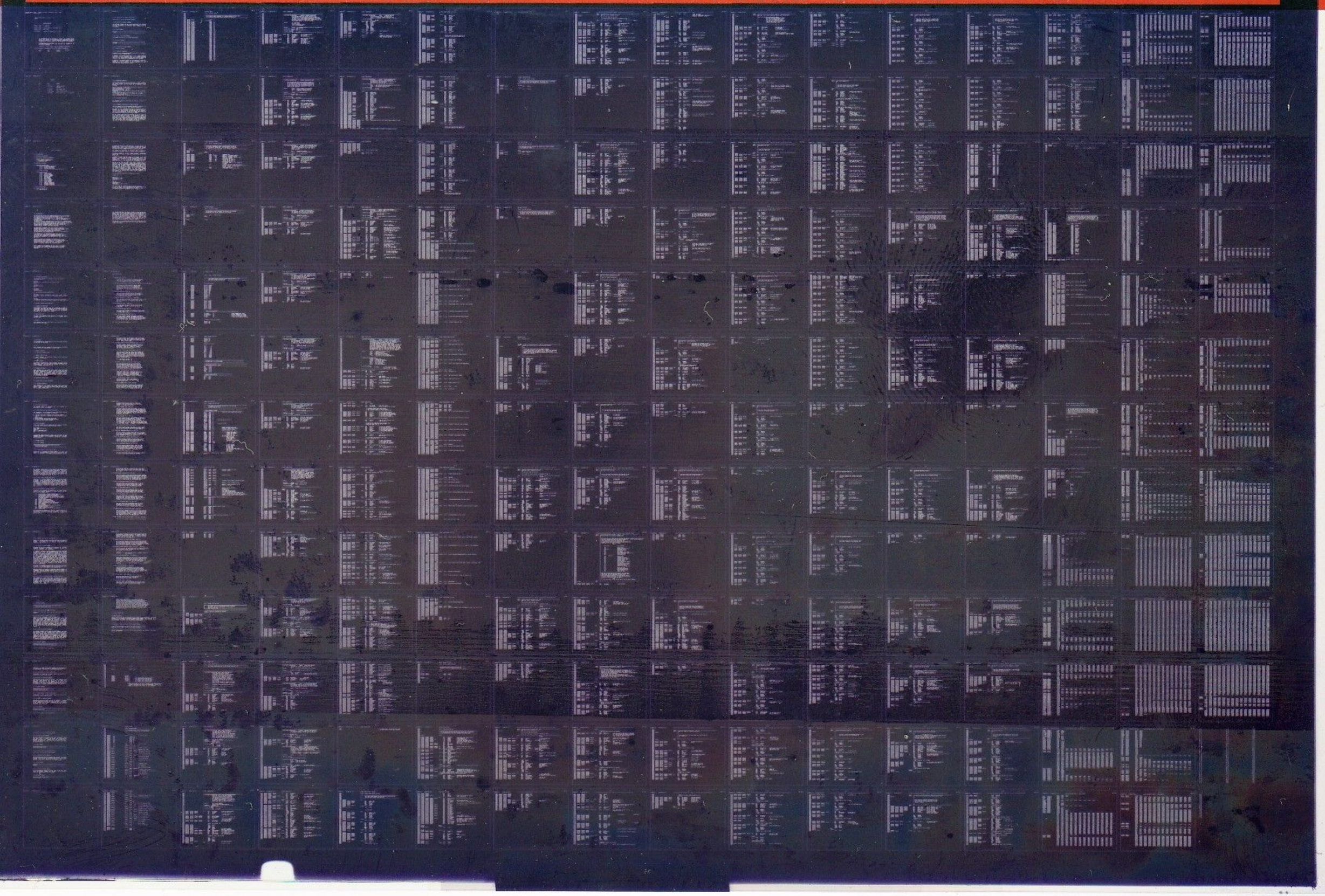
DMP-11, DMV-11

DMP/V11 FCTNL TST#1

CZDMTD0

AH-E238D-MC

FICHE 1 OF 2



DMP-11, DMV-11 DMP/V11 FCTNL TST#1 CZDMTDO AH-E238D-MC FICHE 2 OF 2 JUL 1982

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.TITLE CZDMTDO DMP/V-11 FCTNL TST #1
.REM &
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IDENTIFICATION

PRODUCT CODE: AC-E237D-MC

PRODUCT NAME: CZDMTDO DMP/V-11 FUNCTIONAL TEST 1

PRODUCT DATE: MARCH 1982

MAINTAINER: DIAGNOSTICS MERRIMACK CC: 38P

HISTORY

REV	DATE	REASON
A	18-AUG-80	INITIAL RELEASE DMP ONLY
B	14-JAN-81	DMP11 BUGS FIXED
C	1-APR-81	DMV11 SUPPORT ADDED
D	15-FEB-82	DMP11 BUGS FIXED (11/24 RELATED)

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1.0 INTRODUCTION

THE DMP AND DMV OPTIONS ARE COMMUNICATION OPTIONS THAT IMPLEMENT THE DDCMP PROTOCOL IN A MULTIDROP ENVIRONMENT. THE DMP IS USED WITH UNIBUS SYSTEMS WHILE THE DMV IS A Q BUS OPTION.
THE PURPOSE OF THIS FUNCTIONAL TEST IS TO VERIFY AND EXERCISE THE MICROCODE USED IN THIS OPTION. THIS IS DONE BY PERFORMING THE FOLLOWING TESTS.
CSR ADDRESSING TESTS, ROM VERIFICATION BY CRC TESTS, RUNNING MICRO DIAGNOSTICS, RUNNING INTERFACE DIAGS. (DMP ONLY), CHECKS FOR RDO AND RDI, CHECKS FOR VARIOUS PROCEDURE ERRORS, MODE DEFINITION CHECKS, TEST FOR ALL CONTROL IN COMMANDS AND TESTS FOR ALL CONTROL AND INFORMATION OUT COMMANDS, TRANSMIT, AND RECEIVE MESSAGE TESTS OF VARIOUS LENGTHS, TO AND FROM VARIOUS BUFFERS.

THE FUNCTIONAL DIAGNOSTIC TEST WILL PROVIDE EXTENSIVE TROUBLESHOOTING CAPABILITIES, SUCH AS TIGHT SCOPE LOOPS, SWITCH OPTIONS, AND ABILITY TO "LOCK" ONTO INTERMITTENT ERRORS. IN ADDITION TESTS WILL BE DESIGNED AND STRUCTURED TO ACHIEVE MAXIMUM FAULT RESOLUTION AND FACILITATE REPLACEMENT OF THE SMALLEST FIELD REPLACEABLE UNIT.

THIS PROGRAM WILL BE IMPLEMENTED USING THE DIAGNOSTIC SUPERVISOR AND A STRUCTURED PROGRAMMING APPROACH. BECAUSE THE DESIGN WILL CONFORM TO THE SUPERVISOR (STANDALONE VERSION) THE PROGRAM WILL BE COMPATIBLE WITH ACT, APT, XXDP+, AND SLIDE.

THROUGH DIALOGUE WITH OPERATOR, THE PROGRAM WILL ALLOW MODIFICATION OF DEVICE PARAMETERS, SUCH AS UNIBUS ADDRESS, VECTOR ADDRESSES AND DEVICE PRIORITY. IN ADDITION, THE OPERATOR CAN SPECIFY PARTICULAR TESTS TO BE RUN AND A VARIETY OF LOOPING, RUNNING, AND REPORTING MODES

DEVICE ERRORS WILL BE REPORTED AS THEY OCCUR. THE REPORT WILL INCLUDE A TEST NUMBER AND DESCRIPTION OF THE ERROR, GOOD AND BAD TEST DATA, AND APPLICABLE DEVICE REGISTER CONTENTS.

2.0 HARDWARE REQUIREMENTS

THE FOLLOWING HARDWARE IS REQUIRED TO RUN THE DMP/DMV-11
FUNCTIONAL TESTS:

FOR DMP:
PDP-11/04,05,10,20,30,34,35,40,45,50,60, OR 70
DMP-11

FOR DMV:
LSI-11/03,23,23B
DMV-11

FOR BOTH:
16K MEMORY
CONSOLE TERMINAL

3.0 PRELIMINARY PROGRAM REQUIREMENTS

FOR DMP:
THE M8207 STATIC DIAGNOSTICS AND THE M8203 STATIC DIAGNOSTICS SHOULD BE RUN BEFORE RUNNING THIS FUNCTIONAL DIAG.

FOR DMV:
THE M8053/64 MICROCONTROL AND LINE UNIT STATIC LOGIC TESTS (5 PROGRAMS) SHOULD BE RUN BEFORE RUNNING THIS FUNCTIONAL DIAG.

4.0 GENERAL PROGRAM CONSIDERATIONS

4.1 DIAGNOSTIC SUPERVISOR

THIS PROGRAM IS COMPATIBLE WITH THE STANDALONE DIAGNOSTIC SUPERVISOR, AND MUST BE LOADED TO BE CO-RESIDENT WITH THE SUPERVISOR, OR BE PREVIOUSLY COMBINED WITH THE SUPERVISOR AND LOADED AS A SINGLE FILE. IN EITHER CASE, THE COMBINED PROGRAM WILL NOT EXCEED 16K OF MEMORY.

4.2 EXECUTION TIME

THE TOTAL TIME REQUIRED TO RUN THE DMP-11 FUNCTIONAL TESTS IS ABOUT 120 SECONDS PER PASS (DMP-11) OR ??? SECONDS (DMV-11) FOR EACH UNIT.

4.3 XXDP+

THIS PROGRAM MAY BE LOADED UNDER XXDP+, AND MAY BE RUN IN DUMP MODE OR CHAIN MODE.

4.4 ACT/SLIDE

THIS PROGRAM MAY BE LOADED UNDER ACT OR SLIDE AND MAY BE RUN IN DUMP MODE OR CHAIN MODE.

4.5 APT

THIS PROGRAM MAY BE LOADED BY THE APT SYSTEM (INCLUDING APT-RD) AND RUN IN PROGRAM MODE OR SCRIPT MODE.

4.6 MEMORY MANAGEMENT

IT IS USED IN TX AND RX TESTS.

4.7 MEMORY PARITY OPTION

IF PARITY MEMORY IS INSTALLED, MEMORY PARITY TRAPS ARE DISABLED BY THE PROGRAM.

4.8 ERROR LOGGING

THE NUMBER OF ERRORS WHICH HAVE OCCURRED ON EACH DEVICE UNDER TEST SINCE THE LAST START OR RESTART COMMAND IS KEPT IN AN ERROR LOG. THIS LOG MAY BE PRINTED BY USING THE "PRINT" COMMAND (SEE SECTION 6.3.8).

5.0 PROGRAM LOAD MEDIA

THIS PROGRAM CAN BE LOADED FROM PAPER TAPE USING THE ABSOLUTE LOADER OR FROM ACT, SLIDE, OR APT SYSTEMS, OR FROM ANY MEDIA SUPPORTED BY XXDP+. WHEN USING THE PAPER TAPE ABSOLUTE LOADER, THE PROGRAM SHOULD BE LOADED FIRST, FOLLOWED BY THE DIAGNOSTIC SUPERVISOR. WHEN USING XXDP+, THE DIAGNOSTIC SUPERVISOR SHOULD BE LOADED FIRST, FOLLOWED BY THE DIAGNOSTIC PROGRAM.

6.0 OPERATING INSTRUCTIONS

6.1 LOADING AND STARTING PROCEDURES

6.1.1 LOADING PROCEDURES

THIS PROGRAM MAY BE LOADED FROM PAPER TAPE USING THE ABSOLUTE LOADER. IT MAY ALSO BE LOADED FROM ANY XXDP+ LOAD MEDIA. WHEN LOADED UNDER XXDP+ THE DIAGNOSTIC SUPERVISOR WILL BE LOADED AUTOMATICALLY.

6.1.2 STARTING PROCEDURES

THE PROGRAM STARTS AT LOCATION 200. USE STANDARD DEC PROCEDURES TO START THE PROGRAM.

6.1.3 STEPS FOR QUICK AND SIMPLE EXECUTION

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

A) LOAD AND START THE DIAGNOSTIC USING THE RUN COMMAND
B) RECEIVE DIAGNOSTIC SUPERVISOR IDENTIFICATION PROMPT (DR)
C) ENTER STA<CR>
D) ANSWER HARDWARE AND SOFTWARE QUESTIONS
E) GET END OF PASS MESSAGES OR ERROR MESSAGES
F) TO END EXECUTION, ENTER CONTROL/C

6.2 INITIAL DIALOGUE

AFTER THE PROGRAM AND THE SUPERVISOR ARE LOADED THE PROGRAM IS STARTED, THE FOLLOWING IDENTIFICATION IS TYPED:

```
DRS LOADED
DIAG.  RUN-TIME SERVICES
CZDMT-D-0
DMP/V-11 FUNCTIONAL DIAG.
UNIT IS DMP-11 OR DMV-11
DR>
```

THE OPERATOR THEN PROCEEDS BY TYPING ONE OR MORE OF THE COMMANDS DESCRIBED IN THE FOLLOWING SECTION 6.3. (FOR MORE INFORMATION, REFER TO THE DIAGNOSTIC SUPERVISOR FUNCTIONAL SPECIFICATION).

6.3 PROGRAM OPTIONS

6.3.1 START COMMAND

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

6.3.1.1 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 6.3.1.5.

6.3.1.2 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 OCCURRENCE OF AN ERROR WITH THE HALT ON ERROR FLAG BEING SET. THE EXIT IS A RETURN TO COMMAND MODE. SEE EXAMPLE AT END OF 6.3.1.5.

6.3.1.3 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
IDU	INHIBIT DROPPING OF UNITS BY DIAGNOSTIC
LOT	LOOP ON TEST

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 6.3.1.5.

6.3.1.4 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 6.3.1.5.

6.3.1.5 EFFECT OF START 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 16. 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>. 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.

6.3.2 RESTART COMMAND

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

6.3.2.1 TESTS, PASS, AND FLAGS SWITCHES

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

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

<UNIT-LIST> IS A SEQUENCE OF DECIMAL NUMBERS (0,1 ETC.) OR RANGES OF DECIMAL NUMBERS (0-5, 8-10 ETC.) THAT SPECIFY THE UNITS TO BE TESTED. THE NUMBERS ARE SEPARATED BY COLONS. THE NUMBERS MAY RANGE FROM 0 THRU N-1 (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.

6.3.2.3 EFFECT OF RESTART 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 REEXECUTED (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.

6.3.3 CONTINUE COMMAND

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

6.3.3.1 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.

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

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

6.3.3.3 EFFECT OF CONTINUE 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.

6.3.4 PROCEED COMMAND

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

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

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

6.3.4.2 EFFECT OF PROCEED 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.

6.3.5 ADD COMMAND

****
ADD/UNITS:<UNIT-LIST>
****

6.3.5.1 UNITS SWITCH (/UNITS:<UNIT-LIST>

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

6.3.5.2 EFFECT OF ADD 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.

6.3.6 DROP COMMAND

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

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

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

6.3.6.2 EFFECT OF DROP 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.

6.3.7 PRINT COMMAND

****
PRI(NT)
****

6.3.7.1 EFFECT OF PRINT COMMAND

THE TOTAL NUMBER OF ERRORS FOR EACH UNIT SINCE THE LAST START OR RESTART COMMAND ARE PRINTED. THE ISR (INHIBIT STATISTICAL REPORTING) FLAG IS CLEARED.

6.3.8 DISPLAY COMMAND

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

CZDMTD.P11 09-MAR-82 09:11

****

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

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

6.3.8.2 EFFECT OF DISPLAY 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.

6.3.9 FLAGS COMMAND

****
FLA(GS)
****

6.3.9.1 EFFECT OF FLAGS COMMAND

THE CURRENT SETTINGS OF ALL FLAGS ARE PRINTED.

6.3.10 ZFLAGS COMMAND

****
ZFL(AGS)
****

6.3.10.1 EFFECT OF ZFLAGS COMMAND

ALL FLAGS ARE CLEARED.

6.3.11 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- INITIAL DIALOGUE (SEE 6.2), HARDWARE DIALOGUE (SEE 6.3.1.5), OR SOFTWARE DIALOGUE (SEE 6.3.1.5) 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.

6.3.12 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.

```
SELECT OPTION TYPE (0=8207'DMP',1=8053'DMV',2=8064'DMV): (0) 0 ?
DEVICE CSR ADDRESS : (0) 160170 ?
DEVICE VECTOR ADDRESS : (0) 300 ?
DEVICE PRIORITY LEVEL : (0) 5 ?
TURNAROUND TYPE -(0=H3254H3255,1=CABLE,2=MOD LOC,3=MOD REM,
4=NONE) (0) 0 ?
PLEASE SELECT BAUD RATE; TYPE '0' FOR 2, 4K; '1' FOR 4 8K;
'2' FOR 9.6K; '3' FOR 19.2K; '4' FOR 56K; '5' FOR 250K;
OR '6' FOR 500K BAUDS (0) 4 ?
SELECT INTERFACE TYPE (1=INTEGRAL,2=EIA,3=V.35,4=422): (0) 2 ?
```

6.3.13 SOFTWARE PARAMETERS

NO SOFTWARE PARAMETER QUESTIONS ARE ASKED BY THE DMP/V-11 FUNCTIONAL TEST

6.3.14 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 16 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 16 TABLES. LET THE DESIRED VALUE FOR THE SECOND PARAMETER BE EQUAL TO THE UNIT NUMBER (0,1,2,...,15) EXCEPT FOR UNIT 12, WHICH SHOULD RECEIVE THE VALUE 11. LET THE DESIRED VALUE FOR THE THIRD PARAMETER BE THE NUMBER 76 FOR THE FIRST 7 UNITS AND THE NUMBER 77 FOR THE LAST 9 UNITS.

THE FOLLOWING DIALOGUE WOULD ACCOMPLISH THIS GOAL:

```
# UNITS (D) ? 16

UNIT 1
<QUESTION 1> ? 75
<QUESTION 2> ? 0-6
<QUESTION 3> ? 76

UNIT 21
<QUESTION 1> ?
<QUESTION 2> ? 7-11,,13-15
<QUESTION 3> ? 77
```

THE FIRST TIME THE SERIES IS ASKED, SLOT ONE RECEIVES A 75 IN ALL 16 TABLES. SLOT TWO RECEIVES THE VALUES 0,1,2,...,6 IN TABLES 0 THRU 6 AND A CONSTANT 6 IN TABLES 7 THRU 15. SLOT THREE RECEIVES A CONSTANT 76 IN ALL 16 TABLES.

THE SECOND TIME THRU THE SERIES, TABLES 16 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 7 THRU 15, SINCE NO NEW EXPLICIT VALUES ARE TYPED IN. SLOT TWO GETS THE VALUES 7,8,9,10,11 IN TABLES 7 THRU 11, AND GETS A 11 IN SLOT 12, AND GETS THE VALUES 13,14,15 IN TABLES 13 THRU 15. SLOT THREE GETS THE VALUE 77 IN TABLES 7 THRU 15.

THE DIALOGUE IS TERMINATED WHEN THE SOFTWARE RECOGNIZES THAT 16 EXPLICIT VALUES HAVE BEEN GIVEN FOR AT LEAST ONE QUESTION (NAMELY QUESTION 2).

TEST DESCRIPTIONS

7.0

7.1 ADDRESS TEST (TEST-1)

VERIFIES THAT ALL ADDRESSES IN THE MCPU RESPOND.
THIS TEST IS USED TO VERIFY THAT THE OPTION
IS AT THE ADDRESS THE USER THINKS IT IS ON.

7.2 ROM VERIFICATION TESTS (TESTS 2-9) (2-7 DMP ONLY++++8-9 DMV ONLY)

THIS SERIES OF TESTS VERIFIES THAT ALL ROMS
ARE IN PLACE AND THAT THE THE CONTENTS ARE
CORRECT BY DOING A CRC CALCULATION ON THE
ROM CONTENTS. THE TEST ALSO PRINTS THE REV AND
ROM NUMBER OF THE ROM ON THE FIRST PASS OF THE
TEST.

7.3 INITIALIZATION TEST (TEST 10)

THIS TEST DOES A MASTER CLEAR TO THE DEVICE
AND WAITS FOR THE MICRO-DIAGNOSTICS TO COMPLETE
IF MICRO DIAGS FAIL TO COMPLETE THEN A TIME
OUT ERROR WILL BE REPORTED.

7.4 INTERFACE DIAGNOSTICS (TEST 11) (DMP ONLY)

THIS TEST RUNS ADDITIONAL MICRODIAGNOSTIC CODE IN THE
DMP THAT CHECKS OUT THE INTERRUPT LOGIC AND THE
NPR LOGIC.

7.5 RDI REMAINS SET TEST (TEST 12)

THIS TEST SETS RQI,WAITS FOR RDI TO SET,ISSUES
A "NO REQUEST" CONTROL IN AND LOOKS FOR RDI TO
REMAIN SET.

7.6 TEST FOR RDO SETTING (TEST 13)

THIS TEST DOES A CONTROL IN COMMAND OF "READ MODEM"
AND EXPECTS RDO TO SET WITH AN INFORMATION OUT CODE
OF RETURN MODEM STATUS.

7.7 CHECK FOR PROCEDURE ERROR 100 (TEST 14)

THIS TEST ISSUES A MASTER CLEAR WAITS FOR RUN TO
SET THEN ISSUES A CONTROL IN COMMAND AND EXPECTS
A PROCEDURE ERROR OF 100 "NON MODE DEFINITION COMMAND
AFTER A MASTER CLEAR". UNLESS MODE HAS BEEN DEFINED
IN THE SWITCHES THEN LOOK FOR INFORMATION OUT.

7.8 CHECK FOR PROCEDURE ERROR 104 (TEST 15)

THIS TEST ISSUES A MASTER CLEAR , MODE DEFINITION, FOLLOWED BY A MODE DEF. COMMAND DEFINING A DIFFERENT TYPE OF MODE. THE TEST LOOKS FOR A PROCEDURE ERROR OF 104 "ILLEGAL MODE CHANGE".

7.9 TEST MODE CHANGE OF DUPLEX PORTION OF MODE (TEST 16)

THIS TEST ISSUES A MASTER CLEAR,MODE DEFINITION SEQUENCE(CONTROL STATION/FULL DUPLEX). THE TEST THEN ISSUES A MODE DEF. COMMAND TO CHANGE TO HALF DUPLEX. THEN THE TESTS WAITS AND MAKES SURE NO PROCEDURE ERROR OCCURS.

7.10 TEST FOR MAX TRIBS TO BE ESTABLISHED. (TEST 17)

THIS TEST ESTABLISHES MAX TRIBS THEN ATTEMPTS TO ESTABLISH MAX+1 TRIBS AND CHECKS FOR A PROCEDURE ERROR 114, "ATTEMPT TO ESTABLISH MORE THEN MAXIMUM NUMBER OF TRIBS". THE TEST THEN TRIES TO ESTABLISH A TRIB THAT HAS ALREADY BEEN ESTABLISHED AND CHECKS FOR A PROCEDURE ERROR OF 116 "ATTEMPT TO ESTABLISH ALREADY ESTABLISHED TRIB".

NOTE: MAX TRIBS FOR DMP = 32
MAX TRIBS FOR DMV = 12

7.11 READ/WRITE TRIBUTARY STATUS SLOTS TEST (TEST 18)

THIS TEST WRITES EACH TSS SLOT WITH VARIOUS DATA PATTERNS THEN READS THAT SLOT TO BE SURE THAT THE CORRECT OUTPUT COMMAND AND DATA IS RETURNED. THE SLOTS THAT ARE WRITTEN ARE TRIB STATUS SLOTS 30 THRU 37. THE DATA PATTERNS USED ARE:0,125252,052525,0,-1,377,177400,562:OCTAL.

7.12 TESTS FOR PROCEDURE ERROR 132 (TEST 19-20)

THESE TESTS CHECK THAT A PROCEDURE ERROR OF 132 "ATTEMPT TO WRITE INTO A RESERVED AREA OF THE TRIBUTARY STATUS SLOTS" IS PRODUCED WHEN A WRITE TSS COMMAND IS ISSUED FOR ADDRESS 4. A READ/CLEAR TSS COMMAND IS ISSUED FOR ADDRESS 6.

7.13 TEST FOR READ/CLEAR COMMAND (TEST 21)

THIS TEST ISSUES A READ CLEAR COMMAND TO TRIBUTARY STATUS SLOT 7 AND MAKES SURE THAT NO ERRORS OCCUR.

7.14 TESTS FOR GLOBAL STATUS SLOTS (TEST 22)

THIS TEST READS ALL THE GLOBAL STATUS SLOTS THEN WRITES ALL THE GLOBAL SLOTS USING THE ADDRESSES AS DATA THEN READS THEM BACK AND MAKES SURE THE DATA IS CORRECT. THIS TEST ALSO CHECKS FOR THE LIMITS ON THE WRITE TSS COMMAND BY MAKING SURE A

PROCEDURE ERROR OCCURES WHEN THE LIMITS ARE
EXCEEDED. THIS TEST ALSO CHECKS THE READ/CLEAR
COMMAND TO A GLOBAL STATUS SLOT.

7.15 HALT TRIB COMMAND TESTS (TEST 23)

THIS TEST CHECKS THE HALT TRIB COMMAND BY DOING THE
FOLLOWING: MASTER CLEAR;MODE DEF;ESTABLISH TRIB;ISTRT
TRIB;QUE UP REC BUFFER; ISSUE HALT TRIB COMMAND;CHECK
FOR OUTPUT OF REC BUFFER UNUSED;CHECK FOR SECOND OUTPUT
OF BUFFER RETURNED COMPLETE. THE TEST THEN ISSUES A
SECOND HALT TRIB COMMAND AND CHECKS THAT AFTER A DELAY
NO CONTROL OUT OCCURS

7.16 KILL TRIB COMMAND TESTS (TEST 24)

THIS TEST CHECKS THE KILL TRIB COMMAND BY DOING THE
FOLLOWING: MASTER CLEAR; MODE DEF.; ESTABLISH TRIB;
READ TSS SLOT 1 AND COMPARE FOR GOOD ADDRESS;
PUT TRIB IN MAINT STATE;ISSUE KILL TRIB; CHECK FOR
PROCEDURE ERROR 112 "KILL TO UNHALTED TRIB"; HALT TRIB;
KILL TRIB;READ TSS SLOT 1 AND CHECK FOR PROCEDURE ERROR
106 "NON GLOBAL CONTROL IN COMMAND TO UNESTABLISHED TRIB".

7.17 CHECK FOR PROCEDURE ERROR 102 (TEST 25)

THIS TEST ISSUES ILLEGAL TYPE CODES OF 7 6 5 AND 3
AND CHECKS THAT EACH ONE PRODUCES A PROCEDURE ERROR
102 "ILLEGAL TYPE CODE USED IN AN INPUT COMMAND".

7.18 CHECK FOR PROCEDURE ERROR OF 110 (TEST 26)

THIS TEST ISSUES A MASTER CLEAR; MODE DEF; FOLLOWED
BY AN ISTRT TO TRIB ADDRESS OF ZERO. IT THEN CHECKS
FOR A PROCEDURE ERROR OF 110 "ATTEMPT TO PERFORM A NON-
GLOBAL COMMAND FOR TRIBUTARY ADDRESS OF 0".

7.19 CHECK FOR PROCEDURE ERROR OF 120 (TEST 27)

THIS TEST ISSUES A CONTROL IN WITH A REQEST KEY OF
7 AND ALSO A CONTROL IN WITH A REQUEST KEY OF 17
THEN IT CHECKS THAT BOTH CASES GIVE PROCEDURE ERROR
120 "ILLEGAL REQUEST KEY ON CONTROL IN."

7.20 CHECK FOR PROCEDURE ERROR OF 134 (TEST 28)

THIS TEST ISSUES A MASTER CLEAR , MODE DEF, AND
ESTABLISH TRIB SEQUENCE, FOLLOWED BY AN ATTEMPT
TO USE A RESERVED BIT IN BSEL 7 THEN CHECKS THAT
THIS PRODUCES A PROCEDURE ERROR OF 134 "ATTEMPT
TO USE RESERVED BIT IN BSEL 7 ON CONTROL IN "

7.21 LATCH/UNLATCH POLL CHECK (TEST 29)

THIS TEST CHECKS THE LATCH AND UNLATCH POLL COMMANDS
BY DOING THE FOLLOWING SEQUENCE OF COMMANDS:

MASTER CLEAR; MODE DEF; ESTABLISH TRIB; LATCH POLL
TO DEAD STATE; READ TSS SLOT 2 AND CHECK THAT DEAD
BIT IS ON;UNLATCH POLL; READ TSS SLOT 2;CHECK THAT ACTIVE
BIT IS ON.

7.22 SHORT MESSAGE SENDING TEST (TEST 30)

THIS TEST SENDS A 4 BYTE MESSAGE FROM AN EVEN TRANSMIT
BUFFER TO AN EVEN REC BUFFER IN DDCMP FORMAT CONFIGURED
AS A MULTIPOINT CONTROL STATION FULL DUPLEX. THE TEST
CHECKS THAT REC BUFFERS ARE RETURNED AND DATA IS CORRECT
AND THAT THE NEXT OUTPUT IS TRANSMIT BUFFER RETURNED.
THIS TEST IS ALWAYS DONE IN TTL LOOPBACK MODE.

7.23 CHECK FOR PROCEDURE ERROR 122 (TEST 31)

THIS TEST CHECKS FOR A PROCEDURE ERROR OF 122 BY
PERFORMING THE FOLLOWING: MASTER CLEAR ; MODE DEF;
ESTABLISH BUFFER; CHECK FOR ERROR 122 "ATTEMPT
TO ASSIGN A BUFFER FOR AN UNESTABLISHED TRIB".

7.24 CHECK FOR PROCEDURE ERROR 124 (TEST 32)

THIS TEST CHECKS FOR A PROCEDURE ERROR OF 124 BY
PERFORMING THE FOLLOWING: MASTER CLEAR; MODE DEF;
ESTABLISH TRIB;ESTABLISH BUFFER;CHECK FOR ERROR
124 "ATTEMPT TO ASSIGN A BUFFER FOR A HALTED TRIB".

7.25 CHECK FOR PROCEDURE ERROR 126 (TEST 33)

THIS TEST CHECKS FOR A PROCEDURE ERROR OF 126 BY
PERFORMING THE FOLLOWING: MASTER CLEAR; MODE DEF
ESTABLISH TRIB ; PUT TRIB IN MAINT STATE; ESTABLISH
BUFFER WITH 0 BYTE COUNT; LOOK FOR ERROR 126
"ATTEMPT TO ASSIGN A BUFFER WITH A BYTE COUNT OF 0".

7.26 CHECK FOR PROCEDURE ERROR 130 (TEST 34)

THIS TEST CHECKS FOR A PROCEDURE ERROR OF 130 BY
PERFORMING THE FOLLOWING: MASTER CLEAR; MODE DEF;
ESTABLISH TX BUFFER TO TRIB; CHECK FOR ERROR
130 "ATTEMPT TO ASSIGN A TRANSMIT BUFFER FOR TRIB
0".

7.27 TRANSMIT/RECEIVE 256 BYTES,PTP,DDCMP (TEST 35)

THIS TEST WILL TRANSMIT A BUFFER OF 256 BYTES,STARTING
ON AN EVEN BYTE BOUNDRY TO A REC BUFFER STARTING ON AN
EVEN BYTE BOUNDRY. THE MODE DEFINED IS POINT TO POINT
FULL DUPLEX,DDCMP PROTOCOL. IF THERE IS EXTERNAL LOOP
BACK THEN THE TEST WILL BE DONE OVER THAT LOOPBACK;ELSE
THE LOOPBACK WILL BE SET TO INTERNAL(TTL).

7.28 DMV Q22 MODE TX/RX 256 BYTES,DDCMP (TEST 36) * DMV ONLY *

THIS TEST WILL TRANSMIT A BUFFER OF 256 BYTES,STARTING

ON AN EVEN BYTE BOUNDRY TO A REC BUFFER STARTING ON AN EVEN BOUNDRY. THE MODE DEFINED IS Q22 FORMAT, POINT TO POINT FULL DUPLEX,DDCMP PROTOCOL. IF THERE IS EXTERNAL LOOPBACK THEN THE TEST WILL USE IT, OTHERWISE THE LOOP BACK WILL BE SET TO INTERNAL(TTL).

7.29 TRANSMIT/RECEIVE 255 BYTES,MTP,DDCMP (TEST 37)

THIS TEST WILL TRANSMIT A BUFFER OF 255 BYTES STARTING ON AN EVEN BYTE ADDRESS TO A REC BUFFER STARTING ON AN ODD BYTE ADDRESS. THE MODE IS FULL DUPLEX CONTROL STATION MULTIPOINT,DDCMP PROTOCOL. THE DATA IS COMPARED FOR CORRECT NESS. THE TEST IS DONE WITH INTERNAL LOOPBACK.

7.30 READ/WRITE MODEM REGISTER TESTS (TEST 38) (DMP ONLY)

THIS TEST WRITES THE MODEM REGS OVER THE VARIOUS INTERFACES WITH A PATTERN OF 100. THE MODEM REGS ARE THEN READ AND COMPARED FOR CORRECTNESS.

****
* N O T E ----- THIS TEST ONLY RUNS IF LOOPBACK CONNECTORS
********* ARE ATTACHED

7.31 TEST OF MEM EXTENSION BITS. (TESTS 39-41)

THESE THREE TESTS CHECK THE ABILITY OF THE DEVICE TO DO TRANSFERS TO UPPER MEMORY (IF IT EXISTS). THE TRANSFERS ARE DONE BY TRANSMITTING AND RECEIVING A MESSAGE. (TTL LOOPBACK ONLY) . THE THREE TESTS ARE DONE FOR BIT 16, BIT 17 AND BITS 16 AND 17 (DMV SET FOR Q18 MODE).

****
* N O T E ------ THIS TEST USES MEMORY ONLY IF IT EXISTS
****

7.32 TEST FOR TX/RX 257 BYTES (TEST 42)

THIS TEST TRANSMITS A MESSAGE OF 257 BYTES FROM A TRANSMIT BUFFER STARTING WITH AN ODD BYTE BOUNDRY TO A RECEIVE BUFFER STARTING ON AN ODD BYTE BOUNDRY IN DDCMP MODE,POINT TO POINT. IF THERE IS EXTERNAL LOOP BACK THEN THE TEST WILL BE DONE OVER THAT LOOPBACK;ELSE THE LOOPBACK WILL BE SET TO INTERNAL(TTL).

7.33 TEST FOR TX/RX 1 BYTE (TEST 43)

THIS TEST TX'S AND REC'S A 1 BYTE MESSAGE FROM AN ODD TX BUFFER TO AN EVEN RX BUFFER IN MAINT MODE,MULTIPOINT CONTROL STATION.

7.34 POLLING STATE TESTS (TEST 44)

THIS TEST CHECKS THE DEGRADING OF THE POLLING STATES FROM ACTIVE TO INACTIVE TO POTENTIALLY DEAD TO DEAD THE SEQUENCE THAT IS EXECUTED IS AS FOLLOWS:

MASTER CLEAR, MODE DEF(FULL DUP CONTROL STATION),
SET POLL DELAY(GSS ADD 37),ESTABLISH TRIB,SET SELECTION
TIMER(TSS ADD 36),SET NUMBER OF NO DATA MESSAGES TO
INACTIVE TO 10 AND THE NUMBER OF TIME OUTS TO POTENTIALLY
DEAD TO 4,ISTRT TRIB ,WAIT FOR RUN STATE,READ TSS (ADD 2),
CHECK FOR INACTIVE BIT,LOOP UNTIL INACTIVE OR TIME OUT,READ
THE SELECTION TIMER(TSS 11),COMPARE IT TO 10,CHANGE MODE
TO HALF DUPLEX,WAIT FOR TSS SLOT 2 TO INDICATE POT. DEAD,
READ SELECTION TIMER(TSS 16),COMPARE IT TO 4,WAIT FOR
CONTROL OUT INDICATING DEAD TRIB,READ SELECTION TIMER(TSS 16)
COMPARE IT TO 10.

8.0 ERROR INFORMATION

8.1 ERROR REPORTING

ERRORS ARE REPORTED BY THE PROGRAM AS THEY OCCUR (IF NOT INHIBITED). THE REPORT CONFORMS TO THE DIAGNOSTIC SUPERVISOR ERROR REPORT FORMAT, AND CONSISTS OF A DESCRIPTION OF THE ERROR, THE TEST NUMBER, SUBTEST NUMBER, PC OF THE ERROR CALL, DEVICE ADDRESS, AND BASIC AND EXTENDED ERROR INFORMATION.

THE FOLLOWING EXAMPLES PROVIDE TYPICAL ERROR REPORTS:

```
CZDMT DVC FTL ERR 00024 ON UNIT 00 TST 004 SUB 000 PC:  016170
ERROR IN ROM E04 READ = 177777 ; CALCULATED = 017327
```

FOR ALL OTHER ERRORS, THE REPORT MAY BE MORE EXTENSIVE AND REQUIRE ADDITIONAL DATA TO BE REPORTED.

&

```
1095                            ;
1096        002000                      .=2000
1097
1098
1099
1100        000200                      DRUN==  200
1101
1102
1103
1104
1105
1106
1107        000001              $LSTIN= 1
1108        000001              $LSTTAG= 1
1109        000000              SVCINS= 0       ; LIST INSTRUCTIONS, SHIFTED RIGHT
1110        000000              SVCTST= 0       ; LIST TEST TAGS, SHIFTED RIGHT
1111        000000              SVCSUB= 0       ; LIST SUBTEST TAGS, SHIFTED RIGHT
1112        000000              SVCGBL= 0       ; LIST GLOBAL TAGS, SHIFTED RIGHT
1113        000000              SVCTAG= 0       ; LIST OTHER TAGS, SHIFTED RIGHT
1114
1115                            ;       CHANGE THE VALUES OF THE SVC... SYMBOLS TO BE ZERO IF YOU WISH
1116                            ;       TO ALIGN THE MACRO CALLS AND THEIR EXPANSIONS.  CHANGE THE
1117                            ;       SYMBOLS TO BE MINUS-ONE TO NOT LIST THE EXPANSIONS.  YOU MAY
1118                            ;       CHANGE THE SYMBOLS AT ANY POINT IN YOUR PROGRAM.
1119
1120
```

CZDMTD.P11 09-MAR-82 09:11 PROGRAM HEADER

```
1121
1122                            .SBTTL  PROGRAM HEADER
1123                            ;++
1124                            ; THE PROGRAM HEADER IS THE INTERFACE BETWEEN
1125                            ; THE DIAGNOSTIC PROGRAM AND THE SUPERVISOR.
1126                            ;--
1127
1128
1129  002000                    L$NAME::                ;DIAGNOSTIC NAME
1130  002000  103                      .ASCII /C/
1131  002001  132                      .ASCII /Z/
1132  002002  104                      .ASCII /D/
1133  002003  115                      .ASCII /M/
1134  002004  124                      .ASCII /T/
1135  002005  000                      .BYTE   0
1136  002006  000                      .BYTE   0
1137  002007  000                      .BYTE   0
1138  002010                    L$REV::                 ;REVISION LEVEL
1139  002010  104               L$DEPO::        .ASCII  /D/             ;0
1140  002011                    L$UNIT::                ;NUMBER OF UNITS
1141  002011  060                      .ASCII  /0/
1142  002012                    L$TIML::                ;LONGEST TEST TIME
1143  002012  000000                   .WORD   0
1144  002014                    L$HPCP::                ;POINTER TO H.W. QUES.
1145  002014  003410                   .WORD   1800.
1146  002016                    L$SPCP::                ;POINTER TO S.W. QUES.
1147  002016  032534                   .WORD   L$HARD
1148  002020                    L$HPTP::                ;PTR. TO DEF. H.W. PTABLE
1149  002020  000000                   .WORD   0
1150  002022                    L$SPTP::                ;PTR. TO S.W. PTABLE
1151  002022  002264                   .WORD   L$HW
1152  002024                    L$LADP::                ;DIAG. END ADDRESS
1153  002024  000000                   .WORD   0
1154  002026                    L$STA::                 ;RESERVED FOR APT STATS
1155  002026  037652                   .WORD   L$LAST
1156  002030                    L$CO::
1157  002030  000000                   .WORD   0
1158  002032                    L$DTYP::                ;DIAGNOSTIC TYPE
1159  002032  000000                   .WORD   0
1160  002034                    L$APT::                 ;APT EXPANSION
1161  002034  000000                   .WORD   0
1162  002036                    L$DTP::                 ;PTR. TO DISPATCH TABLE
1163  002036  000000                   .WORD   0
1164  002040                    L$PRIO::                ;DIAGNOSTIC RUN PRIORITY
1165  002040  002132                   .WORD   L$DISPATCH
1166  002042                    L$ENVI::                ;FLAGS DESCRIBE HOW IT WAS SETUP
1167  002042  000340                   .WORD   #PRI07
1168  002044                    L$EXP1::                ;EXPANSION WORD
1169  002044  000000                   .WORD   0
1170  002046                    L$MREV::                ;SVC REV AND EDIT #
1171  002046  000000                   .WORD   0
1172  002050
1173  002050     003                   .BYTE   C$REVISION
1174  002051     003                   .BYTE   C$EDIT
1175  002052                    L$EF::                  ;DIAG. EVENT FLAGS
1176  002052  000000                   .WORD   0
```

CZDMTD.P11 09-MAR-82 09:11 PROGRAM HEADER

```
1177  002054  000000                .WORD   0
1178  002056                  L$SPC::
1179  002056  000000                .WORD   0
1180  002060                  L$DEVP::
1181  002060  002564                .WORD   L$DVTYP         ; POINTER TO DEVICE TYPE LIST
1182  002062                  L$REPP::
1183  002062  000000                .WORD   0               ;PTR. TO REPORT CODE
1184  002064                  L$EXP4::
1185  002064  000000                .WORD   0
1186  002066                  L$EXP5::
1187  002066  000000                .WORD   0
1188  002070                  L$AUT::                         ;PTR. TO ADD UNIT CODE
1189  002070  014502                .WORD   L$AU
1190  002072                  L$DUT::                         ;PTR. TO DROP UNIT CODE
1191  002072  014476                .WORD   L$DU
1192  002074                  L$LUN::                         ;LUN FOR EXERCISERS TO FILL
1193  002074  000000                .WORD   0
1194  002076                  L$DESP::                        ;POINTER TO DIAG. DESCRIPTION
1195  002076  002606                .WORD   L$DESC
1196  002100                  L$LOAD::                        ;GENERATE SPECIAL AUTOLOAD EMT
1197  002100  104035                EMT     E$LOAD
1198  002102                  L$ETP::                         ;POINTER TO ERRTBL
1199  002102  000000                .WORD   0
1200  002104                  L$ICP::                         ;PTR. TO INIT CODE
1201  002104  013774                .WORD   L$INIT
1202  002106                  L$CCP::                         ;PTR. TO CLEAN-UP CODE
1203  002106  014472                .WORD   L$CLEAN
1204  002110                  L$ACP::                         ;PTR. TO AUTO CODE
1205  002110  014430                .WORD   L$AUTO
1206  002112                  L$PRT::                         ;PTR. TO PROTECT TABLE
1207  002112  002122                .WORD   L$PROT
1208  002114                  L$TEST::                        ;TEST NUMBER
1209  002114  000000                .WORD   0
1210  002116                  L$DLY::                         ;DELAY COUNT
1211  002116  000000                .WORD   0
1212  002120                  L$HIME::                        ;PTR. TO HIGH MEM
1213  002120  000000                .WORD   0
1214
1215  002122                  L$PROT::
1216  002122  177777                .WORD   -1
1217  002124  177777                .WORD   -1
1218  002126  177777                .WORD   -1
1219
```

CZDMTD.P11 09-MAR-82 09:11 DISPATCH TABLE

```
1220
1221
1222
1223
1224
1225
1226
1227   002130  000054                  .WORD   44
1228   002132                  L$DISPATCH::
1229   002132  014504                  .WORD   T1
1230   002134  014664                  .WORD   T2
1231   002136  015216                  .WORD   T3
1232   002140  015550                  .WORD   T4
1233   002142  016102                  .WORD   T5
1234   002144  016434                  .WORD   T6
1235   002146  016766                  .WORD   T7
1236   002150  017320                  .WORD   T8
1237   002152  017460                  .WORD   T9
1238   002154  017620                  .WORD   T10
1239   002156  020004                  .WORD   T11
1240   002160  021136                  .WORD   T12
1241   002162  021250                  .WORD   T13
1242   002164  021460                  .WORD   T14
1243   002166  021724                  .WORD   T15
1244   002170  022134                  .WORD   T16
1245   002172  022366                  .WORD   T17
1246   002174  022620                  .WORD   T18
1247   002176  023104                  .WORD   T19
1248   002200  023212                  .WORD   T20
1249   002202  023320                  .WORD   T21
1250   002204  023434                  .WORD   T22
1251   002206  024162                  .WORD   T23
1252   002210  024610                  .WORD   T24
1253   002212  025236                  .WORD   T25
1254   002214  025352                  .WORD   T26
1255   002216  025436                  .WORD   T27
1256   002220  025664                  .WORD   T28
1257   002222  026112                  .WORD   T29
1258   002224  026440                  .WORD   T30
1259   002226  026534                  .WORD   T31
1260   002230  026654                  .WORD   T32
1261   002232  027022                  .WORD   T33
1262   002234  027210                  .WORD   T34
1263   002236  027326                  .WORD   T35
1264   002240  027450                  .WORD   T36
1265   002242  027612                  .WORD   T37
1266   002244  027706                  .WORD   T38
1267   002246  030334                  .WORD   T39
1268   002250  030576                  .WORD   T40
1269   002252  031040                  .WORD   T41
1270   002254  031302                  .WORD   T42
1271   002256  031420                  .WORD   T43
1272   002260  031516                  .WORD   T44
1273
1274
1275
```

CZDMTD.P11 09-MAR-82 09:11 DISPATCH TABLE

```
1276
1277
1278
```

CZDMTD.P11 09-MAR-82 09:11 DEFAULT HARDWARE P-TABLE

```
1279                                    .SBTTL  DEFAULT HARDWARE P-TABLE
1280
1281                                    ;////////////////////////////////////////////////////////////////////////////
1282                                    ;/ THE DEFAULT HARDWARE P-TABLE CONTAINS DEFAULT VALUES OF
1283                                    ;/ THE TEST-DEVICE PARAMETERS.  THE STRUCTURE OF THIS TABLE
1284                                    ;/ IS IDENTICAL TO THE STRUCTURE OF THE RUN-TIME P-TABLE.
1285                                    ;////////////////////////////////////////////////////////////////////////////
1286
1287  002262  000014                            .WORD   L10001-L$HW/2
1288  002264                            L$HW::
1289  002264                            DFPTBL::
1290
1291  002264  000000                            .WORD   0               ;HARDWARE TYPE
1292  002266  160170                            .WORD   160170          ;M8200,4,7 CSR UNIBUS ADDRESS
1293  002270  000300                            .WORD     300           ;M8200,4,7 INTERRUPT VECTOR
1294  002272  005000                            .WORD    5000           ;M8200,4,7 INTERRUPT PRIORITY LEVEL = 5
1295  002274  000003                            .WORD       3           ;LINE UNIT = M8203
1296  002276  000056                            .WORD     056           ;SWITCH PACK #1 (REG 11)
1297  002300  000000                            .WORD     000           ;SWITCH PACK #2 (REG 15)
1298  002302  000000                            .WORD     000           ;SWITCH PACK #3 (REG 16)
1299  002304  000004                            .WORD       4           ;H3251&H3252 USED
1300                                                                    ;0= LOOPBACK CABLE,2= TEST CONNECTOR
1301                                                                    ;4= NONE
1302  002306  000004                            .WORD       4           ;CONTAINS BAUD RATE 4=56K BAUD DEFAULT
1303                                                                    ;0=2.4K , 1=4.8K , 2=9.6K , 3=19.2K , 4=56K
1304                                                                    ;5=250K , 6=500K , 7=1 MEG BAUD
1305  002310  000000                            .WORD       0           ;DUMMY WORD FOR RUN
1306  002312  000002                            .WORD       2           ;1=INTEGRAL ;2=EIA;3=V.35;4=422
1307
1308  002314                            L10001:
1309
1310
1311
1312
1313
```

CZDMTD.P11 09-MAR-82 09:11 SOFTWARE P-TABLE

```
1314                            .SBTTL  SOFTWARE P-TABLE
1315
1316                            ;////////////////////////////////////////////////////////////////////////
1317                            ;/ THE SOFTWARE P-TABLE CONTAINS THE VALUES OF THE PROGRAM
1318                            ;/ PARAMETERS THAT CAN BE CHANGED BY THE OPERATOR.
1319                            ;////////////////////////////////////////////////////////////////////////
1320
1321  002314  000000                    .WORD   L10002-L$SW/2
1322  002316                    L$SW::
1323  002316                    SFPTBL::
1324
1325
1326  002316                    L10002:
1327
1328
1329
1330
1331
1332
```

```
1333
1334
1335                            .SBTTL  GLOBAL EQUATES SECTION
1336
1337
1338                            ;////////////////////////////////////////////////////////////////////////////////
1339                            ;/      THE GLOBAL EQUATES SECTION CONTAINS PROGRAM EQUATES THAT
1340                            ;/      ARE USED IN MORE THAN ONE TEST.
1341                            ;////////////////////////////////////////////////////////////////////////////////
1342
1343                            ;
1344                            ; BIT DIFINITIONS
1345                            ;
1346            100000          BIT15== 100000
1347            040000          BIT14== 40000
1348            020000          BIT13== 20000
1349            010000          BIT12== 10000
1350            004000          BIT11== 4000
1351            002000          BIT10== 2000
1352            001000          BIT09== 1000
1353            000400          BIT08== 400
1354            000200          BIT07== 200
1355            000100          BIT06== 100
1356            000040          BIT05== 40
1357            000020          BIT04== 20
1358            000010          BIT03== 10
1359            000004          BIT02== 4
1360            000002          BIT01== 2
1361            000001          BIT00== 1
1362                            ;
1363            001000          BIT9==  BIT09
1364            000400          BIT8==  BIT08
1365            000200          BIT7==  BIT07
1366            000100          BIT6==  BIT06
1367            000040          BIT5==  BIT05
1368            000020          BIT4==  BIT04
1369            000010          BIT3==  BIT03
1370            000004          BIT2==  BIT02
1371            000002          BIT1==  BIT01
1372            000001          BIT0==  BIT00
1373                            ;
1374                            ; EVENT FLAG DEFINITIONS
1375                            ;   EF32:EF17 RESERVED FOR SUPERVISOR TO PROGRAM COMMUNICATION
1376                            ;
1377            000040          EF.START==      32.                     ; START COMMAND WAS ISSUED
1378            000037          EF.RESTART==    31.                     ; RESTART COMMAND WAS ISSUED
1379            000036          EF.CONTINUE==   30.                     ; CONTINUE COMMAND WAS ISSUED
1380            000035          EF.NEW==        29.                     ; A NEW PASS HAS BEEN STARTED
1381            000034          EF.PWR==        28.                     ; A POWER-FAIL/POWER-UP OCCURRED
1382                            ;
1383
1384                            ; PRIORITY LEVEL DEFINITIONS
1385                            ;
1386            000340          PRI07== 340
1387            000300          PRI06== 300
1388            000240          PRI05== 240
```

```
CZDMTD.P11    09-MAR-82 09:11        GLOBAL EQUATES SECTION

 1389          000200                PRI04== 200
 1390          000140                PRI03== 140
 1391          000100                PRI02== 100
 1392          000040                PRI01== 40
 1393          000000                PRI00== 0
 1394                                ;
 1395                                ;OPERATOR FLAG BITS
 1396                                ;
 1397          000004                EVL==       4
 1398          000010                LOT==      10
 1399          000020                ADR==      20
 1400          000040                IDU==      40
 1401          000100                ISR==     100
 1402          000200                UAM==     200
 1403          000400                BOE==     400
 1404          001000                PNT==    1000
 1405          002000                PRI==    2000
 1406          004000                IXE==    4000
 1407          010000                IBE==   10000
 1408          020000                IER==   20000
 1409          040000                LOE==   40000
 1410          100000                HOE==  100000
 1411
 1412
 1413                                ;;*************************************************************************
 1414                                ;* PROGRAM EVENT FLAG DEFINITIONS
 1415                                ;;*************************************************************************
 1416
 1417                                ;;*********************************************************************************************
 1418                                ;* MAINTENANCE REGISTER - BSEL1
 1419                                ;;*********************************************************************************************
 1420          000200                RUN     = BIT7
 1421          000100                MCLR    = BIT6
 1422          000020                STEPLU  = BIT4
 1423          000010                LULOOP  = BIT3
 1424          000004                ROMO    = BIT2
 1425          000002                ROMI    = BIT1
 1426          000001                STEPMP  = BIT0
 1427
 1428                                ;*****************************************************
 1429                                ; OTHER BIT DEFINITIONS
 1430                                ;*****************************************************
 1431          000010                Q22BIT  =BIT3
 1432          000200                RQI     =200
 1433          000020                RDI     =020
 1434          000200                RDO     =200
 1435
 1436
```

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```
1437
1438
1439                    ;////////////////////////////////////////////////////////////////////////////////
1440                    ;/      THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
1441                    ;/      IN MORE THAN ONE TEST.
1442                    ;////////////////////////////////////////////////////////////////////////////////
1443
1444                    ;*******************************************************************************
1445                    ;* MISCELLANEOUS STORAGE
1446                    ;*******************************************************************************
1447  002316  000000    SAVE4:  .WORD   0               ;SAVE LOC 4 HERE (ERROR TRAP VECTOR)
1448  002320  000000    SAVE6:  .WORD   0
1449  002322  000000    PSTACK: .WORD   0
1450  002324  000000    SUBRPC: .WORD   0
1451  002326  000000    ERROR1: .WORD   0
1452  002330  000000    FRSTIM: .WORD   0
1453  002332  000000    LOGDEV: .WORD   0
1454  002334  000000    IFLAG:  .WORD   0
1455  002336  000000    $GDDAT: .WORD   0       ;GOOD AND BAD DATA STORAGE
1456  002340  000000    $BDDAT: .WORD   0
1457  002342  000000    COUNT:  .WORD   0
1458  002344  000000    REG:    .WORD   0
1459  002346  000000    STARES: .WORD   0       ;INDICATES PASSES
1460  002350  000000    DEVMAP: .WORD   0
1461  002352  000000    DEVPTR: .WORD   0
1462  002354  000000    FRSPAS: .WORD   0
1463  002356  000000    MODINT: .WORD   0               ;MODEM INTERFACE SELECTION
1464  002360  000000    TRIBN:  .WORD   0               ;POINTS TO CURRENT TRIP NUMBER.
1465  002362  000040    TRIBMX: .WORD   32.             ;MAXIMUM NUMBER OF TRIBS
1466  002364  000000    TRIBH:  .WORD   0               ;VALUE OF HIGHEST TRIB USED
1467
1468  002366  000000    ROMN:   .WORD   0               ;CURRENT ROM AND USED FOR TEST #
1469  002370  000000    ROMN1:  .WORD   0                       ;CURRENT ROM NUMBER
1470  002372  000000    WORDT:  .WORD   0                       ;CURRENT ROM CONTENTS.
1471  002374  177777    CWORD:  .WORD   -1                      ;CURRENT CRC CAL.
1472  002376  000000    MODQ22: .WORD   0               ;DMV Q22 FORMAT FLAG (Q22 MODE)
1473  002400  000000    EXLOOP: .WORD   0               ;DMV EXTERNAL LOOP FLAG
1474  002402  000000    ERRWRD: .WORD   0                       ;ERROR OCCURRED.
1475  002404  000000    CADDR:  .WORD   0                       ;CURRENT ROM ADDR.
1476  002406  000000    ERRADD: .WORD   0                       ;PC OF ERROR
1477  002410  000000    PERR:   .WORD   0                       ;PROCEDURE ERROR CHECKED
1478  002412  000000    TSSADD: .WORD   0                       ;WORD FOR TSS ADD
1479  002414  003406    TYLST:  .WORD   3406
1480  002416  002403            .WORD   2403
1481  002420            TYEND:
1482  002420  000000    TXADD:  .WORD   0                       ;TX BUFF ADDRESS
1483  002422  000000    RXADD:  .WORD   0                       ;RX BUFF ADDRESS
1484  002424  000000    RXCC:   .WORD   0                       ;RX CHAR COUNT
1485  002426  000000    TXCC:   .WORD   0                       ;TX CHAR COUNT
1486  002430  000000    CODEW:  .WORD   0                       ;LOCATION FOR ERROR CODES
1487  002432  000000    GENWRD: .WORD   0                       ;USED FOR MAINT STATE AND EX MEM
1488  002434  000000    CRCCAL: .WORD   0                       ;TEMP FOR CRC
1489  002436  000000    ROMADD: .WORD   0                       ;ROM ADDRESS
1490
1491                    ;;********* CURRENT DEVICE PARAMETERS *************
1492  002440            BSEL0:
```

```
1493  002440
1494  002440  160170  SEL0:
                      MPCSR:  .WORD   160170          ;POINTER TO M8200,4,7 CSR'S
1495  002442  160171  BSEL1:  .WORD   160171          ;POINTER TO BSEL1
1496  002444  SEL2:
1497  002444  160172  BSEL2:  .WORD   160172
1498  002446  160173  BSEL3:  .WORD   160173
1499  002450  BSEL4:
1500  002450  160174  SEL4:   .WORD   160174          ;POINTER TO SEL4
1501  002452  160175  BSEL5:  .WORD   160175
1502  002454  BSEL6:
1503  002454  160176  SEL6:   .WORD   160176
1504  002456  160177  BSEL7:  .WORD   160177
1505  002460  BSEL10:
1506  002460  160200  SEL10:  .WORD   160200          ;POINTER TO SEL10 (REQ'D FOR DMV Q22 MODE)
1507  002462  KMRVEC:
1508  002462  000300  MPIVEC: .WORD      300          ;M8200,4,7 INPUT INTERRUPT VECTOR
1509  002464  KMTVEC:
1510  002464  000304  MPOVEC: .WORD      304          ;M8200,4,7 OUTPUT INTERRUPT VECTOR
1511  002466  000000  SPEEDM: .WORD       0          ;SPEED OF LINE UNIT
1512  002470  KMRLVL:
1513  002470  KMTLVL:
1514  002470  000240  MPRIOR: .WORD      240          ;M8200,4,7 DEVICE PRIORITY
1515  002472  000000  OPTYP:  .WORD   0              ;OPTION TYPE
1516  002474  000000  IFTYP:  .WORD   0              ;INTERFACE TYPE
1517  002476  000000  TSTCON: .WORD       0          ;TEST CONNECTOR INDICATOR
1518  002500  000000  RETADR: .WORD       0          ;SUBR ERRCR RETURN ADDRESS
1519  002502  000000  REDBYT: .WORD       0          ;LO BYTE CONTAINS BYTE READ FROM LU REG
1520  002504  000000  WRIBYT: .WORD       0          ;LO BYTE CONTAINS BYTE TO LOAD INTO LU REG
1521  002506  000000  AXNUM:  .WORD       0          ;NUMBER (0-7) OF EXTENDED REG BYTE BEING TESTED
1522  002510  000000  DISILO: .WORD       0          ;CONTAINS CURRENT STATE OF DISSI IN BIT5
1523
1524                  ;***** STORAGE FOR DATA READ IN ADDRESS TESTS *****
1525  002512    000   REDDAT: .BYTE   0
1526  002513    000           .BYTE   0
1527  002514    000           .BYTE   0
1528  002515    000           .BYTE   0
1529  002516    000           .BYTE   0
1530  002517    000           .BYTE   0
1531  002520    000           .BYTE   0
1532  002521    000           .BYTE   0
1533
1534                  ;;*****  GENERAL PURPOSE SCRATCH STORAGE  *****
1535  002522  000000  REG0:   .WORD   0
1536  002524  000000  REG1:   .WORD   0
1537  002526  000000  REG2:   .WORD   0
1538  002530  000000  REG3:   .WORD   0
1539  002532  000000  REG4:   .WORD   0
1540  002534  000000  REG5:   .WORD   0
1541  002536  000000  REG6:   .WORD   0
1542  002540  000000  REG7:   .WORD   0
1543
1544                  ;;*****  SCRATCH STORAGE FOR MESSAGE REPORTING   *****
1545  002542  000000  $TMP0:  .WORD   0
1546  002544  000000  TMP0:   .WORD   0
1547  002546  000000  TMP1:   .WORD   0
1548  002550  000000  TMP2:   .WORD   0
```

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```
 1549  002552  000000          TMP3:   .WORD   0
 1550  002554  000000          TMP4:   .WORD   0
 1551  002556  000000          TMP5:   .WORD   0
 1552  002560  000000          TMP6:   .WORD   0
 1553  002562  000000          TMP7:   .WORD   0
 1554
```

```
                                        .SBTTL  GLOBAL TEXT SECTION

                                        ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                        ;%      THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
                                        ;%      MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
                                        ;%      MORE THAN ONE TEST.
                                        ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

                                        ;;****************************************************************************
                                        ;* NAMES OF DEVICES SUPPORTED BY PROGRAM
                                        ;;****************************************************************************
002564                                  L$DVTYP::
002564  046504  026520  030461                  .ASCIZ  /DMP-11 OR DMV-11/
002572  047440  020122  046504
002600  026526  030461     000
        002606                                  .EVEN

002606                                  L$DESC::
002606  046504  020120  051117                  .ASCIZ  /DMP OR DMV-11 FUNCTIONAL DIAG./
002614  042040  053115  030455
002622  020061  052506  041516
002630  044524  047117  046101
002636  042040  040511  027107
002644     000
        002646                                  .EVEN

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

```
                        .SBTTL  GLOBAL SUBROUTINES
                        ;////////////////////////////////////////////////////////////////////////////////
                        ;/      THE GLOBAL SUBROUTINES ARE CALLED BY MORE THAN ONE TEST
                        ;////////////////////////////////////////////////////////////////////////////////
                        ;
                        ;+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        ; FUNCTIONAL DESCRIPTION: WRDO.. WAITS FOR READY OUT
                        ;                FIRST SAVE THE CALLING ADDRESS
                        ;                IN ERRADD. THEN SEE IF TIME OUT OCCURED
                        ;                IF TIME OUT EXIT ROUTINE..ELSE SEE IF
                        ;                READY OUT SET IF READY OUT SET EXIT
                        ;                ROUTINE. IF NOT THEN WAIT A WHILE
                        ;                THEN SEE IF READY IN SET. IF READY IN
                        ;                IS SET REPORT ERROR AND EXIT ROUTINE.
                        ;                IF NOT READY IN THEN GO BACK AND CHECK
                        ;                FOR TIME OUT.
                        ;                NOTE: CAN BE ENTERED AT WRDO1 IF CALLING
                        ;                ADDRESS FROM R5 DOES NOT NEED TO BE SAVED.
                        ;
                        ; INPUTS:        R5=ADDRESS FROM WHERE ROUTINE WAS CALLED
                        ;
                        ; OUTPUTS:       ERRWRD= -1 IF ERROR OCCURED IN ROUTINE.
                        ;
                        ; SUBORDINATE ROUTINES USED:
                        ;                TOUT - TIME OUT ROUTINE
                        ;               WAIT50 - SHORT DELAY ROUTINE
                        ; CALLING SEQUENCE:
                        ;                JSR     R5,WRDO
                        ;--------------------------------------------------------------------------------
002646  010537  002406  WRDO:   MOV     R5,ERRADD       ;STORE ERROR ADD. AWAY
002652  004537  005070  WRDO1:  JSR     R5,TOUT         ; GO TO TIME OUT ROUTINE
002656  005737  002402          TST     ERRWRD          ;CHECK IF ERROR
002662  100422                  BMI     WRDOE           ;EXIT NOW
002664  032777  000200  177552  BIT     #RDO,@BSEL2     ;RDO SET?
002672  001016                  BNE     WRDOE           ;EXIT IF RDO IS SET
002674  004737  004244          JSR     PC,WAIT50       ;ELSE DELAY A LITTLE
002700  032777  000020  177536  BIT     #RDI,@BSEL2     ;THEN SEE IF RDI IS SET
002706  001761                  BEQ     WRDO1           ;IF NOT THEN GO BACK TO START
                                ; ERROR -UNEXPECTED RDI SET
002710  104455                  TRAP    C$ERDF
002712  000001                  .WORD   1
002714  012021                  .WORD   MEF14
002716  010266                  .WORD   ERR26
002720  005337  002402          DEC     ERRWRD
002724  105077  177514          CLRB    @BSEL2          ;CLEAR RDO
002730  000205          WRDOE:  RTS     R5              ;EXIT
```

```
1650
1651                            ;++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
1652                            ; FUNCTIONAL DESCRIPTION:  WRDI - WAIT FOR READY IN
1653                            ;                          THIS ROUTINE FIRST SAVES THE CALLING ADDRESS
1654                            ;                          IN ERRADD,UNLESS ENTERED AT WRDI1.
1655                            ;                          THEN CHECK FOR TIME OUT IF TIME OUT REPORT
1656                            ;                          ERROR AND EXIT. IF NOT TIME OUT CHECK FOR
1657                            ;                          READY IN. IF READY IN EXIT IF NOT READY IN
1658                            ;                          DELAY A LITTLE AND CHECK FOR READY OUT. IF
1659                            ;                          READY OUT REPORT ERROR AND EXIT ROUTINE.
1660                            ;                          IF NOT READY OUT GO BACK AND CHECK FOR TIME OUT.
1661                            ;
1662                            ; INPUTS:                  R5= CALLING ADDRESS
1663                            ; OUTPUTS:                 ERRWRD= -1 IF ERROR OCCURED IN ROUTINE
1664                            ; SUBORDINATE ROUTINES USED:
1665                            ;                          TOUT- TIME OUT
1666                            ;                         WAIT50- DELAY A LITTLE
1667                            ; CALLING SEQUENCE:
1668                            ;                          JSR     R5,WRDI    ;OR
1669                            ;                          JSR     R5,WRDI1
1670                            ;--++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
1671
1672  002732  010537  002406    WRDI:   MOV     R5,ERRADD       ;STORE AWAY ERROR ADD.
1673  002736  004537  005070    WRDI1:  JSR     R5,TOUT         ;GO TO TIME OUT
1674  002742  005737  002402            TST     ERRWRD          ;IF ERROR EXIT
1675  002746  100422                    BMI     WRDIE           ;
1676  002750  032777  000020  177466 1$:       BIT     #20,@BSEL2      ;RDI SET?
1677  002756  001016                    BNE     WRDIE           ;YES-EXIT
1678  002760  004737  004244            JSR     PC,WAIT50       ;SHORT DELAY
1679  002764  032777  000200  177452        BIT     #200,@BSEL2     ;RDYO SET?
1680  002772  001761                    BEQ     WRDI1           ;NO-LOOP.
1681
1682                                    ;RDO INSTEAD OF RDI
1683
1684  002774  104455                    TRAP    C$ERDF
1685  002776  000002                    .WORD   2
1686  003000  012066                    .WORD   MEF15
1687  003002  010266                    .WORD   ERR26
1688  003004  005337  002402            DEC     ERRWRD          ;SET ERROR OCCURRED
1689  003010  105077  177430            CLRB    @BSEL2          ;CLEAR RDYO
1690  003014  000205            WRDIE:  RTS     R5              ;EXIT.
1691
1692
1693
1694
1695
```

```
1696
1697                            ;++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
1698                            ; FUNCTIONAL DESCRIPTION:  WFPE - WAIT FOR PROCEDURE ERROR
1699                            ;                  FIRST SAVE CALLING ADDRESS IN ERRADD.
1700                            ;                  THEN WAIT FOR READY OUT,IF ERROR FROM
1701                            ;                  WRDO ROUTINE EXIT THIS ROUTINE. ELSE
1702                            ;                  GET CONTROL KEY FROM BSEL2 IF NOT CONTROL
1703                            ;                  OUT REPORT ERROR AND EXIT. ELSE CHECK THAT
1704                            ;                  CONTROL OUT CODE IS SAME AS IN PERR. IF
1705                            ;                  EQUAL THEN EXIT ELSE REPORT ERROR AND EXIT.
1706                            ;
1707                            ; INPUTS:          R5= CALLING ADDRESS
1708                            ;                  PERR = PROCEDURE ERROR EXPECTED.
1709                            ; OUTPUTS:         ERRWRD= -1 IF ERROR OCCURED IN ROUTINE
1710                            ; SUBORDINATE ROUTINES USED:
1711                            ;                 WRD01 - WAIT FOR READY OUT
1712                            ; CALLING SEQUENCE:
1713                            ;                  JSR     R5,WFPE
1714                            ;--++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
1715
1716  003016  010537  002406    WFPE:   MOV     R5,ERRADD       ;STORE OFF ERROR ADDRESS
1717  003022  004537  002652            JSR     R5,WRD01        ;WAIT FOR READY OUT
1718  003026  005737  002402            TST     ERRWRD
1719  003032  100452                    BMI     20$             ;IF ERROR OCCURRED IN SR
1720                                                            ; EXIT THIS SR.
1721  003034  117737  177404  002340            MOVB    @BSEL2,$BDDAT   ;
1722  003042  042737  177770  002340            BIC     #^C<7>,$BDDAT   ; STRIP DATA TO CONTROL KEY
1723  003050  122737  000001  002340            CMPB    #01,$BDDAT
1724  003056  001415                    BEQ     10$             ; GO TO 10 IF CONTROL OUT
1725                                                            ; ELSE REPORT ERROR
1726  003060  012737  000001  002336            MOV     #01,$GDDAT      ;SET GOOD DATA TO 01
1727  003066  012737  012000  002430            MOV     #M18F,CODEW     ;SET UP CODE WORD
1728
1729                                    ;ERROR  NOT CONTROL OUT
1730
1731  003074  104455                    TRAP    C$ERDF
1732  003076  000003                    .WORD   3
1733  003100  011506                    .WORD   EROIC
1734  003102  010324                    .WORD   ERR27
1735  003104  005337  002402            DEC     ERRWRD          ;SET ERROR OCCURRED
1736  003110  000423                    BR      20$             ;AND EXIT SUBROUTINE
1737  003112  117737  177336  002340  10$:       MOVB    @BSEL6,$BDDAT   ;MOVE ERROR CODE TO BDDAT
1738  003120  123737  002410  002340            CMPB    PERR,$BDDAT     ;IS IT WHAT IT SHOULD BE
1739  003126  001414                    BEQ     20$             ; IF SO GO TO 20
1740  003130  013737  002410  002336            MOV     PERR,$GDDAT     ;PUT EXPECTED IN GOOD DATA
1741  003136  012737  011762  002430            MOV     #M13F,CODEW     ;SET UP ERROR WORD
1742
1743                                    ;ERROR BAD ERROR CODE RETURNED
1744
1745  003144  104455                    TRAP    C$ERDF
1746  003146  000004                    .WORD   4
1747  003150  011506                    .WORD   EROIC
1748  003152  010324                    .WORD   ERR27
1749  003154  005337  002402            DEC     ERRWRD          ;SET ERROR INDICATOR
1750  003160                    20$:
1751  003160  000205                    RTS     R5              ;RETURN TO CALLER
```

```
1752
1753                            ;++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
1754                            ; FUNCTIONAL DESCRIPTION:       CONTIN - CONTROL IN ROUTINE
1755                            ;                   THIS ROUTINE SAVES THE CALLING ADDRESS IN R5.
1756                            ;                   THEN SETS RQI AND WAITS FOR RDI TO BE RETURNED BY
1757                            ;                   THE DMP/V-11. IF WRDI REPORTS ERROR EXIT TEST. ELSE
1758                            ;                   LOAD BSEL 3 WITH TRIB NUMBER FROM TRIBN,CLEAR THE RQI
1759                            ;                   BIT,MOV DATA FROM R4 TO SEL4,DATA FROM R3 TO SEL6, AND
1760                            ;                   THEN ISSURE CONTROL IN AND EXIT ROUTINE.
1761                            ;
1762                            ; INPUTS:         R4 = SEL4 DATA
1763                            ;                   R3 = SEL6 DATA
1764                            ;                   TIRBN = TRIBUTARY NUMBER.
1765                            ;                   R5 = CALLING ADDRESS
1766                            ;
1767                            ; OUTPUTS:        ERRWRD = -1 IF ERROR REPORTED IN THIS OR ANY SUBODINATE
1768                            ;                            SUB ROUTINE.
1769                            ; SUBORDINATE ROUTINES USED:
1770                            ;                   WRDI1 - WAIT FOR READY IN.
1771                            ; CALLING SEQUENCE:
1772                            ;                   JSR     R5,CONTIN
1773                            ;--++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
1774
1775  003162  010537  002406   CONTIN: MOV     R5,ERRADD       ;SET UP ERROR ADDRESS
1776  003166  052777  000200  177244         BIS     #RQI,@BSEL0     ;SET REQUEST
1777  003174  004537  002736                 JSR     R5,WRDI1        ;GO WAIT FOR RDI
1778  003200  005737  002402                 TST     ERRWRD
1779  003204  100415                        BMI     43$             ;EXIT IF ERROR OCCURRED
1780  003206  113777  002360  177232         MOVB    TRIBN,@BSEL3    ;SET TRIBN
1781  003214  042777  000200  177216         BIC     #RQI,@BSEL0     ;CLEAR REQUEST
1782  003222  010477  177222                 MOV     R4,@BSEL4       ;SET DATA
1783  003226  010377  177222                 MOV     R3,@BSEL6       ;SET REQUEST TYPE
1784  003232  112777  000001  177204         MOVB    #01,@BSEL2      ;DO CONTROL IN
1785  003240  000205                 43$:    RTS     R5              ;RETURN TO CALLER
1786
```

```
1787
1788                            ;++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
1789                            ; FUNCTIONAL DESCRIPTION:       GETOUT - GET OUTPUT CODE
1790                            ;
1791                            ;       THIS SUB-ROUTINE WAITS FOR RDO(REPORTS ERROR IF
1792                            ;       RDI OR TIME OUT);CHECKS THAT OUTPUT COMMAND TYPE
1793                            ;       IS THE SAME AS THE VALUE IN $GDDAT(REPORTS ERROR
1794                            ;       IF NOT);THEN CHECKS THAT TRIB NUMBER IN BSEL3 IS
1795                            ;       EQUAL TO  THE VALUE IN TRIBN(REPORTS ERROR IF NOT
1796                            ;       THEN RETURNS TO CALLER.
1797                            ;
1798                            ; INPUTS:       $GDDAT = OUTPUT COMMAND TYPE EXPECTED
1799                            ;               TRIBN  = TRIBUTARY ADDRESS EXPECTED
1800                            ;               R5     = ADDRESS OF CALLING ROUTINE
1801                            ;
1802                            ; OUTPUTS:      ERRWRD = -1 IF ERROR OCCURED
1803                            ;
1804                            ; SUBORDINATE ROUTINES USED:
1805                            ;               WRDO1 - WAIT FOR READY OUT
1806                            ;
1807                            ; CALLING SEQUENCE:
1808                            ;               JSR     R5,GETOUT
1809                            ;--++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
1810
1811  003242  010537  002406    GETOUT: MOV     R5,ERRADD       ;STORE OFF ERROR ADD.
1812  003246  004537  002652            JSR     R5,WRDO1        ; GO WAIT FOR READY OUT
1813  003252  005737  002402            TST     ERRWRD
1814  003256  100444                     BMI     20$             ;EXIT IF ERROR OCCURRED
1815  003260  117737  177160  002340    MOVB    @BSEL2,$BDDAT   ;GET COMMAND TYPE TO BDDAT
1816  003266  042737  177770  002340    BIC     #^C<7>,$BDDAT   ;STRIP IT TO JUST COMMAND TYPE
1817  003274  023737  002340  002336    CMP     $BDDAT,$GDDAT   ;IS IT THE RIGHT VALUE??
1818  003302  001412                     BEQ     10$             ;IF YES GO TO 10
1819                                                             ;ELSE REPORT ERROR
1820  003304  012737  012007  002430            MOV     #M28F,CODEW
1821  003312  104455                     TRAP    C$ERDF
1822  003314  000005                     .WORD   5
1823  003316  011506                     .WORD   EROIC
1824  003320  010324                     .WORD   ERR27
1825  003322  005337  002402            DEC     ERRWRD
1826  003326  000420                     BR      20$             ;AND EXIT ON ERROR
1827
1828  003330  013737  002360  002336  10$:      MOV     TRIBN,$GDDAT    ;SET UP GDDAT FOR GOOD TRIBN
1829  003336  117737  177104  002340            MOVB    @BSEL3,$BDDAT   ;GET TRIB NUMBER RETURNED
1830  003344  023737  002340  002336            CMP     $BDDAT,$GDDAT   ;ARE THEY THE SAME???
1831  003352  001406                     BEQ     20$             ;IF YES GO TO 20
1832                                                             ;ELSE REPORT ERROR
1833  003354  104455                     TRAP    C$ERDF
1834  003356  000006                     .WORD   6
1835  003360  012242                     .WORD   MEF18A
1836  003362  007600                     .WORD   ERR18
1837  003364  005337  002402            DEC     ERRWRD
1838  003370  000205                 20$:        RTS     R5              ;RETURN TO CALLER
1839
```

```
1840
1841                            ;++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
1842                            ; FUNCTIONAL DESCRIPTION:       GETRKY - GET RETURN KEY VALUE
1843                            ;                       THIS ROUTINE GETS THE VALUE OF THE RETURN KEY
1844                            ;                       FROM BSEL6 ADN COMPARES IT TO THE VALUE IN
1845                            ;                       $GDDAT. IF EQUAL EXIT IF NOT EQUAL REPORT
1846                            ;                       ERROR AND EXIT.
1847                            ;
1848                            ; INPUTS:               R5      = ADDRESS OF CALLER
1849                            ;                       $GDDAT  = VALUE OF EXPECTED RETURN KEY
1850                            ;
1851                            ; OUTPUTS:              ERRWRD  = -1 IF ERROR OCCURS
1852                            ; CALLING SEQUENCE:
1853                            ;                       JSR     R5,GETRKY
1854                            ;--++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
1855  003372  010537  002406   GETRKY: MOV     R5,ERRADD       ; STORE OFF ERROR ADDRESS
1856  003376  017737  177052  002340         MOV     @BSEL6,$BDDAT   ; GET RETURN KEY FROM BSEL6
1857  003404  042737  177600  002340         BIC     #^C<177>,$BDDAT ; STRIP TO VALID BITS
1858  003412  023737  002340  002336         CMP     $BDDAT,$GDDAT   ;ARE THE VALUES EQUAL
1859  003420  001411                         BEQ     10$             ;IF YES GO TO 10
1860                                                                 ;ELSE ERROR.....
1861  003422  012737  011747  002430         MOV     #M12F,CODEW     ;SET UP CODE WORD
1862  003430  104455                         TRAP    C$ERDF
1863  003432  000007                         .WORD   7
1864  003434  011506                         .WORD   EROIC
1865  003436  010324                         .WORD   ERR27
1866  003440  005337  002402               DEC     ERRWRD          ;SET ERROR OCCURRED
1867  003444  000205             10$:        RTS     R5              ;RETURN TO CALLER
1868
```

```
1869
1870                            ;++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
1871                            ; FUNCTIONAL DESCRIPTION:       GETDAT - GET DATA CODE
1872                            ;                               THIS ROUTINE GETS THE DATA CODE FROM BSEL4
1873                            ;                               AND COMPARES IIT TO THE VALUE IN $GDDAT
1874                            ;                               IF EQUAL EXIT ELSE REPORT ERROR AND EXIT
1875                            ;
1876                            ; INPUTS:             R5      = ADDRESS OF CALLER
1877                            ;                     $GDDAT  = VALUE OF EXPECTED DATA
1878                            ;
1879                            ; OUTPUTS:            ERRWRD  = -1 IF ERROR OCCURED
1880                            ; CALLING SEQUENCE:
1881                            ;                     JSR     R5,GETDAT
1882                            ;--******************************************************************************
1883
1884  003446  010537  002406    GETDAT: MOV     R5,ERRADD       ;STORE OFF ERROR ADDRESS
1885  003452  017737  176772  002340    MOV     @BSEL4,$BDDAT   ;GET DATA
1886  003460  023737  002340  002336    CMP     $BDDAT,$GDDAT   ;COMPARE GOOD AND BAD
1887  003466  001411                    BEQ     10$             ;IF OK GO TO 10
1888                                                            ;ELSE ERROR
1889                                    ;ERROR BAD DATA CODE
1890
1891  003470  012737  012014  002430    MOV     #M30F,CODEW
1892  003476  104455                    TRAP    C$ERDF
1893  003500  000010                    .WORD   8
1894  003502  011506                    .WORD   EROIC
1895  003504  010324                    .WORD   ERR27
1896  003506  005337  002402            DEC     ERRWRD          ;SET ERROR OCCURRED
1897  003512  000205            10$:    RTS     R5              ;RETURN TO CALLER
1898
```

```
                                ;++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                                ; FUNCTIONAL DESCRIPTION:       GETCC - GET CHARACTER COUNT
                                ;                   THIS ROUTINE GETS THE CHAR. COUNT FROM EITHER:
                                ;                   (1) CSR6 IF DMP OR DMV IN Q18 MODE
                                ;                   (2) CSR10 IF DMV IN Q22 MODE
                                ;                   AND THEN COMPARES IT TO THE VALUE IN $GDDAT.
                                ;                   IF EQUAL EXIT, ELSE REPORT ERROR AND EXIT
                                ;
                                ; INPUTS:           R5      = ADDRESS OF CALLER
                                ;                   $GDDAT  = VALUE OF EXPECTED DATA
                                ;
                                ; OUTPUTS:          ERRWRD  = -1 IF ERROR OCCURED
                                ; CALLING SEQUENCE:
                                ;                   JSR     R5,GETCC
                                ;--++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
003514  010537  002406          GETCC:  MOV     R5,ERRADD       ;STORE OFF RETURN ADDRESS
003520  017737  176730  002340          MOV     @SEL6,$BDDAT    ;GET CSR6 TO BDDAT
003526  005737  002376                  TST     MODQ22          ;IS THIS DMV W/Q22 ?
003532  001403                          BEQ     1$
003534  017737  176720  002340          MOV     @SEL10,$BDDAT   ;IF YES: GET CSR10 INSTEAD
003542  042737  140000  002340  1$:     BIC     #140000,$BDDAT  ;STRIP TO CHAR COUNT
003550  023737  002340  002336          CMP     $BDDAT,$GDDAT   ;COMPARE
003556  001406                          BEQ     10$             ;IF OK GO TO 10

                                        ;ELSE REPORT ERROR : BAD CHAR COUNT

003560  104455                          TRAP    C$ERDF
003562  000011                          .WORD   9
003564  012133                          .WORD   MEF16A
003566  010114                          .WORD   ERR23
003570  005337  002402                  DEC     ERRWRD          ;SET ERROR OCCURRED
003574  000205          10$:            RTS     R5              ;RETURN TO CALLER
```

```
                                                ;++*****************************************************************
                                                ; FUNCTIONAL DESCRIPTION:       GETBA - GET BUFFER ADDRESS
                                                ;               THIS ROUTINE GETS THE BUFFER ADDRESS FROM SEL4
                                                ;               AND THEN COMPARES IT TO THE VALUE IN $GDDAT
                                                ;               IF EQUAL EXIT ELSE REPORT ERROR AND EXIT
                                                ;               (IF DMV IN Q22 MODE: SEL6 IS CHECKED FOR 0).
                                                ;
                                                ; INPUTS:       R5      = ADDRESS OF CALLER
                                                ;               $GDDAT  = VALUE OF EXPECTED BUFFER ADDRESS
                                                ;
                                                ; OUTPUTS:      ERRWRD  = -1 IF ERROR OCCURED
                                                ; CALLING SEQUENCE:
                                                ;               JSR     R5,GETBA
                                                ;--*****************************************************************

003576  010537  002406                  GETBA:  MOV     R5,ERRADD               ;STORE OFF ERROR ADDRESS
003602  017737  176642  002340                  MOV     @SEL4,$BDDAT            ;GET ADDRESS OUTPUT
003610  023737  002340  002336                  CMP     $BDDAT,$GDDAT           ;ARE THEY EQUAL ?
003616  001015                                  BNE     1$                      ;IF NOT: REPORT IN
003620  005737  002376                          TST     MODQ22                  ;* IS THIS Q22 MODE ?
003624  001420                                  BEQ     10$                     ;* IF NOT: EXIT
003626  012737  000000  002340                  MOV     #0,$BDDAT               ;* GET EXPECTED EXTENDED ADDRESS
003634  017737  176614  002336                  MOV     @SEL6,$GDDAT            ;* GET ACTUAL EXTENDED ADDRESS
003642  023737  002340  002336                  CMP     $BDDAT,$GDDAT           ;* ARE THEY EQUAL ?
003650  001406                                  BEQ     10$                     ;IF YES: EXIT

                                                                                ;ELSE ERROR
003652                                  1$:
003652  104455                                  TRAP    C$ERDF
003654  000012                                  .WORD   10
003656  012176                                  .WORD   MEF17A
003660  010114                                  .WORD   ERR23
003662  005337  002402                          DEC     ERRWRD                  ;SET ERROR OCCURRED
003666  000205                          10$:    RTS     R5                      ;RETURN TO CALLER
```

```
                                        ;++***********************************************************************
                                        ; FUNCTIONAL DESCRIPTION:       GETOC - GET OUTPUT CODE
                                        ;               THIS ROUTINE GETS THE OUTPUT CODE FROM
                                        ;               BSEL6 AND THEN COMPARES IT TO
                                        ;               THE VALUE IN $GDDAT
                                        ;               IF EQUAL EXIT ELSE REPORT ERROR AND EXIT
                                        ;
                                        ; INPUTS:       R5      = ADDRESS OF CALLER
                                        ;               $GDDAT  = VALUE OF EXPECTED OUTPUT CODE
                                        ;
                                        ; OUTPUTS:      ERRWRD  = -1 IF ERROR OCCURED
                                        ; CALLING SEQUENCE:
                                        ;               JSR     R5,GETOC
                                        ;--***********************************************************************

003670  010537  002406                  GETOC:  MOV     R5,ERRADD               ;STORE OFF ERROR ADDRESS
003674  017737  176554  002340                  MOV     @BSEL6,$BDDAT           ;GET OUTPUT FROM BSEL6
003702  042737  177400  002340                  BIC     #^C<377>,$BDDAT         ;STRIP TO VALID BITS
003710  023737  002340  002336                  CMP     $BDDAT,$GDDAT           ;ARE THEY EQUAL
003716  001411                                  BEQ     10$                     ;IF SO GO TO 10
                                                                                ;ELSE ERROR
003720  012737  012000  002430                  MOV     #M18F,CODEW
003726  104455                                  TRAP    C$ERDF
003730  000013                                  .WORD   11
003732  011506                                  .WORD   EROIC
003734  010324                                  .WORD   ERR27
003736  005337  002402                          DEC     ERRWRD                  ;SET ERROR OCCURRED
003742  000205                          10$:    RTS     R5                      ;RETURN TO CALLER
```

```
                                        ;+*****************************************************************
                                        ; FUNCTIONAL DESCRIPTION:  MEMEX - MEMORY EXTENSTION CODE
                                        ;               THIS ROUTINE IS USED WITH THE
                                        ;               MEMORY EXTENTION TESTS. THE ROUTINE FIRST
                                        ;               CHECKS FOR A CONTROL OUT.. IF THE CONTROL
                                        ;               OUT IS A REC COMPLETE IT COMPARES THE FIRST
                                        ;               DATA WORD ON THE EXTENTIONS PAGE IF GOOD
                                        ;               THEN EXIT IF BAD REPORT ERROR AND EXIT.
                                        ;               IF CONTROL OUT IS NON EXISTENT MEMORY THEN
                                        ;               CHECK TO BE SURE MEMORY IS NON-EXISITENT
                                        ;               IF MEMORY EXIST THEN PRINT ERROR AND
                                        ;               EXIT ROUTINE.
                                        ;
                                        ; INPUTS:       R5      = CALLING ADDRESS
                                        ;
                                        ; OUTPUTS:      ERRWRD  = -1 IF ERROR OCCURED
                                        ; SUBORDINATE ROUTINES USED:
                                        ;               WRDO    = WAIT FOR READY OUT
                                        ; CALLING SEQUENCE:
                                        ;               JSR     R4,MEMEX
                                        ;--*****************************************************************

003744                                  MEMEX:
003744  004537  002646                  EXMEM:  JSR     R5,WRDO         ;WAIT FOR READY OUT
003750  005737  002402                          TST     ERRWRD
003754  100524                                  BMI     EXMEMX
003756  117737  176462  002340                  MOVB    @BSEL2,$BDDAT   ;
003764  042737  177770  002340                  BIC     #^C<7>,$BDDAT   ;STRIP TO TYPE CODE
003772  122737  000000  002340                  CMPB    #0,$BDDAT       ;IS IT REC COMP
004000  001450                                  BEQ     EXMEMA          ; IF YES THEN GO TO A
004002  122737  000001  002340                  CMPB    #1,$BDDAT       ;IF NOT IS IT CONTROL OUT
004010  001012                                  BNE     EXMEMB          ;IF NOT GO TO B
004012  012737  000302  002336                  MOV     #302,$GDDAT
004020  117737  176430  002340                  MOVB    @BSEL6,$BDDAT
004026  123737  002336  002340                  CMPB    $GDDAT,$BDDAT   ;IS IT NON EXISTENT MEM?
004034  001412                                  BEQ     EXMEMC          ;IF YES GO TO C
004036  012737  011762  002430          EXMEMB: MOV     #M13F,CODEW
004044  104455                                  TRAP    C$ERDF
004046  000014                                  .WORD   12
004050  011506                                  .WORD   EROIC
004052  010324                                  .WORD   ERR27
004054  005337  002402                          DEC     ERRWRD          ;SET ERROR FLAG
004060  000462                                  BR      EXMEMX          ;PRINT ERROR AND EXIT
004062                                  EXMEMC:
                                                ;IF ERROR IS NON EXISTENT

004062  005237  177572                          INC     177572          ;INCREMENT MM
004066  012737  004216  000004                  MOV     #METB,4         ;SET UP TRAP
004074  005737  120000                          TST     @#120000                ;TEST THE NON EXISTENT
004100  005037  177572                          CLR     177572          ;CLEAR MM
004104  104455                                  TRAP    C$ERDF
004106  000015                                  .WORD   13
004110  000000                                  .WORD   0
004112  007706                                  .WORD   ERR20
004114  005337  002402                          DEC     ERRWRD
004120  000442                                  BR      EXMEMX          ;PRINT ERROR AND EXIT TEST
```

```
2055
2056                                        ; GET HERE IF BUFFER RETURNED OK
2057
2058  004122  005237  177572          EXMEMA: INC     177572          ;ENABLE MM
2059  004126  012737  004202  000004          MOV     #METC,4         ;SET UP TRAP
2060  004134  013737  033450  002336          MOV     MR1+2,$GDDAT    ;GET FIRST WORD FROM NEW PAGE
2061  004142  013737  120000  002340          MOV     120000,$BDDAT   ;AND FIRST RX WORD
2062  004150  005037  177572                  CLR     177572          ;DISABLE MM
2063  004154  023737  002336  002340          CMP     $GDDAT,$BDDAT   ;COMPARE DATA
2064  004162  001421                          BEQ     EXMEMX          ;EXIT IF GOOD
2065  004164  104455                          TRAP    C$ERDF
2066  004166  000016                          .WORD   14
2067  004170  000000                          .WORD   0
2068  004172  007740                          .WORD   ERR21
2069  004174  005337  002402                  DEC     ERRWRD
2070  004200  000412                          BR      EXMEMX          ;AND EXIT
2071  004202  005037  177572          METC:   CLR     177572          ;DISABLE MM
2072  004206  104455                          TRAP    C$ERDF
2073  004210  000017                          .WORD   15
2074  004212  000000                          .WORD   0
2075  004214  010022                          .WORD   ERR22
2076  004216  005037  177572          METB:   CLR     177572          ;DISABLE MM
2077  004222  062706  000004          META:   ADD     #4,SP           ;;(SP)                  VRG021882
2078  004226  013737  002316  000004 EXMEMX: MOV     SAVE4,4
2079  004234  013737  002320  000006          MOV     SAVE6,6         ;RESTORE TRAPS
2080  004242  000205                          RTS     R5
2081
```

```
                                        ;+*****************************************************************
                                        ; FUNCTIONAL DESCRIPTION:       WAIT50 - WAIT 50 MICRO SECONDS
                                        ;               THIS ROUTINE COUNTS DOWN R1 FROM 200 TO 0
                                        ;               IF DMP AND FROM 600 TO 0 IF DMV. THIS
                                        ;               IS USED AS A DELAY ROUTINE
                                        ;
                                        ; CALLING SEQUENCE:
                                        ;               JSR     PC,WAIT50
                                        ;--*****************************************************************

004244  010146                          WAIT50: MOV     R1,-(SP)        ;SAVE R1
004246  012701  000310                          MOV     #200.,R1        ;INIT COUNTER
004252  005737  002472                          TST     OPTYP
004256  001402                                  BEQ     3$              ;IF DMP GO TO 3
004260  062701  000620                          ADD     #400.,R1        ;ELSE TRIPLE UP TIMER FOR DMV
004264  005301                          3$:     DEC     R1              ;DECREMENT COUNTER
004266  001376                                  BNE     3$              ;BR IF NOT DONE YET
004270  012601                                  MOV     (SP)+,R1        ;RESTORE R1
004272  000207                                  RTS     PC              ;RETURN

                                        ;+*****************************************************************
                                        ; FUNCTIONAL DESCRIPTION:       GWORD   - GET WORD
                                        ;               THIS ROUTINE READS A WORD FROM THE M8207 ROM.
                                        ;
                                        ; INPUTS:       CADDR   = ADDRESS TO BE READ
                                        ;
                                        ; OUTPUTS:      SEL6    = DATA READ
                                        ; SUBORDINATE ROUTINES USED:
                                        ;               ROMCLK  - ROUTINE TO ISSUE CLOCKS TO ROM CIRCUT
                                        ; CALLING SEQUENCE:
                                        ;               JSR     PC,GWORD
                                        ;--*****************************************************************

004274  005077  176140                  GWORD:  CLR     @SEL0           ;INIT
004300  113777  002405  176136                  MOVB    CADDR+1,@SEL2   ;NOW HIGH BYTE OF ADDRESS
004306  004537  004346                          JSR     R5,ROMCLK
004312  121053                                  .WORD   121053          ;MOV IBUS* 2 TO OBUS* 13
004314  042737  000377  004334                  BIC     #377,1$         ;STRIP ADDR FLIED.
004322  153737  002404  004334                  BISB    CADDR,1$                ;ADD IN IMM ADDR.
004330  004537  004346                          JSR     R5,ROMCLK       ;GO DO BRANCH.
004334  100000                          1$:     .WORD   100000          ;BRANCH EXT PUTS ADDR. IN PCREG.
004336  052777  002000  176074                  BIS     #2000,@SEL0     ;SET READ ENABLE.
004344  000207                                  RTS PC                  ;EXIT.
```

```
2125
2126                            ;++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
2127                            ; FUNCTIONAL DESCRIPTION:       ROMCLK  - ROM CLOCK ROUTINE
2128                            ;                       THIS ROUTINE ISSUES A SINGE STEP TO THE
2129                            ;                       M8207.
2130                            ; INPUTS:               R5      - POINTS TO INSTRUCTION TO BE STEPPED
2131                            ;
2132                            ; RETURN:               RETURN IS TO WORD FOLLWOING INSTRUCTION
2133                            ;
2134                            ; CALLING SEQUENCE:
2135                            ;                       JSR     R5,ROMCLK
2136                            ;                       .WORD   INSTR           ;INSTURCITON TO EXECUTE
2137                            ;--**********************************************************************************
2138
2139  004346                    ROMCLK:
2140  004346  152777  000002  176066        BISB    #2,@BSEL1               ;SET ROMI
2141  004354  012577  176074                MOV     (R5)+,@BSEL6    ;SET INSTRUCTION.
2142  004360  152777  000003  176054        BISB    #3,@BSEL1       ;CLOCK INSTR.
2143  004366  142777  000007  176046        BICB    #7,@BSEL1       ;CLEAR.
2144  004374  000205                        RTS     R5
2145
2146                            ;++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
2147                            ; FUNCTIONAL DESCRIPTION:       CRCR    - CRC CALCULATE ROUTINE
2148                            ;                       THIS ROUTINE TAKES 16 BITS OF DATA FROM WORDT
2149                            ;                       AND CONVERTS THEM INTO PART OF THE SERIAL STREAM
2150                            ;                       THAT IS BEING USED TO CALCULATE A CRC-CCITT WORD.
2151                            ;
2152                            ; INPUTS:               WORDT   - WORD TO CALCULATE ON
2153                            ;
2154                            ; IMPLICIT INPUTS:
2155                            ;                       CWORD   - MUST BE A -1 FIRST TIME CALLED
2156                            ;
2157                            ; OUTPUTS:              CWORD   - 16 BIT CALCULATED WORD
2158                            ; CALLING SEQUENCE:
2159                            ;                       JSR     PC,CRCR
2160                            ;--**********************************************************************************
2161  004376  010146            CRCR:   MOV     R1,-(SP)
2162  004400  010246                    MOV     R2,-(SP)
2163  004402  012702  000020            MOV     #16.,R2
2164  004406  000241            10$:    CLC
2165  004410  006037  002374            ROR     CWORD
2166  004414  006037  002372            ROR     WORDT
2167  004420  102011                    BVC     20$
2168  004422  012701  102010            MOV     #102010,R1
2169  004426  043701  002374            BIC     CWORD,R1
2170  004432  042737  102010  002374    BIC     #102010,CWORD
2171  004440  050137  002374            BIS     R1,CWORD
2172  004444  005302            20$:    DEC     R2
2173  004446  003357                    BGT     10$
2174  004450  012602                    MOV     (SP)+,R2
2175  004452  012601                    MOV     (SP)+,R1
2176  004454  000207                    RTS PC
2177
```

```
2178
2179                            ;++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
2180                            ; FUNCTIONAL DESCRIPTION:       MINITR  - MASTER CLEAR ROUTINE
2181                            ;                       THIS ROUTINE ISSUES A MASTER CLEAR TO THE DEVICE
2182                            ;                       IF OPTION IS AN 8206 IT ALSO SETS THE RUN BIT.
2183                            ;
2184                            ; SUBORDINATE ROUTINES USED:
2185                            ;                       WAIT50  - SHORT DELAY ROUTINE
2186                            ; CALLING SEQUENCE:
2187                            ;                       JSR     PC,MINITR
2188                            ;--------------------------------------------------------------------------------------
2189
2190  004456  112777  000100  175756  MINITR: MOVB    #100,@BSEL1             ;SET MASTER CLEAR.
2191  004464  022737  000004  002472           CMP     #04,OPTYP               ;IS THIS 8206
2192  004472  001003                   BNE     MIN1R                   ;BRANCH IF NOT
2193  004474  112777  000200  175740           MOVB    #200,@BSEL1             ;SET RUN
2194  004502  000240                   MIN1R:  NOP
2195  004504  004737  004244           1$:     JSR     PC,WAIT50               ;SHORT DELAY.
2196  004510  000207                           RTS     PC                      ;RETURN.
2197                            ;++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
2198                            ; FUNCTIONAL DESCRIPTION:       MINITS  - MASTER CLEAR AND INIT
2199                            ;                       THIS ROUTINE ISSUES A MASTER CLEAR, WAITS FOR THE
2200                            ;                       RUN BIT TO SET, CHECKS FOR GOOD COMPLETION OF MICRO
2201                            ;                       DIAGNOSTICS AND ISSUES THE MODE DEFINITION.
2202                            ;                       IF ENTERED AT MINIT1 - SET MODE TO FULL DUPLEX POINT
2203                            ;                       TO POINT
2204                            ;                       IF ENTERED AT MINITS - SET MODE TO FULL DUPLEX CONTROL
2205                            ;                       IF ENTERED AT MINTR  - SET MODE TO VALUE IN AXNUM
2206                            ;
2207                            ; OUTPUTS:      ERRWRD  = -1 IF ERROR OCCURS.
2208                            ;
2209                            ; IMPLICIT OUTPUTS:
2210                            ;                       DMP EXITS WITH MODE DEFINED
2211                            ;
2212                            ; SUBORDINATE ROUTINES USED:
2213                            ;                       TOUT    - TIME OUT ROUTINE
2214                            ;                       WAIT50  - SHORT DELAY ROUTINE
2215                            ;                       WRDO    - WAIT FOR READY OUT
2216                            ;
2217                            ; CALLING SEQUENCE:
2218                            ;                       JSR     PC,MINITS       ;OR MINIT1 OR MINTR
2219                            ;--------------------------------------------------------------------------------------
2220  004512  012737  000003  002506  MINIT1: MOV     #03,AXNUM
2221  004520  000403                           BR      MINTR
2222  004522  012737  000005  002506  MINITS: MOV     #05,AXNUM
2223  004530  112777  000100  175704  MINTR:  MOVB    #100,@BSEL1             ;SET MASTER CLEAR.
2224  004536  022737  000004  002472           CMP     #4,OPTYP                ;IS THIS 8206
2225  004544  001003                   BNE     MIN2R                   ;SKIP IF NOT
2226  004546  112777  000200  175666           MOVB    #200,@BSEL1             ;SET RUN BIT
2227  004554  000240                   MIN2R:  NOP
2228  004556  000240                           NOP
2229  004560  012737  004600  002406           MOV     #ERLB7,ERRADD   ;SET ERROR ADDRESS
2230  004566  004537  005070           TLB7:   JSR     R5,TOUT
2231  004572  005737  002402                   TST     ERRWRD
2232  004576  100533                           BMI     MINTE                   ;EXIT IF ERROR
2233  004600                           ERLB7:
```

```
2234  004600  004737  004244          4$:   JSR     PC,WAIT50
2235  004604  005777  175630                TST     @BSEL0          ;NOW WAIT FOR RUN TO ACTUALLY SET.
2236  004610  100366                        BPL     TLB7
2237  004612  012737  004632  002406        MOV     #ERLB8,ERRADD   ;SET ERROR ADDRESS
2238  004620  004537  005070          TLB8: JSR     R5,TOUT         ;CHECK TIME OUT
2239  004624  005737  002402                TST     ERRWRD
2240  004630  100516                        BMI     MINTE           ;EXIT IF ERROR
2241  004632                          ERLB8:
2242  004632  122777  000305  175614  5$:   CMPB    #305,@BSEL6     ;GOOD END TO MICRO DIAG?
2243  004640  001404                        BEQ     2$
2244  004642  122777  000264  175604        CMPB    #264,@BSEL6     ;LINE UNIT FAILURE.?
2245  004650  001363                        BNE     TLB8            ;NO-STAY IN LOOP.
2246                                                                ;YES,CATCH THE PROBLEM LATER.
2247  004652  012737  000077  002336  2$:   MOV     #77,$GDDAT
2248  004660  032737  000003  002472        BIT     #3,OPTYP        ;IS THIS DMV
2249  004666  001403                        BEQ     3$              ;IF NOT GO TO 3
2250  004670  012737  000033  002336        MOV     #33,$GDDAT
2251  004676  023777  002336  175544  3$:   CMP     $GDDAT,@BSEL4
2252  004704  001407                        BEQ     4$              ;IF CORRECT OPTYP CONTINUE
2253  004706  104457                        TRAP    C$ERSOFT
2254  004710  000025                        .WORD   21
2255  004712  012566                        .WORD   MEF32
2256  004714  010422                        .WORD   ERR32
2257  004716  005337  002402                DEC     ERRWRD
2258  004722  000461                        BR      MINTE           ;EXIT TEST
2259  004724  032737  000003  002472  4$:   BIT     #3,OPTYP        ;IS THIS DMV
2260  004732  001423                        BEQ     6$              ;IF NOT GO TO 6
2261  004734  005737  002400                TST     F.LOOP          ;DMV EXTERNAL LOOP FLAG SET?
2262  004740  001020                        BNE     6$              ;IF YES: THEN GO TO 6
2263  004742  112777  000301  175472        MOVB    #301,@BSEL1
2264  004750  004537  002646                JSR     R5,WRDO         ;WAIT FOR READY OUT
2265  004754  012777  000006  175462        MOV     #06,@BSEL2      ;DO MAINT LOOP FOR TTL LOOPBACK
2266  004762  004537  005070          60$:  JSR     R5,TOUT
2267  004766  005737  002402                TST     ERRWRD
2268  004772  100435                        BMI     MINTE
2269  004774  005777  175440                TST     @BSEL0
2270  005000  100370                        BPL     60$
2271  005002  152777  000010  175432  6$:   BISB    #BIT3,@BSEL1    ;SET LINE UNIT LOOP.-
2272                                                                ;THIS ALLOWS US TO SET THE MODE.
2273  005010  052777  000200  175422        BIS     #RQI,@BSEL0
2274  005016  012737  005036  002406        MOV     #ERLB9,ERRADD   ;SET ERROR ADDRESS
2275  005024  004537  005070          TLB9: JSR     R5,TOUT
2276  005030  005737  002402                TST     ERRWRD
2277  005034  100414                        BMI     MINTE           ;EXIT IF ERROR
2278  005036  032777  000020  175400  ERLB9: BIT     #20,@BSEL2      ;WAIT FOR RDI.
2279  005044  001767                        BEQ     TLB9
2280  005046  013777  002506  175400        MOV     AXNUM,@BSEL6    ;;SET UP FOR F/D CONTROL STATION
2281  005054  105077  175360                CLRB    @BSEL0          ;NO MORE REQUESTS.
2282  005060  012777  000002  175356        MOV     #2,@BSEL2       ;START.
2283  005066  000207                  MINTE: RTS     PC
2284
```

```
2285
2286                                    ;+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
2287                                    ; FUNCTIONAL DESCRIPTION:       TOUT    - TIME OUT ROUTINE
2288                                    ;                THIS ROUTINE INC COUNTT LOCATION EVERY
2289                                    ;                TIME IT IS CALLED IF COUNTT OVERFLOWS THEN
2290                                    ;                TIME OUT IS REPORTED AND THE ROUTINE IS EXITED.
2291                                    ; CALLING SEQUENCE:
2292                                    ;                JSR     R5,TOUT
2293                                    ;--*****************************************************************************
2294  005070  020537  005136  TOUT:    CMP     R5,LASTR5
2295  005074  001011                   BNE     TOUTE
2296  005076  005237  005134           INC     COUNTT
2297  005102  001012                   BNE     TOUTEX
2298  005104  104455                   TRAP    C$ERDF
2299  005106  000020                   .WORD   16
2300  005110  011414                   .WORD   MEF7
2301  005112  010266                   .WORD   ERR26
2302  005114  005337  002402           DEC     ERRWRD
2303  005120  005037  005134  TOUTE:   CLR     COUNTT
2304  005124  010537  005136           MOV     R5,LASTR5       ;SAVE CURRENT PC.
2305  005130                   TOUTEX:
2306  005130  104422                   TRAP    C$BRK
2307  005132  000205                   RTS     R5              ;EXIT
2308
2309  005134  000000           COUNTT: 0                       ;NUMBERS OF TIMES IN THIS ROUTINE FROM
2310                                                           ;SAME CALLING LOCATION.
2311  005136  000000           LASTR5: 0                       ;LAST CALLING LOCATION.
2312
```

```
                                    ;++**********************************************************************
                                    ; FUNCTIONAL DESCRIPTION:        STAND   - PRINT STANDARD REGS
                                    ;                  THIS ROUTINE PRINTS THE  UNIT NUMBER AND
                                    ;                  CSR ADDRESS OF THE FAILING UNIT AS WELL AS THE
                                    ;                  CONTENTS OF ALL THE CSR REGS.
                                    ;                  THE ERROR MESG ROUTINES USE THIS SUBROUTNE
                                    ; IMPLICIT INPUTS:
                                    ;                  CSRS'   - THE CSR ARE EXPECTED TO CONTAIN USEFUL DATA
                                    ;                  LOGDEV  - THE LOGIGAL DEVICE NUMBER
                                    ;                  SEL0    - ADDRESS OF THIS UNIT
                                    ; CALLING SEQUENCE:
                                    ;                  JSR     PC,STAND
                                    ;--**********************************************************************

005140                              STAND:
005140  013746  002440                      MOV     SEL0,-(SP)
005144  013746  002332                      MOV     LOGDEV,-(SP)
005150  012746  005306                      MOV     #CFM1,-(SP)
005154  012746  000003                      MOV     #3,-(SP)
005160  010600                              MOV     SP,R0
005162  104415                              TRAP    C$PNTX
005164  062706  000010                      ADD     #10,SP
005170  017746  175260                      MOV     @SEL6,-(SP)
005174  017746  175250                      MOV     @SEL4,-(SP)
005200  017746  175240                      MOV     @SEL2,-(SP)
005204  017746  175230                      MOV     @SEL0,-(SP)
005210  012746  005373                      MOV     #CFM2,-(SP)
005214  012746  000005                      MOV     #5,-(SP)
005220  010600                              MOV     SP,R0
005222  104415                              TRAP    C$PNTX
005224  062706  000014                      ADD     #14,SP
005230  032737  000003  002472              BIT     #3,OPTYP            ;IS THIS A DMV-11 ?
005236  001412                              BEQ     1$                  ;IF NOT: SKIP SEL10 PRINTOUT
005240  017746  175214                      MOV     @SEL10,-(SP)
005244  012746  005451                      MOV     #CFM3,-(SP)
005250  012746  000002                      MOV     #2,-(SP)
005254  010600                              MOV     SP,R0
005256  104415                              TRAP    C$PNTX
005260  062706  000006                      ADD     #6,SP
005264                              1$:
005264  012746  005466                      MOV     #CFM4,-(SP)
005270  012746  000001                      MOV     #1,-(SP)
005274  010600                              MOV     SP,R0
005276  104415                              TRAP    C$PNTX
005300  062706  000004                      ADD     #4,SP
005304  000207                              RTS     PC
005306  047045  040445  040506      CFM1:   .ASCIZ  '%N%AFAILING MCPU IS UNIT #%02%A WHOSE ADDRESS IS %06'
005314  046111  047111  020107
005322  041515  052520  044440
005330  020123  047125  052111
005336  021440  047445  022462
005344  020101  044127  051517
005352  020105  042101  051104
005360  051505  020123  051511
005366  022440  033117     000
005373     045  022516  051501      CFM2:   .ASCIZ  '%N%ASEL0=%06%A SEL2=%06%A SEL4=%06%A SEL6=%06'
```

```
2369   005400   046105   036460   047445
2370   005406   022466   020101   042523
2371   005414   031114   022475   033117
2372   005422   040445   051440   046105
2373   005430   036464   047445   022466
2374   005436   020101   042523   033114
2375   005444   022475   033117      000
2376   005451      045   020101   042523  CFM3:   .ASCIZ  "%A SEL10=%06"
2377   005456   030514   036460   047445
2378   005464   000066
2379   005466   047045      000          CFM4:   .ASCIZ  "%N"
2380            005472                   .EVEN
2381
2382
```

```
2383                    ;+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
2384                    ; FUNCTIONAL DESCRIPTION:       RMVRT - VERIFY ROM CONTENTS
2385                    ;                       THIS ROUTINE READS DMV ROMS USING 256 BYTE READS
2386                    ;                       AND CALCULATES/CHECKS THE CRC.
2387                    ; SUBORDINATE ROUTINES:
2388                    ;                       WRDO    -   WAIT FOR READY OUT (MRDY)
2389                    ;                       CRCR    -   CALCULATE CRC
2390                    ; IMPLICIT INPUTS:
2391                    ;                       ROMADD  -   STARTING ADDRESS OF PARTICULAR ROM
2392                    ; CALLING SEQUENCE:
2393                    ;                       JSR     R5,RMVRT
2394                    ;--+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
2395
2396  005472  012737  177777  002374  RMVRT:  MOV     #-1,CWORD               ;INIT CRC WORD
2397  005500  112777  000301  174734          MOVB    #301,@BSEL1             ;*ENTER MAINTENANCE LOOP
2398  005506  004537  002646                  JSR     R5,WRDO                 ;*
2399  005512  005737  002402                  TST     ERRWRD                  ;*
2400  005516  100477                          BMI     RMVEX                   ;*EXIT IF ERROR
2401  005520  005003                          CLR     R3                      ;CLEAR BLOCK_NUMBER
2402
2403  005522  012777  033726  174724  RMVXX:  MOV     #RECBU1,@SEL6           ;READ 256 BYTES USING M-LOOP
2404  005530  105077  174724                  CLRB    @BSEL10                 ;RCV BUFFER ADDR => BSR10:CSR6
2405  005534  013777  002436  174706          MOV     ROMADD,@SEL4            ;ROM ADDRESS => CSR4
2406  005542  112777  000003  174674          MOVB    #03,@BSEL2              ;*DO BLOCK READ OF 256 BYTES
2407  005550  004537  002646                  JSR     R5,WRDO                 ;*WAIT FOR MRDY BIT (RDO)
2408  005554  005737  002402                  TST     ERRWRD                  ;*
2409  005560  100456                          BMI     RMVEX                   ;*EXIT IF ERROR
2410
2411  005562  005002                          CLR     R2                      ;CLEAR WORD INDEX
2412  005564  005703                          TST     R3                      ;IS THIS THE 1ST BLOCK?
2413  005566  001014                          BNE     RMVYY                   ;
2414  005570  013737  033726  002434          MOV     RECBU1,CRCCAL           ;YES: SAVE 1ST WORD OF 1ST BLOCK
2415  005576  005722                          TST     (R2)+                   ;     (CRC CHARACTER)
2416  005600  116237  033726  013762          MOVB    RECBU1(R2),ROMNO        ;SAVE ROM #
2417  005606  005202                          INC     R2                      ;
2418  005610  116237  033726  013764          MOVB    RECBU1(R2),REVNO        ;SAVE REVISION #
2419  005616  005302                          DEC     R2                      ;ADJUST INDEX FOR ROM#
2420
2421  005620  016237  033726  002372  RMVYY:  MOV     RECBU1(R2),WORDT        ;GET INDEXED WORD FROM BUFFER
2422  005626  004737  004376                  JSR     PC,CRCR                 ;CALCULATE CRC WORD
2423  005632  062702  000002                  ADD     #2,R2                   ;(BUMP INDEX)
2424  005636  022702  000400                  CMP     #256.,R2                ;IS THIS THE LAST WORD ?
2425  005642  001366                          BNE     RMVYY                   ;IF NOT: GET NEXT WORD.
2426
2427  005644  020327  000037          RMVAA:  CMP     R3,#31.                 ;IS THIS THE LAST 256 WORD BLOCK?
2428  005650  001405                          BEQ     RMVBB
2429  005652  062737  000400  002436          ADD     #256.,ROMADD            ;NO: ADD 256 TO ADDRESS
2430  005660  005203                          INC     R3                      ;    AND BUMP BLOCK NUMBER
2431  005662  000717                          BR      RMVXX                   ;    AND GO GET SOME MORE
2432
2433  005664  000240          RMVBB:  NOP                                     ;(COM CWORD=5137 2374)
2434  005666  000240                  NOP                                     ;YES:
2435  005670  013737  002434  002372          MOV     CRCCAL,WORDT            ;
2436  005676  023737  002374  002372          CMP     CWORD,WORDT             ;    COMPARE CRC WORDS...
2437  005704  001404                          BEQ     RMVEX                   ; AND REPORT ERROR IF NO MATCH.
2438  005706  104455                          TRAP    C$ERDF
```

```
CZDMTD.P11    09-MAR-82 09:11          GLOBAL SUBROUTINES

 2439  005710  000021                          .WORD   17
 2440  005712  000000                          .WORD   0
 2441  005714  010162                          .WORD   ERR24
 2442
 2443  005716  000205          RMVEX:  RTS     R5              ;RETURN TO CALLER
 2444
```

```
                                      ;++*************************************************************
                                      ; FUNCTIONAL DESCRIPTION:       TXRXSR  - TRANSMIT RECEIVE SUBROUTINE
                                      ;                 THIS ROUTINE IS USED BY ALL TESTS THAT TRANSMIT
                                      ;                 AND RECIEVE DATA. THE FIRST PART OF THE ROUTINE VERIFIES
                                      ;                 THE OPERATOR INPUTS AND MAKES SURE THAT INTERFACE
                                      ;                 SELECTION CORRESPOND TO SELECTED BAUD RATES.
                                      ;                 THE SECOND PART OF THE ROUTINE FORMS "TXRX3" AND DOES THE
                                      ;                 FOLLOWING. ESTABLISH TRIBUTARY. THEN EITHER DO ISTRT OR
                                      ;                 MAINT STATE DEPENDING ON FLAG. IF ISTRT THEN CHECK FOR
                                      ;                 RUN STATE IF MAINT STATE THEN GO TO NEXT STEP. NEXT QUE
                                      ;                 REC AND TRANSMIT BUFFERS THEN WAIT FOR OUTPUT. IF MEMORY
                                      ;                 MANAGEMENT EXIT TEST. IF ISTRT LOOK FOR REC COMPLETED
                                      ;                 FOLLOWED BY TX COMPLETED. IF MAINT LOOK FOR TRANSMIT FIRST.
                                      ;
                                      ; INPUTS:         TXADD   - ADDRESS OF TRANSMIT BUFFER
                                      ;                 TXCC    - CHAR COUNT OF TX
                                      ;                 RXADD   - ADDRESS OF REC BUFFER
                                      ;                 RXCC    - CHAR COUNT OF REC BUFFER
                                      ;                 GENWRD  - FLAG WORD IF BIT 15 SET-MAINT MODE
                                      ;                           IF BIT 14 SET THEN MEMORY MGT.
                                      ;
                                      ; SUBORDINATE ROUTINES USED:
                                      ;                 WAIT50  - SHORT DELAY
                                      ;                 CONTIN  - CONTROL IN ROUTINE
                                      ;                 GETOUT  - GET CONTROL OUT CODE
                                      ;                 GETOC   - GET OUTPUT CODE
                                      ;                 WRDI    - WAIT FOR READY IN
                                      ;                 GETCC   - GET CHAR COUNT
                                      ;                 GETBA   - GET BUFFER ADDRESS
                                      ;
                                      ; CALLING SEQUENCE:
                                      ;                 JSR     R5,TXRXSR          ;IF NOT INTERFACE CHECK
                                      ;                                            ;CALL AT JSR    R5,TXRX3
                                      ;--*************************************************************

005720  022737  000004  002476  TXRXSR: CMP     #4,TSTCON
005726  001002                          BNE     10$                ;IF INTERNAL LOOP
005730  000137  006346                  JMP     TXRX3              ;GO TO 3

                                        ;JUMP TO TXRX 3 IF INTERNAL LOOP

005734  013737  002360  002506  10$:    MOV     TRIBN,AXNUM        ;SAVE TRIBN.
005742  005037  002360                  CLR     TRIBN              ;MAKE TRIBN 0
                                                                   ;DMV-11 WILL IGNORE THE FOLLOWING...

005746  032737  000002  002476  TXRX1:  BIT     #BIT1,TSTCON       ;IS IT MODEM LOOP BACK?
005754  001571                          BEQ     TXRX2              ;IF NOT THEN GO TO 2
005756  012704  000110                  MOV     #110,R4
005762  032737  000001  002476          BIT     #BIT0,TSTCON       ;IS IT REMOTE MODEM
005770  001402                          BEQ     TXRX1A             ;IF NOT THEN GO TO 1A
005772  012704  000104                  MOV     #104,R4            ;
005776  012703  000021          TXRX1A: MOV     #21,R3
006002  004537  003162                  JSR     R5,CONTIN          ; WRITE MODEM WITH CORRECT
                                                                   ; TYPE OF LOOP CODE
006006  005737  002402                  TST     ERRWRD
006012  100002                          BPL     15$
```

```
2501  006014  000137  006476                JMP     TXRXA
2502
2503  006020  004737  004244          15$:  JSR     PC,WAIT50       ;WAIT FOR A WHILE                    ...
2504  006024  142777  000010  174410        BICB    #BIT3,@BSEL1    ;CLEAR LU LOOP IF NOT INTERNAL
2505
2506                                        ; IF INTEGRAL MODEM  MAKE SURE OPTION
2507                                        ; IS NOT 8053 AND SPEED IS 56K OR HIGHER
2508                                        ; IF NOT INTEGRAL MODEM GO TO NEXT CHECK IF EIA
2509
2510  006032  022737  000001  002474        CMP     #1,IFTYP        ;IS THIS INTEGRAL MODEM
2511  006040  001014                        BNE     XYZTC           ;IF NOT THEN GO CHECK FOR EIA
2512  006042  022737  000001  002472        CMP     #1,OPTYP        ;IS THIS 8053 (DMV NO INTEGRAL)
2513  006050  001453                        BEQ     BADIF           ;IF SO PRINT BAD INTERFACE MESG.
2514  006052  023727  002466  000004        CMP     SPEEDM,#4       ;IS THIS 56 K OR HIGHER
2515  006060  103464                        BLO     BADBR           ;IF NOT PRINT BAD BAUD RATE
2516
2517                                        ; GET HERE IF EVERYTHING OK FOR INTEGRAL
2518
2519  006062  012704  000323                MOV     #323,R4         ;LOAD R4 WITH INTERFACE TYPE
2520  006066  000137  006312                JMP     SETIF           ; AND GO SET IT
2521
2522                                        ;IF THIS IS EIA THEN CHECK THAT OPTION IS NOT
2523                                        ; M8054 AND THAT SPEED IS 56K OR LOWER
2524                                        ;IF NOT EIA CHECK IF V.35
2525
2526  006072  022737  000002  002474  XYZTC: CMP     #2,IFTYP        ;IS THIS EIA INTERFACE
2527  006100  001014                        BNE     V35TC           ;IF NOT GO CHECK FOR V.35 TYPE
2528  006102  022737  000002  002472        CMP     #2,OPTYP        ;IS THIS 8054 (DMV INTEGRAL MODEM)
2529  006110  001433                        BEQ     BADIF           ;IF SO PRINT BAD INTERFACE
2530  006112  023727  002466  000004        CMP     SPEEDM,#4       ;IS THIS HIGHER THAN 56K
2531  006120  101044                        BHI     BADBR           ;IF SO PRINT BAD BAUD RATE
2532
2533                                        ; GET HERE IF EVERYTHING OK FOR EIA
2534
2535  006122  012704  000233                MOV     #233,R4         ;LOAD R4 WITH INTERFACE TYPE
2536  006126  000137  006312                JMP     SETIF           ;AND GO SET IT.
2537
2538                                        ;IF V.35 CHECK THAT OPTION IS NOT 8064
2539                                        ;IF NOT V.35 MUST BE 422
2540
2541  006132  022737  000003  002474  V35TC: CMP     #3,IFTYP        ;IS THIS V.35 INTERFACE
2542  006140  001010                        BNE     T422C           ;IF NOT IT MUST BE 422
2543  006142  022737  000002  002472        CMP     #2,OPTYP        ;IS THIS 8064 (DMV INTEGRAL)
2544  006150  001413                        BEQ     BADIF           ;IF SO PRINT BAD INTERFACE
2545
2546                                        ; GET HERE IF EVERYTHING OK FOR V.35
2547
2548  006152  012704  000313                MOV     #313,R4         ;LOAD R4 WITH INTERFACE TYPE AND
2549  006156  000137  006312                JMP     SETIF                   ;GO SET IT
2550
2551                                        ;IF OPTION TYPE IS DMV THEN ERROR ELSE OK FOR 422
2552
2553  006162  032737  000003  002472  T422C: BIT     #3,OPTYP        ;IS THIS DMV
2554  006170  001003                        BNE     BADIF           ;IF SO PRINT BAD INTERFACE
2555
2556                                        ; GET HERE IF EVERYTHING OK FOR 422
```

```
2557
2558  006172  012704  000133                MOV     #133,R4
2559  006176  000445                       BR      SETIF           ;LOAD UP INTERFACE AND SET IT
2560
2561                                        ;PRINTS BAD INTERFACE AND EXITS
2562
2563  006200  022737  000001  002346  BADIF: CMP     #1,STARES
2564  006206  001037                       BNE     TABEN
2565  006210  012746  010466                MOV     #BADIFM,-(SP)
2566  006214  012746  000001                MOV     #1,-(SP)
2567  006220  010600                       MOV     SP,R0
2568  006222  104417                       TRAP    C$PNTF
2569  006224  062706  000004                ADD     #4,SP
2570  006230  000414                       BR      TABM            ;PRINT 1ST PART OF MESSAGE
2571
2572                                        ;PRINTS BAD BAUD RATE AND EXITS
2573
2574  006232  022737  000001  002346  BADBR: CMP     #1,STARES
2575  006240  001022                       BNE     TABEN
2576  006242  012746  010544                MOV     #BADBRM,-(SP)
2577  006246  012746  000001                MOV     #1,-(SP)
2578  006252  010600                       MOV     SP,R0
2579  006254  104417                       TRAP    C$PNTF
2580  006256  062706  000004                ADD     #4,SP
2581  006262                        TABM:
2582  006262  013746  002370                MOV     ROMN1,-(SP)
2583  006266  012746  010624                MOV     #TESTAB,-(SP)
2584  006272  012746  000002                MOV     #2,-(SP)
2585  006276  010600                       MOV     SP,R0
2586  006300  104417                       TRAP    C$PNTF
2587  006302  062706  000006                ADD     #6,SP
2588  006306  000137  007344          TABEN: JMP     TXRXEN          ;AND THEN EXIT SR.
2589
2590                                        ; GET HERE TO SET INTERFACE
2591
2592  006312  032737  000003  002472  SETIF: BIT     #03,OPTYP       ;IS THIS A DMV11 ?
2593  006320  001007                       BNE     TXRX2           ; YES: SKIP THIS SETUP STUFF !!!
2594  006322  012703  000023                MOV     #23,R3          ; NO: SET INTERFACE
2595  006326  004537  003162                JSR     R5,CONTIN
2596  006332  005737  002402                TST     ERRWRD
2597  006336  100457                       BMI     TXRXA
2598
2599  006340  013737  002506  002360  TXRX2: MOV     AXNUM,TRIBN     ;GET TRIB NUMBER BACK
2600
2601                                        ;ESTABLISH TRIB
2602
2603  006346  012703  000001          TXRX3: MOV     #01,R3
2604  006352  004537  003162                JSR     R5,CONTIN       ;ESTABLISH TRIB
2605
2606  006356  005737  002402                TST     ERRWRD          ;TIME OUT OR REAY ERORS PRINT PC
2607  006362  100445                       BMI     TXRXA           ;EXIT IF ERROR OCCURRED
2608
2609  006364  032737  100000  002432        BIT     #BIT15,GENWRD   ;TEST THE MAINT STATE BIT
2610  006372  001033                       BNE     TXRXB           ;IF SET GO TO 10
2611
2612                                        ;ISTRT TRIB IF NOT MAINT STATE
```

```
2613
2614  006374  012703  000003                MOV     #03,R3          ;ELSE;
2615  006400  004537  003162                JSR     R5,CONTIN       ;ISTRT THE TRIB
2616                                                                  ; TIME OUT OR READY ERRORS REPORT THIS PC
2617  006404  005737  002402                TST     ERRWRD          ;
2618  006410  100432                         BMI     TXRXA           ;EXIT IF ERROR OCCURRED
2619
2620                                        ;CHECK FOR RUN STATE
2621
2622  006412  012737  000001  002336        MOV     #01,$GDDAT      ;CHECK FOR CONTROL OUT
2623  006420  004537  003242                JSR     R5,GETOUT       ; AND CORRECT TRIBN
2624  006424  005737  002402                TST     ERRWRD          ;
2625  006430  100422                         BMI     TXRXA           ;EXIT IF ERROR OCCURRED
2626  006432  012737  000024  002336        MOV     #24,$GDDAT      ;CHECK FOR RUN STATE
2627  006440  004537  003670                JSR     R5,GETOC        ; IN OUTPUT CODE
2628  006444  005737  002402                TST     ERRWRD          ;
2629  006450  100412                         BMI     TXRXA           ;EXIT IF ERROR OCCURRED
2630  006452  042777  000200  173764        BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
2631  006460  000411                         BR      TXRXC           ;AND GO TO 20
2632
2633                                        ; PUT TRIB IN MAINT STATE
2634
2635  006462  012703  000004        TXRXB:  MOV     #04,R3          ;PUT TRIB IN MAINT STATE
2636  006466  004537  003162                JSR     R5,CONTIN       ;
2637                                                                  ; TIME OUT OR READY ERRORS REPORT THIS PC
2638  006472  005737  002402                TST     ERRWRD          ;
2639  006476  100002                TXRXA:  BPL     TXRXC           ;
2640  006500  000137  007344                JMP     TXRXEN          ;EXIT IF ERROR OCCURRED
2641
2642                                        ;QUEUE RECEIVE BUFFER
2643
2644  006504  052777  000200  173726 TXRXC: BIS     #RQI,@BSEL0     ;SET REQUEST
2645  006512  004537  002732                JSR     R5,WRDI
2646                                                                  ; TIME OUT OR READY ERROR REPORT THIS PC
2647  006516  005737  002402                TST     ERRWRD          ;
2648  006522  100002                         BPL     5$              ;
2649  006524  000137  007344                JMP     TXRXEN          ;EXIT IF ERROR OCCURRED
2650  006530  013777  002422  173712 5$:    MOV     RXADD,@BSEL4    ;SET ADDRESS
2651  006536  113777  002360  173702        MOVB    TRIBN,@BSEL3    ;SET TRIBN
2652
2653  006544  005737  002376                TST     MODQ22          ;*IS THIS "Q22 MODE" ?
2654  006550  001411                         BEQ     1$              ;*
2655
2656  006552  013777  002424  173700        MOV     RXCC,@BSEL10    ;*YES: SET CHARACTER COUNT
2657  006560  005077  173670                CLR     @BSEL6          ;*      CLEAR EXTENDED ADDR BITS
2658  006564  112777  000010  173652        MOVB    #10,@BSEL2      ;*      SET RX BUFFER IN (+Q22 BIT)
2659  006572  000406                         BR      2$              ;*      AND CONTINUE...
2660
2661  006574  013777  002424  173652 1$:    MOV     RXCC, @BSEL6    ;*NO: SET CHAR COUNT [+BA16/17]
2662  006602  112777  000000  173634        MOVB    #0,   @BSEL2    ;       SET RX BUFFER IN
2663
2664                                        ;QUEUE TX BUFFER
2665
2666  006610  004537  002732        2$:     JSR     R5,WRDI         ;WAIT FOR READY
2667                                                                  ; TIME OUT OR READY ERROR REPORT THIS PC
2668  006614  005737  002402                TST     ERRWRD          ;
```

```
2669  006620  100002                        BPL     35$             ;*
2670  006622  000137  007344                JMP     TXRXEN          ;*EXIT IF ERROR OCCURRED
2671  006626  013777  002420  173614  35$:  MOV     TXADD,@BSEL4    ;SET TX ADD
2672  006634  113777  002360  173604        MOVB    TRIBN,@BSEL3    ;SET TRIBN
2673
2674  006642  005737  002376                TST     MODQ22          ;*IS THIS "Q22 MODE" ?
2675  006646  001414                        BEQ     3$              ;*
2676
2677  006650  013777  002426  173602        MOV     TXCC,@BSEL10    ;*YES: SET CHARACTER COUNT
2678  006656  005077  173572                CLR     @BSEL6          ;*      CLEAR EXTENDED ADDR BITS
2679  006662  042777  000200  173550        BIC     #RQI,@BSEL0     ;*      CLEAR REQUEST
2680  006670  112777  000014  173546        MOVB    #14,@BSEL2      ;*      SET UP TX BUFFER (+Q22 BIT)
2681  006676  000411                        BR      4$              ;*      AND CONTINUE...
2682
2683  006700  013777  002426  173546  3$:   MOV     TXCC, @BSEL6    ;*NO: SET CHAR COUNT [+BA16/17]
2684  006706  042777  000200  173524        BIC     #RQI,@BSEL0     ;       CLEAR REQUEST
2685  006714  112777  000004  173522        MOVB    #04,  @BSEL2    ;       SET UP TX BUFFER
2686
2687  006722  032737  040000  002432  4$:   BIT     #BIT14,GENWRD
2688  006730  001402                        BEQ     20$
2689  006732  000137  007344                JMP     TXRXEN          ;IF  MM GO TO RETURN
2690  006736  005037  007346          20$:  CLR     MTFLG           ;* CLEAR LOCAL_MAINT_FLAG
2691  006742  005737  002432                TST     GENWRD
2692  006746  100052                        BPL     TXRXG           ;GO AHEAD IF NOT MAINT STATE
2693
2694                                        ;CHECK FOR RX COMPLETED
2695
2696                                        ; NOTE: IF MAINT STATE THEN CHECK FOR RX AND TX BUFFERS
2697                                        ;       RETURNED (ORDER NOT IMPORTANT).
2698                                        ;  BUT: IF NOT MAINT STATE THEN RX BUFFER MUST BE RETURNED
2699                                        ;       FIRST AND TX BUFFER SECOND (OR ERROR REPORTED).
2700                                                                ;* IF WE ARE IN MAINT STATE ....
2701  006750  004537  002646                JSR     R5,WRDO         ;* WAIT FOR READY_OUT
2702  006754  005737  002402                TST     ERRWRD          ;*
2703  006760  100571                        BMI     TXRXEN          ;* EXIT IF ERROR
2704  006762  117704  173456                MOVB    @BSEL2,R4       ;* GET COMMAND TYPE
2705  006766  042704  177770                BIC     #177770,R4      ;* STRIP EXCESS BITS
2706  006772  022704  000004                CMP     #4,R4           ;* CHECK FOR TX BUFFER RETURNED
2707  006776  001403                        BEQ     40$             ;* IF YES: GO CHECK IT
2708  007000  005337  007346                DEC     MTFLG           ;* NO: MTFLG=(-1) TO INDICATE TXBUF
2709  007004  000433                        BR      TXRXG           ;*     RETURNED FIRST
2710
2711  007006  012737  000004  002336  40$:  MOV     #04,$GDDAT
2712  007014  004537  003242                JSR     R5,GETOUT       ;GET OUTPUT CODE
2713  007020  005737  002402                TST     ERRWRD
2714  007024  100547                        BMI     TXRXEN          ;EXIT IF ERROR
2715  007026  013737  002426  002336        MOV     TXCC,$GDDAT     ;*
2716  007034  004537  003514                JSR     R5,GETCC        ;*ELSE CHECK TX CHAR COUNT
2717  007040  005737  002402                TST     ERRWRD          ;*
2718  007044  100537                        BMI     TXRXEN          ;*EXIT IF ERROR
2719  007046  013737  002420  002336        MOV     TXADD,$GDDAT
2720  007054  004537  003576                JSR     R5,GETBA        ;IS THE TX BUFFER ADDR RIGHT ?
2721  007060  005737  002402                TST     ERRWRD          ;
2722  007064  100527                        BMI     TXRXEN          ;EXIT IF ERROR OCCURED
2723
2724  007066  042777  000200  173350        BIC     #RDO,@BSEL2     ;CLEAR READY OUT
```

```
2725  007074  012737  000000  002336  TXRXG:  MOV     #0,  $GDDAT     ;
2726  007102  004537  003242                  JSR     R5,GETOUT       ;CHECK FOR RX RETURNED
2727  007106  005737  002402                  TST     ERRWRD          ;
2728  007112  100514                        BMI     TXRXEN          ;EXIT IF ERROR OCCURRED
2729  007114  013737  002426  002336        MOV     TXCC,$GDDAT     ;
2730  007122  004537  003514                  JSR     R5,GETCC        ;IS THE CHAR COUNT CORRECT
2731  007126  005737  002402                  TST     ERRWRD          ;
2732  007132  100504                        BMI     TXRXEN          ;EXIT IF ERROR OCCURRED
2733  007134  013737  002422  002336        MOV     RXADD,$GDDATT
2734  007142  004537  003576                  JSR     R5,GETBA        ;IS THE BUFFER ADD RIGHT
2735  007146  005737  002402                  TST     ERRWRD          ;
2736  007152  100474                        BMI     TXRXEN          ;EXIT IF ERROR OCCURRED
2737                                  ;*************************************************
2738                                                                  ;DATA CHECK....
2739  007154  013703  002422                  MOV     RXADD,R3
2740  007160  013701  002420                  MOV     TXADD,R1        ;SET UP ADDRESS
2741  007164  005004                        CLR     R4              ;CLEAR R4
2742  007166                          25$:
2743  007166  112337  002340          26$:    MOVB    (R3)+,$BDDAT    ;GET BYTE OF RX
2744  007172  112137  002336          28$:    MOVB    (R1)+,$GDDAT    ;GET BYTE OF TX
2745  007176  123737  002340  002336        CMPB    $BDDAT,$GDDAT           ;ARE THEY THE SAME
2746  007204  001411                        BEQ     30$                     ;IF SO GO TO 30
2747  007206  005204                        INC     R4                      ;MAKE COUNT RIGHT
2748  007210  104455                        TRAP    C$ERDF
2749  007212  000022                        .WORD   18
2750  007214  012337                        .WORD   MEF19A
2751  007216  007646                        .WORD   ERR19
2752  007220  005337  002402                DEC     ERRWRD
2753  007224  005304                        DEC     R4                      ;MAKE COUNT RIGHT
2754  007226  000446                        BR      TXRXEN          ;EXIT IF ERROR
2755  007230  005204                  30$:  INC     R4                      ;BUMP TO NEXT BYTE
2756  007232  020437  002426                CMP     R4,TXCC         ;ARE WE DONE?
2757  007236  103753                        BLO     25$             ;IF NOT GO BACK
2758                                  ;*************************************************
2759  007240  005737  007346                TST     MTFLG           ;* CHECK LOCAL_MAINT_FLAG
2760  007244  001401                        BEQ     31$             ;* IF CLEARED: GOTO 31$
2761  007246  000403                        BR      32$             ;* SET: CHECK EXPECTED TXBUFF RETURN
2762
2763  007250  005737  002432          31$:  TST     GENWRD          ;TEST FOR MAINT STATE
2764  007254  100433                        BMI     TXRXEN          ;RETURN TO CALLER IF MAINT STATE
2765  007256  042777  000200  173160  32$:  BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
2766  007264  012737  000004  002336        MOV     #4,$GDDAT
2767  007272  004537  003242                JSR     R5,GETOUT       ;CHECK FOR TX BUFF COMP
2768  007276  005737  002402                TST     ERRWRD          ;*
2769  007302  100420                        BMI     TXRXEN          ;*IF ERROR: THEN EXIT
2770  007304  013737  002426  002336        MOV     TXCC,$GDDAT     ;*
2771  007312  004537  003514                JSR     R5,GETCC        ;*ELSE CHECK TX CHAR COUNT
2772  007316  005737  002402                TST     ERRWRD          ;*
2773  007322  100410                        BMI     TXRXEN          ;*EXIT IF ERROR
2774  007324  013737  002420  002336        MOV     TXADD,$GDDAT
2775  007332  004537  003576                JSR     R5,GETBA        ;IS THE TX BUFFER ADDR RIGHT ?
2776  007336  005737  002402                TST     ERRWRD          ;
2777  007342  100400                        BMI     TXRXEN          ;EXIT IF ERROR OCCURED
2778  007344  000205                  TXRXEN: RTS     R5
2779
2780  007346  000000                  MTFLG:  0                       ;* LOCAL_MAINT_FLAG
```

```
2781                    ;* (IF MAINT MODE + MTFLG SET THEN TXBUF
2782                    ;*  RETURN EXPECTED AFTER RXBUF RETURN)
```

```
2783
2784
2785
2786
2787
2788
2789
2790   007350
2791   007350  013746  002440          ERR1::  MOV     SEL0,-(SP)
2792   007354  012746  010675                  MOV     #MEF1,-(SP)
2793   007360  012746  000002                  MOV     #2,-(SP)
2794   007364  010600                          MOV     SP,R0
2795   007366  104414                          TRAP    C$PNTB
2796   007370  062706  000006                  ADD     #6,SP
2797   007374                          L10003:
2798   007374  104423                          TRAP    C$MSG
2799
2800
2801                                     ;FAILING CODE
2802
2803   007376                          ERR3::
2804   007376  017746  173052                  MOV     @BSEL6,-(SP)
2805   007402  012746  011105                  MOV     #MEF3,-(SP)
2806   007406  012746  000002                  MOV     #2,-(SP)
2807   007412  010600                          MOV     SP,R0
2808   007414  104414                          TRAP    C$PNTB
2809   007416  062706  000006                  ADD     #6,SP
2810   007422  004737  005140                  JSR     PC,STAND
2811   007426                          L10004:
2812   007426  104423                          TRAP    C$MSG
2813
2814   007430                          ERR5::
2815   007430  013746  002340                  MOV     $BDDAT,-(SP)
2816   007434  013746  002336                  MOV     $GDDAT,-(SP)
2817   007440  012746  011243                  MOV     #MEF5,-(SP)
2818   007444  012746  000003                  MOV     #3,-(SP)
2819   007450  010600                          MOV     SP,R0
2820   007452  104414                          TRAP    C$PNTB
2821   007454  062706  000010                  ADD     #10,SP
2822   007460  004737  005140                  JSR     PC,STAND
2823   007464                          L10005:
2824   007464  104423                          TRAP    C$MSG
2825
2826   007466                          ERR6::
2827   007466  013746  002340                  MOV     $BDDAT,-(SP)
2828   007472  013746  002336                  MOV     $GDDAT,-(SP)
2829   007476  012746  011336                  MOV     #MEF6,-(SP)
2830   007502  012746  000003                  MOV     #3,-(SP)
2831   007506  010600                          MOV     SP,R0
2832   007510  104414                          TRAP    C$PNTB
2833   007512  062706  000010                  ADD     #10,SP
2834   007516  004737  005140                  JSR     PC,STAND
2835   007522                          L10006:
2836   007522  104423                          TRAP    C$MSG
2837
2838                                     ;PRINT FAILED TO SET RDI
```

```
2839
2840  007524
2841  007524  012746  011660  ERR9::  MOV     #MRDI,-(SP)
2842  007530  012746  000001          MOV     #1,-(SP)
2843  007534  010600                  MOV     SP,R0
2844  007536  104414                  TRAP    C$PNTB
2845  007540  062706  000004          ADD     #4,SP
2846  007544  004737  005140          JSR     PC,STAND
2847  007550                  L10007:
2848  007550  104423                  TRAP    C$MSG
2849
2850                                  ;PRINT FAILED TO SET RDO
2851
2852  007552                  ERR10::
2853  007552  012746  011704          MOV     #MRDO,-(SP)
2854  007556  012746  000001          MOV     #1,-(SP)
2855  007562  010600                  MOV     SP,R0
2856  007564  104414                  TRAP    C$PNTB
2857  007566  062706  000004          ADD     #4,SP
2858  007572  004737  005140          JSR     PC,STAND
2859  007576                  L10010:
2860  007576  104423                  TRAP    C$MSG
2861
2862
2863                                  ;PRINTS GOOD AND BAD DATA (BYTES) AND
2864                                  ;FAILING PC ADDRS AND STANDARD REGS
2865
2866  007600                  ERR18::
2867  007600  013746  002406          MOV     ERRADD,-(SP)
2868  007604  012746  011611          MOV     #MFPC,-(SP)
2869  007610  013746  002340          MOV     $BDDAT,-(SP)
2870  007614  013746  002336          MOV     $GDDAT,-(SP)
2871  007620  012746  012301          MOV     #MEF18,-(SP)
2872  007624  012746  000005          MOV     #5,-(SP)
2873  007630  010600                  MOV     SP,R0
2874  007632  104414                  TRAP    C$PNTB
2875  007634  062706  000014          ADD     #14,SP
2876  007640  004737  005140          JSR     PC,STAND
2877  007644                  L10011:
2878  007644  104423                  TRAP    C$MSG
2879
2880                                  ;DATA COMPARE ERROR
2881
2882  007646                  ERR19::
2883  007646  013746  002340          MOV     $BDDAT,-(SP)
2884  007652  013746  002336          MOV     $GDDAT,-(SP)
2885  007656  010446                  MOV     R4,-(SP)
2886  007660  012746  012372          MOV     #MEF19,-(SP)
2887  007664  012746  000004          MOV     #4,-(SP)
2888  007670  010600                  MOV     SP,R0
2889  007672  104414                  TRAP    C$PNTB
2890  007674  062706  000012          ADD     #12,SP
2891  007700  004737  005140          JSR     PC,STAND
2892  007704                  L10012:
2893  007704  104423                  TRAP    C$MSG
2894
```

```
2895
2896
2897  007706
2898  007706  013746  002542  ;NON-EXISTENT MEMORY ERROR
2899  007712  012746  012633
2900  007716  012746  000002  ERR20::
2901  007722  010600          MOV     $TMP0,-(SP)
2902  007724  104414          MOV     #TFM20,-(SP)
2903  007726  062706  000006  MOV     #2,-(SP)
2904  007732  004737  005140  MOV     SP,R0
2905  007736                  TRAP    C$PNTB
2906  007736  104423          ADD     #6,SP
2907                          JSR     PC,STAND
2908  007740          L10013:
2909  007740  012746  012756  TRAP    C$MSG
2910  007744  012746  000001
2911  007750  010600          ERR21::
2912  007752  104414          MOV     #TFM21,-(SP)
2913  007754  062706  000004  MOV     #1,-(SP)
2914  007760  013746  002340  MOV     SP,R0
2915  007764  013746  002336  TRAP    C$PNTB
2916  007770  013746  002542  ADD     #4,SP
2917  007774  012746  013045  MOV     $BDDAT,-(SP)
2918  010000  012746  000004  MOV     $GDDAT,-(SP)
2919  010004  010600          MOV     $TMP0,-(SP)
2920  010006  104414          MOV     #TFM2A,-(SP)
2921  010010  062706  000012  MOV     #4,-(SP)
2922  010014  004737  005140  MOV     SP,R0
2923  010020                  TRAP    C$PNTB
2924  010020  104423          ADD     #12,SP
2925                          JSR     PC,STAND
2926  010022          L10014:
2927  010022  012746  013126  TRAP    C$MSG
2928  010026  012746  000001
2929  010032  010600          ERR22::
2930  010034  104414          MOV     #TFM22,-(SP)
2931  010036  062706  000004  MOV     #1,-(SP)
2932  010042  013746  002542  MOV     SP,R0
2933  010046  012746  013214  TRAP    C$PNTB
2934  010052  012746  000002  ADD     #4,SP
2935  010056  010600          MOV     $TMP0,-(SP)
2936  010060  104414          MOV     #TFM22A,-(SP)
2937  010062  062706  000006  MOV     #2,-(SP)
2938  010066  012746  013303  MOV     SP,R0
2939  010072  012746  000001  TRAP    C$PNTB
2940  010076  010600          ADD     #6,SP
2941  010100  104414          MOV     #TFM22B,-(SP)
2942  010102  062706  000004  MOV     #1,-(SP)
2943  010106  004737  005140  MOV     SP,R0
2944  010112                  TRAP    C$PNTB
2945  010112  104423          ADD     #4,SP
2946                          JSR     PC,STAND
2947          L10015:
2948          TRAP    C$MSG
2949
2950          ;PRINTS GOOD AND BAD DATA (WORDS) AND
              ;FAILING PC ADDRS AND STANDARD REGS
```

```
2951   010114
2952   010114   013746   002406   ERR23::
2953   010120   012746   011611            MOV     ERRADD,-(SP)
2954   010124   013746   002340            MOV     #MFPC,-(SP)
2955   010130   013746   002336            MOV     $BDDAT,-(SP)
2956   010134   012746   012460            MOV     $GDDAT,-(SP)
2957   010140   012746   000005            MOV     #MEF23,-(SP)
2958   010144   010600                     MOV     #5,-(SP)
2959   010146   104414                     MOV     SP,R0
2960   010150   062706   000014            TRAP    C$PNTB
2961   010154   004737   005140            ADD     #14,SP
2962   010160                     L10016:   JSR     PC,STAND
2963   010160   104423                     TRAP    C$MSG
2964
2965   010162                     ERR24::
2966   010162   013746   002374            MOV     CWORD,-(SP)
2967   010166   013746   002372            MOV     WORDT,-(SP)
2968   010172   013746   002366            MOV     ROMN,-(SP)
2969   010176   012746   013367            MOV     #TFM24,-(SP)
2970   010202   012746   000004            MOV     #4,-(SP)
2971   010206   010600                     MOV     SP,R0
2972   010210   104414                     TRAP    C$PNTB
2973   010212   062706   000012            ADD     #12,SP
2974   010216   004737   005140            JSR     PC,STAND
2975   010222                     L10017:
2976   010222   104423                     TRAP    C$MSG
2977
2978   010224                     ERR25::
2979   010224   013746   002372            MOV     WORDT,-(SP)
2980   010230   013746   002370            MOV     ROMN1,-(SP)
2981   010234   013746   002366            MOV     ROMN,-(SP)
2982   010240   012746   013461            MOV     #TFM25,-(SP)
2983   010244   012746   000004            MOV     #4,-(SP)
2984   010250   010600                     MOV     SP,R0
2985   010252   104414                     TRAP    C$PNTB
2986   010254   062706   000012            ADD     #12,SP
2987   010260   004737   005140            JSR     PC,STAND
2988   010264                     L10020:
2989   010264   104423                     TRAP    C$MSG
2990
2991                                       ;PRINTS FAILING PC ADDRESS AND STANARD REGS
2992
2993   010266                     ERR26::
2994   010266   013746   002406            MOV     ERRADD,-(SP)
2995   010272   012746   011611            MOV     #MFPC,-(SP)
2996   010276   012746   011603            MOV     #MEF1A,-(SP)
2997   010302   012746   000003            MOV     #3,-(SP)
2998   010306   010600                     MOV     SP,R0
2999   010310   104414                     TRAP    C$PNTB
3000   010312   062706   000010            ADD     #10,SP
3001   010316   004737   005140            JSR     PC,STAND
3002   010322                     L10021:
3003   010322   104423                     TRAP    C$MSG
3004
3005                                       ;PRINTS FAILING PC ADDRESS AND
3006                                       ;CODE IN ERROR FROM CODEW AND
```

```
3007
3008
3009  010324
3010  010324  013746  002406  ERR27::
3011  010330  012746  011611          MOV     ERRADD,-(SP)
3012  010334  012746  011603          MOV     #MFPC,-(SP)
3013  010340  012746  000003          MOV     #MEF1A,-(SP)
3014  010344  010600                  MOV     #3,-(SP)
3015  010346  104414                  MOV     SP,R0
3016  010350  062706  000010          TRAP    C$PNTB
3017  010354  013746  002340          ADD     #10,SP
3018  010360  013746  002336          MOV     $BDDAT,-(SP)
3019  010364  012746  011730          MOV     $GDDAT,-(SP)
3020  010370  013746  002430          MOV     #MGB,-(SP)
3021  010374  012746  011536          MOV     CODEW,-(SP)
3022  010400  012746  000005          MOV     #MEF11,-(SP)
3023  010404  010600                  MOV     #5,-(SP)
3024  010406  104414                  MOV     SP,R0
3025  010410  062706  000014          TRAP    C$PNTB
3026  010414  004737  005140          ADD     #14,SP
3027  010420                          JSR     PC,STAND
3028  010420  104423          L10022:
                                      TRAP    C$MSG
3029
3030                                  ;PRINTS THE STANDARD REGS
3031
3032  010422                  ERR32::
3033  010422  012746  010450          MOV     #BASER,-(SP)
3034  010426  012746  000001          MOV     #1,-(SP)
3035  010432  010600                  MOV     SP,R0
3036  010434  104414                  TRAP    C$PNTB
3037  010436  062706  000004          ADD     #4,SP
3038  010442  004737  005140          JSR     PC,STAND
3039  010446                  L10023:
3040  010446  104423                  TRAP    C$MSG
3041
3042  010450  040445  040502  044523  BASER:  .ASCIZ  '"%ABASIC ERROR"'
3043  010456  020103  051105  047522
3044  010464  000122
3045  010466  047045  040445  044440  BADIFM: .ASCIZ  '"%N%A INCORRECT INTERFACE FOR OPTION SELECTED "'
3046  010474  041516  051117  042522
3047  010502  052103  044440  052116
3048  010510  051105  040506  042503
3049  010516  043040  051117  047440
3050  010524  052120  047511  020116
3051  010532  042523  042514  052103
3052  010540  042105  000040
3053  010544  047045  040445  044440  BADBRM: .ASCIZ  '"%N%A INCORRECT BAUD RATE FOR INTERFACE SELECTED"'
3054  010552  041516  051117  042522
3055  010560  052103  041040  052501
3056  010566  020104  040522  042524
3057  010574  043040  051117  044440
3058  010602  052116  051105  040506
3059  010610  042503  051440  046105
3060  010616  041505  042524  000104
3061  010624  047045  040445  025040  TESTAB: .ASCIZ  '"%N%A ****** SUBTEST %02%A ABORTED ***** "'
3062  010632  025052  025052  020052
```

```
3063  010640  052523  052102  051505
3064  010646  020124  047445  022462
3065  010654  020101  041101  051117
3066  010662  042524  020104  025052
3067  010670  025052  020052     000
3068
3069  010675     045  020101  042101  MEF1:   .ASCIZ  '%A ADDRESSING PROBLEM UNIT ADDRESS %O6%N'
3070  010702  051104  051505  044523
3071  010710  043516  050040  047522
3072  010716  046102  046505  052440
3073  010724  044516  020124  042101
3074  010732  051104  051505  020123
3075  010740  047445  022466  000116
3076  010746  042101  051104  051505  EMT0:   .ASCIZ  /ADDRESS ERROR -TRAP 4/
3077  010754  020123  051105  047522
3078  010762  020122  052055  040522
3079  010770  020120  000064
3080  010774  051445  022463  041501  FMT0:   .ASCIZ  /%S3%ACSR (SEL%D1%A) DOES NOT RESPOND%N/
3081  011002  051123  024040  042523
3082  011010  022514  030504  040445
3083  011016  020051  047504  051505
3084  011024  047040  052117  051040
3085  011032  051505  047520  042116
3086  011040  047045     000
3087  011043     111  052116  051105  MEF3A:  .ASCIZ  /INTERNAL DMP-11 DIAGNOSTIC FAILED/
3088  011050  040516  020114  046504
3089  011056  026520  030461  042040
3090  011064  040511  047107  051517
3091  011072  044524  020103  040506
3092  011100  046111  042105     000
3093  011105     045  052101  051505  MEF3:   .ASCII  '%ATEST CODE- %O3'
3094  011112  020124  047503  042504
3095  011120  020055  047445     063
3096  011125     045  022516  044501  MEF4:   .ASCIZ  /%N%AINTERNAL DMP-11-LINE UNIT TEST FAILURE/
3097  011132  052116  051105  040516
3098  011140  020114  046504  026520
3099  011146  030461  046055  047111
3100  011154  020105  047125  052111
3101  011162  052040  051505  020124
3102  011170  040506  046111  051125
3103  011176  000105
3104  011200  047111  042524  043122  MEFC:   .ASCIZ  /INTERFACE MICRO-DIAGNOSTIC FAILURE/
3105  011206  041501  020105  044515
3106  011214  051103  026517  044504
3107  011222  043501  047516  052123
3108  011230  041511  043040  044501
3109  011236  052514  042522     000
3110  011243     045  020101  052515  MEF5:   .ASCII  '%A MULTIPORT RAM WRITE/READ ERROR%N'
3111  011250  052114  050111  051117
3112  011256  020124  040522  020115
3113  011264  051127  052111  027505
3114  011272  042522  042101  042440
3115  011300  051122  051117  047045
3116  011306  040445  043440  047517          .ASCIZ  '%A GOOD= %O3%A BAD= %O3'
3117  011314  036504  022440  031517
3118  011322  040445  041040  042101
```

```
 3119  011330  020075  047445  000063
 3120
 3121  011336  040445  047040  051120  MEF6:   .ASCII  '%A NPR TRANSFER TEST'
 3122  011344  052040  040522  051516
 3123  011352  042506  020122  042524
 3124  011360  052123
 3125  011362  047045  040445  043440          .ASCIZ  '%N%A GOOD= %O6%A BAD= %O6'
 3126  011370  047517  036504  022440
 3127  011376  033117  040445  041040
 3128  011404  042101  020075  047445
 3129  011412  000066
 3130
 3131  011414  047125  054105  042520  MEF7:   .ASCIZ  /UNEXPECTED TEST LOOP HANG/
 3132  011422  052103  042105  052040
 3133  011430  051505  020124  047514
 3134  011436  050117  044040  047101
 3135  011444  000107
 3136  011446  046504  020120  047111  MEF8:   .ASCIZ  /DMP INTERRUPTED TO WRONG VECTOR/
 3137  011454  042524  051122  050125
 3138  011462  042524  020104  047524
 3139  011470  053440  047522  043516
 3140  011476  053040  041505  047524
 3141  011504  000122
 3142  011506  047111  047503  051122  EROIC:  .ASCIZ  /INCORRECT CODE RETURNED/
 3143  011514  041505  020124  047503
 3144  011522  042504  051040  052105
 3145  011530  051125  042516  000104
 3146  011536  047045  052045  040445  MEF11:  .ASCIZ  '%N%T%A CODE INCORRECT%N%T%N%O6%S3%O6'
 3147  011544  041440  042117  020105
 3148  011552  047111  047503  051122
 3149  011560  041505  022524  022516
 3150  011566  022524  022516  033117
 3151  011574  051445  022463  033117
 3152  011602     000
 3153  011603     045  022524  033117  MEF1A:  .ASCIZ  '%T%O6'
 3154  011610     000
 3155  011611     106  044501  052514  MFPC:   .ASCIZ  'FAILURE AT PC '
 3156  011616  042522  040440  020124
 3157  011624  041520  000040
 3158
 3159  011630  047522  020115  052506  MRFT:   .ASCIZ  'ROM FUNCTION TEST ERROR'
 3160  011636  041516  044524  047117
 3161  011644  052040  051505  020124
 3162  011652  051105  047522  000122
 3163  011660  040445  042122  020111  MRDI:   .ASCIZ  '%ARDI FAILED TO SET'
 3164  011666  040506  046111  042105
 3165  011674  052040  020117  042523
 3166  011702  000124
 3167  011704  040445  042122  020117  MRDO:   .ASCIZ  '%ARDO FAILED TO SET'
 3168  011712  040506  046111  042105
 3169  011720  052040  020117  042523
 3170  011726  000124
 3171  011730  047507  042117  020040  MGB:    .ASCIZ  'GOOD       BAD'
 3172  011736  020040  020040  041040
 3173  011744  042101     000
 3174  011747     122  052105  051125  M12F:   .ASCIZ  'RETURN KEY'
```

```
3175  011754  020116  042513  000131
3176  011762  051105  047522  000122  M13F:   .ASCIZ  'ERROR'
3177  011770  042122  000117           MFRO:   .ASCIZ  'RDO'
3178  011774  042122  000111           MFRI:   .ASCIZ  'RDI'
3179  012000  052517  050124  052125  M18F:   .ASCIZ  'OUTPUT'
3180  012006     000
3181  012007     124  050131  000105  M28F:   .ASCIZ  'TYPE'
3182  012014  040504  040524     000  M30F:   .ASCIZ  'DATA'
3183  012021     122  044504  051440  MEF14:  .ASCIZ  'RDI SET WHEN EXPECTING RDO TO BE SET'
3184  012026  052105  053440  042510
3185  012034  020116  054105  042520
3186  012042  052103  047111  020107
3187  012050  042122  020117  047524
3188  012056  041040  020105  042523
3189  012064  000124
3190  012066  042122  020117  042523  MEF15:  .ASCIZ  'RDO SET WHEN EXPECTING RDI TO BE SET'
3191  012074  020124  044127  047105
3192  012102  042440  050130  041505
3193  012110  044524  043516  051040
3194  012116  044504  052040  020117
3195  012124  042502  051440  052105
3196  012132     000
3197  012133     111  041516  051117  MEF16A: .ASCIZ  /INCORRECT CHARACTER COUNT RETURNED/
3198  012140  042522  052103  041440
3199  012146  040510  040522  052103
3200  012154  051105  041440  052517
3201  012162  052116  051040  052105
3202  012170  051125  042516  000104
3203  012176  047111  047503  051122  MEF17A: .ASCIZ  /INCORRECT REC BUFFER ADDR. RETURNED/
3204  012204  041505  020124  042522
3205  012212  020103  052502  043106
3206  012220  051105  040440  042104
3207  012226  027122  051040  052105
3208  012234  051125  042516  000104
3209  012242  047111  047503  051122  MEF18A: .ASCIZ  /INCORRECT TRIB NUMBER RETURNED/
3210  012250  041505  020124  051124
3211  012256  041111  047040  046525
3212  012264  042502  020122  042522
3213  012272  052524  047122  042105
3214  012300     000
3215  012301     045  043501  047517  MEF18:  .ASCII  '%AGOOD= %03%A BAD= %03'
3216  012306  036504  022440  031517
3217  012314  040445  041040  042101
3218  012322  020075  047445     063
3219  012327     045  022516  022524          .ASCIZ  '%N%T%06'
3220  012334  033117     000
3221  012337     115  051505  040523  MEF19A: .ASCIZ  /MESSAGE DATA COMPARE ERROR/
3222  012344  042507  042040  052101
3223  012352  020101  047503  050115
3224  012360  051101  020105  051105
3225  012366  047522  000122
3226  012372  040445  044103  051101  MEF19:  .ASCII  '%ACHARACTER# %03%A SENT CODE'
3227  012400  041501  042524  021522
3228  012406  022440  031517  040445
3229  012414  051440  047105  020124
3230  012422  047503  042504
```

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```
3231  012426  022440  031517  040445          .ASCIZ  '' %03%A RECEIVED CODES %03''
3232  012434  051040  041505  044505
3233  012442  042526  020104  047503
3234  012450  042504  020123  047445
3235  012456  000063
3236  012460  040445  047507  042117  MEF23:  .ASCII  '%AGOOD= %06%A BAD= %06''
3237  012466  020075  047445  022466
3238  012474  020101  040502  036504
3239  012502  022440  033117
3240  012506  047045  052045  047445          .ASCIZ  '%N%T%06''
3241  012514  000066
3242  012516  042122  020117  046111  MEF30:  .ASCIZ  /RDO ILLEGALLY SET/
3243  012524  042514  040507  046114
3244  012532  020131  042523  000124
3245  012540  047522  020115  042526  MEF31:  .ASCIZ  /ROM VERSION INCORRECT/
3246  012546  051522  047511  020116
3247  012554  047111  047503  051122
3248  012562  041505  000124
3249  012566  053440  047522  043516  MEF32:  .ASCIZ  / WRONG OPTION TYPE SELECTED IN TABLE/
3250  012574  047440  052120  047511
3251  012602  020116  054524  042520
3252  012610  051440  046105  041505
3253  012616  042524  020104  047111
3254  012624  052040  041101  042514
3255  012632     000
3256  012633     045  052501  044516  TFM20:  .ASCII  '%AUNIT RETURNED NON-EXISTENT MEM ERR FOR ADD'
3257  012640  020124  042522  052524
3258  012646  047122  042105  047040
3259  012654  047117  042455  044530
3260  012662  052123  047105  020124
3261  012670  042515  020115  051105
3262  012676  020122  047506  020122
3263  012704  042101     104
3264  012707     040  047445  022462          .ASCIZ  ' %02%A00000%N%A-MEMORY DOES NOT EXIST!'
3265  012714  030101  030060  030060
3266  012722  047045  040445  046455
3267  012730  046505  051117  020131
3268  012736  047504  051505  047040
3269  012744  052117  042440  044530
3270  012752  052123  000041
3271  012756  040445  040504  040524  TFM21:  .ASCIZ  '%ADATA ERROR IN TRANSFER TO RECEIVE BUFFER AT ADDRESS '
3272  012764  042440  051122  051117
3273  012772  044440  020116  051124
3274  013000  047101  043123  051105
3275  013006  052040  020117  042522
3276  013014  042503  053111  020105
3277  013022  052502  043106  051105
3278  013030  040440  020124  042101
3279  013036  051104  051505  020123
3280  013044     000
3281  013045     045  031117  040445  TFM2A:  .ASCII  '%02%A00000%N%ADATA SENT = %06'
3282  013052  030060  030060  022460
3283  013060  022516  042101  052101
3284  013066  020101  042523  052116
3285  013074  036440  022440  033117
3286  013102  040445  020054  040504          .ASCIZ  '%A, DATA RECD = %06'
```

```
3287  013110  040524  051040  041505
3288  013116  020104  020075  047445
3289  013124  000066
3290  013126  040445  047125  052111  TFM22:  .ASCIZ  '%AUNIT FAILED TO DETECT NON-EXISTENT MEMORY, ADDRESS '
3291  013134  043040  044501  042514
3292  013142  020104  047524  042040
3293  013150  052105  041505  020124
3294  013156  047516  026516  054105
3295  013164  051511  042524  052116
3296  013172  046440  046505  051117
3297  013200  026131  040440  042104
3298  013206  042522  051523  000040
3299  013214  047445  022462  030101  TFM22A: .ASCIZ  '%O2%A00000%N%A W A R N I N G  PARTS OF THIS DIAGNOSTIC'
3300  013222  030060  030060  047045
3301  013230  040445  053440  040440
3302  013236  051040  047040  044440
3303  013244  047040  043440  020040
3304  013252  040520  052122  020123
3305  013260  043117  052040  044510
3306  013266  020123  044504  043501
3307  013274  047516  052123  041511
3308  013302     000
3309  013303     045  020101  040515  TFM22B: .ASCIZ  '%A MAY HAVE BEEN %N%ADESTROYED BY THE NPR TRANSFER!'
3310  013310  020131  040510  042526
3311  013316  041040  042505  020116
3312  013324  047045  040445  042504
3313  013332  052123  047522  042531
3314  013340  020104  054502  052040
3315  013346  042510  047040  051120
3316  013354  052040  040522  051516
3317  013362  042506  020522     000
3318  013367     045  041501  041522  TFM24:  .ASCIZ  "%ACRC ERROR IN ROM E%O2%A READ = %O6%A ; CALCULATED = %O6"
3319  013374  042440  051122  051117
3320  013402  044440  020116  047522
3321  013410  020115  022505  031117
3322  013416  040445  051040  040505
3323  013424  020104  020075  047445
3324  013432  022466  020101  020073
3325  013440  040503  041514  046125
3326  013446  052101  042105  036440
3327  013454  022440  033117     000
3328  013461     045  042501  051122  TFM25:  .ASCII  "%AERROR IN ROM E%O2%A, "
3329  013466  051117  044440  020116
3330  013474  047522  020115  022505
3331  013502  031117  040445  020054
3332  013510  044123  052517  042114          .ASCIZ  "SHOULD BE ROM NO.:  %T%A, NO. READ IS: %T"
3333  013516  041040  020105  047522
3334  013524  020115  047516  035056
3335  013532  020040  052045  040445
3336  013540  020054  047516  020056
3337  013546  042522  042101  044440
3338  013554  035123  022440  000124
3339  013562  047045  052045  047045  DFMT4:  .ASCIZ  /%N%T%N%T%N/
3340  013570  052045  047045     000
3341  013575     045  031517  051445  DFMT5:  .ASCIZ  /%O3%S5%O3%S5%O3%S5%O3%N/
3342  013602  022465  031517  051445
```

```
 3343  013610  022465  031517  051445
 3344  013616  022465  031517  047045
 3345  013624     000
 3346  013625     045  032123  047445  DFMT6:  .ASCIZ  /%S4%03%S5%03%S5%03%S5%03%N/
 3347  013632  022463  032523  047445
 3348  013640  022463  032523  047445
 3349  013646  022463  032523  047445
 3350  013654  022463  000116
 3351  013660  052045  047045     000  DFMT9:  .ASCIZ  /%T%N/
 3352  013665     045  022516  020101  ROMMSG: .ASCIZ  '%N%A UNIT NUMBER: %D5%A ROM NUMBER IS: %T%A  REV. NO. IS: %T'
 3353  013672  047125  052111  047040
 3354  013700  046525  042502  035122
 3355  013706  022440  032504  040445
 3356  013714  051040  046517  047040
 3357  013722  046525  042502  020122
 3358  013730  051511  020072  052045
 3359  013736  040445  020040  042522
 3360  013744  027126  047040  027117
 3361  013752  044440  035123  022440
 3362  013760  000124
 3363                          .EVEN
 3364  013762     000     000  ROMNO:  .BYTE   0,0
 3365  013764     000     000  REVNO:  .BYTE   0,0
 3366                          .EVEN
```

```
CZDMTD.P11    09-MAR-82 09:11          REPORT CODING SECTION

  3367                                 .SBTTL  REPORT CODING SECTION
  3368
  3369
  3370                                 ;++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
  3371                                 ; THE REPORT CODING SECTION CONTAINS THE
  3372                                 ; 'PRINTS' CALLS THAT GENERATE STATISTICAL REPORTS.
  3373                                 ;--
  3374
  3375  013766                         L$RPT::
  3376
  3377
  3378  013766  000167                         .WORD   J$JMP
  3379  013770  000000                         .WORD   L10024-2-.
  3380
  3381
  3382  013772                         L10024:
  3383  013772  104425                         TRAP    C$RPT
  3384
  3385
  3386
  3387
  3388
```

```
3389                                    .SBTTL  INITIALIZE SECTION
3390
3391                                    ;////////////////////////////////////////////////////////////////////
3392                                    ;/ THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
3393                                    ;/ AT THE BEGINNING OF THE TEST SEQUENCE ON THE NEXT UNIT.
3394                                    ;////////////////////////////////////////////////////////////////////
3395
3396  013774                            L$INIT::
3397
3398  013774  010637  002322                    MOV     SP,PSTACK       ;SAVE BASE-LEVEL STACK POINTER
3399  014000  005037  002324                    CLR     SUBRPC          ;CLEAR SUBR CALL PC
3400  014004  005037  002326                    CLR     ERROR1          ;CLEAR ERROR FLAGS
3401  014010  005037  002376                    CLR     MODQ22          ;CLEAR DMV Q22 FORMAT FLAG.
3402  014014  005037  002400                    CLR     EXLOOP          ;CLEAR DMV EXTERNAL LOOP FLAG
3403  014020  005737  002330                    TST     FRSTIM          ;SEE IF FIRST TIME THROUGH AFTER LOAD
3404  014024  001007                            BNE     6$              ;BR IF NOT
3405  014026  013737  000004  002316            MOV     @#4,SAVE4       ;SAVE ERROR TRAP VECTOR
3406  014034  013737  000006  002320            MOV     @#6,SAVE6
3407  014042  000406                            BR      9$
3408  014044  013737  002316  000004  6$:       MOV     SAVE4,@#4       ;RESTORE ERROR TRAP VECTOR
3409  014052  013737  002320  000006            MOV     SAVE6,@#6
3410  014060  012737  000001  002330  9$:       MOV     #1,FRSTIM       ;MARK FLAG FOR NEXT TIME THROUGH
3411                                    ;SEE IF PROGRAM JUST STARTED, BR IF YES
3412  014066  012700  000040                    MOV     #EF.START,R0
3413  014072  104447                            TRAP    C$REFG
3414  014074  103415                            BCS     STARST
3415                                    ;SEE IF PROGRAM JUST RESTARTED, BR IF YES
3416  014076  012700  000037                    MOV     #EF.RESTART,R0
3417  014102  104447                            TRAP    C$REFG
3418  014104  103411                            BCS     STARST
3419                                    ;SEE IF THIS IS A NEW PASS, BR IF YES
3420  014106  012700  000035                    MOV     #EF.NEW,R0
3421  014112  104447                            TRAP    C$REFG
3422  014114  103411                            BCS     NEWST
3423                                    ;SEE IF PROGRAM WAS JUST CONTINUED
3424  014116  012700  000036                    MOV     #EF.CONTINUE,R0
3425  014122  104447                            TRAP    C$REFG
3426  014124  103540                            BCS     ENDIT
3427  014126  000416                            BR      GETPRM
3428  014130                            STARST:
3429  014130  005037  002346                    CLR     STARES          ;CLEAR FLAG TO SHOW JUST HAD STA OR RES
3430                                    ;CLEAR DEVICE MAP
3431  014134  005037  002350                    CLR     DEVMAP
3432  014140                            NEWST:
3433  014140  012737  177777  002332            MOV     #-1,LOGDEV      ;RESET LOGICAL DEVICE TO -1
3434  014146  005237  002354                    INC     FRSPAS          ;INCREMENT NO. OF PASSES AFTER LOAD
3435  014152  005237  002346                    INC     STARES          ;INCREMENT NO. OF PASSES SINCE STA OR RES
3436  014156  012737  000001  002352            MOV     #BIT0,DEVPTR    ;INIT DEVICE MAP BIT POINTER
3437                                    ; GET UNIBUS ADDRESS, VECTOR, PRIORITY LEVEL, SWITCH PACKS, TEST
3438                                    ;   CONNECTOR INFORMATION FOR THIS LOGICAL DEVICE
3439  014164                            GETPRM:
3440  014164  005237  002332                    INC     LOGDEV          ;INCREMENT LOGICAL DEVICE NUMBER
3441  014170  023737  002332  002012            CMP     LOGDEV,L$UNIT   ;SEE IF MAXIMUM UNIT NO. EXCEEDED
3442  014176  002360                            BGE     NEWST           ;BR IF YES....
3443  014200  013700  002332                    MOV     LOGDEV,R0
3444  014204  104442                            TRAP    C$GPHRD
```

```
3445  014206  010001                        MOV     R0,R1
3446  014210  103403                        BCS     10$
3447  014212  006337  002352                ASL     DEVPTR          ;SHIFT DEVICE MAP BIT POINTER
3448  014216  000762                        BR      GETPRM          ;SKIP THIS DEVICE
3449  014220                          10$:
3450  014220  053737  002352  002350        BIS     DEVPTR,DEVMAP   ;SHIFT DEVICE MAP BIT POINTER
3451  014226  006337  002352                ASL     DEVPTR          ;
3452  014232  012137  002472                MOV     (R1)+,OPTYP     ;SET THE OPTION TYPE
3453  014236  011137  002440                MOV     (R1),MPCSR      ;STORE POINTER TO M8200,4,7 CSR'S
3454  014242  011137  002442                MOV     (R1),BSEL1
3455  014246  005237  002442                INC     BSEL1           ;GET POINTER TO BSEL1 (MAINTENANCE REGISTER)
3456  014252  011137  002450                MOV     (R1),SEL4
3457  014256  062737  000004  002450        ADD     #4,SEL4         ;GET POINTER TO SEL4
3458  014264  011137  002444                MOV     (R1),SEL2
3459  014270  062737  000002  002444        ADD     #2,SEL2
3460  014276  011137  002446                MOV     (R1),BSEL3
3461  014302  062737  000003  002446        ADD     #3,BSEL3
3462  014310  011137  002452                MOV     (R1),BSEL5
3463  014314  062737  000005  002452        ADD     #5,BSEL5
3464  014322  011137  002456                MOV     (R1),BSEL7
3465  014326  062737  000007  002456        ADD     #7,BSEL7
3466  014334  011137  002460                MOV     (R1),BSEL10     ;FOR DMV
3467  014340  062737  000010  002460        ADD     #10,BSEL10
3468  014346  012137  002454                MOV     (R1)+,SEL6
3469  014352  062737  000006  002454        ADD     #6,SEL6         ;STORE POINTER TO SEL6
3470  014360  011137  002462                MOV     (R1),MPIVEC     ;GET M8200,4,7 INPUT INTRPT VECTOR
3471  014364  012137  002464                MOV     (R1)+,MPOVEC
3472  014370  062737  000004  002464        ADD     #4,MPOVEC       ;GET M8200,4,7 OUTPUT INTRPT VECTOR
3473  014376  012137  002470                MOV     (R1)+,MPRIOR    ;GET M8200,4,7 DEVICE PRIORITY
3474  014402  062701  000010                ADD     #10,R1          ;POINT TO TEST CON
3475  014406  012137  002476                MOV     (R1)+,TSTCON    ;GET TEST CONNECTOR INDICATOR
3476  014412  012137  002466                MOV     (R1)+,SPEEDM    ;GET SPEED
3477  014416  012137  002474                MOV     (R1)+,IFTYP
3478  014422  012137  002474                MOV     (R1)+,IFTYP     ;FIRST TIME SKIP RUN WORD;THEN LOAD
3479                                                                  ;INTERFACE TYPE
3480  014426                          ENDIT:
3481  014426                          L10025:
3482  014426  104411                        TRAP    C$INIT
3483
3484
3485  014430                          L$AUTO::
3486  014430  004737  004456                JSR     PC,MINITR       ;INITIALIZE
3487  014434  005037  002342                CLR     COUNT           ;+COUNTER
3488
3489  014440  004737  004244          1$:   JSR     PC,WAIT50       ;STALL
3490  014444  005777  165770                TST     @SEL0           ;HAS IT STARTED?
3491  014450  100406                        BMI     4$
3492  014452  105337  002342                DECB    COUNT           ;TIME UP?
3493  014456  001370                        BNE     1$              ;NO LOOP
3494  014460  013700  002332                MOV     LOGDEV,R0
3495  014464  104451                        TRAP    C$DODU
3496
3497  014466                          4$:
3498  014466  104433                        TRAP    C$RESET
3499  014470                          L10026:
3500  014470  104461                        TRAP    C$AUTO
```

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3501

CZDMTD.P11 09-MAR-82 09:11 CLEANUP CODING SECTION

```
3502
3503
3504                    ;////////////////////////////////////////////////////////////////////////
3505                    ;/ THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS PERFORMED
3506                    ;/ AT THE END OF THE TEST SEQUENCE ON A PARTICULAR UNIT.
3507                    ;////////////////////////////////////////////////////////////////////////
3508
3509  014472            L$CLEAN::
3510  014472  104433            TRAP    C$RESET
3511
3512  014474            L10027:
3513  014474  104412            TRAP    C$CLEAN
3514
3515
3516
3517
3518
```

```
                                .SBTTL  DROP UNIT SECTION

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

014476                          L$DU::
                                ;ISSUE UNIBUS RESET TO CLEAN UP
014476  104433                          TRAP    C$RESET
014500                          L10030:
014500  104453                          TRAP    C$DU
```

```
                                .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.
                                ;+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

014502                          L$AU::
014502                          L10031:
014502  104452                          TRAP    C$AU
```

```
3548
3549
3550
3551
3552
```

```
                                .SBTTL  HARDWARE TESTS
                                .SBTTL  ;******************************  TEST 1  ******************************
                                .SBTTL  * ADDRES TEST-VERIFY THAT ALL MCPU ADDRESSES RESPOND
014504                          ZZ
                                ;*ECB
                                ;*
                                ;* THIS IS THE VERY FIRST TEST IN NORMAL SEQUENCE
                                ;* IT IS USED TO VERIFY THAT DMP OR DMV-11 UNDER TEST, RESPONDS
                                ;* TO THE ADDRESS THAT YOU THINK IT IS AT. ON DMP FAILURE CHECK
                                ;* ADDRESS SWITCHES ON THE M8207 MICRO-CPU. WITH LITTLE
                                ;* DOUBT, THIS FAILURE CAN ONLY BE ATTRIBUTED TO THE M8207 BOARD.
                                ;* NOTE:8207 IS DMP ONLY.....
                                ;*
                                ;*-
                                .SBTTL  ;******************************  TEST 1  ******************************
014504                          T1::
014504  012746  000340            MOV     #PRI07,-(SP)
014510  012746  014616            MOV     #ECBINT,-(SP)
014514  012746  000004            MOV     #4,-(SP)
014520  012746  000003            MOV     #3,-(SP)
014524  104437                    TRAP    C$SVEC
014526  062706  000010            ADD     #10,SP
014532  005037  014614            CLR     JMO                     ;CLEAR FLAG
014536  005001                    CLR     R1
014540  005777  165674            TST     @SEL0           ;TEST CSR 0
014544  012701  000002            MOV     #2,R1           ;SAVE OFFSET FOR NEXT CSR
014550  005777  165670            TST     @SEL2           ;TEST CSR 2
014554  012701  000004            MOV     #4,R1           ;SAVE OFFSET
014560  005777  165664            TST     @SEL4           ;TEST CSR 4
014564  012701  000006            MOV     #6,R1           ;SAVE OFFSET
014570  005777  165660            TST     @SEL6           ;TEST CSR 6
014574  005737  014614            TST     JMO             ;WAS THERE A NXM TRAP
014600  001401                    BEQ     10$             ;IF NOT EXIT CLEANLY
014602  104444                    TRAP    C$DCLN
014604                          10$:
014604  012700  000004            MOV     #4,R0
014610  104436                    TRAP    C$CVEC
                                
014612                          L10032:
014612  104401                    TRAP    C$ETST
                                
014614  000000          JMO:    .WORD   0               ;FLAG FOR O'CONNOR CODE
                                
014616                          ECBINT::
014616  005737  014614            TST     JMO             ;HAVE WE HAD AT LEAST 1 TRAP
014622  001006                    BNE     10$
014624  104455                    TRAP    C$ERDF
014626  000023                    .WORD   19
014630  010746                    .WORD   EMT0
014632  007350                    .WORD   ERR1
014634  005237  014614            INC     JMO             ;SET FLAG
```

```
                        ;********************************  TEST 1  ********************************
                        10$:
                                MOV     R1,-(SP)
                                MOV     #FMT0,-(SP)
                                MOV     #2,-(SP)
                                MOV     SP,R0
                                TRAP    C$PNTX
                                ADD     #6,SP
                        L10033:
                                RTI
```

3609	014640			
3610	014640	010146		
3611	014642	012746	010774	
3612	014646	012746	000002	
3613	014652	010600		
3614	014654	104415		
3615	014656	062706	000006	
3616	014662			
3617	014662	000002		
3618				
3619				
3620				

```
CZDMTD.P11    09-MAR-82 09:11          ;*******************************  TEST 2  *******************************

  3621                                 .SBTTL  ;*******************************  TEST 2  *******************************
  3622                                 .SBTTL  *DMP ONLY VERIFY CONTENTS OF ROM 3
  3623  014664                                 ZZ
  3624                                         ;* THIS TEST DONE FOR DMP ONLY
  3625                                         ;*
  3626                                         ;* IN THIS TEST WE'LL VERIFY THE CONTENTS OF ROM  3
  3627                                         ;*
  3628                                 .SBTTL  ;*******************************  TEST 2  *******************************
  3629                                                                         ;-CROMT-
  3630  014664                         T2::
  3631  014664  022737  000000  002472        CMP     #0,OPTYP                ;IS THIS AN 8207 DMP
  3632  014672  001150                        BNE     60$                     ;IF NOT END.....
  3633  014674  012737  000003  002366        MOV     #3,ROMN         ;ROM NUMBER
  3634  014702  012737  000000  002404        MOV     #0,CADDR                ;GET STARTING ADDR.
  3635
  3636  014710  012737  177777  002374        MOV     #-1,CWORD               ;INIT CRC WORD.
  3637
  3638  014716  004737  004274        10$:    JSR     PC,GWORD                ;GET FIRST BYTE.
  3639  014722  117737  165526  002372        MOVB    @SEL6,WORDT             ;STORE FIRST BYTE.
  3640  014730  005237  002404                INC     CADDR                   ;UPDATE ADDR.
  3641  014734  004737  004274                JSR     PC,GWORD                ;GET NEXT BYTE.
  3642  014740  117737  165510  002373        MOVB    @SEL6,WORDT+1   ;STORE IN HIGH BYTE OF WORDT
  3643  014746  005237  002404                INC     CADDR           ;UPDATE ADDR.
  3644  014752  023727  002404  004000        CMP     CADDR,#3777+1           ;AT END?
  3645  014760  001403                        BEQ     20$             ;YES,EXIT LOOP.
  3646
  3647  014762  004737  004376                JSR     PC,CRCR                 ;NO-CALCULATE CRC ON THIS WORD.
  3648  014766  000753                        BR      10$                     ;LOOP.
  3649
  3650  014770  005137  002374        20$:    COM     CWORD                   ;STORED CRC WORD IS COMPLEMENT.
  3651  014774  023737  002374  002372        CMP     CWORD,WORDT             ;EQUAL?
  3652  015002  001404                        BEQ     30$
  3653
  3654                                                                         ;ROM CRC WORD BAD.
  3655  015004  104455                        TRAP    C$ERDF
  3656  015006  000024                        .WORD   20
  3657  015010  000000                        .WORD   0
  3658  015012  010162                        .WORD   ERR24
  3659  015014  012737  003775  002404  30$:  MOV     #3777-2,CADDR           ;SET ROM NUMBER ADDRESS
  3660  015022  012737  000060  002370        MOV     #60,ROMN1               ;ROM NUMBER
  3661  015030  004737  004274                JSR     PC,GWORD                ;READ ROM NUMBER
  3662  015034  117737  165414  002372        MOVB    @SEL6,WORDT             ;STORE BYTE
  3663  015042  123737  002370  002372        CMPB    ROMN1,WORDT             ;GOOD?
  3664  015050  001404                        BEQ     40$
  3665  015052  104455                        TRAP    C$ERDF
  3666  015054  000025                        .WORD   21
  3667  015056  000000                        .WORD   0
  3668  015060  010224                        .WORD   ERR25
  3669  015062                         40$:
  3670  015062  022737  000001  002346        CMP     #1,STARES               ;IS THIS FIRST PASS
  3671  015070  001031                        BNE     50$                     ;IF NOT THEN GO TO 50
  3672  015072  113737  002372  013762        MOVB    WORDT,ROMNO             ;PUT ROM NO IN PRINT CONDITION
  3673  015100  012737  003774  002404        MOV     #3777-3,CADDR
  3674  015106  004737  004274                JSR     PC,GWORD                ;READ REV NO.
  3675  015112  117737  165336  013764        MOVB    @SEL6,REVNO             ;STORE BYTE
  3676  015120  012746  013764                MOV     #REVNO,-(SP)
```

```
CZDMTD.P11     09-MAR-82 09:11          ;********************************  TEST 2  ********************************

  3677  015124  012746  013762                        MOV     #ROMNO,-(SP)
  3678  015130  013746  002332                        MOV     LOGDEV,-(SP)
  3679  015134  012746  013665                        MOV     #ROMMSG,-(SP)
  3680  015140  012746  000004                        MOV     #4,-(SP)
  3681  015144  010600                                MOV     SP,R0
  3682  015146  104417                                TRAP    C$PNTF
  3683  015150  062706  000012                        ADD     #12,SP
  3684  015154  012737  003773  002404  50$:          MOV     #3777-4,CADDR           ;GET VERSION
  3685  015162  004737  004274                        JSR     PC,GWORD                ;READ IT
  3686  015166  117737  165262  002372                MOVB    @SEL6,WORDT
  3687  015174  122737  000131  002372                CMPB    #131,WORDT
  3688  015202  001404                                BEQ     60$
  3689  015204  104455                                TRAP    C$ERDF
  3690  015206  000026                                .WORD   22
  3691  015210  012540                                .WORD   MEF31
  3692  015212  010422                                .WORD   ERR32
  3693  015214                                60$:
  3694  015214                                L10034:
  3695  015214  104401                                TRAP    C$ETST
```

```
                        ;********************************  TEST 3  ********************************
                        .SBTTL  ;********************************  TEST 3  ********************************
                        .SBTTL  *DMP ONLY VERIFY CONTENTS OF ROM 2
                                ZZ
                                ;* THIS TEST DONE FOR DMP ONLY
                                ;*
                                ;* IN THIS TEST WE'LL VERIFY THE CONTENTS OF ROM  2
                                ;*
                        .SBTTL  ;********************************  TEST 3  ********************************
                                                                ;-CROMT-
015216                  T3::
015216 022737 000000 002472             CMP     #0,OPTYP                ;IS THIS AN 8207 DMP
015224 001150                           BNE     60$                     ;IF NOT END.....
015226 012737 000002 002366             MOV     #2,ROMN         ;ROM NUMBER
015234 012737 000000 002404             MOV     #0,CADDR                ;GET STARTING ADDR.

015242 012737 177777 002374             MOV     #-1,CWORD               ;INIT CRC WORD.

015250 004737 004274            10$:    JSR     PC,GWORD                ;GET FIRST BYTE.
015254 117737 165176 002372             MOVB    @BSEL7,WORDT            ;STORE FIRST BYTE.
015262 005237 002404                    INC     CADDR                   ;UPDATE ADDR.
015266 004737 004274                    JSR     PC,GWORD                ;GET NEXT BYTE.
015272 117737 165160 002373             MOVB    @BSEL7,WORDT+1          ;STORE IN HIGH BYTE OF WORDT.
015300 005237 002404                    INC     CADDR           ;UPDATE ADDR.
015304 023727 002404 004000             CMP     CADDR,#3777+1           ;AT END?
015312 001403                           BEQ     20$             ;YES,EXIT LOOP.

015314 004737 004376                    JSR     PC,CRCR                 ;NO-CALCULATE CRC ON THIS WORD.
015320 000753                           BR      10$                     ;LOOP.

015322 005137 002374            20$:    COM     CWORD                   ;STORED CRC WORD IS COMPLEMENT.
015326 023737 002374 002372             CMP     CWORD,WORDT             ;EQUAL?
015334 001404                           BEQ     30$


                                                                ;ROM CRC WORD BAD.
015336 104455                           TRAP    C$ERDF
015340 000024                           .WORD   20
015342 000000                           .WORD   0
015344 010162                           .WORD   ERR24
015346 012737 003775 002404     30$:    MOV     #3777-2,CADDR           ;SET ROM NUMBER ADDRESS
015354 012737 000061 002370             MOV     #61,ROMN1               ;ROM NUMBER
015362 004737 004274                    JSR     PC,GWORD                ;READ ROM NUMBER
015366 117737 165064 002372             MOVB    @BSEL7,WORDT            ;STORE BYTE
015374 123737 002370 002372             CMPB    ROMN1,WORDT             ;GOOD?
015402 001404                           BEQ     40$
015404 104455                           TRAP    C$ERDF
015406 000025                           .WORD   21
015410 000000                           .WORD   0
015412 010224                           .WORD   ERR25
015414                          40$:
015414 022737 000001 002346             CMP     #1,STARES               ;IS THIS FIRST PASS
015422 001031                           BNE     50$                     ;IF NOT THEN GO TO 50
015424 113737 002372 013762             MOVB    WORDT,ROMNO             ;PUT ROM NO IN PRINT CONDITION
015432 012737 003774 002404             MOV     #3777-3,CADDR
015440 004737 004274                    JSR     PC,GWORD                ;READ REV NO.
015444 117737 165006 013764             MOVB    @BSEL7,REVNO            ;STORE BYTE
015452 012746 013764                    MOV     #REVNO,-(SP)
```

```
                        ;********************************  TEST 3  ********************************
 3752  015456  012746  013762                    MOV     #ROMNO,-(SP)
 3753  015462  013746  002332                    MOV     LOGDEV,-(SP)
 3754  015466  012746  013665                    MOV     #ROMMSG,-(SP)
 3755  015472  012746  000004                    MOV     #4,-(SP)
 3756  015476  010600                            MOV     SP,R0
 3757  015500  104417                            TRAP    C$PNTF
 3758  015502  062706  000012                    ADD     #12,SP
 3759  015506  012737  003773  002404  50$:     MOV     #3777-4,CADDR           ;GET VERSION
 3760  015514  004737  004274                    JSR     PC,GWORD                ;READ IT
 3761  015520  117737  164732  002372            MOVB    @BSEL7,WORDT
 3762  015526  122737  000131  002372            CMPB    #131,WORDT
 3763  015534  001404                            BEQ     60$
 3764  015536  104455                            TRAP    C$ERDF
 3765  015540  000026                            .WORD   22
 3766  015542  012540                            .WORD   MEF31
 3767  015544  010422                            .WORD   ERR32
 3768  015546                        60$:
 3769  015546                        L10035:
 3770  015546  104401                            TRAP    C$ETST
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 4  ********************************

 3771                                  .SBTTL  ;********************************  TEST 4  ********************************
 3772                                  .SBTTL  *DMP ONLY VERIFY CONTENTS OF ROM 4
 3773  015550                                  ZZ
 3774                                          ;* THIS TEST DONE FOR DMP ONLY
 3775                                          ;*
 3776                                          ;* IN THIS TEST WE'LL VERIFY THE CONTENTS OF ROM  4
 3777                                          ;*
 3778                                  .SBTTL  ;********************************  TEST 4  ********************************
 3779                                                                          ;-CROMT-
 3780  015550                          T4::
 3781  015550  022737  000000  002472          CMP     #0,OPTYP                ;IS THIS AN 8207 DMP
 3782  015556  001150                          BNE     60$                     ;IF NOT END.....
 3783  015560  012737  000004  002366          MOV     #4,ROMN         ;ROM NUMBER
 3784  015566  012737  004000  002404          MOV     #4000,CADDR             ;GET STARTING ADDR.
 3785
 3786  015574  012737  177777  002374          MOV     #-1,CWORD               ;INIT CRC WORD.
 3787
 3788  015602  004737  00427(                  JSR     PC,GWORD                ;GET FIRST BYTE.
 3789  015606  117737  164642  002372          MOVB    @SEL6,WORDT             ;STORE FIRST BYTE.
 3790  015614  005237  002404                  INC     CADDR                   ;UPDATE ADDR.
 3791  015620  004737  004274                  JSR     PC,GWORD                ;GET NEXT BYTE.
 3792  015624  117737  164624  002373          MOVB    @SEL6,WORDT+1   ;STORE IN HIGH BYTE OF WORDT
 3793  015632  005237  002404                  INC     CADDR           ;UPDATE ADDR.
 3794  015636  023727  002404  010000          CMP     CADDR,#7777+1           ;AT END?
 3795  015644  001403                          BEQ     20$             ;YES,EXIT LOOP.
 3796
 3797  015646  004737  004376                  JSR     PC,CRCR                 ;NO-CALCULATE CRC ON THIS WORD.
 3798  015652  000753                          BR      10$                     ;LOOP.
 3799
 3800  015654  005137  002374          20$:    COM     CWORD                   ;STORED CRC WORD IS COMPLEMENT.
 3801  015660  023737  002374  002372          CMP     CWORD,WORDT             ;EQUAL?
 3802  015666  001404                          BEQ     30$
 3803
 3804                                                                          ;ROM CRC WORD BAD.
 3805  015670  104455                          TRAP    C$ERDF
 3806  015672  000024                          .WORD   20
 3807  015674  000000                          .WORD   0
 3808  015676  010162                          .WORD   ERR24
 3809  015700  012737  007775  002404  30$:    MOV     #7777-2,CADDR           ;SET ROM NUMBER ADDRESS
 3810  015706  012737  000062  002370          MOV     #62,ROMN1               ;ROM NUMBER
 3811  015714  004737  004274                  JSR     PC,GWORD                ;READ ROM NUMBER
 3812  015720  117737  164530  002372          MOVB    @SEL6,WORDT             ;STORE BYTE
 3813  015726  123737  002370  002372          CMPB    ROMN1,WORDT             ;GOOD?
 3814  015734  001404                          BEQ     40$
 3815  015736  104455                          TRAP    C$ERDF
 3816  015740  000025                          .WORD   21
 3817  015742  000000                          .WORD   0
 3818  015744  010224                          .WORD   ERR25
 3819  015746                          40$:
 3820  015746  022737  000001  002346          CMP     #1,STARES               ;IS THIS FIRST PASS
 3821  015754  001031                          BNE     50$                     ;IF NOT THEN GO TO 50
 3822  015756  113737  002372  013762          MOVB    WORDT,ROMNO             ;PUT ROM NO IN PRINT CONDITION
 3823  015764  012737  007774  002404          MOV     #7777-3,CADDR
 3824  015772  004737  004274                  JSR     PC,GWORD                ;READ REV NO.
 3825  015776  117737  164452  013764          MOVB    @SEL6,REVNO             ;STORE BYTE
 3826  016004  012746  013764                  MOV     #REVNO,-(SP)
```

```
                        ;********************************  TEST 4  ********************************
 3827  016010  012746  013762                    MOV     #ROMNO,-(SP)
 3828  016014  013746  002332                    MOV     LOGDEV,-(SP)
 3829  016020  012746  013665                    MOV     #ROMMSG,-(SP)
 3830  016024  012746  000004                    MOV     #4,-(SP)
 3831  016030  010600                            MOV     SP,R0
 3832  016032  104417                            TRAP    C$PNTF
 3833  016034  062706  000012                    ADD     #12,SP
 3834  016040  012737  007773  002404  50$:      MOV     #7777-4,CADDR           ;GET VERSION
 3835  016046  004737  004274                    JSR     PC,GWORD                ;READ IT
 3836  016052 -117737  164376  002372            MOVB    @SEL6,WORDT
 3837  016060  122737  000131  002372            CMPB    #131,WORDT
 3838  016066  001404                            BEQ     60$
 3839  016070  104455                            TRAP    C$ERDF
 3840  016072  000026                            .WORD   22
 3841  016074  012540                            .WORD   MEF31
 3842  016076  010422                            .WORD   ERR32
 3843  016100                        60$:
 3844  016100                        L10036:
 3845  016100  104401                            TRAP    C$ETST
```

```
CZDMTD.P11    09-MAR-82 09:11          ;******************************  TEST 5  ******************************
  3846                                 .SBTTL  ;******************************  TEST 5  ******************************
  3847                                 .SBTTL  *DMP ONLY VERIFY CONTENTS OF ROM 1
  3848  016102                                 ZZ
  3849                                         ;* THIS TEST DONE FOR DMP ONLY
  3850                                         ;*
  3851                                         ;* IN THIS TEST WE'LL VERIFY THE CONTENTS OF ROM  1
  3852                                         ;*
  3853                                 .SBTTL  ;******************************  TEST 5  ******************************
  3854                                                                         ;-CROMT-
  3855  016102                         T5::
  3856  016102  022737  000000  002472        CMP     #0,OPTYP                ;IS THIS AN 8207 DMP
  3857  016110  001150                        BNE     60$                     ;IF NOT END.....
  3858  016112  012737  000001  002366        MOV     #1,ROMN         ;ROM NUMBER
  3859  016120  012737  004000  002404        MOV     #4000,CADDR             ;GET STARTING ADDR.
  3860
  3861  016126  012737  177777  002374        MOV     #-1,CWORD               ;INIT CRC WORD.
  3862
  3863  016134  004737  004274        10$:    JSR     PC,GWORD                ;GET FIRST BYTE.
  3864  016140  117737  164312  002372        MOVB    @BSEL7,WORDT            ;STORE FIRST BYTE.
  3865  016146  005237  002404                INC     CADDR                   ;UPDATE ADDR.
  3866  016152  004737  004274                JSR     PC,GWORD                ;GET NEXT BYTE.
  3867  016156  117737  164274  002373        MOVB    @BSEL7,WORDT+1          ;STORE IN HIGH BYTE OF WORDT.
  3868  016164  005237  002404                INC     CADDR           ;UPDATE ADDR.
  3869  016170  023727  002404  010000        CMP     CADDR,#7777+1           ;AT END?
  3870  016176  001403                        BEQ     20$             ;YES,EXIT LOOP.
  3871
  3872  016200  004737  004376                JSR     PC,CRCR                 ;NO-CALCULATE CRC ON THIS WORD.
  3873  016204  000753                        BR      10$                     ;LOOP.
  3874
  3875  016206  005137  002374        20$:    COM     CWORD                   ;STORED CRC WORD IS COMPLEMENT.
  3876  016212  023737  002374  002372        CMP     CWORD,WORDT             ;EQUAL?
  3877  016220  001404                        BEQ     30$
  3878
  3879                                                                         ;ROM CRC WORD BAD.
  3880  016222  104455                        TRAP    C$ERDF
  3881  016224  000024                        .WORD   20
  3882  016226  000000                        .WORD   0
  3883  016230  010162                        .WORD   ERR24
  3884  016232  012737  007775  002404  30$:  MOV     #7777-2,CADDR           ;SET ROM NUMBER ADDRESS
  3885  016240  012737  000063  002370        MOV     #63,ROMN1               ;ROM NUMBER
  3886  016246  004737  004274                JSR     PC,GWORD                ;READ ROM NUMBER
  3887  016252  117737  164200  002372        MOVB    @BSEL7,WORDT            ;STORE BYTE
  3888  016260  123737  002370  002372        CMPB    ROMN1,WORDT             ;GOOD?
  3889  016266  001404                        BEQ     40$
  3890  016270  104455                        TRAP    C$ERDF
  3891  016272  000025                        .WORD   21
  3892  016274  000000                        .WORD   0
  3893  016276  010224                        .WORD   ERR25
  3894  016300                         40$:
  3895  016300  022737  000001  002346        CMP     #1,STARES               ;IS THIS FIRST PASS
  3896  016306  001031                        BNE     50$                     ;IF NOT THEN GO TO 50
  3897  016310  113737  002372  013762        MOVB    WORDT,ROMNO             ;PUT ROM NO IN PRINT CONDITION
  3898  016316  012737  007774  002404        MOV     #7777-3,CADDR
  3899  016324  004737  004274                JSR     PC,GWORD                ;READ REV NO.
  3900  016330  117737  164122  013764        MOVB    @BSEL7,REVNO            ;STORE BYTE
  3901  016336  012746  013764                MOV     #REVNO,-(SP)
```

```
                        ;********************************  TEST 5  ********************************
 3902  016342  012746  013762                MOV     #ROMNO,-(SP)
 3903  016346  013746  002332                MOV     LOGDEV,-(SP)
 3904  016352  012746  013665                MOV     #ROMMSG,-(SP)
 3905  016356  012746  000004                MOV     #4,-(SP)
 3906  016362  010600                        MOV     SP,R0
 3907  016364  104417                        TRAP    C$PNTF
 3908  016366  062706  000012                ADD     #12,SP
 3909  016372  012737  007773  002404  50$:  MOV     #7777-4,CADDR           ;GET VERSION
 3910  016400  004737  004274                JSR     PC,GWORD                ;READ IT
 3911  016404  117737  164046  002372        MOVB    @BSEL7,WORDT
 3912  016412  122737  000131  002372        CMPB    #131,WORDT
 3913  016420  001404                        BEQ     60$
 3914  016422  104455                        TRAP    C$ERDF
 3915  016424  000026                        .WORD   22
 3916  016426  012540                        .WORD   MEF31
 3917  016430  010422                        .WORD   ERR32
 3918  016432                          60$:
 3919  016432                          L10037:
 3920  016432  104401                        TRAP    C$ETST
```

```
                                        ;*******************************  TEST 6  *******************************
                                .SBTTL  ;*******************************  TEST 6  *******************************
                                .SBTTL  *DMP ONLY VERIFY CONTENTS OF ROM 5
016434                                  ZZ
                                        ;* THIS TEST DONE FOR DMP ONLY
                                        ;*
                                        ;* IN THIS TEST WE'LL VERIFY THE CONTENTS OF ROM  5
                                        ;*
                                .SBTTL  ;*******************************  TEST 6  *******************************
                                                                        ;-CROMT-
016434                          T6::
016434  022737  000000  002472          CMP     #0,OPTYP                ;IS THIS AN 8207 DMP
016442  001150                          BNE     60$                     ;IF NOT END.....
016444  012737  000005  002366          MOV     #5,ROMN         ;ROM NUMBER
016452  012737  010000  002404          MOV     #10000,CADDR            ;GET STARTING ADDR.

016460  012737  177777  002374          MOV     #-1,CWORD               ;INIT CRC WORD.

016466  004737  004274          10$:    JSR     PC,GWORD                ;GET FIRST BYTE.
016472  117737  163756  002372          MOVB    @SEL6,WORDT             ;STORE FIRST BYTE.
016500  005237  002404                  INC     CADDR                   ;UPDATE ADDR.
016504  004737  004274                  JSR     PC,GWORD                ;GET NEXT BYTE.
016510  117737  163740  002373          MOVB    @SEL6,WORDT+1   ;STORE IN HIGH BYTE OF WORDT
016516  005237  002404                  INC     CADDR           ;UPDATE ADDR.
016522  023727  002404  014000          CMP     CADDR,#13777+1          ;AT END?
016530  001403                          BEQ     20$             ;YES,EXIT LOOP.

016532  004737  004376                  JSR     PC,CRCR                 ;NO-CALCULATE CRC ON THIS WORD.
016536  000753                          BR      10$                     ;LOOP.

016540  005137  002374          20$:    COM     CWORD                   ;STORED CRC WORD IS COMPLEMENT.
016544  023737  002374  002372          CMP     CWORD,WORDT             ;EQUAL?
016552  001404                          BEQ     30$

                                                                        ;ROM CRC WORD BAD.
016554  104455                          TRAP    C$ERDF
016556  000024                          .WORD   20
016560  000000                          .WORD   0
016562  010162                          .WORD   ERR24
016564  012737  013775  002404  30$:    MOV     #13777-2,CADDR          ;SET ROM NUMBER ADDRESS
016572  012737  000064  002370          MOV     #64,ROMN1               ;ROM NUMBER
016600  004737  004274                  JSR     PC,GWORD                ;READ ROM NUMBER
016604  117737  163644  002372          MOVB    @SEL6,WORDT             ;STORE BYTE
016612  123737  002370  002372          CMPB    ROMN1,WORDT             ;GOOD?
016620  001404                          BEQ     40$
016622  104455                          TRAP    C$ERDF
016624  000025                          .WORD   21
016626  000000                          .WORD   0
016630  010224                          .WORD   ERR25
016632                          40$:
016632  022737  000001  002346          CMP     #1,STARES               ;IS THIS FIRST PASS
016640  001031                          BNE     50$                     ;IF NOT THEN GO TO 50
016642  113737  002372  013762          MOVB    WORDT,ROMNO             ;PUT ROM NO IN PRINT CONDITION
016650  012737  013774  002404          MOV     #13777-3,CADDR
016656  004737  004274                  JSR     PC,GWORD                ;READ REV NO.
016662  117737  163566  013764          MOVB    @SEL6,REVNO             ;STORE BYTE
016670  012746  013764                  MOV     #REVNO,-(SP)
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 6  ********************************

 3977  016674  012746  013762                    MOV     #ROMNO,-(SP)
 3978  016700  013746  002332                    MOV     LOGDEV,-(SP)
 3979  016704  012746  013665                    MOV     #ROMMSG,-(SP)
 3980  016710  012746  000004                    MOV     #4,-(SP)
 3981  016714  010600                            MOV     SP,R0
 3982  016716  104417                            TRAP    C$PNTF
 3983  016720  062706  000012                    ADD     #12,SP
 3984  016724  012737  013773  002404  50$:      MOV     #13777-4,CADDR          ;GET VERSION
 3985  016732  004737  004274                    JSR     PC,GWORD                ;READ IT
 3986  016736  117737  163512  002372            MOVB    @SEL6,WORDT
 3987  016744  122737  000131  002372            CMPB    #131,WORDT
 3988  016752  001404                            BEQ     60$
 3989  016754  104455                            TRAP    C$ERDF
 3990  016756  000026                            .WORD   22
 3991  016760  012540                            .WORD   MEF31
 3992  016762  010422                            .WORD   ERR32
 3993  016764                          60$:
 3994  016764                          L10040:
 3995  016764  104401                            TRAP    C$ETST
```

```
                        ;********************************  TEST 7  ********************************
                        .SBTTL  ;********************************  TEST 7  ********************************
                        .SBTTL  *DMP ONLY VERIFY CONTENTS OF ROM 14
016766                          ZZ
                                ;* THIS TEST DONE FOR DMP ONLY
                                ;*
                                ;* IN THIS TEST WE'LL VERIFY THE CONTENTS OF ROM  14
                                ;*
                        .SBTTL  ;********************************  TEST 7  ********************************
                                                                ;-CROMT-
016766                  T7::
016766  022737  000000  002472          CMP     #0,OPTYP                ;IS THIS AN 8207 DMP
016774  001150                        BNE     60$                     ;IF NOT END.....
016776  012737  000014  002366          MOV     #14,ROMN                ;ROM NUMBER
017004  012737  010000  002404          MOV     #10000,CADDR            ;GET STARTING ADDR.

017012  012737  177777  002374          MOV     #-1,CWORD               ;INIT CRC WORD.

017020  004737  004274          10$:    JSR     PC,GWORD                ;GET FIRST BYTE.
017024  117737  163426  002372          MOVB    @BSEL7,WORDT            ;STORE FIRST BYTE.
017032  005237  002404                  INC     CADDR                   ;UPDATE ADDR.
017036  004737  004274                  JSR     PC,GWORD                ;GET NEXT BYTE.
017042  117737  163410  002373          MOVB    @BSEL7,WORDT+1          ;STORE IN HIGH BYTE OF WORDT.
017050  005237  002404                  INC     CADDR           ;UPDATE ADDR.
017054  023727  002404  014000          CMP     CADDR,#13777+1          ;AT END?
017062  001403                        BEQ     20$             ;YES,EXIT LOOP.

017064  004737  004376                  JSR     PC,CRCR                 ;NO-CALCULATE CRC ON THIS WORD.
017070  000753                        BR      10$                     ;LOOP.

017072  005137  002374          20$:    COM     CWORD                   ;STORED CRC WORD IS COMPLEMENT.
017076  023737  002374  002372          CMP     CWORD,WORDT             ;EQUAL?
017104  001404                        BEQ     30$

                                                                ;ROM CRC WORD BAD.
017106  104455                  TRAP    C$ERDF
017110  000024                  .WORD   20
017112  000000                  .WORD   0
017114  010162                  .WORD   ERR24
017116  012737  013775  002404  30$:    MOV     #13777-2,CADDR          ;SET ROM NUMBER ADDRESS
017124  012737  000065  002370          MOV     #65,ROMN1               ;ROM NUMBER
017132  004737  004274                  JSR     PC,GWORD                ;READ ROM NUMBER
017136  117737  163314  002372          MOVB    @BSEL7,WORDT            ;STORE BYTE
017144  123737  002370  002372          CMPB    ROMN1,WORDT             ;GOOD?
017152  001404                        BEQ     40$
017154  104455                  TRAP    C$ERDF
017156  000025                  .WORD   21
017160  000000                  .WORD   0
017162  010224                  .WORD   ERR25
017164                  40$:
017164  022737  000001  002346          CMP     #1,STARES               ;IS THIS FIRST PASS
017172  001031                        BNE     50$                     ;IF NOT THEN GO TO 50
017174  113737  002372  013762          MOVB    WORDT,ROMNO             ;PUT ROM NO IN PRINT CONDITION
017202  012737  013774  002404          MOV     #13777-3,CADDR
017210  004737  004274                  JSR     PC,GWORD                ;READ REV NO.
017214  117737  163236  013764          MOVB    @BSEL7,REVNO            ;STORE BYTE
017222  012746  013764                  MOV     #REVNO,-(SP)
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 7  ********************************

 4052  017226  012746  013762                        MOV     #ROMNO,-(SP)
 4053  017232  013746  002332                        MOV     LOGDEV,-(SP)
 4054  017236  012746  013665                        MOV     #ROMMSG,-(SP)
 4055  017242  012746  000004                        MOV     #4,-(SP)
 4056  017246  010600                               MOV     SP,R0
 4057  017250  104417                               TRAP    C$PNTF
 4058  017252  062706  000012                        ADD     #12,SP
 4059  017256  012737  013773  002404  50$:         MOV     #13777-4,CADDR          ;GET VERSION
 4060  017264  004737  004274                        JSR     PC,GWORD                ;READ IT
 4061  017270  117737  163162  002372                MOVB    @BSEL7,WORDT
 4062  017276  122737  000131  002372                CMPB    #131,WORDT
 4063  017304  001404                               BEQ     60$
 4064  017306  104455                               TRAP    C$ERDF
 4065  017310  000026                               .WORD   22
 4066  017312  012540                               .WORD   MEF31
 4067  017314  010422                               .WORD   ERR32
 4068  017316                        60$:
 4069  017316                        L10041:
 4070  017316  104401                               TRAP    C$ETST
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 8  ********************************

 4071                                  .SBTTL  ;********************************  TEST 8  ********************************
 4072                                  .SBTTL  * ROM VERIFY ROM 1 DMV
 4073  017320                                  ZZ
 4074                                          ;*
 4075                                          ;*
 4076                                          ;*
 4077                                          ;* THIS TEST IS USED TO VERIFY THE CONTENTS OF ROM 1
 4078                                          ;*      THIS TEST IS NOT DONE FOR DMP
 4079                                          ;*-
 4080                                  .SBTTL  ;********************************  TEST 8  ********************************
 4081  017320                          T8::
 4082  017320  032737  000003  002472          BIT     #3,OPTYP        ;IS THIS DMV
 4083  017326  001453                          BEQ     RDVEX           ;IF NOT EXIT
 4084  017330  012737  000001  002366          MOV     #1,ROMN
 4085  017336  012737  000060  002370          MOV     #60,ROMN1       ;SET UP ROM NUMBER(ASCII 0)
 4086  017344  012737  140000  002436          MOV     #140000,ROMADD  ;SET UP 1ST ROM ADDRESS
 4087  017352  004537  005472                  JSR     R5,RMVRT        ;GO CHECK ROM CRC
 4088  017356  005037  002402                  CLR     ERRWRD
 4089  017362  104410                          TRAP    C$ESCAPE
 4090  017364  000072                          .WORD   L10042-.
 4091  017366  022737  000001  002346          CMP     #1,STARES       ;IS IT FIRST PASS
 4092  017374  001030                          BNE     RDVEX           ;IF NOT EXIT
 4093
 4094  017376  023737  013762  002370          CMP     ROMNO,ROMN1     ;COMPARE ROM NUMBER
 4095  017404  001406                          BEQ     10$
 4096  017406  104455                          TRAP    C$ERDF
 4097  017410  000027                          .WORD   23
 4098  017412  000000                          .WORD   0
 4099  017414  010224                          .WORD   ERR25
 4100
 4101  017416  104410                          TRAP    C$ESCAPE
 4102  017420  000036                          .WORD   L10042-.
 4103  017422                          10$:
 4104  017422  012746  013764                  MOV     #REVNO,-(SP)
 4105  017426  012746  013762                  MOV     #ROMNO,-(SP)
 4106  017432  013746  002332                  MOV     LOGDEV,-(SP)
 4107  017436  012746  013665                  MOV     #ROMMSG,-(SP)
 4108  017442  012746  000004                  MOV     #4,-(SP)
 4109  017446  010600                          MOV     SP,R0
 4110  017450  104417                          TRAP    C$PNTF
 4111  017452  062706  000012                  ADD     #12,SP
 4112
 4113
 4114
 4115  017456                          RDVEX:
 4116  017456                          L10042:
 4117  017456  104401                          TRAP    C$ETST
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 9  ********************************

 4118                                  .SBTTL  ;********************************  TEST 9  ********************************
 4119                                  .SBTTL  * ROM VERIFY ROM 2 DMV ONLY
 4120  017460                                  ZZ
 4121                                          ;*
 4122                                          ;*
 4123                                          ;* THIS IS THE TEST THAT VERIFIES THE CONTENTS OF ROM 2
 4124                                          ;* OF THE DMV OPTION. THIS TEST IS NOT RUN FOR DMP
 4125                                          ;*
 4126                                  .SBTTL  ;********************************  TEST 9  ********************************
 4127  017460                          T9::
 4128  017460  032737  000003  002472          BIT     #3,OPTYP        ;IS THIS DMV
 4129  017466  001453                          BEQ     RDVEX2          ;IF NOT EXIT
 4130  017470  012737  000002  002366          MOV     #2,ROMN
 4131  017476  012737  000061  002370          MOV     #61,ROMN1       ;SETUP ROM NUMBER(ASCII 1)
 4132  017504  012737  160000  002436          MOV     #160000,ROMADD  ;SETUP 1ST ROM ADDRESS
 4133  017512  004537  005472                  JSR     R5,RMVRT        ;GO CHECK ROM CRC
 4134  017516  005037  002402                  CLR     ERRWRD
 4135  017522  104410                          TRAP    C$ESCAPE
 4136  017524  000072                          .WORD   L10043-.
 4137  017526  022737  000001  002346          CMP     #1,STARES
 4138  017534  001030                          BNE     RDVEX2          ;IF NOT FIRST PASS EXIT
 4139
 4140  017536  123737  013762  002370          CMPB    ROMNO,ROMN1     ;CHECK ROM #
 4141  017544  001406                          BEQ     10$
 4142  017546  104455                          TRAP    C$ERDF
 4143  017550  000030                          .WORD   24
 4144  017552  000000                          .WORD   0
 4145  017554  010224                          .WORD   ERR25
 4146  017556  104410                          TRAP    C$ESCAPE
 4147  017560  000036                          .WORD   L10043-.
 4148  017562                          10$:
 4149  017562  012746  013764                  MOV     #REVNO,-(SP)
 4150  017566  012746  013762                  MOV     #ROMNO,-(SP)
 4151  017572  013746  002332                  MOV     LOGDEV,-(SP)
 4152  017576  012746  013665                  MOV     #ROMMSG,-(SP)
 4153  017602  012746  000004                  MOV     #4,-(SP)
 4154  017606  010600                          MOV     SP,R0
 4155  017610  104417                          TRAP    C$PNTF
 4156  017612  062706  000012                  ADD     #12,SP
 4157
 4158
 4159  017616                          RDVEX2:
 4160  017616                          L10043:
 4161  017616  104401                          TRAP    C$ETST
 4162
```

```
                        ;********************************  TEST 10  ********************************

                        .SBTTL  ;********************************  TEST 10  ********************************
                        .SBTTL  *INITIALIZATION TEST (INTERNAL DIAGNOSTICS)
017620                  ZZ
                        ;*
                        ;* IN THIS TEST WE'LL START OUT BY SETTING THE MASTER CLEAR BIT (BIT 14 OF SEL0)
                        ;* THE LOGIC CLEARS AND STARTS THE MICRO DIAGNOSTICS. IF THE MICRO-DIAGNOSTICS
                        ;* PASS, THE RUN BIT (BIT15 OF SEL0) WILL SET.
                        ;* IF THE RUN BIT FAILS TO SET WITHIN 300 MILLI-SEC, IT
                        ;* PROBABLY MEANS THAT MICRO DIAGNOSTICS HAVE DETECTED AN
                        ;* ERROR AND THE TEST CODE IS IN BSEL6
                        ;*                       DMP
                        ;*
                        ;*      TEST CODE                TEST ENTERED
                        ;*
                        ;*      143                      BRANCH TEST
                        ;*      135                      BRANCH EXTENDED TESTS
                        ;*      125,252,0                IBUS/OBUS TESTS
                        ;*      123                      SCRATCH PAD TEST
                        ;*      151                      ALU TESTS
                        ;*      222                      MAIN MEMORY DATA TEST
                        ;*      132                      MAIN MEMORY DUAL ADDRESS TEST
                        ;*      264                      LINE UNIT TESTS
                        ;*      305                      TESTS COMPLETE
                        ;*            DMV TEST
                        ;*      101                      BRANCH TEST
                        ;*      102                      INTERNAL REG TEST
                        ;*      103                      LOAD AND STORE INSTR.
                        ;*      104                      COMPARE INSTR. TEST
                        ;*      105                      INC/DEC INSTR.
                        ;*      106                      SHIFT AND ROTATE INSTR.
                        ;*      107                      LOGIC INSTR.
                        ;*      110                      ADC,SBC,SED,CLD INSTRU.
                        ;*      111                      STACK PUSH,PULL INSTR.
                        ;*      112                      SUBROUTINE INSTR.
                        ;*      113                      SCRATCH PAD,CSR,AND NPR
                        ;*      114                        ''
                        ;*      115                      FALSE INT TEST
                        ;*      116                      RAM DATA AND ADDRESS
                        ;*      117                      RAM ALTERNATING TEST
                        ;*      120                      INDEX INDIRECT TEST
                        ;*      121                      LINE UNIT TEST
                        ;*
                        ;* NOTE THE RUN BIT WILL BE SET EVEN IF THE LINE UNIT
                        ;* TEST FAILS. TEST CODE MUST BE CHECKED TO FIND ERROR.
                        ;* THESE CODES ARE SET UPON ENTRY OF EACH TEST
                        ;* ONE SHOULD NOT BE DEPENDENT ON A BAD DMP-DMV MODULE
                        ;* TO PASS A CORRECT TEST CODE. IF THIS TEST FAILS, YOU
                        ;* SHOULD RUN THE REPAIR LEVEL DIAGNOSTIC
                        ;*                       NOTE
                        ;* IF THIS TEST FAILS, CHECK SW7 OF SP#1 TO SEE IF RUN IS ENABLED.
                        ;*
                                .SBTTL  ;********************************  TEST 10  ********************************
017620                  T10::

017620  012737  000000  002342          MOV     #0,COUNT                ;CLEAR COUNTER
017626  004737  004456                  JSR     PC,MINITR
```

```
                        ;********************************  TEST 10  ********************************
 4219  017632           10$:
 4220  017632  004737  004244          JSR     PC,WAIT50
 4221  017636  005777  162576          TST     @SEL0           ;TEST DONE?
 4222  017642  100411                  BMI     20$             ;YES TEST FOR ERROR
 4223  017644  005337  002342          DEC     COUNT           ;UPDATE COUNT IF NOT TOO LONG
 4224  017650  001370                  BNE     10$             ;IN THIS WAIT LOOP, GO BACK
 4225
 4226                                  ;INTERNAL DIAG FAILED
 4227
 4228  017652  104455                  TRAP    C$ERDF
 4229  017654  000031                  .WORD   25
 4230  017656  011043                  .WORD   MEF3A
 4231  017660  007376                  .WORD   ERR3
 4232  017662  104410                  TRAP    C$ESCAPE
 4233  017664  000116                  .WORD   L10044-.
 4234  017666  122777  000305  162560 20$:    CMPB    #305,@BSEL6     ;LEGAL TEST COMPLETE CODE?
 4235  017674  001420                  BEQ     40$
 4236  017676  122777  000264  162550        CMPB    #264,@BSEL6     ;LINE UNIT TEST FAILURE?
 4237  017704  001406                  BEQ     30$
 4238
 4239  017706  104455                  TRAP    C$ERDF
 4240  017710  000032                  .WORD   26
 4241  017712  011043                  .WORD   MEF3A
 4242  017714  007376                  .WORD   ERR3
 4243                                                          ;UNKNOWN ERROR WHILE INITIALLING
 4244                                                          ;DMP-11
 4245  017716  104410                  TRAP    C$ESCAPE
 4246  017720  000062                  .WORD   L10044-.
 4247
 4248  017722           30$:
 4249  017722  104455                  TRAP    C$ERDF
 4250  017724  000033                  .WORD   27
 4251  017726  011125                  .WORD   MEF4
 4252  017730  010422                  .WORD   ERR32
 4253  017732  104410                  TRAP    C$ESCAPE
 4254  017734  000046                  .WORD   L10044-.
 4255                                                          ;MODULE FAULT
 4256  017736           40$:
 4257  017736  112777  000200  162474 MOVB    #RQI,@BSEL0     ;SET RQI AND THEN WAIT FOR RDI TO SET.
 4258  017744  012737  017766  002406 MOV     #ERLB1,ERRADD   ;SET UP ERROR ADD.
 4259  017752           TLB1:
 4260  017752  004537  005070          JSR     R5,TOUT
 4261  017756  005037  002402          CLR     ERRWRD
 4262  017762  104410                  TRAP    C$ESCAPE
 4263  017764  000016                  .WORD   L10044-.
 4264  017766           ERLB1:
 4265                                  ;;;;;;;;;;
 4266                                  ; TIME OUT ERROR REPORTS THIS ADDRESS
 4267                                  ;;;;;;;;;;
 4268  017766  032777  000020  162450 47$:    BIT     #RDI,@BSEL2     ;DID RDI SET?
 4269  017774  001766                  BEQ     TLB1
 4270  017776           50$:
 4271  017776  104410                  TRAP    C$ESCAPE
 4272  020000  000002                  .WORD   L10044-.
 4273  020002           L10044:
 4274  020002  104401                  TRAP    C$ETST
```

```
                                ;********************************  TEST 10  ********************************

                                .SBTTL  ;********************************  TEST 11  ********************************
                                .SBTL   * MICRO-DIAGNOSTIC-INTERFACE TESTING DMP ONLY
020004                          ZZ
                                ;* DMP ONLY THIS TEST...
                                ;* THIS TEST WILL EXERCISE THE MICRO-CPU'S INTERFACE TO THE PDP-11
                                ;* WE FIRST START THE MCPU. NEXT WE GIVE THE COMMAND THAT
                                ;* TAKES US TO THE INTERFACE DIAGNOSTIC CODE. ONCE THIS CODE IS
                                ;* STARTED, WE MUST GO THROUGH ALL TESTS. THEREFORE, YOU WILL NOTICE
                                ;* FIVE DISTINCT TESTS PREFORMED
                                ;* AT THE END OF THIS TEST, THE MICRO-CODE IS LISTED.
                                ;* VARIOUS SCOPE POINTS DO EXIST IF YOU NEED THEM. IT IS NOT
                                ;* COMMON PRACTICE TO USE THEM, HOWEVER, WHERE SOME USE OF THEM
                                ;* COULD BE MADE, THEY ARE NOTED.
                                ;*
                                .SBTTL  ;********************************  TEST 11  ********************************

020004                          T11::

020004  032737  000003  002472          BIT     #3,OPTYP        ;IS THIS DMV
020012  001402                         BEQ     10$             ;IF NOT GO TO 10;ELSE
020014  000137  021134                 JMP     EXMDT           ;EXIT TEST
020020                          10$:
020020                          T9BG:
020020  004737  004522                 JSR     PC,MINITS
                                ;****
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;
020024  005037  002402                 CLR     ERRWRD
020030  104410                         TRAP    C$ESCAPE
020032  001102                         .WORD   L10045-.
020034  105077  162416                 CLRB    @BSEL7
020040  112777  000200  162372         MOVB    #DRUN,@BSEL0    ;REQUEST INTERFACE DIAGNOSTICS
020046                          25$:
020046  004537  002732                 JSR     R5,WRDI         ;WAIT FOR RDI TO SET

020052  005037  002402                 CLR     ERRWRD          ;CLEAR ERROR
020056  104410                         TRAP    C$ESCAPE
020060  001054                         .WORD   L10045-.
                                ;;;;;;;;;
                                ; TIME OUT OR READY ERROR REPORTS THIS
                                ; ADDRESS AS FAILING PC
                                ;;;;;;;;;
020062  105077  162352                 CLRB    @BSEL0          ;NO MORE REQUESTS.
020066  112777  000022  162360         MOVB    #22,@BSEL6      ;DIAGNOSTIC CODE.
020074  105077  162356                 CLRB    @BSEL7          ;CLEAR BSEL7
020100  112777  000001  162336         MOVB    #1,@BSEL2       ;START.!

020106                          TLB2:
020106  012737  020130  002406         MOV     #ERLB2,ERRADD   ;SET UP ERROR ADDRESS
020114  004537  005070                 JSR     R5,TOUT
020120  005037  002402                 CLR     ERRWRD
020124  104410                         TRAP    C$ESCAPE
020126  001006                         .WORD   L10045-.
```

```
                        ;********************************  TEST 11  ********************************
020130                  ERLB2:
                                ;;;;;;;;;;;
                                ; TIME OUT ERROR REPORTS THIS ADDRESS
                                ;;;;;;;;;;;
020130  122777  000377  162320  26$:    CMPB    #377,@BSEL7     ;LOOK FOR SYNC OF CODE 377 IN LAST REG
020136  001363                         BNE     TLB2            ;IF "HANG" OCCURS HERE THEN ITS POSSIBLE
                                                                ;THAT EITHER THE DATA PATHS ARE BAD OR
                                                                ;THAT THE MCPU FAILED TO START

020140  012737  000377  002336         MOV     #377,$GDDAT     ;EXPECT 377 BACK FROM ALL REGS
020146  013701  002440                 MOV     BSEL0,R1        ;EXCEPT REG 1 (MAINTENANCE)
020152  012737  000000  002344         MOV     #0, REG
020160  111137  002340         4$:     MOVB    (R1),$BDDAT     ;READ REG, EXPECT 377
020164  123737  002340  002336         CMPB    $BDDAT,$GDDAT   ;OK?
020172  001412                         BEQ     5$              ;YES-CONTINUE
020174  022737  000001  002344         CMP     #1,REG          ;NO ERROR? (EXCEPT REG 1)
020202  001406                         BEQ     5$              ;IF REG 1, SKIP

020204  104455                         TRAP    C$ERDF
020206  000034                         .WORD   28
020210  011200                         .WORD   MEFC
020212  007430                         .WORD   ERR5
020214  104410                         TRAP    C$ESCAPE
020216  000716                         .WORD   L10045-.
020220  005237  002344         5$:     INC     REG             ;UPDATE REGISTER #
020224  005201                         INC     R1              ;AND ADDRESS
020226  023727  002344  000010         CMP     REG, #10        ;DONE ALL REGS?
020234  001351                         BNE     4$
020236  105077  162176                 CLRB    @BSEL0          ;CAUSES MCPU TO EXIT TSTA


                                ;TEST   B


020242                  TLB3:
020242  012737  020264  002406         MOV     #ERLB3,ERRADD   ;SET ERROR ADDRESS
020250  004537  005070                 JSR     R5,TOUT
020254  005037  002402                 CLR     ERRWRD
020260  104410                         TRAP    C$ESCAPE
020262  000652                         .WORD   L10045-.
020264                  ERLB3:
                                ;;;;;;;;
                                ; TIME OUT ERROR REPORTS THIS ADDRESS
                                ;;;;;;;;
020264  105777  162166         27$:    TSTB    @BSEL7          ;LOOK FOR A ZERO IN BSEL7
020270  001364                         BNE     TLB3

020272  005037  002336                 CLR     $GDDAT          ;EXPECT ALL ZEROS EXCEPT SBEL1
020276  013701  002440                 MOV     BSEL0,R1        ;GET ADDR OF MCPU.
020302  012737  000000  002344         MOV     #0,REG
020310  005037  002340                 CLR     $BDDAT
020314  111137  002340         7$:     MOVB    (R1),$BDDAT     ;READ REG
020320  001412                         BEQ     8$              ;IF ZERO-CONTINUE
020322  022737  000001  002344         CMP     #1,REG          ;IF REG #1 CONTINUE
020330  001406                         BEQ     8$
```

```
                        ;********************************  TEST 11  ********************************
 4387  020332  104455                      TRAP    C$ERDF
 4388  020334  000035                      .WORD   29
 4389  020336  011200                      .WORD   MEFC
 4390  020340  007430                      .WORD   ERR5
 4391  020342  104410                      TRAP    C$ESCAPE
 4392  020344  000570                      .WORD   L10045-.
 4393  020346  005237  002344        8$:   INC     REG             ;UPDATE REGISTER #
 4394  020352  005201                      INC     R1              ;AND ADDRESS
 4395  020354  122737  000010  002344      CMPB    #10,REG         ;DONE ALL REGS (0-7)?
 4396  020362  001354                      BNE     7$              ;NO-DO NEXT ONE
 4397
 4398  020364  000404                      BR      9$              ;REPLACE THIS INSTRUCTION WITH CODE 240
 4399                                                              ;(NOP) IF YOU WITH TO COOP IN
 4400                                                              ;TESTS A&B
 4401  020366  112777  000200  162044      MOVB    #200,@BSEL0     ;ALL MICRO-CODE TO LOOP
 4402  020374  000611                      BR      T9BG            ;LOOP
 4403
 4404  020376  112777  000377  162034  9$: MOVB    #377,@BSEL0     ;TELL MICRO-CODE TO EXIT TEST B,
 4405                                                              ;PROCEED TO TEST C.
 4406
 4407
 4408                                      ;TEST   C
 4409                                                              ;; WAS @KMRLVL                  VRG021582
 4410  020404  013746  002470              MOV     KMRLVL,-(SP)
 4411  020410  012746  021044              MOV     #INTC0,-(SP)
 4412  020414  013746  002462              MOV     KMRVEC,-(SP)
 4413  020420  012746  000003              MOV     #3,-(SP)
 4414  020424  104437                      TRAP    C$SVEC
 4415  020426  062706  000010              ADD     #10,SP
 4416                                                              ;INTERRUPT VECTOR
 4417
 4418                                                              ;; WAS @KMTLVL                  VRG021582
 4419  020432  013746  002470              MOV     KMTLVL,-(SP)
 4420  020436  012746  021060              MOV     #INTC4,-(SP)
 4421  020442  013746  002464              MOV     KMTVEC,-(SP)
 4422  020446  012746  000003              MOV     #3,-(SP)
 4423  020452  104437                      TRAP    C$SVEC
 4424  020454  062706  000010              ADD     #10,SP
 4425                                                              ;ILLEGAL INTERRUPT TO WRONG VECTOR
 4426
 4427  020460  005037  002334              CLR     IFLAG
 4428  020464  112777  000377  161754      MOVB    #377,@BSEL3     ;TELL MICRO-CODE TO FORCE INTERRUPT
 4429  020472  012700  000000              MOV     #0,R0
 4430  020476  104441                      TRAP    C$SPRI
 4431
 4432  020500                      TLB4:
 4433  020500  012737  020522  002406      MOV     #ERLB4,ERRADD   ;SET UP ERROR ADDRESS
 4434  020506  004537  005070              JSR     R5,TOUT
 4435  020512  005037  002402              CLR     ERRWRD
 4436  020516  104410                      TRAP    C$ESCAPE
 4437  020520  000414                      .WORD   L10045-.
 4438  020522                      ERLB4:
 4439                                      ;;;;;;;;;;
 4440                                      ; TIME OUT REPORTS THIS ADDRESS
 4441                                      ;;;;;;;;;;
 4442  020522  005737  002334        28$:  TST     IFLAG           ;IFLAG=1 SET BY INTERRUPT SERVICE ROUTINE
```

```
                        ;********************************  TEST 11  ********************************
4443  020526  001764            BEQ     TLB4            ;LOOP UNIT DONE
4444                                                      ;NOTE; IF HANGS HERE, MCPU FAILS TO
4445                                                      ;GENERATE INTERRUPT TO PDP-11.
4446
4447
4448                            ;TEST   D
4449
4450  020530  013746  002470    MOV     KMRLVL,-(SP)
4451  020534  012746  021100    MOV     #INTD0,-(SP)
4452  020540  013746  002462    MOV     KMRVEC,-(SP)
4453  020544  012746  000003    MOV     #3,-(SP)
4454  020550  104437            TRAP    C$SVEC
4455  020552  062706  000010    ADD     #10,SP
4456  020556  013746  002470    MOV     KMTLVL,-(SP)
4457  020562  012746  021120    MOV     #INTD4,-(SP)
4458  020566  013746  002464    MOV     KMTVEC,-(SP)
4459  020572  012746  000003    MOV     #3,-(SP)
4460  020576  104437            TRAP    C$SVEC
4461  020600  062706  000010    ADD     #10,SP
4462
4463  020604  005037  002334    CLR     IFLAG           ;NO INTERRUPT INDICATOR
4464  020610  012700  000000    MOV     #0,R0
4465  020614  104441            TRAP    C$SPRI
4466  020616  105077  161624    CLRB    @BSEL3          ;TELL MCPU TO INTERRUPT
4467
4468  020622                TLB5:
4469  020622  012737  020644  002406  MOV     #ERLB5,ERRADD   ;SET UP ERROR ADDRESS
4470  020630  004537  005070    JSR     R5,TOUT
4471  020634  005037  002402    CLR     ERRWRD
4472  020640  104410            TRAP    C$ESCAPE
4473  020642  000272            .WORD   L10045-.
4474  020644               ERLB5:
4475                            ;;;;;;;;
4476                            ; TIME OUT REPORTS THIS ADDRESS
4477                            ;;;;;;;;
4478  020644  005737  002334  29$:    TST     IFLAG           ;DID MCPU INTERRUPT (IFLAG NOT 0)?
4479  020650  001764            BEQ     TLB5            ;NO - LOOP
4480                                                      ;NOTE:  IF PROGRAM "HANGS" HERE, MCPU
4481                                                      ;FAILED TO INTERRUPT TO VECTOR XX4
4482                                                      ;WE KNOW MCPU IS ABLE TO INTERRUPT
4483                                                      ;TO XX0 (TEST C)
4484
4485  020652  013700  002462    MOV     KMRVEC,R0
4486  020656  104436            TRAP    C$CVEC
4487  020660  013700  002464    MOV     KMTVEC,R0
4488  020664  104436            TRAP    C$CVEC
4489
4490
4491                            ;TEST E NPR TEST
4492
4493
4494  020666  012701  033706    MOV     #DATLST,R1      ;GET DATA LIST
4495  020672  152777  000010  161542  BISB    #BIT3,@BSEL1    ;SET INDICATOR THAT WE ARE STILL IN TEST.
4496
4497  020700  011137  002336  TLB6A:  MOV     (R1),$GDDAT     ;GET NEXT PATTERN
4498  020704  010177  161540    MOV     R1,@BSEL4       ;SET NPR IN ADDR
```

```
                        ;********************************  TEST 11  ********************************
4499  020710  012777  002340  161536        MOV     #$BDDAT,@BSEL6  ;SET NPR OUT ADDR
4500  020716  105077  161516                CLRB    @BSEL0          ;TELL MCPU TO DO NPRS
4501
4502  020722                        TLB6:
4503  020722  012737  020744  002406        MOV     #ERLB6,ERRADD   ;SET ERROR ADDRESS
4504  020730  004537  005070                JSR     R5,TOUT
4505  020734  005037  002402                CLR     ERRWRD
4506  020740  104410                        TRAP    C$ESCAPE
4507  020742  000172                        .WORD   L10045-.
4508  020744                        ERLB6:
4509                                        ;;;;;;;;;
4510                                        ; TIME OUT ERROR REPORTS THIS ADDRESS
4511                                        ;;;;;;;;;
4512  020744  132777  000010  161470  30$:   BITB    #BIT3,@BSEL1    ;DID WE ACCIDENTILY ESCAPE THIS TEST???
4513  020752  001006                        BNE     135$
4514  020754  104455                        TRAP    C$ERDF
4515  020756  000036                        .WORD   30
4516  020760  011414                        .WORD   MEF7
4517  020762  010422                        .WORD   ERR32
4518                                                        ;UNKNOWN MCPU ERROR CAUSED ABORT OF TEST.
4519  020764  104410                        TRAP    C$ESCAPE
4520  020766  000146                        .WORD   L10045-.
4521  020770                        135$:
4522
4523  020770  122777  000377  161442        CMPB    #377,@BSEL0     ;WHEN MCPU DONE, IT PUTS 377 INTO BSEL0
4524  020776  001351                        BNE     TLB6            ;IF WE "HANG" HERE, MCPU FAILS TO DO
4525                                                                ;EITHER NPR IN OR NPR OUT
4526
4527  021000  023737  002336  002340        CMP     $GDDAT,$BDDAT   ;NPRED FRO PATTERN LIST TO $BDDAT
4528                                                                ;DID XFER OCCUR SUCCESSFULLY?
4529  021006  001406                        BEQ     14$             ;
4530
4531  021010  104455                        TRAP    C$ERDF
4532  021012  000037                        .WORD   31
4533  021014  011200                        .WORD   MEFC
4534  021016  007466                        .WORD   ERR6
4535  021020  104410                        TRAP    C$ESCAPE
4536  021022  000112                        .WORD   L10045-.
4537  021024  022721  000562        14$:    CMP     #562,(R1)+      ;IS IT THE LAST PATTERN (562) IS TERM)?
4538  021030  001323                        BNE     TLB6A
4539  021032  112777  000200  161400        MOVB    #200,@BSEL0     ;TELL MCPU TO EXIT TEST
4540  021040  104432                        TRAP    C$EXIT
4541  021042  000072                        .WORD   L10045-.
4542
4543  021044                        INTC0::
4544  021044  013700  000006                MOV     6,R0
4545  021050  104441                        TRAP    C$SPRI
4546  021052  005237  002334                INC     IFLAG
4547  021056                        L10046:
4548  021056  000002                        RTI
4549
4550  021060                        INTC4::
4551  021060  013700  000006                MOV     6,R0
4552  021064  104441                        TRAP    C$SPRI
4553  021066  104455                        TRAP    C$ERDF
4554  021070  000040                        .WORD   32
```

```
4555  021072  011446                ;********************************  TEST 11  ********************************
4556  021074  010422                        .WORD   MEF8
4557  021076                                .WORD   ERR32
4558  021076  000002        L10047:
4559                                  RTI
4560  021100                INTD0::
4561  021100  013700  000006                 MOV     6,R0
4562  021104  104441                         TRAP    C$SPRI
4563  021106  104455                         TRAP    C$ERDF
4564  021110  000041                         .WORD   33
4565  021112  011446                         .WORD   MEF8
4566  021114  010422                         .WORD   ERR32
4567  021116                        L10050:
4568  021116  000002                         RTI
4569
4570  021120                INTD4::
4571  021120  013700  000006                 MOV     6,R0
4572  021124  104441                         TRAP    C$SPRI
4573  021126  005237  002334                 INC     IFLAG           ;CORRECT VECTOR (XX4)
4574  021132                        L10051:
4575  021132  000002                         RTI
4576
4577  021134                EXMDT:
4578
4579  021134                L10045:
4580  021134  104401                         TRAP    C$ETST
4581
4582
```

```
                        ;********************************  TEST 12  ********************************
                        .SBTTL  ;********************************  TEST 12  ********************************
                        .SBTTL  RDI REMAINS SET TEST
021136                          ZZ
                                :*
                                :*ROM FUNCTION TEST     IN THIS TEST, WE'RE GOING TO SET RQI, GET A
                                :*                      RDI, DO A CONTROL IN COMMAND WITH A REQUEST
                                :*                      KEY OF 00 (NO REQUEST). NEXT WE'LL WAIT
                                :*                      FOR RDI TO SET AGAIN SINCE RQI WAS
                                :*                      LEFT SET
                                :*
                        .SBTTL  ;********************************  TEST 12  ********************************
021136                  T12::

021136  004737  004522          JSR     PC,MINITS       ;INITIALIZE & START MCPU

021142  005037  002402          CLR     ERRWRD
021146  104410                  TRAP    C$ESCAPE
021150  000076                  .WORD   L10052-.
                                ;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;

021152                  7$:

021152  052777  000200  161260  BIS     #RQI,@BSEL0     ;SET RQI

021160                  10$:
021160  004537  002732          JSR     R5,WRDI         ;WAIT FOR RDI TO SET

021164  005037  002402          CLR     ERRWRD          ;CLEAR ERROR
021170  104410                  TRAP    C$ESCAPE
021172  000054                  .WORD   L10052-.
                                ;;;;;;;;;
                                ; TIME OUT - OR READY ERROR REPORTS
                                ;            THIS ADDRESS
                                ;;;;;;;;;

021174  005077  161254  20$:    CLR     @BSEL6          ;CLEAR RDI, ISSUE REQUEST OF NO REQUEST
                                                        ;THIS SHOULD CAUSE RDI TO SET AGAIN
                                                        ;SINCE RQI HAD REMAINED SET
021200  112777  000001  161236  MOVB    #1,@BSEL2       ;START

021206  004737  004244          JSR     PC,WAIT50       ;WAIT THIS SHORT TIME SO THAT THE
021212  004737  004244          JSR     PC,WAIT50       ;DMP MICRO-CODE MAY RESET "RDI" IF
021216  004737  004244          JSR     PC,WAIT50
021222  004737  004244          JSR     PC,WAIT50
                                                                ;IT IS GOING TO

021226  032777  000020  161210  BIT     #RDI,@BSEL2     ;IS RDI SET?
021234  001004                  BNE     30$

021236  104455                  TRAP    C$ERDF
021240  000042                  .WORD   34
021242  011630                  .WORD   MRFT
021244  007524                  .WORD   ERR9
                                                        ;COMPLETING A "NO REQUEST" CONTROL
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 12  ********************************

                                                                          ;IN COMMAND

  4639
  4640
  4641   021246                       30$:
  4642   021246                       L10052:
  4643   021246  104401                       TRAP    C$ETST
```

```
                        ;********************************  TEST 12  ********************************

                        .SBTTL  ;********************************  TEST 13  ********************************
                        .SBTTL  *ROM FUNC TEST. VERIFY RDO SETS
021250                  ZZ
                        ;*ROM FUNC      IN THIS TEST WE'LL DO A CONTROL IN WITH
                        ;*                      READ MODEM AS THE REQUEST KEY. WE'LL MAKE
                        ;*                      SURE THAT RDO SETS. WE SHOULD GET A
                        ;*                      RETURN KEY OF 10 'RETURN MODEM'
                        ;*
                        .SBTTL  ;********************************  TEST 13  ********************************
021250                  T13::

021250  004737  004522          JSR     PC,MINITS       ;INIT & START MCPU

021254  005037  002402          CLR     ERRWRD
021260  104410                  TRAP    C$ESCAPE
021262  000174                  .WORD   L10053-.
                                ;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;

021264  052777  000200  161146  BIS     #RQI,@BSEL0     ;SET REQUEST IN
021272  004537  002732          JSR     R5,WRDI         ;WAIT FOR RDI TO SET

021276  005037  002402          CLR     ERRWRD          ;CLEAR ERROR
021302  104410                  TRAP    C$ESCAPE
021304  000152                  .WORD   L10053-.
                                ;;;;;;;;;;;
                                ; TIME OUT OR READY ERROR REPORTS
                                ; THIS ADDRESS AS FAILING PC
                                ;;;;;;;

021306  042777  000200  161124  20$:    BIC     #RQI,@BSEL0     ;DROP REQUEST
021314  012777  000020  161132          MOV     #20,@BSEL6      ;READ MODEM
021322  112777  000001  161114          MOVB    #1,@BSEL2

021330  004737  004244          JSR     PC,WAIT50       ;STALL
021334  004737  004244          JSR     PC,WAIT50

021340  032777  000200  161076  BIT     #RDO,@BSEL2     ;DID "RDO" SET?
021346  001006                  BNE     30$

021350  104455                  TRAP    C$ERDF
021352  000043                  .WORD   35
021354  011630                  .WORD   MRFT
021356  007552                  .WORD   ERR10
                                                        ;REQUEST FOR READ MODEM
021360  104410                  TRAP    C$ESCAPE
021362  000074                  .WORD   L10053-.

021364  117737  161054  002340  30$:    MOVB    @BSEL2, $BDDAT  ;NOW GET CSR AND
021372  042737  177770  002340          BIC     #^C<7>, $BDDAT  ;STRIP FOR
021400  012737  000002  002336          MOV     #2,     $GDDAT  ;TYPE CODE OF INFORMATION OUT
021406  023737  002336  002340          CMP     $GDDAT, $BDDAT
021414  001411                  BEQ     40$
021416  012737  012007  002430          MOV     #M28F,CODEW
021424  104455                  TRAP    C$ERDF
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 13  ********************************

  4700  021426  000044                        .WORD   36
  4701  021430  011506                        .WORD   EROIC
  4702  021432  010324                        .WORD   ERR27
  4703                                                          ;IN RDO
  4704  021434  104410                        TRAP    C$ESCAPE
  4705  021436  000020                        .WORD   L10053-.
  4706
  4707  021440                        40$:
  4708  021440  112737  000010  002336        MOVB    #10,    $GDDAT  ;SHOULD=10 'RETURN MODEM''
  4709  021446  004537  003372                JSR     R5,GETRKY       ;GO GET AND CHECK RETURN KEY
  4710
  4711  021452  005037  002402                CLR     ERRWRD
  4712  021456                        L10053:
  4713  021456  104401                        TRAP    C$ETST
```

```
                                .SBTTL  ;********** TEST 14 **********
                                .SBTTL  * NON-MODE DEF AFTER MC PROCEDURE ERR CHECK
021460                                  ZZ
                                        ;*
                                        ;*
                                        ;*  THIS TEST CHECKS FOR PROCEDURE ERROR WHEN
                                        ;*  NON-MODE DEFINITION IS DONE AFTER MC
                                        ;*
                                        ;*-
                                .SBTTL  ;********** TEST 14 **********
021460                          T14::

021460  112777  000100  160754          MOVB    #100,@BSEL1     ;MASTER CLEAR
021466  022737  000004  002472          CMP     #4,OPTYP                ;8206
021474  001003                          BNE     TLB10           ;IF NOT GO TO TLB10
021476  112777  000200  160736          MOVB    #200,@BSEL1     ;SET RUN 8206

021504                          TLB10:
021504  004537  005070                  JSR     R5,TOUT
021510  005037  002402                  CLR     ERRWRD
021514  104410                          TRAP    C$ESCAPE
021516  000204                          .WORD   L10054-.
021520  005777  160714          ERLB10: TST     @BSEL0
021524  100367                          BPL     TLB10           ;LOOP IF NOT RUN
021526  052777  000200  160704          BIS     #RQI,@BSEL0     ;SET REQUEST
021534  004537  002732                  JSR     R5,WRDI         ;WAIT FOR RDI TO SET

021540  005037  002402                  CLR     ERRWRD          ;CLEAR ERROR
021544  104410                          TRAP    C$ESCAPE
021546  000154                          .WORD   L10054-.
021550  105077  160664                  CLRB    @BSEL0          ;CLEAR REQUEST
021554  105077  160666                  CLRB    @BSEL3          ;MAKE TRIB ADD 0
021560  112777  000052  160666          MOVB    #52,@BSEL6      ;READ TSS
021566  112777  000001  160650          MOVB    #01,@BSEL2      ; EXECUTE CONTROL IN
021574  004537  002646                  JSR     R5,WRDO         ;WAIT FOR RDO
021600  005037  002402                  CLR     ERRWRD
021604  104410                          TRAP    C$ESCAPE
021606  000114                          .WORD   L10054-.
021610  117737  160630  002340          MOVB    @BSEL2,$BDDAT
021616  042737  177770  002340          BIC     #^C<7>,$BDDAT   ;STRIP TO COMMAND CODE
021624  022737  000002  002340          CMP     #2,$BDDAT       ;IS IT INFO OUT
021632  001433                          BEQ     T14EX           ;IF YES EXIT TEST
021634  022737  000001  002340          CMP     #01,$BDDAT      ;IF NOT IS IT CONTROL OUT
021642  001411                          BEQ     T14A            ;
021644  012737  012000  002430          MOV     #M18F,CODEW
021652  104455                          TRAP    C$ERDF
021654  000045                          .WORD   37
021656  011506                          .WORD   EROIC
021660  010324                          .WORD   ERR27
021662  104410                          TRAP    C$ESCAPE
021664  000036                          .WORD   L10054-.
021666  117737  160562  002340  T14A:   MOVB    @BSEL6,$BDDAT
021674  022737  000100  002340          CMP     #100,$BDDAT     ;IS IT 100
021702  001407                          BEQ     T14EX           ;IF SO END TEST ELSE ERROR
021704  012737  011762  002430          MOV     #M13F,CODEW
021712  104455                          TRAP    C$ERDF
```

```
                        ;********************************  TEST 14  ********************************
 4770  021714  000046             .WORD   38
 4771  021716  011506             .WORD   EROIC
 4772  021720  010324             .WORD   ERR27
 4773  021722                  T14EX:
 4774  021722                  L10054:
 4775  021722  104401             TRAP    C$ETST
 4776
```

```
                        ;******************************  TEST 14  ******************************

                        .SBTTL  ;******************************  TEST 15  ******************************
                        .SBTTL  * MODE DEF,MODE DEF PROCEDURE ERROR
021724                          ZZ:
                                ;*
                                ;*
                                ;*
                                ;* THIS TEST CHECKS THAT AFTER THE SEQUENCE OF
                                ;* MASTER CLEAR MODE DEF FOLLOWED BY MODE DEF
                                ;* DIFFERENT TYPE PRODUCES A PROCEDURE ERROR OF
                                ;* OCTAL 104
                                ;*
                                ;*-
                        .SBTTL  ;******************************  TEST 15  ******************************
021724                  T15::

021724  004737  004522          JSR     PC,MINITS       ;DO MC,MODE DEF(CONT STA/FD)

021730  005037  002402          CLR     ERRWRD
021734  104410                  TRAP    C$ESCAPE
021736  000174                  .WORD   L10055-.
                                ;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;
021740  004737  004244          JSR     PC,WAIT50       ;WAIT A WHILE TO BE SURE MODEM READY
                                                        ;IS SET
021744  004737  004244          JSR     PC,WAIT50
021750  142777  000010  160464  BICB    #BIT3,@BSEL1    ;CLEAR LU LOOP
021756  022737  000004  002476  CMP     #4,TSTCON       ;IS THIS NO LOOPBACK
021764  001027                  BNE     20$             ;IF LOOPBACK GO TO 20
021766  032777  000200  160450  BIT     #RDO,@BSEL2     ;IS RDO SET?
021774  001423                  BEQ     20$             ;IF NOT GO TO 20
021776  012737  000304  002336  MOV     #304,$GDDAT
022004  117737  160444  002340  MOVB    @BSEL6,$BDDAT   ;IF YES.IS IT 304
022012  023737  002340  002336  CMP     $BDDAT,$GDDAT
022020  001406                  BEQ     25$             ;IF EQUAL GO TO 25
022022  104455                  TRAP    C$ERDF
022024  000047                  .WORD   39
022026  012516                  .WORD   MEF30
022030  010422                  .WORD   ERR32
022032  104432                  TRAP    C$EXIT
022034  000076                  .WORD   L10055-.
022036                  25$:
022036  042777  000200  160400  BIC     #RDO,@BSEL2     ;CLEAR RDO
022044  052777  000200  160366  20$:   BIS     #RQI,@BSEL0     ;SET REQUEST
022052  004537  002732          JSR     R5,WRDI         ;WAIT FOR RDI TO SET

022056  005037  002402          CLR     ERRWRD          ;CLEAR ERROR
022062  104410                  TRAP    C$ESCAPE
022064  000046                  .WORD   L10055-.
022066  043777  000200  160344  BIC     RQI,@BSEL0      ; CLEAR REQUEST
022074  012777  000007  160352  MOV     #7,@BSEL6       ;SET MODE FOR TRIB/FD
022102  012777  000002  160334  MOV     #02,@BSEL2      ;DO MODE DEF
022110  012737  000104  002410  MOV     #104,PERR       ;SET PROCEDURE ERROR OF
                                                        ; 104 TO BE CHECKED
```

```
                        ;********************************  TEST 15  ********************************

 4833  022116  004537  003016                JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR
 4834
 4835  022122  005037  002402                CLR     ERRWRD
 4836  022126  104410                        TRAP    C$ESCAPE
 4837  022130  000002                        .WORD   L10055-.
 4838                                         ;;;;;;;
 4839                                         ; ESCAPE TEST IF ERROR
 4840                                         ;;;;;;;
 4841                                                         ; ERROR,OR TIME OUT.
 4842
 4843  022132                        L10055:
 4844  022132  104401                        TRAP    C$ETST
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 15  ********************************

 4845
 4846                                  .SBTTL  ;********************************  TEST 16  ********************************
 4847                                  .SBTTL  * MODE DEF ,MODE DEF CHANGE DUPLEX ONLY.
 4848  022134                                  ZZ
 4849                                          :*
 4850                                          :*
 4851                                          :* THIS CHECKS THAT YOU CAN CHANGE THE DUPLEX PORTION
 4852                                          :* OF A MODE DEF
 4853                                          :*
 4854                                          :*-
 4855                                  .SBTTL  ;********************************  TEST 16  ********************************
 4856  022134                          T16::
 4857
 4858  022134  004737  004522                 JSR     PC,MINI         ;MC,MODE DEF(CONT/FD)
 4859  022140  004737  004244                 JSR     PC,WAIT50       ;DELAY
 4860
 4861  022144  005037  002402                 CLR     ERRWRD
 4862  022150  104410                         TRAP    C$ESCAPE
 4863  022152  000212                         .WORD   L10056-.
 4864
 4865                                          ; JUMP TO END OF TEST IF ERROR
 4866
 4867
 4868  022154  022737  000003  002476         CMP     #3,TSTCON       ;IS IT REMOTE MODEM
 4869  022162  001011                         BNE     2$              ;IF NOT THEN GO TO 2A
 4870  022164  012704  000104                 MOV     #104,R4         ;
 4871  022170  012703  000021         1$:     MOV     #21,R3
 4872  022174  004537  003162                 JSR     R5,CONTIN       ; WRITE MODEM WITH CORRECT
 4873                                                                  ; TYPE OF LOOP CODE
 4874  022200  005737  002402                 TST     ERRWRD
 4875  022204  100467                         BMI     10$             ;EXIT IF ERROR
 4876
 4877  022206  142777  000010  160226  2$:    BICB    #BIT3,@BSEL1    ;CLEAR LU LOOP
 4878
 4879  022214  004737  004244                 JSR     PC,WAIT50       ;WAIT A WHILE
 4880  022220  004737  004244                 JSR     PC,WAIT50
 4881  022224  022737  000004  002476         CMP     #4,TSTCON
 4882  022232  001020                         BNE     20$             ;IF LOOPBACK GO TO 20
 4883  022234  032777  000200  160202         BIT     #RDO,@BSEL2     ;ELSE SEE IF READY OUT
 4884  022242  001414                         BEQ     20$             ;IF NOT GO TO 20
 4885  022244  012737  000304  002410         MOV     #304,PERR       ;
 4886  022252  004537  003016                 JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR
 4887
 4888  022256  005037  002402                 CLR     ERRWRD
 4889  022262  104410                         TRAP    C$ESCAPE
 4890  022264  000100                         .WORD   L10056-.
 4891                                          ;;;;;;;
 4892                                          ; ESCAPE TEST IF ERROR
 4893                                          ;;;;;;;
 4894  022266  042777  000200  160150         BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
 4895  022274  052777  000200  160136  20$:    BIS     #RQI,@BSEL0     ;SET REQUEST
 4896  022302  004537  002732                 JSR     R5,WRDI         ;WAIT FOR RDI TO SET
 4897
 4898  022306  005037  002402                 CLR     ERRWRD          ;CLEAR ERROR
 4899  022312  104410                         TRAP    C$ESCAPE
 4900  022314  000050                         .WORD   L10056-.
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 16  ********************************

 4901                                              ;;;;;;;;;;
 4902                                              ; TIME OUT OR READY ERRORS REPORT THIS PC
 4903                                              ;;;;;;;;;;
 4904   022316  043777  000200  160114             BIC     RQI,@BSEL0      ;NO MORE REQUESTS
 4905   022324  112777  000004  160122             MOVB    #04,@BSEL6      ;CONT/FD FOR MODE
 4906   022332  112777  000002  160104             MOVB    #02,@BSEL2      ;DO MODE DEF
 4907   022340  004737  004244                     JSR     PC,WAIT50       ;DELAY A WHILE
 4908   022344  032777  000200  160072             BIT     #RDO,@BSEL2     ;IS RDO SET
 4909   022352  001404                             BEQ     10$             ;BRANCH IF NOT
 4910   022354  104455                             TRAP    C$ERDF
 4911   022356  000050                             .WORD   40
 4912   022360  012516                             .WORD   MEF30
 4913   022362  010422                             .WORD   ERR32
 4914   022364                             10$:
 4915   022364                             L10056:
 4916   022364  104401                             TRAP    C$ETST
 4917
```

```
CZDMTD.P11    09-MAR-82 09:11          ;****************************** TEST 17 ******************************

 4918                                  .SBTTL  ;****************************** TEST 17 ******************************
 4919                                  .SBTTL  *ROM FUNC. TEST. VERIFY THAT MAX TRIBS CAN BE ESTABLISHED
 4920  022366                                  ZZ
 4921                                          ;*ROM FUNCTION TEST-ESTABLISHING TRIBS-
 4922                                          ;*              THIS TEST WILL ESTABLISH MAX TRIBS
 4923                                          ;*              THEN TRY TO ESTABLISH MAX+1 TRIBS
 4924                                          ;*               AND CHECK FOR PROCEDURE ERROR.
 4925                                          ;*               THE TEST ALSO CHECKS FOR PROCEDURE
 4926                                          ;*               ERROR WHEN TRYING TO ESTABLISH AN
 4927                                          ;*               ALREADY ESTABLISHED TRIB.
 4928                                          ;*
 4929                                  .SBTTL  ;****************************** TEST 17 ******************************
 4930
 4931  022366                          T17::
 4932  022366  012737  000040  002362          MOV     #32.,TRIBMX             ;SET MAX TRIB TO 32
 4933  022374  032737  000003  002472          BIT     #3,OPTYP                ;IS THIS DMV
 4934  022402  001403                          BEQ     XX                      ;IF NOT BRANCH
 4935  022404  012737  000014  002362          MOV     #12.,TRIBMX             ;ELSE SET THE MAX TO 12
 4936  022412                          XX:
 4937
 4938  022412  112737  000161  002360          MOVB    #161,TRIBN              ;NUMBER OF TRIBUTARY,
 4939  022420  112737  000161  002364          MOVB    #161,TRIBH              ;START TRIB HIGH AT SAME AS TRIBN
 4940  022426  063737  002362  002364          ADD     TRIBMX,TRIBH            ;ADD MAX NUMBER OF TRIBS TO TRIBH
 4941
 4942  022434  004737  004522                  JSR     PC,MINITS       ;INITIALIZE
 4943
 4944  022440  005037  002402                  CLR     ERRWRD
 4945  022444  104410                          TRAP    C$ESCAPE
 4946  022446  000150                          .WORD   L10057-.
 4947                                          ;;;;;;;
 4948                                          ; JUMP TO END OF TEST IF ERROR
 4949                                          ;;;;;;;;
 4950  022450                          30$:
 4951  022450  112703  000001                  MOVB    #01,R3                  ;SET ESTABLISH TRIB
 4952  022454  004537  003162                  JSR     R5,CONTIN               ;
 4953                                          ;;;;;;;;;
 4954                                          ; READY OR TIME OUT ERRORS REPORT THIS PC
 4955                                          ;;;;;;;;;
 4956
 4957  022460  005037  002402                  CLR     ERRWRD
 4958  022464  104410                          TRAP    C$ESCAPE
 4959  022466  000130                          .WORD   L10057-.
 4960                                          ;;;;;;;;
 4961                                          ; JUMP TO END OF TEST IF ERROR
 4962                                          ;;;;;;;;
 4963  022470  005237  002360                  INC     TRIBN                   ;UPDATE TRIB#
 4964  022474  023737  002364  002360          CMP     TRIBH,  TRIBN           ;ONLY ALLOW MAX TRIBS TO BE SET
 4965  022502  001362                          BNE     30$
 4966
 4967  022504                          37$:
 4968  022504  112703  000001                  MOVB    #01, R3                 ;ESTABLISH MAX +1 TRIBS
 4969  022510  004537  003162                  JSR     R5,CONTIN               ; DO IT
 4970                                          ;;;;;;;;;
 4971                                          ; READY OR TIME OUT ERRORS REPORT THIS PC
 4972                                          ;;;;;;;;;
 4973
```

```
                        ;******************************** TEST 17 ********************************
 4974  022514  005037  002402            CLR     ERRWRD
 4975  022520  104410                    TRAP    C$ESCAPE
 4976  022522  000074                    .WORD   L10057-.
 4977                                    ;;;;;;;;
 4978                                    ; JUMP TO END OF TEST IF ERROR
 4979                                    ;;;;;;;;
 4980
 4981  022524  012737  000114  002410    MOV     #114,   PERR    ;SHOULD READ 114, PROCEDURE ERROR
 4982                                                            ;TRYING TO ESTABLISH MAX+1 TRIBUTARIES
 4983
 4984  022532  004537  003016            JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR
 4985
 4986  022536  005037  002402            CLR     ERRWRD
 4987  022542  104410                    TRAP    C$ESCAPE
 4988  022544  000052                    .WORD   L10057-.
 4989                                    ;;;;;;;
 4990                                    ; ESCAPE TEST IF ERROR
 4991                                    ;;;;;;;
 4992  022546                    60$:
 4993  022546  042777  000200  157670    BIC     #RDO,@BSEL2     ;CLEAR RDO
 4994  022554  005337  002360            DEC     TRIBN           ;DEC TRIB NUMBER
 4995  022560  112703  000001            MOVB    #01,  R3        ;SET ESTABLISH TRIB
 4996  022564  004537  003162            JSR     R5,CONTIN       ;DO IT
 4997                                    ;;;;;;;;;
 4998                                    ;; READY OR TIME OUT ERRORS REPORT THIS PC
 4999                                    ;;;;;;;;;
 5000
 5001  022570  005037  002402            CLR     ERRWRD
 5002  022574  104410                    TRAP    C$ESCAPE
 5003  022576  000020                    .WORD   L10057-.
 5004                                    ;;;;;;;;
 5005                                    ; JUMP TO END OF TEST IF ERROR
 5006                                    ;;;;;;
 5007
 5008  022600  112737  000116  002410    MOVB    #116,  PERR     ;SHOULD BE PROCEDURE ERROR
 5009                                                            ; OF 116 ESTABLISH ALREADY
 5010                                                            ;ESTABLISHED TRIB.
 5011  022606  004537  003016            JSR     R5,WFPE         ;GO CHECK FOR PROCEDURE ERROR
 5012  022612  005037  002402            CLR     ERRWRD
 5013  022616                    70$:
 5014  022616                    L10057:
 5015  022616  104401                    TRAP    C$ETST
 5016
```

```
                        ;*********************************  TEST 18  *********************************
                        .SBTTL  ;*********************************  TEST 18  *********************************
                        .SBTTL  * READ/WRITE TSS TEST
022620                  ZZ
                        ;*
                        ;*
                        ;* THIS TEST CHECKS THAT A TRIB STATUS SLOT CAN
                        ;* BE WRITTEN AND READ
                        ;*
                        ;*-
                        .SBTTL  ;*********************************  TEST 18  *********************************
022620                  T18::
022620  012737  000030  002412        MOV     #30,TSSADD      ;START ADD AT 30
022626  005002          NEWSLT: CLR     R2              ;CLEAR R2

022630  004737  004522  NEWPAT: JSR     PC,MINITS       ;MASTER CLEAR MODE DEF

022634  005037  002402          CLR     ERRWRD
022640  104410                  TRAP    C$ESCAPE
022642  000240                  .WORD   L10060-.
                                ;;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;;

022644  012737  000055  002360        MOV     #55,TRIBN       ;PUT 55 IN TRIB NUMBER
022652  012703  000001          MOV     #01,R3          ;THIS WILL ESTABLISH
022656  004537  003162          JSR     R5,CONTIN       ; A TRIB
                                ;;;;;;;;;;;;;;;;
                                ; TIME OUT AND READY ERRORS REPORT THIS PC
                                ;;;;;;;;;;;;;;;;

022662  005037  002402          CLR     ERRWRD
022666  104410                  TRAP    C$ESCAPE
022670  000212                  .WORD   L10060-.
                                ;;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;;

022672  016204  033706          MOV     DATLST(R2),R4   ;PATTERN TO BE WRITTEN
022676  013703  002412          MOV     TSSADD,R3       ;WRITE TO TSS
022702  052703  000200          BIS     #BIT7,R3        ;SET THE WRITE BIT
022706  004537  003162          JSR     R5,CONTIN       ; GO DO IT!!!
                                ;;;;;;;;;;;;;
                                ; TIME OUT AND READY ERRORS REPORT THIS PC
                                ;;;;;;;;;;;;;

022712  005037  002402          CLR     ERRWRD
022716  104410                  TRAP    C$ESCAPE
022720  000162                  .WORD   L10060-.
                                ;;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;;

022722  013703  002412          MOV     TSSADD,R3       ;SET UP TO READ SLOT
022726  052703  000040          BIS     #BIT5,R3        ;SET THE READ BIT
022732  004537  003162          JSR     R5,CONTIN       ;DO CONTROL IN
                                ;;;;;;;;;;;;;;;;
```

```
                        ;********************************  TEST 18  ********************************
                                ; TIME OUT AND READY ERRORS REPORT THIS PC
                                ;;;;;;;;;;;;;;;;
022736  005037  002402            CLR     ERRWRD
022742  104410                  TRAP    C$ESCAPE
022744  000136                  .WORD   L10060-.
                                ;;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;
022746  012737  000002  002336    MOV     #02,$GDDAT      ; COMPARE FOR A INFO OUT
022754  004537  003242            JSR     R5,GETOUT       ; CHECK FOR INFO OUT AND
                                                        ;CORRECT TRIB NO. IF ERROR
                                                        ;REPORT THIS PC.
022760  005037  002402            CLR     ERRWRD
022764  104410                  TRAP    C$ESCAPE
022766  000114                  .WORD   L10060-.
                                ;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;

022770  013737  002412  002336    MOV     TSSADD,$GDDAT   ;MOVE EXPECTED ADDRESS TO GDDAT
022776  052737  000040  002336    BIS     #BIT5,$GDDAT    ;SET THE READ TSS BIT IN EXPECTED
023004  004537  003372            JSR     R5,GETRKY       ; GO CHECK FOR GOOD RETURN KEY

023010  005037  002402            CLR     ERRWRD
023014  104410                  TRAP    C$ESCAPE
023016  000064                  .WORD   L10060-.
                                ;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;

023020  016237  033706  002336  30$:    MOV     DATLST(R2),$GDDAT       ;MOVE EXPECTED PATTERN
023026  004537  003446            JSR     R5,GETDAT       ;GET DATA RETURNED.
                                                        ;IF ERROR REPORT THIS PC.
023032  005037  002402            CLR     ERRWRD
023036  104410                  TRAP    C$ESCAPE
023040  000042                  .WORD   L10060-.
                                ;;;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;;;

023042  022762  000562  033706    CMP     #562,DATLST(R2) ;ARE WE DONE WITH PATTERN
023050  001404                  BEQ     50$             ;IF SO DO NEXT SLOT
023052  062702  000002            ADD     #2,R2           ;BUMP LIST POINTER
023056  000137  022630            JMP     NEWPAT          ;GO BACK FOR THIS PATTERN.
023062  022737  000037  002412  50$:    CMP     #37,TSSADD      ;IS THIS THE LAST SLOT
023070  001404                  BEQ     60$             ;IF SO END TEST
023072  005237  002412            INC     TSSADD          ;ELSE BUMP ADD
023076  000137  022626            JMP     NEWSLT          ; AND DO NEXT SLOT
023102                          60$:

023102                          L10060:
023102  104401                  TRAP    C$ETST
```

```
                        ;****************************** TEST 18 ******************************

                        .SBTTL  ;****************************** TEST 19 ******************************
                        .SBTTL  *WRITE RESERVED AREA OF TSS. P.E. 132
023104                  ZZ:
                        ;*
                        ;*
                        ;* THIS TEST CHECKS FOR PROCEDURE ERROR
                        ;* ON WRITING TO ILLEGAL SLOT
                        ;*
                        ;*-
                        .SBTTL  ;****************************** TEST 19 ******************************
023104                  T19::

023104  004737  004522          JSR     PC,MINITS       ;MASTER CLEAR MODE DEF

023110  005037  002402          CLR     ERRWRD
023114  104410                  TRAP    C$ESCAPE
023116  000072                  .WORD   L10061-.
                                ;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;

023120  012737  000022  002360  MOV     #22,TRIBN       ;SET TRIB NUMBER TO 22
023126  012703  000001          MOV     #01,R3
023132  004537  003162          JSR     R5,CONTIN       ;ESTABLISH TRIB
                                ;;;;;;;;;;
                                ; TIME OUT OR READY ERRORS REPORT THIS PC
                                ;;;;;;;;;

023136  005037  002402          CLR     ERRWRD
023142  104410                  TRAP    C$ESCAPE
023144  000044                  .WORD   L10061-.
                                ;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;

023146  012703  000204          MOV     #204,R3         ;SEL6=204
023152  004537  003162          JSR     R5,CONTIN       ;WRITE TSS (ILLEGAL)
                                ;;;;;;;;;
                                ; TIME OUT OR READY ERROR REPORT THIS PC
                                ;;;;;;;;;

023156  005037  002402          CLR     ERRWRD
023162  104410                  TRAP    C$ESCAPE
023164  000024                  .WORD   L10061-.
                                ;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;

023166  012737  000132  002410  MOV     #132,PERR               ;CHECK FOR PROCEDURE ERROR
023174  004537  003016          JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR

023200  005037  002402          CLR     ERRWRD
023204  104410                  TRAP    C$ESCAPE
023206  000002                  .WORD   L10061-.
                                ;;;;;;;
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 19  ********************************

  5183                                          ; ESCAPE TEST IF ERROR
  5184                                          ;;;;;;;
  5185
  5186  023210                        L10061:
  5187  023210  104401                         TRAP    C$ETST
  5188
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 19  ********************************

 5189
 5190                                  .SBTTL  ;********************************  TEST 20  ********************************
 5191                                  .SBTTL  *READ CLEAR WRONG ADD P.E.132
 5192  023212                                  ZZ
 5193                                          ;*
 5194                                          ;*
 5195                                          ;* THIS TEST CHECKS FOR PROCEDURE ERROR
 5196                                          ;* FOR RD/CLR TSS WRONG ADD(132)
 5197                                          ;*
 5198                                          ;*-
 5199                                  .SBTTL  ;********************************  TEST 20  ********************************
 5200  023212                          T20::
 5201
 5202  023212  004737  004522                  JSR     PC,MINITS       ;MASTER CLEAR MODE DEF
 5203
 5204  023216  005037  002402                  CLR     ERRWRD
 5205  023222  104410                          TRAP    C$ESCAPE
 5206  023224  000072                          .WORD   L10062-.
 5207                                          ;;;;;;;;;
 5208                                          ; JUMP TO END OF TEST IF ERROR
 5209                                          ;;;;;;;;;
 5210
 5211  023226  012737  000077  002360          MOV     #77,TRIBN       ;MAKE TRIBN 77
 5212  023234  012703  000001                  MOV     #01,R3          ;ESTABLISH TRIB
 5213  023240  004537  003162                  JSR     R5,CONTIN
 5214                                          ;;;;;;;;;;
 5215                                          ; TIME OUT OR READY ERROR REPORTS THIS PC
 5216                                          ;;;;;;;;;
 5217
 5218  023244  005037  002402                  CLR     ERRWRD
 5219  023250  104410                          TRAP    C$ESCAPE
 5220  023252  000044                          .WORD   L10062-.
 5221                                          ;;;;;;;;;
 5222                                          ; JUMP TO END OF TEST IF ERROR
 5223                                          ;;;;;;;;;
 5224
 5225  023254  012703  000106                  MOV     #106,R3
 5226  023260  004537  003162                  JSR     R5,CONTIN       ;READ/CLEAR ADD 6
 5227                                          ;;;;;;;;;;;
 5228                                          ; TIME OUT OR READY ERRORS REPORT THIS PC
 5229                                          ;;;;;;;;;;;
 5230
 5231  023264  005037  002402                  CLR     ERRWRD
 5232  023270  104410                          TRAP    C$ESCAPE
 5233  023272  000024                          .WORD   L10062-.
 5234                                          ;;;;;;;;;
 5235                                          ; JUMP TO END OF TEST IF ERROR
 5236                                          ;;;;;;;;;
 5237
 5238  023274  012737  000132  002410          MOV     #132,PERR       ;SET PROCEDURE ERROR TO
 5239                                                                  ;BE CHECKED TO 132
 5240  023302  004537  003016                  JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR
 5241
 5242  023306  005037  002402                  CLR     ERRWRD
 5243  023312  104410                          TRAP    C$ESCAPE
 5244  023314  000002                          .WORD   L10062-.
```

```
                        ;********************************  TEST 20  ********************************

                                ;;;;;;;
                                ; ESCAPE TEST IF ERROR
                                ;;;;;;;

                        L10062:
                                TRAP    C$ETST
```

```
                        ;********************************  TEST 20  ********************************

                        .SBTTL  ;********************************  TEST 21  ********************************
                        .SBTTL  *READ/CLEAR TSS
023320                  T21::   ZZ
                                ;*
                                ;*
                                ;* THIS TEST THAT READ CLEAR WORKS
                                ;*
                                ;*-
                        .SBTTL  ;********************************  TEST 21  ********************************
023320                  T21::

023320  004737  004522          JSR     PC,MINITS       ;MASTER CLEAR MODE-DEF

023324  005037  002402          CLR     ERRWRD
023330  104410                  TRAP    C$ESCAPE
023332  000100                  .WORD   L10063-.
                                ;;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;

023334  012737  000003  002360  MOV     #03,TRIBN       ;SET TRIB NUMBER
023342  012703  000001          MOV     #01,R3
023346  004537  003162          JSR     R5,CONTIN       ;ESTABLISH TRIB
                                ;;;;;;;;;
                                ;; TIME OUT OR READY ERRORS REPORT THIS PC
                                ;;;;;;;;;

023352  005037  002402          CLR     ERRWRD
023356  104410                  TRAP    C$ESCAPE
023360  000052                  .WORD   L10063-.
                                ;;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;;

023362  012703  000107          MOV     #107,R3
023366  004537  003162          JSR     R5,CONTIN       ;READ/CLEAR ADD 7
                                ;;;;;;;;;;;;;
                                ; TIME OUT OR READY ERRORS REPORT THIS PC
                                ;;;;;;;;;;;;

023372  005037  002402          CLR     ERRWRD
023376  104410                  TRAP    C$ESCAPE
023400  000032                  .WORD   L10063-.
                                ;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;

023402  004737  004244          JSR     PC,WAIT50
023406  004737  004244          JSR     PC,WAIT50       ;DELAY
023412  032777  000200  157024  BIT     #RDO,@BSEL2
023420  001004                  BNE     10$             ;IF RDO THEN END
                                                        ;ELSE ERROR
023422  104455                  TRAP    C$ERDF
023424  000051                  .WORD   41
```

```
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  5307  023426  011630                        .WORD   MRFT
  5308  023430  007552                        .WORD   ERR10
  5309
  5310  023432                        10$:
  5311  023432                        L10063:
  5312  023432  104401                        TRAP    C$ETST
```

```
                        ;****************************** TEST 22 ******************************

                        .SBTTL  ;****************************** TEST 22 ******************************
                        .SBTTL  *GLOBAL STATUS SLOT TESTS
                                ZZ
                                ;*
                                ;*      THIS TEST CHECKS THAT GLOBAL STATUS
                                ;*      SLOTS RESPOND TO COMMANDS
                                ;*
                                ;*-
                        .SBTTL  ;****************************** TEST 22 ******************************
023434                  T22::

023434                  T22.1:
023434  104402                  TRAP    C$BSUB
                                ;;;;;;;;;;;;;;;;;;;;;;;;
                                ; READ ALL SLOTS TEST   ;
                                ;;;;;;;;;;;;;;;;;;;;;;;;

023436  005037  002412                CLR     TSSADD          ;CLEAR ADD
023442  005037  002360                CLR     TRIBN           ;MAKE TRIB #0(GLOBAL COMM)
023446                  5$:
023446  004737  004522                JSR     PC,MINITS       ;MASTER CLEAR INIT

023452  005037  002402                CLR     ERRWRD
023456  104410                      TRAP    C$ESCAPE
023460  000114                      .WORD   L10065-.
                                ;;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;;

023462  013703  002412                MOV     TSSADD,R3
023466  052703  000040                BIS     #BIT5,R3        ;SET UP READ GSS COMMAND
023472  004537  003162                JSR     R5,CONTIN       ;GO DO IT

023476  005037  002402                CLR     ERRWRD
023502  104410                      TRAP    C$ESCAPE
023504  000070                      .WORD   L10065-.
                                ;;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;;

023506  012737  000002  002336        MOV     #2,$GDDAT       ;
023514  004537  003242                JSR     R5,GETOUT       ;CHECK CORRECT TYPE AND
                                                                ; TRIB NO.

023520  005037  002402                CLR     ERRWRD
023524  104410                      TRAP    C$ESCAPE
023526  000046                      .WORD   L10065-.
                                ;;;;;;;;;
                                ; ESCAPE SUB IF ERROR
                                ;;;;;;;;;

023530                  10$:
023530  013737  002412  002336        MOV     TSSADD,$GDDAT
023536  052737  000040  002336        BIS     #BIT5,$GDDAT    ;SET THE READ TSS BIT
023544  004537  003372                JSR     R5,GETRKY       ;CHECK RETURN KEY
```

```
                        ;********************************  TEST 22  ********************************
 5369  023550  005037  002402          CLR     ERRWRD
 5370  023554  104410                  TRAP    C$ESCAPE
 5371  023556  000016                  .WORD   L10065-.
 5372                                  ;;;;;;;;
 5373                                  ; GO TO END OF SUB IF ERROR
 5374                                  ;;;;;;;
 5375
 5376
 5377  023560  005237  002412  30$:    INC     TSSADD          ;BUMP ADDRESS
 5378  023564  022737  000040  002412  CMP     #40,TSSADD      ; ARE WE ALL DONE
 5379  023572  001325                  BNE     5$              ; IF NOT GO BACK
 5380                                                          ;ELSE END SUBTEST
 5381  023574                  L10065:
 5382  023574  104403                  TRAP    C$ESUB
 5383  023576                  T22.2:
 5384  023576  104402                  TRAP    C$BSUB
 5385                                  ;;;;;;;;;;;;;;;;;;;;;;
 5386                                  ; WRITE ALL SLOTS TEST ;
 5387                                  ;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
 5388
 5389  023600  012737  000034  002412          MOV     #34,TSSADD      ;START WITH FIRST WRITABLE ADD
 5390  023606  005037  002360                  CLR     TRIBN           ;AND TRIBN AT ZERO
 5391  023612  004737  004522          40$:    JSR     PC,MINITS       ;MASTER CLEAR INT
 5392
 5393  023616  005037  002402                  CLR     ERRWRD
 5394  023622  104410                          TRAP    C$ESCAPE
 5395  023624  000226                          .WORD   L10066-.
 5396                                          ;;;;;;;;
 5397                                          ; JUMP TO END OF SUB IF ERROR
 5398                                          ;;;;;;;
 5399
 5400  023626  013703  002412          45$:    MOV     TSSADD,R3
 5401  023632  052703  000200                  BIS     #BIT7,R3        ;WRITE TSS(GLOBAL BECAUSE TRIBN=0)
 5402  023636  013704  002412                  MOV     TSSADD,R4       ;PUT IN ADD FOR DATA
 5403  023642  004537  003162                  JSR     R5,CONTIN       ;DO IT
 5404
 5405  023646  005037  002402                  CLR     ERRWRD
 5406  023652  104410                          TRAP    C$ESCAPE
 5407  023654  000176                          .WORD   L10066-.
 5408                                          ;;;;;;;;
 5409                                          ; JUMP TO END OF SUB IF ERROR
 5410                                          ;;;;;;
 5411
 5412  023656  005237  002412                  INC     TSSADD          ;BUMP ADD
 5413  023662  022737  000040  002412          CMP     #40,TSSADD      ;DONE ALL
 5414  023670  001356                          BNE     45$             ;NO GO FINISH!!!
 5415  023672  012703  000227                  MOV     #227,R3
 5416  023676  013704  002412                  MOV     TSSADD,R4
 5417  023702  004537  003162                  JSR     R5,CONTIN       ; TRY TO WRITE BAD ADDRESS
 5418
 5419  023706  005037  002402                  CLR     ERRWRD
 5420  023712  104410                          TRAP    C$ESCAPE
 5421  023714  000136                          .WORD   L10066-.
 5422                                          ;;;;;;;
 5423                                          ; JUMP TO END OF SUB IF ERROR
 5424                                          ;;;;;;
```

```
                        ;********************************  TEST 22  ********************************
5425  023716  012737  000132  002410          MOV     #132,PERR
5426  023724  004537  003016                  JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR
5427
5428  023730  005037  002402                  CLR     ERRWRD
5429  023734  104410                          TRAP    C$ESCAPE
5430  023736  000222                          .WORD   L10064-.
5431                                          ;;;;;;;
5432                                          ; ESCAPE TEST IF ERROR
5433                                          ;;;;;;;
5434
5435  023740  042777  000200  156476  GSSREP: BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
5436  023746  005337  002412                  DEC     TSSADD          ;GET TSSADD BACK TO MAX
5437  023752  013703  002412                  MOV     TSSADD,R3
5438  023756  052703  000040                  BIS     #BIT5,R3        ;SET READ BIT
5439  023762  004537  003162                  JSR     R5,CONTIN       ;READ TSS
5440
5441  023766  005037  002402                  CLR     ERRWRD
5442  023772  104410                          TRAP    C$ESCAPE
5443  023774  000056                          .WORD   L10066-.
5444                                          ;;;;;;;
5445                                          ; JUMP  TO END OF SUB IF ERROR
5446                                          ;;;;;;;
5447
5448  023776  012737  000002  002336          MOV     #2,$GDDAT
5449  024004  004537  003242                  JSR     R5,GETOUT       ;CHECK FOR INFOR. OUT AND
5450
5451  024010  005037  002402                  CLR     ERRWRD
5452                                                                  ;CORRECT TRIBN.
5453  024014  104410                          TRAP    C$ESCAPE
5454  024016  000034                          .WORD   L10066-.
5455                                          ;;;;;
5456                                          ; JUMP TO END OF SUB IF ERROR
5457                                          ;;;;;;
5458  024020  013737  002412  002336  60$:     MOV     TSSADD,$GDDAT
5459  024026  004537  003446                  JSR     R5,GETDAT       ;CHECK FOR GOOD DATA
5460
5461  024032  005037  002402                  CLR     ERRWRD
5462  024036  104410                          TRAP    C$ESCAPE
5463  024040  000012                          .WORD   L10066-.
5464                                          ;;;;;;;
5465                                          ;JUMP TO END OF SUB IF ERROR
5466                                          ;;;;;;
5467
5468  024042  022737  000034  002412  70$:     CMP     #34,TSSADD      ;ARE WE ALL DONE
5469  024050  001333                          BNE     GSSREP          ;GO BACK IF NOT
5470
5471  024052                          L10066:
5472  024052  104403                          TRAP    C$ESUB
5473  024054                          T22.3:
5474  024054  104402                          TRAP    C$BSUB
5475                                          ;;;;;;;;;;;;;;;;;;;;;;;
5476                                          ; READ CLEAR SLOT TEST :
5477                                          ;;;;;;;;;;;;;;;;;;;;;;;
5478
5479  024056  004737  004522                  JSR     PC,MINITS       ;MASTER CLEAR MODE DEF
5480
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 22  ********************************

 5481  024062  005037  002402                CLR     ERRWRD
 5482  024066  104410                        TRAP    C$ESCAPE
 5483  024070  000066                        .WORD   L10067-.
 5484                                          ;;;;;;;
 5485                                          ;JUMP TO END OF SUB IF ERROR
 5486                                          ;;;;;;
 5487
 5488  024072  005037  002360                CLR     TRIBN
 5489  024076  012703  000117                MOV     #117,R3
 5490  024102  004537  003162                JSR     R5,CONTIN       ;READ CLEAR SLOT
 5491
 5492  024106  005037  002402                CLR     ERRWRD
 5493  024112  104410                        TRAP    C$ESCAPE
 5494  024114  000042                        .WORD   L10067-.
 5495                                          ;;;;;;;;
 5496                                          ;JUMP TO END OF SUB IF ERROR
 5497                                          ;;;;;;;;
 5498
 5499  024116  012737  000002  002336        MOV     #02,$GDDAT
 5500  024124  004537  003242                JSR     R5,GETOUT       ;CHECK FOR INFO OUT
 5501                                                                  ;AND CORRECT TRIBN.
 5502  024130  005037  002402                CLR     ERRWRD
 5503  024134  104410                        TRAP    C$ESCAPE
 5504  024136  000020                        .WORD   L10067-.
 5505                                          ;;;;;;;
 5506                                          ;JUMP TO END OF SUB IF ERROR
 5507                                          ;;;;;;
 5508
 5509  024140  012737  000117  002336        MOV     #117,$GDDAT
 5510  024146  004537  003372                JSR     R5,GETRKY       ;CHECK FOR CORRECT RETURN KEY
 5511
 5512  024152  005037  002402                CLR     ERRWRD
 5513  024156                        L10067:
 5514  024156  104403                        TRAP    C$ESUB
 5515  024160                        L10064:
 5516  024160  104401                        TRAP    C$ETST
 5517
```

```
                        ;*******************************  TEST 22  *******************************

                        .SBTTL  ;*******************************  TEST 23  *******************************
                        .SBTTL  *HALT TRIB COMMAND TEST
024162                  ZZ
                        ;*
                        ;*
                        ;* THIS TEST CHECKS THE HALT TRIB COMMAND
                        ;* AND THEN CHECKS THAN A 2ND HALT TRIB
                        ;* DOES NOT CAUSE A CONTROL OUT.
                        ;*-
                        .SBTTL  ;*******************************  TEST 23  *******************************
024162                  T23::

024162  004737  004522          JSR     PC,MINITS       ;MASTER CLEAR -MODE DEF
024166  005037  002402          CLR     ERRWRD          ;IF ERROR GO TO END TEST
024172  104410                  TRAP    C$ESCAPE
024174  000412                  .WORD   L10070-.
024176  012737  000036  002360  MOV     #36,TRIBN       ;SET TRIBN
024204  012703  000001          MOV     #01,R3
024210  004537  003162          JSR     R5,CONTIN       ;ESTABLISH TRIB

                        ;IF TIME OUT OR READY ERRORS THE PROGRAM WILL
                        ;REPORT THIS PC AS FAILING PC

024214  005037  002402          CLR     ERRWRD          ; JUMP TO END OF TEST IF ERROR
024220  104410                  TRAP    C$ESCAPE
024222  000364                  .WORD   L10070-.
024224  012703  000003          MOV     #03,R3
024230  004537  003162          JSR     R5,CONTIN       ;ISTRT TRIB

                        ;IF TIME OUT OR READY ERRORS THE PROGRAM WILL
                        ;REPORT THIS PC AS FAILING PC

024234  005037  002402          CLR     ERRWRD          ; JUMP TO END OF TEST IF ERROR
024240  104410                  TRAP    C$ESCAPE
024242  000344                  .WORD   L10070-.
024244  012737  000001  002336  MOV     #01,$GDDAT      ;CHECK
024252  004537  003242          JSR     R5,GETOUT       ;FOR CONTROL OUT AND
                                                        ;CORRECT TRIBN
                                                        ;IF ERROR REPORT
                                                        ;THIS PC AND ESCAPE TEST
024256  005037  002402          CLR     ERRWRD          ; JUMP TO END OF TEST IF ERROR
024262  104410                  TRAP    C$ESCAPE
024264  000322                  .WORD   L10070-.
024266  012737  000024  002336  MOV     #24,$GDDAT
024274  004537  003670          JSR     R5,GETOC        ;CHECK FOR GOOD OUTPUT CODE
024300  005037  002402          CLR     ERRWRD          ; JUMP TO END OF TEST IF ERROR
024304  104410                  TRAP    C$ESCAPE
024306  000300                  .WORD   L10070-.

                        ; QUE REC BUFFER WITH 100 DECIMAL LOCATIONS

024310  042777  000200  156126  20$:    BIC     #RDO,@BSEL2     ;CLEAR READY OUT
024316  052777  000200  156114          BIS     #RQI,@BSEL0     ;SET REQUEST IN
                                                        ;WAIT FOR READY IN
024324  004537  002732          JSR     R5,WRDI         ;WAIT FOR RDI TO SET
```

```
                        ;*********************************  TEST 23  *********************************
5574  024330  005037  002402          CLR     ERRWRD          ;CLEAR ERROR
5575  024334  104410                  TRAP    C$ESCAPE
5576  024336  000250                  .WORD   L10070-.
5577  024340  042777  000200  156072  BIC     #RQI,@BSEL0     ;CLEAR REQUEST IN
5578  024346  012777  033726  156074  MOV     #RECBU1,@BSEL4  ;
5579  024354  012777  000144  156072  MOV     #100.,@BSEL6
5580  024362  113777  002360  156056  MOVB    TRIBN,@BSEL3
5581  024370  105077  156050          CLRB    @BSEL2          ;QUE UP BUFF
5582  024374  012703  000005          MOV     #05,R3
5583  024400  004537  003162          JSR     R5,CONTIN       ;HALT TRIB
5584                                  ;IF TIME OUT OR READY ERRORS THE PROGRAM WILL
5585                                  ;REPORT THIS PC AS FAILING PC
5586
5587  024404  005037  002402          CLR     ERRWRD          ; JUMP TO END OF TEST IF ERROR
5588  024410  104410                  TRAP    C$ESCAPE
5589  024412  000174                  .WORD   L10070-.
5590  024414  012737  000003  002336  MOV     #03,$GDDAT
5591  024422  004537  003242          JSR     R5,GETOUT       ;CHECK FOR BUFFER UNUSED
5592                                                          ;AND CORRECT TRIBN.
5593  024426  005037  002402          CLR     ERRWRD          ; JUMP TO END OF TEST IF ERROR
5594  024432  104410                  TRAP    C$ESCAPE
5595  024434  000152                  .WORD   L10070-.
5596  024436  012737  000144  002336  MOV     #100.,$GDDAT
5597  024444  004537  003514          JSR     R5,GETCC        ;CHECK FOR GOOD CHAR.COUNT
5598  024450  005037  002402          CLR     ERRWRD          ; JUMP TO END OF TEST IF ERROR
5599  024454  104410                  TRAP    C$ESCAPE
5600  024456  000130                  .WORD   L10070-.
5601  024460  012737  033726  002336  MOV     #RECBU1,$GDDAT
5602  024466  004537  003576          JSR     R5,GETBA        ;CHECK FOR GOOD BUFF. ADD.
5603  024472  005037  002402          CLR     ERRWRD          ; JUMP TO END OF TEST IF ERROR
5604  024476  104410                  TRAP    C$ESCAPE
5605  024500  000106                  .WORD   L10070-.
5606  024502  042777  000200  155734  23$:    BIC     #RDO,@BSEL2     ;CLEAR OUTPUT AND LOOK FOR NEXT
5607  024510  012737  000002  002336          MOV     #2,$GDDAT
5608  024516  004537  003242          JSR     R5,GETOUT       ;NEXT GET INFO OUT
5609  024522  005037  002402          CLR     ERRWRD          ; JUMP TO END OF TEST IF ERROR
5610  024526  104410                  TRAP    C$ESCAPE
5611  024530  000056                  .WORD   L10070-.
5612  024532  012737  000020  002336  MOV     #20,$GDDAT
5613  024540  004537  003372          JSR     R5,GETRKY       ;CHECK FOR GOOD RETURN KEY
5614                                                          ; BUFFER RETURN COMPLETE
5615  024544  005037  002402          CLR     ERRWRD          ; JUMP TO END OF TEST IF ERROR
5616  024550  104410                  TRAP    C$ESCAPE
5617  024552  000034                  .WORD   L10070-.
5618  024554  042777  000200  155662  25$:    BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
5619  024562  004737  004244          JSR     PC,WAIT50
5620  024566  004737  004244          JSR     PC,WAIT50       ;WAIT A WHILE
5621  024572  012703  000000          MOV     #0,R3           ;DO A NO REQUEST
5622  024576  004537  003162          JSR     R5,CONTIN
5623  024602  005037  002402          CLR     ERRWRD          ;IF ERROR OCCURS THE SECOND
5624                                                          ;HALT TRIB CAUSED AN OUTPUT
5625                                                          ;AND SHOULD NOT HAVE.
5626  024606                  L10070:
5627  024606  104401                  TRAP    C$ETST
```

```
CZDMTD.P11    09-MAR-82 09:11          ;******************************  TEST 23  ******************************

 5628
 5629                                  .SBTTL  ;******************************  TEST 24  ******************************
 5630                                  .SBTTL  *KILL TRIB TESTS
 5631  024610                                  ZZ
 5632                                          :*
 5633                                          ;* THIS TEST CHECKS THE KILL TRIB FUNCTIONS
 5634                                          :*-
 5635                                  .SBTTL  ;******************************  TEST 24  ******************************
 5636  024610                          T24::
 5637
 5638  024610  004737  004522                  JSR     PC,MINITS
 5639
 5640  024614  005037  002402                  CLR     ERRWRD
 5641  024620  104410                          TRAP    C$ESCAPE
 5642  024622  000412                          .WORD   L10071-.
 5643                                          ;;;;;;;;
 5644                                          ; JUMP TO END OF TEST IF ERROR
 5645                                          ;;;;;;;;
 5646
 5647  024624  012737  000143  002360          MOV     #143,TRIBN      ;SET TRIB NUMBER
 5648  024632  012703  000001                  MOV     #01,R3
 5649  024636  004537  003162                  JSR     R5,CONTIN       ;ESTABLISH TRIB
 5650                                          ;;;;;;;;;;
 5651                                          ; TIME OUT OR READY ERRORS REPORT THIS P
 5652                                          ;;;;;;;;;;
 5653
 5654  024642  005037  002402                  CLR     ERRWRD
 5655  024646  104410                          TRAP    C$ESCAPE
 5656  024650  000364                          .WORD   L10071-.
 5657                                          ;;;;;;;;
 5658                                          ; JUMP TO END OF TEST IF ERROR
 5659                                          ;;;;;;;;
 5660
 5661  024652  012703  000041                  MOV     #41,R3
 5662  024656  004537  003162                  JSR     R5,CONTIN       ;READ TRIB STATUS SLOT 1
 5663                                          ;;;;;;;;
 5664                                          ; TIME OUT OR READY ERRORS REPORT THIS PC
 5665                                          ;;;;;;;;
 5666
 5667  024662  005037  002402                  CLR     ERRWRD
 5668  024666  104410                          TRAP    C$ESCAPE
 5669  024670  000344                          .WORD   L10071-.
 5670                                          ;;;;;;;;
 5671                                          ; JUMP TO END OF TEST IF ERROR
 5672                                          ;;;;;;;;
 5673
 5674  024672  012737  000002  002336          MOV     #02,$GDDAT      ;SET TYPE FOR INFO OUT
 5675  024700  004537  003242                  JSR     R5,GETOUT       ;CHECK FOR INFO OUT AND
 5676                                                                  ;CORRECT TRIBN.
 5677
 5678  024704  005037  002402                  CLR     ERRWRD
 5679  024710  104410                          TRAP    C$ESCAPE
 5680  024712  000322                          .WORD   L10071-.
 5681                                          ;;;;;;;;
 5682                                          ; JUMP TO END OF TEST IF ERROR
 5683                                          ;;;;;;;;
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 24  ********************************

 5684
 5685  024714  000377  155530          20$:    SWAB    @BSEL4          ;SWAB BYTES
 5686  024720  117737  155524  002340          MOVB    @BSEL4,$BDDAT   ;MOVE TRIB ADD TO BDDAT
 5687  024726  113737  002360  002336          MOVB    TRIBN,$GDDAT    ;MOVE TRIB NUMBER TO GDDAT
 5688  024734  123737  002336  002340          CMPB    $GDDAT,$BDDAT   ;COMPARE
 5689  024742  001407                          BEQ     30$             ;IF OK GO TO 30
 5690                                                                  ;ELSE ERROR
 5691  024744  012737  012014  002430          MOV     #M30F,CODEW
 5692  024752  104455                          TRAP    C$ERDF
 5693  024754  000052                          .WORD   42
 5694  024756  011506                          .WORD   EROIC
 5695  024760  010324                          .WORD   ERR27
 5696
 5697  024762  042777  000200  155454  30$:    BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
 5698  024770  012703  000004                  MOV     #04,R3
 5699  024774  004537  003162                  JSR     R5,CONTIN       ;MAINT STATE TRIB
 5700                                          ;;;;;;;;;;;
 5701                                          ;TIME OUT OR READY ERRORS REPORT THIS PC
 5702                                          ;;;;;;;;;;;
 5703
 5704  025000  005037  002402                  CLR     ERRWRD
 5705  025004  104410                          TRAP    C$ESCAPE
 5706  025006  000226                          .WORD   L10071-.
 5707                                          ;;;;;;;;
 5708                                          ; JUMP TO END OF TEST IF ERROR
 5709                                          ;;;;;;;;
 5710
 5711  025010  012703  000002                  MOV     #02,R3
 5712  025014  004537  003162                  JSR     R5,CONTIN       ;KILL TRIB
 5713                                          ;;;;;;;;;;;
 5714                                          ; TIME OUT OR READY ERRORS REPORT THIS PC
 5715                                          ;;;;;;;;;;;
 5716
 5717  025020  005037  002402                  CLR     ERRWRD
 5718  025024  104410                          TRAP    C$ESCAPE
 5719  025026  000206                          .WORD   L10071-.
 5720                                          ;;;;;;;;
 5721                                          ; JUMP TO END OF TEST IF ERROR
 5722                                          ;;;;;;;;
 5723
 5724  025030  012737  000112  002410          MOV     #112,PERR       ;CHECK FOR KILL TO UNHALTED
 5725  025036  004537  003016                  JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR
 5726
 5727  025042  005037  002402                  CLR     ERRWRD
 5728  025046  104410                          TRAP    C$ESCAPE
 5729  025050  000164                          .WORD   L10071-.
 5730                                          ;;;;;;;
 5731                                          ; ESCAPE TEST IF ERROR
 5732                                          ;;;;;;;
 5733  025052  042777  000200  155364          BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
 5734  025060  012703  000005                  MOV     #05,R3
 5735  025064  004537  003162                  JSR     R5,CONTIN       ;HALT TRIB
 5736                                          ;;;;;;;;;;
 5737                                          ; TIME OUT OR READY ERRORS REPORT THIS PC
 5738                                          ;;;;;;;;;;
 5739
```

```
                        ;********************************  TEST 24  ********************************
5740  025070  005037  002402            CLR     ERRWRD
5741  025074  104410                    TRAP    C$ESCAPE
5742  025076  000136                    .WORD   L10071-.
5743                                    ;;;;;;;;
5744                                    ; JUMP TO END OF TEST IF ERROR
5745                                    ;;;;;;;;
5746
5747  025100  012737  000002  002336    MOV     #2,$GDDAT
5748  025106  004537  003242            JSR     R5,GETOUT       ;CHECK FOR INFO OUT
5749                                                            ;AND CORRECT PC
5750
5751  025112  005037  002402            CLR     ERRWRD
5752  025116  104410                    TRAP    C$ESCAPE
5753  025120  000114                    .WORD   L10071-.
5754                                    ;;;;;;;;
5755                                    ; JUMP TO END OF TEST IF ERROR
5756                                    ;;;;;;;;
5757
5758  025122  012737  000020  002336    MOV     #20,$GDDAT
5759  025130  004537  003372            JSR     R5,GETRKY       ;CHECK FOR GOOD RETURN KEY
5760
5761
5762  025134  005037  002402            CLR     ERRWRD
5763  025140  104410                    TRAP    C$ESCAPE
5764  025142  000072                    .WORD   L10071-.
5765                                    ;;;;;;;;
5766                                    ; JUMP TO END OF TEST IF ERROR
5767                                    ;;;;;;;;
5768
5769  025144  042777  000200  155272  2$:   BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
5770  025152  012703  000002            MOV     #02,R3          ;KILL TRIB
5771  025156  004537  003162            JSR     R5,CONTIN
5772                                    ;;;;;;;;;;
5773                                    ; TIME OUT OR READY ERRORS REPORT THIS PC
5774                                    ;;;;;;;;;;
5775
5776  025162  005037  002402            CLR     ERRWRD
5777  025166  104410                    TRAP    C$ESCAPE
5778  025170  000044                    .WORD   L10071-.
5779                                    ;;;;;;;;
5780                                    ; JUMP TO END OF TEST IF ERROR
5781                                    ;;;;;;;;
5782
5783  025172  012703  000041            MOV     #41,R3          ;READ SLOT 1
5784  025176  004537  003162            JSR     R5,CONTIN
5785                                    ;;;;;;;;;;
5786                                    ; TIME OUT OR READY ERRORS REPORT THIS PC
5787                                    ;;;;;;;;;;
5788
5789  025202  005037  002402            CLR     ERRWRD
5790  025206  104410                    TRAP    C$ESCAPE
5791  025210  000024                    .WORD   L10071-.
5792                                    ;;;;;;;;
5793                                    ; JUMP TO END OF TEST IF ERROR
5794                                    ;;;;;;;;
5795
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 24  ********************************

  5796  025212  012737  000106  002410          MOV     #106,PERR       ;CHECK FOR PROCEDURE 106 ERROR
  5797  025220  004537  003016                  JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR
  5798
  5799  025224  005037  002402                  CLR     ERRWRD
  5800  025230  104410                          TRAP    C$ESCAPE
  5801  025232  000002                          .WORD   L10071-.
  5802                                          ;;;;;;;
  5803                                          ; ESCAPE TEST IF ERROR
  5804                                          ;;;;;;;
  5805
  5806  025234                          L10071:
  5807  025234  104401                          TRAP    C$ETST
  5808
  5809
```

```
                        ;********************************  TEST 24  ********************************

                        .SBTTL  ;********************************  TEST 25  ********************************
                        .SBTTL  *CHECK FOR PROCEDURE ERROR 102
025236                  ZZ
                        ;*
                        ;*
                        ;*      THIS TEST CHECKS THAT ILLEGAL TYPE CODES
                        ;*      ON INPUT COMMANDS WILL PRODUCE PROCEDURE
                        ;*      ERRORS.
                        ;*
                        ;*-
                        .SBTTL  ;********************************  TEST 25  ********************************
025236                  T25::
025236  012702  002414          MOV     #TYLST,R2       ;SET R2 TO START OF LIST

025242  004737  004522  10$:    JSR     PC,MINITS       ;MASTER CLEAR-MODE DEF

025246  005037  002402          CLR     ERRWRD
025252  104410                  TRAP    C$ESCAPE
025254  000074                  .WORD   L10072-.
                                ;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;

025256  052777  000200  155154  BIS     #RQI,@BSEL0     ;SET REQUEST
025264  004537  002732          JSR     R5,WRDI         ;WAIT FOR RDI TO SET

025270  005037  002402          CLR     ERRWRD          ;CLEAR ERROR
025274  104410                  TRAP    C$ESCAPE
025276  000052                  .WORD   L10072-.
025300  042777  000200  155132  BIC     #RQI,@BSEL0     ;CLEAR REQUEST
025306  112277  155132          MOVB    (R2)+,@BSEL2    ;DO FIRST BAD CODE
025312  012737  000102  002410  MOV     #102,PERR       ;
025320  004537  003016          JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR

025324  005037  002402          CLR     ERRWRD
025330  104410                  TRAP    C$ESCAPE
025332  000016                  .WORD   L10072-.
                                ;;;;;;;;
                                ; ESCAPE TEST IF ERROR
                                ;;;;;;;;
025334  042777  000200  155102  BIC     #RDO,@BSEL2     ;CLEAR READY OUT
025342  022702  002420          CMP     #TYEND,R2       ;IS IT END
025346  001335                  BNE     10$             ;IF NOT GO BACK


025350                  L10072:
025350  104401                  TRAP    C$ETST
```

```
                        ;*******************************  TEST 25  *******************************

                        .SBTTL  ;*******************************  TEST 26  *******************************
                        .SBTTL  * CHECK FOR PROCEDURE ERROR 110
025352                  ZZ:
                        ;*
                        ;*
                        ;*      THIS TEST CHECKS FOR THE PROCEDURE ERROR
                        ;*      NON-GLOBAL COMMAND TO TRIB ADDRESS OF 0
                        ;*
                        ;*-
                        .SBTTL  ;*******************************  TEST 26  *******************************
025352                  T26::

025352  004737  004522          JSR     PC,MINITS       ;MASTER CLEAR -MODE-DEF

025356  005037  002402          CLR     ERRWRD
025362  104410                  TRAP    C$ESCAPE
025364  000050                  .WORD   L10073-.
                                ;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;

025366  005037  002360          CLR     TRIBN           ;MAKE TRIB ADDRESS 0
025372  012703  000001          MOV     #01,R3
025376  004537  003162          JSR     R5,CONTIN       ;TRY TO DO ISTRT

025402  005037  002402          CLR     ERRWRD
025406  104410                  TRAP    C$ESCAPE
025410  000024                  .WORD   L10073-.
                                ;;;;;;;;
                                ; JUMP TO END OF TEST IF ERROR
                                ;;;;;;;;

025412  012737  000110  002410  MOV     #110,PERR       ;CHECK FOR PE OF 110
025420  004537  003016          JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR

025424  005037  002402          CLR     ERRWRD
025430  104410                  TRAP    C$ESCAPE
025432  000002                  .WORD   L10073-.
                                ;;;;;;;
                                ; ESCAPE TEST IF ERROR
                                ;;;;;;;

025434                  L10073:
025434  104401                  TRAP    C$ETST
```

```
                                ;******************************  TEST 26  ******************************

                                .SBTTL  ;******************************  TEST 27  ******************************
                                .SBTTL  * CHECKS FOR PROCEDURE ERROR 120
025436                                  ZZ
                                        ;*
                                        ;*
                                        ;*      THIS TEST ISSUES A CONTROL IN WITH A REQUEST
                                        ;*      KEY OF 7 AND LOOKS FOR A PROCEDURE ERROR OF
                                        ;*      ILLEGAL REQUEST KEY ON CONTROL IN (120)
                                        ;*
                                        ;*-
                                .SBTTL  ;******************************  TEST 27  ******************************
025436                          T27::

025436  004737  004522                  JSR     PC,MINITS       ;MASTER CLEAR - MODE DEF

025442  005037  002402                  CLR     ERRWRD
025446  104410                          TRAP    C$ESCAPE
025450  000212                          .WORD   L10074-.
                                        ;;;;;;;;
                                        ; JUMP TO END OF TEST IF ERROR
                                        ;;;;;;;;

025452  012737  000003  002360          MOV     #3,TRIBN
025460  012703  000001                  MOV     #01,R3
025464  004537  003162                  JSR     R5,CONTIN       ;ESTABLISH TRIB
                                        ;;;;;;;;;
                                        ;TIME OUT OR READY ERRORS REPORT HERE
                                        ;;;;;;;;

025470  005037  002402                  CLR     ERRWRD
025474  104410                          TRAP    C$ESCAPE
025476  000164                          .WORD   L10074-.
                                        ;;;;;;;;
                                        ; JUMP TO END OF TEST IF ERROR
                                        ;;;;;;;;

025500  012703  000007                  MOV     #07,R3
025504  004537  003162                  JSR     R5,CONTIN       ;DO CONTROL IN WITH KEY OF 07

025510  005037  002402                  CLR     ERRWRD
025514  104410                          TRAP    C$ESCAPE
025516  000144                          .WORD   L10074-.
                                        ;;;;;;;;
                                        ; JUMP TO END OF TEST IF ERROR
                                        ;;;;;;;;

025520  012737  000120  002410          MOV     #120,PERR       ;LOOK FOR ERROR
025526  004537  003016                  JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR

025532  005037  002402                  CLR     ERRWRD
025536  104410                          TRAP    C$ESCAPE
025540  000122                          .WORD   L10074-.
                                        ;;;;;;;;
                                        ; ESCAPE TEST IF ERROR
```

```
5960
5961  025542  042777  000200  154674          ;;;;;;;
                                              BIC     #RDO,@BSEL2     ;CLEAR RDO
5962  025550  012703  000017                  MOV     #17,R3          ;MOV 17 TO KEY WORD
5963  025554  004537  003162                  JSR     R5,CONTIN       ;DO CONTROL IN WITH KEY OF 17
5964
5965  025560  005037  002402                  CLR     ERRWRD
5966  025564  104410                          TRAP    C$ESCAPE
5967  025566  000074                          .WORD   L10074-.
                                              ;;;;;;;;
                                              ; JUMP TO END OF TEST IF ERROR
                                              ;;;;;;;;
5968
5969
5970
5971
5972  025570  012737  000120  002410          MOV     #120,PERR       ;LOOK FOR ERROR
5973  025576  004537  003016                  JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR
5974
5975  025602  005037  002402                  CLR     ERRWRD
5976  025606  104410                          TRAP    C$ESCAPE
5977  025610  000052                          .WORD   L10074-.
                                              ;;;;;;;
                                              ; ESCAPE TEST IF ERROR
                                              ;;;;;;;
5978
5979
5980
5981  025612  042777  000200  154624          BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
5982  025620  005003                          CLR     R3
5983  025622  004537  003162                  JSR     R5,CONTIN       ;DO A NO REQUEST
5984
5985  025626  005037  002402                  CLR     ERRWRD
5986  025632  104410                          TRAP    C$ESCAPE
5987  025634  000026                          .WORD   L10074-.
                                              ;;;;;;;;
                                              ; JUMP TO END OF TEST IF ERROR
                                              ;;;;;;;;
5988
5989
5990
5991
5992  025636  004737  004244                  JSR     PC,WAIT50       ;THEN DELAY
5993  025642  032777  000200  154574          BIT     #RDO,@BSEL2
5994  025650  001404                          BEQ     10$             ;IF NOT SET THEN END
                                                                      ;ELSE ERROR
5995
5996  025652  104455                          TRAP    C$ERDF
5997  025654  000053                          .WORD   43
5998  025656  012516                          .WORD   MEF30
5999  025660  010422                          .WORD   ERR32
6000  025662                          10$:
6001  025662                          L10074:
6002  025662  104401                          TRAP    C$ETST
6003
```

```
                                ;********************************  TEST 28  ********************************
 6004                           .SBTTL  ;********************************  TEST 28  ********************************
 6005                           .SBTTL  * CHECK FOR PROCEDURE ERROR 134
 6006  025664                           ZZ
 6007                                   ;*
 6008                                   ;*
 6009                                   ;*      THIS TEST CHECKS FOR PROCEDURE ERROR OF USING
 6010                                   ;*      RESERVED BITS IN BSEL7 ON CONTROL IN
 6011                                   ;*
 6012                                   ;*-
 6013                           .SBTTL  ;********************************  TEST 28  ********************************
 6014  025664                           T28::
 6015
 6016  025664  004737  004522           JSR     PC,MINITS       ;MASTER CLEAR MODE DEF
 6017
 6018  025670  005037  002402           CLR     ERRWRD
 6019  025674  104410                   TRAP    C$ESCAPE
 6020  025676  000212                   .WORD   L10075-.
 6021                                   ;;;;;;;;
 6022                                   ; JUMP TO END OF TEST IF ERROR
 6023                                   ;;;;;;;;
 6024
 6025  025700  012737  000005  002360   MOV     #5,TRIBN
 6026  025706  012703  000001           MOV     #1,R3
 6027  025712  004537  003162           JSR     R5,CONTIN       ;ESTABLISH TRIB
 6028                                   ;;;;;;;;;;
 6029                                   ;TIME OUT OR READY ERRORS REPORT THIS PC
 6030                                   ;;;;;;;;
 6031
 6032  025716  005037  002402           CLR     ERRWRD
 6033  025722  104410                   TRAP    C$ESCAPE
 6034  025724  000164                   .WORD   L10075-.
 6035                                   ;;;;;;;;
 6036                                   ; JUMP TO END OF TEST IF ERROR
 6037                                   ;;;;;;;;
 6038
 6039  025726  012703  100000           MOV     #100000,R3      ;SET BIT 7
 6040  025732  004537  003162           JSR     R5,CONTIN
 6041
 6042  025736  005037  002402           CLR     ERRWRD
 6043  025742  104410                   TRAP    C$ESCAPE
 6044  025744  000144                   .WORD   L10075-.
 6045                                   ;;;;;;;;
 6046                                   ; JUMP TO END OF TEST IF ERROR
 6047                                   ;;;;;;;;
 6048
 6049  025746  012737  000134  002410   MOV     #134,PERR
 6050  025754  004537  003016           JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR
 6051
 6052  025760  005037  002402           CLR     ERRWRD
 6053  025764  104410                   TRAP    C$ESCAPE
 6054  025766  000122                   .WORD   L10075-.
 6055                                   ;;;;;;;
 6056                                   ; ESCAPE TEST IF ERROR
 6057                                   ;;;;;;;
 6058  025770  042777  000200  154446   BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
 6059  025776  012703  046000           MOV     #46000,R3       ;SET 6 3 AND2
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 28  ********************************

  6060  026002  004537  003162                JSR     R5,CONTIN       ;DO CONTROL IN
  6061
  6062  026006  005037  002402                CLR     ERRWRD
  6063  026012  104410                         TRAP    C$ESCAPE
  6064  026014  000074                         .WORD   L10075-.
  6065                                         ;;;;;;;;
  6066                                         ; JUMP TO END OF TEST IF ERROR
  6067                                         ;;;;;;;;
  6068
  6069  026016  012737  000134  002410        MOV     #134,PERR
  6070  026024  004537  003016                JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR
  6071
  6072  026030  005037  002402                CLR     ERRWRD
  6073  026034  104410                         TRAP    C$ESCAPE
  6074  026036  000052                         .WORD   L10075-.
  6075                                         ;;;;;;;;
  6076                                         ; ESCAPE TEST IF ERROR
  6077                                         ;;;;;;;;
  6078  026040  005003                         CLR     R3
  6079  026042  042777  000200  154374        BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
  6080  026050  004537  003162                JSR     R5,CONTIN       ;DO CONTROL IN
  6081
  6082  026054  005037  002402                CLR     ERRWRD
  6083  026060  104410                         TRAP    C$ESCAPE
  6084  026062  000026                         .WORD   L10075-.
  6085                                         ;;;;;;;;
  6086                                         ; JUMP TO END OF TEST IF ERROR
  6087                                         ;;;;;;;;
  6088
  6089  026064  004737  004244                JSR     PC,WAIT50       ;WAIT A WHILE
  6090  026070  032777  000200  154346        BIT     #RDO,@BSEL2     ;IS RDO SET NOW
  6091  026076  001404                         BEQ     10$             ;IF NOT THEN GO ON
  6092                                                                 ;ELSE ERROR
  6093  026100  104455                         TRAP    C$ERDF
  6094  026102  000054                         .WORD   44
  6095  026104  012516                         .WORD   MEF30
  6096  026106  010422                         .WORD   ERR32
  6097  026110                          10$:
  6098  026110                          L10075:
  6099  026110  104401                         TRAP    C$ETST
  6100
```

```
CZDMTD.P11    09-MAR-82 09:11          ;****************************** TEST 29 ******************************

 6101                                  .SBTTL  ;****************************** TEST 29 ******************************
 6102                                  .SBTTL  *LATCH - UNLATCH POLL CHECK
 6103  026112                                  ZZ
 6104                                          ;*
 6105                                          ;*
 6106                                          ;* THIS TEST CHECKS THE LATCH - UNLATCH POLL
 6107                                          ;* COMMANDS. FIRST LATCH TRIB IN DEAD STATE
 6108                                          ;* MAKE SURE ITS DEAD. THEN UNLATCH AND MAKE
 6109                                          ;* SURE THAT IT GOES ACTIVE.
 6110                                          ;*
 6111                                          ;*
 6112                                  .SBTTL  ;****************************** TEST 29 ******************************
 6113  026112                          T29::
 6114
 6115  026112  004737  004522                  JSR     PC,MINITS       ;MASTER CLEAR MODE DEF
 6116
 6117  026116  005037  002402                  CLR     ERRWRD
 6118  026122  104410                          TRAP    C$ESCAPE
 6119  026124  000312                          .WORD   L10076-.
 6120                                          ;;;;;;;;
 6121                                          ; JUMP TO END OF TEST IF ERROR
 6122                                          ;;;;;;;;
 6123
 6124  026126  012737  000027  002360          MOV     #27,TRIBN
 6125  026134  012703  000001                  MOV     #01,R3          ;ESTABLISH TRIB
 6126  026140  004537  003162                  JSR     R5,CONTIN
 6127                                          ;;;;;;;;;;
 6128                                          ;TIME OUT OR READY ERROR REPORT THIS PC
 6129                                          ;;;;;;;;;
 6130
 6131  026144  005037  002402                  CLR     ERRWRD
 6132  026150  104410                          TRAP    C$ESCAPE
 6133  026152  000264                          .WORD   L10076-.
 6134                                          ;;;;;;;;
 6135                                          ; JUMP TO END OF TEST IF ERROR
 6136                                          ;;;;;;;;
 6137
 6138  026154  012704  000003                  MOV     #3,R4
 6139  026160  012703  020000                  MOV     #20000,R3       ;LATCH POLL DEAD
 6140  026164  004537  003162                  JSR     R5,CONTIN
 6141                                          ;;;;;;;;;;
 6142                                          ; TIME OUT OR READY ERRORS REPORT THIS PC
 6143                                          ;;;;;;;;;
 6144
 6145  026170  005037  002402                  CLR     ERRWRD
 6146  026174  104410                          TRAP    C$ESCAPE
 6147  026176  000240                          .WORD   L10076-.
 6148                                          ;;;;;;;;
 6149                                          ; JUMP TO END OF TEST IF ERROR
 6150                                          ;;;;;;;;
 6151
 6152  026200  012703  000042                  MOV     #42,R3
 6153  026204  004537  003162                  JSR     R5,CONTIN       ;READ SLOT 2 TSS
 6154                                          ;;;;;;;;;;
 6155                                          ; TIME OUT OR READY ERRORS REPORT THIS PC
 6156                                          ;;;;;;;;;;
```

```
                        ;******************************** TEST 29 ********************************
 6157
 6158  026210  005037  002402              CLR     ERRWRD
 6159  026214  104410                      TRAP    C$ESCAPE
 6160  026216  000220                      .WORD   L10076-.
 6161                                      ;;;;;;;;
 6162                                      ; JUMP TO END OF TEST IF ERROR
 6163                                      ;;;;;;;;
 6164
 6165  026220  012737  000002  002336      MOV     #02,$GDDAT
 6166  026226  004537  003242              JSR     R5,GETOUT
 6167                                      ;;;;;;;;;;
 6168                                      ; CHECK FOR INFO OUT AND CORRECT TRIBN
 6169                                      ; IF ERROR REPORT THIS PC
 6170                                      ;;;;;;;;;;
 6171
 6172  026232  005037  002402              CLR     ERRWRD
 6173  026236  104410                      TRAP    C$ESCAPE
 6174  026240  000176                      .WORD   L10076-.
 6175                                      ;;;;;;;;
 6176                                      ; JUMP TO END OF TEST IF ERROR
 6177                                      ;;;;;;;;
 6178
 6179  026242  012737  000042  002336      MOV     #42,$GDDAT
 6180  026250  004537  003372              JSR     R5,GETRKY
 6181                                      ;;;;;;;;;
 6182                                      ; CHECK FOR CORRECT RETURN KEY
 6183                                      ;;;;;;;;;
 6184
 6185  026254  005037  002402              CLR     ERRWRD
 6186  026260  104410                      TRAP    C$ESCAPE
 6187  026262  000154                      .WORD   L10076-.
 6188                                      ;;;;;;;;
 6189                                      ; JUMP TO END OF TEST IF ERROR
 6190                                      ;;;;;;;;
 6191
 6192  026264  012737  100220  002336      MOV     #100220,$GDDAT  ;
 6193  026272  004537  003446              JSR     R5,GETDAT
 6194                                      ;;;;;;;;;
 6195                                      ; CHECK FOR DEAD STATE
 6196                                      ;;;;;;;;;
 6197
 6198  026276  005037  002402              CLR     ERRWRD
 6199  026302  104410                      TRAP    C$ESCAPE
 6200  026304  000132                      .WORD   L10076-.
 6201                                      ;;;;;;;;
 6202                                      ; JUMP TO END OF TEST IF ERROR
 6203                                      ;;;;;;;;
 6204
 6205  026306  042777  000200  154130      BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
 6206  026314  012703  010000              MOV     #10000,R3
 6207  026320  004537  003162              JSR     R5,CONTIN       ;UNLATCH POLL
 6208                                      ;;;;;;;
 6209                                      ;TIME OUT OR READY ERRORS REPORT THIS PC
 6210                                      ;;;;;;;
 6211
 6212  026324  005037  002402              CLR     ERRWRD
```

```
6213  026330  104410                  TRAP    C$ESCAPE
6214  026332  000104                  .WORD   L10076-.
6215                                  ;;;;;;;;
6216                                  ; JUMP TO END OF TEST IF ERROR
6217                                  ;;;;;;;;
6218
6219  026334  012703  000042          MOV     #42,R3
6220  026340  004537  003162          JSR     R5,CONTIN       ;READ TSS SLOT 2
6221                                  ;;;;;;;;;;
6222                                  ;TIME OUT OR READY ERRORS REPORT THIS PC
6223                                  ;;;;;;;;;
6224
6225  026344  005037  002402          CLR     ERRWRD
6226  026350  104410                  TRAP    C$ESCAPE
6227  026352  000064                  .WORD   L10076-.
6228                                  ;;;;;;;;
6229                                  ; JUMP TO END OF TEST IF ERROR
6230                                  ;;;;;;;;
6231
6232  026354  012737  000002  002336  MOV     #02,$GDDAT      ;
6233  026362  004537  003242          JSR     R5,GETOUT
6234                                  ;;;;;;;;;
6235                                  ;CHECK FOR INFORMATION OUT AND CORRECT TRIBN
6236                                  ;;;;;;;;
6237
6238  026366  005037  002402          CLR     ERRWRD
6239  026372  104410                  TRAP    C$ESCAPE
6240  026374  000042                  .WORD   L10076-.
6241                                  ;;;;;;;;
6242                                  ; JUMP TO END OF TEST IF ERROR
6243                                  ;;;;;;;;
6244
6245  026376  012737  000042  002336  MOV     #42,$GDDAT
6246  026404  004537  003372          JSR     R5,GETRKY
6247                                  ;;;;;;;;
6248                                  ;CHECK FOR CORRECT RETURN KEY
6249                                  ;;;;;;;;
6250
6251  026410  005037  002402          CLR     ERRWRD
6252  026414  104410                  TRAP    C$ESCAPE
6253  026416  000020                  .WORD   L10076-.
6254                                  ;;;;;;;;
6255                                  ; JUMP TO END OF TEST IF ERROR
6256                                  ;;;;;;;;
6257
6258  026420  012737  000600  002336  MOV     #600,$GDDAT
6259  026426  004537  003446          JSR     R5,GETDAT
6260                                  ;;;;;;;;
6261                                  ; CHECK FOR ACTIVE STATE
6262                                  ;;;;;;;;
6263  026432  005037  002402                  CLR     ERRWRD
6264  026436                  L10076:
6265  026436  104401                  TRAP    C$ETST
6266
```

```
                                ;********************************  TEST 29  ********************************

                                .SBTTL  ;********************************  TEST 30  ********************************
                                .SBTTL  SHORT MESSAGE SENDING TEST, WITH INTERNAL LOOPBACK
026440                                  ZZ
                                        ;*
                                        ;* THIS TEST SENDS A 4 BYTE MESSAGE FROM AN EVEN TRANSMIT
                                        ;* BUFFER TO AN EVEN REC BUFFER IN DDCMP FORMAT CONFIGURED
                                        ;* AS A MULTIPOINT CONTROL STATION FULL DUPLEX. THE TEST
                                        ;* CHECKS THAT REC BUFFERS ARE RETURNED AND THAT THE DATA
                                        ;* IS CORRECT. IT ALSO CHECKS THAT THE NEXT OUTPUT COMMAND
                                        ;* IS A TX BUFFER COMPLETE.
                                .SBTTL  ;********************************  TEST 30  ********************************

026440                          T30::
026440  012737  001750  002424          MOV     #1000.,RXCC     ;SET UP RX CC
026446  012737  033726  002422          MOV     #RECBU1,RXADD   ;SET UP RX ADD
026454  012737  033446  002420          MOV     #MR1,TXADD      ;SET UP TX ADD
026462  012737  000004  002426          MOV     #4,TXCC         ;SET UP TX COUNT
026470  005037  002432                  CLR     GENWRD          ;CLEAR GEN WORD
026474  012737  000003  002360          MOV     #3,TRIBN        ;SET TRIB ADDRESS
026502  004737  004522                  JSR     PC,MINITS       ;INITIALIZE

026506  005037  002402                  CLR     ERRWRD
026512  104410                          TRAP    C$ESCAPE
026514  000016                          .WORD   L10077-.
                                        ;;;;;;;;
                                        ; JUMP TO END OF TEST IF ERROR
                                        ;;;;;;;;

026516  004537  006346                  JSR     R5,TXRX3        ;TRANSMIT AND REC.
026522  005037  002402                  CLR     ERRWRD
026526  104410                          TRAP    C$ESCAPE
026530  000002                          .WORD   L10077-.
026532                          L10077:
026532  104401                          TRAP    C$ETST
```

```
                                ;********************************  TEST 31  ********************************
                                .SBTTL  ;********************************  TEST 31  ********************************
                                .SBTTL  * PROCEDURE ERROR 122 CHECK
026534                                  ZZ
                                        ;*
                                        ;*
                                        ;* THIS TEST CHECKS FOR PROCEDURE ERROR 122
                                        ;* ESTABLISH BUFFER FOR UNESTABLISHED TRIB.
                                        ;*
                                .SBTTL  ;********************************  TEST 31  ********************************
026534                          T31::

026534  004737  004522                  JSR     PC,MINITS       ;MASTER CLEAR MODE DEF

026540  005037  002402                  CLR     ERRWRD
026544  104410                          TRAP    C$ESCAPE
026546  000104                          .WORD   L10100-.
                                        ;;;;;;;;
                                        ; JUMP TO END OF TEST IF ERROR
                                        ;;;;;;;;

026550  052777  000200  153662          BIS     #RQI,@BSEL0     ;SET REQUEST FOR INPUT
026556  004537  002732                  JSR     R5,WRDI         ;WAIT FOR RDI TO SET

026562  005037  002402                  CLR     ERRWRD          ;CLEAR ERROR
026566  104410                          TRAP    C$ESCAPE
026570  000062                          .WORD   L10100-.
026572  042777  000200  153640          BIC     #RQI,@BSEL0     ;CLEAR REQUEST
026600  112777  000003  153640          MOVB    #03,@BSEL3
026606  012777  000010  153640          MOV     #10,@BSEL6      ;SET CC
026614  012777  033726  153626          MOV     #RECBU1,@BSEL4  ;SET BA
026622  112777  000000  153614          MOVB    #0,  @BSEL2     ;ESTABLISH BUFFER
026630  012737  000122  002410          MOV     #122,PERR               ;WAIT
026636  004537  003016                  JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR

026642  005037  002402                  CLR     ERRWRD
026646  104410                          TRAP    C$ESCAPE
026650  000002                          .WORD   L10100-.
                                        ;;;;;;;
                                        ; ESCAPE TEST IF ERROR
                                        ;;;;;;;

026652                          L10100:
026652  104401                          TRAP    C$ETST
```

```
                        ;********************************  TEST 32  ********************************
 6348                   .SBTTL  ;********************************  TEST 32  ********************************
 6349                   .SBTTL  *PROCEDURE ERROR 124 CHECK
 6350  026654                  ZZ
 6351                          ;*
 6352                          ;*
 6353                          ;* THIS TEST CHECKS FOR PROCEDURE ERROR 124
 6354                          ;* ESTABLISHING BUFFER FOR HALTED TRIB
 6355                          ;*
 6356                   .SBTTL  ;********************************  TEST 32  ********************************
 6357  026654           T32::
 6358
 6359  026654  004737  004522          JSR     PC,MINITS       ;MASTER CLEAR MODE DEF
 6360
 6361  026660  005037  002402          CLR     ERRWRD
 6362  026664  104410                  TRAP    C$ESCAPE
 6363  026666  000132                  .WORD   L10101-.
 6364                                  ;;;;;;;;
 6365                                  ; JUMP TO END OF TEST IF ERROR
 6366                                  ;;;;;;;;
 6367
 6368  026670  012737  000047  002360  MOV     #47,TRIBN
 6369  026676  012703  000001          MOV     #01,R3
 6370  026702  004537  003162          JSR     R5,CONTIN       ;ESTABLISH TRIB
 6371                                  ;;;;;;;;
 6372                                  ; TIME OUT AND READY ERRORS REPORT THIS PC
 6373                                  ;;;;;;;;
 6374
 6375  026706  005037  002402          CLR     ERRWRD
 6376  026712  104410                  TRAP    C$ESCAPE
 6377  026714  000104                  .WORD   L10101-.
 6378                                  ;;;;;;;;
 6379                                  ; JUMP TO END OF TEST IF ERROR
 6380                                  ;;;;;;;;
 6381
 6382  026716  052777  000200  153514  BIS     #RQI,@BSEL0     ;SET REQUEST
 6383  026724  004537  002732          JSR     R5,WRDI         ;WAIT FOR RDI TO SET
 6384
 6385  026730  005037  002402          CLR     ERRWRD          ;CLEAR ERROR
 6386  026734  104410                  TRAP    C$ESCAPE
 6387  026736  000062                  .WORD   L10101-.
 6388  026740  042777  000200  153472  BIC     #RQI,@BSEL0     ;CLEAR REQUEST
 6389  026746  012777  000010  153500  MOV     #10,@BSEL6      ;SET CC
 6390  026754  012777  033726  153466  MOV     #RECBU1,@BSEL4  ;SET BA
 6391  026762  113777  002360  153456  MOVB    TRIBN,@BSEL3    ;SET TRIB NO.
 6392  026770  112777  000000  153446  MOVB    #0,@BSEL2       ;ESTABLISH BUFFER
 6393  026776  012737  000124  002410  MOV     #124,PERR       ;WAIT FOR ERROR
 6394  027004  004537  003016          JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR
 6395
 6396  027010  005037  002402          CLR     ERRWRD
 6397  027014  104410                  TRAP    C$ESCAPE
 6398  027016  000002                  .WORD   L10101-.
 6399                                  ;;;;;;;
 6400                                  ; ESCAPE TEST IF ERROR
 6401                                  ;;;;;;;
 6402  027020           L10101:
 6403  027020  104401                  TRAP    C$ETST
```

```
6404
6405
6406
6407
```

```
CZDMTD.P11    09-MAR-82 09:11          ;*********************************  TEST 33  *********************************

  6408                                 .SBTTL  ;*********************************  TEST 33  *********************************
  6409                                 .SBTTL  *PROCEDURE ERROR #126 CHECK
  6410  027022                                 ZZ
  6411                                         ;*
  6412                                         ;*
  6413                                         ;* THIS TEST CHECKS FOR A PROCEDURE ERROR OF #126
  6414                                         ;* ASSIGNING A BUFFER WITH A ZERO BYTE COUNT
  6415                                         ;*
  6416                                         ;*-
  6417                                 .SBTTL  ;*********************************  TEST 33  *********************************
  6418  027022                         T33::
  6419
  6420  027022  004737  004522                 JSR     PC,MINITS       ;MASTER CLEAR MODE DEF
  6421
  6422  027026  005037  002402                 CLR     ERRWRD
  6423  027032  104410                         TRAP    C$ESCAPE
  6424  027034  000152                         .WORD   L10102-.
  6425                                         ;;;;;;;;
  6426                                         ; JUMP TO END OF TEST IF ERROR
  6427                                         ;;;;;;;;
  6428
  6429  027036  012737  000074  002360         MOV     #74,TRIBN
  6430  027044  012703  000001                 MOV     #01,R3
  6431  027050  004537  003162                 JSR     R5,CONTIN       ; ESTABLISH TRIB
  6432
  6433  027054  005037  002402                 CLR     ERRWRD
  6434  027060  104410                         TRAP    C$ESCAPE
  6435  027062  000124                         .WORD   L10102-.
  6436                                         ;;;;;;;;
  6437                                         ; JUMP TO END OF TEST IF ERROR
  6438                                         ;;;;;;;;
  6439
  6440  027064  012703  000004                 MOV     #04,R3
  6441  027070  004537  003162                 JSR     R5,CONTIN       ;MAINT STATE
  6442
  6443  027074  005037  002402                 CLR     ERRWRD
  6444  027100  104410                         TRAP    C$ESCAPE
  6445  027102  000104                         .WORD   L10102-.
  6446                                         ;;;;;;;;
  6447                                         ; JUMP TO END OF TEST IF ERROR
  6448                                         ;;;;;;;;
  6449
  6450  027104  052777  000200  153326         BIS     #RQI,@BSEL0     ;SET REQUEST
  6451  027112  004537  002732                 JSR     R5,WRDI         ;WAIT FOR RDI TO SET
  6452
  6453  027116  005037  002402                 CLR     ERRWRD          ;CLEAR ERROR
  6454  027122  104410                         TRAP    C$ESCAPE
  6455  027124  000062                         .WORD   L10102-.
  6456  027126  042777  000200  153304         BIC     #RQI,@BSEL0     ;CLEAR REQUEST
  6457  027134  012777  000000  153312         MOV     #0,@BSEL6       ;0 BYTES
  6458  027142  012777  033726  153300         MOV     #RECBU1,@BSEL4  ;BA
  6459  027150  113777  002360  153270         MOVB    TRIBN,@BSEL3    ;SET TRIBN
  6460  027156  112777  000000  153260         MOVB    #0,@BSEL2       ;SET BUFFER
  6461  027164  012737  000126  002410         MOV     #126,PERR       ;WAIT FOR ERROR
  6462  027172  004537  003016                 JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR
  6463
```

```
                        ;********************************  TEST 33  ************************************
 6464  027176  005037  002402            CLR     ERRWRD
 6465  027202  104410                    TRAP    C$ESCAPE
 6466  027204  000002                    .WORD   L10102-.
 6467                                    ;;;;;;;
 6468                                    ; ESCAPE TEST IF ERROR
 6469                                    ;;;;;;;
 6470
 6471  027206                    L10102:
 6472  027206  104401                    TRAP    C$ETST
 6473
```

```
                                        ;****************************** TEST 34 ******************************
                                .SBTTL  ;****************************** TEST 34 ******************************
                                .SBTTL  *CHECK FOR PROCEDURE ERROR 130
027210                                  ZZ
                                        ;*
                                        ;*
                                        ;* THIS TEST CHECKS FOR A PROCEDURE ERROR OF 130
                                        ;* ASSIGNING TRANSMIT BUFFER FOR TRIB 0
                                        ;*
                                        ;*-
                                .SBTTL  ;****************************** TEST 34 ******************************
027210                          T34::

027210  004737  004522                  JSR     PC,MINITS       ;MASTER CLEAR MODE DEF

027214  005037  002402                  CLR     ERRWRD
027220  104410                          TRAP    C$ESCAPE
027222  000102                          .WORD   L10103-.
                                        ;;;;;;;;
                                        ; JUMP TO END OF TEST IF ERROR
                                        ;;;;;;;;

027224  052777  000200  153206          BIS     #RQI,@BSEL0     ;SET REQUEST
                                                                ;WAIT FOR READY
027232  004537  002732                  JSR     R5,WRDI         ;WAIT FOR RDI TO SET

027236  005037  002402                  CLR     ERRWRD          ;CLEAR ERROR
027242  104410                          TRAP    C$ESCAPE
027244  000060                          .WORD   L10103-.
027246  042777  000200  153164          BIC     #RQI,@BSEL0     ;CLEAR REQUEST.
027254  105077  153166                  CLRB    @BSEL3          ;MAKE TRIB NO. 0
027260  012777  000010  153166          MOV     #10,@BSEL6      ;MAKE CC 10
027266  012777  033446  153154          MOV     #MR1,@BSEL4     ;MAKE ADD MR1
027274  012777  000004  153142          MOV     #4,@BSEL2       ;CLEAR RDI AND ESTAB
                                                                ;TRANSMIT BUFFER
027302  012737  000130  002410          MOV     #130,PERR       ;WAIT FOR PROCEDURE ERROR
027310  004537  003016                  JSR     R5,WFPE         ;WAIT FOR PROCEDURE ERROR

027314  005037  002402                  CLR     ERRWRD
027320  104410                          TRAP    C$ESCAPE
027322  000002                          .WORD   L10103-.
                                        ;;;;;;;;
                                        ; ESCAPE TEST IF ERROR
                                        ;;;;;;;;
027324                          L10103:
027324  104401                          TRAP    C$ETST
```

```
                        ;****************************** TEST 34 ******************************

                        .SBTTL  ;****************************** TEST 35 ******************************
                        .SBTTL  * TRANSMIT REC 256,PTP,DDCMP
027326                  ZZ
                        ;*
                        ;*
                        ;* THIS TEST WILL TRANSMIT 256 BYTE MESSAGE
                        ;* DDCMP PROTOCOL
                        ;* THIS WILL BE DONE EXTERNAL LOOPBACK IF
                        ;* IT EXISTS ELSE INTERNAL LOOPBACK WILL
                        ;* BE USED
                        ;*
                        ;*-
                        .SBTTL  ;****************************** TEST 35 ******************************
027326                  T35::
027326  012737  000035  002370        MOV     #35,ROMN1       ;SET UP TEST NUMBER

027334  012737  001750  002424        MOV     #1000.,RXCC     ;SET REC BUFFER FOR 1000BYTES
027342  012737  033726  002422        MOV     #RECBU1,RXADD   ; SET UP BUFF ADD
027350  012737  000400  002426        MOV     #256.,TXCC      ;SET UP RX CHAR COUNT
027356  012737  033446  002420        MOV     #MR1,TXADD      ;AND ADDRESS
027364  005037  002432                CLR     GENWRD          ;CLEAR GEN WORD
027370  012737  000001  002360        MOV     #01,TRIBN       ;SET THE TRIB TO 01
027376  022737  000004  002476        CMP     #4,TSTCON       ;CHECK FOR LOOPBACK CONNECTOR.
027404  001402                        BEQ     1$              ;
027406  005237  002400                INC     EXLOOP          ;EXT CONNECTOR PRESENT: SET EXT LOOP FLAG
027412  004737  004512        1$:     JSR     PC,MINIT1       ;MASTER CLEAR-MODE DEF
027416  005037  002400                CLR     EXLOOP          ;CLEAR EXTERNAL LOOP FLAG
027422  005037  002402                CLR     ERRWRD
027426  104410                        TRAP    C$ESCAPE
027430  000016                        .WORD   L10104-.
                                        ;;;;;;;;
                                        ; JUMP TO END OF TEST IF ERROR
                                        ;;;;;;;;

027432  004537  005720                JSR     R5,TXRXSR       ;GO TRANSMIT RX AND CHECK

027436  005037  002402                CLR     ERRWRD
027442  104410                        TRAP    C$ESCAPE
027444  000002                        .WORD   L10104-.
                                        ;;;;;;;;
                                        ; JUMP TO END OF TEST IF ERROR
                                        ;;;;;;;;

027446                          L10104:
027446  104401                        TRAP    C$ETST
```

```
CZDMTD.P11    09-MAR-82 09:11          ;******************************  TEST 35  ******************************

  6570
  6571                                 .SBTTL  ;******************************  TEST 36  ******************************
  6572                                 .SBTTL  * DMV Q22 MODE TX AND RX,256 BYTES,DDCMP
  6573  027450                                 ZZ
  6574                                         ;*
  6575                                         ;*                  **** DMV ONLY ****
  6576                                         ;* THIS TEST WILL TRANSMIT A 256 BYTE MESSAGE DDCMP PROTOCOL
  6577                                         ;* USING THE "Q22" CSR MODE OF THE DMV-11
  6578                                         ;* THIS WILL BE DONE EXTERNAL LOOPBACK IF IT EXISTS ( ELSE
  6579                                         ;* INTERNAL LOOPBACK WILL BE USED).
  6580                                         ;*
  6581                                         ;*-
  6582                                 .SBTTL  ;******************************  TEST 36  ******************************
  6583  027450                                 T36::
  6584  027450  032737  000003  002472                BIT     #3,OPTYP        ;IS THIS A DMV ?
  6585  027456  001454                        BEQ     T36END          ;IF NOT: EXIT TEST
  6586
  6587  027460  012737  000036  002370        MOV     #36,ROMN1       ;SET UP TEST NUMBER
  6588  027466  012737  001750  002424        MOV     #1000.,RXCC     ;SET REC BUFFER FOR 1000BYTES
  6589  027474  012737  033726  002422        MOV     #RECBU1,RXADD   ; SET UP BUFF ADD
  6590  027502  012737  000400  002426        MOV     #256.,TXCC      ;SET UP RX CHAR COUNT
  6591  027510  012737  033446  002420        MOV     #MR1,TXADD      ;AND ADDRESS
  6592  027516  005037  002432              CLR     GENWRD          ;CLEAR GEN WORD
  6593  027522  012737  000001  002360        MOV     #01,TRIBN       ;SET THE TRIB TO 01
  6594  027530  022737  000004  002476        CMP     #4,TSTCON       ;CHECK FOR LOOPBACK CONNECTOR.
  6595  027536  001402                        BEQ     1$              ;
  6596  027540  005237  002400              INC     EXLOOP          ;EXT CONNECTOR PRESENT: SET EXT LOOP FLAG
  6597  027544  004737  004512        1$:   JSR     PC,MINIT1       ;MASTER CLEAR-MODE DEF
  6598  027550  005037  002400              CLR     EXLOOP          ;CLEAR NO TTLOOP FLAG
  6599  027554  005037  002402              CLR     ERRWRD
  6600  027560  104410                        TRAP    C$ESCAPE
  6601  027562  000026                        .WORD   L10105-.
  6602                                         ;;;;;;;;
  6603                                         ; JUMP TO END OF TEST IF ERROR
  6604                                         ;;;;;;;;
  6605  027564  005237  002376              INC     MODQ22          ;SET Q22 MODE FLAG (FOR TXRXSR)
  6606  027570  004537  005720              JSR     R5,TXRXSR       ;GO TRANSMIT RX AND CHECK
  6607  027574  005037  002402              CLR     ERRWRD
  6608  027600  005037  002376              CLR     MODQ22
  6609  027604  104410                        TRAP    C$ESCAPE
  6610  027606  000002                        .WORD   L10105-.
  6611                                         ;;;;;;;;
  6612                                         ; JUMP TO END OF TEST IF ERROR
  6613                                         ;;;;;;;;
  6614  027610                         T36END:
  6615  027610                         L10105:
  6616  027610  104401                        TRAP    C$ETST
  6617
```

```
CZDMTD.P11    09-MAR-82 09:11          ;****************************** TEST 37 ******************************

 6618                                  .SBTTL  ;****************************** TEST 37 ******************************
 6619                                  .SBTTL  * TX AND RX,255 BYTES,EVEN TX,ODD RX,DDCMP,MULTIPOINT
 6620  027612                                  ZZ
 6621                                          ;*
 6622                                          ;*
 6623                                          ;* THIS TEST WILL TRANSMIT A MESSAGE OF 255
 6624                                          ;* BYTES FROM AN EVEN TX START ADD TO AN ODD
 6625                                          ;* REC START ADD. IN DDCMP MODE MULTI POINT
 6626                                          ;* CONTROL STATION.
 6627                                          ;*
 6628                                          ;*-
 6629                                  .SBTTL  ;****************************** TEST 37 ******************************
 6630  027612                          T37::
 6631  027612  012737  000377  002426         MOV     #255.,TXCC      ;SET UP TRANSMIT CHAR COUNT
 6632  027620  012737  033446  002420         MOV     #MR1,TXADD      ;SET UP TRANSMIT ADD
 6633  027626  012737  000764  002424         MOV     #500.,RXCC      ;SET UP REC CHAR COUNT
 6634  027634  012737  033727  002422         MOV     #RECBU1+1,RXADD ;SET UP REC ADD
 6635  027642  012737  000075  002360         MOV     #75,TRIBN       ;SET UP TRIB NO.
 6636  027650  005037  002432                 CLR     GENWRD          ;CLEAR THE GENWRD
 6637  027654  004737  004522                 JSR     PC,MINITS       ;MASTER CLEAR MODE DEF
 6638                                                                  ;MULTI POINT CONTROL
 6639
 6640  027660  005037  002402                 CLR     ERRWRD
 6641  027664  104410                         TRAP    C$ESCAPE
 6642  027666  000016                         .WORD   L10106-.
 6643                                          ;;;;;;;;
 6644                                          ; JUMP TO END OF TEST IF ERROR
 6645                                          ;;;;;;;;
 6646
 6647  027670  004537  006346         20$:    JSR     R5,TXRX3        ;GO TRANSMIT AND REC
 6648                                                                  ; AND CHECK DATA.
 6649
 6650  027674  005037  002402                 CLR     ERRWRD
 6651  027700  104410                         TRAP    C$ESCAPE
 6652  027702  000002                         .WORD   L10106-.
 6653                                          ;;;;;;;;
 6654                                          ; JUMP TO END OF TEST IF ERROR
 6655                                          ;;;;;;;;
 6656
 6657  027704                          L10106:
 6658  027704  104401                         TRAP    C$ETST
 6659
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 38  ********************************

  6660                                 .SBTTL  ;********************************  TEST 38  ********************************
  6661                                 .SBTTL  *READ/WRITE MODEM TESTS
  6662  027706                                ZZ
  6663                                         :*
  6664                                         :*
  6665                                         :*  THIS TEST WILL SELECT EACH OF THE 4 MODEM
  6666                                         :*  INTERFACES AND WRITE AND READ THEM. THIS IS
  6667                                         :*  ONLY DONE IF CONNECTORS ARE PRESENT
  6668                                         :*      ( DMP ONLY ).
  6669                                         :*-
  6670                                 .SBTTL  ;********************************  TEST 38  ********************************
  6671  027706                         T38::
  6672
  6673  027706  032737  000003  002472         BIT     #3,OPTYP        ;IS THIS A DMV11 ?
  6674  027714  001402                         BEQ     1$              ; NO: GOOD, CONTINUE TEST
  6675  027716  104432                         TRAP    C$EXIT
  6676  027720  000412                         .WORD   L10107-.
  6677
  6678  027722  005002                 1$:     CLR     R2              ;CLEAR R2
  6679  027724  022737  000000  002476         CMP     #0,TSTCON       ;IS THIS WITH TEST CONN LOOPBACK
  6680  027732  001135                         BNE     MODEX           ;IF NOT GO TO END
  6681  027734  016237  030306  002506 MODEB:  MOV     DUPTYP(R2),AXNUM
  6682  027742  004737  004530                 JSR     PC,MINTR        ;MASTER CLEAR MODE DEF
  6683  027746  004737  004244                 JSR     PC,WAIT50       ;DELAY
  6684
  6685  027752  005037  002402                 CLR     ERRWRD
  6686  027756  104410                         TRAP    C$ESCAPE
  6687  027760  000352                         .WORD   L10107-.
  6688                                         ;;;;;;;;
  6689                                         ; JUMP TO END OF TEST IF ERROR
  6690                                         ;;;;;;;;
  6691  027762  022702  000010                 CMP     #10,R2
  6692  027766  101403                         BLOS    MODEA           ;DON'T TURN OFF LINE UINT LOOP
  6693                                                                 ;IF PAST THIS POINT IN TABLES
  6694  027770  142777  000010  152444         BICB    #BIT3,@BSEL1
  6695
  6696  027776  005037  002360         MODEA:  CLR     TRIBN           ;MAKE TRIB NO. = 0
  6697  030002  016204  030232                 MOV     MODTYP(R2),R4   ;SELECT TYPE OF INTERFACE
  6698  030006  012703  000023                 MOV     #23,R3          ;SELECT INTERFACE
  6699  030012  004537  003162                 JSR     R5,CONTIN
  6700                                         ;;;;;;;;;;
  6701                                         ; TIME OUT OR READY ERRORS REPORT THIS PC
  6702                                         ;;;;;;;;;;
  6703
  6704  030016  005037  002402                 CLR     ERRWRD
  6705  030022  104410                         TRAP    C$ESCAPE
  6706  030024  000306                         .WORD   L10107-.
  6707                                         ;;;;;;;;
  6708                                         ; JUMP TO END OF TEST IF ERROR
  6709                                         ;;;;;;;;
  6710  030026  012704  000100                 MOV     #100,R4
  6711  030032  012703  000021         MODED:  MOV     #21,R3          ;WRITE MODEM
  6712  030036  004537  003162                 JSR     R5,CONTIN
  6713                                         ;;;;;;;;;
  6714                                         ; TIME OUT OR READY ERRORS REPORT THIS PC
  6715                                         ;;;;;;;;;
```

```
                        ;****************************** TEST 38 ******************************

                                CLR     ERRWRD
030042  005037  002402        TRAP    C$ESCAPE
030046  104410                .WORD   L10107-.
030050  000262                ;;;;;;;;
                              ; JUMP TO END OF TEST IF ERROR
                              ;;;;;;;;

030052  012703  000020        MOV     #20,R3
030056  004537  003162        JSR     R5,CONTIN       ;READ MODEM
                              ;;;;;;;;;;
                              ; TIME OUT OR READY ERRORS REPORT THIS PC
                              ;;;;;;;;;;

                                CLR     ERRWRD
030062  005037  002402        TRAP    C$ESCAPE
030066  104410                .WORD   L10107-.
030070  000242                ;;;;;;;;
                              ; JUMP TO END OF TEST IF ERROR
                              ;;;;;;;;

030072  012737  000002  002336  MOV     #02,$GDDAT
030100  004537  003242        JSR     R5,GETOUT
                              ;;;;;;;;
                              ; CHECK FOR INFORMATION OUT AND CORRECT TRIBN
                              ;;;;;;;;

                                CLR     ERRWRD
030104  005037  002402        TRAP    C$ESCAPE
030110  104410                .WORD   L10107-.
030112  000220                ;;;;;;;;
                              ; JUMP TO END OF TEST IF ERROR
                              ;;;;;;;;

030114  012737  000010  002336  MOV     #10,$GDDAT
030122  004537  003372        JSR     R5,GETRKY
                              ;;;;;;;;
                              ;CHECK FOR CORRECT RETURN KEY MODEM STATUS
                              ;;;;;;;;

                                CLR     ERRWRD
030126  005037  002402        TRAP    C$ESCAPE
030132  104410                .WORD   L10107-.
030134  000176                ;;;;;;;;
                              ; JUMP TO END OF TEST IF ERROR
                              ;;;;;;;;
030136  005037  002336        CLR     $GDDAT
030142  005037  002340        CLR     $BDDAT
030146  117737  152276  002340  MOVB    @BSEL4,$BDDAT
030154  116237  030262  002336  MOVB    MODOUT(R2),$GDDAT
030162  123737  002340  002336  CMPB    $BDDAT,$GDDAT
030170  001411                BEQ     10$
030172  012737  012014  002430  MOV     #M30F,CODEW
030200  104455                TRAP    C$ERDF
030202  000055                .WORD   45
030204  011506                .WORD   EROIC
```

```
                        ;********************************  TEST 38  ********************************
  6772  030206  010324                .WORD   ERR27
  6773  030210  104410                TRAP    C$ESCAPE
  6774  030212  000120                .WORD   L10107-.
  6775  030214  062702  000002  10$:   ADD     #2,R2
  6776
  6777  030220  022702  000024        CMP     #24,R2
  6778  030224  001243                BNE     MODEB           ;IF NOT DONE GO TO B
  6779  030226                  MODEX:
  6780  030226  104432                TRAP    C$EXIT
  6781  030230  000102                .WORD   L10107-.
  6782
  6783  030232  000323          MODTYP: .WORD   323
  6784  030234  000313                  .WORD   313
  6785  030236  000233                  .WORD   233
  6786  030240  000133                  .WORD   133
  6787  030242  000133                  .WORD   133
  6788  030244  000233                  .WORD   233
  6789  030246  000323                  .WORD   323
  6790  030250  000323                  .WORD   323
  6791  030252  000323                  .WORD   323
  6792  030254  000313                  .WORD   313
  6793  030256  000377          MODIN:  .WORD   377
  6794  030260  000100                  .WORD   100
  6795
  6796  030262  000310          MODOUT: .WORD   310
  6797  030264  000310                  .WORD   310
  6798  030266  000330                  .WORD   330
  6799  030270  000330                  .WORD   330
  6800  030272  000330                  .WORD   330
  6801  030274  000330                  .WORD   330
  6802  030276  000330                  .WORD   330
  6803  030300  000330                  .WORD   330
  6804  030302  000310                  .WORD   310
  6805  030304  000310                  .WORD   310
  6806
  6807
  6808
  6809  030306  000005          DUPTYP: .WORD   5
  6810  030310  000005                  .WORD   5
  6811  030312  000004                  .WORD   4
  6812  030314  000004                  .WORD   4
  6813  030316  000004                  .WORD   4
  6814  030320  000004                  .WORD   4
  6815  030322  000004                  .WORD   4
  6816  030324  000004                  .WORD   4
  6817  030326  000005                  .WORD   5
  6818  030330  000005                  .WORD   5
  6819
  6820  030332                  L10107:
  6821  030332  104401                TRAP    C$ETST
  6822
  6823
  6824
  6825
  6826
```

```
                        ;*********************************  TEST 39  *********************************
                        .SBTTL  ;*********************************  TEST 39  *********************************
                        .SBTTL  TEST OF MEM EXTENSION BIT 16, ADDRESS 200000
030334                          ZZ
                                ;*
                                ;*
                                ;* THIS TEST WE'LL TRY TRANSMITTING A MESSAGE
                                ;* TO VIRTUAL ADDRESS 200000 (BIT 16 SET).
                                ;* IF MEMORY MANAGEMENT AND/OR SUFFICIENT MEMORY IS NOT
                                ;* AVAILABLE FOR MESSAGE STORAGE, WE WILL EXPECT THE DMP-11
                                ;* TO RETURN A NON-EXISTENT MEMORY ERROR FOR THE BUFFER.
                                ;* IF ENOUGH MEMORY EXISTS,WE'LL MAKE SURE THE TRANSFER TAKES
                                ;* PLACE PROPERLY.
                                ;*
                                ;*-
                        .SBTTL  ;*********************************  TEST 39  *********************************
030334                  T39::
030334  012737  004222  000004        MOV     #META,4         ;SET UP TRAP FOR NO MEM
030342  005037  000006                CLR     6
030346  012737  000002  002542        MOV     #2,$TMP0
030354  012746  000002                MOV     #2,-(SP)        ;DUMMY MOVE TO STACK
030360  012705  030570                MOV     #RET16,R5       ;SET UP R5 FOR RETURN IF TRAP
                                                              ; TAKES U TO SR.
030364  005737  177572                TST     @#177572        ;DOES MEM MANAGEMENT EXIST
                                                              ;IF NOT TRAP TO META
                                                              ; ELSE CONTINUE
030370  062706  000002                ADD     #2,SP           ;FIX THE STACK  ;;(SP)          VRG021882
030374  012700  000000                MOV     #0,R0
030400  104441                        TRAP    C$SPRI
030402  012701  172300                MOV     #172300,R1      ;GET ADDRESS OF KERNEL PDR REQD/
030406  012702  000010                MOV     #8.,R2          ; DO 8 TIMES
030412                  10$:
030412  012721  077406                MOV     #77406,(R1)+
030416  005302                        DEC     R2
030420  001374                        BNE     10$
030422  012701  172340                MOV     #172340,R1
030426  005011                        CLR     (R1)
030430  012761  000200  000002        MOV     #200,2(R1)
030436  012761  000400  000004        MOV     #400,4(R1)
030444  012761  000600  000006        MOV     #600,6(R1)
030452  012761  001000  000010        MOV     #1000,10(R1)
030460  012761  177600  000016        MOV     #177600,16(R1)          ;;CHANGED FROM 7600 FOR
                                                                      ;;AN 11/24                VRG030482
030466  012761  002000  000012        MOV     #2000,12(R1)
030474  005037  002432                CLR     GENWRD
030500  012737  000033  002360        MOV     #33,TRIBN       ;MAP MEM CLEAR GEN AND SET UP TRIB
030506  052737  040000  002432        BIS     #BIT14,GENWRD   ;SET MM BIT
030514  012737  177776  002422        MOV     #177776,RXADD   ;SET UP RX ADD
030522  012737  001750  002424        MOV     #1750,RXCC      ;SET UP RX COUNT(1000 DEC)
030530  012737  033446  002420        MOV     #MR1,TXADD      ;SET UP TRANSMIT COUNT
030536  012737  001000  002426        MOV     #512.,TXCC      ;SET UP TRANSMIT COUNT
030544  004737  004522                JSR     PC,MINITS       ; MASTER CLEAR MODE DEF
030550  004537  006346                JSR     R5,TXRX3        ;GO TRANSMIT AND RX
030554  005037  002402                CLR     ERRWRD          ; IF ERROR GO TO END
030560  104410                        TRAP    C$ESCAPE
030562  000012                        .WORD   L10110-.
```

```
                        ;********************************  TEST 39  ********************************

 6883  030564  004537  003744                JSR     R5,MEMEX        ;CHECK MEM EXTENSION
 6884  030570  005037  002402  RET16:        CLR     ERRWRD          ;CLEAR ERROR WORD
 6885  030574                  L10110:
 6886  030574  104401                        TRAP    C$ETST
```

```
CZDMTD.P11    09-MAR-82 09:11          ;****************************** TEST 40 ******************************

  6887                                 .SBTTL  ;****************************** TEST 40 ******************************
  6888                                 .SBTTL  TEST OF MEM EXTENSION BIT 17, ADDRESS 400000
  6889  030576                                 ZZ
  6890                                           ;*
  6891                                           ;*
  6892                                           ;* THIS TEST WE'LL TRY TRANSMITTING A MESSAGE
  6893                                           ;* TO VIRTUAL ADDRESS 400000 (BIT 17 SET).
  6894                                           ;* IF MEMORY MANAGEMENT AND/OR SUFFICIENT MEMORY IS NOT
  6895                                           ;* AVAILABLE FOR MESSAGE STORAGE, WE WILL EXPECT THE DMP-11
  6896                                           ;* TO RETURN A NON-EXISTENT MEMORY ERROR FOR THE BUFFER.
  6897                                           ;* IF ENOUGH MEMORY EXISTS,WE'LL MAKE SURE THE TRANSFER TAKES
  6898                                           ;* PLACE PROPERLY.
  6899                                           ;*
  6900                                           ;*-
  6901                                 .SBTTL  ;****************************** TEST 40 ******************************
  6902  030576                         T40::
  6903
  6904  030576  012737  004222  000004          MOV     #META,4         ;SET UP TRAP FOR NO MEM
  6905  030604  005037  000006                  CLR     6
  6906  030610  012737  000004  002542          MOV     #4,$TMP0
  6907  030616  012746  000004                  MOV     #4,-(SP)        ;DUMMY MOVE ON STACK IF TRAP
  6908  030622  012705  031032                  MOV     #RET17,R5       ;SET UP R5 FOR RETURN IF TRAP IS
  6909                                                                  ; TO SR.EXMEM.
  6910  030626  005737  177572                  TST     @#177572        ;DOES MEM MANAGEMENT EXIST
  6911                                                                  ;IF NOT TRAP TO META
  6912                                                                  ; ELSE CONTINUE
  6913  030632  062706  000002                  ADD     #2,SP           ;FIX THE STACK  ;;(SP)          VRG021882
  6914  030636  012700  000000                  MOV     #0,R0
  6915  030642  104441                          TRAP    C$SPRI
  6916  030644  012701  172300                  MOV     #172300,R1      ;GET ADDRESS OF KERNEL PDR REQD/
  6917  030650  012702  000010                  MOV     #8.,R2          ; DO 8 TIMES
  6918  030654                         10$:
  6919  030654  012721  077406                  MOV     #77406,(R1)+
  6920  030660  005302                          DEC     R2
  6921  030662  001374                          BNE     10$
  6922  030664  012701  172340                  MOV     #172340,R1
  6923  030670  005011                          CLR     (R1)
  6924  030672  012761  000200  000002          MOV     #200,2(R1)
  6925  030700  012761  000400  000004          MOV     #400,4(R1)
  6926  030706  012761  000600  000006          MOV     #600,6(R1)
  6927  030714  012761  001000  000010          MOV     #1000,10(R1)
  6928  030722  012761  177600  000016          MOV     #177600,16(R1)          ;;CHANGED FROM 7600 FOR
  6929                                                                          ;;AN 11/24              VRG030482
  6930
  6931  030730  012761  004000  000012          MOV     #4000,12(R1)
  6932  030736  005037  002432                  CLR     GENWRD
  6933  030742  012737  000033  002360          MOV     #33,TRIBN       ;MAP MEM CLEAR GEN AND SET UP TRIB
  6934  030750  052737  040000  002432          BIS     #BIT14,GENWRD   ;SET MM BIT
  6935  030756  012737  177776  002422          MOV     #177776,RXADD   ;SET UP RX ADD
  6936  030764  012737  041750  002424          MOV     #41750,RXCC     ;SET UP RX COUNT (1000 DEC)+BA16
  6937  030772  012737  033446  002420          MOV     #MR1,TXADD      ;SET UP TRANSMIT COUNT
  6938  031000  012737  001000  002426          MOV     #512.,TXCC      ;SET UP TRANSMIT COUNT
  6939  031006  004737  004522                  JSR     PC,MINITS       ; MASTER CLEAR MODE DEF
  6940  031012  004537  006346                  JSR     R5,TXRX3        ;GO TRANSMIT AND RX
  6941  031016  005037  002402                  CLR     ERRWRD          ; IF ERROR GO TO END
  6942  031022  104410                          TRAP    C$ESCAPE
```

```
CZDMTD.P11    09-MAR-82 09:11        ;********************************  TEST 40  ********************************

  6943  031024  000012                       .WORD   L10111-.
  6944  031026  004537  003744               JSR     R5,MEMEX        ;CHECK MEM EXTENSION
  6945  031032  005037  002402       RET17:  CLR     ERRWRD          ;CLEAR ERROR WORD
  6946  031036                       L10111:
  6947  031036  104401                       TRAP    C$ETST
  6948
```

```
CZDMTD.P11    09-MAR-82 09:11          ;*************************** TEST 41 *********************************

  6949                                 .SBTTL  ;*************************** TEST 41 *********************************
  6950                                 .SBTTL  TEST OF MEM EXTENSION BIT 16 AND 17, ADDRESS 600000
  6951  031040                                 ZZ
  6952                                         ;*
  6953                                         ;*
  6954                                         ;* THIS TEST WE'LL TRY TRANSMITTING A MESSAGE
  6955                                         ;* TO VIRTUAL ADDRESS 600000 (BIT 16 AND 17 SET).
  6956                                         ;* IF MEMORY MANAGEMENT AND/OR SUFFICIENT MEMORY IS NOT
  6957                                         ;* AVAILABLE FOR MESSAGE STORAGE, WE WILL EXPECT THE DMP-11
  6958                                         ;* TO RETURN A NON-EXISTENT MEMORY ERROR FOR THE BUFFER.
  6959                                         ;* IF ENOUGH MEMORY EXISTS,WE'LL MAKE SURE THE TRANSFER TAKES
  6960                                         ;* PLACE PROPERLY.
  6961                                         ;*
  6962                                         ;*-
  6963                                 .SBTTL  ;*************************** TEST 41 *********************************
  6964  031040                         T41::
  6965
  6966  031040  012737  004222  000004         MOV     #META,4         ;SET UP TRAP FOR NO MEM
  6967  031046  005037  000006                 CLR     6
  6968  031052  012737  000006  002542         MOV     #6,$TMP0
  6969  031060  012746  000006                 MOV     #6,-(SP)        ;DUMMY MOVE TO STACK IF
  6970                                                                 ;TRAP TAKES U TO SR.
  6971  031064  012705  031274                 MOV     #RET18,R5       ;SET UP R5 FOR RETURN
  6972
  6973  031070  005737  177572                 TST     @#177572        ;DOES MEM MANAGEMENT EXIST
  6974                                                                 ;IF NOT TRAP TO META
  6975                                                                 ; ELSE CONTINUE
  6976  031074  062706  000002                 ADD     #2,SP           ;FIX STACK      ;;(SP)          VRG021882
  6977  031100  012700  000000                 MOV     #0,R0
  6978  031104  104441                         TRAP    C$SPRI
  6979  031106  012701  172300                 MOV     #172300,R1      ;GET ADDRESS OF KERNEL PDR REQD/
  6980  031112  012702  000010                 MOV     #8.,R2          ; DO 8 TIMES
  6981  031116                         10$:
  6982  031116  012721  077406                 MOV     #77406,(R1)+
  6983  031122  005302                         DEC     R2
  6984  031124  001374                         BNE     10$
  6985  031126  012701  172340                 MOV     #172340,R1
  6986  031132  005011                         CLR     (R1)
  6987  031134  012761  000200  000002         MOV     #200,2(R1)
  6988  031142  012761  000400  000004         MOV     #400,4(R1)
  6989  031150  012761  000600  000006         MOV     #600,6(R1)
  6990  031156  012761  001000  000010         MOV     #1000,10(R1)
  6991  031164  012761  177600  000016         MOV     #177600,16(R1)          ;;CHANGED FROM 7600 FOR
  6992                                                                         ;;AN 11/24              VRG030482
  6993
  6994  031172  012761  006000  000012         MOV     #6000,12(R1)
  6995  031200  005037  002432                 CLR     GENWRD
  6996  031204  012737  000033  002360         MOV     #33,TRIBN       ;MAP MEM CLEAR GEN AND SET UP TRIB
  6997  031212  052737  040000  002432         BIS     #BIT14,GENWRD   ;SET MM BIT
  6998  031220  012737  177776  002422         MOV     #177776,RXADD   ;SET UP RX ADD
  6999  031226  012737  101750  002424         MOV     #101750,RXCC    ;SET UP RX COUNT (1000 DEC)+BA17
  7000  031234  012737  033446  002420         MOV     #MR1,TXADD      ;SET UP TRANSMIT COUNT
  7001  031242  012737  001000  002426         MOV     #512.,TXCC      ;SET UP TRANSMIT COUNT
  7002  031250  004737  004522                 JSR     PC,MINITS       ; MASTER CLEAR MODE DEF
  7003  031254  004537  006346                 JSR     R5,TXRX3        ;GO TRANSMIT AND RX
  7004  031260  005037  002402                 CLR     ERRWRD          ; IF ERROR GO TO END
```

```
CZDMTD.P11    09-MAR-82 09:11          ;********************************  TEST 41  ********************************

  7005  031264  104410                         TRAP    C$ESCAPE
  7006  031266  000012                         .WORD   L10112-.
  7007  031270  004537  003744                 JSR     R5,MEMEX        ;CHECK MEM EXTENSION
  7008  031274  005037  002402       RET18:    CLR     ERRWRD          ;CLEAR ERROR WORD
  7009  031300                       L10112:
  7010  031300  104401                         TRAP    C$ETST
  7011
```

```
                        ;********************************  TEST 42  ********************************
                        .SBTTL  ;********************************  TEST 42  ********************************
                        .SBTTL  *TX AND RX 257 BYTES,ODD TX,ODD RX,DDCMP,POINT TO POINT
031302                          ZZ
                                ;*
                                ;*
                                ;* THIS TEST WILL TRANSMIT A MESSAGE OF 257 BYTES
                                ;* FROM A TX BUFFER STARTING WITH AN ODD BYTE TO
                                ;* A RECEIVE BUFFER STARTING WITH AN ODD BYTE IN
                                ;* DDCMP MODE,POINT TO POINT IF THERE IS EXTERNAL LOOP
                                ;* BACK THEN THE TEST WILL BE DONE OVER THAT LOOPBACK
                                ;* ELSE THE LOOPBACK WILL BE SET TO INTERNAL(TTL).
                                ;*
                                ;*-
                        .SBTTL  ;********************************  TEST 42  ********************************
031302                  T42::
031302  012737  000042  002370         MOV     #42,ROMN1       ;SET UP TEST NUMBER
031310  005037  002432                 CLR     GENWRD          ;CLEAR THE GEN WORD
031314  012737  000401  002426         MOV     #257.,TXCC      ;SET UP TRANSMIT CHAR COUNT
031322  012737  033447  002420         MOV     #MR1+1,TXADD    ;SET UP ADD FOR TX
031330  012737  033727  002422         MOV     #RECBU1+1,RXADD ;SET UP RX
031336  012737  001750  002424         MOV     #1000.,RXCC     ;SET UP RX COUNT 1000 DECIMAL
031344  012737  000001  002360         MOV     #01,TRIBN       ;SET TRIB # TO 1
031352  022737  000004  002476         CMP     #4,TSTCON       ;CHECK FOR LOOPBACK CONNECTOR
031360  001402                       BEQ     1$              ;
031362  005237  002400                 INC     EXLOOP          ;EXT CONNECTOR PRESENT: SET EXT LOOP FLAG
031366  004737  004512         1$:     JSR     PC,MINIT1       ;MASTER CLEAR-MODE DEF
031372  005037  002400                 CLR     EXLOOP          ;CLEAR EXTERNAL LOOP FLAG
031376  005037  002402                 CLR     ERRWRD
031402  104410                       TRAP    C$ESCAPE
031404  000012                       .WORD   L10113-.
                                        ;;;;;;;
                                        ;ESCAPE TEST IF ERROR
                                        ;;;;;;;
031406  004537  005720         20$:    JSR     R5,TXRXSR       ;GO DO IT
031412  005037  002402                 CLR     ERRWRD
031416                          L10113:
031416  104401                       TRAP    C$ETST
```

```
CZDMTD.P11    09-MAR-82 09:11          ;****************************** TEST 43 ******************************

                                       .SBTTL  ;****************************** TEST 43 ******************************
                                       .SBTTL  *TX AND RX 1 BYTE,ODD TX,EVEN RX,MAINT,MULTIPOINT
031420                                 ZZ
                                       ;*
                                       ;*
                                       ;* THIS TEST TRANSMITS AND RECEIVES 1 BYTE MESSAGE
                                       ;* FROM AND ODD TRANSMIT BUFFER TO AN EVEN RX BUFFER
                                       ;* IN MAINTAINCE MODE,MULTIPOINT
                                       ;*
                                       ;*-
                                       .SBTTL  ;****************************** TEST 43 ******************************
031420                                 T43::

031420  012737  000001  002360           MOV     #01,TRIBN
031426  012737  000001  002426           MOV     #01,TXCC
031434  012737  033447  002420           MOV     #MR1+1,TXADD
031442  012737  000764  002424           MOV     #500.,RXCC
031450  012737  033726  002422           MOV     #RECBU1,RXADD
031456  005037  002432                   CLR     GENWRD
031462  052737  100000  002432           BIS     #BIT15,GENWRD   ;SET UP TX RX AND MAINT STATE
031470  004737  004522                   JSR     PC,MINITS       ;MASTER CLEAR MULTIPOINT
031474  005037  002402                   CLR     ERRWRD
031500  104410                           TRAP    C$ESCAPE
031502  000012                           .WORD   L10114-.
                                         ;;;;;;;;;
                                         ; ESCAPE TEST IF ERROR
                                         ;;;;;;;;;
031504  004537  006346           20$:    JSR     R5,TXRX3                ;GO DO IT
031510  005037  002402                   CLR     ERRWRD          ;CLEAR ERROR WORD
031514                           L10114:
031514  104401                           TRAP    C$ETST
```

```
CZDMTD.P11    09-MAR-82 09:11          ;****************************** TEST 44 ******************************

                                       .SBTTL  ;****************************** TEST 44 ******************************
                                       .SBTTL  POLLING STATE TESTS
                                               ZZ
                                               ;*
                                               ;*
                                               ;* THIS TEST CHECKS THE DEGRADING OF THE POLLING
                                               ;* STATES FROM ACTIVE TO INACTIVE TO POTEN. DEAD
                                               ;* TO DEAD.
                                               ;*
                                       .SBTTL  ;****************************** TEST 44 ******************************
                                       T44::

031516  005037  002432                         CLR     GENWRD          ;CLEAR FLAG WORD
031522  004737  004522                 BEGPOL: JSR     PC,MINITS       ;MASTER CLEAR MODE DEF(FD/CS/MP)
031526  005037  002402                         CLR     ERRWRD
031532  104410                               TRAP    C$ESCAPE
031534  000774                               .WORD   L10115-.
                                             ;;;;;;;;;;;
                                             ;SET POLL DELAY
                                             ;;;;;;;;;;;
031536  005037  002360                       CLR     TRIBN
031542  012703  000237                       MOV     #237,R3
031546  012704  000100                       MOV     #100,R4
031552  004537  003162                       JSR     R5,CONTIN
031556  005037  002402                       CLR     ERRWRD
031562  104410                               TRAP    C$ESCAPE
031564  000744                               .WORD   L10115-.
                                             ;;;;;;;;;;;
                                             ; ESTABLISH TRIB
                                             ;;;;;;;;;;;
031566  012737  000034  002360               MOV     #34,TRIBN       ;SET TRIB NO.
031574  012703  000001                       MOV     #01,R3
031600  004537  003162                       JSR     R5,CONTIN
031604  005037  002402                       CLR     ERRWRD
031610  104410                               TRAP    C$ESCAPE
031612  000716                               .WORD   L10115-.
                                             ;;;;;;;;;;;
                                             ; SET SELECTION TIMER TO 1 SEC
                                             ;;;;;;;;;;;
031614  012703  000236                       MOV     #236,R3
031620  012704  002000                       MOV     #2000,R4
031624  032737  000003  002472               BIT     #3,OPTYP        ;* IS THIS A DMV ?
031632  001402                               BEQ     1$              ;*
031634  012704  000144                       MOV     #144,R4         ;* IF YES: ADJUST VALUE.
031640  004537  003162             1$:       JSR     R5,CONTIN
031644  005037  002402                       CLR     ERRWRD
031650  104410                               TRAP    C$ESCAPE
031652  000656                               .WORD   L10115-.
                                             ;;;;;;;;;;;
                                             ; WRITE NDM > INACTIVE AND #TO > PDEAD
                                             ;;;;;;;;;;;
031654  012704  002010                       MOV     #2010,R4
031660  012703  000234             10$:      MOV     #234,R3
031664  004537  003162                       JSR     R5,CONTIN       ;WRITE TSS SLOT
031670  005037  002402                       CLR     ERRWRD
```

```
                        ;******************************** TEST 44 ********************************
7139  031674  104410                      TRAP    C$ESCAPE
7140  031676  000632                      .WORD   L10115-.
7141                                      ;;;;;;;;;;;
7142                                      ; ISTRT TRIB
7143                                      ;;;;;;;;;;;
7144  031700  012703  000003              MOV     #03,R3
7145  031704  004537  003162              JSR     R5,CONTIN
7146  031710  005037  002402              CLR     ERRWRD
7147  031714  104410                      TRAP    C$ESCAPE
7148  031716  000612                      .WORD   L10115-.
7149                                      ;;;;;;;;;;;
7150                                      ; WAIT FOR RUN STATE
7151                                      ;;;;;;;;;;;
7152  031720  012737  000001  002336      MOV     #01,$GDDAT
7153  031726  004537  003242              JSR     R5,GETOUT
7154  031732  005037  002402              CLR     ERRWRD
7155  031736  104410                      TRAP    C$ESCAPE
7156  031740  000570                      .WORD   L10115-.
7157  031742  012737  000024  002336      MOV     #24,$GDDAT
7158  031750  004537  003670              JSR     R5,GETOC
7159  031754  005037  002402              CLR     ERRWRD
7160  031760  104410                      TRAP    C$ESCAPE
7161  031762  000546                      .WORD   L10115-.
7162                                      ;;;;;;;;;;;
7163                                      ; READ  TSS SLOT WITH POLL STATUS
7164                                      ;;;;;;;;;;;
7165  031764  042777  000200  150452  20$:BIC     #RDO,@BSEL2     ;CLEAR RDO
7166  031772  012703  000042              MOV     #42,R3
7167  031776  004537  003162              JSR     R5,CONTIN       ;READ TSS SLOT 2
7168  032002  005037  002402              CLR     ERRWRD
7169  032006  104410                      TRAP    C$ESCAPE
7170  032010  000520                      .WORD   L10115-.
7171  032012  012737  000002  002336      MOV     #02,$GDDAT
7172  032020  004537  003242              JSR     R5,GETOUT       ;GET INFO OUT
7173  032024  005037  002402              CLR     ERRWRD
7174  032030  104410                      TRAP    C$ESCAPE
7175  032032  000476                      .WORD   L10115-.
7176  032034  032777  001000  150406      BIT     #BIT9,@BSEL4    ;IS IT INACTIVE
7177  032042  001750                      BEQ     20$             ;IF NOT GO BACK
7178                                      ;;;;;;;;;;;
7179                                      ; GET HERE WHEN STATE GOES TO INACTIVE
7180                                      ;;;;;;;;;;;
7181  032044  042777  000200  150372      BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
7182                                      ;;;;;;;;;;;
7183                                      ;READ # OF SELECTION INTERVALS
7184                                      ;;;;;;;;;;;
7185  032052  012703  000051              MOV     #51,R3
7186  032056  004537  003162              JSR     R5,CONTIN
7187  032062  005037  002402              CLR     ERRWRD
7188  032066  104410                      TRAP    C$ESCAPE
7189  032070  000440                      .WORD   L10115-.
7190  032072  012737  000002  002336      MOV     #02,$GDDAT
7191  032100  004537  003242              JSR     R5,GETOUT
7192                                      ;;;;;;;;;;;
7193                                      ; MAKE SURE #OF SELC. INTV IS CORRECT
7194                                      ;;;;;;;;;;;
```

```
CZDMTD.P11    09-MAR-82 09:11          ;******************************  TEST 44  ******************************

 7195  032104  012737  000010  002336          MOV     #10,$GDDAT
 7196  032112  004537  003446                  JSR     R5,GETDAT
 7197                                          ;;;;;;;;;;;
 7198                                          ; GET HERE IN INACTIVE STATE
 7199                                          ;;;;;;;;;;;
 7200  032116                          40$:
 7201  032116  042777  000200  150320          BIC     #RDO,@BSEL2     ;CLEAR OUTPUT
 7202                                          ;;;;;;;;;;
 7203                                          ; CHANGE MODE TO HALF DUPLEX
 7204                                          ;;;;;;;;;;
 7205  032124  052777  000200  150306          BIS     #RQI,@BSEL0
 7206  032132  004537  002732                  JSR     R5,WRDI         ;WAIT FOR RDI TO SET
 7207
 7208  032136  005037  002402                  CLR     ERRWRD          ;CLEAR ERROR
 7209  032142  104410                          TRAP    C$ESCAPE
 7210  032144  000364                          .WORD   L10115-.
 7211  032146  042777  000200  150264          BIC     #RQI,@BSEL0
 7212  032154  012777  000004  150272          MOV     #04,@BSEL6
 7213  032162  112777  000002  150254          MOVB    #02,@BSEL2
 7214  032170  042777  000200  150246  50$:    BIC     #RDO,@BSEL2
 7215
 7216
 7217                                          ;;;;;;;;;;;;
 7218                                          ; READ POLL STATUS SLOT
 7219                                          ;;;;;;;;;;;;
 7220  032176  012703  000042                  MOV     #42,R3
 7221  032202  004537  003162                  JSR     R5,CONTIN
 7222  032206  005037  002402                  CLR     ERRWRD
 7223  032212  104410                          TRAP    C$ESCAPE
 7224  032214  000314                          .WORD   L10115-.
 7225  032216  012737  000002  002336          MOV     #02,$GDDAT
 7226
 7227  032224  004537  003242                  JSR     R5,GETOUT
 7228                                          ;;;;;;;;;;;
 7229                                          ; IS THE STATE POTN. DEAD??
 7230                                          ;;;;;;;;;;
 7231  032230  032777  010000  150212          BIT     #BIT12,@BSEL4
 7232  032236  001754                          BEQ     50$
 7233                                          ;;;;;;;;;
 7234                                          ; IF NOT GO BACK TO 50
 7235                                          ;;;;;;;;;
 7236
 7237                                          ;;;;;;;;;
 7238                                          ; IF SO READ THE SELECTION TIMER
 7239                                          ;;;;;;;;;
 7240
 7241  032240  012703  000056                  MOV     #56,R3
 7242  032244  042777  000200  150172          BIC     #RDO,@BSEL2
 7243  032252  004537  003162                  JSR     R5,CONTIN
 7244  032256  005037  002402                  CLR     ERRWRD
 7245  032262  104410                          TRAP    C$ESCAPE
 7246  032264  000244                          .WORD   L10115-.
 7247  032266  012737  000002  002336          MOV     #02,$GDDAT
 7248  032274  004537  003242                  JSR     R5,GETOUT
 7249  032300  005037  002402                  CLR     ERRWRD
 7250  032304  104410                          TRAP    C$ESCAPE
```

```
                        ;****************************** TEST 44 ******************************
7251  032306  000222                .WORD   L10115-.
7252                                ;;;;;;;;;;
7253                                ; COMPARE SELECTION TIME OUTS WITH # WRITTEN
7254                                ;
7255                                ;;;;;;;;;;
7256  032310  012737  001004  002336  MOV     #1004,$GDDAT
7257  032316  004537  003446         JSR     R5,GETDAT
7258                                ;;;;;;;;;;
7259                                ; WAIT FOR TRIB TO POST SELECT. THRESH. ERROR
7260                                ;;;;;;;;;;
7261  032322  042777  000200  150114  BIC     #RDO,@BSEL2     ;CLEAR OUTPUT CODE
7262
7263  032330  012737  000001  002336  MOV     #01,$GDDAT
7264  032336  004537  003242         JSR     R5,GETOUT
7265  032342  005037  002402         CLR     ERRWRD
7266  032346  104410                 TRAP    C$ESCAPE
7267  032350  000160                 .WORD   L10115-.
7268  032352  012737  000006  002336  MOV     #6,$GDDAT
7269  032360  004537  003670         JSR     R5,GETOC
7270  032364  005037  002402         CLR     ERRWRD
7271  032370  104410                 TRAP    C$ESCAPE
7272  032372  000136                 .WORD   L10115-.
7273  032374  042777  000200  150042  BIC     #RDO,@BSEL2
7274                                ;;;;;;;;;;;
7275                                ; NOW WAIT FOR TRIB TO POST DEAD STATUS
7276                                ;;;;;;;;;;;
7277  032402  012737  000001  002336  MOV     #01,$GDDAT
7278  032410  004537  003242         JSR     R5,GETOUT
7279  032414  005037  002402         CLR     ERRWRD
7280  032420  104410                 TRAP    C$ESCAPE
7281  032422  000106                 .WORD   L10115-.
7282  032424  012737  000022  002336  MOV     #22,$GDDAT
7283  032432  004537  003670         JSR     R5,GETOC
7284
7285  032436  005037  002402         CLR     ERRWRD
7286  032442  104410                 TRAP    C$ESCAPE
7287  032444  000064                 .WORD   L10115-.
7288
7289                                ;;;;;;;;;;;;;
7290                                ; NOW READ SELECTION TIMER AND
7291                                ; SEE IF IT IS EQUAL TO 10
7292                                ;;;;;;;;;;;;;
7293
7294  032446  042777  000200  147770  BIC     #RDO,@BSEL2
7295  032454  012703  000056         MOV     #56,R3
7296  032460  004537  003162         JSR     R5,CONTIN
7297  032464  005037  002402         CLR     ERRWRD
7298  032470  104410                 TRAP    C$ESCAPE
7299  032472  000036                 .WORD   L10115-.
7300  032474  012737  000002  002336  MOV     #02,$GDDAT
7301  032502  004537  003242         JSR     R5,GETOUT
7302  032506  005037  002402         CLR     ERRWRD
7303  032512  104410                 TRAP    C$ESCAPE
7304  032514  000014                 .WORD   L10115-.
7305  032516  012737  001010  002336  MOV     #1010,$GDDAT
7306  032524  004537  003446         JSR     R5,GETDAT
```

```
                        ;****************************** TEST 44 ******************************

7307   032530
7308   032530  104401  L10115:
                                TRAP    C$ETST
7309
7310                            .SBTTL  ------ END OF HARDWARE TESTS -----
7311
7312
7313
7314
```

```
                                ------ END OF HARDWARE TESTS -----

                                .SBTTL  HARDWARE PARAMETER CODING SECTION


                                ;////////////////////////////////////////////////////////////////////////
                                ;/ THE HARDWARE PARAMETER CODING SECTION CONTAINS MACROS
                                ;/ THAT ARE USED BY THE SUPERVISOR TO BUILD P-TABLES.  THE
                                ;/ MACROS ARE NOT EXECUTED AS MACHINE INSTRUCTIONS BUT ARE
                                ;/ INTERPRETED BY THE SUPERVISOR AS DATA STRUCTURES.  THE
                                ;/ MACROS ALLOW THE SUPERVISOR TO ESTABLISH COMMUNICATIONS
                                ;/ WITH THE OPERATOR.
                                ;////////////////////////////////////////////////////////////////////////

032532  000041                          .WORD L10116-L$HARD/2
032534                          L$HARD::
032534  000032                          .WORD   T$CODE
032536  032636                          .WORD   OPTYPM
032540  000007                          .WORD   7
032542  000000                          .WORD   T$LOLIM
032544  000007                          .WORD   T$HILIM
032546  001031                          .WORD   T$CODE
032550  032721                          .WORD   ADDRES
032552  160000                          .WORD   T$LOLIM
032554  177776                          .WORD   T$HILIM
032556  002031                          .WORD   T$CODE
032560  032747                          .WORD   VECTOR
032562  000000                          .WORD   T$LOLIM
032564  000674                          .WORD   T$HILIM
032566  003032                          .WORD   T$CODE
032570  033000                          .WORD   PRIRTY
032572  007000                          .WORD   7000
032574  000004                          .WORD   T$LOLIM
032576  000007                          .WORD   T$HILIM
032600  010032                          .WORD   T$CODE
032602  033031                          .WORD   LOOPBK
032604  000007                          .WORD   7
032606  000000                          .WORD   T$LOLIM
032610  000004                          .WORD   T$HILIM
032612  011032                          .WORD   T$CODE
032614  033135                          .WORD   SPEDM
032616  000007                          .WORD   7
032620  000000                          .WORD   T$LOLIM
032622  000007                          .WORD   T$HILIM
032624  013032                          .WORD   T$CODE
032626  033346                          .WORD   IFTYPM
032630  000007                          .WORD   7
032632  000000                          .WORD   T$LOLIM
032634  000007                          .WORD   T$HILIM

                                        .EVEN
032636                          L10116:

032636  042523  042514  052103  OPTYPM: .ASCIZ  /SELECT TYPE ( 0=8207'DMP',1=8053'DMV',2=8064'DMV):/
032644  052040  050131  020105
```

```
7371  032652  020050  036460  031070
7372  032660  033460  042047  050115
7373  032666  026047  036461  030070
7374  032674  031465  042047  053115
7375  032702  026047  036462  030070
7376  032710  032066  042047  053115
7377  032716  035051     000
7378  032721     104  053105  041511  ADDRES: .ASCIZ  /DEVICE CSR ADDRESS : /
7379  032726  020105  051503  020122
7380  032734  042101  051104  051505
7381  032742  020123  020072     000
7382  032747     104  053105  041511  VECTOR: .ASCIZ  /DEVICE VECTOR ADDRESS : /
7383  032754  020105  042526  052103
7384  032762  051117  040440  042104
7385  032770  042522  051523  035040
7386  032776  000040
7387  033000  042504  044526  042503  PRIRTY: .ASCIZ  /DEVICE PRIORITY LEVEL : /
7388  033006  050040  044522  051117
7389  033014  052111  020131  042514
7390  033022  042526  020114  020072
7391  033030     000
7392  033031     124  051125  040516  LOOPBK: .ASCII  /TURNAROUND TYPE -/
7393  033036  047522  047125  020104
7394  033044  054524  042520  026440
7395  033052  030050  044075  031063          .ASCIZ  /(0=H3254&H3255,1=CABLE,2=MOD LOC,3=MOD REM,4=NONE)/
7396  033060  032065  044046  031063
7397  033066  032465  030454  041475
7398  033074  041101  042514  031054
7399  033102  046475  042117  046040
7400  033110  041517  031454  046475
7401  033116  042117  051040  046505
7402  033124  032054  047075  047117
7403  033132  024505     000
7404  033135     120  042514  051501  SPEDM:  .ASCII  'PLEASE SELECT BAUD RATE;TYPE '0' FOR 2.4K; '1' FOR 4.8K;''
7405  033142  020105  042523  042514
7406  033150  052103  041040  052501
7407  033156  020104  040522  042524
7408  033164  052073  050131  020105
7409  033172  030047  020047  047506
7410  033200  020122  027062  045464
7411  033206  020073  030447  020047
7412  033214  047506  020122  027064
7413  033222  045470     073
7414  033225     015  023412  023462          .ASCII<15><12>''2' FOR 9.6K; '3' FOR 19.2K; '4' FOR 56K; '5' FOR 250K;''
7415  033232  043040  051117  034440
7416  033240  033056  035513  023440
7417  033246  023463  043040  051117
7418  033254  030440  027071  045462
7419  033262  020073  032047  020047
7420  033270  047506  020122  033065
7421  033276  035513  023440  023465
7422  033304  043040  051117  031040
7423  033312  030065  035513
7424  033316  005015  051117  023440          .ASCIZ<15><12>''OR '6' FOR 500K BAUDS''
7425  033324  023466  043040  051117
7426  033332  032440  030060  020113
```

```
CZDMTD.P11    09-MAR-82 09:11          HARDWARE PARAMETER CODING SECTION

 7427  033340  040502  042125  000123
 7428  033346  042523  042514  052103  IFTYPM: .ASCIZ  /SELECT INTERFACE TYPE (1=INTEGRAL,2=EIA,3=V.35,4=422):/
 7429  033354  044440  052116  051105
 7430  033362  040506  042503  052040
 7431  033370  050131  020105  030450
 7432  033376  044475  052116  043505
 7433  033404  040522  026114  036462
 7434  033412  044505  026101  036463
 7435  033420  027126  032463  032054
 7436  033426  032075  031062  035051
 7437  033434     000
 7438
 7439          033436                  .EVEN
 7440
 7441
 7442
```

```
                                .SBTTL  SOFTWARE PARAMETER CODING SECTION


                                ;////////////////////////////////////////////////////////////////////
                                ;/ THE SOFTWARE PARAMETER CODING SECTION CONTAINS MACROS
                                ;/ THAT ARE USED BY THE SUPERVISOR TO BUILD P-TABLES.  THE
                                ;/ MACROS ARE NOT EXECUTED AS MACHINE INSTRUCTIONS BUT ARE
                                ;/ INTERPRETED BY THE SUPERVISOR AS DATA STRUCTURES.  THE
                                ;/ MACROS ALLOW THE SUPERVISOR TO ESTABLISH COMMUNICATIONS
                                ;/ WITH THE OPERATOR.
                                ;////////////////////////////////////////////////////////////////////

033436  000000                          .WORD L10117-L$SOFT/2
033440                          L$SOFT::

                                        .EVEN
033440                          L10117:




                                ;****** PATCH AREA FOR DEBUG ******
033440                          PATCH:
033440  000240                          NOP
033442  000240                          NOP
033444  000240                          NOP
                                ;************************************


033446  041101  000103         MR1:    .ASCIZ  "ABC"
033452                          MR1E:

033452  047516  020127  051511 MR12:   .ASCII  'NOW IS THE TIME FOR ALL GOOD PEOPLE TO COME TO THE"
033460  052040  042510  052040
033466  046511  020105  047506
033474  020122  046101  020114
033502  047507  042117  050040
033510  047505  046120  020105
033516  047524  041440  046517
033524  020105  047524  052040
033532  042510
033534  044124  020105  052521          .ASCII  "THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S"
033542  041511  020113  051102
033550  053517  020116  047506
033556  020130  052512  050115
033564  042105  047440  042526
033572  020122  044124  020105
033600  040514  054532  042040
033606  043517  051447
033612  040502  045503  020056          .ASCII  'BACK. LOPS ARE TOPS!"
033620  047514  051520  040440
```

CZDMTD.P11 09-MAR-82 09:11 SOFTWARE PARAMETER CODING SECTION

```
7499  033626  042522  052040  050117
7500  033634  020523
7501  033636  041101  042103  043105          .ASCII  "ABCDEFGHIJKLMNOPQRSTUVWXYZ"
7502  033644  044107  045111  046113
7503  033652  047115  050117  051121
7504  033660  052123  053125  054127
7505  033666  055131
7506  033670  041501  043505  045511          .ASCII  "ACEGIKMOQSUWY"
7507  033676  047515  051521  053525
7508  033704     131
7509
7510          033706                  .EVEN
7511  033706                  MR12E:
7512
7513  033706  000000          DATLST: 0
7514  033710  125252                  125252
7515  033712  052525                  052525
7516  033714  000000                  0
7517  033716  177777                  -1
7518  033720  000377                  377
7519  033722  177400                  177400
7520  033724  000562                  562
7521
7522  033726  001750          RECBU1: .BLKW   1000.
7523
7524                                  .EVEN
7525  037646  000000                  .WORD   0
7526  037650  000000                  .WORD   0
7527  037652                  L$LAST::
7528
7529          000001                  .END
```

CZDMTD.P11 09-MAR-82 09:11 CROSS REFERENCE TABLE -- USER SYMBOLS

```
ADDRES  032721          7337    7378#
ADR   = 000020 G        1399#
ASSEMB= 000010          1097
AXNUM   002506          1521#   2220*   2222*   2280    2486*   2599    6681*
BADBR   006232          2515    2531    2574#
BADBRM  010544          2576    3053#
BADIF   006200          2513    2529    2544    2554    2563#
BADIFM  010466          2565    3045#
BASER   010450          3033    3042#
BEGPOL  031522          7096#
BIT0  = 000001 G        1372#   1426    2493    3436
BIT00 = 000001 G        1361#   1372
BIT01 = 000002 G        1360#   1371
BIT02 = 000004 G        1359#   1370
BIT03 = 000010 G        1358#   1369
BIT04 = 000020 G        1357#   1368
BIT05 = 000040 G        1356#   1367
BIT06 = 000100 G        1355#   1366
BIT07 = 000200 G        1354#   1365
BIT08 = 000400 G        1353#   1364
BIT09 = 001000 G        1352#   1363
BIT1  = 000002 G        1371#   1425    2490
BIT10 = 002000 G        1351#
BIT11 = 004000 G        1350#
BIT12 = 010000 G        1349#   7231
BIT13 = 020000 G        1348#
BIT14 = 040000 G        1347#   2687    6873    6934    6997
BIT15 = 100000 G        1346#   2609    7071
BIT2  = 000004 G        1370#   1424
BIT3  = 000010 G        1369#   1423    1431    2271    2504    4495    4512    4805    4877    6694
BIT4  = 000020 G        1368#   1422
BIT5  = 000040 G        1367#   5070    5094    5343    5366    5438
BIT6  = 000100 G        1366#   1421
BIT7  = 000200 G        1365#   1420    5056    5401
BIT8  = 000400 G        1364#
BIT9  = 001000 G        1363#   7176
BOE   = 000400 G        1403#
BSEL0   002440          1492#   1776*   1781*   2235    2273*   2281*   2644*   2679*   2684*   4257*   4309*   4320*   4341
                        4359*   4379    4401*   4404*   4500*   4523    4539*   4607*   4665*   4675*   4736    4738*   4744*
                        4822*   4828*   4895*   4904*   5570*   5577*   5834*   5840*   6325*   6331*   6382*   6388*   6450*
                        6456*   6495*   6502*   7205*   7211*
BSEL1   002442          1495#   2140*   2142*   2143*   2190*   2193*   2223*   2226*   2263*   2271*   2397*   2504*   3454*
                        3455*   4495*   4512    4726*   4729*   4805*   4877*   6694*
BSEL10  002460          1505#   2404*   2656*   2677*   3466*   3467*
BSEL2   002444          1497#   1633    1636    1646*   1676    1679    1689*   1721    1784*   1815    2025    2265*   2278
                        2282*   2406*   2630*   2658*   2662*   2680*   2685*   2704    2724*   2765*   4268    4323*   4623*
                        4631    4677*   4682    4693    4747*   4752    4808    4821*   4830*   4883    4894*   4906*   4908
                        4993*   5302    5435*   5569*   5581*   5606*   5618*   5697*   5733*   5769*   5841*   5851*   5961*
                        5981*   5993    6058*   6079*   6090    6205*   6335*   6392*   6460*   6506*   7165*   7181*   7201*
                        7213*   7214*   7242*   7261*   7273*   7294*
BSEL3   002446          1498#   1780*   1829    2651*   2672*   3460*   3461*   4428*   4466*   4745*   5580*   6332*   6391*
                        6459*   6503*
BSEL4   002450          1499#   1782*   1885    2251    2650*   2671*   4498*   5578*   5685*   5686    6334*   6390*   6458*
                        6505*   6764    7176    7231
BSEL5   002452          1501#   3462*   3463*
BSEL6   002454          1502#   1737    1783*   1856    1986    2032    2141*   2242    2244    2280*   2657*   2661*   2678*
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                2683*  2804   4234   4236   4321*  4499*  4620*  4676*  4746*  4765   4811   4829*  4905*
                5579*  6333*  6389*  6457*  6504*  7212*
BSEL7   002456  1504#  3464*  3465*  3714   3717   3737   3750   3761   3864   3867   3887   3900   3911
                4014   4017   4037   4050   4061   4308*  4322*  4335   4375
CADDR   002404  1475#  2116   2120   3634*  3640*  3643*  3644   3659*  3673*  3684*  3709*  3715*  3718*
                3719   3734*  3748*  3759*  3784*  3790*  3793*  3794   3809*  3823*  3834*  3859*  3865*
                3868*  3869   3884*  3898*  3909*  3934*  3940*  3943*  3944   3959*  3973*  3984*  4009*
                4015*  4018*  4019   4034*  4048*  4059*
CFM1    005306  2330   2359#
CFM2    005373  2339   2368#
CFM3    005451  2347   2376#
CFM4    005466  2353   2379#
CODEW   002430  1486#  1727*  1741*  1820*  1861*  1891*  1991*  2035*  3020   4698*  4758*  4768*  5691*
                6768*
CONTIN  003162  1775#  2497   2595   2604   2615   2636   4872   4952   4969   4996   5042   5057   5071
                5151   5164   5213   5226   5275   5288   5344   5403   5417   5439   5490   5537   5546
                5583   5622   5649   5662   5699   5712   5735   5771   5784   5883   5930   5943   5963
                5983   6027   6040   6060   6080   6126   6140   6153   6207   6220   6370   6431   6441
                6699   6712   6725   7106   7116   7128   7137   7145   7167   7186   7221   7243   7296
COUNT   002342  1457#  3487*  3492*  4217*  4223*
COUNTT  005134  2296*  2303*  2309#
CRCCAL  002434  1488#  2414*  2435
CRCR    004376  2161#  2422   3647   3722   3797   3872   3947   4022
CWORD   002374  1471#  2165*  2169   2170*  2171*  2396*  2436   2966   3636*  3650*  3651   3711*  3725*
                3726   3786*  3800*  3801   3861*  3875*  3876   3936*  3950*  3951   4011*  4025*  4026
C$AU    = 000052  1097#  3546
C$AUTO= 000061  1097#  3500
C$BRK   = 000022  1097#  2306
C$BSEG= 000004  1097#
C$BSUB= 000002  1097#  5325   5384   5474
C$CEFG= 000045  1097#
C$CLCK= 000062  1097#
C$CLEA= 000012  1097#  3513
C$CLOS= 000035  1097#
C$CLP1= 000006  1097#
C$CVEC= 000036  1097#  3594   4486   4488
C$DCLN= 000044  1097#  3591
C$DODU= 000051  1097#  3495
C$DRPT= 000024  1097#
C$DU    = 000053  1097#  3530
C$EDIT= 000003  1097#  1174
C$ERDF= 000055  1097#  1641   1684   1731   1745   1821   1833   1862   1892   1925   1961   1992   2036
                2049   2065   2072   2298   2438   2748   3604   3655   3665   3689   3730   3740   3764
                3805   3815   3839   3880   3890   3914   3955   3965   3989   4030   4040   4064   4096
                4142   4228   4239   4249   4349   4387   4514   4531   4553   4563   4634   4685   4699
                4759   4769   4814   4910   5305   5692   5996   6093   6769
C$ERHR= 000056  1097#
C$ERRO= 000060  1097#
C$ERSF= 000054  1097#
C$ERSO= 000057  1097#  2253
C$ESCA= 000010  1097#  4089   4101   4135   4146   4232   4245   4253   4262   4271   4306   4314   4329
                4353   4369   4391   4436   4472   4506   4519   4535   4599   4613   4659   4669   4690
                4704   4734   4742   4750   4763   4797   4826   4836   4862   4889   4899   4945   4958
                4975   4987   5002   5034   5048   5063   5077   5087   5098   5108   5143   5157   5170
                5180   5205   5219   5232   5243   5267   5281   5294   5336   5347   5358   5370   5394
                5406   5420   5429   5442   5453   5462   5482   5493   5503   5533   5543   5551   5559
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                    5564   5575   5588   5594   5599   5604   5610   5616   5641   5655   5668   5679   5705
                    5718   5728   5741   5752   5763   5777   5790   5800   5828   5838   5846   5875   5886
                    5896   5922   5936   5946   5956   5966   5976   5986   6019   6033   6043   6053   6063
                    6073   6083   6118   6132   6146   6159   6173   6186   6199   6213   6226   6239   6252
                    6292   6300   6319   6329   6340   6362   6376   6386   6397   6423   6434   6444   6454
                    6465   6489   6500   6512   6551   6560   6600   6609   6641   6651   6686   6705   6718
                    6731   6744   6757   6773   6881   6942   7005   7042   7074   7098   7108   7118   7130
                    7139   7147   7155   7160   7169   7174   7188   7209   7223   7245   7250   7266   7271
                    7280   7286   7298   7303
C$ESEG= 000005       1097#
C$ESUB= 000003       1097#  5382   5472   5514
C$ETST= 000001       1097#  3597   3695   3770   3845   3920   3995   4070   4117   4161   4274   4580   4643
                    4713   4775   4844   4916   5015   5125   5187   5250   5312   5516   5627   5807   5857
                    5903   6002   6099   6265   6303   6346   6403   6472   6518   6567   6616   6658   6821
                    6886   6947   7010   7050   7082   7308
C$EXIT= 000032       1097#  4540   4818   6675   6780
C$GETB= 000026       1097#
C$GETW= 000027       1097#
C$GMAN= 000043       1097#
C$GPHR= 000042       1097#  3444
C$GPLO= 000030       1097#
C$GPRI= 000040       1097#
C$INIT= 000011       1097#  3482
C$INLP= 000020       1097#
C$MANI= 000050       1097#
C$MEM = 000031       1097#
C$MSG = 000023       1097#  2798   2812   2824   2836   2848   2860   2878   2893   2906   2924   2945   2963
                    2976   2989   3003   3028   3040
C$OPEN= 000034       1097#
C$PNTB= 000014       1097#  2795   2808   2820   2832   2844   2856   2874   2889   2902   2912   2920   2930
                    2936   2941   2959   2972   2985   2999   3015   3024   3036
C$PNTF= 000017       1097#  2568   2579   2586   3682   3757   3832   3907   3982   4057   4110   4155
C$PNTS= 000016       1097#
C$PNTX= 000015       1097#  2333   2342   2350   2356   3614
C$QIO = 000377       1097#
C$RDBU= 000007       1097#
C$REFG= 000047       1097#  3413   3417   3421   3425
C$RESE= 000033       1097#  3498   3510   3528
C$REVI= 000003       1097#  1173
C$RFLA= 000021       1097#
C$RPT = 000025       1097#  3383
C$SEFG= 000046       1097#
C$SPRI= 000041       1097#  4430   4465   4545   4552   4562   4572   6855   6915   6978
C$SVEC= 000037       1097#  3578   4414   4423   4454   4460
C$TPRI= 000013       1097#
DATLST  033706       4494   5054   5104   5114   7513#
DEVMAP  002350       1460#  3431*  3450*
DEVPTR  002352       1461#  3436*  3447*  3450   3451*
DFMT4   013562       3339#
DFMT5   013575       3341#
DFMT6   013625       3346#
DFMT9   013660       3351#
DFPTBL  002264 G     1289#
DIAGMC= 000000       1097
DISILO  002510       1522#
DMPMOD  002000 G     1105#
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CZDMTD.P11 09-MAR-82 09:11 CROSS REFERENCE TABLE -- USER SYMBOLS

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DRUN  = 000200 G          1100#   4309
DUPTYP  030306            6681    6809#
ECBINT  014616 G          3575    3601#
EF.CON= 000036 G          1379#   3424
EF.NEW= 000035 G          1380#   3420
EF.PWR= 000034 G          1381#
EF.RES= 000037 G          1378#   3416
EF.STA= 000040 G          1377#   3412
EMTO    010746            3076#   3606
ENDIT   014426            3426    3480#
ERLB1   017766            4258    4264#
ERLB10  021520            4736#
ERLB2   020130            4326    4331#
ERLB3   020264            4366    4371#
ERLB4   020522            4433    4438#
ERLB5   020644            4469    4474#
ERLB6   020744            4503    4508#
ERLB7   004600            2229    2233#
ERLB8   004632            2237    2241#
ERLB9   005036            2274    2278#
EROIC   011506            1733    1747    1823    1864    1894    1994    2038    3142#   4701    4761    4771    5694    6771
ERRADD  002406            1476#   1629*   1672*   1716*   1775*   1811*   1855*   1884*   1914*   1948*   1985*   2229*   2237*
                          2274*   2867    2952    2994    3010    4258*   4326*   4366*   4433*   4469*   4503*
ERROR1  002326            1451#   3400*
ERRWRD  002402            1474#   1631    1645*   1674    1688*   1718    1735*   1749*   1778    1813    1825*   1837*   1866*
                          1896*   1929*   1965*   1996*   2023    2040*   2053*   2069*   2231    2239    2257*   2267    2276
                          2302*   2399    2408    2499    2596    2606    2617    2624    2628    2638    2647    2668    2702
                          2713    2717    2721    2727    2731    2735    2752*   2768    2772    2776    4088*   4134*   4261*
                          4305*   4313*   4328*   4368*   4435*   4471*   4505*   4598*   4612*   4658*   4668*   4711*   4733*
                          4741*   4749*   4796*   4825*   4835*   4861*   4874    4888*   4898*   4944*   4957*   4974*   4986*
                          5001*   5012*   5033*   5047*   5062*   5076*   5086*   5097*   5107*   5142*   5156*   5169*   5179*
                          5204*   5218*   5231*   5242*   5266*   5280*   5293*   5335*   5346*   5357*   5369*   5393*   5405*
                          5419*   5428*   5441*   5451*   5461*   5481*   5492*   5502*   5512*   5532*   5542*   5550*   5558*
                          5563*   5574*   5587*   5593*   5598*   5603*   5609*   5615*   5623*   5640*   5654*   5667*   5678*
                          5704*   5717*   5727*   5740*   5751*   5762*   5776*   5789*   5799*   5827*   5837*   5845*   5874*
                          5885*   5895*   5921*   5935*   5945*   5955*   5965*   5975*   5985*   6018*   6032*   6042*   6052*
                          6062*   6072*   6082*   6117*   6131*   6145*   6158*   6172*   6185*   6198*   6212*   6225*   6238*
                          6251*   6263*   6291*   6299*   6318*   6328*   6339*   6361*   6375*   6385*   6396*   6422*   6433*
                          6443*   6453*   6464*   6488*   6499*   6511*   6550*   6559*   6599*   6607*   6640*   6650*   6685*
                          6704*   6717*   6730*   6743*   6756*   6880*   6884*   6941*   6945*   7004*   7008*   7041*   7048*
                          7073*   7080*   7097*   7107*   7117*   7129*   7138*   7146*   7154*   7159*   7168*   7173*   7187*
                          7208*   7222*   7244*   7249*   7265*   7270*   7279*   7285*   7297*   7302*
ERR1    007350 G          2790#   3607
ERR10   007552 G          2852#   4688    5308
ERR18   007600 G          1836    2866#
ERR19   007646 G          2751    2882#
ERR20   007706 G          2052    2897#
ERR21   007740 G          2068    2908#
ERR22   010022 G          2075    2926#
ERR23   010114 G          1928    1964    2951#
ERR24   010162 G          2441    2965#   3658    3733    3808    3883    3958    4033
ERR25   010224 G          2978#   3668    3743    3818    3893    3968    4043    4099    4145
ERR26   010266 G          1644    1687    2301    2993#
ERR27   010324 G          1734    1748    1824    1865    1895    1995    2039    3009#   4702    4762    4772    5695    6772
ERR3    007376 G          2803#   4231    4242
ERR32   010422 G          2256    3032#   3692    3767    3842    3917    3992    4067    4252    4517    4556    4566    4817
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                        4913    5999    6096
ERR5     007430 G       2814#   4352    4390
ERR6     007466 G       2826#   4534
ERR9     007524 G       2840#   4637
EVL    = 000004 G       1397#
EXLOOP   002400         1473#   2261    3402*   6547*   6549*   6596*   6598*   7038*   7040*
EXMDT    021134         4298    4577#
EXMEM    003744         2022#
EXMEMA   004122         2028    2058#
EXMEMB   004036         2030    2035#
EXMEMC   004062         2034    2042#
EXMEMX   004226         2024    2041    2054    2064    2070    2078#
E$END  = 002100         1097#
E$LOAD= 000035          1097#   1197
FMTO     010774         3080#   3611
FRSPAS   002354         1462#   3434*
FRSTIM   002330         1452#   3403    3410*
F$AU   = 000015         1097#   3544    3545
F$AUTO= 000020          1097#   3485    3499
F$BGN  = 000040         1097#   1105    1215    2790    2803    2814    2826    2840    2852    2866    2882    2897    2908
                        2926    2951    2965    2978    2993    3009    3032    3375    3380    3396    3485    3509    3526
                        3544    3573    3596    3601    3630    3694    3705    3769    3780    3844    3855    3919    3930
                        3994    4005    4069    4081    4089    4101    4116    4127    4135    4146    4160    4215    4232
                        4245    4253    4262    4271    4273    4294    4306    4314    4329    4353    4369    4391    4436
                        4472    4506    4519    4535    4540    4543    4550    4560    4570    4579    4594    4599    4613
                        4642    4654    4659    4669    4690    4704    4712    4724    4734    4742    4750    4763    4774
                        4791    4797    4818    4826    4836    4843    4856    4862    4889    4899    4915    4931    4945
                        4958    4975    4987    5002    5014    5027    5034    5048    5063    5077    5087    5098    5108
                        5124    5138    5143    5157    5170    5180    5186    5200    5205    5219    5232    5243    5249
                        5262    5267    5281    5294    5311    5322    5324    5336    5347    5358    5370    5381    5383
                        5394    5406    5420    5429    5442    5453    5462    5471    5473    5482    5493    5503    5513
                        5515    5529    5533    5543    5551    5559    5564    5575    5588    5594    5599    5604    5610
                        5616    5626    5636    5641    5655    5668    5679    5705    5718    5728    5741    5752    5763
                        5777    5790    5800    5806    5822    5828    5838    5846    5856    5870    5875    5886    5896
                        5902    5917    5922    5936    5946    5956    5966    5976    5986    6001    6014    6019    6033
                        6043    6053    6063    6073    6083    6098    6113    6118    6132    6146    6159    6173    6186
                        6199    6213    6226    6239    6252    6264    6281    6292    6300    6302    6314    6319    6329
                        6340    6345    6357    6362    6376    6386    6397    6402    6418    6423    6434    6444    6454
                        6465    6471    6484    6489    6500    6512    6517    6536    6551    6560    6566    6583    6600
                        6609    6615    6630    6641    6651    6657    6671    6675    6686    6705    6718    6731    6744
                        6757    6773    6780    6820    6842    6881    6885    6902    6942    6946    6964    7005    7009
                        7026    7042    7049    7063    7074    7081    7093    7098    7108    7118    7130    7139    7147
                        7155    7160    7169    7174    7188    7209    7223    7245    7250    7266    7271    7280    7286
                        7298    7303    7307    7329    7455
F$CLEA= 000007          1097#   3509    3512
F$DU   = 000016         1097#   3526    3529
F$END  = 000041         1097#   1105    2799    2813    2825    2837    2849    2861    2879    2894    2907    2925    2946
                        2964    2977    2990    3004    3029    3041    3378    3384    3483    3501    3514    3531    3547
                        3573    3596    3598    3618    3630    3694    3696    3705    3769    3771    3780    3844    3846
                        3855    3919    3921    3930    3994    3996    4005    4069    4071    4081    4089    4101    4116
                        4118    4127    4135    4146    4160    4162    4215    4232    4245    4253    4262    4271    4273
                        4275    4294    4306    4314    4329    4353    4369    4391    4436    4472    4506    4519    4535
                        4540    4549    4559    4569    4576    4579    4581    4594    4599    4613    4642    4644    4654
                        4659    4669    4690    4704    4712    4714    4724    4734    4742    4750    4763    4774    4776
                        4791    4797    4818    4826    4836    4843    4845    4856    4862    4889    4899    4915    4917
                        4931    4945    4958    4975    4987    5002    5014    5016    5027    5034    5048    5063    5077
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                    5087   5098   5108   5124   5126   5138   5143   5157   5170   5180   5186   5188   5200
                    5205   5219   5232   5243   5249   5251   5262   5267   5281   5294   5311   5313   5322
                    5324   5336   5347   5358   5370   5381   5383   5394   5406   5420   5429   5442   5453
                    5462   5471   5473   5482   5493   5503   5513   5515   5517   5529   5533   5543   5551
                    5559   5564   5575   5588   5594   5599   5604   5610   5616   5626   5628   5636   5641
                    5655   5668   5679   5705   5718   5728   5741   5752   5763   5777   5790   5800   5806
                    5808   5822   5828   5838   5846   5856   5858   5870   5875   5886   5896   5902   5904
                    5917   5922   5936   5946   5956   5966   5976   5986   6001   6003   6014   6019   6033
                    6043   6053   6063   6073   6083   6098   6100   6113   6118   6132   6146   6159   6173
                    6186   6199   6213   6226   6239   6252   6264   6266   6281   6292   6300   6302   6304
                    6314   6319   6329   6340   6345   6347   6357   6362   6376   6386   6397   6402   6404
                    6418   6423   6434   6444   6454   6465   6471   6473   6484   6489   6500   6512   6517
                    6519   6536   6551   6560   6566   6568   6583   6600   6609   6615   6617   6630   6641
                    6651   6657   6659   6671   6675   6686   6705   6718   6731   6744   6757   6773   6780
                    6820   6822   6842   6881   6885   6887   6902   6942   6946   6948   6964   7005   7009
                    7011   7026   7042   7049   7051   7063   7074   7081   7083   7093   7098   7108   7118
                    7130   7139   7147   7155   7160   7169   7174   7188   7209   7223   7245   7250   7266
                    7271   7280   7286   7298   7303   7307   7309   7368   7460
F$HARD= 000004      1097#  7329   7366
F$HW  = 000013      1097#  1287   1308
F$INIT= 000006      1097#  3396   3481
F$JMP = 000050      1097#  3378   4540   4818   6675   6780
F$MOD = 000000      1097#  1105
F$MSG = 000011      1097#  2790   2797   2803   2811   2814   2823   2826   2835   2840   2847   2852   2859
                    2866   2877   2882   2892   2897   2905   2908   2923   2926   2944   2951   2962   2965
                    2975   2978   2988   2993   3002   3009   3027   3032   3039
F$PROT= 000021      1097#  1215   1219
F$PWR = 000017      1097#
F$RPT = 000012      1097#  3375   3382
F$SEG = 000003      1097#
F$SOFT= 000005      1097#  7455   7458
F$SRV = 000010      1097#  3601   3616   4543   4547   4550   4557   4560   4567   4570   4574
F$SUB = 000002      1097#  5325   5381   5384   5471   5474   5513
F$SW  = 000014      1097#  1321   1326
F$TEST= 000001      1097#  3574   3596   3631   3694   3706   3769   3781   3844   3856   3919   3931   3994
                    4006   4069   4082   4116   4128   4160   4216   4273   4295   4579   4595   4642   4655
                    4712   4725   4774   4792   4843   4857   4915   4932   5014   5028   5124   5139   5186
                    5201   5249   5263   5311   5323   5515   5530   5626   5637   5806   5823   5856   5871
                    5902   5918   6001   6015   6098   6114   6264   6282   6302   6315   6345   6358   6402
                    6419   6471   6485   6517   6537   6566   6584   6615   6631   6657   6672   6820   6843
                    6885   6903   6946   6965   7009   7027   7049   7064   7081   7094   7307
GENWRD  002432      1487#  2609   2687   2691   2763   6286*  6543*  6592*  6636*  6871*  6873*  6932*  6934*
                    6995*  6997*  7030*  7070*  7071*  7095*
GETBA   003576      1948#  2720   2734   2775   5602
GETCC   003514      1914#  2716   2730   2771   5597
GETDAT  003446      1884#  5105   5459   6193   6259   7196   7257   7306
GETOC   003670      1985#  2627   5562   7158   7269   7283
GETOUT  003242      1811#  2623   2712   2726   2767   5083   5354   5449   5500   5554   5591   5608   5675
                    5748   6166   6233   6738   7153   7172   7191   7227   7248   7264   7278   7301
GETPRM  014164      3427   3439#  3448
GETRKY  003372      1855#  4709   5095   5367   5510   5613   5759   6180   6246   6751
GSSREP  023740      5435#  5469
GWORD   004274      2115#  3638   3641   3661   3674   3685   3713   3716   3736   3749   3760   3788   3791
                    3811   3824   3835   3863   3866   3886   3899   3910   3938   3941   3961   3974   3985
                    4013   4016   4036   4049   4060
G$CNTO= 000200      1097#
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G$EXCP= 000400          1097#
G$HILI= 000002          1097#
G$LOLI= 000001          1097#
G$NO  = 000000          1097#
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G$OFSI= 000376          1097#  7331  7336  7340  7344  7349  7354  7359
G$PRMA= 000001          1097#  7336  7340
G$PRMD= 000002          1097#  7331  7344  7349  7354  7359
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G$RADL= 000120          1097#
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G$XFER= 000004          1097#
G$YES = 000010          1097#  7331  7336  7340  7344  7349  7354  7359
HELP  = 000000          1096#  1128  1215  1274  1590  3377  3381
HOE   = 100000 G        1410#
IBE   = 010000 G        1407#
IDU   = 000040 G        1400#
IER   = 020000 G        1408#
IFLAG   002334          1454#  4427*  4442  4463*  4478  4546*  4573*
IFTYP   002474          1516#  2510   2526  2541   3477*  3478*
IFTYPM  033346          7360   7428#
INTC0   021044 G        4411   4543#
INTC4   021060 G        4420   4550#
INTD0   021100 G        4451   4560#
INTD4   021120 G        4457   4570#
ISR   = 000100 G        1401#
IXE   = 004000 G        1406#
I$AU  = 000041          1097#  3544#  3547#
I$AUTO= 000041          1097#  3485#  3501#
I$CLN = 000041          1097#  3509#  3514#
I$DU  = 000041          1097#  3526#  3531#
I$HRD = 000041          7329#  7368#
I$INIT= 000041          1097#  3396#  3483#
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I$PROT= 000040          1097#  1215#
I$PTAB= 000041          1097#
I$PWR = 000041          1097#
I$RPT = 000041          1097#  3375#  3384#
I$SEG = 000041          1097#  3573   3630   3705   3780   3855   3930   4005   4081   4127   4215   4294   4594
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                        5529   5636   5822   5870   5917   6014   6113   6281   6314   6357   6418   6484   6536
                        6583   6630   6671   6842   6902   6964   7026   7063   7093
I$SETU= 000041          1097#
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I$SUB = 000041          1097#  3573   3630   3705   3780   3855   3930   4005   4081   4127   4215   4294   4594
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                        5358   5370   5381#  5383#  5394   5406   5420   5442   5453   5462   5471#  5473#  5482
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I$TST = 000041

5493 5503 5513# 5515# 5529 5636 5822 5870 5917 6014 6113 6281 6314
6357 6418 6484 6536 6583 6630 6671 6842 6902 6964 7026 7063 7093
1097# 3573# 3596# 3598# 3630# 3694# 3696# 3705# 3769# 3771# 3780# 3844# 3846#
3855# 3919# 3921# 3930# 3994# 3996# 4005# 4069# 4071# 4081# 4089 4101 4116#
4118# 4127# 4135 4146 4160# 4162# 4215# 4232 4245 4253 4262 4271 4273#
4275# 4294# 4306 4314 4329 4353 4369 4391 4436 4472 4506 4519 4535
4540 4579# 4581# 4594# 4599 4613 4642# 4644# 4654# 4659 4669 4690 4704
4712# 4714# 4724# 4734 4742 4750 4763 4774# 4776# 4791# 4797 4818 4826
4836 4843# 4845# 4856# 4862 4889 4899 4915# 4917# 4931# 4945 4958 4975
4987 5002 5014# 5016# 5027# 5034 5048 5063 5077 5087 5098 5108 5124#
5126# 5138# 5143 5157 5170 5180 5186# 5188# 5200# 5205 5219 5232 5243
5249# 5251# 5262# 5267 5281 5294 5311# 5313# 5322# 5324 5383 5429 5473
5515# 5517# 5529# 5533 5543 5551 5559 5564 5575 5588 5594 5599 5604
5610 5616 5626# 5628# 5636# 5641 5655 5668 5679 5705 5718 5728 5741
5752 5763 5777 5790 5800 5806# 5808# 5822# 5828 5838 5846 5856# 5858#
5870# 5875 5886 5896 5902# 5904# 5917# 5922 5936 5946 5956 5966 5976
5986 6001# 6003# 6014# 6019 6033 6043 6053 6063 6073 6083 6098# 6100#
6113# 6118 6132 6146 6159 6173 6186 6199 6213 6226 6239 6252 6264#
6266# 6281# 6292 6300 6302# 6304# 6314# 6319 6329 6340 6345# 6347# 6357#
6362 6376 6386 6397 6402# 6404# 6418# 6423 6434 6444 6454 6465 6471#
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6600 6609 6615# 6617# 6630# 6641 6651 6657# 6659# 6671# 6675 6686 6705
6718 6731 6744 6757 6773 6780 6820# 6822# 6842# 6881 6885# 6887# 6902#
6942 6946# 6948# 6964# 7005 7009# 7011# 7026# 7042 7049# 7051# 7063# 7074
7081# 7083# 7093# 7098 7108 7118 7130 7139 7147 7155 7160 7169 7174
7188 7209 7223 7245 7250 7266 7271 7280 7286 7298 7303 7307# 7309#

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KMRVEC	002462	1507#	4412	4452	4485									
KMTLVL	002470	1513#	4419	4456										
KMTVEC	002464	1509#	4421	4458	4487									
LASTR5	005136	2294	2304*	2311#										
LOE =	040000 G	1409#												
LOGDEV	002332	1453#	2329	3433*	3440*	3441	3443	3494	3678	3753	3828	3903	3978	4053
		4106	4151											
LOOPBK	033031	7350	7392#											
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LULOOP=	000010	1423#												
L$ACP	002110 G	1204#												
L$APT	002036 G	1162#												
L$AU	014502 G	1189	3544#											
L$AUT	002070 G	1188#												
L$AUTO	014430 G	1205	3485#											
L$CCP	002106 G	1202#												
L$CLEA	014472 G	1203	3509#											
L$CO	002032 G	1158#												
L$DEPO	002011 G	1140#												
L$DESC	002606 G	1195	1577#											
L$DESP	002076 G	1194#												
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L$DISP	002132 G	1165	1228#											
L$DLY	002116 G	1210#												
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CZDMTD.P11 09-MAR-82 09:11 CROSS REFERENCE TABLE -- USER SYMBOLS

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L$DVTY	002564	G	1181	1571#	
L$EF	002052	G	1175#		
L$ENVI	002044	G	1168#		
L$ETP	002102	G	1198#		
L$EXP1	002046	G	1170#		
L$EXP4	002064	G	1184#		
L$EXP5	002066	G	1186#		
L$HARD	032534	G	1147	7329	7330#
L$HIME	002120	G	1212#		
L$HPCP	002016	G	1146#		
L$HPTP	002022	G	1150#		
L$HW	002264	G	1151	1287	1288#
L$ICP	002104	G	1200#		
L$INIT	013774	G	1201	3396#	
L$LADP	002026	G	1154#		
L$LAST	037652	G	1155	7527#	
L$LOAD	002100	G	1196#		
L$LUN	002074	G	1192#		
L$MREV	002050	G	1172#		
L$NAME	002000	G	1129#		
L$PRIO	002042	G	1166#		
L$PROT	002122	G	1207	1215#	
L$PRT	002112	G	1206#		
L$REPP	002062	G	1182#		
L$REV	002010	G	1138#		
L$RPT	013766	G	3375#		
L$SOFT	033440	G	7455	7456#	
L$SPC	002056	G	1178#		
L$SPCP	002020	G	1148#		
L$SPTP	002024	G	1152#		
L$STA	002030	G	1156#		
L$SW	002316	G	1321	1322#	
L$TEST	002114	G	1208#		
L$TIML	002014	G	1144#		
L$UNIT	002012	G	1142#	3441	
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L10005	007464		2823#		
L10006	007522		2835#		
L10007	007550		2847#		
L10010	007576		2859#		
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L10013	007736		2905#		
L10014	010020		2923#		
L10015	010112		2944#		
L10016	010160		2962#		
L10017	010222		2975#		
L10020	010264		2988#		
L10021	010322		3002#		
L10022	010420		3027#		
L10023	010446		3039#		
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CZDMTD.P11 09-MAR-82 09:11 CROSS REFERENCE TABLE -- USER SYMBOLS

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L10026  014470          3499#
L10027  014474          3512#
L10030  014500          3529#
L10031  014502          3545#
L10032  014612          3596#
L10033  014662          3616#
L10034  015214          3694#
L10035  015546          3769#
L10036  016100          3844#
L10037  016432          3919#
L10040  016764          3994#
L10041  017316          4069#
L10042  017456          4090    4102    4116#
L10043  017616          4136    4147    4160#
L10044  020002          4233    4246    4254    4263    4272    4273#
L10045  021134          4307    4315    4330    4354    4370    4392    4437    4473    4507    4520    4536    4541    4579#
L10046  021056          4547#
L10047  021076          4557#
L10050  021116          4567#
L10051  021132          4574#
L10052  021246          4600    4614    4642#
L10053  021456          4660    4670    4691    4705    4712#
L10054  021722          4735    4743    4751    4764    4774#
L10055  022132          4798    4819    4827    4837    4843#
L10056  022364          4863    4890    4900    4915#
L10057  022616          4946    4959    4976    4988    5003    5014#
L10060  023102          5035    5049    5064    5078    5088    5099    5109    5124#
L10061  023210          5144    5158    5171    5181    5186#
L10062  023316          5206    5220    5233    5244    5249#
L10063  023432          5268    5282    5295    5311#
L10064  024160          5430    5515#
L10065  023574          5337    5348    5359    5371    5381#
L10066  024052          5395    5407    5421    5443    5454    5463    5471#
L10067  024156          5483    5494    5504    5513#
L10070  024606          5534    5544    5552    5560    5565    5576    5589    5595    5600    5605    5611    5617    5626#
L10071  025234          5642    5656    5669    5680    5706    5719    5729    5742    5753    5764    5778    5791    5801
                        5806#
L10072  025350          5829    5839    5847    5856#
L10073  025434          5876    5887    5897    5902#
L10074  025662          5923    5937    5947    5957    5967    5977    5987    6001#
L10075  026110          6020    6034    6044    6054    6064    6074    6084    6098#
L10076  026436          6119    6133    6147    6160    6174    6187    6200    6214    6227    6240    6253    6264#
L10077  026532          6293    6301    6302#
L10100  026652          6320    6330    6341    6345#
L10101  027020          6363    6377    6387    6398    6402#
L10102  027206          6424    6435    6445    6455    6466    6471#
L10103  027324          6490    6501    6513    6517#
L10104  027446          6552    6561    6566#
L10105  027610          6601    6610    6615#
L10106  027704          6642    6652    6657#
L10107  030332          6676    6687    6706    6719    6732    6745    6758    6774    6781    6820#
L10110  030574          6882    6885#
L10111  031036          6943    6946#
L10112  031300          7006    7009#
L10113  031416          7043    7049#
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CROSS REFERENCE TABLE -- USER SYMBOLS

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                        7246    7251    7267    7272    7281    7287    7299    7304    7307#
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L10117  033440          7455    7459#
MCLR  = 000100          1421#
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MEF1    010675          2792    3069#
MEF1A   011603          2996    3012    3153#
MEF11   011536          3021    3146#
MEF14   012021          1643    3183#
MEF15   012066          1686    3190#
MEF16A  012133          1927    3197#
MEF17A  012176          1963    3203#
MEF18   012301          2871    3215#
MEF18A  012242          1835    3209#
MEF19   012372          2886    3226#
MEF19A  012337          2750    3221#
MEF23   012460          2956    3236#
MEF3    011105          2805    3093#
MEF3A   011043          3087#   4230    4241
MEF30   012516          3242#   4816    4912    5998    6095
MEF31   012540          3245#   3691    3766    3841    3916    3991    4066
MEF32   012566          2255    3249#
MEF4    011125          3096#   4251
MEF5    011243          2817    3110#
MEF6    011336          2829    3121#
MEF7    011414          2300    3131#   4516
MEF8    011446          3136#   4555    4565
MEMEX   003744          2021#   6883    6944    7007
META    004222          2077#   6844    6904    6966
METB    004216          2046    2076#
METC    004202          2059    2071#
MFPC    011611          2868    2953    2995    3011    3155#
MFRI    011774          3178#
MFRO    011770          3177#
MGB     011730          3019    3171#
MINITR  004456          2190#   3486    4218
MINITS  004522          2222#   4301    4596    4656    4793    4858    4942    5031    5140    5202    5264    5333    5391
                        5479    5531    5638    5825    5872    5919    6016    6115    6288    6316    6359    6420    6486
                        6637    6878    6939    7002    7072    7096
MINIT1  004512          2220#   6548    6597    7039
MINTE   005066          2232    2240    2258    2268    2277    2283#
MINTR   004530          2221    2223#   6682
MIN1R   004502          2192    2194#
MIN2R   004554          2225    2227#
MODEA   027776          6692    6696#
MODEB   027734          6681#   6778
MODED   030032          6711#
MODEX   030226          6680    6779#
MODIN   030256          6793#
MODINT  002356          1463#
MODOUT  030262          6765    6796#
MODQ22  002376          1472#   1916    1952    2653    2674    3401*   6605*   6608*
MODTYP  030232          6697    6783#
MPCSR   002440          1494#   3453*
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MPOVEC  002464          1510#  3471*  3472*
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MRDI    011660          2841   3163#
MRDO    011704          2853   3167#
MRFT    011630          3159#  4636   4687   5307
MR1     033446          2060   6284   6505   6542   6591   6632   6876   6937   7000   7032   7067   7477#
MR1E    033452          7478#
MR12    033452          7480#
MR12E   033706          7511#
MTFLG   007346          2690*  2708*  2759   2780#
M12F    011747          1861   3174#
M13F    011762          1741   2035   3176#  4768
M18F    012000          1727   1991   3179#  4758
M28F    012007          1820   3181#  4698
M30F    012014          1891   3182#  5691   6768
NEWPAT  022630          5031#  5117
NEWSLT  022626          5029#  5121
NEWST   014140          3422   3432#  3442
OPTYP   002472          1515#  2094   2191   2224   2248   2259   2344   2512   2528   2543   2553   2592   3452*
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                        7125
OPTYPM  032636          7332   7369#
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O$BGNR= 000000          1097#  1182
O$BGNS= 000000          1097#  1148
O$DU  = 000001          1097#  1127#  1190
O$ERRT= 000000          1097#  1198
O$GNSW= 000000          1097#  1152
O$POIN= 000001          1097#  1127#  1214
O$SETU= 000000          1097#  1142   7525
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PERR    002410          1477#  1738   1740   4831*  4885*  4981*  5008*  5176*  5238*  5425*  5724*  5796*  5842*
                        5892*  5952*  5972*  6049*  6069*  6336*  6393*  6461*  6508*
PNT   = 001000 G        1404#
PRI   = 002000 G        1405#
PRIRTY  033000          7345   7387#
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PRI01 = 000040 G        1392#
PRI02 = 000100 G        1391#
PRI03 = 000140 G        1390#
PRI04 = 000200 G        1389#
PRI05 = 000240 G        1388#
PRI06 = 000300 G        1387#
PRI07 = 000340 G        1167   1386#  3574
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Q22BIT= 000010          1431#
RDI   = 000020          1433#  1636   4268   4631
RDO   = 000200          1434#  1633   2630   2724   2765   4682   4808   4821   4883   4894   4908   4993   5302
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REG7    002540          1542#
RETADR  002500          1518#
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RET17   031032          6908   6945#
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RMVYY   005620          2413   2421#  2425
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                        6495   6502   7205   7211
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                    7368#  7460#
TABEN   006306       2564  2575  2588#
TABM    006262       2570  2581#
TESTAB  010624       2583  3061#
```

CZDMTD.P11 09-MAR-82 09:11 CROSS REFERENCE TABLE -- USER SYMBOLS

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TFM2A   013045          2917    3281#
TFM20   012633          2899    3256#
TFM21   012756          2909    3271#
TFM22   013126          2927    3290#
TFM22A  013214          2933    3299#
TFM22B  013303          2938    3309#
TFM24   013367          2969    3318#
TFM25   013461          2982    3328#
TLB1    017752          4259#   4269
TLB10   021504          4728    4731#   4737
TLB2    020106          4325#   4336
TLB3    020242          4365#   4376
TLB4    020500          4432#   4443
TLB5    020622          4468#   4479
TLB6    020722          4502#   4524
TLB6A   020700          4497#   4538
TLB7    004566          2230#   2236
TLB8    004620          2238#   2245
TLB9    005024          2275#   2279
TMP0    002544          1546#
TMP1    002546          1547#
TMP2    002550          1548#
TMP3    002552          1549#
TMP4    002554          1550#
TMP5    002556          1551#
TMP6    002560          1552#
TMP7    002562          1553#
TOUT    005070          1630    1673    2230    2238    2266    2275    2294#   4260    4327    4367    4434    4470    4504
                        4732
TOUTE   005120          2295    2303#
TOUTEX  005130          2297    2305#
TRIBH   002364          1466#   4939*   4940*   4964
TRIBMX  002362          1465#   4932*   4935*   4940
TRIBN   002360          1464#   1780    1828    2486    2487*   2599*   2651    2672    4938*   4963*   4964    4994*   5040*
                        5149*   5211*   5273*   5331*   5390*   5488*   5535*   5580    5647*   5687    5881*   5928*   6025*
                        6124*   6287*   6368*   6391    6429*   6459    6544*   6593*   6635*   6696*   6872*   6933*   6996*
                        7035*   7065*   7103*   7114*
TSSADD  002412          1478#   5028*   5055    5069    5093    5118    5120*   5330*   5342    5365    5377*   5378    5389*
                        5400    5402    5412*   5413    5416    5436*   5437    5458    5468
TSTCON  002476          1517#   2480    2490    2493    3475*   4806    4868    4881    6545    6594    6679    7036
TXADD   002420          1482#   2671    2719    2740    2774    6284*   6542*   6591*   6632*   6876*   6937*   7000*   7032*
                        7067*
TXCC    002426          1485#   2677    2683    2715    2729    2756    2770    6285*   6541*   6590*   6631*   6877*   6938*
                        7001*   7031*   7066*
TXRXA   006476          2501    2597    2607    2618    2625    2629    2639#
TXRXB   006462          2610    2635#
TXRXC   006504          2631    2639    2644#
TXRXEN  007344          2588    2640    2649    2670    2689    2703    2714    2718    2722    2728    2732    2736    2754
                        2764    2769    2773    2777    2778#
TXRXG   007074          2692    2709    2725#
TXRXSR  005720          2480#   6557    6606    7047
TXRX1   005746          2490#
TXRX1A  005776          2494    2496#
TXRX2   006340          2491    2593    2599#
TXRX3   006346          2482    2603#   6298    6647    6879    6940    7003    7079
TYEND   002420          1481#   5852
```

```
TYLST   002414  1479# 5823
T$ARGC= 000004  1130# 1131# 1132# 1133# 1134# 1135# 2328# 2334  2335# 2343  2346# 2351  2353#
                2357  2565# 2569  2576# 2580  2582# 2587  2791# 2796  2804# 2809  2815# 2821
                2827# 2833  2841# 2845  2853# 2857  2867# 2875  2883# 2890  2898# 2903  2909#
                2913  2914# 2921  2927# 2931  2932# 2937  2938# 2942  2952# 2960  2966# 2973
                2979# 2986  2994# 3000  3010# 3016  3017# 3025  3033# 3037  3610# 3615  3676#
                3683  3751# 3758  3826# 3833  3901# 3908  3976# 3983  4051# 4058  4104# 4111
                4149# 4156
T$CODE= 013032  7331# 7336# 7340# 7344# 7349# 7354# 7359#
T$ERRN= 000055  1097# 1642# 1685# 1732# 1746# 1822# 1834# 1863# 1893# 1926# 1962# 1993# 2037#
                2050# 2066# 2073# 2254# 2299# 2439# 2749# 3605# 3656# 3666# 3690# 3731# 3741#
                3765# 3806# 3816# 3840# 3881# 3891# 3915# 3956# 3966# 3990# 4031# 4041# 4065#
                4097# 4143# 4229# 4240# 4250# 4350# 4388# 4515# 4532# 4554# 4564# 4635# 4686#
                4700# 4760# 4770# 4815# 4911# 5306# 5693# 5997# 6094# 6770#
T$EXCP= 000000  7331# 7336# 7340# 7344# 7349# 7354# 7359# 7364
T$FLAG= 000040  3378# 3380  4089# 4101# 4135# 4146# 4232# 4245# 4253# 4262# 4271# 4306# 4314#
                4329# 4353# 4369# 4391# 4436# 4472# 4506# 4519# 4535# 4540# 4599# 4613# 4659#
                4669# 4690# 4704# 4734# 4742# 4750# 4763# 4797# 4818# 4826# 4836# 4862# 4889#
                4899# 4945# 4958# 4975# 4987# 5002# 5034# 5048# 5063# 5077# 5087# 5098# 5108#
                5143# 5157# 5170# 5180# 5205# 5219# 5232# 5243# 5267# 5281# 5294# 5336# 5347#
                5358# 5370# 5394# 5406# 5420# 5429# 5442# 5453# 5462# 5482# 5493# 5503# 5533#
                5543# 5551# 5559# 5564# 5575# 5588# 5594# 5599# 5604# 5610# 5616# 5641# 5655#
                5668# 5679# 5705# 5718# 5728# 5741# 5752# 5763# 5777# 5790# 5800# 5828# 5838#
                5846# 5875# 5886# 5896# 5922# 5936# 5946# 5956# 5966# 5976# 5986# 6019# 6033#
                6043# 6053# 6063# 6073# 6083# 6118# 6132# 6146# 6159# 6173# 6186# 6199# 6213#
                6226# 6239# 6252# 6292# 6300# 6319# 6329# 6340# 6362# 6376# 6386# 6397# 6423#
                6434# 6444# 6454# 6465# 6489# 6500# 6512# 6551# 6560# 6600# 6609# 6641# 6651#
                6675# 6686# 6705# 6718# 6731# 6744# 6757# 6773# 6780# 6881# 6942# 7005# 7042#
                7074# 7098# 7108# 7118# 7130# 7139# 7147# 7155# 7160# 7169# 7174# 7188# 7209#
                7223# 7245# 7250# 7266# 7271# 7280# 7286# 7298# 7303#
T$GMAN= 000000  1097#
T$HILI= 000007  7331# 7335  7336# 7339  7340# 7343  7344# 7348  7349# 7353  7354# 7358  7359#
                7363
T$LAST= 000001  1097# 7525#
T$LOLI= 000000  7331# 7334  7336# 7338  7340# 7342  7344# 7347  7349# 7352  7354# 7357  7359#
                7362
T$LSYM= 010000  1097# 1309  1327  2798  2812  2824  2836  2848  2860  2878  2893  2906  2924
                2945  2963  2976  2989  3003  3028  3040  3383  3482  3500  3513  3530  3546
                3597  3617  3695  3770  3845  3920  3995  4070  4117  4161  4274  4548  4558
                4568  4575  4580  4643  4713  4775  4844  4916  5015  5125  5187  5250  5312
                5382  5472  5514  5516  5627  5807  5857  5903  6002  6099  6265  6303  6346
                6403  6472  6518  6567  6616  6658  6821  6886  6947  7010  7050  7082  7308
                7368  7460
T$LTNO= 000054  7528#
T$NEST= 000000  1097# 1105# 1215# 1219# 1287# 1308# 1321# 1326# 2790# 2797# 2803# 2811# 2814#
                2823# 2826# 2835# 2840# 2847# 2852# 2859# 2866# 2877# 2882# 2892# 2897# 2905#
                2908# 2923# 2926# 2944# 2951# 2962# 2965# 2975# 2978# 2988# 2993# 3002# 3009#
                3027# 3032# 3039# 3375# 3382# 3396# 3481# 3485# 3499# 3509# 3512# 3526# 3529#
                3544# 3545# 3574# 3596# 3601# 3616# 3631# 3694# 3706# 3769# 3781# 3844# 3856#
                3919# 3931# 3994# 4006# 4069# 4082# 4116# 4128# 4160# 4216# 4273# 4295# 4543#
                4547# 4550# 4557# 4560# 4567# 4570# 4574# 4579# 4595# 4642# 4655# 4712# 4725#
                4774# 4792# 4843# 4857# 4915# 4932# 5014# 5028# 5124# 5139# 5186# 5201# 5249#
                5263# 5311# 5323# 5325# 5381# 5384# 5471# 5474# 5513# 5515# 5530# 5626# 5637#
                5806# 5823# 5856# 5871# 5902# 5918# 6001# 6015# 6098# 6114# 6264# 6282# 6302#
                6315# 6345# 6358# 6402# 6419# 6471# 6485# 6517# 6537# 6566# 6584# 6615# 6631#
                6657# 6672# 6820# 6843# 6885# 6903# 6946# 6965# 7009# 7027# 7049# 7064# 7081#
```

```
                    7094#  7307#  7329#  7366#  7455#  7458#
T$NS0 = 000000      1105#
T$NS1 = 000005      1215#  1219   1287#  1308   1321#  1326   2790#  2797   2803#  2811   2814#  2823   2826#
                    2835   2840#  2847   2852#  2859   2866#  2877   2882#  2892   2897#  2905   2908#  2923
                    2926#  2944   2951#  2962   2965#  2975   2978#  2988   2993#  3002   3009#  3027   3032#
                    3039   3375#  3382   3396#  3481   3485#  3499   3509#  3512   3526#  3529   3544#  3545
                    3574#  3596   3601#  3616   3631#  3694   3706#  3769   3781#  3844   3856#  3919   3931#
                    3994   4006#  4069   4082#  4116   4128#  4160   4216#  4273   4295#  4579   4595#  4642
                    4655#  4712   4725#  4774   4792#  4843   4857#  4915   4932#  5014   5028#  5124   5139#
                    5186   5201#  5249   5263#  5311   5323#  5515   5530#  5626   5637#  5806   5823#  5856
                    5871#  5902   5918#  6001   6015#  6098   6114#  6264   6282#  6302   6315#  6345   6358#
                    6402   6419#  6471   6485#  6517   6537#  6566   6584#  6615   6631#  6657   6672#  6820
                    6843#  6885   6903#  6946   6965#  7009   7027#  7049   7064#  7081   7094#  7307   7329#
                    7366   7455#  7458
T$NS2 = 000002      4543#  4547   4550#  4557   4560#  4567   4570#  4574   5325#  5381   5384#  5471   5474#
                    5513
T$PTNU= 000000      1097#
T$SAVL= 177777      1097#
T$SEGL= 177777      1097#
T$SUBN= 000000      1097#  3573#  3630#  3705#  3780#  3855#  3930#  4005#  4081#  4127#  4215#  4294#  4594#
                    4654#  4724#  4791#  4856#  4931#  5027#  5138#  5200#  5262#  5322#  5324#  5383#  5473#
                    5529#  5636#  5822#  5870#  5917#  6014#  6113#  6281#  6314#  6357#  6418#  6484#  6536#
                    6583#  6630#  6671#  6842#  6902#  6964#  7026#  7063#  7093#
T$TAGL= 177777      1097#
T$TAGN= 010120      1097#  1215#  1287#  1321#  2790#  2803#  2814#  2826#  2840#  2852#  2866#  2882#  2897#
                    2908#  2926#  2951#  2965#  2978#  2993#  3009#  3032#  3375#  3396#  3485#  3509#  3526#
                    3544#  3574#  3601#  3631#  3706#  3781#  3856#  3931#  4006#  4082#  4128#  4216#  4295#
                    4543#  4550#  4560#  4570#  4595#  4655#  4725#  4792#  4857#  4932#  5028#  5139#  5201#
                    5263#  5323#  5325#  5384#  5474#  5530#  5637#  5823#  5871#  5918#  6015#  6114#  6282#
                    6315#  6358#  6419#  6485#  6537#  6584#  6631#  6672#  6843#  6903#  6965#  7027#  7064#
                    7094#  7329#  7455#
T$TEMP= 000005      1219#  1229#  1230#  1231#  1232#  1233#  1234#  1235#  1236#  1237#  1238#  1239#  1240#
                    1241#  1242#  1243#  1244#  1245#  1246#  1247#  1248#  1249#  1250#  1251#  1252#  1253#
                    1254#  1255#  1256#  1257#  1258#  1259#  1260#  1261#  1262#  1263#  1264#  1265#  1266#
                    1267#  1268#  1269#  1270#  1271#  1272#  1273#  1308#  1326#  2797#  2811#  2823#  2835#
                    2847#  2859#  2877#  2892#  2905#  2923#  2944#  2962#  2975#  2988#  3002#  3027#  3039#
                    3378#  3379   3382#  3481#  3499#  3512#  3529#  3545#  3596#  3616#  3694#  3769#  3844#
                    3919#  3994#  4069#  4089#  4090   4101#  4102   4116#  4135#  4136   4146#  4147   4160#
                    4232#  4233   4245#  4246   4253#  4254   4262#  4263   4271#  4272   4273#  4306#  4307
                    4314#  4315   4329#  4330   4353#  4354   4369#  4370   4391#  4392   4436#  4437   4472#
                    4473   4506#  4507   4519#  4520   4535#  4536   4540#  4541   4547#  4557#  4567#  4574#
                    4579#  4599#  4600   4613#  4614   4642#  4659#  4660   4669#  4670   4690#  4691   4704#
                    4705   4712#  4734#  4735   4742#  4743   4750#  4751   4763#  4764   4774#  4797#  4798
                    4818#  4819   4826#  4827   4836#  4837   4843#  4862#  4863   4889#  4890   4899#  4900
                    4915#  4945#  4946   4958#  4959   4975#  4976   4987#  4988   5002#  5003   5014#  5034#
                    5035   5048#  5049   5063#  5064   5077#  5078   5087#  5088   5098#  5099   5108#  5109
                    5124#  5143#  5144   5157#  5158   5170#  5171   5180#  5181   5186#  5205#  5206   5219#
                    5220   5232#  5233   5243#  5244   5249#  5267#  5268   5281#  5282   5294#  5295   5311#
                    5336#  5337   5347#  5348   5358#  5359   5370#  5371   5381#  5394#  5395   5406#  5407
                    5420#  5421   5429#  5430   5442#  5443   5453#  5454   5462#  5463   5471#  5482#  5483
                    5493#  5494   5503#  5504   5513#  5515#  5533#  5534   5543#  5544   5551#  5552   5559#
                    5560   5564#  5565   5575#  5576   5588#  5589   5594#  5595   5599#  5600   5604#  5605
                    5610#  5611   5616#  5617   5626#  5641#  5642   5655#  5656   5668#  5669   5679#  5680
                    5705#  5706   5718#  5719   5728#  5729   5741#  5742   5752#  5753   5763#  5764   5777#
                    5778   5790#  5791   5800#  5801   5806#  5828#  5829   5838#  5839   5846#  5847   5856#
                    5875#  5876   5886#  5887   5896#  5897   5902#  5922#  5923   5936#  5937   5946#  5947
```

```
                5956#  5957   5966#  5967   5976#  5977   5986#  5987   6001#  6019#  6020   6033#  6034
                6043#  6044   6053#  6054   6063#  6064   6073#  6074   6083#  6084   6098#  6118#  6119
                6132#  6133   6146#  6147   6159#  6160   6173#  6174   6186#  6187   6199#  6200   6213#
                6214   6226#  6227   6239#  6240   6252#  6253   6264#  6292#  6293   6300#  6301   6302#
                6319#  6320   6329#  6330   6340#  6341   6345#  6362#  6363   6376#  6377   6386#  6387
                6397#  6398   6402#  6423#  6424   6434#  6435   6444#  6445   6454#  6455   6465#  6466
                6471#  6489#  6490   6500#  6501   6512#  6513   6517#  6551#  6552   6560#  6561   6566#
                6600#  6601   6609#  6610   6615#  6641#  6642   6651#  6652   6657#  6675#  6676   6686#
                6687   6705#  6706   6718#  6719   6731#  6732   6744#  6745   6757#  6758   6773#  6774
                6780#  6781   6820#  6881#  6882   6885#  6942#  6943   6946#  7005#  7006   7009#  7042#
                7043   7049#  7074#  7075   7081#  7098#  7099   7108#  7109   7118#  7119   7130#  7131
                7139#  7140   7147#  7148   7155#  7156   7160#  7161   7169#  7170   7174#  7175   7188#
                7189   7209#  7210   7223#  7224   7245#  7246   7250#  7251   7266#  7267   7271#  7272
                7280#  7281   7286#  7287   7298#  7299   7303#  7304   7307#  7331#  7336#  7340#  7344#
                7349#  7354#  7359#  7366#  7458#
T$TEST= 000054  1097#  3559   3572   3573#  3621   3628   3630#  3696   3703   3705#  3771   3778   3780#
                3846   3853   3855#  3921   3928   3930#  3996   4003   4005#  4071   4080   4081#  4118
                4126   4127#  4163   4214   4215#  4277   4291   4294#  4583   4593   4594#  4645   4653
                4654#  4714   4723   4724#  4778   4790   4791#  4846   4855   4856#  4918   4929   4931#
                5017   5026   5027#  5128   5137   5138#  5190   5199   5200#  5253   5261   5262#  5313
                5321   5322#  5324   5383   5473   5519   5528   5529#  5629   5635   5636#  5811   5821
                5822#  5860   5869   5870#  5906   5916   5917#  6004   6013   6014#  6101   6112   6113#
                6269   6279   6281#  6305   6313   6314#  6348   6356   6357#  6408   6417   6418#  6474
                6483   6484#  6523   6535   6536#  6571   6582   6583#  6618   6629   6630#  6660   6670
                6671#  6827   6841   6842#  6887   6901   6902#  6949   6963   6964#  7012   7025   7026#
                7052   7062   7063#  7083   7092   7093#  7528
T$TSTM= 177777  1097#  1641   1684   1731   1745   1821   1833   1862   1892   1925   1961   1992   2036
                2049   2065   2072   2253   2298   2306   2333   2342   2350   2356   2438   2568   2579
                2586   2748   2795   2798   2808   2812   2820   2824   2832   2836   2844   2848   2856
                2860   2874   2878   2889   2893   2902   2906   2912   2920   2924   2930   2936   2941
                2945   2959   2963   2972   2976   2985   2989   2999   3003   3015   3024   3028   3036
                3040   3383   3413   3417   3421   3425   3444   3482   3495   3498   3500   3510   3513
                3528   3530   3546   3578   3591   3594   3597   3604   3614   3655   3665   3682   3689
                3695   3730   3740   3757   3764   3770   3805   3815   3832   3839   3845   3880   3890
                3907   3914   3920   3955   3965   3982   3989   3995   4030   4040   4057   4064   4070
                4089   4096   4101   4110   4117   4135   4142   4146   4155   4161   4228   4232   4239
                4245   4249   4253   4262   4271   4274   4306   4314   4329   4349   4353   4369   4387
                4391   4414   4423   4430   4436   4454   4460   4465   4472   4486   4488   4506   4514
                4519   4531   4535   4540   4545   4552   4553   4562   4563   4572   4580   4599   4613
                4634   4643   4659   4669   4685   4690   4699   4704   4713   4734   4742   4750   4759
                4763   4769   4775   4797   4814   4818   4826   4836   4844   4862   4889   4899   4910
                4916   4945   4958   4975   4987   5002   5015   5034   5048   5063   5077   5087   5098
                5108   5125   5143   5157   5170   5180   5187   5205   5219   5232   5243   5250   5267
                5281   5294   5305   5312   5325   5336   5347   5358   5370   5382   5384   5394   5406
                5420   5429   5442   5453   5462   5472   5474   5482   5493   5503   5514   5516   5533
                5543   5551   5559   5564   5575   5588   5594   5599   5604   5610   5616   5627   5641
                5655   5668   5679   5692   5705   5718   5728   5741   5752   5763   5777   5790   5800
                5807   5828   5838   5846   5857   5875   5886   5896   5903   5922   5936   5946   5956
                5966   5976   5986   5996   6002   6019   6033   6043   6053   6063   6073   6083   6093
                6099   6118   6132   6146   6159   6173   6186   6199   6213   6226   6239   6252   6265
                6292   6300   6303   6319   6329   6340   6346   6362   6376   6386   6397   6403   6423
                6434   6444   6454   6465   6472   6489   6500   6512   6518   6551   6560   6567   6600
                6609   6616   6641   6651   6658   6675   6686   6705   6718   6731   6744   6757   6769
                6773   6780   6821   6855   6881   6886   6915   6942   6947   6978   7005   7010   7042
                7050   7074   7082   7098   7108   7118   7130   7139   7147   7155   7160   7169   7174
                7188   7209   7223   7245   7250   7266   7271   7280   7286   7298   7303   7308
```

```
T$TSTS= 000001   1097#  3574#  3631#  3706#  3781#  3856#  3931#  4006#  4082#  4128#  4216#  4295#  4595#
                 4655#  4725#  4792#  4857#  4932#  5028#  5139#  5201#  5263#  5323#  5530#  5637#  5823#
                 5871#  5918#  6015#  6114#  6282#  6315#  6358#  6419#  6485#  6537#  6584#  6631#  6672#
                 6843#  6903#  6965#  7027#  7064#  7094#
T$$AU = 010031   3544#  3545
T$$AUT= 010026   3485#  3499
T$$CLE= 010027   3509#  3512
T$$DU = 010030   3526#  3529
T$$HAR= 010116   7329#  7367
T$$HW = 010001   1287#  1308
T$$INI= 010025   3396#  3481
T$$MSG= 010023   2790#  2797  2803#  2811  2814#  2823  2826#  2835  2840#  2847  2852#  2859  2866#
                 2877  2882#  2892  2897#  2905  2908#  2923  2926#  2944  2951#  2962  2965#  2975
                 2978#  2988  2993#  3002  3009#  3027  3032#  3039
T$$PRO= 010000   1215#
T$$RPT= 010024   3375#  3378  3382
T$$SOF= 010117   7455#  7459
T$$SRV= 010051   3601#  3616  4543#  4547  4550#  4557  4560#  4567  4570#  4574
T$$SUB= 010067   5325#  5336  5347  5358  5370  5381  5384#  5394  5406  5420  5442  5453  5462
                 5471  5474#  5482  5493  5503  5513
T$$SW = 010002   1321#  1326
T$$TES= 010115   3574#  3596  3631#  3694  3706#  3769  3781#  3844  3856#  3919  3931#  3994  4006#
                 4069  4082#  4089  4101  4116  4128#  4135  4146  4160  4216#  4232  4245  4253
                 4262  4271  4273  4295#  4306  4314  4329  4353  4369  4391  4436  4472  4506
                 4519  4535  4540  4579  4595#  4599  4613  4642  4655#  4659  4669  4690  4704
                 4712  4725#  4734  4742  4750  4763  4774  4792#  4797  4818  4826  4836  4843
                 4857#  4862  4889  4899  4915  4932#  4945  4958  4975  4987  5002  5014  5028#
                 5034  5048  5063  5077  5087  5098  5108  5124  5139#  5143  5157  5170  5180
                 5186  5201#  5205  5219  5232  5243  5249  5263#  5267  5281  5294  5311  5323#
                 5429  5515  5530#  5533  5543  5551  5559  5564  5575  5588  5594  5599  5604
                 5610  5616  5626  5637#  5641  5655  5668  5679  5705  5718  5728  5741  5752
                 5763  5777  5790  5800  5806  5823#  5828  5838  5846  5856  5871#  5875  5886
                 5896  5902  5918#  5922  5936  5946  5956  5966  5976  5986  6001  6015#  6019
                 6033  6043  6053  6063  6073  6083  6098  6114#  6118  6132  6146  6159  6173
                 6186  6199  6213  6226  6239  6252  6264  6282#  6292  6300  6302  6315#  6319
                 6329  6340  6345  6358#  6362  6376  6386  6397  6402  6419#  6423  6434  6444
                 6454  6465  6471  6485#  6489  6500  6512  6517  6537#  6551  6560  6566  6584#
                 6600  6609  6615  6631#  6641  6651  6657  6672#  6675  6686  6705  6718  6731
                 6744  6757  6773  6780  6820  6843#  6881  6885  6903#  6942  6946  6965#  7005
                 7009  7027#  7042  7049  7064#  7074  7081  7094#  7098  7108  7118  7130  7139
                 7147  7155  7160  7169  7174  7188  7209  7223  7245  7250  7266  7271  7280
                 7286  7298  7303  7307
T1       014504 G  1229  3573#
T10      017620 G  1238  4215#
T11      020004 G  1239  4294#
T12      021136 G  1240  4594#
T13      021250 G  1241  4654#
T14      021460 G  1242  4724#
T14A     021666    4757  4765#
T14EX    021722    4755  4767  4773#
T15      021724 G  1243  4791#
T16      022134 G  1244  4856#
T17      022366 G  1245  4931#
T18      022620 G  1246  5027#
T19      023104 G  1247  5138#
T2       014664 G  1230  3630#
```

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```
T20       023212 G          1248    5200#
T21       023320 G          1249    5262#
T22       023434 G          1250    5322#
T22.1     023434            5324#
T22.2     023576            5383#
T22.3     024054            5473#
T23       024162 G          1251    5529#
T24       024610 G          1252    5636#
T25       025236 G          1253    5822#
T26       025352 G          1254    5870#
T27       025436 G          1255    5917#
T28       025664 G          1256    6014#
T29       026112 G          1257    6113#
T3        015216 G          1231    3705#
T30       026440 G          1258    6281#
T31       026534 G          1259    6314#
T32       026654 G          1260    6357#
T33       027022 G          1261    6418#
T34       027210 G          1262    6484#
T35       027326 G          1263    6536#
T36       027450 G          1264    6583#
T36END    027610            6585    6614#
T37       027612 G          1265    6630#
T38       027706 G          1266    6671#
T39       030334 G          1267    6842#
T4        015550 G          1232    3780#
T40       030576 G          1268    6902#
T41       031040 G          1269    6964#
T42       031302 G          1270    7026#
T422C     006162            2542    2553#
T43       031420 G          1271    7063#
T44       031516 G          1272    7093#
T5        016102 G          1233    3855#
T6        016434 G          1234    3930#
T7        016766 G          1235    4005#
T8        017320 G          1236    4081#
T9        017460 G          1237    4127#
T9BG      020020            4300#   4402
UAM     = 000200 G          1402#
VECTOR    032747            7341    7382#
V35TC     006132            2527    2541#
WAIT50    004244            1635    1678    2092#   2195    2234    2503    3489    4220    4625    4626    4627    4628    4679
                            4680    4802    4804    4859    4879    4880    4907    5300    5301    5619    5620    5992    6089
                            6683
WIPE      003016            1716#   4833    4886    4984    5011    5177    5240    5426    5725    5797    5843    5893    5953
                            5973    6050    6070    6337    6394    6462    6509
WORDT     002372            1470#   2166*   2421*   2435*   2436    2967    2979    3639*   3642*   3651    3662*   3663    3672
                            3686*   3687    3714*   3717*   3726    3737*   3738    3747    3761*   3762    3789*   3792*   3801
                            3812*   3813    3822    3836*   3837    3864*   3867*   3876    3887*   3888    3897    3911*   3912
                            3939*   3942*   3951    3962*   3963    3972    3986*   3987    4014*   4017*   4026    4037*   4038
                            4047    4061*   4062
WRDI      002732            1672#   2645    2666    4311    4610    4666    4739    4823    4896    5572    5835    6326    6383
                            6451    6497    7206
WRDIE     003014            1675    1677    1690#
WRDI1     002736            1673#   1680    1777
WRDO      002646            1629#   2022    2264    2398    2407    2701    4748
```

CZDMTD.P11 09-MAR-82 09:11 CROSS REFERENCE TABLE -- USER SYMBOLS

```
WRDOE   002730          1632    1634    1647#
WRDO1   002652          1630#   1637    1717    1812
WRIBYT  002504          1520#
XX      022412          4934    4936#
XYZTC   006072          2511    2526#
X$ALWA= 000000          1097#
X$FALS= 000040          1097#
X$OFFS= 000400          1097#
X$TRUE= 000020          1097#
$BDDAT  002340          1456#   1721*   1722*   1723    1737*   1738    1815*   1816*   1817    1829*   1830    1856*   1857*
                        1858    1885*   1886    1915*   1918*   1919*   1920    1949*   1950    1954*   1956    1986*   1987*
                        1988    2025*   2026*   2027    2029    2032*   2033    2061*   2063    2743*   2745    2815    2827
                        2869    2883    2914    2954    3017    4343*   4344    4381*   4382*   4499    4527    4693*   4694*
                        4696    4752*   4753*   4754    4756    4765*   4766    4811*   4812    5686*   5688    6763*   6764*
                        6766
$GDDAT  002336          1455#   1726*   1740*   1817    1828*   1830    1858    1886    1920    1950    1955*   1956    1988
                        2031*   2033    2060*   2063    2247*   2250*   2251    2622*   2626*   2711*   2715*   2719*   2725*
                        2729*   2733*   2744*   2745    2766*   2770*   2774*   2816    2828    2870    2884    2915    2955
                        3018    4340*   4344    4378*   4497*   4527    4695*   4696    4708*   4810*   4812    5082*   5093*
                        5094*   5104*   5353*   5365*   5366*   5448*   5458*   5499*   5509*   5553*   5561*   5590*   5596*
                        5601*   5607*   5612*   5674*   5687*   5688    5747*   5758*   6165*   6179*   6192*   6232*   6245*
                        6258*   6737*   6750*   6762*   6765*   6766    7152*   7157*   7171*   7190*   7195*   7225*   7247*
                        7256*   7263*   7268*   7277*   7282*   7300*   7305*
$LSTIN= 000001          1107#
$LSTTA= 000001          1108#
$TMPO   002542          1545#   2898    2916    2932    6846*   6906*   6968*
.       = 037652        1096#   1575#   1584#   2380#   3379    4090    4102    4136    4147    4233    4246    4254    4263
                        4272    4307    4315    4330    4354    4370    4392    4437    4473    4507    4520    4536    4541
                        4600    4614    4660    4670    4691    4705    4735    4743    4751    4764    4798    4819    4827
                        4837    4863    4890    4900    4946    4959    4976    4988    5003    5035    5049    5064    5078
                        5088    5099    5109    5144    5158    5171    5181    5206    5220    5233    5244    5268    5282
                        5295    5337    5348    5359    5371    5395    5407    5421    5430    5443    5454    5463    5483
                        5494    5504    5534    5544    5552    5560    5565    5576    5589    5595    5600    5605    5611
                        5617    5642    5656    5669    5680    5706    5719    5729    5742    5753    5764    5778    5791
                        5801    5829    5839    5847    5876    5887    5897    5923    5937    5947    5957    5967    5977
                        5987    6020    6034    6044    6054    6064    6074    6084    6119    6133    6147    6160    6174
                        6187    6200    6214    6227    6240    6253    6293    6301    6320    6330    6341    6363    6377
                        6387    6398    6424    6435    6445    6455    6466    6490    6501    6513    6552    6561    6601
                        6610    6642    6652    6676    6687    6706    6719    6732    6745    6758    6774    6781    6882
                        6943    7006    7043    7075    7099    7109    7119    7131    7140    7148    7156    7161    7170
                        7175    7189    7210    7224    7246    7251    7267    7272    7281    7287    7299    7304    7439#
                        7510#   7522#
```

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```
BADHEA  1098#  3559  3572  3621  3628  3696  3703  3771  3778  3846  3853  3921  3928  3996  4003
        4071   4080  4118  4126  4163  4214  4277  4291  4583  4593  4645  4653  4714  4723  4778
        4790   4846  4855  4918  4929  5017  5026  5128  5137  5190  5199  5253  5261  5313  5321
        5519   5528  5629  5635  5811  5821  5860  5869  5906  5916  6004  6013  6101  6112  6269
        6279   6305  6313  6348  6356  6408  6417  6474  6483  6523  6535  6571  6582  6618  6629
        6660   6670  6827  6841  6887  6901  6949  6963  7012  7025  7052  7062  7083  7092
BCOMPL     1#  1097#  3414  3418  3422  3426  3446
BERROR     1#  1097#
BGNAU      1#  1097#  3544
BGNAUT     1#  1097#  3485
BGNCLN     1#  1097#  3509
BGNDU      1#  1097#  3526
BGNHRD     1#  1097#  7329
BGNHW      1#  1097#  1287
BGNINI     1#  1097#  3396
BGNMOD     1#  1097#  1105
BGNMSG     1#  1097#  2790  2803  2814  2826  2840  2852  2866  2882  2897  2908  2926  2951  2965
        2978   2993  3009  3032
BGNPRO     1#  1097#  1215
BGNPTA     1#  1097#
BGNRPT     1#  1097#  3375
BGNSEG     1#  1097#
BGNSET     1#  1097#
BGNSFT     1#  1097#  7455
BGNSRV     1#  1097#  3601  4543  4550  4560  4570
BGNSUB     1#  1097#  5324  5383  5473
BGNSW      1#  1097#  1321
BGNTST     1#  1097#  3573  3630  3705  3780  3855  3930  4005  4081  4127  4215  4294  4594  4654
        4724   4791  4856  4931  5027  5138  5200  5262  5322  5529  5636  5822  5870  5917  6014
        6113   6281  6314  6357  6418  6484  6536  6583  6630  6671  6842  6902  6964  7026  7063
        7093
BNCOMP     1#  1097#
BNERRO     1#  1097#
BREAK      1#  1097#  2305
BRESET     1#  1097#  3497  3510  3528
CKLOOP     1#  1097#
CLOCK      1#  1097#
CLOSE      1#  1097#
CLRVEC     1#  1097#  3592  4485  4487
COMMEN     1#  1097#
CROMT   3620#  3621  3696  3771  3846  3921  3996
DELAY      1#  1097#
DESCRI     1#  1097#  1577
DEVTYP     1#  1097#  1571
DISPAT     1#  1097#  1227
DISPLA     1#  1097#
DOCLN      1#  1097#  3591
DODU       1#  1097#  3494
DORPT      1#  1097#
ED$CAL  1098#  3559  3572  3621  3628  3696  3703  3771  3778  3846  3853  3921  3928  3996  4003
        4071   4080  4118  4126  4163  4214  4277  4291  4583  4593  4645  4653  4714  4723  4778
        4790   4846  4855  4918  4929  5017  5026  5128  5137  5190  5199  5253  5261  5313  5321
        5519   5528  5629  5635  5811  5821  5860  5869  5906  5916  6004  6013  6101  6112  6269
        6279   6305  6313  6348  6356  6408  6417  6474  6483  6523  6535  6571  6582  6618  6629
        6660   6670  6827  6841  6887  6901  6949  6963  7012  7025  7052  7062  7083  7092
ENDAU      1#  1097#  3545
```

```
ENDAUT      1#  1097#  3499
ENDCLN      1#  1097#  3512
ENDCOM      1#  1097#
ENDDU       1#  1097#  3529
ENDHRD      1#  1097#  7366
ENDHW       1#  1097#  1308
ENDINI      1#  1097#  3481
ENDMOD      1#  1097#
ENDMSG      1#  1097#  2797  2811  2823  2835  2847  2859  2877  2892  2905  2923  2944  2962  2975
         2988   3002   3027  3039
ENDPRO      1#  1097#  1219
ENDPTA      1#  1097#
ENDRPT      1#  1097#  3382
ENDSEG      1#  1097#
ENDSET      1#  1097#
ENDSFT      1#  1097#  7458
ENDSRV      1#  1097#  3616  4547  4557  4567  4574
ENDSUB      1#  1097#  5381  5471  5513
ENDSW       1#  1097#  1326
ENDTST      1#  1097#  3596  3694  3769  3844  3919  3994  4069  4115  4159  4273  4579  4642  4712
         4773   4843   4914  5014  5124  5186  5249  5311  5515  5626  5806  5856  5902  6000  6097
         6264   6302   6345  6402  6471  6517  6566  6615  6657  6820  6885  6946  7009  7049  7081
         7307
EQUALS      1#  1097#  1343
ERRDF       1#  1097#  1641  1684  1731  1745  1821  1833  1862  1892  1925  1960  1992  2036  2049
         2065   2072   2298  2438  2748  3604  3655  3665  3689  3730  3740  3764  3805  3815  3839
         3880   3890   3914  3955  3965  3989  4030  4040  4064  4096  4142  4228  4239  4249  4349
         4387   4514   4531  4553  4563  4634  4685  4699  4759  4769  4814  4910  5305  5692  5996
         6093   6769
ERRHRD      1#  1097#
ERROR       1#  1097#
ERRSF       1#  1097#
ERRSOF      1#  1097#  2253
ERRTBL      1#  1097#
ESCAPE      1#  1097#  4089  4101  4135  4146  4232  4245  4253  4262  4270  4306  4314  4329  4353
         4369   4391   4436  4472  4506  4519  4535  4599  4613  4659  4669  4690  4704  4734  4742
         4750   4763   4797  4826  4836  4862  4889  4899  4945  4958  4975  4987  5002  5034  5048
         5063   5077   5087  5098  5108  5143  5157  5170  5180  5205  5219  5232  5243  5267  5281
         5294   5336   5347  5358  5370  5394  5406  5420  5429  5442  5453  5462  5482  5493  5503
         5533   5543   5551  5559  5564  5575  5588  5594  5599  5604  5610  5616  5641  5655  5668
         5679   5705   5718  5728  5741  5752  5763  5777  5790  5800  5828  5838  5846  5875  5886
         5896   5922   5936  5946  5956  5966  5976  5986  6019  6033  6043  6053  6063  6073  6083
         6118   6132   6146  6159  6173  6186  6199  6213  6226  6239  6252  6292  6300  6319  6329
         6340   6362   6376  6386  6397  6423  6434  6444  6454  6465  6489  6500  6512  6551  6560
         6600   6609   6641  6651  6686  6705  6718  6731  6744  6757  6773  6881  6942  7005  7042
         7074   7098   7108  7118  7130  7139  7147  7155  7160  7169  7174  7188  7209  7223  7245
         7250   7266   7271  7280  7286  7298  7303
EXIT        1#  1097#  3378  4540  4818  6675  6779
FEQUAL      1#  1097#
GETBYT      1#  1097#
GETPRI      1#  1097#
GETWOR      1#  1097#
GMANIA      1#  1097#
GMANID      1#  1097#
GMANIL      1#  1097#
GPHARD      1#  1097#  3443
```

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```
GPRMA      1#  1097#  7336  7340
GPRMD      1#  1097#  7331  7344  7349  7354  7359
GPRML      1#  1097#
HEADER     1#  1097#  1129
INLOOP     1#  1097#
IOSETU     1#  1097#
IOSTAR     1#  1097#
KT11       1#  1097#
LASTAD     1#  1097#  7524
MANUAL     1#  1097#
MEMORY     1#  1097#
MSBYTE     1#  1097#  1129#  1135  1136  1137
MSCHEC     1#  1097#  3378#  4540#  4818#  6675#  6780#
MSCNTO     1#  1097#  7331#  7336#  7340#  7344#  7349#  7354#  7359#
MSCOUN     1#  1097#  2328#  2335#  2346#  2353#  2565#  2576#  2582#  2791#  2804#  2815#  2827#  2841#  2853#
        2867#  2883#  2898#  2909#  2914#  2927#  2932#  2938#  2952#  2966#  2979#  2994#  3010#  3017#  3033#
        3610#  3676#  3751#  3826#  3901#  3976#  4051#  4104#  4149#
MSDATA     1#  1097#  1129#  1138  1140  1142  1144  1146  1148  1150  1152  1154  1156  1158  1160
        1162  1164  1166  1168#  1170  1172  1175  1178  1180  1182  1184  1186  1188  1190  1192
        1194  1196  1198  1200  1202  1204  1206  1208  1210  1212  1571#  1577#
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CZDMTD.P11 09-MAR-82 09:11 CROSS REFERENCE TABLE -- MACRO NAMES

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MSLDRO 1# 1097# 3412# 3416# 3420# 3424# 3443# 3494# 3593# 4429# 4464# 4485# 4487# 4544# 4551#
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CZDMTD.P11 09-MAR-82 09:11 CROSS REFERENCE TABLE -- MACRO NAMES

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                3827    3828    3829    3830    3901#   3902    3903    3904    3905    3976#   3977    3978    3979    3980    4051#
                4052    4053    4054    4055    4104#   4105    4106    4107    4108    4149#   4150    4151    4152    4153    4410#
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M$RNRO             1#   1097#   3443#   3445
M$SETS             1#   1097#   1105#   1215#   1287#   1321#   2790#   2803#   2814#   2826#   2840#   2852#   2866#   2882#   2897#
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                6843#   6903#   6965#   7027#   7064#   7094#   7329#   7455#
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M$SVC              1#   1097#   1641    1684    1731    1745    1821    1833    1862    1892    1925    1961    1992    2036    2049
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                4836#   4843#   4844    4862#   4889#   4899#   4910    4915#   4916    4945#   4958#   4975#   4987#   5002#   5014#
                5015    5034#   5048#   5063#   5077#   5087#   5098#   5108#   5124#   5125    5143#   5157#   5170#   5180#   5186#
                5187    5205#   5219#   5232#   5243#   5249#   5250    5267#   5281#   5294#   5305    5311#   5312    5324#   5325
                5336#   5347#   5358#   5370#   5381#   5382    5383#   5384    5394#   5406#   5420#   5429#   5442#   5453#   5462#
                5471#   5472    5473#   5474    5482#   5493#   5503#   5513#   5514    5515#   5516    5533#   5543#   5551#   5559#
                5564#   5575#   5588#   5594#   5599#   5604#   5610#   5616#   5626#   5627    5641#   5655#   5668#   5679#   5692
                5705#   5718#   5728#   5741#   5752#   5763#   5777#   5790#   5800#   5806#   5807    5828#   5838#   5846#   5856#
                5857    5875#   5886#   5896#   5902#   5903    5922#   5936#   5946#   5956#   5966#   5976#   5986#   5996    6001#
                6002    6019#   6033#   6043#   6053#   6063#   6073#   6083#   6093    6098#   6099    6118#   6132#   6146#   6159#
                6173#   6186#   6199#   6213#   6226#   6239#   6252#   6264#   6265    6292#   6300#   6302#   6303    6319#   6329#
                6340#   6345#   6346    6362#   6376#   6386#   6397#   6402#   6403    6423#   6434#   6444#   6454#   6465#   6471#
                6472    6489#   6500#   6512#   6517#   6518    6551#   6560#   6566#   6567    6600#   6609#   6615#   6616    6641#
                6651#   6657#   6658    6675#   6686#   6705#   6718#   6731#   6744#   6757#   6769    6773#   6780#   6820#   6821
                6854#   6855    6881#   6885#   6886    6914#   6915    6942#   6946#   6947    6977#   6978    7005#   7009#   7010
                7042#   7049#   7050    7074#   7081#   7082    7098#   7108#   7118#   7130#   7139#   7147#   7155#   7160#   7169#
                7174#   7188#   7209#   7223#   7245#   7250#   7266#   7271#   7280#   7286#   7298#   7303#   7307#   7308
MSTLAB             1#   1097#   1641#   1684#   1731#   1745#   1821#   1833#   1862#   1892#   1925#   1961#   1992#   2036#   2049#
```

CZDMID.P11 09-MAR-82 09:11 CROSS REFERENCE TABLE -- MACRO NAMES

	2065#	2072#	2253#	2298#	2306#	2333#	2342#	2350#	2356#	2438#	2568#	2579#	2586#	2748#	2795#
	2798#	2808#	2812#	2820#	2824#	2832#	2836#	2844#	2848#	2856#	2860#	2874#	2878#	2889#	2893#
	2902#	2906#	2912#	2920#	2924#	2930#	2936#	2941#	2945#	2959#	2963#	2972#	2976#	2985#	2989#
	2999#	3003#	3015#	3024#	3028#	3036#	3040#	3383#	3413#	3417#	3421#	3425#	3444#	3482#	3495#
	3498#	3500#	3510#	3513#	3528#	3530#	3546#	3578#	3591#	3594#	3597#	3604#	3614#	3655#	3665#
	3682#	3689#	3695#	3730#	3740#	3757#	3764#	3770#	3805#	3815#	3832#	3839#	3845#	3880#	3890#
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	4271#	4274#	4306#	4314#	4329#	4349#	4353#	4369#	4387#	4391#	4414#	4423#	4430#	4436#	4454#
	4460#	4465#	4472#	4486#	4488#	4506#	4514#	4519#	4531#	4535#	4540#	4545#	4552#	4553#	4562#
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	4742#	4750#	4759#	4763#	4769#	4775#	4797#	4814#	4818#	4826#	4836#	4844#	4862#	4889#	4899#
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	5472#	5474#	5482#	5493#	5503#	5514#	5516#	5533#	5543#	5551#	5559#	5564#	5575#	5588#	5594#
	5599#	5604#	5610#	5616#	5627#	5641#	5655#	5668#	5679#	5692#	5705#	5718#	5728#	5741#	5752#
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	6303#	6319#	6329#	6340#	6346#	6362#	6376#	6386#	6397#	6403#	6423#	6434#	6444#	6454#	6465#
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	6686#	6705#	6718#	6731#	6744#	6757#	6769#	6773#	6780#	6821#	6855#	6881#	6886#	6915#	6942#
	6947#	6978#	7005#	7010#	7042#	7050#	7074#	7082#	7098#	7108#	7118#	7130#	7139#	7147#	7155#
	7160#	7169#	7174#	7188#	7209#	7223#	7245#	7250#	7266#	7271#	7280#	7286#	7298#	7303#	7308#
MSTSTL	1#	1097#	1641#	1684#	1731#	1745#	1821#	1833#	1862#	1892#	1925#	1961#	1992#	2036#	2049#
	2065#	2072#	2253#	2298#	2306#	2333#	2342#	2350#	2356#	2438#	2568#	2579#	2586#	2748#	2795#
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	2999#	3003#	3015#	3024#	3028#	3036#	3040#	3383#	3413#	3417#	3421#	3425#	3444#	3482#	3495#
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	3682#	3689#	3695#	3730#	3740#	3757#	3764#	3770#	3805#	3815#	3832#	3839#	3845#	3880#	3890#
	3907#	3914#	3920#	3955#	3965#	3982#	3989#	3995#	4030#	4040#	4057#	4064#	4070#	4089#	4096#
	4101#	4110#	4117#	4135#	4142#	4146#	4155#	4161#	4228#	4232#	4239#	4245#	4249#	4253#	4262#
	4271#	4274#	4306#	4314#	4329#	4349#	4353#	4369#	4387#	4391#	4414#	4423#	4430#	4436#	4454#
	4460#	4465#	4472#	4486#	4488#	4506#	4514#	4519#	4531#	4535#	4540#	4545#	4552#	4553#	4562#
	4563#	4572#	4580#	4599#	4613#	4634#	4643#	4659#	4669#	4685#	4690#	4699#	4704#	4713#	4734#
	4742#	4750#	4759#	4763#	4769#	4775#	4797#	4814#	4818#	4826#	4836#	4844#	4862#	4889#	4899#
	4910#	4916#	4945#	4958#	4975#	4987#	5002#	5015#	5034#	5048#	5063#	5077#	5087#	5098#	5108#
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	6303#	6319#	6329#	6340#	6346#	6362#	6376#	6386#	6397#	6403#	6423#	6434#	6444#	6454#	6465#
	6472#	6489#	6500#	6512#	6518#	6551#	6560#	6567#	6600#	6609#	6616#	6641#	6651#	6658#	6675#
	6686#	6705#	6718#	6731#	6744#	6757#	6769#	6773#	6780#	6821#	6855#	6881#	6886#	6915#	6942#
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MSWORD	1#	1097#	1168#	1177	1227#	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238
	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253
	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268
	1269	1270	1271	1272	1641#	1642	1643	1644	1684#	1685	1686	1687	1731#	1732	1733
	1734	1745#	1746	1747	1748	1821#	1822	1823	1824	1833#	1834	1835	1836	1862#	1863

CZDMTD.P11 09-MAR-82 09:11 CROSS REFERENCE TABLE -- MACRO NAMES

```
                1864    1865    1892#   1893    1894    1895    1925#   1926    1927    1928    1961#   1962    1963    1964    1992#
                1993    1994    1995    2036#   2037    2038    2039    2049#   2050    2051    2052    2065#   2066    2067    2068
                2072#   2073    2074    2075    2253#   2254    2255    2256    2298#   2299    2300    2301    2438#   2439    2440
                2441    2748#   2749    2750    2751    3378#   3604#   3605    3606    3607    3655#   3656    3657    3658    3665#
                3666    3667    3668    3689#   3690    3691    3692    3730#   3731    3732    3733    3740#   3741    3742    3743
                3764#   3765    3766    3767    3805#   3806    3807    3808    3815#   3816    3817    3818    3839#   3840    3841
                3842    3880#   3881    3882    3883    3890#   3891    3892    3893    3914#   3915    3916    3917    3955#   3956
                3957    3958    3965#   3966    3967    3968    3989#   3990    3991    3992    4030#   4031    4032    4033    4040#
                4041    4042    4043    4064#   4065    4066    4067    4096#   4097    4098    4099    4142#   4143    4144    4145
                4228#   4229    4230    4231    4239#   4240    4241    4242    4249#   4250    4251    4252    4349#   4350    4351
                4352    4387#   4388    4389    4390    4514#   4515    4516    4517    4531#   4532    4533    4534    4540#   4553#
                4554    4555    4556    4563#   4564    4565    4566    4634#   4635    4636    4637    4685#   4686    4687    4688
                4699#   4700    4701    4702    4759#   4760    4761    4762    4769#   4770    4771    4772    4814#   4815    4816
                4817    4818#   4910#   4911    4912    4913    5305#   5306    5307    5308    5692#   5693    5694    5695    5996#
                5997    5998    5999    6093#   6094    6095    6096    6675#   6769#   6770    6771    6772    6780#   7331#   7336#
                7340#   7344#   7349#   7354#   7359#   7525    7526
M$XFER            1#    1097#
NEWTST          1098#   3559    3621    3696    3771    3846    3921    3996    4071    4118    4163    4277    4583    4645    4714
                4778    4846    4918    5017    5128    5190    5253    5313    5519    5629    5811    5860    5906    6004    6101
                6269    6305    6348    6408    6474    6523    6571    6618    6660    6827    6887    6949    7012    7052    7083
OPEN              1#    1097#
POINTE            1#    1097#   1127
PRINTB            1#    1097#   2791    2804    2815    2827    2841    2853    2867    2883    2898    2909    2914    2927    2932
                2938    2952    2966    2979    2994    3010    3017    3033
PRINTF            1#    1097#   2565    2576    2581    3676    3751    3826    3901    3976    4051    4104    4149
PRINTS            1#    1097#
PRINTX            1#    1097#   2327    2335    2346    2352    3609
READBU            1#    1097#
READEF            1#    1097#   3412    3416    3420    3424
RFLAGS            1#    1097#
SETPRI            1#    1097#   4429    4464    4544    4551    4561    4571    6854    6914    6977
SETVEC            1#    1097#   3574    4410    4419    4450    4456
SLASH             1#    1097#
STARS             1#    1097#
SVC               1#    1097#
TOR             1602#   4259    4327    4367    4434    4470    4504    4731
WFE             1694#   4833    4886    4984    5177    5240    5426    5725    5797    5843    5893    5953    5973    6050    6070
                6337    6394    6462    6509
WFR             1692#   4311    4610    4666    4739    4823    4896    5572    5835    6326    6383    6451    6497    7206
WFRO            1693#
XFER              1#    1097#   3378#   4540#   4818#   6675#   6780#
XFERF             1#    1097#
XFERT             1#    1097#
ZZ              3559#   3561    3621#   3623    3696#   3698    3771#   3773    3846#   3848    3921#   3923    3996#   3998    4071#
                4073    4118#   4120    4163#   4165    4277#   4279    4583#   4585    4645#   4647    4714#   4716    4778#   4780
                4846#   4848    4918#   4920    5017#   5019    5128#   5130    5190#   5192    5252#   5255    5313#   5315    5519#
                5521    5629#   5631    5811#   5813    5860#   5862    5906#   5908    6004#   6006    6101#   6103    6268#   6271
                6305#   6307    6348#   6350    6408#   6410    6474#   6476    6522#   6525    6570#   6573    6618#   6620    6660#
                6662    6827#   6829    6887#   6889    6949#   6951    7012#   7014    7052#   7054    7083#   7085
```

. ABS. 037652 000

ERRORS DETECTED: 0

CZDMTD.P11 09-MAR-82 09:11 CROSS REFERENCE TABLE -- MACRO NAMES

```
 CZDMTD,CZDMTD/SOL/CRF=SVC34R.MLB,CZDMTD.P11
 RUN-TIME: 35 43 5 SECONDS
 RUN-TIME RATIO: 118/83=1.4
 CORE USED:  21K  (41 PAGES)
```