

DX11B

DIAGNOSTIC (OFFLINE
MD-11-DZDXG-C
EXERCISER)

EP-DZDXG-C-DL
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FICHE 1 OF 1

JUN 1978
digital
MADE IN USA

The image displays a grid of 120 punched cards, arranged in 10 rows and 12 columns. Each card contains a small, dense grid of characters, likely representing a diagnostic test or data set. The cards are dark blue with white text and are mounted on a light-colored background. The text on the cards is too small to read clearly but appears to be organized into columns and rows, possibly representing a data matrix or a series of test results.

IDENTIFICATION

PROGRAM CODE: MAINDEC-11-DZDXG-C-D
PROGRAM NAME: DX11B·DIAGNOSTIC (OFFLINE EXERCISER)
DATE CREATED: JUNE 21, 1974
MAINTAINER: DIAGNOSTIC GROUP
AUTHOR: J. FRIEDRICH

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DIGITAL EQUIPMENT CORPORATION

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1: ABSTRACT

THE FUNCTION OF THE DX118 DIAGNOSTICS IS TO VERIFY THAT THE DX118 IMPLEMENTS THE FUNCTIONAL FLOW DIAGRAMS ILLUSTRATED IN THE DX118 PRINT SET; THE DX118 DIAGNOSTIC PACKAGE CONSISTS OF FOUR TAPES

- 1. DZDXA=C[REV] MAINTENANCE CLOCK #1
- 2. DXDXF=C[REV] MAINTENANCE CLOCK #2
- 3. DZDXG=C[REV] DX OFFLINE DIAGNOSTIC EXERCISER
- 4. DZDXH=C[REV] DX ONLINE-MAINTENANCE-CABLED EXERCISER

THE DIAGNOSTICS WERE DIVIDED INTO FOUR TAPES BECAUSE OF THE 8K WORD MEMORY LIMIT REQUIRED TO SUPPORT MINIMUM SYSTEMS AND FOR FUNCTIONAL SAFEGUARDS; IT WAS FELT THAT SAFEGUARDS SHOULD BE TAKEN TO INSURE THAT NO ONE INADVERTENTLY RAN THE ONLINE-MAINTENANCE-CABLE EXERCISER WHILE CONNECTED ONLINE TO IBM; IT WAS ALSO FELT

648	DYNAMIC SWITCH SETTINGS (SWR =1)
675	CLOCK, ISSUE N MAINTENANCE CLOCK PULSES
676	SS, SELECTION MACRO
677	SHORT, SHORT TT TRACE UPDATE AND SELECT
678	DEFINE, EMT DEFINITIONS
679	ESAVE, SAVE REGISTER FOR ERROR PRINT
680	ERSTOR, RESTOR ERROR REGISTERS
681	SAVE, SAVE ARG ON STACK
682	RESTOR, RESTOR ARG FROM STACK
683	SCOPELOOP, SUBROUTINE TO EXECUTE SCOPE CODE
684	CLEAR, CLEAR FROM ARG1, ARG2 WORDS
685	CLRSUB, SUBROUTINE TO CLEAR FROM ARG1, ARG2 WORDS
686	DUMP, OCTAL DUMP OF ARG
687	SDUMP, OCTAL DUMP OF ARG, LEADING ZEROS SUPPRESSED
688	NUMBER, TEST NUMBER INCREMENTER
689	SCOPEM, SCOPE
690	ERCALL, ERROR CALL EMT
691	STEPTSSF, SINGLE STEP TSSF
692	CHECKFOR, CHECK FOR PHASE ARG
693	CHECK, CHECK FOR PHASE, STATE ARG
694	SNAPSHOTPH, ?
695	LDNLK, LOAD AND LOCK MCLK MACRO
696	CLKCHK, CLOCK AND CHECK PHASE+STATE
697	LOAD, LOAD BIT IN REGISTER + MAP
698	REMOV, REMOVE BIT FROM REGISTER + MAP
863	MISCELLANEOUS DEFINITIONS
965	TRAP DEFINITIONS
1028	DX REGISTERS
1128	POWER FAIL
1182	STATUS POINTER WORD TABLE
1494	TUMBLE TABLE
1502	T1 NOP COMMAND
1532	T2 STOP ON PARITY ERROR
1632	T3 TEST I/O COMMAND
1697	T4 ILLEGAL COMMAND
1685	T5 SENSE COMMAND
1737	T6 READ COMMAND (PDP OUTPUT)
1865	T7 WRITE COMMAND (PDP INPUT)
1992	T10 SUPPRESS SUPPRESSABLE STATUS (ASYNC)
2052	T11 UNSUPPRESSABLE STATUS TEST
2160	T12 COMMAND CHAINING
2261	T13 SELECTIVE RESET
2319	T14 I/O STOP DURING ACTIVE READ
2381	T15 I/O STOP DURING WRITE
2444	T16 HIO DURING ACTIVE WRITE
2549	T17 HIO DURING ACTIVE READ
2639	T20 CONTENTION TEST
2696	T21 HIO AND TIO TO RELEASE STATUS (ON BSYEN ONLY)
2799	T22 CUBSY/CUE TEST (MUX/BSYEN ONLY)
2893	T23 INTERLEAVE TEST (MUX AND NO BSYEN ONLY)
3205	T24 END OF TEST STRING
3198	SETUP SELECTED PARAMETERS
3225	STATUS PRESENTATION
3258	DATA TRANSFER ROUTINES

3318	ONLINE ROUTINE
3319	INITIAL SELECTION SEQUENCE
3476	WIO SUBROUTINE
3552	CUIS SUBROUTINE
3848	MONITOR
4116	MONITOR FILES
4339	MONITOR SUBROUTINES
4721	TTY ASCII OUTPUT ROUTINE
4756	SAVE AND RESTORE REGISTERS
4786	OCTAL DUMP ROUTINE
5113	MESSAGES
5121	DATA BUFFERS

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THAT THE FUNCTIONAL SEPARATION OF TESTS WOULD FACILITATE
ADAPTION TO ACT11 AND ODP TESTING. THERE ARE ALSO TWO
OTHER MAIN ECIS SUPPORTED BY DIAGNOSTICS THAT RUN THE
DX11B:

1. COMMUNICATION TEST PROGRAM (CTP)
2. GENERAL TEST PROGRAM (GTP) WITH DX OVERLAY
3. DEC/X11 WITH DX SOFTWARE MODULE

THESE TESTS OPERATE IN THE MAINTENANCE MODE
AND WERE DESIGNED TO DETECT UNIBUS DEVICE INTERACTION
PROBLEMS. ADDITIONALLY CTP WAS A "RESPONDER" MODE
SO THAT INTERACTION PROBLEMS MAY BE DETECTED WHILE RUNNING
ONLINE.

2. REQUIREMENTS

2.1 EQUIPMENT

PDP11 (MINIMUM 8K WORDS MEMORY)
ASR-33 (OR EQUIVALENT)
DX11B

2.2 STORAGE

ALL PROGRAMS LOAD IN 8K OF MEMORY

2.3 OTHER

A WORKING KNOWLEDGE OF ODT VERSION V206A.ODT IS NECESSARY

3. LOADING PROCEDURE

3.1 METHOD

ALL PROGRAMS ARE IN ABSOLUTE FORMAT AND ARE LOADED
USING THE ABSOLUTE LOADER.

ABSOLUTE LOADER START ADDRESS = 500

MEMORY •
SIZE

4K	17
8K	37
12K	57
16K	77
20K	117
24K	137
28K	157

3.1.1 LOAD ADDRESS OF ABS LOADER INTO SWITCHES

3.1.2 DEPRESS "LOAD ADDRESS" KEY ON CONSOLE

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3.I.3 DEPRESS "START" KEY ON CONSOLE

4. STARTING PROCEDURE

.....
ONLINE DIAGNOSTIC REQUIRES THAT IT BE MAINTENANCE
CABLED -SEE MANUAL FOR DETAILS
.....

.....
NEVER NEVER NEVER RUN THE ONLINED MAINTENANCE CABLED
EXERCISER WHILE CONNECTED TO IBM
.....

- A. SET SWITCH REGISTER TO 000200
- B. DEPRESS "LOAD ADDRESS" KEY
- C. DEPRESS START

THE PROGRAM WILL JUMP TO THE DIAGNOSTIC MONITOR AND
TYPE OUT THE OPERATING INSTRUCTIONS, THIS IS ONCE ONLY
CODE, TO RETYPE THE OPERATING INSTRUCTION THE OPERATOR
MAY EITHER RELOAD THE PROGRAM OR LOAD THE ADDRESS
"MONITOR" IN THE SWITCH REGISTER AND DEPRESS START,

4.1 CONTROL SWITCH SETTINGS

- SR 15 HALT ON ERROR
- SR 14 SCOPE ON TEST OR ERROR
- SR 13 INHIBIT PRINTING
- SR 12 TYPE SHORT ERROR REPORT
- SR 11 INHIBIT ITERATIONS
- SR 10 CONTROL MAINTENANCE CLOCK (MAINT, CLK, TEST ONLY)
- SR 9 ODT TRAP ON ERROR

!
.REM |
SR 2 MULTIPLEXER CHANNEL
SR 1 SET BUSY ENABLE

!
.REM |

4.2 STARTING ADDRESSES

ADDRESSES	COMMENT
000200	NORMAL START

WITH 200 LEFT IN THE SWITCHES THE PROGRAMS
TYPE OUT FULL INSTRUCTIONS ONCE AND
ABBREVIATED INSTRUCTIONS THEREAFTER,
WITH THE SWITCHES ZERO THE PROGRAMS SET
UP EITHER THE DEFAULT OR PREVIOUSLY

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SELECTED PARAMETERS AND IMMEDIATELY ASKS
FOR THE DYNAMIC SWITCH SETTINGS

MONITOR RELOAD TAPE FOR RETYPING OF INSTRUCTIONS

000042 IF THIS LOCATION IS NONZERO THE PROGRAM ASSUMES
IT IS RUNNING UNDER ACY11 OR DDP AND USES THE
DEFAULT PARAMETERS

0.0DT ENTRANCE TO 0DT-11X VERSION V886A.0DT
MAY START THE PROGRAM BY TYPE 20216
<CR>, (MAINTENANCE CLOCK TESTS ONLY)

NOTICE! HE WHO USES 0DT IN A MEANS OTHER THAN EXPLICITLY
DIRECTED BY THIS DOCUMENT DOES SO AT HIS OWN RISK!

5. OPERATING PROCEDURE

STARTING FROM 200 WITH SR<07> UP CAUSES THE FOLLOWING GENERAL
TYPEOUT:
MAINDEC-11=DZDXG-XGD (TEST DESCRIPTION) (APR 74)

TYPE! <D>, FOR DEFAULT PARAMETERS
<P>, FOR PREVIOUS PARAMETERS
<S>, FOR SELECT PARAMETERS
<N>, FOR START WITH THIS TEST NUMBER

(5. CONT'D)

D, P, S, N

IN RESPONSE TO THIS LAST QUESTION THE OPERATOR IS REQUIRED
TO TYPE ONE OF THE LETTERS IN THE STRING. AT AUTO START
TIME THE PROGRAM FIRST SETS UP ALL THE DEFAULT PARAMETERS
"DEFAULT PARAMETERS" MEANS THE SET OF OPERATING VARIABLES
SELECTED AT THE FACTORY. FOR EXAMPLE, THE DEFAULT ADDRESS
IS 176200, THE DEFAULT VECTOR ADDRESS IS 300. THEREFORE, AT
AUTO START TYPING "P" FOR PREVIOUSLY SELECTED PARAMETERS IS
EQUIVALENT TO TYPING "D" FOR DEFAULT PARAMETERS.

IF ANY CHARACTER OTHER THAN ONE IN THE STRING IS TYPED THE
MONITOR WILL REJECT THE CHARACTER AND RETYPE THE STRING.

IF, IN RESPONSE TO THE STRING, THE OPERATOR TYPES AN "N" THE
SELECTION SEQUENCE IS ENTERED AND THE FOLLOWING DIALOGUE
TAKES PLACE,

NOTE! THESE ARE THE DEFAULT PARAMETERS; TYPING <D> IS
EQUIVALENT TO TYPING THE DEFAULT PARAMETERS,

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TEST NUMBER: 1
BASE ADDRESS: 176200
VECTOR ADDRESS: 300
DX PRIORITY LEVEL: 4
TYPE CU ADRS'S IN HEX <CR><LF>| <CR><CR> TERMINATES LIST
ADRS: 10 (THIS IS IN HEX)
DEVICES PER CU: 20 (THIS IS IN OCTAL)
LIST ALL LEGAL COMMANDS
COMMAND:
SET SWITCHES

AT ANY TIME DURING THE "SELECTION SEQUENCE A CONTROL C
MAY BE TYPED AND THE MONITOR WILL ASK AGAIN "D,P,S,N?";

"TEST NUMBER:"

HERE THE MONITOR IS ASKING FOR THE NUMBER OF THE FIRST TEST
IN THE CHAINING SEQUENCE, THE DEFAULT ANSWER IS "1" ONE,
THE FIRST TEST IN THE CHAIN, IT MAY BE THAT THE OPERATOR IS
ONLY INTERESTED IN THE LAST FEW TESTS AND THEREFORE WOULD
TYPE 22 OR WHATEVER, AT THIS WRITING THERE IS NO CHECK TO
SEE IF THE OPERATOR SELECTED A NONEXISTANT TEST NUMBER (E.G.
PI,=2,4 MEG), SEE TABLE OF CONTENTS IN BEGINNING OF
LISTING.
-TYPING <CR> WILL DEFAULT THIS PARAMETER

(5' CONT'D)

"BASE ADDRESS: 176200"

THIS IS THE BASE ADDRESS FOR THE DX11 AND IS ALSO THE ADDRESS OF THE DXDS,
-TYPING <CR> WILL DEFAULT THIS PARAMETER

"VECTOR ADDRESS: 300"

THE DX11 IS CUT TO INTERRUPT TO ADDRESS 300 AT THE FACTORY,
ON SITE THE DX FOLLOWS, DC'S KL'S DP'S, DM'S DN'S, DMBB'S,
DR11'S, DR11A, DR11B, TYPESETTING AND BUS SWITCHES;
-TYPING <CR> WILL DEFAULT THIS PARAMETER

"TYPE CU ADRS'S IN HEX <CR><LF>|<CR><CR> TERMINATES LIST

ADRS: 10 <CR><LF>
ADRS: 20 <CR><CR>
THIS REQUEST IS FOR THE CONTROL UNIT'S HEXIDECIMAL ADDRESS
OR ADDRESSES, CAUTION!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
DO NOT EXCEED 16 ENTRIES OF CU ADDRESSES ; THE PROGRAM
MAY SELF DESTRUCT; ; ; IF THE SYSTEM REQUIRES THAT THERE BE
MORE THAN 16 CU ADDRESSES THEN THE DIAGNOSTICS MUST BE
RUN AGAIN FOR THOSE EXCEEDING 16 CAUTION!!!!
IN MAINTENANCE CLOCK 1 DIAGNOSTIC THE M988 MUST

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NOT BE CUT FOR MORE THAN 16 CU ADDRESSES

THE 19^M CONTROL UNITS ADDRESSES ARE SPECIFIED IN HEXADECIMAL.
FOR CONTROL UNIT 010(10) THE
RESPONSE Y ADRS1 IS 10(HEX) WHICH IS 00010000(2).
THE DX11 CAN EMULATE UP TO 120(10) CONTROL
UNITS WITH 1 DEVICE EACH OR 1 CONTROL UNIT WITH 120(10)
DEVICES OR AS IS THE DEFAULT CASE 1 CONTROL UNIT WITH 16(10)
DEVICES. THE ADRS1 AND RESPONSE WILL CONTINUE
INDEFINITELY AS LONG AS <CR><LF> IS TYPED FOLLOWING THE
CU ADDRESS. THE LIST IS TERMINATED BY TYPING <CR><CR>.
NOTE!!!! TYPING <CR><CR> IN RESPONSE TO THE FIRST ADRS1
WILL DEFAULT THE CU ADDRESS TO 00 AND WILL ALSO
TERMINATE THE LIST. (DEFAULT=10 HEX), THE ACTUAL # MUST BE TYPED IN

"DEVICES PER CUI 20"

THE RESPONSE TO THIS INPUT REQUEST IS IN OCTAL AND REPRESENTS
THE NUMBER OF DEVICES THIS CONTROL UNIT SERVICES. A DX11
EMULATED CONTROL UNIT CAN SERVICE FROM 1 TO 200(8) DEVICES.
NOTE!!!! TYPING <CR> IN RESPONSE TO DEVICES PER CUI
WILL DEFAULT TO 0, THEREBY CAUSING AN ILLEGAL NUMBER
OF DEVICES PER CU MESSAGE. THE ACTUAL # MUST
BE TYPED IN. (DEFAULT=20 OCTAL)
THIS DIAGNOSTIC WILL REJECT <1 AND >20 DEVICES PER CU

(5. CONT'D)

A CHECK IS MADE HERE TO INSURE THAT THE OPERATOR
DID NOT ASSIGN AN IMPOSSIBLE NUMBER OF DEVICES
FOR EACH CONTROL UNIT.

TYPE CU ADRS'S IN HEX <CR><LF> <CR><CR> TERMINATES LIST
ADRS1 F0
DEVICES PER CUI 0
ILLEGAL NUMBER OF DEVICES PER CU
DEVICES PER CUI 4
LIST ALL LEGAL COMMANDS
COMMAND!

WHEN A "4" WAS TYPED IN RESPONSE TO DEVICES PER CUI,
THE NUMBER WAS ACCEPTED AND THE MONITOR CONTINUED.

NOTE!!! OFFLINE & ONLINE DIAGNOSTICS REQUIRE AT LEAST TWO CU DEVICE ADDRESSES
FOR TESTING MULTIPLEXOR FUNCTIONS. THE M900 MUST ALSO BE STRAPPED FOR >1

"LIST ALL LEGAL COMMANDS"
COMMAND! 400<CR>
STATUS! 0 <CR><LF> TO CONTINUE LIST
>CR><CR> TO TERMINATE LIST

THIS FACILITY WAS BUILT INTO THE DIAGNOSTIC TO ENABLE THE
OPERATOR TO BUILD HIS OWN DEVICE STATUS TABLE (DST).
A <CR> IN RESPONSE TO COMMAND! ASSUMES THE DEFAULT DST.

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THE FIRST ENTRY MUST BE NONZERO, THEREFORE IF YOU WISH
YOUR FIRST COMMAND TO BE A TIO=0 YOU MUST TYPE IT IN WITH
PARITY (E.G. 400), FOLLOWING THE COMMAND THE MONITOR WILL
ASK FOR THE CORRESPONDING STATUS,
=TYPING <CR> WILL DEFAULT THIS PARAMETER

"SET SWITCHES"

HERE THE MONITOR ASKS FOR THE CONSOLE SWITCH SETTINGS.

SW<15> HALT ON ERROR
SW<14> SCOPE LOOP
<SW13> INHIBIT ERROR PRINTOUT
SW<12> SHORT ERROR REPORT
SW<11> INHIBIT ITERATIONS
SW<10> MAINTENANCE CLOCK CONTROL (MAINTENANCE TESTS ONLY)
SW<9> ODT TRAP ON ERROR

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.REM 1

SW<2> MUX MODE
SW<3> BSYEN MODE

!
.REM 1

LOAD THE SWITCH REGISTER WITH THE APPROPRIATE FUNCTION
AND TYPE <CR>.

5.2

PROGRAM AND/OR OPERATOR ACTION

THE TYPICAL APPROACH SHOULD BE

1. HALT ON ERROR
WHEN AN ERROR HALT OCCURS
2. CLEAR SW<15>
3. SET SW<14>, SCOPE
4. TYPE <CR> FOR PROCEED IF ODT WAS SELECTED
(SW9=1), OR PRESS CONTINUE ON THE CONSOLE
IF ODT WAS NOT SELECTED SW9=0
IF ERROR IS REPETITIVE;
5. SET SW<13> AND SCOPE ERROR

THE ERROR PC SHOULD BRING THE OPERATOR TO A POINT IN THE
LISTING WHERE THE ERROR IS DOCUMENTED, THEN USING THE
PRINTS AND THE FLOWS THE ERROR CAN BE TRACED TO ITS
SOURCE;

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.REM 1

AT ANY TIME DURING THE INITIALIZATION OR TESTING THE
OPERATOR CAN TYPE CONTROL C AND CONTROL WILL BE RETURNED TO
THE MONITOR, SOME TESTS ARE 5-10 SECONDS IN DURATION SO

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THE RESPONSE TO THE CONTROL C WILL NOT BE INSTANTANEOUS,
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THE RESTART ADDRESS IS 200; IF THIS ADDRESS IS LEFT IN THE
CONSOLE SWITCH WHEN "START" IS PRESSED THE MONITOR WILL TYPE
OUT D,P,S,N? IF THE SWITCHES ARE ZEROED THE TYPE WILL BE
"SET SWITCHES",

THERE ARE TWO CALIBRATION TESTS (MAINT CLK1) THAT SHOULD BE RUN IN
SCOPE MODE(T15 & T16); IT IS QUITE POSSIBLE THAT USING THE STANDARD
OPERATIONS PROCEDURE PREVIOUSLY SUGGESTED THAT THE OPERATOR
WILL FALL NATURALLY INTO THESE CALIBRATION TESTS, IF THE
SYSTEM HAS BEEN BROUGHT UP ONCE BEFORE AND THE OPERATOR
WISHES TO CHECK THE CALIBRATION THE FOLLOWING PROCEDURE
SHOULD BE FOLLOWED:

1; EXAMINE TABLE OF CONTENTS FOR THE TEST NUMBER (N) OF
CALIBRATION ROUTINES,
2; TYPE N IN RESPONSE TO D,P,S,N?
3; PUT SW(14) UP IN RESPONSE TO "SWITCH SETTINGS"
4; TYPE <HR> IF ERROR TYPE OUT OCCURS SET SW(13),

5.2.1 MAINTENANCE CLOCK CONTROL (MAINTENANCE CLK1 & CLK2 DIAG. ONLY)

WHEN SWITCH 10 IS SELECTED AND A MAINTENANCE CLOCK
PROGRAM IS BEING RUN THE EXECUTION OF THE JSR PC, CLK
SUBROUTINE WILL CAUSE A BREAK POINT TRAP TO ODT AND A
TYPEOUT OF THE FOLLOWING FORMAT WILL OCCUR:

AAAAAA B0JNNNNNN
*

THIS INDICATES THAT THE PROGRAM HAS TRAPPED TO ODT
AND IS AWAITING THE COMMAND TO "PROCEED BEFORE EXECUTING
THE NUMBER OF MAINTENANCE CLOCK PULSES SPECIFIED BY JSR PC,
CLK N;
UPON TYPING "P" THE PROGRAM WILL CONTINUE FROM LOCATION
AAAAAA;

THIS IS A USEFUL FEATURE IN SEVERAL
RESPECTS. FIRST, IT ALLOWS THE OPERATOR TO SINGLE
STEP THROUGH THE FLOWS; THE LISTING AIDS HERE ALSO IN
THAT IT HIGHLIGHTS THE PHASE AND STATE; IN ADDITION
TO WALKING THROUGH THE FLOWS THIS FEATURE ALSO ALLOWS THE
OPERATOR TO EXAMINE DONE DISPLAYED DX REGISTERS AND
KEY MEMORY LOCATIONS,

IT IS REQUIRED THAT ONLY THE FOLLOWING ODT COMMANDS BE USED
N/ OPENS WORD N
P PROCEED FROM BREAK POINT
NIG GOES TO WORD N AND STARTS PROGRAM
<CR> CLOSSES OPEN LOCATION (CARRIAGE RETURN)
<LF> OPENS NEXT LOCATION (LINE FEED)

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*C CONTROL C, RETURN TO DIAGNOSTIC MONITOR
ANY OTHER COMMANDS ARE USED AT THE OPERATORS OWN RISK,
IF OTHER COMMANDS ARE USED THE DX AND THEREFORE THE DIAG-
NOSTIC MAY BEHAVE STRANGELY, PLEASE RELOAD.

A TYPICAL SEQUENCE

SET SWITCHES

005536 001017044	
OP	PROCEED
005640 001017044	
OP	PROCEED
006032 001017044	
0176204/000900	EXAMINE 0XCS
176206 /002000	EXAMINE 0XOS
176210 /00300	EXAMINE 0XSA
OP	PROCEED
006504 001017044	
.	CONTROL C
D,P,S,N?	MONITOR MODE

6. ERRORS

TYPICALLY ERROR REPORTS TAKE THE FOLLOWING FORMAT.

ERROR PCI 017274
ERROR IN TEST; 17
CUADRS/MOI 000020
001020742

THIS INDICATES THAT WHILE EXECUTING TEST #17 ON ERROR STATE
WAS DETECTED AND IS DOCUMENTED AT PROGRAM COUNT 017274;
THE CONTRL UNIT UNDER TEST OF THE TIME OF ERROR WAS
20(0) AND THE IBM COMMAND WAS A NOP, IN SEVERAL CASES
THE COMMAND IS OF NO SIGNIFICANCE.

IF SWITCH 9 IS UP THE ERROR REPORT GENERATOR WILL
BREAK TO ODT AS INDICATED BY "00;NNNNNN", HERE AGAIN
THE POWER OF ODT MAY BE USED TO COLLECT ADDITIONAL
DATA CONCERNING THE FAULT.

A TYPICAL APPROACH MIGHT BE (AFTER COLLECTING DATA):
TYPE CONTROL C, RESULTS:

D,P,S,N? N
TEST NUMBER; 17
SET SWITCHES

IN RESPONSE TO SWITCHES SET THE FOLLOWING

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SR<15>=0 HALT ON ERROR
SR<14>=1 SCOPE
TYPE <CR>

IF THE ERROR IS REPEATABLE SET SR<13>, INHIBIT PRINT
AND GO AT IT,
NOTICE: A TYPE OUT OF THE FORMAT BEINNNNNN INDICATES
A BREAK POINT ERROR AT NNNNNN, THIS IS AN ODT ERROR
AND CAN BE CAUSED BY 1, PLAYING GAMES WITH ODT OR
2, AN ILLEGAL BREAK TRAP I.E., T BIT SET OR EXECUTE
A 000003,

(6. CONT'D)

DURING MAINTENANCE CLOCK TESTS THERE EXISTS A SUBROUTINE
CALLED CHKREG, THIS ROUTINE EXAMINES ALL THE DX11
REGISTERS AND VERIFIES THAT THEY ARE IN THE EXPECTED STATE,
CHKREG HAS A SPECIAL ERROR TRAP THAT RESULTS IN THE
FOLLOWING TEXT:

ERROR PCI 017446
ERROR IN TEST: 17
CUADRS/MO: 000020
ORIGIN OF MAP ERROR 017602
REGISTER=CONTENTS=MAP

DXMI: 170777 000400 (DXMI IS UNREADABLE IGNORE THIS COMPARE)
DXCB: 074000 000000 (PHASE AND STATE FLOPS ARE NOT TRACED)
DXES: 000014 000010 (ERROR CONDITION IS THAT BIT2 IS SET)
001020742
0

D.P.S.N?

IN THIS REPORT THE REGISTERS ARE NAMED (UNDER REGISTER)
AND THEIR CONTENTS DUMPED (UNDER CONTENTS) SO THAT IT MAY
BE COMPARED WITH THE EXPECTED STATE IN THE MAP (UNDER MAP);

THERE ARE TWO ANOMALIES HERE:

1. THE DXMI IS OFTEN UNREADABLE THEREFORE IF THE DXMI
IS ALL ONES OR ALMOST ALL ONES DISREGARD THE COMPARISON
IT WAS NOT MADE,
2. THE PHASE AND STATES FLOPS ARE NOT COMPARED SO THAT
CHKREG CAN BE USED IN ROUTINE WITH FREE RUNNING CLOCKS;

THIS MEANS THAT THERE MUST BE A DIFFERENCE BETWEEN
CONTENTS AND MAP IN A REGISTER OTHER THAN THE DXMI OR BITS
OTHER THAN 074000,

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THE EXERCISER PROGRAMS DO TUMBLE TABLE TRACING ON INTERRUPT,
IN THE EVENT OF A TRACE ERROR THE PROGRAM WILL TYPE OUT:

TT TRACE ERROR IN TEST: N1
ORIGIN OF LAST TT UPDATE: N2
TT ENTRY WAS: "WHATEVER"
EXPECTED ENTRY: "WHATEVER +1"
TT POINTER N3

THEN PROCEED WITH THE NORMAL ERROR REPORT, THE ADDRESS XXXXXX
SPECIFIES THE LOCATION WHERE THE EXPECTED TT ENTRIES WERE
LAST UPDATED.

EXERCISER ERROR REPORTS ALSO INDICATE THE
DX MODE WHEN THE ERROR OCCURED: MULTIPLEXOR OR BUSYEN
(DX ONLINE AND DX OFFLINE EXERCISERS ONLY)

6.2 ERROR RECOVERY

IN THE EVENT THAT THE DX GETS STUCK IN AN UNRECOVERABLE
PHASE AND STATE WHILE MAINTENANCE CLOCK ENABLE IS SET,
DEPRESS HAST AND START, THEN LOAD ADDRESS 280 AND START.

ON BREAK POINT ERRORS RELOAD TAPE

7. RESTRICTIONS

7.1 STARTING RESTRICTIONS

SEE SECTION 4,2

7.2 OPERATING RESTRICTIONS

NEVER NEVER NEVER RUN THE ONLINE-MAINTENANCE-CABLED
EXERCISER WHILE CONNECTED TO IBM

8. MISCELLANEOUS

MAINT: CLK1 DIAGNOSTIC ONLY!!!!!!
AT THE END OF THE PROGRAM IT WILL TYPE "END TEST SET SW3=1?".
THIS IS TO SIGNIFY THAT SW3 MUST BE SET AT LEAST ONCE DURING THE
USE OF THIS DIAGNOSTIC; IT IS NOT NECESSARY TO LEAVE SW3=1
AS IT CONSUMES TOO MUCH DIAGNOSTIC TIME, BASICALLY THIS OPENS
THE TEST THAT CHECKS THAT YOU HAVE CORRECTLY ANSWERED ALL THE
CU ADDRESSES & DEVICES/CU QUESTIONS CORRECTLY;...IF YOU LIED
IT WILL CAUGH IT, IE, IF YOU ANSWERED THE DEVICES PER CU
WITH 10(8) AND IN ACTUALITY THE DEVICES PER CU ARE CUT TO

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4 ON THE M900, THIS TEST WILL CATCH THE ERROR,
WHEN SW3=1 PROGRAM RUN TIME IS GREATLY INCREASED
AS IT CHECKS ALL OTHER ADDRESSES FOR ADRECC & ADRECO.

DX ONLINE & DX OFFLINE EXERCISERS!!!!!!
THESE PROGRAMS WILL DEFAULT TO AUTOMATICALLY SETTING
SW1=1 & SW2=1, HOWEVER, TO EXECUTE THEIR FUNCTIONS EARLY IN
THE PROGRAM RUN TIME, SET THEM BEFORE STRIKING <CR> WHEN
THE MONITOR ASKS "SET SWITCHES"
NOTE: AT LEAST 2 DEVICES/CU MUST BE STRAPPED ON M900

8.1 EXECUTION TIME

THE EXECUTION TIME OF EACH PROGRAM IS VARIABLE AND IS A
FUNCTION OF THE PROGRAM LENGTH AND THE CONTROL UNIT
ADDRESS STRUCTURE, IN GENERAL THEY RUN 10 TO 20 MINUTES.

9. PROGRAM DESCRIPTION

CONTAINED WITHIN LISTING,

10. LISTING

FOLLOWING

11. FLOW CHARTS

SEE PRINT SET

!
.LIST MD

.REM *

MAINDEC=110D2DXG=C=D
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146 MAIN ST, MAYNARD, MA, 01754
MAINTAINER: DIAGNOSTICS
AUTHOR: JOHN FRIEDRICH

***** MOD APR 74 *****

! REVISION BY W, ARMSTRONG

.SBTTL DYNAMIC SWITCH SETTINGS (SWR #1)

! DYNAMIC SWITCH REGISTER SETTINGS

!	SWR#	SIGNIFICANCE!
!	SET = ONE	
!	SW# 15	"HALT ON ERROR"
!	SW# 14	"SCOPE LOOP"

649 J0
650 J0
651 J0
652 J0
653 J0
654 J0
655 J0
656 J0
657 J0
658 J0
659 J0
660 J0
661 J0
662 J0
663 J0
664 J0
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666 J0
667 J0
668 J0
669 J0
670 J0
671 J0
672 J0
673 J0

SWR 13 "INHIBIT ERROR REPORT"
SWR 12 "SHORT ERROR REPORT"
SWR 11 "INHIBIT ITERATIONS"

SWR 22 "MUX MODE"
SWR 21 "BSYEN MODE"

"USER CHANGE INFORMATION"
"DUE TO REVISION APR 74"
"PLEASE READ INFO BELOW"

NOTE:

AN OPERATOR RESPONSE OF "0" TO THE PROGRAM
"TTY" REQUEST FOR "DEVICES PER CUI" IS NO
LONGER DEFAULTED TO 20 (16 DECIMAL), I.E.

DEVICES PER CUI 0 "ILLEGAL ?"

THE HEADER "CU CHANNEL ADDRESS" USED ON ERROR
OUTPUT HAS BEEN CHANGED TO "CUADRS/MOI", I.E.,
IT SIGNIFIES EITHER THE CONTENTS OF THE "DXMO"
REGISTER OR THE CONTROL UNIT BASE ADDRESS WHERE
MEANINGFULL.

..... MOD APR 74

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IDXDS, DX DEVICE STATUS BITS

100000	PARER = 100000	!ERRORS
040000	NXM = 40000	!NONEXISTANT MEMORY REFERENCE
020000	SELRST = 20000	!IBM RESETS; SELECTIVE RESET
010000	SYSRST = 10000	! SYSTEM RESET
004000	INFOSC = 4000	! INTERFACE DISCONNECT
034000	!BMRST = SELRST;SYSRST;INFOSC	
002000	UCMKS = 2000	!STATUS FLAGS
001000	CHENDS = 1000	!CHANNEL END SENT
000400	BSYS = 400	!BUSY SENT
000200	CHIS = 200	!CHANNEL INITIATED SELECTION
000100	ESEND = 100	!ENDING STATUS END
000040	CHDEND = 40	!CH DATA END
000020	CUDEND = 20	!CU DATA END
000010	!SSREJ = 10	!ISS REJECT
000004	CHDCHN = 4	!COMMAND CHAINING
000002	STKSTB = 2	!STACKED STATUS B
000001	CHDREJ = 1	!COMMAND REJECT

IDXCS,DX CONTROL UNIT STATUS BITS

100000	PARSTP = 100000	!STOP ON BUS0 PARITY ERROR
040000	CUPBM = 40000	!SELECT FORCED BURST
020000	ENDEN = 20000	!CUEND
010000	CS12 = 10000	!NOT USED
004000	BSYEN = 4000	!ENABLE SET !CUBSY
002000	CS10 = 2000	!NOT USED
001000	ONLINA = 1000	!ONLINE A
000400	CUBSY = 400	!CU BUSY
000200	DONE = 200	!FUNCTION DONE
000100	INTEN = 100	!INTERRUPT
000040	STKSTA = 40	!STACKED STATUS
000030	XBA = 30	!EXTENDED BASE ADDRESS
000006	FCTN = 6	
000001	DXPRS = 1	!FCTN = 60
000003	DXPI = 3	!READ (INPUT)
000005	DXPO = 5	!WRITE (OUTPUT)
000007	DXPST = 7	!STATUS
000001	GO = 1	!BEGIN FUNCTION

IDXOS DX OFFSET (CUOR) AND STATUS (CUSR) BITS

000200	ATTEN = 200	!ATTENTION
000100	STAMOD = 100	!STATUS MODIFIER
000040	CUEND = 40	!CU END
000020	BSY = 20	!BUSY
000010	CHEND = 10	!CH END
000004	DEVEND = 4	!DEVICE END
000002	UCHECK = 2	!UNIT CHECK
000001	UEXCEP = 1	!UNIT EXCEPT

728		IXMO DX MAINTENANCE-OUT BITS	
729			
730			
731	100070	ISELECTION CONTROL LINES	
732	040070	OPLO = 100000	OPERATIONAL OUT
733	020070	HLDO = 40000	HOLD OUT
734	010070	SELO = 20000	SELECT OUT
735		SUPO = 10000	SUPPRESS OUT
736			
737	004070	ITAG LINES	
738	002070	ADRO = 4000	ADDRESS OUT
739	001070	CMDO = 2000	COMMAND OUT
740	000400	SRVO = 1000	SERVICE OUT
741		PARO = 400	PARITY OF 7 FOR BUS OUT
742			
743		IXMI DX MAINTENANCE-IN BITS	
744	100070	ISELECTION CONTROL LINES	
745	040070	OPLI = 100000	OPERATIONAL IN
746	020070	SELI = 40000	SELECT IN
747		REQI = 20000	REQUEST IN
748			
749	010070	ITAG LINES	
750	004070	ADRI = 10000	ADDRESS IN
751	002070	STAI = 4000	STATUS IN
752	001070	SRVI = 2000	SERVICE IN
753	000400	CLKO = 1000	OK TO GO ONLINE (R0)
754		PARI = 400	BUS PARITY (R0)
755			
756		IXCB DX CONTROL BITS	
757	100070	LOCKO = 100000	LOCK OUT
758	074070	PHS = 074000	PHASE STATE BITS
759	002070	FASTCU = 2000	FAST CU
760	001070	SYNO = 1000	SYNCHRONIZATION
761	000400	CUDX = 400	CU DATA CONTROL
762	000200	IOD = 200	INPUT OUTPUT DONE
763			
764			
765	000100	BYPAS = 100	INPR CONTROLS
766	000040	NPRX = 40	BYPASS
767	000020	NPRY = 20	INPR CONTROL SWITCH
768	000010	BALF = 10	INPR TRANSFER DIRECTION
769	000004	ONLINB = 4	BUFFERED ALTERNATOR FLOP
770	000002	ADRECC = 2	ON LINE TO IBM
771	000001	ADRECD = 1	ADDRESS RECOGNITION (CU)
772			ADDRESS RECOGNITION (DEVICE)
773			
774			
775	000001	MCLKP=1	MAINTENANCE CLOCK PULSE
776	000002	MCLKEN=2	MAINT, CLK ENABLE
777	000004	SOSIEN=4	SRVC=SRVI ENABLE
778	000010	TIMDIS=10	TIMER(5 SEC) DISABLE
779	000020	DXTO=20	DX TIMEOUT (5 SEC)
780	000040	NPRTO=40	INPR TIMEOUT (8 MICROSEC)
781	000200	INTREQ=200	INTERRUPT REQUEST

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IDXES1 DX EXTRA EXTRA SIGNALS

000001
000002

IRS =1
DSCRSP =2

IIRH RESET STORED
IDISCONNECT RESPONSE

IDEFINE REGISTER MAP INDICES

000000
000002
000004
000006
000010
000012
000014
000016
000020
000022
000024

DS# 00
CA# 02
CS# 04
OS# 06
BA# 10
BC# 12
MO# 14
MI# 16
CB# 20
ND# 22
ES# 24

IPHASE CONTROL FLOPS OF OXCB

000000
010000
020000
030000
040000
050000
060000
070000

PHASE0=00000
PHASE1=10000
PHASE2=20000
PHASE3=30000
PHASE4=40000
PHASE5=50000
PHASE6=60000
PHASE7=70000

ITIME STATE FLOP AND STATE DEFINATION

004000
004000
000000

TSSF=4000
TS1=4000
TS2=0000

IPHASE AND STATE DEFINITIONS

004000
000000
014000
010000
024000
020000
034000
030000
044000
040000
054000
050000
064000
060000

PH01# PHASE0! TS1
PH02# PHASE0! TS2
PH11# PHASE1! TS1
PH12# PHASE1! TS2
PH21# PHASE2! TS1
PH22# PHASE2! TS2
PH31# PHASE3! TS1
PH32# PHASE3! TS2
PH41# PHASE4! TS1
PH42# PHASE4! TS2
PH51# PHASE5! TS1
PH52# PHASE5! TS2
PH61# PHASE6! TS1
PH62# PHASE6! TS2

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836      074000      PH971= PHASE7: TS1
837      078000      PH972= PH:SE7: TS2
838
839      .SBTTL MISCELLANEOUS DEFINITIONS
840
841      104400      SCOPE=TRAP      ISCOPE LOOP TRAP
842
843      100000      BIT15=100000
844      040000      BIT14=40000
845      020000      BIT13=20000
846      010000      BIT12=10000
847      004000      BIT11=4000
848      002000      BIT10=2000
849      001000      BIT9=1000
850      000400      BIT8=400
851      000200      BIT7=200
852      000100      BIT6=100
853      000040      BIT5=40
854      000020      BIT4=20
855      000010      BIT3=10
856      000004      BIT2=4
857      000002      BIT1=2
858      000001      BIT0=1
859      000000      HERE=0
860
861      ICHANNEL COMMANDS WITH PARITY
862
863      000400      TIC=400      ITEST I/O
864      000001      WRITEC=001      IWRITE
865      000002      READC=002      IREAD
866      000403      NOPC=403      INOP
867      000004      SENSEC=4      ISENSE
868      000405      ILLC=405      IILLEGAL COMMAND
869
870      IUTILITY FLAGS
871
872      100000      INTOK=100000
873      000002      DOPLIN=2      ISPW BIT FOR NO DST !
874
875      ICHANNEL STATUS
876
877      000010      CE=10      ICH END
878      000004      DE=4      IDEVICE END
879      000002      UC=2      IUNIT CHECK
880      000200      ATYN=200      IATTENTION
881      000100      SM=100      ISTATUS MODIFIER
882      000040      CUE=40      ICU END
883      000020      BSY=20      IBUSY
884
885      ISWITCH DEFINITIONS
886
887      100000      HLTSH=BIT15      IHALT ON ERROR
888      040000      LOPSH=BIT14      ILOOP ON ERROR
889      020000      PNTSH=BIT12      IINHIBIT PRINT
  
```

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890      010070      SESH=BIT12      ISHORT ERROR SWITCH
891      004070      IISW=BIT11     IINHIBIT ITERATIONS
892      002070      MCCSW=BIT10    IMAINTENANCE CLOCK CONTROL
893
894      IPROCESSOR PRIORITY LEVELS
895
896      000070      LEVEL0= 000
897      000040      LEVEL1= 040
898      000100      LEVEL2= 100
899      000140      LEVEL3= 140
900      000200      LEVEL4= 200
901      000240      LEVEL5= 240
902      000300      LEVEL6= 300
903      000340      LEVEL7= 340
904
905      IREGISTER DEFINITIONS
906
907      000000      R0=X0
908      000001      R1=X1
909      000002      R2=X2
910      000003      R3=X3
911      000004      R4=X4
912      000005      R5=X5
913      000005      TTY=X5
914      000006      R6=X6
915      000006      SP=X6
916      000007      PC=X7
917
918      000004      TYPE=IOT
919      000240      NOP=240
920      177776      PS=177776
921      177570      SWR=177570
922      177570      SR=177570
923
924      000000      E=0
925      020504      ENYABLE=ENYAG
926
927      IENT DEFINITIONS
928
929      001004      104070      ERROR
930      001006      104001      MAPERR
931      001010      104002      TRACER
932      001012      104003      SAVRG
933      001014      104004      RSTRG
934      001016      104005      ACCEPTO
935      001020      104006      KEY,TO,RO
936      001022      104007      PARITY
937      001024      104010      PCH1
938      001026      104011      PCH2
939      001030      104012      PCH3
940
941      .SBTTL TRAP DEFINITIONS
942
943      ITRAP INITIALIZATION
944
945      ITRAPS TO T,ERROR
946      ITRAPS TO T,MAPERR
947      ITRAPS TO T,TRACER
948      ITRAPS TO T,SAVRG
949      ITRAPS TO T,RSTRG
950      ITRAPS TO T,ACCEPTO
951      ITRAPS TO T,KEY,TO,RO
952      ITRAPS TO T,PARITY
953      ITRAPS TO T,PCH1
954      ITRAPS TO T,PCH2
955      ITRAPS TO T,PCH3
956
957      ISTACK POINTER
958      IPROGRAM COUNTER
959
960      IPROCESSOR STATUS
961
962      ISWITCH REGISTER
  
```

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944
945          000014 016000 000340      ,=14      0,BRK,LEVEL7      ;BREAK TRAP
946
947
948          000020 025214 000340      ,=20      ,IOT,LEVEL7      ;TTY OUTPUT TRAP,LEVEL 7
949
950
951          000024 001444 000340      ,=24      PFAIL,LEVEL7      ;POWER FAIL TRAP
952
953
954          000030 020442 000340      ,=30      EMYDECODER,LEVEL7 ;EMT DECODER TRAP,LEVEL 7
955
956
957          000034 020210 000340      ,=34      SCOPEC,LEVEL7     ;SCOPE TRAP
958
959
960
961          000200      ,=200
962
963          000200 000137 001100      STARTI  JMP      @BEGIN      ;GO TO BEGINNING OF PROGRAM
964
965          001100      ,=1100
966
967          001100 012700 001100      BEGINI  MOV      @BEGIN,SP      ;SET UP STACK POINTER
968          001104 012737 000340 177776      MOV      @LEVEL7,PS      ;PRIORITY LEVEL 7
969
970          ;..... MOD APR 74 .....
971          ;..... 11/40,11/45 TRACE TRAP .....
972
973          001112 012737 000002 016020      MOV      @2,RTX
974          001120 012737 001154 000010      MOV      @I,ITB,@#10
975          001126 012737 000340 000012      MOV      @J40,@#12
976          001134 005046      CLR      -(IP)
977          001136 012740 001144      MOV      @INITZ,-(SP)
978          001142 000000      RTT
979          001144 012737 000006 016020      INITZ:  MOV      @6,RTX
980          001152 000402      BR      INIYC
981          001154 002700 000010      INITB:  ADD      @1,SP
982          001160 013737 016020 016016      INITC:  MOV      RTX,YESRTI
983          001166 012737 000012 000010      MOV      @1,@#10
984          001174 005037 000012      CLR      @#12
985
986          ;..... MOD APR 74 .....
987
988          001200 005737 000042      TST     @#42      ;ACT11
989          001204 001404      BEQ     BGN0      ;BR IF NO
990          ; JSR     PC,MONDFLT ;INSERT DEFAULT PARAMETERS
991          001206 005037 022000      CLR     @UNESHOT ;DO NOT EXECUTE TIME CONSUMING TESTS
992          001212 000137 022250      JMP     @MON11
993          001216 005327 000001      BGN0:  DEC     #1
994          001222 001002      BNE     BGN1
995          001224 000137 021334      JMP     @MONITOR
996          001230 032737 000200 177570      BGN1:  BIT     @2,@SR      ;TEST FOR FAST START
997          001236 001402      BEQ     BGN2      ;BRANCH IF FAST START
  
```

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998 001240 000137 021404      JMP      00MON1,0
999 001244 012706 001100      BGN2I   MOV      00BEGIN,SP
1000 001250 012737 000340      177776 MOV      #LEVEL7,PS
1001 001256 000137 022224      JMP      00MON10      IUSE PREVIOUS PARAMETERS
1002
1003
1004      .SBTTL  DX REGISTERS
1005
1006 001262 176200      DXBASEI 176200
1007 001264 000300      DXIVI   300      IDX INTERRUPT VECTOR ADRS
1008 001266 000302      DXISI   302      IDX INTERRUPT STATUS
1009 001270 000200      DXPRI:  LEVEL4    INT PRIORITY ADRS
1010 001272 000140      LESS1:  LEVEL3    IDX PRIORITY MINUS ONE
1011 001274 176200      DXDSI   176200   IDEVICE STATUS ->TT
1012 001276 176202      DXCAI   176202   ICOMMAND AND ADDRESS ->TT
1013 001300 176204      DXCSI   176204   ICONTROL UNIT STATUS
1014 001302 176206      DXOSI   176206   IOFFSET AND STATUS
1015 001304 176210      DXBAI   176210   IBUS ADDRESS FOR NPR'S
1016 001306 176212      DXBCI   176212   IBYTE COUNT
1017 001310 176214      DXMOI   176214   IMAINTENANCE OUT
1018 001312 176216      DXMI:   176216   IMAINTENANCE IN
1019 001314 176220      DXCBI   176220   ICONTROL BITS
1020 001316 176222      DXNDI   176222   INPR DATA
1021 001320 176224      DXESI   176224   IEXTRA SIGNALS
1022 001322 176226      DXMOB:  176226   IMAINTENANCE OUT BUFFERED
1023 001324 176230      DXESI:  176230   IEXTRA EXTRA SIGNALS
1024
1025      IBYTE REGISTERS
1026
1027      IDXCA
1028
1029 001326 176202      CUARI   176202   ICU ADDRESS REGISTER
1030 001330 176203      CUCRI   176203   ICU COMMAND REGISTER
1031
1032      IDXOS
1033
1034 001332 176206      CUSRI   176206   ICU STATUS REGISTER
1035 001334 176207      CUORI   176207   ICU OFFSET REGISTER
1036
1037      IDXMO
1038
1039 001336 176214      BUSOI   176214   IBM BUS OUT
1040 001340 176215      CONOI   176215   ICONTROL LINES OUT
1041
1042      IDXMI
1043
1044 001342 176216      BUSI:   176216   IBM BUS IN
1045 001344 176217      CONI:   176217   ICONTROL LINES IN
1046
1047      IDXES
1048 001346 176224      MISCI   176224   IMISCELLANEOUS BITS
1049 001350 176225      TTNDX:  176225   ITUMBLE TABLE INDEX REG
1050
1051      IDXMOB

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1052
 1053 001352 176226
 1054 001354 176227
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 1056
 1057
 1058 001356 177700
 1059 001360 177701
 1060 001362 177702
 1061 001364 177703
 1062 001366 177704
 1063 001370 177705
 1064 001372 177706
 1065 001374 177707
 1066
 1067
 1068
 1069 001376 177560
 1070 001400 177562
 1071 001402 177564
 1072 001404 177566
 1073
 1074
 1075
 1076 001406
 1077 001406 000000
 1078 001410 000000
 1079 001412 000000
 1080 001414 000000
 1081 001416 000000
 1082 001420 000000
 1083 001422 000000
 1084 001424 000000
 1085 001426 000000
 1086 001430 000000
 1087 001432 000000
 1088 001434 000000
 1089
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 1091
 1092
 1093 001436 002000
 1094
 1095
 1096
 1097 001440 003000
 1098
 1099
 1100
 1101 001442 026000
 1102
 1103
 1104
 1105

BUSOB: 176226
 CONOB: 176227

IBUS OUT BUFFERED
 ICONTROL OUT BUFFERED

IREGISTER ADDRESSES

REG0: 177700
 REG1: 177701
 REG2: 177702
 REG3: 177703
 REG4: 177704
 REG5: 177705
 REG6: 177706
 REG7: 177707

ITTY ADDRESSES

TKS: 177560
 TKB: 177562
 TPS: 177564
 TPB: 177566

IREGISTER TRACE TABLE

REGTY:
 TDXDS: 0
 TDXCA: 0
 TDXCS: 0
 TDXOS: 0
 TDXBA: 0
 TDXMO: 0
 TDXMI: 0
 TDXCB: 0
 TDXND: 0
 TDXES: 0
 TDXES1: 0
 TTNDX: 0

IREGISTER TRACE TABLE
 IDEVICE STATUS TRACE
 ICOMMAND AND ADDRESS TRACE
 ICU STATUS TRACE
 IOFFSET AND STATUS TRACE
 IBUS ADDRESS TRACE
 IMAINTENANCE OUT TRACE
 IMAINTENANCE IN TRACE
 ICONTROL BIT TRACE
 INPR DATA TRACE
 IEXTRA SIGNAL TRACE
 IEXTRA SIGNAL TRACE 1
 ITTNDX TRACE

ISTATUS POINTER WORD ADDRESS

SPW: 2000

ITUMBLE TABLE ADDRESS

TY: 3000

IDEVICE STATUS TABLE ADDRESS

DSY: DSYADRS IDST MUST BE MOD(400)

.SBTTL POWER FAIL

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1126
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IPOWER FAIL ROUTINE
IIF SELECTED VERIFY STATUS IN IS UP
IAND CE AND DE ARE PRESENTED AS STATUS

PFAILI SAVRG
MOV R6,SAVR6
MOV #PHRUP,24
BIT #SELO,0DXMO
BEO 15
BIT #OPLI,0DXMI
BNE ,*2 ;BRANCH IF NO ERROR CONDITION
ERROR
BIT #STAI,0DXMI
BNE ,*2 ;BRANCH IF NO ERROR CONDITION
ERROR
CMPB #CE,DE,0BUSI
BEO ,*2 ;BRANCH IF NO ERROR CONDITION
ERROR
HALT

IPOWER UP ROUTINE
PHRUPI NOP ;PATCH ANYONE?
MOV SAVR6,R6
RSTRG
MOV #PFAIL,24 ;RESTORE POWER FAIL VECTOR
MOV SPH,0DXOS ;RESTORE OFFSET REG
JSR PC,RESRES ;RESET AND RESTORE
CLR (PC)+ ;INSTALL FOR MECHANICS
B
DEC ,*2
BNE ,*4
TYPE ,PFLD ;POWER FAILED

MOV (SP)+,PS
JMP @RETURN
SAVR6:
PFLDI ,ASCIZ "POWER FAILED"

,EVEN

,SBTT STATUS POINTER WORD TABLE
ENDSTR. ;DEFINE END OF START CODE
  
```

1160 002000
 1161
 1162
 1163
 1164 000000

02000
 IDEFAULT STATUS POINTER WORD (SPW)
 IDEFAULT EMULATION IS OF ONE CONTROL UNIT
 WITH CAPACITY OF 20 DEVICES
 N=0

STATUS POINTER WORDS FOR CU 0

1168	002000	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1169	002002	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1170	002004	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1171	002006	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1172	002010	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1173	002012	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1174	002014	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1175	002016	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1176	002020	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1177	002022	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1178	002024	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1179	002026	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1180	002030	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1181	002032	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1182	002034	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1183	002036	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

STATUS POINTER WORDS FOR CU 1

1184									
1185									
1186									
1187	002040	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1188	002042	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1189	002044	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1190	002046	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1191	002050	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1192	002052	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1193	002054	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1194	002056	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1195	002060	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1196	002062	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1197	002064	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1198	002066	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1199	002070	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1200	002072	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1201	002074	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1202	002076	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

STATUS POINTER WORDS FOR CU 2

1203									
1204									
1205									
1206	002100	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1207	002102	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1208	002104	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1209	002106	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1210	002110	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1211	002112	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1212	002114	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1213	002116	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

1214	002120	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1215	002122	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1216	002124	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1217	002126	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1218	002130	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1219	002132	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1220	002134	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1221	002136	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

1222
1223

1STATUS POINTER WORDS FOR CU 3

1224									
1225	002140	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1226	002142	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1227	002144	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1228	002146	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1229	002150	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1230	002152	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1231	002154	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1232	002156	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1233	002160	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1234	002162	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1235	002164	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1236	002166	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1237	002170	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1238	002172	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1239	002174	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1240	002176	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

1241
1242

1STATUS POINTER WORDS FOR CU 4

1243									
1244	002200	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1245	002202	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1246	002204	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1247	002206	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1248	002210	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1249	002212	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1250	002214	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1251	002216	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1252	002220	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1253	002222	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1254	002224	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1255	002226	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1256	002230	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1257	002232	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1258	002234	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1259	002236	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

1260
1261

1STATUS POINTER WORDS FOR CU 5

1262									
1263	002240	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1264	002242	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1265	002244	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1266	002246	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1267	002250	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

1268	002252	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1269	002254	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1270	002256	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1271	002260	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1272	002262	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1273	002264	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1274	002266	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1275	002270	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1276	002272	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1277	002274	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1278	002276	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

1STATUS POINTER WORDS FOR CU 6

1282	002300	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1283	002302	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1284	002304	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1285	002306	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1286	002310	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1287	002312	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1288	002314	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1289	002316	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1290	002320	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1291	002322	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1292	002324	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1293	002326	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1294	002330	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1295	002332	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1296	002334	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1297	002336	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

1STATUS POINTER WORDS FOR CU 7

1301	002340	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1302	002342	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1303	002344	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1304	002346	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1305	002350	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1306	002352	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1307	002354	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1308	002356	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1309	002360	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1310	002362	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1311	002364	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1312	002366	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1313	002370	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1314	002372	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1315	002374	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1316	002376	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

1STATUS POINTER WORDS FOR CU 10

1320	002400	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1321	002402	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

1322	002404	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1323	002406	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1324	002410	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1325	002412	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1326	002414	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1327	002416	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1328	002420	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1329	002422	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1330	002424	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1331	002426	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1332	002430	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1333	002432	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1334	002434	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1335	002436	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

ISTATUS POINTER WORDS FOR CU 11

1336									
1337									
1338									
1339	002440	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1340	002442	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1341	002444	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1342	002446	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1343	002450	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1344	002452	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1345	002454	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1346	002456	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1347	002460	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1348	002462	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1349	002464	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1350	002466	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1351	002470	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1352	002472	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1353	002474	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1354	002476	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

ISTATUS POINTER WORDS FOR CU 12

1355									
1356									
1357									
1358	002500	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1359	002502	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1360	002504	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1361	002506	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1362	002510	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1363	002512	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1364	002514	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1365	002516	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1366	002520	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1367	002522	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1368	002524	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1369	002526	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1370	002530	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1371	002532	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1372	002534	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1373	002536	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

ISTATUS POINTER WORDS FOR CU 13

1374									
1375									

1376									
1377	002540	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1378	002542	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1379	002544	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1380	002546	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1381	002550	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1382	002552	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1383	002554	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1384	002556	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1385	002560	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1386	002562	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1387	002564	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1388	002566	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1389	002570	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1390	002572	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1391	002574	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1392	002576	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

STATUS POINTER WORDS FOR CU 14

1393									
1394									
1395									
1396	002600	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1397	002602	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1398	002604	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1399	002606	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1400	002610	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1401	002612	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1402	002614	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1403	002616	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1404	002620	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1405	002622	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1406	002624	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1407	002626	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1408	002630	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1409	002632	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1410	002634	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1411	002636	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

STATUS POINTER WORDS FOR CU 15

1412									
1413									
1414									
1415	002640	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1416	002642	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1417	002644	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1418	002646	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1419	002650	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1420	002652	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1421	002654	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1422	002656	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1423	002660	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1424	002662	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1425	002664	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1426	002666	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1427	002670	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1428	002672	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST
1429	002674	025000	ERRDST	IDEVICE	STATUS	TABLE	IS	AT	ERRDST

1430	002676	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1431				
1432			ISTATUS POINTER WORDS FOR CU 16	
1433				
1434	002700	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1435	002702	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1436	002704	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1437	002706	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1438	002710	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1439	002712	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1440	002714	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1441	002716	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1442	002720	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1443	002722	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1444	002724	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1445	002726	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1446	002730	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1447	002732	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1448	002734	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1449	002736	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1450				
1451			ISTATUS POINTER WORDS FOR CU 17	
1452				
1453	002740	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1454	002742	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1455	002744	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1456	002746	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1457	002750	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1458	002752	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1459	002754	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1460	002756	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1461	002760	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1462	002762	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1463	002764	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1464	002766	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1465	002770	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1466	002772	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1467	002774	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1468	002776	025000	ERRDST	IDEVICE STATUS TABLE IS AT ERRDST
1469				
1470			.SBYTL	TUMBLE TABLE
1471		003000	.,	I START OF TUMBLE TABLE
1472				
1473	003000	000400	.BLKW	256. IRESERVE 205, WORDS FOR ??
1474				
1475		004000	ENDTT=.	
1476				
1477				


```

1478 | .....
1479 | ITEST 1      NO: COMMAND
1480 | .....
1481 | 004000 104400 TST11  SCOPE
1482 | 004002 012737 000001 020334      MOV      #1700|COUNT      |ITERATION COUNT
1483 | 004010 012737 000001 021316      MOV      #1700|ERTSTN      |SAVE TEST # FOR ERROR REPORT
1484 | 004016 012737 004024 020340      MOV      #SCP1,0|RETURN      |SCOPE LOOP RETURN ADRS
1485 | 004024      SCP11
1486 |
1487 | ,REM
1488 | *
1489 | THE FUNCTION OF THIS TEST IS TO VERIFY THAT ALL STATUS COMBINATIONS
1490 | (EXCEPT UNIT CHECK) CAN BE FETCHED FROM THE DST AND PRESENTED TO
1491 | THE CHANNEL PROPERLY,
1492 | *
1492 | 004024 013703 001442      MOV      DST,R3
1493 | 004030 005027      CLR      (PC)+
1494 | 004032 000000      NOPSTA1 0      |NOP STATUS
1495 | 004034 113763 004032 000003      NOPC11  MOVB   NOPSTA,3(R3)      |LOAD NOP STATUS IN DST
1496 | 004042 142763 000002 000003      BICB    #UC,3(R3)      |DON'T PRESENT UNIT CHECK
1497 | 004050 004737 024254      JSR     PC|RESRES      |RESET AND RESTORE
1498 | 004054 012737 000403 022670      MOV     #NOPC,0|CMD      |LOAD COMMAND
1499 | 004062 004737 016332      JSR     PC|ISS,SUB      |EXECUTE SELECTION
1500 | 004066 105237 004032      INCB   NOPSTA
1501 | 004072 001360      BNE    NOPC1
1502 |
1503 | 004074 112763 000014 000003      MOVB   #CE|DE,3(R3)      |RESTORE CE DE
1504 | 004102 004737 024254      JSR     PC|RESRES      |DOX RESET AND RESTORE
1505 |
1506 |

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```

1527 | .....
1528 | ITEST 2 ST P ON PARITY ERROR
1529 | .....
1510 004106 104400 TST21 SCOPE
1511 004110 012737 000010 020334 MOV #13,00ICOUNT IITERATION COUNT
1512 004116 012737 000002 021316 MOV #2,00ERTSTN ISAVE TEST # FOR ERROR REPORT
1513 004124 012737 004132 020340 MOV #SCP2,00RETURN ISCOPE LOOP RETURN ADRS
1514 004132 SCP21
1515
1516
1517 ITRANSMIT 4 BYTES USING AN IBM WRITE
1518 ITHE FOURTH BYTE HAS BAD (EVEN) PARITY
1519
1520 004132 032737 000002 022262 BIT #BIT1,00PARA IDO NOT EXECUTE TEST IF BUSY
1521 004140 001402 BEQ PET0 IBRANCH IF NOT BUSY
1522 004142 000137 004546 JMP #IER1 IEXIT IF BUSY
1523 004146 PET01
1524 004146 012737 000001 022670 MOV #WRITEC,00CMD ILOAD COMMAND
1525 004154 004737 015654 JSR PC,00TRINPT IIT TRACE TRACE INIT
1526 004160 012737 000200 019500 MOV #CHIS,00ENTRY1 ILOAD EXPECTED TT ENTRY 1
1527 004166 013737 001272 177776 MOV #LESS1,PS ILOWER PROCESSOR STATUS
1528 004174 012737 004174 020506 MOV #,00TERPC IORIGIN OF TRAP ERROR
1529 004202 004737 016332 JSR PC,ISS,SUB ISELECT
1530
1531
1532 004206 012777 177774 179072 MOV #4,00XBC ILOAD BYTE COUNT
1533 004214 012737 000004 022724 MOV #4,COUNT ILOAD SOFTWARE COUNT
1534 004222 012777 031710 179054 MOV #NPRDAT,00XBA ISPECIFY RECIEVE DATA AREA
1535 004230 052777 100000 179042 BIS #PARSTP,00XCS ISET STOP ON PARITY ERROR
1536 004236 032777 100000 179034 BIT #PARSTP,00XCS IVERIFY SET
1537 004244 001001 BNE ,+4 IBRANCH IF NO ERROR CONDITION
1538 004246 104000 ERROR IPARSTP NOT SET
1539 004250 052777 000003 179022 BIS #DXFI;GO,00XCS IDX FUNCTION INPUT (WRITE) AND GO
1540 004256 012737 000200 019500 MOV #CHIS,00ENTRY1 ILOAD EXPECTED TT ENTRY 1
1541 004264 113737 022666 019540 MOV #DEV,00ENTRY2 ISECOND TT ENTRY = DXCA
1542 004272 113737 022670 019541 MOV #CMD,00ENTRY2+1 I
1543 004300 113777 022666 179020 MOV #DEV,00UAR ILOAD DEV ADRS
1544 004306 113777 022670 179014 MOV #CMD,00UCR ILOAD COMMAND IN CUCR
1545 004314 012737 004314 020506 MOV #,00TERPC IDEFINE ORIGIN OF TRACE ERROR
1546 004322 004737 017500 JSR PC,CUIS,SUB IEXECUTE SELECTION
1547
1548 004326 012702 031710 MOV #NPRDAT,R2 IPOINT R2 TO SAME
1549 004332 012701 004460 MOV #PRTYD,R1 ILOAD SOURCE ADDRESS IN R1
1550 004336 012777 004464 174720 MOV #PERI,00XIV IPOINT INTERRUPT TO PARTIY ERROR
1551 004344 032777 002000 174740 PEW1 BIT #SRV1,00XMI ISRV1 MUST BE UP
1552 004352 001001 BNE ,+4 IBRANCH IF NO ERROR CONDITION
1553 004354 104000 ERROR ISRV1 NOT SET
1554
1555 004356 111177 174754 MOV #R1,00BUSO ILOAD DATA BYTE
1556 004362 121177 174750 CMPB #R1,00BUSO
1557 004366 001401 BEQ ,+4 IBRANCH IF NO ERROR CONDITION
1558 004370 104000 ERROR IBUSO LOAD ERROR
1559 004372 105201 INCB R1 IINC TO NEXT BYTE
1560

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1561 004374 052777 001000 174706      BIS      #SRVO,#DXMO      IRAISE SRVO
1562 004402 032777 001000 174700      BIT      #SRVO,#DXMO
1563 004410 001001                      BNE      ,+3          IBRANCH IF NO ERROR CONDITION
1564 004412 104000                      ERROR
1565
1566 004414 032777 002000 174670      BIT      #SRV1,#DXM1     ISRV1 MUST DROP
1567 004422 001401                      BEQ      ,+4          IBRANCH IF NO ERROR CONDITION
1568 004424 104000                      ERROR
1569
1570 004426 042777 001777 174694      BIC      #SRVO1777,#DXMO IDROP SRVO AND DATA
1571 004434 032777 001000 174646      BIT      #SRVO,#DXMO     IVERIFY SRVO=0
1572 004442 001401                      BEQ      ,+3          IBRANCH IF NO ERROR CONDITION
1573 004444 104000                      ERROR
1574
1575 004446 005337 022724                      DEC      #COUNT        IDEC SOFTWARE BYTE COUNT
1576 004452 001334                      BNE      PEW            IBRANCH IF MORE DATA
1577
1578 004454 000001                      WAIT
1579 004456 104000                      ERROR                  IWAIT FOR PARITY ERROR
1580
1581                                IPRTYD: DATA FILE FOR STOP ON PARITY ERROR TEST
1582
1583 004460      001      PRTYD1 ,BYTE 1          IODD PARITY DATA
1584 004461      002      ,BYTE 2          IODD PARITY DATA
1585 004462      004      ,BYTE 4          IODD PARITY DATA
1586 004463      003      ,BYTE 3          IEVEN PARITY DATA
1587
1588                                IPARITY ERROR INTERRUPT SERVICE ROUTINE
1589
1590 004464 032777 000200 174606 PERI1 BIT #DONE,#DXCS      ICHECK FOR FALSE INTERRUPT
1591 004472 001001                      BNE      ,+4          IBRANCH IF NO ERROR CONDITION
1592 004474 104000                      ERROR                  IFALSE INTERRUPT
1593 004476 042777 000200 174574      BIC      #DONE,#DXCS     ICLEAR DONE
1594 004504 012737 100020 015500      MOV      #P-RERIGUDEND,#ENTRY1 ITT ENTRY
1595 004512 112737 000003 015541      MOV      #3,#ENTRY2+1    ICUCR
1596 004520 113737 022666 015540      MOV      #DEV,#ENTRY2    ICUAR
1597 004526 012737 004526 020506      MOV      #,?#TERPC      IORIGIN OF TRACE ERROR
1598 004534 004737 015432                      JSR      PC?TT,TRACE
1599 004540 012716 004546 PERI0: MOV #PERI1,#SP      IFAKE RETURN PC
1600 004544 000002                      RTI                    IRETURN
1601
1602 004546 005077 174540 PERI1: CLR #DXM1          IDESELECT
1603
1604
1605

```

```
1606 | .....  
1607 |TEST 3 TEST I/O COMMAND  
1608 | .....  
1609 #04552 104400 TST31 SCOPE  
1610 #04554 012737 000200 020334 MOV #200,00ICOUNT ITERATION COUNT  
1611 #04562 012737 000003 021316 MOV #3,00ERTSTN ISAVE TEST # FOR ERROR REPORT  
1612 #04570 012737 004576 020340 MOV #SCP3,00RETURN ISCOPE LOOP RETURN ADRS  
1613 #04576 SCP31  
1614  
1615 .REM *  
1616 THE FUNCTION OF THIS TEST IS TO VERIFY THE DX11 CAN RESPOND TO A  
1617 TEST I/O COMMAND.  
1618 *  
1619  
1620  
1621  
1622 #04576 012737 000400 022670 MOV #TT0C,00CMD ILOAD COMMAND  
1623 #04604 004737 015654 JSR PC00CONSTRAINT IYT TRACE TRACE INIT  
1624 #04610 012737 000200 019500 MOV #CHIS,00ENTRY1 ILOAD EXPECTED TT ENTRY 1  
1625 #04616 013737 001272 177776 MOV #HESS1,PS ILOWER PROCESSOR STATUS  
1626 #04624 012737 004624 020566 MOV 0,00TERPC IORIGIN OF TRAP ERROR  
1627 #04632 004737 016332 JSR PC,ISS,SUB ISELECT  
1628  
1629
```

```
1630 | .....  
1631 |TEST 4 ILLEGAL COMMAND  
1632 | .....  
1633 004636 004400 TST41 SCOPE  
1634 004640 012737 000200 020334 MOV #200,00ICOUNT ;ITERATION COUNT  
1635 004646 012737 000004 021316 MOV #4,00ERTSTN ;SAVE TEST # FOR ERROR REPORT  
1636 004654 012737 004662 020340 MOV #SCP4,00RETURN ;SCOPE LOOP RETURN ADRS  
1637 004662 SCP41  
1638  
1639 ;REM  
1640 THE FUNCTION OF THIS TEST IS TO VERIFY THE DX11 RESPONDS CORRECTLY  
1641 TO AN ILLEGAL COMMAND (I,E; PRESENTS UNIT CHECK),  
1642  
1643 004662 042737 000400 016702 BIC #400,ISSCRJ ;ILLC PRESENTS UNIT CHECK STATUS  
1644 ;THIS CAUSES CMDREJ  
1645 ;THEREFORE CHANGE ISS DIAGNOSTIC  
1646 ;TO LOOK FOR CMDREJ UP  
1647 004670 012737 000405 022670 MOV #ILLC,00CMD ;LOAD COMMAND  
1648 004676 004737 015654 JSR PC,00TRAPNT ;TT TRACE TRACE INIT  
1649 004702 012737 002201 019500 MOV #UCHKS!CHIS!CMDREJ,00ENTRY ;LOAD EXPECTED TT ENTRY 1  
1650 004710 013737 001272 177776 MOV #LESS1,PS ;LOWER PROCESSOR STATUS  
1651 004716 012737 004716 020506 MOV #,00TERPC ;ORIGIN OF TRAP ERROR  
1652 004724 004737 010332 JSR PC,ISS,SUB ;SELECT  
1653  
1654 004730 052737 000400 016702 BIS #400,ISSCRJ ;RESTORE ISS TO LOOK FOR NOT CMDREJ  
1655  
1656
```

```
1657 | .....  
1658 | TEST 5 SENSE COMMAND  
1659 | .....  
1660 004736 104400 TS951 SCOPE  
1661 004740 012737 000200 020334 MOV #200,00ICOUNT IITERATION COUNT  
1662 004746 012737 000000 021316 MOV #5,00ERTSYN ISAVE TEST # FOR ERROR REPORT  
1663 004754 012737 004762 020340 MOV #SCP5,00RETURN ISCOPE LOOP RETURN ADRS  
1664 004762 SCP51  
1665  
1666  
1667  
1668 004762 012737 000004 022670 MOV #SENSEC,00CMD ILOAD COMMAND  
1669 004770 004737 015054 JSR PC;00TRAIT IYT TRACE TRACE INIT  
1670 004774 012737 000200 019500 MOV #CHIS,00ENTRY1 ILOAD EXPECTED TT ENTRY 1  
1671 005002 013737 001272 177776 MOV #LESS1,PS ILOWER PROCESSOR STATUS  
1672 005010 012737 005010 020506 MOV #,00TERPC IORIGIN OF TRAP ERROR  
1673 005016 004737 016332 JSR PC;ISS,SUB ISELECT  
1674  
1675  
1676 005022 012737 000001 022724 MOV #1,COUNT IINIT SOFTWARE BYTE COUNTER  
1677 005030 012777 177777 174290 MOV #,1,0DXBC ISET UP DX BYTE COUNT  
1678 005036 012777 022712 174240 MOV #SSTAT,0DXBA IDX BASE ADDRESS  
1679 005044 052777 000000 174226 BIS #D'FO|GO,0DXCS IFUNCTION OUTPUT & GO  
1680 ISERVICE-IN SHOULD RISE AND  
1681 I(SSTAT) SHOULD BE ON BUS-IN  
1682 005052 012737 000200 019500 MOV #CHIS,00ENTRY1 ILOAD EXPECTED TT ENTRY 1  
1683 005060 113737 022666 019540 MOVB #0DEV,00ENTRY2 ISECOND TT ENTRY = DXCA  
1684 005066 113737 022670 019541 MOVB #0CMD,00ENTRY2+1 I  
1685 005074 113777 022666 174224 MOVB #0DEV,0CUAR ILOAD DEV ADRS  
1686 005102 113777 022670 174220 MOVB #0CMD,0CUCR ILOAD COMMAND IN CUCR  
1687 005110 012737 005110 020506 MOV #,1,00TERPC IDEFINE ORIGIN OF TRACE ERROR  
1688 005116 004737 017500 JSR PC;CUI,S,SUB IEXECUTE SELECTION  
1689  
1690 005122 012737 000020 019500 MOV #CUDEND,00ENTRY1 ILOAD EXPECTED TT ENTRY 1  
1691 005130 113737 022666 019540 MOVB #0DEV,00ENTRY2 ISECOND TT ENTRY = DXCA  
1692 005136 112737 000001 019541 MOVB #1,00ENTRY2+1 ICUCR OF DXCA TT ENTRY  
1693 005144 113777 022666 174194 MOVB #0DEV,0CUAR ILOAD DEV ADRS  
1694 005152 012737 005152 020506 MOV #,1,00TERPC IDEFINE ORIGIN OF TRACE ERROR  
1695 005160 004737 016240 JSR PC;TRANSFER IDO TRANSFER IF REQUIRED  
1696 005164 012737 001100 019500 MOV #CHENDS;SEND,00ENTRY1 ILOAD EXPECTED TT ENTRY 1  
1697 005172 113737 022666 019540 MOVB #0DEV,00ENTRY2 ISECOND TT ENTRY = DXCA  
1698 005200 032737 000004 022202 BIT #BIT2,00PARA ITEST FOR MUX  
1699 005206 001404 BEO 15 IBR IF SELECTOR  
1700 005210 112737 000000 019541 MOVB #0,00ENTRY2+1 IMUX TT CUCR  
1701 005216 000403 BR 25 IGO  
1702 005220 112737 000001 019541 15i MOVB #1,00ENTRY2+1 ICUCR OF DXCA TT ENTRY  
1703 005226 113777 022666 174072 25i MOVB #0DEV,0CUAR ILOAD DEV ADRS  
1704 005234 012737 005234 020506 MOV #,00TERPC IDEFINE ORIGIN OF TRACE ERROR  
1705 005242 004737 016162 JSR PC;STATUSPRESENTATION IPRESENT STATUS  
1706  
1707
```

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1708 | .....
1709 | ITEST 6 READ COMMAND (PDP OUTPUT)
1710 | .....
1711 | TS?6I SC0PE
1712 | #05246 104400 MOV #100,0#ICOUNT IITERATION COUNT
1713 | #05250 012737 000100 020334 MOV #6,0#ERTSTN ISAVE TEST # FOR ERROR REPORT
1714 | #05256 012737 000000 021316 MOV #5,P6,0#RETURN ISCOPE LOOP RETURN ADRS
1715 | #05264 012737 005272 020340 SCP6I
1716 |
1717 |
1718 | .REM *
1719 |
1720 | THE FUNCTION OF THIS TEST IS TO VERIFY THAT THE DX11 CAN PROPERLY
1721 | EXECUTE A READ COMMAND AND SUPPRESS DATA DURING THIS TRANSFER.
1722 | THIS IS ACCOMPLISHED BY EXECUTING A CHANNEL INITIATED SELECTION
1723 | FOLLOWED BY A CONTROL UNIT INITIATED SELECTION IF THE DX11/S SIM-
1724 | ULATOR IS MIMICING A MULTIPLEXOR CHANNEL. FOLLOWING THE COMPLETION
1725 | OF A SUCCESSFUL SELECTION THE DX'S BYTE COUNT IS SET TO 256, AND
1726 | ITS BUS ADDRESS REGISTER IS LOADED TO POINT TO "DATA" A FILE OF
1727 | 128, WORD OF FLOATING 1'S AND FLOATING 0'S. THIS INITIALIZATION
1728 | IS FOLLOWED BY SETTING THE DX FUNCTION BITS TO A FUNCTION=OUTPUT
1729 | AND GO.
1730 | DURING THE ENTIRE TEST ALL TUMBLE TABLE ENTRIES ARE TRACED. PRIOR
1731 | TO EACH ANTICIPATED "DONE" THE EXPECTED TUMBLE TABLE ENTRIES (DXDS
1732 | AND DXCA) ARE LOADED INTO ENTRY1 AND ENTRY2 RESPECTIVELY THEN UPON
1733 | INTERRUPT THESE EXPECTED ENTRIES ARE COMPARED WITH THE ACTUAL TT
1734 | ENTRIES ALONG WITH THE EXPECTED TTNOX CONTENTS. IF A DISCREPANCY
1735 | OCCURS IT IS NOTED BY AN ERROR PC AND A TRACE ERROR ORIGIN PC.
1736 | THE ORIGIN OF THE TRACE ERROR IS CONTAINED IN TERPC WHICH IS UP-
1737 | DATED PRIOR TO EACH ANTICIPATED "DONE" BY A MOV #,,0#TERPC.
1738 |
1739 | THE TRANSFER OF DATA FROM THE DX11 TO THE CHANNEL SIMULATOR IS
1740 | CONTROLLED BY THE SRV0=SRV1 SEQUENCE. DURING THIS SEQUENCE DATA
1741 | CHECKS ARE MADE AND SUPPRESS DATA IS CHECKED BY RAISING SUPO IN
1742 | RESPONSE TO SRV1 AND THEN RATTILING SRV0. NO DATE TRANSFER SHOULD
1743 | TAKE PLACE IF SUPO IS RAISED AFTER THE FIRST BYTE.
1744 |
1745 | *
1746 | #05272 012737 000002 022670 MOV #READC,0#CMD ILOAD COMMAND
1747 | #05300 004737 015054 JSR PC,0#TRANT ITT TRACE TRACE INIT
1748 | #05304 012737 000200 019500 MOV #CHIS,0#ENTRY1 ILOAD EXPECTED TT ENTRY 1
1749 | #05312 013737 001272 177776 MOV #0#LESS1,PS ILOWER PROCESSOR STATUS
1750 | #05320 012737 005320 020506 MOV #,0#TERPC IORIGIN OF TRAP ERROR
1751 | #05326 004737 016332 JSR PC,ISS,SUB ISELECT
1752 |
1753 |
1754 | #05332 012737 000400 022724 MOV #256,,COUNT ISOFTWARE BYTE COUNT
1755 | #05340 012777 177400 173740 MOV #756,,0DXBC IOX BYTE COUNT
1756 | #05346 012701 030310 MOV #DATA,R1 IBASE ADRS OF TEST DATA
1757 | #05352 012777 030310 173724 MOV #DATA,0DXBA IFLOAT 1'S, 0'S OUTPUT DATA
1758 | #05360 052777 000005 173712 BIS #DXFO,0DXCS IFUNCTION OUTPUT AND GO
1759 | ISERVICE-IN SHOULD RAISE AND
1760 | IATA SHOULD BE ON BUS-IN
1761 | #05366 012737 000200 019500 MOV #CHIS,0#ENTRY1 ILOAD EXPECTED TT ENTRY 1
  
```

1762	005374	113737	022666	019540		MOVB	#DEV,#ENTRY2	ISECOND TT ENTRY = DXCA
1763	005402	113737	022670	019541		MOVB	#CMD,#ENTRY2+1	
1764	005410	113777	022666	173710		MOVB	#DEV,#CUAR	ILOAD DEV ADRS
1765	005416	113777	022670	173704		MOVB	#CMD,#CUCR	ILOAD COMMAND IN CUCR
1766	005424	012737	005424	020506		MOV	#,T#TERPC	IDEFINE ORIGIN OF TRACE ERROR
1767	005432	004737	017500			JSR	PC:CUIS,SUB	IEXECUTE SELECTION
1768								
1769	005436	112737	000001	019541		MOVB	#17,#ENTRY2+1	
1770	005444	012737	000020	019500		MOV	#CUDEND,#ENTRY1	ILOAD TT ENTRY
1771	005452	012737	005452	020506		MOV	#,T#TERPC	IREAD DONE TT TRACE ERROR PC
1772	005460	032777	002000	173624	RC0:	BIT	#SRV1,#DXM1	IWAIT FOR SERVICE-IN
1773	005466	001001				BNE	,+4	I BRANCH IF NO ERROR CONDITION
1774	005470	104000				ERROR		ISRV1 NOT SET
1775	005472	127711	173644			CMPS	#BUS1,#R1	ICHECK DATA TRANSMITTED TO 360
1776	005476	001401				BEG	,+1	I BRANCH IF NO ERROR CONDITION
1777	005500	104000				ERROR		IMEMORY TO BUS1 TRANSFER ERROR
1778	005502	105721				TSYB	(R1)+	IINC TO NEXT BYTE
1779	005504	052777	001000	173576		BIS	#SRV0,#DXM0	
1780	005512	032777	001000	173570		BIT	#SRV0,#DXM0	
1781	005520	001001				BNE	,+4	I BRANCH IF NO ERROR CONDITION
1782	005522	104000				ERROR		ISRV0 NOT SET
1783	005524	032737	000004	022262		BIT	#BIT2,PARA	ITEST FOR MUX MODE
1784	005532	001000				BNE	RC1	
1785								WHEN ON MUX CH OPLI WILL DROP WHEN TRANSMISSION IS FINISHED
1786								THIS WILL CAUSE DXM1 TO BE UNREADABLE
1787	005534	032777	002000	173590		BIT	#SRV1,#DXM1	ISERVICE-IN SHOULD DROP
1788	005542	001401				BEG	,+1	I BRANCH IF NO ERROR CONDITION
1789	005544	104000				ERROR		ISRV1 STUCK HIGH
1790	005546	052777	010000	173534	RC1:	BIS	#SUPO,#DXM0	ISSET SUPPRESS-OUT
1791	005554	032777	010000	173526		BIT	#SUPO,#DXM0	IVERIFY SUPO SET
1792	005562	001001				BNE	,+4	I BRANCH IF NO ERROR CONDITION
1793	005564	104000				ERROR		ISUPO NOT SET
1794	005566	012727	000010			MOV	#13,(PC)+	ISRV0 COUNT
1795	005572	000000			RC2:	B		ISRV0 COUNT
1796	005574	052777	001000	173506	RC3:	BIS	#SRV0,#DXM0	IKEEP SRV0 CHANGING
1797	005602	032777	001000	173500		BIT	#SRV0,#DXM0	IVERIFY SRV0 SET
1798	005610	001001				BNE	,+4	I BRANCH IF NO ERROR CONDITION
1799	005612	104000				ERROR		ISRV0 DID NOT SET
1800	005614	042777	001000	173406		BIC	#SRV0,#DXM0	I " " "
1801	005622	032777	001000	173400		BIT	#SRV0,#DXM0	IVERIFY SRV0 CLEAR
1802	005630	001401				BEG	,+1	I BRANCH IF NO ERROR CONDITION
1803	005632	104000				ERROR		ISRV0 NOT 0
1804	005634	032737	000004	022262		BIT	#BIT2,PARA	ITEST FOR MUX MODE
1805	005642	001000				BNE	RC4	
1806								WHEN ON MUX CH OPLI WILL DROP WHEN TRANSMISSION IS FINISHED
1807								THIS WILL CAUSE DXM1 TO BE UNREADABLE
1808	005644	032777	002000	173440		BIT	#SRV1,#DXM1	ISUPO SHOULD SUPPRESS SRV1 SETTING
1809	005652	001401				BEG	,+1	I BRANCH IF NO ERROR CONDITION
1810	005654	104000				ERROR		ISRV1 WAS NOT SUPPRESSED BY SUPO
1811	005656	005337	005572		RC4:	DEC	RC2	IDEC SRV0 COUNT
1812	005662	001344				BNE	RC2	I BRANCH IF SRV0 NOT DONE
1813	005664	042777	010000	173416		BIC	#SUPO,#DXM0	IDROP SUPPRESS-OUT
1814	005672	032777	010000	173410		BIT	#SUPO,#DXM0	IVERIFY SUPO CLEAR
1815	005700	001401				BEG	,+1	I BRANCH IF NO ERROR CONDITION

1816	005772	104070				ERROR			ISUPD STUCK HIGH
1817	005774	032777	001000	173376		BIT	#SRVO, #DXMO		
1818	005712	001471				BEQ	, #4		IBRANCH IF NO ERROR CONDITION
1819	005714	104000				ERROR			ISRVO STUCK HIGH
1820	005716	005337	022724			DEC	COUNT		
1821	005722	001256				BNE	RC		
1822	005724	012737	001100	019500		MOV	#CHENDS, #ESND, #ENTRY1		ILOAD EXPECTED TT ENTRY 1
1823	005732	113737	022666	019540		MOVB	#DEV, #ENTRY2		ISECOND TT ENTRY = DXCA
1824	005740	032737	000004	022202		BIT	#BIT2, #PARA		ITEST FOR MUX
1825	005746	001404				BEQ	15		IBR IF SELECTOR
1826	005750	112737	000000	019541		MOVB	#0, #ENTRY2+1		IMUX TT CUCR
1827	005756	000403				BR	25		IGO
1828	005760	112737	000001	019541	15i	MOVB	#1, #ENTRY2+1		ICUCR OF DXCA TT ENTRY
1829	005766	113777	022666	173332	25i	MOVB	#DEV, #CUAR		ILOAD DEV ADRS
1830	005774	012737	005774	020566		MOV	#, #TERPC		IDEFINE ORIGIN OF TRACE ERROR
1831	006002	004737	016162			JSR	PC, #STATUSPRESENTATION		IPRESENT STATUS
1832									
1833									
1834									

```

1835 | .....
1836 |TEST 7 WRITE COMMAND (PDP INPUT)
1837 | .....
1838 006006 104400 TS97I SCOPE
1839 006010 012737 000100 020334 MOV #100,0#ICOUNT IITERATION COUNT
1840 006016 012737 000007 021316 MOV #7,0#ERTSTN ISAVE TEST # FOR ERROR REPORT
1841 006024 012737 006032 020340 MOV #SCP7,0#RETURN ISCOPE LOOP RETURN ADRS
1842 006032 SCP7I
1843
1844
1845 .REM *
1846
1847 THE FUNCTION OF THIS TEST IS TO VERIFY THAT THE DX11 CAN EXECUTE
1848 WRITE COMMANDS FROM THE CHANNEL SIMULATOR; THIS TEST IS IMPL-
1849 MENTED MUCH LIKE THE HEAD TEST IN THAT THE TRANSFER IS 256 BYTES,
1850 TT TRACING IS DONE AND SUPPRESS DATA IS ALSO CHECKED, TT DIFFERS
1851 IN THE DIRECTION AND TYPE OF DATA;
1852
1853 *
1854
1855 006032 012737 000001 022670 MOV #WRITEC,0#CMD ILOAD COMMAND
1856 006040 004737 015654 JSR PC,0#TRAIT ITT TRACE TRACE INIT
1857 006044 012737 000200 019500 MOV #CHIS,0#ENTRY1 ILOAD EXPECTED TT ENTRY 1
1858 006052 013737 001272 177776 MOV #LESS1,PS ILOWER PROCESSOR STATUS
1859 006060 012737 006060 020506 MOV #,0#TERPC IORIGIN OF TRAP ERROR
1860 006066 004737 016332 JSR PC,ISS,SUB ISELECT
1861
1862
1863 006072 012737 000400 022724 MOV #256,,COUNT ISOFTWARE COUNTER
1864 006100 012777 177400 173200 MOV #256,,DXBC IDX BYTE COUNT
1865 006106 012777 031710 173170 MOV #NPRDATA,0#XBA IADRS FOR DATA FROM 360 SIM
1866 006114 012702 031710 MOV #NPRDATA,R2 IINPUT FILE FOR NPR DATA
1867 006120 012701 030710 MOV #HEATA,R1 IWRITE DATA FOR 360 SIM
1868 006124 052777 000003 173146 BIS #DAP1,GO,0#XCS IFUNCTION INPUT & GO (360 WRITE)
1869 006132 012737 000200 019500 MOV #CHIS,0#ENTRY1 ILOAD EXPECTED TT ENTRY 1
1870 006140 113737 022666 019540 MOVB #DEV,0#ENTRY2 ISECOND TT ENTRY = DXCA
1871 006146 113737 022670 019541 MOVB #CMD,0#ENTRY2+1 I
1872 006154 113777 022666 173144 MOVB #DEV,0#CUAR ILOAD DEV ADRS
1873 006162 113777 022670 173140 MOVB #CMD,0#CUCR ILOAD COMMAND IN CUCR
1874 006170 012737 006170 020506 MOV #,0#TERPC IDEFINE ORIGIN OF TRACE ERROR
1875 006176 004737 017500 JSR PC,CUIS,SUB IEXECUTE SELECTION
1876
1877
1878 006202 012737 000020 019500 WCOI MOV #CQDEND,0#ENTRY1 ITT ENTRY 1
1879 006210 112737 177777 019541 MOVB #1,0#ENTRY2+1 IFAKE CUCR OF ENTRY 2
1880 006216 012737 006216 020506 MOV #,0#TERPC IWRITE TRACE ERROR
1881 006224 032777 002000 173000 BIT #SRV1,0#DXM IWAIT FOR SERVICE-IN
1882 006232 001001 BNE .+ IBRANCH IF NO ERROR CONDITION
1883 006234 104000 ERROR JSRV1 NOT SET
1884 006236 051177 173074 BIS #R1,0#BUSO IPUT DATA ON BUS-OUT
1885 006242 121177 173070 CMPB #R1,0#BUSO IVERIFY LOAD
1886 006246 001401 BEQ .+ IBRANCH IF NO ERROR CONDITION
1887 006250 104000 ERROR IBUSO INTO MEMORY DATA TRANSFER ERROR
1888 006252 052777 001000 173030 BIS #SRV0,0#XMO

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1889	006260	032777	001000	173022		BIT	#SRVO,DXMO	
1890	006266	001001				BNE	,+4	IBRANCH IF NO ERROR CONDITION
1891	006270	104000				ERROR		ISRVO NOT SET
1892	006272	032737	000004	022262		BIT	#BIT2,PARA	ICAN'T LOOK AT SRV! ON MUX CH
1893	006300	001005				BNE	WC00	
1894	006302	032777	002000	173022		BIT	#SRV1,DXMI	
1895	006310	001401				BEO	,+7	IBRANCH IF NO ERROR CONDITION
1896	006312	104000				ERROR		ISRVI DID NOT DROP
1897	006314	005721			WC001	TST	(R1)+	
1898	006316	105722				TSTB	(R1)+	
1899	006320	032702	000001			BIT	#BIT0,R2	ITEST FOR EVEN BOUNDRY
1900	006324	001016				BNE	WC1	
1901								
1902	006326	162701	000004			SUB	#4,R1	
1903	006332	162772	000002			SUB	#2,R2	
1904	006336	121112				CHPB	#R1,#R2	IVERIFY 1ST DATA BYTE TRANSFER
1905	006340	001401				BEO	,+2	IBRANCH IF NO ERROR CONDITION
1906	006342	104000				ERROR		IBUSC INTO MEMORY DATA TRANSFER ERROR
1907	006344	005721				TST	(R1)+	
1908	006346	105722				TSTB	(R1)+	
1909	006350	121112				CHPB	#R1,#R2	IVERIFY 2ND BYTE TRANSFER
1910	006352	001401				BEO	,+4	IBRANCH IF NO ERROR CONDITION
1911	006354	104000				ERROR		ISECOND DATA BYTE INTO MEMORY
1912								
1913	006356	005721				TST	(R1)+	
1914	006360	105722				TSTB	(R2)+	
1915	006362	052777	010000	172720	WC11	BIS	#SUPO,DXMO	ISSET SUPPRESS=OUT
1916	006370	032777	010000	172712		BIT	#SUPO,DXMO	IVERIFY SUPO SET
1917	006376	001001				BNE	,+1	IBRANCH IF NO ERROR CONDITION
1918	006400	104000				ERROR		ISUPO NOT SET
1919	006402	012727	000010			MOV	#10,(PC)+	ISRVO COUNT
1920	006406	000000			WC21	B		ISRVO COUNT
1921	006410	052777	001000	172672	WC31	BIS	#SRVO,DXMO	IKEEP SRVO CHANGING
1922	006416	032777	001000	172664		BIT	#SRVO,DXMO	IVERIFY SRVO SET
1923	006424	001001				BNE	,+4	IBRANCH IF NO ERROR CONDITION
1924	006426	104000				ERROR		ISRVO DID NOT SET
1925	006430	042777	001000	172692		BIC	#SRVO,DXMO	ICLEAR SRVO
1926	006436	032777	001000	172644		BIT	#SRVO,DXMO	IVERIFY SRVO CLEAR
1927	006444	001401				BEO	,+2	IBRANCH IF NO ERROR CONDITION
1928	006446	104000				ERROR		ISRVO NOT 0
1929	006450	032737	000004	022262		BIT	#BIT2,PARA	ITEST FOR MUX MODE
1930	006456	001005				BNE	WC1	
1931								WHEN ON MUX CH OPLI WILL DROP WHEN TRANSMISSION IS FINISHED
1932								THIS WILL CAUSE DXMI TO BE UNREADABLE
1933	006460	032777	002000	172624		BIT	#SRV1,DXMI	ISUPO SHOULD SUPPRESS SRV! SETTING
1934	006466	001401				BEO	,+3	IBRANCH IF NO ERROR CONDITION
1935	006470	104000				ERROR		ISRVI WAS NOT SUPPRESSED BY SUPO
1936	006472	005337	006406		WC41	DEC	WC2	IDEC SRVO COUNT
1937	006476	001344				BNE	WC3	IBRANCH IF SRVO NOT DONE
1938	006500	042777	010000	172602		BIC	#SUPO,DXMO	IDROP SUPPRESS=OUT
1939	006506	032777	010000	172574		BIT	#SUPO,DXMO	IVERIFY SUPO CLEAR
1940	006514	001401				BEO	,+7	IBRANCH IF NO ERROR CONDITION
1941	006516	104000				ERROR		ISUPO STUCK HIGH
1942	006520	032777	001000	172562		BIT	#SRVO,DXMO	

1943										
1944	006526	042777	001777	172554		BIC	#SRVD,1777,0DXMO		ICLR SRVD AND BUSO,PARITY	
1945	006534	032777	001000	172546		BIT	#SRVD,0DXMO			
1946	006542	001401				BEO	,+0		IBRANCH IF NO ERROR CONDITION	
1947	006544	104000				ERROR			ISRVD DID NOT DROP	
1948	006546	005337	022724			DEC	COUNT			
1949	006552	001213				BNE	WC?			
1950	006554	012737	001100	015500		MOV	#CHENDS;ESEND,00ENTRY1		ILOAD EXPECTED TT ENTRY 1	
1951	006562	113737	022666	015540		MOVB	00DEV,00ENTRY2		ISECOND TT ENTRY = DXCA	
1952	006570	032737	000004	022202		BIT	00AT2,00PARA		ITEST FOR MUX	
1953	006576	001404				BEO	15		IBR IF SELECTOR	
1954	006600	112737	000000	015541		MOVB	00,00ENTRY2+1		IMUX TT CUCR	
1955	006606	000403				BR	25		IGO	
1956	006610	112737	177777	015541	151	MOVB	001,00ENTRY2+1		ICUCR OF DXCA TT ENTRY	
1957	006616	113777	022666	172522	251	MOVB	00DEV,0CUAR		ILOAD DEV ADRS	
1958	006624	012737	006624	028506		MOV	0,00TERPC		IDEFINE ORIGIN OF TRACE ERROR	
1959	006632	004737	016162			JSR	PC,STATUSPRESENTATION		IPRESENT STATUS	
1960										

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1961 I .....
1962 ITEST 10 SUPPRESS SUPPRESSABLE STATUS(ASYNCR)
1963 I .....
1964 TSY10: SCOPE
1965 #06636 104470 #00010 020334 MOV #10,#ICOUNT IITERATION COUNT
1966 #06640 012737 #00010 021316 MOV #11,#ERTSTN ISAVE TEST # FOR ERROR REPORT
1967 #06654 012737 #06662 020340 MOV #SCP10,#RETURN ISCOPE LOOP RETURN ADRS
1968 #06662
1969
1970 .REM *
1971
1972 THE FUNCTION OF THIS TEST IS TO VERIFY THAT SUPPRESS OUT CAN SUPPRESS
1973 SUPPRESSABLE STATUS, STATUS IS SUPPRESSABLE IF IT HAS BEEN STACKED
1974 BY THE CHANNEL (I,R, CMDO IN RESPONSE TO STAT) OR IF THE PROGRAMMER
1975 INDICATES THE STATUS IS SUPPRESSABLE BY SETTING STACK=STATUS=A;
1976
1977 *
1978
1979 #06662 042777 077777 172420 BIC #77777,#DXMO ICLEAR BUSOUT AND TAGS
1980 #06670 052777 000040 172402 BIS #STKSTA,#DXCS IINDICATE STATUS IS SUPPRESSABLE
1981 #06676 032777 000040 172374 BIT #S_KSTA,#DXCS IVERIFY SET
1982 #06704 001001 .+0 IBRANCH IF NO ERROR CONDITION
1983 #06706 104000 ERROR ISTKSTA NOT SET
1984 #06710 112777 000010 172414 MOVB #CE,#CUSR ISTATUS, NONSUPPRESSABLE UNLESS STACKED
1985 #06716 052777 000007 172394 BIS #DXFST,#DXCS IATTEMPT TO PRESENT ASYNC STATUS
1986 #06724 032777 020000 172360 BIT #REQI,#DXMI IVERIFY REQI SET
1987 #06732 001001 .+0 IBRANCH IF NO ERROR CONDITION
1988 #06734 104000 ERROR IREQI NOT SET
1989 #06736 052777 010000 172344 BIS #SUPO,#DXMO IRAISE SUPPRESS STATUS
1990 #06744 032777 010000 172336 BIT #SUPO,#DXMO I
1991 #06752 001001 .+0 IBRANCH IF NO ERROR CONDITION
1992 #06754 104000 ERROR ISUPO NOT SET
1993 I BIT #REQI,#DXMI IVERIFY REQI DROPPED
1994 I ERCALL BEI,<REQI DID NOT DROP>
1995
1996 #06756 052777 060000 172324 BIS #HLDOISELO,#DXMO ISHOULD CAUSE SELECTION BYPAS
1997
1998 #06764 032777 100000 172322 BIT #LXCKO,#DXCB IVERIFY NO SELECTION EVENTS
1999 #06772 001401 .+4 IBRANCH IF NO ERROR CONDITION
2000 #06774 104000 ERROR IOX SHOULD NOT SELECT
2001 #06776 032777 000100 172310 BIT #BYPAS,#DXCB INO SELECTION EVENTS
2002 #07004 001401 .+2 IBRANCH IF NO ERROR CONDITION
2003 #07006 104000 ERROR IILLEGAL SELECTION EVENT
2004 #07010 032777 001000 172276 BIT #SYNC,#DXCB INO SELECTION EVENTS
2005 #07016 001401 .+4 IBRANCH IF NO ERROR CONDITION
2006 #07020 104000 ERROR IILLEGAL SELECTION EVENT
2007
2008 #07022 042777 070000 172260 BIC #HLDOISELOISUPO,#DXMO
2009 #07030 032777 010000 172292 BIT #SUPO,#DXMO IVERIFY SUPO ZERO
2010 #07036 001401 .+1 IBRANCH IF NO ERROR CONDITION
2011 #07040 104000 ERROR ISUPO STUCK HIGH
2012
2013 #07042 042777 000040 172230 BIC #STKSTA,#DXCS ICLEAR STACKED=STATUS=A
2014 #07050 032777 000040 172222 BIT #STKSTA,#DXCS IVERIFY CLEARED

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2215 007056 001401
2216 007060 104000
2217
2218
2219

BEO .00
ERROR

IBRANCH IF NO ERROR CONDITION
ISTKSTA STUCK HIGH

```

2020 I .....
2021 ITEST 11 UNSUPPRESSABLE STATUS TEST
2022 I .....
2023 TST111 SCOPE
2024     MOV     #10,#COUNT      IITERATION COUNT
2025     MOV     #11,#ERTSTN     ISAVE TEST # FOR ERROR REPORT
2026     MOV     #SCP11,#RETURN  ISCOPE LOOP RETURN ADRS
2027 SCP111
2028
2029     ,REM     *
2030
2031 THE FUNCTION OF THIS TEST IS TO VERIFY THAT UNSUPPRESSABLE STATUS
2032 (I.E. UNSTACKED "CHANNEL END") CAN BE PRESENTED. THIS IS ACCOM-
2033 PLISHED BY PRESENTING ASYNCHRONOUS STATUS CONTAINING "CHANNEL=END"
2034 WITH STACKED-STATUS=A NOT SET;
2035
2036
2037
2038
2039
2040     BIC     #77777,#DXMO      ICLEAR DXMO
2041     CLRB   #CUSR             IZERO STATUS REGISTER
2042     BISB   #C#,#CUSR        ISET "CHANNEL=END" STATUS
2043     CMPB   #CE,#CUSR        IVERIFY STATUS SET
2044     BEQ    ,+3              IBRANCH IF NO ERROR CONDITION
2045     ERROR
2046     BIT    #STKSTA,#DXCS    ICUSR LOAD ERROR
2047     BEQ    ,+3              IVERIFY NO STKSTA
2048     ERROR
2049     BIS    #DXFST,#DXCS     IBRANCH IF NO ERROR CONDITION
2050     BIT    #REQI,#DXMI      ISTKSTA STUCK HIGH?
2051     BNE    ,+4              IPRESENT STATUS
2052     ERROR
2053     BIS    #SUPO,#DXMO      IVERIFY REQI SET
2054     BIT    #SPO,#DXMO      IBRANCH IF NO ERROR CONDITION
2055     BNE    ,+4              IREQI NOT SET
2056     ERROR
2057     IRAISE SUPPRESS=OUT
2058     MOV     #CHENDSIESEND,#ENTRY1 ITT ENTRY #1
2059     MOV     #REQEV,#ENTRY2     ITT ENTRY #2
2060     MOV     #REQEV,#CUAR
2061     MOV     #0,#ENTRY2+1      IHIGH BYTE OF IT ENTRY 2
2062     MOV     #,#ENTERPC       IDEFINE ORIGIN OF TRACE ERROR
2063     BIC     #SUPO,#DXMO      IDROP SUPO
2064     BIT    #SUPO,#DXMO
2065     BEQ    ,+3              IBRANCH IF NO ERROR CONDITION
2066     ERROR
2067     BIT    #REQI,#DXMI      ISUPO DID NOT DROP
2068     BNE    ,+3              ITEST FOR REQUEST=IN OP
2069     ERROR
2070     IBRANCH IF NO ERROR CONDITION
2071     IREQI NOT SET
2072     BIS    #SELOIHLDO,#DXMO  ISET SELECT=OUT & HOLD=OUT
2073     BIT    #SELO,#DXMO      ITEST FOR SELECT=OUT
2074     BNE    ,+4              IBRANCH IF NO ERROR CONDITION
  
```

2074	007320	104000			ERROR		ISELO NOT SET
2075							
2076	007322	032777	040000	171700	BIT	#HLD0,0DXM0	ITEST FOR HOLD=OUT
2077	007330	001001			BNE	,+4	IBRANCH IF NO ERROR CONDITION
2078	007332	104000			ERROR		IHLD0 NOT SET
2079							
2080	007334	032777	100000	171750	BIT	#OPLI,0DXM1	ITEST FOR OPERATIONAL=IN
2081	007342	001001			BNE	,+4	IBRANCH IF NO ERROR CONDITION
2082	007344	104000			ERROR		IOPLI NOT SET
2083							
2084	007346	032777	020000	171736	BIT	#REQI,0DXM1	ITEST FOR REQI
2085	007354	001401			BEG	,+7	IBRANCH IF NO ERROR CONDITION
2086	007356	104000			ERROR		IREQI DID NOT DROP
2087							
2088	007360	032777	010000	171724	BIT	#ADRI,0DXM1	ITEST FOR ADDRESS IN
2089	007366	001001			BNE	,+4	IBRANCH IF NO ERROR CONDITION
2090	007370	104000			ERROR		IADRI NOT SET
2091							
2092	007372	123777	022666	171742	CHPB	DEV,0BUSI	IADDRESS ON BUSI
2093	007400	001401			BEG	,+4	IBRANCH IF NO ERROR CONDITION
2094	007402	104000			ERROR		IBUSI LOAD ERROR
2095							
2096	007404	052777	002000	171676	BIS	#CMD0,0DXM0	ISET COMMAND=OUT
2097	007412	032777	002000	171670	BIT	#CMD0,0DXM0	
2098	007420	001001			BNE	,+7	IBRANCH IF NO ERROR CONDITION
2099	007422	104000			ERROR		ICMD0 DID NOT SET
2100							
2101	007424	032777	010000	171600	BIT	#ADRI,0DXM1	IADRI SHOULD DROP
2102	007432	001401			BEG	,+4	IBRANCH IF NO ERROR CONDITION
2103	007434	104000			ERROR		IADRI DID NOT DROPS
2104							
2105	007436	042777	060000	171644	BIC	#SELO,IHLD0,0DXM0	
2106	007444	032777	040000	171636	BIT	#HLD0,0DXM0	ITEST HOLD=OUT
2107	007452	001401			BEG	,+4	IBRANCH IF NO ERROR CONDITION
2108	007454	104000			ERROR		IHLD0 SET
2109							
2110	007456	032777	020000	171624	BIT	#SELO,0DXM0	ITEST SELECT=OUT
2111	007464	001401			BEG	,+4	IBRANCH IF NO ERROR CONDITION
2112	007466	104000			ERROR		ISELO SET
2113							
2114	007470	042777	002000	171612	BIC	#CMD0,0DXM0	ICLEAR COMMAND=OUT
2115	007476	032777	002000	171604	BIT	#CMD0,0DXM0	ITEST FOR CMD0 CLEAR
2116	007504	042777	060000	171576	BIC	#HLD0,SELO,0DXM0	IDROP SELO/IHLD0 FOR NONZERO STATUS
2117	007512	052777	001000	171570	BIS	#SRVO,0DXM0	ISERVICE=OUT UP
2118							ISTATUS=IN SHOULD FALL
2119							
2120							
2121	007520	042777	001000	171502	BIC	#SRVO,0DXM0	IDROP SERVICE=OUT,
2122							ITHIS ENDS ES -- ESEND INT SHOULD
2123							IBE UP AND CUBSY CLEAR
2124							ICHECK FOR INTERRUPTS
2125	007526	005077	171560		CLR	0DXM1	ICLEAR DXM1
2126							


```

2127 | .....
2128 | TEST 12 COMMAND CHAINING
2129 | .....
2130 | YSP12: SCOPE
2131 | MOV #10,#COUNT ;ITERATION COUNT
2132 | MOV #14,#ERTSTN ;SAVE TEST # FOR ERROR REPORT
2133 | MOV #SCP12,#RETURN ;SCOPE LOOP RETURN ADRS
2134 | SCP12:
2135 |
2136 | ,REM *
2137 |
2138 | THE FUNCTION OF THIS TEST IS TO VERIFY THAT THE DX11 CAN DETECT
2139 | COMMAND CHAINING. COMMAND CHAINING SHOULD BE INDICATED (CMOCHN
2140 | BIT SET IN DXDS TUMBLE TABLE ENTRY) IF SUPPRESS-OUT IS UP WHEN
2141 | SERVICE-OUT IS RAISED IN RESPONSE TO STATUS-IN. COMMAND CHAINING
2142 | MEANS THAT ANOTHER COMMENT FOR THE DEVICE IN OPERATION WILL IMME-
2143 | DIATELY FOLLOW THE PRESENTATION OF "DEVICE END",
2144 |
2145 | *
2146 |
2147 | BIC #77777,#DXMO ;ZERO DXMO
2148 | JSR PC#CONSTRAINT ;INIT TT TRACING
2149 | MOV #CHENDS;CMOCHN;CHIS,#ENTRY1 ;TT ENTRY #1
2150 | MOVB #DEV,#CUAR ;LOAD CVAR
2151 | MOVB #DEV,#ENTRY2 ;LOAD TT ENTRY #2 WITH
2152 | #READC,#ENTRY2+1 ;EXPECTED CONTENTS
2153 | MOV #,;#TERPC ;DEFINE ORIGIN OF TRACE ERROR
2154 |
2155 | BIS #DEV,#DXMO ;PUT ADRS ON OUT-BUS
2156 | BIS #AYRO,#DXMO ;RAISE ADRS OUT
2157 | BIS #HLDD;SELO,#DXMO ;RAISE HOLD AND SELECT-OUT
2158 | BIT #ADRECC,#DXCB ;VERIFY CU ADRS RECOGNIZED
2159 | BNE ,+4 ;BRANCH IF NO ERROR CONDITION
2160 | ERROR ;ADRECC NOT SET
2161 | BIT #ADRECD,#DXCB ;VERIFY DEVICE ADRS RECOGNIZED
2162 | BNE ,+4 ;BRANCH IF NO ERROR CONDITION
2163 | ERROR ;ADRECD NOT SET
2164 | BIC #ADRO,#DXMO ;DROP ADRO
2165 | MOV #UST,#R0 ;LOAD ADRS OF DEVICE STATUS STABLE
2166 | MOVB #CE,2(R0) ;LOAD CHANNEL-END IN DST
2167 | BIT #OPLI,#DXMI ;VERIFY CU SELECTED
2168 | BNE ,+1 ;BRANCH IF NO ERROR CONDITION
2169 | ERROR ;OPLI NOT SET
2170 | BIT #ADRI,#DXMI ;VERIFY ADDRESS-IN SET
2171 | BNE ,+1 ;BRANCH IF NO ERROR CONDITION
2172 | ERROR ;ADRI NOT SET
2173 |
2174 | CMPB #DEV,#BUSI ;VERIFY DEVICE ADRS ECHO
2175 | BEQ ,+1 ;BRANCH IF NO ERROR CONDITION
2176 | ERROR ;DEVICE ADRS NOT ECHOED
2177 | BIC #DEV,#BUS0 ;REMOVE ADRS FROM BUS0
2178 | BIS #READC,#BUS0 ;LOAD BUS0 WITH COMMAND
2179 | BIS #CMDO,#BUS0 ;RAISE COMMAND OUT
2180 | BIT #AYRI,#DXMI ;

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2181	#10002	001401			REQ	,+4		IBRANCH IF NO ERROR CONDITION
2182	#10004	104000			ERROR			IADMI DID NOT DROP
2183	#10006	042777	000002	171322	BIC	#READC,#BUS0		IREMOVE COMMAND FROM BUS0
2184	#10014	042777	002000	171266	BIC	#CMD0,#DXMO		IDROP COMMAND-OUT
2185	#10022	032777	004000	171262	BIT	#STAT,#DXMI		ISTAT SHOULD BE SET
2186	#10030	001001			BNE	,+4		IBRANCH IF NO ERROR CONDITION
2187	#10032	104000			ERROR			ISTAT NOT SET
2188	#10034	052777	010000	171246	BIS	#SUPO,#DXMO		Iraise SUPPRESS-OUT
2189					IWHEN SRVO IS SET IN RESPONSE TO STAT WHILE			
2190					ISUPO IS SET COMMAND CHAINING SHOULD BE INDICATED			
2191								
2192	#10042	032777	010000	171240	BIT	#SUPO,#DXMO		IVERIFY SUPO SET
2193	#10050	001001			BNE	,+4		IBRANCH IF NO ERROR CONDITION
2194	#10052	104000			ERROR			ISUPO NOT SET
2195								
2196	#10054	052777	001000	171226	BIS	#SRVO,#DXMO		Iraise SRVO
2197								ISTATUS-IN SHOULD
2198								
2199	#10062	042777	001000	171220	BIC	#SRVO,#DXMO		IDROP SRVO
2200	#10070	112777	000004	171234	MOVB	#DE,#CUSR		ILOAD DEVICE END STATUS
2201	#10076	052777	000007	171174	BIS	#DXFST,#DXCS		IPRESENT STATUS
2202	#10104	032777	004000	171200	BIT	#STAT,#DXMI		ISTATUS-IN SHOULD BE SET
2203	#10112	012737	000104	019500	MOV	#SENDI#CMDCHN,ENTRY1	IT9 ENTRY 1	
2204	#10120	113737	022666	019540	MOVB	#DEV,#ENTRY2	IT9 ENTRY 2	
2205	#10126	112737	000002	019541	MOVB	#2:#ENTRY2+1		
2206	#10134	012737	010134	020566	MOV	#,0#YRPG		IDEFINE ORIGIN
2207								
2208	#10142	042777	060000	171140	BIC	#HLDOISELO,#DXMO		IDESELECT
2209								
2210	#10150	052777	001000	171132	BIS	#SRVO,#DXMO		IACCEPT LAST DATA BYTE
2211	#10156	042777	001000	171124	BIC	#SRVO,#DXMO		
2212								
2213	#10164	105060	000002		CLRB	2(10)		IRESTORE ZERO STATUS
2214								
2215	#10170	042777	010000	171112	ENDCC: BIC	#SUPO,#DXMO		IDROP SRVO
2216								
2217					.REM	*		
2218								
2219					THE FUNCTION OF THIS TEST IS TO EXECUTE A SELECTIVE RESET AND VERIFY			
2220					THE DX11 RECORDS THIS EVENT (SELST SET IN DXDS TUMBLE TABLE ENTRY),			
2221					A SELECTIVE RESET IS INDICATED WHENEVER 'SUPPRESS-OUT' IS UP AND			
2222					'OPERATIONAL-OUT' DROPS,			
2223								
2224								
2225								
2226								

```

2227 | .....
2228 | ITEST 13 SELECTIVE RESET
2229 | .....
2230 | TST13: SC0PE
2231 | MOV #10,#COUNT I ITERATION COUNT
2232 | MOV #11,#ENTSYN I SAVE TEST # FOR ERROR REPORT
2233 | MOV #SCP13,#RETURN I SCOPE LOOP RETURN ADRS
2234 | SCP13:
2235 |
2236 |
2237 |
2238 | BIT #BIT1,#PARA I NO RSYEN
2239 | BEQ 15 I DO FOR SELECTOR CH ONLY
2240 | JMP #ENDSR
2241 | BIS #CUFBM,#DXCS I SET CU FORCE BURST MODE
2242 | I KEEP OPLI UP ON MUX
2243 |
2244 | BIT #CUFBM,#DXCS I VERIFY SET
2245 | BNE ,+4 I BRANCH IF NO ERROR CONDITION
2246 | ERROR I CUFBM NOT SET
2247 |
2248 | MOV #READC,#CMD I LOAD COMMAND
2249 | JSR PC,#TRAIT I TRACE TRACE INIT
2250 | MOV #CHIS,#ENTRY1 I LOAD EXPECTED TT ENTRY 1
2251 | MOV #HESS1,PS I LOWER PROCESSOR STATUS
2252 | MOV #,#TERPC I ORIGIN OF TRAP ERROR
2253 | JSR PC,ISS,SUB I SELECT
2254 |
2255 |
2256 | BIT #OPLI,#DXM1 I VERIFY CU SELECTED
2257 | BNE ,+4 I BRANCH IF NO ERROR CONDITION
2258 | ERROR I CU SELECT ERROR
2259 |
2260 | BIS #SUPO,#DXM0 I RAISE SUPPRESS-OUT
2261 |
2262 | MOV #SELST,#ENTRY1 I TT ENTRY #1
2263 | MOV #DEV,#ENTRY2 I TT ENTRY #2
2264 | MOV #DEV,#CUAR
2265 | MOV #2,#ENTRY2+1
2266 | MOV #,#TERPC I DEFINE ORIGIN OF TRACE
2267 |
2268 | BIC #OPLD,HLD,ISELO,#DXM0 I DROP OPERATION-OUT
2269 | I DO SELECTIVE RESET
2270 | BIS #OPLD,#DXM0 I
2271 | BIC #SUPO,#DXM0 I RAISE SUPO
2272 | BIS #SUPO,#DXM0 I
2273 | BEQ ,+7 I BRANCH IF NO ERROR CONDITION
2274 | ERROR I SUPO STUCK HIGH
2275 |
2276 | BIT #CUFBM,#DXCS I VERIFY SELST CLEARED CUFBM
2277 | BEQ ,+4 I BRANCH IF NO ERROR CONDITION
2278 | ERROR I CUFBM SET
2279 |
2280 | ENDSR:
  
```

DZDXG=C (OFF LINE EXERCISER) UPDATE APRIL 94 W.A.
DXOFFL:P11 T13 SELECTIVE RESET

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2281
2282
2283

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2284 | .....
2285 | ITEST 14 I/ STOP DURING ACTIVE READ
2286 | .....
2287 010442 104400 TS9141 SCOPE
2288 010444 012737 000010 020334 MOV #10,#ICOUNT IITERATION COUNT
2289 010452 012737 000014 021316 MOV #14,#ERTSYN ISAVE TEST # FOR ERROR REPORT
2290 010460 012737 010460 020340 MOV #SCP14,#RETURN ISCOPE LOOP RETURN ADRS
2291 010466 SCP141
2292
2293
2294
2295 010466 012737 000002 022670 MOV #HEADC,#CMD ILOAD COMMAND
2296 010474 004737 015654 JSR PC#TRAIT ITT TRACE TRACE INIT
2297 010500 012737 000200 019500 MOV #CHIS,#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2298 010506 013737 001272 177776 MOV #LESS1,PS ILOWER PROCESSOR STATUS
2299 010514 012737 010514 020566 MOV #,#TERPC IORIGIN OF TRAP ERROR
2300 010522 004737 016332 JSR PC#ISS,SUB ISELECT
2301
2302
2303 010526 012777 177400 170592 MOV #256,#DXBC ISET UP DATA TRANSFER
2304 010534 012777 030310 170542 MOV #DATA,DXBA IFOR OUTPUT
2305 010542 052777 000005 170530 BIS #DXFO,DXCS I
2306
2307 | .....?..... MOD APR 74 .....
2308 | | TIMING
2309 | | MOS,BIPOLAR RESPONSE MOD
2310
2311 010550 004737 016024 JSR PC#RDLAY IDELAY FOR FAST BIPOLAR MEMORY
2312
2313 | .....?..... MOD APR 74 .....
2314
2315 010554 012737 000001 022724 MOV #1,#COUNT ITRANSFER 1 BYTE
2316 010562 012737 000040 019500 MOV #CHDEND,#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2317 010570 113737 022666 019540 MOV #DEV,#ENTRY2 ISECOND TT ENTRY = DXCA
2318 010576 112737 000000 019541 MOV #,#ENTRY2+1 ICUR OF DXCA TT ENTRY
2319 010604 113777 022666 170514 MOV #DEV,DCUAR ILOAD DEV ADRS
2320 010612 012737 010612 020566 MOV #,#TERPC IDEFINE ORIGIN OF TRACE ERROR
2321 010620 004737 016240 JSR PC#TRANSFER IDO TRANSFER 1 BYTE
2322 | | SERVICE-IN UP AGAIN
2323 010624 052777 002000 170496 BIS #CHDO,DXMO IKILL WITH I/O STOP
2324 010632 042777 002000 170490 BIC #CHDO,DXMO I
2325 | .....?..... MOD APR 74 .....
2326 | | TIMING
2327 | | MOS,BIPOLAR RESPONSE MOD
2328
2329 010640 004737 016024 JSR PC#RDLAY IDELAY FOR FAST BIPOLAR MEMORY
2330
2331 | .....?..... MOD APR 74 .....
2332
2333 010644 112737 000000 022670 MOV #0,#CMD IFAKE CUR TT ENTRY
2334 010652 012737 001100 019500 MOV #CHEND#SEND,#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2335 010660 113737 022666 019540 MOV #DEV,#ENTRY2 ISECOND TT ENTRY = DXCA
2336 010666 113737 022670 019541 MOV #CHD,#ENTRY2+1 I
2337 010674 113777 022666 170424 MOV #DEV,DCUAR ILOAD DEV ADRS

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MH

2338 010702 113777 022670 173420
2339 010710 012737 010710 022556
2340 010716 004737 016162
2341
2342
2343
2344

MOVB
MOV
JSR

@CMD, @CUCR ILOAD COMMAND IN CUCR
@, @TERPC IDEFINE ORIGIN OF TRACE ERROR
PC, STATUSPRESENTATION IEXECUTE SELECTION

```

2345 | .....
2346 |TEST 15 I/ STOP DURING WRITE
2347 | .....
2348 010722 104400 TST15: SCOPE
2349 010724 012737 000010 020334 MOV #10,0#ICOUNT ;ITERATION COUNT
2350 010732 012737 000015 021316 MOV #17,0#ERTSTN ;SAVE TEST # FOR ERROR REPORT
2351 010740 012737 010740 020340 MOV #SCP15,0#RETURN ;SCOPE LOOP RETURN ADRS
2352 010746 SCP15:
2353
2354
2355
2356 010746 012737 000001 022670 MOV #WRITEC,0#CMD ;LOAD COMMAND
2357 010754 004737 015654 JSR PC,0#TRAIT ;TT TRACE TRACE INIT
2358 010760 012737 000200 019500 MOV #CHIS,0#ENTRY1 ;LOAD EXPECTED TT ENTRY 1
2359 010766 013737 001272 177776 MOV #MESS1,PS ;LOWER PROCESSOR STATUS
2360 010774 012737 010774 020566 MOV #,0#TERPC ;ORIGIN OF TRAP ERROR
2361 011002 004737 016332 JSR PC,ISS,SUB ;SELECT
2362
2363
2364 011006 012777 177400 170272 MOV #256,,0#DXBC ;SET UP DATA TRANSFER
2365 011014 012777 031710 170262 MOV #NPRDAT,0#DXBA ;FOR INPUT
2366 011022 052777 000003 170290 BIS #DXF1,0#DXCS ;
2367 | ..... MOD APR 74 .....
2368 |
2369 | TIMING
2370 | MOS,BIPOLAR RESPONSE MOD
2371 |
2372 |
2373 011030 004737 016024 JSR PC,RDLAY ;DELAY FOR FAST BIPOLAR MEMORY
2374
2375 | ..... MOD APR 74 .....
2376 011034 012701 030710 MOV #NDATA,R1 ;DATA DESTINATION
2377 011040 012737 000001 022724 MOV #1,0#COUNT ;TRANSFER 1 BYTE
2378 011046 012737 000040 019500 MOV #CHDEND,0#ENTRY1 ;LOAD EXPECTED TT ENTRY 1
2379 011054 113737 022660 019540 MOV #DEV,0#ENTRY2 ;SECOND TT ENTRY = DXCA
2380 011062 112737 000000 019541 MOV #0,0#ENTRY2+1 ;CUCR OF DXCA TT ENTRY
2381 011070 113777 022660 170230 MOV #DEV,0#CUAR ;LOAD DEV ADRS
2382 011076 012737 011076 020566 MOV #,0#TERPC ;DEFINE ORIGIN OF TRACE ERROR
2383 011104 004737 016240 JSR PC,TRANSFER ;DO TRANSFER 1 BYTE
2384 ;SERVICE-IN UP AGAIN
2385 011110 052777 002000 170172 BIS #CMD0,0#DXMO ;KILL WITH I/O STOP
2386 011116 042777 002000 170164 BIC #CMD0,0#DXMO ;
2387 | ..... MOD APR 74 .....
2388 | TIMING
2389 | MOS,BIPOLAR RESPONSE MOD
2390 011124 004737 016024 JSR PC,RDLAY ;DELAY FOR FAST BIPOLAR MEMORY
2391 |
2392 | MOS,BIPOLAR RESPONSE MOD
2393 | ..... MOD APR 74 .....
2394 |
2395 |
2396 011130 112737 000000 022670 MOV #0,0#CMD ;FAKE CUCR TT ENTRY
2397 011136 012737 001100 019500 MOV #CHENUS,0#ENTRY1 ;LOAD EXPECTED TT ENTRY 1
2398 011144 113737 022660 019540 MOV #DEV,0#ENTRY2 ;SECOND TT ENTRY = DXCA

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2399 011152 113737 022670 019541
2400 011160 113777 022666 178140
2401 011166 113777 022670 178134
2402 011174 012737 011174 020566
2403 011202 004737 016162
2404
2405
2406

MOVB 00CMD,00ENTRY2+1
MOVB 00DEV,0CUAR ;LOAD DEV ADRS
MOVB 00CMD,0CUCR ;LOAD COMMAND IN CUCR
MOV 0,00TERPC ;DEFINE ORIGIN OF TRACE ERROR
JSR PC,STATUSPRESENTATION ;EXECUTE SELECTION


```

2407      ; .....
2408      ;TEST 16      HI DURING ACTIVE WRITE
2409      ; .....
2410      P11206 104400      TST16: SCOPE
2411      P11210 P12737 P00010 P20334      MOV      #10,#COUNT      ;ITERATION COUNT
2412      P11216 P12737 P00010 P21316      MOV      #16,#ERTSYN      ;SAVE TEST # FOR ERROR REPORT
2413      P11224 P12737 P11232 P20340      MOV      #SCP16,#RETURN ;SCOPE LOOP RETURN ADRS
2414      P11232      SCP16:
2415
2416      ,REM      *
2417
2418      THE FUNCTION OF THIS TEST IS TO VERIFY THAT THE DX11 CAN RESPOND
2419      TO A STOP I/O DURING AN ACTIVE DATA TRANSFER; THIS IS ACCOMPLISHED
2420      BY EXECUTING A SELECTION WITH A COMMAND FOR A TRANSFER (READ),
2421      AFTER THE DX HAS RESPONDED TO THE COMMAND AND INITIATED THE TRANSFER
2422      COMMAND-OUT IS RAISED IN RESPONSE TO SRV!; THIS CAUSES THE DX TO
2423      TERMINATE THE TRANSFER AND RECORD THE FACT THAT THE CHANNEL TERM-
2424      INATED THE TRANSFER BY STORING CHDEND IN THE TT,
2425
2426      *
2427
2428
2429      P11232 P12737 P00001 P22670      MOV      #WRITEC,#CMD      ;LOAD COMMAND
2430      P11240 P04737 P15054      JSR      PC,#TRAITN      ;TT TRACE TRACE INIT
2431      P11244 P12737 P00200 P19500      MOV      #CHIS,#ENTRY1      ;LOAD EXPECTED TT ENTRY 1
2432      P11252 P13737 P01272 P17776      MOV      #LESS1,PS      ;LOWER PROCESSOR STATUS
2433      P11260 P12737 P11260 P20506      MOV      #,#TERPC      ;ORIGIN OF TRAP ERROR
2434      P11266 P04737 P16332      JSR      PC,ISS,SUB      ;SELECT
2435
2436
2437      P11272 P12777 P177400 P170006      MOV      #256,#DXBC      ;SET UP DATA TRANSFER
2438      P11300 P12777 P031710 P167776      MOV      #NPRDAT,#DXBA      ;FOR INPUT
2439      P11306 P052777 P000003 P167704      BIS      #DXFI,#DXCS      ;
2440      P11314 P12737 P00200 P19500      MOV      #C IS,#ENTRY1      ;LOAD EXPECTED TT ENTRY 1
2441      P11322 P13737 P22666 P19540      MOV      #DEV,#ENTRY2      ;SECOND TT ENTRY = DXCA
2442      P11330 P13737 P22670 P19541      MOV      #CMD,#ENTRY2+1      ;
2443      P11336 P13777 P22666 P167702      MOV      #DEV,#CUAR      ;LOAD DEV ADRS
2444      P11344 P13777 P22670 P167796      MOV      #CMD,#CUCR      ;LOAD COMMAND IN CUCR
2445      P11352 P12737 P11352 P20506      MOV      #,#TERPC      ;DEFINE ORIGIN OF TRACE ERROR
2446      P11360 P04737 P17500      JSR      PC,CUIS,SUB      ;EXECUTE SELECTION
2447
2448      P11364 P052777 P000777 P167716      BIS      #777,#DXMO      ;DUMMY DATA
2449      P11372 P052777 P001000 P167710      BIS      #SHVO,#DXMO      ;DO ONE BYTE TRANSFER
2450      P11400 P042777 P001000 P167702      BIC      #SHVO,#DXMO      ;
2451
2452
2453      P11406 P032737 P000004 P22202      ;DO AN INTERFACE DISCONNECT
2454      P11414 P001403      BIT      #BIT2,#PARA      ;TEST FOR MUX
2455      P11416 P12737 P000000 P22670      BEQ      15      ;BR IF NOT MUX
2456      P11424      MOV      #7,#CMD      ;FAKE CUCR ENTRY
2457      P11424 P12737 P004040 P19500      ;15:
2458      P11432 P13737 P22666 P19540      MOV      #INFOSC:CHDEND,#ENTRY1 ;LOAD EXPECTED TT ENTRY 1
2459      P11440 P13737 P22670 P19541      MOV      #DEV,#ENTRY2      ;SECOND TT ENTRY = DXCA
2460      P11446 P13777 P22666 P167692      MOV      #CMD,#ENTRY2+1      ;
2461      P11446 P13777 P22666 P167692      MOV      #DEV,#CUAR      ;LOAD DEV ADRS
  
```

2461	011454	113777	022670	167646	MOVB	#CND, @CUCR	ILOAD COMMAND IN CUCR
2462	011462	012737	011462	020566	MOV	#, @TERPC	IDEFINE ORIGIN OF TRACE ERROR
2463	011470	004737	017166		JSR	PC, MID, SUB	IEXECUTE SELECTION
2464							
2465	011474	112777	000014	167630	MOVB	#CE+DE, @CUSR	ILOAD CE/DE STATUS
2466	011502	052777	000007	167570	BIS	#DXFSTIGO, @DXCS	ISET FCTN/STATUS/GO
2467							ISTATUS-IN SHOULD RISE
2468	011510	112737	000000	022670	MOVB	#, @CND	IFAKE CUCR TT ENTRY
2469	011516	012737	000002	022670	MOV	#READC, @CND	ILOAD COMMAND
2470	011524	004737	015654		JSR	PC, @TRANT	ITT TRACE TRACE INIT
2471	011530	012737	001100	013500	MOV	#CHENUSI, @SEND, @ENTRY1	ILOAD EXPECTED TT ENTRY 1
2472	011536	013737	001272	177776	MOV	#LESS1, PS	ILOWER PROCESSOR STATUS
2473	011544	012737	011544	020566	MOV	#, @TERPC	IORIGIN OF TRAP ERROR
2474	011552	004737	017510		JSR	PC, CUIS, GO	ISELECT
2475							
2476	011556	032777	100000	167526	BIT	#OLI, @DXMI	IOPLI SHOULD BE UP
2477	011564	001001			BNE	, +4	I BRANCH IF NO ERROR CONDITION
2478	011566	104000			ERROR		IOPLI NOT SET
2479	011570	032777	004000	167514	BIT	#STAI, @DXMI	ISTATUS-IN SHOULD SET
2480	011576	001001			BNE	, +4	I BRANCH IF NO ERROR CONDITION
2481	011600	104000			ERROR		I STAI NOT SET
2482	011602	012777	011640	167494	MOV	#WESEINT, @DXIV	IENDING STATUS INTERRUPT
2483	011610	052777	001000	167472	BIS	#SRVO, @DXMO	I SERVICE-OUT UP
2484							I STATUS-IN SHOULD FALL
2485	011616	032777	001000	167464	BIT	#SRVO, @DXMO	
2486	011624	001001			BNE	, +4	I BRANCH IF NO ERROR CONDITION
2487	011626	104000			ERROR		
2488					BIT	#STAI, @DXMI	
2489					ERCALL	BEV, <STAI DID NOT DROP>	
2490	011630	042777	001000	167492	BIC	#SRVO, @DXMO	IDROP SERVICE-OUT,
2491							IT HIS ENDS ES =- ESEND INT SHOULD
2492							IBE UP AND CUBSY CLEAR
2493	011636	000424			BR	ESE2	IEXIT
2494							
2495							
2496							
2497	011640	032777	000200	167432	WESEINT BIT	#DONE, @DXCS	I CHECK FOR VALID INTERRUPT
2498	011646	001001			BNE	, +4	I BRANCH IF NO ERROR CONDITION
2499	011650	104000			ERROR		I INVALID INTERRUPT
2500	011652	042777	000200	167420	BIC	#DONE, @DXCS	I CLEAR DONE
2501	011660	012737	001100	013500	MOV	#CIENDS, @SEND, @ENTRY1	IT? ENTRY 1
2502	011666	112737	000000	013541	MOVB	#, @ENTRY2+1	I ENTRY2
2503	011674	012737	011674	020566	MOV	#, @TERPC	I ORIGIN OF TRACE ERROR
2504	011702	004737	015432		JSR	PC, TT, TRACE	
2505	011706	000002			RTI		I RETURN
2506							
2507	011710	000240			ESE2I	NOP	
2508							
2509							
2510							

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2511 | .....
2512 | TEST 17 HI DURING ACTIVE READ
2513 | .....
2514 011712 104400 TSP17: SCOPE
2515 011714 012737 000010 020334 MOV #10,0#ICOUNT IITERATION COUNT
2516 011722 012737 000017 021316 MOV #11,0#ERTSTN ISAVE TEST # FOR ERROR REPORT
2517 011730 012737 011730 020340 MOV #SCP17,0#RETURN ISCOPE LOOP RETURN ADRS
2518 011736 SCP17:
2519
2520
2521 011736 012737 000002 022670 MOV #READC,0#CMD ILOAD COMMAND
2522 011744 004737 015654 JSR PC;0#TRAIT ITT TRACE TRACE INIT
2523 011750 012737 000200 019500 MOV #CHIS,0#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2524 011756 013737 001272 177776 MOV #LESS1,PS ILOWER PROCESSOR STATUS
2525 011764 012737 011764 020506 MOV #,0#TERPC IORIGIN OF TRAP ERROR
2526 011772 004737 016332 JSR PC;ISS,SUB ISELECT
2527
2528
2529 011776 012777 177400 167302 MOV #256,,0DXBC ISET UP DATA TRANSFER
2530 012004 012777 030310 167272 MOV #DATA,0DXBA IFOR OUTPUT
2531 012012 052777 000005 167200 BIS #DXFO,0DXCS I
2532 012020 012737 000200 019500 MOV #CTIS,0#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2533 012026 113737 022666 019540 MOV #DEV,0#ENTRY2 ISECOND TT ENTRY = DXCA
2534 012034 113737 022670 019541 MOV #CMD,0#ENTRY2+1 I
2535 012042 113777 022666 167296 MOV #DEV,0CUAR ILOAD DEV ADRS
2536 012050 113777 022670 167292 MOV #CMD,0CUCR ILOAD COMMAND IN CUCR
2537 012056 012737 012056 020506 MOV #,0#TERPC IDEFINE ORIGIN OF TRACE ERROR
2538 012064 004737 017500 JSR PC;CUIS,SUB IEXECUTE SELECTION
2539
2540 012070 052777 001000 167212 BIS #SRVO,0DXMO ISTART THE TRANSFER
2541 012076 042777 001000 167204 BIC #SHVO,0DXMO I
2542 IFAKE CUCR TT ENTRY
2543 012104 117727 167240 MOV #TTNDX,(PC)+ ISAVE TTNDX
2544 012110 000000 1Si B IHERE
2545 IDO AN INTERFACE DISCONNECT
2546 012112 112737 000000 022670 MOV #0#CMD IFAKE CUCR ENTRY
2547 012120 012737 004040 019500 MOV #INFOSC;CHDEND,0#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2548 012126 113737 022666 019540 MOV #DEV,0#ENTRY2 ISECOND TT ENTRY = DXCA
2549 012134 113737 022670 019541 MOV #CMD,0#ENTRY2+1 I
2550 012142 113777 022666 167196 MOV #DEV,0CUAR ILOAD DEV ADRS
2551 012150 113777 022670 167192 MOV #CMD,0CUCR ILOAD COMMAND IN CUCR
2552 012156 012737 012156 020506 MOV #,0#TERPC IDEFINE ORIGIN OF TRACE ERROR
2553 012164 004737 017166 JSR PC;HIO,SUB IEXECUTE SELECTION
2554
2555 012170 112777 000014 167134 MOV #CE+DE,0CUSR ILOAD CE/DE STATUS
2556 012176 052777 000007 167074 BIS #DXFSTIGO,0DXCS ISET FCTN/STATUS/GO
2557 ISTATUS-IN SHOULD RISE
2558 012204 012737 000002 022670 MOV #READC,0#CMD ILOAD COMMAND
2559 012212 004737 015654 JSR PC;0#TRAIT ITT TRACE TRACE INIT
2560 012216 012737 001100 019500 MOV #CHENDS;ESEND,0#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2561 012224 013737 001272 177776 MOV #LESS1,PS ILOWER PROCESSOR STATUS
2562 012232 012737 012232 020506 MOV #,0#TERPC IORIGIN OF TRAP ERROR
2563 012240 004737 017510 JSR PC;CUIS,GO ISELECT
2564

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2565 #12244 #32777 100000 167040      BIT      #OPLI,#DXMI      IOPLI SHOULD BE UP
2566 #12252 #01001 104000          BNE      ,+4          IBRANCH IF NO ERROR CONDITION
2567 #12254 104000          ERROR
2568 #12256 #32777 #04000 167026      BIT      #STAI,#DXMI
2569 #12264 #01001 104000          BNE      ,+?          IBRANCH IF NO ERROR CONDITION
2570 #12266 104000          ERROR          ISTAI NOT SET
2571 #12273 #12777 #12326 166766      MOV      #ESEINT,#DXIV  IENDING STATUS INTERRUPT
2572 #12276 #52777 #01000 167004      BIS      #SRVO,#DXMO    ISERVICE-OUT UP
2573                                     ISTATUS-IN SHOULD FALL
2574 #12324 #32777 #01000 166776      BIT      #SRVO,#DXMO
2575 #12312 #01001 104000          BNE      ,+?          IBRANCH IF NO ERROR CONDITION
2576 #12314 104000          ERROR
2577                                     I
2578                                     I
2579 #12316 #42777 #01000 166764      ERCALL  BE ,<STAI DID NOT DROP>
2580                                     BIC      #SRVO,#DXMO    IDROP SERVICE-OUT,
2581                                     ITHIS ENDS ES #- ESEND INT SHOULD
2582                                     BR        ESE1          IBE UP AND CUBSY CLEAR
2583                                     IEXIT?
2584                                     IEND STATUS INTERRUPT SERVICE
2585
2586 #12326 #32777 #00200 166744  ESEINTI BIT      #DONE,#DXCS  ICHECK FOR VALID INTERRUPT
2587 #12334 #01001 104000          BNE      ,+4          IBRANCH IF NO ERROR CONDITION
2588 #12336 104000          ERROR          IINVALID INTERRUPT
2589 #12340 #42777 #00200 166732      BIC      #DONE,#DXCS  ICLEAR DONE
2590 #12346 #12737 #01100 #15500      MOV      #CJENDS,ESEND,#ENTRY1 I?? ENTRY 1
2591 #12354 #12737 #00000 #15541      MOV      #0,#ENTRY2+1  IENTRY2
2592 #12362 #12737 #12362 #20506      MOV      #,,#TERPC    IORIGIN OF TRACE ERROR
2593 #12370 #04737 #15432          JSR      PC,TT,TRACE
2594 #12374 #00002          RTI          IRETURN
2595
2596 #12376 #00240          ESE1I  NOP
2597
2598
2599
  
```

```

2600 I .....
2601 ITEST 20 CONTENTION TEST
2602 I .....
2603 TS1201 SC0PE
2604 #12400 012737 000010 020334 MOV #10,#ICOUNT IITERATION COUNT
2605 #12410 012737 000020 021316 MOV #20,#ENTSYN ISAVE TEST # FOR ERROR REPORT
2606 #12416 012737 012424 020340 MOV #SCP20,#RETURN ISCOPE LOOP RETURN ADRS
2607 #12424 SCP20:
2608
2609
2610 #12424 032737 000004 022202 BIT #BIT2,#PARA ITEST MUX BIT
2611 #12432 001510 BEQ NCONT INO MUX= NO CONT TEST
2612 #12434 032737 000002 022202 BIT #BIT1,#PARA IBSYEN MUST BE 0
2613 #12442 001104 BNE NCONT IBRANCH IF BSYEN
2614 #12444 004737 015654 JSR PC,#TRAI NT IDO TT TRACE INIT
2615 #12450 113777 022672 166650 MOV# DEV,A,#CUAR ISET UP DEVICE 2 FOR
2616 #12456 112777 000200 166646 MOV# #A1TN,#CUSR IASYNCH STATUS
2617
2618
2619
2620
2621
2622
2623
2624
2625
2626
2627 #12464 052777 000007 166636 BIS #DXFST,#DXCS IREQUEST-IN SHOULD BE UP
2628 #12472 032777 020000 166612 BIT #REQI,#DXMI ILOOK FOR REQUEST IN
2629 #12500 001001 BNE ,+1 IBRANCH IF NO ERROR CONDITION
2630 #12502 104000 ERROR IREQI DID NOT SET
2631 #12504 012737 000403 022670 MOV #NOPC,CMD
2632
2633 #12512 012737 001200 019500 MOV #CHENDS:CHIS,#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2634 #12520 113737 022666 019540 MOV# #DEV,#ENTRY2 ISECOND TT ENTRY = DXCA
2635 #12526 112737 000003 019541 MOV# #3,#ENTRY2+1 IMUX TT CUCR
2636 #12534 113777 022666 166564 MOV# #DEV,#CUAR ILOAD DEV ADRS
2637 #12542 012737 012542 020566 MOV #,#TENPC IDEFINE ORIGIN OF TRACE ERROR
2638
2639
2640 #12550 004737 017732 JSR PC,#FASTISS IISS FOR DEVICE 1
2641
2642 #12554 042777 000200 166516 BIC #DONE,#DXCS
2643 #12562 113777 022666 166536 MOV# DEV,#CUAR ITRY STATUS FOR DEV 1
2644 #12570 112777 000200 166534 MOV# #A1TN,#CUSR
2645 #12576 052777 000007 166474 BIS #DXFST,#DXCS IREQUEST IN SHOULD BE UP
2646 #12604 012737 000403 022670 MOV #N_PC,CMD ILOAD NOP COMMAND
2647 #12612 012737 001200 019500 MOV #CHENDS:CHIS,#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2648 #12620 113737 022666 019540 MOV# #DEV,#ENTRY2 ISECOND TT ENTRY = DXCA
2649 #12626 112737 000003 019541 MOV# #3,#ENTRY2+1 IMUX TT CUCR
2650 #12634 113777 022666 166464 MOV# #DEV,#CUAR ILOAD DEV ADRS
2651 #12642 012737 012642 020566 MOV #,#TENPC IDEFINE ORIGIN OF TRACE ERROR
2652 #12650 004737 017732 JSR PC,#FASTISS I
2653 #12654 NCONT:

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DZDXG-C (OFF LINE EXERCISER) UPDATE APRIL 74 W.A.
DXOFFL:P11 T20 CONTENTION TEST

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2654
2655

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2656 | .....
2657 | ITEST 21 HI AND TIO TO RELEASE STATUS ( ON BSYEN ONLY)
2658 | .....
2659 | TSI211 SCOPE
2660 | #12654 #12737 #000010 #22334 MOV #10,#COUNT IITERATION COUNT
2661 | #12664 #12737 #000021 #21316 MOV #21,#ERTSYN ISAVE TEST # FOR ERROR REPORT
2662 | #12672 #12737 #12700 #22340 MOV #SCP21,#RETURN ISCOPE LOOP RETURN ADRS
2663 | #12700 SCP21:
2664 |
2665 |
2666 | #12700 #32737 #000004 #22202 BIT #BIT2,#PARA IMUX CHANNEL?
2667 | #12706 #01005 BNE 15 IIF MUX MUST BE BSYEN
2668 | #12710 #32737 #000002 #22202 BIT #BIT1,#PARA IIF SEL MUST NOT BE BSYEN
2669 | #12716 #001407 BEQ TST6A IBRANCH IF NOT BSYEN
2670 | #12720 #000404 BR 25 ISEL AND BSYEN IS NOT VALID FOR THIS TEST
2671 | #12722 #32737 #000002 #22202 15i BIT #BIT1,PARA IMUX W/O BSYEN?
2672 | #12730 #01002 BNE TST6A IYES = GO
2673 | #12732 #000137 #13452 25i JMP #TST6B IIGNORE TEST
2674 | #12736 TSI6A:
2675 | #12736 #12737 #000001 #22670 MOV #WRITEC,#CMD ILOAD COMMAND
2676 | #12744 #004737 #15654 JSR PC,#TRAIT ITT TRACE TRACE INIT
2677 | #12750 #12737 #000200 #15500 MOV #CHIS,#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2678 | #12756 #13737 #001272 177776 MOV #LESS1,PS ILOWER PROCESSOR STATUS
2679 | #12764 #12737 #12764 #22506 MOV #,#TERPC IORIGIN OF TRAP ERROR
2680 | #12772 #004737 #16332 JSR PC,ISS,SUB ISELECT
2681 |
2682 |
2683 | IDO INTER FACE DISCONNECT
2684 |
2685 | #12776 #12737 #004000 #15500 MOV #INFOSC,#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2686 | #13004 113737 #22666 #15540 MOVB #DEV,#ENTRY2 ISECOND TT ENTRY = DXCA
2687 | #13012 113737 #22670 #15541 MOVB #CMD,#ENTRY2+1 I
2688 | #13020 113777 #22666 166300 MOVB #DEV,#CUAR ILOAD DEV ADRS
2689 | #13026 113777 #22670 166274 MOVB #CMD,#CUCR ILOAD COMMAND IN CUCR
2690 | #13034 #12737 #13034 #22506 MOV #,#TERPC IDEFINE ORIGIN OF TRACE ERROR
2691 | #13042 #004737 #17166 JSR PC,WIO,SUB IEXECUTE SELECTION
2692 |
2693 |
2694 | IATTEMPT TO PRESENT ASYNCHRONOUS STATUS WHILE DISCONNECTED
2695 |
2696 | #13046 #52777 #000014 166256 BIS #CEIDE,#CUSR IGENERATE CEIDE STATUS
2697 | #13054 #52777 #000007 166216 BIS #DXFST,#DXCS ISET FUNCTION STATUS & GO
2698 | #13062 112737 #000000 #22670 MOVB #,#CMD ISTATUS=IN UP
2699 | #13070 #32737 #000004 #22202 BIT #BIT2,#PARA IFAKE CUCR ENTRY
2700 | #13076 #001407 BEQ 15 ITEST FOR MUX
2701 | #13100 113737 #22666 #22670 MOVB #DEV,#CMD IFAKE CUCR ENTRY
2702 | #13106 #12737 #001012 #15500 MOV #CHENDS,ISSREJ,STKSTB,#ENTRY1
2703 | #13114 #000403 BR 1506
2704 | #13116 15i
2705 | #13116 #12737 #001002 #15500 MOV #CHENDS,STKSTB,#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2706 | #13124 113737 #22666 #15540 MOVB #DEV,#ENTRY2 ISECOND TT ENTRY = DXCA
2707 | #13132 113737 #22670 #15541 MOVB #CMD,#ENTRY2+1 I
2708 | #13140 113777 #22666 166160 MOVB #DEV,#CUAR ILOAD DEV ADRS
    
```

2710	013146	113777	022670	166194	MOVW	00CMD,0CUCR	ILOAD COMMAND IN CUCR
2711	013154	012737	013154	020566	MOV	0,10#TERPC	IDEFINE ORIGIN OF TRACE ERROR
2712	013162	004737	017510		JSR	PC,CUIS,GO	IEXECUTE SELECTION
2713							
2714	013166	052777	002000	166114	BIS	0CMD0,0DXMO	ISET COMMAND=OUT INSTEAD
2715							I OF SERVICE OUT
2716	013174	042777	002000	166106	BIC	0CMD0,0DXMO	
2717	013202	013703	001442		MOV	DS, #3	
2718	013206	032777	000040	166064	BIT	0STKSTA,0DXCS	ITEST FOR STACKED STATUS
2719	013214	001001			BNE	,+4	I BRANCH IF NO ERROR CONDITION
2720	013216	104000			ERROR		I STKSTA NOT SET
2721	013220	112763	000000	000000	MOVW	00T0(N3)	ILOAD STATUS FOR TEST I/O COMMAND
2722	013226	012737	000400	022670	MOV	0TIOC,00CMD	ITEST I/O
2723	013234	012737	000200	019500	MOV	0CHIS,00ENTRY1	ILOAD EXPECTED TT ENTRY 1 FOR SEL
2724	013242	113737	022666	019540	MOVW	00DEV,00ENTRY2	I SECOND TT ENTRY = DXCA
2725	013250	032737	000004	022202	BIT	0BIT2,00PARA	ITEST FOR MUX
2726	013256	001407			BEO	15	I BR IF SELECTOR
2727	013260	112737	000000	019541	MOVW	00T00ENTRY2+1	I MUX TT CUCR
2728	013266	012737	001311	019500	MOV	01311,00ENTRY1	I DS FOR MUX
2729	013274	000403			BR	25	I GO
2730	013276	112737	000000	019541	MOVW	00T00ENTRY2+1	I CUCR OF DXCA TT ENTRY
2731	013304	113777	022666	166014	MOVW	00DEV,0CUAR	ILOAD DEV ADRS
2732	013312	012737	013312	020566	MOV	0,70#TERPC	IDEFINE ORIGIN OF TRACE ERROR
2733	013320	004737	013326		JSR	PC,TIO,ISS	
2734	013324	000452			BR	TST6B	
2735							I ISS FOR MIO/TIO TO RELEASE STATUS TEST
2736							
2737	013326	105077	166004		TIO.ISSIC, RB	0BUS0	I CLEAR BUS OUT
2738	013332	053777	022666	165790	BIS	DEV,0DXMO	I PUT DEVICE ADRS ON OUT TAGS
2739	013340	052777	004000	165742	BIS	0A2RO,0DXMO	I RAISE ADRS=OUT
2740	013346	052777	060000	165734	BIS	0HLD0,ISELO,0DXMO	I RAISE SELECT=OUT, HOLD=OUT
2741	013354	042777	004000	165726	BIC	0ADRO,0DXMO	I REMOVE ADRS=OUT
2742							
2743	013362	043777	022666	165720	BIC	DEV,0DXMO	I REMOVE ADRS
2744	013370	053777	022670	165712	BIS	CMD,0DXMO	I PUT COMMAND ON OUT TAGS
2745	013376	052777	002000	165704	BIS	0CMD0,0DXMO	I RAISE CMD=OUT
2746	013404	043777	022670	165676	BIC	CMD,0DXMO	I REMOVE CMD
2747	013412	042777	002000	165670	BIC	0CMD0,0DXMO	I REMOVE CMD=OUT
2748	013420	052777	001000	165662	BIS	0SRVO,0DXMO	I RELEASE STATUS
2749	013426	042777	001000	165654	BIC	0SIVO,0DXMO	I
2750	013434	117700	165710		MOVW	0T,NDX, RB	I FETCH TT INDEX
2751	013440	042700	177000		BIC	017700B, RB	I
2752	013444	063700	001440		ADD	TT, RB	I FIND NEXT TT ENTRY POINT
2753	013450	000207			RTS	PC	
2754	013452	004737	024254		JSR	PC,RESRES	
2755	013456	112763	000000	000000	MOVW	00T0(N3)	I RESTORE STATUS
2756							
2757							


```

2758 | .....
2759 | TEST 22 CUBSY/CUE TEST (MUX/BSYEN ONLY)
2760 | .....
2761 | TST22: SC0PE
2762 |     MOV     #13,#ICOUNT      ;ITERATION COUNT
2763 |     MOV     #24,#ENTSYN     ;SAVE TEST # FOR ERROR REPORT
2764 |     MOV     #SCP22,#RETURN  ;SCOPE LOOP RETURN ADRS
2765 | SCP22:
2766 |
2767 |
2768 |
2769 |     BIT     #BIT2,PARA      ;MUX CHANNEL ?
2770 |     BEQ     TST9,0         ;NO - IGNORE
2771 |     BIT     #BIT1,PARA      ;BSYEN MODE?
2772 |     BNE     TST9,1
2773 |     TST9,0: JMP     #,STY,2
2774 |     TST9,1:
2775 |     MOV     #READC,#CMD     ;LOAD COMMAND
2776 |     JSR     PC,#TRINY      ;TT TRACE TRACE INIT
2777 |     MOV     #CHIS,#ENTRY1   ;LOAD EXPECTED TT ENTRY 1
2778 |     MOV     #HESS1,PS       ;LOWER PROCESSOR STATUS
2779 |     MOV     #,#ENTERPC     ;ORIGIN OF TRAP ERROR
2780 |     JSR     PC,#ISS,SUB     ;SELECT
2781 |
2782 |
2783 |     BIS     DEV,A,#DXMO     ;TRY TO SELECT SECOND
2784 |     BIS     #ADRO,#DXMO     ;ADDRESS OUT
2785 |     BIS     #HLDO,#DXMO     ;HOLD OUT
2786 |     BIS     #SELO,#DXMO     ;SELECT OUT
2787 |
2788 |     ;STATUS-IN SHOULD RISE
2789 |     ;WITH SM + BSY ON BUS
2790 |     ;ISSREJ SHOULD
2791 |     BIC     #ADRO;HLDO;SELO,#DXMO ;ISSREJ SHOULD
2792 |     BIC     DEV,A,#DXMO     ;BE UP
2793 |     MOV     #DEV,#CUAR      ;RESET CUAR
2794 |     MOV     #2,COUNT        ;DO A 2 BYTE DATA
2795 |     MOV     #2,#DXBC        ;TRANSFER
2796 |     MOV     #DATA,#DXBA
2797 |     BIS     #DXFD,#DXCS
2798 |     MOV     #CHIS,#ENTRY1   ;LOAD EXPECTED TT ENTRY 1
2799 |     MOV     #DEV,#ENTRY2    ;SECOND TT ENTRY = DXCA
2800 |     MOV     #CMD,#ENTRY2+1  ;
2801 |     MOV     #DEV,#CUAR      ;LOAD DEV ADRS
2802 |     MOV     #CMD,#CUCR      ;LOAD COMMAND IN CUCR
2803 |     MOV     #,#ENTERPC     ;DEFINE ORIGIN OF TRACE ERROR
2804 |     JSR     PC,#CUI,SUB     ;EXECUTE SELECTION
2805 |
2806 |     MOV     #7,#CMD        ;FAKE CUCR TT ENTRY
2807 |     MOV     #CUDEND;ISSREJ,#ENTRY1 ;LOAD EXPECTED TT ENTRY 1
2808 |     MOV     #DEV,#ENTRY2    ;SECOND TT ENTRY = DXCA
2809 |     MOV     #CMD,#ENTRY2+1  ;
2810 |     MOV     #DEV,#CUAR      ;LOAD DEV ADRS
2811 |     MOV     #CMD,#CUCR      ;LOAD COMMAND IN CUCR
2812 |     MOV     #,#ENTERPC     ;DEFINE ORIGIN OF TRACE ERROR
2813 |     JSR     PC,TRANSFER    ;EXECUTE SELECTION
    
```

2812						
2813	014024	012737	001110	019500	MOV	#CHENDS;#ESEND;#ISSREJ,#ENTRY1 ;LOAD EXPECTED TT ENTRY 1
2814	014032	113737	022666	019540	MOV	#DEV,#ENTRY2 ;SECOND TT ENTRY = DXCA
2815	014040	113737	022670	019541	MOV	#CMD,#ENTRY2+1 ;
2816	014046	113777	022666	169292	MOV	#DEV,#CUAR ;LOAD DEV ADRS
2817	014054	113777	022670	169246	MOV	#CMD,#CUCR ;LOAD COMMAND IN CUCR
2818	014062	012737	014062	020506	MOV	#,#TERPC ;DEFINE ORIGIN OF TRACE ERROR
2819	014070	004737	016162		JSR	PC;STATUSPRESENTATION ;EXECUTE SELECTION
2820						
2821						;ISSREJ SHOULD STILL BE
2822						IUP, ALONG WITH CUBSY
2823						
2824	014074	112777	000040	169230	MOV	#CUE,#CUSR ;PRESENT CUE
2825	014102	052777	000007	169170	BIS	#DXFST,#DXCS ;GO
2826	014110	112737	000000	022670	MOV	#,#CMD ;FAKE CUCR TT ENTRY
2827	014116	012737	000100	019500	MOV	#ESEND,#ENTRY1 ;LOAD EXPECTED TT ENTRY 1
2828	014124	113737	022666	019540	MOV	#DEV,#ENTRY2 ;SECOND TT ENTRY = DXCA
2829	014132	113737	022670	019541	MOV	#CMD,#ENTRY2+1 ;
2830	014140	113777	022666	169160	MOV	#DEV,#CUAR ;LOAD DEV ADRS
2831	014146	113777	022670	169194	MOV	#CMD,#CUCR ;LOAD COMMAND IN CUCR
2832	014154	012737	014154	020506	MOV	#,#TERPC ;DEFINE ORIGIN OF TRACE ERROR
2833	014162	004737	017500		JSR	PC;CUI\$;SUB ;EXECUTE SELECTION
2834						
2835	014166	122777	000040	169146	CHPB	#CUEND,#BUSI ;CHECK STATUS ON BUS=IN
2836	014174	001401			BEG	,+4 ;BRANCH IF NO ERROR CONDITION
2837	014176	104000			ERROR	;BUSI STATUS ERROR
2838	014200	032777	000010	169006	BIF	#ISSREJ,#DXDS ;CHECK FOR ISS REJECT
2839	014206	001001			BNE	,+4 ;BRANCH IF NO ERROR CONDITION
2840	014210	104000			ERROR	;ISSREJ NOT SET
2841	014212	052777	001000	169070	BIS	#SRVO,#DXMO ;ACCEPT STATUS
2842	014220	042777	001000	169002	BIC	#SRVO,#DXMO ;(ISSREJ CLEARS)
2843	014226	005077	169110		CLR	#BUSI ;CLEAR BUSI
2844	014232	005777	169036		TSY	#DXDS ;DXDS SHOULD BE 0
2845						
2846	014236	001401			BEG	,+4 ;BRANCH IF NO ERROR CONDITION
2847	014240	104000			ERROR	;DXDS NOT 0
2848						
2849						
2850						

```

2851 I .....
2852 ITEST 23 INTERLEAVE TEST (MUX AND NO BSYEN ONLY)
2853 I .....
2854 TST23I SCOPE
2855 MOV #23,#ICOUNT IITERATION COUNT
2856 MOV #23,#ERTSTN ISAVE TEST # FOR ERROR REPORT
2857 MOV #SCP23,#RETURN ISCOPE LOOP RETURN ADRS
2858 SCP23I
2859
2860
2861 BIT #BIT2,PARA IMUX?
2862 BEQ TST12A JNO = NO GOOD
2863 BIT #BIT1,PARA IBSYEN?
2864 BEQ TST12B JNC = OK
2865
2866 TST12AI JMP #TST12C
2867 TST12BI
2868 MOV #READC,#CMD ILOAD COMMAND
2869 JSR PC,#YTRAIT ITT TRACE TRACE INIT
2870 MOV #CHIS,#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2871 MOV #LESS1,PS ILOWER PROCESSOR STATUS
2872 MOV #,#TERPC IORIGIN OF TRAP ERROR
2873 JSR PC,ISS,SUB ISELECT
2874
2875
2876 MOV DEV,SAVDEV ISAVE ADDRESS
2877 MOV DEV,A,DEV ISET SECOND DEVICE
2878 MOV #READC,#CMD ILOAD COMMAND
2879 JSR PC,#YTRAIT ITT TRACE TRACE INIT
2880 MOV #CHIS,#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2881 MOV #LESS1,PS ILOWER PROCESSOR STATUS
2882 MOV #,#TERPC IORIGIN OF TRAP ERROR
2883 JSR PC,ISS,SUB ISELECT
2884
2885
2886 MOV SAVDEV,DEV IRESTORE ADDRESS
2887
2888 MOVB DEV,#CUAR ISET FOR DEV 1
2889 MOV #4,COUNT IDT FOR 1 (4 BYTES)
2890 MOV #4,DXBC
2891 MOV #DATA,DXBA
2892 BIS #DXFO,DXCS
2893 MOV #CHIS,#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2894 MOVB #DEV,#ENTRY2 ISECOND TT ENTRY = DXCA
2895 MOVB #CMD,#ENTRY2+1 I
2896 MOVB #DEV,CUAR ILOAD DEV ADRS
2897 MOVB #CMD,CUCR ILOAD COMMAND IN CUCR
2898 MOV #,#TERPC IDEFINE ORIGIN OF TRACE ERROR
2899 JSR PC,CUIS,SUB IEXECUTE SELECTION
2900
2901 MOVB #0,#CMD IFAKE CUCR TT ENTRY
2902 MOV #CUDEND,#ENTRY1 ILOAD EXPECTED TT ENTRY 1
2903 MOVB #DEV,#ENTRY2 ISECOND TT ENTRY = DXCA
2904 MOVB #CMD,#ENTRY2+1 I
  
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2905	014572	113777	022666	164526	MOVB	00DEV,0CUAR	ILOAD DEV ADRS
2906	014600	113777	022670	164522	MOVB	00CMD,0CUCR	ILOAD COMMAND IN CUCR
2907	014606	012737	014606	023506	MOV	0,00TERPC	IDEFINE ORIGIN OF TRACE ERROR
2908	014614	004737	016240		JSR	PC,TRANSFER	IEXECUTE SELECTION
2909							
2910							
2911	014620	013737	022666	022720	MOV	DEV,SAVDEV	ISAVE ADDRESS
2912	014626	013737	022672	022666	MOV	DEV,A,DEV	ISSET SECOND DEVICE
2913	014634	012737	000002	022724	MOV	02,COUNT	I2 BYTES
2914	014642	012777	177776	164436	MOV	000,0DXBC	
2915	014650	012777	030310	164426	MOV	0DATA,0DXBA	
2916	014656	052777	000005	164414	BIS	0DXFO,0DXCS	
2917	014664	012737	000200	019500	MOV	0CHIS,00ENTRY1	ILOAD EXPECTED TT ENTRY 1
2918	014672	113737	022666	019540	MOVB	00DEV,00ENTRY2	ISECOND TT ENTRY = DXCA
2919	014700	113737	022670	019541	MOVB	00CMD,00ENTRY2+1	I
2920	014706	113777	022666	164412	MOVB	00DEV,0CUAR	ILOAD DEV ADRS
2921	014714	113777	022670	164406	MOVB	00CMD,0CUCR	ILOAD COMMAND IN CUCR
2922	014722	012737	014722	023506	MOV	0,00TERPC	IDEFINE ORIGIN OF TRACE ERROR
2923	014730	004737	017500		JSR	PC,CUIS,SUB	IEXECUTE SELECTION
2924							
2925	014734	112737	000000	022670	MOVB	00,00CMD	IFAKE CUCR TT ENTRY
2926	014742	012737	000020	019500	MOV	0CUDEND,00ENTRY1	ILOAD EXPECTED TT ENTRY 1
2927	014750	113737	022666	019540	MOVB	00DEV,00ENTRY2	ISECOND TT ENTRY = DXCA
2928	014756	113737	022670	019541	MOVB	00CMD,00ENTRY2+1	I
2929	014764	113777	022666	164334	MOVB	00DEV,0CUAR	ILOAD DEV ADRS
2930	014772	113777	022670	164330	MOVB	00CMD,0CUCR	ILOAD COMMAND IN CUCR
2931	015000	012737	015000	020506	MOV	0,00TERPC	IDEFINE ORIGIN OF TRACE ERROR
2932	015006	004737	016240		JSR	PC,TRANSFER	IEXECUTE SELECTION
2933							
2934	015012	013737	022720	022666	MOV	SAVDEV,DEV	IRESTORE ADDRESS
2935							
2936	015020	112737	000000	022670	MOVB	00,00CMD	IFAKE CUCR TT ENTRY
2937	015026	012737	001100	019500	MOV	0CHENDS,0SEND,00ENTRY1	ILOAD EXPECTED TT ENTRY 1
2938	015034	113737	022666	019540	MOVB	00DEV,00ENTRY2	ISECOND TT ENTRY = DXCA
2939	015042	113737	022670	019541	MOVB	00CMD,00ENTRY2+1	I
2940	015050	113777	022666	164290	MOVB	00DEV,0CUAR	ILOAD DEV ADRS
2941	015056	113777	022670	164244	MOVB	00CMD,0CUCR	ILOAD COMMAND IN CUCR
2942	015064	012737	015064	023506	MOV	0,00TERPC	IDEFINE ORIGIN OF TRACE ERROR
2943	015072	004737	016162		JSR	PC,STATUSPRESENTATION	IEXECUTE SELECTION
2944							
2945							
2946	015076	013737	022666	022720	MOV	DEV,SAVDEV	ISAVE ADDRESS
2947	015104	013737	022672	022666	MOV	DEV,A,DEV	ISSET SECOND DEVICE
2948	015112	112737	000000	022670	MOVB	00,00CMD	IFAKE CUCR TT ENTRY
2949	015120	012737	001100	019500	MOV	0CHENDS,0SEND,00ENTRY1	ILOAD EXPECTED TT ENTRY 1
2950	015126	113737	022666	019540	MOVB	00DEV,00ENTRY2	ISECOND TT ENTRY = DXCA
2951	015134	113737	022670	019541	MOVB	00CMD,00ENTRY2+1	I
2952	015142	113777	022666	164196	MOVB	00DEV,0CUAR	ILOAD DEV ADRS
2953	015150	113777	022670	164192	MOVB	00CMD,0CUCR	ILOAD COMMAND IN CUCR
2954	015156	012737	015156	023506	MOV	0,00TERPC	IDEFINE ORIGIN OF TRACE ERROR
2955	015164	004737	016162		JSR	PC,STATUSPRESENTATION	IEXECUTE SELECTION
2956							
2957							
2958	015170	013737	022720	022666	MOV	SAVDEV,DEV	IRESTORE ADDRESS

2959 #15176
2960
2961

TST12C1

```

2962 | .....
2963 | TEST 24 END OF TEST STRING
2964 | .....
2965 015176 104400 TST24: SCOPE
2966 015200 012737 000001 020334 MOV #1,0:ICOUNT ;ITERATION COUNT
2967 015206 012737 000024 021316 MOV #24,0:ERTSTN ;SAVE TEST # FOR ERROR REPORT
2968 015214 012737 015222 020340 MOV #SCP24,0:RETURN ;SCOPE LOOP RETURN ADRS
2969 015222 SCP24:
2970
2971
2972 .REM *
2973
2974 THIS TEST FUNCTIONS AS A TERMINATOR FOR THE CHAINABLE TEST STRING,
2975 AS SUCH IT TRANSFERS CONTROL TO THE LOOP CONTROL SUBROUTINE.
2976
2977 *
2978
2979
2980 015222 000137 022340 JMP #LPCNTL
2981
2982
2983
2984 ;INTERRUPT HANDLERS
2985
2986 015226 104000 FALSE: ERROR ;FALSE OR UNEXPECTED INTERRUPT
2987 015230 000002 RTI
2988
2989 015232 032777 000200 104040 INTRI: BIT #DONE,0:DXCS ;TEST DONE
2990 015240 001001 BNE ,+4 ;BRANCH ON DONE
2991 015242 104000 ERROR ;FALSE INTERRUPT
2992 015244 042777 000200 104026 BIC #DONE,0:DXCS ;CLEAR INT CONDITION
2993 015252 052737 100000 015262 BIS #INTOK,INTPAS ;SET INT PASS FLAG
2994 015260 000002 RTI
2995
2996 015262 000000 INTPAS: 0 ;INTERRUPT PASS FLAG
2997
2998
2999 ;INTERR, ROUTINE TO TEST FOR SUCCESSFUL INTERRUPT
3000
3001 015264 INTERR:
3002 015264 032737 100000 015262 BIT #INTOK,INTPAS ;DID INTERRUPT OCCUR
3003 015272 001405 BEQ IRR ;BRANCH IF NOT
3004 015274 062716 000002 IRR2: ADD #2,0:SP ;INC RETURN PC
3005 015300 042737 100000 015262 BIC #INTOK,INTPAS ;CLEAR PASS FLAG
3006 015306 000207 IRR: RTS PC
3007
3008 ;ZEROTT, ROUTINE TO ZERO TUMBLE TABLE
3009
3010 ZEROTT:
3011 015310 MOV R1,0:(SP)
3012 015312 MOV R2,0:(SP)
3013 015314 013701 001440 MOV TT,R1
3014 015320 012702 000400 MOV #250,,R2
3015 015324 005021 ZTT1: CLR (R1)+
  
```

3016	015326	005302			DEC	R2	
3017	015330	001375			BNE	ZTT1	
3018	015332	012602			MOV	(SP)+,R2	
3019	015334	012601			MOV	(SP)+,R1	
3020	015336	000207			RTS	PC	
3021							
3022					ITZERO, ROUTINE TO VERIFY TT ZERO		
3023							
3024	015340				TTZERO:		
3025	015340	010146			MOV	R1,=(SP)	
3026	015342	010246			MOV	R2,=(SP)	
3027	015344	013701	001440		MOV	TT,R1	
3028	015350	012702	000400		MOV	#256,,R2	
3029	015354	005721			TTZ1:	TST	(R1)+
3030	015356	001401			BEG	,+4	
3031	015360	104000			ERROR		IBRANCH IF NO ERROR CONDITION
3032	015362	005302			DEC	R2	ILLEGAL TT ENTRY
3033	015364	001373			BNE	TTZ1	
3034	015366	012602			MOV	(SP)+,R2	
3035	015370	012601			MOV	(SP)+,R1	
3036	015372	000207			RTS	PC	
3037							
3038					ISS DONE INTERRUPT SERVICE		
3039	015374				SEL,DONE:		
3040	015374	032777	000200	163676	BIT	#DONE,#DXCS	ICHECK DONE
3041	015402	001001			BNE	,+2	IBRANCH IF NO ERROR CONDITION
3042	015404	104000			ERROR		IFALSE INTERRUPT
3043	015406	042777	000200	163604	BIC	#DONE,#DXCS	ICLEAR DONR
3044	015414	032777	000200	163656	BIT	#DONE,#DXCS	
3045	015422	001401			BEG	,+3	IBRANCH IF NO ERROR CONDITION
3046	015424	104000			ERROR		IDONE NOT CLEAR
3047	015426	012746	015652		MOV	#SEL,X,=(SP)	IFAKE A JSR PC,TT,TRACE
3048							
3049					ITT,TRACE, ROUTINE TO TRACE TUMBLE TABLE ENTRIES		
3050					IAND THE TTNDX		
3051	015432				TT,TRACE:		
3052							
3053	015432	010146			MOV	R1,=(SP)	
3054	015434	013701	015640		MOV	#ITTTRACE,R1	ILOAD R1 WITH SOFTWARE IT
3055	015440	020137	001440		CMF	R1,#ITT	ICHECK FOR BOTTOM OF TABLE
3056	015444	001005			BNE	15	IBRANCH IF NOT BOTTOM
3057	015446	005737	003776		TST	#03776	ILOOK AT TOP OF TT
3058	015452	001401			BEG	,+4	IBRANCH IF NO RAP AROUND
3059	015454	104002			TRACER		IREPORT TT TRACE ERROR
3060	015456	000404			BR	25	
3061	015460	005741			15:	TST	=(R1)
3062	015462	001401			BEG	,+1	ICHECK FOR TT OVERFLOW
3063	015464	104002			TRACER		IBRANCH IF NO RAP AROUND
3064	015466	005721			TST	(R1)+	ITT OVERFLOW ERROR
3065	015470	011127			25:	MOV	(R1),(PC)+
3066	015472	000000			SENRY1:	B	IING TO ENTRY
3067	015474	023727	015472		CMF	#SENRY1,(PC)+	ISAVE ENTRY ONE
3068	015500	000000			ENTRY1:	B	HERE
3069	015502	001407			BEG	15	ICOMPARE SAVED ENTRY WITH
							IEXPECTED ENTRY
							IBRANCH IF DXDS ENTRY OK

3270	015504	013737	015472	015046	MOV	0#SENRY1,0#TTWAS	
3271	015512	013737	015500	015050	MOV	0#ENTRY1,0#TTSHOULD	
3272	015520	104002			TRACER		IREPORT TT TRACE ERROR
3273	015522	005037	015500		15i CLR	ENTRY1	
3274	015526	005021			CLR	(R1)+	ICLEAR ENTRY AND ADVANCE POINTER
3275	015530	011127			MOV	(R1),(PC)+	ISAVE ENTRY TWO
3276							
3277	015532	000000			SENRY2i 2		HERE
3278	015534	023727	015532		CHP	0#SENRY2,(PC)+	ICOMPARE SAVED ENTRY WITH
3279	015540	000000			ENTRY2i 2		EXPECTED ENTRY
3280	015542	001411			TT,T0i BEQ	25	IBRANCH IF DXCA ENTRY OK
3281	015544	013737	015532	015046	MOV	0#SENRY2,0#TTWAS	
3282	015552	013737	015540	015050	MOV	0#ENTRY2,0#TTSHOULD	
3283	015560	104002			TRACER		IREPORT TT TRACE ERROR
3284	015562	005037	015540		CLR	ENTRY2	
3285	015566	005021			25i CLR	(R2)+	ICLEAR
3286	015570	022701	004000		CHP	0#TST1,R1	ICHECK FOR SOFTWARE
3287	015574	001002			BNE	TT,T1	IBRANCH IF NO OVERFLOW
3288	015576	013701	001440		MOV	0#TT,R1	
3289	015602	005037	015612		TT,T1i CLR	0#TT,T2	
3290	015606	117727	163536		MOVb	0#TTNDX,(PC)+	ISAVE TTNDX
3291	015612	000000			TT,T2i 0		HERE
3292	015614	006337	015612		ASL	TT,T2	ISCALE MOD(2)
3293	015620	063737	001440	015612	ADD	0#TT,0#TT,T2	IADD BASE OF TT TO INDEX
3294	015626	123701	015612		CHPB	0#TT,T2,R1	ICOMPARE TT POINTERS
3295	015632	001401			BEQ	,+3	IBRANCH IF HARDWARE AND SOFTWARE TT POINTERS MATCH
3296	015634	104002			TRACER		IREPORT TT TRACE ERROR
3297	015636	010127			MOV	R1,(PC)+	ISAVE TT TRACE
3298	015640	000000			TTTRACEi 0		HERE
3299	015642	012601			MOV	(SP)+,R1	
3100	015644	000207			RTS	PC	IRETURN
3121	015646	000000			TTWASi 0	IACTUAL	CONTENTS OF TT
3122	015650	000000			TTSHOULDi 0		EXPECTED CONTENTS OF TT
3103							
3124	015652	000002			SEL.Xi RTi		
3105							
3106							
3107							
3108	015654	042777	077777	163426	TRAINYi BIC	077777,0DXMO	IDESELECT
3109	015662	112777	000100	163552	MOVb	0SM,0DST	IRESPONSE TO TEST IO
3110	015670	032737	000002	022202	BIT	0BIT1,0#PARA	ICHECK FOR CUBSY MODE
3111	015676	001410			BEQ	TI,0	IBRANCH IF NOT CU BUSY
3112	015700	052777	004000	163372	BIS	0#SYEN,0DXCS	ISSET BSYEN
3113	015706	032777	004000	163364	BIT	0#SYEN,0DXCS	IVERIFY SET
3114	015714	001001			BNE	,+3	IBRANCH IF NO ERROR CONDITION
3115	015716	104000			ERROR		BSYEN NOT SET
3116	015720	113737	022666	015540	TI,0i MOVb	0#DEV,0#ENTRY2	ISECOND TT ENTRY = DXCA
3117	015726	113737	022670	015541	MOVb	0#CMD,0#ENTRY2+1	
3118	015734	113777	022670	163366	MOVb	0#CMD,0CUAR	ILOAD COMMAND
3119	015742	113777	022666	163356	MOVb	0#DEV,0CUAR	ILOAD COMMAND IN CUAR
3120	015750	052777	000100	163322	BIS	0#INTEN,0DXCS	ISSET INTERRUPT ENABLE
3121	015756	032777	000100	163314	BIT	0#INTEN,0DXCS	IVERIFY SET
3122	015764	001001			BNE	,+4	IBRANCH IF NO ERROR CONDITION
3123	015766	104000			ERROR		INTEN NOT SET


```

3124 015778 013777 001270 163270      MOV      @DXPRT,@DXIS  ;LOAD INT STATUS
3125 015776 012777 015374 163260      MOV      @SEL,DONE,@DXIV ;LOAD INT VECTOR
3126 016004 000207                      RTS      PC
3127
3128
3129
3130 016006 104000      O.BRKI  ERROR  ;BREAK TRAP IS ILLEGAL
3131 016010 022620      CMP      (SP)+,(SP)+  ;RESTORE STACK
3132 016012 000137 221404      JMP      @BION1,0
3133      ;..... MOD APR 74 .....
3134      ; 11/40,11/45 RTT
3135      ; TRACE TRAP MOD
3136
3137 016016 000002      YESRTI: RTI
3138 016020 000002      RTXI:  RTI      ;MODIFIED FOR 11/40,11/45 TO RTT
3139      ;..... MOD APR 74 .....
3140      ; TIMING
3141      ; MOS,BIPOLAR RESPONSE MOD
3142
3143 016022 000020      DELAY:  20
3144 016024 013727 016022      RDLAY:  MOV      DELAY,(PC)+
3145 016030 000000      15:    0
3146 016032 005337 016030      25:    DEC      15      ;DELAY FOR BIPOLAR MEMORY
3147 016036 001375      BNE     25
3148 016040 000207      RTS     PC
3149
3150      ;..... MOD APR 74 .....
3151      ;
3152
3153
3154      .SBTTL  SETUP SELECTED PARAMETERS
3155
3156      ;SETUP: ROUTINE TO CLEAR DX AND SETUP THE FOLLOWING
3157      ;      BIT2=  MUX CH
3158      ;      BIT1=  BSYEN
3159      ;      BIT0=  ON-LINE
3160
3161 016042 000240      SETUP:  NOP
3162 016044 042777 000200 163226      BIC     @DONE,@DXCS  ;CLR "DONE" THEREFORE "LOCKO"
3163 016052 042777 060000 163230      BIC     @HLDO|SELO,@DXMO  ;GET READY FOR NEXT ISS
3164 016060 042777 177000 163224      BIC     #17000,@DXMI  ;
3165 016066 052777 000010 163224      BIS     @TIMDIS,@DXES  ;SET DXT0 DISABLE
3166 016074 042737 100000 015262      BIC     @INTOK,INTPAS  ;CLEAR INTERRUPT PASS FLAG
3167 016102 112777 000100 163332      SP1:   MOVB    @SM,@DST  ;RESPONSE TO TIO
3168 016110 032737 000002 022262      BIT     @BIT1,PARA  ;WAS BSYEN SELECTED
3169 016116 001405      BEQ     SP4         ;BRANCH IF NOT
3170 016120 052777 004000 163152      BIS     @BSYEN,@DXCS  ;SET BUSY ENABLE
3171 016126 105077 163310      CLRB   @DST        ;TIO GETS STATUS BY HARDWARE
3172 016132 012777 015232 163124      SP2:   MOV     @INTR,@DXIV ;SET UP DX INTERRUPT VECTOR
3173 016140 013777 001270 163120      MOV     DXPRT,@DXIS  ;SET UP DX INTERRUPT STATUS
3174 016146 052777 000100 163124      BIS     @INTEN,@DXCS ;SET INT ENABLE
3175 016154 005037 177776      CLR     PS         ;CLEAR PROCESSOR STATUS
3176 016160 000207      SP4:   RTS     PC      ;RETURN
3177

```

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3182 #16162
3183 #16162 #42777 #00200 163110
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3196 #16170 112777 #00014 163134
3197
3198 #16176 #52777 #00007 163074
3199
3200
3201 #16204 #04737 #17500
3202 #16210 #42777 #60000 163072
3203 #16216 #52777 #01000 163004
3204
3205
3206
3207 #16224 #42777 #01000 163056
3208
3209
3210
3211 #16232 #05077 163054
3212 #16236 #00207
3213
3214
3215 #16240
3216 #16240 #32737 #00001 022670
3217 #16246 #01012
3218
3219
3220 #16250
3221 #16250 #52777 #01000 163032
3222
3223 #16256 #42777 #01000 163024
3224
3225 #16264 #05337 #22724
3226 #16270 #01367
3227 #16272 #00416
3228
3229
3230 #16274
3231 #16274 #52177 163036
  
```

,SBTTL STATUS PRESENTATION
 STATUS PRESENTATION
 BIC #DONE,#DXCS ;CLEAR DONE AND LOCKO

MOVB #CE+DE,#CUSR ;LOAD CE/DE STATUS
 BIS #DXFST;GO,#DXCS ;SET FCTN/STATUS/GO
 ;STATUS=IN SHOULD RISE
 JSR #7;CUI\$;SUB ;EXECUTE CUI\$
 BIC #HLDO;SELO,#DXMO ;DROP SELO/HLDO FOR NONZERO STATUS
 BIS #SRVO,#DXMO ;SERVICE=OUT UP
 ;STATUS=IN SHOULD FALL
 BIC #SRVO,#DXMO ;DROP SERVICE=OUT,
 ;THIS ENDS ES -- ESEND INT SHOULD
 ;BE UP AND CUBSY CLEAR
 ;CHECK FOR INTERRUPTS
 CLR #DXMI ;CLEAR DXMI
 RTS #7

,SBTTL DATA TRANSFER ROUTINES
 TRANSFER
 BIT #1;CMD ;IS COMMAND READ OR WRITE?
 BNE TR;WRITE ;WRITE
 ;OUTPUT HERE
 TR;READ
 BIS #SRVO,#DXMO ;SERVICE=OUT UP
 ;SERVICE=IN SHOULD FALL
 BIC #SRVO,#DXMO ;SERVICE=OUT DOWN
 ;SERVICE=IN UP AGAIN IF MORE
 DEC COUNT ;LOOP TILL DONE
 BNE TR;READ ;
 BR TR;OUT
 ;INPUT HERE
 TR;WRITE
 BIS (#1)+,#BUSO ;PUT DATA ON BUS

```
3232 016300 052777 001000 163002      BIS      #SRVO,#DXMO      ;SERVICE-OUT UP
3233                                     BIC      #SRVO,#DXMO      ;SERVICE-IN SHOULD FALL
3234 016306 042777 001000 162774      BIC      #SRVO,#DXMO      ;SERVICE-OUT DOWN
3235 016314 042777 000777 163014      BIC      #777,#BUS0      ;TAKE DATA OFF BUS (SERVICE-IN UP)
3236 016322 005337 022724      DEC      COUNT
3237 016326 001362      BNE      TN WRITE
3238
3239 016330 000207      TR,OUTI RTS      X7
```

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```
.SBTTL ONLINE ROUTINE
| .....?
;ONLIN, ROUTINE TO SET DX ONLINE
;AND WAIT FOR RELAY TO PICK
|
```

```
.SBTTL INITIAL SELECTION SEQUENCE
```

```
;INITIAL SELECTION SEQUENCE
```

```
ISS.SUBI
      BIS      DEV,#DXMO      ;LOAD BUS0 WITH DEVICE ADRS
      CMPB     DEV,#BUS0      ;TEST BUS0 FOR CORRECT ADRS
      BEQ      ,*1            ;BRANCH IF NO ERROR CONDITION
      ERROR    ;BUS0 DID NOT LOAD
```

```
| ..... MOD APR 74 .....
| INITIAL SELECTION CLEANUP MOD
```

3286	016352	113777	022666	162746	MOVB	DEV,%CUAR	
3287	016360	123777	022666	162740	CHPB	DEV,%CUAR	
3288	016366	001401			BEG	,+3	IBRANCH IF NO ERROR CONDITION
3289	016370	104000			ERROR		ICUAR BITS 7 THRU 8 FAILURE
3290						 MOD APR 74
3291							
3292	016372	052777	004000	162710	BIS	#ADRO,%DXMO	!SET ADRO=OUT
3293	016400	132777	000010	162732	BITB	#10,%PCOND	!TEST ADRO UP
3294	016406	001001			BNE	,+4	IBRANCH IF NO ERROR CONDITION
3295	016410	104000			ERROR		!ADRO DID NOT SET
3296							
3297	016412	052777	040000	162670	BIS	#HLD0,%DXMO	!SET HOLD=OUT
3298	016420	032777	040000	162662	BIT	#HLD0,%DXMO	!TEST FOR HOLD=OUT UP
3299	016426	001001			BNE	,+3	IBRANCH IF NO ERROR CONDITION
3300	016430	104000			ERROR		!HOLD OUT DID NOT SET
3301							
3302	016432	052777	020000	162690	BIS	#SELO,%DXMO	!SET SELECT=OUT
3303	016440	132777	000040	162672	BITB	#4,%PCOND	!TEST FOR SELECT=OUT
3304	016446	001001			BNE	,+4	IBRANCH IF NO ERROR CONDITION
3305	016450	104000			ERROR		!SELECT=OUT DID NOT SET
3306							
3307							
3308	016452	032777	000002	162634	BIT	#ADRECC,%DXCB	!HAS CU ADRS RECOGNISED
3309							!IS DEV A VALID CU ADRS
3310	016460	001001			BNE	,+4	IBRANCH IF NO ERROR CONDITION
3311	016462	104000			ERROR		!CX DID NOT RECOGNISE CU ADRS
3312							!IF YES CHECK JUMPERS
3313							!ADRECC LOGIC
3314							
3315							
3316	016464	032777	000010	162602	BIT	#ISSREJ,%DXDS	!TEST FOR ISS REJECT
3317	016472	001401			BEG	,+4	IBRANCH IF NO ERROR CONDITION
3318	016474	104000			ERROR		!ISS REJECT SET
3319	016476	032777	100000	162606	BIT	#OPLI,%DXMI	!OPLI SHOULD BE UP
3320	016504	001001			BNE	,+4	IBRANCH IF NO ERROR CONDITION
3321	016506	104000			ERROR		!OPLI DID NOT SET
3322							!IS DEV A VALID DEVICE ON CU?
3323							
3324	016510	042777	004000	162572	BIC	#ADRO,%DXMO	!DROP ADRO=OUT
3325	016514	132777	000010	162614	BITB	#10,%PCOND	!IS ADRO DOWN
3326	016524	001401			BEG	,+3	IBRANCH IF NO ERROR CONDITION
3327	016526	104000			ERROR		!ADRO DID NOT DROP
3328	016530	032737	000004	022202	BIT	#BIT2,PARA	!TEST FOR MUX CH
3329	016536	001415			BEG	!SS3	IBRANCH IF NOT MUX
3330	016540	042777	060000	162542	BIC	#S'LO;HLD0,%DXMO	!CLEAR SELECT=OUT, HOLD=OUT
3331	016546	032777	020000	162534	BIT	#SELO,%DXMO	!DID SELO CLEAR
3332	016554	001401			BEG	,+4	IBRANCH IF NO ERROR CONDITION
3333	016556	104000			ERROR		!REPORT SELO NOT CLEAR
3334	016560	032777	040000	162522	BIT	#HLD0,%DXMO	!DID HLD0 CLEAR
3335	016566	001401			BEG	,+3	IBRANCH IF NO ERROR CONDITION
3336	016570	104000			ERROR		!HLD0 DID NOT CLEAR
3337	016572	032777	010000	162512	ISS31	BIT	!ADDRESS-IN SHOULD BE UP
3338	016600	001001			BNE	,+4	IBRANCH IF NO ERROR CONDITION
3339	016602	104000			ERROR		!ADRI DID NOT COME UP

3340								
3341	016604	123777	022666	162530		CMPB	DEV,0BUSI	IADRS SHOULD BE ON BUSI
3342	016612	001401				BEG	,+2	I BRANCH IF NO ERROR CONDITION
3343	016614	104000				ERROR		I BUSI DOES NOT CONTAIN
3344								I CORRECT ADRS
3345								
3346	016616	043777	022666	162512		BIC	DEV,0BUS0	I REMOVE ADRS FROM BUS=OUT
3347	016624	105777	162500			TSYB	0BUS0	I ADRS REMOVED
3348	016630	001401				BEG	,+2	I BRANCH IF NO ERROR CONDITION
3349	016632	104000				ERROR		I BUS0 DID NOT CLEAR
3350								
3351	016634	053777	022670	162474		BIS	CMD,0BUS0	I BUT COMMAND ON BUS0
3352	016642	123777	022670	162400		CMPB	CMD,0BUS0	I DID COMMAND LOAD OK
3353	016650	001401				BEG	,+2	I BRANCH IF NO ERROR CONDITION
3354	016652	104000				ERROR		I CMD DID NOT LOAD PROPERLY
3355								
3356	016654	052777	002000	162426		BIS	0CMD0,0DXM0	I SET COMMAND OUT
3357	016662	132777	000004	162490		BITB	04,0CON0	I DID CMD0 SET
3358	016670	001001				BNE	,+4	I BRANCH IF NO ERROR CONDITION
3359	016672	104000				ERROR		I CMD0 DID NOT SET
3360								
3361	016674	032777	000001	162372		BIT	0CMDREJ,0DXM0	I TEST FOR COMMAND REJECT
3362	016702				ISSCRJI			
3363	016702	001401				BEG	,+4	I BRANCH IF NO ERROR CONDITION
3364	016704	104000				ERROR		I COMMAND REJECTED
3365								
3366	016706	032777	010000	162376		BIT	0ADR1,0DXM1	I ADR1 SHOULD FALL
3367	016714	001401				BEG	,+2	I BRANCH IF NO ERROR CONDITION
3368	016716	104000				ERROR		I ADR1 DID NOT DROP
3369								
3370	016720	043777	022670	162302		BIC	CMD,0DXM0	I REMOVE CMD FROM BUS0
3371	016726	105777	162404			TSYB	0BUS0	I WAS CMD REMOVED
3372	016732	001401				BEG	,+4	I BRANCH IF NO ERROR CONDITION
3373	016734	104000				ERROR		I CMD DID NOT CLEAR
3374	016736	042777	002000	162344		BIC	0CMD0,0DXM0	
3375	016744	032777	002000	162336		BIT	0CMD0,0DXM0	
3376	016752	001401				BEG	,+2	I BRANCH IF NO ERROR CONDITION
3377	016754	104000				ERROR		I CMD0 STUCK HIGH
3378								
3379								
3380	016756	032737	004000	001312		BIT	0STAT,DXM1	I TEST FOR STATUS-IN
3381	016764	001001				BNE	,+2	I BRANCH IF NO ERROR CONDITION
3382	016766	104000				ERROR		I STATUS-IN DID NOT RISE
3383	016770	010140				MOV	R1,(SP)	
3384	016772	113701	022670			MOVB	00CMD,R1	
3385	016776	042701	177400			BIC	0177400,R1	
3386	017002	063701	001442			ADD	00DST,R1	
3387	017006	121177	162320			CMPB	0R1,0CUSR	
3388	017012	001401				BEG	,+4	I BRANCH IF NO ERROR CONDITION
3389	017014	104000				ERROR		I STATUS FROM DST TRANSFER ERROR
3390	017016	121177	162320			CMPB	0R1,0BUSI	
3391	017022	001401				BEG	,+4	I BRANCH IF NO ERROR CONDITION
3392	017024	104000				ERROR		I CUSR TO BUSI TRANSFER ERROR
3393	017026	012601				MOV	(SP)+,R1	

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3394
3395
3396
3397 017030 032737 000004 022262      BIT      #BIT2,PARA      ;TEST FOR MUX CH
3398 017036 001023                      BNE      ISS2        ;BRANCH IF MUX
3399 017040 105737 022070                      TSTB    CM)         ;TEST FOR "TEST I/O" COMMAND
3400 017044 001403                      BEQ     ISS1        ;CLEAR SEL0,HLDO IF T10 CMD
3401 017046 105777 162270                      TSTB    #BUSI       ;TEST BUSI FOR ZERO STATUS
3402 017052 001415                      BEQ     ISS2        ;DON'T CLEAR SEL0,HLDO ON 0 STATUS
3403 017054 042777 060000 162226 ISS11  BIC     #SEL0,HLDO,#DXMO ;CLEAR SELECT-OUT, HOLD-OUT
3404 017062 032777 020000 162220      BIT     #SEL0,#DXMO  ;DID SEL0 CLEAR
3405 017070 001401                      BEQ     ,+1         ;BRANCH IF NO ERROR CONDITION
3406 017072 104000                      ERROR   ;REPORT SEL0 NOT CLEAR
3407 017074 032777 040000 162226      BIT     #HLDO,#DXMO ;DID HLDO CLEAR
3408 017102 001401                      BEQ     ,+4         ;BRANCH IF NO ERROR CONDITION
3409 017104 104000                      ERROR   ;HLDO DID NOT CLEAR
3410
3411 017106 052777 001000 162174 ISS21  BIS     #SRVO,#DXMO  ;SET SERVICE-OUT
3412 017114 032777 001000 162166      BIT     #SRVO,#DXMO ;TEST SERVICE OUT
3413 017122 001001                      BNE     ,+1         ;BRANCH IF NO ERROR CONDITION
3414 017124 104000                      ERROR   ;SERVICE-OUT DID NOT SET
3415      ; ..... CAN'T READ DXM! .....
3416      ;      BIT     #STA1,#DXM! ;STATUS-IN SHOULD DROP
3417      ;
3418      ;      ERCALL  BEQ,
3419      ; .....
3420 017126 042777 001000 162194      BIC     #SRVO,#DXMO ;DROP SERVICE-OUT
3421 017134 032777 001000 162146      BIT     #SRVO,#DXMO ;TEST SERVICE-OUT
3422 017142 001401                      BEQ     ,+1         ;BRANCH IF NO ERROR CONDITION
3423 017144 104000                      ERROR   ;SERVICE-OUT DID NOT CLEAR
3424
3425 017146 043777 022070 162134      BIC     CMD,#DXMO   ;CLEAR COMMAND FROM BUS0
3426 017154 105777 162156                      TSTB    #BUS0       ;TEST FOR BUS0 CLEAR
3427 017160 001401                      BEQ     ,+4         ;BRANCH IF NO ERROR CONDITION
3428 017162 104000                      ERROR   ;BUS0 DID NOT CLEAR
3429
3430 017164 000207                      RTS     PC
3431
3432      .SBTTL  H10 SUBROUTINE
3433
3434 017166 032777 070000 162120 H10.SUBI  BIT     #70000,#DXCB ;TEST FOR PHASE ZERO
3435 017174 001103                      BNE     H10,0       ;BRANCH IF SELECTED
3436
3437      ISELECT
3438
3439 017176 053777 022666 162104      BIS     DEV,#DXMO   ;PUT ADRS ON BUS0
3440 017204 123777 022666 162124      CMPB   DEV,#BUS0   ;ADRS LOAD OK
3441 017212 001401                      BEQ     ,+1         ;BRANCH IF NO ERROR CONDITION
3442 017214 104000                      ERROR   ;ADRS LOAD ERROR
3443
3444 017216 052777 004000 162064      BIS     #ADRO,#DXMO ;SET & CHECK ADRS-OUT
3445 017224 032777 004000 162096      BIT     #ADRO,#DXMO
3446 017232 001001                      BNE     ,+1         ;BRANCH IF NO ERROR CONDITION
3447 017234 104000                      ERROR   ;ADRO NOT SET

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3448	#17236	052777	040000	162044	BIS	#HLDO,DXMO	ISET & CHECK HLDO
3449	#17244	032777	040000	162036	BIT	#HDC,DXMO	
3450	#17252	001001			BNE	,+4	IBRANCH IF NO ERROR CONDITION
3451	#17254	104000			ERROR		IHLDO NOT SET
3452							
3453	#17256	052777	020000	162024	BIS	#SELO,DXMO	ISET & CHECK SELECT-OUT
3454	#17264	032777	020000	162016	BIT	#SELO,DXMO	
3455	#17272	001001			BNE	,+4	IBRANCH IF NO ERROR CONDITION
3456	#17274	104000			ERROR		ISELO NOT SET
3457							
3458	#17276	032737	000002	022202	BIT	#BIT1,PARA	ITEST FOR BSV SELECT
3459	#17304	001400			BEO	HIO,0	
3460	#17306	122777	000120	162026	CMPB	#SIAMOD,BSV,#BUSI	ICHECK STATUS
3461	#17314	001401			BEO	,+3	IBRANCH IF NO ERROR CONDITION
3462	#17316	104000			ERROR		IBUSI STATUS ERROR
3463	#17320	000431			BR	HIO,0	
3464	#17322						
3465	#17322	123777	022666	161776	CMPB	DEV,#CUAR	IVERIFY DEVICE ADDRESS
3466	#17330	001401			BEO	,+4	IBRANCH IF NO ERROR CONDITION
3467	#17332	104000			ERROR		IBUSO TO CUAR TRANSFER ERROR
3468							
3469	#17334	042777	004000	161746	BIC	#ADRO,DXMO	ICLEAR & CHECK
3470	#17342	032777	004000	161740	BIT	#ADRO,DXMO	
3471	#17350	001401			BEO	,+3	IBRANCH IF NO ERROR CONDITION
3472	#17352	104000			ERROR		IADNO SET
3473							
3474	#17354	123777	022666	161760	CMPB	DEV,#BUSI	IS CORRECT ADRS BEING ECHOED
3475	#17362	001401			BEO	,+4	IBRANCH IF NO ERROR CONDITION
3476	#17364	104000			ERROR		IBUSI LOAD ERROR
3477							ICHECK ADRECC,0
3478							
3479	#17366	043777	022666	161714	BIC	DEV,DXMO	IREMOVE ADRS FROM BUSO
3480	#17374	105737	001310		TSTB	DXMO	IBRANCH IF CLEAR
3481	#17400	001401			BEO	,+3	IBRANCH IF NO ERROR CONDITION
3482	#17402	104000			ERROR		IBUSO DID NOT CLEAR
3483							
3484							
3485							
3486	#17404						
3487	#17404	042777	060000	161676	BIC	#HLDO,SELO,DXMO	IINTERFACE DISCONNECT
3488	#17412	032777	040000	161670	BIT	#HLDO,DXMO	
3489	#17420	001401			BEO	,+4	IBRANCH IF NO ERROR CONDITION
3490	#17422	104000			ERROR		IHLDO SET
3491							
3492	#17424	032777	020000	161656	BIT	#SELO,DXMO	
3493	#17432	001401			BEO	,+4	IBRANCH IF NO ERROR CONDITION
3494	#17434	104000			ERROR		ISELO SET
3495							
3496	#17436	052777	004000	161644	BIS	#ADRO,DXMO	
3497							
3498	#17444	032777	004000	161636	BIT	#ADRO,DXMO	
3499	#17452	001001			BNE	,+4	IBRANCH IF NO ERROR CONDITION
3500	#17454	104000			ERROR		IADNO NOT SET
3501							

3502	017456	042777	004000	161624	BIC	#ADRO,DXMO	I
3503							
3504	017464	032777	004000	161616	BIT	#ADRO,DXMO	I
3505	017472	001401			BEQ	,+2	I BRANCH IF NO ERROR CONDITION
3506	017474	104000			ERROR		IADRO SET
3507	017476	000207			HIO,21	RTS	PC
3508					,SBTTL	CUIS SUBROUTINE	
3509							
3510							
3511							I
3512							I CUIS.SUB, SUBROUTINE TO EXECUTE A
3513							I CONTROL UNIT INITIATED SELECTION
3514							I
3515	017500						I CUIS.SUBI
3516							
3517	017500	032737	000004	022202	BIT	#BIT2,PARA	
3518	017506	001510			BEQ	CUIS0	
3519							
3520	017510						CUIS.GOI
3521							
3522	017510	032777	020000	161574	BIT	#REQI,DXMI	I TEST FOR REQUEST-IN OP
3523	017516	001001			BNE	,+2	I BRANCH IF NO ERROR CONDITION
3524	017520	104000			ERROR		I REQI NOT SET
3525							
3526	017522	052777	060000	161560	BIS	#SELOIHLDO,DXMO	I SET SELECT-OUT & HOLD-OUT
3527	017530	032777	020000	161552	BIT	#SELO,DXMO	I TEST FOR SELECT-OUT
3528	017536	001001			BNE	,+2	I BRANCH IF NO ERROR CONDITION
3529	017540	104000			ERROR		I SELO NOT SET
3530							
3531	017542	032777	040000	161540	BIT	#HLDO,DXMO	I TEST FOR HOLD-OUT
3532	017550	001001			BNE	,+4	I BRANCH IF NO ERROR CONDITION
3533	017552	104000			ERROR		I HLDO NOT SET
3534							
3535	017554	032777	100000	161530	BIT	#OPLI,DXMI	I TEST FOR OPERATIONAL-IN
3536	017562	001001			BNE	,+4	I BRANCH IF NO ERROR CONDITION
3537	017564	104000			ERROR		I OPLI NOT SET
3538							
3539	017566	032777	020000	161516	BIT	#REQI,DXMI	I TEST FOR REQI
3540	017574	001401			BEQ	,+4	I BRANCH IF NO ERROR CONDITION
3541	017576	104000			ERROR		I REQI DID NOT DROP
3542							
3543	017600	032777	010000	161504	BIT	#ADRI,DXMI	I TEST FOR ADDRESS IN
3544	017606	001001			BNE	,+4	I BRANCH IF NO ERROR CONDITION
3545	017610	104000			ERROR		I ADRI NOT SET
3546							
3547	017612	123777	022666	161522	CMPS	DEV,BUSI	I ADDRESS ON BUSI
3548	017620	001401			BEQ	,+4	I BRANCH IF NO ERROR CONDITION
3549	017622	104000			ERROR		I BUSI LOAD ERROR
3550							
3551	017624	052777	002000	161496	BIS	#CMDO,DXMO	I SET COMMAND-OUT
3552	017632	032777	002000	161490	BIT	#CMDO,DXMO	
3553	017640	001001			BNE	,+4	I BRANCH IF NO ERROR CONDITION
3554	017642	104000			ERROR		I CMDO DID NOT SET
3555							

3556	#17644	032777	010000	161440		BIF	#ADRI,@DXMI	JADRI SHOULD DROP
3557	#17652	001401				BEG	.+?	JBRANCH IF NO ERROR CONDITION
3558	#17654	104000				ERROR		JADRI DID NOT DROPS
3559								
3560	#17656	042777	060000	161424		BIC	#SELO;HLDO,@DXMO	
3561	#17664	032777	040000	161416		BIF	#HLDO,@DXMO	JTEST HOLD=OUT
3562	#17672	001401				BEG	.+?	JBRANCH IF NO ERROR CONDITION
3563	#17674	104000				ERROR		JHLDO SET
3564								
3565	#17676	032777	020000	161404		BIF	#SELO,@DXMO	JTEST SELECT=OUT
3566	#17704	001401				BEG	.+?	JBRANCH IF NO ERROR CONDITION
3567	#17706	104000				ERROR		JSELO SET
3568								
3569	#17710	042777	002000	161372		BIC	#CMD0,@DXMO	JCLEAR COMMAND=OUT
3570	#17716	032777	002000	161364		BIF	#CMD0,@DXMO	JTEST FOR CMD0 CLEAR
3571	#17724	001401				BEG	.+?	JBRANCH IF NO ERROR CONDITION
3572	#17726	104000				ERROR		JCMD0 SET
3573								
3574	#17730	000207						
3575								
3576								
3577								
3578	#17732							
3579	#17732	053777	022666	161390		BIS	DEV,@DXMO	JPUT DEVICE ADRS ON OUT TAGS
3580	#17740	052777	004000	161342		BIS	#ADRO,@DXMO	JRAISE ADRS=OUT
3581	#17746	052777	060000	161334		BIS	#HLDO;SELO,@DXMO	JRAISE SELECT=OUT, HOLD=OUT
3582	#17754	042777	004000	161326		BIC	#ADRO,@DXMO	JREMOVE ADRS=OUT
3583	#17762	043777	022666	161320		BIC	DEV,@DXMO	JREMOVE ADRS
3584	#17770	053777	022670	161312		BIS	CMD,@DXMO	JPUT COMMAND ON OUT TAGS
3585	#17776	052777	002000	161304		BIS	#CMD0,@DXMO	JRAISE CMD=OUT
3586	020004	043777	022670	161276		BIC	CMD,@DXMO	JREMOVE CMD
3587	020012	042777	002000	161270		BIC	#CMD0,@DXMO	JREMOVE CMD=OUT
3588	020020	032737	000004	022262		BIF	#BIT2,PARA	JTEST FOR MUX CH
3589	020026	001000				BNE	FISS1	JBRANCH FI MUX
3590	020030	105737	022670			TSTB	CMD	JTEST FOR "TEST I/O" COMMAND
3591	020034	001403				BEG	FISS1	JCLEAR SELO,HLDO IF TIO CMD
3592	020036	105777	161300			TSTB	#BUS1	JTEST BUS1 FOR ZERO STATUS
3593	020042	001403				BEG	FISS2	JDON'T CLEAR SELO,HLDO ON 0 STATUS
3594	020044	042777	060000	161236	FISS1:	BIC	#HLDO;SELO,@DXMO	JCLEAR SELO AND HLDO
3595	020052	052777	001000	161230	FISS2:	BIS	#SHVO,@DXMO	JRELEASE STATUS
3596	020060	042777	001000	161222		BIC	#SHVO,@DXMO	J
3597	020066	000207				RTS	PC	
3598								
3599								
3600								
3601	#20070							
3602	020070	053777	022666	161230		BIS	DEV,@CUAR	JPRESET COM/ADD REG DEV ADDRESS
3603	020076	042777	000400	161222		BIC	#4'0,@CUAR	JPARITY RESET
3604	020104	053777	022666	161176		BIS	DEV,@DXMO	JPUT DEVICE ADRS ON OUT TAGS
3605	020112	052777	004000	161170		BIS	#ADRO,@DXMO	JRAISE ADRS=OUT
3606	020120	052777	060000	161162		BIS	#HLDO;SELO,@DXMO	JRAISE SELECT=OUT, HOLD=OUT
3607	020126	042777	004000	161154		BIC	#ADRO,@DXMO	JREMOVE ADRS=OUT
3608	020134	043777	022666	161146		BIC	DEV,@DXMO	JREMOVE ADRS
3609	020142	053777	022670	161140		BIS	CMD,@DXMO	JPUT COMMAND ON OUT TAGS

3610	020150	052777	002000	161132		BIS	#CMD0,0DXMO	I RAISE CMD=OUT
3611	020156	043777	022670	161124		BIC	CM2,0DXMO	I REMOVE CMD
3612	020164	042777	002000	161116		BIC	#CMD0,0DXMO	I REMOVE CMD=OUT
3613	020172	052777	001000	161110		BIS	#S=VO,0DXMO	I RELEASE STATUS
3614	020200	042777	001000	161102		BIC	#S=VO,0DXMO	I
3615	020206	000207				RTS	PC	
3616								I SCOPE LOOP AND CONTROL SUBROUTINE
3617								
3618	020210	105777	161162		SCOPECI	TSYB	@TNS	
3619	020214	100014				BPL	SCOPEH	
3620	020216	017727	161156			MOV	@TKB,(PC)+	
3621	020222	000000			DTMPI	B		
3622	020224	042737	000200	020222		BIC	@200,DTMP	
3623	020232	123727	020222	000003		CHPB	DTMP,#3	
3624	020240	001002				BNE	SCOPEH	
3625	020242	000137	021404			JMP	@MON1,0	
3626	020246	032737	040000	177570	SCOPEHI	BIT	@B:T14,SR	I TEST FOR SCOPE
3627	020254	001012				BNE	SCOPEB	I BRANCH IF SCOPE SELECTED
3628	020256	032737	004000	177570		BIT	@B:T11,SR	I TEST FOR ITERATIONS
3629	020264	001020				BNE	SCOPEA	I EXIT IF ITERATIONS INHIBITED
3630	020266	005237	020336			INC	SCOPEF	I INCREMENT ITERATION COUNT
3631	020272	023737	020336	020334		CHP	SCOPEF,ICOUNT	I TEST FOR COMPLETION OF ITERATIONS
3632	020300	001410				BEQ	SCOPEG	I BRANCH IF COMPLETE
3633	020302	012737	177777	022600	SCOPEBI	MOV	#0,ONESHOT	I SO YOU CAN SCOPE ON ONCE ONLY CODE
3634	020310	005726				TSY	(SP)+	I POP RETURN PC
3635	020312	012637	177776			MOV	(S2)+,PS	I RESTOR PROCESSOR STATUS
3636	020316	000177	000010			JMP	@RETURN	I
3637	020322	011637	020340		SCOPEGI	MOV	@SP,RETURN	I SET UP SCOPE RETURN ADRS
3638	020326	005037	020336		SCOPEAI	CLR	SCOPEF	I CLEAR ITERATION COUNT
3639	020332	000002				RTI		
3640	020334	000001			ICOUNTI	1		I NUMBER OF REQUESTED ITERATIONS
3641	020336	000000			SCOPEFI	0		I ITERATION COUNT
3642	020340	004000			RETURNI	TSY1		I DEFAULT RETURN
3643	020342				TSYABLEI			I BEGINNING OF TABLE OF TEST ADDRESSES
3644		020442				.0,+100		I TEST ADDRESS LIST
3645								
3646								
3647								
3648								
3649	020442							
3650	020442	011646			EMTDECODERI	MOV	@R6,-(R6)	I DUPLICATE PC ON STACK
3651	020444	162716	000002			SUB	#2,@R6	I POINT PC TO EMT INST
3652	020450	017616	000000			MOV	@(R6),@R6	I MOV EMT INST ONTO STACK
3653	020454	121627	000024			CHPB	@R6,@20,	I TEST THAT CALL IS WITHIN LIMITS
3654	020460	101401				BLOS	EMTOK	I BRANCH IF WITHIN LIMITS
3655	020462	104000				ERROR		
3656	020464	006116			EMTOKI	ROL	@R6	I EMT ARGUMENT X 2,
3657	020466	042716	177001			BIC	@177001,@R6	I CLEAR HIGH BYTE
3658	020472	062716	020504			ADD	@EMTAG,@R6	I FORM ADRS OF ROUTINE ADRS
3659	020476	017616	000000			MOV	@(R6),@R6	I PUT ROUTINE ADRS ON STACK
3660	020502	000136				JMP	@(R6)+	I JUMP TO ROUTINE
3661								I TAGS FOR EMT CALL
3662								
3663	020504				EMTAGI			I BEGINNING OF EMT TABLE

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3664
3665 020504 000024      .BLKW 20;          IRESERVE 16. WORDS FOR ADRS LIST
3666
3667
3668      IENTRY POINT FOR MAP ERRORS
3669 020554      T,MAPERRI
3670 020554 012737 177777 021262      MOV      00E,ERFLG      IFLAG THAT THIS IS MAP ERROR
3671 020562 000137 020724      JMP      000EF
3672 020566 000000      TERPCI 0      IORIGIN OF TRACE ERROR
3673      ITUMBLE TABLE TRACE ERROR TRAP
3674 020570      T,TRACERI
3675 020570 012737 177776 021262      MOV      002,ERFLG
3676 020576 000024 030037      TYPE    ,TRCM1
3677 020602 010546      MOV      TTY,=(SP)      ISAVE TTY
3678 020604 013705 021316      MOV      ERISTN,TTY      ITYPE ERTSTN IN OCTAL
3679 020610 004737 025470      JSR      X7,PRINTS      IAND SUPPRESS LEADING ZERO'S
3680 020614 012605      MOV      (SP)+,TTY      IRESTORE TTY
3681 020616 000004 030071      TYPE    ,TRCM      ITRACE ERROR AT
3682 020622 010546      MOV      TTY,=(SP)      ISAVE TTY
3683 020624 013705 020566      MOV      TERPC,TTY      ITYPE IN OCTAL
3684 020630 004737 025466      JSR      PC,PRINTR      ITYPE LEADING ZERO'S
3685 020634 012605      MOV      (SP)+,TTY      IRESTORE TTY
3686 020636 000004 030171      TYPE    ,TRC1
3687 020642 010546      MOV      TTY,=(SP)      ISAVE TTY
3688 020644 013705 015646      MOV      TTYAS,TTY      ITYPE IN OCTAL
3689 020650 004737 025466      JSR      PC,PRINTR      ITYPE LEADING ZERO'S
3690 020654 012605      MOV      (SP)+,TTY      IRESTORE TTY
3691 020656 000004 030213      TYPE    ,TRC2
3692 020662 010546      MOV      TTY,=(SP)      ISAVE TTY
3693 020664 013705 015650      MOV      TTYSHOULD,TTY      ITYPE IN OCTAL
3694 020670 004737 025466      JSR      PC,PRINTR      ITYPE LEADING ZERO'S
3695 020674 012605      MOV      (SP)+,TTY      IRESTORE TTY
3696 020676 032701 000002      BIT      0BIT1,R1      ITEST FOR DXDS OR DXCA
3697 020702 001003      BNE     15      IBR IF DXCA
3698 020704 000004 030235      TYPE    ,TTDS
3699 020710 000402      BR      25
3700 020712 000004 030262      15|     TYPE    ,TVCA
3701 020716      25|
3702 020716 000402      BR      0EF
3703
3704      IENTRY POINT FOR MOST ERRORS
3705
3706 020720      T,ERRORI
3707 020720 005037 021262      CLR     ERFLG      IFLAG THIS AS NORMAL ERROR
3708 020724 005237 021314      OEF:   INC     ERRCNT      IINC ERROR COUNT
3709 020730 010037 021320      MOV     R0AE,R0      ISAVE R0
3710 020734 010137 021322      MOV     R1,E,R1      ISAVE R1
3711 020740 010237 021324      MOV     R2,E,R2      ISAVE R2
3712 020744 010337 021326      MOV     R3,E,R3      ISAVE R3
3713 020750 010437 021330      MOV     R4,E,R4      ISAVE R4
3714 020754 010537 021332      MOV     R5,E,R5      ISAVE R5
3715 020760 032737 020000 177570      BIT     0BIT13,SR      ITEST FOR INHIBIT PRINT
3716 020766 001063      BNE     PERRPC      IBRANCH IF INHIBITED
3717 020770 000004 027553      TYPE    ,ENPC

```

3718	020774	011627			MOV	0SP,(PC)+	ISAVE ERROR PC +2
3719	020776	000000			B		IHERE
3720	021000	162737	000002	020776	SUB	02,ETMP0	ICORRECT PC
3721	021006	010546			MOV	TTY,=(SP)	ISAVE TTY
3722	021010	013705	020776		MOV	0#ETMP0,TTY	ITYPE IN OCTAL
3723	021014	004737	025466		JSR	PC,PRINTR	ITYPE LEADING ZERO'S
3724	021020	012605			MOV	(SP)+,TTY	IRESTORE TTY
3725	021022	032737	010000	177570	BIT	0BIT12,SR	ITEST FOR SHORT ERROR REPORT
3726	021030	001042			BNE	PE,RPC	IBRANCH IF SHORT SELECTED
3727	021032	022737	177776	021262	CMF	0#2,ERFLG	
3728	021040	001410			BEO	1S	
3729	021042	000004	027767		TYPE	,MSG35	IERROR IN TEST1
3730	021046	010546			MOV	TTY,=(SP)	ISAVE TTY
3731	021050	013705	021316		MOV	ERTSTN,TTY	ITYPE ERTSTN IN OCTAL
3732	021054	004737	025476		JSR	X7,PRINTS	IAND SUPPRESS LEADING ZERO'S
3733	021060	012605			MOV	(SP)+,TTY	IRESTORE TTY
3734	021062	000004	027716		TYPE	,MSG26	
3735	021066	010546			MOV	TTY,=(SP)	ISAVE TTY
3736	021070	013705	022676		MOV	CUNDRS,TTY	ITYPE IN OCTAL
3737	021074	004737	025466		JSR	PC,PRINTR	ITYPE LEADING ZERO'S
3738	021100	012605			MOV	(SP)+,TTY	IRESTORE TTY
3739	021102	000004	027522		TYPE	,CRLF	
3740	021106	032737	000002	022262	BIT	0B T1,0#PARA	ITEST FOR BUSY ENABLE MODE
3741	021114	001402			BEO	EMOD1	IBRANCH IF NOT
3742	021116	000004	030132		TYPE	,ABSYM	ITYPE BUSY ENABLE
3743	021122	032737	000004	022262	BIT	0BIT2,0#PARA	ITEST FOR MUX CH
3744	021130	001402			BEO	EMOD2	IBRANCH IF SELECTOR
3745	021132	000004	030151		TYPE	,AMUXM	ITYPE MUX CH
3746	021136						
3747	021136	032737	100000	177570	BIT	0HLTSH,SR	ITEST FOR HALT ON ERROR
3748	021144	001401			BEO	ERRLOP	IBRANCH IF NO HALT
3749							
3750							
3751	021146	000000			HALT		IHALT ON ERROR
3752	021150				ERRLOP1		
3753	021150	013700	021320		MOV	E,R0,R0	IRESTORE R0
3754	021154	013701	021322		MOV	E, R1,R1	IRESTORE R1
3755	021160	013702	021324		MOV	E,R2,R2	IRESTORE R2
3756	021164	013703	021326		MOV	E,R3,R3	IRESTORE R3
3757	021170	013704	021330		MOV	E,R4,R4	IRESTORE R4
3758	021174	013705	021332		MOV	E,R5,R5	IRESTORE R5
3759	021200	032737	040000	177570	BIT	0LOPSW,SR	ITEST FOR SCOPE LOOP
3760	021206	001424			BEO	EXIR1	
3761	021210	012706	001100		MOV	0BEGIN,SP	IREINIT STACK POINTER
3762	021214	012737	177777	022660	MOV	0#1,ONESHOT	IREINIT ONESHOT TEST FLAGS
3763	021222	042777	000002	160070	BIC	0MELKEN,0DXES	ICLEAR MAINT CLOCK
3764	021230	005077	160054		CLR	0DXMO	ISYSTEM RESET
3765	021234	052777	000001	160036	BIS	0DXFRS,0DXCS	IDX RESET
3766	021242	004737	024114		JSR	PC,PREI	IREINITIALIZE DX
3767	021246	013737	001272	177776	MOV	LESS1,PS	IDX PRIORITY MINUS ONE
3768	021254	000177	177060		JMP	0RETURN	
3769							
3770	021260	000002			EXTR11	RTI	
3771	021262	000000			ERFLGI	0	IERROR CONTROL FLAG #1=MAP ERROR

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021264 027570
 021266 027577
 021270 027606
 021272 027615
 021274 027624
 021276 027633
 021300 027642
 021302 027651
 021304 027660
 021306 027667
 021310 027676
 021312 027705

 000000
 000000

 021320 000000
 021322 000000
 021324 000000
 021326 000000
 021330 000000
 021332 000000

 021334

 021334 012706 001100
 021340 012737 000340 177776
 021346 004737 023172

 021352 012737 025624 000060
 021360 012737 000200 000002
 021366 000004 027443

 021372 000004 026474
 021376 012737 021520 021374

 021404 000005
 021406 005777 157766
 021412 052777 000100 157756

LIST OF ASCII MESSAGE ADDRESSES

ADRA1 ADXDS
 ADXCA
 ADXCS
 ADXOS
 ADXBA
 ADXBC
 ADXMO
 ADXMI
 ADXCB
 ADXND
 ADXES
 ADRAE1 ADXES1

ERROR COUNT

ERRCNT1 ?
 ERYSNI ? ITTEST NUMBER

REGISTER STORAGE FOR ERROR REPORTING

E,R01 0 ISAVED REGISTERS FOR ERROR REPORTING
 E,R11 0 ISAVED REGISTERS FOR ERROR REPORTING
 E,R21 0 ISAVED REGISTERS FOR ERROR REPORTING
 E,R31 0 ISAVED REGISTERS FOR ERROR REPORTING
 E,R41 0 ISAVED REGISTERS FOR ERROR REPORTING
 E,R51 0 ISAVED REGISTERS FOR ERROR REPORTING

SBTTL MONITOR

MONITOR1

MOV #BEGIN,SP ISET UP STACK POINTER
 MOV #LEVEL7,PS IMONITOR AT LEVEL 7
 JSR PC,@MONDFLT ISET UP DEFAULT PARAMETERS

 MOV #TTYI,@060 ITTY KEYBOARD INT VEC
 MOV #LEVEL4,@062 ILEVEL 4
 TYPE ,HOME IHOME UP AND ERASE SCREEN

 HI TYPE ,HEADER
 MOV @RELOU,@#H+2 IHEADER TEXT GETS WIPEO BY NPRIS

 MON1,01 RESET
 TST @TKB ICLEAR FLAG
 BIS #INTEN,@TKS ISET INTERRUPT ENABLE

3826	21420	012706	001100		MOV	#BEGIN,SP	ISSET UP STACK POINTER
3827	21424	012737	000340	177776	MOV	#LEVEL7,PS	IMONITOR AT LEVEL 7
3828	21432	000004	027063		TYPE	,FSTART	
3829	21436	104006			KEY,TO,R0		
3830	21440	122700	000104		CMPB	#ID,R0	ID = DEFAULT PARAMETERS
3831	21444	001003			BNE	15	
3832	21446	004737	023172		JSR	PCT,MONDFLT	
3833	21452	000403			BR	25	
3834	21454	122700	000120	15i	CMPB	#IP,R0	IP = PREVIOUSLY SELECTED PARAMETERS
3835	21460	001002			BNE	35	
3836	21462	000137	022224	25i	JMP	MON10	
3837	21466	122700	000123	35i	CMPB	#IS,R0	IS = GO THROUGH AND SELECT PARAMETERS
3838	21472	001426			BEG	MON11	
3839	21474	122700	000116		CMPB	#IN,R0	IN = START AT THIS TEST #
3840	21500	001341			BNE	MON1,0	
3841	21502	000004	027141		TYPE	,MSG0	
3842	21506	104005			ACCEPTO		
3843	21510	013737	022704	022706	MOV	OCTNUM,FIRST,TST	
3844	21516	000761			BR	25	
3845							
3846	21520	051137	046105	040517	RELODI	,ASCIZ "RELOAD FOR HEADER TEXT"	
3847	21526	020104	047906	020122			
3848	21534	042510	042101	051105			
3849	21542	052040	054105	000124			
3850							
3851							
3852							
3853	21550	004737	023172		MON11	JSR PCT,MONDFLT	ISSET UP DEFAULT PARAMETERS
3854	21554	000004	027141		TYPE	,MSG0	IFIRST TEST #
3855							
3856	21560	104005			ACCEPTO	IACCEPT TEST NUMBER FROM KEYBOARD	
3857							
3858							
3859	21562	005737	022704		TST	OCTNUM	ITEST FOR DEFAULT
3860	21566	001403			BEG	MON3	IBRANCH ON DEFAULT
3861	21570	013737	022704	022706	MOV	OCTNUM,FIRST,TST	ILOAD FIRST TEST #
3862							
3863	21576	000004	027077		MON31	TYPE ,MSG2	IBASE ADDRESS1
3864							
3865							
3866	21602	104005			ACCEPTO	IACCEPT BASE ADDRESS FROM KEYBOARD	
3867							
3868	21604	005737	022704		TST	OCTNUM	ITEST FOR DEFAULT
3869	21610	001403			BEG	MON4	IBRANCH IF DEFAULT
3870	21612	013737	022704	001202	MOV	OCTNUM,DXBASE	ILOAD NON-DEFAULT ADDRESS
3871							
3872	21620	000004	027733		MON41	TYPE ,MSG20	IACCEPT INTERRUPT VECTOR
3873	21624	104005			ACCEPTO		
3874	21626	005737	022704		TST	OCTNUM	ITEST FOR DEFAULT
3875	21632	001411			BEG	MON4,1	IBRANCH IF DEFAULT
3876	21634	013737	022704	001264	MOV	OCTNUM,DXIV	ILOAD NON-DEFAULT INT VECTOR ADRS
3877	21642	002737	000002	022704	ADD	#2*OCTNUM	IFORM INT STATUS ADRS
3878	21650	013737	022704	001266	MOV	OCTNUM,DXIS	IINT STATUS ADDRESS
3879							

3880								
3881	#21656	000004	#27344	MON4.11	TYPE	,MSG12		!PRIORITY
3882	#21662	104005			ACCEPTO		!ACCEPT	!DX PRIORITY LEVEL
3883	#21664	005737	#22704		TST	OCTNUM		!TEST FOR DEFAULT
3884	#21670	001425			BEQ	MON6		!BRANCH ON DEFAULT
3885	#21672	006337	#22704		ASL	OCTNUM		!SHIFT PRIORITY
3886	#21676	006337	#22704		ASL	OCTNUM		!INTO PROCESSOR
3887	#21702	006337	#22704		ASL	OCTNUM		!PRIORITY BITS OF
3888	#21706	006337	#22704		ASL	OCTNUM		!PROCESSOR STATUS WORD
3889	#21712	006337	#22704		ASL	OCTNUM		
3890	#21716	013737	#22704	001270	MOV	OCTNUM,DXPRT		!LOAD PRIORITY
3891	#21724	005337	#22704		DEC	OCTNUM		
3892	#21730	042737	000037	#22704	BIC	#3;,0,OCTNUM		!CLEAR TNZVC
3893	#21736	013737	#22704	001272	MOV	OCTNUM,LESS1		!PRIORITY TO ALLOW DX INTERRUPTS

3894
3895
3896

!GENERATE A LIST OF LEGAL ADDRESSES

3899	#21744	000004	#27160	MON61	TYPE	,MSG4		!LEGAL ADDRESS LIST
3900	#21750	012703	#22720		MOV	#LEGAL,ADRS,R3		!START OF LEGAL ADRS TABLE
3901	#21754	000004	#27252	MON71	TYPE	,MSG6		!ADRS!
3902	#21760	004737	#24400		JSR	PC,GETHEX		!GET HEXADECIMAL CU ADDRESS
3903	#21764	104007	#25010		PARITY	,HEXNUM		!PUT PARITY (000) ON ADRS
3904	#21770	013723	#25010		MOV	HEXNUM,(R3)+		!SAVE LEGAL ADDRESS
3905	#21774	104006			KEY.TO,R0			
3906	#21776	122700	000015		CMPS	#CR,R0		!ALL DONE?
3907	#22002	001364			BNE	MON7		!CONTINUE LIST IF NOT <CR>

!..... MOD APR 74

3908
3909
3910

!
! ADDRESS RESPONSE MOD
!

3911								
3912	#22004	013727	#25010		MOV	HEXNUM,(PC)+		
3913	#22010	000000		VLUMEX10				
3914	#22012	042737	000400	#22010	BIC	#400,VLUMEX		
3915	#22020	023727	#22010	000376	CMPS	VLUMEX,#376		!TEST FOR > FF
3916	#22026	003403			BLE	15		!(OK) BRANCHES
3917	#22030	000004	#27371		TYPE,	MSG13		!OUTPUT " ILLEGAL ?" I.E. > "FF"
3918	#22034	000747			BR	MON7		!TRY AGAIN
3919	#22036	012723	177777	151	MOV	#1,(R3)+		!MARK END OF LIST

!..... MOD APR 74

3920
3921
3922

! #DEV/CU MOD

!SET UP MAXIMUM NUMBER OF DEVICES PER CONTROL UNIT
!THIS INFORMATION DETERMINES WHAT THE SPW TABLE LOOKS LIKE

3923								
3924								
3925								
3926	#22042	000004	#27117	MON51	TYPE	,MSG3		!MAX # DEVICES/CU
3927	#22046	104005			ACCEPTO			!ACCEPT NUMBER OF DEVICES/CU
3928	#22050	005737	#22704		TST	OCTNUM		!USE 16- ON DEPAULT
3929	#22054	001003			BNE	X11		
3930	#22056	000004	#27371		TYPE,	MSG13		!OUTPUT " ILLEGAL ?" I.E. = "00"
3931	#22062	000767			BR	MON5		!TRY AGAIN
3932								
3933	#22064	013727	#22704	X151	MOV	OCTNUM,(PC)+		

```

3934 022070 000070          RDXXI 0
3935 022072 005337 022070          DEC      RDXX          ;RANGE MODULE 1
3936 022076 013727 022010          MOV      VLUHEX,(PC)+
3937 022102 000000          MDXXI 0          ;RANGE MASK
3938 022104 063737 022070 022102          ADD      RDXX,MDXX          ;SCALE
3939 022112 105137 022102          COMB     MDXX          ;FORM FINAL
3940 022116 042737 177400 022102          BIC      #17400,MDXX          ;CU PORTION CLR
3941
3942          ;..... MOD APR 74 .....
3943
3944 022124 013737 022704 022710          MOV      @C:NUM,MAX:DEV:CU
3945 022132 004737 024006          MON5,11 JSR      PC:CKCUA          ;CHECK FOR LEGAL NUMBER OF DEV PER CU
3946
3947
3948          ;GET COMMAND LIST
3949
3950          .REM *
3951
3952          THIS ROUTINE ACCEPTS AN IBM COMMAND LIST FROM THE CONSOL. ALL
3953          COMMANDS MUST BE NON ZERO (I.E. T10 MUST BE TYPED WITH PARITY
3954          400). WITH EACH COMMAND THE MONITOR ASKS FOR ITS ASSOCIATED DST
3955          STATUS;
3956
3957          *
3958
3959 022136 012704 023152          MON8I  MOV      @CMD,STAT,R4
3960 022142 012703 023112          MOV      @CMD,ADRS,R3
3961 022146 000004 027301          TYPE     ,MSG0          ;LEGAL CMD LIST
3962 022152 000004 027332          MON9I  TYPE     ,MSG10          ;CMDI
3963 022156 104005          ACCEPTO          ;ACCEPT LEGAL COMMANDS FROM KEYBOARD
3964 022160 005737 022704          TST      @CTNUM
3965 022164 001417          BEQ      MON10
3966 022166 104007 022704          PARITY   ,@TNUM
3967 022172 013723 022704          MOV      @CTNUM,(R3)+
3968 022176 000004 027755          TYPE     ,MSG31          ;"STATUS;"
3969 022202 104005          ACCEPTO
3970 022204 113724 022704          MOVB     @CTNUM,(R4)+
3971 022210 104006          KEY,TO,R0
3972 022212 120027 000015          CMPB     R0:0CH
3973 022216 001355          BNE      MON9
3974 022220 012723 177777          MOV      @:,(R3)+          ;LOAD TERMINATOR
3975
3976
3977          ;ASK FOR DYNAMIC SWITCH SETTINGS ON CONSOL SWITCHES
3978
3979 022224          MON10I
3980 022224 012737 177777 022600          MOV      @=1,ONESHOY
3981 022232 005037 021314          CLR      ERRCNT
3982 022236 000004 027262          TYPE     ,MSG7          ;SET DYNAMIC SWITCHES
3983 022242 104006          KEY,TO,R0          ;TYPE ANYTHING
3984 022244 122700 000003          CMPB     @3:R0          ;TEST FOR CONTROL C
3985 022250 001002          BNE      MON11          ;GO IF NO C
3986 022252 000137 021404          JMP      @MON1,0
3987

```



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3988
3989
3990
3991  P22256  113727  177570  MON111  MOV  SWR,(PC)+  ISAVE MODE CONTROL SWITCH SETTINGS
3992  P22262  000000  PARAI  ?  JHERE
3993  P22264  004737  024000  JSR  PC;CKCUA  ICMP ADRS VS MAX DEV PER CU
3994  P22270  004737  023620  JSR  PC;SPH,SETUP  ISET UP STATUS POINTER WORDS
3995  P22274  004737  023444  JSR  PC;TT,CLR  ICLEAR TUMBLE TABLE
3996  P22300  004737  023756  JSR  PC;DST,SETUP  ISETUP DEVICE STATUS TABLE
3997  P22304  004737  023462  JSR  PC;ODAT  ISET 360 SIM OUTPUT DATA FILE
3998  P22310  004737  024302  JSR  PC;REG,SETUP  ISCALE ADDRESSES
3999
4000  P22314  LPCSUI
4001  P22314  012737  000001  022700  MOV  #1;DEV CNT  IINIT DEVICE COUNT
4002  P22322  012737  022720  022674  MOV  #LEGAL,ADRS,ACUA  IADRS OF CU ADRS
4003  P22330  117737  000340  022676  MOV  #ABUA,CUADRS  ICU ADDRESS
4004  P22336  000472  BR  LPC1
4005
4006  P22340  000004  027446  LPCNTLI TYPE  ,BELL
4007
4008  P22344  062737  000001  022676  ADD  #1;CUADRS  I
4009  P22352  005237  022700  INC  DEV CNT  IINC DEVICE COUNT
4010  P22356  023737  022700  022710  CMP  DEV CNT,MAX;DEV;CU
4011  P22364  003457  BLE  LP;1
4012  P22366  012737  000001  022700  MOV  #1;DEV CNT  IINIT DEVICE COUNT
4013  P22374  027727  000274  177777  CMP  #ABUA,#-1
4014  P22402  001042  BNE  LP;2
4015  P22404  062737  000002  022202  ADD  #2;PARA  IINC TO NEXT PARA COMBINATION
4016  P22412  022737  000010  022202  CMP  #10;PARA  IHAVE ALL PARA COMBS BEEN TESTED?
4017  P22420  002030  BGE  LPC5  IBRANCH IF NOT
4018  P22422  042737  177776  022202  BIC  #1;7776,#0;PARA  IALL BUT ONLINE IF SET
4019
4020  ;..... MOD APR 74 .....
4021  ;
4022  ; OPLI TIMEOUT RESET MOD
4023  ;
4024  P22430  012777  000001  150642  MOV  #1;0DXCS  IDX RESET OPLI
4025
4026  ;..... MOD APR 74 .....
4027  ;
4028  P22436  000004  027450  TYPE  ,ENDTST
4029  P22442  000004  027462  TYPE  ,E;M  IERROR COUNT MESSAGE
4030  P22446  010546  MOV  TTY,=(SP)  ISAVE TTY
4031  P22450  013705  021314  MOV  ERR CNT,TTY  ITYPE IN OCTAL
4032  P22454  004737  025466  JSR  PC;PRINTR  ITYPE LEADING ZERO'S
4033  P22460  012605  MOV  (SP)+,TTY  IRESTORE TTY
4034
4035  ;THE FOLLOWING CODE IS FOR INTERFACE WITH DDP AND ACT11
4036
4037  P22462  013700  000042  MOV  #042;#0  IIF 42 = 0 REMAIN IN OX DIAGNSTIC
4038  P22466  001405  BEQ  LP;5
4039  P22470  000005  RESET  ILINK TO DDP OR ACT11
4040  P22472  LOGICALI
4041  P22472  004710  JSR  PC;OR0

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4242 022474 000240      NOP
4243 022476 000240      NOP
4244 022500 000240      NOP
4245 022502 012737 022720 022674 LPC5I  MOV  @LEGAL,ADRS,ACUA
4246 022510 017737 000160 022676 LPC2I  MOV  @ACUA,CUADRS
4247 022516 002737 000002 022674      ADD  @2,ACUA
4248 022524 104007 022670      LPC1I  PARITY ,CUADRS
4249 022530 013737 022670 022666      MOV  CUADRS,DEV
4250 022536 013737 022666 022672      MOV  DEV,DEV,A ;MULTI THREAD
4251 022544 023737 022700 022710      CMP  DEVCNT,MAX,DEV,CU
4252 022552 001404      BEQ  LP#3
4253 022554 002737 000001 022672      ADD  @1,DEV,A
4254 022562 000403      BR   LP#4
4255 022564 162737 000001 022672 LPC3I  SUB  @1,DEV,A
4256 022572 104007 022672      LPC4I  PARITY ,DEV,A
4257
4258
4259 022576 004737 024114      MON12I  JSR  @C,PREI ;DO PRE INIT
4260 022602 012777 015220 150494      MOV  @FALSE,@DXIV ;SET UP PALSE INTERRUPT VECTOR TRAP
4261 022610 013777 001270 150490      MOV  @XPRT,@DXIS ;SET UP INTERRUPT PRIORITY
4262 022616 013700 022700      MOV  FIRST,TST,R0 ;TEST FOR DEFAULT
4263 022622 001002      BNE  MON13 ;BRANCH IF NOT DEFAULT
4264 022624 005237 022700      INC  FIRST,TST ;DEFAULT TEST NUMBER IS ONE
4265 022630 013737 022700 021316 MON13I  MOV  FIRST,TST,ERTSYN
4266 022636 006300      ASL  R0
4267 022640 016037 020340 020340      MOV  TSTABLE=2(R0),@RETURN
4268 022646 002737 000024 020340      ADD  @2,@RETURN
4269 022654 000170 020340      MON14I  JMP  @TSTABLE=2(R0) ;JUMP TO SELECTED TEST
4270
4271
4272
4273
4274
4275
4276
4277 022660 177777      FIVESEC=1 ;5 SEC OPLI TIMER TEST
4278 022662 000000      ONESHOTI -1 ;ONE PASS FLAGS
4279 022664 000000      CARRYI 0 ;CARRY COUNT
4280 022666 000020      TMPI 0 ;TEMPORARY STORAGE
4281
4282 022670 000403      DEVI 20 ;DEVICE ADDRESS TO SELECT - MUST INCLDE PARITY
4283 ; ( I.E. 441 IS DEV=1, CU=2)
4284 ;COMMAND TO PRESET - MUST INCLUDE PARITY
4285 ; (403 IS BASIC NOP COMMAND)
4286
4287
4288 022674 000000      CHDI 403 ;SECOND DEVICE FOR DUAL TESTS
4289
4290
4291
4292 022676 000000      ACUAI 0 ;ADRS OF CU ADRS
4293
4294 022700 000000      CUADRSI 0 ;CU ADRS
4295 022702 002000      DEVCNTI 0 ;DEVICE COUNT
4296 022704 000000      OFFSETI 2000 ;OFFSET TO ADDRESS REGISTER
4297 022706 000000      OCYNUMI 0 ;OCTAL INPUT FROM TTY

```

.SBTTL MONITOR FILES

! ONE PASS FLAGS

```

FIVESEC=1 ;5 SEC OPLI TIMER TEST
ONESHOTI -1 ;ONE PASS FLAGS
CARRYI 0 ;CARRY COUNT
TMPI 0 ;TEMPORARY STORAGE
DEVI 20 ;DEVICE ADDRESS TO SELECT - MUST INCLDE PARITY
; ( I.E. 441 IS DEV=1, CU=2)
;COMMAND TO PRESET - MUST INCLUDE PARITY
; (403 IS BASIC NOP COMMAND)
CHDI 403 ;SECOND DEVICE FOR DUAL TESTS
ACUAI 0 ;ADRS OF CU ADRS
CUADRSI 0 ;CU ADRS
DEVCNTI 0 ;DEVICE COUNT
OFFSETI 2000 ;OFFSET TO ADDRESS REGISTER
OCYNUMI 0 ;OCTAL INPUT FROM TTY

```

4096 022706 000000
4097 022710 000000
4098
4099
4100
4101 022712 000777
4102 022714 000000
4103 022716 000000
4104 022720 000000
4105 022722 000000
4106 022724 000000

FIRST.TST: 0
MAX.DEV.CUI 0

IFIRST TEST TO RUN
IMAXIMUM # OF DEVICES/CU

DIAGNOSTIC VARIABLES

SSTAT: 777
SRCNT: 0
DSTCNT: 0
SAVDEV: 0
YSSFT: 0
COUNT: 0

ISAVED STATUS
ISOURCE DATA
IDESTINATION DATA
ISAVED DEVICE ADDRESS
ITSSP TRACE
IUSED BY CH SIM TO COUNT BYTES TRANSFERRED

4107
4108
4109

LEGAL ADDRESS LIST

4110
4111 022726
4112
4113 022726 000000
4114 022730 000000
4115 022732 000000
4116 022734 000000
4117 022736 000000
4118 022740 000000
4119 022742 000000
4120 022744 000000
4121 022746 000000
4122 022750 000000
4123 022752 000000
4124 022754 000000
4125 022756 000000
4126 022760 000000
4127 022762 000000
4128 022764 000000
4129 022766 000000

LEGAL.ADRS:

.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0

4130
4131 022770
4132

SCALD.ADRS:

4133 022770 000000
4134 022772 000000
4135 022774 000000
4136 022776 000000
4137 023000 000000
4138 023002 000000
4139 023004 000000
4140 023006 000000
4141 023010 000000
4142 023012 000000
4143 023014 000000
4144 023016 000000
4145 023020 000000
4146 023022 000000
4147 023024 000000
4148 023026 000000
4149 023030 000000

.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0
.WORD 0

4150
 4151
 4152
 4153
 4154 023032
 4155
 4156 023032 000400
 4157 023034 000001
 4158 023036 000002
 4159 023040 000403
 4160 023042 000004
 4161 023044 000405
 4162 023046 177777
 4163 023050 177777
 4164 023052 177777
 4165 023054 177777
 4166 023056 177777
 4167 023060 177777
 4168 023062 177777
 4169 023064 177777
 4170 023066 177777
 4171 023070 177777
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 4179 023072
 4180 023072 000
 4181 023073 000
 4182 023074 000
 4183 023075 014
 4184 023076 000
 4185 023077 002
 4186 023100 002
 4187 023101 002
 4188 023102 002
 4189 023103 002
 4190 023104 002
 4191 023105 002
 4192 023106 002
 4193 023107 002
 4194 023110 002
 4195 023111 002
 4196
 4197
 4198
 4199
 4200
 4201 023112
 4202
 4203 023112 000000

ILIST OF DEFAULT COMMANDS

DFLT.CMDI

YIOC	ITEST I/O COMMAND
WRITEC	IWRITE COMMAND
READC	IREAD COMMAND
NOPC	INOP COMMAND
SENSEC	ISENSE COMMAND
ILLC	ILLAGAL COMMAND
=1	ILIST TERMINATOR
=1	ILIST TERMINATOR
=1	ILIST TERMINATOR
=1	ILIST TERMINATOR
=1	ILIST TERMINATOR
=1	ILIST TERMINATOR
=1	ILIST TERMINATOR
=1	ILIST TERMINATOR
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=1	ILIST TERMINATOR
=1	ILIST TERMINATOR
=1	ILIST TERMINATOR

IDEFAULT STATUS LIST

DFLT.STATI

.BYTE	0
.BYTE	0
.BYTE	0
.BYTE	CEIDE
.BYTE	0
.BYTE	UC
.BYTE	UC
.BYTE	UC
.BYTE	UC
.BYTE	UC
.BYTE	UC
.BYTE	UC
.BYTE	UC
.BYTE	UC
.BYTE	UC
.BYTE	UC

ILIST OF LEGAL COMMANDS

CHD.ADRSI

.WORD 0

4204	723114	000000	.WORD	0
4205	723116	000000	.WORD	0
4206	723120	000000	.WORD	0
4207	723122	000000	.WORD	0
4208	723124	000000	.WORD	0
4209	723126	000000	.WORD	0
4210	723130	000000	.WORD	0
4211	723132	000000	.WORD	0
4212	723134	000000	.WORD	0
4213	723136	000000	.WORD	0
4214	723140	000000	.WORD	0
4215	723142	000000	.WORD	0
4216	723144	000000	.WORD	0
4217	723146	000000	.WORD	0
4218	723150	000000	.WORD	0

!COMMAND STATUS

4219
4220
4221

CMD.STATI

4222	723152			
4223				
4224	723152	000	.BYTE	0
4225	723153	000	.BYTE	0
4226	723154	000	.BYTE	0
4227	723155	000	.BYTE	0
4228	723156	000	.BYTE	0
4229	723157	000	.BYTE	0
4230	723160	000	.BYTE	0
4231	723161	000	.BYTE	0
4232	723162	000	.BYTE	0
4233	723163	000	.BYTE	0
4234	723164	000	.BYTE	0
4235	723165	000	.BYTE	0
4236	723166	000	.BYTE	0
4237	723167	000	.BYTE	0
4238	723170	000	.BYTE	0
4239	723171	000	.BYTE	0

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!SET UP DEFAULT PARAMETERS

4244
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MONDFLT!

4246	723172	005037	015500	CLR	0#ENTRY1	!TT TRACE ENTRY1
4247	723172	005037	015500	CLR	0#ENTRY2	!TT TRACE ENTRY2
4248	723176	005037	015540	MOV	0#TT,0#TTTRACE	!INIT TT TRACE
4249	723202	013737	001440	MOV	0#1,0#ONESHOT	!ONE PASS FLAGS
4250	723210	012737	177777	MOV	0#1,0#ONESHOT	!ONE PASS FLAGS
4251	723216	005037	022706	CLR	FIRST,TST	!DEFAULT TEST #
4252	723222	005037	021310	CLR	ER,STN	!ERROR TEST NUMBER
4253	723226	005037	021314	CLR	ERCNT	!ERROR COUNT
4254	723232	013737	023424	MOV	0#0,FIRST,TST,0#RETURN	!FIRST TEST
4255	723240	013737	023426	MOV	0#1,DXBASE,0#DXBASE	!BASE ADDRESS
4256	723246	013737	023430	MOV	0#0,DXIV,0#DXIV	!INT VECTOR ADRS
4257	723254	013737	023442	MOV	0#0,DXIS,0#DXIS	!INT STATUS ADRS

4312	023462	010046			MOV	R07,(SP)	
4313	023464	012700	030710		MOV	#WDATA,R0	
4314	023470	005027			CLR	(PC)+	
4315	023472	000000		ODAT1:	B		
4316	023474	104007	023472	ODAT2:	PARITY	,ODAT1	
4317	023500	013720	023472		MOV	ODAT1,(R0)+	
4318	023504	042737	000400	023472	BIC	#PAR0,ODAT1	
4319	023512	105237	023472		INCB	ODAT1	
4320	023516	001366			BNE	ODAT2	
4321	023520	012600			MOV	(S)+,R0	
4322	023522	000207			RTS	PC	

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4341	023524			T,PARITY:			
4342	023524	017627	000000	SDAPG:	MOV	0(SP),(PC)+	IFETCH ADDRESS OF SOURCE DATA
4343	023530	000000			B		ISOURCE DATA ADDRESS
4344	023532	017727	177772	YDAT:	MOV	0SDAPG,(PC)+	IFETCH SOURCE DATA
4345	023536	000000			B		ISOURCE DATA
4346	023540	005027			CLR	(PC)+	
4347	023542	000000		PRTY:	B		
4348							
4349	023544	106337	023536	PG2:	ASLB	YDAT	
4350	023550	102002			BVC	PG3	
4351	023552	005137	023542		COM	PRTY	
4352							
4353	023556	106337	023536	PG3:	ASLB	YDAT	
4354	023562	001370			BNE	PG4	
4355	023564	005737	023542		TSQ	PRTY	
4356	023570	100404			BM!	PG4	
4357	023572	052777	000400	177730	BIS	#PAR0,0SDAPG	IFETCH PARITY BIT
4358	023600	000403			BR	PG5	
4359	023602	042777	000400	177720	PG4:	BIC	#PAR0,0SDAPG
4360							ICLEAR PARITY BIT
4361	023610	062716	000002	PG5:	ADD	0270SP	IFETCH 2 TO RETURN PC
4362	023614	000002			RT!		

4363
 4364
 4365

IFETCH SPW TABLE
 IFETCH MOD APR 74


```

4420 IPER CU IS LEGAL
4421
4422 024006 012700 022726 CKCUA1 MOV #LEGAL,ADR0,R0 ;
4423 024012 005027 CKC11 CLR (R0)+
4424 024014 000000 CKC21 0
4425 024016 111037 024014 MOV0 #R0,#CKC2 ;FETCH CU ADDRESS
4426 ;..... MOD APR 74 .....
4427 ;
4428 ; ADDRESS RANGE MOD
4429 ;
4430 024022 122737 000020 022710 CKC31 CMPB #23,#MAX,DEV,CU ;CHECK LIMIT 16.
4431
4432 ;..... MOD APR 74 .....
4433 ;
4434 024030 103005 BHS CKC4 ;BRANCH IF WITHIN LIMITS
4435 024032 000004 024056 TYPE ,IDVN ;ILLEGAL NUMBER OF DEVICES PER CU
4436 024036 012716 022042 MOV #M:ND,(SP) ;CHANGE RETURN PC
4437 024042 000207 RTS PC
4438 024044 005720 CKC41 TST (R0)+
4439 024046 021027 177777 CMP #R0,#=1
4440 024052 001357 BNE CKC1
4441 024054 000207 RTS PC
4442 024056 044537 046114 043505 IDVNI ,ASCIZ "ILLEGAL # OF DEVICES PER CU "
4443 024064 046101 021440 047440
4444 024072 020106 042504 044926
4445 024100 042503 020123 042520
4446 024106 020122 052503 000040
4447 .EVEN
4448
4449 IPRE-INIT SUBROUTINE
4450
4451 024114 012737 024250 000004 PREI1 MOV #PREI0,4
4452 024122 012737 000340 000006 MOV #LEVEL7,6
4453 024130 005077 155164 CLR #D:ES ;CLEAR MAINT CLK
4454 024134 004737 024254 JSR PC,RESRES ;DX RESET AND RESTORE
4455 ;THE FOLLOWING INSTRUCTION GET MODIFIED UPON THE COMPLETION
4456 ;OF THE SYSTEM RESET TEST,IF SCOPE PROBLEMS DEVELOP BEFORE THIS TEST
4457 ;PASSES THIS INST, CAN BE PATCHED TO A TRESET,NOP,
4458 024140 004737 024246 PREI,11 JSR PC,#NOCLR ;MODIFIED TO CLRMO
4459 024144 005077 155130 CLR #DXCS ;CLR DONE,LOCK0
4460 024150 004737 024254 JSR PC,RESRES ;DX RESET AND RESTORE
4461 024154 013777 001436 155120 MOV SPH,#DXOS
4462 024162 023777 001436 155112 CMP SP1,#DXOS
4463 024170 001401 BEQ ,+4 ;BRANCH IF NO ERROR CONDITION
4464 024172 104000 ERROR ;
4465 024174 052777 000010 155116 BIS #TIMDIS,#DXES ;TIMER DISABLE
4466 024202 032777 000010 155110 BIT #TIMDIS,#DXES
4467 024210 001001 BNE ,+4 ;BRANCH IF NO ERROR CONDITION
4468 024212 104000 ERROR ;
4469 024214 012737 000006 000004 MOV #074
4470 024222 012737 000000 000006 MOV #HALT,6
4471 024230 004737 015310 JSR PC,ZEROTT ;ZERO TUMBLE TABLE
4472 024234 004737 015340 JSR PC,TTZERO ;VERIFY TT ZERO
4473 024240 000207 RTS PC

```

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4474
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4479
4480 024242 005077 155042      CLRMOI CLR      0DXMO  ID0 SYSTEM RESET
4481 024246 000207              NOCLRI RTS      PC
4482
4483 024250 104000              PREIT0: ERROR      IPREINIT TIME OUT ERROR
4484
4485
4486 024252 000002              RTI
4487
4488
4489      IDX RESET AND RESTORE ROUTINE
4490
4491
4492
4493
4494
4495
4496
4497
4498
4499
4500 024254              RESRESI
4501
4502 024254 042777 000200 159016      BIC      #D0NE,0DXCS      ICLEAR LOCKO
4503 024262 012777 000001 159010      MOV      #DXFRS,0DXCS    IDX RESET
4504 024270 013737 001440 019040      MOV      #0,T,TRACE      IRELOAD SOFT TT POINTER
4505 024276 000240              NOP      IINSERT RESET I,E,"5" HERE IF REQUIRED
4506 024300 000207              RTS      PC
4507
4508
4509
4510
4511
4512      IREGISTER ADDRESS SETUP ROUTINE
4513
4514 024302              REG,SETUP:
4515 024302 013700 001262              MOV      DXBASE,R0      IFETCH BASE ADRS
4516 024306 012701 001274              MOV      #DXDS,R1      IFETCH ADRS OF DXDS ADRS
4517 024312 010021              RS,1: MOV      R0,(R1)+
4518 024314 062700 000002              ADD      #2,R0      IINC TO NEXT DX ADRS
4519 024320 020127 001326              CMP      R1,#DXES1+2
4520 024324 001372              BNE      RS,1
4521
4522 024326 004537 024362              JSR      RS,SBYTE      ISETUP BYTE REF REG'S
4523
4524 024332 001276              DXCA
4525 024334 001326              CUAR
4526
4527 024336 001302              DXOS

```

4528	024340	001332		CUSR			
4529							
4530	024342	001310		DXMO			
4531	024344	001336		BUSO			
4532							
4533	024346	001312		DXM1			
4534	024350	001342		BUSI			
4535							
4536	024352	001320		DXES			
4537	024354	001346		MISC			
4538							
4539	024356	177777		=1			
4540							
4541	024360	000207		RTS	PC		
4542							
4543	024362			SBYTE1			
4544	024362	012500		MOV	(R5)+,R0		
4545	024364	012501		MOV	(R5)+,R1		
4546	024366	011021		MOV	0R0,(R1)+		
4547	024370	011011		MOV	0R0,0R1		
4548	024372	005221		INC	(R3)+		
4549	024374	021527	177777	CMF	0R5,001		
4550	024400	001370		BNE	SBYTE		
4551	024402	005725		TST	(R5)+	JPOP OVER TERMINATOR	
4552	024404	000205		RTS	R5		
4553							
4554							
4555							
4556							
4557	024406	005037	025010	GETHEX1	CLR	HEXNUM	ICLEAR HEXADECIMAL NUMBER LOCATION
4558	024412	010246			MOV	R2,=(SP)	ISAVE R2
4559	024414	010146			MOV	R1,=(SP)	ISAVE R1
4560	024416	010046			MOV	R0,=(SP)	ISAVE R0
4561	024420	005001		ACPTH1	CLR	R1	I
4562	024422	104006		ACPTH,11		KEY,TO,R0	IFETCH AN ASCII CHAR FROM KEYBOARD
4563	024424	120027	000003		CMFB	R0,03	ICONTROL C?
4564	024430	001002			BNE	AH,2	
4565	024432	000137	021404		JMP	00MON1,0	
4566	024436	122700	000177	AH,21	CMFB	0177,R0	ITEST FOR RUBOUT
4567	024442	001424			BEQ	RUBOUM	
4568	024444	122700	000015		CMFB	01,R0	ITEST FOR <CR>
4569	024450	001424			BEQ	CARGH	
4570	024452	120027	000040		CMFB	R0,040	IEXIT IF SPACE
4571	024456	001421			BEQ	CARGH	
4572	024460	120027	000000		CMFB	R0,00	ITEST FOR VALID HEX NUMBER
4573	024464	002413			BLT	RUBOUM	
4574	024466	120027	000071		CMFB	R0,0'V	
4575	024472	003021			BGT	AH,X	
4576	024474	042700	177760	AH,31	BIC	01,7760,R0	ICONVERT ASCII TO HEX
4577	024500	006301			ASL	R1	
4578	024502	006301			ASL	R1	
4579	024504	006301			ASL	R1	
4580	024506	006301			ASL	R1	
4581	024510	050001			BIS	R0,R1	ICHALK'N UP

4582	024512	000743			BR	ACPTH,1		IFETCH NEXT CHAR
4583								
4584	024514	000004	027506		RUBOUMI	TYPE	,,JUES	ITYPE?
4585	024520	000737				BR	ACPTH	
4586	024522	010137	025010		CARGH:	MOV	R1,HEXNUM	PLACE HEX NUMBER HERE
4587	024526	012600				MOV	(SP)+,R0	RESTORE R0
4588	024530	012601				MOV	(SP)+,R1	RESTOR R1
4589	024532	012602				MOV	(SP)+,R2	RESTORE R2
4590	024534	000207				RTS	PC	
4591								
4592	024536	005002			AHEX1	CLR	R2	
4593	024540	120062	025012		AHEX01	CMPB	R0,ATBL(R2)	LOOK THRU ASCII TABLE
4594	024544	001406				BEG	AHEX1	BRANCH ON MATCH
4595	024546	005202				INC	R2	
4596	024550	126227	025012	000000		CMPB	ATBL(R2),#0	LOOK FOR END OF TABLE
4597	024556	001370				BNE	AHEX0	BRANCH IF NOT END
4598	024560	000755				BR	RUBOUM	ERROR ON NO MATCH
4599	024562	116200	025022		AHEX11	MOVB	HTBL(R2),R0	LOAD BINARY OF FIND
4600	024566	000742				BR	AH,3	
4601								
4602								
4603								
4604								
4605								
4606								
4607		025000						
4608								
4609								
4610								
4611	025000							
4612	025000	002				.BYTE	UC	UNIT CHECK ENTRIES
4613	025001	002				.BYTE	UC	UNIT CHECK ENTRIES
4614	025002	002				.BYTE	UC	UNIT CHECK ENTRIES
4615	025003	002				.BYTE	UC	UNIT CHECK ENTRIES
4616	025004	002				.BYTE	UC	UNIT CHECK ENTRIES
4617	025005	002				.BYTE	UC	UNIT CHECK ENTRIES
4618	025006	002				.BYTE	UC	UNIT CHECK ENTRIES
4619	025007	002				.BYTE	UC	UNIT CHECK ENTRIES
4620								
4621	025010	000000			HEXNUM1	0		HEX NUMBER
4622	025012	041101	042103	043105	ATBL1	,ASCII	'ABCDEF'	
4623	025020	000000			,WORD	0		
4624	025022	012	013	014	HTBL1	.BYTE	10',11',12',13',14',15'	
4625	025025	015	016	017				
4626								
4627								
4628	025030							
4629	025030	005037	022704					
4630	025034	010146				CLR	OCTNUM	CLEAR OCTAL NUMBER LOCATION
4631	025036	010046				MOV	R1,=(SP)	SAVE R1
4632	025040	005001				MOV	R0,=(SP)	SAVE R0
4633	025042	104006			ACPT01	CLR	R1	
4634	025044	120027	000003		ACPT0,11	KEY,TO,R0		FETCH AN ASCII CHAR FROM KEYBOARD
4635	025050	001002				CMPB	R0,#3	CONTROL C?
						BNE	AO,2	

4636	025052	000137	021404		JMP	@MON1,0	
4637	025056	122700	000177	AD:21	CMPB	#177,R0	ITEST FOR RUBOUT
4638	025062	001423			BEG	RUBOUT	
4639	025064	122700	000015		CMPB	#15,R0	ITEST FOR <CR>
4640	025070	001423			BEG	CARG	
4641	025072	120027	000040		CMPB	R0,040	IXIT IF SPACE
4642	025076	001420			BEG	CARG	
4643	025100	120027	000000		CMPB	R0 00	ITEST FOR VALID OCTAL NUMBER
4644	025104	002412			BLT	RUBOUT	
4645	025106	120027	000067		CMPB	R0,#'7	
4646	025112	003007			BGT	RUBOUT	
4647	025114	042700	177770		BIC	#177770,R0	ICONVERT ASCII TO OCTAL
4648	025120	006301			ASL	R1	
4649	025122	006301			ASL	R1	
4650	025124	006301			ASL	R1	
4651	025126	050001			BIS	R0,R1	ICHALK'N UP
4652	025130	000744			BR	ACPTC,1	IFETCH NEXT CHAR
4653							
4654	025132	000004	027500		RUBOUTI	TYPE	ITYPE?
4655	025136	000740			BR	ACPTC	
4656	025140	010137	022704		CARGI	MOV	R1,OCTNUM
4657	025144	012600			MOV	(SP)+,R0	IRESTORE R0
4658	025146	012601			MOV	(SP)+,R1	IRESTORE R1
4659	025150	000002			RTI		IRETURN
4660							
4661							
4662							
4663	025152						
4664	025152	105777	154220		T,KEY,TO,R0I		
4665	025156	100375			TSTB	@TKS	ITEST FOR DONE
4666	025160	117700	154214		BPL	,#4	IWAIT FOR KEYBOARD
4667	025164	117777	154210	154212	MOVB	@TKB,R0	IFETCH CHAR
4668	025172	004737	025204		MOVB	@TRB,@TPB	IECHO
4669	025176	042700	177600		JSR	PC,TTYFLG	IWAIT FOR DONE
4670	025202	000002			BIC	#177000,R0	IF BIT ASCII
4671					RTI		
4672							
4673	025204						
4674	025204	105777	154172		TTYFLGI		
4675	025210	100375			25I	TSTB	@TPS
4676	025212	000207			BPL	25	
4677					RTS	PC	
4678							
4679							
4680	025214	032737	020000	177570	.IOTI	BIF	@BIT13,SR
4681	025222	001040			BNE	,IOTE	ITEST FOR INHIBIT PRINT
4682	025224	010537	025332		MOV	TTY,,SAV	ISAVE TTY
4683	025230	017605	000000		MOV	@(2),TTY	IGET ADDRESS TO BE TYPED
4684	025234	122715	000044		.MOREI	CMPB	@15,(TTY)
4685	025240	001425			BEG	,TERM	ITERMINATOR?
4686	025242	105715			TSTB	(TTY)	ITERMINATOR?
4687	025244	001423			BEG	,TERM	
4688	025246	122715	000001		CMPB	@1:(TTY)	IRESTORE OLD SEQUENCE
4689	025252	001416			BEG	,REST	

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4690 025254 122715 000137      CHPB      #R,(TTY)      ;SET UP CR LF
4691 025260 001406      BEQ      ,CRLF
4692 025262 105777 154114      TSYB      @TPS
4693 025266 100375      BPL      ,=4
4694 025270 112577 154110      MOVB     (TTY)+,@TPB
4695 025274 000757      BR      ,MORE
4696 025276 005205      ,CRLF:   INC      TTY
4697 025300 010546      MOV      TTY,=(0)
4698 025302 012705 025334      MOV      @,CAR,TTY
4699 025306 000752      BR      ,MORE
4700 025310 012605      ,REST:   MOV      (0)+,TTY
4701 025312 000750      BR      ,MORE
4702 025314 004737 025204      ,TERM:   JSR      PC,TTYFLG      ;WAIT FOR DONE
4703 025320 013705 025332      MOV      ,SAV,TTY
4704 025324 062716 000002      ,IOTE:   ADD      @2,(0) IPOP
4705 025330 000002      RT!
4706
4707 025332 000000      ,SAVI   B
4708 025334 005019 001002 001002  ,CARI   ,ASCII <CR><LF><2><2><2><2><2><2><1>
4709 025342 001002 001      ,EVEN
4710 025346 025346      ,TYPE:   B
4711 025346 000000      ,SBTTL  SAVE AND RESTORE REGISTERS
4712
4713      ;SAVE REGS 0 TO 4 SUBROUTINE,
4714 025350 012637 025400      T,SAVRG: MOV      (0)+,SVRPC      ;SAVE PC AND PSW,
4715 025354 012637 025410      MOV      (0)+,SVRPSW
4716 025360 010546      MOV      %5,=(0)
4717 025362 010446      MOV      %4,=(0) ;SAVE REGS 0 - 4
4718 025364 010346      MOV      %3,=(0) ;IN STACK,
4719 025366 010246      MOV      %2,=(0)
4720 025370 010146      MOV      %1,=(0)
4721 025372 010046      MOV      %0,=(0)
4722 025374 013746 025410      MOV      SVRPC,=(0)      ;RESTORE PC AND PSW,
4723 025400 013746 025406      MOV      SVPC,=(0)
4724 025404 000002      RT!      ;EXIT,
4725 025406 000000      SVRPC:   B
4726 025410 000000      SVRPSW:  B
4727      ;RESTORE REGS 0 TO 4 SUBROUTINE,
4728 025412 012637 025450      T,RSTRG: MOV      (0)+,RSTPC      ;SAVE PC AND PSW,
4729 025416 012637 025492      MOV      (0)+,RSTPSW
4730 025422 012600      MOV      (0)+,%0      ;RESTORE REGS 0 - 4
4731 025424 012601      MOV      (0)+,%1      ;FROM STACK,
4732 025426 012602      MOV      (0)+,%2
4733 025430 012603      MOV      (0)+,%3
4734 025432 012604      MOV      (0)+,%4
4735 025434 012605      MOV      (0)+,%5
4736
4737 025436 013746 025452      MOV      RSTPSW,=(0)      ;RESTORE PC AND PSW,
4738 025442 013746 025450      MOV      RSTPC,=(0)
4739 025446 000002      RT!      ;EXIT
4740 025450 000000      RSTPC:   B
4741 025452 000000      RSTPSW:  B
4742      ,SBTTL  OCTAL DUMP ROUTINE
4743

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4744	025454	000000	000000	000000	PRINT2I ,WORD	0,0,0,0	
4745	025462	000000					
4746	025464	000	000		PRINT3I ,BYTE	0,0	
4747							
4748	025466	112737	000001	029464	PRINTRI MOVB	#1,PRINT3	ISET ZERO FILL SWITCH
4749	025474	000402			BR	,+0	
4750	025476	005037	029464		PRINTSI CLR	PRINT3	ISUPPRESS LEADING ZERO'S
4751	025502	112737	177772	029465	MOVB	#0,PRINT3+1	ISET COUNT
4752	025510	032737	020000	177570	BIT	#BIT13,SR	
4753	025516	001041			BNE	PRTE	
4754	025520	010446			MOV	X4,(0)	ISAVE R4
4755	025522	012704	029454		MOV	#PRINT2,X4	ISET POINTER TO FIRST ASCII CHAR,
4756	025526	105014			CLRB	(4)	ICLEAR FIRST BYTE
4757	025530	000405			BR	PRINTF	IROTATE FIRST BIT
4758	025532	105014			PRINTLI CLRB	(4)	ICLEAR BYTE OF CHARACTER
4759	025534	006105			ROL	TTY	IROTATE BIT INTO C
4760	025536	106114			ROLB	(4)	IPACK IT
4761	025540	006105			ROL	TTY	IROTATE BIT INTO C
4762	025542	106114			ROLB	(4)	IPACK IT
4763	025544	006105			PRINTFI ROL	TTY	IROTATE BIT INTO C
4764	025546	106114			ROLB	(4)	IPACK IT
4765	025550	105714			TSTB	(4)	
4766	025552	001402			BEQ	,+6	
4767	025554	105237	025464		INCB	PRINT3	
4768	025560	105737	025464		TSTB	PRINT3	ICHECK FILL SWITCH
4769	025564	001402			BEQ	,+6	
4770	025566	152724	000060		BISB	#1,(4)+	IMAKE INTO ASCII CHAR
4771	025572	105237	025465		INCB	PRINT3+1	
4772	025576	001355			BNE	PRINTL	IREPEAT
4773	025600	022704	029454		CMF	#PRINT2,X4	
4774	025604	001002			BNE	,+1	
4775	025606	112724	000060		MOVB	#10,(4)+	
4776	025612	105014			CLRB	(4)	
4777	025614	000004	029454		TYPE	,PRINT2	ITYPE IT
4778	025620	012604			MOV	(6)+,X4	IRESTORE R5
4779	025622	000207			PRTEI RTS	X7	
4780					ITTY WATCH DOG FOR CONTROL C		
4781		000003			CNTLC=3		IASCII CONTROL C
4782							
4783	025624	117727	153550		TTYII MOVB	#TKB,(PC)+	ISAVE CHAR
4784	025630	000000			SCHAR: B		IHERE
4785	025632	042737	000200	029630	BIC	#200,#SCHAR	ISEVEN LEVEL ASCII
4786	025640	122737	000003	029630	CMFB	#C.TLC,#SCHAR	ICHECK FOR CONTROL C
4787	025646	001004			BNE	TTYIO	
4788	025650	000004	029674		TYPE	,ALC ITYPE CONTROL C	
4789	025654	000137	021404		JMP	#MON1,0	
4790	025660	004737	029204		TTYIO: JSR	PC,TTYFLG	
4791	025664	113777	029630	153512	MOVB	#SCHAR,#TPB	IECHO CHARACTER
4792	025672	000002			RTI		
4793							
4794	025674	041536	000		ALCI ,ASCII2	<136><103>	
4795		029700			,EVEN		
4796							
4797		026000			,=:1377+1		IFORM MOD(400) BOUNDARY

Address	Value	DSYADRS=	IDEFAULT	DST
4798				
4799	026000			
4800				
4801	026000	,BYTE	0	ITIO
4802	026001	,BYTE	0	IWRITE
4803	026002	,BYTE	0	IREAD
4804	026003	,BYTE	CEIDE	INOP
4805	026004	,BYTE	0	ISENSE
4806				
4807	026005	,BYTE	UC	ILLEGAL ,UNIT CHECK
4808	026006	,BYTE	UC	ILLEGAL ,UNIT CHECK
4809	026007	,BYTE	UC	ILLEGAL ,UNIT CHECK
4810	026010	,BYTE	UC	ILLEGAL ,UNIT CHECK
4811	026011	,BYTE	UC	ILLEGAL ,UNIT CHECK
4812	026012	,BYTE	UC	ILLEGAL ,UNIT CHECK
4813	026013	,BYTE	UC	ILLEGAL ,UNIT CHECK
4814	026014	,BYTE	UC	ILLEGAL ,UNIT CHECK
4815	026015	,BYTE	UC	ILLEGAL ,UNIT CHECK
4816	026016	,BYTE	UC	ILLEGAL ,UNIT CHECK
4817	026017	,BYTE	UC	ILLEGAL ,UNIT CHECK
4818	026020	,BYTE	UC	ILLEGAL ,UNIT CHECK
4819	026021	,BYTE	UC	ILLEGAL ,UNIT CHECK
4820	026022	,BYTE	UC	ILLEGAL ,UNIT CHECK
4821	026023	,BYTE	UC	ILLEGAL ,UNIT CHECK
4822	026024	,BYTE	UC	ILLEGAL ,UNIT CHECK
4823	026025	,BYTE	UC	ILLEGAL ,UNIT CHECK
4824	026026	,BYTE	UC	ILLEGAL ,UNIT CHECK
4825	026027	,BYTE	UC	ILLEGAL ,UNIT CHECK
4826	026030	,BYTE	UC	ILLEGAL ,UNIT CHECK
4827	026031	,BYTE	UC	ILLEGAL ,UNIT CHECK
4828	026032	,BYTE	UC	ILLEGAL ,UNIT CHECK
4829	026033	,BYTE	UC	ILLEGAL ,UNIT CHECK
4830	026034	,BYTE	UC	ILLEGAL ,UNIT CHECK
4831	026035	,BYTE	UC	ILLEGAL ,UNIT CHECK
4832	026036	,BYTE	UC	ILLEGAL ,UNIT CHECK
4833	026037	,BYTE	UC	ILLEGAL ,UNIT CHECK
4834	026040	,BYTE	UC	ILLEGAL ,UNIT CHECK
4835	026041	,BYTE	UC	ILLEGAL ,UNIT CHECK
4836	026042	,BYTE	UC	ILLEGAL ,UNIT CHECK
4837	026043	,BYTE	UC	ILLEGAL ,UNIT CHECK
4838	026044	,BYTE	UC	ILLEGAL ,UNIT CHECK
4839	026045	,BYTE	UC	ILLEGAL ,UNIT CHECK
4840	026046	,BYTE	UC	ILLEGAL ,UNIT CHECK
4841	026047	,BYTE	UC	ILLEGAL ,UNIT CHECK
4842	026050	,BYTE	UC	ILLEGAL ,UNIT CHECK
4843	026051	,BYTE	UC	ILLEGAL ,UNIT CHECK
4844	026052	,BYTE	UC	ILLEGAL ,UNIT CHECK
4845	026053	,BYTE	UC	ILLEGAL ,UNIT CHECK
4846	026054	,BYTE	UC	ILLEGAL ,UNIT CHECK
4847	026055	,BYTE	UC	ILLEGAL ,UNIT CHECK
4848	026056	,BYTE	UC	ILLEGAL ,UNIT CHECK
4849	026057	,BYTE	UC	ILLEGAL ,UNIT CHECK
4850	026060	,BYTE	UC	ILLEGAL ,UNIT CHECK
4851	026061	,BYTE	UC	ILLEGAL ,UNIT CHECK

4852	026062	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4853	026063	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4854	026064	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4855	026065	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4856	026066	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4857	026067	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4858	026070	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4859	026071	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4860	026072	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4861	026073	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4862	026074	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4863	026075	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4864	026076	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4865	026077	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4866	026100	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4867	026101	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4868	026102	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4869	026103	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4870	026104	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4871	026105	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4872	026106	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4873	026107	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4874	026110	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4875	026111	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4876	026112	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4877	026113	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4878	026114	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4879	026115	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4880	026116	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4881	026117	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4882	026120	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4883	026121	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4884	026122	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4885	026123	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4886	026124	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4887	026125	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4888	026126	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4889	026127	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4890	026130	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4891	026131	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4892	026132	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4893	026133	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4894	026134	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4895	026135	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4896	026136	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4897	026137	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4898	026140	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4899	026141	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4900	026142	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4901	026143	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4902	026144	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4903	026145	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4904	026146	002	.BYTE	UC	ILLEGAL ,UNIT CHECK
4905	026147	002	.BYTE	UC	ILLEGAL ,UNIT CHECK

4976	026150	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4977	026151	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4978	026152	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4979	026153	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4980	026154	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4981	026155	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4982	026156	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4983	026157	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4984	026158	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4985	026159	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4986	026160	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4987	026161	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4988	026162	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4989	026163	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4990	026164	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4991	026165	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4992	026166	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4993	026167	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4994	026168	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4995	026169	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4996	026170	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4997	026171	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4998	026172	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4999	026173	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5000	026174	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5001	026175	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5002	026176	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5003	026177	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5004	026200	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5005	026201	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5006	026202	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5007	026203	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5008	026204	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5009	026205	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5010	026206	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5011	026207	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5012	026210	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5013	026211	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5014	026212	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5015	026213	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5016	026214	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5017	026215	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5018	026216	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5019	026217	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5020	026220	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5021	026221	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5022	026222	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5023	026223	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5024	026224	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5025	026225	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5026	026226	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5027	026227	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5028	026230	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5029	026231	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5030	026232	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5031	026233	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5032	026234	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5033	026235	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK

4960	026236	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4961	026237	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4962	026240	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4963	026241	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4964	026242	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4965	026243	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4966	026244	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4967	026245	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4968	026246	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4969	026247	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4970	026250	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4971	026251	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4972	026252	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4973	026253	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4974	026254	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4975	026255	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4976	026256	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4977	026257	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4978	026260	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4979	026261	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4980	026262	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4981	026263	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
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4986	026270	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4987	026271	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4988	026272	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4989	026273	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4990	026274	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4991	026275	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4992	026276	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4993	026277	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4994	026300	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4995	026301	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4996	026302	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4997	026303	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4998	026304	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
4999	026305	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5000	026306	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5001	026307	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5002	026310	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5003	026311	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5004	026312	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5005	026313	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5006	026314	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5007	026315	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5008	026316	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5009	026317	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5010	026320	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5011	026321	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5012	026322	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK
5013	026323	002	,BYTE	UC	ILLEGAL	,UNIT	CHECK

5014	026324	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5015	026325	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5016	026326	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5017	026327	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5018	026330	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5019	026331	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5020	026332	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5021	026333	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5022	026334	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5023	026335	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5024	026336	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5025	026337	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5026	026340	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5027	026341	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5028	026342	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5029	026343	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5030	026344	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5031	026345	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5032	026346	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5033	026347	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5034	026350	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5035	026351	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5036	026352	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5037	026353	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5038	026354	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5039	026355	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5040	026356	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5041	026357	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5042	026360	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5043	026361	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5044	026362	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5045	026363	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5046	026364	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5047	026365	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5048	026366	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5049	026367	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5050	026370	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5051	026371	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5052	026372	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5053	026373	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5054	026374	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5055	026375	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5056	026376	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5057	026377	002	.BYTE	UC	ILLEGAL	,UNIT	CHECK
5058							
5059			.EVEN				
5060	026400		T.PCH11				
5061	026400	000012	.BLKW	10'			
5062							
5063	026424		T.PCH21				
5064	026424	000012	.BLKW	10'			
5065							
5066	026450		T.PCH31				
5067	026450	000012	.BLKW	10'			

```
5268
5269
5270          000012
5271          000015
5272 026474
5273
5274
5275
(1) 026474 046537 044501 042116
(1)
(1)
(1)
(1) 026500 043137 051117 042040
(1) 026625      137 042923 020105
(1) 026661      137 052137 050131
(1) 026721      137 020040 020040
(1) 026761      137 020040 020040
(1) 027017      137 020040 020040
(1)
(1)
(1) 027063      137 042137 050094
(1)
(1) 027077      137 040502 042923 MSG21 ,ASCIZ "BASE ADDRESS1 "
(1) 027117      137 042904 044926 MSG31 ,ASCIZ "DEVICES PER CUI "
(1) 027141      137 042924 052123 MSG51 ,ASCIZ "TEST NUMBER1 "
(1) 027160 052137 050131 020105 MSG41 ,ASCIZ "TYPE CU ADRS1S IN HEX <CR><LF>1 <CR><CR> TERMINATES LIST"
(1) 027252 040537 051104 039123 MSG61 ,ASCIZ "ADRS1 "
(1) 027262 051537 052105 051402 MSG71 ,ASCIZ "SET SWITCHES="
(1) 027301      137 044914 052123 MSG91 ,ASCIZ "LIST ALL LEGAL COMMANDS"
(1) 027332 041537 046917 040915 MSG101 ,ASCIZ "COMMAND1"
(1) 027344 042137 020130 051120 MSG121 ,ASCIZ "EX PRIORITY LEVEL1 "
(1) 027371      137 030440 044440 MSG131 ,ASCIZ " ILLEGAL 7"
(1)
(1)
(1) 027407      137 042922 051507 RDW1 ,ASCIZ "REGSTR = SHOULD BE = WAS"
(1) 027443      039 000037 HOME1 ,ASCIZ <35><37>
(1) 027446 000207 BEL1 ,ASCIZ <277>
(1) 027450 042937 042116 052040 ENDYST1 ,ASCIZ "END TEST"
(1) 027462 020137 051105 047522 ECM1 ,ASCIZ "ERRORS DETECTED1 "
(1) 027506 057477      000 ,QUES1 ,ASCIZ "?"
(1) 027511      040 020040 020040 SPAC4 ,ASCIZ <40><40><40><40><40><40>
(1) 027520 000040 SPACE1 ,ASCIZ <40>
(1) 027522 000137 CRLF1 ,ASCIZ ""
(1) 027524 052137 050131 020105 STALL1 ,ASCIZ "TYPE IN STALL COUNT1 "
(1) 027553      137 042937 051122 ERPCI ,ASCIZ "ERROR PCI "
(1)
(1) 027570 042137 042130 039123 ADXDS1 ,ASCIZ "DXDS1"
(1) 027577      137 054104 040503 ADXCA1 ,ASCIZ "UXCA1"
(1) 027606 042137 041930 039123 ADXCS1 ,ASCIZ "DXCS1"
(1) 027615      137 054104 051517 ADXOS1 ,ASCIZ "UXOS1"
(1) 027624 042137 041130 039101 ADXBA1 ,ASCIZ "UXBA1"
(1) 027633      137 054104 041902 ADXBC1 ,ASCIZ "DXBC1"
(1) 027642 042137 046930 039117 ADXMO1 ,ASCIZ "DXMO1"
(1) 027651      137 054104 044915 ADXMI1 ,ASCIZ "UXMI1"
```

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(1) 027668 042137 041530 039182 ADXCB1 ,ASCIZ "DXCB1"  
(1) 027669      137 054184 042116 ADXND1 ,ASCIZ "DXND1"  
(1) 027676 042137 042530 039123 ADXES1 ,ASCIZ "DXES1"  
(1) 027725      137 054184 051585 ADXES11,ASCIZ "DXES11"  
(1)                                     J..... MOD APH 74 .....  
(1)                                     J..... ERROR TEXT MOD  
(1)  
(1) 027716 020137 052503 042101 MSG261 ,ASCIZ "CUADRS/MO1"  
(1)                                     J..... MOD APH 74 .....  
(1) 027733      137 042526 052103 MSG281 ,ASCIZ "VECTOR ADDRESS1"  
(1) 027755      137 052123 052101 MSG311 ,ASCIZ "STATUS1"  
(1) 027767      137 051105 047522 MSG351 ,ASCIZ "ERROR IN TEST1"  
(1) 030010 047537 044522 044507 MSG361 ,ASCIZ "ORIGIN OF MAP ERROR1"  
(1) 030037      137 052124 052040 TRCM11 ,ASCIZ "TT TRACE ERROR IN TEST1"  
(1) 030071      137 051117 043511 TRCM1  ,ASCIZ "ORIGIN OF LAST TT TRACE UPDATE1"  
(1) 030132 041040 051525 020131 AB9YM1 ,ASCIZ "BUSY ENABLE"  
(1) 030151      115 046125 044524 AMUXM1 ,ASCIZ "MULTIPLEXER CH"  
(1) 030171      137 047105 051124 TRC11  ,ASCIZ "ENTRY WAS 1"  
(1) 030213      137 047105 051124 TRC21  ,ASCIZ "ENTRY SHOULD BE1"  
(1) 030235      137 047105 051124 TTDS1  ,ASCIZ "ENTRY WAS FROM DXDS"  
(1) 030262 042537 052110 054522 TTCA1  ,ASCIZ "ENTRY WAS FROM DXCA"  
(1)                                     ,LIST  BEX  
5276  
5277                                     ,SBTTL  DATA BUFFERS  
5278  
5279                                     IDATA BUFFER ** CONTAINS 0 - 255 IN ONE BYTE ITEMS  
5280  
5281                                     IDATA FILE FOR CHANNEL SIMULATOR WRITE CMDS  
5282      030310                                     ,EVEN  
5283  
5284 030310                                     DATA1  
5285  
5286  
5287  
5288      000001                                     N=1  
5289 030310 000001                                     ,WORD  N  
5290      000002                                     N=N=2  
5291 030312 000002                                     ,WORD  N  
5292      000004                                     N=N=2  
5293 030314 000004                                     ,WORD  N  
5294      000010                                     N=N=2  
5295 030316 000010                                     ,WORD  N  
5296      000020                                     N=N=2  
5297 030320 000020                                     ,WORD  N  
5298      000040                                     N=N=2  
5299 030322 000040                                     ,WORD  N  
5100      000100                                     N=N=2  
5101 030324 000100                                     ,WORD  N  
5102      000200                                     N=N=2  
5103 030326 000200                                     ,WORD  N  
5104      000400                                     N=N=2  
5105 030330 000400                                     ,WORD  N  
5106      001000                                     N=N=2  
5107 030332 001000                                     ,WORD  N
```

5108		002000	NaN#2	
5109	030334	002000	,WORD	N
5110		004000	NaN#2	
5111	030336	004000	,WORD	N
5112		010000	NaN#2	
5113	030340	010000	,WORD	N
5114		020000	NaN#2	
5115	030342	020000	,WORD	N
5116		040000	NaN#2	
5117	030344	040000	,WORD	N
5118		100000	NaN#2	
5119	030346	100000	,WORD	N
5120		000000	NaN#2	
5121		000002	W#2	
5122	030350	177775	,WORD	=W#1
5123		000004	W#W+W	
5124	030352	177773	,WORD	=W-1
5125		000010	W#W+W	
5126	030354	177767	,WORD	=W-1
5127		000020	W#W+W	
5128	030356	177757	,WORD	=W-1
5129		000040	W#W+W	
5130	030360	177737	,WORD	=W#1
5131		000100	W#W+W	
5132	030362	177677	,WORD	=W#1
5133		000200	W#W+W	
5134	030364	177577	,WORD	=W#1
5135		000400	W#W+W	
5136	030366	177377	,WORD	=W#1
5137		001000	W#W+W	
5138	030370	176777	,WORD	=W#1
5139		002000	W#W+W	
5140	030372	175777	,WORD	=W#1
5141		004000	W#W+W	
5142	030374	173777	,WORD	=W#1
5143		010000	W#W+W	
5144	030376	167777	,WORD	=W#1
5145		020000	W#W+W	
5146	030400	157777	,WORD	=W#1
5147		040000	W#W+W	
5148	030402	137777	,WORD	=W#1
5149		100000	W#W+W	
5150	030404	277777	,WORD	=W#1
5151		000000	W#W+W	
5152	030426	177777	,WORD	=W#1
5153		000000	W#W+W	
5154		000001	N#i	
5155	030410	000001	,WORD	N
5156		000002	NaN#2	
5157	030412	000002	,WORD	N
5158		000004	NaN#2	
5159	030414	000004	,WORD	N
5160		000010	NaN#2	
5161	030416	000010	,WORD	N

5162		000020	N=N=2	
5163	030420	000020	,WORD	N
5164		000040	N=N=2	
5165	030422	000040	,WORD	N
5166		000100	N=N=2	
5167	030424	000100	,WORD	N
5168		000200	N=N=2	
5169	030426	000200	,WORD	N
5170		000400	N=N=2	
5171	030430	000400	,WORD	N
5172		001000	N=N=2	
5173	030432	001000	,WORD	N
5174		002000	N=N=2	
5175	030434	002000	,WORD	N
5176		004000	N=N=2	
5177	030436	004000	,WORD	N
5178		010000	N=N=2	
5179	030440	010000	,WORD	N
5180		020000	N=N=2	
5181	030442	020000	,WORD	N
5182		040000	N=N=2	
5183	030444	040000	,WORD	N
5184		100000	N=N=2	
5185	030446	100000	,WORD	N
5186		000000	N=N=2	
5187		000002	W=2	
5188	030450	177775	,WORD	=W=1
5189		000004	W=W+W	
5190	030452	177773	,WORD	=W=1
5191		000010	W=W+W	
5192	030454	177767	,WORD	=W=1
5193		000020	W=W+W	
5194	030456	177757	,WORD	=W=1
5195		000040	W=W+W	
5196	030460	177737	,WORD	=W=1
5197		000100	W=W+W	
5198	030462	177677	,WORD	=W=1
5199		000200	W=W+W	
5200	030464	177577	,WORD	=W=1
5201		000400	W=W+W	
5202	030466	177377	,WORD	=W=1
5203		001000	W=W+W	
5204	030470	176777	,WORD	=W=1
5205		002000	W=W+W	
5206	030472	175777	,WORD	=W=1
5207		004000	W=W+W	
5208	030474	173777	,WORD	=W=1
5209		010000	W=W+W	
5210	030476	167777	,WORD	=W=1
5211		020000	W=W+W	
5212	030500	157777	,WORD	=W=1
5213		040000	W=W+W	
5214	030502	137777	,WORD	=W=1
5215		100000	W=W+W	

5216	030504	177777	,WORD	=W=1
5217		000000	W=W+W	
5218	030506	177777	,WORD	=W=1
5219		000000	W=W+W	
5220		000001	N=1	
5221	030510	000001	,WORD	N
5222		000002	N=N=2	
5223	030512	000002	,WORD	N
5224		000004	N=N=2	
5225	030514	000004	,WORD	N
5226		000010	N=N=2	
5227	030516	000010	,WORD	N
5228		000020	N=N=2	
5229	030520	000020	,WORD	N
5230		000040	N=N=2	
5231	030522	000040	,WORD	N
5232		000100	N=N=2	
5233	030524	000100	,WORD	N
5234		000200	N=N=2	
5235	030526	000200	,WORD	N
5236		000400	N=N=2	
5237	030530	000400	,WORD	N
5238		001000	N=N=2	
5239	030532	001000	,WORD	N
5240		002000	N=N=2	
5241	030534	002000	,WORD	N
5242		004000	N=N=2	
5243	030536	004000	,WORD	N
5244		010000	N=N=2	
5245	030540	010000	,WORD	N
5246		020000	N=N=2	
5247	030542	020000	,WORD	N
5248		040000	N=N=2	
5249	030544	040000	,WORD	N
5250		100000	N=N=2	
5251	030546	100000	,WORD	N
5252		000000	N=N=2	
5253		000002	W=2	
5254	030550	177775	,WORD	=W=1
5255		000004	W=W+W	
5256	030552	177773	,WORD	=W=1
5257		000010	W=W+W	
5258	030554	177767	,WORD	=W=1
5259		000020	W=W+W	
5260	030556	177757	,WORD	=W=1
5261		000040	W=W+W	
5262	030560	177737	,WORD	=W=1
5263		000100	W=W+W	
5264	030562	177677	,WORD	=W=1
5265		000200	W=W+W	
5266	030564	177577	,WORD	=W=1
5267		000400	W=W+W	
5268	030566	177377	,WORD	=W=1
5269		001000	W=W+W	

5270	030570	176777	.WORD	=W-1
5271		002000	W=W+W	
5272	030572	175777	.WORD	=W-1
5273		004000	W=W+W	
5274	030574	173777	.WORD	=W-1
5275		010000	W=W+W	
5276	030576	167777	.WORD	=W-1
5277		020000	W=W+W	
5278	030600	157777	.WORD	=W-1
5279		040000	W=W+W	
5280	030602	137777	.WORD	=W-1
5281		100000	W=W+W	
5282	030604	077777	.WORD	=W-1
5283		000000	W=W+W	
5284	030606	177777	.WORD	=W-1
5285		000000	W=W+W	
5286		000001	N=1	
5287	030610	000001	.WORD	N
5288		000002	N=N+2	
5289	030612	000002	.WORD	N
5290		000004	N=N+2	
5291	030614	000004	.WORD	N
5292		000010	N=N+2	
5293	030616	000010	.WORD	N
5294		000020	N=N+2	
5295	030620	000020	.WORD	N
5296		000040	N=N+2	
5297	030622	000040	.WORD	N
5298		000100	N=N+2	
5299	030624	000100	.WORD	N
5300		000200	N=N+2	
5301	030626	000200	.WORD	N
5302		000400	N=N+2	
5303	030630	000400	.WORD	N
5304		001000	N=N+2	
5305	030632	001000	.WORD	N
5306		002000	N=N+2	
5307	030634	002000	.WORD	N
5308		004000	N=N+2	
5309	030636	004000	.WORD	N
5310		010000	N=N+2	
5311	030640	010000	.WORD	N
5312		020000	N=N+2	
5313	030642	020000	.WORD	N
5314		040000	N=N+2	
5315	030644	040000	.WORD	N
5316		100000	N=N+2	
5317	030646	100000	.WORD	N
5318		000000	N=N+2	
5319		000002	W=2	
5320	030650	177775	.WORD	=W-1
5321		000004	W=W+W	
5322	030652	177773	.WORD	=W-1
5323		000010	W=W+W	

5324	030654	177767	,WORD	=W=1
5325		000020	W=W+W	
5326	030656	177757	,WORD	=W=1
5327		000040	W=W+W	
5328	030660	177737	,WORD	=W=1
5329		000100	W=W+W	
5330	030662	177677	,WORD	=W=1
5331		000200	W=W+W	
5332	030664	177577	,WORD	=W=1
5333		000400	W=W+W	
5334	030666	177377	,WORD	=W=1
5335		001000	W=W+W	
5336	030670	176777	,WORD	=W=1
5337		002000	W=W+W	
5338	030672	175777	,WORD	=W=1
5339		004000	W=W+W	
5340	030674	173777	,WORD	=W=1
5341		010000	W=W+W	
5342	030676	167777	,WORD	=W=1
5343		020000	W=W+W	
5344	030700	157777	,WORD	=W=1
5345		040000	W=W+W	
5346	030702	137777	,WORD	=W=1
5347		100000	W=W+W	
5348	030704	077777	,WORD	=W=1
5349		000000	W=W+W	
5350	030706	177777	,WORD	=W=1
5351		000000	W=W+W	
5352				
5353		030710	,*	
5354	030710	000000	WDATA: 0	INDICATE ADDRESS OF END OF BUFFER
5355		031710	NPRDATA=WDATA+512,	BEGINNING OF WRITE DATA FILE
5356			INDATA AND NPRDAT OVER WRITE ASCII TEXT	
5357		000001	,END	

ABSYM	030132	3742	5079#																	
ACCEPT#	104075	934#	3842	3856	3866	3873	3882	3927	3963	3969										
ACLC	025674	4788	4794#																	
ACPTH	024420	4561#	4589																	
ACPTH'	024422	4562#	4582																	
ACPTO	025040	4632#	4659																	
ACPTO'	025042	4633#	4652																	
ACUA	022674	4002#	4003	4013	4045#	4246	4047#	4000#												
ADRA	021264	3774#																		
ADRAE	021312	3785#																		
ADRECC#	000002	770#	2150	3300																
ADRECD#	000001	771#	2161																	
ADRI	010000	749#	2000	2101	2170	2180	3337	3366	3543	3556										
ADRO	004000	737#	2150	2164	2739	2741	2704	2709	3292	3324	3444	3445	3469	3470						
		3496	3490	3502	3504	3502	3502	3605	3607											
ADXBA	027624	3770	5079#																	
ADYBC	027633	3779	5079#																	
ADYCA	027577	3775	5079#																	
ADYCB	027660	3782	5079#																	
ADYCS	027600	3776	5079#																	
ADYDS	027570	3774	5079#																	
ADYES	027676	3784	5079#																	
ADYES1	027705	3785	5079#																	
ADYMI	027651	3781	5079#																	
ADYMO	027642	3780	5079#																	
ADYND	027667	3783	5079#																	
ADYOS	027615	3777	5079#																	
AHEX	024536	4575	4592#																	
AHEX0	024540	4593#	4597																	
AHEX1	024562	4594	4590#																	
AH,2	024436	4564	4560#																	
AH,3	024474	4576#	4600																	
AMUXM	030151	3745	5079#																	
AO,2	025056	4635	4637#																	
ATBL	025012	4593	4596	4622#																
ATTEN	000200	719#																		
ATTN	000200	880#	2610	2644																
BA	000010	795#																		
BALF	000010	760#																		
BC	000012	796#																		
BEGIN	001100	963	967#	999	3761	3812	3826													
BELL	027446	4006	5079#																	
BGN0	001216	989	993#																	
BGN1	001230	994	990#																	
BGN2	001244	997	999#																	
BIP0	000001	858#	1999																	
BIP1	000002	857#	1920	2230	2612	2660	2671	2771	2863	3110	3160	3450	3696	3740						
BIP10	002000	840#	992																	
BIP11	004000	847#	991	3620																
BIP12	010000	846#	990	3925																
BIP13	020000	845#	989	3715	4600	4752														
BIP14	040000	844#	880	3626																
BIP15	100000	843#	987																	
BIP2	000004	856#	1690	1703	1804	1824	1892	1929	1952	2453	2610	2666	2700	2725						

	2769	2961	3328	3397	3517	3588	3743							
BIY3	855#													
BIY4	854#													
BIY5	853#													
BIY6	852#													
BIY7	851#													
BIY8	850#													
BIY9	849#													
BSY	722#	883#	3468											
BSYEN	702#	3112	3113	3170										
BSYS	686#													
BUSI	1044#	1122	1775	2892	2174	2935	2843	3341	3390	3401	3468	3474	3547	
	3592	4534												
BUSO	1039#	1559	1556	1884	1885	2177	2178	2179	2183	2737	3231	3235	3281	
	3346	3347	3351	3352	3371	3426	3448	4531						
BUSOB	1053#													
BYPAS	765#	2001												
CA	792#													
CARG	4648	4642	4656#											
CARGH	4569	4571	4586#											
CARRY	4078#													
CB	799#													
CE	877#	1122	1503	1984	2042	2043	2106	2465	2555	2696	3196	4183	4884	
CHDEND	689#	2310	2378	2457	2547									
CHEND	723#													
CHENDS	685#	1690	1822	1950	2050	2149	2334	2397	2471	2501	2568	2598	2633	
	2647	2703	2706	2813	2937	2949								
CHIS	687#	1520	1540	1624	1649	1678	1682	1748	1761	1857	1869	2149	2258	
	2297	2350	2431	2440	2523	2532	2633	2647	2677	2723	2777	2796	2878	
	2880	2893	2917											
CKCUA	3945	3993	4422#											
CK01	4423#	4440												
CK02	4424#	4429												
CK03	4430#													
CK04	4434	4438#												
CLK0	752#													
CLRMO	4480#													
CL1	4382#	4384												
CMD	1498	1524	1542	1544	1622	1647	1668	1684	1686	1746	1763	1765	1855	
	1871	1873	2248	2295	2333	2336	2338	2356	2396	2399	2401	2429	2442	
	2444	2455	2459	2461	2468	2469	2521	2534	2536	2546	2549	2551	2558	
	2631	2640	2675	2687	2709	2699	2702	2708	2710	2722	2744	2746	2775	
	2798	2800	2804	2807	2809	2815	2817	2826	2829	2831	2868	2878	2895	
	2897	2901	2904	2906	2919	2921	2925	2928	2930	2936	2939	2941	2948	
	2951	2953	3117	3118	3216	3351	3352	3378	3384	3399	3425	3584	3586	
	3590	3609	3611	4002#										
CMDCHN	692#	2149	2203											
CMD0	738#	2896	2897	2114	2115	2179	2184	2323	2324	2385	2386	2714	2716	
	2745	2747	3356	3374	3275	3551	3552	3569	3578	3585	3587	3618	3612	
CMDREJ	694#	1649	3361											
CMD,AD	3968	4201#	4265											
CMD,ST	3959	4222#	4274	4413										
CNYLC	4781#	4786												
CONI	1045#													

CONO	001340	10400	3293	3303	3325	3357								
CONOB	001354	10540												
COUNT	022724	15330	15790	16760	17540	18200	18630	19480	23150	23770	27920	28890	29130	32250
CR	000015	32360	41000											
CRLF	727522	3906	3972	4708	52710									
CS	000004	3739	50790											
CS10	002000	7930												
CS12	010000	7030												
CUADRS	722676	7010												
CUAR	001326	3730	40030	40000	40460	4040	4049	40910						
		10290	19430	16850	16930	17030	17640	18290	18720	19570	20000	21500	22640	23190
		23370	23810	24000	24430	21600	25350	25500	26150	26360	26430	26500	26800	27890
		27310	27910	27990	28000	28160	28300	28800	28960	29050	29200	29290	29400	29520
		31190	32000	3207	3465	32020	36030	4525						
CUBSY	000400	7050												
CUCR	001330	10300	19440	16860	17650	18730	23300	24010	24440	24610	25360	25510	26090	27100
		20000	20000	20170	20310	20970	29060	29210	29300	29410	29530	31100		
CUBEND	000020	6900	1594	1690	1770	1870	2005	2902	2926					
CUBX	000400	7610												
CUE	000040	0020	2024											
CUEND	000040	7210	2039											
CUBM	040000	6990	2241	2244	2276									
CUIS,C	017510	2474	2503	2712	35200									
CUIS,S	017500	1546	1600	1767	1875	2446	2530	2802	2833	2899	2923	3201	35150	
CUIS0	017730	3510	39740											
CUOR	001334	10350												
CUSR	001332	10340	19040	20410	20420	2043	22000	24650	25550	26160	26440	26960	28240	31960
		3307	4920											
DATA	030310	1750	1757	2304	2530	2794	2891	2915	50040					
DE	000004	0700	1122	1903	2200	2465	2555	2696	3196	4183	4804			
DELAY	016022	31430	3144											
DEV	022666	1541	1943	1996	1683	1685	1691	1693	1697	1703	1702	1764	1823	1829
		1870	1872	1951	1957	2059	2060	2092	2150	2151	2155	2174	2177	2204
		2203	2264	2317	2319	2335	2337	2379	2301	2390	2400	2441	2443	2450
		2400	2533	2535	2540	2550	2634	2636	2643	2640	2650	2686	2680	2702
		2707	2709	2724	2731	2730	2743	2791	2797	2799	2800	2800	2814	2816
		2820	2830	2876	28770	28860	2880	2894	2896	2903	2905	2911	29120	2910
		2920	2927	2929	29340	2930	2940	2946	29470	2950	2952	29500	3116	3119
		3200	3201	3206	3207	3141	3346	3439	3440	3465	3474	3479	3547	3579
		3503	3602	3604	3600	40490	4050	40000						
DEV CNT	022700	40010	40090	4010	40120	4051	40920							
DEVEND	000004	7240												
DEV,A	022672	2615	2703	2790	2877	2912	2947	40500	40530	40550	4056	40050	42600	
DFLT,C	023032	41540	4264											
DFLT,S	023072	41790	4273											
DOFLIN	000002	0730												
DONE	000200	7060	1590	1993	2497	2500	2506	2509	2642	2909	2992	3040	3043	3044
		3162	3103	4502										
DS	000000	7910												
DSCRSP	000002	7060												
DST	001442	11010	1492	2165	2717	31090	31670	31710	3300	42630	4305	4410		
DSTADR	026000	1101	4263	47990										
DSTCNT	022716	41030												
DST,SE	023756	3996	44090											

DS:1	723766	4412#	4419#																	
DS:2	723774	4414#	4416																	
DTMP	727222	3621#	3522#	3623																
DXBA	701304	1015#	1534#	1678#	1757#	1865#	2304#	2365#	2438#	2532#	2794#	2891#	2915#							
DXBASE	701262	1006#	3978#	4255#	4515															
DXBC	701306	1016#	1532#	1677#	1755#	1864#	2303#	2364#	2437#	2529#	2793#	2897#	2914#							
DXCA	701276	1012#	4524																	
DXCB	701314	1019#	1998	2001	2004	2158	2161	3308	3434											
DXCS	701308	1013#	1535#	1536	1539#	1797	1593#	1679#	1759#	1868#	1987#	1981	1985#	2013#						
		2014	2046	2049#	2201#	2241#	2244	2276	2305#	2366#	2439#	2466#	2497	2507#						
		2531#	2556#	2586	2589#	2927#	2642#	2645#	2697#	2718	2795#	2825#	2892#	2916#						
		2989	2992#	3040	3043#	3044	3112#	3113	3127#	3121	3162#	3170#	3174#	3183#						
		3198#	3769#	4024#	4459#	4522#	4503#													
DXDS	701274	1011#	2038	2044	3316	3361	4516													
DXES	701320	1021#	3169#	3763#	4453#	4765#	4466	4536												
DXES1	701324	1023#	4519																	
DXFI	= 700003	712#	1539	1868	2366	2439														
DXFO	= 700005	713#	1679	1758	2305	2531	2795	2892	2916											
DXFRS	= 700001	711#	3769	4503																
DXFST	= 700007	714#	1989	2049	2201	2466	2556	2627	2645	2697	2825	3198								
DXIS	701266	1008#	3124#	3173#	3078#	4061#	4257#													
DXIV	701264	1007#	1550#	2402#	2571#	3125#	3172#	3876#	4267#	4256#										
DXMI	701312	1018#	1110	1119	1551	1566	1602#	1772	1787	1808	1881	1894	1933	1986						
		2050	2067	2080	2084	2088	2101	2125#	2167	2170	2180	2185	2202	2256						
		2476	2479	2565	2568	2620	3164#	3211#	3319	3337	3366	3380	3522	3535						
		3539	3543	3556	4533															
DXMO	701312	1017#	1114	1561#	1562	1570#	1571	1779#	1789	1792#	1791	1796#	1797	1800#						
		1001	1013#	1014	1017	1088#	1089	1915#	1916	1921#	1922	1925#	1926	1938#						
		1939	1942	1944#	1945	1779#	1989#	1997	1996#	2008#	2009	2040#	2053#	2054						
		2063#	2064	2071#	2072	2076	2096#	2097	2105#	2106	2110	2114#	2115	2116#						
		2117#	2121#	2147#	2155#	2156#	2157#	2164#	2184#	2188#	2192	2196#	2199#	2200#						
		2210#	2211#	2215#	2260#	2260#	2270#	2271#	2272	2323#	2324#	2385#	2386#	2448#						
		2449#	2450#	2483#	2485	2492#	2540#	2541#	2572#	2574	2579#	2714#	2716#	2730#						
		2739#	2740#	2741#	2743#	2744#	2745#	2746#	2747#	2748#	2749#	2783#	2784#	2785#						
		2766#	2769#	2790#	2841#	2842#	3108#	3163#	3202#	3203#	3207#	3221#	3223#	3232#						
		3234#	3280#	3292#	3297#	3298	3302#	3324#	3330#	3331	3334	3356#	3370#	3374#						
		3375	3403#	3404	3407	3411#	3412	3420#	3421	3425#	3439#	3444#	3445	3448#						
		3449	3453#	3454	3469#	3472	3479#	3480	3487#	3488	3492	3496#	3498	3502#						
		3504	3520#	3527	3531	3551#	3552	3560#	3561	3565	3569#	3570	3579#	3580#						
		3581#	3582#	3583#	3584#	3585#	3586#	3587#	3594#	3595#	3596#	3604#	3605#	3606#						
		3607#	3608#	3609#	3610#	3611#	3612#	3613#	3614#	3764#	4480#	4530								
DXMOB	701322	1022#																		
DXND	701316	1020#																		
DXOS	701302	1014#	1133#	4461#	4462	4527														
DXPRT	701270	1009#	3124	3173	3090#	4061	4258#													
DXPO	= 700020	779#																		
D,DEV.	723440	4260	4291#																	
D,DXBA	723426	4255	4286#																	
D,DXIS	723442	4257	4292#																	
D,DXIV	723430	4256	4287#																	
D,DXPR	723432	4258	4288#																	
D,FIRS	723424	4254	4289#																	
D,LEGA	723436	4261	4290#																	
D,MAX.	723434	4259	4289#																	

E	000013	924#	929#	930#	931#	932#	933#	934#	935#	936#	937#	938#	939#	
EC	000001	1476#												
ECM	027462	4029	5879#											
EMOD1	021122	3741	3743#											
EMOD2	021136	3744	3746#											
EMTABL	020532	925#	929#	930#	931#	932#	933#	934#	935#	936#	937#	938#	939#	
EMTAG	020504	925	3658	3663#										
EMTDEC	020442	955	3649#											
EMYOK	020464	3654	3656#											
ENDCC	010170	2215#												
ENDEH	020000	700#												
ENDSR	010442	2240	2279#											
ENDSTR	001630	1159#												
ENDTST	027450	4028	5879#											
ENDTT	004000	1475#	4303											
ENTRY1	015500	1526#	1540#	1594#	1624#	1649#	1670#	1682#	1698#	1696#	1748#	1761#	1770#	1822#
		1857#	1969#	1878#	1950#	2058#	2149#	2203#	2258#	2262#	2297#	2316#	2334#	2358#
		2378#	2397#	2431#	2440#	2457#	2471#	2501#	2523#	2532#	2547#	2560#	2590#	2633#
		2647#	2677#	2685#	2703#	2706#	2723#	2728#	2777#	2796#	2809#	2813#	2827#	2870#
		2880#	2893#	2902#	2917#	2926#	2937#	2949#	3068#	3071	3073#	4247#		
ENTRY2	015540	1541#	1542#	1595#	1596#	1683#	1684#	1691#	1692#	1697#	1700#	1702#	1762#	1763#
		1769#	1823#	1826#	1828#	1870#	1871#	1879#	1951#	1954#	1956#	2059#	2061#	2151#
		2152#	2204#	2205#	2263#	2565#	2317#	2318#	2339#	2336#	2379#	2380#	2398#	2399#
		2441#	2442#	2458#	2459#	2502#	2533#	2534#	2548#	2549#	2591#	2634#	2635#	2648#
		2649#	2680#	2687#	2707#	2708#	2724#	2727#	2738#	2797#	2798#	2806#	2807#	2814#
		2815#	2828#	2829#	2894#	2895#	2903#	2904#	2918#	2919#	2927#	2928#	2938#	2939#
		2950#	2951#	3079#	3082	3084#	3116#	3117#	4248#					
ERFLG	021262	3670#	3679#	3707#	3727	3771#								
ERPC	027553	3717	5879#											
ERRCNT	021314	3700#	3791#	3981#	4031	4253#								
ERRDST	025000	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180
		1181	1182	1183	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196
		1197	1198	1199	1200	1201	1202	1206	1207	1208	1209	1210	1211	1212
		1213	1214	1215	1216	1217	1218	1219	1220	1221	1225	1226	1227	1228
		1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1244
		1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257
		1258	1259	1263	1264	1469	1266	1267	1268	1269	1270	1271	1272	1273
		1274	1275	1276	1277	1278	1282	1283	1284	1285	1286	1287	1288	1289
		1290	1291	1292	1293	1294	1295	1296	1297	1301	1302	1303	1304	1305
		1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1320	1321
		1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334
		1335	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350
		1351	1352	1353	1354	1358	1359	1360	1361	1362	1363	1364	1365	1366
		1367	1368	1369	1370	1371	1372	1373	1377	1378	1379	1380	1381	1382
		1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1396	1397	1398
		1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411
		1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427
		1428	1429	1430	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443
		1444	1445	1446	1447	1448	1449	1453	1454	1455	1456	1457	1458	1459
		1460	1461	1462	1463	1464	1465	1466	1467	1468	4392	4611#		
ERRLOP	021150	3748	3752#											
ERROR	010400	929#	1110	1121	1124	1530	1553	1558	1564	1568	1573	1579	1592	1774
		1777	1782	1789	1793	1799	1803	1810	1816	1819	1883	1887	1891	1896
		1906	1911	1918	1924	1928	1935	1941	1947	1983	1988	1992	2000	2003

		2006	2011	2016	2045	2048	2052	2056	2066	2069	2074	2079	2082	2086
		2090	2094	2099	2103	2108	2112	2107	2103	2169	2172	2176	2182	2187
		2194	2246	2258	2274	2278	2478	2481	2487	2499	2567	2578	2576	2588
		2630	2720	2837	2840	2847	2986	2991	3231	3242	3246	3115	3123	3138
		3203	3209	3295	3320	3325	3311	3318	3321	3327	3335	3336	3339	3343
		3349	3354	3359	3364	3368	3373	3377	3382	3389	3392	3406	3409	3414
		3423	3428	3442	3447	3451	3456	3462	3467	3472	3476	3482	3490	3494
		3500	3506	3524	3529	3533	3537	3541	3545	3549	3554	3558	3563	3567
		3572	3655	4464	4468	4483								
ERTSTN	#21316	1483#	1512#	1611#	1635#	1702#	1713#	1845#	1966#	2025#	2132#	2232#	2289#	2350#
		2412#	2510#	2605#	2661#	2763#	2856#	2967#	3678	3731	3792#	4065#	4252#	
ES	#001030	801#	929#	930#	931#	932#	933#	934#	935#	936#	937#	938#	939#	
ESEINT	#12326	2571	2586#											
ESEND	#00100	688#	1696	1822	1950	2058	2203	2334	2397	2471	2501	2562	2590	2813
		2827	2937	2949										
ESE1	#12376	2582	2596#											
ESE2	#11710	2493	2507#											
ETMP	#20776	3719#	3720#	3722										
EXR,SM	#000001	2#	9	653	3935	3747	3749	3751	4215	4250	4282	5075		
EXR1	#21260	3760	3778#											
E,R0	#21320	3709#	3753	3797#										
E,R1	#21322	3710#	3754	3798#										
E,R2	#21324	3711#	3755	3799#										
E,R3	#21326	3712#	3756	3800#										
E,R4	#21330	3713#	3757	3801#										
E,R5	#21332	3714#	3758	3802#										
PALSE	#15226	2986#	4860											
FASTCU	#02000	759#												
FASTIS	#17732	2640	2652	3978#										
FCYN	#000006	710#												
FIRST	#22706	3843#	3861#	4062	4064#	4065	4096#	4251#						
FISS1	#20044	3589	3591	3594#										
FISS2	#20052	3593	3595#											
FIVESE	#000001	4076#												
FSTART	#27063	3820	5075#											
GETHEX	#24406	3902	4957#											
GO	#000001	715#	1539	1679	1868	2466	2556	3198						
H	#21372	3820#	3821#											
HEADER	#26474	3820	5072#											
HERE	#000000	859#												
HEXNUM	#25010	3903	3904	3912	4557#	4586#	4621#							
HIO,0	#17322	3459	3464#											
HIO,SU	#17166	2463	2553	2691	3434#									
HIO,0	#17404	3435	3463	3486#										
HIO,2	#17476	3507#												
HLDO	#40000	732#	1996	2008	2871	2876	2105	2106	2116	2157	2200	2260	2740	2785
		2709	3163	3202	3297	3298	3330	3334	3403	3407	3448	3449	3487	3488
		3526	3531	3560	3561	3581	3594	3606						
HLPSW	#100000	887#	3747											
HOME	#27443	3810	5075#											
HTAG	#13234	2723#												
HTBL	#25022	4599	4624#											
IBMRST	#34000	683#												
ICOUNT	#20334	1482#	1511#	1610#	1634#	1661#	1712#	1839#	1965#	2024#	2131#	2231#	2288#	2349#

IDVN	2411#	2519#	2624#	2668#	2762#	2855#	2966#	3631	3648#										
IISW	4423	4439	4442#																
ILLC	891#																		
INFOSC	868#	1647	4161																
INITB	682#	683	2457	2547	2685														
INITC	974	981#																	
INITZ	988	982#																	
INVEN	977	979#																	
INERR	787#	3128	3121	3174	3825														
INOK	3881#																		
INPAS	872#	2993	3882	3885	3166														
INPR	2993#	2996#	3882	3885#	3166#														
INREQ	2989#	3172																	
IOD	781#																		
IRR	762#																		
IRR2	3883	3886#																	
IRS	3884#																		
ISSCRJ	785#																		
ISSREJ	1643#	1854#	3362#																
ISS,SU	691#	2783	2885	2813	2838	3316													
ISS1	1499	1929	1627	1652	1673	1751	1867	2253	2322	2361	2434	2526	2688						
ISS2	2788	2873	2883	3279#															
ISS3	3488	3483#																	
KEY,TD	3398	3482	3411#																
LEGAL	3329	3337#																	
LESS1	935#	3829	3985	3971	3983	4562	4633												
LEVEL0	3988	4882	4845	4111#	4261#	4262#	4371	4422											
LEVEL1	1818#	1527	1625	1658	1871	1749	1858	2251	2298	2359	2432	2472	2524						
LEVEL2	2561	2678	2778	2871	2881	3767	3893#												
LEVEL3	896#																		
LEVEL4	897#																		
LEVEL5	898#																		
LEVEL6	899#	1818																	
LEVEL7	988#	1889	3817	4288															
LF	981#																		
LOCKO	982#																		
LOGICA	983#	946	949	952	955	958	968	1888	3813	3827	4452								
LOPSW	4788	5878#																	
LPCNTL	757#	1998																	
LPCSU	4848#																		
LPC1	888#	3759																	
LPC2	2988	4888#																	
LPC3	4888#																		
LPC4	4884	4811	4848#																
LPC5	4884	4814																	
MAPERR	4852	4855#																	
MARK	4854	4858#																	
MAX,DE	4817	4838	4845#																
MCCSW	938#																		
MCLKEN	4368#	4375																	
MCLKP	3944#	4818	4851	4897#	4259#	4394	4438												
	892#																		
	776#	3763																	
	775#																		

MC1,SM#	000000	20	9	144	344	653	1103	1148	3118	3588	4554	4682	5075	
MC2,SM#	000000	20	9	144	344	3118	3588	4313	4809	5058	5072	5075		
MDXX	022102	3937#	3938#	3939#	3940#									
MEM,SM#	000000	20	16	374	381	930	1003	1101	1476	3668	4313	4314	5075	
MI	000016	7980												
MISC	001346	10480	4537											
MO	000014	7970												
MONDFL	023172	3814	3932	3853	4246#									
MONITO	021334	995	3807#											
MON1	021550	3838	3853#											
MON1.0	021404	990	3132	3625	3823#	3842	3986	4404	4565	4636	4789			
MON10	022224	1001	3836	3965	3979#									
MON11	022256	992	3989	3991#										
MON12	022576	4059#												
MON13	022630	4063	4069#											
MON14	022654	4069#												
MON2	023336	4267#	4269											
MON2.0	023356	4272#	4276#											
MON2.1	023370	4275#	4277											
MON2.3	023422	4282#												
MON3	021576	3860	3963#											
MON4	021620	3869	3972#											
MON4.1	021656	3875	3981#											
MON5	022042	3926#	3931	4436										
MON5.1	022132	3945#												
MON6	021744	3884	3999#											
MON7	021754	3901#	3907	3918										
MON8	022136	3959#												
MON9	022152	3962#	3973											
MSG10	027332	3962	5079#											
MSG12	027344	3881	5079#											
MSG13	027371	3917	3930	5075#										
MSG2	027077	3863	5079#											
MSG26	027716	3734	5079#											
MSG28	027733	3872	5079#											
MSG3	027117	3926	5079#											
MSG31	027755	3968	5079#											
MSG35	027767	3729	5079#											
MSG36	030010	5079#												
MSG4	027160	3899	5079#											
MSG5	027141	3841	3854	5075#										
MSG6	027252	3901	5079#											
MSG7	027262	3982	5079#											
MSG9	027301	3961	5079#											
N	000000	1164#	1169	1184#	1203#	1222#	1241#	1260#	1279#	1298#	1317#	1336#	1355#	1374#
		1393#	1412#	1431#	1450#	1469#	1476#	1478	1486#	1507	1515#	1606	1614#	1630
		1638#	1657	1665#	1708	1716#	1835	1843#	1901	1969#	2020	2028#	2127	2135#
		2227	2239#	2284	2292#	2345	2353#	2407	2415#	2511	2519#	2600	2608#	2656
		2664#	2750	2766#	2851	2859#	2962	2970#	5088#	5089	5090#	5091	5092#	5093
		5094#	5095	5096#	5097	5098#	5099	5100#	5101	5102#	5103	5104#	5105	5106#
		5107	5108#	5109	5110#	5111	5112#	5113	5114#	5115	5116#	5117	5118#	5119
		5120#	5154#	5155	5156#	5157	5158#	5159	5160#	5161	5162#	5163	5164#	5165
		5166#	5167	5168#	5169	5170#	5171	5172#	5173	5174#	5175	5176#	5177	5178#
		5179	5180#	5181	5182#	5183	5184#	5185	5186#	5220#	5221	5222#	5223	5224#

	5225	5226#	5227	5228#	5229	5230#	5231	5232#	5233	5234#	5235	5236#	5237
	5238#	5239	5240#	5241	5242#	5243	5244#	5245	5246#	5247	5248#	5249	5250#
	5251	5252#	5286#	5287	5288#	5289	5290#	5291	5292#	5293	5294#	5295	5296#
	5297	5298#	5299	5300#	5301	5302#	5303	5304#	5305	5306#	5307	5308#	5309
	5310#	5311	5312#	5313	5314#	5315	5316#	5317	5318#				
NCONT # 712654	2611	2613	2653#										
# 700022	800#												
NOCLR # 724246	4498	4481#											
NOP # 000240	919#												
NOPC # 000403	866#	1498	2631	2646	4199								
NOPC1 # 004034	1495#	1901											
NOPSTA # 004032	1494#	1499	1920#										
NPRDAT # 031712	1534	1940	1865	1866	2365	2438	5355#						
NPRY # 000022	767#												
NPRYO # 000042	780#												
NPRX # 000042	766#												
NXM # 040003	679#												
OCYNUM # 222704	3843	3859	3861	3868	3870	3874	3876	3877#	3878	3883	3885#	3886#	3887#
	3888#	3889#	3890	3891#	3892#	3893	3928	3933	3944	3964	3966	3967	3970
	4095#	4629#	4656#										
ODAT # 23462	3997	4311#											
ODAT1 # 23472	4315#	4316	4317	4318#	4319#								
ODAT2 # 23474	4316#	4320											
DEF # 20724	3671	3702	3708#										
OFFSET # 22702	4094#	4279	4280										
OLE, SM # 000000	2#	9	16	3167	3272	3993	4506	5075					
ONESH0 # 222660	991#	3633#	3762#	3980#	4077#	4250#							
ONLINA # 001000	704#												
ONLINA # 000004	769#												
OPLI # 100000	744#	1116	2080	2167	2256	2476	2565	3319	3535				
OPLD # 100000	731#	2260	2270										
OS # 000006	794#												
O, BRK # 160006	946	3130#											
PARA # 22262	1920	1690	1783	1804	1824	1892	1929	1952	2238	2453	2610	2612	2666
	2668	2671	2700	2725	2769	2771	2861	2863	3110	3168	3328	3397	3498
	3517	3588	3740	3743	3992#	4815#	4816	4818#					
PARER # 100000	678#	1994											
PARI # 000400	753#												
PARITY # 104007	936#	3903	3966	4248	4356	4316							
PARO # 000400	740#	4318	4357	4359									
PARSTP # 100000	698#	1539	1536										
PC # X000007	916#	1134#	1135#	1493#	1497#	1499#	1504#	1525#	1529#	1546#	1598#	1623#	1627#
	1648#	1652#	1669#	1673#	1688#	1695#	1705#	1747#	1751#	1767#	1794#	1831#	1856#
	1860#	1875#	1919#	1959#	2148#	2249#	2253#	2296#	2300#	2311#	2321#	2329#	2340#
	2357#	2361#	2373#	2383#	2390#	2403#	2430#	2434#	2446#	2463#	2470#	2474#	2504#
	2522#	2526#	2538#	2543#	2553#	2559#	2563#	2593#	2614#	2640#	2652#	2676#	2680#
	2691#	2712#	2733#	2753#	2754#	2776#	2780#	2802#	2811#	2819#	2833#	2869#	2873#
	2879#	2883#	2899#	2908#	2923#	2932#	2943#	2955#	3006#	3020#	3036#	3065#	3067#
	3075#	3078	3090#	3097#	3100#	3126#	3144#	3148#	3176#	3430#	3507#	3574#	3597#
	3615#	3620#	3684#	3689#	3694#	3718#	3723#	3737#	3766#	3814#	3832#	3853#	3902#
	3912#	3933#	3936#	3945#	3991#	3993#	3994#	3995#	3996#	3997#	3998#	4032#	4041#
	4059#	4271#	4282#	4305#	4314#	4322#	4342#	4344#	4346#	4394#	4405#	4411#	4417#
	4423#	4437#	4441#	4454#	4458#	4460#	4471#	4472#	4473#	4481#	4506#	4541#	4590#
	4668#	4676#	4702#	4783#	4792#								

PCM1	= 104010	937#																		
PCM2	= 104011	938#																		
PCM3	= 104012	939#																		
PERI	= 004464	1550	1592#																	
PERIO	= 004540	1599#																		
PERI1	= 004546	1522	1599	1622#																
PERRPC	= 021136	3716	3726	3747#																
PEY3	= 004146	1521	1523#																	
PEW	= 004344	1551#	1576																	
PFAIL	= 001444	952	1111#	1132																
PFLD	= 001610	1139	1149#																	
PG2	= 023544	4349#	4354																	
PG3	= 023556	4350	4353#																	
PG4	= 023602	4356	4359#																	
PG5	= 023610	4358	4361#																	
PHASE0	= 000000	805#	822	823																
PHASE1	= 010000	806#	824	825																
PHASE2	= 020000	807#	826	827																
PHASE3	= 030000	808#	828	829																
PHASE4	= 040000	809#	830	831																
PHASE5	= 050000	810#	832	833																
PHASE6	= 060000	811#	834	835																
PHASE7	= 070000	812#	836	837																
PHS	= 074000	758#																		
PHS01	= 004000	822#																		
PHS02	= 000000	823#																		
PHS11	= 014000	824#																		
PHS12	= 010000	825#																		
PHS21	= 024000	826#																		
PHS22	= 020000	827#																		
PHS31	= 034000	828#																		
PHS32	= 030000	829#																		
PHS41	= 044000	830#																		
PHS42	= 040000	831#																		
PHS51	= 054000	832#																		
PHS52	= 050000	833#																		
PHS61	= 064000	834#																		
PHS62	= 060000	835#																		
PHS71	= 074000	836#																		
PHS72	= 070000	837#																		
PNTSW	= 020000	889#																		
PREI	= 024114	3766	4059	4451#																
PREITO	= 024250	4451	4483#																	
PREI.1	= 024140	4458#																		
PRINTF	= 025544	4757	4763#																	
PRINTL	= 025532	4758#	4772																	
PRINTR	= 025466	3684	3689	3694	3723	3737	4032	4748#												
PRINTS	= 025476	3679	3732	4750#																
PRINT2	= 025454	4744#	4755	4773	4777															
PRINT3	= 025464	4746#	4748#	4750#	4751#	4767#	4768	4771#												
PRYE	= 025622	4753	4779#																	
PRYY	= 023542	4347#	4351#	4355																
PRYYD	= 004460	1549	1583#																	
PS	= 177776	920#	960#	1000#	1146#	1527#	1625#	1650#	1671#	1749#	1858#	2251#	2298#	2359#						

		2432*	2472*	2524*	2561*	2678*	2778*	2871*	2881*	3175*	3639*	3767*	3813*	3827*
PWRUP	#0153J	1113	1129#											
RC0	#05460	1772#	1821											
RC1	#05546	1784	1793#											
RC2	#05572	1795#	1811*											
RC3	#05574	1796#	1912											
RC4	#05656	1805	1811#											
RDM	#27407	5075#												
RDLAY	#16024	2311	2329	2373	2390	3144#								
RDXK	#22070	3934#	3939*	3938										
READC	#00002	865#	1746	2152	2178	2183	2248	2295	2469	2521	2598	2775	2868	2878
		4158												
REGTY	#01406	1076#												
REG,SE	#24302	3998	4514#											
REG2	#01356	1058#												
REG1	#01360	1059#												
REG2	#01362	1060#												
REG3	#01364	1061#												
REG4	#01366	1062#												
REG5	#01370	1063#												
REG6	#01372	1064#												
REG7	#01374	1065#												
RELOD	#21520	3821	3940#											
REQI	#02000	746#	1980	2050	2067	2084	2028	3522	3539					
RESRES	#24254	1134	1497	1504	2754	4454	4407	4500#						
RETURN	#20340	1147	1484*	1513*	1612*	1636*	1663*	1714*	1841*	1967*	2026*	2133*	2233*	2290*
		2351*	2413*	2517*	2606*	2662*	2764*	2857*	2968*	3636	3637*	3642#	3768	4867*
		4068*	4254*											
RSTPC	#25450	4720*	4730	4740#										
RSTPSW	#25452	4729*	4737	4741#										
RSTRG	#104004	933#	1131											
RS,1	#24312	4517#	4520											
RTX	#16020	973*	979*	982	3138#									
RUBOUB	#24514	4567	4573	4584#	4598									
RUBOUT	#25132	4638	4644	4646	4654#									
R0	#X00000	907#	2169*	2166*	2213*	2750*	2751*	2752*	3709	3753*	3830	3834	3837	3839
		3906	3972	3984	4037*	4041	4062*	4066*	4067	4069	4264*	4267	4268	4273*
		4275	4312	4313*	4317*	4321*	4371*	4374	4379	4386*	4387	4389	4398	4422*
		4425	4438	4439	4515*	4517	4518*	4544*	4546	4547	4560	4563	4566	4568
		4570	4572	4574	4576*	4581	4587*	4593	4599*	4631	4634	4637	4639	4641
		4643	4645	4647*	4651	4657*	4666*	4669*						
R1	#X00001	908#	1549*	1555	1556	1559*	1756*	1775	1778	1867*	1884	1885	1897	1902*
		1904	1907	1909	1913	2376*	3011	3013*	3015*	3019*	3025	3027*	3029	3035*
		3053	3054*	3055	3061	3164	3065	3074*	3075	3085*	3086	3088*	3094	3097
		3099*	3231	3383	3384*	3385*	3386*	3387	3398	3393*	3696	3710	3754*	4265*
		4267*	4270*	4274*	4275*	4301*	4302*	4303	4372*	4374*	4375*	4377*	4378*	4382*
		4384*	4387	4392*	4396*	4399	4410*	4414*	4516*	4517*	4519	4545*	4546*	4547*
		4548*	4559	4561*	4577*	4578*	4579*	4580*	4581*	4586	4588*	4630	4632*	4640*
		4649*	4650*	4651*	4656	4658*								
R2	#X00002	909#	1540*	1866*	1898	1899	1903*	1904	1908	1909	1914	3012	3014*	3016*
		3018*	3020	3028*	3032*	3034*	3711	3755*	4385*	4396	4413*	4414	4558	4589*
		4592*	4593	4595*	4596	4599								
R3	#X00003	910#	1492*	1495*	1496*	1503*	2717*	2721*	2755*	3712	3756*	3900*	3904*	3910*
		3960*	3967*	3974*										

SP	#X230006	915#	967#	976#	977#	981#	999#	1146	1599#	3004#	3011#	3012#	3018	3019
		3025#	3020#	3034	3035	3047#	3053#	3099	3131	3303#	3393	3634	3635	3637
		3677#	3680	3682#	3685	3007#	3690	3692#	3695	3710	3721#	3724	3730#	3733
		3735#	3738	3761#	3812#	3826#	4030#	4033	4312#	4321	4342	4361#	4402	4436#
		4550#	4559#	456	4587	4588	4589	4630#	4631#	4657	4658			
SPACE	#27520	5075#												
SPAC4	#27511	5075#												
SPW	#01436	1093#	1133	4279#	4378	4384	4461	4462						
SPW,SE	#23620	3994	4370#											
SP,0	#23630	4374#	4380											
SP,1	#23666	4386#	4400											
SP,2	#23672	4387#	4391											
SP,3	#23714	4388	4394#											
SP,4	#23720	4395#	4397#											
SP,5	#23722	4396#	4398											
SP,6	#23732	4393	4399#											
SP,7	#23754	4401	4405#											
SP1	#16102	3167#												
SP2	#16132	3169	3172#											
SP4	#16160	3176#												
SR	#177573	922#	996	3626	3628	3715	3725	3747	3759	4680	4752			
SRCCNT	#22714	4102#												
SRVI	#002000	751#	1951	1966	1972	1987	1800	1801	1894	1933				
SRVO	#001000	739#	1961	1962	1970	1571	1779	1780	1796	1797	1800	1801	1817	1800
		1809	1921	1922	1925	1920	1942	1944	1945	2117	2121	2196	2199	2210
		2211	2449	2450	2483	2505	2490	2540	2541	2572	2574	2579	2740	2740
		2841	2842	3203	3207	3221	3223	3232	3234	3411	3412	3420	3421	3595
		3596	3613	3614										
SSTAT	#22712	1670	4101#											
STAI	#004000	750#	1119	2105	2202	2479	2560	3300						
STALL	#27524	5075#												
STAMOD	#000100	720#	3460											
START	#000200	963#												
STATUS	#16162	1705	1831	1959	2340	2403	2019	2943	2955	3102#				
STKSTA	#000040	700#	1980	1981	2013	2014	2046	2710						
STKSTB	#000002	693#	2703	2706										
SUPD	#010000	734#	1790	1791	1813	1814	1915	1916	1939	1939	1989	1990	2000	2009
		2053	2054	2063	2064	2100	2192	2215	2260	2271	2272			
SVRPC	#25406	4714#	4723	4725#										
SVRPSW	#25410	4715#	4722	4726#										
SWR	#177573	921#	3991											
SYNC	#001000	760#	2004											
YSRST	#100000	681#	683											
S1	#015222	1406#	1515#	1614#	1638#	1665#	1716#	1843#	1969#	2020#	2135#	2235#	2292#	2353#
		2415#	2519#	2600#	2664#	2666#	2859#	2970#						
YDAY	#23536	4345#	4349#	4353#										
YDXBA	#01416	1081#												
YDXCA	#01410	1070#												
YDXCB	#01424	1084#												
YDXCS	#01412	1079#												
YDXDS	#01406	1077#												
YDXES	#01430	1086#												
YDXES1	#01432	1087#												
YDXMI	#01422	1083#												

TDXMC	#01420	10820																
TDXND	#01426	10850																
TDXOS	#01414	10800																
TERPC	#20566	15280	15450	15970	16260	16510	16720	16870	16940	17040	17500	17660	17710	18300				
		18590	18740	18800	19580	20620	21530	22060	22520	22660	22490	23200	23390	23600				
		23820	24020	24330	24450	24620	24730	25030	25250	25370	25520	25620	25920	26370				
		26510	26790	26900	27110	27320	27790	28010	28100	28180	28320	28720	28820	28980				
		29070	29220	29310	29420	29540	30720	3603										
TESTAB	#20412	14760	14860	15150	16140	16380	16650	17160	18430	19690	20200	21350	22350	22920				
		23530	24190	25190	26080	26640	27660	28590	29770									
		7780	3169	4465	4466													
TINDIS	#00010	8630	1622	2722	4156													
TIOC	#00400	2733	27370															
TID,IS	#13326	27530																
TIS,2	#13450	3111	31160															
TI,2	#15720	10700	3620	3824	4666	4667	4783											
TKB	#01400	10690	3610	38250	4664													
TKS	#01376	40790																
TMP	#22664	10720	46670	46940	47910													
TPB	#01404	10710	4674	4692														
TPS	#01402	9310	3059	3063	3072	3383	3096											
TRACER	#04002	1525	1623	1648	1669	1747	1856	2140	2249	2296	2357	2430	2470	2522				
TRAI NT	#15654	2559	2614	2676	2776	2869	2879	31000										
		1695	2321	2383	2811	2900	2932	32150										
TRANSF	#16240	3681	50790															
TRCM	#30071	3676	50790															
TRCM1	#30037	3686	50790															
TRC1	#30171	3691	50790															
TRC2	#30213	3227	32300															
TR,OUT	#16330	32200	3220															
TR,REA	#16250	3217	32300	3237														
TR,WRI	#16274	8160																
TSSF	#04000	41050																
TSSFY	#22722	1476	36430	4867	4869													
TSTABL	#20342	14810	1486	3086	3642	4289												
TSY1	#04000	19640	1969															
TSY10	#06636	2862	28660															
TSY10A	#14306	2864	28670															
TSY10B	#14312	20230	2020															
TSY11	#07062	21300	2139															
TSY12	#07532	2066	29590															
TSY12C	#15176	22300	2239															
TSY13	#10176	22870	2292															
TSY14	#10442	23480	2353															
TSY15	#10722	24100	2419															
TSY16	#11206	25140	2519															
TSY17	#11712	15100	1519															
TSY2	#04106	26030	2600															
TSY20	#12400	26590	2664															
TSY21	#12654	27610	2766															
TSY22	#13464	28540	2959															
TSY23	#14242	29650	2970															
TSY24	#15176	16090	1614															
TSY3	#04552	16330	1630															
TSY4	#04636																	

TSY5	#04736	1660#	1665																		
TSY6	#05246	1711#	1716																		
TSY6A	#12736	2669	2672	2674#																	
TSY6B	#13452	2673	2734	2754#																	
TSY7	#06006	1838#	1943																		
TSY9.0	#13530	2770	2773#																		
TSY9.1	#13534	2772	2774#																		
TSY9.2	#14232	2773	2844#																		
TS1	#04000	817#	822	824	826	828	830	832	834	836											
TS2	#07000	818#	823	825	827	829	831	833	835	837											
TT	#01440	1097#	2752	3013	3027	3055	3088	3093	4249	4280#	4281#	4301	4399	4584							
TTCA	#30262	3700	5079#																		
TTDS	#30235	3698	5079#																		
TTNDX	#01350	1049#	2943	2750	3090																
TTRACE	#15640	3054	3090#	4249#	4504#																
TTSHOU	#15650	3071#	3082#	3102#	3693																
TTTNDX	#01434	1088#																			
TTWAS	#15646	3070#	3081#	3101#	3688																
TTY	#X000005	913#	3677	3678#	3680#	3682	3683#	3685#	3687	3688#	3690#	3692	3693#	3695#							
		3721	3722#	3724#	3730	3731#	3733#	3735	3736#	3738#	4030	4031#	4033#	4682							
		4683#	4684	4686	4688	4690	4694	4696#	4697	4698#	4700#	4703#	4759#	4761#							
		4763#																			
TTYFLG	#25204	4668	4673#	4702	4790																
TTYI	#25624	3816	4783#																		
TTYIS	#25660	4787	4790#																		
TTZERO	#15340	3024#	4472																		
TTZ1	#15354	3029#	3833																		
TT,CLR	#23444	3995	4300#																		
TT,TRA	#15432	1598	2904	2993	3051#																
TT,T0	#15542	3080#																			
TT,T1	#15602	3087	3089#																		
TT,T2	#15612	3089#	3091#	3092#	3093#	3094															
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		3745	3810	3820	3820	3841	3854	3863	3872	3881	3899	3901	3917	3926							
		3930	3961	3962	3968	3982	4006	4028	4029	4403	4435	4584	4654	4777							
		4788																			
T,ACCE	#25030	934	4620#																		
T,ERRO	#20720	929	3706#																		
T,KEY	#25152	935	4663#																		
T,MAPE	#20554	930	3669#																		
T,PARI	#23524	936	4341#																		
T,PCH1	#26400	937	5060#																		
T,PCH2	#26424	938	5063#																		
T,PCH3	#26450	939	5066#																		
T,RSTR	#25412	933	4720#																		
T,SAVR	#25350	932	4714#																		
T,TRAC	#20570	931	3674#																		
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		4612	4613	4614	4615	4616	4617	4618	4619	4807	4808	4809	4810	4811							
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4942	4943	4944	4945	4946	4947	4948	4949	4950	4951	4952	4953	4954
4955	4956	4957	4958	4959	4960	4961	4962	4963	4964	4965	4966	4967
4968	4969	4970	4971	4972	4973	4974	4975	4976	4977	4978	4979	4980
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4994	4995	4996	4997	4998	4999	5000	5001	5002	5003	5004	5005	5006
5007	5008	5009	5010	5011	5012	5013	5014	5015	5016	5017	5018	5019
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5046	5047	5048	5049	5050	5051	5052	5053	5054	5055	5056	5057	
7250												
6040	1049											
7260												
39130	39140	3915	3936									
51210	5122	51230	5124	51250	5126	51270	5128	51290	5130	51310	5132	51330
5134	51350	5136	51370	5138	51390	5140	51410	5142	51430	5144	51450	5146
51470	5148	51490	5150	51510	5152	51530	51540	5155	51560	5157	51580	5159
51930	5194	51950	5196	51970	5198	51990	5200	52010	5202	52030	5204	52050
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52190	52530	5254	52550	5256	52570	5258	52590	5260	52610	5262	52630	5264
52650	5266	52670	5268	52690	5270	52710	5272	52730	5274	52750	5276	52770
5278	52790	5280	52810	5282	52830	5284	52850	53190	5320	53210	5322	53230
5324	53250	5326	53270	5328	53290	5330	53310	5332	53330	5334	53350	5336
53370	5338	53390	5340	53410	5342	53430	5344	53450	5346	53470	5348	53490
5350	53510											
10780	1049											
1093	10970											
1900	19190											
19200	19300											
19210	1937											
1930	19300											
1867	2370	4313	53540	5355								
2402	24970											
8640	1924	1855	2356	2429	2675	4197						
7090												
3929	39330											
9020	31370											
30100	4471											
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11600	14710	14730	1475	15060	15150	1528	1537	1545	1552	1557	1563	1567
1572	1591	1597	16140	1620	16300	1651	16650	1672	1687	1694	1704	17160
1750	1766	1771	1773	1770	1781	1788	1792	1798	1802	1809	1815	1818
1830	18430	1859	1874	1880	1882	1886	1899	1895	1905	1918	1917	1923
1927	1934	1940	1946	1950	19690	1982	1987	1991	1999	2002	2005	2010
2015	20200	2044	2047	2051	2055	2062	2069	2068	2073	2077	2081	2085
2089	2093	2098	2102	2107	2111	21350	2153	2159	2162	2168	2171	2175
2181	2180	2193	2206	22390	2245	2252	2257	2266	2273	2277	22920	2299
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UCHECK# 000002
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 UEXCEP# 000001
 VLUHEX# 022010
 W# 000000

WCO# 006202
 WCO2# 006314
 WC1# 006362
 WC2# 006406
 WC3# 006410
 WC4# 006472
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 WRITEC# 000001
 XBA# 000030
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 YESRTI# 016016
 ZERDTT# 015310
 ZT91# 015324
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ACPTM	2#	4554																		
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ASCICH	2#	4661																		
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CHECK	675#																			
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CLKCHK	675#																			
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CONSTY	2#	2597																		
COPYRI	2#	627																		
CUBTST	2#	2756																		
DBUFS	2#	5876																		
DEFINE	675#	929	930	931	932	933	934	935	936	937	938	939								
DSYM	2#	4797																		
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DXBITS	2#	676																		
DXDOC	2#																			
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EDEF	2#	924																		
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ERCALL	675#	1117	1120	1123	1537	1552	1557	1563	1567	1572	1591	1773	1776	1781	1788					
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	3372	3376	3381	3388	3391	3405	3408	3413	3422	3427	3441	3446	3450	3455	3461					
	3466	3471	3475	3481	3489	3493	3499	3505	3523	3528	3532	3536	3540	3544	3548					
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ERPGM	2#	3666																		
ERSTOR	675#	3752																		
ESAVE	675#	3789																		
EXRMAC	2#	3837																		
FASISS	2#	3575																		
WIODAD	2#																			
WIODAR	2#	2508																		
WIODAW	2#	2405																		
WIODIO	2#	2654																		
WYIOI	2#																			
ILLCMD	2#	1629																		
INPLEV	2#	2849																		
INTSM	2#	2981																		
LDNLK	675#																			
LOAD	675#																			
MACDEF	2#	675																		
MISCDE	2#	839																		
MMAC1	2#	5868																		
MONMAC	2#	3883																		

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ASL	3292	3885	3886	3987	3888	3889	4266	4377	4577	4578	4579	4582	4648	4649	4652
ASLE	4349	4353													
BEO	989	997	1115	1123	1521	1557	1567	1572	1649	1776	1788	1802	1809	1815	1816
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	2044	2047	2065	2089	2093	2102	2107	2111	2175	2181	2239	2273	2277	2454	2611
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	3295	3111	3169	3282	3288	3317	3326	3329	3332	3335	3342	3348	3353	3363	3367
	3372	3376	3388	3391	3402	3402	3405	3408	3422	3427	3441	3459	3461	3466	3471
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	3728	3741	3744	3748	3762	3838	3862	3869	3875	3884	3965	4238	4252	4388	4421
	4463	4567	4569	4571	4594	4638	4242	4642	4685	4687	4689	4691	4766	4769	
BGE	4217														
BGT	4575	4646													
BHIS	4434														
BIC	1572	1593	1643	1808	1813	1925	1938	1944	1979	2008	2013	2040	2063	2105	2114
	2116	2121	2147	2164	2177	2183	2184	2199	2208	2211	2215	2268	2271	2324	2386
	2452	2492	2502	2541	2579	2589	2642	2716	2741	2743	2746	2747	2749	2751	2789
	2792	2842	2992	3009	3043	3108	3162	3163	3164	3166	3183	3202	3207	3223	3234
	3235	3324	3338	3346	3372	3374	3385	3403	3422	3425	3469	3479	3487	3502	3562
	3569	3582	3583	3586	3587	3594	3596	3603	3607	3608	3611	3612	3614	3622	3657
	3763	3892	3914	3948	4018	4318	4259	4375	4502	4576	4647	4669	4785		
BICB	1496														
BIS	1535	1539	1561	1654	1679	1758	1779	1792	1796	1868	1884	1888	1915	1921	1982
	1985	1989	1996	2049	2053	2071	2096	2117	2155	2156	2157	2172	2179	2188	2196
	2201	2212	2241	2268	2278	2305	2323	2366	2385	2439	2448	2449	2466	2483	2531
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	3203	3221	3231	3232	3282	3292	3297	3302	3351	3356	3411	3439	3444	3448	3493
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	3613	3765	3825	4357	4465	4981	4651								
BIBB	2042	4772													
BIF	996	1114	1116	1119	1520	1536	1551	1562	1566	1571	1592	1698	1772	1788	1783
	1787	1791	1797	1801	1804	1808	1814	1817	1824	1881	1889	1892	1894	1899	1916
	1922	1926	1929	1933	1939	1942	1945	1952	1981	1986	1992	1992	2001	2004	2009
	2014	2046	2050	2054	2064	2067	2072	2076	2080	2084	2088	2097	2101	2106	2112
	2115	2158	2161	2167	2170	2180	2185	2192	2202	2238	2244	2256	2272	2276	2453
	2476	2479	2485	2497	2565	2568	2574	2586	2612	2612	2628	2666	2668	2671	2722
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BIBB	3293	3383	3325	3357											
BLE	3916	4011													
BLOS	3654														
BLT	4402	4573	4644												
BMI	4356														
BNE	994	1117	1120	1138	1501	1537	1552	1563	1576	1591	1773	1781	1784	1792	1798
	1805	1812	1821	1822	1892	1893	1902	1917	1923	1932	1937	1949	1982	1987	1991
	2051	2055	2068	2073	2077	2081	2089	2092	2159	2162	2168	2171	2186	2193	2245
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	2839	2992	3017	3233	3041	3256	3287	3114	3122	3147	3217	3226	3237	3294	3299

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	3929	3973	3985	4014	4063	4269	4077	4304	4320	4354	4380	4391	4398	4416	4440
	4467	4520	4550	4564	4597	4635	4081	4753	4772	4774	4787				
RPL	3619	4665	4675	4693											
BR	980	1701	1827	1959	2493	2582	2670	2704	2729	2734	3060	3227	3463	3699	3702
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	4699	4701	4749	4757											
BVC	4350														
CLR	976	984	991	1139	1493	1602	2129	2043	3015	3073	3074	3084	3085	3089	3175
	3211	3630	3707	3764	3981	4247	4240	4251	4252	4253	4322	4314	4346	4423	4453
	4459	4480	4557	4561	4592	4629	4632	4750							
CLRB	2041	2213	2737	3171	4756	4750	4770								
CMP	3055	3067	3078	3200	3131	3631	3727	3915	4010	4013	4016	4051	4260	4303	4379
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CMPB	1122	1556	1775	1889	1904	1909	2043	2092	2174	2035	3094	3201	3207	3341	3352
	3307	3390	3440	3460	3465	3474	3547	3623	3653	3830	3834	3837	3839	3906	3972
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	4645	4604	4600	4690	4700										
COM	4351														
COMB	3939														
DEC	993	1137	1575	1011	1020	1936	1940	3016	3032	3146	3225	3236	3091	3935	4276
	4397	4415													
EMP	929	930	931	932	933	934	935	936	937	938	939				
HALT	675	1125	3751	4470											
INC	3630	3700	4009	4064	4540	4595	4696								
INCB	1500	1559	4319	4767	4771										
IOY	918														
JMP	963	992	995	990	1001	1147	1522	2240	2673	2773	2066	2900	3132	3625	3636
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JSR	1134	1497	1499	1504	1525	1529	1540	1590	1623	1627	1640	1652	1669	1673	1680
	1695	1705	1747	1751	1767	1831	1750	1860	1875	1959	2140	2249	2253	2296	2300
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ERRORS DETECTED: 0

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