

KMC11-B

KMC11-B STATIC PART 2 AH-S880A-MC
CZKMCA0 FICHE 1 OF 1

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IDENTIFICATION

PRODUCT CODE: AC-S878A-MC
PRODUCT NAME: CZKMCAO KMC11-B STATIC PART2
PROGRAM DATE: SEPTEMBER 1981
MAINTAINER: CSS/NSG DIAGNOSTICS

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1.0 GENERAL INFORMATION

THIS PROGRAM TESTS 1 TO 64 KMC11-B (M8206) MODULES. IT RUNS UNDER THE DIAGNOSTIC RUNTIME SERVICES (DRS).

1.1 PROGRAM ABSTRACT

THIS PROGRAM CONSISTS OF A SET OF SEQUENTIAL LOGIC TESTS USED TO VERIFY THE LOGIC OF THE KMC11-B. IT IS RUN AFTER, AND IN CONJUNCTION WITH, CZKMB TO FULLY CHECK THE KMC11-B LOGIC.

1.1.1 STRUCTURE OF PROGRAM

THIS DIAGNOSTIC OCCUPIES 14.5K WORDS OF MEMORY AND IS COMPATIBLE WITH BOTH XXDP+ AND ACT. IT CAN BE RUN STANDALONE UNDER XXDP+, AND CAN BE CHAINED UNDER XXDP+, ACT AND APT IN ACT MODE (SEE 'CREATE CORE IMAGE' COMMAND BELOW FOR DETAILS OF CHAINING PROCEDURE).

WHEN THIS DIAGNOSTIC IS STARTED, CONTROL GOES FIRST TO THE SUPERVISOR. IT WILL THEN ENTER COMMAND MODE, INDICATED BY THE PROMPT 'DR>'. AT COMMAND MODE THE OPERATOR MAY THEN ENTER ANY OF SEVERAL COMMANDS AS DESCRIBED BELOW.

1.2 SYSTEM REQUIREMENTS

1.2.1 HARDWARE REQUIREMENTS

PDP-11 PROCESSOR WITH 16K OR MORE OF MEMORY
CONSOLE DEVICE (LA36,LA120,LA34,VT100,ETC.)
KMC11-B (M8206)

1.2.2 SOFTWARE REQUIREMENTS

THE PROGRAM IS REVISION-D DIAGNOSTIC SUPERVISOR COMPATIBLE. CONSULT THE XXDP+ USERS MANUAL FOR OPERATING INSTRUCTIONS.

1.3 RELATED DOCUMENTS AND STANDARDS

XXDP+ USERS MANUAL CHQUS

1.4 DIAGNOSTIC HIERARCHY PREREQUISITES

CZKMB KMC11-B STATIC PART1

1.5 ASSUMPTIONS

THE HARDWARE OTHER THAN THE SUBSYSTEM BEING TESTED IS ASSUMED TO WORK
PROPERLY. FALSE ERRORS MAY BE REPORTED IF THE PROCESSOR, MEMORY, ETC.,
DO NOT FUNCTION PROPERLY.

2.0 OPERATING INSTRUCTIONS -----

2.1 LOADING AND STARTING PROCEDURES -----

2.1.1 LOADING PROCEDURES -----

THIS PROGRAM MAY BE LOADED FROM ANY XXDP+ LOAD MEDIA.

2.1.2 STARTING PROCEDURES -----

THE DIAGNOSTIC SUPERVISOR AUTOSTARTS ON LOADING. IT MAY BE
RESTARTED AT 200(8).
A SAMPLE DIALOGUE IS LISTED BELOW:

DR>STA

CHANGE HW (L) ? Y

UNITS (D) ? 1

UNIT 0

CSR ADDRESS : (0) 174100 ? <CR>

RUN REMOTE POWERFAIL TEST ? 0=NO, 1=YES : (0) 0 ? <CR>

2.1.3 STEPS FOR QUICK AND SIMPLE EXECUTION -----

THE DIAGNOSTIC CAN BE EXECUTED STANDALONE WITHOUT READING THE REMAINDER OF THIS
DOCUMENT, AS FOLLOWS:

- A) LOAD THE DIAGNOSTIC FROM THE RELEVANT XXDP+ MEDIUM.
- B) RECEIVE PROMPT 'DR>'
- C) ENTER STA<CR>
- D) ANSWER HARDWARE QUESTIONS
- E) GET END OF PASS MESSAGES OR ERROR MESSAGES
- F) TO END EXECUTION, ENTER CONTROL/C. THIS RETURNS
THE 'DR>' PROMPT.

2.2 SPECIAL ENVIRONMENTS -----

IF THE SYSTEM IS CONFIGURED TO BOOT ON POWER FAIL, DO NOT
-- ---
RUN THE REMOTE POWER FAIL TEST.

2.3 PROGRAM OPTIONS

2.3.1 START COMMAND

STA(RT)/TESTS:<TEST-LIST>/PASS:<PASS-CNT>/FLAGS:<FLAG-LIST>/EOP:<INCR>

2.3.1.1 TESTS SWITCH (/TESTS:<TEST-LIST>)

<TEST-LIST> IS A SEQUENCE OF DECIMAL NUMBERS (1:2 ETC.) OR RANGES OF DECIMAL NUMBERS (1-5:8-10 ETC.) THAT SPECIFY THE TESTS TO BE EXECUTED. THE NUMBERS ARE SEPARATED BY COLONS. THE NUMBERS RANGE FROM 1 TO THE LARGEST TEST NUMBER IN THE DIAGNOSTIC. THEY MAY BE SPECIFIED IN ANY ORDER. TESTS WILL BE EXECUTED IN NUMERICAL ORDER REGARDLESS OF THE ORDER OF SPECIFICATION. THE DEFAULT IS TO EXECUTE ALL TESTS. ON THIS AND ALL SWITCHES, THE ANGLE BRACKETS <> ARE PUNCTUATION USED IN THE DEFINITION ONLY, AND ARE NOT TO BE TYPED BY THE OPERATOR. SEE EXAMPLE AT END OF 2.3.1.

2.3.1.2 PASS SWITCH (/PASS:<PASS-CNT>)

<PASS-CNT> IS A DECIMAL NUMBER INDICATING THE DESIRED NUMBER OF PASSES. A PASS IS DEFINED AS THE EXECUTION OF THE FULL DIAGNOSTIC (ALL SELECTED TESTS) AGAINST ALL UNITS SUBMITTED. THE DEFAULT IS NON-ENDING EXECUTION. IN THIS CASE EXIT FROM THE PROGRAM IS ACCOMPLISHED EITHER BY TYPING A CONTROL/C OR BY OCCURANCE OF AN ERROR WITH THE HALT ON ERROR FLAG BEING SET. THE EXIT IS A RETURN TO COMMAND MODE. SEE EXAMPLE AT END OF 2.3.1.

2.3.1.3 FLAGS SWITCH (/FLAGS:<FLAG-LIST>)

<FLAG-LIST> IS A SEQUENCE OF ELEMENTS OF THE FORM <FLAG>, <FLAG=1>, OR <FLAG=0>, SEPARATED BY COLONS, WHERE <FLAG> HAS ONE OF THE FOLLOWING VALUES:

HOE	HALT ON ERROR, CAUSING COMMAND MODE TO BE ENTERED WHEN AN ERROR IS ENCOUNTERED
LOE	LOOP ON ERROR, CAUSING THE DIAGNOSTIC TO LOOP CONTINUOUSLY WITHIN THE SMALLEST DEFINED BLOCK OF CODING (SEGMENT, SUBTEST, OR TEST) CONTAINING THE ERROR
IER	INHIBIT ERROR REPORTING
IBE	INHIBIT BASIC ERROR REPORTS
IXE	INHIBIT EXTENDED ERROR REPORTS
PRI	DIRECT ALL MESSAGES TO A LINE PRINTER
PNT	PRINT NUMBER OF TEST BEING EXECUTED
BOE	BELL ON ERROR
UAM	RUN IN UNATTENDED MODE, BYPASSING MANUAL INTERVENTION TESTS
ISR	INHIBIT STATISTICAL REPORTS

IDR INHIBIT DROPPING OF UNITS BY DIAGNOSTIC

THE FLAGS NAMED OR EQUATED TO 1 ARE SET, THOSE EQUATED TO 0 ARE CLEARED. A FLAG NOT SPECIFIED IS CLEARED. IF THE FLAGS SWITCH IS NOT GIVEN ALL FLAGS ARE CLEARED. SEE EXAMPLE AT END OF 2.3.1.

2.3.1.4 END OF PASS SWITCH (/EOP:<INCR>)

<INCR> IS A DECIMAL NUMBER INDICATING HOW OFTEN (IN TERMS OF PASSES) IT IS DESIRED THAT THE END OF PASS MESSAGE BE PRINTED. THE DEFAULT IS AT THE END OF EVERY PASS. SEE EXAMPLE AT END OF 2.3.1.

2.3.1.5 EFFECT OF COMMAND

THE EFFECT OF THE START COMMAND IS TO INITIATE THE HARDWARE PARAMETER DIALOGUE, THE SOFTWARE PARAMETER DIALOGUE, AND THEN THE DIAGNOSTIC TESTS THEMSELVES.

THE HARDWARE PARAMETER DIALOGUE COMMENCES WITH THE QUESTION '# UNITS?' TO WHICH THE OPERATOR REPLIES WITH A DECIMAL NUMBER N FROM 1 TO 64. THE TERM 'UNIT' REFERS TO THE DEVICE TO WHICH THIS SERIES OF DIAGNOSTICS IS DEDICATED. FOLLOWING THIS ARE THE QUESTIONS WHEREBY THE P-TABLES THEMSELVES WILL BE BUILT. EACH P-TABLE IS A CORE-RESIDENT TABLE CONTAINING ALL THE HARDWARE INFORMATION FOR ONE UNIT. THE OPERATOR MUST SUPPLY N (NUMBER OF UNITS) VALUES FOR EACH QUESTION. HE MAY DO THIS BY GIVING ONE ANSWER TO EACH QUESTION (IN WHICH CASE THE SERIES OF QUESTIONS WILL BE POSED N TIMES) OR BY GIVING N VALUES, SEPARATED BY COMMAS, TO EACH QUESTION (SERIES WILL BE POSED ONCE). EACH QUESTION IS FOLLOWED BY THE RESPONSE RADIX (D FOR DECIMAL, B FOR BINARY, O FOR OCTAL, L FOR YES/NO) IN PARENTHESES AND THE DEFAULT VALUE AFTER THE PARENTHESES.

FOLLOWING THE HARDWARE QUESTIONS ARE THE SOFTWARE QUESTIONS TO BUILD THE SOFTWARE TABLES, WHICH DEFINE THE MODE (QUICK VERIFY ETC.) THAT THE DIAGNOSTIC WILL EXECUTE IN.

WHEN THE QUESTION '# UNITS?' IS ANSWERED, MEMORY STORAGE IS ALLOCATED FOR THE P-TABLES, AND IF THERE IS NOT ENOUGH TO ACCOMMODATE THEM THE MESSAGE 'TOO MANY UNITS' IS ISSUED. IN THIS CASE THE DIAGNOSTIC MUST BE EXECUTED MORE THAN ONCE TO TEST ALL UNITS.

EXAMPLE:

STA/TESTS:1:2-4:6:8-10/PASS:3/FLAGS:IER:HOE=1:UAM:LOE

THIS COMMAND WILL CAUSE THREE PASSES TO BE MADE, EACH PASS CONSISTING OF TESTS 1,2,3,4,6,8,9, AND 10 EXECUTED AGAINST ALL UNITS. THERE IS NO DIFFERENCE BETWEEN SAYING <FLAG> AND SAYING <FLAG=1>.0 THE NOTATION <FLAG=0> IS MEANINGFUL ONLY ON A COMMAND OTHER THAN START TO CLEAR A FLAG THAT WAS PREVIOUSLY SET. NOTE THAT ON ALL COMMANDS ONLY THE FIRST THREE LETTERS ARE SCANNED.

2.3.2 RESTART COMMAND

RES(TART)/TESTS:<TEST-LIST>/PASS:<PASS-CNT>/FLAGS:<FLAG-LIST>/UNITS:<UNIT-LIST>

2.3.2.1 TESTS, PASS, AND FLAGS SWITCHES

<TEST-LIST>, <PASS-CNT>, AND <FLAG-LIST> ARE AS IN THE START COMMAND.

2.3.2.2 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS A SEQUENCE OF DECIMAL NUMBERS (1,2 ETC.) OR RANGES OF DECIMAL NUMBERS (1-5, 8-10 ETC.) THAT SPECIFY THE UNITS TO BE TESTED. THE NUMBERS ARE SEPARATED BY COLONS. THE NUMBERS MAY RANGE FROM 1 THRU N (N IS THE NUMBER OF UNITS SPECIFIED IN THE PREVIOUS START COMMAND). THE NUMBER INDICATES THE POSITION OF THE P-TABLE AS THE DATA WAS ENTERED DURING THE HARDWARE DIALOGUE. THE UNITS WHICH ARE SELECTED MUST NOT HAVE BEEN DROPPED BY THE DROP COMMAND. SEE THE DISCUSSION OF ADD AND DROP COMMANDS BELOW. DEFAULT IS TO TEST ALL UNITS WHICH HAVE NOT BEEN DROPPED BY A DROP COMMAND.

2.3.2.3 EFFECT OF COMMAND

THE RESTART COMMAND DIFFERS FROM THE START COMMAND IN THAT THE P-TABLES FROM THE PREVIOUS START COMMAND (THERE MUST HAVE BEEN ONE) ARE USED, INSTEAD OF NEW ONES BEING BUILT. THE UNITS SWITCH GIVES THE ABILITY TO SELECT A SUBSET OF THESE. THE SOFTWARE DIALOGUE MAY OPTIONALLY BE RE-EXECUTED (OPERATOR WILL BE ASKED). THE COMMAND CAN BE USED AFTER COMMAND MODE HAS BEEN REENTERED IN ANY OF THE THREE NORMAL WAYS: A) THE REQUESTED NUMBER OF PASSES HAVE BEEN MADE B) AN ERROR WAS ENCOUNTERED WITH THE HALT ON ERROR FLAG SET C) A CONTROL/C WAS ENTERED BY THE OPERATOR.

2.3.3 CONTINUE COMMAND

CON(TINUE)/PASS:<PASS-CNT>/FLAGS:<FLAG-LIST>

2.3.3.1 PASS SWITCH (/PASS:<PASS-CNT>)

<PASS-CNT> IS SAME AS IN START COMMAND, BUT THE DEFAULT IS THE UNSATISFIED PASS-CNT FROM THE PREVIOUS START OR RESTART. IF NONE REMAINS, THE DEFAULT IS NON-ENDING EXECUTION.

2.3.3.2 FLAG SWITCH (/FLAGS:<FLAG-LIST>)

<FLAG-LIST> IS SAME AS IN START COMMAND, BUT UNSPECIFIED FLAGS RETAIN THEIR CURRENT VALUE.

2.3.3.3 EFFECT OF COMMAND

CONTINUE MUST FOLLOW A START OR RESTART, AND COMMAND MODE MUST HAVE BEEN ENTERED DUE TO A HALT ON ERROR OR A CONTROL/C. THE EFFECT

OF THE COMMAND IS TO GO TO THE BEGINNING OF THE TEST THAT WAS BEING
EXECUTED WHEN THE HALT OR CONTROL/C TOOK PLACE. SOFTWARE DIALOGUE MAY
OPTIONALLY BE REEXECUTED. HARDWARE PARAMETERS MAY NOT BE CHANGED.

2.3.4 PROCEED COMMAND

PRO(CEED)/FLAGS:<FLAG-LIST>

2.3.4.1 FLAGS SWITCH (/FLAGS:<FLAG-LIST>)

<FLAG-LIST> IS AS IN THE START COMMAND, BUT UNSPECIFIED FLAGS RETAIN
THEIR CURRENT VALUE.

2.3.4.2 EFFECT OF COMMAND

PROCEED MUST FOLLOW A START, RESTART, OR CONTINUE. COMMAND MODE
MUST HAVE BEEN ENTERED VIA A HALT ON ERROR. THE EFFECT OF THE
COMMAND IS TO BEGIN EXECUTION AT THE LOCATION FOLLOWING THE
ERROR CALL. NEITHER HARDWARE NOR SOFTWARE PARAMETERS MAY BE ALTERED.

2.3.5 CREATE CORE IMAGE COMMAND

CCI/TESTS:<TEST-LIST>/PASS:<PASS-CNT>/FLAGS:<FLAG-LIST>

2.3.5.1 TESTS, PASS, AND FLAGS SWITCHES

<TEST-LIST>, <PASS-CNT>, <FLAG-LIST>, AND ARE AS
IN THE START COMMAND, EXCEPT THAT THE UAM (UNATTENDED MODE) FLAG
DEFAULTS TO THE SET POSITION.

2.3.5.2 EFFECT OF COMMAND

THE PURPOSE OF THIS COMMAND IS TO CREATE A BIC FILE SUITABLE FOR
CHAIN MODE EXECUTION. THE XXDP+ PROCEDURE IS AS FOLLOWS:

INVOKE THE XXDP+ UTILITY UPD1 OR UPD2
LOAD XXN:FILE.BIN
START 200
<QUESTIONS AND ANSWERS>
RESTART UPD1 USING RESTART ADDRESS
HICORE ADDRESS (IF 'PASSED 14.5K' MESSAGE CAME)
DUMP XXN:FILE.BIC

THE OPERATOR DIALOGUE (HARDWARE AND SOFTWARE) WILL
BE EXECUTED AS IN THE START COMMAND, BUT AT THE END OF THE QUESTIONS
THE HALT STATE WILL BE ENTERED. THE OPERATOR SHOULD THEN
DUMP THE PROGRAM TO THE XXDP+ LIBRARY USING A BIC EXTENSION
TO INDICATE THAT THIS FILE IS CHAINABLE. HE SHOULD USE THE XXDP+ UTILITY

UPD1 OR UPD2 TO DO THIS. IF THE P-TABLES EXTEND BEYOND 14.5K, A MESSAGE WILL BE ISSUED GIVING THE NEW UPPER CORE LIMIT, TO WHICH THE OPERATOR MUST ADJUST BEFORE DUMPING. HE MAY NOW DELETE THE NON-CHAINABLE BIN FILE IF DESIRED, SINCE THE BIC FILE HAS ALL THE CAPABILITIES OF IT.

WHEN THIS BIC FILE IS SUBSEQUENTLY EXECUTED IN CHAIN MODE, THE OPERATOR DIALOGUES WILL BE BYPASSED. HOWEVER, IF IT IS EXECUTED STANDALONE, THE DIALOGUE WILL BE REISSUED.

NOTE THAT IF THE MESSAGE 'TOO MANY UNITS' IS ISSUED, TWO OR MORE CORE IMAGES MUST BE CREATED (WITH DIFFERENT NAMES) TO TEST ALL UNITS.

NOTE THAT ALTHOUGH THE CHAINABLE IMAGE CAN BE EXECUTED ON A 16K MACHINE, THE ORIGINAL CCI CREATION MUST BE DONE ON A LARGE MACHINE, THE EXACT SIZE BEING DEPENDENT ON WHICH UPDATE UTILITY IS USED.

2.3.6 ADD COMMAND

ADD/UNITS:<UNIT-LIST>

2.3.6.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS AS IN THE RESTART COMMAND.

2.3.6.2 EFFECT OF COMMAND

THE UNITS SPECIFIED ARE ADDED TO THE TEST SEQUENCE. EACH UNIT MUST HAVE A P-TABLE IN MEMORY DUE TO AN EARLIER HARDWARE DIALOGUE. THIS COMMAND MUST BE FOLLOWED BY A RESTART OR CONTINUE. THE UNITS SWITCH MUST BE SPECIFIED. THE ADD COMMAND IS MEANINGFUL ONLY FOR UNITS THAT WERE PREVIOUSLY DROPPED.

2.3.7 DROP COMMAND

DRO(P)/UNITS:<UNIT-LIST>

2.3.7.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS AS IN THE RESTART COMMAND.

2.3.7.2 EFFECT OF COMMAND

THE UNITS SPECIFIED WILL BE DROPPED FROM TESTING. THE UNITS WILL BE RESELECTED ONLY BY THE EXECUTION OF AN ADD OR START COMMAND. THE UNITS SWITCH MUST BE ENTERED. THIS COMMAND MUST BE FOLLOWED BY A RESTART OR A CONTINUE COMMAND.

2.3.8 PRINT COMMAND

PRI(NT)

2.3.8.1 EFFECT OF COMMAND

ALL STATISTICS TABLES ACCUMULATED BY THE DIAGNOSTIC ARE PRINTED. THE
ISR (INHIBIT STATISTICAL REPORTING) FLAG IS CLEARED.

2.3.9 DISPLAY COMMAND

DIS(PLAY)/UNITS:<UNIT-LIST>

2.3.9.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS AS IN THE RESTART COMMAND.

2.3.9.2 EFFECT OF COMMAND

THE HARDWARE P-TABLES FOR ALL UNITS UNDER TEST ARE PRINTED OUT IN THE
FORMAT IN WHICH THEY WERE ENTERED. ANY UNITS THAT WERE DROPPED BY THE
OPERATOR 'DROP' COMMAND ARE SO DESIGNATED.

2.3.10 FLAGS COMMAND

FLA(GS)

2.3.10.1 EFFECT OF COMMAND

THE CURRENT SETTINGS OF ALL FLAGS ARE PRINTED.

2.3.11 ZFLAGS COMMAND

ZFL(AGS)

2.3.11.1 EFFECT OF COMMAND

ALL FLAGS ARE CLEARED.

2.3.12 CONTROL CHARACTERS

A CONTROL C (^C) ENTERED DURING THE EXECUTION OF A DIAGNOSTIC
CAUSES A RETURN TO COMMAND MODE.

A CONTROL Z (^Z) ENTERED DURING ONE OF THE THREE OPERATOR DIALOGUES

(HARD CORE QUESTIONS (SEE 1.1.1), HARDWARE DIALOGUE (SEE 2.3.1.5), OR SOFTWARE DIALOGUE (SEE 2.3.1.5) CAUSES THE DEFAULTS TO BE TAKEN FOR THE REMAINDER OF THAT DIALOGUE.

A CONTROL O (^O) ENTERED DURING THE EXECUTION OF A DIAGNOSTIC CAUSES ALL TELETYPE OUTPUT TO BE SUPPRESSED FOR THE REMAINDER OF THE DIAGNOSTIC OR UNTIL ANOTHER ^O IS TYPED, WHICH RESTORES NORMAL TELETYPE OUTPUT.

2.3.13 HARDWARE PARAMETERS

THE FOLLOWING QUESTIONS WILL BE ASKED ON A START COMMAND. THE VALUE LOCATED TO THE LEFT OF THE QUESTION MARK IS THE DEFAULT VALUE THAT WILL BE TAKEN ON A CARRIAGE RETURN RESPONSE.

CSR ADDRESS (0) 174100 ?
RUN REMOTE POWERFAIL TEST ? 0=NO, 1=YES 0?

*** NOTE: PI VECTOR IS NOT NEEDED FOR THIS TEST ***

2.3.14 SOFTWARE PARAMETERS

NONE

2.3.15 EXTENDED DISCUSSION OF P-TABLE DIALOGUE

THE FULL CAPABILITY OF THE HARDWARE DIALOGUE IS REVEALED BY THE FOLLOWING DISCUSSION OF WHAT HAPPENS INTERNALLY.

AS SOON AS THE QUESTION '# UNITS?' IS ANSWERED (WITH THE NUMBER N, SAY) SPACE IN CORE IS ALLOCATED FOR N P-TABLES. ALL OF THE P-TABLES ARE OF THE SAME FORMAT, AND THERE IS A ONE-TO ONE CORRESPONDENCE BETWEEN THE HARDWARE PARAMETER QUESTIONS AND THE SLOTS IN THE P-TABLE FORMAT.

ON THE FIRST TRIP THRU THE QUESTIONS, ALL OF THE SLOTS IN ALL OF THE P-TABLES ARE FILLED. IF THE OPERATOR TYPES IN LESS THAN N EXPLICIT VALUES IN RESPONSE TO A PARTICULAR QUESTION, THESE VALUES ARE PLACED IN THE P-TABLES (ONE VALUE GOING INTO THE PROPER SLOT OF EACH P-TABLE BEGINNING WITH THE FIRST P-TABLE) UNTIL THE STRING OF VALUES IS EXHAUSTED. THE LAST VALUE IN THE STRING BECOMES THE NEW DEFAULT AND IS USED TO FILL THAT SLOT IN THE REMAINING P-TABLES.

ON SUBSEQUENT TRIPS THRU THE QUESTIONS, THE SAME PROCESS IS CARRIED OUT, EXCEPT THAT THE EARLIEST P-TABLE NOT TO HAVE RECEIVED AN EXPLICIT VALUE IN ANY OF ITS SLOTS NOW ASSUMES THE ROLE THAT TABLE NUMBER ONE PLAYED IN THE FIRST TRIP.

THE SERIES OF QUESTIONS IS REISSUED UNTIL AT LEAST ONE QUESTION HAS RECEIVED N EXPLICIT VALUES FROM THE OPERATOR.

IN GIVING A STRING OF VALUES, COMMAS WITHOUT INTERVENING VALUES MAY BE USED

TO INDICATE A REPETITION OF THE LAST NAMED VALUE.

A STRING OF VALUES MAY BE GIVEN AS A RANGE (6-10 FOR EXAMPLE). IF THE VALUES REPRESENT PURE NUMERICAL DATA, THIS SAMPLE RANGE TRANSLATES TO THE STRING 6,7,8,9,10 (AN INCREMENT OF 1). IF THE VALUES ARE ADDRESSES, THE SAMPLE RANGE TRANSLATES TO THE STRING 6,8,10 (AN INCREMENT OF 2).

NOW LET US SEE HOW WE COULD USE THESE CAPABILITIES TO CONSTRUCT A SET OF P-TABLES. ASSUME THAT WE HAVE 64 UNITS, AND THAT THERE ARE THREE HARDWARE PARAMETERS FOR EACH (THREE SLOTS IN THE P-TABLE, THREE HARDWARE QUESTIONS IN THE DIALOGUE). LET THE DESIRED VALUE FOR THE FIRST PARAMETER BE THE NUMBER 75 FOR ALL 64 TABLES. LET THE DESIRED VALUE FOR THE SECOND PARAMETER BE EQUAL TO THE UNIT NUMBER (1,2,3,...,64) EXCEPT FOR UNIT 50, WHICH SHOULD RECEIVE THE VALUE 49. LET THE DESIRED VALUE FOR THE THIRD PARAMETER BE THE NUMBER 76 FOR THE FIRST 20 UNITS AND THE NUMBER 77 FOR THE LAST 44 UNITS.

THE FOLLOWING DIALOGUE WOULD ACCOMPLISH THIS GOAL:

UNITS (D) ? 64

UNIT 1
<QUESTION 1> ? 75
<QUESTION 2> ? 1-20
<QUESTION 3> ? 76

UNIT 21
<QUESTION 1> ?
<QUESTION 2> ? 21-49,,51-64
<QUESTION 3> ? 77

THE FIRST TIME THE SERIES IS ASKED, SLOT ONE RECEIVES A 75 IN ALL 64 TABLES. SLOT TWO RECEIVES THE VALUES 1,2,3,...,20 IN TABLES 1 THRU 20 AND A CONSTANT 20 IN TABLES 21 THRU 64. SLOT THREE RECEIVES A CONSTANT 76 IN ALL 64 TABLES.

THE SECOND TIME THRU THE SERIES, TABLES 21 THRU THE END ARE GOING TO BE AFFECTED (NOTE THAT THIS PIECE OF INFORMATION IS PRINTED OUT FOR THE THE OPERATOR IN THE FORM 'UNIT XX' AT THE BEGINNING OF EACH SERIES). QUESTION 1 IS RESPONDED TO BY A <CR>, SO SLOT ONE STAYS AT CONSTANT 75 IN TABLES 21 THRU 64, SINCE NO NEW EXPLICIT VALUES ARE TYPED IN. SLOT TWO GETS THE VALUES 21,22,23,...,49 IN TABLES 21 THRU 49, AND GETS A 49 IN SLOT 50, AND GETS THE VALUES 51,52,53,...,64 IN TABLES 51 THRU 64. SLOT THREE GETS THE VALUE 77 IN TABLES 21 THRU 64.

THE DIALOGUE IS TERMINATED WHEN THE SOFTWARE RECOGNIZES THAT 64 EXPLICIT VALUES HAVE BEEN GIVEN FOR AT LEAST ONE QUESTION (NAMELY QUESTION 2).

2.4 EXECUTION TIMES

ONE PASS OF ONE UNIT TAKES APPROXIMATELY 85 SECONDS.

3.0 ERROR INFORMATION -----

3.1 ERROR REPORTING -----

THE ERROR MESSAGES PRODUCED BY THIS DIAGNOSTIC HAVE THE FOLLOWING FORMAT:

CZKMCA DEV[FTL OR HRD] ERROR NNNNN ON UNIT UU TST NN SUB NNN PC XXXXX
ASCII ERROR MESSAGE

3.2 ERROR HALTS -----

ERROR HALTS ARE SUPPORTED PER DESCRIBED IN THE PREVIOUS SECTION
WITH /FLAG:HOE. THERE ARE NO OTHER HALTS.

4.0 PERFORMANCE AND PROGRESS REPORTS -----

4.1 PERFORMANCE REPORTS -----

A CUMULATIVE ERROR COUNT IS GIVEN AFTER PASS.

4.2 PROGRESS REPORTS -----

A PASS COUNT IS UPDATED AND PRINTED AFTER PASS.

5.0 DEVICE INFORMATION TABLES -----

DEVICE:	M8206
CSR:	FLOATING (174100 IS THE DEFAULT)
VECTOR:	FLOATING (300 IS THE DEFAULT)
BR LEVEL:	5

6.0 TEST SUMMARIES -----

TEST SUMMARIES ARE GIVEN AT THE BEGINNING OF EACH
TEST MODULE.

```
672          .TITLE CZKMCAO KMC11-B STATIC PART2
673          002000          .=2000
674
675
676
677
678
679
680          .MCALL SVC
681 002000          SVC          ; INITIALIZE SUPERVISOR MACROS
682
683
684
685
686
687 002000          BGNMOD CZKMCA
688
689
690          000000          $LSTIN= 0
691          000000          $LSTTAG= 0
692          000000          SVCINS= 0          ; LIST INSTRUCTIONS, SHIFTED RIGHT
693          000000          SVCTST= 0          ; LIST TEST TAGS, SHIFTED RIGHT
694          000000          SVCSUB= 0          ; LIST SUBTEST TAGS, SHIFTED RIGHT
695          000000          SVCGBL= 0          ; LIST GLOBAL TAGS, SHIFTED RIGHT
696          000000          SVCTAG= 0          ; LIST OTHER TAGS, SHIFTED RIGHT
697
698          ;          CHANGE THE VALUES OF THE SVC... SYMBOLS TO BE ZERO IF YOU WISH
699          ;          TO ALIGN THE MACRO CALLS AND THEIR EXPANSIONS.  CHANGE THE
700          ;          SYMBOLS TO BE MINUS-ONE TO NOT LIST THE EXPANSIONS.  YOU MAY
701          ;          CHANGE THE SYMBOLS AT ANY POINT IN YOUR PROGRAM.
702
703
```



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704 .SBTTL PROGRAM HEADER
705 :++
706 : THE PROGRAM HEADER IS THE INTERFACE BETWEEN
707 : THE DIAGNOSTIC PROGRAM AND THE SUPERVISOR.
708 :--
709
710 002000 POINTER BGNAU,BGNDU,BGNRPT,BGNSW
711
712
713 002000 L$NAME:: HEADER CZKMC,A,0,240.,0
714 002000 :DIAGNOSTIC NAME
715 002000 103 .ASCII /C/
716 002001 132 .ASCII /Z/
717 002002 113 .ASCII /K/
718 002003 115 .ASCII /M/
719 002004 103 .ASCII /C/
720 002005 000 .BYTE 0
721 002006 000 .BYTE 0
722 002007 000 .BYTE 0
723 002010 L$REV:: :REVISION LEVEL
724 002010 101 .ASCII /A/
725 002011 L$DEPO:: :0
726 002011 060 .ASCII /O/
727 002012 L$UNIT:: :NUMBER OF UNITS
728 002012 000000 .WORD 0
729 002014 L$TIML:: :LONGEST TEST TIME
730 002014 000360 .WORD 240.
731 002016 L$HPCP:: :POINTER TO H.W. QUES.
732 002016 031256 .WORD L$HARD
733 002020 L$SPCP:: :POINTER TO S.W. QUES.
734 002020 000000 .WORD 0
735 002022 L$HPTP:: :PTR. TO DEF. H.W. PTABLE
736 002022 002252 .WORD L$HW
737 002024 L$SPTP:: :PTR. TO S.W. PTABLE
738 002024 002300 .WORD L$SW
739 002026 L$LADP:: :DIAG. END ADDRESS
740 002026 032002 .WORD L$LAST
741 002030 L$STA:: :RESERVED FOR APT STATS
742 002030 000000 .WORD 0
743 002032 L$CO::
744 002032 000000 .WORD 0
745 002034 L$DTYP:: :DIAGNOSTIC TYPE
746 002034 000000 .WORD 0
747 002036 L$APT:: :APT EXPANSION
748 002036 000000 .WORD 0
749 002040 L$DTP:: :PTR. TO DISPATCH TABLE
750 002040 002124 .WORD L$DISPATCH
751 002042 L$PRIO:: :DIAGNOSTIC RUN PRIORITY
752 002042 000000 .WORD 0
753 002044 L$ENVI:: :FLAGS DESCRIBE HOW IT WAS SETUP
754 002044 000000 .WORD 0
755 002046 L$EXP1:: :EXPANSION WORD
756 002046 000000 .WORD 0
757 002050 L$MREV:: :SVC REV AND EDIT #
758 002050 003 .BYTE C$REVISION
759 002051 003 .BYTE C$EDIT
```

760	002052		L\$EF::		;DIAG. EVENT FLAGS
761	002052	000000		.WORD 0	
762	002054	000000		.WORD 0	
763	002056		L\$SPC::		
764	002056	000000		.WORD 0	
765	002060		L\$DEVP::		; POINTER TO DEVICE TYPE LIST
766	002060	002670		.WORD L\$DVTYP	
767	002062		L\$REPP::		;PTR. TO REPORT CODE
768	002062	012366		.WORD L\$RPT	
769	002064		L\$EXP4::		
770	002064	000000		.WORD 0	
771	002066		L\$EXP5::		
772	002066	000000		.WORD 0	
773	002070		L\$AUT::		;PTR. TO ADD UNIT CODE
774	002070	013114		.WORD L\$AU	
775	002072		L\$DUT::		;PTR. TO DROP UNIT CODE
776	002072	013110		.WORD L\$DU	
777	002074		L\$LUN::		;LUN FOR EXERCISERS TO FILL
778	002074	000000		.WORD 0	
779	002076		L\$DESP::		;POINTER TO DIAG. DESCRIPTION
780	002076	002676		.WORD L\$DESC	
781	002100		L\$LOAD::		;GENERATE SPECIAL AUTOLOAD EMT
782	002100	104035		EMT E\$LOAD	
783	002102		L\$ETP::		;POINTER TO ERR_TBL
784	002102	000000		.WORD 0	
785	002104		L\$ICP::		;PTR. TO INIT CODE
786	002104	012404		.WORD L\$INIT	
787	002106		L\$CCP::		;PTR. TO CLEAN-UP CODE
788	002106	013106		.WORD L\$CLEAN	
789	002110		L\$ACP::		;PTR. TO AUTO CODE
790	002110	012402		.WORD L\$AUTO	
791	002112		L\$PRT::		;PTR. TO PROTECT TABLE
792	002112	012374		.WORD L\$PROT	
793	002114		L\$TEST::		;TEST NUMBER
794	002114	000000		.WORD 0	
795	002116		L\$DLY::		;DELAY COUNT
796	002116	000000		.WORD 0	
797	002120		L\$HIME::		;PTR. TO HIGH MEM
798	002120	000000		.WORD 0	
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.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 42
L\$DISPATCH::
.WORD T1
.WORD T2
.WORD T3
.WORD T4
.WORD T5
.WORD T6
.WORD T7
.WORD T8
.WORD T9
.WORD T10
.WORD T11
.WORD T12
.WORD T13
.WORD T14
.WORD T15
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.WORD T35
.WORD T36
.WORD T37
.WORD T38
.WORD T39
.WORD T40
.WORD T41
.WORD T42

002122
002122 000052
002124
002124 013116
002126 013226
002130 013420
002132 013572
002134 013750
002136 014230
002140 014460
002142 014720
002144 015270
002146 015650
002150 016134
002152 016420
002154 016664
002156 017144
002160 017424
002162 017704
002164 020164
002166 020444
002170 020724
002172 021210
002174 021474
002176 021760
002200 022244
002202 022530
002204 023014
002206 023222
002210 023404
002212 023744
002214 024174
002216 024440
002220 024742
002222 025344
002224 026442
002226 026612
002230 027002
002232 027502
002234 027676
002236 030026
002240 030244
002242 030362
002244 030522
002246 030660

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SEQ 0018

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002250
002250 000012
002252
002252
002252 000006
002254 174100
002256 000300
002260 005000
002262 000003
002264 000056
002266 000000
002270 000000
002272 000000
002274 000000

002276
002276

.SBTTL DEFAULT HARDWARE P-TABLE

:/ THE DEFAULT HARDWARE P-TABLE CONTAINS DEFAULT VALUES OF
:/ THE TEST-DEVICE PARAMETERS. THE STRUCTURE OF THIS TABLE
:/ IS IDENTICAL TO THE STRUCTURE OF THE RUN-TIME P-TABLE.

.ENABL AMA
BGNHW DFPTBL
.WORD L10000-L\$HW/2

L\$HW::
DFPTBL::

.WORD 6
.WORD 174100
.WORD 300
.WORD 5000
.WORD 3
.WORD 56
.WORD 0
.WORD 0
.WORD 0
.WORD 0

:MICRO-CPU TYPE.
:M8200,4,6,7 CRS ADDRESS
:M8200,4,6,7 VECTOR ADDRESS
:INTERRUPT PRIORITY LEVEL
:LINE UNIT TYPE
:SWITCH PACK #1 (DDCMP LINE #)
:SWITCH PACK #2 (BM873 BOOT ADDRESS)
:SWITCH PACK #3
:TEST CONNECTOR INSTALLED FLAG
:TEST REMOTE POWERFAIL FLAG (0=NO, 1=YES)

ENDHW
L10000:


```
890 .SBTTL SOFTWARE P-TABLE
891
892 :////////////////////
893 :// THE SOFTWARE P-TABLE CONTAINS THE VALUES OF THE PROGRAM
894 :// PARAMETERS THAT CAN BE CHANGED BY THE OPERATOR.
895 :////////////////////
896
897 002276 BGNSW SFPTBL
898 002276 .WORD L10001-L$SW/2
899 002300
900 002300
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903 002300
904 002300
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L\$SW::
SFPTBL::

ENDSW
L10001:

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000001

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000004
000002
000001

000040
000037

.SBTTL GLOBAL EQUATES SECTION

:////////////////////
:/ THE GLOBAL EQUATES SECTION CONTAINS PROGRAM EQUATES THAT
:/ ARE USED IN MORE THAN ONE TEST.
:////////////////////

EQUALS

:
: BIT DEFINITIONS:
BIT15== 100000
BIT14== 40000
BIT13== 20000
BIT12== 10000
BIT11== 4000
BIT10== 2000
BIT09== 1000
BIT08== 400
BIT07== 200
BIT06== 100
BIT05== 40
BIT04== 20
BIT03== 10
BIT02== 4
BIT01== 2
BIT00== 1:
BIT9== BIT09
BIT8== BIT08
BIT7== BIT07
BIT6== BIT06
BIT5== BIT05
BIT4== BIT04
BIT3== BIT03
BIT2== BIT02
BIT1== BIT01
BIT0== BIT00

: EVENT FLAG DEFINITIONS

: EF32:EF17 RESERVED FOR SUPERVISOR TO PROGRAM COMMUNICATION

:
EF.START== 32.
EF.RESTART== 31.; START COMMAND WAS ISSUED
; RESTART COMMAND WAS ISSUED

967	000036	EF.CONTINUE==	30.	: CONTINUE COMMAND WAS ISSUED : A NEW PASS HAS BEEN STARTED : A POWER-FAIL/POWER-UP OCCURRED
968	000035	EF.NEW==	29.	
969	000034	EF.PWR==	28.	
970		:		
971		:		
972		:		
973		:	PRIORITY LEVEL DEFINITIONS	
974	000340	:		
975	000300	PRI07==	340	
976	000240	PRI06==	300	
977	000200	PRI05==	240	
978	000140	PRI04==	200	
979	000100	PRI03==	140	
980	000040	PRI02==	100	
981	000000	PRI01==	40	
982		PRI00==	0	
983		:		
984		:	OPERATOR FLAG BITS	
985	000004	:		
986	000010	EVL==	4	
987	000020	LOT==	10	
988	000040	ADR==	20	
989	000100	IDU==	40	
990	000200	ISR==	100	
991	000400	UAM==	200	
992	001000	BOE==	400	
993	002000	PNT==	1000	
994	004000	PRI==	2000	
995	010000	IXE==	4000	
996	020000	IBE==	10000	
997	040000	IER==	20000	
998	100000	LOE==	40000	
		HOE==	100000	

;KMC11-B DEFINITIONS

999			
1000			
1001	000000	IMM==	000000
1002	020000	IBUS==	020000
1003	040000	MEM==	040000
1004	060000	BRG==	060000
1005	100000	BRIM==	100000
1006	120000	IBSP==	120000
1007	140000	BRMEM==	140000
1008	160000	BRBRG==	160000
1009			
1010	004000	LMH==	004000
1011	010000	LML==	010000
1012	014000	IMR==	014000
1013	010000	A9==	LML
1014	004000	A8==	LMH
1015			
1016	000400	BRGR==	000400
1017	001000	OBP==	001000
1018	001400	BRS==	001400
1019	002000	OB==	002000
1020	002400	M==	002400
1021	003000	SPR==	003000
1022	003400	SPBR==	003400
1023			
1024	000400	BRA==	000400
1025	001000	C1==	001000
1026	001400	Z1==	001400
1027	002000	BRG0==	002000
1028	002400	BRG1==	002400
1029	003000	BRG4==	003000
1030	003400	BRG7==	003400
1031			
1032	000200	SELA==	000200
1033	000220	SELB==	000220
1034			
1035	000000	SRG0==	000000
1036	000020	SRG1==	000020
1037	000040	SRG2==	000040
1038	000060	SRG3==	000060
1039	000100	SRG4==	000100
1040	000120	SRG5==	000120
1041	000140	SRG6==	000140
1042	000160	SRG7==	000160
1043	000200	SRG10==	000200
1044	000220	SRG11==	000220
1045	000240	SRG12==	000240
1046	000260	SRG13==	000260
1047	000300	SRG14==	000300
1048	000320	SRG15==	000320
1049	000340	SRG16==	000340
1050	000360	SRG17==	000360
1051			

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```
::*****  
:* PROGRAM EVENT FLAG DEFINITIONS  
:*****
```

```
1058      .SBTTL  GLOBAL DATA SECTION
1059
1060      ;//////////
1061      ;/      THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
1062      ;/      IN MORE THAN ONE TEST.
1063      ;//////////
1064
1065      ;*****
1066      ;* PROGRAM CONTROL PARAMETERS
1067      ;*****
1068      002300 000000      NEXT:  .WORD  0      ;ADDRESS OF NEXT TEST TO BE EXECUTED
1069      002302 000000      LOCK:   .WORD  0      ;ADDRESS FOR LOCK CURRENT DATA
1070
1071      ;*****
1072      ;* MISCELLANEOUS STORAGE
1073      ;*****
1074      002304 000000      LOGDEV: .WORD  0      ;LOGICAL DEVICE NUMBER
1075      002306 000000      PSTACK: .WORD  0      ;BASE LEVEL PROGRAM STACK POINTER
1076      002310 000000      SUBRPC: .WORD  0      ;PC OF SUBR CALL FOR ERROR REPORTS
1077      002312 000000      ERRFLG: .WORD  0      ;SUBROUTINE ERROR FLAG
1078      002314 000000      RETADR: .WORD  0      ;SUBR ERROR RETURN ADDRESS
1079      002316 000000      STRTSW: .WORD  0      ;SWITCHES AT START OF PROGRAM
1080      002320 000000      STAT:   .WORD  0      ;KM STATUS WORD STORAGE
1081      002322 000000      CLKX:   .WORD  0
1082      002324 000000      MASKX: .WORD  0
1083      002326 000000      SAVSP: .WORD  0      ;STACK POINTER STORAGE
1084      002330 000000      SAVPC: .WORD  0      ;PROGRAM COUNTER STORAGE
1085      002332 000000      ZERO:   .WORD  0
1086      002334 000001      ONE:    .WORD  1
1087      002336 000000      MEMLIM: .WORD  0      ;HIGHEST LOCATION FOR NPR'S
1088      002340 000001      KMACTV: .BLKW  1      ;M8200,4,6,7 SELECTED ACTIVE
1089      002342 000001      KMNUM: .BLKW  1      ;OCTAL NUMBER OF M8200,4,6,7'S
1090      002344 000001      SAVACT: .BLKW  1      ;ORIGINAL ACTIVE DEVICES
1091      002346 000001      SAVNUM: .BLKW  1      ;WORKABLE NUMBER
1092      002350 000000      FLAG:   .WORD  0      ;SCRATCH STORAGE
1093      002352 000000      RUN:    .WORD  0      ;POINTER TO RUNNING DEVICES
1094      002354 000000      FADR:   .WORD  0
1095      002356 000006      WTYPE: .WORD  6      ;M82XX NUMBER FOR TYPE OF MICO-CPU
1096      002360 000000      $REG5: .WORD  0      ;STORAGE USED FOR ERROR MSG DATA
1097      002362 000000      $REG4: .WORD  0
1098      002364 000000      $REG3: .WORD  0
1099      002366 000000      $REG2: .WORD  0
1100      002370 000000      $REG1: .WORD  0
1101      002372 000000      $REG0: .WORD  0
1102      002374 000000      TYPE:   .WORD  0      ;=0 FOR DMP,=1 FOR M8206
1103      002376 000000      MRO:    .WORD  0      ;MEMLOC USED INSTEAD OF RO.
1104      002400 003777      MEMSZ: .WORD  3777    ;INDICATES MEMORIE SIZE, LAST ADDR.
1105      002402 000000      TEMP:   .WORD  0
1106      002404 000000      $TEMPO: .WORD  0
1107      002406 000000      $TMP0: .WORD  0
1108      002410 000000      $GDADR: .WORD  0      ;CONTAINS ADDRESS OF 'GOOD' DATA
1109      002412 000000      $BDADR: .WORD  0      ;CONTAINS ADDRESS OF 'BAD' DATA
1110      002414 000000      $GDDAT: .WORD  0      ;CONTAINS 'GOOD' DATA
1111      002416 000000      $BDDAT: .WORD  0      ;CONTAINS 'BAD' DATA
1112      002420 000000      .WORD  0      ;RESERVED--NOT TO BE USED
1113      002422 000000      .WORD  0
```



```
1114 002424 000000      FTIME: .WORD 0
1115 002426 000000      SAVE4: .WORD 0
1116 002430 000000      SAVE6: .WORD 0
1117 002432 000000      SKIP33: .WORD 0      ; FLAG FOR TESTING REMOTE POWERFAIL (T33)
1118
1119      ;*****
1120      ;* PROGRAM CONTROL FLAGS
1121      ;*****
1122 002434      000      INIFLG: .BYTE 0      ;PROGRAM INITIALIZING FLAG
1123      002436      .EVEN
1124 002436      000      LOKFLG: .BYTE 0      ;LOCK ON CURRENT TEST FLAG
1125 002437      000      QV.FLG: .BYTE 0      ;QUICK VERIFY FLAG
1126      .EVEN
1127
1128      ;*****
1129      ;* DEFINITION OF M8200,4,6,7 STATUS WORDS - STAT1,STAT2,STAT3
1130      ;*
1131      ;*
1132      ;*      STAT1 - BITS 00-08 IS M8200,4,6,7 VECTOR ADDRESS
1133      ;*      BIT15=1 LINE UNIT IS AN M8203
1134      ;*      BIT14=0 NO TEST CONNECTOR(S) USED
1135      ;*      BIT14=1 H-XXX TEST CONNECTOR WILL BE USED
1136      ;*      BIT13=0 LINE UNIT IS AN M8201
1137      ;*      BIT13=1 LINE UNIT IS AN M8202
1138      ;*      BIT12=1 NO LINE UNIT
1139      ;*      BITS 09-11 IS M8200,4,6,7 PRIORITY LEVEL
1140      ;*
1141      ;*      STAT2 - LOW BYTE IS SWITCH PACK #1 (DDCMP LINE NUMBER)
1142      ;*      HIGH BYTE IS SWITCH PACK #2 (BM873 BOOT ADDRESS)
1143      ;*
1144      ;*      STAT3 - BIT0=1 DO FREE RUNNING TESTS ON M8200,4,6,7
1145      ;*
1146      ;*****
1147 002440 000000      STAT1: .WORD 0
1148 002442 000000      STAT2: .WORD 0
1149 002444 000000      STAT3: .WORD 0
1150
1151      ;*****
1152      ;* POINTERS TO M8200,4,6,7 VECTORS AND REGISTERS
1153      ;*****
1154 002446 000000      KMRVEC: 0      ;POINTER TO M8200,4,6,7 RCV INTRPT VECTOR
1155 002450 000000      KMRLVL: 0      ;POINTER TO M8200,4,6,7 RCV INTRPT SERVICE PS
1156 002452 000000      KMTVEC: 0      ;POINTER TO M8200,4,6,7 TX INTRPT VECTOR
1157 002454 000000      KMTLVL: 0      ;POINTER TO M8200,4,6,7 TX INTRPT SERVICE PS
1158 002456 000000      KMCSR: 0      ;POINTER TO M8200,4,6,7 CONTROL STATUS REGISTER
1159 002460 000000      KMCSRH: 0      ;POINTER TO M8200,4,6,7 CONTROL STATUS REGISTER HIGH BYTE
1160 002462 000000      KMCTL: 0      ;POINTER TO M8200,4,6,7 CONTROL OUT REGISTER
1161 002464 000000      KMP04: 0      ;POINTER TO M8200,4,6,7 PORT REGISTER - SEL4
1162 002466 000000      KMP06: 0      ;POINTER TO M8200,4,6,7 PORT REGISTER - SEL6
1163
1164      ;:**** PRIMARY REG ADRS STORAGE FOR THIS UNIT ****:
1165      ;THESE LOCATIONS WILL BE LOADED FOR THE CURRENT UNIT, IN INIT CODE
1166 002470      REGADR:
1167
1168      ;:**** STACK USED FOR SUBROUTINE LINKAGE ****:
1169 002470 000100      .BLKW 100
```

CZKMCAO KMC11-B STATIC PART2
CZKMCA.P11 20-OCT-81 17:00

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GLOBAL DATA SECTION

SEQ 0027

1170 002670

SSTACK:

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002670				
002670				
002670	034115	030062	000066	
002676				
002676				
002676	055103	046513	040503	
002704	020060	046513	030503	
002712	026461	020102	052123	
002720	052101	041511	050040	
002726	051101	031124	000	
002734				

```
.SBTTL GLOBAL TEXT SECTION
;XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
;% THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
;% MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
;% MORE THAN ONE TEST.
;XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
;*****
;* NAMES OF DEVICES SUPPORTED BY PROGRAM
;*****
DEV TYP <M8206>
L$DVTYP::
  .ASCIIZ /M8206/
  .EVEN
  DESCRIPT <CZKMCAO KMC11-B STATIC PART2>
L$DESC::
  .ASCIIZ /CZKMCAO KMC11-B STATIC PART2/

  .EVEN

;
; FORMAT STATEMENTS USED IN PRINT CALLS
;
```

CZKMCAO KMC11-B STATIC PART2
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GLOBAL SUBROUTINES

SEQ 0029

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.SBTTL GLOBAL SUBROUTINES

:/

:/ THE GLOBAL SUBROUTINES ARE CALLED BY MORE THAN ONE TEST

:/

:-

: MACRO'S NEEDED TO CALL SUBROUTINES

:-

.MACRO POPSP2
22626

.ENDM

CZKMCAO KMC11-B STATIC PART2
CZKMCA.P11 20-OCT-81 17:00

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GLOBAL SUBROUTINES

09:50 E 3
PAGE 30

SEQ 0030

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:/ THE GLOBAL SUBROUTINES ARE CALLED BY MORE THAN ONE TEST
:/

: MACRO'S NEEDED TO CALL SUBROUTINES
:-----

.MACRO ED\$CALL XY
.LIST
:***** TEST 'XY' *****
.NLIST
.ENDM
.MACRO BADHEAD
.RADIX 10
ED\$CALL \T\$TESTNUM+1
.RADIX 8
.ENDM

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```
.MACRO MYINT
JSR      R5,DEBUG
.ENDM

.MACRO MACEX ?N2
TST      TYPE
BNE      N2
EXIT     TST
N2:
.ENDM
.MACRO MACEX2 ?N2
CMP      WTYPE,#0
BNE      N2
EXIT     TST
N2:
.ENDM
.MACRO K4ONLY ?N2
CMP      MEMSZ,#2000
BNE      N2
EXIT     TST
N2:
.ENDM
;NOTE THIS TEST IS ONLY DESIGNED FOR 4K MODULE.

.MACRO CLRMAR
ROMCLK
004000
.ENDM
.MACRO ROMCLK
JSR      R5,.ROMCLK
.ENDM
;CLOCK INSTRUCTION

.MACRO SROMCLK
JSR      R5,.SROMCLK
.ENDM

.MACRO SKIP06 NNN
CMP      WTYPE,#6
BEQ      NNN
.ENDM
;SEE IF M8206

.MACRO SKIP07 NNN
CMP      WTYPE,#7
BEQ      NNN
.ENDM
;SEE IF M8200,4,6,7

.MACRO SKIP04 NNN
CMP      WTYPE,#4
BEQ      NNN
.ENDM
;SEE IF M8204

.MACRO MSTCLR
JSR      R5,.MSTCLR
.ENDM
;CLEAR M8200,4,6,7

.MACRO CHKREG ?N2,?N3,A,B,C,D,E,F,G,H,I
.LIST    ME
JSR      PC,RDKM
MOV      #N2,R2
JSR      PC,RCHECK
; READ KMC11 REGISTERS
; LOAD POINTER
; CHECK FOR NO CHANGE
```

CZKMCAO KMC11-B STATIC PART2
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GLOBAL SUBROUTINES PAGE 33

SEQ 0033

1309
1310
1311
1312
1313
1314

BR N3
N2: .BYTE A,B,C,D,E,F,G,H,I,20 : SKIP LIST
N3:
.NLIST ME
.ENDM
.NLIST ME


```
1315 ;TEST SUBROUTINES
1316
1317 002734 010446 SINGLE: MOV R4, -(SP) ; SAVE R4
1318 002736 012504 MOV (R5)+, R4 ; GET PARAMETER LIST
1319 002740 005114 1$: COM (R4) ; CHECK FOR EXIT
1320 002742 001407 BEQ 3$ ; SKIP IF ENTRY=-1
1321 002744 005114 COM (R4) ; RESTORE VALUE
1322 002746 012437 002756 MOV (R4)+, 2$ ; FETCH FOR EXEC.
1323 002752 ROMCLK
1324 002756 000400 2$: 400 ; KMC INST. GOES HERE
1325 002760 000767 BR 1$ ; GET NEXT
1326 002762 005114 3$: COM (R4) ; RESTORE TERMINATOR
1327 002764 012604 MOV (SP)+, R4 ; RESTORE
1328 002766 000205 RTS R5 ; EXIT
1329
1330 002770 004737 003750 CLRKM: JSR PC, CLRALL ; CLEAR BR, C, AND Z
1331 002774 004537 002734 JSR R5, SINGLE ; EXECUTE CLR REGS INST.
1332 003000 003172 CLRLST ; LIST OF INSTRUCTIONS
1333 003002 105077 177450 CLRB @KMC SR ; CLEAR BSEL0
1334 003006 005077 177450 CLR @KMC TL ; CLEAR SEL2
1335 003012 000207 RTS PC ; EXIT
1336
1337 003014 004737 003032 RDKM: JSR PC, RDIB03 ; READ IBUS0-3
1338 003020 004737 003056 JSR PC, RDIB47 ; READ IBUS4-7
1339 003024 004737 003102 JSR PC, RDIP10 ; READ UBUS*10-11
1340 003030 000207 RTS PC ; EXIT
1341
1342 003032 004537 002734 RDIB03: JSR R5, SINGLE ; READ IBUS0-3
1343 003036 003222 IB03LS
1344 003040 017737 177416 003160 MOV @KMC TL, SIB0 ; GET IB0 IB1
1345 003046 017737 177412 003162 MOV @KMP04, SIB2 ; GET IB2 IB3
1346 003054 000207 RTS PC ; EXIT
1347
1348 003056 004537 002734 RDIB47: JSR R5, SINGLE ; READ IBUS 4-7
1349 003062 003234 IB47LS
1350 003064 017737 177372 003164 MOV @KMC TL, SIB4 ; GET IB4 IB5
1351 003072 017737 177366 003166 MOV @KMP04, SIB6 ; GET IB6 IB7
1352 003100 000207 RTS PC ; EXIT
1353
1354 003102 004537 002734 RDIP10: JSR R5, SINGLE ; READ IBUS* 10-11
1355 003106 003246 IP10LS
1356 003110 017737 177350 003170 MOV @KMP04, SIBP10 ; GET IB*10 AND 11
1357 003116 000207 RTS PC
1358
1359 003120 012701 003160 RCHECK: MOV #SIB0, R1 ; POINTER TO EXPECTED
1360 003124 012703 000012 MOV #10, R3 ; COUNT
1361 003130 112105 RCLP: MOVB (R1)+, R5 ; EXPECTED
1362 003132 112204 MOVB (R2)+, R4 ; ACTUAL
1363 003134 042705 177400 BIC #177400, R5 ; CLEAR HIGH BYTE
1364 003140 042704 177400 BIC #177400, R4
1365 003144 120504 CMPB R5, R4 ; CHECK DATA
1366 003146 001401 BEQ RCXX ; SKIP IF OK
1367 003150 000240 NOP ; REPLACE WITH HALT FOR CROSSTALK CHECK
1368 003152 005303 RCXX: DEC R3 ; DONE?
1369 003154 001365 BNE RCLP ; NO
1370 003156 000207 RTS PC ; EXIT
```

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1371                                     ; STORAGE FOR REGISTERS READ
1372
1373 003160      000      SIB0:  .BYTE  0
1374 003161      000      SIB1:  .BYTE  0
1375 003162      000      SIB2:  .BYTE  0
1376 003163      000      SIB3:  .BYTE  0
1377 003164      000      SIB4:  .BYTE  0
1378 003165      000      SIB5:  .BYTE  0
1379 003166      000      SIB6:  .BYTE  0
1380 003167      000      SIB7:  .BYTE  0
1381
1382 003170      000      SIBP10: .BYTE  0
1383 003171      000      SIBP11: .BYTE  0
1384
1385                                     .EVEN
1386
1387                                     ; COMMAND LISTS
1388
1389 003172 062220  CLRLST: BRG!OB!SELB!0      ; MOVE BRG TO IBUS 0-7
1390 003174 062221      BRG!OB!SELB!1
1391 003176 062222      BRG!OB!SELB!2
1392 003200 062223      BRG!OB!SELB!3
1393 003202 062224      BRG!OB!SELB!4
1394 003204 062225      BRG!OB!SELB!5
1395 003206 062226      BRG!OB!SELB!6
1396 003210 062227      BRG!OB!SELB!7
1397 003212 061230      BRG!OBP!SELB!10      ; MOVE BRG TO OBUS*10,11,13
1398 003214 061231      BRG!OBP!SELB!11
1399 003216 061233      BRG!OBP!SELB!13
1400 003220 177777      -1
1401
1402 003222 021002  IB03LS: IBUS!OBP!SRG0!2
1403 003224 021023      IBUS!OBP!SRG1!3
1404 003226 021044      IBUS!OBP!SRG2!4
1405 003230 021065      IBUS!OBP!SRG3!5
1406 003232 177777      -1
1407
1408 003234 021102  IB47LS: IBUS!OBP!SRG4!2
1409 003236 021123      IBUS!OBP!SRG5!3
1410 003240 021144      IBUS!OBP!SRG6!4
1411 003242 021165      IBUS!OBP!SRG7!5
1412 003244 177777      -1
1413
1414 003246 121204  IP10LS: IBSP!OBP!SRG10!4
1415 003250 121225      IBSP!OBP!SRG11!5
1416 003252 177777      -1

```

```
1417 003254      .MSTCLR:
1418 003254 105077 177200      CLRB    @KMCSRH      ;*: CLEAR RUN, IF UP
1419 003260 112777 000100 177172      MOVB    #BIT6,@KMCSRH      ;SET INST.
1420 003266 142777 000300 177164      BICB    #BIT6!BIT7,@KMCSRH
1421 003274 004737 002770      JSR      PC,CLRKM
1422 003300 000205      RTS      R5
1423
1424
1425      ;DEBUG  THIS ROUTINE IS ENTERED AT THE BEGINING OF EACH TEST
1426      ;      IN ORDER TO LOAD THE CSR ADDR. INTO R1..
1427      ;      ALSO THIS PROGRAM TRACKS ITSELF HERE.
1428      ;      CALL=JSR      R5,DEBUG
1429      ;
1430 003302      DEBUG:
1431 003302 010537 003322      MOV      R5,TESTAD      ;SAVE ADDR. OF TEST.
1432 003306 013701 002456      MOV      KMCSR,R1      ;LOAD KMCSR INTP R1.
1433 003312 000240      NOP
1434 003314 000240      NOP
1435 003316 000240      NOP
1436 003320 000205      RTS R5
1437 003322 000000      TESTAD: .WORD    0      ;LAST TEST ADDR.
1438 003324 000144      PATCH:  .BLKW   100.      ;PATCH AREA.
1439
1440
1441
1442 003634      ENDBUG:
1443      ;      UNSAFE TO PATCH ANY OTHER AREA.
1444 003634      .ROMCLK:
1445 003634 000240      NOP
1446 003636 000240      NOP
1447 003640 112777 000002 176612      .REGT:  MOVB    #BIT1,@KMCSRH
1448 003646 012577 176614      MOV      (R5)+,@KMPO6
1449 003652 152777 000003 176600      BISB    #BIT1!BIT0,@KMCSRH
1450 003660 142777 000007 176572      BICB    #BIT2!BIT1!BIT0,@KMCSRH
1451 003666 000205      RTS      R5
1452
1453 003670      .SROMCLK:
1454 003670 000240      NOP
1455 003672 000240      NOP
1456 003674 112777 000002 176556      MOVB    #BIT1,@KMCSRH
1457 003702 012577 176560      MOV      (R5)+,@KMPO6
1458 003706 000240      NOP
1459 003710 000240      NOP
1460 003712 142777 000007 176540      BICB    #7,@KMCSRH
1461 003720      1$:
1462 003720 152777 000001 176532      BISB    #BIT0,@KMCSRH      ;STEP INSTR.
1463 003726 142777 000007 176524      BICB    #7,@KMCSRH
1464 003734 000240      NOP
1465 003736 000240      NOP
1466 003740 152777 000002 176512      BISB    #BIT1,@KMCSRH
1467 003746      2$:
1468 003746 000205      RTS      R5
1469 003750      CLRALL:
1470      ;      CLEARS C & Z BITS AND BR
1471 003750      ROMCLK
1472 003754 000400      400      ;0 TO BR
```

```
1473 003756 ROMCLK  
1474 003762 063220 63220 ;SP(0) TO BR  
1475 003764 ROMCLK  
1476 003770 060400 60400 ;BR,SP(0) + BR  
1477 003772 SROMCLK  
1478 003776 000000 0  
1479 004000 000207 RTS PC  
1480  
1481 004002 SETBR0: ;SETS BR0 BIT  
1482 ROMCLK  
1483 004002 401 ;1 TO BR  
1484 004006 000401 RTS PC  
1485 004010 000207  
1486  
1487 004012 SETBR1: ;THIS SUBROUTINE SETS BR1 BIT  
1488  
1489 ROMCLK ;NEXT WORD IS INSTRUCTION  
1490 004012 000402 ;BR_002  
1491 004016 000402 RTS PC  
1492 004020 000207  
1493  
1494 004022 SETBR4: ;THIS SUBROUTINE SETS BR4 BIT  
1495  
1496 ROMCLK ;NEXT WORD IS INSTRUCTION  
1497 004022 420  
1498 004026 000420 RTS PC  
1499 004030 000207  
1500  
1501 004032 SETBR7: ;THIS SUBROUTINE SETS BR7 BIT  
1502  
1503 ROMCLK ;NEXT WORD IS INSTRUCTION  
1504 004032 600  
1505 004036 000600 RTS PC  
1506 004040 000207  
1507  
1508 004042 SETC: ;THIS SUBROUTINE SETS THE C BIT  
1509  
1510 ROMCLK ;NEXT WORD IS INSTRUCTION  
1511 004042 000777 ;BR 377  
1512 004046 000777 ROMCLK ;NEXT WORD IS INSTRUCTION  
1513 004050 063220 ;SP(0) BR  
1514 004054 063220 ROMCLK ;NEXT WORD IS INSTRUCTION  
1515 004056 060400 ;BR SP(0)+BR  
1516 004062 060400 SROMCLK ;NOW WE MUST CLOCK THE BITS INTO IBUS <13>  
1517 004064 000000 0  
1518 004070 000000 RTS PC  
1519 004072 000207  
1520  
1521 004074 SETZ: ;THIS SUBROUTINE SETS THE Z BIT  
1522  
1523 ROMCLK ;NEXT WORD IS INSTRUCTION  
1524 004074 000777 ;BR 377  
1525 004100 000777 SROMCLK ;NOW CLOCK THE BITS INTO IBUS<13>  
1526 004102 000777 0777  
1527 004106 000777 RTS PC  
1528 004110 000207
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1529
1530 004112
1531
1532
1533 004112 017605 000000
1534 004116 062716 000002
1535 004122
1536 004126 121244
1537 004130
1538 004134 121265
1539 004136 016104 000004
1540 004142 042704 140000
1541 004146 000207
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1543 004150
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1545
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1548 004150
1549 004160 005000
1550 004162 012702 013116
1551 004166 012711 002000
1552 004172 010061 000004
1553 004176 012261 000006
1554 004202 052711 020000
1555 004206 005200
1556 004210 023700 002400
1557 004214 001364
1558 004216 005011
1559 004220 000207
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1561 004222
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1563
1564
1565
1566 004222 005000
1567 004224 012737 000400 004270
1568 004232 012711 002000
1569 004236 010061 000004
1570 004242 013761 004270 000006
1571 004250 105237 004270
1572 004254 005200
1573 004256 023700 002400
1574 004262 101765
1575 004264 005011
1576 004266 000207
1577 004270 000000
1578
1579 004272 000000 000001 000004
1580 004300 000007 001777 000525
1581
1582 004306 000400
1583 004310 000401
1584 004312 000404

RAMDAT:
;THIS SUBROUTINE LOADS R4 WITH THE CRAM PC
MOV @ (SP),R5 ;GOOD DATA
ADD #2,(SP) ;ADJUST STACK
1$: ROMCLK ;READ PC LOW REG DIRECTLY.
121244 ;IBUS*12> TO PORT 4
ROMCLK
121265 ; IBUS*13> TO PORT 5
MOV 4(R1),R4 ;PUT INTO R4
BIC #140000,R4 ; CLEAR C AND Z
RTS PC ;EXIT

WROM:
;THIS SUBROUTINE WRITES THE ROMMAP INTO THE CRAM
;
; BIT #BIT15,STAT1 ;BE SURE M8200,4,6,7 HAS CRAM
; BEQ 2$ ;SKIP IF NO CRAM
; SKIP07 2$
; CLR R0 ;R0=CRAM ADDRESS
; MOV #ROMMAP,R2 ;R2 POINTS TO ROMMAP
1$: MOV #BIT10,(R1) ;SET ROMO
MOV R0,4(R1) ;LOAD CRAM ADDRESS
MOV (R2)+6(R1) ;LOAD WORD TO BE WRITTEN
BIS #BIT13,(R1) ;WRITE IT!
INC R0 ;NEXT ADDRESS
CMP MEMSZ,R0 ;DONE YET?
BNE 1$ ;BR IF NO
CLR (R1) ;CLEAR SELO
2$: RTS PC ;RETURN

MEMSET:
;THIS SUBROUTINE LOADS CRAM WITH SPECIAL INSTRUCTIONS
;FOR THE CRAM JUMP TEST. ALL CRAM LOCATIONS ARE LOADED
;WITH INSTRUCTIONS THAT MOVE B7-0 OF ITS ADDRESS TO BRG.
CLR R0 ;R0 = CRAM ADDRESS
MOV #400,5$ ;LOAD BR_0
MOV #BIT10,(R1) ;SET ROMO
1$: MOV R0,4(R1) ;LOAD CRAM ADDRESS
MOV 5$,6(R1) ;LOAD INSTRUCTION
INCB 5$ ;BUMP INSTRUCTION
INC R0 ;NEXT ADDRESS
CMP MEMSZ,R0 ;DONE YET?
BLOS 1$ ;BR IF NO
CLR (R1) ;CLEAR ALL BITS
3$: RTS PC ;RETURN
5$: 0

CRAMA: .WORD 0,1,4,7,1777,525

INSTU: 000400 ;BR_0
000401 ;BR_1
000404 ;BR_4

```

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SEQ 0039

```
1585 004314 000407          000407          ;BR 7
1586 004316 000777          000777          ;BR 377
1587 004320 000525          000525          ;BR 125
1588
1589
1590
1591                                ;ROUTINE TO SAVE GENERAL REGISTERS FOR ERROR ROUTINE.
1592                                ; CALL = JSR PC,SV05
1592 004322 010537 002360      SV05: MOV R5,$REG5
1593 004326 010437 002362      MOV R4,$REG4
1594 004332 010337 002364      MOV R3,$REG3
1595 004336 010237 002366      MOV R2,$REG2
1596 004342 010137 002370      MOV R1,$REG1
1597 004346 013737 002376 002372 MOV R0,$REG0
1598 004354 000207          RTS PC
1599
1600
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004356	047045	047445	022466
004364	032123	047445	022466
004372	032123	047445	022464
004400	000116		
004402	047045	047445	022463
004410	033523	047445	022463
004416	000116		
004420	047045	047445	022463
004426	030523	022460	031517
004434	051445	022464	032117
004442	047045	000	
004445	045	022516	033117
004452	051445	022465	033117
004460	047045	000	
004463	045	022516	033117
004470	051445	022465	033117
004476	051445	022463	033117
004504	047045	000	
004507	045	022516	051101
004514	043505	051511	042524
004522	020122	042101	051104
004530	051505	020123	051105
004536	047522	026122	042101
004544	051104	051505	020123
004552	020075	047445	022466
004560	026101	047125	052111
004566	036440	022440	031117
004574	000		
004575	045	022516	020101
004602	051503	020122	044510
004610	044107	041040	052131
004616	020105	047507	020124
004624	051127	052111	042524
004632	020116	047111	047524
004640	047440	020116	020101
004646	047514	020127	054502
004654	042524	054040	042506
004662	000122		
004664	047045	040445	041440
004672	051123	046040	053517
004700	041040	052131	020105
004706	047507	020124	051127
004714	052111	042524	020116
004722	047111	047524	047440
004730	020116	020101	044510

.SBTTL GLOBAL ERROR REPORT SECTION

:/ THE GLOBAL ERROR REPORT SECTION CONTAINS ERROR MESSAGES
:/ THAT ARE USED IN MORE THAN ONE TEST.
:/

TFM1: .ASCIZ /%N%06%S4%06%S4%04%N/

TFM2: .ASCIZ /%N%03%S7%03%N/

TFM3: .ASCIZ /%N%03%S10%03%S4%04%N/

TFM4: .ASCIZ /%N%06%S5%06%N/

TFM5: .ASCIZ /%N%06%S5%06%S3%06%N/

TFM36: .ASCIZ /%N%AREGISTER ADDRESS ERROR,ADDRESS = %06%A,UNIT = %02/

TFM41: .ASCIZ /%N%A CSR HIGH BYTE GOT WRITTEN INTO ON A LOW BYTE XFER/

TFM42: .ASCIZ /%N%A CSR LOW BYTE GOT WRITTEN INTO ON A HIGH BYTE XFER/

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1657	004736	044107	041040	052131
1658	004744	020105	043130	051105
1659	004752	000		
1660	004753	045	022516	020101
1661	004760	042516	020107	042101
1662	004766	051104	052040	051505
1663	004774	020124	052504	046101
1664	005002	040440	042104	020122
1665	005010	051105	047522	026522
1666	005016	040502	020104	042101
1667	005024	051104	036440	022440
1668	005032	033117	000	
1669	005035	045	020101	041523
1670	005042	040522	041524	020110
1671	005050	040520	020104	047445
1672	005056	022463	020101	052504
1673	005064	046101	040440	042104
1674	005072	042522	051523	042440
1675	005100	051122	051117	053440
1676	005106	052111	020110	050123
1677	005114	047445	000062	
1678	005120	052045	040445	044124
1679	005126	020105	040515	020122
1680	005134	042522	026107	041440
1681	005142	047117	042524	052116
1682	005150	036523	022440	033117
1683	005156	000		
1684	005157	045	022524	052101
1685	005164	042510	050040	020103
1686	005172	042522	026107	041440
1687	005200	047117	042524	052116
1688	005206	036523	022440	033117
1689	005214	000		
1690	005215	045	047101	051120
1691	005222	046457	051511	020103
1692	005230	042522	051507	042040
1693	005236	052101	020101	040506
1694	005244	046111	051125	026105
1695	005252	043440	047517	020104
1696	005260	022475	033117	040445
1697	005266	020054	040502	020104
1698	005274	022475	033117	000
1699	005301	115	051501	042524
1700	005306	020122	046103	040505
1701	005314	020122	040506	046111
1702	005322	042105	052040	020117
1703	005330	046103	040505	020122
1704	005336	000		
1705	005337	045	022516	022524
1706	005344	000116		
1707	005346	047045	040445	047125
1708	005354	052111	020075	047445
1709	005362	022462	020101	020073
1710	005370	040506	046111	047111
1711	005376	020107	047125	052111
1712	005404	040440	042104	042522

TFM40: .ASCIZ /%N%A NEG ADDR TEST DUAL ADDR ERROR-BAD ADDR = %06/

TFM43: .ASCIZ /%A SCRATCH PAD %03%A DUAL ADDRESS ERROR WITH SP%02/

TFM44: .ASCIZ /%T%THE MAR REG, CONTENTS= %06/

TFM45: .ASCIZ /%T%THE PC REG, CONTENTS= %06/

TFM46: .ASCIZ '%ANPR/MISC REGS DATA FAILURE, GOOD =%06%A, BAD =%06''

TMMC: .ASCIZ /MASTER CLEAR FAILED TO CLEAR /

FM1: .ASCIZ /%N%T%N/

FMX: .ASCIZ /%N%AUNIT= %02%A ; FAILING UNIT ADDRESS = %06%N/

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SEQ 0042

1713	005412	051523	036440	022440		
1714	005420	033117	047045	000		
1715						
1716						
1717						
1718	005425	000			EM0:	.ASCIIZ //
1719	005426	051103	046501	042040	EM1:	.ASCIIZ /CRAM DATA ERROR/
1720	005434	052101	020101	051105		
1721	005442	047522	000122			
1722	005446	051103	046501	042040	EM2:	.ASCIIZ /CRAM DUAL ADDRESSING ERROR/
1723	005454	040525	020114	042101		
1724	005462	051104	051505	044523		
1725	005470	043516	042440	051122		
1726	005476	051117	000			
1727	005501	112	046525	020120	EM3:	.ASCIIZ /JUMP ERROR/
1728	005506	051105	047522	000122		
1729	005514	051103	046501	045040	EM4:	.ASCIIZ /CRAM JUMP TEST FAULT/
1730	005522	046525	020120	042524		
1731	005530	052123	043040	052501		
1732	005536	052114	000			
1733	005541	111	050117	046440	EM5:	.ASCIIZ /IOP MAIN MEMORY TEST/
1734	005546	044501	020116	042515		
1735	005554	047515	054522	052040		
1736	005562	051505	000124			
1737	005566	047511	020120	040515	EM6:	.ASCIIZ /IOP MAR TEST/
1738	005574	020122	042524	052123		
1739	005602	000				
1740	005603	102	020122	044522	EM7:	.ASCIIZ /BR RIGHT SHIFT ERROR/
1741	005610	044107	020124	044123		
1742	005616	043111	020124	051105		
1743	005624	047522	000122			
1744	005630	040515	020122	052504	EM10:	.ASCIIZ /MAR DUAL ADDRESSING ERROR/
1745	005636	046101	040440	042104		
1746	005644	042522	051523	047111		
1747	005652	020107	051105	047522		
1748	005660	000122				
1749	005662	052512	050115	043040	EM11:	.ASCIIZ /JUMP FIELD ERROR/
1750	005670	042511	042114	042440		
1751	005676	051122	051117	000		
1752	005703	112	046525	020120	EM12:	.ASCIIZ /JUMP TEST ERROR/
1753	005710	042524	052123	042440		
1754	005716	051122	051117	000		
1755	005723	103	047117	044504	EM16:	.ASCIIZ /CONDITION CODE TESTING,Z & C/
1756	005730	044524	047117	041440		
1757	005736	042117	020105	042524		
1758	005744	052123	047111	026107		
1759	005752	020132	020046	000103		
1760	005760				EM35:	
1761	005760	047506	041522	020105	EM17:	.ASCIIZ /FORCE POWER FAIL ERROR/
1762	005766	047520	042527	020122		
1763	005774	040506	046111	042440		
1764	006002	051122	051117	000		
1765	006007	111	052502	025123	EM27:	.ASCIIZ 'IBUS* WRITE/READ ERROR'
1766	006014	053440	044522	042524		
1767	006022	051057	040505	020104		
1768	006030	051105	047522	000122		

```
1769
1770 006036 041111 051525 047457 EM29: .ASCIIZ 'IBUS/OBUS WRITE/READ ERROR'
1771 006044 052502 020123 051127
1772 006052 052111 027505 042522
1773 006060 042101 042440 051122
1774 006066 051117 000
1775 006071 045 022516 025101 STM: .ASCIIZ '%N%A*****'
1776 006076 025052 025052 025052
1777 006104 025052 025052 025052
1778 006112 025052 025052 025052
1779 006120 025052 025052 025052
1780 006126 025052 025052 025052
1781 006134 025052 025052 025052
1782 006142 025052 025052 025052
1783 006150 025052 025052 025052
1784 006156 025052 025052 025052
1785 006164 000
1786 006165 000 DH0: .ASCIIZ //
1787
1788
1789 006166 054105 042520 052103 DH1: .ASCIIZ /EXPECTED FOUND ADDRESS/
1790 006174 042105 020040 047506
1791 006202 047125 020104 040440
1792 006210 042104 042522 051523
1793 006216 000
1794 006217 105 050130 041505 DH2: .ASCIIZ /EXPECTED FOUND/
1795 006224 042524 020104 043040
1796 006232 052517 042116 000
1797 006237 106 047522 020115 DH3: .ASCIIZ /FROM ADDR TO ADDR BAD ADDR/
1798 006244 042101 051104 020040
1799 006252 047524 040440 042104
1800 006260 020122 041040 042101
1801 006266 040440 042104 000122
1802
1803
1804 .EVEN
1805
1806
1807
1808
1809 :-----
1810 : MACRO'S NEEDED TO REPORT ERRORS
1811 :-----
1812 .MACRO MDT1
1813 PRINTB #TFM1,$REG2,$REG4,$REG0
1814 .ENDM
1815
1816 .MACRO MDT2
1817 PRINTB #TFM1,$REG5,$REG4,$REG2
1818 .ENDM
1819
1820 .MACRO MDT3
1821 PRINTB #TFM2,$REG5,$REG4
1822 .ENDM
1823
1824 .MACRO MDT4
```

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GLOBAL ERROR REPORT SECTION

SEQ 0044

```
1825          PRINTB  #TFM3,$REG5,$REG4,FLAG
1826      .ENDM
1827
1828      .MACRO  MDT5
1829          PRINTB  #TFM3,$REG5,$REG4,$REG2
1830      .ENDM
1831
1832      .MACRO  MDT0
1833      .ENDM
1834      .MACRO  MDT6
1835          PRINTB  #TFM4,$REG2,$REG4
1836      .ENDM
1837
1838      .MACRO  MDT7
1839          PRINTB  #TFM4,$REG5,$REG4
```

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GLOBAL ERROR REPORT SECTION

SEQ 0045

1840
1841
1842
1843

.ENDM
.MACRO MDT8
PRINTB #TFM5,FADR,\$REG5,\$REG4
.ENDM

```
1844  
1845      .MACRO SMD      ERRNN  ERNB  ERHM  ERFM  
1846      BGNMSG  ERR'ERRNN  
1847      PRINTB  #FMX,LOGDEV,KMCSR  
1848      PRINTB  #FM1,#EM'ERNB  
1849      PRINTB  #FM1,#DH'ERHM  
1850      MDT'ERFM  
1851      PRINTB  #STM  
1852      ENDMSG  
1853      .ENDM  
1854  
1855      .MACRO ERROR  ECB  
1856      JSR      PC,SV05  
1857      ERRDF    'ECB',EMO,ERR'ECB'  
1858      .ENDM
```

1859	006274				SMD	1,1,1,1
1860	006274			ERR1::		
1861	006274	013746	002456		MOV	KMCSR,-(SP)
1862	006300	013746	002304		MOV	LOGDEV,-(SP)
1863	006304	012746	005346		MOV	#FMX,-(SP)
1864	006310	012746	000003		MOV	#3,-(SP)
1865	006314	010600			MOV	SP,R0
1866	006316	104414			TRAP	C\$PNTB
1867	006320	062706	000010		ADD	#10,SP
1868	006324	012746	005426		MOV	#EM1,-(SP)
1869	006330	012746	005337		MOV	#FM1,-(SP)
1870	006334	012746	000002		MOV	#2,-(SP)
1871	006340	010600			MOV	SP,R0
1872	006342	104414			TRAP	C\$PNTB
1873	006344	062706	000006		ADD	#6,SP
1874	006350	012746	006166		MOV	#DH1,-(SP)
1875	006354	012746	005337		MOV	#FM1,-(SP)
1876	006360	012746	000002		MOV	#2,-(SP)
1877	006364	010600			MOV	SP,R0
1878	006366	104414			TRAP	C\$PNTB
1879	006370	062706	000006		ADD	#6,SP
1880	006374	013746	002372		MOV	\$REG0,-(SP)
1881	006400	013746	002362		MOV	\$REG4,-(SP)
1882	006404	013746	002366		MOV	\$REG2,-(SP)
1883	006410	012746	004356		MOV	#TFM1,-(SP)
1884	006414	012746	000004		MOV	#4,-(SP)
1885	006420	010600			MOV	SP,R0
1886	006422	104414			TRAP	C\$PNTB
1887	006424	062706	000012		ADD	#12,SP
1888	006430	012746	006071		MOV	#STM,-(SP)
1889	006434	012746	000001		MOV	#1,-(SP)
1890	006440	010600			MOV	SP,R0
1891	006442	104414			TRAP	C\$PNTB
1892	006444	062706	000004		ADD	#4,SP
1893	006450			L10002:		
1894	006450	104423			TRAP	C\$MSG
1895	006452				SMD	2,2,1,1
1896	006452			ERR2::		
1897	006452	013746	002456		MOV	KMCSR,-(SP)
1898	006456	013746	002304		MOV	LOGDEV,-(SP)
1899	006462	012746	005346		MOV	#FMX,-(SP)
1900	006466	012746	000003		MOV	#3,-(SP)
1901	006472	010600			MOV	SP,R0
1902	006474	104414			TRAP	C\$PNTB
1903	006476	062706	000010		ADD	#10,SP
1904	006502	012746	005446		MOV	#EM2,-(SP)
1905	006506	012746	005337		MOV	#FM1,-(SP)
1906	006512	012746	000002		MOV	#2,-(SP)
1907	006516	010600			MOV	SP,R0
1908	006520	104414			TRAP	C\$PNTB
1909	006522	062706	000006		ADD	#6,SP
1910	006526	012746	006166		MOV	#DH1,-(SP)
1911	006532	012746	005337		MOV	#FM1,-(SP)
1912	006536	012746	000002		MOV	#2,-(SP)
1913	006542	010600			MOV	SP,R0
1914	006544	104414			TRAP	C\$PNTB

1915	006546	062706	000006	ADD	#6,SP
1916	006552	013746	002372	MOV	\$REG0,-(SP)
1917	006556	013746	002362	MOV	\$REG4,-(SP)
1918	006562	013746	002366	MOV	\$REG2,-(SP)
1919	006566	012746	004356	MOV	#TFM1,-(SP)
1920	006572	012746	000004	MOV	#4,-(SP)
1921	006576	010600		MOV	SP,R0
1922	006600	104414		TRAP	C\$PNTB
1923	006602	062706	000012	ADD	#12,SP
1924	006606	012746	006071	MOV	#STM,-(SP)
1925	006612	012746	000001	MOV	#1,-(SP)
1926	006616	010600		MOV	SP,R0
1927	006620	104414		TRAP	C\$PNTB
1928	006622	062706	000004	ADD	#4,SP
1929	006626				
1930	006626	104423		L10003: TRAP	C\$MSG
1931	006630			\$MD	3,1,1,2
1932	006630			ERR3::	
1933	006630	013746	002456	MOV	KMCSR,-(SP)
1934	006634	013746	002304	MOV	LOGDEV,-(SP)
1935	006640	012746	005346	MOV	#FMX,-(SP)
1936	006644	012746	000003	MOV	#3,-(SP)
1937	006650	010600		MOV	SP,R0
1938	006652	104414		TRAP	C\$PNTB
1939	006654	062706	000010	ADD	#10,SP
1940	006660	012746	005426	MOV	#EM1,-(SP)
1941	006664	012746	005337	MOV	#FM1,-(SP)
1942	006670	012746	000002	MOV	#2,-(SP)
1943	006674	010600		MOV	SP,R0
1944	006676	104414		TRAP	C\$PNTB
1945	006700	062706	000006	ADD	#6,SP
1946	006704	012746	006166	MOV	#DH1,-(SP)
1947	006710	012746	005337	MOV	#FM1,-(SP)
1948	006714	012746	000002	MOV	#2,-(SP)
1949	006720	010600		MOV	SP,R0
1950	006722	104414		TRAP	C\$PNTB
1951	006724	062706	000006	ADD	#6,SP
1952	006730	013746	002366	MOV	\$REG2,-(SP)
1953	006734	013746	002362	MOV	\$REG4,-(SP)
1954	006740	013746	002360	MOV	\$REG5,-(SP)
1955	006744	012746	004356	MOV	#TFM1,-(SP)
1956	006750	012746	000004	MOV	#4,-(SP)
1957	006754	010600		MOV	SP,R0
1958	006756	104414		TRAP	C\$PNTB
1959	006760	062706	000012	ADD	#12,SP
1960	006764	012746	006071	MOV	#STM,-(SP)
1961	006770	012746	000001	MOV	#1,-(SP)
1962	006774	010600		MOV	SP,R0
1963	006776	104414		TRAP	C\$PNTB
1964	007000	062706	000004	ADD	#4,SP
1965	007004			L10004: TRAP	C\$MSG
1966	007004	104423		\$MD	4,3,2,3
1967	007006			ERR4::	
1968	007006				
1969	007006	013746	002456	MOV	KMCSR,-(SP)
1970	007012	013746	002304	MOV	LOGDEV,-(SP)

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SEQ 0049

1971	007016	012746	005346	MOV	#FMX,-(SP)
1972	007022	012746	000003	MOV	#3,-(SP)
1973	007026	010600		MOV	SP,R0
1974	007030	104414		TRAP	C\$PNTB
1975	007032	062706	000010	ADD	#10,SP
1976	007036	012746	005501	MOV	#EM3,-(SP)
1977	007042	012746	005337	MOV	#FM1,-(SP)
1978	007046	012746	000002	MOV	#2,-(SP)
1979	007052	010600		MOV	SP,R0
1980	007054	104414		TRAP	C\$PNTB
1981	007056	062706	000006	ADD	#6,SP
1982	007062	012746	006217	MOV	#DH2,-(SP)
1983	007066	012746	005337	MOV	#FM1,-(SP)
1984	007072	012746	000002	MOV	#2,-(SP)
1985	007076	010600		MOV	SP,R0
1986	007100	104414		TRAP	C\$PNTB
1987	007102	062706	000006	ADD	#6,SP
1988	007106	013746	002362	MOV	\$REG4,-(SP)
1989	007112	013746	002360	MOV	\$REG5,-(SP)
1990	007116	012746	004402	MOV	#TFM2,-(SP)
1991	007122	012746	000003	MOV	#3,-(SP)
1992	007126	010600		MOV	SP,R0
1993	007130	104414		TRAP	C\$PNTB
1994	007132	062706	000010	ADD	#10,SP
1995	007136	012746	006071	MOV	#STM,-(SP)
1996	007142	012746	000001	MOV	#1,-(SP)
1997	007146	010600		MOV	SP,R0
1998	007150	104414		TRAP	C\$PNTB
1999	007152	062706	000004	ADD	#4,SP
2000	007156				
2001	007156	104423		TRAP	C\$MSG

L10005:

2002	007160				SMD	5,4,2,3
2003	007160			ERR5::		
2004	007160	013746	002456		MOV	KMCSR,-(SP)
2005	007164	013746	002304		MOV	LOGDEV,-(SP)
2006	007170	012746	005346		MOV	#FMX,-(SP)
2007	007174	012746	000003		MOV	#3,-(SP)
2008	007200	010600			MOV	SP,R0
2009	007202	104414			TRAP	C\$PNTB
2010	007204	062706	000010		ADD	#10,SP
2011	007210	012746	005514		MOV	#EM4,-(SP)
2012	007214	012746	005337		MOV	#FM1,-(SP)
2013	007220	012746	000002		MOV	#2,-(SP)
2014	007224	010600			MOV	SP,R0
2015	007226	104414			TRAP	C\$PNTB
2016	007230	062706	000006		ADD	#6,SP
2017	007234	012746	006217		MOV	#DH2,-(SP)
2018	007240	012746	005337		MOV	#FM1,-(SP)
2019	007244	012746	000002		MOV	#2,-(SP)
2020	007250	010600			MOV	SP,R0
2021	007252	104414			TRAP	C\$PNTB
2022	007254	062706	000006		ADD	#6,SP
2023	007260	013746	002362		MOV	\$REG4,-(SP)
2024	007264	013746	002360		MOV	\$REG5,-(SP)
2025	007270	012746	004402		MOV	#TFM2,-(SP)
2026	007274	012746	000003		MOV	#3,-(SP)
2027	007300	010600			MOV	SP,R0
2028	007302	104414			TRAP	C\$PNTB
2029	007304	062706	000010		ADD	#10,SP
2030	007310	012746	006071		MOV	#STM,-(SP)
2031	007314	012746	000001		MOV	#1,-(SP)
2032	007320	010600			MOV	SP,R0
2033	007322	104414			TRAP	C\$PNTB
2034	007324	062706	000004		ADD	#4,SP
2035	007330			L10006:		
2036	007330	104423			TRAP	C\$MSG

2037	007332			ERR6::	SMD	6.5.1.4
2038	007332				MOV	KMCSR,-(SP)
2039	007332	013746	002456		MOV	LOGDEV,-(SP)
2040	007336	013746	002304		MOV	#FMX,-(SP)
2041	007342	012746	005346		MOV	#3,-(SP)
2042	007346	012746	000003		MOV	SP,R0
2043	007352	010600			TRAP	C\$PNTB
2044	007354	104414			ADD	#10,SP
2045	007356	062706	000010		MOV	#EM5,-(SP)
2046	007362	012746	005541		MOV	#FM1,-(SP)
2047	007366	012746	005337		MOV	#2,-(SP)
2048	007372	012746	000002		MOV	SP,R0
2049	007376	010600			TRAP	C\$PNTB
2050	007400	104414			ADD	#6,SP
2051	007402	062706	000006		MOV	#DH1,-(SP)
2052	007406	012746	006166		MOV	#FM1,-(SP)
2053	007412	012746	005337		MOV	#2,-(SP)
2054	007416	012746	000002		MOV	SP,R0
2055	007422	010600			TRAP	C\$PNTB
2056	007424	104414			ADD	#6,SP
2057	007426	062706	000006		MOV	FLAG,-(SP)
2058	007432	013746	002350		MOV	\$REG4,-(SP)
2059	007436	013746	002362		MOV	\$REG5,-(SP)
2060	007442	013746	002360		MOV	#TFM3,-(SP)
2061	007446	012746	004420		MOV	#4,-(SP)
2062	007452	012746	000004		MOV	SP,R0
2063	007456	010600			TRAP	C\$PNTB
2064	007460	104414			ADD	#12,SP
2065	007462	062706	000012		MOV	#STM,-(SP)
2066	007466	012746	006071		MOV	#1,-(SP)
2067	007472	012746	000001		MOV	SP,R0
2068	007476	010600			TRAP	C\$PNTB
2069	007500	104414			ADD	#4,SP
2070	007502	062706	000004	L10007:	TRAP	C\$MSG
2071	007506				SMD	7.6.1.5
2072	007506	104423		ERR7::	MOV	KMCSR,-(SP)
2073	007510				MOV	LOGDEV,-(SP)
2074	007510				MOV	#FMX,-(SP)
2075	007510	013746	002456		MOV	#3,-(SP)
2076	007514	013746	002304		MOV	SP,R0
2077	007520	012746	005346		TRAP	C\$PNTB
2078	007524	012746	000003		ADD	#10,SP
2079	007530	010600			MOV	#EM6,-(SP)
2080	007532	104414			MOV	#FM1,-(SP)
2081	007534	062706	000010		MOV	#2,-(SP)
2082	007540	012746	005566		MOV	SP,R0
2083	007544	012746	005337		TRAP	C\$PNTB
2084	007550	012746	000002		ADD	#6,SP
2085	007554	010600			MOV	#DH1,-(SP)
2086	007556	104414			MOV	#FM1,-(SP)
2087	007560	062706	000006		MOV	#2,-(SP)
2088	007564	012746	006166		MOV	SP,R0
2089	007570	012746	005337		TRAP	C\$PNTB
2090	007574	012746	000002			
2091	007600	010600				
2092	007602	104414				

2093	007604	062706	000006	ADD	#6,SP
2094	007610	013746	002366	MOV	\$REG2,-(SP)
2095	007614	013746	002362	MOV	\$REG4,-(SP)
2096	007620	013746	002360	MOV	\$REG5,-(SP)
2097	007624	012746	004420	MOV	#TFM3,-(SP)
2098	007630	012746	000004	MOV	#4,-(SP)
2099	007634	010600		MOV	SP,R0
2100	007636	104414		TRAP	C\$PNTB
2101	007640	062706	000012	ADD	#12,SP
2102	007644	012746	006071	MOV	#STM,-(SP)
2103	007650	012746	000001	MOV	#1,-(SP)
2104	007654	010600		MOV	SP,R0
2105	007656	104414		TRAP	C\$PNTB
2106	007660	062706	000004	ADD	#4,SP
2107	007664				
2108	007664	104423		L10010: TRAP	C\$MSG
2109	007666			\$MD	10.7.2.3
2110	007666			ERR10::	
2111	007666	013746	002456	MOV	KMCSR,-(SP)
2112	007672	013746	002304	MOV	LOGDEV,-(SP)
2113	007676	012746	005346	MOV	#FMX,-(SP)
2114	007702	012746	000003	MOV	#3,-(SP)
2115	007706	010600		MOV	SP,R0
2116	007710	104414		TRAP	C\$PNTB
2117	007712	062706	000010	ADD	#10,SP
2118	007716	012746	005603	MOV	#EM7,-(SP)
2119	007722	012746	005337	MOV	#FM1,-(SP)
2120	007726	012746	000002	MOV	#2,-(SP)
2121	007732	010600		MOV	SP,R0
2122	007734	104414		TRAP	C\$PNTB
2123	007736	062706	000006	ADD	#6,SP
2124	007742	012746	006217	MOV	#DH2,-(SP)
2125	007746	012746	005337	MOV	#FM1,-(SP)
2126	007752	012746	000002	MOV	#2,-(SP)
2127	007756	010600		MOV	SP,R0
2128	007760	104414		TRAP	C\$PNTB
2129	007762	062706	000006	ADD	#6,SP
2130	007766	013746	002362	MOV	\$REG4,-(SP)
2131	007772	013746	002360	MOV	\$REG5,-(SP)
2132	007776	012746	004402	MOV	#TFM2,-(SP)
2133	010002	012746	000003	MOV	#3,-(SP)
2134	010006	010600		MOV	SP,R0
2135	010010	104414		TRAP	C\$PNTB
2136	010012	062706	000010	ADD	#10,SP
2137	010016	012746	006071	MOV	#STM,-(SP)
2138	010022	012746	000001	MOV	#1,-(SP)
2139	010026	010600		MOV	SP,R0
2140	010030	104414		TRAP	C\$PNTB
2141	010032	062706	000004	ADD	#4,SP
2142	010036			L10011: TRAP	C\$MSG
2143	010036	104423		\$MD	11.10.2.6
2144	010040			ERR11::	
2145	010040				
2146	010040	013746	002456	MOV	KMCSR,-(SP)
2147	010044	013746	002304	MOV	LOGDEV,-(SP)
2148	010050	012746	005346	MOV	#FMX,-(SP)

2149	010054	012746	000003	MOV	#3,-(SP)
2150	010060	010600		MOV	SP,R0
2151	010062	104414		TRAP	C\$PNTB
2152	010064	062706	000010	ADD	#10,SP
2153	010070	012746	005630	MOV	#EM10,-(SP)
2154	010074	012746	005337	MOV	#FM1,-(SP)
2155	010100	012746	000002	MOV	#2,-(SP)
2156	010104	010600		MOV	SP,R0
2157	010106	104414		TRAP	C\$PNTB
2158	010110	062706	000006	ADD	#6,SP
2159	010114	012746	006217	MOV	#DH2,-(SP)
2160	010120	012746	005337	MOV	#FM1,-(SP)
2161	010124	012746	000002	MOV	#2,-(SP)
2162	010130	010600		MOV	SP,R0
2163	010132	104414		TRAP	C\$PNTB
2164	010134	062706	000006	ADD	#6,SP
2165	010140	013746	002362	MOV	\$REG4,-(SP)
2166	010144	013746	002366	MOV	\$REG2,-(SP)
2167	010150	012746	004445	MOV	#TFM4,-(SP)
2168	010154	012746	000003	MOV	#3,-(SP)
2169	010160	010600		MOV	SP,R0
2170	010162	104414		TRAP	C\$PNTB
2171	010164	062706	000010	ADD	#10,SP
2172	010170	012746	006071	MOV	#STM,-(SP)
2173	010174	012746	000001	MOV	#1,-(SP)
2174	010200	010600		MOV	SP,R0
2175	010202	104414		TRAP	C\$PNTB
2176	010204	062706	000004	ADD	#4,SP
2177	010210				
2178	010210	104423		L10012: TRAP	C\$MSG
2179	010212			\$MD	12,7,2,7
2180	010212			ERR12::	
2181	010212	013746	002456	MOV	KMCSR,-(SP)
2182	010216	013746	002304	MOV	LOGDEV,-(SP)
2183	010222	012746	005346	MOV	#FMX,-(SP)
2184	010226	012746	000003	MOV	#3,-(SP)
2185	010232	010600		MOV	SP,R0
2186	010234	104414		TRAP	C\$PNTB
2187	010236	062706	000010	ADD	#10,SP
2188	010242	012746	005603	MOV	#EM7,-(SP)
2189	010246	012746	005337	MOV	#FM1,-(SP)
2190	010252	012746	000002	MOV	#2,-(SP)
2191	010256	010600		MOV	SP,R0
2192	010260	104414		TRAP	C\$PNTB
2193	010262	062706	000006	ADD	#6,SP
2194	010266	012746	006217	MOV	#DH2,-(SP)
2195	010272	012746	005337	MOV	#FM1,-(SP)
2196	010276	012746	000002	MOV	#2,-(SP)
2197	010302	010600		MOV	SP,R0
2198	010304	104414		TRAP	C\$PNTB
2199	010306	062706	000006	ADD	#6,SP
2200	010312	013746	002362	MOV	\$REG4,-(SP)
2201	010316	013746	002360	MOV	\$REG5,-(SP)
2202	010322	012746	004445	MOV	#TFM4,-(SP)
2203	010326	012746	000003	MOV	#3,-(SP)
2204	010332	010600		MOV	SP,R0

2205	010334	104414		TRAP	C\$PNTB
2206	010336	062706	000010	ADD	#10,SP
2207	010342	012746	006071	MOV	#STM,-(SP)
2208	010346	012746	000001	MOV	#1,-(SP)
2209	010352	010600		MOV	SP,R0
2210	010354	104414		TRAP	C\$PNTB
2211	010356	062706	000004	ADD	#4,SP
2212	010362				
2213	010362	104423		L10013: TRAP	C\$MSG
2214	010364			\$MD	13,10,2,3
2215	010364			ERR13::	
2216	010364	013746	002456	MOV	KMCSR,-(SP)
2217	010370	013746	002304	MOV	LOGDEV,-(SP)
2218	010374	012746	005346	MOV	#FMX,-(SP)
2219	010400	012746	000003	MOV	#3,-(SP)
2220	010404	010600		MOV	SP,R0
2221	010406	104414		TRAP	C\$PNTB
2222	010410	062706	000010	ADD	#10,SP
2223	010414	012746	005630	MOV	#EM10,-(SP)
2224	010420	012746	005337	MOV	#FM1,-(SP)
2225	010424	012746	000002	MOV	#2,-(SP)
2226	010430	010600		MOV	SP,R0
2227	010432	104414		TRAP	C\$PNTB
2228	010434	062706	000006	ADD	#6,SP
2229	010440	012746	006217	MOV	#DH2,-(SP)
2230	010444	012746	005337	MOV	#FM1,-(SP)
2231	010450	012746	000002	MOV	#2,-(SP)
2232	010454	010600		MOV	SP,R0
2233	010456	104414		TRAP	C\$PNTB
2234	010460	062706	000006	ADD	#6,SP
2235	010464	013746	002362	MOV	\$REG4,-(SP)
2236	010470	013746	002360	MOV	\$REG5,-(SP)
2237	010474	012746	004402	MOV	#TFM2,-(SP)
2238	010500	012746	000003	MOV	#3,-(SP)
2239	010504	010600		MOV	SP,R0
2240	010506	104414		TRAP	C\$PNTB
2241	010510	062706	000010	ADD	#10,SP
2242	010514	012746	006071	MOV	#STM,-(SP)
2243	010520	012746	000001	MOV	#1,-(SP)
2244	010524	010600		MOV	SP,R0
2245	010526	104414		TRAP	C\$PNTB
2246	010530	062706	000004	ADD	#4,SP
2247	010534			L10014: TRAP	C\$MSG
2248	010534	104423		\$MD	14,11,2,6
2249	010536			ERR14::	
2250	010536				
2251	010536	013746	002456	MOV	KMCSR,-(SP)
2252	010542	013746	002304	MOV	LOGDEV,-(SP)
2253	010546	012746	005346	MOV	#FMX,-(SP)
2254	010552	012746	000003	MOV	#3,-(SP)
2255	010556	010600		MOV	SP,R0
2256	010560	104414		TRAP	C\$PNTB
2257	010562	062706	000010	ADD	#10,SP
2258	010566	012746	005662	MOV	#EM11,-(SP)
2259	010572	012746	005337	MOV	#FM1,-(SP)
2260	010576	012746	000002	MOV	#2,-(SP)

2261	010602	010600		MOV	SP,R0
2262	010604	104414		TRAP	C\$PNTB
2263	010606	062706	000006	ADD	#6,SP
2264	010612	012746	006217	MOV	#DH2,-(SP)
2265	010616	012746	005337	MOV	#FM1,-(SP)
2266	010622	012746	000002	MOV	#2,-(SP)
2267	010626	010600		MOV	SP,R0
2268	010630	104414		TRAP	C\$PNTB
2269	010632	062706	000006	ADD	#6,SP
2270	010636	013746	002362	MOV	\$REG4,-(SP)
2271	010642	013746	002366	MOV	\$REG2,-(SP)
2272	010646	012746	004445	MOV	#TFM4,-(SP)
2273	010652	012746	000003	MOV	#3,-(SP)
2274	010656	010600		MOV	SP,R0
2275	010660	104414		TRAP	C\$PNTB
2276	010662	062706	000010	ADD	#10,SP
2277	010666	012746	006071	MOV	#STM,-(SP)
2278	010672	012746	000001	MOV	#1,-(SP)
2279	010676	010600		MOV	SP,R0
2280	010700	104414		TRAP	C\$PNTB
2281	010702	062706	000004	ADD	#4,SP
2282	010706				
2283	010706	104423		TRAP	C\$MSG

L10015:

2284 010710
2285 010710
2286 010710 013746 002456
2287 010714 013746 002304
2288 010720 012746 005346
2289 010724 012746 000003
2290 010730 010600
2291 010732 104414
2292 010734 062706 000010
2293 010740 012746 005703
2294 010744 012746 005337
2295 010750 012746 000002
2296 010754 010600
2297 010756 104414
2298 010760 062706 000006
2299 010764 012746 006237
2300 010770 012746 005337
2301 010774 012746 000002
2302 011000 010600
2303 011002 104414
2304 011004 062706 000006
2305 011010 013746 002362
2306 011014 013746 002360
2307 011020 013746 002354
2308 011024 012746 004463
2309 011030 012746 000004
2310 011034 010600
2311 011036 104414
2312 011040 062706 000012
2313 011044 012746 006071
2314 011050 012746 000001
2315 011054 010600
2316 011056 104414
2317 011060 062706 000004
2318 011064
2319 011064 104423
2320 011066
2321 011066
2322 011066 013746 002456
2323 011072 013746 002304
2324 011076 012746 005346
2325 011102 012746 000003
2326 011106 010600
2327 011110 104414
2328 011112 062706 000010
2329 011116 012746 005723
2330 011122 012746 005337
2331 011126 012746 000002
2332 011132 010600
2333 011134 104414
2334 011136 062706 000006
2335 011142 012746 006217
2336 011146 012746 005337
2337 011152 012746 000002
2338 011156 010600
2339 011160 104414

ERR15:: SMD 15,12,3,8
MOV KMCSR,-(SP)
MOV LOGDEV,-(SP)
MOV #FMX,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #10,SP
MOV #EM12,-(SP)
MOV #FM1,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #6,SP
MOV #DH3,-(SP)
MOV #FM1,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #6,SP
MOV \$REG4,-(SP)
MOV \$REG5,-(SP)
MOV FADR,-(SP)
MOV #TFM5,-(SP)
MOV #4,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #12,SP
MOV #STM,-(SP)
MOV #1,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #4,SP
L10016: TRAP C\$MSG
ERR16:: SMD 16,16,2,7
MOV KMCSR,-(SP)
MOV LOGDEV,-(SP)
MOV #FMX,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #10,SP
MOV #EM16,-(SP)
MOV #FM1,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #6,SP
MOV #DH2,-(SP)
MOV #FM1,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP C\$PNTB

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SEQ 0057

2340	011162	062706	000006	ADD	#6,SP
2341	011166	013746	002362	MOV	\$REG4,-(SP)
2342	011172	013746	002360	MOV	\$REG5,-(SP)
2343	011176	012746	004445	MOV	#TFM4,-(SP)
2344	011202	012746	000003	MOV	#3,-(SP)
2345	011206	010600		MOV	SP,R0
2346	011210	104414		TRAP	C\$PNTB
2347	011212	062706	000010	ADD	#10,SP
2348	011216	012746	006071	MOV	#STM,-(SP)
2349	011222	012746	000001	MOV	#1,-(SP)
2350	011226	010600		MOV	SP,R0
2351	011230	104414		TRAP	C\$PNTB
2352	011232	062706	000004	ADD	#4,SP
2353	011236				
2354	011236	104423			
2355					

L10017:

TRAP C\$MSG

2356					
2357	011240			ERR17::	\$MD 17,17,0,0
2358	011240				
2359	011240	013746	002456		MOV KMCSR,-(SP)
2360	011244	013746	002304		MOV LOGDEV,-(SP)
2361	011250	012746	005346		MOV #FMX,-(SP)
2362	011254	012746	000003		MOV #3,-(SP)
2363	011260	010600			MOV SP,R0
2364	011262	104414			TRAP C\$PNTB
2365	011264	062706	000010		ADD #10,SP
2366	011270	012746	005760		MOV #EM17,-(SP)
2367	011274	012746	005337		MOV #FM1,-(SP)
2368	011300	012746	000002		MOV #2,-(SP)
2369	011304	010600			MOV SP,R0
2370	011306	104414			TRAP C\$PNTB
2371	011310	062706	000006		ADD #6,SP
2372	011314	012746	006165		MOV #DH0,-(SP)
2373	011320	012746	005337		MOV #FM1,-(SP)
2374	011324	012746	000002		MOV #2,-(SP)
2375	011330	010600			MOV SP,R0
2376	011332	104414			TRAP C\$PNTB
2377	011334	062706	000006		ADD #6,SP
2378	011340	012746	006071		MOV #STM,-(SP)
2379	011344	012746	000001		MOV #1,-(SP)
2380	011350	010600			MOV SP,R0
2381	011352	104414			TRAP C\$PNTB
2382	011354	062706	000004		ADD #4,SP
2383	011360			L10020:	
2384	011360	104423			TRAP C\$MSG
2385	011362				\$MD 29,29,2,3
2386	011362			ERR29::	
2387	011362	013746	002456		MOV KMCSR,-(SP)
2388	011366	013746	002304		MOV LOGDEV,-(SP)
2389	011372	012746	005346		MOV #FMX,-(SP)
2390	011376	012746	000003		MOV #3,-(SP)
2391	011402	010600			MOV SP,R0
2392	011404	104414			TRAP C\$PNTB
2393	011406	062706	000010		ADD #10,SP
2394	011412	012746	006036		MOV #EM29,-(SP)
2395	011416	012746	005337		MOV #FM1,-(SP)
2396	011422	012746	000002		MOV #2,-(SP)
2397	011426	010600			MOV SP,R0
2398	011430	104414			TRAP C\$PNTB
2399	011432	062706	000006		ADD #6,SP
2400	011436	012746	006217		MOV #DH2,-(SP)
2401	011442	012746	005337		MOV #FM1,-(SP)
2402	011446	012746	000002		MOV #2,-(SP)
2403	011452	010600			MOV SP,R0
2404	011454	104414			TRAP C\$PNTB
2405	011456	062706	000006		ADD #6,SP
2406	011462	013746	002362		MOV \$REG4,-(SP)
2407	011466	013746	002360		MOV \$REG5,-(SP)
2408	011472	012746	004402		MOV #TFM2,-(SP)
2409	011476	012746	000003		MOV #3,-(SP)
2410	011502	010600			MOV SP,R0
2411	011504	104414			TRAP C\$PNTB

2412	011506	062706	000010		ADD	#10,SP
2413	011512	012746	006071		MOV	#STM,-(SP)
2414	011516	012746	000001		MOV	#1,-(SP)
2415	011522	010600			MOV	SP,R0
2416	011524	104414			TRAP	C\$PNTB
2417	011526	062706	000004		ADD	#4,SP
2418	011532			L10021:		
2419	011532	104423			TRAP	C\$MSG
2420	011534				\$MD	35,35,2,3
2421	011534			ERR35::		
2422	011534	013746	002456		MOV	KMCSR,-(SP)
2423	011540	013746	002304		MOV	LOGDEV,-(SP)
2424	011544	012746	005346		MOV	#FMX,-(SP)
2425	011550	012746	000003		MOV	#3,-(SP)
2426	011554	010600			MOV	SP,R0
2427	011556	104414			TRAP	C\$PNTB
2428	011560	062706	000010		ADD	#10,SP
2429	011564	012746	005760		MOV	#EM35,-(SP)
2430	011570	012746	005337		MOV	#FM1,-(SP)
2431	011574	012746	000002		MOV	#2,-(SP)
2432	011600	010600			MOV	SP,R0
2433	011602	104414			TRAP	C\$PNTB
2434	011604	062706	000006		ADD	#6,SP
2435	011610	012746	006217		MOV	#DH2,-(SP)
2436	011614	012746	005337		MOV	#FM1,-(SP)
2437	011620	012746	000002		MOV	#2,-(SP)
2438	011624	010600			MOV	SP,R0
2439	011626	104414			TRAP	C\$PNTB
2440	011630	062706	000006		ADD	#6,SP
2441	011634	013746	002362		MOV	\$REG4,-(SP)
2442	011640	013746	002360		MOV	\$REG5,-(SP)
2443	011644	012746	004402		MOV	#TFM2,-(SP)
2444	011650	012746	000003		MOV	#3,-(SP)
2445	011654	010600			MOV	SP,R0
2446	011656	104414			TRAP	C\$PNTB
2447	011660	062706	000010		ADD	#10,SP
2448	011664	012746	006071		MOV	#STM,-(SP)
2449	011670	012746	000001		MOV	#1,-(SP)
2450	011674	010600			MOV	SP,R0
2451	011676	104414			TRAP	C\$PNTB
2452	011700	062706	000004		ADD	#4,SP
2453	011704			L10022:		
2454	011704	104423			TRAP	C\$MSG
2455						
2456	011706			BGNMSG	ERR36	
2457	011706			ERR36::		
2458	011706			PRINTF	#TFM36,KMCSR,LOGDEV	
2459	011706	013746	002304		MOV	LOGDEV,-(SP)
2460	011712	013746	002456		MOV	KMCSR,-(SP)
2461	011716	012746	004507		MOV	#TFM36,-(SP)
2462	011722	012746	000003		MOV	#3,-(SP)
2463	011726	010600			MOV	SP,R0
2464	011730	104417			TRAP	C\$PNTF
2465	011732	062706	000010		ADD	#10,SP
2466	011736			PRINTB	#STM	
2467	011736	012746	006071		MOV	#STM,-(SP)

2468	011742	012746	000001		MOV	#1,-(SP)
2469	011746	010600			MOV	SP,R0
2470	011750	104414			TRAP	C\$PNTB
2471	011752	062706	000004		ADD	#4,SP
2472	011756			ENDMSG		
2473	011756			L10023:		
2474	011756	104423			TRAP	C\$MSG
2475						
2476	011760			BGNMSG	ERR40	
2477	011760			ERR40::		
2478	011760			PRINTF	#TFM40,R2	
2479	011760	010246			MOV	R2,-(SP)
2480	011762	012746	004753		MOV	#TFM40,-(SP)
2481	011766	012746	000002		MOV	#2,-(SP)
2482	011772	010600			MOV	SP,R0
2483	011774	104417			TRAP	C\$PNTF
2484	011776	062706	000006		ADD	#6,SP
2485	012002			PRINTB	#STM	
2486	012002	012746	006071		MOV	#STM,-(SP)
2487	012006	012746	000001		MOV	#1,-(SP)
2488	012012	010600			MOV	SP,R0
2489	012014	104414			TRAP	C\$PNTB
2490	012016	062706	000004		ADD	#4,SP
2491	012022			ENDMSG		
2492	012022			L10024:		
2493	012022	104423			TRAP	C\$MSG
2494	012024			BGNMSG	ERR41	
2495	012024			ERR41::		
2496	012024			PRINTF	#TFM41	
2497	012024	012746	004575		MOV	#TFM41,-(SP)
2498	012030	012746	000001		MOV	#1,-(SP)
2499	012034	010600			MOV	SP,R0
2500	012036	104417			TRAP	C\$PNTF
2501	012040	062706	000004		ADD	#4,SP
2502	012044			PRINTB	#STM	
2503	012044	012746	006071		MOV	#STM,-(SP)
2504	012050	012746	000001		MOV	#1,-(SP)
2505	012054	010600			MOV	SP,R0
2506	012056	104414			TRAP	C\$PNTB
2507	012060	062706	000004		ADD	#4,SP
2508	012064			ENDMSG		
2509	012064			L10025:		
2510	012064	104423			TRAP	C\$MSG
2511	012066			BGNMSG	ERR42	
2512	012066			ERR42::		
2513	012066			PRINTF	#TFM42	
2514	012066	012746	004664		MOV	#TFM42,-(SP)
2515	012072	012746	000001		MOV	#1,-(SP)
2516	012076	010600			MOV	SP,R0
2517	012100	104417			TRAP	C\$PNTF
2518	012102	062706	000004		ADD	#4,SP
2519	012106			PRINTB	#STM	
2520	012106	012746	006071		MOV	#STM,-(SP)
2521	012112	012746	000001		MOV	#1,-(SP)
2522	012116	010600			MOV	SP,R0
2523	012120	104414			TRAP	C\$PNTB

2524	012122	062706	000004		ADD	#4,SP
2525	012126			ENDMSG		
2526	012126			L10026:		
2527	012126	104423		TRAP	C\$MSG	
2528						
2529	012130			BGNMSG	ERR43	
2530	012130			ERR43::		
2531	012130			PRINTF	#TFM43,R5,R4	
2532	012130	010446		MOV	R4,-(SP)	
2533	012132	010546		MOV	R5,-(SP)	
2534	012134	012746	005035	MOV	#TFM43,-(SP)	
2535	012140	012746	000003	MOV	#3,-(SP)	
2536	012144	010600		MOV	SP,R0	
2537	012146	104417		TRAP	C\$PNTF	
2538	012150	062706	000010	ADD	#10,SP	
2539	012154			PRINTB	#STM	
2540	012154	012746	006071	MOV	#STM,-(SP)	
2541	012160	012746	000001	MOV	#1,-(SP)	
2542	012164	010600		MOV	SP,R0	
2543	012166	104414		TRAP	C\$PNTB	
2544	012170	062706	000004	ADD	#4,SP	
2545	012174			ENDMSG		
2546	012174			L10027:		
2547	012174	104423		TRAP	C\$MSG	
2548	012176			BGNMSG	ERR44	
2549	012176			ERR44::		
2550	012176			PRINTF	#TFM44,#TMMC,R4	
2551	012176	010446		MOV	R4,-(SP)	
2552	012200	012746	005301	MOV	#TMMC,-(SP)	
2553	012204	012746	005120	MOV	#TFM44,-(SP)	
2554	012210	012746	000003	MOV	#3,-(SP)	
2555	012214	010600		MOV	SP,R0	
2556	012216	104417		TRAP	C\$PNTF	
2557	012220	062706	000010	ADD	#10,SP	
2558	012224			PRINTB	#STM	
2559	012224	012746	006071	MOV	#STM,-(SP)	
2560	012230	012746	000001	MOV	#1,-(SP)	
2561	012234	010600		MOV	SP,R0	
2562	012236	104414		TRAP	C\$PNTB	
2563	012240	062706	000004	ADD	#4,SP	
2564	012244			ENDMSG		
2565	012244			L10030:		
2566	012244	104423		TRAP	C\$MSG	
2567	012246			BGNMSG	ERR45	
2568	012246			ERR45::		
2569	012246			PRINTF	#TFM45,#TMMC,R4	
2570	012246	010446		MOV	R4,-(SP)	
2571	012250	012746	005301	MOV	#TMMC,-(SP)	
2572	012254	012746	005157	MOV	#TFM45,-(SP)	
2573	012260	012746	000003	MOV	#3,-(SP)	
2574	012264	010600		MOV	SP,R0	
2575	012266	104417		TRAP	C\$PNTF	
2576	012270	062706	000010	ADD	#10,SP	
2577	012274			PRINTB	#STM	
2578	012274	012746	006071	MOV	#STM,-(SP)	
2579	012300	012746	000001	MOV	#1,-(SP)	

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CZKMCA.P11 20-OCT-81 17:00

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GLOBAL ERROR REPORT SECTION PAGE 62

SEQ 0062

2580	012304	010600		MOV	SP,R0
2581	012306	104414		TRAP	C\$PNTB
2582	012310	062706	000004	ADD	#4,SP
2583	012314			ENDMSG	
2584	012314			L10031:	
2585	012314	104423		TRAP	C\$MSG
2586	012316			BGNMSG	ERR46
2587	012316			ERR46::	
2588	012316			PRINTF	#TFM46,\$GDDAT,R4
2589	012316	010446		MOV	R4,-(SP)
2590	012320	013746	002414	MOV	\$GDDAT,-(SP)
2591	012324	012746	005215	MOV	#TFM46,-(SP)
2592	012330	012746	000003	MOV	#3,-(SP)
2593	012334	010600		MOV	SP,R0
2594	012336	104417		TRAP	C\$PNTF
2595	012340	062706	000010	ADD	#10,SP
2596	012344			PRINTB	#STM
2597	012344	012746	006071	MOV	#STM,-(SP)
2598	012350	012746	000001	MOV	#1,-(SP)
2599	012354	010600		MOV	SP,R0
2600	012356	104414		TRAP	C\$PNTB
2601	012360	062706	000004	ADD	#4,SP
2602	012364			ENDMSG	
2603	012364			L10032:	
2604	012364	104423		TRAP	C\$MSG
2605					

CZKMCAO KMC11-B STATIC PART2 MACY11 30A(1052) 21-OCT-81 09:50 L⁵ PAGE 63
CZKMCA.P11 20-OCT-81 17:00 REPORT CODING SECTION

SEQ 0063

2606
2607
2608

.SBTTL REPORT CODING SECTION

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SEQ 0064

2609

;++

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CZKMCA.P11 20-OCT-81 17:00

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REPORT CODING SECTION PAGE 65

SEQ 0065

2610
2611
2612
2613
2614 012366
2615 012366
2616
2617
2618 012366
2619 012366 000167
2620 012370 000000
2621

: THE REPORT CODING SECTION CONTAINS THE
: 'PRINTS' CALLS THAT GENERATE STATISTICAL REPORTS.
:--

LSRPT:: BGNRPT

EXIT RPT
.WORD JSJMP
.WORD L10033-2-.

2622			
2623	012372		ENDRPT
2624	012372		L10033:
2625	012372	104425	TRAP C\$RPT
2626			
2627	012374		BGNPROT
2628	012374		L\$PROT::
2629	012374	177777	-1
2630	012376	177777	-1
2631	012400	177777	-1
2632	012402		ENDPROT
2633			
2634	012402		BGNAUTO
2635	012402		L\$AUTO::
2636	012402		ENDAUTO
2637	012402		L10035:
2638	012402	104461	TRAP C\$AUTO

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CZKMCA.P11 20-OCT-81 17:00 REPORT CODING SECTION PAGE 67

SEQ 0067

2639
2640

CZKMCAO KMC11-B STATIC PART2 MACY11 30A(1052) 21-OCT-81 09:50 ^{D 6} PAGE 68
CZKMCA.P11 20-OCT-81 17:00 INITIALIZE SECTION

SEQ 0068

2641

.SBTTL INITIALIZE SECTION

```

2642
2643
2644
2645
2646
2647
2648 012404
2649 012404
2650
2651
2652 012404 012705 002670
2653
2654 012410 010637 002306
2655 012414 005737 002424
2656 012420 001011
2657 012422 013737 000004 002426
2658 012430 013737 000006 002430
2659 012436 012737 000001 002424
2660 012444 013737 002426 000004
2661 012452 013737 002430 000006
2662
2663
2664 012460
2665 012460 012700 000040
2666 012464 104447
2667 012466
2668 012466 103414
2669
2670 012470
2671 012470 012700 000035
2672 012474 104447
2673 012476
2674 012476 103410

://///////////////
:/ THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
:/ AT THE BEGINNING OF EACH PASS.
://///////////////

      BGNINIT
LS$INIT::

:INITIALIZE SUBROUTINE STACK
      MOV      #SSTACK,R5
:STORE BASE LEVEL PROGRAM STACK POINTER
      MOV      SP,PSTACK
      TST      FTIME
      BNE      1$
      MOV      @#4,SAVE4
      MOV      @#6,SAVE6
      MOV      #1,FTIME
1$:      MOV      SAVE4,@#4
      MOV      SAVE6,@#6

:SEE IF PROGRAM JUST STARTED, BR IF YES
      READEF   #EF.START
      MOV      #EF.START,R0
      TRAP     CSREFG
      BCOMPLETE NEWST
      BCS      NEWST
:SEE IF THIS IS A NEW PASS, BR IF YES
      READEF   #EF.NEW
      MOV      #EF.NEW,R0
      TRAP     CSREFG
      BCOMPLETE NEWST
      BCS      NEWST

```

2675	012500				READF	#EF.CONTINUE
2676	012500	012700	000036		MOV	#EF.CONTINUE,R0
2677	012504	104447			TRAP	CSREFG
2678	012506				BCOMPLETE	ENDIT
2679	012506	103576			BCS	ENDIT
2680						
2681					:SEE IF PROGRAM JUST RESTARTED, BR IF NOT	
2682	012510				READF	#EF.RESTART
2683	012510	012700	000037		MOV	#EF.RESTART,R0
2684	012514	104447			TRAP	CSREFG
2685	012516				BNCOMPLETE	GETPRM
2686	012516	103003			BCC	GETPRM
2687						
2688	012520				NEWST:	
2689					:RESET LOGICAL DEVICE TO -1	
2690	012520	012737	177777	002304	MOV	#-1,LOGDEV
2691						
2692					:GET UNIBUS ADRS, VECTOR, PRIORITY LEVEL, LINE UNIT, SWITCH	
2693					: PACKS, TEST CONNECTOR INFO. FOR THIS M8200,4,6,7 (CURRENT LOGICAL	
2694					: DEVICE).	
2695	012526				GETPRM:	
2696	012526	005237	002304		INC	LOGDEV
2697	012532				GPHARD	LOGDEV,R1
2698	012532	013700	002304		MOV	LOGDEV,R0
2699	012536	104442			TRAP	CSGPHRD
2700	012540	010001			MOV	R0,R1
2701	012542				BNCOMPLETE	GETPRM
2702	012542	103371			BCC	GETPRM
2703	012544	012737	000006	002356	MOV	#6,WTYPE
2704	012552	005721			TST	(R1)+
2705					:GET ADDRESS OF M8200,4,6,7	
2706	012554	011137	002456		MOV	(R1),KMCSR
2707					:GET POINTER TO M8200,4,6,7 CSR HI BYTE	
2708	012560	011137	002460		MOV	(R1),KMCSRH
2709	012564	005237	002460		INC	KMCSRH
2710					:GET POINTER TO M8200,4,6,7 CTL OUT REG	
2711	012570	011137	002462		MOV	(R1),KMCTL
2712	012574	062737	000002	002462	ADD	#2,KMCTL
2713					:GET POINTER TO M8200,4,6,7 PORT REG - SEL 4	
2714	012602	011137	002464		MOV	(R1),KMPO4
2715	012606	062737	000004	002464	ADD	#4,KMPO4
2716					:GET POINTER TO M8200,4,6,7 PORT REG - SEL 6	
2717	012614	012137	002466		MOV	(R1)+,KMPO6
2718	012620	062737	000006	002466	ADD	#6,KMPO6
2719					:GET POINTER TO RCV VECTOR	
2720	012626	011137	002446		MOV	(R1),KMRVEC
2721					:GET POINTER TO RCV PRIORITY LEVEL	
2722	012632	011137	002450		MOV	(R1),KMRLVL
2723	012636	062737	000002	002450	ADD	#2,KMRLVL
2724					:GET POINTER TO TX VECTOR	
2725	012644	011137	002452		MOV	(R1),KMTVEC
2726	012650	062737	000004	002452	ADD	#4,KMTVEC
2727					:GET POINTER TO TX PRIORITY LEVEL	
2728	012656	011137	002454		MOV	(R1),KMTLVL
2729	012662	062737	000006	002454	ADD	#6,KMTLVL
2730					:PUT VECTOR INTO STAT1	

2731	012670	012137	002440		MOV	(R1)+,STAT1	
2732					;PUT	PRIORITY INTO STAT1	
2733	012674	052137	002440		BIS	(R1)+,STAT1	
2734					;SEE IF	NO LINE UNIT, SET BIT IF YES	
2735	012700	005711			TST	(R1)	
2736	012702	001004			BNE	50000\$	
2737	012704	052737	010000	002440	BIS	#BIT12,STAT1	
2738	012712	000416			BR	4\$	
2739	012714				50000\$:		
2740					;SEE IF	M8201 LINE UNIT, SET BIT IF YES	
2741	012714	021127	000001		CMP	(R1),#1	
2742	012720	001001			BNE	50001\$	
2743	012722	000412			BR	4\$	
2744	012724				50001\$:		
2745					;SEE IF	M8202 LINE UNIT, SET BIT IF YES	
2746	012724	021127	000002		CMP	(R1),#2	
2747	012730	001004			BNE	50002\$	
2748	012732	052737	020000	002440	BIS	#BIT13,STAT1	
2749	012740	000403			BR	4\$	
2750	012742				50002\$:		
2751					;SET BIT FOR	M8203 LINE UNIT	
2752	012742	052737	100000	002440	BIS	#BIT15,STAT1	
2753	012750				4\$:		
2754					;SET BIT IN	STAT1 FOR TEST CONNECTOR	
2755	012750	056137	000010	002440	BIS	10(R1),STAT1	
2756	012756	005037	002432		CLR	SKIP33	: SET TO NO TEST
2757	012762	005761	000012		TST	12(R1)	: SKIP TEST?
2758	012766	001403			BEQ	45\$	: 0=YES
2759	012770	012737	177777	002432	MOV	#-1,SKIP33	: 1=NO - RUN IT
2760	012776	062701	000002		45\$:	ADD #2,R1	
2761					;SET SWITCH	PACK #1 IN STAT2 LOW BYTE	
2762	013002	012137	002442		MOV	(R1)+,STAT2	
2763					;SET SWITCH	PACK #2 IN STAT2 HIGH BYTE	
2764	013006	111137	002443		MOVB	(R1),STAT2+1	
2765							
2766					;INCREMENT	LOGICAL UNIT (DEVICE) NUMBER	
2767					:	INC LOGDEV	
2768	013012	000240			NOP		
2769	013014	000240			NOP		
2770							
2771	013016	012737	002000	002400	MOV	#2000,MEMSZ	
2772	013024	005037	002374		CLR	TYPE	
2773	013030	123727	002356	000000	CMPB	WTYPE,#0	
2774	013036	001422			BEQ	ENDIT	
2775	013040	123727	002356	000004	CMPB	WTYPE,#4	:KMC?
2776	013046	001004			BNE	5\$	
2777	013050	012737	000001	002374	MOV	#1,TYPE	
2778	013056	000412			BR	ENDIT	
2779	013060	012737	007777	002400	5\$:	MOV #7777,MEMSZ	
2780	013066	123727	002356	000006	CMPB	WTYPE,#6	
2781	013074	001003			BNE	ENDIT	
2782	013076	012737	000001	002374	MOV	#1,TYPE	
2783	013104				ENDIT:		
2784	013104				ENDINIT		
2785	013104				L10036:		
2786	013104	104411			TRAP	C\$INIT	

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CZKMCA.P11 20-OCT-81 17:00 INITIALIZE SECTION PAGE 72

SEQ 0072

2787
2788
2789
2790
2791
2792
2793

.EVEN

CZKMCAO KMC11-B STATIC PART2
CZKMCA.P11 20-OCT-81 17:00

MACY11 30A(1052) 21-OCT-81 09:50 I 6
CLEANUP CODING SECTION PAGE 73

SEQ 0073

2794
2795
2796
2797
2798
2799
2800
2801
2802
2803
2804
2805
2806
2807
2808
2809
2810
2811
2812

013106
013106

013106
013106
013106 104412

.SBTTL CLEANUP CODING SECTION
:////////////////////
:/ THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS PERFORMED
:/ AT THE END OF EACH PASS.
:////////////////////
BGNCLN
L\$CLEAN::

ENDCLN
L10037: TRAP C\$CLEAN

CZKMCAO KMC11-B STATIC PART2
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DROP UNIT SECTION PAGE 74

SEQ 0074

2813
2814
2815
2816
2817
2818
2819
2820 013110
2821 013110
2822
2823 013110
2824 013110 104433
2825 013112
2826 013112
2827 013112 104453
2828
2829
2830
2831
2832

.SBTTL DROP UNIT SECTION

:/
:/ THE DROP-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
:/ TO NO LONGER BE TESTED.
:/

 BGNDU
L\$DU::
;ISSUE UNIBUS RESET TO CLEAN UP
 BRESET
 TRAP C\$RESET
 ENDDU
L10040:
 TRAP C\$DU

CZKMCAO KMC11-B STATIC PART2
CZKMCA.P11 20-OCT-81 17:00

MACY11 30A(1052) 21-OCT-81 09:50 K 6 PAGE 75
ADD UNIT SECTION

SEQ 0075

2833
2834
2835
2836
2837
2838
2839
2840
2841 013114
2842 013114
2843 013114
2844 013114
2845 013114 104452

.SBTTL ADD UNIT SECTION

:/ THE ADD-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
:/ TO BE (A) TESTED FOR THE FIRST TIME, OR (B) RESUMED IN TESTING. IF
:/ 'EF.AUNIT' IS SET, THE UNIT WILL BE TESTED AS A NEW UNIT.
:/

LSAU:: BGNAU
L10041: ENDAU
TRAP CSAU

```
2846 .SBTTL HARDWARE TESTS
2847
2848
2849
2850 ;START OF CODE BLOCK WHICH IS USED AS DATA
2851 013116 ROMMAP:
2852
2853 013116 BADHEAD
2854 ;***** TEST 1 *****
2855 ;*VERIFY THAT REFERENCING UNIBUS DEVICE REGISTERS
2856 ;*DOES NOT CAUSE A TIME OUT TRAP
2857 013116 BADHEAD
2858 ;***** TEST 1 *****
2859
2860 013116 BGNTST
2861 013116 T1::
2862 013116 013701 002456 MOV KMCSR,R1 ;R1 CONTAINS BASE M8200,4,6,7 ADDRESS
2863 013122 012705 000004 MOV #4,R5 ;4 REGISTERS TO BE TESTED
2864 013126 012737 013164 000004 MOV #2$,4 ;SET OUT TIMEOUT TRAP
2865 013134 012737 000240 000006 MOV #240,6 ;LEVEL 7
2866 013142 005711 1$: TST (R1) ;REFERENCE DEVICE REGISTERS
2867 013144 000240 NOP
2868 013146 ESCAPE TST
2869 013146 104410 TRAP C$ESCAPE
2870 013150 000054 .WORD L10042-.
2871 013152 062701 000002 ADD #2,R1 ;NEXT REGISTER
2872 013156 005305 DEC R5 ;DEC REGISTER COUNT
2873 013160 001370 BNE 1$ ;BR IF NOT LAST REGISTER
2874 013162 000410 BR 3$
2875
2876 013164 062706 000004 2$: ADD #4,SP
2877 013170 ERROR 36 ;TIME OUT ERROR
2878 013174 104455 TRAP C$ERDF
2879 013176 000044 .WORD 36
2880 013200 005425 .WORD EMO
2881 013202 011706 .WORD ERR36
2882
2883 013204 013737 002426 000004 3$: MOV SAVE4,4
2884 013212 013737 002430 000006 MOV SAVE6,6
2885 013220 ESCAPE TST
2886 013220 104410 TRAP C$ESCAPE
2887 013222 000002 .WORD L10042-.
2888
2889 013224 ENDTST
2890 013224 L10042:
2891 013224 104401 TRAP C$ETST
2892 .EVEN
```

```
2893 013226 BADHEAD
2894 :***** TEST 2 *****
2895 :*TEST OF BR RIGHT SHIFT
2896 :*VERIFY THAT A DEST OF BR RSH (011) OF A MICRO-INSTRUCTION
2897 :*SHIFTS THE RESULTING BR DATA RIGHT ONCE.
2898 013226 BADHEAD
2899 :***** TEST 2 *****
2900
2901 013226 BGNTST
2902 013226 T2::
2903
2904 013226 MSTCLR ;R1 CONTAINS BASE M8200,4,6,7 ADDRESS
2905 013232 013701 002456 MOV KMCSR,R1 ;MASTER CLEAR M8200,4,6,7
2906 013236 005011 CLR (R1) ;R1 = M8200,4,6,7 BASE ADDRESS
2907 013240 012705 052525 MOV #52525,R5 ;CLEAR SELO
2908 013244 010561 000004 MOV R5,4(R1) ;START WITH 125
2909 013250 ROMCLK ;PORT4 125
2910 013254 120500 120500 ;NEXT WORD IS INSTRUCTION
2911 013256 ROMCLK ;PORT4 TO BR-REG
2912 013262 061620 061620 ;NEXT WORD IS INSTRUCTION
2913 013264 ROMCLK ;BR RSH BR, SHIFT BR RIGHT
2914 013270 061225 061225 ;NEXT WORD IS INSTRUCTION
2915 013272 006005 ROR R5 ;PORT5 BR
2916 013274 116104 000005 MOVB 5(R1),R4 ;R5 = 'EXPECTED'
2917 013300 120504 CMPB R5,R4 ;R4 = 'FOUND'
2918 013302 001410 BEQ 1$ ;DID BR SHIFT RIGHT ONCE?
2919 013304 ERROR 12 ;BR IF YES
2920 013310 104455 TRAP C$ERDF ;BR RIGHT SHIFT ERROR
2921 013312 000014 .WORD 12
2922 013314 005425 .WORD EMO
2923 013316 010212 .WORD ERR12
2924 ;SHOULD BE 52
2925 013320 ESCAPE TST
2926 013320 104410 TRAP C$ESCAPE
2927 013322 000074 .WORD L10043-.
2928 013324 1$:
2929 013324 ROMCLK ;NEXT WORD IS INSTRUCTION
2930 013330 061620 061620 ;BR RSH BR, SHFT BR RIGHT AGAIN
2931 013332 ROMCLK ;NEXT WORD IS INSTRUCTION
2932 013336 061225 061225 ;PORT5 BR
2933 013340 006005 ROR R5 ;R5 = 'EXPECTED'
2934 013342 116104 000005 MOVB 5(R1),R4 ;R4 = 'FOUND'
2935 013346 120504 CMPB R5,R4 ;DID BR SHIFT RIGHT?
2936 013350 001406 BEQ 2$ ;BR IF YES
2937 013352 ERROR 12 ;BR RIGHT SHIFT ERROR
2938 013356 104455 TRAP C$ERDF
2939 013360 000014 .WORD 12
2940 013362 005425 .WORD EMO
2941 013364 010212 .WORD ERR12
2942 ;S/B 25
2943 013366 2$:
2944 013366 CHKREG
2945 .LIST ME
2946 013366 004737 003014 JSR PC,RDKM ; READ KMC11 REGISTERS
2947 013372 012702 013404 MOV #64$,R2 ; LOAD POINTER
2948 013376 004737 003120 JSR PC,RCHECK ; CHECK FOR NO CHANGE
```

2949	013402	000405				BR	65\$		: SKIP LIST
2950	013404	000	000	000	64\$:	.BYTE	20		
2951	013407	000	000	000					
2952	013412	000	000	000					
2953	013415	020							
2954	013416				65\$:				
2955	013416				ENDTST				
2956	013416				L10043:				
2957	013416	104401			TRAP	CSETST			

```

2958 013420      BADHEAD
2959              ;***** TEST 3 *****
2960              ;*IOP CRAM WRITE/READ TEST
2961              ;*FLOAT A 1 THROUGH EACH CRAM LOCATION
2962 013420      BADHEAD
2963              ;***** TEST 3 *****
2964
2965 013420      BGNTST
2966 013420      T3::
2967 013420      MYINT
2968 013424      MSTCLR
2969              ;R1 CONTAINS BASE M8200,4,6,7 ADDRESS
2970 013430 005037 002376      CLR      MRO
2971 013434 012702 000001      MOV      #1,R2
2972 013440              ;MRO = CRAM ADDRESS
2973 013440              ;R2 = WRITE DATA
2974 013440 104404      BGNSEG
2975 013442 012711 002000      TRAP      C$BSEG
2976 013446 013761 002376 000004 3$:      MOV      #BIT10,(R1)
2977 013454 010261 000006      MOV      MRO,4(R1)
2978 013460 052711 020000      MOV      R2,6(R1)
2979 013464 016104 000006      BIS      #BIT13,(R1)
2980 013470 020204      MOV      6(R1),R4
2981 013472 001410      CMP      R2,R4
2982 013474      BEQ      4$
2983 013500 104455      ERROR      1
2984 013502 000001      TRAP      C$ERDF
2985 013504 005425      .WORD      1
2986 013506 006274      .WORD      EMO
2987 013510      .WORD      ERR1
2988 013510 104410      ESCAPE SEG
2989 013512 000002      TRAP      C$ESCAPE
2990 013514      .WORD      10000$-.
2991 013514      4$:      ENDSEG
2992 013514 104405      10000$:
2993 013516 000241      TRAP      C$ESEG
2994 013520 006102      CLC
2995 013522 001346      ROL      R2
2996 013524 005237 002376      BNE      ADR5
2997 013530 023737 002400 002376      INC      MRO
2998 013536 001336      CMP      MEMSZ,MRO
2999 013540      BNE      ADR4
3000 013540      5$:
3001      CHKREG
3002 013540 004737 003014      .LIST      ME
3003 013544 012702 013556      JSR      PC,RDKM
3004 013550 004737 003120      MOV      #64$,R2
3005 013554 000405      JSR      PC,RCHECK
3006 013556 000 000 000 64$:      BR      65$
3007 013561 000 000 000      .BYTE      .....20
3008 013564 000 000 000
3009 013567 020
3010 013570      65$:
3011 013570      ENDTST
3012 013570      L10044:
3013 013570 104401      TRAP      C$ETST

```



```
3014 013572 BADHEAD
3015 ;***** TEST 4 *****
3016 ;*IOP CRAM WRITE/READ TEST
3017 ;*FLOAT A 0 THROUGH EACH CRAM LOCATION
3018 013572 BADHEAD
3019 ;***** TEST 4 *****
3020
3021 013572 BGNTST
3022 013572 T4::
3023 013572
3024 013576 MYINT
3025 013602 005037 002376 MSTCLR ;MASTER CLEAR M8200,4,6,7
3026 013606 012702 000001 CLR MRO ;MRO = CRAM ADDRESS
3027 013612 ADR1: MOV #1,R2 ;R2 = WRITE DATA
3028 013612 ADR2:
3029 013612 104404 BGNSEG
3030 013614 005102 TRAP CSBSEG
3031 013616 012711 002000 COM R2 ;MAKE IT A FLOATING ZERO
3032 013622 013761 002376 000004 3$: MOV #BIT10,(R1) ;SET ROMO
3033 013630 010261 000006 MOV MRO,4(R1) ;WRITE ADDRESS TO SEL4
3034 013634 052711 020000 MOV R2,6(R1) ;LOAD SEL6 WITH WRITE DATA
3035 013640 016104 000006 BIS #BIT13,(R1) ;WRITE SEL6 INTO CRAM
3036 013644 020204 MOV 6(R1),R4 ;READ CRAM INTO 'FOUND'
3037 013646 001410 CMP R2,R4 ;IS DATA CORRECT?
3038 013650 BEQ 4$ ;BR IF OK
3039 013654 104455 ERROR 1 ;ERROR
3040 013656 000001 TRAP C$ERDF
3041 013660 005425 .WORD 1
3042 013662 006274 .WORD EMO
3043 013664 .WORD ERR1
3044 013664 104410 ESCAPE SEG
3045 013666 000002 TRAP C$ESCAPE
3046 013670 .WORD 10000$-
3047 013670 4$: ENDSEG
3048 013670 104405 10000$: TRAP C$ESEG
3049 013672 005102 COM R2 ;BACK TO FLOATING ONE
3050 013674 000241 CLC ;CLEAR CARRY
3051 013676 006102 ROL R2 ;SHIFT WRITE DATA
3052 013700 001344 BNE ADR2 ;BR IF NOT DONE THIS ADDRESS
3053 013702 005237 002376 INC MRO ;BUMP TO NEXT CRAM ADDRESS
3054 013706 023737 002400 002376 CMP MEMSZ,MRO ;DONE YET?
3055 013714 001334 BNE ADR1 ;BR IF NO
3056 013716 5$:
3057 013716
3058
3059 013716 004737 003014 CHKREG
3060 013722 012702 013734 .LIST ME ; READ KMC11 REGISTERS
3061 013726 004737 003120 JSR PC,RDKM ; LOAD POINTER
3062 013732 000405 MOV #64$,R2 ; CHECK FOR NO CHANGE
3063 013734 000 000 000 64$: JSR PC,RCHECK ; SKIP LIST
3064 013737 000 000 000 BR 65$
3065 013742 000 000 000 .BYTE .....20
3066 013745 020
3067 013746 65$:
3068 013746 ENDTST
3069 013746 L10045:
```

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SEQ 0081

3070 013746 104401

TRAP C\$ETST


```
3071 013750 BADHEAD
3072 :***** TEST 5 *****
3073 :*IOP CRAM DUAL ADDRESSING TEST
3074 :*WRITE EACH ADDRESS INTO ITSELF, READ EACH
3075 :*ADDRESS TO VERIFY CORRECT ADDRESSING
3076 013750 BADHEAD
3077 :***** TEST 5 *****
3078
3079 013750 BGNTST
3080 013750 T5::
3081 013750 MYINT
3082
3083 013754 MSTCLR ;R1 CONTAINS BASE M8200,4,6,7 ADDRESS
3084 013760 005037 002376 CLR MRO ;MASTER CLEAR M8200,4,6,7
3085 013764 BGNSEG ;MRO =CRAM ADDRESS
3086 013764 104404 TRAP C$BSEG
3087 013766 013702 002376 1$: MOV MRO,R2 ;SAVE R2 FOR TYPEOUT
3088 013772 012711 002000 MOV #BIT10,(R1) ;SET ROMO
3089 013776 013761 002376 000004 MOV MRO,4(R1) ;WRITE ADDRESS TO SEL4
3090 014004 013761 002376 000006 MOV MRO,6(R1) ;LOAD SEL6 WITH WRITE DATA
3091 014012 052711 020000 BIS #BIT13,(R1) ;WRITE CRAM
3092 014016 SKIP06 15$ ;IF M8206,SKIP NEXT INSTR.
3093 014026 005061 000006 CLR 6(R1) ;CLEAR SEL 6
3094 014032
3095 014032 016104 000006 15$: MOV 6(R1),R4 ;SHOULD READ BACK OWN ADDRESS
3096 014036 023704 002376 CMP MRO,R4 ;IS DATA CORRECT?
3097 014042 001410 BEQ 2$ ;BR IF YES
3098 014044 ERROR 1 ;DATA ERROR
3099 014050 104455 TRAP C$ERDF
3100 014052 000001 .WORD 1
3101 014054 005425 .WORD EMO
3102 014056 006274 .WORD ERR1
3103 014060 ESCAPE SEG
3104 014060 104410 TRAP C$ESCAPE
3105 014062 000002 .WORD 10000$-.
3106 014064
3107 014064 2$: 10000$: ENDSEG
3108 014064 104405 TRAP C$ESEG
3109 014066 BGNSEG
3110 014066 104404 TRAP C$BSEG
3111 014070 005237 002376 INC MRO ;BUMP TO NEXT ADDRESS
3112 014074 023737 002400 002376 CMP MEMSZ,MRO ;DONE WRITING YET?
3113 014102 001331 BNE 1$ ;BR IF NO
3114 014104 005037 002376 CLR MRO ;RESTART AT ADDRESS 0
3115 014110 013702 002376 3$: MOV MRO,R2 ;SAVE R2 FOR TYPEOUT
3116 014114 012711 002000 MOV #BIT10,(R1) ;SET ROMO
3117 014120 013761 002376 000004 MOV MRO,4(R1) ;SEL4 = CRAM ADDRESS
3118 014126 016104 000006 MOV 6(R1),R4 ;READ CRAM INTO 'FOUND'
3119 014132 023704 002376 CMP MRO,R4 ;IS DATA CORRECT?
3120 014136 001411 BEQ 4$ ;BR IF YES
3121 014140 ERROR 2 ;DUAL ADDRESSING ERROR
3122 014144 104455 TRAP C$ERDF
3123 014146 000002 .WORD 2
3124 014150 005425 .WORD EMO
3125 014152 006452 .WORD ERR2
3126 014154 ESCAPE SEG
```

3127	014154	104410				TRAP	C\$ESCAPE	
3128	014156	000002				.WORD	10001\$-	
3129	014160					ENDSEG		
3130	014160				10001\$:			
3131	014160	104405				TRAP	C\$ESEG	
3132	014162				4\$:			:LOOP TO 3\$ IF SW09=1
3133	014162	005237	002376			INC	MRO	:BUMP TO NEXT ADDRESS
3134	014166	023737	002400	002376		CMP	MEMSZ,MRO	:DONE WRITING YET?
3135	014174	001345				BNE	3\$	:BR IF NO
3136	014176				5\$:			
3137	014176					CHKREG		
3138						.LIST	ME	
3139	014176	004737	003014			JSR	PC,RDKM	: READ KMC11 REGISTERS
3140	014202	012702	014214			MOV	#64\$,R2	: LOAD POINTER
3141	014206	004737	003120			JSR	PC,RCHECK	: CHECK FOR NO CHANGE
3142	014212	000405				BR	65\$	: SKIP LIST
3143	014214	000	000	000	64\$:	.BYTE	,20	
3144	014217	000	000	000				
3145	014222	000	000	000				
3146	014225	020						
3147	014226				65\$:			
3148	014226				ENDTST			
3149	014226				L10046:			
3150	014226	104401				TRAP	C\$ETST	

```
3151 014230 BADHEAD
3152 :***** TEST 6 *****
3153 :*IOP MAIN MEMORY TEST
3154 :*FLOAT A 1 THROUGH ALL MAIN MEMORY LOCATIONS
3155 014230 BADHEAD
3156 :***** TEST 6 *****
3157
3158 014230 BGNTST
3159 014230 T6::
3160 014230 MYINT
3161
3162 014234 MSTCLR :R1 CONTAINS BASE M8200.4,6,7 ADDRESS
3163 014240 005037 002350 :MASTER CLEAR M8200.4,6,7
3164 014244 012737 000001 002376 1$: CLR FLAG :START WITH ADDRESS 0
3165 014252 042737 003777 014306 33$: MOV #1,MRO :START WITH BIT 0
3166 014260 042737 000037 014314 BIC #3777,66$ :CLEAR ADDRESS FIELD OF INSTRUCTION
3167 014266 153737 002350 014306 BIC #37,68$ :CLEAR ADDRESS FIELD OF INSTRUCTION
3168 014274 153737 002351 014314 BISB FLAG,66$ :ADD ADDRESS TO INSTRUCTION7
3169 014302 BISB FLAG+1,68$ :ADD ADDRESS TO INSTRUCTION
3170 014306 010000 66$: ROMCLK 010000 :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3171 014310 ROMCLK
3172 014314 004000 68$: ROMCLK 004000 :LOAD MAR HI
3173 014316 013761 002376 000004 MOV MRO,4(R1) :WRITE PATTERN IN PORT4
3174 014324 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3175 014330 122500 ROMCLK 122500 :MOVE PORT4 TO MEMORY
3176 014332 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3177 014336 040620 ROMCLK 040620 :MOVE MEMORY TO BR
3178 014340 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3179 014344 061225 ROMCLK 61225 :MOVE BR TO PORT5
3180 014346 013705 002376 MOV MRO,R5 :PUT 'EXPECTED' IN R5
3181 014352 116104 000005 MOV8 5(R1),R4 :PUT 'FOUND' IN R4
3182 014356 120504 CMP8 R5,R4 :DATA CORRECT?
3183 014360 001410 BEQ 67$ :BR IF YES
3184 014362 ERROR 6 :DATA ERROR
3185 014366 104455 TRAP C$ERDF
3186 014370 000006 .WORD 6
3187 014372 005425 .WORD EMO
3188 014374 007332 .WORD ERR6
3189 014376 ESCAPE TST
3190 014376 104410 TRAP C$ESCAPE
3191 014400 000056 .WORD L10047-.
3192 014402 67$:
3193 014402 000241 CLC :SW09=1?
3194 014404 106137 002376 ROLB MRO :CLEAR CARRY
3195 014410 001320 BNE 33$ :SHIFT BIT IN MRO
3196 014412 005237 002350 INC FLAG :DONE IF MRO=0
3197 014416 023737 002400 002350 CMP MEMSZ,FLAG :NEXT ADDRESS
3198 014424 001307 BNE 1$ :LAST ADDRESS?
3199 014426 2$:
3200 014426 CHKREG
3201 .LIST ME
3202 014426 004737 003014 JSR PC,RDKM : READ KMC11 REGISTERS
3203 014432 012702 014444 MOV #64$,R2 : LOAD POINTER
3204 014436 004737 003120 JSR PC,R$CHECK : CHECK FOR NO CHANGE
3205 014442 000405 BR 65$ : SKIP LIST
3206 014444 000 000 000 64$: .BYTE .....20
```

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SEQ 0085

3207	014447	000	000	000
3208	014452	000	000	000
3209	014455	020		
3210	014456			
3211	014456			
3212	014456			
3213	014456	104401		

65\$:
ENDTST
L10047:

TRAP C\$ETST

```
3214 014460 BADHEAD
3215 :***** TEST 7 *****
3216 :*IOP MAIN MEMORY TEST
3217 :*FLOAT A 0 THROUGH ALL MAIN MEMORY LOCATIONS
3218 014460 BADHEAD
3219 :***** TEST 7 *****
3220
3221 014460 BGNTST
3222 014460 T7::
3223 014460 MYINT
3224 :R1 CONTAINS BASE M8200,4,6,7 ADDRESS
3225 014464 MSTCLR :MASTER CLEAR M8200,4,6,7
3226 014470 005037 002350 CLR FLAG :START WITH ADDRESS 0
3227 014474 012737 000001 002376 1$: MOV #1,MRO :START WITH BIT 0
3228 014502 005137 002376 34$: COM MRO :CHANGE TO FLOATING 0
3229 014506 042737 003777 014542 35$: BIC #3777,66$ :CLEAR ADDRESS FIELD OF INSTRUCTION
3230 014514 042737 000037 014550 BIC #37,68$ :CLEAR ADDRESS FIELD OF INSTRUCTION
3231 014522 153737 002350 014542 BISB FLAG,66$ :ADD ADDRESS TO INSTRUCTION
3232 014530 153737 002351 014550 BISB FLAG+1,68$ :ADD ADDRESS TO INSTRUCTION
3233 014536 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3234 014542 010000 66$: 010000 :LOAD MAR LO WITH ADDRESS IN FLAG
3235 014544 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3236 014550 004000 68$: 004000 :LOAD MAR HI
3237 014552 013761 002376 000004 MOV MRO,4(R1) :WRITE PATTERN IN PORT4
3238 014560 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3239 014564 122500 122500 :MOVE PORT4 TO MEMORY
3240 014566 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3241 014572 040620 040620 :MOVE MEMORY TO BR
3242 014574 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3243 014600 061225 61225 :MOVE BR TO PORT5
3244 014602 013705 002376 MOV MRO,R5 :PUT 'EXPECTED' IN R5
3245 014606 116104 000005 MOVB 5(R1),R4 :PUT 'FOUND' IN R4
3246 014612 120504 CMPB R5,R4 :DATA CORRECT?
3247 014614 001406 BEQ 67$ :BR IF YES
3248 014616 ERROR 6 :DATA ERROR
3249 014622 104455 TRAP C$ERDF
3250 014624 000006 .WORD 6
3251 014626 005425 .WORD EMO
3252 014630 007332 .WORD ERR6
3253 014632 67$: ESCAPE TST
3254 014632 104410 TRAP C$ESCAPE
3255 014634 000062 .WORD L10050-
3256 014636 005137 002376 COM MRO :CHANGE TO FLOATING 1
3257 014642 000241 CLC :CLEAR CARRY
3258 014644 106137 002376 ROLB MRO :SHIFT BIT IN MRO
3259 014650 001314 BNE 34$ :DONE IF MRO=0
3260 014652 005237 002350 INC FLAG :NEXT ADDRESS
3261 014656 023737 002400 002350 CMP MEMSZ,FLAG :LAST ADDRESS?
3262 014664 001303 BNE 1$ :BR IF NO
3263 014666 2$:
3264 014666 CHKREG
3265 .LIST ME
3266 014666 004737 003014 JSR PC,RDKM : READ KMC11 REGISTERS
3267 014672 012702 014704 MOV #64$,R2 : LOAD POINTER
3268 014676 004737 003120 JSR PC,RCHECK : CHECK FOR NO CHANGE
3269 014702 000405 BR 65$ : SKIP LIST
```

3270	014704	000	000	000	64\$:	.BYTE	20
3271	014707	000	000	000			
3272	014712	000	000	000			
3273	014715	020					
3274	014716				65\$:		
3275	014716				ENDTST		
3276	014716				L10050:		
3277	014716	104401			TRAP	CSETST	


```

3278 014720      BADHEAD
3279              :***** TEST 8 *****
3280              :*IOP MAIN MEMORY DUAL ADDRESSING TEST
3281              :*LOAD EACH MEMORY LOCATION WITH ITS OWN ADDRESS
3282              :*READ BACK EACH LOCATION TO VERIFY CORRECT ADDRESSING
3283 014720      BADHEAD
3284              :***** TEST 8 *****
3285
3286 014720      BGNTST
3287 014720      T8::
3288 014720
3289              MYINT
3290 014724      MSTCLR              ;R1 CONTAINS BASE M8200,4,6,7 ADDRESS
3291 014730      005037 002350      ;MASTER CLEAR M8200,4,6,7
3292 014734      013702 002350      ;START WITH ADDRESS 0
3293 014740      042737 003777 014774 1$: MOV FLAG,R2      ;PUT DATA IN R2
3294 014746      042737 000037 015002 BIC #3777,2$      ;CLEAR ADDRESS FIELD OF INSTRUCTION
3295 014754      153737 002350 014774 BIC #37,7$        ;CLEAR ADDRESS FIELD OF INSTRUCTION
3296 014762      153737 002351 015002 BISB FLAG,2$      ;ADD ADDRESS TO INSTRUCTION
3297 014770      ROMCLK          ;ADD ADDRESS TO INSTRUCTION
3298 014774      010000 2$: 010000      ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3299 014776      ROMCLK          ;LOAD MAR LO
3300 015002      004000 7$: 004000      ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3301 015004      010261 000004      ;LOAD MAR HI
3302 015010      ROMCLK          ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3303 015014      122500          ;MOVE PORT4 TO MEMORY
3304 015016      ROMCLK          ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3305 015022      040620          ;MOVE MEMORY TO THE BR
3306 015024      ROMCLK          ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3307 015030      061225          ;MOVE BR TO PORT5
3308 015032      010205          ;PUT 'EXPECTED' IN R5
3309 015034      116104 000005      MOV R2,R5      ;PUT 'FOUND' IN R4
3310 015040      120504          MOVB 5(R1),R4
3311 015042      001406          CMPB R5,R4
3312 015044          ERROR 6      ;DATA CORRECT?
3313 015050      104455          BEQ 3$      ;BR IF YES
3314 015052      000006          TRAP C$ERDF      ;DATA ERROR
3315 015054      005425          .WORD 6
3316 015056      007332          .WORD EMO
3317 015060          .WORD ERR6
3318 015060      104410 3$: ESCAPE TST
3319 015062      000204          TRAP C$ESCAPE
3320 015064      005237 002350      .WORD L10051-
3321 015070      023737 002400 002350 INC FLAG
3322 015076      001316          CMP MEMSZ,FLAG
3323 015100      012737 015112 002302 BNE 1$
3324 015106      005037 002350      MOV #4$,LOCK
3325 015112      013702 002350 4$: CLR FLAG
3326 015116      042737 003777 015144 MOV FLAG,R2
3327 015124      042737 000037 015152 BIC #3777,5$
3328 015132      153737 002350 015144 BIC #37,8$
3329 015140          BISB FLAG,5$
3330 015144      010000 5$: ROMCLK
3331 015146          ROMCLK
3332 015152      004000 8$: 004000
3333 015154          ROMCLK

```

```

;R1 CONTAINS BASE M8200,4,6,7 ADDRESS
;MASTER CLEAR M8200,4,6,7
;START WITH ADDRESS 0
;PUT DATA IN R2
;CLEAR ADDRESS FIELD OF INSTRUCTION
;CLEAR ADDRESS FIELD OF INSTRUCTION
;ADD ADDRESS TO INSTRUCTION
;ADD ADDRESS TO INSTRUCTION
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;LOAD MAR LO
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;LOAD MAR HI
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;MOVE PORT4 TO MEMORY
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;MOVE MEMORY TO THE BR
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;MOVE BR TO PORT5
;PUT 'EXPECTED' IN R5
;PUT 'FOUND' IN R4
;DATA CORRECT?
;BR IF YES
;DATA ERROR
;NEXT ADDRESS
;LAST ADDRESS?
;BR IF NO
;NEW SCOPE 1
;RESTART AT ADDRESS 0
;PUT DATA IN R2
;CLEAR ADDRESS FIELD OF INSTRUCTION
;CLEAR ADDRESS FIELD OF INSTRUCTION
;ADD ADDRESS TO INSTRUCTION
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;LOAD THE MAR LO
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;LOAD MAR HI
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304

```

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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```
3367 015270      BADHEAD
3368              :***** TEST 9 *****
3369              :*IOP MAR TEST
3370              :*PERFORM DUAL ADDRESSING TEST
3371              :*USING MAR AUTO-INC FEATURE
3372 015270      BADHEAD
3373              :***** TEST 9 *****
3374
3375 015270      BGNTST
3376 015270      T9::
3377 015270
3378              MYINT
3379 015274      MSTCLR              ;R1 CONTAINS BASE M8200,4,6,7 ADDRESS
3380 015300      CLR                ;MASTER CLEAR M8200,4,6,7
3381 015302      MOV                ;START WITH A ZERO
3382 015306      INC                ;GET MEMORY SIZE
3383 015310      ROMCLK             ;STOP ADDR=MEMSZ+1
3384 015314      010000            ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3385 015316      CLRMAR            ;LOAD MAR WITH A ZERO
3386 015324      010261 000004      1$: MOV R2,4(R1)      ;WRITE DATA TO PORT4
3387 015330      ROMCLK             ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3388 015334      136500            ;MEM PORT4, AUTO-INC MAR
3389 015336      INC R2              ;INCREMENT DATA
3390 015340      CMP R3,R2          ;DONE YET?
3391 015342      BNE 1$            ;BR IF NO
3392 015344      CLR R2            ;RESTART WITH A ZERO
3393 015346      ROMCLK             ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3394 015352      010000            ;LOAD MAR WITH A ZERO
3395 015354      CLRMAR
3396 015362      2$:
3397 015362      SR0MCLK            ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3398 015366      055224            ;MOVE MEM TO PORT4
3399 015370      MOV R2,R5          ;PUT 'EXPECTED' IN R5
3400 015372      MOV B 4(R1),R4    ;PUT 'FOUND' IN R4
3401 015376      CMPB R5,R4        ;DATA CORRECT?
3402 015400      BEQ 3$            ;BR IF YES
3403 015402      ERROR 11         ;MAR ERROR
3404 015406      TRAP C$ERDF
3405 015410      .WORD 11
3406 015412      .WORD EMO
3407 015414      .WORD ERR11
3408 015416      3$: SR0MCLK
3409 015422      0                ;DUMP NOP INSTR. TO CLK AUTO INC IN MAR.
3410 015424      CLR R4
3411 015426      ROMCLK             ;READ IBUS* <15> (MAR HIGH)
3412 015432      121325            ;MAR HIGH _POT 5
3413
3414 015434      ROMCLK             ;READ IBUS* <14> (MAR LOW)
3415 015440      121304
3416 015442      MOV 4(R1),R4      ;ADD TO MAR HIGH.
3417 015446      BIC #160000,R4
3418 015452      INC R2
3419 015454      CMP R2,MEMSZ
3420 015460      BNE 35$
3421 015462      BIS #10000,R2    ;IF AT HIGH LIMIT,ADD IN OVERFLOW BIT.
3422 015466      35$:
```

```

3423 015466 020204      CMP      R2,R4      ;ADDR. OK?
3424 015470 001406      BEQ      4$
3425 015472              ERROR    11          ;ERROR MAR ADDR. BAD IN IBUS <14>AND <15>
3426 015476 104455      TRAP     C$ERDF
3427 015500 000013      .WORD    11
3428 015502 005425      .WORD    EMO
3429 015504 010040      .WORD    ERR11
3430
3431                      ;EXPECTED (R4) IS COMBINATION OF
3432                      ;IBUS* <14> AND <15>
3432 015506      4$:
3433 015506
3434 015506 104410
3435 015510 000136
3436 015512 032702 010000
3437 015516 001721
3438
3439                      ;*
3440                      ;*THIS SECTION OF CODE ADDED TO MAKE SURE
3441                      ;*THAT MASTER CLEAR, CLEARS THE MAR
3442                      ;*
3443 015520 000240      NOP
3444 015522 000240      NOP
3445 015524 005011      CLR      @R1          ; CLEAR RUN, IF SET
3446 015526 052711 040000      BIS      #40000,(R1) ;SET MASTER CLEAR
3447 015532 005011      CLR      (R1)          ;CLEAR MASTER CLEAR
3448 015534
3449 015540 121325      SROMCLK   121325      ;WE MUST FIRST CLOCK
3450 015542          SROMCLK   121304      ;THE MAR LATCH REGS
3451 015546 121304          SROMCLK   121304      ;BEFORE WE CAN READ THEM
3452 015550          ROMCLK
3453 015554 121325      ROMCLK   121325      ;READ IBUS* <15> PUT IN PORT5
3454 015556          ROMCLK   121304      ;MAR HIGH
3455 015562 121304          ROMCLK   121304      ;READ IBUS* <14>, PUT IN PORT4
3456 015564 005002          CLR      R2          ;MAR LOW
3457 015566 016104 000004      MOV     4(R1),R4 ;EXPECT MAR CLEAR
3458
3459                      ;READ PORTS 4&5. THEY CONTAIN
3460                      ;THE CONTENTS OF THE MAR
3461                      ;MASTER CLEAR SHOULD HAVE
3462                      ;CLEARED THE MAR
3462 015572 042704 160000      BIC      #160000,R4 ;BRANCH END TST IF CLEAR
3463 015576 020204          CMP      R2,R4      ; MASK OUT JUNK
3464 015600 001406      BEQ      40$          ; CHECK FOR MAR=0
3465 015602
3466 015606 104455      TRAP     C$ERDF
3467 015610 000054      .WORD    44
3468 015612 005425      .WORD    EMO
3469 015614 012176      .WORD    ERR44
3470 015616
3471 015616      40$:
3472
3473 015616 004737 003014      CHKREG   ME
3474 015622 012702 015634      .LIST   PC,RDKM      ; READ KMC11 REGISTERS
3475 015626 004737 003120      MOV     #64$,R2      ; LOAD POINTER
3476 015632 000405          JSR      PC,R$CHECK ; CHECK FOR NO CHANGE
3477 015634          BR      65$          ; SKIP LIST
3478 015637          .BYTE    .....20
3478 015637          000          000          000      64$:
3478 015637          000          000          000

```

3479	015642	000	000	000	
3480	015645	020			
3481	015646				65\$:
3482	015646				ENDTST
3483	015646				L10052:
3484	015646	104401			TRAP C\$ETST

```
3485 015650 BADHEAD
3486 :***** TEST 10 *****
3487 :*IOP (GRAM) ODT BITS TEST
3488 :*LOAD MAR WITH A 0 INC MAR UNTIL IT OVERFLOWS
3489 :*VERIFY THAT IBUS* 10 BITS IS SET ONLY WHEN MAR BIT 8 IS A ONE
3490 :*AND THAT IBUS* 10 BIT6 IS SET ON MAR OVERFLOW
3491 015650 BADHEAD
3492 :***** TEST 10 *****
3493
3494 015650 BGNTST
3495 015650 T10::
3496 015650
3497 MYINT
3498 015654 MSTCLR
3499 015660 CLR R2
3500 015662 005002 ROMCLK
3501 015666 010000 010000
3502 015670 1$: ROMCLK
3503 015670 121204
3504 015674 121204
3505 015676 005005 CLR R5
3506 015700 032702 000400 BIT #BIT8,R2
3507 015704 001402 BEQ 11$
3508 015706 012705 000040 MOV #BIT5,R5
3509 015712 016104 000004 11$: MOV 4(R1),R4
3510 015716 042704 177637 BIC #177637,R4
3511 015722 020504 CMP R5,R4
3512 015724 001410 BEQ 15$
3513 015726 ERROR 7
3514 015732 104455 TRAP C$ERDF
3515 015734 000007 .WORD 7
3516 015736 005425 .WORD EMO
3517 015740 007510 .WORD ERR7
3518 015742 ESCAPE TST
3519 015742 104410 TRAP C$ESCAPE
3520 015744 000166 .WORD L10053-.
3521 015746 15$: ROMCLK
3522 015746 014000
3523 015752 014000
3524 015754 005202 INC R2
3525 015756 020237 002400 CMP R2,MEMSZ
3526 015762 001342 BNE 1$
3527 015764 ROMCLK
3528 015770 121204 121204
3529 015772 012705 000140 MOV #140,R5
3530 015776 016104 000004 MOV 4(R1),R4
3531 016002 042704 177627 BIC #177627,R4
3532 016006 020504 CMP R5,R4
3533 016010 001406 BEQ 17$
3534 016012 ERROR 7
3535 016016 104455 TRAP C$ERDF
3536 016020 000007 .WORD 7
3537 016022 005425 .WORD EMO
3538 016024 007510 .WORD ERR7
3539 016026 17$: ROMCLK
3540 016032 010000 010000
```

:R1 CONTAINS BASE M8200,4,6,7 ADDRESS
:MASTER CLEAR M8200,4,6,7
:R2=SAME AS MAR CONTENTS
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:MAR_0
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:PORT4=IBUS*10
:R5='EXPECTED'
:IS BIT8 SET IN MAR?
:BR IF NO
:IF YES THEN SET BITS
:R4='FOUND'
:CLEAR UNWANTED BITS
:BITS 5&6 SHOULD BE CLEAR
:BR IF OK
:ERROR BITS 5&6 NOT CLEAR
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:INC MAR
:BUMP MEM ADDRESS
:OVERFLOWED YET?(OVFL PAGE BITS).
:BR IF NO
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:PART4 IBUS* 10
:R5='EXPECTED'
:R4='FOUND'
:CLEAR UNWANTED BITS
:BIT6 SHOULD BE SET
:BR IF OK
:ERROR, BIT6 NOT SET
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:MAR_0

```
3541 016034 ROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3542 016040 004000 ;MAR HI 0
3543 016042 ROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3544 016046 121204 ;PORT4 IBUS* 10
3545 016050 005005 CLR R5 ;R5='EXPECTED'
3546 016052 016104 000004 MOV 4(R1),R4 ;R4='FOUND'
3547 016056 042704 177637 BIC #177637,R4 ;CLEAR UNWANTED BITS
3548 016062 020504 CMP R5,R4 ;BITS 5&6 SHOULD BE CLEAR
3549 016064 001406 BEQ 2$ ;BR IF OK
3550 016066 ERROR 7 ;ERROR 5&6 NOT BOTH CLEAR
3551 016072 104455 TRAP C$ERDF
3552 016074 000007 .WORD 7
3553 016076 005425 .WORD EM0
3554 016100 007510 .WORD ERR7
3555 016102 2$:
3556 016102 CHKREG
3557 .LIST ME
3558 016102 004737 003014 JSR PC,RDKM ; READ KMC11 REGISTERS
3559 016106 012702 016120 MOV #64$,R2 ; LOAD POINTER
3560 016112 004737 003120 JSR PC,R$CHECK ; CHECK FOR NO CHANGE
3561 016116 000405 BR 65$ ; SKIP LIST
3562 016120 000 000 000 64$: .BYTE .....20
3563 016123 000 000 000
3564 016126 000 000
3565 016131 020
3566 016132 65$:
3567 016132 ENDTST
3568 016132 L10053:
3569 016132 104401 TRAP C$ETST
```

```
3570 016134 BADHEAD
3571 ;***** TEST 11 *****
3572 ;*CRAM TEST OF JUMP(1) NEVER MICRO-PROCESSOR INSTRUCTION.
3573 ;*PERFORM THE JUMP INSTRUCTION
3574 ;*VERIFY THE JUMP DID NOT OCCUR BY CLOCKING THE INSTRUCTION
3575 ;*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
3576 ;*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
3577 ;*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
3578 ;*THE CRAM PC IS CORRECT. IF THE CRAM PC IS NOT RIGHT,
3579 ;*THEN PORT4 CONTAINS A 37
3580 016134 BADHEAD
3581 ;***** TEST 11 *****
3582
3583 BGNTST
3584 T11::
3585 10$:
3586
3587 MYINT
3588 MSTCLR ;R1 CONTAINS BASE M8200,4,6,7 ADDRESS
3589 BGNSEG ;MASTER CLEAR M8200,4,6,7
3590 TRAP C$BSEG
3591 JSR PC, MEMSET ;SET MEM AND RAM
3592 1$:
3593 JSR PC, CLRALL ;CLEAR ALL CONDITIONS
3594 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3595 100400 ;START AT ROM PC=0
3596 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3597 114377!<400*2> ;JUMP TO ROM PC OF 1777
3598 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
3599 1 ;EXPECTED DATA
3600 CMP R5, R4 ;IS ROM PC CORRECT?
3601 BEQ 2$ ;BR IF NO
3602 ERROR 5 ;ERROR, CRAM PC IS WRONG
3603 TRAP C$ERDF
3604 .WORD 5
3605 .WORD EMO
3606 .WORD ERR5
3607 2$:
3608 ESCAPE SEG
3609 TRAP C$ESCAPE
3610 .WORD 10000$-.
3611 ENDSEG
3612 10000$:
3613 TRAP C$ESEG
3614 BGNSEG
3615 TRAP C$BSEG
3616 NOP
3617 NOP
3618 JSR PC, CLRALL ;CLEAR ALL CONDITIONS
3619 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3620 100403 ;START AT ROM PC=3
3621 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3622 100000!<400*2> ;JUMP TO ROM PC OF 0
3623 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
3624 1 ;EXPECTED DATA
3625 CMP R5, R4 ;IS ROM PC CORRECT?
3626 BEQ 4$ ;BR IF YES
```



```
3626 016266          ERROR 5          ;ERROR, CROM PC IS WRONG
3627 016272 104455    TRAP  C$ERDF
3628 016274 000005    .WORD 5
3629 016276 005425    .WORD EMO
3630 016300 007160    .WORD ERR5
3631 016302          4$:  ESCAPE SEG
3632 016302 104410    TRAP  C$ESCAPE
3633 016304 000002    .WORD 10001$-.
3634 016306          ENDSEG
3635 016306          10001$:
3636 016306 104405    TRAP  C$ESEG
3637 016310          BGNSEG
3638 016310 104404    TRAP  C$BSEG
3639 016312 004737 003750 JSR   PC,CLRALL          ;CLEAR ALL CONDITINS
3640 016316          SRMCLK          ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3641 016322 100406    100406          ;START AT ROM PC=6
3642 016324          SRMCLK          ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3643 016330 105125    104125!<400*2> ;JUMP TO ROM PC OF 525
3644 016332 004737 004112 JSR   PC,RAMDAT          ;R4=CRAM PC (LSB 8 BITS)
3645 016336 000001    1          ;EXPECTED DATA
3646 016340 020504    CMP    R5,R4          ;IS ROM PC CORRECT?
3647 016342 001406    BEQ    6$          ;BR IF YES
3648 016344          ERROR 5          ;ERROR, CRAM PC IS WRONG
3649 016350 104455    TRAP  C$ERDF
3650 016352 000005    .WORD 5
3651 016354 005425    .WORD EMO
3652 016356 007160    .WORD ERR5
3653 016360          6$:  ESCAPE SEG
3654 016360 104410    TRAP  C$ESCAPE
3655 016362 000002    .WORD 10002$-.
3656 016364          ENDSEG
3657 016364          10002$:
3658 016364 104405    TRAP  C$ESEG
3659 016366          CHKREG
3660          .LIST  ME
3661 016366 004737 003014 JSR   PC,RDKM          ; READ KMC11 REGISTERS
3662 016372 012702 016404 MOV   #64$,R2          ; LOAD POINTER
3663 016376 004737 003120 JSR   PC,RCHECK          ; CHECK FOR NO CHANGE
3664 016402 000405    BR     65$          ; SKIP LIST
3665 016404          000 000 000 64$: .BYTE .....20
3666 016407          000 000 000
3667 016412          000 000 000
3668 016415          020
3669 016416          65$:
3670 016416          ENDTST
3671 016416          L10054:
3672 016416 104401    TRAP  C$ETST
```

```
3673 016420 BADHEAD
3674 :***** TEST 12 *****
3675 :*CRAM TEST OF JUMP(1) ALWAYS MICRO-PROCESSOR INSTRUCTION.
3676 :*PERFORM THE JUMP INSTRUCTION
3677 :*VERIFY THE JUMP DID OCCUR BY CLOCKING THE INSTRUCTION
3678 :*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
3679 :*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
3680 :*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
3681 :*THE JUMP WAS SUCCESSFUL, IF THE JUMP WAS UNSUCCESSFUL
3682 :*THEN PORT4 WILL CONTAIN A 37
3683 016420 BADHEAD
3684 :***** TEST 12 *****
3685
3686 016420 BGNTST
3687 016420 T12::
3688 016420
3689 MYINT
3690 016424 MSTCLR ;R1 CONTAINS BASE M8200,4,6,7 ADDRESS
3691 016430 004737 004222 JSR PC, MEMSET ;MASTER CLEAR M8200,4,6,7
3692 016434 1$: BGNSEG ;SET MEM AND RAM
3693 016434 104404 TRAP C$BSEG
3694 016436 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3695 016442 100400 100400 ;START AT ROM PC=0
3696 016444 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3697 016450 114777 114377!<400*1> ;JUMP TO ROM PC OF 1777
3698 016452 004737 004112 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
3699 016456 000377 377 ;EXPECTED DATA
3700 016460 120504 CMPB R5,R4 ;IS ROM PC CORRECT?
3701 016462 001406 BEQ 2$ ;BR IF YES
3702 016464 ERROR 5 ;ERROR, CRAM PC IS WRONG
3703 016470 104455 TRAP C$ERDF
3704 016472 000005 .WORD 5
3705 016474 005425 .WORD EMO
3706 016476 007160 .WORD ERR5
3707 016500 2$: ESCAPE SEG
3708 016500 104410 TRAP C$ESCAPE
3709 016502 000002 .WORD 10000$-.
3710 016504 ENDSEG
3711 016504 10000$:
3712 016504 104405 TRAP C$ESEG
3713 016506 BGNSEG
3714 016506 104404 TRAP C$BSEG
3715 016510 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3716 016514 100403 100403 ;START AT ROM PC=3
3717 016516 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3718 016522 100400 100000!<400*1> ;JUMP TO ROM PC OF 0
3719 016524 004737 004112 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
3720 016530 000000 0 ;EXPECTED DATA
3721 016532 120504 CMPB R5,R4 ;IS ROM PC CORRECT?
3722 016534 001406 BEQ 4$ ;BR IF YES
3723 016536 ERROR 5 ;ERROR, CRAM PC IS WRONG
3724 016542 104455 TRAP C$ERDF
3725 016544 000005 .WORD 5
3726 016546 005425 .WORD EMO
3727 016550 007160 .WORD ERR5
3728 016552 4$: ESCAPE SEG
```



```
3729 016552 104410          TRAP  C$ESCAPE
3730 016554 000002          .WORD 10001$-.
3731 016556                ENDSEG
3732 016556                10001$:
3733 016556 104405          TRAP  C$ESEG
3734 016560                BGNSEG
3735 016560 104404          TRAP  C$BSEG
3736 016562                SR0MCLK
3737 016566 100406          100406
3738 016570                SR0MCLK
3739 016574 104525          104125! <400*1>
3740 016576 004737 004112  JSR   PC,RAMDAT
3741 016602 000125          125
3742 016604 120504          CMPB  R5,R4
3743 016606 001406          BEQ   6$
3744 016610                ERROR  5
3745 016614 104455          TRAP  C$ERDF
3746 016616 000005          .WORD 5
3747 016620 005425          .WORD EMO
3748 016622 007160          .WORD ERR5
3749 016624                6$:
3750 016624 104410          ESCAPE SEG
3751 016626 000002          TRAP  C$ESCAPE
3752 016630                .WORD 10002$-.
3753 016630                ENDSEG
3754 016630 104405          10002$:
3755 016632                TRAP  C$ESEG
3756                CHKREG
3757 016632 004737 003014  .LIST ME
3758 016636 012702 016650  JSR   PC,RDKM
3759 016642 004737 003120  MOV   #64$,R2
3760 016646 000405          JSR   PC,R$CHECK
3761 016650 000 000 000  BR    65$
3762 016653 000 000 000  64$: .BYTE .....20
3763 016656 000 000 000
3764 016661 020
3765 016662                65$:
3766 016662                ENDTST
3767 016662                L10055:
3768 016662 104401          TRAP  C$ETST
```

```
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;START AT ROM PC=6
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;JUMP TO ROM PC OF 525
;R4=CRAM PC (LSB 8 BITS)
;EXPECTED DATA
;IS ROM PC CORRECT?
;BR IF YES
;ERROR, CRAM PC IS WRONG
```

```
; READ KMC11 REGISTERS
; LOAD POINTER
; CHECK FOR NO CHANGE
; SKIP LIST
```

```
3769 016664 BADHEAD
3770 ;***** TEST 13 *****
3771 ;*CRAM TEST OF JUMP(1) ON C BIT SET MICRO-PROCESSOR INSTRUCTION.
3772 ;*SET THE C BIT, PERFORM THE JUMP INSTRUCTION.
3773 ;*VERIFY THE JUMP DID OCCUR BY CLOCKING THE INSTRUCTION
3774 ;*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
3775 ;*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
3776 ;*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
3777 ;*THE JUMP WAS SUCCESSFUL, IF THE JUMP WAS UNSUCCESSFUL
3778 ;*THEN PORT4 WILL CONTAIN A 37
3779 016664 BADHEAD
3780 ;***** TEST 13 *****
3781
3782 016664 BGNTST
3783 016664 T13::
3784 016664
3785 MYINT
3786 016670 ;R1 CONTAINS BASE M8200,4,6,7 ADDRESS
3787 016674 004737 004222 ;MASTER CLEAR M8200,4,6,7
3788 016700 JSR PC, MEMSET ;SET MEM AND RAM
3789 016700 104404 TRAP C$BSEG
3790 016702 004737 004042 JSR PC, SETC
3791 016706 SROMCLK ;SET THE C BIT'
3792 016712 100400 100400 ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3793 016714 SROMCLK ;START AT ROM PC=0
3794 016720 115377 114377! <400*2> ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3795 016722 004737 004112 JSR PC, RAMDAT ;JUMP TO ROM PC OF 1777
3796 016726 000377 377 ;R4=CRAM PC (LSB 8 BITS)
3797 016730 120504 CMPB R5, R4 ;EXPECTED DATA
3798 016732 001406 BEQ 2$ ;IS ROM PC CORRECT?
3799 016734 ERROR 5 ;BR IF YES
3800 016740 104455 TRAP C$ERDF ;ERROR, CRAM PC IS WRONG
3801 016742 000005 .WORD 5
3802 016744 005425 .WORD EMO
3803 016746 007160 .WORD ERR5
3804 016750 2$: ;LOOP TO 1$ IF SW09=1
3805 016750 ESCAPE SEG
3806 016750 104410 TRAP C$ESCAPE
3807 016752 000002 .WORD 10000$-.
3808 016754 ENDSEG
3809 016754 10000$:
3810 016754 104405 TRAP C$ESEG
3811 016756 BGNSEG
3812 016756 104404 TRAP C$BSEG
3813 016760 004737 004042 JSR PC, SETC
3814 016764 SROMCLK ;SET THE C BIT'
3815 016770 100403 100403 ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3816 016772 SROMCLK ;START AT ROM PC=3
3817 016776 101000 100000! <400*2> ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3818 017000 004737 004112 JSR PC, RAMDAT ;JUMP TO ROM PC OF 0
3819 017004 000000 0 ;R4=CRAM PC (LSB 8 BITS)
3820 017006 120504 CMPB R5, R4 ;EXPECTED DATA
3821 017010 001406 BEQ 4$ ;IS ROM PC CORRECT?
3822 017012 ERROR 5 ;BR IF YES
3823 017016 104455 TRAP C$ERDF ;ERROR, CRAM PC IS WRONG
3824 017020 000005 .WORD 5
```

```
3825 017022 005425      .WORD  EMO
3826 017024 007160      .WORD  ERR5
3827 017026           4$:      ;LOOP TO 3$ IF SW09=1
3828 017026           ESCAPE SEG
3829 017026 104410      TRAP  C$ESCAPE
3830 017030 000002      .WORD  10001$-.
3831 017032           ENDSEG
3832 017032           10001$:
3833 017032 104405      TRAP  C$ESEG
3834 017034           BGNSEG
3835 017034 104404      TRAP  C$BSEG
3836 017036 004737 004042 JSR   PC,SETC
3837 017042           SROMCLK
3838 017046 100406      100406
3839 017050           SROMCLK
3840 017054 105125      104125!<400*2>
3841 017056 004737 004112 JSR   PC,RAMDAT
3842 017062 000125      125
3843 017064 120504      CMPB   R5,R4
3844 017066 001406      BEQ    6$
3845 017070           ERROR  5
3846 017074 104455      TRAP  C$ERDF
3847 017076 000005      .WORD  5
3848 017100 005425      .WORD  EMO
3849 017102 007160      .WORD  ERR5
3850 017104           6$:      ESCAPE SEG
3851 017104 104410      TRAP  C$ESCAPE
3852 017106 000002      .WORD  10002$-.
3853 017110           ENDSEG
3854 017110           10002$:
3855 017110 104405      TRAP  C$ESEG
3856 017112           CHKREG
3857           .LIST  ME
3858 017112 004737 003014 JSR   PC,RDKM
3859 017116 012702 017130 MOV   #64$,R2
3860 017122 004737 003120 JSR   PC,RCHECK
3861 017126 000405      BR     65$
3862 017130      000      000      000 64$: .BYTE  ....,20
3863 017133      000      000      000
3864 017136      000      000      000
3865 017141      020
3866 017142           65$:
3867 017142           ENDTST
3868 017142           L10056:
3869 017142 104401      TRAP  C$ETST
```

```
;SET THE C BIT'
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;START AT ROM PC=6
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;JUMP TO ROM PC OF 525
;R4=CRAM PC (LSB 8 BITS)
;EXPECTED DATA
;IS ROM PC CORRECT?
;BR IF YES
;ERROR, CRAM PC IS WRONG
```

```
; READ KMC11 REGISTERS
; LOAD POINTER
; CHECK FOR NO CHANGE
; SKIP LIST
```

```
3870 017144 BADHEAD
3871 :***** TEST 14 *****
3872 :*CRAM TEST OF JUMP(1) ON Z BIT SET MICRO-PROCESSOR INSTRUCTION.
3873 :*SET THE Z BIT, PERFORM THE JUMP INSTRUCTION.
3874 :*VERIFY THE JUMP DID OCCUR BY CLOCKING THE INSTRUCTION
3875 :*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
3876 :*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
3877 :*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
3878 :*THE JUMP WAS SUCCESSFUL, IF THE JUMP WAS UNSUCCESSFUL
3879 :*THEN PORT4 WILL CONTAIN A 37
3880 017144 BADHEAD
3881 :***** TEST 14 *****
3882
3883 BGNTST
3884 T14::
3885
3886 MYINT
3887 MSTCLR ;R1 CONTAINS BASE M8200,4,6,7 ADDRESS
3888 JSR PC,MYINT ;MASTER CLEAR M8200,4,6,7
3889 BGNSEG ;SET MEM AND RAM
3890 TRAP C$BSEG
3891 JSR PC,SETZ ;SET THE Z BIT
3892 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3893 100400 ;START AT ROM PC=0
3894 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3895 114377!<400*3> ;JUMP TO ROM PC OF 1777
3896 JSR PC,RAMDAT ;R4=CRAM PC (LSB 8 BITS)
3897 377 ;EXPECTED DATA
3898 CMPB R5,R4 ;IS ROM PC CORRECT?
3899 BEQ 2$ ;BR IF YES
3900 ERROR 5 ;ERROR, CRAM PC IS WRONG
3901 TRAP C$ERDF
3902 .WORD 5
3903 .WORD EM0
3904 .WORD ERR5
3905 2$: ESCAPE SEG
3906 TRAP C$ESCAPE
3907 .WORD 10000$-
3908 ENDSEG
3909 10000$:
3910 TRAP C$ESEG
3911 BGNSEG
3912 TRAP C$BSEG
3913 JSR PC,SETZ ;SET THE Z BIT
3914 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3915 100403 ;START AT ROM PC=3
3916 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3917 100000!<400*3> ;JUMP TO ROM PC OF 0
3918 JSR PC,RAMDAT ;R4=CRAM PC (LSB 8 BITS)
3919 0 ;EXPECTED DATA
3920 CMPB R5,R4 ;IS ROM PC CORRECT?
3921 BEQ 4$ ;BR IF YES
3922 ERROR 5 ;ERROR, CRAM PC IS WRONG
3923 TRAP C$ERDF
3924 .WORD 5
3925 .WORD EM0
```

```
3926 017304 007160
3927 017306
3928 017306 104410
3929 017310 000002
3930 017312
3931 017312
3932 017312 104405
3933 017314
3934 017314 104404
3935 017316 004737 004074
3936 017322
3937 017326 100406
3938 017330
3939 017334 105525
3940 017336 004737 004112
3941 017342 000125
3942 017344 120504
3943 017346 001406
3944 017350
3945 017354 104455
3946 017356 000005
3947 017360 005425
3948 017362 007160
3949 017364
3950 017364 104410
3951 017366 000002
3952 017370
3953 017370
3954 017370 104405
3955 017372
3956
3957 017372 004737 003014
3958 017376 012702 017410
3959 017402 004737 003120
3960 017406 000405
3961 017410 000 000 000
3962 017413 000 000 000
3963 017416 000 000 000
3964 017421 020
3965 017422
3966 017422
3967 017422
3968 017422 104401

4$: .WORD ERR5
    ESCAPE SEG
    TRAP C$ESCAPE
    .WORD 10001$-.
    ENDSEG

10001$: TRAP C$ESEG
        BGNSEG
        TRAP C$BSEG
        JSR PC,SETZ
        SROMCLK
        100406
        SROMCLK
        104125!<400*3>
        JSR PC,RAMDAT
        125
        CMPB R5,R4
        BEQ 6$
        ERROR 5
        TRAP C$ERDF
        .WORD 5
        .WORD EMO
        .WORD ERR5
        ESCAPE SEG
        TRAP C$ESCAPE
        .WORD 10002$-.
        ENDSEG

10002$: TRAP C$ESEG
        CHKREG
        .LIST ME
        JSR PC,RDKM
        MOV #64$,R2
        JSR PC,RCHECK
        BR 65$
        .BYTE .....20

6$: .WORD 5
    .WORD EMO
    .WORD ERR5
    ESCAPE SEG
    TRAP C$ESCAPE
    .WORD 10002$-.
    ENDSEG

10002$: TRAP C$ESEG
        CHKREG
        .LIST ME
        JSR PC,RDKM
        MOV #64$,R2
        JSR PC,RCHECK
        BR 65$
        .BYTE .....20

65$:
    ENDTST
    L10057: TRAP C$ETST

;SET THE Z BIT'
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;START AT ROM PC=6
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;JUMP TO ROM PC OF 525
;R4=CRAM PC (LSB 8 BITS)
;EXPECTED DATA
;IS ROM PC CORRECT?
;BR IF YES
;ERROR, CRAM PC IS WRONG

; READ KMC11 REGISTERS
; LOAD POINTER
; CHECK FOR NO CHANGE
; SKIP LIST
```

```
3969 017424 BADHEAD
3970 :***** TEST 15 *****
3971 :*CRAM TEST OF JUMP(I) ON BRO SET MICRO-PROCESSOR INSTRUCTION.
3972 :*SET THE BRO BIT, PERFORM THE JUMP INSTRUCTION.
3973 :*VERIFY THE JUMP DID OCCUR BY CLOCKING THE INSTRUCTION
3974 :*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
3975 :*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
3976 :*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
3977 :*THE JUMP WAS SUCCESSFUL, IF THE JUMP WAS UNSUCCESSFUL
3978 :*THEN PORT4 WILL CONTAIN A 37
3979 017424 BADHEAD
3980 :***** TEST 15 *****
3981
3982 017424 BGNTST
3983 017424 T15::
3984 017424
3985 MYINT
3986 017430 MSTCLR
3987 017434 004737 004222 JSR PC, MEMSET
3988 017440
3989 017440 1$:
3990 017440 104404 BGNSEG
3991 017442 004737 004002 TRAP C$BSEG
3992 017446 SRMCLK PC, SETBRO
3993 017452 100400 :SET THE BRO BIT'
3994 017454 SRMCLK 100400 :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3995 017460 116377 :START AT ROM PC=0
3996 017462 004737 004112 :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
3997 017466 000377 :JUMP TO ROM PC OF 1777
3998 017470 120504 :R4=CRAM PC (LSB 8 BITS)
3999 017472 001406 :EXPECTED DATA
4000 017474 :IS ROM PC CORRECT?
4001 017500 104455 :BR IF YES
4002 017502 000005 :ERROR, CRAM PC IS WRONG
4003 017504 005425
4004 017506 007160
4005 017510 2$:
4006 017510 104410 ESCAPE SEG
4007 017512 000002 TRAP C$ESCAPE
4008 017514 :WORD 10000$-.
4009 017514 ENDSEG
4010 017514 104405 10000$:
4011 017516 TRAP C$ESEG
4012 017516 BGNSEG
4013 017520 004737 004002 TRAP C$BSEG
4014 017524 SRMCLK PC, SETBRO
4015 017530 100403 :SET THE BRO BIT'
4016 017532 SRMCLK 100403 :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4017 017536 102000 :START AT ROM PC=3
4018 017540 004737 004112 :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4019 017544 000000 :JUMP TO ROM PC OF 0
4020 017546 120504 :R4=CRAM PC (LSB 8 BITS)
4021 017550 001406 :EXPECTED DATA
4022 017552 :IS ROM PC CORRECT?
4023 017556 104455 :BR IF YES
4024 017560 000005 :ERROR, CRAM PC IS WRONG
```



```
4025 017562 005425      .WORD  EMO
4026 017564 007160      .WORD  ERR5
4027 017566           4$:  ESCAPE SEG
4028 017566 104410      TRAP  C$ESCAPE
4029 017570 000002      .WORD  10001$-.
4030 017572           ENDSEG
4031 017572           10001$:
4032 017572 104405      TRAP  C$ESEG
4033 017574           BGNSEG
4034 017574 104404      TRAP  C$BSEG
4035 017576 004737 004002 JSR   PC,SETBRO
4036 017602           SROMCLK
4037 017606 100406      100406
4038 017610           SROMCLK
4039 017614 106125      104125!<400*4>
4040 017616 004737 004112 JSR   PC,RAMDAT
4041 017622 000125      125
4042 017624 120504      CMPB   R5,R4
4043 017626 001406      BEQ    6$
4044 017630           ERROR  5
4045 017634 104455      TRAP  C$ERDF
4046 017636 000005      .WORD  5
4047 017640 005425      .WORD  EMO
4048 017642 007160      .WORD  ERR5
4049 017644           6$:  ESCAPE SEG
4050 017644 104410      TRAP  C$ESCAPE
4051 017646 000002      .WORD  10002$-.
4052 017650           ENDSEG
4053 017650           10002$:
4054 017650 104405      TRAP  C$ESEG
4055 017652           CHKREG
4056           .LIST  ME
4057 017652 004737 003014 JSR   PC,RDKM
4058 017656 012702 017670 MOV   #64$,R2
4059 017662 004737 003120 JSR   PC,RCHECK
4060 017666 000405      BR     65$
4061 017670      000      000      000 64$: .BYTE  ....,20
4062 017673      000      000      000
4063 017676      000      000      000
4064 017701      020
4065 017702           65$:
4066 017702           ENDTST
4067 017702           L10060:
4068 017702 104401      TRAP  C$ETST
```

```
;SET THE BRO BIT'
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;START AT ROM PC=6
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;JUMP TO ROM PC OF 525
;R4=CRAM PC (LSB 8 BITS)
;EXPECTED DATA
;IS ROM PC CORRECT?
;BR IF YES
;ERROR, CRAM PC IS WRONG
```

```
; READ KMC11 REGISTERS
; LOAD POINTER
; CHECK FOR NO CHANGE
; SKIP LIST
```

```
4069 017704 BADHEAD
4070 :***** TEST 16 *****
4071 :*CRAM TEST OF JUMP(1) ON BR1 SET MICRO-PROCESSOR INSTRUCTION.
4072 :*SET THE BR1 BIT, PERFORM THE JUMP INSTRUCTION.
4073 :*VERIFY THE JUMP DID OCCUR BY CLOCKING THE INSTRUCTION
4074 :*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
4075 :*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
4076 :*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
4077 :*THE JUMP WAS SUCCESSFUL, IF THE JUMP WAS UNSUCCESSFUL
4078 :*THEN PORT4 WILL CONTAIN A 37
4079 017704 BADHEAD
4080 :***** TEST 16 *****
4081
4082 017704 BGNTST
4083 017704 T16::
4084 017704 MYINT
4085 :R1 CONTAINS BASE M8200,4,6,7 ADDRESS
4086 017710 MSTCLR :MASTER CLEAR M8200,4,6,7
4087 017714 004737 004222 JSR PC, MEMSET :SET MEM AND RAM
4088 017720 1s: BGNSEG
4089 017720 TRAP C$BSEG
4090 017720 104404 JSR PC, SETBR1 :SET THE BR1 BIT'
4091 017722 004737 004012 SR0MCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4092 017726 100400 100400 :START AT ROM PC=0
4093 017732 116777 SR0MCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4094 017734 114377! <400*5> :JUMP TO ROM PC OF 1777
4095 017740 004737 004112 JSR PC, RAMDAT :R4=CRAM PC (LSB 8 BITS)
4096 017742 000377 377 :EXPECTED DATA
4097 017746 120504 CMPB R5, R4 :IS ROM PC CORRECT?
4098 017750 001406 BEQ 2$ :BR IF YES
4099 017752 104455 ERROR 5 :ERROR, CRAM PC IS WRONG
4100 017760 000005 TRAP C$ERDF
4101 017762 005425 .WORD 5
4102 017764 007160 .WORD EMO
4103 017770 2$: ESCAPE SEG :WORD ERR5
4104 017770 104410 TRAP C$ESCAPE
4105 017770 000002 .WORD 10000$-.
4106 017774 10000$: ENDSEG
4107 017774 TRAP C$ESEG
4108 017774 104405 BGNSEG
4109 017776 104404 TRAP C$BSEG
4110 017776 004737 004012 JSR PC, SETBR1 :SET THE BR1 BIT'
4111 020000 100403 SR0MCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4112 020010 102400 100403 :START AT ROM PC=3
4113 020012 004737 004112 SR0MCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4114 020016 000000 0 :JUMP TO ROM PC OF 0
4115 020020 000000 0 :R4=CRAM PC (LSB 8 BITS)
4116 020024 120504 CMPB R5, R4 :EXPECTED DATA
4117 020026 001406 BEQ 4$ :IS ROM PC CORRECT?
4118 020030 104455 ERROR 5 :BR IF YES
4119 020032 000005 TRAP C$ERDF :ERROR, CRAM PC IS WRONG
4120 020036 104455 .WORD 5
4121 020040 000005
```



```
4125 020042 005425      .WORD  EMO
4126 020044 007160      .WORD  ERR5
4127 020046           4$:  ESCAPE  SEG
4128 020046          104410  TRAP    C$ESCAPE
4129 020050 000002      .WORD  10001$-.
4130 020052           ENDSEG
4131 020052          10001$:
4132 020052 104405      TRAP    C$ESEG
4133 020054          BGNSEG
4134 020054 104404      TRAP    C$BSEG
4135 020056 004737 004012  JSR     PC,SETBR1
4136 020062          SROMCLK
4137 020066 100406      100406
4138 020070          SROMCLK
4139 020074 106525      104125!<400*5>
4140 020076 004737 004112  JSR     PC,RAMDAT
4141 020102 000125      125
4142 020104 120504      CMPB    R5,R4
4143 020106 001406      BEQ     6$
4144 020110          ERROR    5
4145 020114 104455      TRAP    C$ERDF
4146 020116 000005      .WORD  5
4147 020120 005425      .WORD  EMO
4148 020122 007160      .WORD  ERR5
4149 020124           6$:  ESCAPE  SEG
4150 020124 104410      TRAP    C$ESCAPE
4151 020126 000002      .WORD  10002$-.
4152 020130           ENDSEG
4153 020130          10002$:
4154 020130 104405      TRAP    C$ESEG
4155 020132          CHKREG
4156          .LIST  ME
4157 020132 004737 003014  JSR     PC,RDKM
4158 020136 012702 020150  MOV     #64$,R2
4159 020142 004737 003120  JSR     PC,R$CHECK
4160 020146 000405      BR      65$
4161 020150          64$:  .BYTE  .....20
4162 020153          000      000      000
4163 020156          000      000      000
4164 020161          020
4165 020162          65$:
4166 020162          ENDTST
4167 020162          L10061:
4168 020162 104401      TRAP    C$ETST
```

:SET THE BR1 BIT'
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:START AT ROM PC=6
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:JUMP TO ROM PC OF 525
:R4=CRAM PC (LSB 8 BITS)
:EXPECTED DATA
:IS ROM PC CORRECT?
:BR IF YES
:ERROR, CRAM PC IS WRONG

: READ KMC11 REGISTERS
: LOAD POINTER
: CHECK FOR NO CHANGE
: SKIP LIST

```
4169 020164 BADHEAD
4170 :***** TEST 17 *****
4171 :*CRAM TEST OF JUMP(1) ON BR4 SET MICRO-PROCESSOR INSTRUCTION.
4172 :*SET THE BR4 BIT, PERFORM THE JUMP INSTRUCTION.
4173 :*VERIFY THE JUMP DID OCCUR BY CLOCKING THE INSTRUCTION
4174 :*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
4175 :*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
4176 :*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
4177 :*THE JUMP WAS SUCCESSFUL, IF THE JUMP WAS UNSUCCESSFUL
4178 :*THEN PORT4 WILL CONTAIN A 37
4179 020164 BADHEAD
4180 :***** TEST 17 *****
4181
4182 020164 BGNTST
4183 020164 T17::
4184 020164 MYINT
4185 020170 MSTCLR
4186 020174 004737 004222 JSR PC, MEMSET ;MASTER CLEAR M8200,4,6,7
4187 020200 1$: ;SET MEM AND RAM
4188 020200 BGNSEG
4189 020200 TRAP C$BSEG
4190 020202 004737 004022 JSR PC, SETBR4 ;SET THE BR4 BIT'
4191 020206 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4192 020212 100400 ;START AT ROM PC=0
4193 020214 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4194 020220 117377 114377! <400*6> ;JUMP TO ROM PC OF 1777
4195 020222 004737 004112 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
4196 020226 000377 377 ;EXPECTED DATA
4197 020230 120504 CMPB R5,R4 ;IS ROM PC CORRECT?
4198 020232 001406 BEQ 2$ ;BR IF YES
4199 020234 ERROR 5 ;ERROR, CRAM PC IS WRONG
4200 020240 104455 TRAP C$ERDF
4201 020242 000005 .WORD 5
4202 020244 005425 .WORD EM0
4203 020246 007160 .WORD ERR5
4204 020250 2$: ESCAPE SEG
4205 020250 104410 TRAP C$ESCAPE
4206 020252 000002 .WORD 10000$-.
4207 020254 ENDSEG
4208 020254 10000$:
4209 020254 104405 TRAP C$ESEG
4210 020256 BGNSEG
4211 020256 104404 TRAP C$BSEG
4212 020260 004737 004022 JSR PC, SETBR4 ;SET THE BR4 BIT'
4213 020264 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4214 020270 100403 100403 ;START AT ROM PC=3
4215 020272 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4216 020276 103000 100000! <400*6> ;JUMP TO ROM PC OF 0
4217 020300 004737 004112 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
4218 020304 000000 0 ;EXPECTED DATA
4219 020306 120504 CMPB R5,R4 ;IS ROM PC CORRECT?
4220 020310 001406 BEQ 4$ ;BR IF YES
4221 020312 ERROR 5 ;ERROR, CRAM PC IS WRONG
4222 020316 104455 TRAP C$ERDF
4223 020320 000005 .WORD 5
4224 020322 005425 .WORD EM0
```

```
4225 020324 007160
4226 020326
4227 020326 104410
4228 020330 000002
4229 020332
4230 020332
4231 020332 104405
4232 020334
4233 020334 104404
4234 020336 004737 004022
4235 020342
4236 020346 100406
4237 020350
4238 020354 107125
4239 020356 004737 004112
4240 020362 000125
4241 020364 120504
4242 020366 001406
4243 020370
4244 020374 104455
4245 020376 000005
4246 020400 005425
4247 020402 007160
4248 020404
4249 020404 104410
4250 020406 000002
4251 020410
4252 020410
4253 020410 104405
4254 020412
4255
4256 020412 004737 003014
4257 020416 012702 020430
4258 020422 004737 003120
4259 020426 000405
4260 020430 000 000 000
4261 020433 000 000 000
4262 020436 000 000 000
4263 020441 020
4264 020442
4265 020442
4266 020442
4267 020442 104401

4$: .WORD ERR5
    ESCAPE SEG
    TRAP C$ESCAPE
    .WORD 10001$-.
    ENDSEG
10001$: TRAP C$ESEG
        BGNSEG
        TRAP C$BSEG
        JSR PC,SETBR4
        SROMCLK
        100406
        SROMCLK
        104125!<400*6>
        JSR PC,RAMDAT
        125
        CMPB R5,R4
        BEQ 6$
        ERROR 5
        TRAP C$ERDF
        .WORD 5
        .WORD EM0
        .WORD ERR5
6$: ESCAPE SEG
    TRAP C$ESCAPE
    .WORD 10002$-.
    ENDSEG
10002$: TRAP C$ESEG
        CHKREG
        .LIST ME
        JSR PC,RDKM
        MOV #64$,R2
        JSR PC,R$CHECK
        BR 65$
64$: .BYTE .....20

;SET THE BR4 BIT'
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;START AT ROM PC=6
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;JUMP TO ROM PC OF 525
;R4=CRAM PC (LSB 8 BITS)
;EXPECTED DATA
;IS ROM PC CORRECT?
;BR IF YES
;ERROR, CRAM PC IS WRONG

; READ KMC11 REGISTERS
; LOAD POINTER
; CHECK FOR NO CHANGE
; SKIP LIST

65$:
ENDTST
L10062: TRAP C$ETST
```

```
4268 020444 BADHEAD
4269 :***** TEST 18 *****
4270 :*CRAM TEST OF JUMP(I) ON BR7 SET MICRO-PROCESSOR INSTRUCTION.
4271 :*SET THE BR7 BIT, PERFORM THE JUMP INSTRUCTION.
4272 :*VERIFY THE JUMP DID OCCUR BY CLOCKING THE INSTRUCTION
4273 :*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
4274 :*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
4275 :*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
4276 :*THE JUMP WAS SUCCESSFUL, IF THE JUMP WAS UNSUCCESSFUL
4277 :*THEN PORT4 WILL CONTAIN A 37
4278 020444 BADHEAD
4279 :***** TEST 18 *****
4280
4281 020444 BGNTST
4282 020444 T18::
4283 020444 MYINT
4284 :R1 CONTAINS BASE M8200,4,6,7 ADDRESS
4285 020450 MSTCLR :MASTER CLEAR M8200,4,6,7
4286 020454 004737 004222 JSR PC, MEMSET :SET MEM AND RAM
4287 020460 1$: BGNSEG
4288 020460 104404 TRAP C$BSEG
4289 020462 004737 004032 JSR PC, SETBR7 :SET THE BR7 BIT'
4290 020466 SR0MCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4291 020472 100400 100400 :START AT ROM PC=0
4292 020474 SR0MCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4293 020500 117777 114377!<400*7> :JUMP TO ROM PC OF 1777
4294 020502 004737 004112 JSR PC, RAMDAT :R4=CRAM PC (LSB 8 BITS)
4295 020506 000377 377 :EXPECTED DATA
4296 020510 120504 CMPB R5, R4 :IS ROM PC CORRECT?
4297 020512 001406 BEQ 2$ :BR IF YES
4298 020514 ERROR 5 :ERROR, CRAM PC IS WRONG
4299 020520 104455 TRAP C$ERDF
4300 020522 000005 .WORD 5
4301 020524 005425 .WORD EMO
4302 020526 007160 .WORD ERR5
4303 020530 2$: ESCAPE SEG
4304 020530 104410 TRAP C$ESCAPE
4305 020532 000002 .WORD 10000$-.
4306 020534 ENDSEG
4307 020534 10000$:
4308 020534 104405 TRAP C$ESEG
4309 020536 BGNSEG
4310 020536 104404 TRAP C$BSEG
4311 020540 004737 004032 JSR PC, SETBR7 :SET THE BR7 BIT'
4312 020544 SR0MCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4313 020550 100403 100403 :START AT ROM PC=3
4314 020552 SR0MCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4315 020556 103400 100000!<400*7> :JUMP TO ROM PC OF 0
4316 020560 004737 004112 JSR PC, RAMDAT :R4=CRAM PC (LSB 8 BITS)
4317 020564 000000 0 :EXPECTED DATA
4318 020566 120504 CMPB R5, R4 :IS ROM PC CORRECT?
4319 020570 001406 BEQ 4$ :BR IF YES
4320 020572 ERROR 5 :ERROR, CRAM PC IS WRONG
4321 020576 104455 TRAP C$ERDF
4322 020600 000005 .WORD 5
4323 020602 005425 .WORD EMO
```

```
4324 020604 007160
4325 020606
4326 020606 104410
4327 020610 000002
4328 020612
4329 020612
4330 020612 104405
4331 020614
4332 020614 104404
4333 020616 004737 004032
4334 020622
4335 020626 100406
4336 020630
4337 020634 107525
4338 020636 004737 004112
4339 020642 000125
4340 020644 120504
4341 020646 001406
4342 020650
4343 020654 104455
4344 020656 000005
4345 020660 005425
4346 020662 007160
4347 020664
4348 020664 104410
4349 020666 000002
4350 020670
4351 020670
4352 020670 104405
4353 020672
4354
4355 020672 004737 003014
4356 020676 012702 020710
4357 020702 004737 003120
4358 020706 000405
4359 020710 000 000 000
4360 020713 000 000 000
4361 020716 000 000 000
4362 020721 020
4363 020722
4364 020722
4365 020722
4366 020722 104401
```

```
4$: .WORD ERR5
    ESCAPE SEG
    TRAP C$ESCAPE
    .WORD 10001$-.
    ENDSEG
10001$: TRAP C$ESEG
        BGNSEG
        TRAP C$BSEG
        JSR PC,SETBR7
        SROMCLK
        100406
        SROMCLK
        104125!<400*7>
        JSR PC,RAMDAT
        125
        CMPB R5,R4
        BEQ 6$
        ERROR 5
        TRAP C$ERDF
        .WORD 5
        .WORD EM0
        .WORD ERR5
6$: ESCAPE SEG
    TRAP C$ESCAPE
    .WORD 10002$-.
    ENDSEG
10002$: TRAP C$ESEG
        CHKREG
        .LIST ME
        JSR PC,RDKM
        MOV #64$,R2
        JSR PC,R$CHECK
        BR 65$
64$: .BYTE .....20
65$:
    ENDTST
L10063: TRAP C$ETST
```

```
;SET THE BR7 BIT'
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:START AT ROM PC=6
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:JUMP TO ROM PC OF 525
:R4=CRAM PC (LSB 8 BITS)
:EXPECTED DATA
:IS ROM PC CORRECT?
:BR IF YES
:ERROR, CRAM PC IS WRONG

: READ KMC11 REGISTERS
: LOAD POINTER
: CHECK FOR NO CHANGE
: SKIP LIST
```

```
4367 020724 BADHEAD
4368 ;***** TEST 19 *****
4369 ;*CRAM TEST OF NO JUMP(I) ON C BIT CLEAR MICRO-PROCESSOR INSTRUCTION.
4370 ;*CLEAR THE C BIT, PERFORM THE JUMP INSTRUCTION.
4371 ;*VERIFY THE JUMP DID NOT OCCUR BY CLOCKING THE INSTRUCTION
4372 ;*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
4373 ;*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
4374 ;*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
4375 ;*THE JUMP WAS SUCCESSFUL, IF THE JUMP WAS UNSUCCESSFUL
4376 ;*THEN PORT4 WILL CONTAIN A 37
4377 020724 BADHEAD
4378 ;***** TEST 19 *****
4379
4380 020724 BGNTST
4381 020724 T19::
4382 020724
4383 020730 MYINT
4384 020734 004737 004222 MSTCLR ;MASTER CLEAR M8200,4,6,7
4385 020740 JSR PC, MEMSET ;SET MEM AND RAM
4386 020740 104404 1$: BGNSEG
4387 020742 TRAP C$BSEG
4388 020746 MSTCLR
4389 020752 100400 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4390 020754 100400 ;START AT ROM PC=0
4391 020760 115377 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4392 020762 004737 004112 114377!<400*2> ;JUMP TO ROM PC OF 1777
4393 020766 000001 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
4394 020770 020504 1 ;EXPECTED DATA
4395 020772 001406 CMP R5,R4 ;IS ROM PC CORRECT?
4396 020774 BEQ 2$ ;BR IF YES
4397 021000 104455 ERROR 5 ;ERROR, CRAM PC IS WRONG
4398 021002 000005 TRAP C$ERDF
4399 021004 005425 .WORD 5
4400 021006 007160 .WORD EMO
4401 021010 2$: ESCAPE SEG .WORD ERR5
4402 021010 104410 TRAP C$ESCAPE
4403 021012 000002 .WORD 10000$-.
4404 021014 ENDSEG
4405 021014 10000$:
4406 021014 104405 TRAP C$ESEG
4407 021016 BGNSEG
4408 021016 104404 TRAP C$BSEG
4409 021020 000240 NOP
4410 021022 000240 NOP
4411 021024 004737 003750 JSR PC, CLRALL ;CLEAR ALL CONDITIONS
4412 021030 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4413 021034 100403 100403 ;START AT ROM PC=3
4414 021036 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4415 021042 101000 100000!<400*2> ;JUMP TO ROM PC OF 0
4416 021044 004737 004112 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
4417 021050 000001 1 ;EXPECTED DATA
4418 021052 020504 CMP R5,R4 ;IS ROM PC CORRECT?
4419 021054 001406 BEQ 4$ ;BR IF YES
4420 021056 ERROR 5 ;ERROR, CRAM PC IS WRONG
4421 021062 104455 TRAP C$ERDF
4422 021064 000005 .WORD 5
```



```
4423 021066 005425      .WORD  EMO
4424 021070 007160      .WORD  ERR5
4425 021072          4$:  ESCAPE  SEG
4426 021072 104410      TRAP   C$ESCAPE
4427 021074 000002      .WORD  10001$-.
4428 021076          ENDSEG
4429 021076          10001$:
4430 021076 104405      TRAP   C$ESEG
4431 021100          BGNSEG
4432 021100 104404      TRAP   C$BSEG
4433 021102 004737 003750 JSR    PC,CLRALL
4434 021106          SROMCLK
4435 021112 100406      100406
4436 021114          SROMCLK
4437 021120 105125      104125!<400*2>
4438 021122 004737 004112 JSR    PC,RAMDAT
4439 021126 000001      1
4440 021130 020504      CMP     R5,R4
4441 021132 001406      BEQ     6$
4442 021134          ERROR  5
4443 021140 104455      TRAP   C$ERDF
4444 021142 000005      .WORD  5
4445 021144 005425      .WORD  EMO
4446 021146 007160      .WORD  ERR5
4447 021150          6$:  ESCAPE  SEG
4448 021150 104410      TRAP   C$ESCAPE
4449 021152 000002      .WORD  10002$-.
4450 021154          ENDSEG
4451 021154          10002$:
4452 021154 104405      TRAP   C$ESEG
4453 021156          CHKREG
4454          .LIST  ME
4455 021156 004737 003014 JSR    PC,RDKM
4456 021162 012702 021174 MOV    #64$,R2
4457 021166 004737 003120 JSR    PC,RCHECK
4458 021172 000405      BR     65$
4459 021174      000      000      000 64$: .BYTE  ....,20
4460 021177      000      000      000
4461 021202      000      000      000
4462 021205      020
4463 021206          65$:
4464 021206          ENDTST
4465 021206          L10064:
4466 021206 104401      TRAP   C$ETST
```

:CLEAR ALL CONDITIONS
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:START AT ROM PC=6
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:JUMP TO ROM PC OF 525
:R4=CRAM PC (LSB 8 BITS)
:EXPECTED DATA
:IS ROM PC CORRECT?
:BR IF YES
:ERROR, CRAM PC IS WRONG

: READ KMC11 REGISTERS
: LOAD POINTER
: CHECK FOR NO CHANGE
: SKIP LIST

```
4467 021210 BADHEAD
4468 :***** TEST 20 *****
4469 :*CRAM TEST OF NO JUMP(1) ON Z BIT CLEAR MICRO-PROCESSOR INSTRUCTION.
4470 :*CLEAR THE Z BIT, PERFORM THE JUMP INSTRUCTION.
4471 :*VERIFY THE JUMP DID NOT OCCUR BY CLOCKING THE INSTRUCTION
4472 :*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
4473 :*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
4474 :*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
4475 :*THE JUMP WAS SUCCESSFUL, IF THE JUMP WAS UNSUCCESSFUL
4476 :*THEN PORT4 WILL CONTAIN A 37
4477 021210 BADHEAD
4478 :***** TEST 20 *****
4479
4480 021210 BGNTST
4481 021210 T20::
4482 021210
4483 021214 MYINT
4484 021220 004737 004222 MSTCLR ;MASTER CLEAR M8200,4,6,7
4485 021224 JSR PC, MEMSET ;SET MEM AND RAM
4486 021224 104404 1$: BGNSEG
4487 021226 TRAP C$BSEG
4488 021232 MSTCLR
4489 021236 100400 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4490 021240 115777 100400 ;START AT ROM PC=0
4491 021244 004737 004112 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4492 021246 000001 114377! <400*3> ;JUMP TO ROM PC OF 1777
4493 021252 020504 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
4494 021254 001406 1 ;EXPECTED DATA
4495 021256 104455 CMP R5, R4 ;IS ROM PC CORRECT?
4496 021260 000005 BEQ 2$ ;BR IF YES
4497 021264 005425 ERROR 5 ;ERROR, CRAM PC IS WRONG
4498 021266 007160 TRAP C$ERDF
4499 021270 .WORD 5
4500 021272 .WORD EMO
4501 021274 .WORD ERR5
4502 021274 104410 2$: ESCAPE SEG
4503 021276 000002 TRAP C$ESCAPE
4504 021300 .WORD 10000$-.
4505 021300 ENDSEG
4506 021300 104405 10000$: TRAP C$ESEG
4507 021302 BGNSEG
4508 021302 104404 TRAP C$BSEG
4509 021304 000240 NOP
4510 021306 000240 NOP
4511 021310 004737 003750 JSR PC, CLRALL ;CLEAR ALL CONDITIONS
4512 021314 100403 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4513 021320 101400 100403 ;START AT ROM PC=3
4514 021322 004737 004112 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4515 021326 000001 100000! <400*3> ;JUMP TO ROM PC OF 0
4516 021330 020504 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
4517 021334 001406 1 ;EXPECTED DATA
4518 021336 104455 CMP R5, R4 ;IS ROM PC CORRECT?
4519 021340 000005 BEQ 4$ ;BR IF YES
4520 021342 104455 ERROR 5 ;ERROR, CRAM PC IS WRONG
4521 021346 000005 TRAP C$ERDF
4522 021350 .WORD 5
```



```
4523 021352 005425      .WORD  EMO
4524 021354 007160      .WORD  ERR5
4525 021356           4$:  ESCAPE SEG
4526 021356 104410      TRAP  C$ESCAPE
4527 021360 000002      .WORD  10001$-.
4528 021362           ENDSEG
4529 021362           10001$:
4530 021362 104405      TRAP  C$ESEG
4531 021364           BGNSEG
4532 021364 104404      TRAP  C$BSEG
4533 021366 004737 003750 JSR   PC,CLRALL
4534 021372           SROMCLK
4535 021376 100406      100406
4536 021400           SROMCLK
4537 021404 105525      104125!<400*3>
4538 021406 004737 004112 JSR   PC,RAMDAT
4539 021412 000001      1
4540 021414 020504      CMP    R5,R4
4541 021416 001406      BEQ    6$
4542 021420           ERROR  5
4543 021424 104455      TRAP  C$ERDF
4544 021426 000005      .WORD  5
4545 021430 005425      .WORD  EMO
4546 021432 007160      .WORD  ERR5
4547 021434           6$:  ESCAPE SEG
4548 021434 104410      TRAP  C$ESCAPE
4549 021436 000002      .WORD  10002$-.
4550 021440           ENDSEG
4551 021440           10002$:
4552 021440 104405      TRAP  C$ESEG
4553 021442           CHKREG
4554           .LIST  ME
4555 021442 004737 003014 JSR   PC,RDKM
4556 021446 012702 021460 MOV   #64$,R2
4557 021452 004737 003120 JSR   PC,RCHECK
4558 021456 000405      BR    65$
4559 021460      000      000      000 64$: .BYTE .....20
4560 021463      000      000      000
4561 021466      000      000      000
4562 021471      020
4563 021472           65$:
4564 021472           ENDTST
4565 021472           L10065:
4566 021472 104401      TRAP  C$ETST
```

```
;CLEAR ALL CONDITIONS
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;START AT ROM PC=6
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;JUMP TO ROM PC OF 525
;R4=CRAM PC (LSB 8 BITS)
;EXPECTED DATA
;IS ROM PC CORRECT?
;BR IF YES
;ERROR, CRAM PC IS WRONG
```

```
; READ KMC11 REGISTERS
; LOAD POINTER
; CHECK FOR NO CHANGE
; SKIP LIST
```

```
4567 021474 BADHEAD
4568 :***** TEST 21 *****
4569 :*CRAM TEST OF NO JUMP(1) ON BRO CLEAR MICRO-PROCESSOR INSTRUCTION.
4570 :*CLEAR THE BRO BIT, PERFORM THE JUMP INSTRUCTION.
4571 :*VERIFY THE JUMP DID NOT OCCUR BY CLOCKING THE INSTRUCTION
4572 :*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
4573 :*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
4574 :*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
4575 :*THE JUMP WAS SUCCESSFUL, IF THE JUMP WAS UNSUCCESSFUL
4576 :*THEN PORT4 WILL CONTAIN A 37
4577 021474 BADHEAD
4578 :***** TEST 21 *****
4579
4580 021474 BGNTST
4581 021474 T21::
4582 021474
4583 021500 MYINT
4584 021504 004737 004222 MSTCLR ;MASTER CLEAR M8200,4,6,7
4585 021510 JSR PC, MEMSET ;SET MEM AND RAM
4586 021510 104404 1$: BGNSEG
4587 021512 004737 003750 TRAP C$BSEG
4588 021516 JSR PC, CLRALL ;CLEAR ALL CONDITIONS
4589 021522 100400 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4590 021524 100400 ;START AT ROM PC=0
4591 021530 116377 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4592 021532 004737 004112 114377!<400*4> ;JUMP TO ROM PC OF 1777
4593 021536 000001 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
4594 021540 020504 1 ;EXPECTED DATA
4595 021542 001406 CMP R5, R4 ;IS ROM PC CORRECT?
4596 021544 BEQ 2$ ;BR IF YES
4597 021550 104455 ERROR 5 ;ERROR, CRAM PC IS WRONG
4598 021552 000005 TRAP C$ERDF
4599 021554 005425 .WORD 5
4600 021556 007160 .WORD EMO
4601 021560 2$: ESCAPE SEG ;ERR5
4602 021560 104410 TRAP C$ESCAPE
4603 021562 000002 .WORD 10000$-.
4604 021564 ENDSEG
4605 021564 10000$:
4606 021564 104405 TRAP C$ESEG
4607 021566 BGNSEG
4608 021566 104404 TRAP C$BSEG
4609 021570 000240 NOP
4610 021572 000240 NOP
4611 021574 004737 003750 JSR PC, CLRALL ;CLEAR ALL CONDITIONS
4612 021600 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4613 021604 100403 100403 ;START AT ROM PC=3
4614 021606 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4615 021612 102000 100000!<400*4> ;JUMP TO ROM PC OF 0
4616 021614 004737 004112 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
4617 021620 000001 1 ;EXPECTED DATA
4618 021622 020504 CMP R5, R4 ;IS ROM PC CORRECT?
4619 021624 001406 BEQ 4$ ;BR IF YES
4620 021626 ERROR 5 ;ERROR, CRAM PC IS WRONG
4621 021632 104455 TRAP C$ERDF
4622 021634 000005 .WORD 5
```

```
4623 021636 005425      .WORD EMO
4624 021640 007160      .WORD ERR5
4625 021642           4$: ESCAPE SEG
4626 021642 104410      TRAP C$ESCAPE
4627 021644 000002      .WORD 10001$-.
4628 021646           ENDSEG
4629 021646           10001$:
4630 021646 104405      TRAP C$ESEG
4631 021650           BGNSEG
4632 021650 104404      TRAP C$BSEG
4633 021652 004737 003750 JSR PC,CLRALL
4634 021656           SROMCLK
4635 021662 100406      100406
4636 021664           SROMCLK
4637 021670 106125      104125!<400*4>
4638 021672 004737 004112 JSR PC,RAMDAT
4639 021676 000001      1
4640 021700 020504      CMP R5,R4
4641 021702 001406      BEQ 6$
4642 021704           ERROR 5
4643 021710 104455      TRAP C$ERDF
4644 021712 000005      .WORD 5
4645 021714 005425      .WORD EMO
4646 021716 007160      .WORD ERR5
4647 021720           6$: ESCAPE SEG
4648 021720 104410      TRAP C$ESCAPE
4649 021722 000002      .WORD 10002$-.
4650 021724           ENDSEG
4651 021724           10002$:
4652 021724 104405      TRAP C$ESEG
4653 021726           CHKREG
4654           .LIST ME
4655 021726 004737 003014 JSR PC,RDKM
4656 021732 012702 021744 MOV #64$,R2
4657 021736 004737 003120 JSR PC,RCHECK
4658 021742 000405      BR 65$
4659 021744 000 000 000 64$: .BYTE .....20
4660 021747 000 000 000
4661 021752 000 000 000
4662 021755 020
4663 021756           65$:
4664 021756           ENDTST
4665 021756           L10066:
4666 021756 104401      TRAP C$ETST
```

```
:CLEAR ALL CONDITIONS
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:START AT ROM PC=6
:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
:JUMP TO ROM PC OF 525
:R4=CRAM PC (LSB 2 BITS)
:EXPECTED DATA
:IS ROM PC CORRECT?
:BR IF YES
:ERROR, CRAM PC IS WRONG
```

```
: READ KMC11 REGISTERS
: LOAD POINTER
: CHECK FOR NO CHANGE
: SKIP LIST
```

```
4667 021760 BADHEAD
4668 :***** TEST 22 *****
4669 :*CRAM TEST OF NO JUMP(1) ON BR1 CLEAR MICRO-PROCESSOR INSTRUCTION.
4670 :*CLEAR THE BR1 BIT, PERFORM THE JUMP INSTRUCTION.
4671 :*VERIFY THE JUMP DID NOT OCCUR BY CLOCKING THE INSTRUCTION
4672 :*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
4673 :*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
4674 :*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
4675 :*THE JUMP WAS SUCCESSFUL, IF THE JUMP WAS UNSUCCESSFUL
4676 :*THEN PORT4 WILL CONTAIN A 37
4677 021760 BADHEAD
4678 :***** TEST 22 *****
4679
4680 021760 BGNTST
4681 021760 T22::
4682 021760
4683 021764 MYINT
4684 021770 004737 004222 MSTCLR ;MASTER CLEAR M8200,4,6,7
4685 021774 1$: JSR PC, MEMSET ;SET MEM AND RAM
4686 021774 104404 BGNSEG
4687 021776 004737 003750 TRAP C$BSEG
4688 022002 JSR PC, CLRALL ;CLEAR ALL CONDITIONS
4689 022006 100400 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4690 022010 116777 100400 ;START AT ROM PC=0
4691 022014 004737 004112 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4692 022016 000001 114377!<400*5> ;JUMP TO ROM PC OF 1777
4693 022022 020504 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
4694 022024 001406 1 ;EXPECTED DATA
4695 022026 104455 CMP R5, R4 ;IS ROM PC CORRECT?
4696 022034 000005 BEQ 2$ ;BR IF YES
4697 022036 005425 ERROR 5 ;ERROR, CRAM PC IS WRONG
4698 022040 007160 TRAP C$ERDF
4699 022042 104410 .WORD 5
4700 022044 2$: ESCAPE SEG ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4701 022046 000002 TRAP C$ESCAPE ;START AT ROM PC=3
4702 022050 10000$-. .WORD 10000$-. ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4703 022052 104405 10000$: TRAP C$ESEG ;JUMP TO ROM PC OF 0
4704 022054 000240 BGNSEG ;R4=CRAM PC (LSB 8 BITS)
4705 022056 000240 TRAP C$BSEG ;EXPECTED DATA
4706 022060 004737 003750 NOP ;IS ROM PC CORRECT?
4707 022064 100403 JSR PC, CLRALL ;BR IF YES
4708 022070 102400 SR0MCLK ;ERROR, CRAM PC IS WRONG
4709 022072 004737 004112 100403 ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4710 022076 000001 100000!<400*5> ;START AT ROM PC=3
4711 022100 000001 JSR PC, RAMDAT ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4712 022106 020504 1 ;JUMP TO ROM PC OF 0
4713 022110 001406 CMP R5, R4 ;R4=CRAM PC (LSB 8 BITS)
4714 022112 104455 BEQ 4$ ;EXPECTED DATA
4715 022116 000005 ERROR 5 ;IS ROM PC CORRECT?
4716 022120 104455 TRAP C$ERDF ;BR IF YES
4717 022122 000005 .WORD 5 ;ERROR, CRAM PC IS WRONG
```

Address	Hex	Dec	Label	Instruction	Comments
4723	022122	005425		.WORD EMO	
4724	022124	007160		.WORD ERR5	
4725	022126		4\$:	ESCAPE SEG	
4726	022126	104410		TRAP C\$ESCAPE	
4727	022130	000002		.WORD 10001\$-	
4728	022132			ENDSEG	
4729	022132		10001\$:		
4730	022132	104405		TRAP C\$ESEG	
4731	022134			BGNSEG	
4732	022134	104404		TRAP C\$BSEG	
4733	022136	004737	003750	JSR PC,CLRALL	;CLEAR ALL CONDITIONS
4734	022142			SROMCLK	;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4735	022146	100406		100406	;START AT ROM PC=6
4736	022150			SROMCLK	;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4737	022154	106525		104125!<400*5>	;JUMP TO ROM PC OF 525
4738	022156	004737	004112	JSR PC,RAMDAT	;R4=CRAM PC (LSB 8 BITS)
4739	022162	000001		1	;EXPECTED DATA
4740	022164	020504		CMP R5,R4	;IS ROM PC CORRECT?
4741	022166	001406		BEQ 6\$	;BR IF YES
4742	022170			ERROR 5	;ERROR, CRAM PC IS WRONG
4743	022174	104455		TRAP C\$ERDF	
4744	022176	000005		.WORD 5	
4745	022200	005425		.WORD EMO	
4746	022202	007160		.WORD ERR5	
4747	022204		6\$:	ESCAPE SEG	
4748	022204	104410		TRAP C\$ESCAPE	
4749	022206	000002		.WORD 10002\$-	
4750	022210			ENDSEG	
4751	022210		10002\$:		
4752	022210	104405		TRAP C\$ESEG	
4753	022212			CHKREG	
4754				.LIST ME	
4755	022212	004737	003014	JSR PC,RDKM	; READ KMC11 REGISTERS
4756	022216	012702	022230	MOV #64\$,R2	; LOAD POINTER
4757	022222	004737	003120	JSR PC,RCHECK	; CHECK FOR NO CHANGE
4758	022226	000405		BR 65\$	; SKIP LIST
4759	022230	000	000	64\$:	.BYTE20
4760	022233	000	000		
4761	022236	000	000		
4762	022241	020			
4763	022242			65\$:	
4764	022242			ENDTST	
4765	022242			L10067:	
4766	022242	104401		TRAP C\$ETST	

```
4767 022244 BADHEAD
4768 :***** TEST 23 *****
4769 :*CRAM TEST OF NO JUMP(I) ON BR4 CLEAR MICRO-PROCESSOR INSTRUCTION.
4770 :*CLEAR THE BR4 BIT, PERFORM THE JUMP INSTRUCTION.
4771 :*VERIFY THE JUMP DID NOT OCCUR BY CLOCKING THE INSTRUCTION
4772 :*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
4773 :*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
4774 :*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
4775 :*THE CRAM PC IS CORRECT, IF THE CRAM PC IS NOT RIGHT.
4776 :*THEN PORT4 CONTAINS A $7
4777 022244 BADHEAD
4778 :***** TEST 23 *****
4779
4780 022244 BGNTST
4781 022244 123::
4782 022244 MYINT
4783 022250 MSTCLR ;MASTER CLEAR M8200.4,6,7
4784 022254 004737 004222 JSR PC, MEMSET ;SET MEM AND RAM
4785 022260 1$: BGNSEG
4786 022260 104404 TRAP C$BSEG
4787 022262 004737 003750 JSR PC, CLRALL ;CLEAR ALL CONDITIONS
4788 022266 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4789 022272 100400 100400 ;START AT ROM PC=0
4790 022274 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4791 022300 117377 114377! <400*6> ;JUMP TO ROM PC OF 1777
4792 022302 004737 004112 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
4793 022306 000001 1 ;EXPECTED DATA
4794 022310 020504 CMP R5, R4 ;IS ROM PC CORRECT?
4795 022312 001406 BEQ 2$ ;BR IF YES
4796 022314 ERROR 5 ;ERROR, CRAM PC IS WRONG
4797 022320 104455 TRAP C$ERDF
4798 022322 000005 .WORD 5
4799 022324 005425 .WORD EMO
4800 022326 007160 .WORD ERR5
4801 022330 2$: ESCAPE SEG
4802 022330 104410 TRAP C$ESCAPE
4803 022332 000002 .WORD 10000$-.
4804 022334 ENDSEG
4805 022334 10000$:
4806 022334 104405 TRAP C$ESEG
4807 022336 BGNSEG
4808 022336 104404 TRAP C$BSEG
4809 022340 000240 NOP
4810 022342 000240 NOP
4811 022344 004737 003750 JSR PC, CLRALL ;CLEAR ALL CONDITIONS
4812 022350 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4813 022354 100403 100403 ;START AT ROM PC=3
4814 022356 SROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4815 022362 103000 100000! <400*6> ;JUMP TO ROM PC OF 0
4816 022364 004737 004112 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
4817 022370 000001 1 ;EXPECTED DATA
4818 022372 020504 CMP R5, R4 ;IS ROM PC CORRECT?
4819 022374 001406 BEQ 4$ ;BSR IF YES
4820 022376 ERROR 5 ;ERROR, CRAM PC IS WRONG
4821 022402 104455 TRAP C$ERDF
4822 022404 000005 .WORD 5
```


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

4867 022530 BADHEAD
4868 :***** TEST 24 *****
4869 :*CRAM TEST OF NO JUMP(1) ON BR7 CLEAR MICRO-PROCESSOR INSTRUCTION.
4870 :*CLEAR THE BR7 BIT, PERFORM THE JUMP INSTRUCTION.
4871 :*VERIFY THE JUMP DID NOT OCCUR BY CLOCKING THE INSTRUCTION
4872 :*IN THE LOCATION IT IS AT. THIS INSTRUCTION LOADS THE
4873 :*BR WITH THE LOWEST 8 BITS OF THE CRAM PC. AT THIS POINT
4874 :*THE BR DATA IS MOVED TO PORT4. IF THIS DATA IS CORRECT
4875 :*THE CRAM PC IS CORRECT, IF THE CRAM PC IS NOT RIGHT.
4876 :*THEN PORT4 CONTAINS A 37
4877 022530 BADHEAD
4878 :***** TEST 24 *****
4879
4880 022530 BGNTST
4881 022530 T24::
4882 022530
4883 022534 MYINT
4884 022540 004737 004222 MSTCLR ;MASTER CLEAR M8200,4,6,7
4885 022544 104404 JSR PC, MEMSET ;SET MEM AND RAM
4886 022544 004737 003750 BGNSEG
4887 022546 104404 TRAP C$BSEG
4888 022552 JSR PC, CLRALL ;CLEAR ALL CONDITIONS
4889 022556 100400 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4890 022560 117777 100400 ;START AT ROM PC=0
4891 022564 004737 004112 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4892 022566 000001 114377! <400*7> ;JUMP TO ROM PC OF 1777
4893 022572 020504 JSR PC, RAMDAT ;R4=CRAM PC (LSB 8 BITS)
4894 022574 001406 1 ;EXPECTED DATA
4895 022576 104455 CMP R5, R4 ;IS ROM PC CORRECT?
4896 022600 BEQ 2$ ;BR IF YES
4897 022604 000005 ERROR 5 ;ERROR, CRAM PC IS WRONG
4898 022606 005425 TRAP C$ERDF
4899 022610 007160 .WORD 5
4900 022612 104410 .WORD EMO
4901 022614 000002 .WORD ERR5
4902 022616 10000$ 2$: ESCAPE SEG
4903 022620 TRAP C$ESCAPE
4904 022620 .WORD 10000$-.
4905 022620 ENDSEG
4906 022620 104405 10000$: TRAP C$ESEG
4907 022622 BGNSEG
4908 022622 104404 TRAP C$BSEG
4909 022624 000240 NOP
4910 022626 000240 NOP
4911 022630 004737 003750 JSR PC, CLRALL ;CLEAR ALL CONDITIONS
4912 022634 100403 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4913 022640 103400 100403 ;START AT ROM PC=3
4914 022646 004737 004112 SR0MCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
4915 022650 000001 100000! <400*7> ;JUMP TO ROM PC OF 0
4916 022654 020504 JSR PC, RAMDAT ;R4=CRAM PC (LCB 8 BITS)
4917 022656 001406 1 ;EXPECTED DATA
4918 022660 CMP R5, R4 ;IS ROM PC CORRECT?
4919 022662 BEQ 4$ ;BR IF YES
4920 022666 ERROR 5 ;ERROR, CRAM PC IS WRONG
4921 022666 104455 TRAP C$ERDF
4922 022670 000005 .WORD 5

```



```

      .WORD      EMO
      .WORD      ERR5
4$:   ESCAPE SEG
      TRAP      C$ESCAPE
      .WORD      10001$-.
      ENDSEG

10001$:
      TRAP      C$ESEG
      BGNSEG
      TRAP      C$BSEG
      JSR      FC,CLRALL
      SR0MCLK
      100406
      SR0MCLK
      104125! <400*7>
      JSR      PC,RAMDAT
      1
      CMP      R5,R4
      BEQ      6$
      ERROR    5
      TRAP      C$ERDF
      .WORD      5
      .WORD      EMO
      .WORD      ERR5
6$:   ESCAPE SEG
      TRAP      C$ESCAPE
      .WORD      10002$-.
      ENDSEG

10002$:
      TRAP      C$ESEG
      CHKREG
      .LIST     ME
      JSR      PC,RDKM
      MOV      #64$,R2
      JSR      PC,RCHECK
      BR        65$
64$:  .BYTE     .....20

65$:  ENDTST
      L10071:
      TRAP      C$ETST

```

```

;CLEAR ALL CONDITIONS
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;START AT ROM PC=6
;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
;JUMP TO ROM PC OF 525
;R4=CRAM PC (LSB 8 BITS)
;EXPECTED DATA
;IS ROM PC CORRECT?
;BR IF YES
;ERROR, CRAM PC IS WRONG

; READ KMC11 REGISTERS
; LOAD POINTER
; CHECK FOR NO CHANGE
; SKIP LIST

```

CZKMAO KMC11-B STATIC PART2
CZKMA.P11 20-OCT-81 17:00MACY11 30A(1052) 21-OCT-81 09:50 PAGE 123
HARDWARE TESTS

SEQ 0123

4967 023014

BADHEAD

:***** TEST 25 *****

4968

:*

4969

:MAIN MEMORY PAGE DUAL ADDRESS TEST.

4970

:IN THIS TEST WE WILL VERIFY THAT PAGES DO

4971

:NOT DUAL ADDRESS. THIS TEST IS DIFFERENT FROM THE

4972

:PREVIOUS DUAL ADDRESS TESTS IN THAT THE OTHER

4973

:TEST REALLY DIDN'T CHECK PAGE DUAL ADDRESSING

4974

4975 023014

BADHEAD

:***** TEST 25 *****

4976

4977

4978 023014

BGNTST

4979 023014

T25::

4980 023014

MYINT

4981 023020

MSTCLR

4982 023024 005002

CLR R2

:R2 WILL BE PAGE #

4983 023026 042737 000037 023052 1\$:

BIC #37,2\$

:CLEAR UNUSED BITS

4984 023034 050237 023052

BIS R2,2\$

:ADD CURRENT PAGE MARKER.

4985 023040

ROMCLK

:SET ADDR D

4986 023044 010000

10000

4987 023046

ROMCLK

:OF PAGE X

4988 023052 004000

2\$:

4000

:THIS LOCATION MODIFIED BY LOST

4989

:FEW INSTRUCTIONS

4990 023054 010261 000004

MOV R2,4(R1)

:PUT PAGE # INTO PART 4

4991 023060

ROMCLK

:CLOCK PART 4 INTO MEMORY

4992 023064 122500

122500

:WHOSE PAGE # IS IN R2

4993 023066 005202

INC R2

:UPDATE PAGE #

4994 023070 032702 000020

BIT #20,R2

:DONE ALL PAGES?

4995 023074 001754

BEQ 1\$

:NO-DO NEXT ONE

4996

4997

:OK, ALL LOADS OF ALL PAGES

4998

:CONTAIN THIER PAGE NUMBER, NOW

4999

:WE'LL GO BACK THROUGH

5000

:THEM CHECKING THEM OUT.

5001

5002 023076 005002

CLR R2

:R2 STILL HAS PAGE NUMBER

5003

5004 023100 042737 000037 023116 3\$:

BIC #37,4\$

5005 023106 050237 023116

BIS R2,4\$

5006 023112

ROMCLK

:LOAD PAGE NUMBER

5007 023116 004000

4\$:

4000

:MOVE MEM TO PART 4

5008 023120

ROMCLK

5009 023124 041224

041224

:FOUND

5010 023126 116104 000004

MOVB 4(R1),R4

:EXPECTED

5011 023132 110205

MOVB R2,R5

:ADDRESS PROBLEM?

5012 023134 120504

CMPB R5,R4

5013 023136 001406

BEQ 5\$

5014

ERROR 13

:PAGE ADDRESSING ERROR IN MAIN

5015 023140

TRAP

C\$ERDF

5016 023144 104455

.WORD

13

5017 023146 000015

.WORD

EMO

5018 023150 005425

.WORD

ERR13

5019 023152 010364

5020

:MEMORY.

5021

:MAR BITS 8 THROUGH 12 ARE REPRESENTED

5022

:BY R2 ('EXP'ED')BITS 0-4)

5023										
5024	023154					5\$:	ESCAPE TST			
5025	023154	104410					TRAP C\$ESCAPE			
5026	023156	000042					.WORD L10072-			
5027	023160	005202					INC R2		:UPDATE PAGE ADDRESS	
5028	023162	032702	000020				BIT #20,R2		:ALL DONE?	
5029	023166	001744					BEQ 3\$		:NO-CHECK NEXT PAGE.	
5030									:YES-EXIT.	
5031	023170						CHKREG			
5032							.LIST ME			
5033	023170	004737	003014				JSR PC,RDKM		: READ KMC11 REGISTERS	
5034	023174	012702	023206				MOV #64\$,R2		: LOAD POINTER	
5035	023200	004737	003120				JSR PC,RCHECK		: CHECK FOR NO CHANGE	
5036	023204	000405					BR 65\$		: SKIP LIST	
5037	023206	000	000	000	64\$:		.BYTE20			
5038	023211	000	000	000						
5039	023214	000	000	000						
5040	023217	020								
5041	023220					65\$:				
5042	023220					ENDTST				
5043	023220					L10072:				
5044	023220	104401					TRAP C\$ETST			

```
5045 023222 BADHEAD
5046 ;***** TEST 26 *****
5047 ;*
5048 ;*JUMP FIELD,PAGE TEST
5049 ;*
5050 ;*IN THIS TEST WILL MAKE SURE A JUMP FIELD INSTRUCTION
5051 ;*WORKS. TO DO THIS, WE'LL PUT THE DESIRED PAGE, FIELD
5052 ;*INFORMATION IN IBUS* <13> THEN ISSUE A JUMP FIELD
5053 ;*THEN WE'LL READ PC REG. AND VERIFY.
5054 023222 BADHEAD
5055 ;***** TEST 26 *****
5056
5057 023222 BGNTST
5058 023222 T26::
5059 023222 MYINT
5060 023222 MSTCLR
5061
5062 023232 005002 CLR R2 ;R2 TO CONTAIN FIELD #
5063
5064 023234 042737 000017 023252 1$: BIC #17,2$ ;CLEAR ANY JUNK
5065 023242 050237 023252 BIS R2,2$ ;SET FIELD # INTO INSTR.
5066
5067 023246 ROMCLK ;CLOCK FIELD BITS INTO BREG.
5068 023252 000400 2$: 000400 ;CONTAINS FIELD,PAGE BITS
5069 023254 ROMCLK ;XFERR BREG INTO IBUS* <13>
5070 023260 061233 061233
5071 023262 SR0MCLK ;GET INSTRUCTION CLOCKED.
5072 023266 100000 100000 ;BAS FORM FOR JUM FIELD INSTR.
5073
5074
5075 023270 142761 000002 000001 BICB #BIT1,1(R1) ;CLEAR ROMI
5076 023276 ROMCLK ;CLOCK NEXT INSTR.
5077 023302 121264 121264 ;MOVE IBUS* TO PORT 4
5078 023304 116104 000004 MOV B 4(R1),R4 ;GET IT.
5079 023310 042704 177760 BIC #<17>,R4
5080 023314 120402 CMPB R4,R2 ;FIELD OK?
5081 023316 001407 BEQ 3$ ;IF OK GO AHEAD
5082 023320 010205 MOV R2,R5
5083 023322 ERROR 12 ;CHANGE FIELD INSTRUCTION
5084 023326 104455 TRAP C$ERDF
5085 023330 000014 .WORD 12
5086 023332 005425 .WORD EMO
5087 023334 010212 .WORD ERR12
5088
5089 ;FAILED. FOR FIELD,PAGE INDICATES
5090 ;BY 'EXPECTED' BITS 0,1,2,3 OF
5091 ;EXPECTED REPRESENT FIELD BITS.
5091 023336 3$: ESCAPE TST
5092 023336 104410 TRAP C$ESCAPE
5093 023340 000042 .WORD L10073-.
5094
5095
5096 023342 005202 INC R2 ;UPDATE TO NEXT FIELD
5097 023344 032702 000020 BIT #20,R2 ;DONE ALL FIELDS?
5098 023350 001731 BEQ 1$
5099
5100 023352 CHKREG
```

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J 10

ADDRESS	HEX	ASCII	OPERATION	COMMENT
5101			.LIST	ME
5102	023352	004737	JSR	PC,RDKM ; READ KMC11 REGISTERS
5103	023356	012702	MOV	#64\$,R2 ; LOAD POINTER
5104	023362	004737	JSR	PC,RCHECK ; CHECK FOR NO CHANGE
5105	023366	000405	BR	65\$; SKIP LIST
5106	023370	000	.BYTE	,20
5107	023373	000		
5108	023376	000		
5109	023401	020		
5110	023402		65\$:	
5111	023402		ENDTST	
5112	023402		L10073:	
5113	023402	104401	TRAP	C\$ETST

5114 023404

BADHEAD

;***** TEST 27 *****

5115

;*

5116

;JUMP TEST, JUMP ALWAYS, JUMP CHANGE FIELD

5117

;*

5118

;IN THIS TEST, WE WILL CHECK THE ABILITY OF THE
;MICRO PROCESSOR TO JUMP (BRANCH & ALWAYS INSTRUCTION)

5119

;TO LOCATIONS, FIELDS FROM OTHER LOCATIONS FIELDS.

5120

;WE ALREADY KNOW THAT THE BRANCH INSTR WORKS FROM

5121

;OTHER TEST. PROCEDURE:

5122

;1. START ADDR 0, FIELD 0

5123

;2. **CALCULATE NEW ADDR, FIELD VIA INC,

5124

;3. CAUSE JUMP (BRANCH) TO NEW ADDRESS

5125

;4. READ PC FROM IBUS*12 AND IBUS*13

5126

;5. REPEAT STEP 2-4 256.TIMES

5127

;*

5128

;TO CALCULATE NEW ADDRESS:

5129

;1. INC LOW BYTE OF ADDRESS FOR PC ADDRESS 0-7

5130

;2. INC LOW BYTE OF NADDRESS FOR PC ADDRESS 8-11

5131

;BITS REPRESENTED AS BITS 0-3. WHEN 0-3 OVERFLOWS,
;RESTARTS AT ZERO.

5132

;*

5133

;NET RESULT IS JUMPS FROM:

5134

;FIELD,PAGE

5135

;0

5136

;1

5137

;2

5138

;3

5139

;10

5140

;11

5141

;:10

5142

;17

5143

;LOC

5144

;0

5145

;1

5146

;2

5147

;3

5148

;7

5149

;11

5150

;377

5151

;BADHEAD

5152

;***** TEST 27 *****

5153

;BGNTST

5154

;T27::

5155

;MYINT

5156

;MSTCLR

5157

;MOV #0,55\$; 55\$= DESTINATION ADDRESS

5158

;MOV #0,FADR ; SOURCE ADDRESS

5159

;:LOOP HERE

5160

;1\$:

5161

;MOVB FADR+1,2\$; LOAD IMM INST. FOR PC-HIGH

5162

;MOVB FADR,3\$; DITTO FOR PC-LOW

5163

;11\$:

5164

;ROMCLK

5165

;000400 ;MOVE PAGE, FIELD # TO BREG.

5166

;ROMCLK

5167

;61233 ;MOV BREG TO PC HIGH REG.

5168

;SROMCLK

5169

;100000 ;NOW CLOCK IT IN BY JMP FIELD INSTR.


```
5170 023466 113737 023531 023506      MOVB 55$+1,22$      : FIELD, PAGE FOR DEST.
5171 023474 113737 023530 023522      MOVB 55$,33$      : PC 7-0
5172 023502                                     ROMCLK
5173 023506 000400      22$: 000400
5174 023510                                     ROMCLK
5175 023514 061233      61233
5176 023516                                     SRCLK
5177 023522 100000      33$: 100000      : BR TO DEST.
5178 023524 004737 004112      JSR PC,RAMDAT : GET PC
5179 023530 000000      55$: 0           : DEST. ADDRESS GOES HERE
5180 023532      5$:
5181 023532 020504      CMP R5,R4          : JUMP GO OK?
5182 023534 001406      BEQ 4$           : YEA, CONTINUES
5183 023536      ERROR 15                : FAILED TO JUMP PROPERLY.
5184 023542 104455      TRAP C$ERDF
5185 023544 000017      .WORD 15
5186 023546 005425      .WORD EMO
5187 023550 010710      .WORD ERR15
5188                                     : 'FROM ADDR' REPRESENTS
5189                                     : THE ADDRESS WE STARTED AT
5190                                     : 'TO ADDR' REPRESENTS WHERE
5191                                     : WE EXPECTED TO JUMP TO,
5192                                     : 'BAD ADDR' REPRESENTS WHERE
5193                                     : WE WENT TO.
5194
5195      .REM %
5196
5197      15      12      11      10      9 8 7      0
5198      -----
5199      |UNUSED| FIELD      | PAGE      |IMMED. ADDR|
5200      |      | BITS      | BITS      |
5201      -----
5202
5203      ;THIS IS A PICTURE OF THE P.C. REG.
5204      BITS 0-7 ARE IN IBUS*12>
5205      BITS 8-11 ARE IN IBUS*13>
5206      THEY GOT CLOCK IN THERE VIA JUMPS TAKEN
5207      THE FIELD BITS
5208      ARE IN BIT POSITION 0,1 OF THE INSTRUCTION AT 2$.
5209
5210      3$ WAS THE JUMP ALWAYS INSTRUCTION. THE IMMED. ADDR.
5211      WAS IN 0-7 OF THE JUMP INSTR. THE PAGE BITS,
5212      PC REG BITS 8,9, WERE IN BITS 11,12 OF THE INSTR.
5213      JUMP INSTRUCTIONS H/VE BEEN CHECKED OUT
5214      BEFORE, SO THE IMPORTANT THING TO REMEMBER TO
5215      WATCH IS THE 'FROM ADDR','TO ADDR'
5216
5217      %
5218      4$:
5219      ESCAPE TST
5220      TRAP C$ESCAPE
5221      .WORD L10074-.
5222      INC 55$
5223      BIT #BIT12,55$      : BUMP DEST.
5224      BEQ 11$             : DONE 4K?
5225      CLR 55$             : DO NEXT IF NO
5226      INC FADR            : YES, RESET AND GO TO NEXT PAGE
5227      : BUMP PAGE
```

```
5226 023602 113737 002354 002355      MOVB      FADR,FADR+1      : MAKE 12 BIT ADDRESS
5227 023610 032737 010000 002354      BIT        #BIT12,FADR      : DONE?
5228 023616 001704                      BEQ        1$              : DO AGAIN IF NO
5229
5230
5231
5232
5233
5234 023620 000240                      NOP
5235 023622 000240                      NOP
5236 023624 005011                      CLR        (R1)          : CLEAR RUN, IF UP
5237 023626 052711 040000      BIS        #40000,(R1)      : SET MASTER CLEAR
5238 023632                      SRMCLK
5239 023636 121265      121265          : WE MUST FIRST CLOCK
5240 023640                      SRMCLK
5241 023644 121244      121244          : THE PC LATCH REGS
5242 023646                      ROMCLK
5243 023652 121265      121265          : BEFORE WE CAN READ THEM
5244 023654                      ROMCLK
5245 023660 121244      121244          : REG PC REG HI, PUT IN PORT5
5246 023662 005005                      : REG PC REG LOW, PUT IN PORT4
5247 023664 016104 000004      CLR        R5              : EXPECT ZERO
5248 023670 042704 170001      MOV        4(R1),R4          : READ PC REG FROM PORT 4&5
5249 023674 001406      BIC        #170001,R4
5250                      BEQ        40$
5251                      : IF CLEARED, EXIT
5252                      : NOTE WE ALSO CLEARED BIT 1 OF THE
5253                      : PC REG, BECAUSE AFTER THE MASTER
5254                      : CLEAR, WE DID TWO INSTRUCTIONS TO
5255                      : READ IT, THUS CAUSING THE PC REG
5256                      : TO GET BUMPED.
5257 023702 104455      ERROR      45
5258 023704 000055      TRAP      C$ERDF
5259 023706 005425      .WORD     45
5260 023710 012246      .WORD     EMO
5261                      .WORD     ERR45
5262 023712                      : PC REG
5263 023712
5264
5265 023712 004737 003014      40$:      CHKREG
5266 023716 012702 023730      .LIST    ME
5267 023722 004737 003120      JSR      PC,RDKM
5268 023726 000405                      MOV        #64$,R2
5269 023730          000          000      JSR      PC,RCHECK
5270 023733          000          000      BR        65$
5271 023736          000          000      .BYTE    .....20
5272 023741          020
5273 023742
5274 023742
5275 023742
5276 023742 104401      65$:      ENDTST
5276                      L10074:
5276                      TRAP      C$ETST
```



```
5277 023744 BADHEAD
5278 :***** TEST 28 *****
5279 :
5280 :* IN THIS TEST WE'LL VERIFY THAT THE Z BIT CAN BE READ FROM
5281 :* IBUS*<13>. WE ALLREADY KNOW THAT THE Z BIT WORKS PROPERLY,
5282 :* ALL WE WANT TO KNOW HERE IS THAT IT CAN BE READ.
5283 :
5284 023744 BADHEAD
5285 :***** TEST 28 *****
5286 :
5287 023744 BGNTST
5288 023744 T28:: MSTCLR
5289 023744 MYINT
5290 023750 JSR PC,CLRALL ;CLR CONDITION CODES.
5291 023754 004737 003750 ROMCLK ;NOW READ IBUS*15>PUT IN PORT 4
5292 023760 121264 121264 MOV 4(R1),R4 ;READ IT FROM PORT 4
5293 023764 116104 000004 BIC #177477,R4 ;STRIP ANY JUNK,C&Z BITS 6,7
5294 023766 042704 177477 MOV #0,R5 ;EXPECT IT CLEAR
5295 023772 012705 000000 CMPB R4,R5 ;OK?
5296 023776 012705 000000 BEQ 1$ ;FAILURE OF Z&C TO BE CLEAR.
5297 024002 120405 000000 ERROR 16
5298 024004 001410 TRAP C$ERDF
5299 024006 104455 .WORD 16
5300 024012 000020 .WORD EMO
5301 024014 000020 .WORD ERR16
5302 024016 005425
5303 024020 011066
5304
5305 024022 ESCAPE TST
5306 024022 104410 TRAP C$ESCAPE
5307 024024 000146 .WORD L10075-
5308 024026 004737 004074 1$: JSR PC,SETZ ;SET Z BIT.
5309 024032 ROMCLK ;NOW GO BACK AND CHECK Z BIT SET.
5310 024036 121264 121264
5311
5312 024040 016104 000004 MOV 4(R1),R4 ;GET INFO.
5313 024044 042704 177477 BIC #*C<300>,R4 ;STRIP FOR C&Z BITS.
5314 024050 012705 000200 MOV #200,R5 ;EXPECT ONLY Z BIT SET.
5315 024054 120405 000200 CMPB R4,R5 ;SET OK?
5316 024056 001410 BEQ 2$ ;Z BIT FAILED TO SET PROPERLY.
5317 024060 ERROR 16
5318 024064 104455 TRAP C$ERDF
5319 024066 000020 .WORD 16
5320 024070 005425 .WORD EMO
5321 024072 011066 .WORD ERR16
5322
5323 024074 ESCAPE TST
5324 024074 104410 TRAP C$ESCAPE
5325 024076 000074 .WORD L10075-
5326 024100 004737 003750 2$: JSR PC,CLRALL ;NOW TRY TO CLEAR Z BIT.
5327 024104 ROMCLK
5328 024110 121264 121264 MOV 4(R1),R4
5329 024112 016104 000004 BIC #*C<300>,R4 ;STRIP FOR C&Z BITS
5330 024116 042704 177477 BEQ 3$ ;IF ZERO,WE'RE OK
5331 024122 001407 CLR R5 ;ELSE REPORT ERROR
5332 024124 005005
```

```

5333 024126          ERROR 16          ;Z BIT FAILED TO CLEAR PROPERLY.
5334 024132 104455   TRAP  C$ERDF
5335 024134 000020   .WORD 16
5336 024136 005425   .WORD EMO
5337 024140 011066   .WORD ERR16
5338 024142
5339 024142          3$:
5340          CHKREG
5341 024142 004737 003014 .LIST ME
5342 024146 012702 024160 JSR PC,RDKM ; READ KMC11 REGISTERS
5343 024152 004737 003120 MOV #64$,R2 ; LOAD POINTER
5344 024156 000405 JSR PC,RCHECK ; CHECK FOR NO CHANGE
5345 024160 000 000 000 64$: .BYTE .....20 ; SKIP LIST
5346 024163 000 000 000
5347 024166 000 000 000
5348 024171 020
5349 024172          65$:
5350 024172          L10075:
5351 024172          ENDTST
5352 024172 104401   TRAP  C$ETST
  
```

```

5353 024174      BADHEAD
5354             ;***** TEST 29 *****
5355             ;*
5356             ;* IN THIS TEST WE'LL VERIFY THAT THE C BIT CAN BE READ FROM
5357             ;* IBUS*<13>. WE ALLREADY KNOW THAT THE C BIT WORKS PROPERLY,
5358             ;* ALL WE WANT TO KNOW HERE IS THAT IT CAN BE READ.
5359             ;*
5360 024174      BADHEAD
5361             ;***** TEST 29 *****
5362
5363 024174      BGNTST
5364 024174      T29::
5365 024174      K4ONLY
5366 024204      TRAP      C$EXIT
5367 024206      .WORD    L10076-.
5368 024210      MSTCLR
5369 024214      MYINT
5370 024220      JSR      PC,CLRALL
5371 024224      ROMCLK
5372 024230      121264
5373 024232      116104      000004
5374 024236      042704      177477
5375 024242      012705      000000
5376 024246      120405
5377 024250      001410
5378 024252
5379 024256      104455
5380 024260      000020
5381 024262      005425
5382 024264      011066
5383
5384 024266      ESCAPE TST
5385 024266      TRAP    C$ESCAPE
5386 024270      .WORD    L10076-.
5387 024272      JSR      PC,SETC
5388 024276      ROMCLK
5389 024302      121264
5390 024304      016104      000004
5391 024310      042704      177477
5392 024314      012705      000100
5393 024320      120405
5394 024322      001410
5395 024324
5396 024330      104455
5397 024332      000020
5398 024334      005425
5399 024336      011066
5400
5401 024340      ESCAPE TST
5402 024340      TRAP    C$ESCAPE
5403 024342      .WORD    L10076-.
5404 024344      JSR      PC,CLRALL
5405 024350      ROMCLK
5406 024354      121264
5407 024356      016104      000004
5408 024362      042704      177477

```

;M8206 &M8207 ONLY!

;CLR CONDITION CODES.

;NOW READ IBUS*<13>PUT IN PORT 4

;READ IT FROM PORT 4

;STRIP ANY JUNK,C&Z BITS 6,7

;EXPECT IT CLEAR

;OK?

;FAILURE OF Z&C TO BE CLEAR.

;SET C BIT.

;NOW GO BACK AND CHECK C BIT SET.

;GET INFO.

;STRIP FOR C&Z BITS.

;EXPECT ONLY C BIT SET.

;SET OK?

;C BIT FAILED TO SET PROPERLY.

;NOW TRY TO CLEAR C BIT.

;STRIP FOR C&Z BITS

5409	024366	001407				BEQ	3\$		
5410	024370	005005				CLR	R5		;IF ZERO,WE'RE OK
5411	024372					ERROR	16		;ELSE REPORT ERROR
5412	024376	104455				TRAP	C\$ERDF		;C BIT FAILED TO CLEAR PROPERLY.
5413	024400	000020				.WORD	16		
5414	024402	005425				.WORD	EM0		
5415	024404	011066				.WORD	ERR16		
5416	024406				3\$:				
5417	024406					CHKREG			
5418						.LIST	ME		
5419	024406	004737	003014			JSR	PC,RDKM		; READ KMC11 REGISTERS
5420	024412	012702	024424			MOV	#65\$,R2		; LOAD POINTER
5421	024416	004737	003120			JSR	PC,R\$CHECK		; CHECK FOR NO CHANGE
5422	024422	000405				BR	66\$		; SKIP LIST
5423	024424	000	000	000	65\$:	.BYTE	20		
5424	024427	000	000	000					
5425	024432	000	000	000					
5426	024435	020							
5427	024436				66\$:				
5428	024436					ENDTST			
5429	024436				L10076:				
5430	024436	104401				TRAP	C\$ETST		

```
5431 024440 BADHEAD
5432 ;***** TEST 30 *****
5433 ;*TEST OF PROGRAM CLOCK BIT
5434 ;*DO A MASTER CLEAR, VERIFY THAT PROGRAM CLOCK IS SET
5435 ;*WRITE PROGRAM CLOCK BIT TO A ONE, VERIFY THAT IT CLEARS,
5436 ;*AND THEN SETS SOME TIME LATER
5437 024440 BADHEAD
5438 ;***** TEST 30 *****
5439
5440 024440 BGNTST
5441 024440 T30::
5442 024440
5443 024444 MYINT
5444 024450 005037 002402 MSTCLR ;MASTER CLEAR M8200,4,6,7
5445 024454 005037 002406 CLR TEMP ;PREPARE FOR
5446 024460 012702 000011 CLR $TMP0 ;DELAY
5447 024464 MOV #11,R2 ;SAVE FOR TYPEOUT
5448 024470 121224 ROMCLK ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5449 024472 016104 000004 121224 ;PORT 4 LU11
5450 024476 042704 000357 MOV 4(R1),R4 ;PUT 'FOUND' IN R4
5451 024502 012737 000020 002414 BIC #357,R4 ;CLEAR UNWANTED BITS
5452 024510 123704 002414 MOV #20,$GDDAT ;PUT 'EXPECTED' IN $GDDAT
5453 024514 001406 CMPB $GDDAT,R4 ;IS PGM CLOCK SET?
5454 024516 BEQ 1$ ;
5455 024522 104455 ERROR 14 ;ERROR, PGM CLOCK IS NOT SET
5456 024524 000016 TRAP C$ERDF
5457 024526 005425 .WORD 14
5458 024530 010536 .WORD EMO
5459 024532 012761 000020 000004 1$: MOV #20,4(R1) ;LOAD PORT 4
5460 024540 152761 000002 000001 BISB #BIT1,1(R1) ;SET ROMI
5461 024546 012761 121111 000006 MOV #121111,6(R1) ;SEL6 INSTRUCTION
5462 024554 152761 000003 000001 BISB #BIT1!BIT0,1(R1) ;SET CLOCK BIT
5463 024562 012761 121224 000006 MOV #121224,6(R1) ;LOAD NEXT INSTRUCTION
5464 024570 152761 000003 000001 BISB #BIT1!BIT0,1(R1) ;READ CLOCK BIT
5465 024576 142761 030001 000001 BICB #BIT!BIT0,1(R1) ;CLEAR MAINT BITS
5466 024604 016104 000004 MOV 4(R1),R4 ;PUT 'FOUND' IN R4
5467 024610 005037 002414 CLR $GDDAT ;PUT 'EXPECTED' IN $GDDAT
5468 024614 123704 002414 CMPB $GDDAT,R4 ;IS PGM CLOCK CLEAR?
5469 024620 001406 BEQ 2$ ;
5470 024622 ERROR 14 ;ERROR, PGM CLOCK IS NOT CLEAR
5471 024626 104455 TRAP C$ERDF
5472 024630 000016 .WORD 14
5473 024632 005425 .WORD EMO
5474 024634 010536 .WORD ERR14
5475 024636 2$: ROMCLK
5476 024642 121224 ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5477 024644 122761 000020 000004 121224 ;PORT4 LU11
5478 024652 001416 CMPB #20,4(R1) ;IS PGM CLOCK SET?
5479 024654 005237 002402 BEQ 3$ ;BR IF YES
5480 024660 005537 002406 INC TEMP ;INCREMENT DELAY
5481 024664 022737 000006 002406 ADC $TMP0 ;INCREMENT DELAY
5482 024672 001361 CMP #6,$TMP0 ;IS DELAY DONE
5483 024674 BNE 2$ ;BR IF NO
5484 024700 104455 ERROR 14 ;ERROR PGM CLOCK NOT SET
5485 024702 000016 TRAP C$ERDF
5486 .WORD 14
```

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F 11

Address	Instruction	Op-Code	Register	Value	Comment
5487	024704	005425			
5488	024706	010536			
5489	024710				
5490					
5491	024710				
5492					
5493	024710	004737	003014		
5494	024714	012702	024726		
5495	024720	004737	003120		
5496	024724	000405			
5497	024726	000	000	000	
5498	024731	000	000	000	
5499	024734	000	000	000	
5500	024737	020			
5501	024740				
5502	024740				
5503	024740				
5504	024740	104401			

Label	Instruction	Op-Code	Register	Value	Comment
3\$:					
	CHKREG				
	.LIST				
	JSR		PC,RDKM		: READ KMC11 REGISTERS
	MOV		#64\$,R2		: LOAD POINTER
	JSR		PC,RCHECK		: CHECK FOR NO CHANGE
	BR		65\$		: SKIP LIST
64\$:	.BYTE			20	
65\$:	ENDTST				
L10077:	TRAP		CSETST		


```
5505 024742 BADHEAD
5506 :***** TEST 31 *****
5507 :*FORCE POWER FAIL TEST
5508 :*SET FORCE POWER FAIL BIT VERIFY THAT PROCESSOR TRAPS TO 24
5509 :*GOING DOWN AND COMING UP. VERIFY ALSO THAT BUS INIT WAS
5510 :*BLOCKED FROM GETTING TO THE M8200,4,6,7 DURING THE POWER FAIL
5511 :*****
5512 :*>>> THE DEFAULT CONDITION IS TO SKIP THIS TEST <<<
5513 :*>>> RUN IT ONLY IF POWERFAIL TRAPS TO 24 RATHER <<<
5514 :*>>> THAN THE BOOTSTRAP MODULE. <<<
5515 024742 BADHEAD
5516 :***** TEST 31 *****
5517
5518 024742 BGNTST
5519 024742 T31::
5520 024742 MYINT
5521 :R1 CONTAINS BASE M8200,4,6,7 ADDRESS
5522 024746 MSTCLR :MASTER CLEAR M8200,4,6,7
5523 024752 005737 002432 TST SKIP33 : EXIT TEST?
5524 024756 001002 BNE 55$ : SKIP IF NO - RUN IT
5525 024760 000137 025342 JMP 6$ : SKIP TEST
5526 024764 005037 002402 55$: CLR TEMP :PREPARE FOR DELAY
5527 024770 013737 000024 002406 MOV @#24,$TMP0 :SAVE POWER FAIL ADDRESS
5528 024776 013746 000024 MOV @#24,-(SP) :STORE POWER FAIL ADDRESS
5529 025002 012737 025064 000024 MOV #1$,@#24 :SET U FOPR FORCE POWER FAIL
5530 025010 012761 000002 000004 MOV #2,4(R1) :LOAD PORT4
5531 025016 012711 001000 MOV #BIT9,(R1) :SET ROMI
5532 025022 012761 121111 000006 MOV #121111,6(R1) :LOAD INSTRUCTION
5533 025030 012711 005400 MOV #BIT9!BIT8!BIT11,(R1) :CLOCK INSTRUCTION
5534 025034 005237 002402 5$: INC TEMP :WAIT FOR POWER FAIL
5535 025040 001375 BNE 5$ :BR IF DELAY NOT DONE
5536 025042 MSTCLR
5537 025046 ERROR 17 :ERROR, NO POWER FAIL
5538 025052 104455 TRAP C$ERDF
5539 025054 000021 .WORD 17
5540 025056 005425 .WORD EMO
5541 025060 011240 .WORD ERR17
5542 025062 000445 BR 4$
5543 025064 012737 025102 000024 1$: MOV #3$,@#24 :POWER UP ADDRESS
5544 025072 010637 025100 MOV SP,2$ :STORE STACK
5545 025076 000000 HALT :WAIT FOR POWER UP SEQUENCE
5546 025100 000000 2$: 0
5547 025102 013706 025100 3$: MOV 2$,SP :RESTORE STACK
5548 025106 012737 025302 000024 MOV #10$,@#24 :PUT IN CASE OF FALSE POWER-UP.
5549 025114 005037 025300 CLR 11$
5550 025120 005237 025300 12$: INC 11$ :STALL ON POWER UP.
5551 025124 001375 BNE 12$ :WAIT HERE IF BAD,WILL POWER OUT OF HERE.
5552 :ELSE PROCEED.
5553
5554 025126 POPSP2 :POP STACK TWICE2
5555 025130 013701 002456 MOV KMCSR,R1
5556 025134 012637 000024 MOV (SP)+,@#24 :RESTORE TRUE POWER FAIL ADDRESS
5557 025140 023737 002406 000024 CMP $TMP0,@#24 :IS IT CORRECT?
5558 025146 001413 BEQ 4$ :BR IF YES
5559 025150 ERROR 17 :ERROR, STACK IS INCORRECT
5560 025154 104455 TRAP C$ERDF
```

5561	025156	000021			.WORD	17	
5562	025160	005425			.WORD	EMO	
5563	025162	011240			.WORD	ERR17	
5564	025164	013737	002406	000024	MOV	\$TMP0,@#24	;RESTORE TRUE POWER FAIL ADDRESS
5565	025172	013706	002306		MOV	PSTACK,SP	;RESTORE STACK
5566	025176	032711	004000	4\$:	BIT	#BIT11,(R1)	;BIT11 STILL SET?
5567	025202	001014			BNE	7\$	
5568	025204	011104			MOV	(R1),R4	
5569	025206	012737	004000	002414	MOV	#BIT11,\$GDDAT	
5570	025214				ERROR	35	;OAC FAILED
5571	025220	104455			TRAP	C\$ERDF	
5572	025222	000043			.WORD	35	
5573	025224	005425			.WORD	EMO	
5574	025226	011534			.WORD	ERR35	
5575							;TO PREVENT
5576							;INIT FROM
5577							;CLEARING CSR
5578	025230				EXIT	TST	
5579	025230	104432			TRAP	C\$EXIT	
5580	025232	000110			.WORD	L10100-	
5581	025234	012711	003000	002414	MOV	#BIT9!BIT10,(R1)	;SEL6 = MAINT IR
5582	025240	012737	121111		MOV	#121111,\$GDDAT	;SGDDAT = EXPECTED
5583	025246	016104	000006		MOV	6(R1),R4	;R4 = FOUND
5584	025252	023704	002414		CMP	\$GDDAT,R4	;MAINT IR SHOULD = 12111
5585	025256	001431			BEQ	6\$	;BR IF OK
5586	025260				MSTCLR		
5587	025264				ERROR	35	;IF = 0 THEN BUS INIT WAS
5588	025270	104455			TRAP	C\$ERDF	
5589	025272	000043			.WORD	35	
5590	025274	005425			.WORD	EMO	
5591	025276	011534			.WORD	ERR35	
5592							;NOT BLOCKED FROM CLEARING
5593							;THE M8200,4,6,7
5594							
5595	025300	000000		11\$:	.WORD	0	;TEMP COUNT FOR STALL ON POWER UP.
5596							
5597	025302	052711	040000	10\$:	BIS	#BIT14,(R1)	;CLR THE THING SO IT CAN'T ASSIRT AC LOW
5598							;AGAIN!
5599	025306				MSTCLR		
5600	025312				ERROR	17	;ERROR GLIP GAVE US SECOUND UNEXPECTED
5601	025316	104455			TRAP	C\$ERDF	
5602	025320	000021			.WORD	17	
5603	025322	005425			.WORD	EMO	
5604	025324	011240			.WORD	ERR17	
5605							;ASSERTION OF AC LOW ON UNIBUS.
5606							;FATEL TYPE OF ERROR.
5607	025326	062706	000004		ADD	#4,SP	;RESTORE STACK.
5608	025332	012637	000024		MOV	(SP)+,@#24	
5609	025336				MSTCLR		
5610	025342			6\$:			
5611	025342			ENDTST			
5612	025342			L10100:			
5613	025342	104401			TRAP	C\$ETST	


```
5614 025344 BADHEAD
5615 :*****TEST 32 *****
5616 :*MICRO-PROCESSOR NOISE TEST
5617 :*WRITE ALL ZERO'S THEN ALL ONE'S THEN A DATA PATTERN
5618 :*TO THE IBUS AND IBUS REGISTERS AND TO THE SP AND MAIN MEM
5619 :*THEN GO BACK AND READ THE DATA PATTERNS TO VERIFY THAT
5620 :*READING AND WRITING OF OTHER LOCATIONS AND REGISTERS
5621 :*DID NOT CHANGE THE DATA.
5622 025344 BADHEAD
5623 :*****TEST 32 *****
5624
5625 025344 BGNTST
5626 025344 T32::
5627 025344 MYINT
5628 025350 MSTCLR
5629 025354 005002 CLR R2 :MASTER CLEAR M8200,4,6,7
5630 025356 042737 000017 025404 1$: BIC #17,2$ :R2 IS INDEX REGISTER
5631 025364 156237 026374 025404 BIC 30$(R2),2$ :CLEAR ADDRESS FIELD
5632 025372 116261 026402 000004 MOV 31$(R2),4(R1) :ADD IBUS* REG ADDRESS TO INSTRUCTION
5633 025400 ROMCLK :LOAD PORT4
5634 025404 121100 2$: 121100 :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5635 025406 005202 INC R2 :WRITE IBUS* REGISTER
5636 025410 022702 000005 CMP #5,R2 :INC INDEX REGISTER
5637 025414 001360 BNE 1$ :DONE YET?
5638 025416 005002 CLR R2 :BR IF NO
5639 025420 042737 000017 025466 3$: BIC #17,4$ :R2 IS IBUS REGISTER ADDRESS
5640 025426 042737 000017 025502 BIC #17,5$ :CLEAR ADDRESS FIELD OF INSTRUCTIONS
5641 025434 042737 000017 025514 BIC #17,6$
5642 025442 050237 025466 BIS R2,4$ :ADD IBUS REG ADDRESS TO INSTRUCTION
5643 025446 050237 025502 BIS R2,5$
5644 025452 050237 025514 BIS R2,6$
5645 025456 105061 000004 CLRB 4(R1) :CLEAR PORT4
5646 025462 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5647 025466 122100 4$: 122100 :WRITE 0 TO IBUS REG
5648 025470 112761 000377 000004 MOV #377,4(R1) :LOAD PORT4
5649 025476 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5650 025502 122100 5$: 122100 :WRITE ALL ONES TO IBUS REG
5651 025504 110261 000004 MOV R2,4(R1) :LOAD PORT4
5652 025510 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5653 025514 122100 6$: 122100 :WRITE ITS OWN ADDRESS TO IBUS REG
5654 025516 005202 INC R2 :NEXT ADDRESS
5655 025520 022702 000010 CMP #10,R2 :DONE YET?
5656 025524 001335 BNE 3$ :BR IF NO
5657 025526 005002 CLR R2 :START AT SP ADDRESS 0
5658 025530 042737 000017 025576 7$: BIC #17,8$ :CLEAR ADDRESS FIELD
5659 025536 042737 000017 025612 BIC #17,9$
5660 025544 042737 000017 025624 BIC #17,10$
5661 025552 050237 025576 BIS R2,8$ :ADD ADDRESS TO INSTRUCTION
5662 025556 050237 025612 BIS R2,9$
5663 025562 050237 025624 BIS R2,10$
5664 025566 105061 000004 CLRB 4(R1) :CLEAR PORT4
5665 025572 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5666 025576 123100 8$: 123100 :WRITE ZERO TO SP
5667 025600 112761 000377 000004 MOV #377,4(R1) :LOAD PORT4
5668 025606 ROMCLK :NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5669 025612 123100 9$: 123100 :WRITE ALL ONES TO SP
```

```
5670 025614 110261 000004      MOVB      R2,4(R1)      ;LOAD PORT4
5671 025620      ROMCLK      ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5672 025624 123100      10$: 123100      ;WRITE SP ADDRESS TO ITSELF
5673 025626 005202      INC      R2      ;NEXT SP ADDRESS
5674 025630 022702 000020      CMP      #20,R2      ;DONE YET?
5675 025634 001335      BNE      7$      ;BR IF NO
5676 025636 005002      CLR      R2      ;R2 = AOM ,E, ADDRESS
5677 025640      ROMCLK      ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5678 025644 010000      010000      ;MAR _ 0
5679 025646      ROMCLK      4000
5680 025652 004000      11$: CLR      4(R1)      ;CLEAR PORT4
5681 025654 105061 000004      ROMCLK      ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5682 025660 122500      122500      ;WRITE ZEROS TO MEM
5683 025664 112761 000377 000004      MOV      #377,4(R1) ;LOAD PORT4
5684 025666 122500      ROMCLK      ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5685 025674 122500      122500      ;WRITE ONES TO MEM
5686 025700 110261 000004      MOV      R2,4(R1) ;LOAD PORT4
5687 025702 136500      ROMCLK      ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5688 025712 005202      136500      ;WRITE TO MEM IT OWN ADDRESS
5689 025714 022702 001000      INC      R2      ;NEXT MEM ADDRESS
5690 025716 001354      CMP      #1000,R2 ;DONE YET?
5691 025722      BNE      11$      ;BR IF NO
5692
5693      ;NOW GO BACK AND READ EVERYTHIN
5694
5695
5696 025724      ROMCLK      ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5697 025730 010000      010000      ;MAR 0
5698 025732      ROMCLK      ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5699 025736 004000      4000      ;MAR HI _ 0 (M8200,4,6,7 ONLY)
5700
5701 025740 005737 002374      ;WOULD BE CRAM CODE
5702 025744 001446      TST      TYPE
5703 025746 005005      BEQ      40$
5704 025750 042737 000360 026012 12$: CLR      R5      ;R5 IS INDEX REGISTER
5705 025756 116502 026374      BIC      #360,13$ ;CLEAR ADDRESS FIELD
5706 025762 010203      MOV      30$(R5),R2 ;R2 = IBUS* ADDRESS
5707 025764 006303      MOV      R2,R3      ;PUT IBUS* ADDRESS IN R3
5708 025766 006303      ASL      R3      ;SHIFT ADDRESS TO BITS 4-7
5709 025770 006303      ASL      R3
5710 025772 006303      ASL      R3
5711 025774 050337 026012      BIS      R3,13$ ;ADD ADDRESS TO INSTRUCTION
5712 026000 116537 026402 002414      MOV      31$(R5),$GDDAT ;$GDDAT = 'EXPECTED'
5713 026006      ROMCLK      ;NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5714 026012 121004      13$: 121004      ;PORT4 - IBUS* REGISTER
5715 026014 016104 000004      MOV      4(R1),R4 ;R4 = 'FOUND'
5716 026020 123704 002414      CMP      $GDDAT,R4 ;IBUS* CONTENTS OK?
5717 026024 001412      BEQ      20$      ;BR IF YES
5718 026026 010237 002376      MOV      R2,MRO
5719 026032 105037 002415      CLR      $GDDAT+1
5720 026036      ERROR      29      ;IBUS* DATA ERROR
5721 026042 104455      TRAP      C$ERDF
5722 026044 000035      .WORD      29
5723 026046 005425      .WORD      EM0
5724 026050 011362      .WORD      ERR29
5725 026052 005205      20$: INC      R5      ;INC COUNTER
```

5726	026054	022705	000005			CMP	#5,R5		:DONE YET?
5727	026060	001333				BNE	12\$		:BR IF NO
5728									
5729	026062				40\$:				
5730									:END CRAM,GENERAL TESTS
5731									
5732	026062	005002				CLR	R2		:R2 = IBUS REG ADDRESS
5733	026064	042737	000360	026120	14\$:	BIC	#360,15\$		:CLEAR ADDRESS FIELD OF INSTRUCTION
5734	026072	010203				MOV	R2,R3		:R3 = IBUS ADDRESS
5735	026074	006303				ASL	R3		:SHIFT ADDRESS TO BITS 4-7
5736	026076	006303				ASL	R3		
5737	026100	006303				ASL	R3		
5738	026102	006303				ASL	R3		
5739	026104	050337	026120			BIS	R3,15\$		:ADD ADDRESS TO INSTRUCTION
5740	026110	010237	002414			MOV	R2,\$GDDAT		:\$GDDAT = 'EXPECTED'
5741	026114					ROMCLK			:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5742	026120	021004			15\$:	021004			:PORT4 - IBUS REG
5743	026122	016104	000004			MOV	4(R1),R4		:IBUS = 'FOUND'
5744	026126	123704	002414			CMPB	\$GDDAT,R4		:IBUS CONTENTS OK?
5745	026132	001406				BEQ	21\$		:BR IF YES
5746	026134					ERROR	29		:IBUS DATA ERROR
5747	026140	104455				TRAP	C\$ERDF		
5748	026142	000035				.WORD	29		
5749	026144	005425				.WORD	EMO		
5750	026146	011362				.WORD	ERR29		
5751	026150	005202			21\$:	INC	R2		:NEXT IBUS REGISTER
5752	026152	022702	000010			CMP	#10,R2		:DONE YET?
5753	026156	001342				BNE	14\$		:BR IF NO
5754	026160	005002				CLR	R2		:R2 = SP ADDRESS
5755	026162	042737	000017	026200	16\$:	BIC	#17,17\$		:CLEAR ADDRESS FIELD OF INSTRUCTION
5756	026170	050237	026200			BIS	R2,17\$		:ADD ADDRESS TO INSTRUCTION
5757	026174					ROMCLK			:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5758	026200	040600			17\$:	040600			:BR - SP
5759	026202	010237	002414			MOV	R2,\$GDDAT		:\$GDDAT = 'EXPECTED'
5760	026206					ROMCLK			:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5761	026212	061224				061224			:PORT4 BR
5762	026214	016104	000004			MOV	4(R1),R4		:R4 = 'FOUND'
5763	026220	123704	002414			CMPB	\$GDDAT,R4		:SP CONTENTS OK?
5764	026224	001406				BEQ	22\$		:BR IF YES
5765	026226					ERROR	7		:SP DATA ERROR
5766	026232	104455				TRAP	C\$ERDF		
5767	026234	000007				.WORD	7		
5768	026236	005425				.WORD	EMO		
5769	026240	007510				.WORD	ERR7		
5770	026242	005202			22\$:	INC	R2		:NEXT SP LOCATION
5771	026244	022702	000020			CMP	#20,R2		:DONE YET?
5772	026250	001344				BNE	16\$		:BR IF NO
5773	026252	005002				CLR	R2		:R2 = MEMORY ADDRESS
5774	026254					ROMCLK			:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5775	026260	010000				010000			:MAR 0
5776	026262					ROMCLK			:NEXT WORD IS INSTRUCTION, ROMCLK PC=5304
5777	026266	004000				4000			:MAR HI 0 (M8200,4,6,7 OR FAMILY ONLY)
5778	026270	010237	002414		18\$:	MOV	R2,\$GDDAT		:\$GDDAT = 'EXPECTED'
5779	026274					ROMCLK			:NEXT WORD IS INSTRUCTION, ROMCLK=5304
5780	026300	055224				055224			:PORT4 MAIN MEM
5781	026302	016104	000004			MOV	4(R1),R4		:R4 = 'FOUND'

5782	026306	123704	002414			CMPB	\$GDDAT,R4		:MAIN MEM CONTENTS OK?
5783	026312	001406				BEQ	23\$		:BR IF YES
5784	026314					ERROR	6		:MAIN MEM DATA ERROR
5785	026320	104455				TRAP	C\$ERDF		
5786	026322	000006				.WORD	6		
5787	026324	005425				.WORD	EMO		
5788	026326	007332				.WORD	ERR6		
5789	026330	005202			23\$:	INC	R2		:NEXT MEM ADDRESS
5790	026332	022702	001000			CMP	#1000,R2		:DONE YET?
5791	026336	001354				BNE	18\$		:BR IF NO
5792	026340					CHKREG			
5793						.LIST	ME		
5794	026340	004737	003014			JSR	PC,RDKM		: READ KMC11 REGISTERS
5795	026344	012702	026356			MOV	#64\$,R2		: LOAD POINTER
5796	026350	004737	003120			JSR	PC,RCHECK		: CHECK FOR NO CHANGE
5797	026354	000405				BR	65\$		: SKIP LIST
5798	026356	000	000	000	64\$:	.BYTE	,20		
5799	026361	000	000	000					
5800	026364	000	000	000					
5801	026367	020							
5802	026370				65\$:				
5803	026370					EXIT	TST		
5804	026370	104432				TRAP	C\$EXIT		
5805	026372	000046				.WORD	L10101-		
5806	026374	000	002	003	30\$:	.BYTE	0,2,3,5,10		
5807	026377	005	010						
5808									
5809		026402			.EVEN				
5810	026402	001	003	004	31\$:	.BYTE	1,3,4,6,10		
5811	026405	006	010						

5812										
5813	026410									
5814										
5815	026410									
5816						CHKREG				
5817	026410	004737	003014			.LIST	ME			
5818	026414	012702	026426			JSR	PC,RDKM		:	READ KMC11 REGISTERS
5819	026420	004737	003120			MOV	#66\$,R2		:	LOAD POINTER
5820	026424	000405				JSR	PC,RCHECK		:	CHECK FOR NO CHANGE
5821	026426	000	000	000	66\$:	BR	67\$		:	SKIP LIST
5822	026431	000	000	000		.BYTE	20			
5823	026434	000	000	000						
5824	026437	020								
5825	026440				67\$:					
5826	026440				ENDTST					
5827	026440				L10101:					
5828	026440	104401				TRAP	C\$ETST			

5829 026442

5830

5831

5832

5833

5834

5835

5836 026442

5837

5838

5839 026442

5840 026442

5841 026442

5842 026446

5843 026452

5844 026456 000525

5845 026460

5846 026464 062221

5847 026466

5848 026472 063221

5849 026474

5850 026500 060361

5851

5852

5853 026502

5854 026506 020420

5855

5856 026510

5857 026514 061220

5858

5859 026516 111137 002416

5860 026522 012737 000125 002414

5861 026530 105037 002417

5862

5863

5864

5865 026534 023737 002416 002414

5866 026542 001406

5867

5868 026544

5869 026550 104455

5870 026552 000007

5871 026554 005425

5872 026556 007510

5873

5874 026560

5875 026560

5876

5877 026560 004737 003014

5878 026564 012702 026576

5879 026570 004737 003120

5880 026574 000405

5881 026576 000 000 000 64\$:

5882 026601 000 000 000

5883 026604 000 000 000

5884 026607 020

BADHEAD

:***** TEST 33 *****

: * THIS TEST IS DESIGNED TO MAKE SURE THAT A NODST INSTRUCTION

: * DOES NOT WRITE INTO PORT B OF THE MULTIPOINT RAM.

: * TO DO THIS, WE'LL PUT A 125 INTO INDAT2, THEN WE'LL PUT A

: * 125 INTO BOTH SP1 AND BR. LAST WE'LL DO A NODST BR, SUBOC, SP1

: * IF THERE IS A WRITE INTO PORTB, INDAT2 WILL CONTAIN A 377.

BADHEAD

:***** TEST 33 *****

BGNTST

T33::

MYINT

MSTCLR

ROMCLK

00525

;PUT A 125 INTO BRG.

ROMCLK

062221

;NOW INTO OIDAT2

ROMCLK

63221

;NOW INTO SP1

ROMCLK

060361

;NOW THE 'NODST BR, SUBOC, SP1'

;THE NODST SHOULD NOT MODIFY INDAT2!

ROMCLK

020420

;PUT CONTENT OF INDAT2 IN BRG.

ROMCLK

061220

;PUT BRG INTO BSEL0

MOVB (R1), \$BDDAT

;SEE WHAT CAME BACK.

MOV #125, \$GDDAT

;SHOULD BE 125 IF 377 CAME BACK.

CLRB \$BDDAT+1

;YOU CAN BET THAT THE 'NODST' WROTE

;INTO THE MULTIPOINT RAM! WATCH SIGNAL

; 'D1 WRITE OUT L'

CMP \$BDDAT, \$GDDAT

;NOW LOOK.

BEQ 10\$

ERROR 7

TRAP C\$ERDF

.WORD 7

.WORD EM0

.WORD ERR7

10\$:

CHKREG

.LIST ME

JSR PC, RDKM

; READ KMC11 REGISTERS

MOV #64\$, R2

; LOAD POINTER

JSR PC, RCHECK

; CHECK FOR NO CHANGE

BR 65\$

; SKIP LIST

.BYTE20

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SEQ 0144

5885 026610
5886 026610
5887 026610
5888 026610 104401

65\$:
L10102: ENDTST
TRAP C\$ETST

```
5889 026612 BADHEAD
5890 :***** TEST 34 *****
5891 :
5892 :* EXTENDED CRAM TEST FOR M8206. IN THIS TEST WE WILL LOAD DATA
5893 :* THROUGHOUT THE CRAM (TEST DATA IS JUST 4K OF DIAG. CODE) AND
5894 :* THEN READ IT BACK AND VERIFY THAT IT IS CORRECT.
5895 026612 BADHEAD
5896 :***** TEST 34 *****
5897 :
5898 026612 BGNTST
5899 026612 T34::
5900 :
5901 026612 10$: MYINT
5902 026616 MSTCLR
5903 026622 012702 013116 MOV #ROMMAP,R2 ;GET ADDR. OF LIST.
5904 :
5905 026626 012711 002000 MOV #2000,(R1) ;SET TO WRITE DATA.
5906 026632 005003 CLR R3 ;CRAM ADDR ZERO.
5907 :
5908 026634 010361 000004 15$: MOV R3,4(R1) ;SET ADDR.
5909 026640 012261 000006 MOV (R2)+,6(R1) ;WRITE DATA.
5910 :
5911 026644 020337 002400 CMP R3,MEMSZ ;DONE WHOLE CRAM?
5912 026650 001402 BEQ 20$ ;YES,EXIT THIS LOOP.
5913 026652 005203 INC R3 ;NO,UPDAT ADDR.
5914 026654 000767 BR 15$
5915 026656 005003 20$: CLR R3 ;NOW WE WILL READ BACK,STARTING AT
5916 : ;CRAM ADDR. ZERO.
5917 026660 012705 013116 MOV #ROMMAP,R5 ;GET ADDR. LIST OF DATA
5918 :
5919 026664 010361 000004 30$: MOV R3,4(R1) ;SET ADDR.
5920 :
5921 026670 011502 MOV (R5),R2 ;PUT EXPECTED INTO R2
5922 026672 016104 000006 MOV 6(R1),R4 ;READ ACCUAL
5923 026676 020204 CMP R2,R4 ;EQUAL?
5924 026700 001412 BEQ 40$ ;YES,CONTINUE.
5925 026702 010337 002376 MOV R3,MRO
5926 :
5927 026706 ERROR 1 ;ERROR CRAM DATA TEST,DATA
5928 026712 104455 TRAP C$ERDF
5929 026714 000001 .WORD 1
5930 026716 005425 .WORD EMO
5931 026720 006274 .WORD ERR1
5932 :
5933 :READ NOT DATA THAT WAS WRITTEN.
5934 :
5935 026722 ESCAPE TST
5936 026722 104410 TRAP C$ESCAPE
5937 026724 000054 .WORD L10103-
5938 026726 020337 002400 40$: CMP R3,MEMSZ ;ALL DONE?
5939 026732 001016 BNE 50$
5940 :
5941 026734 004737 003014 CHKREG ME
5942 026740 012702 026752 JSR PC,RDKM ; READ KMC11 REGISTERS
5943 026744 004737 003120 MOV #64$,R2 ; LOAD POINTER
5944 026750 000405 JSR PC,RCHECK ; CHECK FOR NO CHANGE
BR 65$ ; SKIP LIST
```


5945	026752	000	000	000	64\$:	.BYTE	,20	
5946	026755	000	000	000				
5947	026760	000	000	000				
5948	026763	020						
5949	026764				65\$:			
5950								
5951	026764				EXIT	TST		
5952	026764	104432			TRAP	C\$EXIT		
5953	026766	000012			.WORD	L10103-		
5954								
5955	026770	005203			50\$:	INC	R3	;UPDATE ADDR.
5956	026772	062705	000002			ADD	#2,R5	
5957	026776	000732				BR	30\$	
5958								
5959	027000				ENDTST			
5960	027000				L10103:			
5961	027000	104401			TRAP	C\$ETST		

```
5962 027002      BADHEAD
5963              :***** TEST 35 *****
5964              :
5965              :* THIS TEST LOADS MICRO-CODE INTO A M8206 MCPU THEN EXECUTES IT.
5966              :* THE MICRO CODE IS DESIGNED TO WRITE ALL ONES INTO THE SEL REGS.
5967              :
5968 027002      BADHEAD
5969              :***** TEST 35 *****
5970
5971 027002      BGNTST
5972 027002      T35::
5973
5974
5975 027002      1$: MYINT
5976 027006      MSTCLR
5977
5978 027012 004537 027446 JSR      R5,LOADER      ;LOAD THE MICRO CODE
5979
5980 027016 000777      777
5981 027020 061220      061220      ;MOVE #377,BRG
5982 027022 061222      061222      ;MOVE BRG,BSEL0
5983 027024 061223      061223      ;MOVE BRG,BSEL2
5984 027026 061224      061224      ;MOVE BRG,BSEL3
5985 027030 061225      061225      ;MOVE BRG,BSEL4
5986 027032 061226      061226      ;MOVE BRG,BSEL5
5987 027034 061227      061227      ;MOVE BRG,BSEL6
5988 027036 123000      123000      ;MOVE BRG,BSEL7
5989 027040 101410      101410      ;MOVE BSEL0,SP0
5990                                ;BRANCH BACK ONE UNTIL <>377
5991 027042 000400      400
5992 027044 061220      61220
5993 027046 061222      61222
5994 027050 061223      61223
5995 027052 061224      61224
5996 027054 061225      61225
5997 027056 061226      61226
5998 027060 061227      61227
5999 027062 123000      123000
6000 027064 104022      104022
6001 027066 177777      177777
6002                                ;MOVE #0,BRG
6003                                ;MOVE BRG,BSEL0
6004                                ;MOVE BRG,BSEL2
6005                                ;MOVE BRG,BSEL3
6006                                ;MOVE BRG,BSEL4
6007                                ;MOVE BRG,BSEL5
6008                                ;MOVE BRG,BSEL6
6009                                ;MOVE BRG,BSEL7
6010                                ;MOVE BSEL0,SP0
6011                                ;BRANCH BACK THE LOCATION.
6012
6013 027070 005011      CLR      @R1
6014 027072 012711 040000 MOV      #040000,(R1)
6015 027076 012711 100000 MOV      #100000,(R1)
6016                                ; CLEAR RUN
6017                                ; INITIALIZE MCPU
6018                                ; START CPU.
6019
6020 027102 012700 000062 MOV      #50.,R0
6021                                ; THE CYCLE TIME ON THE M8206 IS
6022                                ; 200NS. WE ARE ASKING THE MCPU TO
6023                                ; DO 8 INSTRUCTIONS. WE'LL DELAY
6024                                ; 100 PDP11 INSTRUCTIONS
6025                                ; THIS REALLY SHOULD BE PLENTY OF TIME.
6026
6027 027106 005300      20$: DEC      R0
6028 027110 001376      BNE      20$
6029
6030 027112 005005      CLR      R5
6031 027114 012705 000377 MOV      #377,R5
6032                                ; JUST FOR TYPEOUT.
6033                                ; EXPECT 377
```

6018	027120	111104			MOVB	(R1),R4		:READ MCPU
6019	027122	120405			CMPB	R4,R5		:SEE IF OK.
6020	027124	001410			BEQ	30\$		
6021								
6022	027126				ERROR	29		:ERROR! MCPU WAS TO WRITE ALL
6023	027132	104455			TRAP	C\$ERDF		
6024	027134	000035			.WORD	29		
6025	027136	005425			.WORD	EM0		
6026	027140	011362			.WORD	ERR29		
6027								:ONES INTO BSEL0,BUT INSTEAD FAILED.
6028	027142				ESCAPE	TST		
6029	027142	104410			TRAP	C\$ESCAPE		
6030	027144	000334			.WORD	L10104-		
6031								
6032	027146	012705	177777	30\$:	MOV	#177777,R5		:EXPECT ALL ONES
6033	027152	016104	000002		MOV	2(R1),R4		:RECIEVED
6034	027156	020405			CMP	R4,R5		:RECIEVE OK?
6035	027160	001410			BEQ	40\$		
6036								
6037	027162				ERROR	29		:ERROR! MCPU WAS TO WRITE ALL ONES
6038	027166	104455			TRAP	C\$ERDF		
6039	027170	000035			.WORD	29		
6040	027172	005425			.WORD	EM0		
6041	027174	011362			.WORD	ERR29		
6042								:INTO BSEL 2&3
6043								
6044	027176				ESCAPE	TST		
6045	027176	104410			TRAP	C\$ESCAPE		
6046	027200	000300			.WORD	L10104-		
6047								
6048	027202	016104	000004	40\$:	MOV	4(R1),R4		:READ BSEL 4&5
6049	027206	020405			CMP	R4,R5		:READ OK?
6050	027210	001410			BEQ	50\$		
6051								
6052	027212				ERROR	29		:ERROR! FAILED TO WRITE BSEL \$&5
6053	027216	104455			TRAP	C\$ERDF		
6054	027220	000035			.WORD	29		
6055	027222	005425			.WORD	EM0		
6056	027224	011362			.WORD	ERR29		
6057								: TO ALL ONES.
6058	027226				ESCAPE	TST		
6059	027226	104410			TRAP	C\$ESCAPE		
6060	027230	000250			.WORD	L10104-		
6061								
6062	027232	016104	000006	50\$:	MOV	6(R1),R4		:READ BSEL 6&7
6063	027236	020405			CMP	R4,R5		:READ OK?
6064	027240	001410			BEQ	60\$		
6065								
6066	027242				ERROR	29		:ERROR! FAILED TO WRITE BSEL 6&7
6067	027246	104455			TRAP	C\$ERDF		
6068	027250	000035			.WORD	29		
6069	027252	005425			.WORD	EM0		
6070	027254	011362			.WORD	ERR29		
6071								: TO ALL ONES.
6072	027256				ESCAPE	TST		
6073	027256	104410			TRAP	C\$ESCAPE		

6074	027260	000220			.WORD	L10104-	
6075	027262	105011		60\$:	CLRB	(R1)	
6076	027264	005005			CLR	R5	;SIGNAL MCPU TO WRITE ALL ZEROS.
6077							;EXPECT TO READ ALL ZEROS.
6078	027266	005004			CLR	R4	
6079	027270	111104			MOVB	(R1),R4	;READ BSEL0
6080	027272	001410			BEQ	70\$	;EXPECT ZERO.
6081							
6082	027274				ERROR	29	
6083	027300	104455			TRAP	C\$ERDF	;MCPU FAILED TO CLEAR BSEL0
6084	027302	000035			.WORD	29	
6085	027304	005425			.WORD	EM0	
6086	027306	011362			.WORD	ERR29	
6087							
6088	027310				ESCAPE	TST	
6089	027310	104410			TRAP	C\$ESCAPE	
6090	027312	000166			.WORD	L10104-	
6091	027314	016104	000002	70\$:	MOV	2(R1),R4	;READ BSEL 283
6092	027320	001410			BEQ	80\$	;IF ZERO,OK
6093							
6094	027322				ERROR	29	
6095	027326	104455			TRAP	C\$ERDF	;MCPU FAILED TO CLEAR BSEL 283
6096	027330	000035			.WORD	29	
6097	027332	005425			.WORD	EM0	
6098	027334	011362			.WORD	ERR29	
6099	027336				ESCAPE	TST	
6100	027336	104410			TRAP	C\$ESCAPE	
6101	027340	000140			.WORD	L10104-	
6102	027342			80\$:			
6103	027342	016104	000004		MOV	4(R1),R4	;READ BSEL 485
6104	027346	001410			BEQ	90\$	
6105							
6106	027350				ERROR	29	
6107	027354	104455			TRAP	C\$ERDF	;MCPU FAILED TO CLEAR BSEL 485
6108	027356	000035			.WORD	29	
6109	027360	005425			.WORD	EM0	
6110	027362	011362			.WORD	ERR29	
6111	027364				ESCAPE	TST	
6112	027364	104410			TRAP	C\$ESCAPE	
6113	027366	000112			.WORD	L10104-	
6114	027370			90\$:			
6115	027370	016104	000006		MOV	6(R1),R4	;READ BSEL 687
6116	027374	001406			BEQ	95\$	
6117							
6118	027376				ERROR	29	
6119	027402	104455			TRAP	C\$ERDF	;MCPU FAILED TO CLEAR BSEL 687
6120	027404	000035			.WORD	29	
6121	027406	005425			.WORD	EM0	
6122	027410	011362			.WORD	ERR29	
6123							
6124	027412			95\$:			
6125	027412				CHKREG		
6126					.LIST	ME	
6127	027412	004737	003014		JSR	PC,RDKM	; READ KMC11 REGISTERS
6128	027416	012702	027430		MOV	#64\$,R2	; LOAD POINTER
6129	027422	004737	003120		JSR	PC,RCHECK	; CHECK FOR NO CHANGE

6130	027426	000405				BR	65\$		: SKIP LIST
6131	027430	000	000	000	64\$:	.BYTE	,20		
6132	027433	000	000	000					
6133	027436	000	000	000					
6134	027441	020							
6135	027442				65\$:				
6136	027442					EXIT	TST		
6137	027442	104432				TRAP	C\$EXIT		
6138	027444	000034				.WORD	L10104-		
6139									
6140									
6141									
6142									
6143									
6144									
6145	027446	012711	002000		LOADER:	MOV	#2000,(R1)		
6146									
6147	027452	005000				CLR	R0		
6148									
6149	027454	010061	000004		10\$:	MOV	R0,4(R1)		:SET ADDR.
6150	027460	005200				INC	R0		
6151	027462	011561	000006			MOV	(R5),6(R1)		:WRITE MICRO CODE.
6152	027466	022527	177777			CMP	(R5)+,#177777		:SEE IF TERM.
6153	027472	001370				BNE	10\$		
6154	027474	005011				CLR	(R1)		
6155	027476	000205				RTS	R5		
6156									
6157	027500					ENDTST			
6158	027500				L10104:				
6159	027500	104401				TRAP	C\$ETST		

```
6160 027502      BADHEAD
6161              :***** TEST 36 *****
6162              :*
6163              :*NEGATIVE ADDRESS TEST.
6164              :*      IN THIS TEST, WE'LL MAKE SURE THAT THE M8206
6165              :*      DOES NOT RESPOND TO AN ADDRESS THAT ISN'T ASSIGNED
6166              :*      TO IT
6167              :*
6168 027502      BADHEAD
6169              :***** TEST 36 *****
6170
6171 027502      BGNTST
6172 027502      T36::
6173 027502      MYINT
6174 027506      MSTCLR
6175
6176 027512 012711 000641      MOV      #641,(R1)      ;PUT A DEFINITE PATTERN IN MCPU.
6177 027516 012737 027624 000004      MOV      #20$,a#4      ;SET UP FOR TRAPS FROM NON-EX.
6178 027524 005037 000006      CLR      a#6
6179 027530 012702 160000      MOV      #160000,R2      ;GET STARTING ADDRESS.
6180
6181 027534 022712 000641      10$:      CMP      #641,(R2)      ;SEE IF CONTENTS OF THE ADDRESS
6182              :POINTED TO BY R2 EQUALS THE CONTENTS
6183              :OF THE MCPU CSR
6184 027540 001434      BEQ      40$
6185
6186 027542 062702 000002      15$:      ADD      #2,R2      ;UPDATE ADDRESS.
6187 027546 020227 177750      CMP      R2,#177750      ;DONE?
6188 027552 001370      BNE      10$      ;NO-LOOP
6189
6190 027554 013737 002426 000004 17$:      MOV      SAVE4,a#4      ;RESTORE TRAP CATCHER
6191 027562 013737 002430 000006      MOV      SAVE6,a#6      ;FROM VALUES SAVED BY INIT SECTION
6192 027570
6193
6194 027570 004737 003014      .LIST      ME
6195 027574 012702 027606      JSR      PC,RDKM      ; READ KMC11 REGISTERS
6196 027600 004737 003120      MOV      #64$,R2      ; LOAD POINTER
6197 027604 000405      JSR      PC,RCHECK      ; CHECK FOR NO CHANGE
6198 027606      000      000      000      64$:      BR      65$      ; SKIP LIST
6199 027611      000      000      000
6200 027614      000      000      000
6201 027617      020
6202 027620      65$:
6203 027620      EXIT      TST      ;EXIT, ALL DONE
6204 027620 104432      TRAP      C$EXIT
6205 027622 000052      .WORD      L10105-.
6206
6207 027624 062706 000004      20$:      ADD      #4,SP      ;SAVE FROM TRAP
6208 027630 000744      BR      15$      ;LOOP
6209
6210 027632      40$:      ;*OH NO, WE MAY HAVE A DUAL ADDRESS PROBLEM!
6211
6212 027632 012711 000174      MOV      #174,(R1)      ;WRITE NEW PATTERN IN MCPU CSR
6213 027636 022712 000174      CMP      #174,(R2)      ;DID NEW PATTERN SHOW UP IN ADDR?
6214 027642 001403      BEQ      60$
6215
```


6216	027644	012711	000641	50\$:	MOV	#641,(R1)	;PUT OLD PATTERN BACK IN MCPU CSR.
6217	027650	000734			BR	15\$	;LOOP
6218							
6219	027652	020102		60\$:	CMP	R1,R2	;IS THIS THE MCPU ADDRESS?
6220	027654	001773			BEQ	50\$	;YES-NO ERROR
6221							
6222	027656				ERROR	40	;DUAL ADDRESS ERROR
6223	027662	104455			TRAP	C\$ERDF	
6224	027664	000050			.WORD	40	
6225	027666	005425			.WORD	EM0	
6226	027670	011760			.WORD	ERR40	
6227	027672	000730			BR	17\$	
6228							
6229	027674				ENDTST		
6230	027674			L10105:			
6231	027674	104401			TRAP	C\$ETST	

```
6232 027676      BADHEAD
6233              :***** TEST 37 *****
6234              :*
6235              :*BYTE ADDRESSING TEST
6236              :*   HERE, WE'RE GOING TO MAKE SURE THAT WE CAN
6237              :*   WRITE INTO ONLY A HIGH OR LOW BYTE OF THE MCPU.
6238              :*
6239 027676      BADHEAD
6240              :***** TEST 37 *****
6241
6242 027676      BGNTST
6243 027676      T37:: MYINT
6244 027676      MSTCLR
6245 027702      CLR      (R1)          ;CLEAR CSR
6246 027706 005011  MOVB      #-1,(R1)    ;WRITE ALL ONES INTO LOW BYTE
6247 027710 112711 177777          ;OF CSR
6248
6249 027714 032711 177400          ;SEE IF HIGH BYTE GOT WRITTEN
6250 027720 001410
6251
6252 027722      ERROR 41              ;HIGH BYTE GOT WRITTEN INTO ON A LOW BYTE
6253 027726 104455      TRAP C$ERDF
6254 027730 000051      .WORD 41
6255 027732 005425      .WORD EMO
6256 027734 012024      .WORD ERR41
6257 027736      ESCAPE TST          ;OPERATION
6258 027736 104410      TRAP C$ESCAPE
6259 027740 000064      .WORD L10106-.
6260
6261 027742 005011 10$: CLR      (R1)
6262 027744 112761 177777 000001  MOVB      #-1,1(R1)    ;WRITE INTO HIGH BYTE
6263 027752 032711 000377          ;SEE IF LOW BYTE GOT WRITTEN
6264 027756 001406      BIT      #377,(R1)
6265          BEQ      20$
6266
6266 027760      ERROR 42              ;LOW BYTE GOT WRITTEN INTO ON A
6267 027764 104455      TRAP C$ERDF
6268 027766 000052      .WORD 42
6269 027770 005425      .WORD EMO
6270 027772 012066      .WORD ERR42
6271
6272              ;HIGH BYTE OPERATION.
6273 027774      20$:
6274 027774      CHKREG
6275          .LIST ME
6276 027774 004737 003014      JSR      PC,RDKM          ; READ KMC11 REGISTERS
6277 030000 012702 030012      MOV      #64$,R2          ; LOAD POINTER
6278 030004 004737 003120      JSR      PC,RCHECK        ; CHECK FOR NO CHANGE
6279 030010 000405          BR      65$          ; SKIP LIST
6280 030012      000      000      000 64$: .BYTE      .....20
6281 030015      000      000      000
6282 030020      000      000      000
6283 030023      020
6284 030024      65$:
6285 030024      ENDTST
6286 030024      L10106: TRAP      C$ETST
6287 030024 104401
```



```
6288 030026 BADHEAD
6289 :***** TEST 38 *****
6290 :
6291 :*IN THIS TEST WE'RE GOING TO MAKE SURE THAT THE PC
6292 :*REG COUNTS UP PROPERLY. THE PC REG SHOULD INCREMENT
6293 :*ONCE AFTER EACH INSTRUCTION.
6294 :
6295 030026 BADHEAD
6296 :***** TEST 38 *****
6297 :
6298 030026 BGNTST
6299 030026 T38::
6300 030026 10$: MYINT
6301 030032 MSTCLR
6302 030036 005000 CLR R0 : START AT 0
6303 030040 012711 002000 MOV #BIT10,(R1) : SET ROMO
6304 030044 010061 000004 1$: MOV R0,4(R1) : ADDRESS
6305 030050 005061 000006 CLR 6(R1) : LOAD A NOP
6306 030054 005200 INC R0 : NEXT ADDRESS
6307 030056 032700 010000 BIT #BIT12,R0 : DONE 4K?
6308 030062 001770 BEQ 1$ : NO
6309 030064 012705 000000 MOV #0,R5 : START AT ZERO
6310 030070 012737 007777 002354 MOV #7777,FADR : START AT LAST ADDRESS
6311 030076 012711 002000 2$: MOV #BIT10,(R1) : SET ROMO
6312 030102 013761 002354 000004 MOV FADR,4(R1) : SETUP PC
6313 030110 005011 CLR (R1)
6314 030112 012711 000400 MOV #BIT8,(R1) : SET SINGLE STEP
6315 030116 005011 CLR (R1) : RESET SINGLE STEP
6316 030120 20$: ROMCLK : READ PC HIGH REG.
6317 030124 121265 121265
6318 ROMCLK
6319 030126 121244 : READ PC LOW REG.
6320 030132 121244 121244
6321 030134 016104 000004 MOV 4(R1),R4 : GET WHOLE PICTURE
6322 030140 042704 170000 BIC #170000,R4
6323 030144 020405 CMP R4,R5 : INCREMENT OK?
6324 030146 001410 BEQ 30$
6325 ERROR 15 : PC FAILED TO INCREMENT PROPERLY
6326 030150 TRAP C$ERDF
6327 030154 104455 .WORD 15
6328 030156 000017 .WORD EMO
6329 030160 005425 .WORD ERR15
6330 030162 010710 : SHOULD INCREMENT BY ONE
6331 : FOR EACH INSTRUCTION.
6332 ESCAPE TST
6333 030164 TRAP C$ESCAPE
6334 030164 104410 .WORD L10107-.
6335 030166 000054
6336 30$: INC FADR : BUMP ADDRESS
6337 030170 005237 002354 BIC #BIT12,FADR : 0-7777
6338 030174 042737 010000 002354 INC R5 : BUMP ADDRESS
6339 030202 005205 BIT #BIT12,R5 : DONE?
6340 030204 032705 010000 BEQ 2$ : NO
6341 030210 001732
6342 CHKREG
6343 030212
```

```
6344  
6345 030212 004737 003014 .LIST ME  
6346 030216 012702 030230 JSR PC,RDKM ; READ KMC11 REGISTERS  
6347 030222 004737 003120 MOV #64$,R2 ; LOAD POINTER  
6348 030226 000405 JSR PC,RCHECK ; CHECK FOR NO CHANGE  
6349 030230 000 000 000 64$: BR 65$ ; SKIP LIST  
6350 030233 000 000 000 .BYTE .....20  
6351 030236 000 000 000  
6352 030241 020  
6353 030242 65$:  
6354 030242 L10107: ENDTST  
6355 030242 L10107: TRAP C$ETST  
6356 030242 104401
```

```

6357 030244 BADHEAD
6358 :***** TEST 39 *****
6359 :*
6360 :*IN THIS TEST WE'LL MAKE SURE THAT 'BRANCH FIELD H' DOESN'T
6361 :*GET SUCH HIGH.
6362 :*FIRST WE'LL CLEAR THE PC HIGH REG. THEN WE'LL DO A BRANCH INSTR
6363 :*WITH BAB BITS 11&12 SET. IF PCR BITS 8&9 SET THEN WE'LL KNOW
6364 :*WE WERE SUCCESSFUL IF PCR BITS 8&9 FAIL TO SET, WE'LL KNOW
6365 :*THAT THE MUX SELECTED THE WRONG INPUT TO BE CLOCKED INTO THE PCR.
6366 :*
6367 030244 BADHEAD
6368 :***** TEST 39 *****
6369 :
6370 030244 BGNTST
6371 030244 T39::
6372 030244 000240 NOP
6373 030246 000240 NOP
6374 030250 10$: MYIN, ;INITIALIZE PARAMETERS
6375 030254 MSTCLR ;CLEAR DEVICE.
6376
6377 030260 SROMCLK ;DO A 'BRANCH ALWAYS' WITH
6378 030264 114400 114400 ;BAB BITS 11&12 SET THIS SHOULD CLOCK
6379 ;THESE BITS INTO BITS 8&9 OF THE PCR.
6380 030266 ROMCLK ;NOW READ THE PCR HIGH
6381 030272 121265 121265 ;AND PUT INTO PORT5.
6382 ;REG. BR NO CLK OF BAB BITS
6383 030274 116105 000005 MOVB 5(R1),R5 ;READ THE PCR.
6384 030300 112704 000003 MOVB #3,R4 ;EXPECT BITS 8,9 TO BE SET.
6385 030304 042705 000374 BIC #374,R5 ;STRIP ANY JUNK
6386 030310 020405 CMP R4,R5 ;OK?
6387 030312 001406 BEQ 20$
6388
6389 030314 ERROR 15 ;'BRANCH FIELD H' STUCK HIGH OR
6390 030320 104455 TRAP C$ERDF
6391 030322 000017 .WORD 15
6392 030324 005425 .WORD EMO
6393 030326 010710 .WORD ERR15
6394 ;OTHER PROBLEM IN THIS AREA.
6395
6396 030330 20$:
6397 030330 CHKREG
6398 .LIST ME
6399 030330 004737 003014 JSR PC,RDKM ; READ KMC11 REGISTERS
6400 030334 012702 030346 MOV #64$,R2 ; LOAD POINTER
6401 030340 004737 003120 JSR PC,RCHECK ; CHECK FOR NO CHANGE
6402 030344 000405 BR 65$ ; SKIP LIST
6403 030346 000 000 000 64$: .BYTE .....20
6404 030351 000 000 000
6405 030354 000 000 000
6406 030357 020
6407 030360 65$:
6408 030360 L10110: ENDTST
6409 030360 TRAP C$ETST
6410 030360 104401

```

```
6411 030362 BADHEAD
6412 :***** TEST 40 *****
6413 :*
6414 :*IN THIS TEST WE'RE GOING TO MAKE SURE THAT ONLY SPO
6415 :*IS SELECTED FOR SOURCE WHEN THE DESTINATION
6416 :*IS THE OUTBUS
6417 :*FIRST WE'LL WRITE EACH SP ADDR INTO ITSELF THEN WE'LL
6418 :*MOV SP TO OBUS4. THAT SHOULD SELECT
6419 :*SP ADDRESS 0. IF ANY OTHER DATA SHOWS UP, WE'LL
6420 :*BLAME IT ON THE SELECTION OF A DIFFERENT SCRATCH PAD.
6421 030362 BADHEAD
6422 :***** TEST 40 *****
6423 :
6424 030362 BGNTST
6425 030362 T40:: MYINT
6426 030362 MSTCLR
6427 030366 CLR R5 ;START WITH ADDR-ZERO
6428 030372 005005 JMP 30$ ;***: SKIP FOR NOW
6429 030374 000137 030470
6430
6431 030400 042737 000017 030422 10$: BIC #17,20$ ;STRIP SP ADDR FIELD FROM INSTR
6432 030406 010561 000004 MOV R5,4(R1) ;PUT SP ADDR INTO PORT4.
6433 030412 050537 030422 BIS R5,20$ ;ADD SP ADDR TO INSTR.
6434 030416 ROMCLK
6435 030422 123100 20$: 123100 ;WRITE TO SP
6436 030424 005205 INC R5 ;UPDATE ADDRESS
6437 030426 120527 000020 CMPB R5,#20 ;IF NOT THROUGH, REPEAT.
6438 030432 001362 BNE 10$
6439
6440 030434 ROMCLK ;NOW MOV SPO TO OBUS* PORT4
6441 030440 061204 061204 ;
6442 030442 016104 000004 MOV 4(R1),R4 ;READ PORT4 IT S/B ZERO
6443 030446 001410 BEQ 30$
6444 030450 012705 000000 MOV #0,R5
6445 030454 ERROR 43 ;SPO NOT SELECTED FOR SOURCE-SEE
6446 030460 104455 TRAP C$ERDF
6447 030462 000053 .WORD 43
6448 030464 005425 .WORD EMO
6449 030466 012130 .WORD ERR43
6450
6451 ;DISCUSSION IN HEADER.
6452 030470 30$:
6453 030470 CHKREG
6454 .LIST ME
6455 030470 004737 003014 JSR PC,RDKM ; READ KMC11 REGISTERS
6456 030474 012702 030506 MOV #64$,R2 ; LOAD POINTER
6457 030500 004737 003120 JSR PC,RCHECK ; CHECK FOR NO CHANGE
6458 030504 000405 BR 65$ ; SKIP LIST
6459 030506 000 000 000 64$: .BYTE .....20
6460 030511 000 000 000
6461 030514 000 000 000
6462 030517 020
6463 030520 65$:
6464 030520 L10111: ENDTST
6465 030520 TRAP C$ETST
6466 030520 104401
```

```
6467 030522 BADHEAD
6468 :***** TEST 41 *****
6469 :
6470 :*IN THIS TEST WE ARE GOING TO MAKE SURE THAT THE
6471 :*SIGNAL 'MOV INST H' (AND ITS ASSOC. TRIBS) DOESN'T GET
6472 :*STUCK HIGH. IN ORDER TO DO THIS WE'LL CLEAR THE PC HIGH REG
6473 :*PUT KNOWN DATA IN THE BREG AND SP1 THEN WE'LL A BRANCH
6474 :*WITH CROM BITS 0-3 SET AS WELL AS CROM BIT 9 WITH CROM BITS 8 AND 11 CLEAR.
6475 :*IF 'MOV INST H' GETS STUCK HIGH, THE PC REG HIGH WILL GET LOADED
6476 :*WITH THE CONTENTS OF THE ALU
6477 030522 BADHEAD
6478 :***** TEST 41 *****
6479 :
6480 030522 BGNTST
6481 030522 141::
6482 030522 000240 NOP
6483 030524 000240 NOP
6484 030526 10$: MYINT ;DO INITIAL TEST SET-UP.
6485 030532 MSTCLR ;DO A MASTER CLEAR.
6486 030536 012761 000002 000004 MOV #2,4(R1) ;PUT A 2 INTO SP1
6487 030544 ROMCLK ;PORT4 TO SCRATCH PAD 1
6488 030550 123101 123101
6489 030552 012761 000004 000004 MOV #4,4(R1)
6490 030560 ROMCLK
6491 030564 123100 123100
6492 030566 SROMCLK
6493 030572 141201 141201 ;NOW DO A BRANCH ON C-BIT SET
6494 :BASED ON SP CONTENTS
6495 :OK-WHAT WE ARE REALLY
6496 :INTERESTED IN IS SEEING IF THE
6497 :PC HIGH REG GETS LOADED WITH
6498 :THE CONTENTS OF THE ALU (2)
6499 :IF THIS OCCURS, WE CAN PROBABLY
6500 :SAY THAT 'MOV INSTR' REMAINED
6501 030574 ROMCLK ;HIGH.
6502 030600 121265 ;READ PC HIGH, PUT INTO PORTS
6503 030602 116104 000005 MOVB 5(R1),R4 ;READ PC REG HIGH FROM PORT
6504 030606 001407 BEQ 20$ ;SHOULD BE CLEAR
6505 030610 005005 CLR R5
6506 :
6507 030612 ERROR 15 ;ERROR-PC REG HIGH S/B CLEAR-SEE HEADER
6508 030616 104455 TRAP C$ERDF
6509 030620 000017 .WORD 15
6510 030622 005425 .WORD EMO
6511 030624 010710 .WORD ERR15
6512 :DISCUSSION.
6513 :
6514 030626 20$:
6515 030626 CHKREG
6516 .LIST ME
6517 030626 004737 003014 JSR PC,RDKM ; READ KMC11 REGISTERS
6518 030632 012702 030644 MOV #64$,R2 ; LOAD POINTER
6519 030636 004737 003120 JSR PC,RCHECK ; CHECK FOR NO CHANGE
6520 030642 000405 BR 65$ ; SKIP LIST
6521 030644 000 000 000 64$: .BYTE .....20
6522 030647 000 000 000
```

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SEQ 0159

6523 030652 000 000 000

6524 030655 020

6525 030656

6526 030656

6527 030656

6528 030656 104401

65\$:

ENDTST

L10112:

TRAP

C\$ETST


```
6529 030660 BADHEAD
6530 :***** TEST 42 *****
6531 :*TEST THAT MASTER CLEAR, CLEARS BITS IN THE NPR CONTROL REGISTER AND
6532 :*MICROPROCESSOR MISCELLANEOUS REGISTER-FIRST WE'LL SET THE
6533 :*PRIORITY UP SO THAT WHEN WE SET THE BUS REQUEST BIT THAT IT WON'T BUG US
6534 :*THEN WE'LL SET ALL THE BITS IN BOTH REGS EXCEPT THE
6535 :*NPR REQUEST. WE'LL LOOK TO SEE THAT ALL GOT SET, NEXT
6536 :*WE'LL DO A MASTER CLEAR AND BE SURE THAT THEY ALL
6537 :*CLEAR.
6538 030660 BADHEAD
6539 :***** TEST 42 *****
6540
6541 030660 BGNTST
6542 030660 T42:: MYINT
6543 030660 MSTCLR
6544 030664 NOP
6545 030670 000240 NOP
6546 030672 000240 SETPRI #PRI07 ;DON'T ALLOW INTERRUPTS.
6547 030674 MOV #PRI07,R0
6548 030674 012700 000340 TRAP CS$PRI
6549 030700 104441 MOV #354,4(R1) ;DATA TO BE SET
6550 030702 012761 000354 000004 ROMCLK
6551 030710 121111 121111 ;PUT INTO MISC REG.
6552 030714 012761 000236 000004 MOV #236,4(R1) ; DO NOT SET NPR REQ OR TIM
6553 030716 ROMCLK
6554 030724 121110 121110 ;PUT INTO NPR REG
6555 030730 ROMCLK
6556 030732 121225 121225 ;MOV MISC REG (11) TO PORT5
6557 030736 ROMCLK
6558 121204 121204 ;MOVE NPR REG (10) TO PORT4
6559 030740 MOV #166236,$GDDAT ;EXPECT ALL TO SET
6560 030744 012737 166236 002414 MOV 4(R1),R4 ;READ WHAT HAPPEN
6561 030746 016104 000004 MOV #10000,R4 ; CLEAR TIMER IF SET
6562 030754 042704 010000 BIC $GDDAT,R4 ;DID ALL BITS GET SET?
6563 030760 023704 002414 BEQ 10$ ;YES CONTINUE.
6564 030764 001410 BRESET
6565 030770 104433 TRAP CS$RESET
6566 030772 ERROR 46 ;SOME SORT OF PROBLEM SETTING BITS
6567 030774 TRAP CS$ERDF
6568 031000 104455 .WORD 46
6569 031002 000056 .WORD EM0
6570 031004 005425 .WORD ERR46
6571 031006 012316 ;IN THE NPR AND/OR MISC REG.
6572 CKLOOP
6573 TRAP CS$CLP1
6574 031010 CLR (R1)
6575 031010 104406 BISB #100,1(R1) ;SET MASTER CLEAR
6576 031012 005011 10$: BICB #100,1(R1) ;CLEAR MASTER CLEAR
6577 031014 152761 000100 000001
6578 031016 142761 000100 000001
6579 031030 ROMCLK
6580 031034 121225 121225 ;MOV MISC REG (11) TO PORT5
6581 ROMCLK
6582 031036
```

Address	Offset	Value	Label	Operation	Comment
6585	031042	121204			
6586	031044	016104	000004	MOV 4(R1),R4	;MOV NPR REG (10) TO PORT4
6587	031050	005037	002414	CLR \$GDDAT	;READ RESULTS
6588	031054	042704	010000	BIC #010000,R4	;EXPECT ZERO
6589	031060	023704	002414	CMP \$GDDAT,R4	;STRIP PROG CLK BIT
6590	031064	001407		BEQ 20\$	;CHECK
6591					;IF ALL ZERO, EVERYTHING COOL.
6592	031066			ERROR 46	
6593	031072	104455		TRAP C\$ERDF	;MASTER CLEAR FAILED TO CLEAR
6594	031074	000056		.WORD 46	
6595	031076	005425		.WORD EMO	
6596	031100	012316		.WORD ERR46	
6597					;SOME BITS IN THE NPR AND/OR MISC REGS.
6598	031102			CKLOOP	
6599	031102	104406		TRAP C\$CLP1	
6600					
6601	031104				
6602	031104	012761	000014 000004	MOV #14,4(R1)	;NOW WE ARE GOING TO TRY TO
6603	031112			ROMCLK	;SET THE EXT BITS (16&17) IN THE NPR REG.
6604	031116	121110		121110	;IF MASTER CLEAR FAILED TO CLEAR ITSELF
6605	031120			ROMCLK	;THEN WE WILL BE UNABLE TO SET
6606	031124	121205		121205	;THESE BITS
6607	031126	116104	000004	MOVB 4(R1),R4	;READ REG
6608	031132	012737	000014 002414	MOV #14,\$GDDAT	;STORE GOOD
6609	031140	023704	002414	CMP \$GDDAT,R4	;DID BITS SET?
6610	031144	001407		BEQ 30\$	;YES-CONTINUE
6611					
6612	031146			ERROR 46	
6613	031152	104455		TRAP C\$ERDF	;MASTER CLEAR FAILED TO CLEAR
6614	031154	000056		.WORD 46	
6615	031156	005425		.WORD EMO	
6616	031160	012316		.WORD ERR46	
6617					;ITSELF, THUS PROHIBITING US FROM
6618					;FURTHER SETTING BITS IN THE NPR REG.
6619	031162			CKLOOP	
6620	031162	104406		TRAP C\$CLP1	
6621					
6622	031164				
6623	031164	104433		BRESET	;NOW WE'LL SEE IF A BUS RESET CLEARS
6624				TRAP C\$RESET	;THESE BITS.
6625	031166				
6626	031172	121204		ROMCLK	;READ MISC REG
6627	031174	116104	000004	121204	
6628	031200	001410		MOVB 4(R1),R4	;IF ZERO-END TST
6629				BEQ 40\$	
6630	031202	005037	002414	CLR \$GDDAT	;S/B ZERO
6631					
6632	031206			ERROR 46	
6633	031212	104455		TRAP C\$ERDF	;BUS RESET FAILED TO CLEAR NPR REG
6634	031214	000056		.WORD 46	
6635	031216	005425		.WORD EMO	
6636	031220	012316		.WORD ERR46	
6637					;MASTER CLEAR WAS ABLE TO LOOK TO THE
6638					;CIRCUITRY THAT CONVERTS BUS INIT
6639					;TO "CLEAR"
6640					


```
6641 031222          40$:
6642 031222          CHKREG
6643          .LIST ME
6644 031222 004737 003014 JSR PC,RDKM ; READ KMC11 REGISTERS
6645 031226 012702 031240 MOV #64$,R2 ; LOAD POINTER
6646 031232 004737 003120 JSR PC,RCHECK ; CHECK FOR NO CHANGE
6647 031236 000405 BR 65$ ; SKIP LIST
6648 031240 000 000 000 64$: .BYTE .....20
6649 031243 000 000 000
6650 031246 000 000 000
6651 031251 020
6652 031252          65$:
6653 031252          L10113: ENDTST
6654 031252          TRAP C$ETST
6655 031252 104401
```

.SBTTL HARDWARE PARAMETER CODING SECTION

```

://////
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://////

```

```

BGNHRD
.WORD L10114-L$HARD/2
L$HARD::
:      GPRMD  WPM,0,0,7,0,7,YES
      GPRMA  ADDRES,2,0,160000,177776,YES
      .WORD  T$CODE
      .WORD  ADDRES
      .WORD  T$LOLIM
      .WORD  T$HILIM
:      GPRMA  VECTOR,4,0,0,674,YES
      GPRMD  PRTY,6,0,7000,4,7,YES
      GPRMD  LNUNIT,10,0,3,0,3,YES
      GPRMD  SWPAC1,12,0,377,0,377,YES
      GPRMD  SWPAC2,14,0,377,0,377,YES
      GPRMD  LOOPBK,20,0,40000,0,1,YES
      GPRMD  PFTST,22,0,1,0,1,YES
      .WORD  T$CODE
      .WORD  PFTST
      .WORD  1
      .WORD  T$LOLIM
      .WORD  T$HILIM

```

```

ENDHRD
.EVEN

```

L10114:

WPM: .ASCIZ 'WHICH MICRO-CPU? (0=M8200,4=M8204,6=M8206,7=M8207)'

ADDRES: .ASCIZ /CSR ADDRESS : /

VECTOR: .ASCIZ /VECTOR ADDRESS : /

```

6656
6657
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6660
6661
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6663
6664
6665
6666
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6669 031254
6670 031254 000011
6671 031256
6672
6673
6674 031256
6675 031256 001031
6676 031260 031362
6677 031262 160000
6678 031264 177776
6679
6680
6681
6682
6683
6684
6685 031266
6686 031266 011032
6687 031270 031721
6688 031272 000001
6689 031274 000000
6690 031276 000001
6691
6692 031300
6693
6694 031300
6695
6696 031300 044127 041511 020110
6697 031306 044515 051103 026517
6698 031314 050103 037525 024040
6699 031322 036460 034115 030062
6700 031330 026060 036464 034115
6701 031336 030062 026064 036466
6702 031344 034115 030062 026066
6703 031352 036467 034115 030062
6704 031360 000067
6705 031362 051503 020122 042101
6706 031370 051104 051505 020123
6707 031376 020072 00C
6708 031401 126 041505 047524
6709 031406 020122 042101 051104
6710 031414 051505 020123 020072
6711 031422 000

```

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CZKMCA.P11 20-OCT-81 17:00

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SEQ 0164

6712	031423	120	044522	051117	PRIPTY: .ASCIZ /PRIORITY LEVEL : /
6713	031430	052111	020131	042514	
6714	031436	042526	020114	020072	
6715	031444	000			
6716	031445	127	044510	044103	LNUNIT: .ASCIZ /WHICH LINE UNIT (0-3)? 0=NONE,1=M8201,2=M8202,3=M8203 : /
6717	031452	046040	047111	020105	
6718	031460	047125	052111	024040	
6719	031466	026460	024463	020077	
6720	031474	036460	047516	042516	
6721	031502	030454	046475	031070	
6722	031510	030460	031054	046475	
6723	031516	031070	031060	031454	
6724	031524	046475	031070	031460	
6725	031532	035040	000040		
6726	031536	053523	052111	044103	SWPAC1: .ASCIZ /SWITCH PACK #1 (DDCMP LINE #) : /
6727	031544	050040	041501	020113	
6728	031552	030443	024040	042104	
6729	031560	046503	020120	044514	
6730	031566	042516	021440	020051	
6731	031574	020072	000		
6732	031577	123	044527	041524	SWPAC2: .ASCIZ /SWITCH PACK #2 (BM873 BOOT ADR) : /
6733	031604	020110	040520	045503	
6734	031612	021440	020062	041050	
6735	031620	034115	031467	041040	
6736	031626	047517	020124	042101	
6737	031634	024522	035040	000040	
6738	031642	044527	046114	052040	LOOPBK: .ASCIZ /WILL TEST CONNECTOR(S) BE USED ? 0=NO,1=YES : /
6739	031650	051505	020124	047503	
6740	031656	047116	041505	047524	
6741	031664	024122	024523	041040	
6742	031672	020105	051525	042105	
6743	031700	037440	030040	047075	
6744	031706	026117	036461	042531	
6745	031714	020123	020072	000	
6746	031721	122	047125	051040	PFTST: .ASCIZ /RUN REMOTE POWERFAIL TEST ? 0=NO, 1=YES : /
6747	031726	046505	052117	020105	
6748	031734	047520	042527	043122	
6749	031742	044501	020114	042524	
6750	031750	052123	037440	030040	
6751	031756	047075	026117	030440	
6752	031764	054475	051505	035040	
6753	031772	000			
6754					
6755	031774				.EVEN
6756					
6757					
6758					
6759					
6760					
6761					

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031774
031774 000000
031776

031776
031776

031776
000000
032000 000000
032002
000001

.SBTTL SOFTWARE PARAMETER CODING SECTION

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:////////////////////

BGNSFT
.WORD L10115-L\$SOFT/2
L\$SOFT::

ENDSFT
.EVEN
L10115:
.EVEN

LASTAD
.EVEN
.WORD 0
.WORD 0
L\$LAST::
.END

[illegible]

C\$BRK = 000022	682#												
C\$BSEG= 000004	682#	2974	3029	3086	3110	3590	3614	3638	3693	3714	3735	3789	3812
	3835	3890	3912	3934	3990	4012	4034	4090	4112	4134	4189	4211	4233
	4288	4310	4332	4386	4408	4432	4486	4508	4532	4586	4608	4632	4686
	4708	4732	4786	4808	4832	4886	4908	4932					
C\$BSUB= 000002	682#												
C\$CEFG= 000045	682#												
C\$CLCK= 000062	682#												
C\$CLEA= 000012	682#	2807											
C\$CLOS= 000035	682#												
C\$CLP1= 000006	682#	6575	6599	6620									
C\$CVEC= 000036	682#												
C\$DCLN= 000044	682#												
C\$DODU= 000051	682#												
C\$DRPT= 000024	682#												
C\$DU = 000053	682#	2827											
C\$EDIT= 000003	682#	759											
C\$ERDF= 000055	682#	2878	2920	2938	2983	3039	3099	3122	3185	3249	3313	3342	3404
	3426	3466	3514	3535	3551	3603	3627	3649	3703	3724	3745	3800	3823
	3846	3901	3923	3945	4001	4023	4045	4101	4123	4145	4200	4222	4244
	4299	4321	4343	4397	4421	4443	4497	4521	4543	4597	4621	4643	4697
	4721	4743	4797	4821	4843	4897	4921	4943	5016	5084	5184	5257	5300
	5318	5334	5379	5396	5412	5455	5471	5485	5538	5560	5571	5588	5601
	5721	5747	5766	5785	5869	5928	6023	6038	6053	6067	6083	6095	6107
	6119	6223	6253	6267	6327	6390	6446	6508	6569	6593	6613	6633	
C\$ERHR= 000056	682#												
C\$ERRO= 000060	682#												
C\$ERSF= 000054	682#												
C\$ERSO= 000057	682#												
C\$ESCA= 000010	682#	2869	2886	2926	2988	3044	3104	3127	3190	3254	3318	3347	3434
	3519	3608	3632	3654	3708	3729	3750	3806	3829	3851	3906	3928	3950
	4006	4028	4050	4106	4128	4150	4205	4227	4249	4304	4326	4348	4402
	4426	4448	4502	4526	4548	4602	4626	4648	4702	4726	4748	4802	4826
	4848	4902	4926	4948	5025	5092	5219	5306	5324	5385	5402	5935	6029
	6045	6059	6073	6089	6100	6112	6258	6334					
C\$ESEG= 000005	682#	2992	3048	3108	3131	3612	3636	3658	3712	3733	3754	3810	3833
	3855	3910	3932	3954	4010	4032	4054	4110	4132	4154	4209	4231	4253
	4308	4330	4352	4406	4430	4452	4506	4530	4552	4606	4630	4652	4706
	4730	4752	4806	4830	4852	4906	4930	4952					
C\$ESUB= 000003	682#												
C\$ETST= 000001	682#	2891	2957	3013	3070	3150	3213	3277	3366	3484	3569	3672	3768
	3869	3968	4068	4168	4267	4366	4466	4566	4666	4766	4866	4966	5044
	5113	5276	5352	5430	5504	5613	5828	5888	5961	6159	6231	6287	6356
	6410	6466	6528	6655									
	682#	5366	5579	5804	5952	6137	6204						
C\$EXIT= 000032	682#												
C\$GETB= 000026	682#												
C\$GETW= 000027	682#												
C\$GMAN= 000043	682#												
C\$GPHR= 000042	682#	2699											
C\$GPLO= 000030	682#												
C\$GPRI= 000040	682#												
C\$INIT= 000011	682#	2786											
C\$INLP= 000020	682#												
C\$MANI= 000050	682#												
C\$MEM = 000031	682#												
C\$MSG = 000023	682#	1894	1930	1966	2001	2036	2072	2108	2143	2178	2213	2248	2283

		2319	2354	2384	2419	2454	2474	2493	2510	2527	2547	2566	2585	2604
C\$OPEN=	000034	682#												
C\$PNTB=	000014	682#	1866	1872	1878	1886	1891	1902	1908	1914	1922	1927	1938	1944
		1950	1958	1963	1974	1980	1986	1993	1998	2009	2015	2021	2028	2033
		2044	2050	2056	2064	2069	2080	2086	2092	2100	2105	2116	2122	2128
		2135	2140	2151	2157	2163	2170	2175	2186	2192	2198	2205	2210	2221
		2227	2233	2240	2245	2256	2262	2268	2275	2280	2291	2297	2303	2311
		2316	2327	2333	2339	2346	2351	2364	2370	2376	2381	2392	2398	2404
		2411	2416	2427	2433	2439	2446	2451	2470	2489	2506	2523	2543	2562
		2581	2600											
C\$PNTF=	000017	682#	2464	2483	2500	2517	2537	2556	2575	2594				
C\$PNTS=	000016	682#												
C\$PNTX=	000015	682#												
C\$QIO =	000377	682#												
C\$RDBU=	000007	682#												
C\$REFG=	000047	682#	2666	2672	2677	2684								
C\$RESE=	000033	682#	2824	6567	6623									
C\$REVI=	000003	682#	758											
C\$RFLA=	000021	682#												
C\$RPT =	000025	682#	2625											
C\$SEFG=	000046	682#												
C\$SPRI=	000041	682#	6549											
C\$SVEC=	000037	682#												
C\$TPRI=	000013	682#												
C1 =	001000	1025#												
DEBUG	003302	1430#	2968	3024	3082	3161	3224	3289	3378	3497	3587	3689	3785	3886
		3985	4085	4185	4284	4383	4483	4583	4683	4783	4883	4981	5060	5153
		5291	5370	5443	5521	5628	5842	5902	5976	6174	6245	6301	6375	6427
		6485	6544											
DFPTBL	002252	876#												
DH0	006165	1786#	2372											
DH1	006166	1789#	1874	1910	1946	2052	2088							
DH2	006217	1794#	1982	2017	2124	2159	2194	2229	2264	2335	2400	2435		
DH3	006237	1797#	2299											
DIAGMC=	000000	682												
EF.CON=	000036	967#	2676											
EF.NEW=	000035	968#	2671											
EF.PWR=	000034	969#												
EF.RES=	000037	966#	2683											
EF.STA=	000040	965#	2665											
EM0	005425	1718#	2880	2922	2940	2985	3041	3101	3124	3187	3251	3315	3344	

EM29	006036	1770#	2394															
EM3	005501	1727#	1976															
EM35	005760	1760#	2429															
EM4	005514	1729#	2011															
EM5	005541	1733#	2046															
EM6	005566	1737#	2082															
EM7	005603	1740#	2118	2188														
ENDBUG	003634	1442#																
ENDIT	013104	2679	2774	2778	2781	2783#												
ERRFLG	002312	1077#																
ERR1	006274 G	1860#	2986	3042	3102	5931												
ERR10	007666 G	2110#																
ERR11	010040 G	2145#	3407	3429														
ERR12	010212 G	2180#	2923	2941	5087													
ERR13	010364 G	2215#	5019															
ERR14	010536 G	2250#	5458	5474	5488													
ERR15	010710 G	2285#	5187	6330	6393	6511												
ERR16	011066 G	2321#	5303	5321	5337	5382	5399	5415										
ERR17	011240 G	2358#	5541	5563	5604													
ERR2	006452 G	1896#	3125															
ERR29	011362 G	2386#	5724	5750	6026	6041	6056	6070	6086	6098	6110	6122						
ERR3	006630 G	1932#																
ERR35	011534 G	2421#	5574	5591														
ERR36	011706 G	2457#	2881															
ERR4	007006 G	1968#																
ERR40	011760 G	2477#	6226															
ERR41	012024 G	2495#	6256															
ERR42	012066 G	2512#	6270															
ERR43	012130 G	2530#	6449															
ERR44	012176 G	2549#	3469															
ERR45	012246 G	2568#	5260															
ERR46	012316 G	2587#	6572	6596	6616	6636												
ERR5	007160 G	2003#	3606	3630	3652	3706	3727	3748	3803	3826	3849	3904	3926	3948				
		4004	4026	4048	4104	4126	4148	4203	4225	4247	4302	4324	4346	4'00				
		4424	4446	4500	4524	4546	4600	4624	4646	4700	4724	4746	4800	4824				
		4846	4900	4924	4946													
ERR6	007332 G	2038#	3188	3252	3316	3345	5788											
ERR7	007510 G	2074#	3517	3538	3554	5769	5872											
EVL =	000004 G	985#																
E\$END =	002100	682#																
E\$LOAD=	000035	682#	782															
FADR	002354	1094#	2307	5156*	5159	5160	5225*	5226*	5227	6310*	6312	6337*	6338*					
FLAG	002350	1092#	2058	3163*	3167	3168	3196*	3197	3226*	3231	3232	3260*	3261	3291*				
		3292	3295	3296	3320*	3321	3324*	3325	3328	3349*	3350							
FMX	005346	1707#	1863	1899	1935	1971	2006	2041	2077	2113	2148	2183	2218	2253				
		2288	2324	2361	2389	2424												
FM1	005337	1705#	1869	1875	1905	1911	1941	1947	1977	1933	2012	2018	2047	2053				
		2083	2089	2119	2125	2154	2160	2189	2195	2124	2230	2209	2265	2294				
		2300	2330	2336	2367	2373	2395	2401	2430	2436								
FTIME	002424	1114#	2655	2659*														
F\$AU =	000015	682#	2842	2844														
F\$AUTO=	000020	682#	2635	2637														
F\$BGN =	000040	682#	688	1860	1896	1932	1968	2003	2038	2074	2110	2145	2180	2215				
		2250	2285	2321	2358	2386	2421	2457	2477	2495	2512	2530	2549	2568				
		2587	2615	2621	2628	2635	2649	2802	2821	2842	2861	2869	2886	2890				
		2902	2926	2956	2966	2974	2988	3012	3022	3029	3044	3069	3080	3086				

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0170

FSCLEA= 000007
FSDU = 000016
FSEND = 000041FSHARD= 000004
FSHW = 000013
FSINIT= 000006
FSJMP = 000050
FSMOD = 000000
FSMSG = 000011FSPROT= 000021
FSPWR = 000017
FSRPT = 000012
FSSEG = 000003

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3365	3376	3434	3483	3495	3519	3568	3584	3590	3608	3614	3632	3638
3654	3671	3687	3693	3708	3714	3729	3735	3750	3767	3783	3789	3806
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3983	3990	4006	4012	4028	4034	4050	4067	4083	4090	4106	4112	4128
4134	4150	4167	4183	4189	4205	4211	4227	4233	4249	4266	4282	4288
4304	4310	4326	4332	4348	4365	4381	4386	4402	4408	4426	4432	4448
4465	4481	4486	4502	4508	4526	4532	4548	4565	4581	4586	4602	4608
4626	4632	4648	4665	4681	4686	4702	4708	4726	4732	4748	4765	4781
4786	4802	4808	4826	4832	4848	4865	4881	4886	4902	4908	4926	4932
4948	4965	4979	5025	5043	5058	5092	5112	5151	5219	5275	5288	5306
5324	5351	5364	5366	5385	5402	5429	5441	5503	5519	5579	5612	5626
5804	5827	5840	5887	5899	5935	5952	5960	5972	6029	6045	6059	6073
6089	6100	6112	6137	6158	6172	6204	6230	6243	6258	6286	6299	6334
6355	6371	6409	6425	6465	6481	6527	6542	6654	6670	6775		
682#	2802	2806										
682#	2821	2826										
682#	688	1895	1931	1967	2002	2037	2073	2109	2144	2179	2214	2249
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2605	2619	2626	2639	2787	2808	2828	2846	2861	2869	2886	2890	2892
2902	2926	2956	2958	2966	2988	2993	3012	3014	3022	3044	3049	3069
3071	3080	3104	3109	3127	3132	3149	3151	3159	3190	3212	3214	3222
3254	3276	3278	3287	3318	3347	3365	3367	3376	3434	3483	3485	3495
3519	3568	3570	3584	3608	3613	3632	3637	3654	3659	3671	3673	3687
3708	3713	3729	3734	3750	3755	3767	3769	3783	3806	3811	3829	3834
3851	3856	3868	3870	3884	3906	3911	3928	3933	3950	3955	3967	3969
3983	4006	4011	4028	4033	4050	4055	4067	4069	4083	4106	4111	4128
4133	4150	4155	4167	4169	4183	4205	4210	4227	4232	4249	4254	4266
4268	4282	4304	4309	4326	4331	4348	4353	4365	4367	4381	4402	4407
4426	4431	4448	4453	4465	4467	4481	4502	4507	4526	4531	4548	4553
4565	4567	4581	4602	4607	4626	4631	4648	4653	4665	4667	4681	4702
4707	4726	4731	4748	4753	4765	4767	4781	4802	4807	4826	4831	4848
4853	4865	4867	4881	4902	4907	4926	4931	4948	4953	4965	4967	4979
5025	5043	5045	5058	5092	5112	5114	5151	5219	5275	5277	5288	5306
5324	5351	5353	5364	5366	5385	5402	5429	5431	5441	5503	5505	5519
5579	5612	5614	5626	5804	5827	5829	5840	5887	5889	5899	5935	5952
5960	5962	5972	6029	6045	6059	6073	6089	6100	6112	6137	6158	6160
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6409	6411	6425	6465	6467	6481	6527	6529	6542	6654	6656	6695	6782
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682#	874	889										
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2495	2509	2512	2526	2530	2546	2549	2565	2568	2584	2587	2603	
682#	2628	2633										
682#	2615	2624										
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682#	3638	3657	3693	3711	3714	3732	3735	3753	3789	3809	3812	3835
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4090	4109	4112	4131	4134	4153	4189	4208	4211	4230	4233	4252	4288
4307	4310	4329	4332	4351	4386	4405	4408	4429	4432	4451	4486	4505

4508	4529	4532	4551	4586	4605	4608	4629	4632	4651	4686	4705	4708
4729	4732	4751	4786	4805	4808	4829	4832	4851	4886	4905	4908	4929
4932	4951											
682#	6775	6780										
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682#	898	904										
682#	2862	2890	2903	2956	2967	3012	3023	3069	3081	3149	3160	3212
3223	3276	3288	3365	3377	3483	3496	3568	3585	3671	3688	3767	3784
3868	3885	3967	3984	4067	4084	4167	4184	4266	4283	4365	4382	4465
4482	4565	4582	4665	4682	4765	4782	4865	4882	4965	4980	5043	5059
5112	5152	5275	5289	5351	5365	5429	5442	5503	5520	5612	5627	5827
5841	5887	5900	5960	5973	6158	6173	6230	6244	6286	6300	6355	6372
6409	6426	6465	6482	6527	6543	6654						
2686	2695#	2702										
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1155#	2722*	2723*			
1154#	2720*				
1157#	2728*	2729*			

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0174

LSSOFT	031776	G	6775	6776#	
LSSPC	002056	G	763#		
LSSPCP	002020	G	733#		
LSSPTP	002024	G	737#		
LSSSTA	002030	G	741#		
LSSW	002300	G	738	898	899#
LSTEST	002114	G	793#		
LSTIML	002014	G	729#		
LSUNIT	002012	G	727#		
L10000	002276		874	889#	
L10001	002300		898	904#	
L10002	006450		1893#		
L10003	006626		1929#		
L10004	007004		1965#		
L10005	007156		2000#		
L10006	007330		2035#		
L10007	007506		2071#		
L10010	007664		2107#		
L10011	010036		2142#		
L10012	010210		2177#		
L10013	010362		2212#		
L10014	010534		2247#		
L10015	010706		2282#		
L10016	011064		2318#		
L10017	011236		2353#		
L10020	011360		2383#		
L10021	011532		2418#		
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L10024	012022		2492#		
L10025	012064		2509#		
L10026	012126		2526#		
L10027	012174		2546#		
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L10033	012372		2620	2624#	
L10035	012402		2637#		
L10036	013104		2785#		
L10037	013106		2806#		
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L10041	013114		2844#		
L10042	013224		2870	2887	2890#
L10043	013416		2927	2956#	
L10044	013570		3012#		
L10045	013746		3069#		
L10046	014226		3149#		
L10047	014456		3191	3212#	
L10050	014716		3255	3276#	
L10051	015266		3319	3348	3365#
L10052	015646		3435	3483#	
L10053	016132		3520	3568#	
L10054	016416		3671#		
L10055	016662		3767#		
L10056	017142		3868#		
L10057	017422		3967#		

[illegible]

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0177

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SIB5	003165	1378#											
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SPR =	003000 G	1021#											
SRG0 =	000000 G	1035#	1402										
SRG1 =	000020 G	1036#	1403										
SRG10 =	000200 G	1043#	1414										
SRG11 =	000220 G	1044#	1415										
SRG12 =	000240 G	1045#											
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SRG3 =	000060 G	1038#	1405										
SRG4 =	000100 G	1039#	1408										
SRG5 =	000120 G	1040#	1409										
SRG6 =	000140 G	1041#	1410										
SRG7 =	000160 G	1042#	1411										
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SEQ 0180

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SEQ 0181

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		3070#	3086#	3110#	3150#	3213#	3277#	3366#	3484#	3569#	3590#	3614#	3638#	3672#
		3693#	3714#	3735#	3768#	3789#	3812#	3835#	3869#	3890#	3912#	3934#	3968#	3990#
		4012#	4034#	4068#	4090#	4112#	4134#	4168#	4189#	4211#	4233#	4267#	4288#	4310#
		4332#	4366#	4386#	4408#	4432#	4466#	4486#	4508#	4532#	4566#	4586#	4608#	4632#
		4666#	4686#	4708#	4732#	4766#	4786#	4808#	4832#	4866#	4886#	4908#	4932#	4966#
		5044#	5113#	5276#	5352#	5430#	5504#	5613#	5828#	5888#	5961#	6159#	6231#	6287#
		6356#	6410#	6466#	6528#	6655#	6695#	6782#						
TEMP	002402	1105#	5444*	5480*	5526*	5534*								
TESTAD	003322	1431*	1437#											
TFM1	004356	1612#	1883	1919	1955									
TFM2	004402	1616#	1990	2025	2132	2237	2408	2443						
TFM3	004420	1619#	2061	2097										
TFM36	004507	1630#	2461											
TFM4	004445	1623#	2167	2202	2272	2343								
TFM40	004753	1660#	2480											
TFM41	004575	1640#	2497											
TFM42	004664	1650#	2514											
TFM43	005035	1669#	2534											
TFM44	005120	1678#	2553											
TFM45	005157	1684#	2572											
TFM46	005215	1690#	2591											
TFM5	004463	1626#	2308											
TMMC	005301	1699#	2552	2571										
TYPE	002374	1102#	2772*	2777*	2782*	5701								
T\$ARGC=	000001	715#	716#	717#	718#	719#	720#	1861#	1867	1868#	1873	1874#	1879	1880#
		1887	1888#	1892	1897#	1903	1904#	1909	1910#	1915	1916#	1923	1924#	1928
		1933#	1939	1940#	1945	1946#	1951	1952#	1959	1960#	1964	1969#	1975	1976#
		1981	1982#	1987	1988#	1994	1995#	1999	2004#	2010	2011#	2016	2017#	2022
		2023#	2029	2030#	2034	2039#	2045	2046#	2051	2052#	2057	2058#	2065	2066#
		2070	2075#	2081	2082#	2087	2088#	2093	2094#	2101	2102#	2106	2111#	2117
		2118#	2123	2124#	2129	2130#	2136	2137#	2141	2146#	2152	2153#	2158	2159#
		2164	2165#	2171	2172#	2176	2181#	2187	2188#	2193	2194#	2199	2200#	2206
		2207#	2211	2216#	2222	2223#	2228	2229#	2234	2235#	2241	2242#	2246	2251#
		2257	2258#	2263	2264#	2269	2270#	2276	2277#	2281	2286#	2292	2293#	2298
		2299#	2304	2305#	2312	2313#	2317	2322#	2328	2329#	2334	2335#	2340	2341#
		2347	2348#	2352	2359#	2365	2366#	2371	2372#	2377	2378#	2382	2387#	2393
		2394#	2399	2400#	2405	2406#	2412	2413#	2417	2422#	2428	2429#	2434	2435#
		2440	2441#	2447	2448#	2452	2459#	2465	2467#	2471	2479#	2484	2486#	2490
		2497#	2501	2503#	2507	2514#	2518	2520#	2524	2532#	2538	2540#	2544	2551#
		2557	2559#	2563	2570#	2576	2578#	2582	2589#	2595	2597#	2601		
T\$CODE=	011032	6675#	6686#											
T\$ERRN=	000056	682#	2879#	2921#	2939#	2984#	3040#	3100#	3123#	3186#	3250#	3314#	3343#	3405#
		3427#	3467#	3515#	3536#	3552#	3604#	3628#	3650#	3704#	3725#	3746#	3801#	3824#

CZKMCAO KMC11-B STATIC PART2
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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0182

TSEXCP= 000000
TSFLAG= 000040

TSGMAN= 000000
TSHILI= 000001
TSLAST= 000001
TSLOLI= 000000
TSLSYM= 010000

TSLTNO= 000052
TSNEST= 000000

TSNSO = 000000
TSNS1 = 000005

3847#	3902#	3924#	3946#	4002#	4024#	4046#	4102#	4124#	4146#	4201#	4223#	4245#
4300#	4322#	4344#	4398#	4422#	4444#	4498#	4522#	4544#	4598#	4622#	4644#	4698#
4722#	4744#	4798#	4822#	4844#	4898#	4922#	4944#	5017#	5085#	5185#	5258#	5301#
5319#	5335#	5380#	5397#	5413#	5456#	5472#	5486#	5539#	5561#	5572#	5589#	5602#
5722#	5748#	5767#	5786#	5870#	5929#	6024#	6039#	6054#	6068#	6084#	6096#	6108#
6120#	6224#	6254#	6268#	6328#	6391#	6447#	6509#	6570#	6594#	6614#	6634#	
6675#	6679	6686#	6691									
2619#	2621	2869#	2886#	2926#	2988#	3044#	3104#	3127#	3190#	3254#	3318#	3347#
3434#	3519#	3608#	3632#	3654#	3708#	3729#	3750#	3806#	3829#	3851#	3906#	3928#
3950#	4006#	4028#	4050#	4106#	4128#	4150#	4205#	4227#	4249#	4304#	4326#	4348#
4402#	4426#	4448#	4502#	4526#	4548#	4602#	4626#	4648#	4702#	4726#	4748#	4802#
4826#	4848#	4902#	4926#	4948#	5025#	5092#	5219#	5306#	5324#	5366#	5385#	5402#
5579#	5804#	5935#	5952#	6029#	6045#	6059#	6073#	6089#	6100#	6112#	6137#	6204#
6258#	6334#											
682#												
6675#	6678	6686#	6690									
682#	6792#											
6675#	6677	6686#	6689									
682#	890	905	1894	1930	1966	2001	2036	2072	2108	2143	2178	2213
2248	2283	2319	2354	2384	2419	2454	2474	2493	2510	2527	2547	2566
2585	2604	2625	2638	2786	2807	2827	2845	2891	2957	3013	3070	3150
3213	3277	3366	3484	3569	3672	3768	3869	3968	4068	4168	4267	4366
4466	4566	4666	4766	4866	4966	5044	5113	5276	5352	5430	5504	5613
5828	5888	5961	6159	6231	6287	6356	6410	6466	6528	6655	6695	6782
6795#												
682#	688#	874#	889#	898#	904#	1860#	1893#	1896#	1929#	1932#	1965#	1968#
2000#	2035#	2035#	2038#	2071#	2074#	2107#	2110#	2142#	2145#	2177#	2180#	2212#
2215#	2247#	2250#	2282#	2285#	2318#	2321#	2353#	2358#	2383#	2386#	2418#	2421#
2453#	2457#	2473#	2477#	2492#	2495#	2509#	2512#	2526#	2530#	2546#	2549#	2565#
2568#	2584#	2587#	2603#	2615#	2624#	2628#	2633#	2635#	2637#	2649#	2785#	2802#
2806#	2821#	2826#	2842#	2844#	2862#	2890#	2903#	2956#	2967#	2974#	2991#	3012#
3023#	3029#	3047#	3069#	3081#	3086#	3107#	3110#	3130#	3149#	3160#	3212#	3223#
3276#	3288#	3365#	3377#	3483#	3496#	3568#	3585#	3590#	3611#	3614#	3635#	3638#
3657#	3671#	3688#	3693#	3711#	3714#	3732#	3735#	3753#	3767#	3784#	3789#	3909#
3812#	3832#	3835#	3854#	3868#	3885#	3890#	3909#	3912#	3931#	3934#	3953#	3967#
3984#	3990#	4009#	4012#	4031#	4034#	4053#	4067#	4084#	4090#	4109#	4112#	4131#
4134#	4153#	4167#	4184#	4189#	4208#	4211#	4230#	4233#	4252#	4266#	4283#	4288#
4307#	4310#	4329#	4332#	4351#	4365#	4382#	4386#	4405#	4408#	4429#	4432#	4451#
4465#	4482#	4486#	4505#	4508#	4529#	4532#	4551#	4565#	4582#	4586#	4605#	4608#
4629#	4632#	4651#	4665#	4682#	4686#	4705#	4708#	4729#	4732#	4751#	4765#	4782#
4786#	4805#	4808#	4829#	4832#	4851#	4865#	4882#	4886#	4905#	4908#	4929#	4932#
4951#	4965#	4980#	5043#	5059#	5112#	5152#	5275#	5289#	5351#	5365#	5429#	5442#
5503#	5520#	5612#	5627#	5827#	5841#	5887#	5900#	5960#	5973#	6158#	6173#	6230#
6244#	6286#	6300#	6355#	6372#	6409#	6426#	6465#	6482#	6527#	6543#	6654#	6670#
6693#	6775#	6780#										
688#												
874#	889	898#	904	1860#	1893	1896#	1929	1932#	1965	1968#	2000	2003#
2035	2038#	2071	2074#	2107	2110#	2142	2145#	2177	2180#	2212	2215#	2247
2250#	2282	2285#	2318	2321#	2353	2358#	2383	2386#	2418	2421#	2453	2457#
2473	2477#	2492	2495#	2509	2512#	2526	2530#	2546	2549#	2565	2568#	2584
2587#	2603	2615#	2624	2628#	2633	2635#	2637	2649#	2785	2802#	2806	2821#
2826	2842#	2844	2862#	2890	2903#	2956	2967#	3012	3023#	3069	3081#	3149
3160#	3212	3223#	3276	3288#	3365	3377#	3483	3496#	3568	3585#	3671	3688#
3767	3784#	3868	3885#	3967	3984#	4067	4084#	4167	4184#	4266	4283#	4365
4382#	4465	4482#	4565	4582#	4665	4682#	4765	4782#	4865	4882#	4965	4980#
5043	5059#	5112	5152#	5275	5289#	5351	5365#	5429	5442#	5503	5520#	5612

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0183

TSMS2 = 000003

TSPTMU= 000000

TSSAVL= 177777

TSSEGL= 177777

TSSEK0= 010002

TSSUBN= 000000

TSTAGL= 177777

TSTAGN= 010116

TSTEMP= 000005

5627#	5827	5841#	5887	5900#	5960	5973#	6158	6173#	6230	6244#	6286	6300#
635	6372#	6409	6426#	6465	6482#	6527	6543#	6654	6670#	6693	6775#	6780
2974#	2991	3029#	3047	3086#	3107	3110#	3130	3590#	3611	3614#	3635	3638#
3657	3693#	3711	3714#	3732	3735#	3753	3789#	3809	3812#	3832	3835#	3854
3890#	3909	3912#	3931	3934#	3953	3990#	4009	4012#	4031	4034#	4053	4090#
4109	4112#	4131	4134#	4153	4189#	4208	4211#	4230	4233#	4252	4288#	4307
4310#	4329	4332#	4351	4386#	4405	4408#	4429	4432#	4451	4486#	4505	4508#
4529	4532#	4551	4586#	4605	4608#	4629	4632#	4651	4686#	4705	4708#	4729
4732#	4751	4786#	4805	4808#	4829	4832#	4851	4886#	4905	4908#	4929	4932#
4951												
682#												
682#												
682#	2974#	2989	2991#	2993	3029#	3045	3047#	3049	3086#	3105	3107#	3109
3110#	3128	3130#	3132	3590#	3609	3611#	3613	3614#	3633	3635#	3637	3638#
3655	3657#	3659	3693#	3709	3711#	3713	3714#	3730	3732#	3734	3735#	3751
3753#	3755	3789#	3807	3809#	3811	3812#	3830	3832#	3834	3835#	3852	3854#
3856	3890#	3907	3909#	3911	3912#	3929	3931#	3933	3934#	3951	3953#	3955
3990#	4007	4009#	4011	4012#	4029	4031#	4033	4034#	4051	4053#	4055	4090#
4107	4109#	4111	4112#	4129	4131#	4133	4134#	4151	4153#	4155	4189#	4206
4208#	4210	4211#	4228	4230#	4232	4233#	4250	4252#	4254	4288#	4305	4307#
4309	4310#	4327	4329#	4331	4332#	4349	4351#	4353	4386#	4403	4405#	4407
4408#	4427	4429#	4431	4432#	4449	4451#	4453	4486#	4503	4505#	4507	4508#
4527	4529#	4531	4532#	4549	4551#	4553	4586#	4603	4605#	4607	4608#	4627
4629#	4631	4632#	4649	4651#	4653	4686#	4703	4705#	4707	4708#	4727	4729#
4731	4732#	4749	4751#	4753	4786#	4803	4805#	4807	4808#	4827	4829#	4831
4832#	4849	4851#	4853	4886#	4903	4905#	4907	4908#	4927	4929#	4931	4932#
4949	4951#	4953										
2974#	2989	2991	3029#	3045	3047	3086#	3105	3107	3110#	3128	3130	3590#
3609	3611	3614#	3633	3635	3638#	3655	3657	3693#	3709	3711	3714#	3730
3732	3735#	3751	3753	3789#	3807	3809	3812#	3830	3832	3835#	3852	3854
3890#	3907	3909	3912#	3929	3931	3934#	3951	3953	3990#	4007	4009	4012#
4029	4031	4034#	4051	4053	4090#	4107	4109	4112#	4129	4131	4134#	4151
4153	4189#	4206	4208	4211#	4228	4230	4233#	4250	4252	4288#	4305	4307
4310#	4327	4329	4332#	4349	4351	4386#	4403	4405	4408#	4427	4429	4'32#
4449	4451	4486#	4503	4505	4508#	4527	4529	4532#	4549	4551	4586#	4603
4605	4608#	4627	4629	4632#	4649	4651	4686#	4703	4705	4708#	4727	4729
4732#	4749	4751	4786#	4803	4805	4808#	4827	4829	4832#	4849	4851	4886#
4903	4905	4908#	4927	4929	4932#	4949	4951					
682#	2861#	2902#	2966#	3022#	3080#	3159#	3222#	3287#	3376#	3495#	3584#	3687#
3783#	3884#	3983#	4083#	4183#	4282#	4381#	4481#	4581#	4681#	4781#	4881#	4979#
5058#	5151#	5288#	5364#	5441#	5519#	5626#	5840#	5899#	5972#	6172#	6243#	6299#
6371#	6425#	6481#	6542#									
682#												
682#	874#	898#	1860#	1896#	1932#	1968#	2003#	2038#	2074#	2110#	2145#	2180#
2215#	2250#	2285#	2321#	2358#	2386#	2421#	2457#	2477#	2495#	2512#	2530#	2549#
2568#	2587#	2615#	2628#	2635#	2649#	2802#	2821#	2842#	2862#	2903#	2967#	3023#
3081#	3160#	3223#	3288#	3377#	3496#	3585#	3688#	3784#	3885#	3984#	4084#	4184#
4283#	4382#	4482#	4582#	4682#	4782#	4882#	4980#	5059#	5152#	5289#	5365#	5442#
5520#	5627#	5841#	5900#	5973#	6173#	6244#	6300#	6372#	6426#	6482#	6543#	6670#
6775#												
816#	817#	818#	819#	820#	821#	822#	823#	824#	825#	826#	827#	828#
829#	830#	831#	832#	833#	834#	835#	836#	837#	838#	839#	840#	841#
842#	843#	844#	845#	846#	847#	848#	849#	850#	851#	852#	853#	854#
855#	856#	857#	858#	889#	904#	1893#	1929#	1965#	2000#	2035#	2071#	2107#
2142#	2177#	2212#	2247#	2282#	2318#	2353#	2383#	2418#	2453#	2473#	2492#	2509#
2526#	2546#	2565#	2584#	2603#	2619#	2620	2624#	2633#	2637#	2785#	2806#	2826#

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0184

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3212#	3254#	3255	3276#	3318#	3319	3347#	3348	3365#	3434#	3435	3483#	3519#
3520	3568#	3608#	3609#	3611#	3632#	3633#	3635#	3654#	3655#	3657#	3671#	3708#
3709#	3711#	3729#	3730#	3732#	3750#	3751#	3753#	3767#	3806#	3807#	3809#	3829#
3830#	3832#	3851#	3852#	3854#	3868#	3906#	3907#	3909#	3928#	3929#	3931#	3950#
3951#	3953#	3967#	4006#	4007#	4009#	4028#	4029#	4031#	4050#	4051#	4053#	4067#
4106#	4107#	4109#	4128#	4129#	4131#	4150#	4151#	4153#	4167#	4205#	4206#	4208#
4227#	4228#	4230#	4249#	4250#	4252#	4266#	4304#	4305#	4307#	4326#	4327#	4329#
4348#	4349#	4351#	4365#	4402#	4403#	4405#	4426#	4427#	4429#	4448#	4449#	4451#
4465#	4502#	4503#	4505#	4526#	4527#	4529#	4548#	4549#	4551#	4565#	4602#	4603#
4605#	4626#	4627#	4629#	4648#	4649#	4651#	4665#	4702#	4703#	4705#	4726#	4727#
4729#	4748#	4749#	4751#	4765#	4802#	4803#	4805#	4826#	4827#	4829#	4848#	4849#
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5026	5043#	5092#	5093	5112#	5219#	5220	5275#	5306#	5307	5324#	5325	5351#
5366#	5367	5385#	5386	5402#	5403	5429#	5503#	5579#	5580	5612#	5804#	5805
5827#	5887#	5935#	5936	5952#	5953	5960#	6029#	6030	6045#	6046	6059#	6060
6073#	6074	6089#	6090	6100#	6101	6112#	6113	6137#	6138	6158#	6204#	6205
6230#	6258#	6259	6286#	6334#	6335	6355#	6409#	6465#	6527#	6654#	6675#	6686#
6693#	6780#											
682#	2854	2858	2861#	2894	2899	2902#	2959	2963	2966#	3015	3019	3022#
3072	3077	3080#	3152	3156	3159#	3215	3219	3222#	3279	3284	3287#	3368
3373	3376#	3486	3492	3495#	3571	3581	3584#	3674	3684	3687#	3770	3780
3783#	3871	3881	3884#	3970	3980	3983#	4070	4080	4083#	4170	4180	4183#
4269	4279	4282#	4368	4378	4381#	4468	4478	4481#	4568	4578	4581#	4668
4678	4681#	4768	4778	4781#	4868	4878	4881#	4968	4976	4979#	5046	5055
5058#	5115	5148	5151#	5278	5285	5288#	5354	5361	5364#	5432	5438	5441#
5506	5516	5519#	5615	5623	5626#	5830	5837	5840#	5890	5896	5899#	5963
5969	5972#	6161	6169	6172#	6233	6240	6243#	6289	6296	6299#	6358	6368
6371#	6412	6422	6425#	6468	6478	6481#	6530	6539	6542#	6795		
682#	1866	1872	1878	1886	1891	1894	1902	1908	1914	1922	1927	1930
1938	1944	1950	1958	1963	1966	1974	1980	1986	1993	1998	2001	2009
2015	2021	2028	2033	2036	2044	2050	2056	2064	2069	2072	2080	2086
2092	2100	2105	2108	2116	2122	2128	2135	2140	2143	2151	2157	2163
2170	2175	2178	2186	2192	2198	2205	2210	2213	2221	2227	2233	2240
2245	2248	2256	2262	2268	2275	2280	2283	2291	2297	2303	2311	2316
2319	2327	2333	2339	2346	2351	2354	2364	2370	2376	2381	2384	2392
2398	2404	2411	2416	2419	2427	2433	2439	2446	2451	2454	2464	2470
2474	2483	2489	2493	2500	2506	2510	2517	2523	2527	2537	2543	2547
2556	2562	2566	2575	2581	2585	2594	2600	2604	2625	2638	2666	2672
2677	2684	2699	2786	2807	2824	2827	2845	2869	2878	2886	2891	2920
2926	2938	2957	2974	2983	2988	2992	3013	3029	3039	3044	3048	3070
3086	3099	3104	3108	3110	3122	3127	3131	3150	3185	3190	3213	3249
3254	3277	3313	3318	3342	3347	3366	3404	3426	3434	3466	3484	3514
3519	3535	3551	3569	3590	3603	3608	3612	3614	3627	3632	3636	3638
3649	3654	3658	3672	3693	3703	3708	3712	3714	3724	3729	3733	3735
3745	3750	3754	3768	3789	3800	3806	3810	3812	3823	3829	3833	3835
3846	3851	3855	3869	3890	3901	3906	3910	3912	3923	3928	3932	3934
3945	3950	3954	3968	3990	4001	4006	4010	4012	4023	4028	4032	4034
4045	4050	4054	4068	4090	4101	4106	4110	4112	4123	4128	4132	4134
4145	4150	4154	4168	4189	4200	4205	4209	4211	4222	4227	4231	4233
4244	4249	4253	4267	4288	4299	4304	4308	4310	4321	4326	4330	4332
4343	4348	4352	4366	4386	4397	4402	4406	4408	4421	4426	4430	4432
4443	4448	4452	4466	4486	4497	4502	4506	4508	4521	4526	4530	4532
4543	4548	4552	4566	4586	4597	4602	4606	4608	4621	4626	4630	4632
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T\$TEST= 000052

T\$TSM= 177777

T1	013116	G
T10	015650	G
T11	016134	G
T12	016420	G
T13	016664	G
T14	017144	G
T15	017424	G

4743	4748	4752	4766	4786	4797	4802	4806	4808	4821	4826	4830	4832
4843	4848	4852	4866	4886	4897	4902	4906	4908	4921	4926	4930	4932
4943	4948	4952	4966	5016	5025	5044	5084	5092	5113	5184	5219	5257
5276	5300	5306	5318	5324	5334	5352	5366	5379	5385	5396	5402	5412
5430	5455	5471	5485	5504	5538	5560	5571	5579	5588	5601	5613	5721
5747	5766	5785	5804	5828	5869	5888	5928	5935	5952	5961	6023	6029
6038	6045	6053	6059	6067	6073	6089	6095	6100	6107	6112	6119	6119
6137	6159	6204	6223	6231	6253	6258	6267	6287	6327	6334	6356	6390
6410	6446	6466	6508	6528	6549	6567	6569	6575	6593	6599	6613	6620
6623	6633	6655										
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3784#	3885#	3984#	4084#	4184#	4283#	4382#	4482#	4582#	4682#	4782#	4882#	4980#
5059#	5152#	5289#	5365#	5442#	5520#	5627#	5841#	5900#	5973#	6173#	6244#	6300#
6372#	6426#	6482#	6543#									
2842#	2844											
2635#	2637											
2802#	2806											
2821#	2826											
6670#	6694											
874#	889											
2649#	2785											
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2321#	2353	2358#	2383	2386#	2418	2421#	2453	2457#	2473	2477#	2492	2495#
2509	2512#	2526	2530#	2546	2549#	2565	2568#	2584	2587#	2603		
2628#												
2615#	2619	2624										
2974#	2988	2991#	3029#	3044	3047#	3086#	3104	3107#	3110#	3127	3130#	3590#
3608	3611#	3614#	3632	3635#	3638#	3654	3657#	3693#	3708	3711#	3714#	3729
3732#	3735#	3750	3753#	3789#	3806	3809#	3812#	3829	3832#	3835#	3851	3854#
3890#	3906	3909#	3912#	3928	3931#	3934#	3950	3953#	3990#	4006	4009#	4012#
4028	4031#	4034#	4050	4053#	4090#	4106	4109#	4112#	4128	4131#	4134#	4150
4153#	4189#	4205	4208#	4211#	4227	4230#	4233#	4249	4252#	4288#	4304	4307#
4310#	4326	4329#	4332#	4348	4351#	4386#	4402	4405#	4408#	4426	4429#	4'32#
4448	4451#	4486#	4502	4505#	4508#	4526	4529#	4532#	4548	4551#	4586#	4602
4605#	4608#	4626	4629#	4632#	4648	4651#	4686#	4702	4705#	4708#	4726	4729#
4732#	4748	4751#	4786#	4802	4805#	4808#	4826	4829#	4832#	4848	4851#	4886#
4902	4905#	4908#	4926	4929#	4932							

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CROSS REFERENCE TABLE -- USER SYMBOLS

[illegible]

CZKMCAO KMC11-B STATIC PART2
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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0187

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\$REG3	002364	1098#	1594*											
\$REG4	002362	1097#	1593*	1881	1917	1953	1988	2023	2059	2095	2130	2165	2200	2235
		2270	2305	2341	2406	2441								
\$REG5	002360	1096#	1592*	1954	1989	2024	2060	2096	2131	2201	2236	2306	2342	2407
		2442												
\$TEMPO	002404	1106#												
\$TMPO	002406	1107#	5445*	5481*	5482	5527*	5557	5564						
.	= 032002	673#	1088#	1089#	1090#	1091#	1123#	1169#	1200#	1438#	2620	2870	2887	2927
		2989	3045	3105	3128	3191	3255	3319	3348	3435	3520	3609	3633	3655
		3709	3730	3751	3807	3830	3852	3907	3929	3951	4007	4029	4051	4107
		4129	4151	4206	4228	4250	4305	4327	4349	4403	4427	4449	4503	4527
		4549	4603	4627	4649	4703	4727	4749	4803	4827	4849	4903	4927	4949
		5026	5093	5220	5307	5325	5367	5386	5403	5580	5805	5809#	5813#	5936
		5753	6030	6046	6060	6074	6090	6101	6113	6138	6205	6259	6335	6755#
.MSTCL	003254	1417#	2905	2969	3025	3084	3163	3226	3291	3380	3499	3589	3691	3787
		3888	3987	4087	4186	4286	4384	4388	4484	4488	4584	4684	4784	4884
		4982	5061	5154	5290	5369	5444	5523	5537	5587	5600	5610	5629	5843
		5903	5977	6175	6246	6302	6376	6428	6486	6545				
.REGT	003640	1447#												
.ROMCL	003634	1324	1444#	1472	1474	1476	1484	1491	1498	1505	1512	1514	1516	1525
		1536	1538	2910	2912	2914	2930	2932	3170	3172	3175	3177	3179	3234
		3236	3239	3241	3243	3298	3300	3303	3305	3307	3330	3332	3334	3336
		3384	3386	3388	3394	3396	3412	3415	3453	3455	3501	3504	3523	3528
		3540	3542	3544	4986	4988	4992	5007	5009	5068	5070	5077	5165	5167
		5173	5175	5243	5245	5293	5310	5328	5372	5389	5406	5448	5477	5634
		5647	5650	5653	5666	5669	5672	5678	5680	5683	5686	5689	5697	5699
		5714	5742	5758	5761	5775	5777	5780	5844	5846	5848	5850	5854	5857
		6317	6320	6381	6435	6441	6488	6491	6502	6552	6555	6557	6560	6582
		6585	6604	6606	6626									
.SROMC	003670	1453#	1478	1518	1527	3398	3409	3449	3451	3595	3597	3619	3621	3641
		3643	3695	3697	3716	3718	3737	3739	3792	3794	3815	3817	3838	3840
		3893	3895	3915	3917	3937	3939	3993	3995	4015	4017	4037	4039	4093
		4095	4115	4117	4137	4139	4192	4194	4214	4216	4236	4238	4291	4293
		4313	4315	4335	4337	4389	4391	4413	4415	4435	4437	4489	4491	4513
		4515	4535	4537	4589	4591	4613	4615	4635	4637	4689	4691	4713	4715
		4735	4737	4789	4791	4813	4815	4835	4837	4889	4891	4913	4915	4935
		4937	5072	5169	5177	5239	5241	6378	6493					

CZKMCAO KMC11-B STATIC PART2
CZKMCA.P11 20-OCT-81 17:00

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CROSS REFERENCE TABLE -- MACRO NAMES

SEQ 0188

BADHEA	1248#	2853	2857	2893	2898	2958	2962	3014	3018	3071	3076	3151	3155	3214	3218
	3278	3283	3367	3372	3485	3491	3570	3580	3673	3683	3769	3779	3870	3880	3969
	3979	4069	4079	4169	4179	4268	4278	4367	4377	4467	4477	4567	4577	4667	4677
	4767	4777	4867	4877	4967	4975	5045	5054	5114	5147	5277	5284	5353	5360	5431
	5437	5505	5515	5614	5622	5829	5836	5889	5895	5962	5968	6160	6168	6232	6239
	6288	6295	6357	6367	6411	6421	6467	6477	6529	6538					
BCOMPL	2667	2673	2678												
BGNAU	2841														
BGNAUT	2634														
BGNCLN	2801														
BGNDU	2820														
BGNHRD	6669														
BGNHW	873														
BGNINI	2648														
BGNMOD	687														
BGNMSG	1860	1896	1932	1968	2003	2038	2074	2110	2145	2180	2215	2250	2285	2321	2358
	2386	2421	2456	2476	2494	2511	2529	2548	2567	2586					
BGNPRO	2627														
BGNRPT	2614														
BGNSEG	2973	3028	3085	3109	3589	3613	3637	3692	3713	3734	3788	3811	3834	3889	3911
	3933	3989	4011	4033	4089	4111	4133	4188	4210	4232	4287	4309	4331	4385	4407
	4431	4485	4507	4531	4585	4607	4631	4685	4707	4731	4785	4807	4831	4885	4907
	4931														
BGNSFT	6774														
BGNSW	897														
BGNTST	2860	2901	2965	3021	3079	3158	3221	3286	3375	3494	3583	3686	3782	3883	3982
	4082	4182	4281	4380	4480	4580	4680	4780	4880	4978	5057	5150	5287	5363	5440
	5518	5625	5839	5898	5971	6171	6242	6298	6370	6424	6480	6541			
BNCOMP	2685	2701													
BRESET	2823	6566	6622												
CHKREG	1304#	2944	3000	3057	3137	3200	3264	3353	3471	3556	3659	3755	3856	3955	4055
	4155	4254	4353	4453	4553	4653	4753	4853	4953	5031	5100	5263	5339	5417	5491
	5792	5815	5875	5939	6125	6192	6274	6343	6397	6453	6515	6642			
CKLOOP	6574	6598	6619												
CLRMAR	1277#	3385	3395												
DESCRI	1193														
DEVTYP	1189														
DISPAT	813														
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	3279	3284	3368	3373	3486	3492	3571	3581	3674	3684	3770	3780	3871	3881	3970
	3980	4070	4080	4170	4180	4269	4279	4368	4378	4468	4478	4568	4578	4668	4678
	4768	4778	4868	4878	4968	4976	5046	5055	5115	5148	5278	5285	5354	5361	5432
	5438	5506	5516	5615	5623	5830	5837	5890	5896	5963	5969	6161	6169	6233	6240
	6289	6296	6358	6368	6412	6422	6468	6478	6530	6539					
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ENDAUT	2636														
ENDCLN	2805														
ENDDU	2825														
ENDHRD	6692														
ENDHW	888														
ENDINI	2784														
ENDMSG	1893	1929	1965	2000	2035	2071	2107	2142	2177	2212	2247	2282	2318	2353	2383
	2418	2453	2472	2491	2508	2525	2545	2564	2583	2602					
ENDPRO	2632														
ENDRPT	2623														
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[illegible]

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	2075#	2082#	2088#	2094#	2102#	2111#	2118#	2124#	2130#	2137#	2146#	2153#	2159#	2172#			
	2181#	2188#	2194#	2200#	2207#	2216#	2223#	2229#	2235#	2242#	2251#	2258#	2264#	2277#			
	2286#	2293#	2299#	2305#	2313#	2322#	2329#	2335#	2341#	2348#	2359#	2366#	2372#	2387#			
	2394#	2400#	2406#	2413#	2422#	2429#	2435#	2441#	2448#	2459#	2467#	2479#	2486#	2503#			
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	751	753#	755	757	760	763	765	767	769	771	773	775	777	781			
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	5112#	5275#	5351#	5429#	5503#	5612#	5827#	5887#	5960#	6158#	6230#	6286#	6355#	6409#	6465#		
	6527#	6654#	6693#	6780#													
MSDEFA	6675#	6686#															
MSENDE	889#	904#	1893#	1929#	1965#	2000#	2035#	2071#	2107#	2142#	2177#	2212#	2247#	2282#	2318#		
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	3931#	3953#	3967#	4009#	4031#	4053#	4067#	4109#	4131#	4153#	4167#	4208#	4230#	4252#	4266#		
	4307#	4329#	4351#	4365#	4405#	4429#	4451#	4465#	4505#	4529#	4551#	4565#	4605#	4629#	4651#		
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	5275#	5351#	5429#	5503#	5612#	5827#	5887#	5960#	6158#	6230#	6286#	6355#	6409#	6465#	6527#		
	6654#	6693#	6780#														
	6675#	6686#															
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	3535#	3551#	3603#	3627#	3649#	3703#	3724#	3745#	3800#	3823#	3846#	3901#	3923#	3945#	4001#		
	4023#	4045#	4101#	4123#	4145#	4200#	4222#	4244#	4299#	4321#	4343#	4397#	4421#	4443#	4497#		
	4521#	4543#	4597#	4621#	4643#	4697#	4721#	4743#	4797#	4821#	4843#	4897#	4921#	4943#	5016#		
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	5588#	5601#	5721#	5747#	5766#	5785#	5869#	5928#	6023#	6038#	6053#	6067#	6083#	6095#	6107#		
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CZKMCAO KMC11-B STATIC PART2
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CROSS REFERENCE TABLE -- MACRO NAMES

K 15

SEQ 0192

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CZKMAO KMC11-B STATIC PART2
CZKMA.P11 20-OCT-81 17:00MACY11 30A(1052) 21-OCT-81 09:50 PAGE 197
CROSS REFERENCE TABLE -- MACRO NAMES

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	2175	2177#	2178	2181#	2186	2188#	2192	2194#	2198	2200#	2205	2207#	2210	2212#	2213
	2216#	2221	2223#	2227	2229#	2233	2235#	2240	2242#	2245	2247#	2248	2251#	2256	2258#
	2262	2264#	2268	2270#	2275	2277#	2280	2282#	2283	2286#	2291	2293#	2297	2299#	2303

CZKMAO KMC11-B STATIC PART2
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CROSS REFERENCE TABLE -- MACRO NAMES

SEQ 0196

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2394#	2398	2400#	2404	2406#	2411	2413#	2416	2418#	2419	2422#	2427	2429#	2433	2435#
2439	2441#	2446	2448#	2451	2453#	2454	2459#	2464	2467#	2470	2473#	2474	2479#	2483
2486#	2489	2492#	2493	2497#	2500	2503#	2506	2509#	2510	2514#	2517	2520#	2523	2526#
2527	2532#	2537	2540#	2543	2546#	2547	2551#	2556	2559#	2562	2565#	2566	2570#	2575
2578#	2581	2584#	2585	2589#	2594	2597#	2600	2603#	2604	2619#	2624#	2625	2637#	2638
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2826#	2827	2844#	2845	2869#	2878	2886#	2890#	2891	2920	2926#	2938	2956#	2957	2974#
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3514	3519#	3535	3551	3568#	3569	3590#	3603	3608#	3611#	3612	3614#	3627	3632#	3635#
3636	3638#	3649	3654#	3657#	3658	3671#	3672	3693#	3703	3708#	3711#	3712	3714#	3724
3729#	3732#	3733	3735#	3745	3750#	3753#	3754	3767#	3768	3789#	3800	3806#	3809#	3810
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4154	4167#	4168	4189#	4200	4205#	4208#	4209	4211#	4222	4227#	4230#	4231	4233#	4244
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6137#	6158#	6159	6204#	6223	6230#	6231	6253	6258#	6267	6286#	6287	6327	6334#	6355#
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6593	6599#	6613	6620#	6623#	6633	6654#	6655							
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MSTLAB

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CROSS REFERENCE TABLE -- MACRO NAMES

SEQ 0197

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	4702#	4706#	4708#	4721#	4726#	4730#	4732#	4743#	4748#	4752#	4766#	4786#	4797#	4802#	4806#
	4808#	4821#	4826#	4830#	4832#	4843#	4848#	4852#	4866#	4886#	4897#	4902#	4906#	4908#	4921#
	4926#	4930#	4932#	4943#	4948#	4952#	4966#	5016#	5025#	5044#	5084#	5092#	5113#	5184#	5219#
	5257#	5276#	5300#	5306#	5318#	5324#	5334#	5352#	5366#	5379#	5385#	5396#	5402#	5412#	5430#
	5455#	5471#	5485#	5504#	5538#	5560#	5571#	5579#	5588#	5601#	5613#	5721#	5747#	5766#	5785#
	5804#	5828#	5869#	5888#	5928#	5935#	5952#	5961#	6023#	6029#	6038#	6045#	6053#	6059#	6067#
	6073#	6083#	6089#	6095#	6100#	6107#	6112#	6119#	6137#	6159#	6204#	6223#	6231#	6253#	6258#
	6267#	6287#	6327#	6334#	6356#	6390#	6410#	6446#	6466#	6508#	6528#	6549#	6567#	6569#	6575#
	6593#	6599#	6613#	6620#	6623#	6633#	6655#								
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	1958#	1963#	1966#	1974#	1980#	1986#	1993#	1998#	2001#	2009#	2015#	2021#	2028#	2033#	2036#
	2044#	2050#	2056#	2064#	2069#	2072#	2080#	2086#	2092#	2100#	2105#	2108#	2116#	2122#	2128#
	2135#	2140#	2143#	2151#	2157#	2163#	2170#	2175#	2178#	2186#	2192#	2198#	2205#	2210#	2213#
	2221#	2227#	2233#	2240#	2245#	2248#	2256#	2262#	2268#	2275#	2280#	2283#	2291#	2297#	2303#
	2311#	2316#	2319#	2327#	2333#	2339#	2346#	2351#	2354#	2364#	2370#	2376#	2381#	2384#	2392#
	2398#	2404#	2411#	2416#	2419#	2427#	2433#	2439#	2446#	2451#	2454#	2464#	2470#	2474#	2483#
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	2581#	2585#	2594#	2600#	2604#	2625#	2638#	2666#	2672#	2677#	2684#	2699#	2786#	2807#	2824#
	2827#	2845#	2869#	2878#	2886#	2891#	2920#	2926#	2938#	2957#	2974#	2983#	2988#	2992#	3013#
	3029#	3039#	3044#	3048#	3070#	3086#	3099#	3104#	3108#	3110#	3122#	3127#	3131#	3150#	3185#
	3190#	3213#	3249#	3254#	3277#	3313#	3318#	3342#	3347#	3366#	3404#	3426#	3434#	3466#	3484#
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	4123#	4128#	4132#	4134#	4145#	4150#	4154#	4168#	4189#	4200#	4205#	4209#	4211#	4222#	4227#
	4231#	4233#	4244#	4249#	4253#	4267#	4288#	4299#	4304#	4308#	4310#	4321#	4326#	4330#	4332#
	4343#	4348#	4352#	4366#	4386#	4397#	4402#	4406#	4408#	4421#	4426#	4430#	4432#	4443#	4448#
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	4702#	4706#	4708#	4721#	4726#	4730#	4732#	4743#	4748#	4752#	4766#	4786#	4797#	4802#	4806#
	4808#	4821#	4826#	4830#	4832#	4843#	4848#	4852#	4866#	4886#	4897#	4902#	4906#	4908#	4921#
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	6593#	6599#	6613#	6620#	6623#	6633#	6655#								
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	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842
	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857
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	2985	2986	3039#	3040	3041	3042	3099#	3100	3101	3102	3122#	3123	3124	3125	3185#
	3186	3187	3188	3249#	3250	3251	3252	3313#	3314	3315	3316	3342#	3343	3344	3345
	3404#	3405	3406	3407	3426#	3427	3428	3429	3466#	3467	3468	3469	3514#	3515	3516
	3517	3535#	3536	3537	3538	3551#	3552	3553	3554	3603#	3604	3605	3606	3627#	3628
	3629	3630	3649#	3650	3651	3652	3703#	3704	3705	3706	3724#	3725	3726	3727	3745#
	3746	3747	3748	3800#	3801	3802	3803	3823#	3824	3825	3826	3846#	3847	3848	3849
	3901#	3902	3903	3904	3923#	3924	3925	3926	3945#	3946	3947	3948	4001#	4002	4003
	4004	4023#	4024	4025	4026	4045#	4046	4047	4048	4101#	4102	4103	4104	4123#	4124
	4125	4126	4145#	4146	4147	4148	4200#	4201	4202	4203	4222#	4223	4224	4225	4244#
	4245	4246	4247	4299#	4300	4301	4302	4321#	4322	4323	4324	4343#	4344	4345	4346

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CROSS REFERENCE TABLE -- MACRO NAMES

SEQ 0198

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	4623	4624	4643#	4644	4645	4646	4697#	4698	4699	4700	4721#	4722	4723	4724	4743#
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	4897#	4898	4899	4900	4921#	4922	4923	4924	4943#	4944	4945	4946	5016#	5017	5018
	5019	5084#	5085	5086	5087	5184#	5185	5186	5187	5257#	5258	5259	5260	5300#	5301
	5302	5303	5318#	5319	5320	5321	5334#	5335	5336	5337	5366#	5379#	5380	5381	5382
	5396#	5397	5398	5399	5412#	5413	5414	5415	5455#	5456	5457	5458	5471#	5472	5473
	5474	5485#	5486	5487	5488	5538#	5539	5540	5541	5560#	5561	5562	5563	5571#	5572
	5573	5574	5579#	5588#	5589	5590	5591	5601#	5602	5603	5604	5721#	5722	5723	5724
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	6253#	6254	6255	6256	6267#	6268	6269	6270	6327#	6328	6329	6330	6390#	6391	6392
	6393	6446#	6447	6448	6449	6508#	6509	6510	6511	6569#	6570	6571	6572	6593#	6594
	6595	6596	6613#	6614	6615	6616	6633#	6634	6635	6636	6675#	6686#	6792	6793	
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	1969	1976	1982	1988	1995	2004	2011	2017	2023	2030	2039	2046	2052	2058	2066
	2075	2082	2088	2094	2102	2111	2118	2124	2130	2137	2146	2153	2159	2165	2172
	2181	2188	2194	2200	2207	2216	2223	2229	2235	2242	2251	2258	2264	2270	2277
	2286	2293	2299	2305	2313	2322	2329	2335	2341	2348	2359	2366	2372	2378	2387
	2394	2400	2406	2413	2422	2429	2435	2441	2448	2466	2485	2502	2519	2539	2558
	2577	2596													
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	2664	2670	2675	2682											
	1281#	1323	1471	1473	1475	1483	1490	1497	1504	1511	1513	1515	1524	1535	1537
	2909	2911	2913	2929	2931	3169	3171	3174	3176	3178	3233	3235	3238	3240	3242
	3297	3299	3302	3304	3306	3329	3331	3333	3335	3383	3386	3387	3393	3396	3411
	3414	3452	3454	3500	3503	3522	3527	3539	3541	3543	4985	4987	4991	5006	5008
	5067	5069	5076	5164	5166	5172	5174	5242	5244	5292	5309	5327	5371	5388	5405
	5447	5476	5633	5646	5649	5652	5665	5668	5671	5677	5679	5682	5685	5688	5696
	5698	5713	5741	5757	5760	5774	5776	5779	5843	5845	5847	5849	5853	5856	6316
	6319	6380	6434	6440	6487	6490	6501	6551	6554	6556	6559	6581	6584	6603	6605
	6625														
SETPRI SKIP04 SKIP06 SKIP07 SROMCL	6547	1296#													
	1288#	3092													
	1292#	1548													
	1285#	1477	1517	1526	3397	3408	3448	3450	3594	3596	3618	3620	3640	3642	3694
	3696	3715	3717	3736	3738	3791	3793	3814	3816	3837	3839	3892	3894	3914	3916
	3936	3938	3992	3994	4014	4016	4036	4038	4092	4094	4114	4116	4136	4138	4191
	4193	4213	4215	4235	4237	4290	4292	4312	4314	4334	4336	4388	4390	4412	4414
	4434	4436	4488	4490	4512	4514	4534	4536	4588	4590	4612	4614	4634	4636	4688
	4690	4712	4714	4734	4736	4788	4790	4812	4814	4834	4836	4888	4890	4912	4914
	4934	4936	5071	5168	5176	5238	5240	6377	6492						
SVC XFER SMD	680#	681													
	2619#	5366#	5579#	5804#	5952#	6137#	6204#								
	1845#	1859	1895	1931	1967	2002	2037	2073	2109	2144	2179	2214	2249	2284	2320
	2357	2385	2420												

. ABS. 032002 000

CZKMCAO KMC11-B STATIC PART2 MACY11 30A(1052) 21-OCT-81 09:50 F 16
CZKMCA.P11 20-OCT-81 17:00 CROSS REFERENCE TABLE -- MACRO NAMES PAGE 201

SEQ 0199

ERRORS DETECTED: 0

CZKMCA,CZKMCA/CRF/SOL/NL:TOC=SVC34R/ML,CZKMCA
RUN-TIME: 243 281 31 SECONDS
RUN-TIME RATIO: 2514/557=4.5
CORE USED: 20K (39 PAGES)