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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 TSV05 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+ USERS 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
HOE	HALT ON ERROR - CONTROL IS RETURNED TO RUNTIME SERVICES COMMAND MODE
LOE	LOOP ON ERROR
IER*	INHIBIT ALL ERROR REPORTS
IBR*	INHIBIT ALL ERROR REPORTS EXCEPT FIRST LEVEL (FIRST LEVEL CONTAINS ERROR TYPE, NUMBER, PC, TEST AND UNIT)
IXE*	INHIBIT EXTENDED ERROR REPORTS (THOSE 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 APPLY TO DIAGNOSTICS WHICH DO NOT SUPPORT 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 RESPONSE 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 50HZ (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 08: - 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 09:
DATMIS<7> ILW<6> OUTRDY<5> INRDY<4>

MESSAGE BUFFER ADDRESS = 047352

MESSAGE BUFFER CONTENTS:

WORD 00 EXPD:	100020	RECV:	100020	XOR:	000000
WORD 01 EXPD:	000012	RECV:	000012	XOR:	000000
WORD 02 EXPD:	000000	RECV:	000000	XOR:	000000
WORD 03 EXPD:	000010	RECV:	000010	XOR:	000000
WORD 04 EXPD:	000000	RECV:	000000	XOR:	000000
WORD 05 EXPD:	000000	RECV:	000000	XOR:	000000
WORD 06 EXPD:	000000	RECV:	000000	XOR:	000000
WORD 07 EXPD:	000000	RECV:	000000	XOR:	000000
WORD 08 EXPD:	070217	RECV:	070217	XOR:	000000
WORD 09 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 0 = 140010

PACKET WORD 1 = 000010

PACKET WORD 2 = 000000

PACKET WORD 3 = 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.

CVTSD HRD EPR 00121 ON UNIT 00 TST 001 SUB 002 PC: 023306
MOT BIT (XSTO) 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 (0) ? 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 NUMBER	N/I SECS.	NUMBER ITER	DEF SECS.
1	1	2	1
2	1	1	0
3	1	1	0
4	1	1	0
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 INFORMATION TABLES

WHENEVER THE PROGRAM IS STARTED, VIA THE STA(RT) COMMAND, THE SUPERVISOR REQUESTS THE FOLLOWING P-TABLES PARAMETER CHANGES:

CHANGE HW (L) ?

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.

IN ADDITION, ON A STA.T, 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 (ESS) 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 PARITY 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 EOF

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.

D2

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

SEQ 016

```

2          .TITLE  TSV2 - PROGRAM HEADER
3          .SBTTL  PROGRAM HEADER
4
10         .MCALL  SVC
11 000000   SVC                      ; INITIALIZE SUPERVISOR MACROS
12         .ENABLE LC
13         .NLIST  BEX,CND
19 000000   .ENABL  ABS,AMA
20         .*2000
21 002000   BGNMOD  TSV2
    002000
22
23
24
25
26
27
28 002000   POINTER BGNSW,BGNSFT,BGNAU,BGNDU,BGNRPT
29 002000   HEADER  CVTSD,B,0,655,,0
    002000   L$NAME::                ;DIAGNOSTIC NAME
    002000       103                .ASCII /C/
    002001       126                .ASCII /V/
    002002       124                .ASCII /T/
    002003       123                .ASCII /S/
    002004       104                .ASCII /D/
    002005       000                .BYTE  0
    002006       000                .BYTE  0
    002007       000                .BYTE  0
    002010   L$REV::                ;REVISION LEVEL
    002010       102                .ASCII /B/
    002011   L$DEPO::               ;0
    002011       060                .ASCII /O/
    002012   L$UNIT::               ;NUMBER OF UNITS
    002012  000000                .WORD   0
    002014   L$TIML::               ;LONGEST TEST TIME
    002014  001217                .WORD   655.
    002016   L$HPCP::               ;POINTER TO H.W. QUES.
    002016  105546                .WORD   L$HARD
    002020   L$SPCP::               ;POINTER TO S.W. QUES.
    002020  105700                .WORD   L$SOFT
    002022   L$HPTP::               ;PTR. TO DEF. H.W. PTABLE
    002022  002150                .WORD   L$HW
    002024   L$SPTP::               ;PTR. TO S.W. PTABLE
    002024  002160                .WORD   L$SW
    002026   L$LADP::               ;DIAG. END ADDRESS
    002026  106404                .WORD   L$LAST
    002030   L$STA::                ;RESERVED FOR APT STATS
    002030  000000                .WORD   0
    002032   L$CO::                 ;
    002032  000000                .WORD   0
    002034   L$DTYP::               ;DIAGNOSTIC TYPE
    002034  000000                .WORD   0
    002036   L$APT::                ;APT EXPANSION
    002036  000000                .WORD   0
    002040   L$DTP::                ;PTR. TO DISPATCH TABLE
    002040  002124                .WORD   L$DISPATCH
    002042   L$PRIO::               ;DIAGNOSTIC RUN PRIORITY

```

E2

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 EARTBL
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	

F2

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

SEQ 018

31
32
33
34
35
36
37
38
39

002122
002122 000011
002124
002124 023526
002126 032334
002130 041432
002132 046770
002134 053046
002136 056042
002140 063414
002142 073344
002144 101120

```
.SBTTL DISPATCH TABLE

;***
; THE DISPATCH TABLE CONTAINS THE STARTING ADDRESS OF EACH TEST.
; IT IS USED BY THE SUPERVISOR TO DISPATCH TO EACH TEST.
;***

DISPATCH 9
  .WORD 9
L$DISPATCH::
  .WORD T1
  .WORD T2
  .WORD T3
  .WORD T4
  .WORD T5
  .WORD T6
  .WORD T7
  .WORD T8
  .WORD T9
```

G2

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      .WORD      L10000-L$HW/2
      002150      L$HW::
      002150      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      ENDPHW
      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      .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      ENDSW
           002170      L10001;
70
71 002170      ENDMOD

```

TSV3 - GLOBAL AREAS
SOFTWARE P-TABLE

MACRO M1113 06-FEB-84 18:04

SEQ 021

```

7          .TITLE  TSV3 - GLOBAL AREAS
8          .SBTTL  GLOBAL EQUATES SECTION
13
19
20 002170      BGNMOD  TSV3
21 002170      TSV3::
22          .SBTTL  GLOBAL EQUATES SECTION
23
24          ;**
25          ; THE GLOBAL EQUATES SECTION CONTAINS PROGRAM EQUATES THAT
26          ; ARE USED IN MORE THAN ONE TEST.
27          ;**
28
32 002170      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

J2

SEQ 022

```

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

```

;
; OPERATOR FLAG BITS

```

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

```

33
34 002170

KT11
; SBITL MEMORY MANAGEMENT DEFINITIONS

; DEFINE MEMORY MANAGEMENT REGISTERS

```

000250      ; *KT11 VECTOR ADDRESS
            MMVEC= 250
            ; *KT11 STATUS REGISTER ADDRESSES
177572      SR0= 177572
177574      SR1= 177574
177576      SR2= 177576
172516      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 REGISTERS

```

UDPDR0= 177620
UDPDR1= 177622
UDPDR2= 177624
UDPDR3= 177626
UDPDR4= 177630
UDPDR5= 177632
UDPDR6= 177634
UDPDR7= 177636

```

.ENDC

```
; *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
```

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
MEMORY MANAGEMENT DEFINITIONS

L2

SEQ 024

```
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
KOPDR0 = 172320
KOPDR1 = 172322
KOPDR2 = 172324
KOPDR3 = 172326
KOPDR4 = 172330
KOPDR5 = 172332
KOPDR6 = 172334
KOPDR7 = 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
KOPAR0 = 172360
KOPAR1 = 172362
KOPAR2 = 172364
KOPAR3 = 172366
KOPAR4 = 172370
KOPAR5 = 172372
KOPAR6 = 172374
KOPAR7 = 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      XSOILC= BIT9          ;ILLEGAL COMMAND
81          000400      XSOILA= BIT8          ;ILLEGAL ADDRESS
82          000200      XSOMOT= BIT7          ;TAPE IN MOTION
83          000100      XSOONL= BIT6          ;TRANSPORT ON LINE
84          000040      XSOIE=  BIT5          ;INTERRUPT ENABLE
85          000020      XSOVCK= BIT4          ;VOLUME CHECK BIT
86          000010      XSOPED= BIT3          ;PHASE ENCODED DRIVE
87          000004      XSOWLK= BIT2          ;WRITE LOCKED
88          000002      XSOBOT= BIT1          ;BEGINNING OF TAPE
89          000001      XSOEOT= BIT0          ;END OF TAPE
90
91          ;+
92          ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 1
93          ;(XST1)
94          ;
95          100000      X1.DLT = BIT15          ;DATA LATE

```

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
TSV05 REGISTER AND PACKET DEFINITIONS

SEQ 026

```

96      040000      X1.SPARE= BIT14      ;NOT USED
97      020000      X1.COR  = BIT13      ;CORRECTABLE DATA ERROR
98      017375      X1.MBZ  = BIT12+BIT11+BIT10+BIT9+BIT7+BIT6+BIT5+BIT4+BIT3+BIT2+BIT0 ;ALWAYS 0
99      000400      X1.RBP  = BIT8       ;READ BUS PARITY ERROR
100     000002      X1.UNC  = BIT1       ;UNCORRECTABLE DATA OR HARD ERROR
101
102      ;+
103      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 2
104      ;(XST2)
105      ;-
106      100000      X2.OPM  = BIT15      ;OPERATION IN PROGRESS (TAPE MOVING)
107      040000      X2.RCE  = BIT14      ;RAM CHECKSUM ERROR
108      035400      X2.SPARE= BIT13+BIT12+BIT11+BIT9+BIT8 ;NOT USED BY TSV05 (ALWAYS=0)
109      002000      X2.WCF  = BIT10      ;WRITE CLOCK FAILURE (FIFO NOT EMPTIED BY TRANSPORT)
110      000200      X2.EXTF = BIT7       ;IF WRITE CHAR CMD THEN = EXTENDED FEATURES ENABLED
111      000100      X2.BUFE = BIT6       ;IF WRITE CHAR CMD THEN = BUFFERING ENABLED
112      000077      X2.REV  = 000077    ;IF WRITE CHAR CMD THEN = MICROCODE REVISION LEVEL
113      000007      X2.UNIT = BIT2+BIT1+BIT0 ;IF GET STATUS THEN = CURRENTLY SELECTED UNIT NO.
114
115      ;+
116      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 3
117      ;(XST3)
118      ;-
119      177400      X3.MDE  = 177400     ;MICRO-DIAGNOSTIC ERROR CODE
120      000200      X3.SPARE= BIT7       ;NOT USED BY TSV05
121      000100      X3.OPI  = BIT6       ;OPERATION INCOMPLETE
122      000040      X3.REV  = BIT5       ;REVERSE
123      000020      X3.TRF  = BIT4       ;TRANSPORT RESPONSE FAILURE
124      000010      X3.DCK  = BIT3       ;DENSITY CHECK
125      000006      X3.MBZ  =BIT2+BIT1   ;NOT USED ALWAYS 0
126      000001      X3.RIB  = BIT0       ;REVERSE INTO BOT
127
128      ;+
129      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 4
130      ;(XST4)
131      ;-
132      100000      X4.HSP  = BIT15      ;HIGH SPEED
133      040000      X4.RCE  = BIT14      ;RETRY COUNT EXCEEDED
134      020000      X4.TSM  = BIT13      ;TRANSPORT SPECIAL MODE
135      017400      X4.MBZ  = BIT12+BIT11+BIT10+BIT9+BIT6 ;NOT USED ALWAYS 0
136      000377      X4.WRC  = 000377    ;WRITE RETRY COUNT FIELD
137
138      ;+
139      ;
140      ;TSSR 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

```

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
TSV05 REGISTER AND PACKET DEFINITIONS

SEQ 027

```

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      RMSGGBEG = 215    ;MESSAGE BUFFER BEGIN RAM ADDRESS
207      000234      RMSGGEN = 234     ;MESSAGE BUFFER END RAM ADDRESS
208
209      ;
210      ; REGISTER DEFINITIONS IN THE MESSAGE BUFFER

```

C3

TSV3 GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
TSV05 REGISTER AND PACKET DEFINITIONS

SEQ 028

```

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.WRAM  = 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    ;ITAD0 - 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

```

TSV3 - GLOBAL AREAS MACBO M1113 06-FEB-84 18:04
 TSV05 REGISTER AND PACKET DEFINITIONS

SEQ 029

267	000002	WC.IFEN	• BIT11	;IFEN	- FORMATTER ENABLE
268	000001	WC.IGO	• BIT0	;GO	
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		; MS.ATTN SUBCODES			
292					
293	000000	MSA.NGP	• 0*2	;NO-OP (NOTHING TRIGGERED)	
294	000002	MSA.VOL	• 1*2	;SIMULATE ON-LINE/OFF-LINE TRANSITION	
295	000004	MSA.NRAM	• 2*2	;FORCE NON-FATAL RAM ERROR (FORCES ERRCODE 54)	
296	000006	MSA.FRAME	• 3*2	;FORCE FATAL RAM ERROR (CAUSES SCE TO SET)	
297					
298		; WRITE SUBSYSTEM WRITE NPR BSEL1 BIT DEFINITIONS			
299					
300	000200	NP.IR	• BIT7	;INTERRUPT REQUEST (0-1 TRANSITION)	
301	000100	NP.OUT	• BIT6	;TAPE DATA DIRECTION OUT (0= IN)	
302	000040	NP.LOOP	• BIT5	;ENABLE TRANSPORT LOOPBACK	
303	000020	NP.WRP	• BIT4	;WRITE CORRECT PARITY (SET=0 TO WRITE WRONG)	
304					
305		; READ STATUS MESSAGE BUFFER BIT DEFINITIONS			
306					
307					
308	000200	S2.DIM	• BIT7	;WORD #9 BYTE 2 DATA IN MISS	
309	000100	S2.ILW	• BIT6	; ILW H	
310	000040	S2.OUTRDY	• BIT5	; OUT RDY H	
311	000020	S2.INRDY	• BIT4	; IN RDY H	
312	000010	S2.ATIMR	• BIT3	; TIMER A FLAG H	
313	000004	S2.BTIMR	• BIT2	; TIMER B FLAG H	
314	000003	S2.UNDEF	• BIT1:BIT0	;(UNDEFINED)	
315	100000	S1.PARIN	• BIT15	;WORD #8 BYTE 1 PARIN H	
316	040000	S1.I2RESV	• BIT14	; IRESV2	
317	020000	S1.I1RESV	• BIT13	; IRESV1	
318	010000	S1.IEOT	• BIT12	; IEOT L	
319	004000	S1.IIDENT	• BIT11	; IIDENT H	
320	002000	S1.ICER	• BIT10	; ICER H	
321	001000	S1.IFMK	• BIT9	; IFMK H	
322	000400	S1.IHER	• BIT8	; IHER H	
323	000200	S0.ISPEED	• BIT7	;WORD #8 BYTE 0 ISPEED H	

E3

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
 TSV05 REGISTER AND PACKET DEFINITIONS

SEQ 030

```

324      000100      SO.IRDY      - BIT6      ;      IRDY L
325      000040      SO.IONL      - BIT5      ;      IONL 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.IFBI      - BIT1      ;      IFBY 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 NDF 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          .SBITL  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 BUF AREA
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 RECMG:: .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

```

H3

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
502      ;
503      ;
504      ;STORAGE FOR DEVICE REGISTERS
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      ;...FOR MULTI-UNIT CHECKOUT.
509
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      NXML0::      .WORD  0      ;NXM LO ADDRESS BITS
526 003134 000000      NXMHI::      .WORD  0      ;NXM HI ADDRESS BITS FOR DAL'S 16-21
527 003136 000000      T23A::      .WORD  0      ;11/23A FLAG
528 003140 000000      T23B::      .WORD  0      ;11/23B FLAG
529 003142 000000      T3BFLG::      .WORD  0      ;TEST 3B 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 000000      .WORD  0
538 003162 000000      .WORD  0
539 003164 000000      .WORD  0
540 003166 177777      .WORD  -1      ;END OF MEM TABLE.
541 003170      CTABE::
542      ;ERROR STATISTICS TABLE (1 WORD PER UNIT), 64 UNITS MAX:
543      ;
544      ;      0      =      UNIT NOT TESTED
545      ;      100000 =      UNIT ONLINE, NO ERRORS
546      ;      10XXXX =      UNIT ONLINE, ENCOUNTERED XXXX ERRORS
547      ;      160000 =      UNIT DROPPED, NON-EXISTENT DEVICE REGISTER
548      ;      160001 =      UNIT DROPPED, NOT IDLE AT START
549      ;      14XXXX =      UNIT DROPPED, ENCOUNTERED XXXX ERRORS
550      ;
551 003170      ERTABL:      .BLKW  64.

```

13

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

SEQ 034

552 003370 000000

ERTABE: .WORD 0

553

554 003372 000000

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 ;+
565 ; NAMES OF DLVICES SUPPORTED
566 ;--
567 003374          DEVTYP <TSV05>
    003374          L$DVTYP::
    003374          .ASCIZ /TSV05/
    124            .EVEN
    123
    126
568
569 ;+
570 ; TEST DESCRIPTION
571 ;--
572 003402          DESCRIPT <**** TSV05 LOGIC DIAGNOSTIC - CHECK TRANSPORT IF ERROR ****>
    003402          L$DESC::
    003402          .ASCIZ /**** TSV05 LOGIC DIAGNOSTIC - CHECK TRANSPORT IF ERROR ****/
    052            .EVEN
    052
    052
573
574 ;+
575 ; BIT TO ASCII CONVERSION FOR TSSR REGISTER
576 ;--
577
578
579 003476 003536 003541 003545 TSSRBIT:: .WORD 1$,2$,3$,4$,5$,6$,7$,8$
580 003516 003577 003603 003607 .WORD 9$,10$,11$,12$,13$,14$,15$,16$
581 003536 123 103 000 1$: .ASCIZ 'SC'
582 003541 102 111 105 2$: .ASCIZ 'BIE'
583 003545 123 103 105 3$: .ASCIZ 'SCE'
584 003551 122 115 122 4$: .ASCIZ 'RMR'
585 003555 116 130 115 5$: .ASCIZ 'NXM'
586 003561 116 102 101 6$: .ASCIZ 'NBA'
587 003565 102 111 124 7$: .ASCIZ 'BIT9'
588 003572 102 111 124 8$: .ASCIZ 'BIT8'
589 003577 123 123 122 9$: .ASCIZ 'SSR'
590 003603 117 106 114 10$: .ASCIZ 'OFL'
591 003607 102 111 124 11$: .ASCIZ 'BIT5'
592 003614 102 111 124 12$: .ASCIZ 'BIT4'
593 003621 102 111 124 13$: .ASCIZ 'BIT3'
594 003626 102 111 124 14$: .ASCIZ 'BIT2'
595 003633 102 111 124 15$: .ASCIZ 'BIT1'
596 003640 102 111 124 16$: .ASCIZ 'BIT0'
597 .EVEN
598
599 003646 124 123 123 SFIERR: .ASCIZ 'TSSR ERROR AFTER SOFT INIT'
600 003701 124 123 123 SFHERR: .ASCIZ 'TSSR ERROR AFTER BUS RESET'
601 003734 040 040 116 NXR: .ASCIZ / NON-EXISTANT DEVICE REGISTER/
602 003773 045 101 040 NXR: .ASCIZ /#A ADDRESS: #06/
603 004014 045 101 040 TSSX: .ASCIZ /#A TSBA,TSSR EXP'D: #06#A,#06#N/
604 004054 045 101 040 TSSX: .ASCIZ /#A TSBA,TSSR REC'D: #06#A,#06#N/
605 004113 045 116 045 FUSI: .ASCIZ /#N#A/
606 004117 040 040 125 USI: .ASCIZ / UNEXPECTED INTERRUPT/
607 004146 040 040 111 NSI: .ASCIZ / INTERRUPT EXPECTED, NOT RECEIVED/
608 004211 045 116 045 FNOINTR: .ASCIZ /#N#A/

```

TSV3 - GLOBAL AREAS
GLOBAL TEXT MESSAGES

MACRO M1113 06-FEB-84 18:04

SEQ 036

```

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              NUL: .ASCIZ //
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 EXPOT2: .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 'TSR Incorrect After WRITE Command, More Bits Set Than SSR'
644 005202      124      123      123 RDERR: .ASCIZ 'SSR 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
651              .EVEN
652              .SBTTL GLOBAL ERROR REPORT SECTION
653
654
655
656
657
658
659 005732      BGNMSG NXRERR              ;NON-EXISTANT DEVICE REGISTER.
660 005732      NXRERR: PRINTX #NXRX,NODEV ;NODEV = NEXM ADDRESS.
661 005732      013746 003106      MOV NCDEV,-(SP)
662 005736      012746 003773      MOV #NXRX,-(SP)
663 005742      012746 000002      MOV #2,-(SP)
664 005746      010600      MOV SP,RO
665 005750      104415      TRAP C$PNTX
666 005752      062706 000006      ADD #6,SP
667 005756      004737 005764      JSR PC,EXTEND ; PRINT EXTENSION IF REQUIRED.
668 005762      ENDMSG
669 005762      104423      L10002: TRAP C$MSG
670
671
672
673
674
675
676
677
678
679 005764      005727      ;
680 005766      000000      ; THIS ROUTINE APPENDS A UNIQUE EXTENSION (IF REQUIRED)
681 005770      001402      ; TO ANY OF THE ABOVE ERROR SIGNATURES.
682 005772      004777 177770      ;
683 005776      012746 004524      EXTEND: IST (PC)+
684 006002      012746 000001      EXTA: 0 ; 0 - NO EXTENSION.
685 006006      010600      BEQ 1$
686              JSR PC,EXTA ; APPEND EXTENSION TEXT.
687              PRINTX #NULCR ; PRINT A BLANK LINE
688              MOV #NULCR,-(SP)
689              MOV #1,-(SP)
690              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	04,SP
673 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          ;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          ;SHOW CONTENTS ARE AMBIGUOUS
707      MOV             #AMBTSSR, -(SP)
708      MOV             #1,-(SP)
709      MOV             SP,R0
710      TRAP            C$PNTX
711      ADD             #4,SP
712      MOV             R4,R3          ;CONTENTS OF TSSR
713      BIC             #HIADDR!FATERP!TERCLS,R3 ;CLEAR ALL MULTIPLE BIT FIELDS
714      BEQ             20$             ;NO BITS ARE SET
715      MOV             #TMPBFR,R2      ;TEMPORARY ASCII BUFFER
716      MOV             #TSSRBIT,R1    ;ASCII EQUIVALENT OF BITS
717      MOV             R3              ;REMAINING BITS TO CONVERT
718      TST             R3              ;BRANCH WHEN ALL ARE DONE
719      BEQ             15$             ;CLEAR CARRY FOR SHIFT
720      CLC
721      ROL             R3              ;SHIFT NEXT BIT TO CARRY
722      BCC             13$             ;BRANCH IF BIT NOT SET
723      MOV             (R1),R0          ;POINTER TO BIT DEFINITION
724      MOV             (R0)+,(R2)+      ;MOVE ASCII TO BUFFER
725      BNE             11$             ;MOVE ALL BITS
726      MOV             #',,-1(R2)      ;INSERT A COMMA TO TERMINATE
727      MOV             (R1)+           ;POINT TO NEXT DESCRIPTION
728      TST             R3              ;GET THE REMAINING BITS
729      BEQ             10$             ;TERMINATE THE LINE
730      MOV             R2,-(R2)         ;PRINT THE BIT DEFINITIONS
731      PRINTX          ;SSDEF, #TMPBFR
732      MOV             #TMPBFR, -(SP)
733      MOV             #SSDEF, -(SP)
734
735      5$:  MOV             R4,R3
736      BIC             #HIADDR!FATERP!TERCLS,R3
737      BEQ             20$
738      MOV             #TMPBFR,R2
739      MOV             #TSSRBIT,R1
740      MOV             R3
741      TST             R3
742      BEQ             15$
743      CLC
744      ROL             R3
745      BCC             13$
746      MOV             (R1),R0
747      MOV             (R0)+,(R2)+
748      BNE             11$
749      MOV             #',,-1(R2)
750      MOV             (R1)+
751      TST             R3
752      BEQ             10$
753      MOV             R2,-(R2)
754      PRINTX          ;SSDEF, #TMPBFR
755      MOV             #TMPBFR, -(SP)
756      MOV             #SSDEF, -(SP)

```

N3

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

SEQ 039

```

006164 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$:  MOV     R4,R3          ;GET THE TSSR CONTENTS
721 006202 042703 177761 BIC     #+CTERCLS,R3      ;CLEAR ALL BUT TERMINATION
722 006206 016303 006754 MOV     TCOCOD(R3),R3     ;GET THE TERMINATION CODE MEANING
723 006212      PRINTX  #TCOASC,R3      ;PRINT THE TERMINATION CODE
006212 010346      MOV     R3,-(SP)
006214 012746 006554      MOV     #TCCASC,-(SP)
006220 012746 000002      MOV     #2,-(SP)
006224 010600      MOV     SP,R0
006226 104415      TRAP    C$PNTX
006230 062706 000006      ADD     #6,SP
724 006234 010403      MOV     R4,R3          ;TSSR CONTENTS AGAIN
725 006236 042703 177717 BIC     #+CFATERR,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          ;ALINE TERMINATION CODE FOR INDEX
730 006252 016303 007314 MOV     TSFCOD(R3),R3     ;GET THE FATAL TERMINATION CODE
731 006256      PRINTX  #TFCAASC,R3     ;PRINT THE FATAL TERMINATION CODE
006256 010346      MOV     R3,-(SP)
006260 012746 006615      MOV     #TFCAASC,-(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     #+CHIADDR,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          ;RETURN TO CALLER
738

753 006354      045      116      045  EPRT1:  .ASCIZ  'NMA *****CHECK TRANSPORT*****'
754 006413      045      116      045  EPRT2:  .ASCIZ  'NMA *****CHECK PARITY SWITCH IN TRANSPORT*****'
756 006473      045      116      045  TSSRFOR: .ASCIZ  'NMA TSSR = #06'
757 006513      045      116      045  TEXASC:  .ASCIZ  'NMA Extended Address Bits = #06'
758 006554      045      116      045  TCOASC:  .ASCIZ  'NMA Termination Class Code = #T'
759 006615      045      116      045  TFCASC:  .ASCIZ  'NMA Fatal Termination Class Code = #T'
760 006664      045      116      045  TSSDEF:  .ASCIZ  'NMA TSSR Bits Set: #T'
761 006713      045      116      045  AMBTSSR: .ASCIZ  'NMA TSSR Contents Are Ambiguous'
762
763 006754 006774 007017 007045 TCOCOD: .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	11:	.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	11,21,31,41
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							;; THIS ROUTINE PRINTS THE ADDRESS AND CONTENTS OF A COMMAND PACKET.
784							;; THIS ROUTINE IS NORMALLY ONLY CALLED FROM A PRINT ROUTINE.
785							;;
786							;; INPUT:
787							;;
788						R0	NUMBER OF WORDS IN PACKET
789						R3	HIGH ORDER COMMAND PACKET ADDRESS
790						R4	ADDRESS OF COMMAND PACKET
791							;;
792							;; NOTE: R3 IS IGNORED IF THE KTENABLE FLAG IS CLEAR.
793							;;
794							;;
795	007446				PRIPKT::		
796	007446					SAVREG	;; SAVE THE REGISTERS
797	007452	010005			MOV	R0,R5	;; SAVE NO. OF WORDS IN PACKET
798	007454	005737	003126		TST	KTENABLE	;; ABOVE 28K UNDER TEST?
799	007460	001001			BNE	101	;; BR IF YES
800	007462	005003			CLR	R3	;; SET HIGH ORDER ADDRESS TO 0
801	007464	010301			101:	MOV	R3,R1
802	007466	010400				MOV	R4,R0
803	007470	006100				ROL	R0
804	007472	006101				ROL	R1
805	007474					PRINTB	#PKTADD,R1,R4
	007474	010446				MOV	R4,-(SP)
	007476	010146				MOV	R1,-(SP)
	007500	012746	007632			MOV	#PKTADD,-(SP)
	007504	012746	000003			MOV	#3,-(SP)
	007510	010600				MOV	SP,R0
	007512	104414				TRAP	C#PNTB
	007514	062706	000010			ADD	#10,SP
806	007520	010300			151:	MOV	R3,R0
807	007522	001404				BEQ	201
808	007524	010401				MOV	R4,R1
809	007526	004737	017376			JSR	PC,SETMAP
810	007532	010004				MOV	R0,R4
811	007534	005001			201:	CLR	R1
812	007536	012402			251:	MOV	(R4),R2
813	007540					PRINTB	#PKTFRM,R1,R2

;; PRINT THE DATA

C4

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      25$          ;LOOP TILL ALL DONE
817 007572 000207      RTS       PC          ;RETURN
818
819 007574      045      116      045  PKTFRM: .ASCIZ  '##A Packet Word @D1#A - #06'
820 007632      045      116      045  PKTADD: .ASCIZ  '##A Packet Address - #01#05'
821
822          .EVEN
823          .SBTTL  PRIBXOR - PRINT EXPD, RECV AND XOR BYTE
824
825          ;
826          ;PRINT EXPECTED DATA, RECEIVED DATA, AND XOR OF THE DATA BYTE
827          ;THIS ROUTINE IS NORMALLY CALLED ONLY FOR PRINT ROUTINES.
828          ;
829          ;INPUTS:
830          ;
831          ;      R1      RECEIVED DATA
832          ;      R2      EXPECTED DATA
833          ;
834          ;OUTPUT:
835          ;
836          ;      R0      XOR OF EXPECTED/RECEIVED DATA
837          ;
838          ;-
839
840 007670          PRIBXOR:
841 007670          SAVREG          ;SAVE THE REGISTERS
842 007674 010203      MOV      R2,R3          ;EXPECTED DATA
843 007676          XOR      R1,R3          ;FORM THE EXCLUSIVE OR
844 007706 012700 177400  MOV      @C<377>,R0          ;BYTE MASK
845 007712 040001      BIC      R0,R1          ;SAVE LOW BYTE RECV
846 007714 040002      BIC      R0,R2          ;SAVE LOW BYTE EXPD
847 007716 040003      BIC      R0,R3          ;SAVE LOW BYTE XOR
848 007720          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
849 007746 010300      MOV      R3,R0          ;R0 HAS XOR ON RETURN
850 007750 000207      RTS       PC          ;RETURN TO CALLER
851
852 007752      045      116      045  XORBFOR: .ASCIZ  '##A EXPD: #03#A RECV: #03#A XOR: #03'
853          .EVEN
854          .SBTTL  PRIBXOR - PRINT EXPD, RECV AND XOR
855

```

TSV3 GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
 PR XOR PRINT EXPD, RECV AND XOR

SEQ 042

```

856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872 010020
873 010020
874 010024 010203
875 010026
875 010036
    010036 010346
    010040 010146
    010042 010246
    010044 012746 010070
    010050 012746 000004
    010054 010600
    010056 104414
    010060 062706 000012
877 010064 010300
878 010066 000207
879
880 010070 045 116 045
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896 010136
897 010136
898 010142 000207
899
900
901
902
903
904

```

```

;
;
; PRINT EXPECTED DATA, RECEIVED DATA, AND XOR OF THE TWO
; THIS ROUTINE IS NORMALLY CALLED ONLY FOR PRINT ROUTINES.
;
; INPUTS:
;
;     R1     RECEIVED DATA
;     R2     EXPECTED DATA
;
; OUTPUT:
;
;     R0     XOR OF EXPECTED/RECEIVED DATA
;
; -
PR XOR:
    SAVREG                ;SAVE THE REGISTERS
    MOV     R2,R3          ;EXPECTED DATA
    XOR     R1,R3          ;FORM THE EXCLUSIVE OR
    PRINTB  @XORFOR,R2,R1,R3 ;PRINT THE MESSAGE
    MOV     R3,-(SP)
    MOV     R1,-(SP)
    MOV     R2,-(SP)
    MOV     @XORFOR,-(SP)
    MOV     @4,-(SP)
    MOV     SP,R0
    TRAP    C$PRINTB
    ADD     @12,SP
    MOV     R3,R0          ;R0 HAS XOR ON RETURN
    RTS     PC             ;RETURN TO CALLER

045 XORFOR: .ASCIZ 'N#A EXPD: #06#A RECV: #06#A XOR: #06'
        .EVEN
        .SBTTL PRIEQU - PRINT BIT NUMBERS AS ASCII EQUIVALENT
;
;
; ROUTINE TO CONVERT BIT VALUES TO ASCII AND PRINT THE STRING
; THIS ROUTINE IS NORMALLY CALLED FROM A PRINT ROUTINE
;
; INPUTS:
;
;     R0     OCTAL VALUE TO CONVERT
;     R1     TABLE OF POINTERS TO ASCII EQUIVALENT
;
; -
PRIEQU:
    SAVREG                ;SAVE THE REGISTERS
    RTS     PC             ;RETURN TO CALLER

        .SBTTL PRIRAM - PRINT RAM ADDRESS
;
;
; PRINT CONTROLLER RAM ADDRESS.
; THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.

```

E4

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

SEQ 043

```

905
906
907
908
909
910
911 010144
912 010144
913 010150
    010150 010446
    010152 012746 010174
    010156 012746 000002
    010162 010600
    010164 104414
    010166 062706 000006
914 010172 000207
915
916 010174 045 116 045 RAMFOR: .ASCIZ 'NWA CONTROLLER RAM ADDRESS = #06'
917 .EVEN
918
919 .SBTTL PRIADD - PRINT MEMORY ERROR ADDRESS
920
921
922 ;PRINT MEMORY ADDRESS
923 ;THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.
924
925 ; IMPLICIT INPUTS
926
927 ; ERRHI - HIGH ORDER ADDRESS
928 ; ERRLO - LOW ORDER ADDRESS
929
930
931 010236
932 010236
933 010242 013700 002230
934 010246 013701 002232
935 010252 010102
936 010254 006101
937 010256 006100
938 010260
    010260 010246
    010262 010046
    010264 012746 010306
    010270 012746 000003
    010274 010600
    010276 104414
    010300 062706 000010
939 010304 000207
940
941 010306 045 116 045 PRIA0: .ASCIZ 'NWA MEMORY ERROR ADDRESS = #01#05'
942 .EVEN
943
944 .SBTTL PRIADD - PRINT MEMORY TEST ADDRESS
945
946
947 ;PRINT MEMORY ADDRESS
948 ;THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.

; INPUTS:
;
; R4 RAM ADDRESS
;
; PRIRAM:
; SAVREG
; PRINTB RAMFOR,R4 ;SAVE R1-R5 UNTIL NEXT RETURN
; MOV R4,-(SP) ;PRINT RAM ADDRESS IN ERROR
; MOV RAMFOR,-(SP)
; MOV #2,-(SP)
; MOV SP,R0
; TRAP C:PNTB
; ADD #6,SP
; RTS PC ;RETURN

; *
; PRINT MEMORY ADDRESS
; THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.
; IMPLICIT INPUTS
; ERRHI - HIGH ORDER ADDRESS
; ERRLO - LOW ORDER ADDRESS
;
; PRIADD:
; SAVREG
; MOV ERRHI,R0 ;SAVE R1-R5 UNTIL NEXT RETURN
; MOV ERRLO,R1 ;GET HIGH ADDRESS
; MOV R1,R2 ;GET LOW ADDRESS
; ROL R1 ;COPY LOW ADDRESS
; ROL R0 ;SHIFT BIT 15 TO C BIT
; PRINTB PRIA0,R0,R2 ;SHIFT INTO HIGH ORDER
; MOV R2,-(SP) ;PRINT MEMORY ADDRESS IN ERROR
; MOV R0,-(SP)
; MOV PRIA0,-(SP)
; MOV #3,-(SP)
; MOV SP,R0
; TRAP C:PNTB
; ADD #10,SP
; RTS PC ;RETURN

; *
; PRINT MEMORY ADDRESS
; 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      PRITADD:
957      SAVREG      ;SAVE R1-R5 UNTIL NEXT RETURN
958      MOV ERRHI,R2 ;GET HIGH ADDRESS
959      MOV ERRLO,R1 ;GET LOW ADDRESS
960      ;MOV R1,R2   ;COPY LOW ADDRESS
961      ;ROL R1      ;SHIFT BIT 15 TO C BIT
962      ;ROL R0      ;SHIFT INTO HIGH ORDER
963      PRINTB #PRIT0,R1 ;PRINT MEMORY ADDRESS LOW IN ERROR
964      MOV R1,-(SP)
965      MOV #PRIT0,-(SP)
966      MOV #2,-(SP)
967      MOV SP,R0
968      TRAP C:PNTB
969      ADD #6,SP
970      PRINTB #PRIT1,R2 ;PRINT MEMORY ADDRESS HIGH IN ERROR
971      MOV R2,-(SP)
972      MOV #PRIT1,-(SP)
973      MOV #2,-(SP)
974      MOV SP,R0
975      TRAP C:PNTB
976      ADD #6,SP
977      RTS PC      ;RETURN
978
979      045 PRIT0: .ASCIZ 'MMA MEMORY TEST ADDRESS LOW - #06'
980      045 PRIT1: .ASCIZ 'MMA MEMORY TEST ADDRESS HIGH - #06'
981      .EVEN
982      .SBTTL SPACE - SPACE RECORDS (FORWARD AND REVERSE) COMMAND
983
984      ;
985      ;
986      ; ROUTINE TO ISSUE A SPACE RECORDS
987      ; COMMAND (FORWARD OR REVERSE)
988      ;
989      ; INPUT:
990      ;
991      ; R3 NUMBER OF RECORDS TO BE SPACED OVER
992      ; BIT15 CONTROLS DIRECTION
993      ; BIT15 = 0 IS FORWARD
994      ; BIT15 = 1 IS REVERSE
995      ; R5 FIRST DEVICE UNIBUS ADDRESS
996      ;
997      ; REQUIRES A WRITE CHARACTERISTICS DONE PREVIOUSLY
998      ;
999      ; OUTPUT:
1000      ;
1001      ; CARRY SET - SPACE RECORDS COMMAND OK
1002      ; CLR - SPACE RECORDS FAILED
1003      ;
1004      ; R0 THE CONTENTS OF R4 IS MOVED TO R0

```

G4

TS13 - 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
1030 010666 001356      BNE    15$      ;BUMP DELAY COUNTER DOWN
1031 010670 000411      BR     60$      ;BR, IF MORE DELAY
1032 010672 016501 000002      20$: MOV    TSSR(R5),R1      ;BR IF TROUBLE CARRY = CLEAR
1033 010676 012702 000200      MOV    #SSR,R2      ;READ TSSR
1034 010702 020201      25$: CMP    R2,R1      ;SET UP EXPECTED
1035 010704 001401      BEQ    40$      ;ARE THEY OK
1036 010706 000402      BR     60$      ;BR, IF EQUAL = OK
1037 010710 000261      40$: SEC      ;TROUBLE EXIT
1038 010712 000401      BR     70$      ;SET CARRY NO TROUBLE
1039 010714 000241      60$: CLC      ;EXIT
1040 010716      70$:      ;CARRY CLEAR = ERROR
1041 010716 010400      MOV    R4,R0      ;PASS PACKET ADDRESS
1042 010720 000207      RTS    PC      ;RETURN

```

TSM - 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      ;
1042      010730      .=<.*10>6177770
1044      ;
1045      ; COMMAND WORD
1046      010730      000000      80$: .WORD
1047      ; NUMBER OF RECORDS TO BE SPACED OVER WORD
1048      010732      000000      90$: .WORD
1049      010734      000000      .WORD
1050      010736      000000      .WORD
1051      010740      000000      SDELAY: .WORD 0 ; DELAY COUNTER
1052      ; EVEN
1053      ; SBTTL WRTCHR - WRITE CHARACTERISTICS COMMAND
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      WRTCHR: ;
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
 WRTHR - WRITE CHARACTERISTICS COMMAND

SEQ 047

```

1095 011002 032701 000100      BIT      00FL,R1      ;WAS OFF LINE SET IN TSSR
1096 011006 001402              BEQ      25$          ;BR, IF NO OFL SET
1097 011010 052702 000100      BIS      00FL,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$:  ADD      08.,R4      ;POINT TO WRT CHARA DATA PACKET
1102 011026 011403              MOV      (R4),R3      ;GET ADDRESS OF MESSAGE BUFFER
1103 011030 032763 000200 000012  BIT      0X2.EXTF,XST2(R3) ;EXTENDED FEATURES BIT SET?
1104 011036 001402              BEQ      45$          ;BR IF NO
1105 011040 005237 002220      INC      EXTFEA      ;SET EXTENDED FEATURES SW SWITCH
1106 011044              45$:  BIT      0X2.BUFE,XST2(R3) ;BUFFER ENABLE SWITCH SET
1107 011044 032763 000100 000012  BEQ      50$          ;BR, IF SWITCH NOT SET
1108 011052 001402              INC      BENBSW      ;SET SOFTWARE SWITCH FOR ENABLED
1109 011054 005237 002222      50$:  SEC          ;SET CARRY NO TROUBLE
1110 011060              BR       70$          ;EXIT
1111 011060 000261              CLC          ;CARRY CLEAR = ERROR
1112 011062 000401              60$:  MOV      TSSR(R5),R0 ;RETURN TSSR CONTENTS
1113 011064 000241              70$:  RTS      PC      ;RETURN
1114 011066 016500 000002      .SBTTL  REWIND - POSITION TAPE (REWIND) COMMAND
1115 011072 000207
1116
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      ; OUTPUT
1138      ;
1139      ; R0      THE CONTENTS OF R4 IS PASSED TO R0
1140
1141
1142
1143
1144      REWIND::
1145 011074
1146 011100 012704 011170      SAVREG
1147 011104 010465 000000      MOV      0RWPack,R4      ;SAVE R1-R5 UNTIL NEXT RETURN
1148 011110 012703 000550      MOV      R4,TSSR(R5) ;GET PACKET ADDRESS
1149 011114 004737 016330      MOV      0360.,R3 ;SEND PACKET ADDRESS TO EXECUTE
1150 011120 103417              MOV      0360.,R3 ;ENOUGH TIME FOR 2400' REEL TO REWIND
1151 011122              10$:  JSR      PC,WAITF ;WAIT FOR SSR TO SET
                          BCS      20$          ;LEAVE WHEN SSR IS SET
                          DELAY    250.        ;WAIT FOR .25 SECONDS

```

J4

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

SEQ 048

011122	012727	000372	MOV	0250.,(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		RWPACK:	.=<.,+10>E177770	
1161	011170	102010	.WORD	102010	;POSITION COMMAND (REWIND)
1162	011170	000000	.WORD	0	;NOT USED
1163			.SBTTL	CKRAM - COMPARE RAM TO I/O PACKET	
1164					
1165					
1166					
1167					
1168					
1169					
1170					
1171					
1172					
1173					
1174					
1175					
1176					
1177					
1178					
1179					
1180					
1181					
1182					
1183					
1184					
1185					
1186					
1187					
1188					
1189					
1190					
1191					
1192					
1193	011174		CKRAM::	SAVREG	;SAVE THE GENERAL REGISTERS
1194	011174		MOV	0RAMDATA,R1	;ADDRESS TO SAVE THE RAM DATA
1195	011200	012701	002234	MOV	0RMPKTBEGR,R2
1196	011204	012702	000201	CLR	R3
1197	011210	005003		JSR	PC,CHKTSSR
1198	011212	004737	016416	MOV	00,TSDB(R5)
1199	011216	112765	000000	10\$: JSR	PC,CHKTSSR
1200	011224	004737	016416	MOV	R2,TSDB(R5)
1201	011230	010265	000000	JSR	PC,CHKTSSR
1202	011234	004737	016416		

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
CKRAM - COMPARE RAM TO I/O PACKET

SEQ 049

```

1203 011240 116511 000000      MOVB    TSBA(R5),(R1)      ;READ THE RAM DATA
1204 011244 122124      CMPB    (R1)+,(R4)+      ;COMPARE TO EXPECTED
1205 011246 001401      BEQ     20$      ;BRANCH IF OK
1206 011250 005203      INC     R3      ;SET ERROR FLAG
1207 011252 005202      20$: INC     R2      ;ADDRESS OF NEXT RAM LOCATION
1208 011254 020227 000210      CMP     R2,#RMPKTEND      ;REACHED END YET ?
1209 011260 003761      BLE     10$      ;BRANCH TILL ALL READ
1210 011262 005703      TST     R3      ;WAS AN ERROR FOUND ?
1211 011264 001402      BEQ     30$      ;BRANCH IF NOT
1212 011266 000241      CLC      ;CLEAR CARRY TO SHOW ERROR
1213 011270 000401      BR      50$      ;EXIT
1214 011272 000261      30$: SEC      ;SHOW GOOD COMPARE
1215 011274 012737 000010 002274 50$: MOV     #8,,RAMSIZ      ;SETUP RAMSIZ FOR PRAMPKT ROUTINE
1216 011302 000207      RTS     PC      ;RETURN
1217      .SBTTL CKRAM2 - COMPARE RAM TO I/O CHARACTERISTICS DATA
1218      ;*
1219      ;
1220      ;ROUTINE TO READ THE FIRST 8 OR 10 BYTES FROM RAM
1221      ;MEMORY AND COMPARE THIS DATA TO A CHARACTERISTICS DATA BLOCK.
1222      ;
1223      ;INPUT:
1224      ;
1225      ;      R4      ADDRESS OF THE CHARACTERISTICS DATA
1226      ;      R5      FIRST DEVICE UNIBUS ADDRESS
1227      ;
1228      ;OUTPUT:
1229      ;
1230      ;      CARRY    SET - RAM MATCHES PACKET
1231      ;              CLR - RAM DOES NOT MATCH PACKET
1232      ;
1233      ;IMPLICIT OUTPUT:
1234      ;
1235      ;      THE TABLE RAMDATA IS FILLED WITH THE
1236      ;      DATA HELD IN RAM.
1237      ;      RAMSIZ IS SET TO 8. OR 10. FOR PRAMPKT ROUTINE
1238      ;
1239      ;SIDE EFFECTS:
1240      ;
1241      ;      THE SUBSYSTEM IS LEFT IN MAINTENANCE MODE
1242      ;
1243      ;-
1244      ;
1245 011304      CKRAM2: SAVREG      ;SAVE THE GENERAL REGISTERS
1246 011304      MOV     #RAMDATA,R1      ;ADDRESS TO SAVE THE RAM DATA
1247 011310 012701 002234      MOV     #RMPCHBEG,R2      ;BYTE ADDRESS OF FIRST RAM DATA
1248 011314 012702 000167      CLR     R3      ;CLEAR THE ERROR FLAG
1249 011320 005003      JSR     PC,CHK1SSR      ;WAIT FOR SSR
1250 011322 004737 016416      MCVB    #0,TSDB(R5)      ;SET MAINTENANCE MODE
1251 011326 112765 000000 000000 10$: JSR     PC,CHK1SSR      ;WAIT FOR SSR TO SET
1252 011334 004737 016416      MOV     R2,TSDB(R5)      ;SELECT NEXT RAM ADDRESS
1253 011340 010265 000000      JSR     PC,CHK1SSR      ;WAIT FOR SSR TO SET
1254 011344 004737 016416      MOVB    TSBA(R5),(R1)      ;READ THE RAM DATA
1255 011350 116511 000000      CMPB    (R1)+,(R4)+      ;COMPARE TO EXPECTED
1256 011354 122124      BEQ     20$      ;BRANCH IF OK
1257 011356 001401      INC     R3      ;SET ERROR FLAG
1258 011360 005203      20$: INC     R2      ;ADDRESS OF NEXT RAM LOCATION
1259 011362 005202

```

Line	Address	Hex	Label	Op	Opnd	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,#RMCHEND	;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,#RMCHEND-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	C00207		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		SAVREG		;SAVE R1-R5 UNTIL NEXT RETURN
1303	011450	010137	002300		MOV	R0,RCVHIADD	;SAVE RECV HIGH ADDRESS
1304	011454	005737	003126		MOV	R1,RCVLOAD	;SAVE RECV LOW ADDRESS
1305	011460	001403			TST	KTENABLE	;TESTING ABOVE 28K?
1306	011462	004737	017376		BEQ	10\$	;BR IF NO
1307	011466	010001			JSR	PC,SETMAP	;RETURN ADDRESS BIASED TO PAR6 IN R0
1308	011470	005004			MOV	R0,R1	;GET RETURNED ADDRESS BIASED TO PAR6
1309	011472	005003		10\$:	CLR	R4	;WORD IN BUFFER
1310	011474	010205			CLR	R3	;CLEAR ERROR SEEN FLAG
1311	011476	011264	002314		MOV	R2,R5	;GET EXPD BUFFER ADDRESS
1312	011502	011164	002460	15\$:	MOV	(R2),EXPMSG(R4)	;SAVE EXPD FOR ERROR REPORT
1313	011506	022221			MOV	(R1),RECVMSG(R4)	;SAVE RECV FOR ERROR REPORT
1314	011510	001401			CMP	(R2)+,(R1)+	;EXPD EQUAL RECV?
1315	011512	005203			BEQ	25\$	;BR IF YES
1316	011514	062704	000002	25\$:	INC	R3	;SET ERROR SEEN FLAG
					ADD	#2,R4	;POINT TO NEXT WORD ADDRESS

M4

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      #DEBUGMSG ;000
1362 011576 012746 011712      MOV      #DEBUGMSG,-(SP)
1363 011602 012746 000001      MOV      #1,-(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$:      MOV      R0,RCVHIADD ;SAVE RECV HIGH ADDRESS
1368 011622 010137 002300      MOV      R1,RCVLOADD ;SAVE RECV LOW ADDRESS
1369 011626 005737 003126      TST      KTNABLE ;TESTING ABOVE 28K?
1370 011632 001403            BEQ      10$      ;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$:   MOVB      (R2),EXPMSG(R4) ;SAVE EXPD FOR ERROR REPORT
1371 011652 111164 002460          MOVB      (R1),RECMSG(R4) ;SAVE RECV FOR ERROR REPORT
1372 011656 122221          CMPB      (R2)+,(R1)+ ;EXPD EQUAL RECV?
1373 011660 001401          BEQ       25$          ;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 -CKMSG2 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 SJMSG: .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,PRITSSR ;PRINT CONTENTS OF TSSR REGISTER
1409 012120 004737 017262 JSR PC,CKDROP ;DROP UNIT, IF ALLOWED
1410 012124 ENDMMSG
1411 012124 104423 L10003: TRAP C$MSG
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          ENDMMSG
      012142          L10004:
      012142 104423          TRAP    C#MSG

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          ENDMMSG
      012160          L10005:
      012160 104423          TRAP    C#MSG

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

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

```

C5

TSV3 GLOBAL AREAS MACRO M1113 06 FEB-84 18:04
PKTMES 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
    012204
    012204 104423
1478
1479
1480
1481
1482
1483
1484
1485
1486
1487
1488
1489
1490 012206
    012206
1491 012206 004737 010352
1492 012212 016501 000002
1493 012216 004737 006020
1494 012222
    012222
    012222 104423
1495
1496
1497
1498
1499
1500
1501
1502
1503
1504
1505
1506
1507
1508 012224
    012224
1509 012224 012700 000007
1510 012230 005737 002220
1511 012234 001402
1512 012236 012700 000010
1513 012242 004737 014632
1514 012246
    012246
    012246 104423
1515
1516
1517
1518

```

```

;
BGNMSG PKTMES
PKTMES::
    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
    ENDMMSG
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 TSSR REGISTER
    ENDMMSG
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
;    RECMMSG - 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    $1              ;BR IF NO
    MOV    #8,R0           ;EXT FEATURE BUFFER IS 8 WORDS
    JSR    PC,PRMSGEXP     ;PRINT EXPD/RECV MESSAGE BUFFERS
    ENDMMSG
L10011:
    TRAP   CMSG
    .SBTTL FIFEXP - PRINT FIFO EXP/RECV DATA
;
;PRINT ROUTINE TO PRINT FIFO EXP/RECV DATA

```

D5

ISV3 GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
FIFEXP PRINT FIFO EXP/RECV DATA

SEQ 055

```

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      ENDMMSG
1545
1546      L10012:
1547      TRAP    C#MSG
1548      .ASCIZ  '###A NUMBER OF BYTES TRANSFERRED = #D2'
1549      .ASCIZ  '###A FIFO DATA BYTES IN ERROR;'
1550      .EVEN
1551      .SBTTL  MSGSTAT - PRINT STATUS HEADER AND MESSAGE BUFFERS
1552
1553      ;
1554      ;PRINT ROUTINE TO PRINT MESSAGE BUFFER EXPD/RECV
1555      ;
1556      IMPLICIT INPUTS:
1557
1558      EXPMSG - EXPECTED MESSAGE BUFFER
1559      RECMMSG - RECEIVED MESSAGE BUFFER
1560      RCVHIADD - RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
1561      RCVLOADD - RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
1562
1563      BGNMSG MSGSTAT
1564      MSGSTAT:
1565      MOV     #STATCOD,R1      ;ASCII ADDRESS TABLE
1566      MOV     (R1)+,R0      ;DONE ALL MSG LINES?
1567      BEQ     20$,          ;BR IF YES
1568      PRINTX  R0      ;PRINT STATUS BIT NAMES
1569      MOV     R0,-(SP)
1570      MOV     #1,-(SP)
1571      MOV     SP,R0
1572      TRAP    C#PNTX
1573      ADD     #4,SP
1574      BR      10$,          ;DO ANOTHER MSG LINE
1575      MOV     #10,,R0      ;NUMBER OF WORDS IN A READ STATUS BUFFER

```

E5

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/RECV MESSAGE BUFFERS
1557 012470      ENDMMSG
      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      .SBTTL MSGLOOP - PRINT LOOPBACK HEADER AND MESSAGE BUFFERS
1569
1570
1571      ;PRINT ROUTINE TO PRINT MESSAGE BUFFER EXPD/RECV
1572
1573      ;IMPLICIT INPUTS:
1574
1575      ;
1576      ; EXPMSG - EXPECTED MESSAGE BUFFER
1577      ; RECMMSG - RECEIVED MESSAGE BUFFER
1578      ; RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
1579      ; RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
1580
1580 013144      BGNMSG MSGLOOP
      013144
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
      013154 010046      PRINTX   R0      ;PRINT STATUS BIT NAMES
      013156 012746 000001      MOV      R0,-(SP)
      013162 010600      MOV      @1,-(SP)
      013164 104415      MOV      SP,R0
      013166 062706 000004      TRAP      C#PNTX
1585 013172 000766      ADD      @4,SP
1586 013174 012700 000012      BR      10#      ;DO ANOTHER MSG LINE
1587 013200 004737 014632      20#:      MOV      @10,R0      ;NUMBER OF WORDS IN A READ STATUS BUFFER
1588 013204      JSR      PC,PRMSGEXP      ;PRINT EXPD/RECV MESSAGE BUFFERS
      013204      ENDMMSG
      013204 104423      L10014:
      013204      TRAP      C#MSG
1589
1590 013206 013226 013301 013400 LOOPCOD:      .WORD      1#,2#,3#,4#,5#,6#,7#,0
1591 013226      045      116      045 1#:.ASCIZ  '###A Tape Bus Loopback Signals in Word #8:'
1592 013301      045      116      045 2#:.ASCIZ  '###A PARERR<15> IRESV2<14> IRESV1<13>'
1593 013400      045      116      045 3#:.ASCIZ  '###A IHISP=>IEOT<12> IWRT=>IIDENT<11> IREV =>ICER <10>'
1594 013477      045      116      045 4#:.ASCIZ  '###A IWM =>IFMK<09> IEDIT=>IHER <08> IFAD =>ISPEED<07>'
1595 013576      045      116      045 5#:.ASCIZ  '###A ITADO=>IRDY<06> ITAD1=>IONL <05> IERASE=>ILDP <04>'
1596 013675      045      116      045 6#:.ASCIZ  '###A IREW =>IDBY<03> IRWU =>IRWD <02> IFEN =>IFBY <01>'
1597 013774      045      116      045 7#:.ASCIZ  '###A IGO =>IFPT<00>'
1598      .EVEN
1599      .SBTTL MSGSUB - PRINT WRITE SUBSYSTEM MESSAGE BUFFER
1600
1601
1602      ;PRINT ROUTINE TO PRINT MESSAGE BUFFER EXPD/RECV

```

F5

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
MSGSUB - PRINT WRITE SUBSYSTEM MESSAGE BUFFER

SEQ 057

```

1603      ;
1604      ;
1605      ;IMPLICIT INPUTS:
1606      ;
1607      ;      EXPMSG - EXPECTED MESSAGE BUFFER
1608      ;      RECMG  - RECEIVED MESSAGE BUFFER
1609      ;      RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
1610      ;      RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
1611      ;-
1612      BGNMSG MSGSUB
1613      MSGSUB:
1614      MOV     #10,,R0      ;SIZE OF WRITE SUBSYSTEM BUFFER
1615      JSR     PC,PRMSGEXP  ;PRINT EXPD/RCV MESSAGE BUFFERS
1616      ENDMG
1617      L10015:
1618      TRAP    C#MSG
1619      ;
1620      ;SBTTL MEMADD - PRINT MEMORY ADDRESS DATA ERROR
1621      ;*
1622      ;PRINT ROUTINE TO PRINT MEMORY ADDRESS DATA COMPARE ERROR
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      BGNMSG MEMADD
1631      MEMADD:
1632      JSR     PC,PRIADD    ;PRINT MEMORY ADDRESS IN ERROR
1633      MOV     EXPD,R1      ;GET EXPD DATA
1634      MOV     RECV,R2      ;GET RECEIVED DATA
1635      JSR     PC,PRI XOR   ;PRINT EXPD/RCV
1636      ENDMG
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      ;IMPLICIT INPUTS:
1648      ;
1649      ;      RAMDATA DATA AS READ FROM THE RAM
1650      ;      RAMSIZ  NUMBER OF BYTES IN PACKET
1651      ;                  IF RAMSIZ=0 THEN DEFAULT TO 8.
1652      ;IMPLICIT OUTPUTS:
1653      ;
1654      ;      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      PRAMPKT:
1657 014056      SAVREG
1658 014062 012701 002234      MOV    #RAMDATA,R1      ;SAVE R1-R5 UNTIL NEXT RETURN
1659 014066 005002      CLR    R2      ;DATA FROM THE RAM
1660 014070 122124      5$: CMPB   (R1)+,(R4)+      ;INIT BYTE NUMBER
1661 014072 001005      BNE    7$      ;COMPARE EXPECTED, RECEIVED
1662 014074      FORCERROR 7$,NOTSSR      ;BR IF NO MATCH
1663 014104 000436      BR     10$
1664 014106 116105 177777      7$: MOVB  -1(R1),R5      ;GET RECV RAM DATA
1665 014112 116403 177777      MOVB  -1(R4),R3      ;GET EXPD PACKET DATA
1666 014116      XOR    R5,R3      ;XOR EXPD/RECV
1667 014126 042703 177400      BIC    #177400,R3      ;LOW BYTE ONLY
1668 014132 116137 177777 002226      MCVB  -1(R1),RECV      ;GET RECEIVED RAM DATA
1669 014140 116437 177777 002224      MOVB  -1(R4),EXPD      ;GET EXPECTED RAM DATA
1670 014146      PRINTB  #RAMASC,R2,RECV,EXPD,R3
      014146 010346      MOV    R3,-(SP)
      014150 013746 002224      MOV    EXPD,-(SP)
      014154 013746 002226      MOV    RECV,-(SP)
      014160 010246      MOV    R2,-(SP)
      014162 012746 014236      MOV    #RAMASC,-(SP)
      014166 012746 000C05      MOV    #5,-(SP)
      014172 010600      MOV    SP,R0
      014174 104414      TRAP   C#PNTB
      014176 062706 000014      ADD    #14,SP
1671 014202 005202      10$: INC    R2      ;UPDATE BYTE COUNT
1672 014204 005737 002274      TST    RAMSIZ      ;DEFAULT TO 8.?
1673 014210 001404      3EQ    15$      ;BR IF YES
1674 014212 020237 002274      CMP    R2,RAMSIZ      ;DONE ALL BYTES?
1675 014216 003724      BLE    5$      ;BR IF NO
1676 014220 000403      BR     25$
1677 014222 020227 C00010      15$: CMP    R2,#8.      ;DONE DEFAULT NUMBER OF BYTES?
1678 014226 002720      20$: BLT    5$      ;BR IF NO
1679 014230 005037 002274      25$: CLR    RAMSIZ      ;SET DEFAULT RAMSIZ
1680 014234 000207      RTS     PC      ;RETURN
1681
1682 014236      045      116      045 RAMASC: .ASCIZ 'N#A BYTE: #D2#F 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 KENABLE FLAG IS CLEAR
1696      ;
1697      ; THIS ROUTINE IS NORMALLY CALLED FROM A PRINT ROUTINE
1698      ;
1699      ; -
1700
1701 014322      PRMESS:

```

H5

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
PRMESS - PRINT CONTENTS OF MESSAGE BUFFER

SEQ 059

```

1702 C14322 SAVREG ;SAVE THE REGISTERS
1703 014326 010005 MOV R0,R5 ;SAVE LOW ORDER ADDRESS
1704 014330 005737 003126 TST KTENABLE ;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 BI @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 '##A Message Buffer Address - #01#05'
1728 014545 045 116 045 PRIASC: .ASCIZ '##A Message Buffer Contents:'
1729 014603 045 116 045 PRASC: .ASCIZ '##A Word#01#A: #0'
1730 .EVEN
1731 .SBTTL PRMSGEXP - PRINT EXPD/RCV 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

```

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
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 RECV LOW ADDRESS
1749 014644 010004      MOV      R0,R4      ;COPY LOW ADDRESS
1750 014646 013701 002276      MOV      RCVHIADD,R1      ;GET RECV 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 RECV BUFFER ADDRESS
1758 014734 011100 20$:      MOV      (R1),R0      ;GET EXPD
1759 014736 011203      MOV      (R2),R3      ;GET RECV
1760 014740      XOR      R0,R3      ;XOR EXPD/RECV
1761 014750      PRINTX      @PRMSG2,R4,(R1)+,(R2)+,R3
      014750 010346      MOV      R3,-(SP)
      014752 012246      MOV      (R2)+,-(SP)
      014754 012146      MOV      (R1)+,-(SP)
      014756 010446      MOV      R4,-(SP)
      014760 012746 015115      MOV      @PRMSG2,-(SP)
      014764 012746 000005      MOV      @5,-(SP)
      014770 010600      MOV      SP,R0
      014772 104415      TRAP      C#PNTX
      014774 062706 000014      ADD      @14,SP
1762 015000 005204      INC      R4      ;NUMBER OF THE NEXT
1763 015002 020405      CMP      R4,R5      ;DONE ALL YET?
1764 015004 002001      BGE      50$      ;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 = 0105'
1769 015057 045 116 045 PRMSG1: .ASCIIZ 'NMA Message Buffer Contents:'
1770 015115 045 116 045 PRMSG2: .ASCIIZ 'NMA WORD 0020A EXPD: 0060A RECV: 0060A XOR: 0060'
1771      .EVEN
1772      .SBTTL PRBYTEXP - PRINT ERROR BYTES IN EXP/REC MESSAGE BUFFER
1773
1774
1775      ;ROUTINE TO PRINT ERROR BYTES IN MESSAGE BUFFERS

```

TSV3 GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
 PRBYTEXP - PRINT ERROR BYTES IN EXP/REC MESSAGE BUFFER

SEQ 061

```

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
1787 015206      010005      MOV      R0,R5          ;SAVE R1-R5 UNTIL NEXT RETURN
1788 015210      005037      002312      CLR      PRMNO          ;SAVE NUMBER OF BYTES
1789 015214      005004          CLR      R4          ;INIT ERROR COUNT
1790 015216      012701      002314      MOV      EXPMSG,R1      ;NUMBER OF THE CURRENT BYTE
1791 015222      012702      002460      MOV      RECMSG,R2      ;GET EXPD BUFFER ADDRESS
1792 015226      111100          20$:      MOV      (R1),R0      ;GET RECV BUFFER ADDRESS
1793 015230      042700      177400      BIC      C<377>,R0      ;GET EXPD BYTE
1794 015234      110037      015550      MOV      R0,PRBEXP      ;CLEAR UPPER BYTE
1795 015240      111203          MOV      (R2),R3      ;SAVE FOR ERROR REPORT
1796 015242      042703      177400      BIC      C<377>,R3      ;GET RECV BYTE
1797 015246      110337      015552      MOV      R3,PRBREC      ;CLEAR UPPER BYTE
1798 015252          XOR      R0,R3      ;FOR ERROR REPORT
1799 015262      122122          CMP      (R1)+,(R2)+      ;XOR EXPD/RECV
1800 015264      001431          BEQ      30$      ;EXPD = RECV?
1801 015266      005237      002312      INC      PRMNO          ;BR IF YES
1802 015272      023727      002312      000010      CMP      PRMNO,08.      ;UPDATE ERROR COUNT
1803 015300      101023          BHI      30$      ;PRINTED 8?
1804 015302          27$:      PRINTX   PRBMSG,R4,PRBEXP,PRBREC,R3 ;BR IF YES
1805 015302      010346          MOV      R3,-(SP)
1806 015304      013746      015552      MOV      PRBREC,-(SP)
1807 015310      013746      015550      MOV      PRBEXP,-(SP)
1808 015314      010446          MOV      R4,-(SP)
1809 015316      012746      015416      MOV      PRBMSG,-(SP)
1810 015322      012746      000005      MOV      05,-(SP)
1811 015326      010600          MOV      SP,R0
1812 015330      104415          TRAP     C$PNTX
1813 015332      062706      000014      ADD      014,SP
1814 015336          FORL:      50$:      50$      ;000
1815 015346      000404          BR       35$      ;000
1816 015350          30$:
1817 015350          FORCERROR 27$,NOTSSR      ;000
1818 015360          35$:
1819 015360      005204          INC      R4          ;NUMBER OF THE NEXT
1820 015362      020405          CMP      R4,R5      ;DONE ALL YET?
1821 015364      002001          BGE      50$      ;BR IF YES
1822 015366      000717          BR       20$      ;DO ANOTHER
1823 015370          50$:      PRINTX   PRBTOT,PRMNO      ;PRINT TOTAL ERROR COUNT
1824 015370      013746      002312      MOV      PRMNO,-(SP)
1825 015374      012746      015503      MOV      PRBTOT,-(SP)
1826 015400      012746      000002      MOV      02,-(SP)
1827 015404      010600          MOV      SP,R0
1828 015406      104415          TRAP     C$PNTX
1829 015410      062706      000006      ADD      06,SP
1830 015414      000207          RTS      PC          ;RETURN
1831
1817 015416      045      116      045      PRBMSG: .ASCIZ 'NNA  BYTE CND2A EXPD: 03A RECV: 03A XOR: 03'

```

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
 PRBYTEXP - PRINT ERROR BYTES IN EXP/REC MESSAGE BUFFER

SEQ 062

```

1818 015503      045      116      045 PRBTOT: .ASCIZ 'NWA 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          EXPREC: JSR PC,PRI XOR ;PRINT THE DATA
1836 015560          ENDMMSG
1837 015560          L10017: TRAP C$MSG
1838 015560          .SBTTL EXPBREC - PRINT EXPD/RECV BYTE DATA
1839 ;+
1840 ;
1841 ;PRINT ROUTINE TO DISPLAY BYTE EXPD/RECV DATA
1842 ;
1843 ;INPUTS:
1844 ;
1845 ;      R1      RECEIVED DATA BYTE
1846 ;      R2      EXPECTED DATA BYTE
1847 ;
1848 ;-
1849
1850 015562          BGNMSG EXPBREC
1851 015562          EXPBREC: JSR PC,PRI XOR ;PRINT THE DATA
1852 015566          ENDMMSG
1853 015566          L10020: TRAP C$MSG
1854 015566          .SBTTL RAMERR - PRINT RAM AND PACKET DATA
1855 ;+
1856 ;
1857 ;PRINT ROUTINE TO DISPLAY RAM/PACKET DATA
1858 ;
1859 ;INPUTS:
1860 ;
1861 ;      R4      POINTER TO COMMAND PACKET
1862 ;
1863 ;IMPLICIT INPUTS:
1864 ;
1865 ;      RAMDATA  DATA AS READ FROM THE RAM
1866 ;      RAMSIZ   NUMBER OF BYTES IN PACKET
1867 ;               IF RAMSIZ=0 THEN DEFAULT TO 8.
1868 ;

```

```

1869
1870      ;IMPLICIT OUTPUTS:
1871      ;
1872      ;      RAMSIZ  SET TO 0
1873      ;
1874      ;
1875      015570      BGNMSG  RAMERR
1876      015570      RAMERR:: JSR      PC,PRAMPKT      ;PRINT RAM/PACKET DATA
1877      015574      004737  014056      ENDMMSG
1878      015574      L10021: TRAP      C$MSG
1879      015574      104423      .SBTTL  RAMTADD - PRINT TEST ADDRESS, RAM AND PACKET DATA
1880
1881      ;
1882      ;PRINT ROUTINE TO DISPLAY RAM/PACKET DATA
1883      ;
1884      ;INPUTS:
1885      ;
1886      ;      R4      POINTER TO COMMAND PACKET
1887      ;
1888      ;IMPLICIT INPUTS:
1889      ;
1890      ;      RAMDATA      DATA AS READ FROM THE RAM
1891      ;      RAMSIZ      NUMBER OF BYTES IN PACKET
1892      ;                  IF RAMSIZ=0 THEN DEFAULT TO 8.
1893      ;      ERRHI      HIGH ORDER TEST ADDRESS
1894      ;      ERRLO      LOW ORDER TEST ADDRESS
1895      ;
1896      ;IMPLICIT OUTPUTS:
1897      ;
1898      ;      RAMSIZ  SET TO 0
1899      ;
1900      ;
1901      015576      BGNMSG  RAMTADD
1902      015576      RAMTADD:: JSR      PC,PRITADD      ;PRINT TEST ADDRESS
1903      015602      004737  010352      JSR      PC,PRAMPKT      ;PRINT RAM/PACKET DATA
1904      015606      004737  014056      ENDMMSG
1905      015606      L10022: TRAP      C$MSG
1906      015606      104423      .SBTTL  RAMEXP - PRINT RAM EXPD/RECV DATA
1907
1908      ;
1909      ;PRINT ROUTINE TO DISPLAY EXPD/RECV DATA
1910      ;
1911      ;INPUTS:
1912      ;
1913      ;      R1      RECEIVED DATA
1914      ;      R2      EXPECTED DATA
1915      ;      R4      CONTROLLER RAM ADDRESS
1916      ;
1917      ;
1918      015610      BGNMSG  RAMEXP
1919      015610      RAMEXP::

```

M5

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
RAMEXP - PRINT RAM EXPD/RECV DATA

SEQ 064

```

1919 015610 042701 177400      BIC      0+C<377>,R1      ;SAVE EXPD RAM DATA BYTE
1920 015614 042702 177400      BIC      0+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
      015630 104423      L10023:      TRAP      C$MSG
1924
1925      .SBTTL  TIMEXP - PRINT TIMER A,B AND EXP/REC
1926
1927      ;+
1928      ;PRINT ROUTINE TO DISPLAY EXPD/RECV DATA
1929      ;AND TIMER A,B HEADER MESSAGE
1930
1931      ;INPUTS:
1932
1933      ;      R1      RECEIVED DATA
1934      ;      R2      EXPECTED DATA
1935      ;-
1936
1937 015632      BGNMSG  TIMEXP
      015632      TIMEXP::
1938 015632      PRINTX  0TIMSGO      ;PRINT HEADER
      015632 012746 015660      MOV      0TIMSGO,-(SP)
      015636 012746 000001      MOV      01,-(SP)
      015642 010600      MOV      SP,R0
      015644 104415      TRAP      C$PNTX
      015646 062706 000004      ADD      04,SP
1939 015652 004737 010020      JSR      PC,PRIXOR      ;PRINT THE DATA
1940 015656      ENDMMSG
      015656
      015656 104423      L10024:      TRAP      C$MSG
1941
1942 015660      045      116      045  TIMSGO: .ASCIZ  'TIMER A STATUS IS IN BIT 3-TIMER B STATUS IS IN BIT 2'
1943      .EVEN
1944      .SBTTL  BADSSR - PRINT TSSR ERRORS ON DATA TRANSFERS
1945
1946      ;+
1947      ;PRINT ROUTINE FOR TSSR ERRORS ON DATA TRANSFERS
1948
1949      ;INPUTS:
1950
1951      ;      R1      CONTENTS OF TSSR
1952      ;      R2      DATA WRITTEN (8 BITS)
1953      ;-
1954
1955
1956
1957 015760      BGNMSG  BADSSR
      015760      BADSSR::
1958 015760 010246      MOV      R2,-(SP)      ;SAVE DATA TRANSFERRED
1959 015762 042702 177400      BIC      0177400,R2      ;GET JUST ONE BYTE
1960 015766      PRINTB  0XFERASC,R2
      015766 010246      MOV      R2,-(SP)
      015770 012746 016020      MOV      0XFERASC,-(SP)
      015774 012746 000002      MOV      02,-(SP)
      016000 010600      MOV      SP,R0

```

N5

TSV5 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
 BADSSR - PRINT TSSR ERRORS ON DATA TRANSFERS

SEQ 065

1961	016002	104414			TRAP	C\$PNTB	
	016004	062706	000006		ADD	#6,SP	
	016010	012602			MOV	(SP)+,R2	;RESTORE R2
1962	016012	004737	006020		JSR	PC,PRITSSR	;DECODE TSSR CONTENTS
1963	016016				ENDMSG		
	016016			L10025:			
	016016	104423			TRAP	C\$MSG	
1964	016020	045	116	045	XFERASC:	.ASCIZ 'NWA 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					;		
1972					;		
1973					;		
1974					;		
1975					;		
1976					;	ROUTINE TO DO A SOFT INITIALIZE OF THE CONTROLLER	
1977					;	BY WRITING INTO THE TSSR REGISTER. AFTER THE INIT,	
1978					;	THE TSSR REGISTER IS TESTED FOR ERRORS. ANY ERRORS	
1979					;	DETECTED SHOULD BE TREATED AS DEVICE FATAL ERRORS.	
1980					;		
1981					;	INPUTS:	
1982					;		
1983					;	R5 ADDRESS OF FIRST REGISTER	
1984					;		
1985					;	OUTPUTS:	
1986					;		
1987					;	R0 CONTENTS OF TSSR, IF ERROR	
1988					;	CARRY SET IF INIT WAS OKAY	
1989					;	CLEAR IF FATAL ERROR	
1990					;		
1991					;	CALLING SEQUENCE:	
1992					;		
1993					;	MOV #ADDRESS,R5	
1994					;	JSR PC,SOFINIT	
1995					;	BCS CONTINUE	
1996					;	ERRDF	;REPORT FATAL ERROR
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,WAITF	; 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	176277		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	5\$	;BRANCH IF OKAY
2009	016114	000241			CLC		;CLEAR THE CARRY FOR ERROR
2010	016116	000401			BR	10\$	;GO TO EXIT
2011	016120	000261			5\$: SEC		;SET THE CARRY BIT
2012	016122	000207			10\$: RTS	PC	;RETURN TO CALLER
2013					.SBTTL	CHKAMB - CHECK TSSR FOR AMBIGUITY	

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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 042700 177761
2046 016170 020400 000016
2047 016174 001000
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
2067
2068
2069
2070 016224 000

;
; THIS ROUTINE TESTS THE CONTENTS OF THE TSSR REGISTER
; FOR AMBIGUITY
;
; INPUT:
;
;      R0      CONTENTS OF TSSR
;
; OUTPUT:
;
;      R0      CONTENTS OF TSSR
;
;      CARRY   SET - NO AMBIGUITY
;              CLR - AMBIGUOUS CONTENTS
;
;
CHKAMB:
        SAVREG                ;SAVE THE GENERAL REGISTERS
        MOV      R0,R4        ;CONTENTS OF TSSR
        BIT      05C,R0        ;IS BIT 15 SET ?
        BNE      50           ;BRANCH IF YES
        BIT      01C<NBA!UFL!SSR!HIADDR>,R0 ;ANY OTHER BITS SET ?
        BNE      40           ;MUST BE AN ERROR
        BR       45           ;RETURN WITH SUCCESS
50:      BIT      05SR,R0        ;IS READY BIT SET ?
        BNE      10           ;BRANCH IF READY BIT IS SET.
        BIT      0BIT5,R0      ;IS FATAL ERROR BIT SET ?
        BEQ      40           ;ERROR IF NOT
        BIC      01CTERCLS,R4  ;CLEAR ALL BUT TERMINATION CODE
        CMP      R4,016        ;ALL THREE BITS MUST BE SET
        BNE      40           ;ERROR IF NOT SET
        BR       45           ;OK IF ALL ARE SET
10:      BIT      0BIT5,R0      ;IS FATAL ERROR BIT SET ?
        BEQ      45           ;ERROR IF BIT IS SET WITH SSR
        BIT      0BIT2!BIT1,R0 ;IS THIS A FUNCTION REJECT
        BNE      45           ;BR, IF TSSR IS OK
40:      CLC                    ;AMBIGUOUS CONTENTS
        BR       50
45:      SEC                    ;SHOW SUCCESS - NO AMBIGUITY
50:      RTS      PC            ;RETURN TO CALLER
        .SBTTL  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      01004b             ENAINIT: MOV R0,-(SP) ;SAVE R0
2081 016234      013700      002202      MOV IVEC,R0 ;GET POINTER TO VECTORS
2082 016240      012720      016276      MOV @INTR,(R0), ;SET UP INTERRUPT VECTOR
2083 016244      012720      000340      MOV @PRI07,(R0),
2084 016250      012600      MOV (SP)+,R0 ;RESTORE R0
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                                .SBTTL INTR - INTERRUPT HANDLERS
2094
2095 016276      BGNSRV INTR ;DEFINE INTERRUPT ENTRY
2096 016276      012737      000001      002216      INTR:: MOV @1,INTRECV ;SET FLAG TO SHOW INTERRUPT RECEIVED
2097 016304      105037      016225      CLR B INTFLAG ;CLEAR FLAG TO SAY WE GOT INTERRUPT
2098 016310      132737      000001      016224      BIT B @IOKSTP,INTMASK ;EXPECTING STOP INTERRUPT?
2099 016316      001003      BNE 1 ;BR IF YES
2100 016320      152737      000001      016225      BIS B @IOKSTP,INTFLAG ;NO, SET THE ERROR FLAG.
2101
2102                                ;SAVE REGISTERS, MSG BUFFER, ETC.
2103 016326      1$:
2104 016326      ENDSRV
2105 016326      000002      L10026: RTI
2106                                .SBTTL WAITF - WAIT FOR SUBSYSTEM READY
2107
2108                                ; SUBROUTINE TO WAIT FOR THE SUBSYSTEM READY FLAG
2109                                ; INPUTS:
2110                                ;
2111                                ; R5 ADDRESS OF FIRST DEVICE REGISTER
2112                                ;
2113                                ; OUTPUTS:
2114                                ;
2115                                ; R0 CONTENTS OF LAST TSSR READ
2116                                ; CARRY SET - READY BIT SET
2117                                ; CLR - TIMEOUT WAITING FOR READY
2118                                ;
2119 016330      000401      WAITF:: BR 1$ ;NOP WHEN SUPER FIXED
2120 016332      104422      BREAK ;DO A SUPVSR BREAK FIRST.
2121 016334      012746      011000      1$: MOV @11000,-(SP) ;25-APRIL-83 REV B - 1100 MSEC TIMER
2122 016340      016500      000002      2$: MOV TSSR(R5),R0 ;READ THE TSSR REGISTER
2123 016344      105700      TST B R0 ;TEST FOR READY BIT SET

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SEQ 068

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2124
2125 016346 100420 BMI 3$ ; EXIT ON STOP FLAG.
2126 016350 DELAY 1 ; WAIT 100 USEC
      016350 012727 000001 MOV 01,(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 CHKTSSR - 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 CHKTSSR:
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 0$C,R0 ; SPECIAL CONDITION SET?
2159 016436 001405 BEQ 15$ ; BR IF NO
2160 016440 032700 074000 BIT 0$<SCE!BIE!RMR!NXM>,R0 ; ANY ERROR BITS SET?
2161 016444 001402 BEQ 15$ ; 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 ; ROUTINE TO TEST FOR A NEXM IN THE RANGE (R1) THRU (R2).
2169 ; ON RETURN, IF "C" = 1, (R1) = NEXM ADDRESS.
2170 ; "C" = 0, ALL ADDRESSES OK.
2171 ;
2172 ; CALL: MOV ADR1,R1

```

E6

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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    02$,004      ; SET BUSERR VECTOR.
2178 016464 012737 000200 000006 MOV    0PRI04,006
2179 016472 005003          CLR    R3      ;FLAG.
2180 016474 005711 1$: 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    02,R1      ;SET NEXT ADDRESS...
2185 016506 000772          BR     1$      ;...AND CONTINUE.
2186      ;
2187 016510 005103 2$: COM    R3      ;GOT ONE, SET FLAG...
2188 016512 012716 016520 MOV    03$, (SP)
2189 016516 000002          RTI           ;...AND DISMISS INTERRUPT...
2190 016520 012700 000004 3$: CLRVEC 04      ;...AND GIVE BACK THE VECTOR.
2191      MOV    04,R0
2192      TRAP   C$CVEC
2193      TST    R3      ;DID WE CATCH ONE ??
2194 016526 005703          BEQ    .+4      ;NO, "C" = 0. SKIP NEXT.
2195 016530 001401          SEC           ;YES, "C" = 1. (R1) = NEXM ADDR.
2196 016532 000261          RTS    PC
2197 016534 000207
2198      ;
2199      ;      .SBTTL TSTLOOP - CHECK ITERATION COUNT
2200      ;      ; SUBROUTINE TO EXECUTE TEST ITERATIONS.
2201      ;      ; EXIT WITH "C" SET IF LOOPS ALLOWED AND LOOP COUNT NON-ZERO.
2202      ;      ; LOOP COUNTER IS SET BY "BEGIN.TEST" MACRO.
2203      ;      ; CALL: LOOPTO ARG
2204      ;
2205 016536 005737 002162 TSTLOOP: TST    NOITS      ; ITERATIONS INHIBITED?
2206 016542 001006          BNE    1$      ; YES.
2207 016544 005737 002176 TST    QVP      ; NO.
2208 016550 100403          BMI    1$      ;LOOPS DISALLOWED IN QUICK PASS.
2209 016552 005337 002210 DEC    LOOPCNT      ; BUMP LOOP COUNTER.
2210 016556 001002          BNE    2$
2211 016560 000241 1$: CLC           ;LOOP DISALLOWED, OR DONE.
2212 016562 000401          BR     3$
2213 016564 000261 2$: SEC           ;LOOP ENABLED.
2214 016566 000207          RTS    PC
2215      ;
2216      ;      .SBTTL TSTSETUP - PRINT TEST NAME AND INIT ERROR COUNTS
2217      ;      ; PRINT THE NUMBER AND NAME OF EACH TEST AS WE GO ALONG.
2218      ;      ; INCREMENT "TESTK" TO INDICATE THE NUMBER OF TESTS
2219      ;      ; IN THE CURRENT RUN SEQUENCE.
2220      ;      ; CLEAR THE ERROR COUNTER AND SIGNATURE EXTENSION FLAGS.
2221      ;
2222      ;      ; INPUT:
2223      ;
2224      ;      ;      RO      POINTER TO TEST ID ASCIZ STRING
2225      ;
2226      ;
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      010046      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      EXTA      ; 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      104455      ERDF      1,NXR,NXRERR      ; NO DEVICE HERE -- PRINT IT
2256      016640      000001      TRAP     C$ERDF
2257      016642      003734      .WORD    1
2258      016644      005732      .WORD    NXR
2259      016646      000407      .WORD    NXRERR
2260      016650      052760      160001      003170      3$:  BIS      0160001,ERTABL(R0) ; FLAG ERROR IN THE ERROR TABLE
2261      016656      104455      ERDF      2,NOINIT      ; DEVICE NOT IDLE
2262      016660      000002      TRAP     C$ERDF
2263      016662      004331      .WORD    2
2264      016664      000000      .WORD    NOINIT
2265      016666      012737      177777      003104      2$:  MOV      0-1,DUFLG      ; DROP THE UNIT
2266      016670      013700      002174      DODU      UNITN
2267      016700      104451      MOV      UNITN,R0
2268      016702      104444      TRAP     C$DODU
2269      016704      000423      DOCLN      C$DOCLN      ; ABORT THE PASS
2270      016706      104421      BR       5$
2271      016710      032700      001000      4$:  RFLAGS   R0      ; GET THE OPERATOR FLAGS.
2272      016712      001412      TRAP     C$RFLA
2273      016714      011600      BIT      0PNT,R0      ; PRINT THE TEST NUMBERS?
2274      016716      010600      BEQ      1$      ; BR IF NO
2275      016720      010046      MOV      (SP),R0      ;GET THE ID MESSAGE
2276      016722      012746      PRINTF   0TNAM,R0      ;DISPLAY THE TEST ID
2277      016724      012746      MOV      R0,-(SP)
2278      016726      000002      MOV      0TNAM,-(SP)
2279      016732      010600      MOV      02,-(SP)
2280      MOV      SP,R0

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TSTSETUP - PRINT TEST NAME AND INIT ERROR COUNTS

SEQ 071

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016734 104417 TRAP C$PNTF
016736 062706 000006 ADD #6,SP
2269 016742 005237 002206 1$: INC TSTCNT ; BUMP TEST COUNTER.
2270 016746 013700 002204 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 ;
2278 ; AT END OF EACH TEST, PRINT THE NUMBER OF ERRORS RECEIVED
2279 ; IF NORMAL ERROR REPORTING IS DISABLED (FLA:IER).
2280 ;
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
2292 .SBTTL INCERK - INCREMENT LOCAL ERROR COUNT
2293 ;
2294 ; ROUTINES TO INCREMENT LOCAL ERROR COUNT AND CHECK FOR LIMIT:
2295 ;
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

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

SEQ 072

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2315 017210 023737 017036 002164      CMP      ERRK,LERRMAX      ; IS LOCAL LIMIT EXCEEDED FOR THIS TEST?
2316 017216 103417                      BLO      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      $-1,DUFLG      ; NO -- DROP THE UNIT
2321 017236                      ERDF    4,EMAXDU
      017236 104455                      TRAP    C$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                      ; SUBROUTINE - DETERMINE CONFIGURATION OF TSV05 SYSTEM.
2345                      ;
2346                      ; CONFIG:
2347 017330                      JSR      PC,SOFINIT
2348 017330 004737 016054              RTS      PC
2349 017334 000207                      .SBTTL  KTON,KTOFF      - ENABLE/DISABLE MEMORY MANAGEMENT
2350
2351                      ;
2352                      ; SUBROUTINE - ENABLE MEM MGT.
2353                      ;
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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TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
KTON,KTOFF - ENABLE/DISABLE MEMORY MANAGEMENT

SEQ 073

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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 000240      NOP
2365 017364 000240      NOP
2366 017366 012737 000000 177572 MOV     #0,SRO      ; DISABLE KT.
2367 017374 000207      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 017376 SETMAP:
2388 017376      SAVREG
2389 017402 005737 003124 TST      KTFLG      ; SAVE R1-R4 UNTIL NEXT RETURN
2390 017406 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
2394      ROR      R1
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      BHIS     10$          ; BR IF YES
2399 017454 010137 172354 MOV     R1,#KIPAR6  ; 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
2403 017472 000261      SEC
2404 017474 000401      BR      15$          ; RETURN IN R0
2405 017476 000241      CLC
2406 017500 000207      RTS      PC          ; SET SUCCESS
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 ;

```

J6

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
 FILLMEM - FILL MEMORY WITH BACKGROUND PATTERN

SEQ 074

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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 LOCATION
2428      10$: MOV    R3,(R1)+  ;SIZE OF FREE SPACE BELOW 28K.
2429      DEC    R2           ;STORE A BACKGROUND WORD
2430      BGT    10$         ;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
2438      ROL    R1
2439      ROL    R0
2440      .ENDR
2441      JSR    PC,SETMAP    ;CLEAR C BIT
2442      MOV    R3,(R0)+     ;CONVERT BLOCKS TO WORDS
2443      CMP    R0,#160000   ;MAKE IT DOUBLE PRECISION
2444      BLO    30$
2445      SUB    #20000,R0
2446      ADD    #200,00KIPAR6 ;SETUP PAR6 MAPPING REGISTER
2447      CMP    00KIPAR6,KTFLG ;STORE TEST PATTERN IN >28K ADDRESS
2448      BEQ    50$         ;END OF PAR6 MAPPING AREA?
2449      TST    T23A        ;BR IF NO
2450      BEQ    35$         ;BACKUP INTO PAR6 MAPPING BEGIN
2451      MOV    SR0,R4        ;POINT TO NEXT 4K BLOCK >28K.
2452      BIC    #177761,R4
2453      CMP    #16,R4
2454      BEQ    50$         ;END OF MEMORY?
2455      TST    T23B        ;BR IF YES
2456      BEQ    45$         ;11/23A?
2457      CMP    00KIPAR6,#7600 ;NO KEEP GOING
2458      BHS    40$         ;GET SRO CONTENTS
2459      BR     45$         ;CLEAR ALL BUT PAGE NUMBER
2460      MOV    #20,SR3      ;SEE IF PAGE 7
2461      JMP    30$         ;EXIT IF THERE
2462      JSR    PC,KTOFF     ;11/23B?
2463      RTS    PC          ;NO KEEP GOING
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      ;

```

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

SEQ 075

```

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      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      BR      50$      ;SAVE RECV FOR ERROR REPORT
2499 020010 005721      15$: TST     (R1)+   ;
2500 020012 005302      DEC     R2        ;POINT TO NEXT ADDRESS
2501 020014 003362      BGT     10$      ;DONE ALL MEMORY IN FREE SPACE?
2502 020016 005737 003124  TST     KTFLG    ;BR IF NO
2503 020022 001472      BEQ     55$      ; GOT KT?
2504 020024 004737 017336  JSR     PC,KTON    ; NO. GET OUT.
2505 020030 005000      CLR     R0        ; YES. ENABLE KT.
2506 020032 013701 003144  MOV     PST32W,R1  ;HIGH ORDER ADDRESS START
2507      000006      .REPT    6          ;GET >28K START ADDRESS (IN 32W BLOCKS)
2508      ROL     R1
2509      ROL     R0
2510      .ENDR
2511 020066 042701 000177  BIC     #177,R1      ;ALINE 4K BOUNDARY
2512 020072 010046      MOV     R0,-(SP)    ;SAVE HIGH ORDER
2513 020074 010146      MOV     R1,-(SP)    ;SAVE LOW ORDER
2514 020076 004737 017376  JSR     PC,SETMAP   ;SETUP PAR6 MAPPING REGISTER
2515 020102 010004      MOV     R0,R4      ;COPY ADDRESS BIASED TO PAR6
2516 020104 012601      MOV     (SP)+,R1   ;RESTORE LOW ORDER IN NON PAR6 FORMAT
2517 020106 012600      MOV     (SP)+,R0   ;RESTORE HIGH ORDER IN NON PAR6 FORMAT
2518 020110 020314      30$: CMP     R3,(R4)  ;ABOVE 28K LOCATION EQUAL EXPD?
2519 020112 001411      BEQ     32$      ;BR IF YES
2520 020114 010037 002230  MOV     R0,ERRHI  ;SAVE HIGH ORDER IN ERROR
2521 020120 010137 002232  MOV     R1,ERRLO  ;SAVE LOW ORDER IN ERROR
2522 020124 010337 002224  MOV     R3,EXPD   ;SAVE EXPD FOR ERROR REPORT
2523 020130 011437 002226  MOV     (R4),RECV ;SAVE RECV FOR ERROR REPORT
2524 020134 000421      BR      50$      ;
2525 020136 062701 000002  32$: ADD     #2,R1    ;UPDATE NON PAR6 ADDRESS
2526 020142 005500      ADC     R0        ;MAKE IT DOUBLE PRECISION ADD
2527 020144 062704 000002  ADD     #2,R4    ;UPDATE PAR FORMAT ADDRESS
2528 020150 020427 160000  CMP     R4,#160000  ;END OF PAR6 MAPPING AREA?
2529 020154 103755      BLO     30$      ;BR IF NO
2530 020156 162704 020000  SUB     #20000,R4 ;BACKUP INTO PAR6 MAPPING BEGIN

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L6

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

SEQ 076

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2531 020162 062737 000200 172354      ADD    #200,0#KIPAR6 ;POINT TO NEXT 4K BLOCK >28K.
2532 020170 023737 172354 003124      CMP    0#KIPAR6,KTFLG ;END OF MEMORY?
2533 020176 101744                      BLOS   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:

```

M6

TSV3 : GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
GETPAT - GET 8 BIT PATTERN FROM OPERATOR

SEQ 077

```

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      BR        10000$
2598 020264      .WORD     PATDAT
2599 020266      .WORD     T$CODE
2600 020270      .WORD     DATASC
2601 020272      .WORD     377
2602 020274      .WORD     T$LOLIM
2603 020276      .WORD     T$HILIM
2604 020300      10000$:
2605 020300      BNCOMPLETE      1$      ;RETRY IF ERROR
2606 020302      BCC      1$
2607 020306      MOV      PATDAT,R0      ;DATA PATTERN FROM OPERATOR
2608 020310      RTS      PC      ;RETURN TO CALLER
2609
2610      ;+
2611      ;LOCAL DATA AREA
2612      ; -
2613
2614 020310      000000      PATDAT: .WORD     0      ;TEMPORARY STORAGE FOR DATA
2615 020312      105      116      124      DATASC: .ASCIZ  'ENTER DATA PATTERN'
2616
2617      .EVEN
2618      .SBTTL  GETSEL - ISSUE MENU AND GET OPERATOR RESPONSE
2619
2620      ;+
2621      ;ROUTINE TO ISSUE A MENU AND GET
2622      ;THE OPERATOR'S RESPONSE.
2623      ;
2624      ;INPUTS:
2625      ;
2626      ;      R0      ADDRESS OF ASCIZ STRING OF MENU
2627      ;      R1      MAXIMUM ALLOWABLE OPERATOR RESPONSE
2628      ;
2629      ;OUTPUTS:
2630      ;
2631      ;      R0      NUMBER OF THE OPERATOR'S SELECTION
2632      ;
2633      ; -
2634
2635 GETSEL::
2636 020336      SAVREG                      ;SAVE GENERAL REGISTERS
2637 020336      MOV      R0,R2      ;SAVE THE MENU ADDRESS
2638 020342      MOV      R2,R3      ;START OF MENU STRING
2639 020344      1$:      MOV      (R3)
2640 020346      2$:      TST      (R3)      ;END OF ASCII ?
2641 020350      BEQ      3$      ;BRANCH IF ALL LINES DISPLAYED
2642 020352      PRINTF  $SELASC,(R3)+      ;DISPLAY THE MENU
2643 020352      MOV      (R3)+,-(SP)
2644 020354      MOV      $SELASC,-(SP)
2645 020360      MOV      $2,-(SP)
2646 020364      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			TRAP	C\$PNTF	
020370	062706	000006		ADD	#6,SP	
2631 020374	000764			BR	2\$	
2632 020376			3\$:	GMANID	MENASC,MENRES,D,-1,0,-1,NO	
020376	104443			TRAP	C\$GMAN	
020400	000406			BR	10001\$	
020402	020556			.WORD	MENRES	
020404	000042			.WORD	T\$CODE	
020406	020527			.WORD	MENASC	
020410	177777			.WORD	-1	
020412	000000			.WORD	T\$LOLIM	
020414	177777			.WORD	T\$HILIM	
020416			10001\$:	BNCOMPLETE	1\$	;RETRY IF ERROR
2633 020416				BCC	1\$	
020416	103352			MOV	MENRES,R0	;GET THE OPERATOR'S REPLY
2634 020420	013700	020556		CMP	R0,R1	;COMPARE TO MAXIMUM ALLOWED
2635 020424	020001			BLOS	5\$	;BRANCH IF OK
2636 020426	101411			PRINTF	#MENERR	;DISPLAY ERROR MESSAGE
2637 020430				MOV	#MENERR,-(SP)	
020430	012746	020454		MOV	#1,-(SP)	
020434	012746	000001		MOV	SP,R0	
020440	010600			TRAP	C\$PNTF	
020442	104417			ADD	#4,SP	
020444	062706	000004		BR	1\$	;RETRY
2638 020450	000735		5\$:	RTS	PC	;RETURN TO CALLER
2639 020452	000207					
2640 020454	045	116	045	MENERR:	.ASCIZ	'N/A *** Menu Selection Too Large ***'
2641 020522	045	116	045	SELASC:	.ASCIZ	'N/T'
2642 020527	105	156	164	MENASC:	.ASCIZ	'Enter Menu Selection: '
2643				.EVEN		
2644 020556	000000			MENRES:	.WORD	0
2645				.SBTTL	CHKMAN	- CHECK MANUAL INTERVENTION LEGALITY
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					

```

;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                ;SAVE THE REGISTERS
    MANUAL                ;SEE IF MANUAL INTERVENTION OK
    TRAP                  C$MANI

```

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

SEQ 079

```

2670 020566          BCOMPLETE 1$          ;BRANCH IF ALLOWED
      020566 103411    BCS 1$
2671 020570          PRINTF 0NOMAN          ;PRINT THE WARNING MESSAGE
      020570 012746 020614    MOV 0NOMAN, -(SP)
      020574 012746 000001    MOV 01, -(SP)
      020600 010600    MOV SP, R0
      020602 104417    TRAP C1PNTF
      020604 062706 000004    ADD 04, SP
2672 020610 000241    CLC                  ;CLEAR CARRY FOR ERROR
2673 020612 000207    1$: RTS PC            ;RETURN
2674
2675 020614 045 116 045 NOMAN: .ASCIZ 'NMA *** Manual Intervention not Allowed - Test Aborted ***'
2676      .even
2677      .SBTTL ENVIRN - SETUP FREE DIAGNOSTIC SPACE
2678      ;
2679      ; SUBROUTINE TO SET-UP VARIOUS ENVIRONMENTAL PARAMETERS.
2680      ;
2681 020710          ENVIRN: MEMORY R0
      020710 104431    TRAP C1MEM
2682 020712 010037 003116    MOV R0, FREE          ; GET 1ST FREE ADDRESS...
2683 020716 062737 000002 003116    ADD 02, FREE
2684 020724 011037 003120    MOV (R0), FRESIZ      ;...AND WORD COUNT.
2685 020730 162737 000004 003120    SUB 04, FRESIZ
2686 020736 013702 002012    MOV L1UNIT, R2      ; GET NUMBER OF UNITS
2687 020742 162737 000007 003120 10$: SUB 07, FRESIZ ; TAKE AWAY 7 WORDS PER UNIT
2688 020750 005302    DEC R2
2689 020752 001373    BNE 10$
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 02, R0          ;BACKUP 1 WORD
2693 020770 010037 003122    MOV R0, FREEHI        ;STORE LAST FREE ADDRESS
2694 020774 000240    NOP                        ;*****
2695 020776 012701 177520    MOV 0BDVPCR, R1      ;GET BDV11 PCR ADDRESS
2696 021002 010102    MOV R1, R2                  ;COPY TO R2
2697 021004 062702 000002    ADD 02, R2          ;SET THE RANGE
2698 021010 004737 016456    JSR PC, XNXM        ;SEE IF WE HAVE ONE
2699 021014 103001    BCC 15$                    ;OK TO SET FLAGS
2700 021016 000445    BR 40$                      ;RETURN WITH FLAGS CLEAR
2701 021020 013701 177520    15$: MOV BDVPCR, R1  ;SAVE PCR CONTENTS
2702 021024 062701 000001    ADD 01, R1          ;ADD ONE TO IT
2703 021030 012702 177520    MOV 0BDVPCR, R2      ;GET BDV11 PCR ADDRESS
2704 021034 005212    INC (R2)                    ;TRY TO WRITE TO IT
2705 021036 013703 177520    MOV BDVPCR, R3      ;GET RESULTS
2706 021042 020103    CMP R1, R3                  ;DID IT CHANGE?
2707 021044 001017    BNE 20$                      ;NO, MUST BE 11/23B
2708 021046 005237 003136    INC T23A            ;SET THE FLAG
2709 021052 042737 170000 002120    BIC 0170000, L1HIME ;SUPERVISOR COULD BE WRONG
2710 021060 000240    NOP                        ;BR 40$ FOR RELEASE
2711 021062          PRINTF 0M8186            ;TELL THE SYSTEM TYPE
      021062 012746 005550    MOV 0M8186, -(SP)
      021066 012746 000001    MOV 01, -(SP)
      021072 010600    MOV SP, R0
      021074 104417    TRAP C1PNTF
      021076 062706 000004    ADD 04, SP
2712 021102 000413    BR 40$                      ;RETURN
2713 021104 005237 003140    20$: INC T23B        ;SET THE FLAG
2714 021110 000240    NOP                        ;BR 40$ FOR RELEASE

```

C7

TSV5 - GLOBAL AREAS MACRO M1113 06 FEB-84 18:04
ENVIRN - SETUP FREE DIAGNOSTIC SPACE

SEQ 080

```

2715 021112          PRINTF 0M8189      ;TELL THE SYSTEM TYPE
      021112 012746 005641      MOV 0M8189,-(SP)
      021116 012746 000001      MOV 01,-(SP)
      021122 010600          MOV SP,R0
      021124 104417          TRAP C:PNTF
      021126 062706 000004      ADD 04,SP
2716 021132 000207      40$: RTS PC      ;RETURN
2717          .SBTTL KTINIT - SETUP KT11 MEMORY MANAGEMENT REGISTERS
2718          ;
2719          ;
2720          ;ROUTINE TO INIT KT-11
2721          ;
2722          ;
2723          ;
2724 021134          KTINIT:
2725 021134 005037 003124      CLR KTFLG      ; INIT >28K MEMORY FLAG
2726 021140 005037 003126      CLR KTENABLE   ; INIT TEST >28K FLAG
2727 021144 023727 002120 001577  CMP L:HIME,01577 ; GOT ENOUGH MEMORY (>28K)?
2728 021152 101444          BLOS 9$          ; NO.
2729 021154 013700 000004      MOV 00ERRVEC,R0 ; SAVE OLD ERR VEC PTR.
2730 021160 012737 021252 000004  MOV 02$,00ERRVEC ; SET ERR VEC PTR.
2731 021166 005737 177572      TST 00$RO     ; 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 0177,KTFLG
2735 021210 010037 000004      MOV R0,00ERRVEC ; RESTORE OLD ERR VEC PTR.
2736 021214 005000          CLR R0          ; R0 = AR DATA.
2737 021216 012701 172340      MOV 0KIPAR0,R1 ; R1 = KI REGS PTR.
2738 021222 012761 077406 177740 1$: MOV 077406,-40(R1) ; SET DESCRIPTOR REG.
2739 021230 010021          MOV R0,(R1)     ; SET KIPAR REG.
2740 021232 062700 000200      ADD 0200,R0   ; BUMP AR DATA BY "4K".
2741 021236 020027 002000      CMP R0,02000 ; AT "I/O"?
2742 021242 001367          BNE 1$          ; NO.
2743 021244 012741 177600      MOV 0177600,-(R1) ; YES. SET KTPAR7 FOR I/O.
2744 021250 000405          BR 9$
2745          ;
2746 021252 012716 0212$      2$: MOV 06$,(SP) ; SET UP RETURN
2747 021256 000002          RTI              ; RTI TO NEXT LOCATION
2748          ;
2749 021260 010037 000004      6$: MOV R0,00ERRVEC ; RESTORE OLD ERR VEC PTR.
2750          ;
2751 021264 000207      9$: RTS PC
2752          ;
2753          ; SUBROUTINE TO SET EXTENDED FEATURES SWITCH
2754          ;
2755          ; Requires that SOFINIT and WRTHCR 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          ;

```

D7

TSV3 - GLOBAL AREAS MACRO M1113 06-FEB-84 18:04
KTINIT - 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$:      RTS      PC      ; RETURN
2776
2777      ;      COMMAND PACKET.
2778
2779      021340      .      -      <,+3>&177774      ;MUST BE ON MOD 4 BOUNDRY.
2780
2781 021340 000000      CMDPKT:: 0      ;1ST WORD IS ISOS COMMAND.
2782 021342 000000      0      ;2ND WORD IS THE BUFFER LOW ADDRESS.
2783 021344 000000      0      ;3RD WORD IS THE BUFFER HIGH ADDRESS.
2784 021346 000000      0      ;4TH WORD IS THE BYTE/RECORD/FILE COUNT.
2785
2786      ;      WRITE SUB-SYSTEM MEMORY CHARACTERISTIC BLOCK.
2787
2788 021350 000000      WSMBK:: 0      ;1ST WORD:: SEL 0
2789 021352 000000      0      ;2ND WORD:: SEL 2
2790 021354 000000      0      ;3RD WORD:: SEL 4
2791      .EVEN
2792
2793      ;+      SUBROUTINE TO CHECK WETHER OR NOT WE'LL TEST NXM
2794      ;
2795      ;
2796      ;INPUTS:
2797      ;OUTPUTS:
2798      ;      The NXMFLG is set if we can test.
2799      ;      The NXML0 and NXMHI addresses are setup.
2800      ;-
2801
2802 021356      MEMCK::
2803
2804 021356      SAVREG      ;SAVE THE REGISTERS
2805 021362 005037 003130      CLR      NXMFLG      ;CLEAR THE FLAG
2806 021366 005037 003132      CLR      NXML0      ;CLEAR THE TEST ADDRESS LO
2807 021372 005037 003134      CLR      NXMHI      ;CLEAR THE TEST ADDRESS HI
2808 021376 005737 003140      TST      T23B      ;IS IT A 11/23B?
2809 021402 001407      BEQ      1$      ;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

```

E7

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,NXMHI      ;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      ;*
2834      ;      SUBROUTINE TO SETUP THE NXM ADDRESS FOR TESTING
2835      ;
2836      ;OUTPUTS:NXMLO,NXMHI      ;SETUP WITH NXM ADDRESS
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 NYM
2841 021542 042701 000177      BIC     #177,R1
2842 021546 010102              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,NXMHI      ;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

G7

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

SEQ 084

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

;NO DEVICE PROTECTION REQUIRED.

TSV4 - MISCELLANEOUS SECTIONS MACRO M1113 06-FEB-84 18:04
INITIALIZE SECTION

SEQ 085

```

22                                     .SBTTL  INITIALIZE SECTION
23
24                                     ;++
25                                     ;THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
26                                     ;AT THE BEGINNING OF EACH PASS.
27                                     ;
28                                     ;IF "START" OR "RESTART", SET QUICK-PASS FLAG AND BUS-INIT.
29                                     ;IF "CONTINUE", NOTHING IS REQUIRED.
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      $EPR1,EPR1SW      ;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                                READEF  $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$UNIT      ;UNIT IN RANGE?
45 021706 103070                BHIS     4$                      ;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$: READEF  $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                                READEF  $EF.START
021756 012700 000040                MOV      $EF.START,RO
021762 104447                TRAP      C$REFG
58 021764                                BCOMPLETE 2$
021764 103404                BCS      2$
59 021766                                READEF  $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.

```

TSV4 - MISCELLANEOUS SECTIONS MACRO M1113 06-FEB-84 18:04
INITIALIZE SECTION

SEQ 086

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	#20,-(SP)		;RETURN TO DEBUGGER
69					JMP	0.ODT		;ENTER THE DEBUGGER
70	022020	005037	003372		CLR	SKIPT		;CLEAR THE SUBTEST "SKIPPER"
71	022024			20\$:				
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		30\$:	CLR	(RO)+		;CLEAR THE ERROR TABLE
77	022050	020027	003370		CMP	RO,#ERTABE		
78	022054	103774			BLO	30\$		
79	022056	000404			BR	4\$		
80	022060	005037	002176	31\$:	CLR	QVP		
81	022064	000137	022134		JMP	PASRPT		;GO REPORT THE STATUS
82								
83	022070			4\$:				
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	11\$		
92	022130				DOCLN			;ABORT, NO MORE UNITS.
	022130	104444			TRAP	C#DCLN		
93	022132	000240		11\$:	NOF			
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			10\$:				
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

J7

SV4 - MISCELLANEOUS SECTIONS MACRO M1113 06-FEB-64 18:04
INITIALIZE SECTION

SEQ 087

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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  DIS      @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            RFLACS     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      @-1,DUFLG          ;DROP THIS UNIT.
155 022354                2$:
156                      ;
157                      ;FINALLY, SET CPU PRIORITY AND WE'RE DONE.
158                      ;
159                      5$:
160 022354            SETPRI     @PRI00          ;ENABLE INTERRUPTS.
161 022354 012700 000000      MOV      @PRI00,R0
162 022360 104441            TRAP     C$SPRI
163 022362            ENDINIT
164 022362 104411            L10030:
165 022362            TRAP     C$INIT
166 022364 045 116 045 PUNIT: .ASCIZ  /NNNA***** TESTING UNIT #D2#A *****/
167                      .EVEN

```

```

158                                     .SBTTL  ADD AND DROP UNITS SECTIONS
159
160                                     ;**
161                                     ; THE ADD-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
162                                     ; TO BE (A) ADDED TO THE TEST LIST FOR THE FIRST TIME,
163                                     ; OR (B) RE-INSERTED IF IT HAD BEEN PREVIOUSLY DROPPED.
164                                     ;--
165 022432                                BGNAU
166 022432                                L$AU::
167 022432 010001                        MOV     R0,R1                ; GET UNIT TO BE ADDED (R0)
168 022434 006301                        ASL     R1                  ; MAKE IT A WORD INDEX
169 022436 052761 100000 003170          BIS     #100000,ERTABL(R1)    ; SET THE "ACTIVE" BIT
170 022444 042761 040000 003170          BIC     #40000,ERTABL(R1)    ; CLEAR THE "DROPPED" BIT
171 022452                                PRINTF  #1$,R0
172 022452 010046                        MOV     R0,-(SP)
173 022454 012746 022500                MOV     #1$,-(SP)
174 022460 012746 000002                MOV     #2$,-(SP)
175 022464 010600                        MOV     SP,R0
176 022466 104417                        TRAP    C$PNTF
177 022470 062706 000006                ADD     #6,SP
178 022474                                EXIT    AU
179 022474 000167                        .WORD   J$JMP
180 022476 000026                        .WORD   L10031-2-.
181 022500 045 116 045 1$:              .ASCIIZ /%N%A UNIT %D%A ADDED/
182                                     .EVEN
183
184                                     ENDAU                                ; UNUSED.
185 022526                                L10031:
186 022526                                TRAP    C$AU
187 022526 104452
188
189                                     ;**
190                                     ; THE DROP-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
191                                     ; TO BE REMOVED FROM THE TEST LIST.
192
193                                     ;
194                                     ; SUPVSR DOES THE "DROPPING". THIS IS JUST TO TELL THE MAN.
195                                     ; "DROPPED" UNITS ARE RE-SELECTED ON OPERATOR "STA" OR "ADD"
196                                     ; COMMAND. OTHERWISE REMAIN INACTIVE. THE "DISPLAY" COMMAND
197                                     ; WILL PRINT ALL DROPPED UNITS, AND THE P-TABLES OF THOSE
198                                     ; WHICH ARE STILL ACTIVE.
199                                     ; UPON ENTRY, R0 CONTAINS THE UNIT TO BE DROPPED.
200
201 022530                                BGN DU
202 022530                                L$DU::
203 022530 012737 177777 003104          MOV     #1,DUFLG
204 022536 010001                        MOV     R0,R1
205 022540 006301                        ASL     R1
206 022542 052761 140000 003170          BIS     #140000,ERTABL(R1)    ; SAY DROPPED
207 022550 000240 000240 000240          240,240,240                ; ??????????
208 022556                                PRINTF  #1$,R0
209 022556 010046                        MOV     R0,-(SP)
210 022560 012746 022604                MOV     #1$,-(SP)
211 022564 012746 000002                MOV     #2$,-(SP)
212 022570 010600                        MOV     SP,R0
213 022572 104417                        TRAP    C$PNTF
214 022574 062706 000006                ADD     #6,SP
215 022600                                EXIT    DU
216 022600 000167                        .WORD   J$JMP
217 022602 000030                        .WORD   L10032-2-.

```

L7

TSV4 - MISCELLANEOUS SECTIONS
ADD AND DROP UNITS SECTIONS

MACRO M1113 06-FEB-84 18:04

SEQ 089

```

195 022604      045      116      045 1$: .ASCIZ /NNA UNIT DDA DROPPED/
196                                     .EVEN
197 022634                                     ENDDU
    022634                                     L10032: TRAP C$DU
    022634 104453
198
199                                     ;++
200                                     ; AUTO-DROP CODE SECTION.
201                                     ;--
    022636                                     BGNAUTO
    022636                                     L$AUTO::
202 022636 013705 002200                                     MOV CSRADDR,R5 ;POINT TO DEVICE REGISTER
203 022642 012703 000550                                     MOV #360.,R3 ;ENOUGH TIME FOR 2400' REEL TO REWIND
204 022646 004737 016330 10$: 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$DI',(PC)+
    022666 000000                                     .WORD 0
    022670 005367 177772                                     DEC -6(PC)
    022674 001375                                     BNE .-4
    022676 005367 177756                                     DEC -22(PC)
    022702 001367                                     BNE .-20
207 022704 005303                                     DEC R3 ;BUMP COUNTER DOWN
208 022706 001357                                     BNE 10$ ;KEEP GOING
209 022710 004737 017262                                     JSR PC,CKDROP ;TRY AND DROP UNIT
210 022714
211 022714                                     20$: ENDAUTO ; UNUSED.
    022714                                     L10033:
    022714 104461                                     TRAP C$AUTO

```

```

213          .SBTTL  CLEAN-UP AND REPORT CODING SECTIONS
214
215          ;++
216          ; THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS
217          ; EXECUTED AT THE END OF EACH PASS (OR SUB-PASS).
218          ; USE TO RETURN DEVICE UNDER TEST TO A NEUTRAL STATE.
219          ;--
220          BGNCLN
221          L$CLEAN::
222          MOV     CSRADDR,R5          ;POINT TO DEVICE REGISTER
223          TST     DUFLG              ;"DROPPED" FLAG IS SET ON...
224          BMI     1$                ;...AND GROSS CONTROLLER FAULT...
225                                     ;...DON'T TRY TO XCT CLEANUP CODE.
226          MOV     #0,TSSR(R5)        ;DO SOFT INIT
227          JSR     PC,WAITF
228          1$:
229          2$:      ENDCLN
230          L10034:  TRAP     C$CLEAN
231
232          ;++
233          ; THE REPORT CODING SECTION CONTAINS THE
234          ; "PRINTS" CALLS THAT GENERATE STATISTICAL REPORTS.
235          ;--
236          BGNRPT
237          L$RPT::
238          PRINTS  #DEVSUM
239          MOV     #DEVSUM,-(SP)
240          MOV     #1,-(SP)
241          MOV     SP,R0
242          TRAP    C$PNTS
243          ADD     #4,SP
244          MOV     R2,-(SP)
245          MOV     R3,-(SP)
246          MOV     R4,-(SP)
247          MOV     #ERTAB,R4          ; GET START OF ERROR TABLE.
248          CLR     R3                 ; CLEAR UNIT NUMBER
249          1$:  MOV     (R4),R2        ; GET ERROR TABLE ENTRY & TEST IT.
250          BEQ     4$                 ; ZERO IF UNIT NOT RUN
251          BFL     4$
252          BIT     #BIT14,R2          ; WAS UNIT DROPPED?
253          BNE     2$                 ; BR IF YES
254          BIC     #C7777,R2         ; GET ERROR COUNT FIELD
255          PRINTS  #DEVONL,R3,R2      ; PRINT
256          MOV     R2,-(SP)
257          MOV     R3,-(SP)
258          MOV     #DEVONL,-(SP)
259          MOV     #3,-(SP)
260          MOV     SP,R0
261          TRAP    C$PNTS
262          ADD     #10,SP
263          BR      4$
264          2$:  CMP     R2,#160000     ; WAS UNIT NON-EXISTENT?
265          BNE     3$                 ; BR IF NO
266          PRINTS  #DEVNXR,R3
267          MOV     R3,-(SP)
268          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
10
11
17

.TITLE TEST 1 - HARDWARE TEST 1-8 TESTS

023526
023526

BGNMUD TSV7B
TSV7B::

C8

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

SEQ 097

```

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          .BGNST
39          023526 012737 006354 002172      MOV    #EPRT1,EPRTSW      ;PRIMARY ERROR MESSAGE
40          023526 012700 032117              MOV    #TST29ID,R0      ;ASCII MESSAGE TO IDENTIFY TEST
41          44 023534 004737 016570              JSR    PC,TSTSETUP      ;DO INITIAL TEST SETUP
42          45 023540 004737 000005 002210      MOV    #5,LOOPCNT      ;PERFORM 5 ITERATIONS
43          46 023544 012737 026474              CLR    T29CNT          ;CLEAR TAPE RECORD COUNTER
44          47 023552 005037 026474
45          48 023556
46          49
47          50
48          51          ; TEST 1, SUBTEST 1
49          52
50          53          ; VERIFIES THAT A WRITE TAPE MARK RETRY COMMAND ISSUED WHILE THE
51          54          ; TAPE IS POSITIONED AT BOT CAUSES FUNCTION REJECT TERMINATION, WITH THE
52          55          ; NON-EXECUTABLE FUNCTION (NEF) ERROR BIT SET.
53          56
54          57
55          58
56          59
57          60          .BGNSUB
58          61          023556 104402 004737 032146      JSR    PC,T29REST      ;SET COMMAND PACKET
59          62 023560 004737 032240      JSR    PC,T29RT2      ;SET UP OTHER COMMAND PACKET
60          63 023570 004737 032302      JSR    PC,T29RT3      ;SET UP OTHER COMMAND PACKET
61          64 023574 012737 023420 026500      MOV    #10000,T29DLY      ;SET UP DELAY ROUTINE
62          65 023602 004737 016054      JSR    PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
63          66 023606 103426              BCS    20$              ;BR IF INIT WAS OK
64          67 023610              DELAY    250              ;DELAY ABOUT .25 SECONDS
65          68 023610 012727 000250              MOV    #250,(PC)+
66          69 023614 000000              .WORD    0
67          70 023616 013727 002116              MOV    L$DLY,(PC)+
68          71 023622 000000              .WORD    0
69          72 023624 005367 177772              DEC    -6(PC)
70          73 023630 001375              BNE     -4
71          74 023632 005367 177756              DEC    -22(PC)
72          75 023636 001367              BNE     -20
73          76 023640 005337 026500      DEC    T29DLY      ;BUMP DELAY ROUTINE DOWN
74          77 023644 001356              BNE     10$          ;BR, IF MORE DELAY TIME LEFT
75          78 023646 005237 002214      INC     FATFLG      ;ERROR COUNT
76          79 023652 010001      MOV    R0,R1      ;CONTENTS OF TSSR REGISTER
77          80 023654              ERROF    ERRNO,SFIERR,SFIMSG      ;FATAL ERROR TSSR WAS NOT OK
78          81 023654 104455              TRAP    C$ERDF
79          82 023656 000145              .WORD    101
80          83 023660 003646              .WORD    SFIERR

```

PC	Address	Offset	Label	Instruction	Comment	Trap	Word	SFMSG
76	023662	012114		MOV UNITN,T29DSW	SET UP UNIT NUMBER			SFMSG
77	023664	013737	002174					
78	023672	012704	026320	MOV #T29PACKET,R4	SUBROUTINE NEEDS PACKET ADDRESS			
79	023676	004737	010742	JSR PC,WR1CHR	ISSUE WRITE CHARACTERISTICS			
80	023702	103407		BCS 25	BR, IF COMMAND ISSUED OK			
81	023704	005237	002214	INC FATFLG	ERROR COUNT			
85	023710	010001		MOV R0,R1	SAVE CONTENTS OF TSSR			
86	023712			ERRHRD ERRNO,WRMSG,SFMSG	WRITE CHARACTERISTICS FAILED	TRAP		C\$ERHRD
	023712	104456						
	023714	000146						102
	023716	005052						WRMSG
	023720	012114						SFMSG
87	023722		25:	CKLOOP	LOOP IF SELECTED			
	023722	104406				TRAP		C\$CLP1
88	023724	016501	000002	MOV TSSR(R5),R1	GET THE TSSR			
89	023730	010102		MOV R1,R2	SET UP EXPECTED			
90	023732	042702	000100	BIC #OFL,R2	OFF LINE SHOULD NOT BE SET			
91	023736	020102		CMP R1,R2	THEY SHOULD BE EQUAL			
92	023740	001406		BEQ 26	BR, IF OFL IS NOT SET			
96	023742			ERRDF ERRNO,T29OFL,EXPREC	DRIVE IS OFF LINE	TRAP		C\$ERDF
	023742	104455						103
	023744	000147						T29OFL
	023746	026502						EXPREC
	023750	015554						
97	023752	004737	017262	JSR PC,CKDROP	TRY AND DROP DRIVE			
98	023756	004737	011074	JSR PC,REWIND	CALL TAPE REWIND COMMAND			
99	023762	016501	000002	MOV TSSR(R5),R1	GET TSSR			
100	023766	012702	000200	MOV #SSR,R2	SET UP EXPECTED TSSR			
101	023772	103407		BCS 30	BR, IF NO PROBLEM			
102	023774	010004		MOV R0,R4	PACKET ADDRESS SET UP			
103	023776	005237	002214	INC FATFLG	ERROR COUNT			
107	024002			ERRHRD ERRNO,T29RWN,PKTSSR	REWIND NOT ACCEPTED	TRAP		C\$ERHRD
	024002	104456						104
	024004	000150						T29RWN
	024006	030305						PKTSSR
	024010	012126						
108	024012		30:	CKLOOP	LOOP IF SELECTED			
	024012	104406				TRAP		C\$CLP1
109	024014	013701	026350	MOV T29BFR+6,R1	PICK UP XSTO			
110	024020	010102		MOV R1,R2	SET UP EXPECTED			
111	024022	052702	000002	BIS #BIT1,R2	SET BOT BIT IN EXPECTED			
112	024026	020102		CMP R1,R2	DOES EXP = REC'D			
113	024030	001406		BEQ 40	BR, IF EQUAL (OK)			
114	024032	005237	002214	INC FATFLG	ERROR COUNT			
118	024036			ERRHRD ERRNO,T29BOT,EXPREC	TAPE NOT AT BOT AFTER REWIND	TRAP		C\$ERHRD
	024036	104456						105
	024040	000151						T29BOT
	024042	027776						EXPREC
	024044	015554						
119	024046		40:	CKLOOP	LOOP IF SELECTED			
	024046	1						

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

SEQ 095

Line	Address	Hex	Label	Op	Opnd	Comment	Trap	Code
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	024136	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							
	024170	104403						
149	024172	023727	002214 000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25	TRAP	C\$ESUB
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								
156								
157								
158								
159								
160								
161								
162								
163								
164								
165	024206							
	024206			BGNSUB		;BEGIN SUBTEST		
	024206	104402				T1.2:	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	00221					

TEST 1 - HARDWARE TEST 1-8 TEST MACRO M1115 06-FEB-84 18:04
TEST 1: WRITE TAPE MARK RETRY

SEQ 096

	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\$:	CKLOOP		;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	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
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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	30\$		;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				ERRHRD	ERRNO,T29RWN,PKTSSR		;REWIND NOT ACCEPTED
	025116	104456					TRAP	C\$ERHRD
	025120	000166					.WORD	118
	025122	030305					.WORD	T29RWN
	025124	012126					.WORD	PKTSSR
322	025126			30\$:	CKLOOP			;LOOP IF SELECTED
	025126	104406					TRAP	C\$CLP1
323	025130	013701	026350		MOV	T29BFR+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			CMF	R1,R2		;DOES EXP = REC'D
327	025144	001406			BEQ	40\$		;BR, IF EQUAL (OK)
328	025146	005237	002214		INC	FATFLG		;ERROR COUNT
332	025152				ERRHRD	ERRNO,T29BOT,EXPREC		;TAPE NOT AT BOT AFTER REWIND
	025152	104456					TRAP	C\$ERHRD
	025154	000167					.WORD	119
	025156	027776					.WORD	T29BOT
	025160	015554					.WORD	EXPREC
333	025162			40\$:	CKLOOP			;LOOP IF SELECTED
	025162	104406					TRAP	C\$CLP1
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,WAITF		;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			CMF	R1,R2		;ARE THEY EQUAL
341	025220	001406			BEQ	70\$		;BR, IF OK
342	025222	005237	002214		INC	FATFLG		;ERROR COUNT
346	025226				ERRHRD	ERRNO,T29WDC,PKTSSR		;TSSR INCORRECT AFTER WRITE TAPE MARK
	025226	104456					TRAP	C\$ERHRD
	025230	000170					.WORD	120
	025232	030677					.WORD	T29WDC
	025234	012126					.WORD	PKTSSR
347	025236			70\$:	CKLOOP			;LOOP IF SELECTED
	025236	104406					TRAP	C\$CLP1
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,WAITF		;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			CMF	R1,R2		;WAS STATUS GOOD
356	025300	001406			BEQ	165\$		;BR, IF TERMINATION WAS GOOD
357	025302	005237	002214		INC	FATFLG		;ERROR COUNT
361	025306				ERRHRD	ERRNO,T29WDC,PKTSSR		;TSSR NOT CORRECT AFTER WRT TAPE M.
	025306	104456					TRAP	C\$ERHRD
	025310	000171					.WORD	121
	025312	030677					.WORD	T29WDC
	025314	012126					.WORD	PKTSSR
362	025316			165\$:	CKLOOP			;LOOP IF SELECTED

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

SEQ 100

Line	Address	Offset	Label	Operation	Comments	Trap	Count
363	025320	012737	140401	026440	MOV #140401,T29PK3	TRAP	C\$CLP1
364	025326	013737	003116	026442	MOV FREE,T29R8		
365	025334	012704	026440		MOV #T29PK3,R4		
366	025340	010465	000000		MOV R4,TSD8(R5)		
367	025344	004737	01633C		JSR PC,WAITF		
368	025350	016501	000002		MOV TSSR(R5),R1		
369	025354	012702	100204		MOV #SSR!SC!BIT2,R2		
370	025360	020102			CMP R1,R2		
371	025362	001406			BEQ 222\$		
372	025364	005237	002214		INC FATFLG		
376	025370				ERRHRD ERRNO,T29RDG,PKTSSR		
	025370	104456					
	025372	000172					
	025374	031643					
	025376	012126					
377	025400		222\$:	CKLOOP			
	025400	104406					
378	025402	013701	026350		MOV T29RFR+6,R1		
379	025406	010102			MOV R1,R2		
380	025410	052702	100000		BIS #BIT15,R2		
381	025414	020102			CMP R1,R2		
382	025416	001406			BEQ 226\$		
383	025420	005237	002214		INC FATFLG		
387	025424				ERRHRD ERRNO,T29RRN,EXPREC		
	025424	104456					
	025426	000173					
	025430	032024					
	025432	015554					
388	025434		226\$:	CKLOOP			
	025434	104406					
389	025436			ENDSUB			
	025436						
	025436	104403					
390	025440	023727	002214	000017	CMP FATFLG,#15.		
391	025446	103402			BLO 999\$		
392	025450	004737	017262		JSR PC,CKDROP		
393	025454			999\$:			
394				;			
395				;			
396				;			
397				TEST 1, SUBTEST 4			
398				;			
399				VERIFIES THAT THE SPACE-REVERSE PORTION OF THE WRITE TAPE MARK			
400				RETRY OPERATION IS PERFORMED BY REWINDING THE TAPE, ISSUING SEVERAL			
401				WRITE TAPE MARK RETRY COMMANDS IN SUCCESSION, THEN ISSUING TWO SPACE			
402				RECORDS REVERSE COMMANDS IN SUCCESSION. THE SECOND SPACE RECORDS REVERSE			
403				COMMAND SHOULD TERMINATE WITH REVERSE INTO BOT (RIB) STATUS SET.			
404				;			
405	025454			;-			
	025454			BGNSUB			
	025454	104402					
406	025456	004737	032146		JSR PC,T29REST		
407	025462	004737	032240		JSR PC,T29RT2		
408	025466	004737	032302		JSR PC,T29RT3		
409	025472	012737	023420	026500	MOV #10000.,T29DLY		
410	025500	004737	016054	10\$:	JSR PC,SOFINIT		

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

SEQ 101

Line	Address	Hex	Label	Op	Opnd	Comment	Opnd
411	025504	103426					
412	025506		BCS	20\$		;BR IF INIT WAS OK	
	025506	012727	DELAY	250		;DELAY ABOUT .25 SECONDS	
	025512	000000				MOV	#250,(PC)+
	025514	013727				.WORD	0
	025520	000000				MOV	L\$DLY,(PC)+
	025522	005367				.WORD	0
	025526	001375				DEC	-6(PC)
	025530	005367				BNE	.-4
	025534	001367				DEC	-22(PC)
						CNE	.-20
413	025536	005337	DEC	T29DLY		;BUMP DELAY ROUTINE DOWN	
414	025542	001356	BNE	10\$		;BR, IF MORE DELAY TIME LEFT	
415	025544	005237	INC	FATFLG		;ERROR COUNT	
419	025550	010001	MOV	R0,R1		;CONTENTS OF TSSR REGISTER	
420	025552		ERRDF	ERRNO,SFIERR,SFIMSG		;FATAL ERROR TSSR WAS NOT OK	
	025552	104455				TRAP	C\$ERDF
	025554	000174				.WORD	124
	025556	003646				.WORD	SFIERR
	025560	012114				.WORD	SFIMSG
421	025562	013737	MOV	UNITN,T29DSW		;SET UP DRIVE NUMBER	
422	025570	012704	MOV	#T29PACKET,R4		;SUBROUTINE NEEDS PACKET ADDRESS	
423	025574	004737	JSR	PC,WRTCHR		;ISSUE WRITE CHARACTERISTICS	
424	025600	103407	BCS	23\$		;BR, IF COMMAND ISSUED OK	
425	025602	005237	INC	FATFLG		;ERROR COUNT	
429	025606	010001	MOV	R0,R1		;SAVE CONTENTS OF TSSR	
430	025610		ERRHRD	ERRNO,WRTMSG,SFIMSG		;WRITE CHARACTERISTICS FAILED	
	025610	104456				TRAP	C\$ERHRD
	025612	000175				.WORD	125
	025614	005052				.WORD	WRTMSG
	025616	012114				.WORD	SFIMSG
431	025620		23\$: CKLOOP			;LOOP IF SELECTED	
	025620	104406				TRAP	C\$CLP1
432	025622	004737	JSR	PC,REWIND		;CALL TAPE REWIND COMMAND	
433	025626	103411	BCS	30\$		;BR, IF NO PROBLEM	
434	025630	016501	MOV	TSSR(R5),R1		;GET TSSR	
435	025634	010004	MOV	R0,R4		;SAVE PACKET ADDRESS	
436	025636	005237	INC	FATFLG		;ERROR COUNT	
440	025642		ERRHRD	ERRNO,T29RWN,PKTSSR		;REWIND NOT ACCEPTED	
	025642	104456				TRAP	C\$ERHRD
	025644	000176				.WORD	126
	025646	030305				.WORD	T29RWN
	025650	012126				.WORD	PKTSSR
441	025652		30\$: CKLOOP			;LOOP IF SELECTED	
	025652	104406				TRAP	C\$CLP1
442	025654	013701	MOV	T29BFR+6,R1		;PICK UP XSTO	
443	025660	010102	MOV	R1,R2		;SET UP EXPECTED	
444	025662	052702	BIS	#BIT1,R2		;SET BOT BIT IN EXPECTED	
445	025666	020102	CMP	R1,R2		;DOES LAR = REC'D	
446	025670	001406	BEQ	40\$		;BR, IF EQUAL (OK)	
447	025672	005237	INC	FATFLG		;ERROR COUNT	
451	025676		ERRHRD	ERRNO,T29BOT,EXPREC		;TAPE NOT AT BOT AFTER REWIND	
	025676	104456				TRAP	C\$ERHRD
	025700	000177				.WORD	127
	025702	027776				.WORD	T29BOT
	025704	015					

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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

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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 104

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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 100006      .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:      .WORD FREE      ;ADDRESS OF WRITE BUFFER
574 026442      T29WB:      .WORD 0
575 026442 003116      T29SZ:      .WORD 0      ;SIZE OF BUFFER (EXTENT)
576 026444 000000      .EVEN
577 026446 000000
578
579      ;
580      ;
581      ;
582 026450      T29BF2:
583 026450 010      T29BS0: .BYTE 10      ;BSELO AREA
584 026451 200      T29BS1: .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      T29WDR: .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      ;*
607      ;LOCAL TEXT MESSAGES FOR TEST
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 (XST0)'
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'

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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 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	T29RWN:	.ASCIZ	'Rewind (POSITION) Command Not Accepted'
628	030354	122	101	115	T29MNC:	.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	031136	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	'THK (XST0) Failed To Set After READ REVERSE Into Tape Mark'
644	032117	127	162	151	T29ID:	.ASCIZ	'Write Tape Mark Retry'
645						.EVEN	
646							
647							
648							
649							
650							
651							
652							
653	032146				T29REST:		
654	032146				SAVREG		'SAVE THE REGISTERS
655	032152	012701	026320		MOV	#T29PACKET,R1	'START OF THE PACKET
656	032156	012721	140004		MOV	#140004,(R1),	'WRITE SUBSYSTEM MEM. WITH ACK, CVC=1
657	032162	012721	026330		MOV	#T29DATA,(R1),	'ADDRESS OF CHARACTERISTICS DATA BLOCK
658	032166	005021			CLR	(R1),	'EXTENDED ADDRESS
659	032170	012721	000012		MOV	#10,(R1),	'SIZE OF DATA BLOCK IN BYTES
660	032174	012721	026342		MOV	#T29BFR,(R1),	'ADDRESS OF MESSAGE BUFFER
661	032200	005021			CLR	(R1),	
662	032202	012721	000024		MOV	#20,(R1),	'LENGTH OF MESSAGE BUFFER
663	032206	005021			CLR	(R1),	
664	032210	012711	000000		MOV	#0,(R1)	'SELECT DRIVE ZERO (0)
665	032214	012702	000030		MOV	#24,R2	'NUMBER OF LOCATIONS TO BE CLEARED
666	032220	012762	177777	026342 641:	MOV	#177777,T29BFR(R2)	'ALL ONES TO MESSAGE BUFFER
667	032226	005742			TST	(R2)	'NEXT LOCATION
668	032230	020227	000000		CMP	R2,#0	'CHECK FOR END OF LOOP
669	032234	001371			BNE	641	'KEEP GOING UNTIL DONE
670	032236	000207			RTS	PC	'RETURN
671							
672	032240				T29RT2:		

ADDRESS	HEX	DATA	ASSEMBLY	COMMENT
673	032240		SAVREG	SAVE THE REGISTERS
674	032244	012701 026430	MOV #T29PK2,R1	START OF THE PACKET
675	032250	012721 140006	MOV #140006,(R1).	WRITE SUBSYSTEM MEM. WITH ACK,CVC=1,
676	032254	012721 026450	MOV #T29BF2,(R1).	ADDRESS OF DATA BLOCK
677	032260	005021	CLR (R1).	EXTENDED ADDRESS
678	032262	012721 000006	MOV #6,(R1).	SIZE OF DATA BLOCK IN BYTES
679	032266	005021	CLR (R1).	
680	032270	012701 026450	MOV #T29BF2,R1	POINT TO DATA SEL AREA
681	032274	005021	CLR (R1).	
682	032276	005011	CLR (R1)	
683	032300	000207	RTS PC	RETURN
684	032302		T29RT3:	
685	032302		SAVREG	SAVE THE REGISTERS
686	032306	012701 026440	MOV #T29PK3,R1	START OF THE PACKET
687	032312	012721 000000	MOV #0,(R1).	WRITE SUBSYSTEM MEM. WITH ACK,
688	032316	012721 000000	MOV #0,(R1).	ADDRESS OF DATA BLOCK
689	032322	005021	CLR (R1).	EXTENDED ADDRESS
690	032324	012711 000000	MOV #0,(R1)	SIZE OF DATA BLOCK IN BYTES
691	032330	000207	RTS PC	RETURN
692	032332		ENDTST	

L10036: TRAP C:ETST

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693 .SBTTL TEST 2: SKIP TAPE MARKS
694
695
696 ; THIS TEST VERIFIES PROPER OPERATION OF THE SKIP TAPE MARKS
697 ; FORWARD AND SKIP TAPE MARKS REVERSE COMMANDS. PROPER OPERATION
698 ; UNDER CONTROL OF ALL COMBINATIONS OF THE ENABLE SKIP TAPE MARKS
699 ; STOP (ESS) AND ENABLE TAPE MARKS STOP OFF BOT (ENB) BITS SPECIFIED
700 ; BY THE WRITE CHARACTERISTICS COMMAND. THE TEST CONSISTS OF THE
701 ; FOLLOWING SUBTESTS (FOR EACH SUBTEST, THE TAPE IS FIRST WRITTEN
702 ; WITH AN APPROPRIATE SERIES OF DATA RECORDS AND/OR TAPE MARKS
703 ; AND/OR DOUBLE TAPE MARKS.
704
705
706 ; THE TEST CONSISTS OF THE FOLLOWING 11 SUBTESTS
707
708
709
710
711 ; -
712 032334 BGNTST
713 032334
714 032334 012737 006354 002172 MOV 0EPR11,EPR1SW ;PRIMARY ERROR MESSAGE T2::
715 032342 012700 041231 MOV 0TST30ID,R0 ;ASCII MESSAGE TO IDENTIFY TEST
716 032346 004737 016570 JSR PC,TSTSETUP ;DO INITIAL TEST SETUP
717 032352 012737 000005 002210 MOV 05,100PCNT ;PERFORM 5 ITERATIONS
718
719
720 ;
721 ;
722 ; TEST 2, SUBTEST 1
723 ;
724 ;
725 ; VERIFIES THAT A SKIP TAPE MARKS FORWARD COMMAND WITH
726 ; A TAPE MARK COUNT OF 1 OPERATES PROPERLY. THE TAPE
727 ; IS FIRST REWOUND, THEN WRITTEN WITH SEVERAL "FILES";
728 ; EACH FILE CONSISTS OF A NUMBER OF DATA RECORDS
729 ; FOLLOWED BY A TAPE MARK. THE FINAL FILE IS
730 ; TERMINATED BY A DOUBLE TAPE MARK. EACH DATA RECORD

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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	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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E9

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

SEQ 108

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777 032512 005237 002214      INC    FATFLG      ;ERROR COUNT
781 032516 010001              MOV    R0,R1      ;SAVE CONTENTS OF TSSR
782 032520              ERRHRD  ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
                                ;
                                TRAP    C$ERHRD
                                .WORD   202
                                .WORD   WRTMSG
                                .WORD   SFMSG
783 032530              23$:    CKLOOP              ;LOOP IF SELECTED
                                TRAP    C$CLP1
                                .WORD   104406
784
785 ;*****
786 ;
787 ;ISSUE A REWIND TO TAPE DRIVE AND WAIT FOR SSR TO SET
788 ;
789 ;*****
790
791 032532 004737 011074      JSR     PC,REWIND      ;CALL TAPE REWIND COMMAND
792 032536 103411              BCS     30$          ;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,T30RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP    C$ERHRD
                                .WORD   203
                                .WORD   T30RWN
                                .WORD   PKTSSR
800 032562              30$:    CKLOOP              ;LOOP IF SELECTED
                                TRAP    C$CLP1
                                .WORD   104406
801
802 ;*****
803 ;
804 ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
805 ;
806 ;*****
807
808 032564 013701 036530      MOV     T30BFR+6,R1    ;PICK UP XSTO
809 032570 010102              MOV    R1,R2          ;SET UP EXPECTED
810 032572 052702 000002      BIS     @BIT1,R2      ;SET BOT BIT IN EXPECTED
811 032576 020102              CMP     R1,R2          ;DOES EXP = REC'D
812 032600 001406              BEQ     40$          ;BR, IF EQUAL (OK)
813 032602 005237 002214      INC     FATFLG        ;ERROR COUNT
817 032606              ERRHRD  ERRNO,T30BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP    C$ERHRD
                                .WORD   204
                                .WORD   T30BOT
                                .WORD   EXPREC
818 032616              40$:    CKLOOP              ;LOOP IF SELECTED
                                TRAP    C$CLP1
                                .WORD   104406
819 032620 012737 000001 036654  MOV    @1.,T30FCN    ;SET "FILE" COUNTER AT 1 DECIMAL
820 032626 012703 000001 64$:    MOV    @1,R3        ;ONE RECORD PER "FILE"
821 032632 013737 003116 036622 65$:    MOV    FREE,T30WB    ;SET UP PACKETS'S WRITE BUFFER
822 032640 012737 003720 036626  MOV    @2000.,T30SZ    ;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      T30FCN,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      R1,0FREE      ;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      QSSR,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$ERHRD
      032730 000315      .WORD      205
      032732 037170      .WORD      T30WDD
      032734 012120      .WORD      PKTSSR
848 032736      70$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
      032736 104406      ;COUNT THE RECORD COUNTER DOWN
849 032740 005203      INC      R3      ;AT 20 YET
850 032742 020327 000021      CMP      R3,#21      ;BR, IF NOT AT 20 RECORDS WRITTEN
851 032746 001331      BNE      65$
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      QSSR,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$ERHRD
      033014 000316      .WORD      206
      033016 040362      .WORD      T30WDC
      033020 012126      .WORD      PKTSSR
872 033022      160$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
      033022 104406      ;COUNT THE "FILE" COUNTER DOWN
873 033024 005237 036654      INC      T30FCN      ;WRITE 5 FILE TO TAPE
874 033030 023727 036654 000006      CMP      T30FCN,#6      ;BR, IF NOT AT 5 FILES WRITTEN
875 033036 001273      BNE      64$
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      0141011,T30PK3      ;WRITE TAPE MARK,ACK,CVC=1 COMMAND
884 033046 012704 036620      MOV      0T30PK3,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      0SSR,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,T30WDC,PKTSSR      ;TSSR NOT CORRECT AFTER WRT TAPE M.
      033102 104456      TRAP      C$ERHRD
      033104 000317      .WORD    207
      033106 040362      .WORD    T30WDC
      033110 012126      .WORD    PKTSSR
896 033112      165$: 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,T30RWN,PKTSSR      ;REWIND NOT ACCEPTED
      033134 104456      TRAP      C$ERHRD
      033136 000320      .WORD    208
      033140 040240      .WORD    T30RWN
      033142 012126      .WORD    PKTSSR
913 033144      170$: CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
      033144 104406
914
915 ;*****
916 ;
917 ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
918 ;
919 ;*****
920
921 033146 013701 036530      MOV      T30BFR+6,R1      ;PICK UP XSTO
922 033152 010102      MOV      R1,R2      ;SET UP EXPECTED
923 033154 052702 000002      BIS      0BIT1,R2      ;SET BOT BIT IN EXPECTED
924 033160 020102      CMP      R1,R2      ;DOES EXP = REC'D
925 033162 001406      BEQ      180$      ;BR, IF EQUAL (OK)
926 033164 005237 002214      INC      FATFLG      ;ERROR COUNT
930 033170      ERRHRD  ERRNO,T30BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
      033170 104456      TRAP      C$ERHRD
      033172 000321      .WORD    209
      033174 040041      .WORD    T30BOT
      033176 015554      .WORD    EXPREC
931 033200      180$: 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      ERRHRD  ERRNO,WRTMSG,SFMSG    ;WRITE CHARACTERISTICS FAILED
          033240 104456      TRAP      C$ERHRD
          033242 000322      .WORD    210
          033244 005052      .WORD    WRTMSG
          033246 012114      .WORD    SFMSG
951 033250      188$: 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$: JSR      PC,WAITF      ;WAIT FOR SSR TO SET
965 033310 016501 000002      MOV      TSSR(R5),R1    ;PICK UP TSSR
966 033314 032701 000200      BIT      #SSR,R1      ;IS SSR SET YET
967 033320 001017      BNE      191$      ;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      ERRHRD  ERRNO,T30SKM,PKTSSR    ;TSSR NOT CORRECT AFTER SKIP TAPE M.
          033374 104456      TRAP      C$ERHRD
          033376 000323      .WORD    211
          033400 037114      .WORD    T30SKM

```

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

SEQ 112

```

979 033402 012126          192$: CKLOOP          ;LOOP IF SELECTED          .WORD PKTSSR
      033404          TRAP C$CLP1
      033404 104406
980
981 ;*****
982 ;
983 ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
984 ;
985 ;*****
986
987 033406 013701 036530      MOV T30BFR+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 195$      ;BR, IF EQUAL (OK)
992 033424 005237 002214      INC FATFLG      ;ERROR COUNT
996 033430      ERRHRD ERRNO,T30TMK,EXPREC      ;TMK NOT SET AFTER WRT TAPE MARK
      033430 104456          TRAP C$ERHRD
      033432 000324          .WORD 212
      033434 040514          .WORD T30TMK
      033436 015554          .WORD EXPREC
997 033440          195$: CKLOOP          ;LOOP IF SELECTED          TRAP C$CLP1
      033440 104406
998 033442 012700      MOV #177777,R0      ;VALUE TO WRITTEN TO MEMORY
999 033446 004737 017502      JSR PC,FILLMEM      ;FILL MEM WITH ALL ONES
1000 033452 013737 003116 036622      MOV FREE,T30RB      ;STARTING READ BUFFER ADDRESS
1001
1002 ;*****
1003 ;
1004 ;READ FORWARD,ACK,CVC=1 COMMAND
1005 ;
1006 ;*****
1007
1008 033460 012737 140001 036620      MOV #140001,T30PK3      ;READ FORWARD,ACK,CVC=1 COMMAND
1009 033466 012704 036620      MOV #T30PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
1010 033472 012737 003720 036626      MOV #2000.,T30SZ      ;SET UP RECORD SIZE IN PACKET
1011 033500 010465 000000      MOV R4,T30B(R5)      ;ISSUE COMMAND
1012 033504 004737 016330      JSR PC,WAITF      ;WAIT FOR SSR TO SET
1013 033510 016501 000002      MOV TSSR(R5),R1      ;GET TSSR CONTENTS
1014 033514 012702 000200      MOV #SSR,R2      ;SET UP EXPECTED
1015 033520 020102      CMP R1,R2      ;ARE THEY EQUAL
1016 033522 001406      BEQ 200$      ;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 C$ERHRD
      033532 000325          .WORD 213
      033534 037413          .WORD T30RDF
      033536 012126          .WORD PKTSSR
1022 033540          200$: CKLOOP          ;LOOP IF SELECTED          TRAP C$CLP1
      033540 104406
1023 033542 017701 147350      MOV #FREE,R1      ;FIRST LOC IN READ BUFFER
1024 033546 012702 177777      MOV #177777,R2      ;EXPECTED IF NO DATA TRANS.
1025 033552 020102      CMP R1,R2      ;DID ANY DATA GET TRANSFERRED
1026 033554 001006      BNE 220$      ;BR, IF NO DATA TRANS (GOOD)
1027 033556 005237 002214      INC FATFLG      ;ERROR COUNT
1031 033562      ERRHRD ERRNO,T30DTR,EXPREC      ;DATA TRANSFERRED ON READ TAPE MARK
      033562 104456          TRAP C$ERHRD

```

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

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		MOV	#1001,R2		;SET UP RECORD NUMBER EXPECTED (FILE 2)
1034	033600	017701	001001	MOV	#FREE,R1		;GET INFO FROM BUFFER
1035	033604	020201	147312	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	104456				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
	033	015554				.WORD	EXPREC
1077	033		240\$:	CKLOOP	;LOOP IF SELECTED		
	033	104406				TRAP	C\$CLP1
1078	033/14	005723		TST	(R3)+		;POINT TO NEXT POSITION

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

SEQ 114

1079	033716	011301			MOV	(R3),R1	;GET NEXT COMMAND ETC.
1080	033720	020127	177777		CMP	R1,#177777	;END OF TABLE MARKER
1081	033724	001402			BEG	330\$	;BR, IF AT END OF TABLE
1082	033726	000137	033214		JMP	182\$	;JUMP TO MORE COMMANDS TO DO
1083	033732			330\$:	CKLOOP		;LOOP IF SELECTED
	033732	104406					TRAP C\$CLP1
1084	033734				ENDSUB		;<<<<<<<<<<<< END SUBTEST >>>>>>>
	033734						L10044:
	033734	104403					TRAP :\$ESUP
1085	033736	023727	002214	000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25
1086	033744	103402			BLO	999\$	;BR, IF LESS THAN 25
1087	033746	004737	017262		JSR	PC,CKDROP	;TRY TO DROP THE UNIT
1088	033752			999\$:			
1089				:			
1090				:			
1091				:TEST 2, SUBTEST 2			
1092				:			
1093				:VERIFIES THAT SKIP TAPE MARKS COMMANDS WITH A TAPE			
1094				:MARK COUNT GREATER THAN 1 OPERATE PROPERLY. COUNTS			
1095				:OF 2,3,8,64,256, AND 512 ARE TESTED. THE			
1096				:TESTING SEQUENCE IS SIMILAR TO THAT USED IN SUBTEST 1.			
1097				:			
1098				:			
1099				:			
1100				: -			
1101				:			
1102	033752				BGNBUB		;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>
	033752						T2.2:
	033752	104402					TRAP C\$BSUB
1103	033754	004737	041252		JSR	PC,T3OREST	;SET COMMAND PACKET
1104	033760	005037	036654		CLR	T30FCN	;CLEAR FILE COUNTER
1105	033764	004737	041344		JSR	PC,T3ORT2	;SET UP OTHER COMMAND PACKET
1106	033770	004737	041406		JSR	PC,T3ORT3	;SET UP OTHER COMMAND PACKET
1107	033774	012737	176750	036656	MOV	#65000.,T3ODLY	;SET UP DELAY COUNTER
1108	034002	004737	016054	10\$:	JSR	PC,SOFINIT	;DO INITIALIZE ON CONTROLLER
1109	034006	103426			BCS	20\$	;BR IF INIT WAS OK
1110	034010				DELAY	250	;DELAY ROUTINE CALL
	034010	012727	000250				MOV #250.(PC)+
	034014	000000					.WORD 0
	034016	013727	002116				MOV L\$DLY,(PC)+
	034022	000000					.WORD 0
	034024	005367	177772				DEC -6(PC)
	034030	001375					BNE .-4
	034032	005367	177756				DEC -22(PC)
	034036	001367					BNE .-20
1111	034040	005337	036656		DEC	T3ODLY	;BUMP COUNTER
1112	034044	001356			BNE	10\$	;BR, IF MORE COUNTING TO DO
1113	034046	005237	002214		INC	FATFLG	;ERROR COUNT
1117	034052	010001			MOV	R0,R1	;CONTENTS OF ISSR REGISTER
1118	034054				ERRDF	ERRNO,SFIERR,SFIMSG	;FATAL ERROR TSSR WAS NOT OK
	034054	104455					TRAP C\$ERDF
	034056	000332					.WORD 218
	034060	003646					.WORD SFIERR
	034062	012114					.WORD SFIMSG
1119	034064			20\$:			
1120	034064	013737	002174	036520	MOV	UNITN,T3ODSW	;SET UP UNIT NUMBER
1121	034072	012704	036500		MOV	#T3OPACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS

Line	Address	Offset	Label	Instruction	Comment	Trap	Value
1122				*****			
1123				;			
1124				;ISSUE WRITE CHARACTERISTICS COMMAND			
1125				;			
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,SFMSG	;WRITE CHARACTERISTISC FAILED		
	034112	104456				TRAP	C\$ERHRD
	034114	000333				.WORD	219
	034116	005052				.WORD	WRTMSG
	034120	012114				.WORD	SFMSG
1137	034122			23\$:	CKLOOP		
	034122	104406				TRAP	C\$CLP1
1138				*****			
1139				;			
1140				;ISSUE A REWIND TO TAPE DRIVE AND WAIT FOR SSR TO SET			
1141				;			
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		
	034144	104456				TRAP	C\$ERHRD
	034146	000334				.WORD	220
	034150	040240				.WORD	T3ORWN
	034152	012126				.WORD	PKTSSR
1154	034154			30\$:	CKLOOP		
	034154	104406				TRAP	C\$CLP1
1155				*****			
1156				;			
1157				;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER			
1158				;			
1159				*****			
1160				;			
1161				*****			
1162	034156	013701	036530	MOV T3OBFR+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 = REC'D		
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		
	034200	104456				TRAP	C\$ERHRD
	034202	000335				.WORD	221
	034204	040041				.WORD	T3OBOT
	034206	015554				.WORD	EXPREC
1172	034210			40\$:	CKLOOP		
	034210	104406				TRAP	C\$CLP1

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$CLP1
1228 034416 005237 036654 000031      INC      T30FCN      ;COUNT THE "FILE" COUNTER DOWN
1229 034422 023727 036654      CMP      T30FCN, #25.      ;WRITE 25 FILES TO TAPE
1230 034430 001273      BNE      64$      ;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, TSD8(R5)      ;ISSUE COMMAND
1240 034450 004737 016330      JSR      PC, WAITF      ;WAIT FOR SSR TO SET
1241 034454 016501 000002      MOV      TSSR(R5), R1      ;PICK UP TSSR
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      ERRHRD      ERRNO, T30WDC, PKTSSR      ;TSSR NOT CORRECT AFTER WRT TAPE M.
1250 034504      165$: CKLOOP      ;LOOP IF SELECTED
1251 034504 104406                                TRAP C$CLP1
1252
1253      ;*****
1254      ;ISSUE A REWIND TO TAPE DRIVE AND WAIT FOR SSR TO SET
1255      ;
1256      ;*****
1257
1258 034506 004737 011074      JSR      PC, REWIND      ;CALL TAPE REWIND COMMAND
1259 034512 103411      BCS      170$      ;BR. IF NO PROBLEM
1260 034514 010004      MOV      R0, R4      ;GET PACKET ADDRESS
1261 034516 016501 000002      MOV      TSSR(R5), R1      ;GET STATUS REGISTER
1262 034522 005237 002214      INC      FATFLG      ;ERROR COUNT
1266 034526      ERRHRD      ERRNO, T30RWN, PKTSSR      ;REWIND NOT ACCEPTED
1267 034536      170$: CKLOOP      ;LOOP IF SELECTED
1268 034536 104406                                TRAP C$CLP1
1269
1270      ;*****
1271      ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
1272      ;
1273      ;*****
1274
1275 034540 013701 036530      MOV      T30BFR+6, R1      ;PICK UP XSTO
1276 034544 010102      MOV      R1, R2      ;SET UP EXPECTED
1277 034546 052702 000002      BIS      #BIT1, R2      ;SET BOT BIT IN EXPECTED
1278 034552 020102      CMP      R1, R2      ;DOES EXP = REC'D

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

SEQ 118

1279	034554	001406		BEQ	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	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	MOV	UNITN,T30DSW		;SET UP UNIT NUMBER		
1289	034614	011337	036516	1821:	MOV	(R5),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,SFIMSG		;WRITE CHARACTERISTICS	FAILED	
	034640	104456					TRAP	C1ERHRD	
	034642	000343					.WORD	227	
	034644	005052					.WORD	WRTMSG	
	034646	012114					.WORD	SFIMSG	
1306	034650			1881:	CKLOOP		;LOOP IF SELECTED		
	034650	104406					TRAP	C1CLP1	
1307									
1308									
1309									
1310									
1311									
1312									
1313									
1314	034652	012737	141010	MOV	#141010,T30PK3		;SKIP TAPE MARK,ACK,CVC=1 COMMAND		
1315	034660	013737	036634	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,T30DB(R5)	;ISSUE COMMAND		
1318	034676	012737	176750	MOV	#65000,T30DLT		;SET UP DELAY COUNTER		
1319	034704	004737	016330	1901:	JSR	PC,WAITF	;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	16(PC)	
	034742	001375					BNE	14	
	034744	005367	177756				DEC	22(PC)	
	034750	001367					BNE	1-20	

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

SEQ 119

TEST 2: SKIP TAPE MARKS

1324	034752	005337	036656	DEC	T30DLY				
1325	034756	001352		BNE	1901				
1326	034760	012702	000200	1911:	MOV	#SSR,R2			
1327	034764	020102			CMP	R1,R2			
1328	034766	001406			BEQ	1921			
1329	034770	005237	002214		INC	FATFLG			
1333	034774				ERRHRD	ERRNO,T30SKM,PKTSSR			
	034774	104456							
	034776	000344							
	035000	037114							
	035002	012126							
1334	035004			1921:	CKLOOP				
	035004	104406							
1335									
1336									
1337									
1338									
1339									
1340									
1341									
1342	035006	013701	036530		MOV	T30BFR+6,R1			
1343	035012	010102			MOV	R1,R2			
1344	035014	052702	100000		BIS	#BIT15,R2			
1345	035020	020102			CMP	R1,R2			
1346	035022	001406			BEQ	1951			
1347	035024	005237	002214		INC	FATFLG			
1351	035030				ERRHRD	ERRNO,T30TMK,EXPREC			
	035030	104456							
	035032	000345							
	035034	040514							
	035036	015554							
1352	035040			1951:	CKLOOP				
	035040	104406							
1353	035042	012700	177777		MOV	#177777,R0			
1354	035046	004737	017501		JSR	PC,FILLMEM			
1355	035052	013737	003116	036622	MOV	FREE,T30RB			
1356									
1357									
1358									
1359									
1360									
1361									
1362									
1363	035060	012737	140001	036620	MOV	#140001,T30PK3			
1364	035066	012704	036620		MOV	#T30PK3,R4			
1365	035072	012737	000024	036626	MOV	#20,T30SZ			
1366	035100	010465	000000		MOV	R4,T30DB(R5)			
1367	035104	004737	016330		JSR	PC,WAITF			
1368	035110	016501	000002		MOV	TSSR(R5),R1			
1369	035114	012702	000200		MOV	#SSR,R2			
1370	035120	020102			CMP	R1,R2			
1371	035122	001406			BEQ	2001			
1372	035124	005237	002214		INC	FATFLG			
1376	035130				ERRHRD	ERRNO,T30RDF,PKTSSR			
	035130	104456							
	035132	000346							
	035134	037413							

;BUMP DELAY ROUTINE
 ;BR, IF MORE DELAY TO GO
 ;SET UP EXPECTED (SSR ONLY)
 ;WAS STATUS GOOD
 ;BR, IF TERMINATION WAS GOOD
 ;ERROR COUNT
 ;TSSR NOT CORRECT AFTER SKIP TAPE M.
 TRAP C#ERHRD
 .WORD 228
 .WORD T30SKM
 .WORD PKTSSR
 ;LOOP IF SELECTED
 TRAP C#CLP1
 ;*****
 ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
 ;*****
 ;PICK UP XSTO
 ;SET UP EXPECTED
 ;SET TMK BIT IN EXPECTED
 ;DOES EXP = REC'D
 ;BR, IF EQUAL (OK)
 ;ERROR COUNT
 ;TMK NOT SET AFTER WRT TAPE MARK
 TRAP C#ERHRD
 .WORD 229
 .WORD T30TMK
 .WORD EXPREC
 ;LOOP IF SELECTED
 TRAP C#CLP1
 ;VALUE TO WRITTEN TO MEMORY
 ;FILL MEM WITH ALL ONES
 ;STARTING READ BUFFER ADDRESS
 ;*****
 ;READ FORWARD,ACK,CVC=1 COMMAND
 ;*****
 ;READ FORWARD,ACK,CVC=1 COMMAND
 ;SET UP R4 WITH PACKET ADDRESS
 ;SET UP RECORD SIZE IN PACKET
 ;ISSUE COMMAND
 ;WAIT FOR SSR TO SET
 ;GET TSSR CONTENTS
 ;SET UP EXPECTED
 ;ARE THEY EQUAL
 ;BR, IF OK
 ;ERROR COUNT
 ;TSSR INCORRECT AFTER WRITE DATA
 TRAP C#ERHRD
 .WORD 230
 .WORD T30RDF

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

SEQ 120

1377	035136	012126	200\$:	CKLOOP	;LOOP IF SELECTED	.WORD	PKTSSR
	035140	104406				TRAP	C\$CLP1
1378	035142	017701		MOV	BFREE,R1		;FIRST LOC IN READ BUFFER
1379	035146	012702		MOV	0177777,R2		;EXPECTED IF NO DATA TRANS.
1380	035152	020102		CMP	R1,R2		;DID ANY DATA GET TRANSFERRED
1381	035154	001006		BNE	220\$		;BR, IF NO DATA TRANS (GOOD)
1382	035156	005237		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		220\$:	CKLOOP	;LOOP IF SELECTED		
	035172	104406				TRAP	C\$CLP1
1388	035174	013702		MOV	T30FCN,R2		;GET NUMBER OF SKIPS
1389	035200	005202		INC	R2		;SET TO CORRECT FILE VALUE
1390	035202	000302		SWAB	R2		;SWAP BYTE HALVES
1391	035204	052702		BIS	0BIT0,R2		;SET FOR RECORD #1
1392	035210	017701		MOV	BFREE,R1		;GET INFO FROM BUFFER
1393	035214	020201		CMP	R2,R1		;ARE THEY EQUAL
1394	035216	001406		BEQ	228\$		;BR, IF EQUAL (OK)
1395	035220	005237		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		229\$:	CKLOOP	;LOOP IF SELECTED		
	035234	104406				TRAP	C\$CLP1
1401							
1402							
1403							
1404							
1405							
1406							
1407							
1408	035236	004737		JSR	PC,REWIND		;CALL TAPE REWIND COMMAND
1409	035242	103411		BCS	230\$		;BR, IF NO PROBLEM
1410	035244	010004		MOV	R0,R4		;SAVE PACKET ADDRESS
1411	035246	016501		MOV	TSSR(R5),R1		;GET TSSR STATUS
1412	035252	005237		INC	FATFLG		;ERROR COUNT
1416	035256			ERRHRD	ERRNO,T30RWN,PKTSSR		;REWIND NOT ACCEPTED
	035256	104456				TRAP	C\$ERHRD
	035260	000351				.WORD	233
	035262	040240				.WORD	T30RWN
	035264	012126				.WORD	PKTSSR
1417	035266		230\$:	CKLOOP	;LOOP IF SELECTED		
	035266	104406				TRAP	C\$CLP1
1418							
1419							
1420							
1421							
1422							
1423							
1424							
1425	035270	013701		MOV	T30BFR+6,R1		;PICK UP XSTO

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

SEQ 121

1426	035274	010102			MOV R1,R2	;SET UP EXPECTED		
1427	035276	052702	000002		BIS #BIT1,R2	;SET BOT BIT IN EXPECTED		
1428	035302	020102			CMP R1,R2	;DOES EXP = REC'D		
1429	035304	001406			BEQ 240\$	;BR, IF EQUAL (OK)		
1430	035306	005237	002214		INC FATFLG	;ERROR COUNT		
1434	035312				ERRHRD ERRNO,T30BOT,EXPREC	;TAPE NOT AT BOT AFTER REWIND		
	035312	104456				TRAP C\$ERHRD		
	035314	000352				.WORD 234		
	035316	040041				.WORD T30BOT		
	035320	015554				.WORD EXPREC		
1435	035322			240\$:	CKLOOP	;LOOP IF SELECTED		
	035322	104406				TRAP C\$CLP1		
1436	035324	005723			TST (R3)+	;POINT TO NEXT POSITION		
1437	035326	011301			MOV (R3),R1	;GET NEXT COMMAND ETC.		
1438	035330	020127	177777		CMP R1,#177777	;END OF TABLE MARKER		
1439	035334	001410			BEQ 330\$	;BR, IF AT END OF TABLE		
1440	035336	013701	036654		MOV T30FCN,R1	;GET NUMBER OF SKIPS		
1441	035342	000241			CLC	;CLEAR THE CARRY BIT		
1442	035344	006101			ROL R1	;PUSH OVER ONE POSITION		
1443	035346	010137	036654		MOV R1,T30FCN	;PUT BACK IN COUNTER		
1444	035352	000137	034614		JMP 182\$	;JUMP TO MORE COMMANDS TO DO		
1445	035356			330\$:	CKLOOP	;LOOP IF SELECTED		
	035356	104406				TRAP C\$CLP1		
1446	035360				ENDSUB	;<<<<<<<<<<<< END SUBTEST >>>>>>>>>>>>		
	035360					L10045:		
	035360	104403				TRAP C\$ESUB		
1447	035362	023727	002214	000017	CMP FATFLG,#15.	;IS ERROR COUNT AT 25		
1448	035370	103402			BLO 999\$	;BR, IF LESS THAN 25		
1449	035372	004737	017262		JSR PC,CKDROP	;TRY TO DROP THE UNIT		
1450	035376			999\$:				
1451					;*			
1452					;			
1453					;TEST 2, SUBTEST 3			
1454					;			
1455					;			
1456					;VERIFIES THAT A SKIP TAPE MARKS REVERSE COMMAND			
1457					;ISSUED WHILE THE TAPE IS POSITIONED AT BOT CAUSES			
1458					;FUNCTION REJECT TERMINATION, WITH THE NON-EXECUTABLE			
1459					;FUNCTION (NEF) ERROR BIT SET.			
1460					;			
1461					;			
1462					;			
1463					;			
1464					;			
1465					;-			
1466	035376				BGN SUB	;>>>>>>>>> BEGIN SUBTEST ~~~~~~		
	035376					T2.3:		
	035376	104402				TRAP C\$BSUB		
1467	035400	004737	041252		JSR PC,T30REST	;SET COMMAND PACKET		
1468	035404	005037	036654		CLR T30FCN	;CLEAR FILE COUNTER		
1469	035410	004737	041344		JSR PC,T30RT2	;SET UP OTHER COMMAND PACKET		
1470	035414	004737	041406		JSR PC,T30RT3	;SET UP OTHER COMMAND PACKET		
1471	035420	012737	176750	036656	MOV #65000.,T30DLY	;SET UP DELAY COUNTER		
1472	035426	004737	016054		JSR PC,SOFINIT	;DO INITIALIZE ON CONTROLLER		
1473	035432	103426		10\$:	BCS 20\$	;BR IF INIT WAS OK		
1474	035434				DELAY 250	;DELAY ROUTINE CALL		
	035434	012727	000250			MOV #250,(PC)+		

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

SEQ 123

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

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TEST 1 - HARDWARE TEST 1-8 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		180\$:	CKLOOP				; LOOP IF SELECTED		
	035752	104406							TRAP	C\$CLP1
1577	035754			ENDSUB				; <<<<<<<< END SUBTEST >>>>>>>>		
	035754							L10046:		
	035754	104403							TRAP	C\$ESUB
1578	035756	023727	002214	000017	CMP	FATFLG, #15.		; IS ERROR COUNT AT 25		
1579	035764	103402			BLO	999\$		; BR, IF LESS THAN 25		
1580	035766	004737	017262		JSR	PC, CKDROP		; TRY TO DROP THE UNIT		
1581	035772			999\$:						
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 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	T3OFCN		; 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	10\$:	JSR	PC, SOFINIT		; DO INITIALIZE ON CONTROLLER		
1605	036026	103426			BCS	20\$		; BR IF INIT WAS OK		
1606	036030				DEI AY	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	10\$		; BR, IF MORE COUNTING TO DO		
1609	036066	005237	002214		INC	FATFLG		; ERROR COUNT		
1613	036072	010001			MOV	R0, R1		; CONTENTS OF TSSR REGISTER		
1614	036074				ERRDF	ERRNO, SFIERR, SFIMSG		; FATAL ERROR TSSR WAS NOT OK		
	036074	104455							TRAP	C\$ERDF
	036076	000361							.WORD	241
	036100	003646							.WORD	

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 20$: MOV UNITN,T30DSW ;SET UP UNIT NUMBER
1617 036112 012704 036500 MOV *T30PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
1618
1619 ;*****
1620 ;
1621 ;ISSUE WRITE CHARACTERISTICS COMMAND
1622 ;
1623 ;*****
1624
1625 036116 004737 010742 JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
1626 036122 103407 BCS 23$ ;BR, IF COMMAND ISSUED OK
1627 036124 005237 002214 INC FATFLG ;ERROR COUNT
1631 036130 010001 MOV RO,R1 ;SAVE CONTENTS OF TSSR
1632 036132 ERRHRD ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
1632 036132 104456 TRAP C$ERHRD
1632 036134 000362 .WORD 242
1632 036136 005052 .WORD WRTMSG
1632 036140 012114 .WORD SFMSG
1633 036142 23$: CKLOOP ;LOOP IF SELECTED
1633 036142 104406 TRAP C$CLP1
1634
1635 ;*****
1636 ;
1637 ;ISSUE A REWIND TO TAPE DRIVE AND WAIT FOR SSR TO SET
1638 ;
1639 ;*****
1640
1641 036144 004737 011074 JSR PC,REWIND ;CALL TAPE REWIND COMMAND
1642 036150 103411 BCS 30$ ;BR, IF NO PROBLEM
1643 036152 010004 MOV RO,R4 ;GET PACKET ADDRESS
1644 036154 016501 000002 MOV TSSR(R5),R1 ;GET STATUS REGISTER
1645 036160 005237 002214 INC FATFLG ;ERROR COUNT
1649 036164 ERRHRD ERRNO,T30RWN,PKTSSR ;REWIND NOT ACCEPTED
1649 036164 104456 TRAP C$ERHRD
1649 036166 000363 .WORD 243
1649 036170 040240 .WORD T30RWN
1649 036172 012126 .WORD PKTSSR
1650 036174 30$: CKLOOP ;LOOP IF SELECTED
1650 036174 104406 TRAP C$CLP1
1651
1652 ;*****
1653 ;
1654 ;GET EXTENDED STATUS REGISTER ZERO (XSTO) FROM MESSAGE BUFFER
1655 ;
1656 ;*****
1657
1658 036176 013701 036530 MOV T30BFR+6,R1 ;PICK UP XSTO
1659 036202 010102 MOV R1,R2 ;SET UP EXPECTED
1660 036204 052702 000002 BIS *BIT1,R2 ;SET BOT BIT IN EXPECTED
1661 036210 020102 CMP R1,R2 ;DOES EXP = REC'D
1662 036212 001406 BEQ 40$ ;BR, IF EQUAL (OK)
1663 036214 005237 002214 INC FATFLG ;ERROR COUNT
1667 036220 ERRHRD ERRNO,T30BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
1667 036220 104456 TRAP C$ERHRD
1667 036222 000364 .WORD 244
1667 036224 040041 .WORD T30BOT

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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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      036226 015554
1668 036230                                40$:  CKLOOP                                ;LOOP IF SELECTED                                .WORD  EXPREC
      036230 104406                                TRAP  C$CLP1
1669 036232 013737 003116 036622            MOV    FREE,T30WB                                ;SET UP GOOD WRITE BUFFER
1670 036240 012737 000400 036626            MOV    $256.,T30SZ                                ;SET UP SIZE
1671
1672      ;*****
1673      ;
1674      ;WRITE DATA,ACK,CVC=1 COMMAND
1675      ;
1676      ;*****
1677
1678 036246 012737 140005 036620            MOV    $140005,T30PK3                                ;WRITE DATA,ACK,CVC=1 COMMAND
1679 036254 012704 036620                    MOV    $T30PK3,R4                                ;SET UP R4 WITH PACKET ADDRESS
1680 036260 010465 000000                    MOV    R4,TSD8(R5)                                ;ISSUE COMMAND
1681 036264 004737 016330                    JSR    PC,WAITF                                ;WAIT FOR SSR TO SET
1682 036270 016501 000002                    MOV    TSSR(R5),R1                                ;GET TSSR CONTENTS
1683 036274 012702 000200                    MOV    $SSR,R2                                ;SET UP EXPECTED
1684 036300 020102                                CMP    R1,R2                                ;ARE THEY EQUAL
1685 036302 001406                                BEQ    70$                                ;BR. IF OK
1686 036304 005237 002214                    INC    FATFLG                                ;ERROR COUNT
1690 036310                    ERRHRD  ERRNO,T30WDD,PKTSSR                                ;TSSR INCORRECT AFTER WRITE DATA
      036310 104456                                TRAP  C$ERHRD
      036312 000365                                .WORD 245
      036314 037170                                .WORD T30WDD
      036316 012126                                .WORD PKTSSR
1691 036320                                70$:  CKLOOP                                ;LOOP IF SELECTED                                TRAP  C$CLP1
      036320 104406
1692
1693      ;*****
1694      ;
1695      ;SKIP TAPE MARK REVERSE,ACK,CVC=1 COMMAND
1696      ;
1697      ;*****
1698
1699 036322 012737 000001 036622            MOV    $1,T30WB                                ;# OF TM TO SKIP
1700 036330 012737 141410 036620            MOV    $141410,T30PK3                                ;SKIP TAPE MARK REVERSE,ACK,CVC=1 CMD
1701 036336 012704 036620                    MOV    $T30PK3,R4                                ;SET UP R4 WITH PACKET ADDRESS
1702 036342 010465 000000                    MOV    R4,TSD8(R5)                                ;ISSUE COMMAND
1703 036346 004737 016330                    JSR    PC,WAITF                                ;WAIT FOR SSR TO SET
1704 036352 016501 000002                    MOV    TSSR(R5),R1                                ;PICK UP TSSR
1705 036356 012702 100204                    MOV    $SSR!BIT2!SC,R2                                ;SET UP EXPECTED (SSR AND SC ONLY)
1706 036362 020102                                CMP    R1,R2                                ;WAS STATUS GOOD
1707 036364 001406                                BEQ    160$                                ;BR. IF TERMINATION WAS GOOD
1708 036366 005237 002214                    INC    FATFLG                                ;ERROR COUNT
1712 036372                    ERRHRD  ERRNO,T30IBU,PKTSSR                                ;TSSR NOT CORRECT AFTER WRT TAPE M.
      036372 104456                                TRAP  C$ERHRD
      036374 000366                                .WORD 246
      036376 036660                                .WORD T30IBU
      036400 012126                                .WORD PKTSSR
1713 036402                                160$: CKLOOP                                ;LOOP IF SELECTED                                TRAP  C$CLP1
      036402 104406
1714
1715      ;*****
1716      ;
1717      ;GET EXTENDED STATUS REGISTER ZERO (XST3) FROM MESSAGE BUFFER
1718      ;

```

[illegible]

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						
1797 036636			T30IMV:			
1798 036636			T30RN:			
1799 036636	000000			.WORD	000000	; NEITHER EWB NOR ESS
1800 036640	000100			.WORD	000100	; EWB SET
1801 036642	000200			.WORD	000200	; ESS SET
1802 036644	000300			.WORD	000300	; BOTH EWB AND ESS SET
1803 036646	177777			.WORD	177777	; END OF DATA
1804						
1805			:			
1806 036650	000000		T30CNT:	.WORD	0	; TAPE TIMER COUNTER STORAGE AREA
1807 036652	000000		T30CNU:	.WORD	0	; TAPE TIMER COUNTER STORAGE AREA
1808 036654	000000		T30FCN:	.WORD	0	; FILE NUMBER COUNTER
1809 036656	000000		T30DLY:	.WORD	0	; DELAY COUNTER STORAGE
1810			;			
1811			; LOCAL TEXT MESSAGES FOR TEST			
1812			;-			
1813						
1814 036660	124	123	123	T30IBU:	.ASCIIZ	'TSSR Incorrect After SKIP TAPE MARK REVERSE Into BOT'
1815 036745	122	111	102	T30RIB:	.ASCIIZ	'RIB Bit (XST3) Failed To Set After Reverse Into BOT'
1816 037031	124	123	123	T30IBT:	.ASCIIZ	'TSSR Incorrect After SKIP TAPE MARK REVERSE At BOT'
1817 037114	124	123	123	T30SKM:	.ASCIIZ	'TSSR Incorrect After SKIP TAPE MARK Command'
1818 037170	124	123	123	T30WDD:	.ASCIIZ	'TSSR Not Correct After WRITE DATA Command'
1819 037242	124	141	160	T30PTB:	.ASCIIZ	'Tape Not Positioned On Correct Record After READ REVERSE'
1820 037333	124	141	160	T30TPB:	.ASCIIZ	'Tape Not Positioned On Second File First Record'
1821 037413	124	123	123	T30RDF:	.ASCIIZ	'TSSR Incorrect After READ FORWARD Into "File"'
1822 037471	124	123	123	T30RDG:	.ASCIIZ	'TSSR Incorrect After SPACE Command Into TAPE MARK'
1823 037553	124	123	123	T30WDF:	.ASCIIZ	'TSSR Not Correct After Illegal Mode Bits Set'
1824 037630	111	154	154	T30LOQ:	.ASCIIZ	'Illegal Mode Bits, Failed To Set ILC Bit In XST0'
1825 037711	127	122	111	T30SSR:	.ASCIIZ	'WRITE MISCELLANEOUS Command Not Accepted'
1826 037762	124	123	123	T30WDE:	.ASCIIZ	'TSSR Not Correct After SKIP TAPE MARKS, At BOT'
1827 040041	124	141	160	T30BOT:	.ASCIIZ	'Tape Not At BOT After REWIND Command'
1828 040106	124	123	123	T30TM:	.ASCIIZ	'TSSR Not Correct After SPACE FORWARD Command'
1829 040163	124	123	123	T30TM2:	.ASCIIZ	'TSSR Not Correct After SPACE REVERSE Command'
1830 040240	122	145	167	T30RWN:	.ASCIIZ	'Rewind (POSITION) Command Not Accepted'
1831 040307	104	162	151	T30OFL:	.ASCIIZ	'Drive 7 Select Failed To Set "OFL" In TSSR'
1832 040362	124	123	123	T30WDC:	.ASCIIZ	'TSSR Not Correct After WRITE TAPE MARK Command'
1833 040441	103	126	103	T30VCK:	.ASCIIZ	'CVC Set, Didn't Reset VCK In Message Buffer'

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

SEQ 129

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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 T3ONEF: .ASCIZ 'SKIP TAPE MARKS, At BOT, Failed To Set NEF Bit'
1836 040655      124      115      113 T3ORRM: .ASCIZ 'TMK Not Set After READ REVERSE Into TAPE MARK'
1837 040733      124      115      113 T3ORRN: .ASCIZ 'TMK Not Set After SPACE REVERSE Into TAPE MARK'
1838 041012      124      115      113 T3ORRP: .ASCIZ 'TMK Not Set After READ FORWARD Into TAPE MARK'
1839 041070      116      117      040 T3ODTR: .ASCIZ 'NO Data Transferred On READ FORWARD'
1840 041134      104      141      164 T3ODTA: .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      T3OREST:
1851 041252      SAVREG
1852 041256      012701 036500      MOV      #T3OPACKET,R1      ;SAVE THE REGISTERS
1853 041262      012721 100004      MOV      #100004,(R1)+      ;START OF THE PACKET
1854 041266      012721 036510      MOV      #T30DATA,(R1)+      ;WRITE SUBSYSTEM MEM. WITH ACK,
1855 041272      005021      CLR      (R1)+      ;ADDRESS OF CHARAISTICS DATA BLOCK
1856 041274      012721 000012      MOV      #10.,(R1)+      ;EXTENDED ADDRESS
1857 041300      012721 036522      MOV      #T30BFR,(R1)+      ;SIZE OF DATA BLOCK IN BYTES
1858 041304      005021      CLR      (R1)+      ;ADDRESS OF MESSAGE BUFFER
1859 041306      012721 000024      MOV      #20.,(R1)+      ;LENGTH OF MESSAGE BUFFER
1860 041312      005021      CLR      (R1)+
1861 041314      012711 000000      MOV      #0,(R1)      ;SELECT DRIVE ZERO
1862 041320      012702 000030      MOV      #24.,R2      ;NUMBER OF LOCATIONS TO BE CLEARED
1863 041324      012762 177777 036522 64$: MOV      #177777,T30BFR(R2) ;ALL ONES TO MESSAGE BUFFER
1864 041332      005742      TST      -(R2)      ;NEXT LOCATION
1865 041334      022702 000000      CMP      #0.,R2      ;CHECK R2 FOR DONE
1866 041340      001371      BNE      64$      ;KEEP GOING UNTIL DONE
1867 041342      000207      RTS      PC      ;RETURN
1868
1869 041344      T3ORT2:
1870 041344      SAVREG
1871 041350      012701 036610      MOV      #T3OPK2,R1      ;SAVE THE REGISTERS
1872 041354      012721 100006      MOV      #100006,(R1)+      ;START OF THE PACKET
1873 041360      012721 036630      MOV      #T30BF2,(R1)+      ;WRITE SUBSYSTEM MEM. WITH ACK,
1874 041364      005021      CLR      (R1)+      ;ADDRESS OF DATA BLOCK
1875 041366      012721 000006      MOV      #6.,(R1)+      ;EXTENDED ADDRESS
1876 041372      005021      CLR      (R1)+      ;SIZE OF DATA BLOCK IN BYTES
1877 041374      012701 036630      MOV      #T30BF2,R1      ;POINT TO DATA SEL AREA
1878 041400      005021      CLR      (R1)+
1879 041402      005011      CLR      (R1)
1880 041404      000207      RTS      PC      ;RETURN
1881 041406
1882 041406      T3ORT3:
1883 041412      012701 036620      SAVREG
1884 041416      005021      MOV      #T3OPK3,R1      ;SAVE REGISTERS
1885 041420      005021      CLR      (R1)+      ;SET UP POINTER ADDRESS
1886 041422      005021      CLR      (R1)+      ;COMMAND SPACE
1887 041424      005011      CLR      (R1)+      ;ADDRESS OF DATA BLOCK
1888 041426      000207      CLR      (R1)+      ;EXTENDED ADDRESS
1889 041430      ENDTST      RTS      PC      ;SIZE OF DATA TRANSFER BLOCK
                                ;RETURN
                                L10043:

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[illegible]

B11

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

SEQ 131

041522	013727	002116				MOV	L#DLY,(PC)+	
041526	000000					.WORD	0	
041530	005367	177772				DEC	-6(PC)	
041534	001375					BNE	,-4	
041536	005367	177756				DEC	-22(PC)	
041542	001367					BNE	,-20	
1945	041544	005337	043342		DEC	T31DLY		BUMP COUNTER
1946	041550	001356			BNE	101		BR, IF COUNTER NOT DONE
1947	041552	005237	002214		INC	FATFLG		ERROR COUNT
1951	041556	010001			MOV	R0,R1		CONTENTS OF TSSR REGISTER
1952	041560				ERRDF	ERRNO,SFIERR,SFIMSG		FATAL ERROR TSSR WAS NOT OK
	041560	104455					TRAP	C#ERDF
	041562	000455				.WORD	301	
	041564	003646				.WORD	SFIERR	
	041566	012114				.WORD	SFIMSG	
1953	041570	013737	002174	043210	201:	MOV	UNITN,T31DSW	SET UP UNIT NUMBER IN PACKET
1954	041576	012704	043170			MOV	#T31PACKET,R4	SUBROUTINE NEEDS PACKET ADDRESS
1955	041602	004737	010742			JSR	PC,WRTCHR	ISSUE WRITE CHARACTERISTICS
1956	041606	103407				BCS	231	BR, IF COMMAND ISSUED OK
1957	041610	005237	002214			INC	FATFLG	ERROR COUNT
1961	041614	010001				MOV	R0,R1	SAVE CONTENTS OF TSSR
1962	041616					ERRHRD	ERRNO,WRTMSG,SFIMSG	WRITE CHARACTERISTIC FAILED
	041616	104456					TRAP	C#ERHRD
	041620	000456				.WORD	302	
	041622	005052				.WORD	WRTMSG	
	041624	012114				.WORD	SFIMSG	
1963	041626				231:	CKLOOP		LOOP IF SELECTED
	041626	104406					TRAP	C#CLP1
1964	041630	004737	011074			JSR	PC,REWIND	CALL TAPE REWIND COMMAND
1965	041634	103407				BCS	301	BR, IF NO PROBLEM
1966	041636	010004				MOV	R0,R4	SET UP REWIND PACKET ADDRESS
1967	041640	005237	002214			INC	FATFLG	ERROR COUNT
1971	041644					ERRHRD	ERRNO,T31RWN,PKTSSR	REWIND NOT ACCEPTED
	041644	104456					TRAP	C#ERHRD
	041646	000457				.WORD	303	
	041650	044674				.WORD	T31RWN	
	041652	012126				.WORD	PKTSSR	
1972	041654				301:	CKLOOP		LOOP IF SELECTED
	041654	104406					TRAP	C#CLP1
1973	041656	013701	043220			MOV	T31BFR+6,R1	PICK UP XSTO
1974	041662	010102				MOV	R1,R2	SET UP EXPECTED
1975	041664	052702	000002			BIS	#BIT1,R2	SET BOT BIT IN EXPECTED
1976	041670	020102				CMP	R1,R2	DOES EXP = REC'D
1977	041672	001406				BEQ	401	BR, IF EQUAL (OK)
1978	041674	005237	002214			INC	FATFLG	ERROR COUNT
1982	041700					ERRHRD	ERRNO,T31BOT,EXPREC	TAPE NOT AT BOT AFTER REWIND
	041700	104456					TRAP	C#ERHRD
	041702	000460				.WORD	304	
	041704	044345				.WORD	T31BOT	
	041706	015554				.WORD	EXPREC	
1983	041710				401:	CKLOOP		LOOP IF SELECTED
	041710	104406					TRAP	C#CLP1
1984	041712	013737	003116	043312		MOV	FREE,T31WB	STARTING WRITE BUFFER ADDRESS
1985	041720	012737	140005	043310	651:	MOV	#140005,T31PK3	WRITE DATA,CVC=1,ACK COMMAND
1986	041726	012704	043310			MOV	#T31PK3,R4	SET UP R4 WITH PACKET ADDRESS
1987	041732	012700	000144			MOV	#100.,R0	SET PATTERN IN CORRECT REGISTER
1988	041736	004737	017502			JSR	PC,FILLMEM	FILL MEMORY WITH RECORD SIZE

C11

TEST 1: HARDWARE TEST 1-B 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,T31WDC	;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	80#	;BR, IF OK		
1996	041774	005237	002214		INC	FATFLG	;ERROR COUNT		
2000	042000				ERRHRD	ERRNO,T31WDC,PKTSSR	;TSSR INCORRECT AFTER WRITE DATA		
	042000	104456					TRAP	C#ERHRD	
	042002	000461					.WORD	305	
	042004	045230					.WORD	T31WDC	
	042006	012126					.WORD	PKTSSR	
2001	042010				80#:	CKLOOP	;LOOP IF SELECTED		
	042010	104406					TRAP	C#CLP1	
2002	042012	004737	011074		JSR	PC,REWIND	;CALL TAPE REWIND COMMAND		
2003	042016	103407			BCS	230#	;BR, IF NO PROBLEM		
2004	042020	010001			MOV	R0,R1	;SAVE TSSR		
2005	042022	005237	002214		INC	FATFLG	;ERROR COUNT		
2009	042026				ERRHRD	ERRNO,T31RWN,EXPREC	;REWIND NOT ACCEPTED		
	042026	104456					TRAP	C#ERHRD	
	042030	000462					.WORD	306	
	042032	044674					.WORD	T31RWN	
	042034	015554					.WORD	EXPREC	
2010	042036				230#:	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	240#	;BR, IF EQUAL (OK)		
2016	042056	005237	002214		INC	FATFLG	;ERROR COUNT		
2020	042062				ERRHRD	ERRNO,T31BOT,EXPREC	;TAPE NOT AT BOT AFTER REWIND		
	042062	104456					TRAP	C#ERHRD	
	042064	000463					.WORD	307	
	042066	044345					.WORD	T31BOT	
	042070	015554					.WORD	EXPREC	
2021	042072				240#:	CKLOOP	;LOOP IF SELECTED		
	042072	104406					TRAP	C#CLP1	
2022	042074	012737	041012	043310	265#:	MOV	#041012,T31PK3		
2023	042102	012704	043310		MOV	#T31PK3,R4	;NO-OP,CVC=1 COMMAND		
2024	042106	010337	043316		MOV	R3,T31SZ	;SET UP R4 WITH PACKET ADDRESS		
2025	042112	010465	000000		MOV	R4,T31WDC	;SET UP RECORD SIZE IN PACKET		
2026	042116	004737	016330		JSR	PC,WAITF	;ISSUE COMMAND		
2027	042122	016501	000002		MOV	TSSR(R5),R1	;WAIT FOR SSR TO SET		
2028	042126	012702	000200		MOV	#SSR,R2	;GET TSSR CONTENTS		
2029	042132	020102			CMP	R1,R2	;SET UP EXPECTED		
2030	042134	001406			BEQ	280#	;ARE THEY EQUAL		
2031	042136	005237	002214		INC	FATFLG	;BR, IF OK		
2035	042142				ERRHRD	ERRNO,T31RDF,PKTSSR	;ERROR COUNT		
	042142	104456					;TSSR INCORRECT AFTER READ DATA		
	042144	000464					TRAP	C#ERHRD	
	042146	043543					.WORD	308	
	042150	012126					.WORD	T31RDF	
2036	042152				280#:	CKLOOP	;LOOP IF SELECTED		
	042152	104406					TRAP	C#CLP1	
2037	042154	013701	043220		MOV	T31BFR+6,R1	;PICK UP XSTO		

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

SEQ 133

Line	Address	Offset	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 3: NO-OP ("CLEAN TAPE") AND INITIALIZE

SEQ 134

[illegible]

F11

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	104406					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 XST0
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	104456					TRAP	C\$ERHRD
	042756	000477					.WORD	319
	042760	043543					.WORD	T31RDF
	042762	012126					.WORD	PKTSSR

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

SEQ 136

Line	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
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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

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2298 ;LOCAL TEXT MESSAGES FOR TEST
2299 ;-
2300
2301 043344 124 123 123 T31RDE: .ASCIZ 'TSSR Not Correct After PEAD 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 NOP 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 T31REST:
2344 046610 SAVREG
2345 046614 MOV #T31PACKET,R1 ;SAVE THE REGISTERS
2346 046620 MOV #100004,(R1)+ ;START OF THE PACKET
2347 046624 MOV #T31DATA,(R1)+ ;WRITE SUBSYSTEM MEM. WITH ACK,
2348 046630 CLR (R1)+ ;ADDRESS OF CHARAISTICS DATA BLOCK
2349 046632 MOV #10.,(R1)+ ;EXTENDED ADDRESS
2350 046636 MOV #T31BFR,(R1)+ ;SIZE OF DATA BLOCK IN BYTES
2351 046642 CLR (R1)+ ;ADDRESS OF MESSAGE BUFFER
2352 046644 MOV #20.,(R1)+ ;LENGTH OF MESSAGE BUFFER
2353 046650 CLR (R1)+
2354 046652 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

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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
2383 046766 104401      L10050:      TRAP      C$ETST
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      ;

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.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.

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 4: ERASE AND OPERATION INCOMPLETE

SEQ 141

Address	Instruction	Comments	Labels	Registers	Operands	Flow Control	Errors
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 CHARACTERISTISC 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 WITH PACKET ADDRESS	
2486 047244	010337	051456		27\$:	MOV R3,T32SZ	;SET UP RECORD SIZE IN PACKET	
2487 047250	010465	000000			MOV R4,TSDB(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	
2501 047320	001351				BNE 27\$	;BR, IF NOT AT END OF LOOP	
2502 047322	004737	011074			JSR PC,REWIND	;CALL TAPE REWIND COMMAND	
2503 047326	103411				BCS 30\$	;BR, IF NO PROBLEM	
2							

Address	Offset	Label	Instruction	Comment	Trap	Trap Code
047346	051700					T32RWN
047350	012126					PKTSSR
2511 047352		30\$:	CKLOOP	;LOOP IF SELECTED		
047352	104406				TRAP	C\$CLP1
2512 047354	013701	051360	MOV	T32BFR+6,R1		
2513 047360	010102		MOV	R1,R2		
2514 047362	052702	000002	BIS	#BIT1,R2		
2515 047366	020102		CMP	R1,R2		
2516 047370	001406		BEQ	40\$		
2517 047372	005237	002214	INC	FATFLG		
2521 047376			ERRHRD	ERRNO,T32BOE,EXPREC		
047376	104456				TRAP	C\$ERHRD
047400	000626				.WORD	406
047402	052366				.WORD	T32BOE
047404	015554				.WORD	EXPREC
2522 047406		40\$:	CKLOOP	;LOOP IF SELECTED		
047406	104406				TRAP	C\$CLP1
2523 047410	012737	140411	MOV	#140411,T32PK3		
2524 047416	012704	051450	MOV	#T32PK3,R4		
2525 047422	010465	000000	MOV	R4,TSDB(R5)		
2526 047426	004737	016330	JSR	PC,WAITF		
2527 047432	016501	000002	MOV	TSSR(R5),R1		
2528 047436	012702	000200	MOV	#SSR,R2		
2529 047442	020102		CMP	R1,R2		
2530 047444	001406		BEQ	50\$		
2531 047446	005237	002214	INC	FATFLG		
2535 047452			ERRHRD	ERRNO,T32ERA,PKTSSR		
047452	104456				TRAP	C\$ERHRD
047454	000627				.WORD	407
047456	052016				.WORD	T32ERA
047460	012126				.WORD	PKTSSR
2536 047462		50\$:	CKLOOP	;LOOP IF SELECTED		
047462	104406				TRAP	C\$CLP1
2537 047464	013701	051360	MOV	T32BFR+6,R1		
2538 047470	010102		MOV	R1,R2		
2539 047472	042702	000002	BIC	#BIT1,R2		
2540 047476	020102		CMP	R1,R2		
2541 047500	001406		BEQ	55\$		
2542 047502	005237	002214	INC	FATFLG		
2546 047506			ERRHRD	ERRNO,T32BOE,EXPREC		
047506	104456				TRAP	C\$ERHRD
047510	000630				.WORD	408
047512	052366				.WORD	T32BOE
047514	015554				.WORD	EXPREC
2547 047516		55\$:	CKLOOP	;LOOP IF SELECTED		
047516	104406				TRAP	C\$CLP1
2548 047520	013737	003116	MOV	FREE,T32RB		
2549 047526	012737	140401	MOV	#140401,T32PK3		
2550 047534	012737	000400	MOV	#256.,T32SZ		
2551 047542	012704	051450	MOV	#T32PK3,R4		
2552 047546	010465	000000	MOV	R4,TSDB(R5)		
2553 047552	004737	016330	JSR	PC,WAITF		
2554 047556	016501	000002	MOV	TSSR(R5),R1		
2555 047562	012702	100204	MOV	#SSR!SC!BIT2,R2		
2556 047566	020102		CMP	R1,R2		
2557 047570	001406		BEQ	180\$		
2558 047572	005237	002214	INC	FATFLG		

2562	047576				ERRHRD	ERRNO,T32TSA,PKTSSR	;TSSR INCORRECT AFTER READ DATA		
	047576	104456						TRAP	C\$ERHRD
	047600	000631						.WORD	409
	047602	052311						.WORD	T32TSA
	047604	012126						.WORD	PKTSSR
2563	047606		180\$:		CKLOOP		;LOOP IF SELECTED		
	047606	104406						TRAP	C\$CLP1
2564	047610	013701	051366		MOV	T32BFR+14,R1	;GET XST3 STATUS WORD		
2565	047614	010102			MOV	R1,R2	;SET UP EXPECTED		
2566	047616	052702	000001		BIS	#BIT0,R2	;SET THE RIB BIT		
2567	047622	020102			CMP	R1,R2	;ARE THEY EQUAL		
2568	047624	001406			BEQ	190\$	;BR, IF EQUAL (GOOD)		
2569	047626	005237	002214		INC	FATFLG	;ERROR COUNT		
2573	047632				ERRHRD	ERRNO,T32RIB,EXPREC	;RIB SHOULD BE SET		
	047632	104456						TRAP	C\$ERHRD
	047634	000632						.WORD	410
	047636	052136						.WORD	T32RIB
	047640	015554						.WORD	EXPREC
2574	047642		190\$:						
2575	047642				ENDSUB		;>>>>>>>>>> END SUBTEST >>>>>>>>>		
	047642						L10054:		
	047642	104403						TRAP	C\$ESUB
2576	047644	023727	002214	000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25		
2577	047652	103402			BLO	999\$	;BR, IF LESS THAN 25		
2578	047654	004737	017262		JSR	PC,CKDROP	;TRY TO DROP THE UNIT		
2579	047660		999\$:						
2580			:						
2581			:						
2582			: TEST 4, SUBTEST 2						
2583			:						
2584			:						
2585			:						
2586			:						
2587			:						
2588			:						
2589			:						
2590			:						
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2594			:						
2595			:						
2596			:						
2597			:						
2598			:						
2599			:						
2600			:						
2601			:						
2602			:						
2603			:						
2604			:						
2605			:						
2606			:						
2607			:						
2608			:						
2609			:						
2610			:						

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

SEQ 144

[illegible]

C12

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	0140005,T32PK3		;WRITE DATA,CVC*1,ACK COMMAND
2662	050072	012704	051450		MOV	0T32PK3,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	0SSR,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	C1ERRHRD
	050142	000637					.WORD	415
	050144	052536					.WORD	T32WDC
	050146	012126					.WORD	PKTSSR
2677	050150			804:	CKLOOP			;LOOP IF SELECTED
	050150	104406					TRAP	C1CLP1
2678	050152	005723			TST	(R3),		;BUMP RECORD SIZE COUNTER
2679	050154	020327	000156		CMP	R3,0110.		;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	C1ERRHRD
	050200	000640					.WORD	416
	050202	051700					.WORD	T32RWN
	050204	015554					.WORD	EXPREC
2689	050206			2304:	CKLOOP			;LOOP IF SELECTED
	050206	104406					TRAP	C1CLP1
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	081T1,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	C1ERRHRD
	050234	000641					.WORD	417
	050236	051516					.WORD	T32BOT
	050240	015554					.WORD	EXPREC
2700	050242			2404:	CKLOOP			;LOOP IF SELECTED
	050242	104406					TRAP	C1CLP1
2701	050244	012703	000001		MOV	01,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	0140411,T32PK3		;ERASE DATA,ACK COMMAND
2704	050262	012704	051450		MOV	0T32PK3,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	0SSR,R2		;SET UP EXPECTED
2709	050306	020102			CMP	R1,R2		;ARE THEY EQUAL

Line	Address	Offset	Label	Operation	Comments
2710	050310	001406			
2711	050312	005237	002214	BEQ INC	280\$ 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	#140401,T32PK3
2719	050344	012737	000144	MOV	#100.,T32SZ
2720	050352	012704	051450	MOV	#T32PK3,R4
2721	050356	010465	000000	MOV	R4,TSD8(R5)
2722	050362	004737	016330	JSR	PC,WAITF
2723	050366	016501	000002	MOV	TSSR(R5),R1
2724	050372	012702	000200	MOV	#SSR,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	#FREE,R1
2734	050424	012702	000144	MOV	#100.,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,#15.
2746	050462	103402	000017	BLO	999\$
2747	050464	004737	017262	JSR	PC,CKDROP
2748	050470		999\$:		
2749			;		
2750			;		
2751			TEST 4, SUBTEST 3		
2752			;		
2753			;		
2754			VERIFIES THAT AN ERASE COMMAND ENCOUNTERING THE EOT MARKER, OR		
2755			EXECUTED BEYOND THE EOT MARKER, CAUSES TAPE STATUS ALERT		
2756			TERMINATION WITH THE EOT STATUS BIT SET. ALSO VERIFIES THAT THE		
2757			OTHER TAPE MOTION COMMANDS EXECUTED WHEN THE TAPE IS BLANK		
2758			RESULT IN UNRECOVERABLE ERROR TERMINATION AND OPERATION		
			INCOMPLETE STATUS. THE FOLLOWING TEST SEQUENCE IS EXECUTED:		

Address	Op Code	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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Line	Address	Offset	Label	Operation	Register/Value	Comment	Trap	Offset
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	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,TSD8(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						

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

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Line	Address	Hex	Label	Op	Opnd	Comment
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	051452	MOV	FREE,T32RB
2866	051066	011337	051450	265\$:	MOV	(R3),T32PK3
2867	051072	012704	051450		MOV	#T32PK3,R4
2868	051076	012700	177777		MOV	#177777,R0
2869	051102	004737	017502		JSR	PC,FILLMEM
2870	051106	012737	000144	051456	MOV	#100.,T32SZ
2871	051114	010465	000000		MOV	R4,TSD8(R5)
2872	051120	012737	000062	051514	MOV	#50.,T32DLY
2873	051126	004737	016330	270\$:	JSR	PC,WAITF
2874	051132	016501	000002		MOV	TSSR(R5),R1
2875	051136	012702	100214		MOV	#SSR!SC!BIT2!BIT3,R2
2876	051142	020102			CMP	R1,R2
2877	051144	001425			BEQ	280\$
2878	051146				DELAY	250
	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
2880	051202	001351			BNE	270\$
2881	051204	005237	002214		INC	FATFLG
2885	051210				ERRHRD	ERRNO,T32ECF,PKTSSR
	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
2888	051226	010102			MOV	R1,R2
2889	051230	052702	000100		BIS	#BIT6,R2
2890	051234	020102			CMP	R1,R2
2891	051236	001406			BEQ	290\$
2892	051240	005237	002214		INC	FATFLG
2896	051244				ERRHRD	ERRNO,T32OPI,EXPREC
	051244	104456				TRAP C\$ERHRD
	051246	000654				.WORD 428
	051250	052603				.WORD T32OPI
	051252	015554				.WORD EXPREC
2897	051254		290\$:	CKLOOP		;LOOP IF SELECTED

[illegible]

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
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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
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2976 051510 000000
2977 051512 000000
2978 051514 000000
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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
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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'
TST32ID: .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 031352 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              ENDTST
3042 053044 104401              L10053: TRAP      C$ETST
3043
3044              .SBTTL TEST 5: DATA PARITY TEST
3045
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,SFIERR,SFIMSG	;FATAL ERROR TSSR WAS NOT OK	
	053210	104455					TRAP	C\$ERDF
	053212	000765					.WORD	501
	053214	003646					.WORD	SFIERR
	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	104406					TRAP	C\$ERHRD
	053336	000000					.WORD	504
	053340	055325					.WORD	T33BOT
	053342	015554					.WORD	EXPREC

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

SEQ 155

3170	053344			40\$:	CKLOOP		;LOOP IF SELECTED
	053344	104406					TRAP C\$CLP1
3171	053346	005737	002220	42\$:	TST	EXTFEA	;CHECK FOR EXTENDED FEATURES SW SWITCH
3172	053352	001025			BNE	55\$	;BR IF SWITCH IS ON
3173	053354	112737	000200		MOVB	#200,T33BS1	;WRITE MISCELLANEOUS CONT/READ STATUS
3174	053362	112737	000010		MOVB	#10,T33BS0	;FUNC. SEL. BIT (TURN ON EXTFEA SWITCH)
3175	053370	012704	054660		MOV	#T33PK2,R4	;WRITE SUBSYS MEM PACKET
3176	053374	010465	000000		MOV	R4,TSDB(R5)	;ISSUE COMMAND
3177	053400	004737	016416		JSR	PC,CHKTSSR	;WAIT FOR SSR
3178	053404	103407			BCS	50\$	;BR, IF NO ERROR
3179	053406	010001			MOV	R0,R1	;ERROR, SAVE TSSR
3180	053410	005237	002214		INC	FATFLG	;ERROR COUNT
3184	053414				ERRHRD	ERRNO,T33SSR,PKTSSR	;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
	053414	104456					TRAP C\$ERHRD
	053416	000771					.WORD 505
	053420	055241					.WORD T33SSR
	053422	012126					.WORD PKTSSR
3185	053424			50\$:	CKLOOP		;LOOP IF SELECTED
	053424	104406					TRAP C\$CLP1
3186	053426	005737	002222	55\$:	TST	BENBSW	;CHECK FOR BUFFER ENABLED
3187	053432	001426			BEQ	70\$	;BR, IF BUFFERING NOT ENABLED
3188	053434	013737	002174		MOV	UNITN,T33DSW	;SET UP UNIT NUMBER
3189	053442	042737	000020		BIC	#BIT4,T33DSW	;BUFFER DISABLE
3190	053450	052737	000010		BIS	#BIT3,T33DSW	;BUFFER DISABLE SEND 01 TO BITS 4 AND 3
3191	053456	012704	054550		MOV	#T33PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS
3192	053462	004737	010742		JSR	PC,WRTCHR	;ISSUE WRITE CHARACTERISTICS
3193	053466	103407			BCS	60\$	;BR, IF COMMAND ISSUED OK
3194	053470	005237	002214		INC	FATFLG	;ERROR COUNT
3198	053474	010001			MOV	R0,R1	;SAVE CONTENTS OF TSSR
3199	053476				ERRHRD	ERRNO,WRTMSG,SFMSG	;WRITE CHARACTERISTICS FAILED
	053476	104456					TRAP C\$ERHRD
	053500	000772					.WORD 506
	053502	005052					.WORD WRTMSG
	053504	012114					.WORD SFMSG
3200	053506			60\$:	CKLOOP		;LOOP IF SELECTED
	053506	104406					TRAP C\$CLP1
3201	053510			70\$:			
3202	053510	112737	000100		MOVB	#100,T33BS1	;WRITE MISCELLANEOUS CONT/READ STATUS
3203	053516	112737	000011		MOVB	#11,T33BS0	;FUNC. SEL. BIT (SET WRONG PARITY)
3204	053524	012704	054660		MOV	#T33PK2,R4	;WRITE SUBSYS MEM PACKET
3205	053530	010465	000000		MOV	R4,TSDB(R5)	;ISSUE COMMAND
3206	053534	004737	016416		JSR	PC,CHKTSSR	;WAIT FOR SSR
3207	053540	103407			BCS	80\$	;BR, IF NO ERROR
3208	053542	010001			MOV	R0,R1	;ERROR, SAVE TSSR
3209	053544	005237	002214		INC	FATFLG	;ERROR COUNT
3213	053550				ERRHRD	ERRNO,T33SSR,PKTSSR	;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
	053550	104456					TRAP C\$ERHRD
	053552	000773					.WORD 507
	053554	055241					.WORD T33SSR
	053556	012126					.WORD PKTSSR
3214	053560			80\$:	CKLOOP		;LOOP IF SELECTED
	053560	104406					TRAP C\$CLP1
3215	053562	012703	000026		MOV	#22,R3	;NUMBER OF RECORDS TO BE WRITTEN
3216	053566	013737	003116		MOV	FREE,T33WB	;STARTING WRITE BUFFER ADDRESS
3217	053574	005037	054720		CLR	T33CNU	;MAKE SURE ITS CLEAR
3218	053600	012737	140005		MOV	#140005,T33PK3	;WRITE DATA,ACK,CVC=1 COMMAND
3219	053606	012704	054670		MOV	#T33PK3,R4	;SET UP R4 WITH PACKET ADDRESS

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

SEQ 156

3220	053612	012737	000024	054676	MOV	#20.,T33SZ	;SET UP RECORD SIZE IN PACKET		
3221	053620	013777	054720	127270	MOV	T33CNU,0FREE	;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 SSR 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			DCS	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+6,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

SEQ 157

3269	054022	005037	054720		CLR	T33CNU		ICLEAR DATA VALUE IN RECORD
3270	054026	012703	000024		MOV	#20.,R3		IRECORD SIZE
3271	054032	013737	003116	054672	1554:	MOV	FREE,T33RB	ISTARTING WRITE BUFFER ADDRESS
3272	054040	012737	140001	054670		MOV	#140001,T33PK3	IREAD DATA,CVC=1,ACK COMMAND
3273	054046	012704	051670			MOV	#T33PK3,R4	ISSET UP R4 WITH PACKET ADDRESS
3274	054052	012737	000024	054676		MOV	#20.,T33SZ	ISSET UP RECORD SIZE IN PACKET
3275	054060	010465	000000			MOV	R4,T33DB(R5)	ISSUE COMMAND
3276	054064	004737	010330			JSR	PC,WAITF	IWAIT FOR SSR TO SET
3277	054070	016501	000000			MOV	T33R(R5),R1	IGET T33R CONTENTS
3278	054074	012702	100210			MOV	#SSR!SC!BIT3,R2	ISSET UP EXPECTED
3279	054100	020102				CMP	R1,R2	IFARE THEY EQUAL
3280	054102	001406				BEQ	1604	IBR, IF OK
3281	054104	005237	002214			INC	FATFLG	IERROR COUNT
3285	054110					ERRHRD	ERRNO,T33WDC,PKTSSR	ITSSR INCORRECT AFTER WRITE DATA
	054110	104456						TRAP C1ERRHRD
	054112	001000						.WORD 512
	054114	055467						.WORD T33WDC
	054116	012126						.WORD PKTSSR
3286	054120				1604:	CKLOOP		ILLOOP IF SELECTED
	054120	104406						TRAP C1CLP1
3287	054122	013701	054602			MOV	T33BFR+10,R1	IPICK UP XST1
3288	054126	010102				MOV	R1,R2	ISSET UP EXPECTED
3289	054130	052702	000002			BIS	#BIT1,R2	ISSET UNC BIT IN EXPECTED
3290	054134	020102				CMP	R1,R2	IDOES EXP = REC'D
3291	054136	001406				BEQ	1704	IBR, IF EQUAL (OK)
3292	054140	005237	002214			INC	FATFLG	IERROR COUNT
3296	054144					ERRHRD	ERRNO,T33UND,EXPREC	IUNC 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		ILLOOP IF SELECTED
	054154	104406						TRAP C1CLP1
3298	054156	013701	054602			MOV	T33BFR+10,R1	IPICK UP XST1
3299	054162	010102				MOV	R1,R2	ISSET UP EXPECTED
3300	054164	052702	000400			BIS	#BIT8,R2	ISSET RBP BIT IN EXPECTED
3301	054170	020102				CMP	R1,R2	IDOES EXP = REC'D
3302	054172	001406				BEQ	1804	IBR, IF EQUAL (OK)
3303	054174	005237	002214			INC	FATFLG	IERROR COUNT
3307	054200					ERRHRD	ERRNO,T33RBP,EXPREC	IREAD 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		ILLOOP IF SELECTED
	054210	104406						TRAP C1CLP1
3309	054212	017701	126700			MOV	FREE,R1	IGET DATA READ
3310	054216	013702	054720			MOV	T33CNU,R2	IGET PATTERN
3311	054222	020102				CMP	R1,R2	IFARE THEY EQUAL
3312	054224	001406				BEQ	1824	IBR, IF OK
3313	054226	005237	002214			INC	FATFLG	IERROR COUNT
3317	054232					ERRHRD	ERRNO,T33DIA,EXPREC	IDATA NOT CORRECT
	054232	104456						TRAP C1ERRHRD
	054234	001003						.WORD 515
	054236	055550						.WORD T33DIA
	054240	015554						.WORD EXPREC
3318	054242				1824:	CKLOOP		ILLOOP IF SELECTED

C13

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

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3319	054242	104406			MOV	FREE,T33WB		TRAP	C1CLP1
3320	054244	013737	003116	054672	MOV	0140401,T33PK3		STARTING WRITE BUFFER ADDRESS	
3321	054252	012737	140401	054670	195:	MOV	0T33PK3,R4	READ REVERSE DATA RETRY,ACK COMMAND	
3322	054260	012704	054670		MOV	020.,T33SZ		SET UP R4 WITH PACKET ADDRESS	
3323	054264	012737	000024	054676	MOV	R4,TSD8(R5)		SET UP RECORD SIZE IN PACKET	
3324	054272	010465	000000		MOV	PC,WAITF		ISSUE COMMAND	
3325	054276	004737	016330		JSR	TSSR(R5),R1		WAIT FOR SSR TO SET	
3326	054302	016501	000002		MOV	0SC!SSR!BIT3,R2		GET TSSR CONTENTS	
3327	054306	012702	100210		MOV	R1,R2		SET UP EXPECTED	
3328	054312	020102			CMP	190:		ARE THEY EQUAL	
3329	054314	001406			BEQ	FATFLG		BR, IF OK	
3333	054316	005237	002214		INC	ERRHRD		ERROR COUNT	
	054322	104456			ERRNO,T33WDC,PKTSSR			TSSR INCORRECT AFTER WRITE DATA	
	054324	001004					TRAP	C1ERHRD	
	054326	055467					.WORD	516	
	054330	012126					.WORD	T33WDC	
3334	054332				190:	CKLOOP		.WORD	PKTSSR
	054332	104406						LOOP IF SELECTED	
3335	054334	013701	054602		MOV	T33BFR+10,R1		TRAP	C1CLP1
3336	054340	010102			MOV	R1,R2		PICK UP XST1	
3337	054342	052702	000002		BIS	0BIT1,R2		SET UP EXPECTED	
3338	054346	020102			CMP	R1,R2		SET UNC BIT IN EXPECTED	
3339	054350	001406			BEQ	200:		DOES EXP = REC'D	
3340	054352	005237	002214		INC	FATFLG		BR, IF EQUAL (OK)	
3344	054356				ERRHRD	ERRNO,T33UND,EXPREC		ERROR COUNT	
	054356	104456						TAPE NOT AT BOT AFTER REWIND	
	054360	001005					TRAP	C1ERHRD	
	054362	055152					.WORD	517	
	054364	015554					.WORD	T33UND	
3345	054366				200:	CKLOOP		.WORD	EXPREC
	054366	104406						LOOP IF SELECTED	
3346	054370	013701	054602		MOV	T33BFR+10,R1		TRAP	C1CLP1
3347	054374	010102			MOV	R1,R2		PICK UP XST0	
3348	054376	052702	000400		BIS	0BIT8,R2		SET UP EXPECTED	
3349	054402	020102			CMP	R1,R2		SET RBP BIT IN EXPECTED	
3350	054404	001406			BEQ	210:		DOES EXP = REC'D	
3351	054406	005237	002214		INC	FATFLG		BR, IF EQUAL (OK)	
3355	054412				ERRHRD	ERRNO,T33RBP,EXPREC		ERROR COUNT	
	054412	104456						READ BUS PARITY ERROR BIT NOT SET	
	054414	001006					TRAP	C1ERHRD	
	054416	054724					.WORD	518	
	054420	015554					.WORD	T33RBP	
3356	054422				210:	CKLOOP		.WORD	EXPREC
	054422	104406						LOOP IF SELECTED	
3357	054424	017701	126466		MOV	0FREE,R1		TRAP	C1CLP1
3358	054430	013702	054720		MOV	T33CMU,R2		GET DATA READ	
3359	054434	020102			CMP	R1,R2		GET PATTERN	
3360	054436	001406			BEQ	215:		ARE THEY EQUAL	
3361	054440	005237	002214		INC	FATFLG		BR, IF OK	
3365	054444				ERRHRD	ERRNO,T33DTA,EXPREC		ERROR COUNT	
	054444	104456						DATA NOT CORRECT	
	054446	001007					TRAP	C1ERHRD	
	054450	055550					.WORD	519	
	054452	015554					.WORD	T33DTA	
3366	054454				215:	CKLOOP		.WORD	EXPREC
	054454	104406						LOOP IF SELECTED	
							TRAP	C1CLP1	

3367	054456	010302		
3368	054460	012703	000001	
3369	054464	004737	010544	
3370	054470	010203		
3371	054472	005237	054720	
3372	054476	005303		
3373	054500	001402		
3374	054502	000137	054032	
3375	054506			
3376	054506			
	054506	104403		
3377	054510	023727	002214	000017
3378	054516	103402		
3379	054520	004737	017262	
3380	054524			
3381				
3382				
3383				
3384	054524	004737	016536	
3385	054530	103002		
3386	054532	000137	053076	
3387	054536			
	054536	104432		
	054540	001300		
3388				
3389				
3390				
3392		054550		
3394	054550			
3395	054550	100004		
3396	054552	054560		
3397	054554	000000		
3398	054556	000012		
3399	054560			
3400	054560	054572		
3401	054562	000000		
3402	054564	000024		
3403	054566	000000		
3404	054570	000000		
3405	054572			
3406				
3407				
3408				
3410		054660		
3412	054660			
3413	054660	100006		
3414	054662	054700		
3415	054664	000000		
3416	054666	000006		
3417				
3421	054670			
3422	054670	100005		
3423	054672			
3424	054672	003116		
3425	054674	000000		
3426	054676	000000		

```

MOV      R3,R2
MOV      #1,R3
JSR      PC,SPACE
MOV      R2,R3
INC      T33CNU
DEC      R3
BEQ      220$
JMP      155$
220$:
        ENDSUB

        CMP      FATFLG,#15.
        RLO
        JSR      PC,CKDROP
999$:
;
;
;
        JSR      PC,TSTLOOP
        BCC      230$
        JMP      T33LOOP
230$:
        EXIT      TST

;
;LOCAL STORAGE FOR THIS TEST
;
        .=<.,10>&177770
T33PACKET:
        .WORD      100004
        .WORD      T33DATA
        .WORD      0
        .WORD      10.
T33DATA:
        .WORD      T33BFR
        .WORD      0
        .WORD      20.
        .WORD      0
T33DSW: .WORD      0
T33BFR: .BLKW      25.
;
;WRITE SUBSYSTEM MEMORY COMMAND PACKET
;
        .=<.,10>&177770
T33PK2:
        .WORD      100006
        .WORD      T33BF2
        .WORD      0
        .WORD      6.
T33PK3:
        .WORD      100005
T33RB:
T33WB: .WORD      FREE
        .WORD      0
T33SZ: .WORD      0

```

```

;SAVE R3 FOR A MOMENT
;SPACE FORWARD ONE RECORD
;CALL ROUTINE
;RESTORE R3
;BUMP TO NEXT RECORD NUMBER
;BUMP COUNTER
;BR, IF DONE
;BR, IF NOT DONE YET

;<<<<<<<<<<<< END SUBTEST >>>>>>>>>>>>
                L10060:
                        TRAP      C$ESUB
;IS ERROR COUNT AT 25
;BR, IF LESS THAN 25
;TRY TO DROP THE UNIT

;DO WE NEED TO ITERATE TEST
;BR, IF NO LOOP REQUIRED
;EXECUTE AGAIN
;ALL DONE THIS TEST
                                TRAP      C$EXIT
                                .WORD     L10057-.

;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)

```

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: .ASCIZ 'Read Bus Parity Bit Not Set (XST1), Should Be'
3455 055002 124 123 123 T33WPW: .ASCIZ 'TSSR Incorrect After Wrong Parity Write Command'
3456 055062 125 116 103 T33UNC: .ASCIZ 'UNC Bit (XST1) Not Set After Wrong Parity WRITE Command'
3457 055152 125 116 103 T33UND: .ASCIZ 'UNC Bit (XST1) Not Set After Wrong Parity READ Command'
3458 055241 127 122 111 T33SSR: .ASCIZ 'WRITE MISCELLANEOUS CONT/READ COMMAND Not Accepted'
3459 055325 124 141 160 T33BOT: .ASCIZ 'Tape Not At BOT After REWIND Command (BOT Not Set In XST0)'
3460 055420 122 145 167 T33RWN: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
3461 055467 124 123 123 T33WDC: .ASCIZ 'TSSR Not Correct After READ Wrong Parity Command'
3462 055550 104 141 164 T33DTA: .ASCIZ 'Data Compare Error, Data Read From Tape Not Equal To Written'
3463 055645 104 141 164 TST33ID: .ASCIZ '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 CHARACTERISTICS 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

```

F13

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

SEQ 161

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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 104401      L10057: TRAP      C$ETST
3513
3514      .SBTTL TEST 6: OPERATIONS AT EOT
3515      ;+
3516      ;THIS TEST VERIFIES PROPER OPERATION OF THE WRITE DATA RETRY
3517      ;COMMAND (SPACE REVERSE, ERASE, WRITE DATA)
3518      ;
3519      ;THE TEST CONSISTS OF THE FOLLOWING 1 SUBTEST
3520      ;
3521      ;
3522      ;
3523      ;-
3524 056042      BGN1ST
3525 056042      T6::
3526 056042 012737 006354 002172      MOV      #EPRT1,EPRTSW      ;PRIMARY ERROR MESSAGE
3527 056050 012700 063207      MOV      #T34ID,R0      ;ASCII MESSAGE TO IDENTIFY TEST
3528 056054 004737 016570      JSR      PC,TSTSETUP      ;DO INITIAL TEST SETUP
3529 056060 012737 000005 002210      MOV      #5,LOOPCNT      ;PERFORM 5 ITERATIONS
3530 056066 005037 060672      CLR      T34CNT      ;CLEAR TAPE RECORD COUNTER
3531
3532      ;+
3533      ;TEST 6, SUBTEST 1
3534      ;
3535      ;
3536      ;THIS TEST VERIFIES THAT THE EOT STATUS IS HANDLED PROPERLY BY
3537      ;THE VARIOUS TAPE MOTION COMMANDS. THE FOLLOWING TEST SEQUENCE
3538      ;IS PERFORMED:
3539
3540
3541

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1. THE TAPE IS REWOUND.
2. WRITE DATA COMMANDS ARE REPEATEDLY ISSUED UNTIL TAPE STATUS ALERT TERMINATION IS SEEN WITH EOT=1. ERRORS OTHER THAN OCCASIONAL CORRECTABLE OR UNCORRECTABLE DATA ERRORS CAUSE A FATAL ERROR REPORT. RECORDS WITH DATA ERRORS ARE RETRIED, SO THE TAPE ENDS UP WITH GOOD DATA.
3. ANOTHER WRITE DATA COMMAND IS ISSUED, AND IT IS CHECKED THAT TAPE STATUS ALERT TERMINATION OCCURS, WITH EOT=1.
4. A WRITE TAPE MARK COMMAND IS ISSUED, AND IT IS CHECKED THAT TAPE STATUS ALERT TERMINATION OCCURS, WITH EOT=1.
5. A SKIP TAPE MARKS REVERSE COMMAND IS ISSUED, AND IT IS CHECKED THAT TAPE STATUS ALERT TERMINATION OCCURS, WITH EOT=1 AND TMK=1.
6. A SPACE RECORDS REVERSE COMMAND, WITH A RECORD COUNT OF 1, IS ISSUED, AND IT IS CHECKED THAT TAPE STATUS ALERT TERMINATION OCCURS, WITH EOT=1 AND TMK=1.
7. A SPACE RECORDS REVERSE COMMAND, WITH A RECORD COUNT OF 1, IS ISSUED, AND IT IS CHECKED THAT NORMAL TERMINATION OCCURS, WITH EOT=1.
8. A SPACE RECORDS FORWARD COMMAND, WITH A RECORD COUNT OF 1, IS ISSUED, AND IT IS CHECKED THAT NORMAL TERMINATION OCCURS, WITH EOT=1.
9. A READ REVERSE COMMAND IS ISSUED, AND IT IS CHECKED THAT NORMAL TERMINATION OCCURS, WITH EOT=1.
10. A READ FORWARD COMMAND IS ISSUED, AND IT IS CHECKED THAT NORMAL TERMINATION OCCURS, WITH EOT=1.
11. A SPACE RECORDS REVERSE COMMAND, WITH A RECORD COUNT OF 3, IS ISSUED, AND IT IS CHECKED THAT NORMAL TERMINATION OCCURS, WITH EOT=0.
12. A SPACE RECORDS FORWARD COMMAND, WITH A RECORD COUNT OF 3, IS ISSUED, AND IT IS CHECKED THAT NORMAL TERMINATION OCCURS, WITH EOT=1.
13. A SKIP FILE MARKS REVERSE COMMAND IS ISSUED, WHICH SHOULD SKIP ALL THE WAY TO BOT, AND IT IS CHECKED THAT TAPE STATUS ALERT TERMINATION OCCURS, WITH EOT=0, BOT=1, AND RIB=1.

T 34L OOP:
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3599      ; TEST 6, SUBTEST 1
3600      ;
3601      ; VERIFIES THAT WRITING OVER THE END-OF-TAPE (EOT)
3602      ; MARKER CAUSES TAPE STATUS ALERT TERMINATION. IF THE
3603      ; TAPE TRANSPORT DOES NOT RECOGNIZE THE EOT MARKER, THE
3604      ; TAPE WILL RUN OFF THE END OF THE REEL, CAUSING THE
3605      ; PROGRAM SEQUENCE TO BE ABORTED WITH A FATAL ERROR
3606      ; INDICATION. IN THIS CASE, CORRECTIVE MAINTENANCE
3607      ; MUST BE PERFORMED USING THE TRANSPORT'S BUILT-IN
3608      ; MAINTENANCE ROUTINE AVAILIABLE VIA THE FRONT PANEL.
3609      ; IF THE CONTROLLER DOES NOT RECOGNIZE THE EOT, THE
3610      ; TRANSPORT WILL FAULT BUT THE TAPE WILL NOT RUN OFF
3611      ; THE END OF THE REEL BUT THE TRANSPORT MUST BE
3612      ; MANUALLY PLACED BACK ON-LINE TO BE USABLE. THIS IS A
3613      ; FATAL DIAGNOSTIC ERROR.
3614      ;
3615      ;
3616      ;
3617      ;
3618      ; -
3619
3620
3621    056072          BGNSUB                      >>>>>>>> BEGIN SUBTEST >>>>>>>>
        056072                                T6.1:
        056072   104402                          TRAP       C$BSUB
3622    056074   004737   063232                JSR         PC,T34REST            ;SET COMMAND PACKET
3623    056100   004737   063366                JSR         PC,T34RT3           ;STORE PACKET
3624    056104   004737   063324                JSR         PC,T34RT2           ;SET UP OTHER COMMAND PACKET
3625    056110   012737   176750   060674     MOV         #65000.,T34DLY        ;SET UP COUNTER
3626    056116   004737   016054               10$:   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$,DLY,(PC)+
        056136   000000                                     .WORD        0
        056140   005367   177772                                     DEC         -6(PC)
        056144   001375                                     BNE         -4
        056146   005367   177756                                     DEC         -22(PC)
        056152   001367                                     BNE         ,-20
3629    056154   016501   000002             MOV         TSSR(R5),R1              ;GET TSSR STATUS
3630    056160   032701   000200             BIT         #SSR,R1                 ;CHECK FOR SSR SET
3631    056164   001012                       RNE         20$                   ;BR, WHEN SSR IS SET
3632    056166   005337   060674             DEC         T34DLY                    ;BUMP COUNTER DOWN
3633    056172   001351                       RNE         10$                   ;BR, IF MORE DELAY REQUIRED
3634    056174   005237   002214             INC         FATFLG                     ;ERROR COUNT
3638    056200   010001             MOV         RO,R1                           ;CONTENTS OF TSSR REGISTER
3639    056202             ERRDF    ERNO,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   060560     MOV         UNITN,T34DSW          ;SET UP DRIVE NUMBER
3642    056222   052737   000040   060560     BIS         #BIT5,T34DSW          ;TURN ON HIGH SPEED TO SAVE TIME
3643    056230   012704   060540             MOV         #T34PACKET,R4          ;SUBROUTINE NEEDS PACKET ADDRESS

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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,WRICHR		;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,WRTMSG,SFIMSG		;WRITE CHARACTERISTICS FAILED	
	056250	104456						TRAP	C\$ERHRD
	056252	001132						.WORD	602
	056254	005052						.WORD	WRTMSG
	056256	012114						.WORD	SFIMSG
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 XSTO	
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	

J13

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

SEQ 165

3695	056474	010465	000000		MOV	R4,TSD8(R5)		;ISSUE COMMAND
3696	056500	004737	016330		JSR	PC,WAIF		;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,WAIF		;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

K13

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

SEQ 166

3744	056710	012737	000001	060662	MOV	#1,T34WB	;SET NUMBER (1) OF TMS TO SKIP
3745	056716	012704	060660		MOV	#T34PK3,R4	;R4 = POINTER 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

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

SEQ 167

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	163\$:	CKLOOP	;LOOP IF SELECTED
	057170	104406		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	165\$:	CKLOOP	;LOOP IF SELECTED
	057224	104406		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,TSDB(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	BEQ	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	167\$:	CKLOOP	;LOOP IF SELECTED
	057306	104406		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	170\$:	CKLOOP	;LOOP IF SELECTED
	057326	104406		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,TSDB(R5)
3842	057354	004737	JSR	PC,WAITF
				;WAIT FOR SSR TO SET

M13

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 XSTO
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 (XSTO) 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,TSD8(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,TSD8(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

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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,T34R8			;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,TSDB(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,T34R8			;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,TSDB(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
3935	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,T34R8			;NUMBER OF RECORDS TO SPACE		
3939	060042	012704	060660		MOV	#T34PK3,R4			;R4 = POINTER TO PACKET		
3940	060046	010465	000000		MOV	R4,TSDB(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		

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3943	060062	012702	000200		MOV	05SR,R2		SET UP EXPECTED	
3944	060066	020102			CMP	R1,R2		ARE THEY EQUAL	
3945	060070	001406			BEQ	2501		IF, IT MIGHT BE END OF TAPE	
3946	060072	005237	002214		INC	FATFLG		ERROR COUNT	
3950	060076				ERRHRD	ERRNO,T34POS,PKTSSR		POSITION COMMAND DIDN'T WORK	
	060076	104456						TRAP	C1ERRHRD
	060100	001157						.WORD	623
	060102	060714						.WORD	T34POS
	060104	012126						.WORD	PKTSSR
3951	060106			2501:	CKLOOP			LOOP IF SELECTED	
	060106	104406						TRAP	C1CLP1
3952	060110	013701	060570		MOV	T34BFR+6,R1		PICK UP XSTO	
3953	060114	010102			MOV	R1,R2		SET UP EXPECTED	
3954	060116	042702	000001		BIC	0BIT0,R2		CLEAR THE EOT BIT ON IN EXPECTED	
3955	060122	020102			CMP	R1,R2		WAS THE BIT ON	
3956	060124	001406			BEQ	2601		IF, IF EOT WAS FOUND	
3957	060126	005237	002214		INC	FATFLG		ERROR COUNT	
3961	060132				ERRHRD	ERRNO,T34ETC,EXPREC		EOT BIT (XSTO) NOT CLEAR	
	060132	101456						TRAP	C1ERRHRD
	060134	001160						.WORD	624
	060136	061157						.WORD	T34ETC
	060140	015554						.WORD	EXPREC
3962	060142			2601:	CKLOOP			LOOP IF SELECTED	
	060142	104406						TRAP	C1CLP1
3963	060144	012737	140010	060660	MOV	0140010,T34PK3		SPACE RECORDS FORWARD, ACK, CVC=1 CMD.	
3964	060152	012737	000003	060662	MOV	05,T34RB		NUMBER OF RECORDS TO SPACE	
3965	060160	012704	060660		MOV	0T34PK3,R4		R4 - POINTER TO PACKET	
3966	060164	010465	000000		MOV	R4,TSD0(R5)		ISSUE COMMAND	
3967	060170	004737	016330		JSR	PC,WAITF		WAIT FOR SSR TO SET	
3968	060174	016501	000002		MOV	TSSR(R5),R1		GET TSSR CONTENTS	
3969	060200	012702	000200		MOV	05SR,R2		SET UP EXPECTED	
3970	060204	020102			CMP	R1,R2		ARE THEY EQUAL	
3971	060206	001406			BEQ	2701		IF, IT MIGHT BE END OF TAPE	
3972	060210	005237	002214		INC	FATFLG		ERROR COUNT	
3976	060214				ERRHRD	ERRNO,T34ET,PKTSSR		TSSR NOT CORRECT	
	060214	104456						TRAP	C1ERRHRD
	060216	001161						.WORD	625
	060220	062116						.WORD	T34ET
	060222	012126						.WORD	PKTSSR
3977	060224			2701:	CKLOOP			LOOP IF SELECTED	
	060224	104406						TRAP	C1CLP1
3978	060226	013701	060570		MOV	T34BFR+6,R1		PICK UP XSTO	
3979	060232	010102			MOV	R1,R2		SET UP EXPECTED	
3980	060234	052702	000001		BIS	0BIT0,R2		SET THE EOT BIT ON IN EXPECTED	
3981	060240	020102			CMP	R1,R2		WAS THE BIT ON	
3982	060242	001400			BEQ	2801		IF, IF EOT WAS FOUND	
3983	060244			2801:	CKLOOP			LOOP IF SELECTED	
	060244	104406						TRAP	C1CLP1
3984	060246	012737	141410	060660	MOV	0141410,T34PK3		SKIP FILE MARKS REVERSE,ACK,CVC=1 COMMAND	
3985	060254	012737	000003	060662	MOV	03,T34RB		NUMBER OF FILE MARKS	
3986	060262	012704	060660		MOV	0T34PK3,R4		R4 - POINTER TO PACKET	
3987	060266	010465	000000		MOV	R4,TSD0(R5)		ISSUE COMMAND	
3988	060272	012737	176750	060674	MOV	065000,T34DLY		SET UP DELAY COUNTER	
3989	060300	004737	016330		JSR	PC,WAITF		WAIT FOR SSR TO SET	
3990	060304	016501	000002		MOV	TSSR(R5),R1		GET TSSR CONTENTS	
3991	060310	032701	000200		BIF	05SR,R1		CHECK FOR SSR SET	
3992	060314	001017			BNE	2861		IF, WHEN SSR IS SET	

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PC	Address	Instruction	Comments
3993	060316	012727 000250	DELAY 250
	060322	000000	
	060324	013727 002116	
	060330	000000	
	060332	005367 177772	
	060336	001375	
	060340	005367 177756	
	060344	001367	
3994	060346	005337 060674	DEC T34DLY
3995	060352	001352	BNE 2851
3996	060354	012702 000200	MOV 05SR,R2
3997	060360	020102	CMP R1,R2
3998	060362	001007	BNE 2901
3999	060364	005303	DEC R3
4000	060366	005237 002214	INC FATFLG
4004	060372		ERRHRD ERRNO,T34ET,PKTSSR
	060372	104456	
	060374	001162	
	060376	062116	
	060400	012126	
4005	060402	032701 000004	BIT 0BIT2,R1
4006	060406	013701 060570	MOV T34BFR+6,R1
4007	060412	010102	MOV R1,R2
4008	060414	042702 000001	BIC 0BIT0,R2
4009	060420	020102	CMP R1,R2
4010	060422	001406	BEQ 3001
4011	060424	005237 002214	INC FATFLG
4015	060430		ERRHRD ERRNO,T34ETC,EXPREC
	060430	101456	
	060432	001163	
	060434	061157	
	060436	015554	
4016	060440		3001: CKLOOP
	060440	104406	
4017	060442	013701 060570	MOV T34BFR+6,R1
4018	060446	010102	MOV R1,R2
4019	060450	052702 000002	BIS 0BIT1,R2
4020	060454	020102	CMP R1,R2
4021	060456	001406	BEQ 3201
4022	060460	005237 002214	INC FATFLG
4026	060464		ERRHRD ERRNO,T34BOT,EXPREC
	060464	104456	
	060466	001164	
	060470	061234	
	060472	015554	
4027	060474		3201: CKLOOP
	060474	104406	
4028	060476		6001:
4029	060476		ENDSUB
	060476		
	060476	104403	
4030	060500	023727 002214 000017	CMP FATFLG,015,
4031	060506	103402	BLU 9991
4032	060510	004737 017262	JSR PC,CKDROP
4033	060514		9991:
4034	060514	004737 016536	JSR PC,ISTLOOP

Address	Hex	Dec	Label	Value	Comment
4035	060520	103002			
4036	060522	000137	056072		
4037	060526				
	060526	104432			
	060530	002662			
4038					
4039					
4040					
4041		060540			
4044	060540				
4045	060540	100004			
4046	060542	060550			
4047	060544	000000			
4048	060546	000010			
4049	060550				
4050	060550	060562			
4051	060552	000000			
4052	060554	000012			
4053	060556	000000			
4054	060560	000000			
4055	060562				
4056					
4057					
4058					
4060		060650			
4062	060650				
4063	060650	100006			
4064	060652	060676			
4065	060654	000000			
4066	060656	000006			
4067					
4071	060660				
4072	060660	100005			
4073	060662				
4074	060662	000000			
4075	060664	000000			
4076	060666	000000			
4077					
4078					
4079	060670	000000			
4080	060672	000000			
4081	060674	000000			
4082					
4083					
4084	060676				
4085	060676	010			
4086	060677	200			
4087	060700	000000			
4088	060702	000000			
4089					
4090					
4091					
4092					
4093					
4094	060704	100005			
4095	060706	100405			
4096	060710	102005			

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

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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 CHARACTERISTICS 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

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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\$ERHRD
	063612	001276			.WORD	702
	063614	005052			.WORD	WRTMSG
	063616	012114			.WORD	SFMSG
4251	063620			25\$: CKLOOP		;LOOP IF SELECTED
	063620	104406				TRAP C\$CLP1
4252	063622	004737	011074	JSR	PC,RL ND	;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),	;GET TSSR FOR PRINTOUT

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

SEQ 176

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4256 063636 005237 002214          INC    FATFLG          ;ERROR COUNT
4260 063642          ERRHRD  ERRNO,T35RWN,PKTSSR ;REWIND NOT ACCEPTED
      063642 104456
      063644 001277
      063646 070644
      063650 012126
4261 063652          30$:  CKLOOP          ;LOOP IF SELECTED
      063652 104406
4262 063654 013701 067420          MOV    T35BFR+6,R1      ;PICK UP XSTO
4263 063660 010102          MOV    R1,R2          ;SET UP EXPECTED
4264 063662 052702 000002          BIS    #BIT1,R2      ;SET BOT BIT IN EXPECTED
4265 063666 020102          CMP    R1,R2          ;DOES EXP = REC'D
4266 063670 001406          BEQ    40$          ;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
      063700 001300
      063702 070340
      063704 015554
4272 063706          40$:  CKLOOP          ;LOOP IF SELECTED
      063706 104406
4273 063710 012703 000024          MOV    #20.,R3          ;NUMBER OF RECORDS
4274 063714 012737 000400 067516          MOV    #256.,T35SZ      ;SET UP RECORD SIZE
4275 063722 013737 003116 067512          MOV    FREE,T35WB      ;ADDRESS OF WRITE BUFFER
4276
4277          ;*****
4278          ;
4279          ;WRITE DATA,ACK,CVC=1 COMMAND
4280          ;
4281          ;*****
4282
4283 063730 012737 140005 067510          MOV    #140005,T35PK3      ;WRITE DATA,ACK,CVC=1 COMMAND
4284 063736 012704 067510          MOV    #T35PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
4285 06374 010465 000000          50$:  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
      063774 001301
      063776 070266
      064000 012126
4296 064002          60$:  CKLOOP          ;LOOP IF SELECTED
      064002 104406
4297 064004 005303          DEC    R3          ;BUMP RECORD COUNTER
4298 064006 001355          BNE    50$          ;BR, IF MORE RRECORDS 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

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

SEQ 177

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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  C1ERRHRD
      064124 001302          .WORD  706
      064126 072422          .WORD  T35SSR
      064130 012126          .WORD  PKTSSR
4324 064132          90$:  CKLOOP          ;LOOP IF SELECTED
      064132 104406          TRAP  C1CLP1
4325 064134 012704 067370      MOV  #T35PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
4326 064140 004737 010742      JSR  PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
4327 064144 103407          BCS  100$         ;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  C1ERRHRD
      064156 001303          .WORD  707
      064160 005052          .WORD  WRTMSG
      064162 012114          .WORD  SFMSG
4334 064164          100$: CKLOOP          ;SCOPE LOOP
      064164 104406          TRAP  C1CLP1
4335 064166 012737 176750 067542 110$:  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      BII  #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
120$:

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

SEQ 178

064234	012727	000001				MOV	01,(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	
4353	064270	001352			BNE	120\$	
4354	064272	012702	000200	130\$:	MOV	0SSR,R2	
4355	064276	020102			CMP	R1,R2	
4356	064300	001406			BEQ	140\$	
4357	064302	005237	002214		INC	FATFLG	
4361	064306				ERRHRD	ERRNO,T35RWE,PKTSSR	
	064306	104456					
	064310	001304					
	064312	072770					
	064314	012126					
4362	064316			140\$:	CKLOOP		
	064316	104406					
4363	064320	005737	002216		TST	INTRECV	
4364	064324	001410			BEQ	150\$	
4365	064326	016501	000002		MOV	TSSR(R5),R1	
4366	064332	005237	002214		INC	FATFLG	
4370	064336				ERRHRD	ERRNO,T35INT,PKTSSR	
	064336	104456					
	064340	001305					
	064342	072601					
	064344	012126					
4371	064346			150\$:	CKLOOP		
	064346	104406					
4372							
4373							
4374							
4375							
4376							
4377							
4378							
4379	064350	013701	067420		MOV	T35BFR+6,R1	
4380	064354	010102			MOV	R1,R2	
4381	064356	052702	000200		BIS	0BIT7,R2	
4382	064362	020102			CMP	R1,R2	
4383	064364	001406			BEQ	160\$	
4384	064366	005237	002214		INC	FATFLG	
4388	064372				ERRHRD	ERRNO,T35MOT,EXPREC	
	064372	104456					
	064374	001306					
	064376	072503					
	064400	015554					
4389	064402			160\$:	CKLOOP		
	064402	104406					
4390	064404	013701	067424		MOV	T35BFR+12,R1	
4391	064410	010102			MOV	R1,R2	
4392	064412	052702	100000		BIS	0BIT15,R2	
4393	064416	020102			CMP	R1,R2	
4394	064420	001406			BEQ	170\$	

;DROP DEAD TIMER BUMP DOWN
 ;BR, IF MORE TIME TO GO
 ;SET UP EXPECTED
 ;ARE THEY EQUAL
 ;BR, IF OK
 ;ERROR COUNT
 ;TSSR INCORRECT AFTER WRITE DATA
 TRAP C\$ERHRD
 .WORD 708
 .WORD T35RWE
 .WORD PKTSSR
 ;LOOP IF SELECTED
 TRAP C\$CLP1
 ;CHECK FOR INTERRUPTS
 ;BR, IF NO INTERRUPTS DETECTED
 ;GET TSSR STATUS FOR PRINTOUT
 ;ERROR COUNT
 ;INTERRUPT RECEIVED (BAD)
 TRAP C\$ERHRD
 .WORD 709
 .WORD T35INT
 .WORD PKTSSR
 ;LOOP IF SELECTED
 TRAP C\$CLP1
 ;*****
 ;
 ;NOW CHECK FOR THE MOTION BITS SET
 ;
 ;*****
 ;PICK UP XST0
 ;SET UP EXPECTED
 ;SET MOT BIT IN EXPECTED
 ;DOES EXP = REC'D
 ;BR, IF EQUAL (OK)
 ;ERROR COUNT
 ;TAPE NOT AT BOT AFTER REWIND
 TRAP C\$ERHRD
 .WORD 710
 .WORD T35MOT
 .WORD EXPREC
 ;LOOP IF SELECTED
 TRAP C\$CLP1
 ;PICK UP XST2
 ;SET UP EXPECTED
 ;SET OPM BIT IN EXPECTED
 ;DOES EXP = REC'D
 ;BR, IF EQUAL (OK)

Address	Offset	Label	OpCode	Op1	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	Op
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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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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$:      MOV      R4,T35DB(R5)      ;ISSUE COMMAND
4490 065032 004737 016330      JSR      PC,WAITEF      ;WAIT FOR SSR TO SET
4491 065036 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
4492 065042 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
4493 065046 020102      CMP      R1,R2      ;ARE THEY EQUAL
4494 065050 001406      BEQ      60$      ;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$CLP1
4501 065066 104406
4502      ;*****
4503      ;
4504      ;WAIT FOR TAPE TO STOP ALL MOTION
4505      ;
4506      ;*****
4507
4508 065070 012737 000012 067542      MOV      #10.,T35DLY      ;SET UP DELAY COUNTER
4509 065076      70$:      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      MOV      #200,T35BS1      ;WRITE MISCELLANEOUS CONT/READ STATUS
4515 065150 112737 000010 067520      MOV      #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,T35DB(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
                                .WORD      104456
                                .WORD      001315

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Address	Offset	Hex	Label	Instruction	Comment	Register	Value
065206	072422						
065210	012126						
4526	065212	90\$:	CKLOOP		;LOOP IF SELECTED		
065212	104406						
4527	065214	012704	067370	MOV	#T35PACKET,R4		
4528	065220	004737	010742	JSR	PC,WRTCHR		
4529	065224	103407		BCS	100\$		
4530	065226	005237	002214	INC	FATFLG		
4534	065232	010001		MOV	R0,R1		
4535	065234			ERRHRD	ERRNO,WRTMSG,SFMSG		
065234	104456						
065236	001316						
065240	005052						
065242	012114						
4536	065244	100\$:	CKLOOP		;SCOPE LOOP		
065244	104406						
4537	065246	012737	176750	110\$:	MOV	#65000.,T35DLY	
4538	065254	005037	067536	CLR	T35CNT		
4539							
4540							
4541							
4542							
4543							
4544							
4545							
4546	065260	012737	142212	067510	MOV	#142212,T35PK3	
4547	065266	012704	067510		MOV	#T35PK3,R4	
4548	065272	010465	000000		MOV	R4,T35DB(R5)	
4549	065276	016501	000002	120\$:	MOV	T35R(R5),R1	
4550	065302	032701	000200		BIT	#SSR,R1	
4551	065306	001021			BNE	130\$	
4552	065310	005237	067536		INC	T35CNT	
4553	065314				DELAY	1	
065314	012727	000001					
065320	000000						
065322	013727	002116					
065326	000000						
065330	005367	177772					
065334	001375						
065336	005367	177756					
065342	001367						
4554	065344	005337	067542		DEC	T35DLY	
4555	065350	001352			BNE	120\$	
4556	065352	012702	000200	130\$:	MOV	#SSR,R2	
4557	065356	020102			CMP	R1,R2	
4558	065360	001406			BEQ	140\$	
4559	065362	005237	002214		INC	FATFLG	
4563	065366				ERRHRD	ERRNO,T35RWE,PKTSSR	
065366	104456						
065370	001317						
065372	072770						
065374	012126						
4564	065376			140\$:	CKLOOP		
065376	104406						
4565	065400	005737	002216		TST	INTRECV	
4566	065404	001010			BNE	150\$	
4567	065406	016501	000002		MOV	T35R(R5),R1	

B15

TEST 1 : HARDWARE TEST 1.8 TEST MACRO M1113 06-FEB 84 18:04
 TEST 2 : EXTENDED MODE FEATURES

SEQ 183

4568	065412	005237	002214	INC	FATFLG		ERROR COUNT		
4572	065416			ERRHRD	ERRNO,T35NIN,PKTSSR		INTERRUPT NOT RECEIVED (BAD)		
	065416	104456					TRAP	C1ERHRD	
	065420	001320					.WORD	720	
	065422	073056					.WORD	T35NIN	
	065424	012126					.WORD	PKTSSR	
4573	065426			1504:	CKLOOP		LOOP IF SELECTED		
	065426	104406					TRAP	C1CLP1	
4574									
4575									
4576									
4577									
4578									
4579									
4580									
4581	065430	013701	067420	MOV	T35BFR+6,R1		PICK UP XST0		
4582	065434	010102		MOV	R1,R2		SET UP EXPECTED		
4583	065436	052702	000200	BIS	#BIT7,R2		SET MOT BIT IN EXPECTED		
4584	065442	020102		CMP	R1,R2		DOES EXP = REC'D		
4585	065444	001406		BEQ	1604		BR, IF EQUAL (OK)		
4586	065446	005237	002214	INC	FATFLG		ERROR COUNT		
4590	065452			ERRHRD	ERRNO,T35MOT,EXPREC		TAPE NOT AT BOT AFTER REWIND		
	065452	104456					TRAP	C1ERHRD	
	065454	001321					.WORD	721	
	065456	072503					.WORD	T35MOT	
	065460	015554					.WORD	EXPREC	
4591	065462			1604:	CKLOOP		LOOP IF SELECTED		
	065462	104406					TRAP	C1CLP1	
4592	065464	013701	067424	MOV	T35BFR+12,R1		PICK UP XST2		
4593	065470	010102		MOV	R1,R2		SET UP EXPECTED		
4594	065472	052702	100000	BIS	#BIT15,R2		SET OPM BIT IN EXPECTED		
4595	065476	020102		CMP	R1,R2		DOES EXP = REC'D		
4596	065500	001406		BEQ	1704		BR, IF EQUAL (OK)		
4597	065502	005237	002214	INC	FATFLG		ERROR COUNT		
4601	065506			ERRHRD	ERRNO,T35OPM,EXPREC		OPM BIT NOT SET		
	065506	104456					TRAP	C1ERHRD	
	065510	001322					.WORD	722	
	065512	072672					.WORD	T35OPM	
	065514	015554					.WORD	EXPREC	
4602	065516			1704:	CKLOOP		LOOP IF SELECTED		
	065516	104406					TRAP	C1CLP1	
4603	065520	012737	000027	MOV	#25,T35DLT		SET UP DELAY COUNTER		
4604	065526			1754:	DELAY	250	START DELAY		
	065526	012727	000250				MOV	#250,(PC),	
	065532	000000					.WORD	0	
	065534	013727	002116				MOV	18DLT,(PC),	
	065540	000000					.WORD	0	
	065542	005367	177772				DEC	6(PC)	
	065546	001375					BNE	4	
	065550	005367	177756				DEC	22(PC)	
	065554	001367					BNE	20	
4605	065556	005337	067542	DEC	T35DLT		BUMP DELAY COUNTER		
4606	065562	001361		BNE	1754		BR, IF MORE DELAY		
4607	065564			ENDSUB					
	065564	104403							
4608	065566	023727	002214	CMP	FATFLG,#15.		IS ERROR COUNT AT 25		
		000017					TRAP	C1ESUB	

4609	065574	103402		BLO	9998		IF LESS THAN 25
4610	065576	004737	017262	JSR	PC,CKDROP		TRY TO DROP THE UNIT
4611	065602						
4612							
4613							
4614							
4615							
4616							
4617							
4618							
4619							
4620							
4621							
4622							
4623							
4624							
4625							
4626							
4627							
4628							
4629							
4630							
4631							
4632	065602						
	065602						
	065602	104402					
4633	065604	004737	073164	JSR	PC,T35REST		
4634	065610	004737	073256	JSR	PC,T35RT2		
4635	065614	004737	073320	JSR	PC,T35RT3		
4636	065620	004737	016054	JSR	PC,SOFINIT		
4637	065624	103407		BCS	201		
4638	065626	005237	002214	INC	FATFLG		
4642	065632	010001		MOV	R0,R1		
4643	065634			ERRDF	ERRNO,SFIERR,SFIMSG		
	065634	104455					
	065636	001323					
	065640	003646					
	065642	012114					
4644	065644	013737	002174	MOV	UNITN,T35DSW		
4645	065652	012704	067370	MOV	T35PACKET,R4		
4646	065656	004737	010742	JSR	PC,WATCHR		
4647	065662	103407		BCS	231		
4648	065664	005237	002214	INC	FATFLG		
4652	065670	010001		MOV	R0,R1		
4653	065672			ERRHRD	ERRNO,WRTMSG,SFIMSG		
	065672	104456					
	065674	001324					
	065676	005052					
	065700	012114					
4654	065702						
	065702	104406					
4655	065704	004737	011074	JSR	PC,REWIND		
4656	065710	103411		BCS	301		
4657	065712	010004		MOV	R0,R4		
4658	065714	016501	000002	MOV	TSSR(R5),R1		
4659	065720	005237	002214	INC	FATFLG		
4663	065724			ERRHRD	ERRNO,T35RWV,PRTSSR		

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

SEQ 185

065724	104456						TRAP	C\$ERRRD
065726	001325						.WORD	725
065730	070644						.WORD	T35RWN
065732	012126						.WORD	PKTSSR
4664	065734	104406			30\$: CKLOOP		LOOP IF SELECTED	
	065734	104406					TRAP	C\$CLP1
4665	065736	013701	067420		MOV T35BFR+6,R1		PICK UP XSTO	
4666	065742	010102			MOV R1,R2		SET UP EXPECTED	
4667	065744	052702	000002		BIS #BIT1,R2		SET BOT BIT IN EXPECTED	
4668	065750	020102			CMP R1,R2		DOES EXP = REC'D	
4669	065752	001406			BEQ 40\$		BR, IF EQUAL (OK)	
4670	065754	005237	002214		INC FATFLG		ERROR COUNT	
4674	065760				ERRHRD ERRNO,T35BOT,EXPREC		TAPE NOT AT BOT AFTER REWIND	
	065760	104456					TRAP	C\$ERRRD
	065762	001326					.WORD	726
	065764	070340					.WORD	T35BOT
	065766	015554					.WORD	EXPREC
4675	065770				40\$: CKLOOP		LOOP IF SELECTED	
	065770	104406					TRAP	C\$CLP1
4676	065772	012703	000024		MOV #20.,R3		STARTING RECORD SIZE	
4677	065776	013737	003116	067512	MOV FREE,T35WB		STARTING WRITE BUFFER ADDRESS	
4678								
4679								
4680								
4681								
4682								
4683								
4684								
4685	066004	012737	140005	067510	65\$: MOV #140005,T35PK3		WRITE DATA,CVC=1,ACK COMMAND	
4686	066012	012704	067510		MOV #T35PK3,R4		SET UP R4 WITH PACKET ADDRESS	
4687	066016	010300			MOV R3,R0		SET PATTERN IN CORRECT REGISTER	
4688	066020	004737	017502		JSR PC,FILLMEM		FILL MEMORY WITH RECORD SIZE	
4689	066024	010337	067516		MOV R3,T35SZ		SET UP RECORD SIZE IN PACKET	
4690	066030	010465	000000		MOV R4,T35DB(R5)		ISSUE COMMAND	
4691	066034	004737	016330		JSR PC,WAITF		WAIT FOR SSR TO SET	
4692	066040	016501	000002		MOV T35SR(R5),R1		GET T35SR CONTENTS	
4693	066044	012702	000200		MOV #SSR,R2		SET UP EXPECTED	
4694	066050	020102			CMP R1,R2		ARE THEY EQUAL	
4695	066052	001406			BEQ 80\$		BR, IF OK	
4696	066054	005237	002214		INC FATFLG		ERROR COUNT	
4700	066060				ERRHRD ERRNO,T35WDC,PKTSSR		T35SR INCORRECT AFTER WRITE DATA	
	066060	104456					TRAP	C\$ERRRD
	066062	001327					.WORD	727
	066064	071200					.WORD	T35WDC
	066066	012126					.WORD	PKTSSR
4701	066070				80\$: CKLOOP		LOOP IF SELECTED	
	066070	104406					TRAP	C\$CLP1
4702								
4703								
4704								
4705								
4706								
4707								
4708								
4709	066072	012737	141005	067510	MOV #141005,T35PK3		WRITE DATA RETRY,CVC=1,ACK COMMAND	
4710	066100	010465	000000		MOV R4,T35DB(R5)		ISSUE COMMAND	
4711	066104	004737	016330		JSR PC,WAITF		WAIT FOR SSR TO SET	

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

SEQ 186

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	;DOES 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,T35S7	;SET UP RECORD SIZE IN PACKET	
4760	066300	010465	000000		MOV	R4,T35D8(R5)	;ISSUE COMMAND	
4761	066304	004737	016330		JSR	PC,WAITE	;WAIT FOR SSR TO SET	
4762	066310	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS	

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

SEQ 187

4763	066314	012702	000200	MOV	0SSR,R2	;	SET UP EXPECTED	
4764	066320	020102		CMP	R1,R2	;	ARE THEY EQUAL	
4765	066322	001406		BEG	280\$	;	BR, IF OK	
4766	066324	005237	002214	INC	FATFLG	;	ERROR COUNT	
4770	066330			ERRHRD	ERRNO,T35RDF,PKTSSR	;	TSSR INCORRECT AFTER READ DATA	
	066330	104456					TRAP	C\$ERHRD
	066332	001333					.WORD	731
	066334	067632					.WORD	T35RDF
	066336	012126					.WORD	PKTSSR
4771	066340			280\$:	CKLOOP	;	LOOP IF SELECTED	
	066340	104406					TRAP	C\$CLP1
4772	066342	013702	003116	MOV	FREE,R2	;	GET BUFFER ADDRESS	
4773	066346	010304		MOV	R3,R4	;	GET RECORD SIZE	
4774	066350	162704	000024	SUB	020\$,R4	;	POINT BACK TO 1ST RECORD	
4775	066354	060204		285\$:	ADD R2,R4	;	POINT TO 1ST LOC IN BUFFER	
4776	066356	021403		CMP	(R4),R3	;	DATA WRITTEN - READ	
4777	066360	001410		BEG	290\$	;	BR, IF DATA OK (GOOD)	
4778	066362	011401		MOV	(R4),R1	;	PICK UP BAD DATA	
4779	066364	010302		MOV	R3,R2	;	SET UP EXPECTED	
4780	066366	005237	002214	INC	FATFLG	;	ERROR COUNT	
4784	066372			ERRHRD	ERRNO,T35DTA,EXPREC	;	DATA IN BUFFER NOT CORRECT	
	066372	104456					TRAP	C\$ERHRD
	066374	001334					.WORD	732
	066376	072325					.WORD	T35DTA
	066400	015554					.WORD	EXPREC
4785	066402			290\$:	CKLOOP	;	LOOP IF SELECTED	
	066402	104406					TRAP	C\$CLP1
4786	066404	005724		TST	(R4),	;	BUMP TO NEXT ADDRESS	
4787	066406	160204		SUB	R2,R4	;	BACK TO RECORD SIZE	
4788	066410	020403		CMP	R4,R3	;	AT END OF RECORD YET	
4789	066412	001360		BNE	285\$	;	BR, IF MORE DATA TO CHECK	
4790	066414	005723		TST	(R3),	;	BUMP RECORD SIZE	
4791	066416	020327	000050	CMP	R3,040,	;	DONE YET	
4792	066422	001313		BNE	265\$	;	BR, IF NOT DONE YET (MORE READS)	
4793	066424			300\$:	CKLOOP	;	LOOP IF SELECTED	
	066424	104406					TRAP	C\$CLP1
4794	066426			330\$:				
4795	066426			ENDSUB		;	***** END SUBTEST *****	
	066426	104403					L10066;	
4796	066430	023727	002214 000017	CMP	FATFLG,015,	;	IS ERROR COUNT AT 25	
4797	066436	103402		BLO	999\$	;	BR, IF LESS THAN 25	
4798	066440	004737	017262	JSR	PC,CKDROP	;	TRY TO DROP THE UNIT	
4799	066444			999\$:				
4800				;				
4801				;				
4802				;	TEST 7, SUBTEST 4			
4803				;				
4804				;	VERIFIES THAT A TAPE-MOTION COMMAND (READ, WRITE, POSITION),			
4805				;	ISSUED IMMEDIATELY AFTER TERMINATION OF A REWIND WITH			
4806				;	IMMEDIATE INTERRUPT COMMAND, IS "QUEUED" BY THE CONTROLLER AND			
4807				;	THEN EXECUTES PROPERLY.			
4808				;				
4809				;				
4810				;				
4811				;				
4812	066444			BGNSUB		;	***** BEGIN SUBTEST *****	

						T7.4:		
	066444	104402					TRAP	C\$BSUB
4813	066446	004737	073164		JSR	PC,T35REST	;SET COMMAND PACKET	
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	R0,R1	;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	012114					.WORD	SFIMSG
4828	066552	013737	002174	067410	20\$;	MOV	UNITN,T35DSW	;SET UP UNIT (DRIVE) NUMBER
4829	066560	012704	067370		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	R0,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	R0,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	
	066642	104406					TRAP	C\$CLP1
4849	066644	013701	067420		MOV	T35BER+6,R1	;PICK UP XSTO	
4850	066650	010102			MOV	R1,R2	;SET UP EXPECTED	
4851	066652	052702	000002		BIS	#BIT1,R2	;SET BOT BIT IN EXPECTED	
4852	066656	020102			CMP	R1,R2	;DOES EXP = REC'D	
4853	066660	001406			BEQ	40\$	;BR, IF EQUAL (OK)	
4854	066662	005237	002214		INC			

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

SEQ 189

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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          TRAP  C$CLP1
      066676 104406
4860 066700 012703 000024      MOV  #20.,R3            ;STARTING RECORD SIZE
4861 066704 013737 003116 067512  MOV  FREE,T35WB      ;STARTING WRITE BUFFER ADDRESS
4862
4863      ;*****
4864      ;
4865      ;WRITE DATA,CVC=1,ACK COMMAND
4866      ;
4867      ;*****
4868
4869 066712 012737 140005 067510 65$:   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,TSD8(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$ERHRD
      066770 001341          .WORD 737
      066772 071200          .WORD T35WDC
      066774 012126          .WORD PKTSSR
4885 066776          80$:   CKLOOP                    ;LOOP IF SELECTED          TRAP  C$CLP1
      066776 104406
4886
4887      ;*****
4888      ;
4889      ;WRITE DATA RETRY,ACK,SWB=1 COMMAND
4890      ;
4891      ;*****
4892
4893 067000 012737 111005 067510      MOV  #111005,T35PK3      ;WRITE DATA RETRY,ACK,SWB=1 COMMAND
4894 067006 010465 000000      MOV  R4,TSD8(R5)           ;ISSUE COMMAND
4895 067012 004737 016330      JSR  PC,WAITF             ;WAIT FOR SSR TO SET
4896 067016 016501 000002      MOV  TSSR(R5),R1          ;GET TSSR CONTENTS
4897 067022 012702 000200      MOV  #SSR,R2              ;SET UP EXPECTED
4898 067026 020102      CMP  R1,R2                       ;ARE THEY EQUAL
4899 067030 001406      BEQ  90$                          ;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          TRAP  C$CLP1
      067046 104406

```

TEST 1 - HARDWARE TEST 1-8 TEST MACRO M1113 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	RIS	#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	MOV	FREE,T35RB		;STARTING READ BUFFER ADDRESS		
4932									
4933									
4934									
4935									
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,T35S2		;SET UP RECORD SIZE IN PACKET
4942	067176	010465	000000			MOV	R4,T35DB(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		

4957	067252	060204	
4958	067254	000303	
4959	067256	021403	
4960	067260	001410	
4961	067262	011401	
4962	067264	010302	
4963	067266	005237	002214
4967	067272		
	067272	104456	
	067274	001346	
	067276	072325	
	067300	015554	

```

285$:  ADD      R2,R4
        SWAB    R3
        CMP     (R4),R3
        BEQ     290$
        MOV     (R4),R1
        MOV     R3,R2
        INC     FATFLG
        ERRHRD  ERRNO,T35DTA,EXPREC

```

```

;POINT TO 1ST LOC IN BUFFER
;SWAP BYTES SWB=1 ETC.
;DATA WRITTEN = READ
;BR, IF DATA OK (GOOD)
;PICK UP BAD DATA
;SET UP EXPECTED
;          ;ERROR COUNT
;DATA IN BUFFER NOT CORRECT
                                TRAP          C$ERHRD
                                .WORD          742
                                .WORD          T35DTA
                                .WORD          EXPREC

```

4968	067302		
	067302	104406	
4969	067304	005724	
4970	067306	160204	
4971	067310	000303	
4972	067312	020403	
4973	067314	001356	
4974	067316	005723	
4975	067320	020327	000050
4976	067324	001315	
4977	067326		
	067326	104406	

```

290$:      CKLOOP
           TST      (R4)+
           SUB      R2,R4
           SWAB     R3
           CMP      R4,R3
           BNE      285$
           TST      (R3)+
           CMP      R3,#40.
           BNE      265$

```

```

;LOOP IF SELECTED
                                TRAP      C$CLP1
;BUMP TO NEXT ADDRESS
;BACK TO RECORD SIZE
;PUT R3 BACK INTO SHAPE
;AT END OF RECORD YET
;BR, IF MORE DATA TO CHECK
;BUMP RECORD SIZE
;DONE YET
;BR, IF NOT DONE YET (MORE READS)
;LOOP IF SELECTED

```

4978	067330			
	067350			
	067330	104403		
4979	067332	023727	002214	000017
4980	067340	103402		
4981	067342	004737	017262	
4982	067346			

```

ENDSUB

CMP      FATFLG, #15.
BLO      999$
JSR      PC, CKDROP

```

[illegible]

4983	067346	004737	016536
4984			
4985			
4986	067346	004737	016536
4987	067352	103002	
4988	067354	000137	063444
4989	067360		
	067360	104432	
	067362	003760	

```

999$;      JSR      PC,TSTLOOP
:
:
:
:      JSR      PC,TSTLOOP
:      BCC      163
:      JMP      T35LOOP
163$;      EXIT     TST

```

```

;DO WE NEED TO ITERATE TEST
;BR. IF NO LOOP REQUIRED
;EXECUTE AGAIN
;ALL DONE THIS TEST
                                TRAP      C$EXIT
                                .WORD     L10063-

```

4990		
4991		
4992		
4994		067370
4996	067370	
4997	067370	100004
4998	067372	067400
4999	067374	000000
5000	067376	000012
5001	067400	
5002	067400	067412
5003	067402	000000
5004	067404	000024
5005	067406	000000
5006	067410	000000
5007	067412	
5008		

```

;+
;LOCAL STORAGE FOR THIS TEST
;-
      .*=.10>E177770
T35PACKET:
      .WORD      100004
      .WORD      T35DATA
      .WORD      0
      .WORD      10.
T35DATA:
      .WORD      T35BFR
      .WORD      0
      .WORD      20.
      .WORD      0
T35DSW: .WORD      0
T35BFR: .BLKW     25,
;

```

```

;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

```

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

SEQ 192

```

5009      ;WRITE SUBSYSTEM MEMORY COMMAND PACKET
5010      ;
5012      067500      ;
5014      067500      T35PK2:      .<..+10>E177770
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      ;BSEL0 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 TIMER 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'

```

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 Bit 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				T35REST:		
5102	073164				SAVREG		SAVE THE REGISTERS
5103	073170	012701	067370		MOV	0T35PACKET,R1	START OF THE PACKET
5104	073174	012721	100004		MOV	0100004,(R1)+	WRITE SUBSYSTEM MEM. WITH ACK.
5105	073200	012721	067400		MOV	0T35DATA,(R1)+	ADDRESS OF CHARAISTICS DATA BLOCK
5106	073204	005021			CLR	(R1)+	EXTENDED ADDRESS
5107	073206	012721	000012		MOV	010.,(R1)+	SIZE OF DATA BLOCK IN BYTES
5108	073212	012721	067412		MOV	0T35BFR,(R1)+	ADDRESS OF MESSAGE BUFFER
5109	073216	005021			CLR	(R1)+	
5110	073220	012721	000024		MOV	020.,(R1)+	LENGTH OF MESSAGE BUFFER
5111	073224	005021			CLR	(R1)+	
5112	073226	012711	000000		MOV	00.(R1)	SELECT DRIVE ZERO
5113	073232	012702	000030		MOV	024.,R2	NUMBER OF LOCATIONS TO BE CLEARED
5114	073236	012762	177777	067412 64\$:	MOV	0177777,T35BFR(R2)	ALL ONES TO MESSAGE BUFFER
5115	073244	005742			IST	-(R2)	NEXT LOCATION
5116	073246	022702	000000		CMP	00,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		SAVE THE REGISTERS
5122	073262	012701	067500		MOV	0T35PK2,R1	START OF THE PACKET
5123	073266	012721	100006		MOV	0100006,(R1)+	WRITE SUBSYSTEM MEM. WITH ACK.
5124	073272	012721	067520		MOV	0T35BF2,(R1)+	ADDRESS OF DATA BLOCK
5125	073276	005021			CLR	(R1)+	EXTENDED ADDRESS
5126	073300	012721	000006		MOV	06.,(R1)+	SIZE OF DATA BLOCK IN BYTES
5127	073304	005021			CLR	(R1)+	

5128	073306	012701	067520	MOV	#T35BF2,R1	;POINT TO DATA SEL AREA
5129	073312	005021		CLR	(R1)+	
5130	073314	005011		CLR	(R1)	
5131	073316	000207		RTS	PC	;RETURN
5132	073320			T35RT3:		
5133	073320			SAVREG		;SAVE REGISTERS
5134	073324	012701	067510	MOV	#T35PK3,R1	;SET UP POINTER ADDRESS
5135	073330	005021		CLR	(R1)+	;COMMAND SPACE
5136	073332	005021		CLR	(R1)+	;ADDRESS OF DATA BLOCK
5137	073334	005021		CLR	(R1)+	;EXTENDED ADDRESS
5138	073336	005011		CLR	(R1)	;SIZE OF DATA TRANSFER BLOCK
5139	073340	000207		RTS	PC	;RETURN
5140	073342			ENDTST		
	073342					
	073342	104401				
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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.

```

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5192                                     :  

5193                                     : THE TEST CONSISTS OF THE FOLLOWING 2 SUBTESTS  

5194                                     :  

5195                                     :  

5196                                     :  

5197                                     : -  

5198 073344                                BGNTST  

5199 073344                                T8::  

5200 073344 012737 006354 002172          MOV    #EPRT1,EPRTSW      ;PRIMARY ERROR MESSAGE  

5201 073352 004737 017354                   JSR     PC,KTOFF        ;TURN OFF KT11  

5202 073356 012700 100717                   MOV     #TST36ID,R0       ;ASCII MESSAGE TO IDENTIFY TEST  

5203 073362 004737 016570                   JSR     PC,TSTSETUP      ;DO INITIAL TEST SETUP  

5204 073366 012737 000005 002210          MOV     #5,L0OPCNT      ;PERFORM 5 ITERATIONS  

5205 073374 005037 075726                   CLR      T36CNT         ;CLEAR TAPE RECORD COUNTER  

5206                                     : *  

5207                                     :  

5208                                     : TEST 8, SUBTEST 1  

5209                                     :  

5210                                     :  

5211                                     : VERIFIES THAT A WRITE DATA RETRY COMMAND ISSUED WHILE  

5212                                     : THE TAPE IS POSITIONED AT BOT CAUSES FUNCTION REJECT  

5213                                     : TERMINATION, WITH THE NON-EXECUTABLE FUNCTION (NEF)  

5214                                     : ERROR BIT SET.  

5215                                     :  

5216                                     :  

5217                                     : -  

5218                                     :  

5219                                     :  

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5221                                     :  

5222 073400 T36LOOP:  

5223 073400 BGNSUB                          ; >>>>>>>>> BEGIN SUBTEST >>>>>>>>  

5224 073400 T8.1:                          TRAP    C$BSUB  

5225 073402 004737 100740                   JSR     PC,T36REST      ;SET COMMAND PACKET  

5226 073406 004737 101032                   JSR     PC,T36RT2      ;SET UP OTHER COMMAND PACKET  

5227 073412 004737 101074                   JSR     PC,T36RT3      ;SET UP OTHER COMMAND PACKET  

5228 073416 012737 176750 075732          MOV     #65000.,T36DLY   ;SET UP DELAY COUNTER  

5229 073424 005037 015726                   CLR      T36CNT         ;CLEAR COUNTER  

5230 073430 004737 016054 10$:             JSR     PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER  

5231 073434 103426 BCS    20$               ;BR IF INIT WAS OK  

5232 073436 012727 000250                   DELAY    250           ;DELAY ABOUT .25 SEC  

5233 073442 000000                               MOV     #250,(PC)+      ;  

5234 073444 013727 002116                               .WORD    0  

5235 073450 000000                               MOV     L$DLY,(PC)+      ;  

5236 073452 005367 177772                               .WORD    0  

5237 073456 001375                               DEC      -6(PC)        ;  

5238 073460 005367 177756                               BNE      .4            ;  

5239 073464 001367                               DEC      -2(PC)        ;  

5240 073466 005337 075732                               BNE      .-20          ;  

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

SEQ 196

Address	Offset	Label	Instruction	Comment
5233	073472	001356	BNE 101	BR, IF COUNTER NOT DONE
5234	073474	005237	INC FATFLG	ERROR COUNT
5238	073500	010001	MOV R0,R1	CONTENTS OF TSSR REGISTER
5239	073502		ERRDF ERRNO,SFIERR,SFIMSG	FATAL ERROR TSSR WAS NOT OK
	073502	104455		TRAP C\$ERDF
	073504	001441		.WORD 801
	073506	003646		.WORD SFIERR
	073510	012114		.WORD SFIMSG
5240	073512	013737	MOV UNITN,T36DSW	SET UP DRIVE NUMBER
5241	073520	012704	MOV #T36PACKET,R4	SUBROUTINE NEEDS PACKET ADDRESS
5242	073524	004737	JSR PC,WRTCHR	ISSUE WRITE CHARACTERISTICS
5243	073530	103407	BCS 251	BR, IF COMMAND ISSUED OK
5244	073532	005237	INC FATFLG	ERROR COUNT
5248	073536	010001	MOV R0,R1	SAVE CONTENTS OF TSSR
5249	073540		ERRHRD ERRNO,WRTMSG,SFIMSG	WRITE CHARACTERISTICS FAILED
	073540	104456		TRAP C\$ERHRD
	073542	001442		.WORD 802
	073544	005052		.WORD WRTMSG
	073546	012114		.WORD SFIMSG
5250	073550		251: CKLOOP	LOOP IF SELECTED
	073550	104406		TRAP C\$CLP1
5251	073552	004737	JSR PC,REWIND	CALL TAPE REWIND COMMAND
5252	073556	103407	BCS 301	BR, IF NO PROBLEM
5253	073560	010004	MOV R0,R4	SET UP REWIND PACKET ADDRESS
5254	073562	005237	INC FATFLG	ERROR COUNT
5258	073566		ERRHRD ERRNO,T36RWN,PKTSSR	REWIND NOT ACCEPTED
	073566	104456		TRAP C\$ERHRD
	073570	001443		.WORD 803
	073572	077141		.WORD T36RWN
	073574	012126		.WORD PKTSSR
5259	073576		301: CKLOOP	LOOP IF SELECTED
	073576	104406		TRAP C\$CLP1
5260	073600	013701	MOV T36BFR+6,R1	PICK UP XSTO
5261	073604	010102	MOV R1,R2	SET UP EXPECTED
5262	073606	052702	BIS #BIT1,R2	SET BOT BIT IN EXPECTED
5263	073612	020102	CMP R1,R2	DOES EXP = REC'D
5264	073614	001406	BEQ 401	BR, IF EQUAL (OK)
5265	073616	005237	INC FATFLG	ERROR COUNT
5269	073622		ERRHRD ERRNO,T36BOT,EXPREC	TAPE NOT AT BOT AFTER REWIND
	073622	104456		TRAP C\$ERHRD
	073624	001444		.WORD 804
	073626	076635		.WORD T36BOT
	073630	015554		.WORD EXPREC
5270	073632		401: CKLOOP	LOOP IF SELECTED
	073632	104406		TRAP C\$CLP1
5271	073634	013737	MOV UNITN,T36DSW	SET UP DRIVE NUMBER
5272	073642	052737	BIS #BIT3:BIT4,T36DSW	25-APR-83 REV B - TURN ON THE BUFFERING
5273	073650	012704	MOV #T36PACKET,R4	SUBROUTINE NEEDS PACKET ADDRESS
5274	073654	004737	JSR PC,WRTCHR	ISSUE WRITE CHARACTERISTICS
5275	073660	103407	BCS 501	BR, IF COMMAND ISSUED OK
5276	073662	005237	INC FATFLG	ERROR COUNT
5280	073666	010001	MOV R0,R1	SAVE CONTENTS OF TSSR
5281	073670		ERRHRD ERRNO,WRTMSG,SFIMSG	WRITE CHARACTERISTICS FAILED
	073670	104456		TRAP C\$ERHRD
	073672	001445		.WORD 805
	073674	005052		.WORD WRTMSG
	073676	012114		.WORD SFIMSG

Address	Hex	Dec	Hex	Dec	Label	Instruction	Comment
5282	073700	104406			50%:	CKLOOP	;LOOP IF SELECTED
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	60%
5293	073754	005237	002214			INC	FATFLG
5297	073760					ERRHRD	ERRNO,WRTErr,PKTSSR
	073760	104456					
	073762	0C1446					
	073764	005107					
	073766	012126					
5298	073770				60%:	CKLOOP	;LOOP IF SELECTED
5299	073772	012737	000005	075732		MOV	#05.,T36DLY
5300	074000				70%:	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	70%
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		80%:	BIT	#SSR,R1
5311	074104	001021				BNE	90%
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	80%
5316	074150	012702	000200		90%:	MOV	#SSR,R2
5317	074154	020102				CMP	R1,R2
5318	074156	001406				BEQ	100%
5319	0741						

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	0BIT3,T36DSW	;25-APR-83 REV B - TURN OFF BUFFERING
5327	074212	012704	075560		MOV	0T36PACKET,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,SFIMSG	;WRITE CHARACTERISTICS FAILED	
	074232	104456				TRAP	C\$ERHRD
	074234	001450				.WORD	808
	074236	005052				.WORD	WRTMSG
	074240	012114				.WORD	SFIMSG
5336	074242		110\$:	CKLOOP		;LOOP IF SELECTED	
	074242	104406				TRAP	C\$CLP1
5337	074244	012737	006642	075706	MOV	03490.,T36SZ	;SET SIZE OF TRANSFER
5338	074252	012737	140005	075700	MOV	0140005,T36PK3	;WRITE DATA,ACK,CVC-1 COMMAND
5339	074260	012704	075700		MOV	0T36PK3,R4	;SET UP R4 WITH PACKET ADDRESS
5340	074264	005037	075730		CLR	T36CNU	;CLEAR COUNTER
5341	074270	012737	001750	075732	MOV	01000.,T36DLY	;SET DROP DEAD COUNTER VALUE
5342	074276	010465	000000		MOV	R4,T508(R5)	;ISSUE COMMAND
5343	074302	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS
5344	074306	032701	000200	120\$:	BIT	0SSR,R1	;CHECK FOR SSR SET
5345	074312	001021			BNE	130\$	;BR, IF SSR IS SET
5346	074314	005237	075730		INC	T36CNU	;BUMP CYCLE COUNTER
5347	074320				DELAY	1	;CUT NUMBER OF LOOPS DOWN
	074320	012727	000001			MOV	01,(PC)+
	074324	000000				.WORD	0
	074326	013727	002116			MOV	L\$DLY,(PC)+
	074332	000000				.WORD	0
	074334	005367	177772			DEC	-6(PC)
	074340	001375				BNE	.-4
	074342	005367	177756			DEC	-22(PC)
	074346	001367				BNE	.-20
5348	074350	005337	075732		DEC	T36DLY	;BUMP DROP DEAD COUNTER
5349	074354	001352			BNE	120\$	;BR, IF THERE IS STILL TIME
5350	074356	012702	000200	130\$:	MOV	0SSR,R2	;SET UP EXPECTED
5351	074362	020102			CMP	R1,R2	;ARE THEY EQUAL
5352	074364	001406			BEQ	140\$	;BR, IF OK
5353	074366	005237	002214		INC	FATFLG	;ERROR COUNT
5357	074372			ERRHRD	ERRNO,WRTERR,PKTSSR	;TSSR INCORRECT AFTER WRITE DATA	
	074372	104456				TRAP	C\$ERHRD
	074374	001451				.WORD	809
	074376	005107				.WORD	WRTERR
	074400	012126				.WORD	PKTSSR
5358	074402		140\$:	CKLOOP		;LOOP IF SELECTED	
	074402	104406				TRAP	C\$CLP1
5359	074404	013701	075726		MOV	T36CNT,R1	;GET FIRST COUNTER
5360	074410	013702	075730		MOV	T36CNU,R2	;GET SECOND COUNTER
5361	074414	020102			CMP	R1,R2	;25-APR-83 REV B COMPARE EM
5362	074416	003406			BLE	300\$	;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

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5363 074420 005237 002214          INC      FATFLG          ;ERROR COUNT
5367 074424          ERRHRD  ERRNO,T36NAS,EXPREC  ;TAPE NOT AT CORRECT SPEED
      074424 104456          TRAP      C$ERHRD
      074426 001452          .WORD    810
      074430 075734          .WORD    T36NAS
      074432 015554          .WORD    EXPREC
5368 074434          300$;  CKLOOP          ;LOOP IF SELECTED          TRAP      C$CLP1
      074434 104406          ENDSUB
5369 074436          L10071:
      074436 104403          TRAP      C$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          ;
5381          ;
5382          ;
5383          ;
5384          ;
5385          ;
5386          ;
5387          ;
5388          ;
5389          ;
5390          ;
5391          ;
5392          ;
5393          ;
5394          ;
5395          ;
5396          ;
5397          ;
5398          ;
5399          ;
5400          ;
5401          ;
5402          ;
5403          ;
5404          ;
5405          ;
5406          ;
5407          ;
5408          ;
5409          ;
5410          ;
5411          ;
5412          ;
5413          ;
5414          ;
5415          ;

```

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.

Line	Address	Offset	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 8: RECORD BUFFERING

SEQ 202

Address	Offset	Hex	Label	Instruction	Comment
075066	000000				
075070	013727	002116			
075074	000000				
075076	005367	177772			
075102	001375				
075104	005367	177756			
075110	001367				
5508	075112	005337	075732	DEC T36DLY	;BUMP COUNTER DOWN
5509	075116	001361		BNE 70\$	;BR, IF MORE DELAY TO GO
5510	075120	012737	006642 075706	MOV #3490.,T36SZ	;SET SIZE OF TRANSFER
5511	075126	012737	140005 075700	MOV #140005,T36PK3	;WRITE DATA,ACK,CVC=1 COMMAND
5512	075134	012704	075700	MOV #T36PK3,R4	;SET UP R4 WITH PACKET ADDRESS
5513	075140	005037	075726	CLR T36CNT	;CLEAR COUNTER
5514	075144	012737	001750 075732	MOV #1000.,T36DLY	;SET DROP DEAD COUNTER VALUE
5515	075152	010465	000000	MOV R4,TSD8(R5)	;ISSUE COMMAND
5516	075156	016501	000002 80\$:	MOV TSSR(R5),R1	;GET TSSR CONTENTS
5517	075162	032701	000200	BIT #SSR,R1	;CHECK FOR SSR SET
5518	075166	001021		BNE 90\$	;BR, IF SSR IS SET
5519	075170	005237	075726	INC T36CNT	;BUMP CYCLE COUNTER
5520	075174			DELAY 1	;CUT NUMBER OF LOOPS DOWN
	075174	012727	000001		
	075200	000000			
	075202	013727	002116		
	075206	000000			
	075210	005367	177772		
	075214	001375			
	075216	005367	177756		
	075222	001367			
5521	075224	005337	075732	DEC T36DLY	;BUMP DROP DEAD COUNTER
5522	075230	001352		BNE 80\$	;BR, IF THERE IS STILL TIME
5523	075232	012702	000200 90\$:	MOV #SSR,R2	;SET UP EXPECTED
5524	075236	020102		CMP R1,R2	;ARE THEY EQUAL
5525	075240	001406		BEQ 100\$	;BR, IF OK
5526	075242	005237	002214	INC FATFLG	;ERROR COUNT
5530	075246			ERRHRD ERRNO,T36WDE,PKTSSR	;TSSR INCORRECT AFTER READ DATA
	075246	104456			
	075250	001461			
	075252	076563			
	075254	012126			
5531	075256				
	075256	104406			
5532	075260	013737	002174 075600	MOV UNITN,T36DSW	;SET UP DRIVE NUMBER
5533	075266	052737	000010 075600	BIS #BIT3,T36DSW	;25-APR-83 REV B - TURN OFF BUFFERING
5534	075274	012704	075560	MOV #T36PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS
5535	075300	004737	010742	JSR PC,WRTCHR	;ISSUE WRITE CHARACTERISTICS
5536	075304	103407		BCS 110\$	;BR, IF COMMAND ISSUED OK
5537	075306	005237	002214	INC FATFLG	;ERROR COUNT
5541	075312	010001		MOV R0,R1	;SAVE CONTENTS OF TSSR
5542	075314			ERRHRD ERRNO,WRTMSG,SFMSG	;WRITE CHARACTERISTICS FAILED
	075314	104456			
	075316	001462			
	075320	005052			
	075322	012114			
5543	075324				
	075324	104406			
5544	075326	012737	006642 075706	MOV #3490.,T36SZ	;SET SIZE OF TRANSFER
5545	075334	012737	140005 075700	MOV #140005,T36PK3	;WRITE DATA,ACK,CVC=1 COMMAND

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,TSD8(R5)		;ISSUE COMMAND
5550	075364	016501	000002	120\$:	MOV	TSSR(R5),R1		;GE; 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\$		;BP, IF OK
5560	075450	005237	002214		INC	FATFLG		;ERROR COUNT
5564	075454				ERRHRD	ERRNO,WRterr,PKTSSR		;TSSR INCORRECT AFTER WRITE DATA
	075454	104456					TRAP	C\$ERHRD
	075456	001463					.WORD	819
	075460	005107					.WORD	WRterr
	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	FATFLG		;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	104403						L10072:
5577	075522	023727	002214	000017	CMP	FATFLG,#15.		TRAP
5578	075530	103402			BLO	999\$		C\$ESUB
5579	075532	004737	017262		JSR	PC,CKDROP		;IS ERROR COUNT AT 25
5580	075536			999\$:				;BR, IF LESS THAN 25
5581								;TRY TO DROP THE UNIT
5582								
5583								
5584	075536	004737	016536		JSR	PC,1STLOOP		;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

```
TRAP      C$EXIT
.WORD     L10070-.
```

	075550	104432
	075552	003344
5589		
5590		
5591		
5593		075560
5595	075560	
5596	075560	100004
5597	075562	075570
5598	075564	000000
5599	075566	000012
5600	075570	
5601	075570	075602
5602	075572	000000
5603	075574	000024
5604	075576	000000
5605	075600	000000
5606	075602	
5607		
5608		
5609		
5611		075670
5613	075670	
5614	075670	100006
5615	075672	075710
5616	075674	000000
5617	075676	000006
5618		
5622	075700	
5623	075700	100005
5624	075702	
5625	075702	003116
5626	075704	000000
5627	075706	000000
5628		
5629		
5630		
5631		
5632	075710	
5633	075710	010
5634	075711	200
5635	075712	000000
5636	075714	000000
5637		
5638		
5639		
5640		
5641		
5642	075716	100205
5643	075720	100605
5644	075722	102205
5645	075724	177777
5646		
5647		
5648	075726	000000
5649	075730	000000
5650	075732	000000

```

;
;LOCAL STORAGE FOR THIS TEST
;
;      .=<.+10>E177770
T36PACKET:
      .WORD    100004
      .WORD    T36DATA
      .WORD    0
      .WORD    10.
T36DATA:
      .WORD    T36BFR
      .WORD    0
      .WORD    20.
      .WORD    0
T36DSW: .WORD    0
T36BFR: .BLKW    25.
;
;WRITE SUBSYSTEM MEMORY COMMAND PACKET
;
;      .=<.+10>E177770
T36PK2:
      .WORD    100006
      .WORD    T36BF2
      .WORD    0
      .WORD    6.
T36PK3:
      .WORD    100005
T36RB:
T36WB: .WORD    FREE
      .WORD    0
T36SZ: .WORD    0
      .EVEN
;
;
;
T36BF2:
T36BS0: .BYTE    10
T36BS1: .BYTE    200
T36S2: .WORD    0
T36S3: .WORD    0
;
;
      .EVEN
;TAPE MOTION PACKET COMMAND VALUES
T36RN: .WORD    100205
T36WDR: .WORD    100605
T36CON: .WORD    102205
      .WORD    177777
;
T36CNT: .WORD    0
T36CNU: .WORD    0
T36DLY: .WORD    0

```

```

;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 CONTINUOUS
;END OF DATA


;TAPE TIMER COUNTER STORAGE AREA
;TAPE TIMER COUNTER STORAGE AREA
;DELAY COUNTER

```

```

5651
5652      ;+
5653      ;LOCAL TEXT MESSAGES FOR TEST
5654      ;-
5655 075734      111      155      160 T36NAS: .ASCIZ 'Improper Tape Controller Buffering Speed'
5656 076005      124      141      160 T36WNG: .ASCIZ 'Tape Position Incorrect After REREAD Previous (OPP=1)'
5657 076073      124      123      123 T36RDF: .ASCIZ 'TSSR Incorrect After READ DATA Command'
5658 076142      122      105      122 T36RRF: .ASCIZ 'REREAD Previous (Space Reverse, Read Forward) Command Failed'
5659 076237      120      117      123 T36SC: .ASCIZ 'POSITION (Space Command) Failed, TSSR Not Correct'
5660 076321      122      111      102 T36LOR: .ASCIZ 'RIB NOT SET AFTER READ REVERSE INTO BOT'
5661 076371      124      123      123 T36WDF: .ASCIZ 'TSSR Not Correct After Illegal Mode Bits Set'
5662 076446      111      154      154 T36LOQ: .ASCIZ 'Illegal Mode Bits, Failed To Set ILC Bit In XST0'
5663 076527      122      105      122 T36SSR: .ASCIZ 'REREAD COMMAND Not Accepted'
5664 076563      124      123      123 T36WDE: .ASCIZ 'TSSR Not Correct After WRITE DATA Command'
5665 076635      124      141      160 T36BOT: .ASCIZ 'Tape Not At BOT After REWIND Command (BOT Not Set In XST0)'
5666 076730      127      122      111 T36TIM: .ASCIZ 'WRITE DATA RETRY, S Erase Tape Not Long Enough'
5667 077005      122      105      122 T36EOT: .ASCIZ 'REREAD DATA OVER EOT GAVE NO TAPE STATUS ALERT'
5668 077064      124      123      123 T36TM: .ASCIZ 'TSSR Not Correct After REREAD COMMAND Reject'
5669 077141      122      145      167 T36RWN: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
5670 077210      122      101      115 T36RNC: .ASCIZ 'RAM Error, Correct Data Pattern Not In Ram'
5671 077263      124      123      123 T36AM3: .ASCIZ 'TSSR Init. Failed After REREAD COMMAND'
5672 077332      104      162      151 T36OFL: .ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
5673 077405      124      123      123 T36WDD: .ASCIZ 'TSSR Not Correct After REREAD DATA Command, SWB Bit Set'
5674 077475      124      123      123 T36WDC: .ASCIZ 'TSSR Not Correct After REREAD DATA Command'
5675 077550      103      126      103 T36VCK: .ASCIZ 'CVC Set, Didn't Reset VCK In Message Buffer'
5676 077623      124      123      102 T36BA: .ASCIZ 'TSBA Not Correct After REREAD DATA Command'
5677 077676      127      122      111 T36WSS: .ASCIZ 'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'
5678 077765      122      145      141 T36LON: .ASCIZ 'Reading Long Record Failed To Set RLL Bit In XST0'
5679 100047      122      145      141 T36LOP: .ASCIZ 'Reading Long Record Failed To Set RLS Bit In XST0'
5680 100131      122      145      163 T36PBP: .ASCIZ 'Residual Byte Count Incorrect After Short Record Read'
5681 100217      122      145      141 T36TRL: .ASCIZ 'Reading Long Record Failed To Give Tape Status Alert'
5682 100305      127      122      111 T36NEF: .ASCIZ 'WRITE DATA RETRY, At First Record, Failed To Set RIB Bit XST3'
5683 100403      124      123      123 T36SCF: .ASCIZ 'TSSR Not Correct After SPACE RECORDS Command'
5684 100460      124      123      123 T36TSA: .ASCIZ 'TSSR Not Correct After WRITE DATA RETRY, Into BOT'
5685 100542      124      123      123 T36WRF: .ASCIZ 'TSSR Not Correct After WRITE DATA RETRY Command'
5686 100622      104      141      164 T36DTA: .ASCIZ 'Data Compare Error, Data Read From Tape Not Equal To Written'
5687 100717      122      145      143 TST36ID: .ASCIZ '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      T36REST:
5697 100740      SAVREG
5698 100744      012701      075560      MOV      #T36PACKET,R1      ;SAVE THE REGISTERS
5699 100750      012721      100004      MOV      #100004,(R1)+      ;START OF THE PACKET
5700 100754      012721      075570      MOV      #T36DATA,(R1)+      ;WRITE SUBSYSTEM MEM. WITH ACK,
5701 100760      005021      CLR      (R1)+      ;ADDRESS OF CHARAISTICS DATA BLOCK
5702 100762      012721      000012      MOV      #10,(R1)+      ;EXTENDED ADDRESS
5703 100766      012721      075602      MOV      #T36BFR,(R1)+      ;SIZE OF DATA BLOCK IN BYTES
5704 100772      005021      CLR      (R1)+      ;ADDRESS OF MESSAGE BUFFER
5705 100774      012721      000024      MOV      #20,(R1)+      ;LENGTH OF MESSAGE BUFFER
5706 101000      005021      CLR      (R1)+
5707 101002      012711      000000      MOV      #0,(R1)      ;SELECT DRIVE ZERO

```

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
5717 101036 012701 075670      MOV      #T36PK2,R1      ;SAVE THE REGISTERS
5718 101042 012721 100006      MOV      #100006,(R1)+    ;START OF THE PACKET
5719 101046 012721 075710      MOV      #T36BF2,(R1)+    ;WRITE SUBSYSTEM MEM. WITH ACK,
5720 101052 005021              CLR      (R1)+        ;ADDRESS OF DATA BLOCK
5721 101054 012721 000006      MOV      #6.,(R1)+      ;EXTENDED ADDRESS
5722 101060 005021              CLR      (R1)+        ;SIZE OF DATA BLOCK IN BYTES
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
5729 101100 012701 075700      MOV      #T36PK3,R1      ;SAVE REGISTERS
5730 101104 005021              CLR      (R1)+        ;SET UP POINTER ADDRESS
5731 101106 005021              CLR      (R1)+        ;COMMAND SPACE
5732 101110 005021              CLR      (R1)+        ;ADDRESS OF DATA BLOCK
5733 101112 005011              CLR      (R1)+        ;EXTENDED ADDRESS
5734 101114 000207              RTS      PC         ;SIZE OF DATA TRANSFER BLOCK
5735 101116              ENDTST                      ;RETURN
101116
101116 104401              L10070: TRAP      C$ETST
5736
5737
5738
5739
5740
5741
5742
5743
5744
5745
5746
5747
5748
5749
5750
5751 101120
101120
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 016570              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
5765
;+
;
;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
;SPACE RECORDS COMMAND WITH A RECORD COUNT OF 80 OR MORE, AND A
;SKIP TAPE MARKS COMMAND WITH A COUNT OF 2 OF MORE, OPERATE THE
;TAPE IN HIGH-SPEED MODE. THIS TEST CAN ONLY BE RUN IF A
;REAL-TIME CLOCK IS AVAILIABLE ON THE SYSTEM. THE TEST OPERATES BY
;TIMING VARIOUS TAPE-MOTION OPERATIONS. USING A NUMBER OF
;DIFFERENT TEST RECORD LENGTHS.
;
;-
BGNTST
T9::
;TEST 9, SUBTEST 1

```

[illegible]

....B1	CKMSG2 - COMPARE EX....B5	TEST 1: WRITE TAPE B9	TEST 5: DATA PARITY....B13
....C1	PKTMES - PRINT TSSR....C5	TEST 1: WRITE TAPE C9	TEST 5: DATA PARITY....C13
....D1	FIFEXP - PRINT FIFO....D5	TEST 2: SKIP TAPE M....D9	TEST 5: DATA PARITY....D13
....E1	MSGSTAT - PRINT STAT....E5	TEST 2: SKIP TAPE M....E9	TEST 5: DATA PARITY....E13
....F1	MSGSUB - PRINT WRITE....F5	TEST 2: SKIP TAPE M....F9	TEST 5: DATA PARITY....F13
....G1	PRAMPKT - PRINT RAM G5	TEST 2: SKIP TAPE M....G9	TEST 6: OPERATIONS G13
....H1	PRMESS - PRINT CONT....H5	TEST 2: SKIP TAPE M....H9	TEST 6: OPERATIONS H13
....I1	PRMSGEXP - PRINT EXP....I5	TEST 2: SKIP TAPE M....I9	TEST 6: OPERATIONS I13
....J1	PRBYTEXP - PRINT ERR....J5	TEST 2: SKIP TAPE M....J9	TEST 6: OPERATIONS J13
....K1	PRBYTEXP - PRINT ERR....K5	TEST 2: SKIP TAPE M....K9	TEST 6: OPERATIONS K13
....L1	RAMERR - PRINT RAM L5	TEST 2: SKIP TAPE M....L9	TEST 6: OPERATIONS L13
....M1	RAMEXP - PRINT RAM M5	TEST 2: SKIP TAPE M....M9	TEST 6: OPERATIONS M13
....N1	BADSSR - PRINT TSSR N5	TEST 2: SKIP TAPE M....N9	TEST 6: OPERATIONS N13
....B2	CHKAMB - CHECK TSSR....B6	TEST 2: SKIP TAPE M....B10	TEST 6: OPERATIONS B14
....C2	ENAIN,DSBINT - ENAB....C6	TEST 2: SKIP TAPE M....C10	TEST 6: OPERATIONS C14
....D2	WAITF - WAIT FOR S....D6	TEST 2: SKIP TAPE M....D10	TEST 6: OPERATIONS D14
PROGRAM HEADER	XNXM - CHECK FOR E6	TEST 2: SKIP TAPE M....E10	TEST 6: OPERATIONS E14
DISPATCH TABLE	TSTSETUP - PRINT TES....F6	TEST 2: SKIP TAPE M....F10	TEST 6: OPERATIONS F14
DEFAULT HARDWARE P-T....G2	TSTSETUP - PRINT TES....G6	TEST 2: SKIP TAPE M....G10	TEST 7: EXTENDED MO....G14
SOFTWARE P-TABLE	INCERK - INCREMENT H6	TEST 2: SKIP TAPE M....H10	TEST 7: EXTENDED MO....H14
SOFTWARE P-TABLE	KTON,KTOFF - EN....I6	TEST 2: SKIP TAPE M....I10	TEST 7: EXTENDED MO....I14
GLOBAL EQUATES SECTI....J2	FILLMEM - FILL MEMOR....J6	TEST 2: SKIP TAPE M....J10	TEST 7: EXTENDED MO....J14
MEMORY MANAGEMENT DE....K2	CMPMEM - COMPARE ME....K6	TEST 2: SKIP TAPE M....K10	TEST 7: EXTENDED MO....K14
MEMORY MANAGEMENT DE....L2	CMPMEM - COMPARE ME....L6	TEST 2: SKIP TAPE M....L10	TEST 7: EXTENDED MO....L14
TSV05 REGISTER AND P....M2	GETPAT - GET 8 BIT M6	TEST 2: SKIP TAPE M....M10	TEST 7: EXTENDED MO....M14
TSV05 REGISTER AND P....N2	GETSEL - ISSUE MENU....N6	TEST 2: SKIP TAPE M....N10	TEST 7: EXTENDED MO....N14
TSV05 REGISTER AND P....B3	CHKMAN - CHECK MANU....B7	TEST 3: NO-OP ("CLE....B11	TEST 7: EXTENDED MO....B15
TSV05 REGISTER AND P....C3	ENVIRN - SETUP FREE....C7	TEST 3: NO-OP ("CLE....C11	TEST 7: EXTENDED MO....C15
TSV05 REGISTER AND P....D3	KTINIT - SETUP KT11....D7	TEST 3: NO-OP ("CLE....D11	TEST 7: EXTENDED MO....D15
TSV05 REGISTER AND P....E3	KTINIT - SETUP KT11....E7	TEST 3: NO-OP ("CLE....E11	TEST 7: EXTENDED MO....E15
SPECIAL MACROS AND O....F3	KTINIT - SETUP KT11....F7	TEST 3: NO-OP ("CLE....F11	TEST 7: EXTENDED MO....F15
GLOBAL DATA SECTION G3	PROTECTION TABLE G7	TEST 3: NO-OP ("CLE....G11	TEST 7: EXTENDED MO....G15
TSTBLK - TEST DATA H3	INITIALIZE SECTION H7	TEST 3: NO-OP ("CLE....H11	TEST 7: EXTENDED MO....H15
GLOBAL ENVIRONMENT S....I3	INITIALIZE SECTION I7	TEST 3: NO-OP ("CLE....I11	TEST 7: EXTENDED MO....I15
GLOBAL TEXT MESSAGES....J3	INITIALIZE SECTION J7	TEST 3: NO-OP ("CLE....J11	TEST 7: EXTENDED MO....J15
GLOBAL TEXT MESSAGES....K3	ADD AND DROP UNITS S....K7	TEST 4: ERASE AND O....K11	TEST 7: EXTENDED MO....K15
GLOBAL ERROR REPORT L3	ADD AND DROP UNITS S....L7	TEST 4: ERASE AND O....L11	TEST 7: EXTENDED MO....L15
PRITSSR - PRINT TSSR....M3	CLEAN-UP AND REPORT M7	TEST 4: ERASE AND O....M11	TEST 7: EXTENDED MO....M15
PRITSSR - PRINT TSSR....N3	CLEAN-UP AND REPORT N7	TEST 4: ERASE AND O....N11	TEST 8: RECORD BUFF....N15
PRITSSR - PRINT TSSR....B4	CLEAN-UP AND REPORT B8	TEST 4: ERASE AND O....B12	TEST 8: RECORD BUFF....B16
PRIPKT - PRINT THE C4	TEST 1: WRITE TAPE C8	TEST 4: ERASE AND O....C12	TEST 8: RECORD BUFF....C16
PRIXOR - PRINT EXPD....D4	TEST 1: WRITE TAPE D8	TEST 4: ERASE AND O....D12	TEST 8: RECORD BUFF....D16
PRIRAM - PRINT RAM E4	TEST 1: WRITE TAPE E8	TEST 4: ERASE AND O....E12	TEST 8: RECORD BUFF....E16
PRITADD - PRINT MEMO....F4	TEST 1: WRITE TAPE F8	TEST 4: ERASE AND O....F12	TEST 8: RECORD BUFF....F16
SPACE - SPACE RECO....G4	TEST 1: WRITE TAPE G8	TEST 4: ERASE AND O....G12	TEST 8: RECORD BUFF....G16
SPACE - SPACE RECO....H4	TEST 1: WRITE TAPE H8	TEST 4: ERASE AND O....H12	TEST 8: RECORD BUFF....H16
WRTHR - WRITE CHAR....I4	TEST 1: WRITE TAPE I8	TEST 4: ERASE AND O....I12	TEST 8: RECORD BUFF....I16
REWIND - POSITION T....J4	TEST 1: WRITE TAPE J8	TEST 4: ERASE AND O....J12	TEST 8: RECORD BUFF....J16
CKRAM - COMPARE RA....K4	TEST 1: WRITE TAPE K8	TEST 5: DATA PARITY....K12	TEST 8: RECORD BUFF....K16
CKRAM2 - COMPARE RA....L4	TEST 1: WRITE TAPE L8	TEST 5: DATA PARITY....L12	TEST 8: RECORD BUFF....L16
CKMSG - COMPARE WR....M4	TEST 1: WRITE TAPE M8	TEST 5: DATA PARITY....M12	TEST 9: FUNCTION TI....M16
CKMSG2 - COMPARE EX....N4	TEST 1: WRITE TAPE N8	TEST 5: DATA PARITY....N12	

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

SEQ 208

Address	Offset	Label	Instruction	Comment	Register	Value
101360	001607					
101362	103565					
101364	012126					
5812	101365	301:	CKLOOP	LOOP IF SELECTED		
	101366					
5813	101370	013701	102270	MOV	T37BFR+6,R1	
5814	101374	010102		MOV	R1,R2	
5815	101376	052702	000002	BIS	#BIT1,R2	
5816	101402	020102		CMP	R1,R2	
5817	101404	001406		BEQ	401	
5818	101406	005237	002214	INC	FATFLG	
5822	101412			ERRHRD	ERRNO,T37BOT,EXPREC	
	101412	104456				
	101414	001610				
	101416	103261				
	101420	015554				
5823	101422	401:	CKLOOP	LOOP IF SELECTED		
	101422	104406				
5824	101424	012703	000144	MOV	#100.,R3	
5825	101430	013737	003116	MOV	FREE,T37WB	
5826	101436	012737	140005	MOV	#140005,T37PK3	
5827	101444	012704	102360	MOV	#T37PK3,R4	
5828	101450	012737	001130	MOV	#600.,T37S2	
5829	101456	010465	000000	MOV	R4,TSD8(R5)	
5830	101462	004737	016330	JSR	PC,WAITF	
5831	101466	016501	000002	MOV	TSSR(R5),R1	
5832	101472	012702	000200	MOV	#SSR,R2	
5833	101476	020102		CMP	R1,R2	
5834	101500	001406		BEQ	701	
5835	101502	005237	002214	INC	FATFLG	
5839	101506			ERRHRD	ERRNO,T37WDC,PKTSSR	
	101506	104456				
	101510	001611				
	101512	104121				
	101514	012126				
5840	101516	701:	CKLOOP	LOOP IF SELECTED		
	101516	104406				
5841	101520	005303		DEC	R3	
5842	101522	001345		BNE	651	
5843	101524	004737	011074	JSR	PC,REWIND	
5844	101530	103411		BCS	1301	
5845	101532	016501	000002	MOV	TSSR(R5),R1	
5846	101536	010004		MOV	R0,R4	
5847	101540	005237	002214	INC	FATFLG	
5851	101544			ERRHRD	ERRNO,T37RWN,PKTSSR	
	101544	104456				
	101546	001612				
	101550	103565				
	101552	012126				
5852	101554	1301:	CKLOOP	LOOP IF SELECTED		
	101554	104406				
5853	101556	013701	102270	MOV	T37BFR+6,R1	
5854	101562	010102		MOV	R1,R2	
5855	101564	052702	000002	BIS	#BIT1,R2	
5856	101570	020102		CMP	R1,R2	
5857	101572	001406		BEQ	1401	
5858	101574	005237	002214	INC	FATFLG	

C1

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

SEQ 209

5862	101600			ERRHRD	ERRNO,T37BOT,EXPREC	;TAPE NOT AT BOT AFTER REWIND		
	101600	104456				TRAP	C:ERHRD	
	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	;SET UP PACKET ADDRESS		
5865	101616	012737	000037	102362	MOV	;SET UP RECORDS TO SPACE OVER		
5866	101624	012737	140010	102360	MOV	;ACK,CVC=1,SPACE FORWARD COMMAND		
5867	101632	010465	000000		MOV	;ISSUE COMMAND		
5868	101636	005237	102406		INC	;BUMP TIMER		
5869	101642				DELAY	;DELAY ABOUT 100US		
	101642	012727	000001			MOV	01,(PC)+	
	101646	000000				.WORD	0	
	101650	013727	002116			MOV	L:DLI,(PC)+	
	101654	000000				.WORD	0	
	101656	005367	177772			DEC	-6(PC)	
	101662	001375				BNE	.-4	
	101664	005367	177756			DEC	-22(PC)	
	101670	001367				BNE	.-20	
5870	101672	016501	000002		MOV	;GET TSSR		
5871	101676	032701	000200		BIT	;CHECK FOR TSSR'S SSR SET		
5872	101702	001755			BEQ	;KEEP COUNTING UNTIL SET		
5873	101704	012702	000200		MOV	;SET UP EXPECTED		
5874	101710	020201			CMP	;WAS EVERYTHING OK		
5875	101712	001406			BEQ	;BR, IF ALL IS WELL		
5876	101714	005237	002214		INC	;ERROR COUNT		
5880	101720				ERRHRD	;SPACE FORWARD DIDN'T WORK OUT		
	101720	104456				TRAP	C:ERHRD	
	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	;CALL TAPE REWIND COMMAND		
5883	101736	103411			BCS	;BR, IF NO PROBLEM		
5884	101740	010004			MOV	;GET PACKET ADDRESS		
5885	101742	016501	000002		MOV	;GET STATUS FROM TSSR		
5886	101746	005237	002214		INC	;ERROR COUNT		
5890	101752				ERRHRD	;REWIND NOT ACCEPTED		
	101752	104456				TRAP	C:ERHRD	
	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	;PICK UP XSTO		
5893	101770	010102			MOV	;SET UP EXPECTED		
5894	101772	052702	000002		BIS	;SET BOT BIT IN EXPECTED		
5895	101776	020102			CMP	;DOES EXP = REC'D		
5896	102000	001406			BEQ	;BR, IF EQUAL (OK)		
5897	102002	005237	002214		INC	;ERROR COUNT		
5901	102006				ERRHRD	;TAPE NOT AT BOT AFTER REWIND		
	102006	104456				TRAP	C:ERHRD	
	102010	001616				.WORD	910	
	102012	103261				.WORD	T37BOT	

D1

```

;LOOP IF SELECTED                                .WORD    EXPREC
;SET UP PACKET ADDRESS                          TRAP      C$CLP1
;SET UP RECORDS TO SPACE OVER
;ACK,CVC=1,SPACE FORWARD COMMAND
;ISSUE COMMAND
;BUMP TIMER
;DELAY ABOUT 100US
MOV        #1,(PC)+
          .WORD    0
MOV        L$DLY,(PC)+
          .WORD    0
DEC        -6(PC)
BNE        -.4
DEC        -22(PC)
BNE        -.20
;GET TSSR
;CHECK FOR TSSR'S SSR SET
;KEEP COUNTING UNTIL SET
;SET UP EXPECTED
;WAS EVERYTHING OK
;BR, IF ALL IS WELL
          ;ERROR COUNT
;SPACE FORWARD DIDN'T WORK OUT
TRAP      C$ERHRO
          .WORD    911
          .WORD    T37SCF
          .WORD    PKTSSR
;LOOP IF SELECTED                                TRAP      C$CLP1
;TIME FOR WRITE SPACING
;TIME FOR WRITE RETRY SPACING
;SETTING UP CONSTANTS
;SETTING UP CONSTANTS
;CHECK FOR DIFFERENCE
;BR, IF GOOD ##### CHECK #####
          ;ERROR COUNT
;TIME WAS NOT DIFFERENT ENOUGH
TRAP      C$ERHRO
          .WORD    912
          .WORD    T37TIM
          .WORD    EXPREC
;LOOP IF SELECTED                                TRAP      C$CLP1
;<<<<<<<<<<<<<<<< END SUBTEST >>>>>>>>>>>>>>>>
          L10074:
TRAP      C$ESUB
          ;IS ERROR COUNT AT 25
          ;BR, IF LESS THAN 25
          ;TRY TO DROP THE UNIT
;DO WE NEED TO ITERATE TEST
;BR, IF NO LOOP REQUIRED
```

E1

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

SEQ 211

5943	102226	000137	101154	JMP	T37LOOP	;EXECUTE AGAIN
5944	102232			1634:		
5945	102232			EXIT	TST	;ALL DONE THIS TEST
	102232	104432				TRAP C\$EXIT
	102234	003306				.WORD L10073-
5946				;		
5947				;LOCAL STORAGE FOR THIS TEST		
5948				;		
5950		102240		;	..10>E177770	
5952	102240			T37PACKET:		;COMMAND PACKET FOR TEST
5953	102240	100004		.WORD	100004	;WRITE CHARACTERISTICS COMMAND, WITH , ACK
5954	102242	102250		.WORD	T37DATA	;ADDRESS OF CHARACTERISTICS BLOCK
5955	102244	000000		.WORD	0	
5956	102246	000012		.WORD	10.	;STARTING VALUE OF BLOCK SIZE
5957	102250			T37DATA:		;CHARACTERISTICS DATA BLOCK
5958	102250	102262		.WORD	T37BFR	;ADDRESS OF MESSAGE BUFFER
5959	102252	000000		.WORD	0	
5960	102254	000024		.WORD	20.	;LENGTH OF MESSAGE BUFFER
5961	102256	000000		.WORD	0	
5962	102260	000000		T37DSW:	.WORD 0	;SELECT DRIVE 0
5963	102262			T37BFR:	.BLKW 25.	;MESSAGE BUFFER
5964				;		
5965				;WRITE SUBSYSTEM MEMORY COMMAND PACKET		
5966				;		
5968		102350		;	..10>E177770	
5970	102350			T37PK2:		
5971	102350	100006		.WORD	100006	;WRITE SUB SYS MEM COMMAND, AND ACK
5972	102352	102370		.WORD	T37BF2	;ADDRESS OF SELECT BLOCK DATA
5973	102354	000000		.WORD	0	
5974	102356	000006		.WORD	6	;SIZE OF DATA PACKET
5975						
5979	102360			T37PK3:		
5980	102360	100005		.WORD	100005	;REREAD COMMAND, AND ACK
5981	102362			T37RB:		
5982	102362	003116		T37WB:	.WORD FREE	;ADDRESS OF WRITE BUFFER
5983	102364	000000		.WORD	0	
5984	102366	000000		T37SZ:	.WORD 0	;SIZE OF BUFFER (EXTENT)
5985				.EVEN		
5986				;		
5987				;		
5988				;		
5989	102370			T37BF2:		
5990	102370	010		T37BS0:	.BYTE 10	;BSELO AREA
5991	102371	200		T37BS1:	.BYTE 200	;BSEL1 AREA
5992	102372	000000		T37S2:	.WORD 0	;SEL 2 AREA
5993	102374	000000		T37S3:	.WORD 0	;DATA AREA
5994				;		
5995				;		
5996				.EVEN		
5997				;TAPE MOTION PACKET COMMAND VALUES		
5998						
5999	102376	100205		T37RN:	.WORD 100205	;REREAD DATA (NEXT)
6000	102400	100605		T37WDR:	.WORD 100605	;REREAD DATA RETRY
6001	102402	102205		T37CON:	.WORD 102205	;WRITE CONTINUOUS
6002	102404	177777		.WORD	177777	;END OF DATA
6003						
6004				;		

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

SEQ 212

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: .ASCIIZ			'Tape Position Incorrect After REREAD Previous (OPP=1)'
6013	102502	124	123	123	T37RDF: .ASCIIZ			'TSSR Incorrect After READ DATA Command'
6014	102551	122	105	122	T37RRF: .ASCIIZ			'REREAD Previous (Space Reverse, Read Forward) Command Failed'
6015	102646	120	117	123	T37SC: .ASCIIZ			'POSITION (Space Command) Failed, TSSR Not Correct'
6016	102730	122	111	102	T37LOR: .ASCIIZ			'RIB NOT SET AFTER READ REVERSE INTO BOT'
6017	103000	124	123	123	T37WDF: .ASCIIZ			'TSSR Not Correct After Illegal Mode Bits Set'
6018	103055	111	154	154	T37LOQ: .ASCIIZ			'Illegal Mode Bits, Failed To Set ILC Bit In XST0'
6019	103136	122	105	122	T37SSR: .ASCIIZ			'REREAD COMMAND Not Accepted'
6020	103172	124	123	123	T37WDE: .ASCIIZ			'TSSR Not Correct After WRITE DATA RETRY Command, At BOT'
6021	103261	124	141	160	T37BOT: .ASCIIZ			'Tape Not At BOT After REWIND Command (BOT Not Set In XST0)'
6022	103354	127	122	111	T37TIM: .ASCIIZ			'WRITE DATA RETRY'S Erase Tape Not Long Enough'
6023	103431	122	105	122	T37EOT: .ASCIIZ			'REREAD DATA OVER EOT GAVE NO TAPE STATUS ALERT'
6024	103510	124	123	123	T37TM: .ASCIIZ			'TSSR Not Correct After REREAD COMMAND Reject'
6025	103565	122	145	167	T37RWN: .ASCIIZ			'Rewind (POSITION) Command Not Accepted'
6026	103634	122	101	115	T37RNC: .ASCIIZ			'RAM Error, Correct Data Pattern Not In Ram'
6027	103707	124	123	123	T37AM3: .ASCIIZ			'TSSR Init. Failed After REREAD COMMAND'
6028	103756	104	162	151	T37OFL: .ASCIIZ			'Drive 7 Select Failed To Set "OFL" In TSSR'
6029	104031	124	123	123	T37WDD: .ASCIIZ			'TSSR Not Correct After REREAD DATA Command, SW9 Bit Set'
6030	104121	124	123	123	T37WDC: .ASCIIZ			'TSSR Not Correct After REREAD DATA Command'
6031	104174	103	126	103	T37VCK: .ASCIIZ			'CVC Set, Didn't Reset VCK In Message Buffer'
6032	104247	124	123	102	T37BA: .ASCIIZ			'TSBA Not Correct After REREAD DATA Command'
6033	104322	127	122	111	T37WSS: .ASCIIZ			'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'
6034	104411	122	145	141	T37LON: .ASCIIZ			'Reading Long Record Failed To Set RLL Bit In XST0'
6035	104473	122	145	141	T37LOP: .ASCIIZ			'Reading Long Record Failed To Set RLS Bit In XST0'
6036	104555	122	145	163	T37PBP: .ASCIIZ			'Residual Byte Count Incorrect After Short Record Read'
6037	104643	122	145	141	T37TRL: .ASCIIZ			'Reading Long Record Failed To Give Tape Status Alert'
6038	104731	127	122	111	T37NEF: .ASCIIZ			'WRITE DATA RETRY, At First Record, Failed To Set RIB Bit XST3'
6039	105027	124	123	123	T37SCF: .ASCIIZ			'TSSR Not Correct After SPACE RECORDS Command'
6040	105104	124	123	123	T37TSA: .ASCIIZ			'TSSR Not Correct After WRITE DATA RETRY, Into BOT'
6041	105166	124	123	123	T37WRF: .ASCIIZ			'TSSR Not Correct After WRITE DATA RETRY Command'
6042	105246	104	141	164	T37DTA: .ASCIIZ			'Data Compare Error, Data Read From Tape Not Equal To Written'
6043	105343	106	165	156	T37ID: .ASCIIZ			'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	102267		MOV	#T37BFR,(R1).		;ADDRESS OF MESSAGE BUFFER
6060	105416	005021			CLR	(R1).		
6061	105420	012721	000024		MOV	#20.,(R1).		;LENGTH OF MESSAGE BUFFER

G1

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

SEQ 213

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				L10073: TRAP C\$ETST
6092	105544			ENDMOD		

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      BGNMRD
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$CODE
105550      .WORD  HPM1
105552      .WORD  T$LLOLIM
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$LLOLIM
105564      .WORD  T$HILIM
35      .GPRMD  HPM3,4,0,340,0,7,YES      ;GET INTERRUPT PRIORITY.
36 105566      ENDMRD
          .EVEN
          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

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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      BGNSFT
105676      .WORD L10076-L$SOFT/2
105700
53          L$SOFT::
54          ;      GPRML  SPM1,0,-1,YES          ; GET TRANSPORT TEST FLAG.
          ;      GPRML  SPM4,2,-1,YES          ; GET ITERATION CONTROL.
          ;      .WORD  T$CODE
          ;      .WORD  SPM4
          ;      .WORD  -1
55          ;      GPRMD  SPM6,4,D,7777,0,7777,YES      ; GET LOCAL EPROR LIMIT
56          ;      GPRMD  SPM7,6,D,7777,0,7777,YES      ; GET GLOBAL ERROR LIMIT
57 105706      ENDSFT
          .EVEN
          L10076:
58
59 105706      105      116      101  SPM1:  .ASCIZ  'ENABLE TRANSPORT TESTS '
60 105736      111      116      110  SPM4:  .ASCIZ  'INHIBIT ITERATIONS '
61 105766      120      105      122  SPM6:  .ASCIZ  'PER TEST ERROR LIMIT '
62 106016      120      105      122  SPM7:  .ASCIZ  'PER UNIT ERROR LIM, '
63          .SBTTL  PATCH AREA
64
65          ;
66          ; FINALLY A GENEROUS PATCH AREA.
67          ;
68          ; AND AN ADJUSTMENT TO ACCOUNT FOR THE "LASTAD BIT7" HACK
69          ; DESCRIBED IN "SUPPRG.MEM" (FOR REV C).
70          ;
71
72 106046      PATCH::
73
74 106046      .BLKW  32,
75
76          .-137/+1
77          LASTAD      ;SET LAST USED ADDRESS.
78          .EVEN
79 106400      .WORD  0
          106400      000000
          106402      000000
          106404
80 106404      L$LAST::
81 106404      ENDMOD
          .END

```

TSv6 - PARAMETER CODING MACRO M1113 06-FEB-84 18:04
SYMBOL TABLE

SEQ 216

ADDSSR 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 G	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	DJAD12 004637	F\$HW 000013	IPRI 002204 G
BIT0 000001 G	C\$CVEC 000036	DUFLG 003104 G	F\$INIT 000006	ISR 000100 G
BIT00 000001 G	C\$DCLN 000044	DUMMY 003054	F\$JMP 000050	IVEC 002202 G
BIT01 000002 G	C\$DDDU 000051	EF.CON 000036 G	F\$MOD 000000	IXE 004000 G
BIT02 000004 G	C\$DRPT 000024	EF.NEW 000035 G	F\$MSG 000011	I\$AU 000041
BIT03 000010 G	C\$DU 000053	EF.PWR 000034 G	F\$PROT 000021	I\$AUTO 000041
BIT04 000020 G	C\$EDIT 000003	EF.RES 000037 G	F\$PWR 000017	I\$CLN 000041
BIT05 000040 G	C\$ERDF 000055	EF.STA 000040 G	F\$RPT 000012	I\$DU 000041
BIT06 000100 G	C\$ERRR 000056	EMAXDU 017057	F\$SEG 000003	I\$HRD 000041
BIT07 000200 G	C\$ERRG 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\$ERSJ 000057	ENVIRN 020710	F\$SUB 000002	I\$MSG 000041
BIT1 000002 G	C\$ESCA 000010	EPRTSW 002172 G	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	ERCM 012013	GERRMA 002166 G	I\$RPT 000041
BIT13 020000 G	C\$EXTT 000032	ERRHI 002230 G	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	G\$CNT0 000200	I\$SFT 000041
BIT2 000004 G	C\$GMAN 000043	ERRNC 001620	G\$DELM 000372	I\$SRV 000041
BIT3 000010 G	C\$GPHR 000042	ERRVEC 000004 G	G\$DISP 000003	I\$SUB 000041
BIT4 000020 G	C\$GPLD 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	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	G\$OFST 000376	KIPAR3 172346
BOE 000400 G	C\$MSG 000023	EXPD 002224 G	G\$PRMA 000001	KIPAR4 172350
BRINIT 004453	C\$OPEN 000034	EXPGOT 004527	G\$PRMD 000002	KIPAR5 172352
BSELO 000000	C\$PNTB 000014	EXPGT2 004563	G\$PRML 000000	KIPAR6 172354
BSEL1 000001	C\$PNTF 000017	EXPMSC 002314 G	G\$RADA 000140	KIPAR7 172356
CHKAMB 016124	C\$PNIS 000016	EXPREC 015554 G	G\$RADB 000000	KIPDR0 172300
CHKMAN 020560 G	C\$PNTX 000015	EXTA 005766	G\$RADD 000040	KIPDR1 172302
CHKTSS 016416	C\$QIO 000377	EXTEND 005764	G\$RADL 000120	KIPDR2 172304
CKDROP 017262	C\$RDBU 000007	EXTFEA 002220 G	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\$IES 000010	KIPDR5 172312
CKMSG2 011560 G	C\$REVI 000003	FATERR 000050	HIADDR 001400	KIPDR6 172314
CKRAM 011174 G	C\$RFLA 000021	FATFLG 002214 G	HOE 100000 G	KIPDR7 172316
CKRAM2 011304 G	C\$RPT 000025	FERCM 012002	HPM1 105566	KTENAB 003126 G
CMDPKT 021340 G	C\$SEFG 000046	FIFEXP 012250 G	HPM2 105622	KTFLG 003124 G
CMPMEM 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\$YPRI 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 G	IFAU 004252	LISTAL 000001
CTABE 003170 G	DEBUGH 011712	FREE 003115 G	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\$FOIN= 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\$AL 022432 G	L10006 012166	MEMCK 021356 G	PATCH 106046 G	PW.NOP= 000000
L\$AUT 002070 G	L10007 012204	MENASC 020527	PATDAT 020310	PW.N01= 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.NOD= 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	PKIAD 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.AT1= 000006	PKTMES 012170 G	P.CMD = 000037
L\$DU 022530 G	L10024 015656	MS.EXT= 000200	PKTRAM 004741 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	GETS= 000017
L\$LTP 002102 G	L10032 022634	M8189 005641	PRBEXP 015550	.IE = 000200
L\$EXP1 002046 G	L10033 022714	M818A = 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 032332	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	PRIBXO 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 001146	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	PRIT1 010477	RAMFOR 010174
L\$NAME 002000 G	L10052 043134	NULCR 004524	PRIXOR 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	RCVMA 002276 G
L\$PRT 002112 G	L10055 050452	NXMHI 003134 G	PRI02 = 000100 G	RCVLOA 002300 G
L\$REPP 002062 G	L10056 051266	NXMLD 003132 G	PRI03 = 000140 G	RDERR 005202
L\$REV 002010 G	L10057 056040	NXMTST 021532	PRI04 = 000200 G	RECMG 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	NXR 003773	PRI07 = 000340 G	RETFERR 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	PRMSG 014632 G	RMCHEN= 000200
L\$SW 002160 G	L10066 066426	O\$APTS= 000000	PRMSG0 015012	RMMSG8= 000215
L\$TEST 002114 G	L10067 067330	O\$AU = 000001	PRMSG1 015057	RMMSG8= 000234
L\$TIHL 002014 G	L10070 101116	O\$BGR= 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	PR1ASC 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\$ILI= 000776	T29DSW 026340	T30CNT 036650
SCME 005007	TCJCOD 006754	T\$LAST= 000001	T29DTA 030043	T30CNU 036652
SDELAY 010740	TEMP1 003110 G	T\$LOLI= 000000	T29EOT 030131	T30DAT 036510
SELASC 020522	TEMP2 003112 G	T\$LSYM= 010000	T29LON 031225	T30DLY 036656
SELDAT= 000004	TERCLS= 000016	T\$LTNO= 000011	T29LOO 023556	T30DLY 036520
SEL2 = 000002	TESTNO= 000011	T\$NEST= 177777	T29LOP 031307	T30DLY 041134
SETMAP 017376	TEXASC 006513	T\$NSO = 000000	T29LOQ 027426	T30DTR 041070
SETU 022166	TFCASC 006615	T\$NS1 = 000005	T29LOR 027301	T30ETM 036516
SFFMSG 012162 G	TIMEXP 015630 G	T\$NS2 = 000002	T29NEF 026630	T30FCN 036654
SFHERR 003701	TIMSGO 015660	T\$PTNU= 000000	T29NEQ 031545	T30IBT 037031
SFIERR 003646	TINERR 012101	T\$SAVL= 177777	T29OFL 026502	T30IBU 036660
SFIMSG 012114 G	TMPBFR 002624 G	T\$SEGL= 177777	T29OF7 030515	T30IMV 036636
SFPTBL 002160 G	TNAM 016764	T\$SUBN= 000001	T29PAC 026320	T30LOO 032360
SIFLAG 003146 G	TRANST 002160 G	T\$TAGL= 177777	T29PBP 031371	T30LOQ 037630
SIMSG 012046	TSBA = 000000 G	T\$TAGN= 010077	T29PK2 026430	T30NEF 040576
SKIPT 003372	TSBAH = 000001 G	T\$TEMP= 000000	T29PK3 026440	T30OFL 040307
SOFINI 016054 G	TSDB = 000000 G	T\$TEST= 000011	T29RB 026442	T30PAC 036500
SPACE 010544 G	TSDBH = 000001 G	T\$TSTM= 177777	T29RDF 026720	T30PK2 036610
SPM1 105706	TSFCOD 007314	T\$TSIS= 000001	T29RDG 031643	T30PK3 036620
SPM4 105736	TSREJ = 000006	T\$AU = 010031	T29RES 032146	T30PTB 037242
SPM6 105766	TSSDEF 006664	T\$AUT= 010033	T29RIB 031724	T30RB 036622
SPM7 106016	TSSR = 000002 G	T\$CLE= 010034	T29RN 026456	T30RDF 037413
SRO = 177572	TSSRBI 003476 G	T\$DU = 010032	T29RNC 030354	T30RDG 037471
SR1 = 177574	TSSRFO 006473	T\$HAR= 010075	T29RRF 026767	T30RES 041252
SR2 = 177576	TSSRH = 000003 G	T\$HW = 010000	T29RRG 027103	T30RIB 036745
SR3 = 172516	TSSX 004014	T\$INI= 010030	T29RRN 032024	T30RN 036636
SSR = 000200	TSTBLK 002744 G	T\$MSG= 010025	T29RSZ 026476	T30RRM 040655
STATCO 012472	TSTCNT 002206 G	T\$PRO= 010027	T29RT2 032240	T30RRN 040733
SVCGBL= 000000	TSTEND 017000	T\$RPT= 010035	T29RT3 032302	T30RRP 041012
SVCINS= 000000	TSTFLA 002306 G	T\$SOF= 010076	T29RWN 030305	T30RT2 041344
SVCSUB= 000001	TSTL00 016536 G	T\$SRV= 010026	T29SC 027217	T30RT3 041406
SVCTAG= 000000	TSTPTR 002310 G	T\$SMD= 010074	T29SSR 027507	T30RWN 040240
SVCTST= 000001	TSTSET 016570 G	T\$SMD= 010001	T29SZ 026446	T30SKM 037114
S\$LSYM= 010000	TST29I 032117	T\$TLS= 010073	T29S2 026452	T30SSR 037711
S0.IDB= 000010	TST30I 041231	T1 023526 G	T29S3 026454	T30SZ 036626
S0.IFB= 000002	TST31I 046543	T1.1 023556	T29TM 030227	T30S2 036632
S0.IFP= 000001	TST32I 052640	T1.2 024206	T29TRL 031457	T30S3 036634
S0.ILD= 000020	TST33I 055645	T1.3 024730	T29VCK 030771	T30TM 040106
S0.ION= 000040	TST34I 063207	T1.4 025454	T29WB 026442	T30TMK 040514
S0.IRW= 000100	TST35I 073133	T2 032334 G	T29WDC 030677	T30TM2 040163
S0.IRW= 000004	TST36I 100717	T2.1 032360	T29WDD 030570	T30TPB 037333
S0.ISP= 000200	TST37I 105343	T2.2 033752	T29WDE 027562	T30VCK 040441
S1.ICE= 002000	TSV2 002000 G	T2.3 035376	T29WDF 027351	T30WB 036622
S1.IED= 010000	TSV3 002170 G	T2.4 035772	T29WDR 026460	T30WDC 040362
S1.IFM= 001000	TSV4 021626 G	T23A 003136 G	T29WLK 027644	T30WDC 037170
S1.IHE= 000400	TSV6 105544 G	T23B 003140 G	T29WNG 026523	T30WDC 037762
S1.IID= 004000	TSV7B 023526 G	T29AM3 030427	T29WRT 027731	T30WDF 037553
S1.IIR= 020000	TTIBFR= 177562 G	T29BA 031044	T29WSS 031136	T31AM3 045016
S1.IIR= 040000	TTICSR= 177560 G	T29BF 026342	T3 041432 G	T31BA 045356
S1.PAR= 100000	TTIVEC= 000060 G	T29BF2 026450	T3EFLG 003142 G	T31BFR 043212
S2.ATI= 000010	T\$ARGC= 000003	T29BOT 027776	T3.1 041462	T31BF2 043320
S2.BTI= 000004	T\$CODE= 001130	T29BS0 026450	T3.2 042340	T31BOT 044345
S2.DIM= 000200	T\$ERRN= 001620	T29BS1 026451	T30BFR 036522	T31BS0 043320
S2.ILW= 000100		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	T34FR	060562	T35DAT	067400	T36CNT	075726
T31CON	043332	T32DLY	051514	T34RF2	060676	T35DLY	067542	T36CNU	075730
T31DAT	043200	T32DSW	051350	T34LOT	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	T32OPI	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	T34RE	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	075705
T31S3	043324	T33DTA	055550	T34STM	061700	T35SZ	067516	T36S2	075712
T31TIM	043440	T33L00	053076	T34SZ	060666	T35S2	067522	T36S3	075714
T31TM	044617	T33PAC	054550	T34S2	060700	T35S3	067524	T36TIM	076730
T31TRL	043752	T33PK2	054660	T34S3	060702	T35TIM	070433	T36TM	077064
T31TSA	046236	T33PK3	054670	T34TM	062263	T35TRL	070567	T36TRL	100217
T31VCK	04303	T33RC	054672	T34TMK	061763	T35TSA	072163	T36TSA	100460
T31WB	043312	T33RBP	054724	T34VCK	062773	T35VCK	071253	T36VCK	077550
T31WDC	045230	T33RES	055662	T34WB	060662	T35WB	067512	T36WB	075702
T31WDD	045140	T33RN	054706	T34WD	060704	T35WDC	071200	T36WDC	077475
T31WDE	044233	T33RT2	055754	T34WDC	062671	T35WDD	071110	T36WDD	077405
T31WDF	044041	T33RT3	056016	T34WDD	062602	T35WDE	070266	T36WDE	076563
T31WDR	043330	T33RWN	055420	T34WDR	060706	T35WDF	070130	T36WDF	076371
T31WNG	043471	T33SSR	055241	T34WSS	063120	T35WDR	067530	T36WDR	075720
T31WNH	043410	T33SZ	054676	T34WTM	061300	T35WNG	067544	T36WNG	076005
T31WRF	046343	T33S2	054702	T35AM3	070766	T35WRF	072245	T36WRF	100542
T31WSS	045431	T33S3	054704	T35BA	071326	T35WSS	071401	T36WSS	077676
T32AM3	051747	T33UNC	055062	T35BFR	067412	T36AM3	077263	T37AM3	103707
T32BA	052063	T33UND	055152	T35BF2	067520	T363A	077623	T37BA	104247
T32BFR	051352	T33WB	054672	T35BOT	070340	T36BFR	075602	T37BFR	102262
T32BOE	052366	T33WDC	055467	T35BS0	067520	T36BF2	075710	T37BF2	102370
T32BOT	051516	T33WDR	054710	T35BS1	067521	T36BOT	076635	T37BOT	103261
T32CMD	051460	T33WPW	055002	T35CNT	067536	T36BS0	075710	T37BS0	102370
T32CNT	051510	T34AM3	062461	T35CNU	067540			T37BS1	102371

N1

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

SEQ 2:

T37CNT 102406	T37SSR 103136	T7.4 066444	WSMBK 021350 G	X\$OFFS= 000400
T37CNU 102410	T37SZ 102366	T8 073344 G	XFERAS 016020	X\$TRUE= 000020
T37CON 102402	T37S2 102372	T8.1 073400	XNXM 016456	X1.COR= 020000
T37DAT 102250	T37S3 102374	T8.2 074454	XOPBFO 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	UNITN 002174 G	XST2 = 000012 G	X1.UNC= 000002
T37LON 104411	T37VCK 104174	UNREC = 000006	XST3 = 000014 G	X2. UF= 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	XSOMOT= 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.MOE= 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	XXCOM1 003114 G	X4.RCE= 040000
T37RWN 103565	T7.1 063444	WRCHR 010742 G	X\$ALWA= 000000	X4.TSM= 020000
T37SC 102646	T7.2 064522	WRTERR 005107	X\$FALS= 000040	X4.WRC= 000377
T37SCF 105027	T7.3 065602	WRTMSG 005052		

. ABS. 106404 000
000000 001

ERRORS DETECTED: 0

VIRTUAL MEMORY USE: 30328 WORDS (119 PAGES)
DYNAMIC MEMORY: 20614 WORDS (79 PAGES)
ELAPSED TIME: 00:43:58
CVTSDB, CVTSDB, SEQ/-SP=SVC/ML, TSV1D, TSV22D, TSV3B, TSV4, TSV7B, TSV6

TEST 9: FUNCTION TI....B1
TEST 9: FUNCTION TI....C1
TEST 9: FUNCTION TI....D1
TEST 9: FUNCTION TI....E1
TEST 9: FUNCTION TI....F1
TEST 9: FUNCTION TI....G1
TEST 9: FUNCTION TI....H1
SOFTWARE PARAMETER C....I1
SYMBOL TABLE J1
SYMBOL TABLE K1
SYMBOL TABLE L1
SYMBOL TABLE M1
SYMBOL TABLE N1