        |                     | TRAP                             |
|        | 064340 | 001305 |        |        |        |                     | .WORD                            |
|        | 064342 | 072601 |        |        |        |                     | .WORD                            |
|        | 064344 | 012126 |        |        |        |                     | .WORD                            |
| 4371   | 064346 |        |        | 150\$: | CKLOOP |                     | ;LOOP IF SELECTED                |
|        | 064346 | 104406 |        |        |        |                     | TRAP                             |
| 4372   |        |        |        |        |        |                     | C\$CLP1                          |
| 4373   |        |        |        |        |        |                     |                                  |
| 4374   |        |        |        |        |        |                     |                                  |
| 4375   |        |        |        |        |        |                     |                                  |
| 4376   |        |        |        |        |        |                     |                                  |
| 4377   |        |        |        |        |        |                     |                                  |
| 4378   |        |        |        |        |        |                     |                                  |
| 4379   | 064350 | 013701 | 067420 |        | MOV    | T35BFR+6,R1         | ;PICK UP XST0                    |
| 4380   | 064354 | 010102 |        |        | MOV    | R1,R2               | ;SET UP EXPECTED                 |
| 4381   | 064356 | 052702 | 000200 |        | BIS    | #BIT7,R2            | ;SET MOT BIT IN EXPECTED         |
| 4382   | 064362 | 020102 |        |        | CMP    | R1,R2               | ;DOES EXP = REC'D                |
| 4383   | 064364 | 001406 |        |        | BEQ    | 160\$               | ;BR, IF EQUAL (OK)               |
| 4384   | 064366 | 005237 | 002214 |        | INC    | FATFLG              | ;ERROR COUNT                     |
| 4388   | 064372 |        |        |        | ERRHRD | ERRNO,T35MOT,EXPREC | ;TAPE NOT AT BOT AFTER REWIND    |
|        | 064372 | 104456 |        |        |        |                     | TRAP                             |
|        | 064374 | 001306 |        |        |        |                     | .WORD                            |
|        | 064376 | 072503 |        |        |        |                     | .WORD                            |
|        | 064400 | 015554 |        |        |        |                     | .WORD                            |
| 4389   | 064402 |        |        | 160\$: | CKLOOP |                     | ;LOOP IF SELECTED                |
|        | 064402 | 104406 |        |        |        |                     | TRAP                             |
| 4390   | 064404 | 013701 | 067424 |        | MOV    | T35BFR+12,R1        | ;PICK UP XST2                    |
| 4391   | 064410 | 010102 |        |        | MOV    | R1,R2               | ;SET UP EXPECTED                 |
| 4392   | 064412 | 052702 | 100000 |        | BIS    | #BIT15,R2           | ;SET OPM BIT IN EXPECTED         |
| 4393   | 064416 | 020102 |        |        | CMP    | R1,R2               | ;DOES EXP = REC'D                |
| 4394   | 064420 | 001406 |        |        | BEQ    | 170\$               | ;BR, IF EQUAL (OK)               |

| Address | Offset | Hex    | Dec    | Label  | Instruction         | Comments       | Register | Value |
|---------|--------|--------|--------|--------|---------------------|----------------|----------|-------|
| 4395    | 064422 | 005237 | 002214 |        | INC ERRHRD          | FATFLG         |          |       |
| 4399    | 064426 |        |        |        | ERRNO,T350PM,EXPREC |                |          |       |
|         | 064426 | 104456 |        |        |                     |                |          |       |
|         | 064430 | 001307 |        |        |                     |                |          |       |
|         | 064432 | 072672 |        |        |                     |                |          |       |
|         | 064434 | 015554 |        |        |                     |                |          |       |
| 4400    | 064436 |        |        | 170\$: | CKLOOP              |                |          |       |
|         | 064436 | 104406 |        |        |                     |                |          |       |
| 4401    | 064440 | 012737 | 000027 | 067542 | MOV                 | #23.,T35DLY    |          |       |
| 4402    | 064446 |        |        | 175\$: | DELAY               | 250            |          |       |
|         | 064446 | 012727 | 000250 |        |                     |                |          |       |
|         | 064452 | 000000 |        |        |                     |                |          |       |
|         | 064454 | 013727 | 002116 |        |                     |                |          |       |
|         | 064460 | 000000 |        |        |                     |                |          |       |
|         | 064462 | 005367 | 177772 |        |                     |                |          |       |
|         | 064466 | 001375 |        |        |                     |                |          |       |
|         | 064470 | 005367 | 177756 |        |                     |                |          |       |
|         | 064474 | 001367 |        |        |                     |                |          |       |
| 4403    | 064476 | 005337 | 067542 |        | DEC                 | T35DLY         |          |       |
| 4404    | 064502 | 001361 |        |        | BNE                 | 175\$          |          |       |
| 4405    | 064504 |        |        |        | ENDSUB              |                |          |       |
|         | 064504 |        |        |        |                     |                |          |       |
|         | 064504 | 104403 |        |        |                     |                |          |       |
| 4406    | 064506 | 023727 | 002214 | 000017 | CMP                 | FATFLG,#15.    |          |       |
| 4407    | 064514 | 103402 |        |        | BLO                 | 999\$          |          |       |
| 4408    | 064516 | 004737 | 017262 |        | JSR                 | PC,CKDROP      |          |       |
| 4409    | 064522 |        |        | 999\$: |                     |                |          |       |
| 4410    |        |        |        |        |                     |                |          |       |
| 4411    |        |        |        |        |                     |                |          |       |
| 4412    |        |        |        |        |                     |                |          |       |
| 4413    |        |        |        |        |                     |                |          |       |
| 4414    |        |        |        |        |                     |                |          |       |
| 4415    |        |        |        |        |                     |                |          |       |
| 4416    |        |        |        |        |                     |                |          |       |
| 4417    |        |        |        |        |                     |                |          |       |
| 4418    |        |        |        |        |                     |                |          |       |
| 4419    |        |        |        |        |                     |                |          |       |
| 4420    |        |        |        |        |                     |                |          |       |
| 4421    |        |        |        |        |                     |                |          |       |
| 4422    |        |        |        |        |                     |                |          |       |
| 4423    |        |        |        |        |                     |                |          |       |
| 4424    |        |        |        |        |                     |                |          |       |
| 4425    |        |        |        |        |                     |                |          |       |
| 4426    | 064522 |        |        |        | BGNSUB              |                |          |       |
|         | 064522 |        |        |        |                     |                |          |       |
|         | 064522 | 104402 |        |        |                     |                |          |       |
| 4427    | 064524 |        |        |        | SETPRI              | #PRI00         |          |       |
|         | 064524 | 012700 | 000000 |        |                     |                |          |       |
|         | 064530 | 104441 |        |        |                     |                |          |       |
| 4428    | 064532 | 004737 | 073164 |        | JSR                 | PC,T35REST     |          |       |
| 4429    | 064536 | 005037 | 002216 |        | CLR                 | INTRECV        |          |       |
| 4430    | 064542 | 004737 | 073256 |        | JSR                 | PC,T35RT2      |          |       |
| 4431    | 064546 | 004737 | 073320 |        | JSR                 | PC,T35RT3      |          |       |
| 4432    | 064552 | 012737 | 176750 | 067542 | MOV                 | #65000.,T35DLY |          |       |
| 4433    | 064560 | 005037 | 067536 |        | CLR                 | T35CNT         |          |       |
| 4434    | 064564 | 004737 | 016054 | 10\$:  | JSR                 | PC,SOFINIT     |          |       |
| 4435    | 064570 | 103426 |        |        | BCS                 | 20\$           |          |       |

| Address | Instruction | Comments | Register/Value | Label  | Operation | Value               |
|---------|-------------|----------|----------------|--------|-----------|---------------------|
| 4436    | 064572      | 012727   | 000250         |        | DELAY     | 250                 |
|         | 064576      | 000000   |                |        |           |                     |
|         | 064600      | 013727   | 002116         |        |           |                     |
|         | 064604      | 000000   |                |        |           |                     |
|         | 064606      | 005367   | 177772         |        |           |                     |
|         | 064612      | 001375   |                |        |           |                     |
|         | 064614      | 005367   | 177756         |        |           |                     |
|         | 064620      | 001367   |                |        |           |                     |
| 4437    | 064622      | 005337   | 067542         |        | DEC       | T35DLY              |
| 4438    | 064626      | 001356   |                |        | BNE       | 10\$                |
| 4439    | 064630      | 005237   | 002214         |        | INC       | FATFLG              |
| 4443    | 064634      | 010001   |                |        | MOV       | R0,R1               |
| 4444    | 064636      |          |                |        | ERRDF     | ERRNO,SFIERR,SFIMSG |
|         | 064636      | 104455   |                |        |           |                     |
|         | 064640      | 001310   |                |        |           |                     |
|         | 064642      | 003646   |                |        |           |                     |
|         | 064644      | 012114   |                |        |           |                     |
| 4445    | 064646      | 013737   | 002174         | 067410 | 20\$:     | MOV UNITN,T35DSW    |
| 4446    | 064654      | 012704   | 067370         |        | MOV       | #T35PACKET,R4       |
| 4447    | 064660      | 004737   | 010742         |        | JSR       | PC,WRTCHR           |
| 4448    | 064664      | 103407   |                |        | BCS       | 25\$                |
| 4449    | 064666      | 005237   | 002214         |        | INC       | FATFLG              |
| 4453    | 064672      | 010001   |                |        | MOV       | R0,R1               |
| 4454    | 064674      |          |                |        | ERRHRD    | ERRNO,WRTMSG,SFIMSG |
|         | 064674      | 104456   |                |        |           |                     |
|         | 064676      | 001311   |                |        |           |                     |
|         | 064700      | 005052   |                |        |           |                     |
|         | 064702      | 012114   |                |        |           |                     |
| 4455    | 064704      |          |                |        | 25\$:     | CKLOOP              |
|         | 064704      | 104406   |                |        |           |                     |
| 4456    | 064706      | 004737   | 011074         |        | JSR       | PC,REWIND           |
| 4457    | 064712      | 103411   |                |        | BCS       | 30\$                |
| 4458    | 064714      | 010004   |                |        | MOV       | R0,R4               |
| 4459    | 064716      | 016501   | 000002         |        | MOV       | TSSR(R5),R1         |
| 4460    | 064722      | 005237   | 002214         |        | INC       | FATFLG              |
| 4464    | 064726      |          |                |        | ERRHRD    | ERRNO,T35RWN,PKTSSR |
|         | 064726      | 104456   |                |        |           |                     |
|         | 064730      | 001312   |                |        |           |                     |
|         | 064732      | 070644   |                |        |           |                     |
|         | 064734      | 012126   |                |        |           |                     |
| 4465    | 064736      |          |                |        | 30\$:     | CKLOOP              |
|         | 064736      | 104406   |                |        |           |                     |
| 4466    | 064740      | 013701   | 067420         |        | MOV       | T35BFR+6,R1         |
| 4467    | 064744      | 010102   |                |        | MOV       | R1,R2               |
| 4468    | 064746      | 052702   | 000002         |        | BIS       | #BIT1,R2            |
| 4469    | 064752      | 020102   |                |        | CMP       | R1,R2               |
| 4470    | 064754      | 001406   |                |        | BEQ       | 40\$                |
| 4471    | 064756      | 005237   | 002214         |        | INC       | FATFLG              |
| 4475    | 064762      |          |                |        | ERRHRD    | ERRNO,T35BOT,EXPREC |
|         | 064762      | 104456   |                |        |           |                     |
|         | 064764      | 001313   |                |        |           |                     |
|         | 064766      | 070340   |                |        |           |                     |
|         | 064770      | 015554   |                |        |           |                     |
| 4476    | 064772      |          |                |        | 40\$:     | CKLOOP              |
|         | 064772      | 104406   |                |        |           |                     |
| 4477    | 064774      | 012703   | 000024         |        | MOV       | #20.,R3             |

TEST 1 HARDWARE TEST 1.8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 7: EXTENDED MODE FEATURES

SEQ 181

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4478 065000 012737 000400 067516      MOV      #256.,T35SZ      ;SET UP RECORD SIZE
4479 065006 013737 003116 067512      MOV      FREE,T35WB      ;ADDRESS OF WRITE BUFFER
4480
4481      ;*****
4482      ;
4483      ;WRITE DATA,ACK,CVC=1 COMMAND
4484      ;
4485      ;*****
4486
4487 065014 012737 140005 067510      MOV      #140005,T35PK3      ;WRITE DATA,ACK,CVC=1 COMMAND
4488 065022 012704 067510      MOV      #T35PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
4489 065026 010465 000000      50$:    MOV      R4,TSD8(R5)      ;ISSUE COMMAND
4490 065032 004737 016330      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
4491 065036 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
4492 065042 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
4493 065046 020102      CMP      R1,R2      ;ARE THEY EQUAL
4494 065050 001406      BEQ      60$      ;BR, IF OK
4495 065052 005237 002214      INC      FATFLG      ;ERROR COUNT
4499 065056      ERRHRD  ERRNO,T35WDE,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
                                TRAP      C$ERHRD
                                .WORD      716
                                .WORD      T35WDE
                                .WORD      PKTSSR
4500 065066      60$:    CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
4501
4502      ;*****
4503      ;
4504      ;WAIT FOR TAPE TO STOP ALL MOTION
4505      ;
4506      ;*****
4507
4508 065070 012737 000012 067542      70$:    MOV      #10.,T35DLY      ;SET UP DELAY COUNTER
4509 065076      DELAY      250      ;WAIT ABOUT .25 SEC
                                MOV      #250,(PC)+
                                .WORD      0
                                MOV      L$DLY,(PC)+
                                .WORD      0
                                DEC      -6(PC)
                                BNE      -.4
                                DEC      -22(PC)
                                BNE      -.20
4510 065126 005337 067542      DEC      T35DLY      ;BUMP COUNTER DOWN
4511 065132 001361      BNE      70$      ;BR, IF MORE TO DELAY
4512 065134 005737 002220      TST      EXTFEA      ;CHECK FOR EXTENDED FEATURES SW SWITCH
4513 065140 001042      BNE      110$      ;BR IF SWITCH IS ON
4514 065142 112737 000200 067521      MOVB     #200,T35BS1      ;WRITE MISCELLANEOUS CONT/READ STATUS
4515 065150 112737 000010 067520      MOVB     #10,T35BS0      ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
4516 065156 012704 067500      MOV      #T35PK2,R4      ;WRITE SUBSYS MEM PACKET
4517 065162 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
4518 065166 004737 016416      JSR      PC,CHKTSSR      ;WAIT FOR SSR
4519 065172 103407      BCS      90$      ;BR, IF NO ERROR
4520 065174 010001      MOV      R0,R1      ;ERROR, SAVE TSSR
4521 065176 005237 002214      INC      FATFLG      ;ERROR COUNT
4525 065202      ERRHRD  ERRNO,T35SSR,PKTSSR      ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
                                TRAP      C$ERHRD
                                .WORD      717
4526 065202 104456
4527 065204 001315

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TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 7: EXTENDED MODE FEATURES

SEQ 182

```

065206 072422 .WORD T35SSR
065210 012126 .WORD PKTSSR
4526 065212 104406 90$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
065212 012704 067370 MOV #T35PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
065214 004737 010742 JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
065224 103407 002214 BCS 100$ ;BR, IF COMMAND ISSUED OK
065226 005237 002214 INC FATFLG ;ERROR COUNT
065232 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
065234 010456 ERRHRD ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
065234 104456 TRAP C$ERHRD
065236 001316 .WORD 718
065240 005052 .WORD WRTMSG
065242 012114 .WORD SFMSG
4536 065244 104406 100$: CKLOOP ;SCOPE LOOP TRAP C$CLP1
065244 012737 176750 067542 110$: MOV #65000.,T35DLY ;SET UP DELAY COUNTER
065254 005037 067536 CLR T35CNT ;DELAY COUNTER
4539
4540 ;*****
4541 ;
4542 ;REWIND IMMEDIATE,ACK,CVC=1,IE=1 COMMAND
4543 ;
4544 ;*****
4545
4546 065260 012737 142212 067510 MOV #142212,T35PK3 ;REWIND IMMEDIATE,ACK,CVC=1,IE=1 COMMAND
4547 065266 012704 067510 MOV #T35PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
4548 065272 010465 000000 MOV R4,TSD8(R5) ;ISSUE COMMAND
4549 065276 016501 000002 120$: MOV TSSR(R5),R1 ;GET TSSR CONTENTS
4550 065302 032701 000200 BIT #SSR,R1 ;CHECK FOR SSR SET
4551 065306 001021 BNE 130$ ;BR, WHEN SSR IS SET
4552 065310 005237 067536 INC T35CNT ;BUMP THE CYCLE COUNTER
4553 065314 012727 000001 DELAY 1 ;DELAY TO KEEP COUNTER DOWN
065314 012727 000001 MOV #1,(PC)+
065320 000000 .WORD 0
065322 013727 002116 MOV L$DLY,(PC)+
065326 000000 .WORD 0
065330 005367 177772 DEC 6(PC)
065334 001375 BNE 4
065336 005367 177756 DEC -22(PC)
065342 001367 BNE -20
4554 065344 005337 067542 DEC T35DLY ;DROP DEAD TIMER BUMP DOWN
4555 065350 001352 BNE 120$ ;BR, IF MORE TIME TO GO
4556 065352 012702 000200 130$: MOV #SSR,R2 ;SET UP EXPECTED
4557 065356 020102 CMP R1,R2 ;ARE THEY EQUAL
4558 065360 001406 BEQ 140$ ;BR, IF OK
4559 065362 005237 002214 INC FATFLG ;ERROR COUNT
4563 065366 104456 ERRHRD ERRNO,T35RWE,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
065366 104456 TRAP C$ERHRD
065370 001317 .WORD 719
065372 072770 .WORD T35RWE
065374 012126 .WORD PKTSSR
4564 065376 104406 140$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
065376 005737 002216 TST INTRECV ;CHECK FOR INTERRUPTS
4565 065400 001010 BNE 150$ ;BR, IF INTERRUPTS DETECTED
4566 065404 016501 000002 MOV TSSR(R5),R1 ;GET TSSR STATUS FOR PRINTOUT

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| PC | PC+1 | PC+2 | PC+3 | PC+4 | PC+5 | PC+6 | PC+7 | PC+8 | PC+9 | PC+10 | PC+11 | PC+12 | PC+13 | PC+14 | PC+15 | PC+16 | PC+17 | PC+18 | PC+19 | PC+20 | PC+21 | PC+22 | PC+23 | PC+24 | PC+25 | PC+26 | PC+27 | PC+28 | PC+29 | PC+30 | PC+31 | PC+32 | PC+33 | PC+34 | PC+35 | PC+36 | PC+37 | PC+38 | PC+39 | PC+40 | PC+41 | PC+42 | PC+43 | PC+44 | PC+45 | PC+46 | PC+47 | PC+48 | PC+49 | PC+50 | PC+51 | PC+52 | PC+53 | PC+54 | PC+55 | PC+56 | PC+57 | PC+58 | PC+59 | PC+60 | PC+61 | PC+62 | PC+63 | PC+64 | PC+65 | PC+66 | PC+67 | PC+68 | PC+69 | PC+70 | PC+71 | PC+72 | PC+73 | PC+74 | PC+75 | PC+76 | PC+77 | PC+78 | PC+79 | PC+80 | PC+81 | PC+82 | PC+83 | PC+84 | PC+85 | PC+86 | PC+87 | PC+88 | PC+89 | PC+90 | PC+91 | PC+92 | PC+93 | PC+94 | PC+95 | PC+96 | PC+97 | PC+98 | PC+99 | PC+100 | PC+101 | PC+102 | PC+103 | PC+104 | PC+105 | PC+106 | PC+107 | PC+108 | PC+109 | PC+110 | PC+111 | PC+112 | PC+113 | PC+114 | PC+115 | PC+116 | PC+117 | PC+118 | PC+119 | PC+120 | PC+121 | PC+122 | PC+123 | PC+124 | PC+125 | PC+126 | PC+127 | PC+128 | PC+129 | PC+130 | PC+131 | PC+132 | PC+133 | PC+134 | PC+135 | PC+136 | PC+137 | PC+138 | PC+139 | PC+140 | PC+141 | PC+142 | PC+143 | PC+144 | PC+145 | PC+146 | PC+147 | PC+148 | PC+149 | PC+150 | PC+151 | PC+152 | PC+153 | PC+154 | PC+155 | PC+156 | PC+157 | PC+158 | PC+159 | PC+160 | PC+161 | PC+162 | PC+163 | PC+164 | PC+165 | PC+166 | PC+167 | PC+168 | PC+169 | PC+170 | PC+171 | PC+172 | PC+173 | PC+174 | PC+175 | PC+176 | PC+177 | PC+178 | PC+179 | PC+180 | PC+181 | PC+182 | PC+183 | PC+184 | PC+185 | PC+186 | PC+187 | PC+188 | PC+189 | PC+190 | PC+191 | PC+192 | PC+193 | PC+194 | PC+195 | PC+196 | PC+197 | PC+198 | PC+199 | PC+200 | PC+201 | PC+202 | PC+203 | PC+204 | PC+205 | PC+206 | PC+207 | PC+208 | PC+209 | PC+210 | PC+211 | PC+212 | PC+213 | PC+214 | PC+215 | PC+216 | PC+217 | PC+218 | PC+219 | PC+220 | PC+221 | PC+222 | PC+223 | PC+224 | PC+225 | PC+226 | PC+227 | PC+228 | PC+229 | PC+230 | PC+231 | PC+232 | PC+233 | PC+234 | PC+235 | PC+236 | PC+237 | PC+238 | PC+239 | PC+240 | PC+241 | PC+242 | PC+243 | PC+244 | PC+245 | PC+246 | PC+247 | PC+248 | PC+249 | PC+250 | PC+251 | PC+252 | PC+253 | PC+254 | PC+255 | PC+256 | PC+257 | PC+258 | PC+259 | PC+260 | PC+261 | PC+262 | PC+263 | PC+264 | PC+265 | PC+266 | PC+267 | PC+268 | PC+269 | PC+270 | PC+271 | PC+272 | PC+273 | PC+274 | PC+275 | PC+276 | PC+277 | PC+278 | PC+279 | PC+280 | PC+281 | PC+282 | PC+283 | PC+284 | PC+285 | PC+286 | PC+287 | PC+288 | PC+289 | PC+290 | PC+291 | PC+292 | PC+293 | PC+294 | PC+295 | PC+296 | PC+297 | PC+298 | PC+299 | PC+300 | PC+301 | PC+302 | PC+303 | PC+304 | PC+305 | PC+306 | PC+307 | PC+308 | PC+309 | PC+310 | PC+311 | PC+312 | PC+313 | PC+314 | PC+315 | PC+316 | PC+317 | PC+318 | PC+319 | PC+320 | PC+321 | PC+322 | PC+323 | PC+324 | PC+325 | PC+326 | PC+327 | PC+328 | PC+329 | PC+330 | PC+331 | PC+332 | PC+333 | PC+334 | PC+335 | PC+336 | PC+337 | PC+338 | PC+339 | PC+340 | PC+341 | PC+342 | PC+343 | PC+344 | PC+345 | PC+346 | PC+347 | PC+348 | PC+349 | PC+350 | PC+351 | PC+352 | PC+353 | PC+354 | PC+355 | PC+356 | PC+357 | PC+358 | PC+359 | PC+360 | PC+361 | PC+362 | PC+363 | PC+364 | PC+365 | PC+366 | PC+367 | PC+368 | PC+369 | PC+370 | PC+371 | PC+372 | PC+373 | PC+374 | PC+375 | PC+376 | PC+377 | PC+378 | PC+379 | PC+380 | PC+381 | PC+382 | PC+383 | PC+384 | PC+385 | PC+386 | PC+387 | PC+388 | PC+389 | PC+390 | PC+391 | PC+392 | PC+393 | PC+394 | PC+395 | PC+396 | PC+397 | PC+398 | PC+399 | PC+400 | PC+401 | PC+402 | PC+403 | PC+404 | PC+405 | PC+406 | PC+407 | PC+408 | PC+409 | PC+410 | PC+411 | PC+412 | PC+413 | PC+414 | PC+415 | PC+416 | PC+417 | PC+418 | PC+41 |
|----|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
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[illegible]



| Address | Offset | Label  | Operation | Comments                   | Trap  | Trap Comment               |
|---------|--------|--------|-----------|----------------------------|-------|----------------------------|
| 065724  | 104456 |        |           |                            | TRAP  | C\$ERHRD                   |
| 065726  | 001325 |        |           |                            | .WORD | 725                        |
| 065730  | 070644 |        |           |                            | .WORD | T35RWN                     |
| 065732  | 012126 |        |           |                            | .WORD | PKTSSR                     |
| 4664    | 065734 | 30:    | CKLOOP    | ;LOOP IF SELECTED          |       |                            |
|         | 065734 |        |           |                            | TRAP  | C\$CLP1                    |
| 4665    | 065736 | 013701 | 067420    | MOV T35BFR+6,R1            |       |                            |
| 4666    | 065742 | 010102 |           | MOV R1,R2                  |       |                            |
| 4667    | 065744 | 052702 | 000002    | BIS #BIT1,R2               |       |                            |
| 4668    | 065750 | 020102 |           | CMP R1,R2                  |       |                            |
| 4669    | 065752 | 001406 |           | BEQ 40:                    |       |                            |
| 4670    | 065754 | 005237 | 002214    | INC FATFLG                 |       |                            |
| 4674    | 065760 |        |           | ERRHRD ERRNO,T35BOT,EXPREC |       |                            |
|         | 065760 | 104456 |           |                            | TRAP  | C\$ERHRD                   |
|         | 065762 | 001326 |           |                            | .WORD | 726                        |
|         | 065764 | 070340 |           |                            | .WORD | T35BOT                     |
|         | 065766 | 015554 |           |                            | .WORD | EXPREC                     |
| 4675    | 065770 | 40:    | CKLOOP    | ;LOOP IF SELECTED          |       |                            |
|         | 065770 |        |           |                            | TRAP  | C\$CLP1                    |
| 4676    | 065772 | 012703 | 000024    | MOV #20.,R3                |       |                            |
| 4677    | 065776 | 013737 | 003116    | MOV FREE,T35WB             |       |                            |
| 4678    |        |        |           |                            |       |                            |
| 4679    |        |        |           |                            |       |                            |
| 4680    |        |        |           |                            |       |                            |
| 4681    |        |        |           |                            |       |                            |
| 4682    |        |        |           |                            |       |                            |
| 4683    |        |        |           |                            |       |                            |
| 4684    |        |        |           |                            |       |                            |
| 4685    | 066004 | 012737 | 140005    | 067510                     | 65:   | MOV #140005,T35PK3         |
| 4686    | 066012 | 012704 | 067510    |                            |       | MOV #T35PK3,R4             |
| 4687    | 066016 | 010300 |           |                            |       | MOV R3,R0                  |
| 4688    | 066020 | 004737 | 017502    |                            |       | JSR PC,FILLMEM             |
| 4689    | 066024 | 010337 | 067516    |                            |       | MOV R3,T35SZ               |
| 4690    | 066030 | 010465 | 000000    |                            |       | MOV R4,TSD8(R5)            |
| 4691    | 066034 | 004737 | 016330    |                            |       | JSR PC,WAITF               |
| 4692    | 066040 | 016501 | 000002    |                            |       | MOV TSSR(R5),R1            |
| 4693    | 066044 | 012702 | 000200    |                            |       | MOV #SSR,R2                |
| 4694    | 066050 | 020102 |           |                            |       | CMP R1,R2                  |
| 4695    | 066052 | 001406 |           |                            |       | BEQ 80:                    |
| 4696    | 066054 | 005237 | 002214    |                            |       | INC FATFLG                 |
| 4700    | 066060 |        |           |                            |       | ERRHRD ERRNO,T35WDC,PKTSSR |
|         | 066060 | 104456 |           |                            |       |                            |
|         | 066062 | 001327 |           |                            | TRAP  | C\$ERHRD                   |
|         | 066064 | 071200 |           |                            | .WORD | 727                        |
|         | 066066 | 012126 |           |                            | .WORD | T35WDC                     |
| 4701    | 066070 |        |           |                            | .WORD | PKTSSR                     |
|         | 066070 | 104406 |           |                            | TRAP  | C\$CLP1                    |
| 4702    |        |        |           |                            |       |                            |
| 4703    |        |        |           |                            |       |                            |
| 4704    |        |        |           |                            |       |                            |
| 4705    |        |        |           |                            |       |                            |
| 4706    |        |        |           |                            |       |                            |
| 4707    |        |        |           |                            |       |                            |
| 4708    |        |        |           |                            |       |                            |
| 4709    | 066072 | 012737 | 141005    | 067510                     |       | MOV #141005,T35PK3         |
| 4710    | 066100 | 010465 | 000000    |                            |       | MOV R4,TSD8(R5)            |
| 4711    | 066104 | 004737 | 016330    |                            |       | JSR PC,WAITF               |

TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 7: EXTENDED MODE FEATURES

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|      |        |        |        |        |        |                     |               |                                        |
|------|--------|--------|--------|--------|--------|---------------------|---------------|----------------------------------------|
| 4712 | 066110 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |               | ;GET TSSR CONTENTS                     |
| 4713 | 066114 | 012702 | 000200 |        | MOV    | SSR,R2              |               | ;SET UP EXPECTED                       |
| 4714 | 066120 | 020102 |        |        | CMP    | R1,R2               |               | ;ARE THEY EQUAL                        |
| 4715 | 066122 | 001406 |        |        | BEQ    | 90\$                |               | ;BR, IF OK                             |
| 4716 | 066124 | 005237 | 002214 |        | INC    | FATFLG              |               | ;ERROR COUNT                           |
| 4720 | 066130 |        |        |        | ERRHRD | ERRNO,T35WRF,PKTSSR |               | ;TSSR INCORRECT AFTER WRITE DATA RETRY |
|      | 066130 | 104456 |        |        |        |                     | TRAP          | C\$ERHRD                               |
|      | 066132 | 001330 |        |        |        |                     | .WORD         | 728                                    |
|      | 066134 | 072245 |        |        |        |                     | .WORD         | T35WRF                                 |
|      | 066136 | 012126 |        |        |        |                     | .WORD         | PKTSSR                                 |
| 4721 | 066140 |        |        | 90\$:  | CKLOOP |                     |               | ;LOOP IF SELECTED                      |
|      | 066140 | 104406 |        |        |        |                     | TRAP          | C\$CLP1                                |
| 4722 | 066142 | 005723 |        |        | TST    | (R3),               |               | ;BUMP RECORD SIZE COUNTER              |
| 4723 | 066144 | 020327 | 000052 |        | CMP    | R3,42.              |               | ;AT 42 SIZE YET                        |
| 4724 | 066150 | 001315 |        |        | BNE    | 65\$                |               | ;BR, IF MORE RECORDS TO WRITE          |
| 4725 | 066152 | 004737 | 011074 |        | JSR    | PC,REWIND           |               | ;CALL TAPE REWIND COMMAND              |
| 4726 | 066156 | 103411 |        |        | BCS    | 230\$               |               | ;BR, IF NO PROBLEM                     |
| 4727 | 066160 | 010001 |        |        | MOV    | R0,R1               |               | ;SAVE TSSR                             |
| 4728 | 066162 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |               | ;GET TSSR CONTENTS                     |
| 4729 | 066166 | 005237 | 002214 |        | INC    | FATFLG              |               | ;ERROR COUNT                           |
| 4733 | 066172 |        |        |        | ERRHRD | ERRNO,T35RWN,EXPREC |               | ;REWIND NOT ACCEPTED                   |
|      | 066172 | 104456 |        |        |        |                     | TRAP          | C\$ERHRD                               |
|      | 066174 | 001331 |        |        |        |                     | .WORD         | 729                                    |
|      | 066176 | 070644 |        |        |        |                     | .WORD         | T35RWN                                 |
|      | 066200 | 015554 |        |        |        |                     | .WORD         | EXPREC                                 |
| 4734 | 066202 |        |        | 230\$: | CKLOOP |                     |               | ;LOOP IF SELECTED                      |
|      | 066202 | 104406 |        |        |        |                     | TRAP          | C\$CLP1                                |
| 4735 | 066204 | 013701 | 067420 |        | MOV    | T35BFR+6,R1         |               | ;PICK UP XSTO                          |
| 4736 | 066210 | 010102 |        |        | MOV    | R1,R2               |               | ;SET UP EXPECTED                       |
| 4737 | 066212 | 052702 | 000002 |        | BIS    | BIT1,R2             |               | ;SET BOT BIT IN EXPECTED               |
| 4738 | 066216 | 020102 |        |        | CMP    | R1,R2               |               | ;LJES EXP = REC'D                      |
| 4739 | 066220 | 001406 |        |        | BEQ    | 240\$               |               | ;BR, IF EQUAL (OK)                     |
| 4740 | 066222 | 005237 | 002214 |        | INC    | FATFLG              |               | ;ERROR COUNT                           |
| 4744 | 066226 |        |        |        | ERRHRD | ERRNO,T35BOT,EXPREC |               | ;TAPE NOT AT BOT AFTER REWIND          |
|      | 066226 | 104456 |        |        |        |                     | TRAP          | C\$ERHRD                               |
|      | 066230 | 001332 |        |        |        |                     | .WORD         | 730                                    |
|      | 066232 | 070340 |        |        |        |                     | .WORD         | T35BOT                                 |
|      | 066234 | 015554 |        |        |        |                     | .WORD         | EXPREC                                 |
| 4745 | 066236 |        |        | 240\$: | CKLOOP |                     |               | ;LOOP IF SELECTED                      |
|      | 066236 | 104406 |        |        |        |                     | TRAP          | C\$CLP1                                |
| 4746 | 066240 | 012703 | 000024 |        | MOV    | 20.,R3              |               | ;STARTING RECORD SIZE                  |
| 4747 | 066244 | 013737 | 003116 | 067512 | MOV    | FREE,T35RB          |               | ;STARTING READ BUFFER ADDRESS          |
| 4748 |        |        |        |        |        |                     |               |                                        |
| 4749 |        |        |        |        |        |                     |               |                                        |
| 4750 |        |        |        |        |        |                     |               |                                        |
| 4751 |        |        |        |        |        |                     |               |                                        |
| 4752 |        |        |        |        |        |                     |               |                                        |
| 4753 |        |        |        |        |        |                     |               |                                        |
| 4754 |        |        |        |        |        |                     |               |                                        |
| 4755 | 066252 | 012737 | 100001 | 067510 | 265\$: | MOV                 | 100001,T35PK3 | ;READ DATA,ACK COMMAND                 |
| 4756 | 066260 | 012704 | 067510 |        | MOV    | T35PK3,R4           |               | ;SET UP R4 WITH PACKET ADDRESS         |
| 4757 | 066264 | 012700 | 177777 |        | MOV    | 177777,R0           |               | ;SET PATTERN IN CORRECT REGISTER       |
| 4758 | 066270 | 004737 | 017502 |        | JSR    | PC,FILLMEM          |               | ;FILL MEMORY WITH RECORD SIZE          |
| 4759 | 066274 | 010337 | 067516 |        | MOV    | R3,T35SZ            |               | ;SET UP RECORD SIZE IN PACKET          |
| 4760 | 066300 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |               | ;ISSUE COMMAND                         |
| 4761 | 066304 | 004737 | 016330 |        | JSR    | PC,WAITF            |               | ;WAIT FOR SSR TO SET                   |
| 4762 | 066310 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |               | ;GET TSSR CONTENTS                     |

| Address | Instruction | Op-Code | Register | Label         | Comment                       |
|---------|-------------|---------|----------|---------------|-------------------------------|
| 4763    | MOV         | 066314  | 012702   | 000200        |                               |
| 4764    | CMP         | 066320  | 020102   |               |                               |
| 4765    | BEQ         | 066322  | 001406   |               |                               |
| 4766    | INC         | 066324  | 005237   | 002214        |                               |
| 4770    | ERRHRD      | 066330  |          |               | ERRNO, T35RDF, PKTSSR         |
|         |             | 066330  | 104456   |               |                               |
|         |             | 066332  | 001333   |               |                               |
|         |             | 066334  | 067632   |               |                               |
|         |             | 066336  | 012126   |               |                               |
| 4771    |             | 066340  |          |               | 280\$: CKLOOP                 |
|         |             | 066340  | 104406   |               |                               |
| 4772    | MOV         | 066342  | 013702   | 003116        |                               |
| 4773    | MOV         | 066346  | 010304   |               |                               |
| 4774    | SUB         | 066350  | 162704   | 000024        |                               |
| 4775    | ADD         | 066354  | 060204   |               | 285\$: R2, R4                 |
| 4776    | CMP         | 066356  | 021403   |               | (R4), R3                      |
| 4777    | BEQ         | 066360  | 001410   |               | 290\$: (R4), R1               |
| 4778    | MOV         | 066362  | 011401   |               | R3, R2                        |
| 4779    | MOV         | 066364  | 010302   |               | INC FATFLG                    |
| 4780    | INC         | 066366  | 005237   | 002214        | ERRHRD ERRNO, T35DTA, EXPREC  |
| 4784    | ERRHRD      | 066372  |          |               |                               |
|         |             | 066372  | 104456   |               |                               |
|         |             | 066374  | 001334   |               |                               |
|         |             | 066376  | 072325   |               |                               |
|         |             | 066400  | 015554   |               |                               |
| 4785    |             | 066402  |          |               | 290\$: CKLOOP                 |
|         |             | 066402  | 104406   |               |                               |
| 4786    | TST         | 066404  | 005724   |               | (R4),                         |
| 4787    | SUB         | 066406  | 160204   |               | R2, R4                        |
| 4788    | CMP         | 066410  | 020403   |               | R4, R3                        |
| 4789    | BNE         | 066412  | 001360   |               | 285\$: (R3),                  |
| 4790    | TST         | 066414  | 005723   |               | R3, 440.                      |
| 4791    | CMP         | 066416  | 020327   | 000050        | 265\$: RNE                    |
| 4792    | RNE         | 066422  | 001313   |               |                               |
| 4793    |             | 066424  |          |               | 300\$: CKLOOP                 |
|         |             | 066424  | 104406   |               |                               |
| 4794    |             | 066426  |          |               | 330\$: ENDSUB                 |
| 4795    |             | 066426  |          |               |                               |
|         |             | 066426  | 104403   |               |                               |
| 4796    | CMP         | 066430  | 023727   | 002214 000017 | FATFLG, 415.                  |
| 4797    | BLO         | 066436  | 103402   |               | 999\$: JSR PC, CKDROP         |
| 4798    | JSR         | 066440  | 004737   | 017262        |                               |
| 4799    |             | 066444  |          |               | 999\$: ; *                    |
| 4800    |             |         |          |               | ; ;                           |
| 4801    |             |         |          |               | ; TEST 7, SUBTEST 4           |
| 4802    |             |         |          |               | ; ;                           |
| 4803    |             |         |          |               | ; VERIFIES THAT A TAPE MOTION |
| 4804    |             |         |          |               | ; ISSUED IMMEDIATELY AFTER    |
| 4805    |             |         |          |               | ; IMMEDIATE INTERRUPT COMMAND |
| 4806    |             |         |          |               | ; THEN EXECUTES PROPERLY.     |
| 4807    |             |         |          |               | ; ;                           |
| 4808    |             |         |          |               | ; ;                           |
| 4809    |             |         |          |               | ; ;                           |
| 4810    |             |         |          |               | ; ;                           |
| 4811    |             |         |          |               | ; ;                           |
| 4812    |             | 066444  |          |               | BGN SUB                       |

SEQ 188

**T7.4:**

| Address | Offset | Hex    | Dec    | Label  | Instruction                | Comment                          | Trap             | Subroutine |
|---------|--------|--------|--------|--------|----------------------------|----------------------------------|------------------|------------|
| 066444  | 104402 |        |        |        |                            |                                  | T7.4:            |            |
| 4813    | 066446 | 004737 | 073164 |        | JSR PC,T35REST             | ;SET COMMAND PACKET              | TRAP             | C\$BSUB    |
| 4814    | 066452 | 004737 | 073256 |        | JSR PC,T35RT2              | ;SET UP OTHER COMMAND PACKET     |                  |            |
| 4815    | 066456 | 004737 | 073320 |        | JSR PC,T35RT3              | ;SET UP OTHER COMMAND PACKET     |                  |            |
| 4816    | 066462 | 012737 | 176750 | 067542 | MOV #65000.,T35DLY         | ;SET UP DELAY COUNTER            |                  |            |
| 4817    | 066470 | 004737 | 016054 | 10\$:  | JSR PC,SOFINIT             | ;DO INITIALIZE ON CONTROLLER     |                  |            |
| 4818    | 066474 | 103426 |        |        | BCS 20\$                   | ;BR IF INIT WAS OK               |                  |            |
| 4819    | 066476 |        |        |        | DELAY 250                  | ;DELAY ABOUT .25 SEC             |                  |            |
|         | 066476 | 012727 | 000250 |        |                            |                                  | MOV #250.(PC).   |            |
|         | 066502 | 000000 |        |        |                            |                                  | .WORD 0          |            |
|         | 066504 | 013727 | 002116 |        |                            |                                  | MOV L\$DLY.(PC). |            |
|         | 066510 | 000000 |        |        |                            |                                  | .WORD 0          |            |
|         | 066512 | 005367 | 177772 |        |                            |                                  | DEC 6(PC)        |            |
|         | 066516 | 001375 |        |        |                            |                                  | BNE . 4          |            |
|         | 066520 | 005367 | 177756 |        |                            |                                  | DEC 22(PC)       |            |
|         | 066524 | 001367 |        |        |                            |                                  | BNE . 20         |            |
| 4820    | 066526 | 005337 | 067542 |        | DEC T35DLY                 | ;BUMP COUNTER                    |                  |            |
| 4821    | 066532 | 001356 |        |        | BNE 10\$                   | ;BR, IF COUNTER NOT DONE         |                  |            |
| 4822    | 066534 | 005237 | 002214 |        | INC FATFLG                 | ;ERROR COUNT                     |                  |            |
| 4826    | 066540 | 010001 |        |        | MOV RO,P1                  | ;CONTENTS OF TSSR REGISTER       |                  |            |
| 4827    | 066542 |        |        |        | ERRDF ERRNO,SFIERR,SFIMSG  | ;FATAL ERROR TSSR WAS NOT OK     |                  |            |
|         | 066542 | 104455 |        |        |                            |                                  | TRAP             | C\$ERDF    |
|         | 066544 | 001335 |        |        |                            |                                  | .WORD 733        |            |
|         | 066546 | 003646 |        |        |                            |                                  | .WORD SFIERR     |            |
|         | 066550 | 012'14 |        |        |                            |                                  | .WORD SFIMSG     |            |
| 4828    | 066552 | 013737 | 002174 | 067410 | MOV UNITN,T35DSW           | ;SET UP UNIT (DRIVE) NUMBER      |                  |            |
| 4829    | 066560 | 012704 | 067370 | 20\$:  | MOV #T35PACKET,R4          | ;SUBROUTINE NEEDS PACKET ADDRESS |                  |            |
| 4830    | 066564 | 004737 | 010742 |        | JSR PC,WRTCHR              | ;ISSUE WRITE CHARACTERISTICS     |                  |            |
| 4831    | 066570 | 103407 |        |        | BCS 23\$                   | ;BR, IF COMMAND ISSUED OK        |                  |            |
| 4832    | 066572 | 005237 | 002214 |        | INC FATFLG                 | ;ERROR COUNT                     |                  |            |
| 4836    | 066576 | 010001 |        |        | MOV RO,R1                  | ;SAVE CONTENTS OF TSSR           |                  |            |
| 4837    | 066600 |        |        |        | ERRHRD ERRNO,WRTMSG,SFIMSG | ;WRITE CHARACTERISTICS FAILED    |                  |            |
|         | 066600 | 104456 |        |        |                            |                                  | TRAP             | C\$ERHRD   |
|         | 066602 | 001336 |        |        |                            |                                  | .WORD 734        |            |
|         | 066604 | 005052 |        |        |                            |                                  | .WORD WRTMSG     |            |
|         | 066606 | 012114 |        |        |                            |                                  | .WORD SFIMSG     |            |
| 4838    | 066610 |        |        | 23\$:  | CKLOOP                     | ;LOOP IF SELECTED                |                  |            |
|         | 066610 | 104406 |        |        |                            |                                  | TRAP             | C\$CLP1    |
| 4839    | 066612 | 004737 | 011074 |        | JSR PC,REWIND              | ;CALL TAPE REWIND COMMAND        |                  |            |
| 4840    | 066616 | 103411 |        |        | BCS 30\$                   | ;BR, IF NO PROBLEM               |                  |            |
| 4841    | 066620 | 016501 | 000002 |        | MOV TSSR(R5),R1            | ;GET TSSR CONTENTS               |                  |            |
| 4842    | 066624 | 010004 |        |        | MOV RO,R4                  | ;GET PACKET ADDRESS              |                  |            |
| 4843    | 066626 | 005237 | 002214 |        | INC FATFLG                 | ;ERROR COUNT                     |                  |            |
| 4847    | 066632 |        |        |        | ERRHRD ERRNO,T35RWN,PKTSSR | ;REWIND NOT ACCEPTED             |                  |            |
|         | 066632 | 104456 |        |        |                            |                                  | TRAP             | C\$ERHRD   |
|         | 066634 | 001337 |        |        |                            |                                  | .WORD 735        |            |
|         | 066636 | 070644 |        |        |                            |                                  | .WORD T35RWN     |            |
|         | 066640 | 012126 |        |        |                            |                                  | .WORD PKTSSR     |            |
| 4848    | 066642 |        |        | 30\$:  | CKLOOP                     | ;LOOP IF SELECTED                |                  |            |
|         | 0      |        |        |        |                            |                                  |                  |            |

TEST 1 HARDWARE TEST 1.8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 7: EXTENDED MODE FEATURES

SEQ 189

```

4858 066666          ERRHRD  ERRNO,T35BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
      066666 104456          TRAP      C$ERHRD
      066670 001340          .WORD    736
      066672 070340          .WORD    T35BOT
      066674 015554          .WORD    EXPREC
4859 066676          40$:   CKLOOP                    ;LOOP IF SELECTED
      066676 104406          TRAP      C$CLP1
4860 066700 012703 000024      MOV      #20.,R3        ;STARTING RECORD SIZE
4861 066704 013737 003116 067512  MOV      FREE,T35WB  ;STARTING WRITE BUFFER ADDRESS
4862
4863      ;*****
4864      ;
4865      ;WRITE DATA,CVC=1,ACK COMMAND
4866      ;
4867      ;*****
4868
4869 066712 012737 140005 067510 65$:   MOV      #140005,T35PK3  ;WRITE DATA,CVC=1,ACK COMMAND
4870 066720 012704 067510      MOV      #T35PK3,R4        ;SET UP R4 WITH PACKET ADDRESS
4871 066724 010300      MOV      R3,R0                    ;SET PATTERN IN CORRECT REGISTER
4872 066726 004737 017502      JSR      PC,FILLMEM         ;FILL MEMORY WITH RECORD SIZE
4873 066732 010337 067516      MOV      R3,T35SZ          ;SET UP RECORD SIZE IN PACKET
4874 066736 010465 000000      MOV      R4,T35DB(R5)       ;ISSUE COMMAND
4875 066742 004737 016330      JSR      PC,WAITF          ;WAIT FOR SSR TO SET
4876 066746 016501 000002      MOV      TSSR(R5),R1        ;GET TSSR CONTENTS
4877 066752 012702 000200      MOV      #SSR,R2           ;SET UP EXPECTED
4878 066756 020102      CMP      R1,R2                    ;ARE THEY EQUAL
4879 066760 001406      BEQ      80$                       ;BR. IF OK
4880 066762 005237 002214      INC      FATFLG             ;ERROR COUNT
4884 066766          ERRHRD  ERRNO,T35WDC,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
      066766 104456          TRAP      C$ERHRD
      066770 001341          .WORD    737
      066772 071200          .WORD    T35WDC
      066774 012126          .WORD    PKTSSR
4885 066776          80$:   CKLOUP                    ;LOOP IF SELECTED
      066776 104406          TRAP      C$CLP1
4886
4887      ;*****
4888      ;
4889      ;WRITE DATA RETRY,ACK,SWB=1 COMMAND
4890      ;
4891      ;*****
4892
4893 067000 012737 111005 067510      MOV      #111005,T35PK3  ;WRITE DATA RETRY,ACK,SWB=1 COMMAND
4894 067006 010465 000000      MOV      R4,T35DB(R5)       ;ISSUE COMMAND
4895 067012 004737 016330      JSR      PC,WAITF          ;WAIT FOR SSR TO SET
4896 067016 016501 000002      MOV      TSSR(R5),R1        ;GET TSSR CONTENTS
4897 067022 012702 000200      MOV      #SSR,R2           ;SET UP EXPECTED
4898 067026 020102      CMP      R1,R2                    ;ARE THEY EQUAL
4899 067030 001406      BEQ      90$                       ;BR. IF OK
4900 067032 005237 002214      INC      FATFLG             ;ERROR COUNT
4904 067036          ERRHRD  ERRNO,T35WRF,EXPREC      ;TSSR INCORRECT AFTER WRITE DATA RETRY
      067036 104456          TRAP      C$ERHRD
      067040 001342          .WORD    738
      067042 072245          .WORD    T35WRF
      067044 015554          .WORD    EXPREC
4905 067046          90$:   CKLOOP                    ;LOOP IF SELECTED
      067046 104406          TRAP      C$CLP1

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TEST 1 - HARDWARE TEST 1 8 TEST MACRO M11.3 06 FEB 84 18:04  
 TEST 7: EXTENDED MODE FEATURES

SEQ 190

```

4906 067050 005723          TST      (R3).          ;BUMP RECORD SIZE COUNTER
4907 067052 020327 000052          CMP      R3,#42.      ;AT 42 SIZE YET
4908 067056 001315          BNE      65$              ;BR. IF MORE RECORDS TO WRITE
4909 067060 004737 011074          JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
4910 067064 103411          BCS      230$              ;BR. IF NO PROBLEM
4911 067066 016501 000002          MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
4912 067072 010004          MOV      R0,R4              ;GET PACKET ADDRESS
4913 067074 005237 002214          INC      FATFLG          ;ERROR COUNT
4917 067100          ERRHRD  ERRNO,T35RWN,PKTSSR      ;REWIND NOT ACCEPTED
          067100 104456          TRAP      C$ERHRD
          067102 001343          .WORD    739
          067104 070644          .WORD    T35RWN
          067106 012126          .WORD    PKTSSR
4918 067110          230$: CKLOOP          ;LOOP IF SELECTED
          067110 104406          TRAP      C$CLP1
4919 067112 013701 067420          MOV      T35BFR+6,R1      ;PICK UP XSTO
4920 067116 010102          MOV      R1,R2              ;SET UP EXPECTED
4921 067120 052702 000002          BIS      #BIT1,R2        ;SET BOT BIT IN EXPECTED
4922 067124 020102          CMP      R1,R2              ;DOES EXP = REC'D
4923 067126 001406          BEQ      240$              ;BR. IF EQUAL (OK)
4924 067130 005237 002214          INC      FATFLG          ;ERROR COUNT
4928 067134          ERRHRD  ERRNO,T35BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
          067134 104456          TRAP      C$ERHRD
          067136 001344          .WORD    740
          067140 070340          .WORD    T35BOT
          067142 015554          .WORD    EXPREC
4929 067144          240$: CKLOOP          ;LOOP IF SELECTED
          067144 104406          TRAP      C$CLP1
4930 067146 012703 000024          MOV      #20.,R3        ;STARTING RECORD SIZE
4931 067152 013737 003116 067512      MOV      FREE,T35RB      ;STARTING READ BUFFER ADDRESS
4932
4933          ;*****
4934          ;
4935          ;READ DATA,ACK COMMAND
4936          ;
4937          ;*****
4938
4939 067160 012737 100001 067510 265$: MOV      #100001,T35PK3      ;READ DATA,ACK COMMAND
4940 067166 012704 067510          MOV      #T35PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
4941 067172 010337 067516          MOV      R3,T35SZ        ;SET UP RECORD SIZE IN PACKET
4942 067176 010465 000000          MOV      R4,TSDR(R5)      ;ISSUE COMMAND
4943 067202 004737 016330          JSR      PC,WAITF      ;WAIT FOR SSR TO SET
4944 067206 016501 000002          MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
4945 067212 012702 000200          MOV      #SSR,R2        ;SET UP EXPECTED
4946 067216 020102          CMP      R1,R2              ;ARE THEY EQUAL
4947 067220 001406          BEQ      280$              ;BR. IF OK
4948 067222 005237 002214          INC      FATFLG          ;ERROR COUNT
4952 067226          ERRHRD  ERRNO,T35RDF,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
          067226 104456          TRAP      C$ERHRD
          067230 001345          .WORD    741
          067232 067632          .WORD    T35RDF
          067234 012126          .WORD    PKTSSR
4953 067236          280$: CKLOOP          ;LOOP IF SELECTED
          067236 104406          TRAP      C$CLP1
4954 067240 013702 003116          MOV      FREE,R2        ;GET BUFFER ADDRESS
4955 067244 010304          MOV      R3,R4              ;GET RECORD SIZE
4956 067246 162704 000024          SUB      #20.,R4        ;POINT BACK TO 1ST RECORD

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SEQ 191

[illegible]

TEST 1 - HARDWARE TEST 1.8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 7: EXTENDED MODE FEATURES

SEQ 192

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5009 ;WRITE SUBSYSTEM MEMORY COMMAND PACKET
5010 ;
5012 067500 ;*-<+10>E177770
5014 067500 T35PK2:
5015 067500 100006 .WORD 100006 ;WRITE SUB SYS MEM COMMAND, AND ACK
5016 067502 067520 .WORD T35BF2 ;ADDRESS OF SELECT BLOCK DATA
5017 067504 000000 .WORD 0
5018 067506 000006 .WORD 6. ;SIZE OF DATA PACKET
5019
5023 067510 T35PK3:
5024 067510 100005 .WORD 100005 ;REREAD COMMAND, AND ACK
5025 067512 T35RB:
5026 067512 003116 T35WB: .WORD FREE ;ADDRESS OF WRITE BUFFER
5027 067514 000000 .WORD 0
5028 067516 000000 T35SZ: .WORD 0 ;SIZE OF BUFFER (EXTENT)
5029 .EVEN
5030 ;
5031 ;
5032 ;
5033 067520 T35BF2:
5034 067520 010 T35BS0: .BYTE 10 ;BSELO AREA
5035 067521 200 T35BS1: .BYTE 200 ;BSEL1 AREA
5036 067522 000000 T35S2: .WORD 0 ;SEL 2 AREA
5037 067524 000000 T35S3: .WORD 0 ;DATA AREA
5038 ;
5039 ;
5040 .EVEN
5041 ;TAPE MOTION PACKET COMMAND VALUES
5042
5043 067526 100205 T35RN: .WORD 100205 ;REREAD DATA (NEXT)
5044 067530 100605 T35WDR: .WORD 100605 ;REREAD DATA RETRY
5045 067532 102205 T35CON: .WORD 102205 ;WRITE CONTINUOUS
5046 067534 177777 .WORD 177777 ;END OF DATA
5047
5048 ;
5049 067536 000000 T35CNT: .WORD 0 ;TAPE TIMER COUNTER STORAGE AREA
5050 067540 000000 T35CNU: .WORD 0 ;TAPE TIME? COUNTER STORAGE AREA
5051 067542 000000 T35DLY: .WORD 0 ;DELAY COUNTER
5052 ;
5053 ;LOCAL TEXT MESSAGES FOR TEST
5054 ;
5055
5056 067544 124 141 160 T35WNG: .ASCIZ 'Tape Position Incorrect After REREAD Previous (OPP=1)'
5057 067632 124 123 123 T35RDF: .ASCIZ 'TSSR Incorrect After READ DATA Command'
5058 067701 122 105 122 T35RRF: .ASCIZ 'REREAD Previous (Space Reverse, Read Forward) Command Failed'
5059 067776 120 117 123 T35SC: .ASCIZ 'POSITION (Space Command) Failed, TSSR Not Correct'
5060 070060 122 111 102 T35LOR: .ASCIZ 'RIB NOT SET AFTER READ REVERSE INTO BOT'
5061 070130 124 123 123 T35WDF: .ASCIZ 'TSSR Not Correct After Illegal Mode Bits Set'
5062 070205 111 154 154 T35LOQ: .ASCIZ 'Illegal Mode Bits, Failed To Set ILC Bit In XST0'
5063 070266 124 123 123 T35WDE: .ASCIZ 'TSSR Not Correct After WRITE DATA Command'
5064 070340 124 141 160 T35BOT: .ASCIZ 'Tape Not At BOT After REWIND Command (BOT Not Set In XST0)'
5065 070433 127 122 111 T35TIM: .ASCIZ 'WRITE DATA RETRY'S Erase Tape Not Long Enough'
5066 070510 122 105 122 T35EOT: .ASCIZ 'REREAD DATA OVER EOT GAVE NO TAPE STATUS ALERT'
5067 070567 124 123 123 T35TM: .ASCIZ 'TSSR Not Correct After REREAD COMMAND Reject'
5068 070644 122 145 167 T35RWN: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
5069 070713 122 101 115 T35RNC: .ASCIZ 'RAM Error, Correct Data Pattern Not In Ram'
5070 070766 124 123 123 T35AM3: .ASCIZ 'TSSR Init. Failed After REREAD COMMAND'

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TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 7: EXTENDED MODE FEATURES

SEQ 193

|      |        |        |        |              |          |                    |                                                                 |
|------|--------|--------|--------|--------------|----------|--------------------|-----------------------------------------------------------------|
| 5071 | 071035 | 104    | 162    | 151          | T35OFL:  | .ASCIZ             | 'Drive 7 Select Failed To Set "OFL" In TSSR'                    |
| 5072 | 071110 | 124    | 123    | 123          | T35WDD:  | .ASCIZ             | 'TSSR Not Correct After REREAD DATA Command, SWB B't Set'       |
| 5073 | 071200 | 124    | 123    | 123          | T35WDC:  | .ASCIZ             | 'TSSR Not Correct After REREAD DATA Command'                    |
| 5074 | 071253 | 103    | 126    | 103          | T35VCK:  | .ASCIZ             | 'CVC Set, Didn't Reset VCK In Message Buffer'                   |
| 5075 | 071326 | 124    | 123    | 102          | T35BA:   | .ASCIZ             | 'TSBA Not Correct After REREAD DATA Command'                    |
| 5076 | 071401 | 127    | 122    | 111          | T35WSS:  | .ASCIZ             | 'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'        |
| 5077 | 071470 | 122    | 145    | 141          | T35LON:  | .ASCIZ             | 'Reading Long Record Failed To Set RLL Bit In XST0'             |
| 5078 | 071552 | 122    | 145    | 141          | T35LOP:  | .ASCIZ             | 'Reading Long Record Failed To Set RLS Bit In XST0'             |
| 5079 | 071634 | 122    | 145    | 163          | T35PBP:  | .ASCIZ             | 'Residual Byte Count Incorrect After Short Record Read'         |
| 5080 | 071722 | 122    | 145    | 141          | T35TRL:  | .ASCIZ             | 'Reading Long Record Failed To Give Tape Status Alert'          |
| 5081 | 072010 | 127    | 122    | 111          | T35NEF:  | .ASCIZ             | 'WRITE DATA RETRY, At First Record, Failed To Set RIB Bit XST3' |
| 5082 | 072106 | 124    | 123    | 123          | T35SCF:  | .ASCIZ             | 'TSSR Not Correct After SPACE RECORDS Command'                  |
| 5083 | 072163 | 124    | 123    | 123          | T35TSA:  | .ASCIZ             | 'TSSR Not Correct After WRITE DATA RETRY, Into BOT'             |
| 5084 | 072245 | 124    | 123    | 123          | T35WRF:  | .ASCIZ             | 'TSSR Not Correct After WRITE DATA RETRY Command'               |
| 5085 | 072325 | 104    | 141    | 164          | T35DTA:  | .ASCIZ             | 'Data Compare Error, Data Read From Tape Not Equal To Written'  |
| 5086 | 072422 | 124    | 123    | 123          | T35SSR:  | .ASCIZ             | 'TSSR Incorrect After WRITE MISCELLANEOUS Command'              |
| 5087 | 072503 | 115    | 117    | 124          | T35MOT:  | .ASCIZ             | 'MOT Bit (XST0) Not Set During Rewind (Extended Features Mode)' |
| 5088 | 072601 | 111    | 156    | 164          | T35INT:  | .ASCIZ             | 'Interrupt Received After REWIND Command (IE Bit Not Set)'      |
| 5089 | 072672 | 117    | 120    | 115          | T35OPM:  | .ASCIZ             | 'OPM Bit (XST2) Not Set During Rewind (Extended Features Mode)' |
| 5090 | 072770 | 124    | 123    | 123          | T35RWE:  | .ASCIZ             | 'TSSR Incorrect After Extended Features REWIND Command'         |
| 5091 | 073056 | 116    | 157    | 040          | T35NIN:  | .ASCIZ             | 'No Interrupt Detected After REWIND IMMEDIATE'                  |
| 5092 | 073133 | 105    | 170    | 164          | TST35ID: | .ASCIZ             | 'Extended Mode Functions'                                       |
| 5093 |        |        |        |              |          | .EVEN              |                                                                 |
| 5094 |        |        |        |              |          |                    |                                                                 |
| 5095 |        |        |        |              |          |                    |                                                                 |
| 5096 |        |        |        |              |          |                    |                                                                 |
| 5097 |        |        |        |              |          |                    |                                                                 |
| 5098 |        |        |        |              |          |                    |                                                                 |
| 5099 |        |        |        |              |          |                    |                                                                 |
| 5100 |        |        |        |              |          |                    |                                                                 |
| 5101 | 073164 |        |        |              | T35RES1: |                    |                                                                 |
| 5102 | 073164 |        |        |              | SAVREG   |                    |                                                                 |
| 5103 | 073170 | 012701 | 067370 |              | MOV      | #T35PACKET,R1      | ;SAVE THE REGISTERS                                             |
| 5104 | 073174 | 012721 | 100004 |              | MOV      | #100004,(R1)+      | ;START OF THE PACKET                                            |
| 5105 | 073200 | 012721 | 067400 |              | MOV      | #T35DATA,(R1)+     | ;WRITE SUBSYSTEM MEM. WITH ACK,                                 |
| 5106 | 073204 | 005021 |        |              | CLR      | (R1)+              | ;ADDRESS OF CHARAISTICS DATA BLOCK                              |
| 5107 | 073206 | 012721 | 000012 |              | MOV      | #10.,(R1)+         | ;EXTENDED ADDRESS                                               |
| 5108 | 073212 | 012721 | 067412 |              | MOV      | #T35BFR,(R1)+      | ;SIZE OF DATA BLOCK IN BYTES                                    |
| 5109 | 073216 | 005021 |        |              | CLR      | (R1)+              | ;ADDRESS OF MESSAGE BUFFER                                      |
| 5110 | 073220 | 012721 | 000024 |              | MOV      | #20.,(R1)+         | ;LENGTH OF MESSAGE BUFFER                                       |
| 5111 | 073224 | 005021 |        |              | CLR      | (R1)+              |                                                                 |
| 5112 | 073226 | 012711 | 000000 |              | MOV      | #0,(R1)            | ;SELECT DRIVE ZERO                                              |
| 5113 | 073232 | 012702 | 000030 |              | MOV      | #24.,R2            | ;NUMBER OF LOCATIONS TO BE CLEARED                              |
| 5114 | 073236 | 012762 | 177777 | 067412 64\$: | MOV      | #177777,T35BFR(R2) | ;ALL ONES TO MESSAGE BUFFER                                     |
| 5115 | 073244 | 005742 |        |              | TST      | -(R2)              | ;NEXT LOCATION                                                  |
| 5116 | 073246 | 022702 | 000000 |              | CMP      | #0,R2              | ;AT END OF LOOP YET                                             |
| 5117 | 073252 | 001371 |        |              | BNE      | 64\$               | ;KEEP GOING UNTIL DONE                                          |
| 5118 | 073254 | 000207 |        |              | RTS      | PC                 | ;RETURN                                                         |
| 5119 |        |        |        |              |          |                    |                                                                 |
| 5120 | 073256 |        |        |              | T35RT2:  |                    |                                                                 |
| 5121 | 073256 |        |        |              | SAVREG   |                    |                                                                 |
| 5122 | 073262 | 012701 | 067500 |              | MOV      | #T35PK2,R1         | ;SAVE THE REGISTERS                                             |
| 5123 | 073266 | 012721 | 100006 |              | MOV      | #100006,(R1)+      | ;START OF THE PACKET                                            |
| 5124 | 073272 | 012721 | 067520 |              | MOV      | #T35BF2,(R1)+      | ;WRITE SUBSYSTEM MEM. WITH ACK,                                 |
| 5125 | 073276 | 005021 |        |              | CLR      | (R1)+              | ;ADDRESS OF DATA BLOCK                                          |
| 5126 | 073300 | 012721 | 000006 |              | MOV      | #6.,(R1)+          | ;EXTENDED ADDRESS                                               |
| 5127 | 073304 | 005021 |        |              | CLR      | (R1)+              | ;SIZE OF DATA BLOCK IN BYTES                                    |

TEST 1 - HARDWARE TEST 1-8 TEST MACRO M1113 06-FEB 84 18:04  
 TEST 7: EXTENDED MODE FEATURES

SEQ 194

5128 073306 012701 067520  
 5129 073312 005021  
 5130 073314 005011  
 5131 073316 000207

MOV #T35BF2,R1  
 CLR (R1)+  
 CLR (R1)+  
 RTS PC

;POINT TO DATA SEL AREA

;RETURN

T35RT3:

5132 073320  
 5133 073320  
 5134 073324 012701 067510  
 5135 073330 005021  
 5136 073332 005021  
 5137 073334 005021  
 5138 073336 005011  
 5139 073340 000207  
 5140 073342

SAVREG  
 MOV #T35PK3,R1  
 CLR (R1)+  
 CLR (R1)+  
 CLR (R1)+  
 CLR (R1)+  
 RTS PC  
 ENDTST

;SAVE REGISTERS  
 ;SET UP POINTER ADDRESS  
 ;COMMAND SPACE  
 ;ADDRESS OF DATA BLOCK  
 ;EXTENDED ADDRESS  
 ;SIZE OF DATA TRANSFER BLOCK  
 ;RETURN

073342  
 073342 104401

L10063:

TRAP C\$ETST

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.SBTTL TEST 8 RECORD BUFFERING

THIS TEST VERIFIES THAT RECORD BUFFERING, USED FOR WRITE DATA AND READ NEXT COMMANDS, OPERATES PROPERLY AND IS PROPERLY CONTROLLED BY THE EXTENDED CHARACTERISTICS DATA WORD. IF THE M7196 CONTROLLER MODULE IS NOT ALREADY IN EXTENDED FEATURES MODE (AS CONTROLLED BY THE DIP SWITCH ON THE MODULE), IT IS PLACED INTO THAT MODE BY INVERTING THE SENSE OF THE SWITCH USING THE WRITE SUBSYSTEM MEMORY COMMAND. NOTE THAT RECORD BUFFERING HAS BEEN ENABLED IN PREVIOUS TESTS OF READ AND WRITE AND SO HAS BEEN PARTIALLY TESTED ALREADY. THIS TEST VERIFIES THAT BUFFERING IS ACTUALLY OPERATING. THE FOLLOWING SUBTESTS ARE PERFORMED:

VERIFIES THAT NORMAL BUFFERING ON WRITE DATA COMMANDS OPERATES PROPERLY AT LOW TAPE SPEED. THE FOLLOWING SEQUENCE IS PERFORMED:

1. THE TAPE IS REWOUND.
2. BUFFERING IS DISABLED AND LOW TAPE SPEED IS SELECTED (VIA WRITE CHARACTERISTICS COMMAND).
3. AN INITIAL RECORD IS WRITTEN ONTO THE TAPE IN ORDER TO MOVE THE TAPE OFF BOT.
4. THE PROGRAM DELAYS FOR A TIME SUFFICIENT TO ALLOW THE TAPE TO REPOSITION AND COME TO REST.
5. A WRITE DATA COMMAND, WITH A BYTE COUNT LESS THAN 3.5K, IS ISSUED, AND THE PROGRAM COUNTS, IN A WAIT LOOP, THE TIME IT TAKES TO RECEIVE COMMAND TERMINATION. THIS SHOULD BE A RELATIVELY LONG TIME SINCE BUFFERING IS DISABLED.
6. BUFFERING IS ENABLED.
7. THE WRITE DATA COMMAND IS AGAIN ISSUED, WITH THE SAME BYTE COUNT AS THAT USED PREVIOUSLY. THE TIME TO COMPLETION IS AGAIN MEASURED.



TEST 1: HARDWARE TEST 1.8 TEST MACRO M1113 06 FEB 84 18:04  
TEST 8: RECORD BUFFERING

SEQ 196

| Address | Offset | Label | Op Code | Op 1 | Op 2 | Op 3 | Op 4 | Op 5 | Op 6 | Op 7 | Op 8 | Op 9 | Op 10 | Op 11 | Op 12 | Op 13 | Op 14 | Op 15 | Op 16 | Op 17 | Op 18 | Op 19 | Op 20 | Op 21 | Op 22 | Op 23 | Op 24 | Op 25 | Op 26 | Op 27 | Op 28 | Op 29 | Op 30 | Op 31 | Op 32 | Op 33 | Op 34 | Op 35 | Op 36 | Op 37 | Op 38 | Op 39 | Op 40 | Op 41 | Op 42 | Op 43 | Op 44 | Op 45 | Op 46 | Op 47 | Op 48 | Op 49 | Op 50 | Op 51 | Op 52 | Op 53 | Op 54 | Op 55 | Op 56 | Op 57 | Op 58 | Op 59 | Op 60 | Op 61 | Op 62 | Op 63 | Op 64 | Op 65 | Op 66 | Op 67 | Op 68 | Op 69 | Op 70 | Op 71 | Op 72 | Op 73 | Op 74 | Op 75 | Op 76 | Op 77 | Op 78 | Op 79 | Op 80 | Op 81 | Op 82 | Op 83 | Op 84 | Op 85 | Op 86 | Op 87 | Op 88 | Op 89 | Op 90 | Op 91 | Op 92 | Op 93 | Op 94 | Op 95 | Op 96 | Op 97 | Op 98 | Op 99 | Op 100 | Op 101 | Op 102 | Op 103 | Op 104 | Op 105 | Op 106 | Op 107 | Op 108 | Op 109 | Op 110 | Op 111 | Op 112 | Op 113 | Op 114 | Op 115 | Op 116 | Op 117 | Op 118 | Op 119 | Op 120 | Op 121 | Op 122 | Op 123 | Op 124 | Op 125 | Op 126 | Op 127 | Op 128 | Op 129 | Op 130 | Op 131 | Op 132 | Op 133 | Op 134 | Op 135 | Op 136 | Op 137 | Op 138 | Op 139 | Op 140 | Op 141 | Op 142 | Op 143 | Op 144 | Op 145 | Op 146 | Op 147 | Op 148 | Op 149 | Op 150 | Op 151 | Op 152 | Op 153 | Op 154 | Op 155 | Op 156 | Op 157 | Op 158 | Op 159 | Op 160 | Op 161 | Op 162 | Op 163 | Op 164 | Op 165 | Op 166 | Op 167 | Op 168 | Op 169 | Op 170 | Op 171 | Op 172 | Op 173 | Op 174 | Op 175 | Op 176 | Op 177 | Op 178 | Op 179 | Op 180 | Op 181 | Op 182 | Op 183 | Op 184 | Op 185 | Op 186 | Op 187 | Op 188 | Op 189 | Op 190 | Op 191 | Op 192 | Op 193 | Op 194 | Op 195 | Op 196 | Op 197 | Op 198 | Op 199 | Op 200 | Op 201 | Op 202 | Op 203 | Op 204 | Op 205 | Op 206 | Op 207 | Op 208 | Op 209 | Op 210 | Op 211 | Op 212 | Op 213 | Op 214 | Op 215 | Op 216 | Op 217 | Op 218 | Op 219 | Op 220 | Op 221 | Op 222 | Op 223 | Op 224 | Op 225 | Op 226 | Op 227 | Op 228 | Op 229 | Op 230 | Op 231 | Op 232 | Op 233 | Op 234 | Op 235 | Op 236 | Op 237 | Op 238 | Op 239 | Op 240 | Op 241 | Op 242 | Op 243 | Op 244 | Op 245 | Op 246 | Op 247 | Op 248 | Op 249 | Op 250 | Op 251 | Op 252 | Op 253 | Op 254 | Op 255 | Op 256 | Op 257 | Op 258 | Op 259 | Op 260 | Op 261 | Op 262 | Op 263 | Op 264 | Op 265 | Op 266 | Op 267 | Op 268 | Op 269 | Op 270 | Op 271 | Op 272 | Op 273 | Op 274 | Op 275 | Op 276 | Op 277 | Op 278 | Op 279 | Op 280 | Op 281 | Op 282 | Op 283 | Op 284 | Op 285 | Op 286 | Op 287 | Op 288 | Op 289 | Op 290 | Op 291 | Op 292 | Op 293 | Op 294 | Op 295 | Op 296 | Op 297 | Op 298 | Op 299 | Op 300 | Op 301 | Op 302 | Op 303 | Op 304 | Op 305 | Op 306 | Op 307 | Op 308 | Op 309 | Op 310 | Op 311 | Op 312 | Op 313 | Op 314 | Op 315 | Op 316 | Op 317 | Op 318 | Op 319 | Op 320 | Op 321 | Op 322 | Op 323 | Op 324 | Op 325 | Op 326 | Op 327 | Op 328 | Op 329 | Op 330 | Op 331 | Op 332 | Op 333 | Op 334 | Op 335 | Op 336 | Op 337 | Op 338 | Op 339 | Op 340 | Op 341 | Op 342 | Op 343 | Op 344 | Op 345 | Op 346 | Op 347 | Op 348 | Op 349 | Op 350 | Op 351 | Op 352 | Op 353 | Op 354 | Op 355 | Op 356 | Op 357 | Op 358 | Op 359 | Op 360 | Op 361 | Op 362 | Op 363 | Op 364 | Op 365 | Op 366 | Op 367 | Op 368 | Op 369 | Op 370 | Op 371 | Op 372 | Op 373 | Op 374 | Op 375 | Op 376 | Op 377 | Op 378 | Op 379 | Op 380 | Op 381 | Op 382 | Op 383 | Op 384 | Op 385 | Op 386 | Op 387 | Op 388 | Op 389 | Op 390 | Op 391 | Op 392 | Op 393 | Op 394 | Op 395 | Op 396 | Op 397 | Op 398 | Op 399 | Op 400 | Op 401 | Op 402 | Op 403 | Op 404 | Op 405 | Op 406 | Op 407 | Op 408 | Op 409 | Op 410 | Op 411 | Op 412 | Op 413 | Op 414 | Op 415 | Op 416 | Op 417 |
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```

5282 073700          504:  CKLOOP
      073700 104406
5283 073702 012737 003720 075706  MOV    #2000.,T36SZ
5284 073710 013737 003116 075702  MOV    FREE,T36WB
5285 073716 012737 140005 075700  MOV    #140005,T36PK3
5286 073724 012704 075700      MOV    #T36PK3,R4
5287 073730 010465 000000      MOV    R4,TSD8(R5)
5288 073734 004737 016330      JSR    PC,WAITF
5289 073740 016501 000002      MOV    TSSR(R5),R1
5290 073744 012702 000200      MOV    #SSR,R2
5291 073750 020102      CMP    R1,R2
5292 073752 001406      BEQ    604
5293 073754 005237 002214      INC    FATFLG
5297 073760          ERRHRD  ERRNO,WTERR,PKTSSR
      073760 104456
      073762 001446
      073764 005107
      073766 012126
5298 073770          604:  CKLOOP
      073770 104406
5299 073772 012737 000005 075732  MOV    #05.,T36DLY
5300 074000          704:  DELAY  1
      074000 012727 000001
      074004 000000
      074006 013727 002116
      074012 000000
      074014 005367 177772
      074020 001375
      074022 005367 177756
      074026 001367
5301 074030 005337 075732      DEC    T36DLY
5302 074034 001361          BNE    704
5303 074036 012737 006642 075706  MOV    #3490.,T36SZ
5304 074044 012737 140005 075700  MOV    #140005,T36PK3
5305 074052 012704 075700      MOV    #T36PK3,R4
5306 074056 005037 075726      CLR    T36CNT
5307 074062 012737 001750 075732  MOV    #1000.,T36DLY
5308 074070 010465 000000      MOV    R4,TSD8(R5)
5309 074074 016501 000002      MOV    TSSR(R5),R1
5310 074100 032701 000200      BIT    #SSR,R1
5311 074104 001021          BNE    904
5312 074106 005237 075726      INC    T36CNT
5313 074112          DELAY  1
      074112 012727 000001
      074116 000000
      074120 013727 002116
      074124 000000
      074126 005367 177772
      074132 001375
      074134 005367 177756
      074140 001367
5314 074142 005337 075732      DEC    T36DLY
5315 074146 001352          BNE    804
5316 074150 012702 000200          MOV    #SSR,R2
5317 074154 020102          CMP    R1,R2
5318 074156 001406          BEQ    1004
5319 074160 005237 002214      INC    FATFLG

```

```

;LOOP IF SELECTED
TRAP    C8CLP1
;SET UP RECORD SIZE
;ADDRESS OF WRITE BUFFER
;WRITE DATA,ACK,CVC=1 COMMAND
;SET UP R4 WITH PACKET ADDRESS
;ISSUE COMMAND
;WAIT FOR SSR TO SET
;GET TSSR CONTENTS
;SET UP EXPECTED
;ARE THEY EQUAL
;BR, IF OK
;ERROR COUNT
;TSSR INCORRECT AFTER READ DATA
TRAP    C8ERHRD
.WORD   806
.WORD   WTERR
.WORD   PKTSSR
;LOOP IF SELECTED
TRAP    C8CLP1
;25 APR-83 REV B  DELAY FOR TAPE TO STOP
;25-APR-83 REV B  DELAY ROUTINE CALL
MOV     #1,(PC).
.WORD   0
MOV     L8DLY,(PC).
.WORD   0
DEC     -6(PC)
BNE     .4
DEC     -22(PC)
BNE     -.20
;BUMP COUNTER DOWN
;BR, IF MORE DELAY TO GO
;SET SIZE OF TRANSFER
;WRITE DATA,ACK,CVC=1 COMMAND
;SET UP R4 WITH PACKET ADDRESS
;CLEAR COUNTER
;SET DROP DEAD COUNTER VALUE
;ISSUE COMMAND
;GET TSSR CONTENTS
;CHECK FOR SSR SET
;BR, IF SSR IS SET
;BUMP CYCLE COUNTER
;CUT NUMBER OF LOOPS DOWN
MOV     #1,(PC).
.WORD   0
MOV     L8DLY,(PC).
.WORD   0
DEC     -6(PC)
BNE     .4
DEC     -22(PC)
BNE     -.20
;BUMP DROP DEAD COUNTER
;BR, IF THERE IS STILL TIME
;SET UP EXPECTED
;ARE THEY EQUAL
;BR, IF OK
;ERROR COUNT

```

TEST 1 HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
TEST 8: RECORD BUFFERING

SEQ 198

|      |        |        |        |        |                     |                     |                                       |
|------|--------|--------|--------|--------|---------------------|---------------------|---------------------------------------|
| 5323 | 074164 |        |        | ERRHRD | ERRNO,T36WDE,PKTSSR |                     | ;TSSR INCORRECT AFTER READ DATA       |
|      | 074164 | 104456 |        |        |                     |                     | TRAP C:ERHRD                          |
|      | 074166 | 001447 |        |        |                     |                     | .WORD 807                             |
|      | 074170 | 076563 |        |        |                     |                     | .WORD T36WDE                          |
|      | 074172 | 012126 |        |        |                     |                     | .WORD PKTSSR                          |
| 5324 | 074174 |        |        | 100:   | CKLOOP              |                     | ;LOOP IF SELECTED                     |
|      | 074174 | 104406 |        |        |                     |                     | TRAP C:CLP1                           |
| 5325 | 074176 | 013737 | 002174 | 075600 | MOV                 | UNITN,T36DSW        | ;SET UP DRIVE NUMBER                  |
| 5326 | 074204 | 052737 | 000010 | 075600 | BIS                 | #BIT3,T36DSW        | ;25 APR-83 REV B - TURN OFF BUFFERING |
| 5327 | 074212 | 012704 | 075560 |        | MOV                 | #T36PACKET,R4       | ;SUBROUTINE NEEDS PACKET ADDRESS      |
| 5328 | 074216 | 004737 | 010742 |        | JSR                 | PC,WRTCHR           | ;ISSUE WRITE CHARACTERISTICS          |
| 5329 | 074222 | 103407 |        |        | BCS                 | 110:                | ;BR, IF COMMAND ISSUED OK             |
| 5330 | 074224 | 005237 | 002214 |        | INC                 | FATFLG              | ;ERROR COUNT                          |
| 5334 | 074230 | 010001 |        |        | MOV                 | R0,R1               | ;SAVE CONTENTS OF TSSR                |
| 5335 | 074232 |        |        |        | ERRHRD              | ERRNO,WRTMSG,SFMSG  | ;WRITE CHARACTERISTIC FAILED          |
|      | 074232 | 104456 |        |        |                     |                     | TRAP C:ERHRD                          |
|      | 074234 | 001450 |        |        |                     |                     | .WORD 808                             |
|      | 074236 | 005052 |        |        |                     |                     | .WORD WRTMSG                          |
|      | 074240 | 012114 |        |        |                     |                     | .WORD SFMSG                           |
| 5336 | 074242 |        |        |        | 110:                | CKLOOP              | ;LOOP IF SELECTED                     |
|      | 074242 | 104406 |        |        |                     |                     | TRAP C:CLP1                           |
| 5337 | 074244 | 012737 | 006642 | 075706 | MOV                 | #3490.,T36S7        | ;SET SIZE OF TRANSFER                 |
| 5338 | 074252 | 012737 | 140005 | 075700 | MOV                 | #140005,T36PK       | ;WRITE DATA,ACK,CVC=1 COMMAND         |
| 5339 | 074260 | 012704 | 075700 |        | MOV                 | #T36PK3,R4          | ;SET UP R4 WITH PACKET ADDRESS        |
| 5340 | 074264 | 005037 | 075730 |        | CLR                 | T36CNU              | ;CLEAR COUNTER                        |
| 5341 | 074270 | 012737 | 001750 | 075732 | MOV                 | #1000.,T36DLY       | ;SET DROP DEAD COUNTER VALUE          |
| 5342 | 074276 | 010465 | 000000 |        | MOV                 | R4,TSD8(R5)         | ;ISSUE COMMAND                        |
| 5343 | 074302 | 016501 | 000002 |        | 120:                | MOV                 | TSSR(R5),R1                           |
| 5344 | 074306 | 032701 | 000200 |        | BIT                 | #SSR,R1             | ;GET TSSR CONTENTS                    |
| 5345 | 074312 | 001021 |        |        | BNE                 | 130:                | ;CHECK FOR SSR SET                    |
| 5346 | 074314 | 005237 | 075730 |        | INC                 | T36CNU              | ;BR, IF SSR IS SET                    |
| 5347 | 074320 |        |        |        | DELAY               | 1                   | ;BUMP CYCLE COUNTER                   |
|      | 074320 | 012727 | 000001 |        |                     |                     | ;CUT NUMBER OF LOOPS DOWN             |
|      | 074324 | 000000 |        |        |                     |                     | MOV #1,(PC).                          |
|      | 074326 | 013727 | 002116 |        |                     |                     | .WORD 0                               |
|      | 074332 | 000000 |        |        |                     |                     | MOV L:DLV,(PC).                       |
|      | 074334 | 005367 | 177772 |        |                     |                     | .WORD 0                               |
|      | 074340 | 001375 |        |        |                     |                     | DEC -6(PC)                            |
|      | 074342 | 005367 | 177756 |        |                     |                     | BNE .4                                |
|      | 074346 | 001367 |        |        |                     |                     | DEC -22(PC)                           |
| 5348 | 074350 | 005337 | 075732 |        | DEC                 | T36DLY              | BNE .-20                              |
| 5349 | 074354 | 001352 |        |        | BNE                 | 120:                | ;BUMP DROP DEAD COUNTER               |
| 5350 | 074356 | 012702 | 000200 |        | 130:                | MOV                 | #SSR,R2                               |
| 5351 | 074362 | 020102 |        |        | CMP                 | R1,R2               | ;BR, IF THERE IS STILL TIME           |
| 5352 | 074364 | 001406 |        |        | BEQ                 | 140:                | ;SET UP EXPECTED                      |
| 5353 | 074366 | 005237 | 002214 |        | INC                 | FATFLG              | ;ARE THEY EQUAL                       |
| 5357 | 074372 |        |        |        | ERRHRD              | ERRNO,WRTERR,PKTSSR | ;BR, IF OK                            |
|      | 074372 | 104456 |        |        |                     |                     | ;ERROR COUNT                          |
|      | 074374 | 001451 |        |        |                     |                     | ;TSSR INCORRECT AFTER WRITE DATA      |
|      | 074376 | 005107 |        |        |                     |                     | TRAP C:ERHRD                          |
|      | 074400 | 012126 |        |        |                     |                     | .WORD 809                             |
| 5358 | 074402 |        |        |        |                     |                     | .WORD WRTERR                          |
|      | 074402 | 104406 |        |        |                     |                     | .WORD PKTSSR                          |
| 5359 | 074404 | 013701 | 075726 |        | 140:                | CKLOOP              | ;LOOP IF SELECTED                     |
| 5360 | 074410 | 013702 | 075730 |        | MOV                 | T36CNT,R1           | TRAP C:CLP1                           |
| 5361 | 074414 | 020102 |        |        | MOV                 | T36CNU,R2           | ;GET FIRST COUNTER                    |
| 5362 | 074416 | 003406 |        |        | CMP                 | R1,R2               | ;GET SECOND COUNTER                   |
|      |        |        |        |        | BLE                 | 300:                | ;25 APR 83 REV B - COMPARE EM         |
|      |        |        |        |        |                     |                     | ;BR, IF VALUES ARE CORRECT (OK)       |



TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 8: RECORD BUFFERING

SEQ 199

```

5363 074420 005237 002214          INC  FATFLG          ;ERROR COUNT
5367 074424          ERRHRD  ERRNO,T36NAS,EXPREC  ;TAPE NOT AT CORRECT SPEED
          074424 104456          TRAP  C:ERHRD
          074426 001452          .WORD 810
          074430 075734          .WORD T36NAS
          074432 015554          .WORD EXPREC
5368 074434          3004:  CKLOOP          ;LOOP IF SELECTED
          074434 104406          TRAP  C:CLP1
5369 074436          ENDSUB
          074436          L10071:
          074436 104403          TRAP  C:ESUB
5370 074440 023727 002214 000017    CMP  FATFLG,015.    ;IS ERROR COUNT AT 25
5371 074446 103402          BLO  999$          ;BR, IF LESS THAN 25
5372 074450 004737 017262          JSR  PC,CKDROP        ;TRY TO DROP THE UNIT
5373 074454          999$:
5374          :
5375          :
5376          : TEST 8, SUBTEST 2
5377          :
5378          :
5379          :
5380          : THIS TEST VERIFIES THAT RECORD BUFFERING, USED FOR WRITE DATA
5381          : AND READ NEXT COMMANDS, OPERATES PROPERLY AND IS PROPERLY
5382          : CONTROLLED BY THE EXTENDED CHARACTERISTICS DATA WORD. IF THE
5383          : M7196 CONTROLLER MODULE IS NOT ALREADY IN EXTENDED FEATURES MODE
5384          : (AS CONTROLLED BY THE DIP SWITCH ON THE MODULE), IT IS PLACED
5385          : INTO THAT MODE BY INVERTING THE SENSE OF THE SWITCH USING THE
5386          : WRITE SUBSYSTEM MEMORY COMMAND. NOTE THAT RECORD BUFFERING HAS
5387          : BEEN ENABLED IN PREVIOUS TESTS OF READ AND WRITE AND SO HAS BEEN
5388          : PARTIALLY TESTED ALREADY. THIS TEST VERIFIES THAT BUFFERING IS
5389          : ACTUALLY OPERATING. THE FOLLOWING SUBTESTS ARE PERFORMED:
5390          :
5391          : VERIFIES THAT NORMAL BUFFERING ON WRITE DATA COMMANDS OPERATES
5392          : PROPERLY AT LOW TAPE SPEED. THE FOLLOWING SEQUENCE IS
5393          : PERFORMED:
5394          :
5395          : 1. THE TAPE IS REWOUND.
5396          :
5397          : 2. BUFFERING IS DISABLED AND LOW TAPE SPEED IS SELECTED
5398          : (VIA WRITE CHARACTERISTICS COMMAND).
5399          :
5400          : 3. AN INITIAL RECORD IS WRITTEN ONTO THE TAPE IN ORDER TO
5401          : MOVE THE TAPE OFF BOT.
5402          :
5403          : 4. THE PROGRAM DELAYS FOR A TIME SUFFICIENT TO ALLOW THE
5404          : TAPE TO REPOSITION AND COME TO REST.
5405          :
5406          : 5. A WRITE DATA COMMAND, WITH A BYTE COUNT LESS THAN 3.5K,
5407          : IS ISSUED, AND THE PROGRAM COUNTS, IN A WAIT LOOP, THE
5408          : TIME IT TAKES TO RECEIVE COMMAND TERMINATION. THIS
5409          : SHOULD BE A RELATIVELY LONG TIME SINCE BUFFERING IS
5410          : DISABLED.
5411          :
5412          : 6. BUFFERING IS ENABLED.
5413          :
5414          : 7. THE WRITE DATA COMMAND IS AGAIN ISSUED, WITH THE SAME
5415          : BYTE COUNT AS THAT USED PREVIOUSLY. THE TIME TO
          : COMPLETION IS AGAIN MEASURED.

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[illegible]



SEQ 201

| Line | Address | Offset | Label  | Operation | Register/Value      | Comment                                   | Trap  | Offset   |
|------|---------|--------|--------|-----------|---------------------|-------------------------------------------|-------|----------|
| 5460 | 074642  | 010004 |        | MOV       | R0,R4               | ;SET UP REWIND PACKET ADDRESS             |       |          |
| 5461 | 074644  | 005237 | 002214 | INC       | FATFLG              | ;ERROR COUNT                              |       |          |
| 5465 | 074650  |        |        | ERRHRD    | ERRNO,T36RWN,PKTSSR | ;REWIND NOT ACCEPTED                      |       |          |
|      | 074650  | 104456 |        |           |                     |                                           | TRAP  | C\$ERHRD |
|      | 074652  | 001455 |        |           |                     |                                           | .WORD | 813      |
|      | 074654  | 077141 |        |           |                     |                                           | .WORD | T36RWN   |
|      | 074656  | 012126 |        |           |                     |                                           | .WORD | PKTSSR   |
| 5466 | 074660  |        | 30\$:  | CKLOOP    |                     | ;LOOP IF SELECTED                         |       |          |
|      | 074660  | 104406 |        |           |                     |                                           | TRAP  | C\$CLP1  |
| 5467 | 074662  | 013701 | 075610 | MOV       | T36BFR+0,R1         | ;PICK UP XSTO                             |       |          |
| 5468 | 074666  | 010102 |        | MOV       | R1,R2               | ;SET UP EXPECTED                          |       |          |
| 5469 | 074670  | 052702 | 000002 | BIS       | #BIT1,R2            | ;SET BOT BIT IN EXPECTED                  |       |          |
| 5470 | 074674  | 020102 |        | CMP       | R1,R2               | ;DOES EXP = REC'D                         |       |          |
| 5471 | 074676  | 001406 |        | BEQ       | 40\$                | ;BR, IF EQUAL (OK)                        |       |          |
| 5472 | 074700  | 005237 | 002214 | INC       | FATFLG              | ;ERROR COUNT                              |       |          |
| 5476 | 074704  |        |        | ERRHRD    | ERRNO,T36BOT,EXPREC | ;TAPE NOT AT BOT AFTER REWIND             |       |          |
|      | 074704  | 104456 |        |           |                     |                                           | TRAP  | C\$ERHRD |
|      | 074706  | 001456 |        |           |                     |                                           | .WORD | 814      |
|      | 074710  | 076635 |        |           |                     |                                           | .WORD | T36BOT   |
|      | 074712  | 015554 |        |           |                     |                                           | .WORD | EXPREC   |
| 5477 | 074714  |        | 40\$:  | CKLOOP    |                     | ;LOOP IF SELECTED                         |       |          |
|      | 074714  | 104406 |        |           |                     |                                           | TRAP  | C\$CLP1  |
| 5478 | 074716  | 013737 | 002174 | MOV       | UNITN,T36DSW        | ;SET UP DRIVE NUMBER                      |       |          |
| 5479 | 074724  | 052737 | 000030 | BIS       | #BIT3!BIT4,T36DSW   | ;25 APR-83 REV B TURN ON THE BUFFERING    |       |          |
| 5480 | 074732  | 012704 | 075560 | MOV       | #T36PACKET,R4       | ;SUBROUTINE NEEDS PACKET ADDRESS          |       |          |
| 5481 | 074736  | 004737 | 010742 | JSR       | PC,WRTCHR           | ;ISSUE WRITE CHARACTERISTICS              |       |          |
| 5482 | 074742  | 103407 |        | BCS       | 50\$                | ;BR, IF COMMAND ISSUED OK                 |       |          |
| 5483 | 074744  | 005237 | 002214 | INC       | FATFLG              | ;ERROR COUNT                              |       |          |
| 5487 | 074750  | 010001 |        | MOV       | R0,R1               | ;SAVE CONTENTS OF TSSR                    |       |          |
| 5488 | 074752  |        |        | ERRHRD    | ERRNO,WRTMSG,SFIMSG | ;WRITE CHARACTERISTICS FAILED             |       |          |
|      | 074752  | 104456 |        |           |                     |                                           | TRAP  | C\$ERHRD |
|      | 074754  | 001457 |        |           |                     |                                           | .WORD | 815      |
|      | 074756  | 005052 |        |           |                     |                                           | .WORD | WRTMSG   |
|      | 074760  | 012114 |        |           |                     |                                           | .WORD | SFIMSG   |
| 5489 | 074762  |        | 50\$:  | CKLOOP    |                     | ;LOOP IF SELECTED                         |       |          |
|      | 074762  | 104406 |        |           |                     |                                           | TRAP  | C\$CLP1  |
| 5490 | 074764  | 012737 | 003720 | MOV       | #2000.,T36SZ        | ;SET UP RECORD SIZE                       |       |          |
| 5491 | 074772  | 013737 | 003116 | MOV       | FREE,T36WB          | ;ADDRESS OF WRITE BUFFER                  |       |          |
| 5492 | 075000  | 012737 | 140005 | MOV       | #140005,T36PK3      | ;WRITE DATA,ACK,CVC=1 COMMAND             |       |          |
| 5493 | 075006  | 012704 | 075700 | MOV       | #T36PK3,R4          | ;SET UP R4 WITH PACKET ADDRESS            |       |          |
| 5494 | 075012  | 010465 | 000000 | MOV       | R4,TSDB(R5)         | ;ISSUE COMMAND                            |       |          |
| 5495 | 075016  | 004737 | 016330 | JSR       | PC,WAITF            | ;WAIT FOR SSR TO SET                      |       |          |
| 5496 | 075022  | 016501 | 000002 | MOV       | TSSR(R5),R1         | ;GET TSSR CONTENTS                        |       |          |
| 5497 | 075026  | 012702 | 000200 | MOV       | #SSR,R2             | ;SET UP EXPECTED                          |       |          |
| 5498 | 075032  | 020102 |        | CMP       | R1,R2               | ;ARE THEY EQUAL                           |       |          |
| 5499 | 075034  | 001406 |        | BEQ       | 60\$                | ;BR, IF OK                                |       |          |
| 5500 | 075036  | 005237 | 002214 | INC       | FATFLG              | ;ERROR COUNT                              |       |          |
| 5504 | 075042  |        |        | ERRHRD    | ERRNO,WRTERR,PKTSSR | ;TSSR INCORRECT AFTER READ DATA           |       |          |
|      | 075042  | 104456 |        |           |                     |                                           | TRAP  | C\$ERHRD |
|      | 075044  | 001460 |        |           |                     |                                           | .WORD | 816      |
|      | 075046  | 005107 |        |           |                     |                                           | .WORD | WRTERR   |
|      | 075050  | 012126 |        |           |                     |                                           | .WORD | PKTSSR   |
| 5505 | 075052  |        | 60\$:  | CKLOOP    |                     | ;LOOP IF SELECTED                         |       |          |
|      | 075052  | 104406 |        |           |                     |                                           | TRAP  | C\$CLP1  |
| 5506 | 075054  | 012737 | 000005 | MOV       | #05.,T36DLY         | ;25-APR-83 REV B - DELAY FOR TAPE TO STOP |       |          |
| 5    |         |        |        |           |                     |                                           |       |          |

| Address | Hex | Dec | Label | Op | Op2 | Op3 | Op4 | Op5 | Op6 | Op7 | Op8 | Op9 | Op10 | Op11 | Op12 | Op13 | Op14 | Op15 | Op16 | Op17 | Op18 | Op19 | Op20 | Op21 | Op22 | Op23 | Op24 | Op25 | Op26 | Op27 | Op28 | Op29 | Op30 | Op31 | Op32 | Op33 | Op34 | Op35 | Op36 | Op37 | Op38 | Op39 | Op40 | Op41 | Op42 | Op43 | Op44 | Op45 | Op46 | Op47 | Op48 | Op49 | Op50 | Op51 | Op52 | Op53 | Op54 | Op55 | Op56 | Op57 | Op58 | Op59 | Op60 | Op61 | Op62 | Op63 | Op64 | Op65 | Op66 | Op67 | Op68 | Op69 | Op70 | Op71 | Op72 | Op73 | Op74 | Op75 | Op76 | Op77 | Op78 | Op79 | Op80 | Op81 | Op82 | Op83 | Op84 | Op85 | Op86 | Op87 | Op88 | Op89 | Op90 | Op91 | Op92 | Op93 | Op94 | Op95 | Op96 | Op97 | Op98 | Op99 | Op100 | Op101 | Op102 | Op103 | Op104 | Op105 | Op106 | Op107 | Op108 | Op109 | Op110 | Op111 | Op112 | Op113 | Op114 | Op115 | Op116 | Op117 | Op118 | Op119 | Op120 | Op121 | Op122 | Op123 | Op124 | Op125 | Op126 | Op127 | Op128 | Op129 | Op130 | Op131 | Op132 | Op133 | Op134 | Op135 | Op136 | Op137 | Op138 | Op139 | Op140 | Op141 | Op142 | Op143 | Op144 | Op145 | Op146 | Op147 | Op148 | Op149 | Op150 | Op151 | Op152 | Op153 | Op154 | Op155 | Op156 | Op157 | Op158 | Op159 | Op160 | Op161 | Op162 | Op163 | Op164 | Op165 | Op166 | Op167 | Op168 | Op169 | Op170 | Op171 | Op172 | Op173 | Op174 | Op175 | Op176 | Op177 | Op178 | Op179 | Op180 | Op181 | Op182 | Op183 | Op184 | Op185 | Op186 | Op187 | Op188 | Op189 | Op190 | Op191 | Op192 | Op193 | Op194 | Op195 | Op196 | Op197 | Op198 | Op199 | Op200 | Op201 | Op202 | Op203 | Op204 | Op205 | Op206 | Op207 | Op208 | Op209 | Op210 | Op211 | Op212 | Op213 | Op214 | Op215 | Op216 | Op217 | Op218 | Op219 | Op220 | Op221 | Op222 | Op223 | Op224 | Op225 | Op226 | Op227 | Op228 | Op229 | Op230 | Op231 | Op232 | Op233 | Op234 | Op235 | Op236 | Op237 | Op238 | Op239 | Op240 | Op241 | Op242 | Op243 | Op244 | Op245 | Op246 | Op247 | Op248 | Op249 | Op250 | Op251 | Op252 | Op253 | Op254 | Op255 | Op256 | Op257 | Op258 | Op259 | Op260 | Op261 | Op262 | Op263 | Op264 | Op265 | Op266 | Op267 | Op268 | Op269 | Op270 | Op271 | Op272 | Op273 | Op274 | Op275 | Op276 | Op277 | Op278 | Op279 | Op280 | Op281 | Op282 | Op283 | Op284 | Op285 | Op286 | Op287 | Op288 | Op289 | Op290 | Op291 | Op292 | Op293 | Op294 | Op295 | Op296 | Op297 | Op298 | Op299 | Op300 | Op301 | Op302 | Op303 | Op304 | Op305 | Op306 | Op307 | Op308 | Op309 | Op310 | Op311 | Op312 | Op313 | Op314 | Op315 | Op316 | Op317 | Op318 | Op319 | Op320 | Op321 | Op322 | Op323 | Op324 | Op325 | Op326 | Op327 | Op328 | Op329 | Op330 | Op331 | Op332 | Op333 | Op334 | Op335 | Op336 | Op337 | Op338 | Op339 | Op340 | Op341 | Op342 | Op343 | Op344 | Op345 | Op346 | Op347 | Op348 | Op349 | Op350 | Op351 | Op352 | Op353 | Op354 | Op355 | Op356 | Op357 | Op358 | Op359 | Op360 | Op361 | Op362 | Op363 | Op364 | Op365 | Op366 | Op367 | Op368 | Op369 | Op370 | Op371 | Op372 | Op373 | Op374 | Op375 | Op376 | Op377 | Op378 | Op379 | Op380 | Op381 | Op382 | Op383 | Op384 | Op385 | Op386 | Op387 | Op388 | Op389 | Op390 | Op391 | Op392 | Op393 | Op394 | Op395 | Op396 | Op397 | Op398 | Op399 | Op400 | Op401 | Op402 | Op403 | Op404 | Op405 | Op406 | Op407 | Op408 | Op409 | Op410 | Op411 | Op412 | Op413 | Op414 | Op415 | Op416 | Op41 |
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TEST 1 - HARDWARE TEST 1.8 TEST MACRO M1113 06 FEB 84 18:04  
TEST 8: RECORD BUFFERING

SEQ 203

|      |        |        |        |        |        |                     |       |                                 |
|------|--------|--------|--------|--------|--------|---------------------|-------|---------------------------------|
| 5546 | 075342 | 012704 | 075700 |        | MOV    | #T36PK3,R4          |       | ;SET UP R4 WITH PACKET ADDRESS  |
| 5547 | 075346 | 005037 | 075730 |        | CLR    | T36CNU              |       | ;CLEAR COUNTER                  |
| 5548 | 075352 | 012737 | 001750 | 075732 | MOV    | #1000.,T36DLY       |       | ;SET DROP DEAD COUNTER VALUE    |
| 5549 | 075360 | 010465 | 000000 |        | MOV    | R4,TSDR(R5)         |       | ;ISSUE COMMAND                  |
| 5550 | 075364 | 016501 | 000002 | 120\$: | MOV    | TSSR(R5),R1         |       | ;GET TSSR CONTENTS              |
| 5551 | 075370 | 032701 | 000200 |        | BIT    | #SSR,R1             |       | ;CHECK FOR SSR SET              |
| 5552 | 075374 | 001021 |        |        | BNE    | 130\$               |       | ;BR, IF SSR IS SET              |
| 5553 | 075376 | 005237 | 075730 |        | INC    | T36CNU              |       | ;BUMP CYCLE COUNTER             |
| 5554 | 075402 |        |        |        | DELAY  | 1                   |       | ;CUT NUMBER OF LOOPS DOWN       |
|      | 075402 | 012727 | 000001 |        |        |                     | MOV   | #1,(PC)+                        |
|      | 075406 | 000000 |        |        |        |                     | .WORD | 0                               |
|      | 075410 | 013727 | 002116 |        |        |                     | MOV   | L\$DLY,(PC)+                    |
|      | 075414 | 000000 |        |        |        |                     | .WORD | 0                               |
|      | 075416 | 005367 | 177772 |        |        |                     | DEC   | 6(PC)                           |
|      | 075422 | 001375 |        |        |        |                     | BNE   | . 4                             |
|      | 075424 | 005367 | 177756 |        |        |                     | DEC   | 22(PC)                          |
|      | 075430 | 001367 |        |        |        |                     | BNE   | . 20                            |
| 5555 | 075432 | 005337 | 075732 |        | DEC    | T36DLY              |       | ;BUMP DROP DEAD COUNTER         |
| 5556 | 075436 | 001352 |        |        | BNE    | 120\$               |       | ;BR, IF THERE IS STILL TIME     |
| 5557 | 075440 | 012702 | 000200 | 130\$: | MOV    | #SSR,R2             |       | ;SET UP EXPECTED                |
| 5558 | 075444 | 020102 |        |        | CMP    | R1,R2               |       | ;ARE THEY EQUAL                 |
| 5559 | 075446 | 001406 |        |        | BEQ    | 140\$               |       | ;BR, IF OK                      |
| 5560 | 075450 | 005237 | 002214 |        | INC    | FATFLG              |       | ;ERROR COUNT                    |
| 5564 | 075454 |        |        |        | ERRHRD | ERRNO,WRERR,PKTSSR  |       | ;SSR INCORRECT AFTER WRITE DATA |
|      | 075454 | 104456 |        |        |        |                     | TRAP  | C\$ERHRD                        |
|      | 075456 | 001463 |        |        |        |                     | .WORD | 819                             |
|      | 075460 | 005107 |        |        |        |                     | .WORD | WRERR                           |
|      | 075462 | 012126 |        |        |        |                     | .WORD | PKTSSR                          |
| 5565 | 075464 |        |        | 140\$: | CKLOOP |                     |       | ;LOOP IF SELECTED               |
|      | 075464 | 104406 |        |        |        |                     | TRAP  | C\$CLP1                         |
| 5566 | 075466 | 013701 | 075726 |        | MOV    | T36CNT,R1           |       | ;GET FIRST COUNTER              |
| 5567 | 075472 | 013702 | 075730 |        | MOV    | T36CNU,R2           |       | ;GET SECOND COUNTER             |
| 5568 | 075476 | 020102 |        |        | CMP    | R1,R2               |       | ;25 APR-83 REV B COMPARE EM     |
| 5569 | 075500 | 003406 |        |        | BLE    | 300\$               |       | ;BR, IF VALUES ARE CORRECT (OK) |
| 5570 | 075502 | 005237 | 002214 |        | INC    | FA,FLG              |       | ;ERROR COUNT                    |
| 5574 | 075506 |        |        |        | ERRHRD | ERRNO,T36NAS,EXPREC |       | ;TAPE NOT AT CORRECT SPEED      |
|      | 075506 | 104456 |        |        |        |                     | TRAP  | C\$ERHRD                        |
|      | 075510 | 001464 |        |        |        |                     | .WORD | 820                             |
|      | 075512 | 075734 |        |        |        |                     | .WORD | T36NAS                          |
|      | 075514 | 015554 |        |        |        |                     | .WORD | EXPREC                          |
| 5575 | 075516 |        |        | 300\$: | CKLOOP |                     |       | ;LOOP IF SELECTED               |
|      | 075516 | 104406 |        |        |        |                     | TRAP  | C\$CLP1                         |
| 5576 | 075520 |        |        |        | ENDSUB |                     |       |                                 |
|      | 075520 |        |        |        |        |                     |       |                                 |
|      | 075520 | 104403 |        |        |        |                     |       |                                 |
| 5577 | 075522 | 023727 | 002214 | 000017 | CMP    | FATFLG,#15.         |       |                                 |
| 5578 | 075530 | 103402 |        |        | BLO    | 999\$               |       |                                 |
| 5579 | 075532 | 004737 | 017262 |        | JSR    | PC,CKDROP           |       |                                 |
| 5580 | 075536 |        |        | 999\$: |        |                     |       |                                 |
| 5581 |        |        |        |        |        |                     |       |                                 |
| 5582 |        |        |        |        |        |                     |       |                                 |
| 5583 |        |        |        |        |        |                     |       |                                 |
| 5584 | 075536 | 004737 | 016536 |        | JSR    | PC,TSTLOOP          |       | ;DO WE NEED TO ITERATE TEST     |
| 5585 | 075542 | 103002 |        |        | BCC    | 163\$               |       | ;BR, IF NO LOOP REQUIRED        |
| 5586 | 075544 | 000137 | 073400 |        | JMP    | T36LOOP             |       | ;EXECUTE AGAIN                  |
| 5587 | 075550 |        |        | 163\$: |        |                     |       |                                 |
| 5588 | 075550 |        |        |        | EXIT   | TST                 |       | ;ALL DONE THIS TEST             |

TEST 1 - HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 8: RECORD BUFFERING

SEQ 204

|        |        |  |  |       |          |
|--------|--------|--|--|-------|----------|
| 075550 | 104432 |  |  | TRAP  | C\$EXIT  |
| 075552 | 003344 |  |  | .WORD | L10070 . |

  

|      |        |                                        |  |                                            |  |
|------|--------|----------------------------------------|--|--------------------------------------------|--|
| 5589 |        | ;                                      |  |                                            |  |
| 5590 |        | ;LOCAL STORAGE FOR THIS TEST           |  |                                            |  |
| 5591 |        | ;                                      |  |                                            |  |
| 5593 | 075560 | .*<.*10>E177770                        |  |                                            |  |
| 5595 | 075560 | T36PACKET:                             |  | ;COMMAND PACKET FOR TEST                   |  |
| 5596 | 075560 | .WORD 100004                           |  | ;WRITE CHARACTERISTICS COMMAND, WITH . ACK |  |
| 5597 | 075562 | .WORD T36DATA                          |  | ;ADDRESS OF CHARACTERISTICS BLOCK          |  |
| 5598 | 075564 | .WORD 0                                |  |                                            |  |
| 5599 | 075566 | .WORD 10.                              |  | ;STARTING VALUE OF BLOCK SIZE              |  |
| 5600 | 075570 | T36DATA:                               |  | ;CHARACTERISTICS DATA BLOCK                |  |
| 5601 | 075570 | .WORD 36BFR                            |  | ;ADDRESS OF MESSAGE BUFFER                 |  |
| 5602 | 075572 | .WORD 0                                |  |                                            |  |
| 5603 | 075574 | .WORD 20.                              |  | ;LENGTH OF MESSAGE BUFFER                  |  |
| 5604 | 075576 | .WORD 0                                |  |                                            |  |
| 5605 | 075600 | T36DSW: .WORD 0                        |  | ;SELECT DRIVE 0                            |  |
| 5606 | 075602 | T36BFR: .BLKW 25.                      |  | ;MESSAGE BUFFER                            |  |
| 5607 |        | ;                                      |  |                                            |  |
| 5608 |        | ;WRITE SUBSYSTEM MEMORY COMMAND PACKET |  |                                            |  |
| 5609 |        | ;                                      |  |                                            |  |
| 5611 | 075670 | .*<.*10>E177770                        |  |                                            |  |
| 5613 | 075670 | T36PK2:                                |  |                                            |  |
| 5614 | 075670 | .WORD 100006                           |  | ;WRITE SUB SYS MEM COMMAND, AND ACK        |  |
| 5615 | 075672 | .WORD T36BF2                           |  | ;ADDRESS OF SELECT BLOCK DATA              |  |
| 5616 | 075674 | .WORD 0                                |  |                                            |  |
| 5617 | 075676 | .WORD 6.                               |  | ;SIZE OF DATA PACKET                       |  |
| 5618 |        |                                        |  |                                            |  |
| 5622 | 075700 | T36PK3:                                |  |                                            |  |
| 5623 | 075700 | .WORD 100005                           |  | ;REREAD COMMAND, AND ACK                   |  |
| 5624 | 075702 | T36RB:                                 |  |                                            |  |
| 5625 | 075702 | T36WB: .WORD FREE                      |  | ;ADDRESS OF WRITE BUFFER                   |  |
| 5626 | 075704 | .WORD 0                                |  |                                            |  |
| 5627 | 075706 | T36SZ: .WORD 0                         |  | ;SIZE OF BUFFER (EXTENT)                   |  |
| 5628 |        | .EVEN                                  |  |                                            |  |
| 5629 |        | ;                                      |  |                                            |  |
| 5630 |        | ;                                      |  |                                            |  |
| 5631 |        | ;                                      |  |                                            |  |
| 5632 | 075710 | T36BF2:                                |  |                                            |  |
| 5633 | 075710 | T36BS0: .BYTE 10                       |  | ;BSEL0 AREA                                |  |
| 5634 | 075711 | T36BS1: .BYTE 200                      |  | ;BSEL1 AREA                                |  |
| 5635 | 075712 | T36S2: .WORD 0                         |  | ;SEL 2 AREA                                |  |
| 5636 | 075714 | T36S3: .WORD 0                         |  | ;DATA AREA                                 |  |
| 5637 |        | ;                                      |  |                                            |  |
| 5638 |        | ;                                      |  |                                            |  |
| 5639 |        | .EVEN                                  |  |                                            |  |
| 5640 |        | ;TAPE MOTION PACKET COMMAND VALUES     |  |                                            |  |
| 5641 |        |                                        |  |                                            |  |
| 5642 | 075716 | T36RN: .WORD 100205                    |  | ;REREAD DATA (NEXT)                        |  |
| 5643 | 075720 | T36WDR: .WORD 100605                   |  | ;REREAD DATA RETRY                         |  |
| 5644 | 075722 | T36CON: .WORD 102205                   |  | ;WRITE CONTINUOUS                          |  |
| 5645 | 075724 | .WORD 177777                           |  | ;END OF DATA                               |  |
| 5646 |        |                                        |  |                                            |  |
| 5647 |        | ;                                      |  |                                            |  |
| 5648 | 075726 | T36CNT: .WORD 0                        |  | ;TAPE TIMER COUNTER STORAGE AREA           |  |
| 5649 | 075730 | T36CNU: .WORD 0                        |  | ;TAPE TIMER COUNTER STORAGE AREA           |  |
| 5650 | 075732 | T36DLY: .WORD 0                        |  | ;DELAY COUNTER                             |  |

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5651
5652          ;*
5653          ;LOCAL TEXT MESSAGES FOR TEST
5654          ;*
5655 075734      111      155      160 T36NAS: .ASCIIZ 'Improper Tape Controller Buffering Speed'
5656 076005      124      141      160 T36WNG: .ASCIIZ 'Tape Position Incorrect After REREAD Previous (OPP=1)'
5657 076073      124      123      123 T36RDF: .ASCIIZ 'TSSR Incorrect After READ DATA Command'
5658 076142      122      105      122 T36RRF: .ASCIIZ 'REREAD Previous (Space Reverse, Read Forward) Command Failed'
5659 076237      120      117      123 T36SC: .ASCIIZ 'POSITION (Space Command) Failed, TSSR Not Correct'
5660 076321      122      111      102 T36LOR: .ASCIIZ 'RIB NOT SET AFTER READ REVERSE INTO BOT'
5661 076371      124      123      123 T36WDF: .ASCIIZ 'TSSR Not Correct After Illegal Mode Bits Set'
5662 076446      111      154      154 T36LOQ: .ASCIIZ 'Illegal Mode Bits, Failed To Set ILC Bit In XST0'
5663 076527      122      105      122 T36SSR: .ASCIIZ 'REREAD COMMAND Not Accepted'
5664 076563      124      123      123 T36WDE: .ASCIIZ 'TSSR Not Correct After WRITE DATA Command'
5665 076635      124      141      160 T36BOT: .ASCIIZ 'Tape Not At BOT After REWIND Command (BOT Not Set In XST0)'
5666 076730      127      122      111 T36TIM: .ASCIIZ 'WRITE DATA RETRY'S Erase Tape Not Long Enough'
5667 077005      122      105      122 T36EOT: .ASCIIZ 'REREAD DATA OVER EOT GAVE NO TAPE STATUS ALERT'
5668 077064      124      123      123 T36TM: .ASCIIZ 'TSSR Not Correct After REREAD COMMAND Reject'
5669 077141      122      145      167 T36RWN: .ASCIIZ 'Rewind (POSITION) Command Not Accepted'
5670 077210      122      101      115 T36RNC: .ASCIIZ 'RAM Error, Correct Data Pattern Not In Ram'
5671 077263      124      123      123 T36AM3: .ASCIIZ 'TSSR Init. Failed After REREAD COMMAND'
5672 077332      104      162      151 T36OFL: .ASCIIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
5673 077405      124      123      123 T36WDD: .ASCIIZ 'TSSR Not Correct After REREAD DATA Command, SWB Bit Set'
5674 077475      124      123      123 T36WDC: .ASCIIZ 'TSSR Not Correct After REREAD DATA Command'
5675 077550      103      126      103 T36VCK: .ASCIIZ 'CVC Set, Didn't Reset VCK In Message Buffer'
5676 077623      124      123      102 T36BA: .ASCIIZ 'TSBA Not Correct After REREAD DATA Command'
5677 077676      127      122      111 T36WSS: .ASCIIZ 'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'
5678 077765      122      145      141 T36LON: .ASCIIZ 'Reading Long Record Failed To Set RLL Bit In XST0'
5679 100047      122      145      141 T36LOP: .ASCIIZ 'Reading Long Record Failed To Set RLS Bit In XST0'
5680 100131      122      145      163 T36PBP: .ASCIIZ 'Residual Byte Count Incorrect After Short Record Read'
5681 100217      122      145      141 T36TRL: .ASCIIZ 'Reading Long Record Failed To Give Tape Status Alert'
5682 100305      127      122      111 T36NEF: .ASCIIZ 'WRITE DATA RETRY, At First Record, Failed To Set RIB Bit XST3'
5683 100403      124      123      123 T36SCF: .ASCIIZ 'TSSR Not Correct After SPACE RECORDS Command'
5684 100460      124      123      123 T36TSA: .ASCIIZ 'TSSR Not Correct After WRITE DATA RETRY, Into BOT'
5685 100542      124      123      123 T36WRF: .ASCIIZ 'TSSR Not Correct After WRITE DATA RETRY Command'
5686 100622      104      141      164 T36DTA: .ASCIIZ 'Data Compare Error, Data Read From Tape Not Equal To Written'
5687 100717      122      145      143 T36ID: .ASCIIZ 'Record Buffering'
5688          .EVEN
5689          ;*
5690          ;
5691          ;ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES
5692          ;WRITE SUBSYSTEM MEMORY COMMAND
5693          ;
5694          ;*
5695
5696 100740
5697 100740
5698 100744      012701      075560
5699 100750      012721      100004
5700 100754      012721      075570
5701 100760      005021
5702 100762      012721      000012
5703 100766      012721      075602
5704 100772      005021
5705 100774      012721      000024
5706 101000      005021
5707 101002      012711      000000

T36REST:
      SAVREG
      MOV      #T36PACKET,R1
      MOV      #100004,(R1)
      MOV      #T36DATA,(R1)
      CLR      (R1)
      MOV      #10,(R1)
      MOV      #T36BFR,(R1)
      CLR      (R1)
      MOV      #20,(R1)
      CLR      (R1)
      MOV      #0(R1)

      ;SAVE THE REGISTERS
      ;START OF THE PACKET
      ;WRITE SUBSYSTEM MEM. WITH ACK.
      ;ADDRESS OF CHARAISTICS DATA BLOCK
      ;EXTENDED ADDRESS
      ;SIZE OF DATA BLOCK IN BYTES
      ;ADDRESS OF MESSAGE BUFFER
      ;LENGTH OF MESSAGE BUFFER
      ;SELECT DRIVE ZERO

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TEST 1 - HARDWARE TEST 1-8 TEST MACRO M1113 06 FEB 84 18:04  
 TEST 8: RECORD BUFFERING

SEQ 206

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5708 101006 012702 000030      MOV    #24.,R2          ;NUMBER OF LOCATIONS TO BE CLEARED
5709 101012 012762 177777 075602 64$: MOV    #177777,T36BFR(R2) ;ALL ONES TO MESSAGE BUFFER
5710 101020 005742          TST    -(R2)          ;NEXT LOCATION
5711 101022 022702 000000      CMP    #0,R2          ;AT END OF LOOP YET
5712 101026 001371          BNE    64$          ;KEEP GOING UNTIL DONE
5713 101030 000207          RTS    PC          ;RETURN
5714
5715 101032          T36RT2:
5716 101032          SAVREG          ;SAVE THE REGISTERS
5717 101036 012701 075670      MOV    #T36PK2,R1        ;START OF THE PACKET
5718 101042 012721 100006      MOV    #100006,(R1)+      ;WRITE SUBSYSTEM MEM. WITH ACK,
5719 101046 012721 075710      MOV    #T36BF2,(R1)+      ;ADDRESS OF DATA BLOCK
5720 101052 005021          CLR    (R1)+          ;EXTENDED ADDRESS
5721 101054 012721 000006      MOV    #6.,(R1)+          ;SIZE OF DATA BLOCK IN BYTES
5722 101060 005021          CLR    (R1)+
5723 101062 012701 075710      MOV    #T36BF2,R1        ;POINT TO DATA SEL AREA
5724 101066 005021          CLR    (R1)+
5725 101070 005011          CLR    (R1)
5726 101072 000207          RTS    PC          ;RETURN
5727 101074          T36RT3:
5728 101074          SAVREG          ;SAVE REGISTERS
5729 101100 012701 075700      MOV    #T36PK3,R1        ;SET UP POINTER ADDRESS
5730 101104 005021          CLR    (R1)+          ;COMMAND SPACE
5731 101106 005021          CLR    (R1)+          ;ADDRESS OF DATA BLOCK
5732 101110 005021          CLR    (R1)+          ;EXTENDED ADDRESS
5733 101112 005011          CLR    (R1)          ;SIZE OF DATA TRANSFER BLOCK
5734 101114 000207          RTS    PC          ;RETURN
5735 101116          ENDTST
5736 101116 104401          L10070: TRAP    C$ETST
5737
5738          .SBTTL TEST 9: FUNCTION TIMING
5739          ;*
5740          ; THIS TEST VERIFIES THAT THE TAPE TRANSPORT SEEMS TO BE WRITING
5741          ; RECORDS, GAPS, AND EXTENDED GAPS OF THE PROPER LENGTH. BOTH LOW
5742          ; AND HIGH SPEED MODES ARE TESTED. IT IS ALSO VERIFIED THAT A
5743          ; SPACE RECORDS COMMAND WITH A RECORD COUNT OF 80 OR MORE, AND A
5744          ; SKIP TAPE MARKS COMMAND WITH A COUNT OF 2 OF MORE, OPERATE THE
5745          ; TAPE IN HIGH-SPEED MODE. THIS TEST CAN ONLY BE RUN IF A
5746          ; REAL-TIME CLOCK IS AVAILIABLE ON THE SYSTEM. THE TEST OPERATES BY
5747          ; TIMING VARIOUS TAPE-MOTION OPERATIONS, USING A NUMBER OF
5748          ; DIFFERENT TEST RECORD LENGTHS.
5749          ;
5750          ; -
5751 101120          BGNTST
5752 101120 012737 006354 002172      MOV    #EPRT1,EPRTSW      ;PRIMARY ERROR MESSAGE
5753 101126 004737 017354          JSR    PC,KTOFF          ;TURN KT OFF
5758 101132 012700 105343          MOV    #TST37ID,R0        ;ASCII MESSAGE TO IDENTIFY TEST
5759 101136 004737 01657C          JSR    PC,TSTSETUP      ;DO INITIAL TEST SETUP
5760 101142 012737 000005 002210      MOV    #5,LOOPCNT      ;PERFORM 5 ITERATIONS
5761 101150 005037 102406          CLR    T37CNT          ;CLEAR TAPE RECORD COUNTER
5762
5763          ;*
5764          ; TEST 9, SUBTEST 1
5765          ;

```



[illegible]

TEST 1 - HARDWARE TEST 1-8 TEST MACRO M1113 06 FEB 84 18:04  
TEST 9: FUNCTION TIMING

SEQ 208

|      |        |        |        |        |        |                     |                |  |                                 |       |          |
|------|--------|--------|--------|--------|--------|---------------------|----------------|--|---------------------------------|-------|----------|
|      | 101360 | 001607 |        |        |        |                     |                |  |                                 | .WORD | 903      |
|      | 101362 | 103565 |        |        |        |                     |                |  |                                 | .WORD | T37RWN   |
|      | 101364 | 012126 |        |        |        |                     |                |  |                                 | .WORD | PKTSSR   |
| 5812 | 101366 |        |        | 304:   | CKLOOP |                     |                |  | LOOP IF SELECTED                |       |          |
|      | 101366 | 104406 |        |        |        |                     |                |  |                                 | TRAP  | C\$CLP1  |
| 5813 | 101370 | 013701 | 102270 |        | MOV    | T37BFR+6,R1         |                |  | PICK UP XSTO                    |       |          |
| 5814 | 101374 | 010102 |        |        | MOV    | R1,R2               |                |  | SET UP EXPECTED                 |       |          |
| 5815 | 10137  | 052702 | 000002 |        | BIS    | #BIT1,R2            |                |  | SET BOT BIT IN EXPECTED         |       |          |
| 5816 | 101400 | 020102 |        |        | CMP    | R1,R2               |                |  | DOES EXP = REC'D                |       |          |
| 5817 | 101404 | 001406 |        |        | BEQ    | 404                 |                |  | BR, IF EQUAL (OK)               |       |          |
| 5818 | 101406 | 005237 | 002214 |        | INC    | FATFLG              |                |  | ERROR COUNT                     |       |          |
| 5822 | 101412 |        |        |        | ERRHRD | ERRNO,T37BOT,EXPREC |                |  | TAPE NOT AT BOT AFTER REWIND    |       |          |
|      | 101412 | 104456 |        |        |        |                     |                |  |                                 | TRAP  | C\$ERHRD |
|      | 101414 | 001610 |        |        |        |                     |                |  |                                 | .WORD | 904      |
|      | 101416 | 103261 |        |        |        |                     |                |  |                                 | .WORD | T37BOT   |
|      | 101420 | 015554 |        |        |        |                     |                |  |                                 | .WORD | EXPREC   |
| 5823 | 101422 |        |        | 404:   | CKLOOP |                     |                |  | LOOP IF SELECTED                |       |          |
|      | 101422 | 104406 |        |        |        |                     |                |  |                                 | TRAP  | C\$CLP1  |
| 5824 | 101424 | 012703 | 000144 |        | MOV    | #100.,R3            |                |  | NUMBER OF RECORDS TO BE WRITTEN |       |          |
| 5825 | 101430 | 013737 | 003116 | 102362 | MOV    | FREE,T37WB          |                |  | STARTING WRITE BUFFER ADDRESS   |       |          |
| 5826 | 101436 | 012737 | 140005 | 102360 | 654:   | MOV                 | #140005,T37PK3 |  | WRITE DATA,ACK,CVC-1 COMMAND    |       |          |
| 5827 | 101444 | 012704 | 102360 |        | MOV    | #T37PK3,R4          |                |  | SET UP R4 WITH PACKET ADDRESS   |       |          |
| 5828 | 101450 | 012737 | 001130 | 102366 | MOV    | #600.,T37S4         |                |  | SET UP RECORD SIZE IN PACKET    |       |          |
| 5829 | 101456 | 010465 | 000000 |        | MOV    | R4,TSD8(R5)         |                |  | ISSUE COMMAND                   |       |          |
| 5830 | 101462 | 004737 | 016330 |        | JSR    | PC,WAITF            |                |  | WAIT FOR SSR TO SET             |       |          |
| 5831 | 101466 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |                |  | GET TSSR CONTENTS               |       |          |
| 5832 | 101472 | 012702 | 000200 |        | MOV    | #SSR,R2             |                |  | SET UP EXPECTED                 |       |          |
| 5833 | 101476 | 020102 |        |        | CMP    | R1,R2               |                |  | ARE THEY EQUAL                  |       |          |
| 5834 | 101500 | 001406 |        |        | BEQ    | 704                 |                |  | BR, IF OK                       |       |          |
| 5835 | 101502 | 005237 | 002214 |        | INC    | FATFLG              |                |  | ERROR COUNT                     |       |          |
| 5839 | 101506 |        |        |        | ERRHRD | ERRNO,T37WDC,PKTSSR |                |  | TSSR INCORRECT AFTER WRITE DATA |       |          |
|      | 101506 | 104456 |        |        |        |                     |                |  |                                 | TRAP  | C\$ERHRD |
|      | 101510 | 001611 |        |        |        |                     |                |  |                                 | .WORD | 905      |
|      | 101512 | 104121 |        |        |        |                     |                |  |                                 | .WORD | T37WDC   |
|      | 101514 | 012126 |        |        |        |                     |                |  |                                 | .WORD | PKTSSR   |
| 5840 | 101516 |        |        | 704:   | CKLOOP |                     |                |  | LOOP IF SELECTED                |       |          |
|      | 101516 | 104406 |        |        |        |                     |                |  |                                 | TRAP  | C\$CLP1  |
| 5841 | 101520 | 005303 |        |        | DEC    | R3                  |                |  | DEC RECORD COUNTER              |       |          |
| 5842 | 101522 | 001345 |        |        | BNE    | 654                 |                |  | BR, IF MORE RECORDS TO WRITE    |       |          |
| 5843 | 101524 | 004737 | 011074 |        | JSR    | PC,REWIND           |                |  | CALL TAPE REWIND COMMAND        |       |          |
| 5844 | 101530 | 103411 |        |        | BCS    | 1304                |                |  | BR, IF NO PROBLEM               |       |          |
| 5845 | 101532 | 016501 | 000002 |        | MOV    | TSSR(R5),R1         |                |  | GET TSSR CONTENTS               |       |          |
| 5846 | 101536 | 010004 |        |        | MOV    | R0,R4               |                |  | GET PACKET ADDRESS              |       |          |
| 5847 | 101540 | 005237 | 002214 |        | INC    | FATFLG              |                |  | ERROR COUNT                     |       |          |
| 5851 | 101544 |        |        |        | ERRHRD | ERRNO,T37RWN,PKTSSR |                |  | REWIND NOT ACCEPTED             |       |          |
|      | 101544 | 104456 |        |        |        |                     |                |  |                                 | TRAP  | C\$ERHRD |
|      | 101546 | 001612 |        |        |        |                     |                |  |                                 | .WORD | 906      |
|      | 101550 | 103565 |        |        |        |                     |                |  |                                 | .WORD | T37RWN   |
|      | 101552 | 012126 |        |        |        |                     |                |  |                                 | .WORD | PKTSSR   |
| 5852 | 101554 |        |        | 1304:  | CKLOOP |                     |                |  | LOOP IF SELECTED                |       |          |
|      | 101554 | 104406 |        |        |        |                     |                |  |                                 | TRAP  | C\$CLP1  |
| 5853 | 101556 | 013701 | 102270 |        | MOV    | T37BFR+6,R1         |                |  | PICK UP XSTO                    |       |          |
| 5854 | 101562 | 010102 |        |        | MOV    | R1,R2               |                |  | SET UP EXPECTED                 |       |          |
| 5855 | 101564 | 052702 | 000002 |        | BIS    | #BIT1,R2            |                |  | SET BOT BIT IN EXPECTED         |       |          |
| 5856 | 101570 | 020102 |        |        | CMP    | R1,R2               |                |  | DOES EXP = REC'D                |       |          |
| 5857 | 101572 | 001406 |        |        | BEQ    | 1404                |                |  | BR, IF EQUAL (OK)               |       |          |
| 5858 | 101574 | 005237 | 002214 |        | INC    | FATFLG              |                |  | ERROR COUNT                     |       |          |



C1

TEST 19: HARDWARE TEST 1 8 TEST MACRO M1113 06 FEB 84 18:04

SEQ 209

|      |        |        |        |        |                     |                     |                                  |              |  |
|------|--------|--------|--------|--------|---------------------|---------------------|----------------------------------|--------------|--|
| 5862 | 101600 |        |        | ERRMRD | ERRNO,T37BOT,EXPREC |                     | ;TAPE NOT AT BOT AFTER REWIND    |              |  |
|      | 101600 | 104456 |        |        |                     |                     | TRAP                             | C\$ERMRD     |  |
|      | 101602 | 001613 |        |        |                     |                     | .WORD                            | 907          |  |
|      | 101604 | 103261 |        |        |                     |                     | .WORD                            | T37BOT       |  |
|      | 101606 | 015554 |        |        |                     |                     | .WORD                            | EXPREC       |  |
| 5863 | 101610 |        |        | 1401:  | CKLOOP              |                     | ;LOOP IF SELECTED                |              |  |
|      | 101610 | 104406 |        |        |                     |                     | TRAP                             | C\$CLP1      |  |
| 5864 | 101612 | 012704 | 102360 |        | MOV                 | #T37PK3,R4          | ;SET UP PACKET ADDRESS           |              |  |
| 5865 | 101616 | 012737 | 000037 | 102362 | MOV                 | #31.,T37RB          | ;SET UP RECORDS TO SPACE OVER    |              |  |
| 5866 | 101624 | 012737 | 140010 | 102360 | MOV                 | #140010,T37PK3      | ;ACK,CVC=1,SPACE FORWARD COMMAND |              |  |
| 5867 | 101632 | 010465 | 000000 |        | 1501:               | MOV                 | R4,TSD8(R5)                      |              |  |
| 5868 | 101636 | 005237 | 102406 |        | 1521:               | INC                 | T37CNT                           |              |  |
| 5869 | 101642 |        |        |        |                     | DELAY               | 1                                |              |  |
|      | 101642 | 012727 | 000001 |        |                     |                     |                                  |              |  |
|      | 101646 | 000000 |        |        |                     |                     | MOV                              | #1,(PC).     |  |
|      | 101650 | 013727 | 002116 |        |                     |                     | .WORD                            | 0            |  |
|      | 101654 | 000000 |        |        |                     |                     | MOV                              | L\$DLY,(PC). |  |
|      | 101656 | 005367 | 177772 |        |                     |                     | .WORD                            | 0            |  |
|      | 101662 | 001375 |        |        |                     |                     | DEC                              | 6(PC)        |  |
|      | 101664 | 005367 | 177756 |        |                     |                     | BNE                              | .-4          |  |
|      | 101670 | 001367 |        |        |                     |                     | DEC                              | 22(PC)       |  |
|      |        |        |        |        |                     |                     | BNE                              | .-20         |  |
| 5870 | 101672 | 016501 | 000002 |        | MOV                 | TSSR(R5),R1         | ;GET TSSR                        |              |  |
| 5871 | 101676 | 032701 | 000200 |        | BIT                 | #SSR,R1             | ;CHECK FOR TSSR'S SSR SET        |              |  |
| 5872 | 101702 | 001755 |        |        | BEQ                 | 1521                | ;KEEP COUNTING UNTIL SET         |              |  |
| 5873 | 101704 | 012702 | 000200 |        | MOV                 | #SSR,R2             | ;SET UP EXPECTED                 |              |  |
| 5874 | 101710 | 020201 |        |        | CMP                 | R2,R1               | ;WAS EVERYTHING OK               |              |  |
| 5875 | 101712 | 001406 |        |        | BEQ                 | 1601                | ;BR, IF ALL IS WELL              |              |  |
| 5876 | 101714 | 005237 | 002214 |        | INC                 | FATFLG              | ;ERROR COUNT                     |              |  |
| 5880 | 101720 |        |        |        | ERRMRD              | ERRNO,T37SCF,PKTSSR | ;SPACE FORWARD DIDN T WORK OUT   |              |  |
|      | 101720 | 104456 |        |        |                     |                     | TRAP                             | C\$ERMRD     |  |
|      | 101722 | 001614 |        |        |                     |                     | .WORD                            | 908          |  |
|      | 101724 | 105027 |        |        |                     |                     | .WORD                            | T37SCF       |  |
|      | 101726 | 012126 |        |        |                     |                     | .WORD                            | PKTSSR       |  |
| 5881 | 101730 |        |        | 1601:  | CKLOOP              |                     | ;LOOP IF SELECTED                |              |  |
|      | 101730 | 104406 |        |        |                     |                     | TRAP                             | C\$CLP1      |  |
| 5882 | 101732 | 004737 | 011074 |        | JSR                 | PC,REWIND           | ;CALL TAPE REWIND COMMAND        |              |  |
| 5883 | 101736 | 103411 |        |        | BCS                 | 1701                | ;BR, IF NO PROBLEM               |              |  |
| 5884 | 101740 | 010004 |        |        | MOV                 | R0,R4               | ;GET PACKET ADDRESS              |              |  |
| 5885 | 101742 | 016501 | 000002 |        | MOV                 | TSSR(R5),R1         | ;GET STATUS FROM TSSR            |              |  |
| 5886 | 101746 | 005237 | 002214 |        | INC                 | FATFLG              | ;ERROR COUNT                     |              |  |
| 5890 | 101752 |        |        |        | ERRMRD              | ERRNO,T37RWN,PKTSSR | ;REWIND NOT ACCEPTED             |              |  |
|      | 101752 | 104456 |        |        |                     |                     | TRAP                             | C\$ERMRD     |  |
|      | 101754 | 001615 |        |        |                     |                     | .WORD                            | 909          |  |
|      | 101756 | 103565 |        |        |                     |                     | .WORD                            | T37RWN       |  |
|      | 101760 | 012126 |        |        |                     |                     | .WORD                            | PKTSSR       |  |
| 5891 | 101762 |        |        | 1701:  | CKLOOP              |                     | ;LOOP IF SELECTED                |              |  |
|      | 101762 | 104406 |        |        |                     |                     | TRAP                             | C\$CLP1      |  |
| 5892 | 101764 | 013701 | 102270 |        | MOV                 | T37BFR*6,R1         | ;PICK UP XSTO                    |              |  |
| 5893 | 101770 | 010102 |        |        | MOV                 | R1,R2               | ;SET UP EXPECTED                 |              |  |
| 5894 | 101772 | 052702 | 000002 |        | BIS                 | #BIT1,R2            | ;SET BOT BIT IN EXPECTED         |              |  |
| 5895 | 101776 | 020102 |        |        | CMP                 | R1,R2               | ;DOES EXP = REC'D                |              |  |
| 5896 | 102000 | 001406 |        |        | BEQ                 | 1751                | ;BR, IF EQUAL (OK)               |              |  |
| 5897 | 102002 | 005237 | 002214 |        | INC                 | FATFLG              | ;ERROR COUNT                     |              |  |
| 5901 | 102006 |        |        |        | ERRMRD              | ERRNO,T37BOT,EXPREC | ;TAPE NOT AT BOT AFTER REWIND    |              |  |
|      | 102006 | 104456 |        |        |                     |                     | TRAP                             | C\$ERMRD     |  |
|      | 102010 | 001616 |        |        |                     |                     | .WORD                            | 910          |  |
|      | 102012 | 103261 |        |        |                     |                     | .WORD                            | T37BOT       |  |

| Address | Offset | Hex Data | Hex Data | Hex Data | Assembly | Comments            | Register/Label           | Value        |
|---------|--------|----------|----------|----------|----------|---------------------|--------------------------|--------------|
| 5902    | 102014 | 015554   |          |          |          |                     |                          |              |
|         | 102016 |          | 1754:    | CKLOOP   |          | ;LOOP IF SELECTED   | .WORD                    | EXPREC       |
|         | 102016 | 104406   |          |          |          |                     | TRAP                     | C\$CLP1      |
| 5903    | 102020 | 012704   | 102360   |          | MOV      | #T37PK3,R4          |                          |              |
| 5904    | 102024 | 012737   | 000121   | 102362   | MOV      | #81.,T37RB          |                          |              |
| 5905    | 102032 | 012737   | 140010   | 102360   | MOV      | #140010,T37PK3      |                          |              |
| 5906    | 102040 | 010465   | 000000   |          | MOV      | R4,TSD8(R5)         |                          |              |
| 5907    | 102044 | 005237   | 102410   |          | 2504:    | MOV                 |                          |              |
| 5908    | 102050 |          |          |          | 2524:    | INC                 | T37CNU                   |              |
|         | 102050 | 012727   | 000001   |          | DELAY    | 1                   |                          |              |
|         | 102054 | 000000   |          |          |          |                     | MOV                      | #1,(PC).     |
|         | 102056 | 013727   | 002116   |          |          |                     | .WORD                    | 0            |
|         | 102062 | 000000   |          |          |          |                     | MOV                      | L\$DLY,(PC). |
|         | 102064 | 005367   | 177772   |          |          |                     | .WORD                    | 0            |
|         | 102070 | 001375   |          |          |          |                     | DEC                      | -6(PC)       |
|         | 102072 | 005367   | 177756   |          |          |                     | BNE                      | . 4          |
|         | 102076 | 001367   |          |          |          |                     | DEC                      | 22(PC)       |
|         |        |          |          |          |          |                     | BNE                      | . 20         |
| 5909    | 102100 | 016501   | 000002   |          | MOV      | TSSR(R5),R1         |                          |              |
| 5910    | 102104 | 032701   | 000200   |          | BIT      | #SSR,R1             |                          |              |
| 5911    | 102110 | 001755   |          |          | BEQ      | 2524                |                          |              |
| 5912    | 102112 | 012702   | 000200   |          | MOV      | #SSR,R2             |                          |              |
| 5913    | 102116 | 020201   |          |          | CMP      | R2,R1               |                          |              |
| 5914    | 102120 | 001406   |          |          | BEQ      | 2604                |                          |              |
| 5915    | 102122 | 005237   | 002214   |          | INC      | FATFLG              |                          |              |
| 5919    | 102126 |          |          |          | ERRHRD   | ERRNO,T37SCF,PKTSSR |                          |              |
|         | 102126 | 104456   |          |          |          |                     |                          |              |
|         | 102130 | 001617   |          |          |          |                     | TRAP                     | C\$ERHRD     |
|         | 102132 | 105027   |          |          |          |                     | .WORD                    | 911          |
|         | 102134 | 012126   |          |          |          |                     | .WORD                    | T37SCF       |
|         |        |          |          |          |          |                     | .WORD                    | PKTSSR       |
| 5920    | 102136 |          |          |          | 2604:    | CKLOOP              |                          |              |
|         | 102136 | 104406   |          |          |          |                     | ;LOOP IF SELECTED        |              |
|         |        |          |          |          |          |                     | TRAP                     | C\$CLP1      |
| 5921    | 102140 | 013701   | 102406   |          | MOV      | T37CNT,R1           |                          |              |
| 5922    | 102144 | 013702   | 102410   |          | MOV      | T37CNU,R2           |                          |              |
| 5923    | 102150 | 042701   | 000077   |          | BIC      | #000077,R1          |                          |              |
| 5924    | 102154 | 042702   | 000077   |          | BIC      | #000077,R2          |                          |              |
| 5925    | 102160 | 020102   |          |          | CMP      | R1,R2               |                          |              |
| 5926    | 102162 | 003406   |          |          | BLE      | 3004                |                          |              |
| 5927    | 102164 | 005237   | 002214   |          | INC      | FATFLG              |                          |              |
| 5931    | 102170 |          |          |          | ERRHRD   | ERRNO,T37TIM,EXPREC |                          |              |
|         | 102170 | 104456   |          |          |          |                     |                          |              |
|         | 102172 | 001620   |          |          |          |                     | TRAP                     | C\$ERHRD     |
|         | 102174 | 103354   |          |          |          |                     | .WORD                    | 912          |
|         | 102176 | 015554   |          |          |          |                     | .WORD                    | T37TIM       |
|         |        |          |          |          |          |                     | .WORD                    | EXPREC       |
| 5932    | 102200 |          |          |          | 3004:    | CKLOOP              |                          |              |
|         | 102200 | 104406   |          |          |          |                     | ;LOOP IF SELECTED        |              |
|         |        |          |          |          |          |                     | TRAP                     | C\$CLP1      |
| 5933    | 102202 |          |          |          | ENDSUB   |                     |                          |              |
|         | 102202 |          |          |          |          |                     | ;***** END SUBTEST ***** |              |
|         | 102202 | 104403   |          |          |          |                     |                          |              |

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F I

SEQ 211

5943 102226 000137 101154  
5944 102232  
5945 102232  
102232 104432  
102234 003306

5946  
5947  
5948  
5950 102240

5952 102240  
5953 102240 100004  
5954 102242 102250  
5955 102244 000000  
5956 102246 000012

5957 102250  
5958 102250 102262  
5959 102252 000000  
5960 102254 000024  
5961 102256 000000  
5962 102260 000000

5963 102262  
5964  
5965  
5966  
5968 102350

5970 102350  
5971 102350 100006  
5972 102352 102370  
5973 102354 000000  
5974 102356 000006

5975  
5979 102360  
5980 102360 100005  
5981 102362  
5982 102362 003116  
5983 102364 000000  
5984 102366 000000

5985  
5986  
5987  
5988

5989 102370  
5990 102370 010  
5991 102371 200  
5992 102372 000000  
5993 102374 000000

5994  
5995  
5996  
5997  
5998

5999 102376 100205  
6000 102400 100605  
6001 102402 102205  
6002 102404 177777  
6003  
6004

MP T37LOOP  
1638: EXIT TST  
; LOCAL STORAGE FOR THIS TEST  
; .<..10>E177770  
T37PACKET:  
.WORD 100004  
.WORD T37DATA  
.WORD 0  
.WORD 10.  
T37DATA:  
.WORD T37BFR  
.WORD 0  
.WORD 20.  
.WORD 0  
T37DSW: .WORD 0  
T37BFR: .BLKW 25.  
; WRITE SUBSYSTEM MEMORY COMMAND PACKET  
; .<..10>E177770  
T37PK2:  
.WORD 100006  
.WORD T37BF2  
.WORD 0  
.WORD 6.  
T37PK3:  
.WORD 100005  
T37RB:  
T37WB: .WORD FREE  
.WORD 0  
T37SZ: .WORD 0  
.EVEN  
; T37BF2:  
T37BS0: .BYTE 10  
T37BS1: .BYTE 200  
T37S2: .WORD 0  
T37S3: .WORD 0  
; .EVEN  
; TAPE MOTION PACKET COMMAND VALUES  
T37RN: .WORD 100205  
T37WDR: .WORD 100605  
T37CON: .WORD 102205  
.WORD 177777  
;

;EXECUTE AGAIN  
;ALL DONE THIS TEST  
TRAP C\$EXIT  
.WORD L10073 .  
;COMMAND PACKET FOR TEST  
;WRITE CHARACTERISTICS COMMAND, WITH , ACK  
;ADDRESS OF CHARACTERISTICS BLOCK  
;STARTING VALUE OF BLOCK SIZE  
;CHARACTERISTICS DATA BLOCK  
;ADDRESS OF MESSAGE BUFFER  
;LENGTH OF MESSAGE BUFFER  
;SELECT DRIVE 0  
;MESSAGE BUFFER  
;WRITE SUB SYS MEM COMMAND, AND ACK  
;ADDRESS OF SELECT BLOCK DATA  
;SIZE OF DATA PACKET  
;REREAD COMMAND, AND ACK  
;ADDRESS OF WRITE BUFFER  
;SIZE OF BUFFER (EXTENT)  
;BSEL0 AREA  
;BSEL1 AREA  
;SEL 2 AREA  
;DATA AREA  
;REREAD DATA (NEXT)  
;REREAD DATA RETRY  
;WRITE CONTINOUS  
;END OF DATA

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|      |        |        |        |     |                                                                 |                |  |                                                                 |
|------|--------|--------|--------|-----|-----------------------------------------------------------------|----------------|--|-----------------------------------------------------------------|
| 6005 | 102406 | 000000 |        |     | T37CNT: .WORD                                                   | 0              |  | ;TAPE TIMER COUNTER STORAGE AREA                                |
| 6006 | 102410 | 000000 |        |     | T37CNU: .WORD                                                   | 0              |  | ;TAPE TIMER COUNTER STORAGE AREA                                |
| 6007 | 102412 | 000000 |        |     | T37DLY: .WORD                                                   | 0              |  | ;DELAY COUNTER                                                  |
| 6008 |        |        |        |     | ;                                                               |                |  |                                                                 |
| 6009 |        |        |        |     | ;LOCAL TEXT MESSAGES FOR TEST                                   |                |  |                                                                 |
| 6010 |        |        |        |     | ;-                                                              |                |  |                                                                 |
| 6011 |        |        |        |     |                                                                 |                |  |                                                                 |
| 6012 | 102414 | 124    | 141    | 160 | T37WNG: .ASCIZ                                                  |                |  | 'Tape Position Incorrect After REREAD Previous (OPP=1)'         |
| 6013 | 102502 | 124    | 123    | 123 | T37RDF: .ASCIZ                                                  |                |  | 'TSSR Incorrect After READ DATA Command'                        |
| 6014 | 102551 | 122    | 105    | 122 | T37RRF: .ASCIZ                                                  |                |  | 'REREAD Previous (Space Reverse, Read Forward) Command Failed'  |
| 6015 | 102646 | 120    | 117    | 123 | T37SC: .ASCIZ                                                   |                |  | 'POSITION (Space Command) Failed, TSSR Not Correct'             |
| 6016 | 102730 | 122    | 111    | 102 | T37LOR: .ASCIZ                                                  |                |  | 'RIB NOT SET AFTER READ REVERSE INTO BOT'                       |
| 6017 | 103000 | 124    | 123    | 123 | T37WDF: .ASCIZ                                                  |                |  | 'TSSR Not Correct After Illegal Mode Bits Set'                  |
| 6018 | 103055 | 111    | 154    | 154 | T37LOQ: .ASCIZ                                                  |                |  | 'Illegal Mode Bits, Failed To Set ILC Bit In XST0'              |
| 6019 | 103136 | 122    | 105    | 122 | T375'R: .ASCIZ                                                  |                |  | 'REREAD COMMAND Not Accepted'                                   |
| 6020 | 103172 | 124    | 123    | 123 | T37WDE: .ASCIZ                                                  |                |  | 'TSSR Not Correct After WRITE DATA RETRY Command, At BOT'       |
| 6021 | 103261 | 124    | 141    | 160 | T37BOT: .ASCIZ                                                  |                |  | 'Tape Not At BOT After REWIND Command (BOT Not Set In XST0)'    |
| 6022 | 103354 | 127    | 122    | 111 | T37TIM: .ASCIZ                                                  |                |  | 'WRITE DATA RETRY'S Erase Tape Not Long Enough'                 |
| 6023 | 103431 | 122    | 105    | 122 | T37EOT: .ASCIZ                                                  |                |  | 'REREAD DATA OVER EOT GAVE NO TAPE STATUS ALERT'                |
| 6024 | 103510 | 124    | 123    | 123 | T37TM: .ASCIZ                                                   |                |  | 'TSSR Not Correct After REREAD COMMAND Reject'                  |
| 6025 | 103565 | 122    | 145    | 167 | T37RWN: .ASCIZ                                                  |                |  | 'Rewind (POSITION) Command Not Accepted'                        |
| 6026 | 103634 | 122    | 101    | 115 | T37RNC: .ASCIZ                                                  |                |  | 'RAM Error, Correct Data Pattern Not In Ram'                    |
| 6027 | 103707 | 124    | 123    | 123 | T37AM3: .ASCIZ                                                  |                |  | 'TSSR Init. Failed After REREAD COMMAND'                        |
| 6028 | 103756 | 104    | 162    | 151 | T37OFL: .ASCIZ                                                  |                |  | 'Drive 7 Select Failed To Set "OFL" In TSSR'                    |
| 6029 | 104031 | 124    | 123    | 123 | T37WDD: .ASCIZ                                                  |                |  | 'TSSR Not Correct After REREAD DATA Command, SWB Bit Set'       |
| 6030 | 104121 | 124    | 123    | 123 | T37WDC: .ASCIZ                                                  |                |  | 'TSSR Not Correct After REREAD DATA Command'                    |
| 6031 | 104174 | 103    | 126    | 103 | T37VCK: .ASCIZ                                                  |                |  | 'CVC Set, Didn't Reset VCK In Message Buffer'                   |
| 6032 | 104247 | 124    | 123    | 102 | T37BA: .ASCIZ                                                   |                |  | 'TSBA Not Correct After REREAD DATA Command'                    |
| 6033 | 104322 | 127    | 122    | 111 | T37WSS: .ASCIZ                                                  |                |  | 'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'        |
| 6034 | 104411 | 122    | 145    | 141 | T37LON: .ASCIZ                                                  |                |  | 'Reading Long Record Failed To Set RLL Bit In XST0'             |
| 6035 | 104473 | 122    | 145    | 141 | T37LOP: .ASCIZ                                                  |                |  | 'Reading Long Record Failed To Set RLS Bit In XST0'             |
| 6036 | 104555 | 122    | 145    | 163 | T37PBP: .ASCIZ                                                  |                |  | 'Residual Byte Count Incorrect After Short Record Read'         |
| 6037 | 104643 | 122    | 145    | 141 | T37TRL: .ASCIZ                                                  |                |  | 'Reading Long Record Failed To Give Tape Status Alert'          |
| 6038 | 104731 | 127    | 122    | 111 | T37NEF: .ASCIZ                                                  |                |  | 'WRITE DATA RETRY, At First Record, Failed To Set RIB Bit XST3' |
| 6039 | 105027 | 124    | 123    | 123 | T37SCF: .ASCIZ                                                  |                |  | 'TSSR Not Correct After SPACE RECORDS Command'                  |
| 6040 | 105104 | 124    | 123    | 123 | T37TSA: .ASCIZ                                                  |                |  | 'TSSR Not Correct After WRITE DATA RETRY, Into BOT'             |
| 6041 | 105166 | 124    | 123    | 123 | T37WRF: .ASCIZ                                                  |                |  | 'TSSR Not Correct After WRITE DATA RETRY Command'               |
| 6042 | 105246 | 104    | 141    | 164 | T37DTA: .ASCIZ                                                  |                |  | 'Data Compare Error, Data Read From Tape Not Equal To Written'  |
| 6043 | 105343 | 106    | 165    | 156 | T37ID: .ASCIZ                                                   |                |  | 'Function Timing'                                               |
| 6044 |        |        |        |     | .EVEN                                                           |                |  |                                                                 |
| 6045 |        |        |        |     | ;                                                               |                |  |                                                                 |
| 6046 |        |        |        |     | ;                                                               |                |  |                                                                 |
| 6047 |        |        |        |     | ;ROUTINE TO RESTORE COMMAND PACKET TO START UP (DEFAULT) VALUES |                |  |                                                                 |
| 6048 |        |        |        |     | ;WRITE SUBSYSTEM MEMORY COMMAND                                 |                |  |                                                                 |
| 6049 |        |        |        |     | ;                                                               |                |  |                                                                 |
| 6050 |        |        |        |     | ;-                                                              |                |  |                                                                 |
| 6051 |        |        |        |     |                                                                 |                |  |                                                                 |
| 6052 | 105364 |        |        |     | T37REST:                                                        |                |  |                                                                 |
| 6053 | 105364 |        |        |     | SAVREG                                                          |                |  | ;SAVE THE REGISTERS                                             |
| 6054 | 105370 | 012701 | 102240 |     | MOV                                                             | #T37PACKET,R1  |  | ;START OF THE PACKET                                            |
| 6055 | 105374 | 012721 | 100004 |     | MOV                                                             | #100004,(R1).  |  | ;WRITE SUBSYSTEM MEM. WITH ACK.                                 |
| 6056 | 105400 | 012721 | 102250 |     | MOV                                                             | #T37DATA,(R1). |  | ;ADDRESS OF CHARACTERISTICS DATA BLOCK                          |
| 6057 | 105404 | 005021 |        |     | CLR                                                             | (R1).          |  | ;EXTENDED ADDRESS                                               |
| 6058 | 105406 | 012721 | 000012 |     | MOV                                                             | #10.,(R1).     |  | ;SIZE OF DATA BLOCK IN BYTES                                    |
| 6059 | 105412 | 012721 | 102262 |     | MOV                                                             | #T37BFR,(R1).  |  | ;ADDRESS OF MESSAGE BUFFER                                      |
| 6060 | 105416 | 005021 |        |     | CLR                                                             | (R1).          |  |                                                                 |
| 6061 | 105420 | 012721 | 000024 |     | MOV                                                             | #20.,(R1).     |  | ;LENGTH OF MESSAGE BUFFER                                       |

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|      |        |        |        |         |                    |                                    |
|------|--------|--------|--------|---------|--------------------|------------------------------------|
| 6062 | 105424 | 005021 |        | CLR     | (R1).              |                                    |
| 6063 | 105426 | 012711 | 000000 | MOV     | #0,(R1)            | ;SELECT DRIVE ZERO                 |
| 6064 | 105432 | 012702 | 000030 | MOV     | #24.,R2            | ;NUMBER OF LOCATIONS TO BE CLEARED |
| 6065 | 105436 | 012762 | 177777 | MOV     | #177777,T37BFR(R2) | ;ALL ONES TO MESSAGE BUFFER        |
| 6066 | 105444 | 005742 |        | TST     | -(R2)              | ;NEXT LOCATION                     |
| 6067 | 105446 | 022702 | 000000 | CMP     | #0,R2              | ;AT END OF LOOP YET                |
| 6068 | 105452 | 001371 |        | BNE     | 64\$               | ;KEEP GOING UNTIL DONE             |
| 6069 | 105454 | 000207 |        | RTS     | PC                 | ;RETURN                            |
| 6070 |        |        |        |         |                    |                                    |
| 6071 | 105456 |        |        | T37RT2: |                    |                                    |
| 6072 | 105456 |        |        | SAVREG  |                    | ;SAVE THE REGISTERS                |
| 6073 | 105462 | 012701 | 102350 | MOV     | #T37PK2,R1         | ;START OF THE PACKET               |
| 6074 | 105466 | 012721 | 100006 | MOV     | #100006,(R1).      | ;WRITE SUBSYSTEM MEM. WITH ACK.    |
| 6075 | 105472 | 012721 | 102370 | MOV     | #T37BF2,(R1).      | ;ADDRESS OF DATA BLOCK             |
| 6076 | 105476 | 005021 |        | CLR     | (R1).              | ;EXTENDED ADDRESS                  |
| 6077 | 105500 | 012721 | 000006 | MOV     | #6.,(R1).          | ;SIZE OF DATA BLOCK IN BYTES       |
| 6078 | 105504 | 005021 |        | CLR     | (R1).              |                                    |
| 6079 | 105506 | 012701 | 102370 | MOV     | #T37BF2,R1         | ;POINT TO DATA SEL AREA            |
| 6080 | 105512 | 005021 |        | CLR     | (R1).              |                                    |
| 6081 | 105514 | 005011 |        | CLR     | (R1)               |                                    |
| 6082 | 105516 | 000207 |        | RTS     | PC                 | ;RETURN                            |
| 6083 | 105520 |        |        | T37RT3: |                    |                                    |
| 6084 | 105520 |        |        | SAVREG  |                    | ;SAVE REGISTERS                    |
| 6085 | 105524 | 012701 | 102360 | MOV     | #T37PK3,R1         | ;SET UP POINTER ADDRESS            |
| 6086 | 105530 | 005021 |        | CLR     | (R1).              | ;COMMAND SPACE                     |
| 6087 | 105532 | 005021 |        | CLR     | (R1).              | ;ADDRESS OF DATA BLOCK             |
| 6088 | 105534 | 005021 |        | CLR     | (R1).              | ;EXTENDED ADDRESS                  |
| 6089 | 105536 | 005011 |        | CLR     | (R1)               | ;SIZE OF DATA TRANSFER BLOCK       |
| 6090 | 105540 | 000207 |        | RTS     | PC                 | ;RETURN                            |
| 6091 | 105542 |        |        | ENDTST  |                    |                                    |
|      | 105542 |        |        |         |                    |                                    |
|      | 105542 | 104401 |        |         |                    |                                    |
| 6092 | 105544 |        |        | ENDMOD  |                    |                                    |

L10073: TRAP C\$ETST

HL

TSV6 PARAMETER CODING MACRO M1113 06 FEB 84 18:04  
TEST 9: FUNCTION TIMING

SEQ 214

```

1          .TITLE  TSV6  PARAMETER CODING
7
12
18
19 105544      BGNMOD  TSV6
    105544      TSV6::
20
21          .SBTTL  HARDWARE PARAMETER CODING SECTION
22
23          ;**
24          ; THE HARDWARE PARAMETER CODING SECTION CONTAINS MACROS
25          ; THAT ARE USED BY THE SUPERVISOR TO BUILD P-TABLES.  THE
26          ; MACROS ARE NOT EXECUTED AS MACHINE INSTRUCTIONS BUT ARE
27          ; INTERPRETED BY THE SUPERVISOR AS DATA STRUCTURES.  THE
28          ; MACROS ALLOW THE SUPERVISOR TO ESTABLISH COMMUNICATIONS
29          ; WITH THE OPERATOR.
30          ;
31 105544      BGNHRD
    105544      .WORD  L10075-L$HARD/2
    105546      L$HARD::
32
33 105546      GPRMA  HPM1,0,0,160010,177776,YES      ;GET TSBA/TSDB REGISTER ADDRESS.
    105546      .WORD  T$CODE
    105550      .WORD  HPM1
    105552      .WORD  T$LOLIM
    105554      .WORD  T$HILIM
34 105556      GPRMA  HPM2,2,0,0,776,YES              ;GET VECTOR ADDRESS.
    105556      .WORD  T$CODE
    105560      .WORD  HPM2
    105562      .WORD  T$LOLIM
    105564      .WORD  T$HILIM
35          ;GPRMD  HPM3,4,0,340,0,7,YES            ;GET INTERRUPT PRIORITY.
36 105566      ENDRD
    .EVEN
    105566      L10075:
37 105566      104    105    126  HPM1:  .ASCIZ  'DEVICE ADDRESS (TSBA/TSDB)
38 105622      111    116    124  HPM2:  .ASCIZ  'INTERRUPT VECTOR
39 105646      111    116    124  HPM3:  .ASCIZ  'INTERRUPT PRIORITY
40          .EVEN

```



```

42          .SBTTL  SOFTWARE PARAMETER CODING SECTION
43
44          ;**
45          ; THE SOFTWARE PARAMETER CODING SECTION CONTAINS MACROS
46          ; THAT ARE USED BY THE SUPERVISOR TO BUILD P-TABLES.  THE
47          ; MACROS ARE NOT EXECUTED AS MACHINE INSTRUCTIONS BUT ARE
48          ; INTERPRETED BY THE SUPERVISOR AS DATA STRUCTURES.  THE
49          ; MACROS ALLOW THE SUPERVISOR TO ESTABLISH COMMUNICATIONS
50          ; WITH THE OPERATOR.
51          ;
52          105676      000003      BGNSFT
53          105676      .WORD L10076 L$SOFT/2
54          105700      001130      L$SOFT::
55          105702      105736      ; GPRML  SPM1.0, 1,YES      ; GET TRANSPORT TEST FLAG.
56          105704      177777      ; GPRML  SPM4.2, 1,YES      ; GET ITERATION CONTROL.
57          105706      .WORD  T$CODE
58          105706      .WORD  SPM4
59          105706      .WORD  1
60          105736      111      116      101  SPM1:  .ASCIZ  'ENABLE TRANSPORT TESTS '
61          105766      120      105      110  SPM4:  .ASCIZ  'INHIBIT ITERATIONS '
62          106016      120      105      122  SPM6:  .ASCIZ  'PER TEST ERROR LIMIT '
63          106016      120      105      122  SPM7:  .ASCIZ  'PER UNIT ERROR LIMIT '
64          106016      120      105      122  SPM7:  .ASCIZ  'PER UNIT ERROR LIMIT '
65          106016      120      105      122  SPM7:  .ASCIZ  'PER UNIT ERROR LIMIT '
66          106016      120      105      122  SPM7:  .ASCIZ  'PER UNIT ERROR LIMIT '
67          106016      120      105      122  SPM7:  .ASCIZ  'PER UNIT ERROR LIMIT '
68          106016      120      105      122  SPM7:  .ASCIZ  'PER UNIT ERROR LIMIT '
69          106016      120      105      122  SPM7:  .ASCIZ  'PER UNIT ERROR LIMIT '
70          106016      120      105      122  SPM7:  .ASCIZ  'PER UNIT ERROR LIMIT '
71          106016      120      105      122  SPM7:  .ASCIZ  'PER UNIT ERROR LIMIT '
72          106046      .SBTTL  PATCH AREA
73
74          ;
75          ; FINALLY A GENEROUS PATCH AREA.
76          ;
77          ; AND AN ADJUSTMENT TO ACCOUNT FOR THE "LASTAD BIT7" HACK
78          ; DESCRIBED IN "SUPPRG.MEM" (FOR REV C).
79          ;
80          PATCH::
81          .BLKW  32.
82          .*.!377*1
83          LASTAD      ;SET LAST USED ADDRESS.
84          .EVEN
85          .WORD  0
86          .WORD  0
87          L$LAST::
88          ENDMOD
89          .END
90
91          106400      000000
92          106402      000000
93          106404
94          106404      000001

```

TSV6 PARAMETER CODING MACRO M1113 06 FEB-84 18:04  
SYMBOL TABLE

SEQ 216

|        |        |   |         |        |         |        |          |        |        |         |        |        |   |
|--------|--------|---|---------|--------|---------|--------|----------|--------|--------|---------|--------|--------|---|
| ADSSR  | 012206 | G | C\$AU   | 000052 | DEVDR0  | 023456 | FRESIZ   | 003120 | G      | INTFLA  | 016225 |        |   |
| ADR    | 000020 | G | C\$AUTO | 000061 | DEVNRD  | 023375 | FUSI     | 004113 |        | INTMAS  | 016224 |        |   |
| AMBTSS | 006713 |   | C\$BRK  | 000022 | DEVNXR  | 023313 | F\$AU    | 000015 |        | INTR    | 016276 | G      |   |
| ASSEMB | 000010 |   | C\$BSEG | 000004 | DEVONL  | 023243 | F\$AUTO  | 000020 |        | INTREC  | 002216 | G      |   |
| A1716  | 000003 |   | C\$BSUB | 000002 | DEVSUM  | 023206 | F\$BGN   | 000040 |        | INTVEC  | 016226 |        |   |
| BADDAT | 003150 | G | C\$CEFG | 000045 | DFPTBL  | 002150 | F\$CLEA  | 000007 |        | INTX    | 004274 |        |   |
| BADSSR | 015760 | G | C\$CLCK | 000062 | DIAGMC  | 000000 | F\$DU    | 000016 |        | INVERT  | 021266 | G      |   |
| BDVPCR | 177520 | G | C\$CLEA | 000012 | DICED   | 000001 | F\$END   | 000041 |        | IOKCKI  | 000200 |        |   |
| BENBSW | 002222 | G | C\$CLOS | 000035 | DSBINT  | 016264 | F\$HARD  | 000004 |        | IOKSTP  | 000001 |        |   |
| BIE    | 040000 |   | C\$CLP1 | 000006 | DUAD12  | 004637 | F\$HW    | 000013 |        | IPRI    | 002204 | G      |   |
| BIT0   | 000001 | G | C\$CVEC | 000036 | DUFLG   | 003104 | F\$INIT  | 000006 |        | ISR     | 000100 | G      |   |
| BIT00  | 000001 | G | C\$DCLN | 000044 | DUMMY   | 003054 | F\$JMP   | 000050 |        | IVEC    | 002202 | G      |   |
| BIT01  | 000002 | G | C\$DODU | 000051 | EF.CON  | 000036 | F\$MOD   | 000000 |        | IXE     | 004000 | G      |   |
| BIT02  | 000004 | G | C\$DRPT | 000024 | EF.NEW  | 000035 | F\$MSG   | 000011 |        | I\$AU   | 000041 |        |   |
| BIT03  | 000010 | G | C\$DU   | 000053 | EF.PWR  | 000034 | F\$PROT  | 000021 |        | I\$AUTO | 000041 |        |   |
| BIT04  | 000020 | G | C\$EDIT | 000003 | EF.RES  | 000037 | F\$PWR   | 000017 |        | I\$CLN  | 000041 |        |   |
| BIT05  | 000040 | G | C\$ERDF | 000055 | EF.STA  | 000040 | F\$RPT   | 000012 |        | I\$DU   | 000041 |        |   |
| BIT06  | 000100 | G | C\$ERHR | 000056 | EMAXDU  | 017057 | F\$SEG   | 000003 |        | I\$HRD  | 000041 |        |   |
| BIT07  | 000200 | G | C\$ERRO | 000060 | EN      | 000000 | F\$SOFT  | 000005 |        | I\$INIT | 000041 |        |   |
| BIT08  | 000400 | G | C\$ERSF | 000054 | ENAIN   | 016232 | F\$SRV   | 000010 |        | I\$MOD  | 000041 |        |   |
| BIT09  | 001000 | G | C\$ERSO | 000057 | ENVIRN  | 020710 | F\$SUB   | 000002 |        | I\$MSG  | 000041 |        |   |
| BIT1   | 000002 | G | C\$ESCA | 000010 | EPRTSW  | 002172 | F\$SW    | 000014 |        | I\$PROT | 000040 |        |   |
| BIT10  | 002000 | G | C\$ESEG | 000005 | EPRT1   | 006354 | F\$TEST  | 000001 |        | I\$PTAB | 000041 |        |   |
| BIT11  | 004000 | G | C\$ESUB | 000003 | EPRT2   | 006413 | GDDAT    | 003152 | G      | I\$PWR  | 000041 |        |   |
| BIT12  | 010000 | G | C\$ETST | 000001 | ERRCM   | 012013 | GERRMA   | 002166 | G      | I\$RPT  | 000041 |        |   |
| BIT13  | 020000 | G | C\$EXIT | 000032 | ERRHI   | 002230 | GETPAT   | 020254 | G      | I\$SEG  | 000041 |        |   |
| BIT14  | 040000 | G | C\$GETB | 000026 | ERRK    | 017036 | GETSEL   | 020336 | G      | I\$SETU | 000041 |        |   |
| BIT15  | 100000 | G | C\$GETW | 000027 | ERRLO   | 002232 | G\$CNT0  | 000200 |        | I\$SFT  | 000041 |        |   |
| BIT2   | 000004 | G | C\$GMAN | 000043 | ERRNO   | 001620 | G\$DELM  | 000372 |        | I\$SRV  | 000041 |        |   |
| BIT3   | 000010 | G | C\$GPHR | 000042 | ERRVEC  | 000004 | G\$DISP  | 000003 |        | I\$SUB  | 000041 |        |   |
| BIT4   | 000020 | G | C\$GPLO | 000030 | ERTABE  | 003370 | G\$EXCP  | 000400 |        | I\$TST  | 000041 |        |   |
| BIT5   | 000040 | G | C\$GPRI | 000040 | ERTABL  | 003170 | G\$HILI  | 000002 |        | J\$JMP  | 000167 |        |   |
| BIT6   | 000100 | G | C\$INIT | 000011 | ESUM    | 017040 | G\$LOLI  | 000001 |        | KIPAR0  | 172340 |        |   |
| BIT7   | 000200 | G | C\$INLP | 000020 | EVL     | 000004 | G\$NO    | 000000 |        | KIPAR1  | 172342 |        |   |
| BIT8   | 000400 | G | C\$MANI | 000050 | EXBCNT  | 000010 | G\$OFFS  | 000400 |        | KIPAR2  | 172344 |        |   |
| BIT9   | 001000 | G | C\$MEM  | 000031 | EXPBRE  | 015562 | G\$OF SI | 000376 |        | KIPAR3  | 172346 |        |   |
| BOE    | 000400 | G | C\$MSG  | 000023 | EXPD    | 002224 | G\$PRMA  | 000001 |        | KIPAR4  | 172350 |        |   |
| BRINIT | 004453 |   | C\$OPEN | 000034 | EXPGOT  | 004527 | G\$PRMD  | 000002 |        | KIPAR5  | 172352 |        |   |
| BSEL0  | 000000 |   | C\$PNTB | 000014 | EXPGT2  | 004563 | G\$PRML  | 000000 |        | KIPAR6  | 172354 |        |   |
| BSEL1  | 000001 |   | C\$PNTF | 000017 | EXPMSG  | 002314 | G\$RADA  | 000140 |        | KIPAR7  | 172356 |        |   |
| CHKAMB | 016124 |   | C\$PNTS | 000016 | EXPREC  | 015554 | G\$RADB  | 000000 |        | KIPDR0  | 172300 |        |   |
| CHKMAN | 020560 | G | C\$PNTX | 000015 | EXTA    | 005766 | G\$RADL  | 000040 |        | KIPDR1  | 172302 |        |   |
| CHKTSS | 016416 |   | C\$QIO  | 000377 | EXTEND  | 005764 | G\$RADL  | 000120 |        | KIPDR2  | 172304 |        |   |
| CKDROP | 017262 |   | C\$RDBU | 000007 | EXTFEA  | 002220 | G\$RADO  | 000020 |        | KIPDR3  | 172306 |        |   |
| CKEMAX | 017162 |   | C\$REFG | 000047 | E\$END  | 002100 | G\$XFER  | 000004 |        | KIPDR4  | 172310 |        |   |
| CKMSG  | 011440 | G | C\$RESE | 000033 | E\$LOAD | 000035 | G\$YES   | 000010 |        | KIPDR5  | 172312 |        |   |
| CKMSG2 | 011560 | G | C\$REVI | 000003 | FATERR  | 000060 | HIADDR   | 001400 |        | KIPDR6  | 172314 |        |   |
| CKRAM  | 011174 | G | C\$RFLA | 000021 | FATFLG  | 002214 | HOE      | 100000 | G      | KIPDR7  | 172316 |        |   |
| CKRAM2 | 011304 | G | C\$RPT  | 000025 | FERCM   | 012002 | HPM1     | 105566 |        | KTENAB  | 003126 | G      |   |
| CMOPKT | 021340 | G | C\$SEFG | 000046 | FIFEXP  | 012250 | HPM2     | 105622 |        | KTFLG   | 003124 | G      |   |
| CMEM   | 017740 |   | C\$SPRI | 000041 | FIF1MS  | 012322 | HPM3     | 105646 |        | KTINIT  | 021134 |        |   |
| CONFIG | 017330 |   | C\$SVEC | 000037 | FIF2MS  | 012371 | IBE      | 010000 | G      | KTOFF   | 017354 |        |   |
| COUNT  | 002302 | G | C\$TPRI | 000013 | FILLME  | 017502 | IDU      | 000040 | G      | KTON    | 017336 |        |   |
| CSRADD | 002200 | G | DATA    | 002304 | G       | FNOINT | 004211   | IER    | 020000 | G       | LERRMA | 002164 | G |
| CTAB   | 003156 | G | DATASC  | 020312 |         | FORCER | 002170   | IFALT  | 004252 |         | LISTAL | 000001 |   |
| CTABE  | 003170 | G | DEBUGM  | 011712 |         | FREE   | 003116   | INCERK | 017124 |         | LOE    | 040000 | G |
| CTABM  | 003156 | G | DEVcnt  | 002212 | G       | FREEHI | 003122   | INTCPC | 016230 |         | LOOPCN | 002210 | G |



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SYMBOL TABLE

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|                  |               |                 |                  |                 |
|------------------|---------------|-----------------|------------------|-----------------|
| LOOPCO 013206    | L10001 002170 | L10073 105542   | O\$ERRT= 000000  | PST32W 003144 G |
| LOOPFL 003154 G  | L10002 005762 | L10074 102202   | O\$GNSW= 000001  | PUNIT 022364    |
| LOT 000010 G     | L10003 012124 | L10075 105566   | O\$POIN= 000001  | PW.D11= 000021  |
| L\$ACP 002110 G  | L10004 012142 | L10076 105706   | O\$SETU= 000000  | PW.D13= 000022  |
| L\$APT 002036 G  | L10005 012160 | MEMADD 014034 G | PASRPT 022134    | PW.D22= 000020  |
| L\$AU 022432 G   | L10006 012166 | MEMCK 021356 G  | PATCH 106046 G   | PW.NOP= 000000  |
| L\$AUT 002070 G  | L10007 012204 | MENASC 020527   | PATDAT 020310    | PW.NO1= 000023  |
| L\$AUTO 022636 G | L10010 012222 | MENERR 020454   | PC.ERA= 002400   | PW.RDE= 000024  |
| L\$CCP 002106 G  | L10011 012246 | MENRES 020556   | PC.IER= 002000   | PW.RDR= 000001  |
| L\$CLEA 022716 G | L10012 012320 | MMVEC = 000250  | PC.NOO= 001000   | PW.RDS= 000005  |
| L\$CO 002032 G   | L10013 012470 | MSA.FR= 000006  | PC.REL= 000000   | PW.RFI= 000003  |
| L\$DEPO 002011 G | L10014 013204 | MSA.NO= 000000  | PC.REW= 000400   | PW.WCT= 000006  |
| L\$DESC 003402 G | L10015 014032 | MSA.NR= 000004  | PKBCNT= 000006   | PW.WFI= 000004  |
| L\$DESP 002076 G | L10016 014054 | MSA.VO= 000002  | PKHI = 000004    | PW.WFM= 000007  |
| L\$DEVP 002060 G | L10017 015560 | MSGEXP 012224 G | PKLOW = 000002   | PW.WMI= 000010  |
| L\$DISP 002124 G | L10020 015566 | MSGLOO 013144 G | PKTAND 007632    | PW.WNP= 000011  |
| L\$DLY 002116 G  | L10021 015574 | MSGSTA 012430 G | PKTFRM 007574    | PW.WTR= 000002  |
| L\$DTP 002040 G  | L10022 015606 | MSGSUB 014022 G | PKTGET 012144 G  | P.ACK = 100000  |
| L\$DTYP 002034 G | L10023 015630 | MS.ATI= 000006  | PKTMES 012170 G  | P.CMD = 000037  |
| L\$DU 022530 G   | L10024 015656 | MS.EXT= 000200  | PKTRAM 00741 G   | P.CONT= 000012  |
| L\$DUT 002072 G  | L10025 016016 | MS.RSD= 000001  | PKTSSR 012126 G  | P.CVC = 040000  |
| L\$DVTY 003374 G | L10026 016326 | MS.RSF= 000020  | PNT = 001000 G   | P.FMT = 000140  |
| L\$EF 002052 G   | L10030 022362 | MS.RST= 000010  | PRAMPK 014056    | P.FORM= 000011  |
| L\$ENVI 002044 G | L10031 022526 | M8186 005550    | PRASC 014603     | P.GETS= 000017  |
| L\$ETP 002102 G  | L10032 022634 | M8189 005641    | PRBEXP 015550    | P.IE = 000200   |
| L\$EXP1 002046 G | L10033 022714 | NBA = 002000    | PRBMSG 015416    | P.INIT= 000013  |
| L\$EXP4 002064 G | L10034 022742 | NEWPAS 022070   | PRBREC 015552    | P.MODE= 007400  |
| L\$EXP5 002066 G | L10035 023204 | NODEV 003106 G  | PRBTOT 015503    | P.OPP = 020000  |
| L\$HARD 105546 G | L10036 032702 | NOINIT 004331   | PRBYTE 015202 G  | P.POSI= 000010  |
| L\$HIME 002120 G | L10037 024170 | NOINTR 004215   | PRI = 002000 G   | P.READ= 000001  |
| L\$HPCP 002016 G | L10040 024712 | NOITS 002162 G  | PRIADD 010236    | P.SWB = 010000  |
| L\$HPTP 002022 G | L10041 025436 | NOMAN 020614    | PRIAO 010306     | P.WRIT= 000005  |
| L\$HW 002150 G   | L10042 026260 | NOMEM 005454    | PRIBX0 007670 G  | P.WRTC= 000004  |
| L\$ICP 002104 G  | L10043 041430 | NP.IR = 000200  | PRIEQU 010136    | P.WRTS= 000006  |
| L\$INIT 021636 G | L10044 033734 | NP.LOO= 000040  | PRIPKT 007446 G  | QVP 002176 G    |
| L\$LADP 002026 G | L10045 035360 | NP.OUT= 000100  | PRIRAM 010144    | RAMASC 014236   |
| L\$LAST 106404 G | L10046 035754 | NP.WRP= 000020  | PRITAD 010352    | RAMDAT 002234 G |
| L\$LOAD 002100 G | L10047 036440 | NSI 004146      | PRITSS 006020    | RAMERR 015570 G |
| L\$LUN 002074 G  | L10050 046766 | NSINIT 004403   | PRITO 010434     | RAMEXP 015610 G |
| L\$MREV 002050 G | L10051 042322 | NUL 004523      | PRITI 010477     | RAMFOR 010174   |
| L\$NAME 002000 G | L10052 043134 | NULCR 004524    | PRI XOR 010020 G | RAMSIZ 002274 G |
| L\$PRIO 002042 G | L10053 053044 | NXM = 004000    | PRI00 = 000000 G | RAMTAD 015576 G |
| L\$PROT 021626 G | L10054 047642 | NXMFLG 003130 G | PRI01 = 000040 G | RCVHIA 002276 G |
| L\$PRT 002112 G  | L10055 050452 | NXMHI 003134 G  | PRI02 = 000100 G | RCVLOA 002300 G |
| L\$REPP 002062 G | L10056 051266 | NXML0 003132 G  | PRI03 = 000140 G | RDERR 005202    |
| L\$REV 002010 G  | L10057 056040 | NXMTST 021532   | PRI04 = 000200 G | RECMSG 002460 G |
| L\$RPT 022744 G  | L10060 054506 | NXR 003734      | PRI05 = 000240 G | RECV 002226 G   |
| L\$SOFT 105700 G | L10061 063412 | NXRERR 005732 G | PRI06 = 000300 G | REGSAV 020220   |
| L\$SPC 002056 G  | L10062 060476 | NXRX 003773     | PRI07 = 000340 G | RETERR 005366   |
| L\$SPCP 002020 G | L10063 073342 | NXTU 022102     | PRMESS 014322    | REWIND 011074 G |
| L\$SPTP 002024 G | L10064 064504 | OFL = 000100    | PRMNO 002312 G   | RMCHBE= 000167  |
| L\$STA 002030 G  | L10065 065564 | ONEFIL= 000000  | PRMSGE 014632 G  | RMCHEN= 000200  |
| L\$SW 002160 G   | L10066 066426 | O\$APTS= 000000 | PRMSG0 015012    | RMMSGB= 000215  |
| L\$TEST 002114 G | L10067 067330 | O\$AU = 000001  | PRMSG1 015057    | RMMSGE= 000234  |
| L\$TIML 002014 G | L10070 101116 | O\$BGNR= 000001 | PRMSG2 015115    | RMPKTB= 000201  |
| L\$UNIT 002012 G | L10071 074436 | O\$BGNS= 000001 | PROASC 014500    | RMPKTE= 000210  |
| L10000 002156    | L10072 075520 | O\$DU = 000001  | PRIASC 014545    | RMR = 010000    |

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SYMBOL TABLE

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|                 |                  |                 |                 |               |
|-----------------|------------------|-----------------|-----------------|---------------|
| RWPACK 011170   | S2.INR= 000020   | T\$EXCP= 000000 | T29CON 026462   | T30BOT 040041 |
| SC = 100000     | S2.OUT= 000040   | T\$FLAG= 000040 | T29DAT 026330   | T30BS0 036630 |
| SCE = 020000    | S2.UND= 000003   | T\$GMAN= 000000 | T29DLY 026500   | T30BS1 036631 |
| SCHERR 005274   | TBLEND= 003054 G | T\$HILI= 000776 | T29DSW 026340   | T30CNT 036650 |
| SCME 005007     | TCOASC 006554    | T\$LAST= 000001 | T29DTA 030043   | T30CNU 036652 |
| SEDELAY 010740  | TCOCOD 006754    | T\$LOLI= 000000 | T29EOT 030131   | T30DAT 036510 |
| SELASC 020522   | TEMP1 003110 G   | T\$LSYM= 010000 | T29LON 031225   | T30DLY 036656 |
| SELDAT= 000004  | TEMP2 003112 G   | T\$LTNO= 000011 | T29LOO 023556   | T30DSW 036520 |
| SEL2 = 000002   | TERCLS= 000016   | T\$NEST= 177777 | T29LOP 031307   | T30DTA 041134 |
| SETMAP 017376   | TESTNO= 000011   | T\$NSO = 000000 | T29LOQ 027426   | T30DTR 041070 |
| SETU 022166     | TEXASC 006513    | T\$NS1 = 000005 | T29LOR 027301   | T30ETH 036516 |
| SFFMSG 012162 G | TFCASC 006615    | T\$NS2 = 000002 | T29NEF 026630   | T30FCN 036654 |
| SFHERR 003701   | TIMEXP 015632 G  | T\$PTNU= 000000 | T29NEQ 031545   | T30IBT 037031 |
| SFIERR 003646   | TIMSGO 015660    | T\$SAVL= 177777 | T29OFL 026502   | T30IBU 036660 |
| SFIMSG 012114 G | TINERR 012101    | T\$SEGL= 177777 | T29OF7 030515   | T30IMV 036636 |
| SFPTBL 002160 G | TMPBFR 002624 G  | T\$SUBN= 000001 | T29PAC 026320   | T3OLOO 032360 |
| SIFLAG 003146 G | TNAM 016764      | T\$TAGL= 177777 | T29PBP 031371   | T3OLOQ 037630 |
| SIMSG 012046    | TRANST 002160 G  | T\$TAGN= 010077 | T29PK2 026430   | T3ONEF 040576 |
| SKIPT 003372    | TSBA = 000000 G  | T\$TEMP= 000000 | T29PK3 026440   | T3OOFI 040307 |
| SOFINI 016054 G | TSBAH = 000001 G | T\$TEST= 000011 | T29RB 026442    | T3OPAC 036500 |
| SPACE 010544 G  | TSD8 = 000000 G  | T\$TSTM= 177777 | T29RDF 026720   | T3OPK2 036610 |
| SPM1 105706     | TSD8H = 000001 G | T\$TSTS= 000001 | T29RDG 031643   | T3OPK3 036620 |
| SPM4 105736     | TSFCOD 007314    | T\$AU = 010031  | T29RES 032146   | T3OPTB 037242 |
| SPM6 105766     | TSREJ = 000006   | T\$AUT = 010033 | T29RIB 031724   | T3ORB 036622  |
| SPM7 106016     | TSSDEF 006664    | T\$CLE = 010034 | T29RN 026456    | T3ORDF 037413 |
| SR0 = 177572    | TSSR = 000002 G  | T\$DU = 010032  | T29RNC 030354   | T3ORDG 037471 |
| SR1 = 177574    | TSSRBI 003476 G  | T\$HAR= 010075  | T29RRF 026767   | T3ORES 041252 |
| SR2 = 177576    | TSSRFO 006473    | T\$HW = 010000  | T29RRG 027103   | T3ORIB 036745 |
| SR3 = 172516    | TSSRH = 000003 G | T\$INI= 010030  | T29RRN 032024   | T3ORN 036636  |
| SSR = 000200    | TSSX 004014      | T\$MSG= 010025  | T29RSZ 026476   | T3ORRM 040655 |
| STATCO 012472   | TSTBLK 002744 G  | T\$PRD= 010027  | T29RT2 032240   | T3ORRN 040733 |
| SVCGBL= 000000  | TSTCNT 002206 G  | T\$RPT= 010035  | T29RT3 032302   | T3ORRP 041012 |
| SVCINS= 000000  | TSTEND 017000    | T\$SOF= 010076  | T29RWN 030305   | T3ORT2 041344 |
| SVCSUB= 000001  | TSTFLA 002306 G  | T\$SRV= 010026  | T29SC 027217    | T3ORT3 041406 |
| SVCTAG= 000000  | TSTLOO 016536 G  | T\$SUB= 010074  | T29SSR 027507   | T3ORWN 040240 |
| SVCTST= 000001  | TSTPTR 002310 G  | T\$SW = 010001  | T29SZ 026446    | T3OSKM 037114 |
| S\$LSYM= 010000 | TSTSET 016570 G  | T\$TES= 010073  | T29S2 026452    | T3OSSR 037711 |
| SO.IDB= 000010  | TST29I 032117    | T1 023526 G     | T29S3 026454    | T3OSZ 036626  |
| SO.IFB= 000002  | TST30I 041231    | T1.1 023556     | T29TM 030227    | T3OS2 036632  |
| SO.IFP= 000001  | TST31I 046543    | T1.2 024206     | T29TRL 031457   | T3OS3 036634  |
| SO.ILD= 000020  | TST32I 052640    | T1.3 024730     | T29VCK 030771   | T30TM 040106  |
| SO.ION= 000040  | TST33I 055645    | T1.4 025454     | T29WB 026442    | T30TMK 040514 |
| SO.IRD= 000100  | TST34I 063207    | T2 032334 G     | T29WDC 030677   | T30TM2 040163 |
| SO.IRW= 000004  | TST35I 073133    | T2.1 032360     | T29WDD 030570   | T30TPB 037333 |
| SO.ISP= 000200  | TST36I 100717    | T2.2 033752     | T29WDE 027562   | T3OVCK 040441 |
| S1.ICE= 002000  | TST37I 105343    | T2.3 035376     | T29WDF 027351   | T3OWB 036622  |
| S1.IEO= 010000  | TSV2 002000 G    | T2.4 035772     | T29WDR 026460   | T3OWDC 040362 |
| S1.IFM= 001000  | TSV3 002170 G    | T23A 003136 G   | T29WLK 027644   | T3OWDD 037170 |
| S1.IHE= 000400  | TSV4 021626 G    | T23B 003140 G   | T29WNG 026523   | T3OWDE 037762 |
| S1.IID= 004000  | TSV6 105544 G    | T29AM3 030427   | T29WRT 027731   | T3OWDF 037553 |
| S1.IIR= 020000  | TSV7B 023526 G   | T29BA 031044    | T29WSS 031136   | T31AM3 045016 |
| S1.I2R= 040000  | TTIBFR= 177562 G | T29BFR 026342   | T3 041432 G     | T31BA 045356  |
| S1.PAR= 100000  | TTICSR= 177560 G | T29BF2 026450   | T3BFLG 003142 G | T31BFR 043212 |
| S2.ATI= 000010  | TTIVEC= 000060 G | T29BOT 027776   | T3.1 041462     | T31BF2 043320 |
| S2.BTI= 000004  | T\$ARGC= 000003  | T29BS0 026450   | T3.2 042340     | T31BOT 044345 |
| S2.DIM= 000200  | T\$CODE= 001130  | T29BS1 026451   | T30BFR 036522   | T31BS0 043320 |
| S2.ILW= 000100  | T\$ERRN= 001620  | T29CNT 026474   | T30BF2 036630   | T31BS1 043321 |

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SYMBOL TABLE

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|        |        |        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| T31CNT | 043336 | T32CNU | 051512 | T34BA  | 063046 | T35CON | 067532 | T36BS1 | 075711 |
| T31CNU | 043340 | T32DAT | 051340 | T34BFR | 060562 | T35DAT | 067400 | T36CNT | 075726 |
| T31CON | 043332 | T32DLY | 051514 | T34BF2 | 060676 | T35DLY | 067542 | T36CNU | 075730 |
| T31DAT | 043200 | T32DSW | 051350 | T34BOT | 061234 | T35DSW | 067410 | T36CON | 075722 |
| T31DLY | 043342 | T32ECF | 052455 | T34BS0 | 060676 | T35DTA | 072325 | T36DAT | 075570 |
| T31DSW | 043210 | T32EOT | 051611 | T34BS1 | 060677 | T35EOT | 070510 | T36DLY | 075732 |
| T31DTA | 046446 | T32ERA | 052016 | T34CNT | 060672 | T35INT | 072601 | T36DSW | 075600 |
| T31EOT | 044540 | T32L00 | 047020 | T34CON | 060710 | T35LON | 071470 | T36DTA | 100622 |
| T31LON | 045520 | T320PI | 052603 | T34DAT | 060550 | T35L00 | 063444 | T36EOT | 077005 |
| T31L00 | 041462 | T32PAC | 051330 | T34DLY | 060674 | T35L0P | 071552 | T36LON | 077765 |
| T31L0P | 045602 | T32PK2 | 051440 | T34DSW | 060560 | T35L0Q | 070205 | T36L00 | 073400 |
| T31L0Q | 044116 | T32PK3 | 051450 | T34EOT | 062205 | T35LOR | 070060 | T36L0P | 100047 |
| T31LOR | 043771 | T32RB  | 051452 | T34ET  | 062116 | T35MOT | 072503 | T36L0Q | 076446 |
| T31NEF | 046040 | T32RES | 052700 | T34ETC | 061157 | T35NEF | 072010 | T36LOR | 076321 |
| T31OFL | 045065 | T32RIB | 052136 | T34ETN | 061451 | T35NIN | 073056 | T36NAS | 075734 |
| T31PAC | 043170 | T32RT2 | 052772 | T34ETO | 061002 | T35OFL | 071035 | T36NEF | 100305 |
| T31PBP | 045664 | T32RT3 | 053022 | T34ETS | 061530 | T35OPM | 072672 | T36OFL | 077332 |
| T31PK2 | 043300 | T32RWN | 051700 | T34ETZ | 061622 | T35PAC | 067370 | T36PAC | 075560 |
| T31PK3 | 043310 | T32SCF | 052234 | T34ET2 | 061367 | T35PBP | 071634 | T36PBP | 100131 |
| T31RB  | 043312 | T32SZ  | 051456 | T34L00 | 056072 | T35PK2 | 067500 | T36PK2 | 075670 |
| T31RDE | 043344 | T32TSA | 052311 | T34OFL | 062527 | T35PK3 | 067510 | T36PK3 | 075700 |
| T31RDF | 043543 | T32WB  | 051452 | T34PAC | 060540 | T35RB  | 067512 | T36RB  | 075702 |
| T31RES | 046610 | T32WDC | 052536 | T34PK2 | 060650 | T35RDF | 067632 | T36RDF | 076073 |
| T31RN  | 043326 | T33BFR | 054572 | T34PK3 | 060660 | T35RES | 073164 | T36RES | 100740 |
| T31RNC | 044743 | T33BF2 | 054700 | T34POS | 060714 | T35RN  | 067526 | T36RN  | 075716 |
| T31RRF | 043612 | T33BOT | 055325 | T34RB  | 060662 | T35RNC | 070713 | T36RNC | 077210 |
| T31RT2 | 046702 | T33BS0 | 054700 | T34RES | 063232 | T35RRF | 067701 | T36RRF | 076142 |
| T31RT3 | 046744 | T33BS1 | 054701 | T34RNC | 062406 | T35RT2 | 073256 | T36RT2 | 101032 |
| T31RWN | 044674 | T33CNT | 054716 | T34RRE | 061066 | T35RT3 | 073320 | T36RT3 | 101074 |
| T31SC  | 043707 | T33CNU | 054720 | T34RSZ | 060670 | T35RWE | 072770 | T36RWN | 077141 |
| T31SCF | 046161 | T33CON | 054712 | T34RT2 | 063324 | T35RWN | 070644 | T36SC  | 076237 |
| T31SSR | 044177 | T33DAT | 054560 | T34RT3 | 063366 | T35SC  | 067776 | T36SCF | 100403 |
| T31SZ  | 043316 | T33DLY | 054722 | T34RWN | 062337 | T35SCF | 072106 | T36SSR | 076527 |
| T31S2  | 043322 | T33DSW | 054570 | T34SSR | 062063 | T35SSR | 072422 | T36SZ  | 075706 |
| T31S3  | 043324 | T33DTA | 055550 | T34STM | 061700 | T35SZ  | 067516 | T36S2  | 075712 |
| T31TIM | 044440 | T33L00 | 053076 | T34SZ  | 060666 | T35S2  | 067522 | T36S3  | 075714 |
| T31TM  | 044617 | T33PAC | 054550 | T34S2  | 060700 | T35S3  | 067524 | T36TIM | 076730 |
| T31TRL | 045752 | T33PK2 | 054660 | T34S3  | 060702 | T35TIM | 070433 | T36TM  | 077064 |
| T31TSA | 046236 | T33PK3 | 054670 | T34TM  | 062263 | T35TRL | 070567 | T36TRL | 100217 |
| T31VCK | 045303 | T33RB  | 054672 | T34TMK | 061763 | T35TSA | 072163 | T36TSA | 100460 |
| T31WB  | 043312 | T33RBP | 054724 | T34VCK | 062773 | T35VCK | 071253 | T36VCK | 077550 |
| T31WDC | 045230 | T33RES | 055662 | T34WB  | 060662 | T35VCK | 071253 | T36V   | 075702 |
| T31WDD | 045140 | T33RN  | 054706 | T34WD  | 060704 | T35WB  | 067512 | T36WDC | 077475 |
| T31WDE | 044233 | T33RT2 | 054754 | T34WDC | 062671 | T35WDC | 071200 | T36WDD | 077405 |
| T31WDF | 044041 | T33RT3 | 056016 | T34WDD | 062602 | T35WDD | 071110 | T36WDE | 076563 |
| T31WDR | 043330 | T33RWN | 055420 | T34WDR | 060706 | T35WDE | 070266 | T36WDF | 076371 |
| T31WNG | 043471 | T33SSR | 055241 | T34WSS | 063120 | T35WDF | 070130 | T36WDR | 075720 |
| T31WNH | 043410 | T33SZ  | 054676 | T34WTM | 061300 | T35WDR | 067530 | T36WNG | 076005 |
| T31WRF | 046343 | T33S2  | 054702 | T35AM3 | 070766 | T35WNG | 067544 | T36WRF | 100542 |
| T31WSS | 045431 | T33S3  | 054704 | T35BA  | 071326 | T35WRF | 072245 | T36WSS | 077676 |
| T32AM3 | 051747 | T33UNC | 055062 | T35BFR | 067412 | T35WSS | 071401 | T37AM3 | 103707 |
| T32BA  | 052063 | T33UND | 055152 | T35BF2 | 067520 | T36AM3 | 077263 | T37BA  | 104247 |
| T32BFR | 051352 | T33WB  | 054672 | T35BOT | 070340 | T36BA  | 077623 | T37BFR | 102262 |
| T32BOE | 052366 | T33WDC | 055467 | T35BS0 | 067520 | T36BFR | 075602 | T37BF2 | 102370 |
| T32BOT | 051516 | T33WDR | 054710 | T35BS1 | 067521 | T36BF2 | 075710 | T37BOT | 103261 |
| T32CMD | 051460 | T33WPW | 055002 | T35CNT | 067536 | T36BOT | 076635 | T37BS0 | 102370 |
| T32CNT | 051510 | T34AM3 | 062461 | T35CNU | 067540 | T36BS0 | 075710 | T37BS1 | 102371 |

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SYMBOL TABLE

SEQ 220

|               |               |                 |                 |                |
|---------------|---------------|-----------------|-----------------|----------------|
| T37CNT 102406 | T37SSR 103136 | T7.4 066444     | WSMBK 021350 G  | X8OFFS= 000400 |
| T37CNU 102410 | T37SZ 102366  | T8 073344 G     | XFERAS 016020   | X8TRUE= 000020 |
| T37CON 102402 | T37S2 102372  | T8.1 073400     | XNXM 016456     | X1.COR= 020000 |
| T37DAT 102250 | T37S3 102374  | T8.2 074454     | XORBF0 007752   | X1.DLT= 100000 |
| T37DLY 102412 | T37TIM 103354 | T9 101120 G     | XORFOR 010070   | X1.MBZ= 017375 |
| T37DSW 102260 | T37TM 103510  | T9.1 101154     | XST0 = 000006 G | X1.RBP= 000400 |
| T37DTA 105246 | T37TRL 104643 | UAM = 000200 G  | XST1 = 000010 G | X1.SPA= 040000 |
| T37EOT 103431 | T37TSA 105104 | UNITM 002174 G  | XST2 = 000012 G | X1.UNC= 000002 |
| T37LON 104411 | T37VCK 104174 | UNREC = 000006  | XST3 = 000014 G | X2.BUF= 000100 |
| T37LOO 101154 | T37WB 102362  | USI 004117      | XST4 = 000016 G | X2.EXT= 000200 |
| T37LOP 104473 | T37WDC 104121 | WAITF 016330 G  | XSOBOT= 000002  | X2.OPM= 100000 |
| T37LOQ 103055 | T37WDD 104031 | WC.IFA= 000200  | XSOEOT= 000001  | X2.RCE= 040000 |
| T37LOR 102730 | T37WDE 103172 | WC.IFE= 000002  | XSOIE = 000040  | X2.REV= 000077 |
| T37NEF 104731 | T37WDF 103000 | WC.IGO= 000001  | XSOILA= 000400  | X2.SPA= 035400 |
| T37OFL 103756 | T37WDR 102400 | WC.IRE= 000010  | XSOILC= 001000  | X2.UNI= 000007 |
| T37PAC 102240 | T37WNG 102414 | WC.IRW= 000004  | XSOLET= 020000  | X2.WCF= 002000 |
| T37PBP 104555 | T37WRF 105166 | WC.IOT= 000100  | XSONOT= 000200  | X3.DCK= 000010 |
| T37PK2 102350 | T37WSS 104322 | WC.IIT= 000040  | XSONEF= 002000  | X3.MBZ= 000006 |
| T37PK3 102360 | T4 046770 G   | WC.ISR= 000020  | XSOONL= 000100  | X3.MDE= 177400 |
| T37RB 102362  | T4.1 047020   | WF.IED= 000010  | XSOPED= 000010  | X3.OPI= 000100 |
| T37RDF 102502 | T4.2 047660   | WF.IER= 000004  | XSORLL= 010000  | X3.REV= 000040 |
| T37RES 105364 | T4.3 050470   | WF.IHI= 000200  | XSORLS= 040000  | X3.RIB= 000001 |
| T37RN 102376  | T5 053046 G   | WF.IRE= 000040  | XSOTMK= 100000  | X3.SPA= 000200 |
| T37RNC 103634 | T5.1 053076   | WF.IWF= 000020  | XSOVCK= 000020  | X3.TRF= 000020 |
| T37RRF 102551 | T6 056042 G   | WF.IWR= 000100  | XSOWLE= 004000  | X4.HSP= 100000 |
| T37RT2 105456 | T6.1 056072   | WF.I3R= 000002  | XSOWLK= 000004  | X4.MBZ= 017400 |
| T37RT3 105520 | T7 063414 G   | WF.I4R= 000001  | XXCOMM 003114 G | X4.RCE= 040000 |
| T37RWN 103565 | T7.1 063444   | WATCHR 010742 G | X8ALWA= 000000  | X4.TSM= 020000 |
| T37SC 102646  | T7.2 064522   | WTERR 005107    | X8FALS= 000040  | X4.WRC= 000377 |
| T37SCF 105027 | T7.3 065602   | WTMSG 005052    |                 |                |

. ABS. 106404 000  
000000 001  
ERRORS DETECTED: 0

VIRTUAL MEMORY USED: 30328 WORDS ( 119 PAGES)  
DYNAMIC MEMORY: 20614 WORDS ( 79 PAGES)  
ELAPSED TIME: 00:45:58  
CVTSDB,CVTSDB.SEQ/-SP=SVC/ML,TSV10,TSV220,TSV38,TSV4,TSV7B,TSV6