

# DH11

MEMORY TEST  
MD-11-DZDHB-B

EP-DZDHB-B-DL-A

NOV 1976

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FICHE 1 OF 1

MADE IN U.S.A.

Frame 1: Header information	Frame 2: Vertical bar pattern	Frame 3: Grid of vertical bars	Frame 4: Grid of vertical bars	Frame 5: Grid of vertical bars	Frame 6: Grid of vertical bars
Frame 7: Vertical bar pattern	Frame 8: Vertical bar pattern	Frame 9: Grid of vertical bars	Frame 10: Grid of vertical bars	Frame 11: Grid of vertical bars	Frame 12: Grid of vertical bars
Frame 13: Text and vertical bars	Frame 14: Vertical bar pattern	Frame 15: Grid of vertical bars	Frame 16: Grid of vertical bars	Frame 17: Grid of vertical bars	Frame 18: Grid of vertical bars
Frame 19: Text and vertical bars	Frame 20: Vertical bar pattern	Frame 21: Grid of vertical bars	Frame 22: Grid of vertical bars	Frame 23: Grid of vertical bars	Frame 24: Grid of vertical bars
Frame 25: Text and vertical bars	Frame 26: Vertical bar pattern	Frame 27: Grid of vertical bars	Frame 28: Grid of vertical bars	Frame 29: Grid of vertical bars	Frame 30: Grid of vertical bars
Frame 31: Text and vertical bars	Frame 32: Vertical bar pattern	Frame 33: Grid of vertical bars	Frame 34: Grid of vertical bars	Frame 35: Grid of vertical bars	Frame 36: Grid of vertical bars
Frame 37: Text and vertical bars	Frame 38: Vertical bar pattern	Frame 39: Grid of vertical bars	Frame 40: Grid of vertical bars	Frame 41: Grid of vertical bars	Frame 42: Grid of vertical bars
Frame 43: Text and vertical bars	Frame 44: Vertical bar pattern	Frame 45: Grid of vertical bars	Frame 46: Grid of vertical bars	Frame 47: Grid of vertical bars	Frame 48: Grid of vertical bars
Frame 49: Text and vertical bars	Frame 50: Vertical bar pattern	Frame 51: Grid of vertical bars	Frame 52: Grid of vertical bars	Frame 53: Grid of vertical bars	Frame 54: Grid of vertical bars
Frame 55: Text and vertical bars	Frame 56: Vertical bar pattern	Frame 57: Grid of vertical bars	Frame 58: Grid of vertical bars	Frame 59: Grid of vertical bars	Frame 60: Grid of vertical bars

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81002508

1. ABSTRACT

THE DH11 MEMORY TEST IS A TEST OF THE BYTE COUNT AND  
BUS ADDRESS MEMORIES OF THE DH11. EACH MEMORY IS  
TESTED FOR ADDRESSABILITY AND DATA READ/WRITE  
CAPABILITY







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## 4.3 (CONT'D)

4.3.1.6 TYPE IN THE ADDRESS OF THE RECEIVER INTERRUPT VECTOR FOR THE DH11 TO BE TESTED FOLLOWED BY <CARRIAGE RETURN>

NOTE: WORDS IN ANGLE BRACKETS, I.E. <CARRIAGE RETURN> MEAN THAT THE TELETYPE KEY WITH THE NAMED FUNCTION SHOULD BE STRUCK

IF AN INCORRECT ADDRESS IS ENTERED, THE PROGRAM WILL TYPE "?" AND WILL REPEAT THE SECOND MESSAGE OF 4.3.1.5  
4.3.1.7 THE PROGRAM WILL TYPE "CONTROL REGISTER ADDRESS-" AND WAIT FOR AN INPUT FROM THE TELETYPE KEYBOARD

4.3.1.8 TYPE IN THE ADDRESS OF THE SYSTEM CONTROL REGISTER OF THE DH11 TO BE TESTED FOLLOWED BY <CARRIAGE RETURN>

IF AN INCORRECT ADDRESS IS TYPED, THE PROGRAM WILL TYPE "?" AND WILL THEN REPEAT THE MESSAGE OF 4.3.1.7  
4.3.1.9 THE PROGRAM WILL TYPE "R" TO INDICATE THAT IT IS ABOUT TO START TESTING, AND THEN TESTING WILL BEGIN

4.3.2 PROGRAM RESTART WITH ALL SWITCHES DOWN

4.3.2.1 PERFORM 4.3.1.2 TO 4.3.1.5  
4.3.2.2 THE PROGRAM WILL TYPE "DH11 MEMORY TEST" AND WILL THEN CONTINUE AS DESCRIBED IN 4.3.1.9

4.3.3 PROGRAM RESTART WITH SMOO=1

4.3.3.1 LOAD ADDRESS 000200  
4.3.3.2 SET SMO1=1  
4.3.3.3 PRESS START  
4.3.3.4 THE PROGRAM WILL PERFORM AS DESCRIBED IN 4.3.1.5 TO 4.3.1.9

4.3.4 PROGRAM RESTART WITH SMO1=1

4.3.4.1 LOAD ADDRESS 000200  
4.3.4.2 SET SMO1=1  
4.3.4.3 PRESS START  
4.3.4.4 THE PROGRAM WILL TYPE "DH11 MEMORY TEST" AND WILL THEN TYPE "TEST PC-" AND WILL WAIT FOR AN INPUT FROM THE TELETYPE KEYBOARD  
4.3.4.5 TYPE IN THE ADDRESS OF THE TEST AT WHICH THE PROGRAM IS TO BE STARTED FOLLOWED BY <CARRIAGE RETURN>  
4.3.4.6 THE PROGRAM WILL TYPE R TO INDICATE THAT IT HAS STARTED AND WILL START TESTING AT THE SELECTED TEST.

NOTE: CARE MUST BE TAKEN WHEN THIS FEATURE IS USED, SINCE THERE IS NO PROTECTION AGAINST SELECTING AN ADDRESS THAT IS IN THE MIDDLE OF A TEST

NOTE: IF IT IS DESIRED TO LOOP ON THE TEST THAT IS SELECTED SET SW14=1 BEFORE ENTERING THE TEST ADDRESS



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5. OPERATING PROCEDURE

5.1 OPERATIONAL SWITCH SETTINGS

SW15=1, HALT ON ERROR  
SW14=1, LOOP ON CURRENT TEST  
SW13=1, SUPPRESS ERROR TYPEOUT  
SW11=1, INHIBIT ITERATIONS  
SW10=1, ESCAPE TO NEXT TEST ON ERROR  
SW09=1, FREEZE VARIABLE PARAMETER IN CURRENT TEST  
SW01=1, START PROGRAM AT SELECTED TEST  
SW00=1, CHANGE PARAMETERS AT PROGRAM RESTART

5.2 SUBROUTINE ABSTRACTS

5.2.1 TRAPCATCHER (LOCATIONS 00000-000776)

THIS ROUTINE IS USED TO INTERCEPT UNEXPECTED INTERRUPTS AND TRAPS. THE AREA FROM 00000-000776 IS LOADED WITH THE FOLLOWING SEQUENCE

2  
0  
4  
0  
772  
0  
776  
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IF AN UNEXPECTED INTERRUPT OR TRAP OCCURS, THE PROGRAM WILL HALT WITH THE PC 2 GREATER THAN THE ADDRESS TO WHICH THE PROGRAM TRAPPED. THE PROCESSOR STACK MAY BE EXAMINED TO DETERMINE WHERE THE PROGRAM WAS WHEN THE TRAP OR INTERRUPT OCCURED.

5.2.2 START (PROGRAM INITIALIZATION)

THIS ROUTINE INITIALIZES ALL PROGRAM FLAGS AND COUNTERS, TYPES THE PROGRAM TITLE MESSAGE, AND INPUTS THE VECTOR AND CONTROL REGISTER ADDRESSES OF THE DN11 TO BE TESTED.

5.2.3 BEGIN (PROGRAM START AND RESTART)

THIS ROUTINE IS ENTERED IMMEDIATLY AFTER "START" AND EACH TIME A PROGRAM PASS HAS BEEN COMPLETED. THE ROUTINE SETS UP THE PROCESSOR STACK AND STATUS WORD AND THEN TRANSFERS CONTROL TO THE TEST AT WHICH TESTING WILL BEGIN. IF SW01=0 WHEN THIS ROUTINE IS ENTERED TESTING WILL START AT T1 (TEST 1). IF SW01=1 WHEN THIS ROUTINE IS ENTERED, TESTING WILL START AT THE PC ENTERED FROM THE TELETYPE KEYBOARD.







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5.2.7 ERRORS (ERROR HANDLER)

THIS ROUTINE IS ENTERED UPON ERROR DETECTION ONLY. WITH ALL CONSOLE SWITCHES DOWN, THE ROUTINE PROCEEDS AS FOLLOWS:

- A) THE PC OF THE INSTRUCTION THAT CALLED THE ERROR HANDLER IS ACCESSED THRU THE STACK, AND THEN THE EMT INSTRUCTION ITSELF IS FETCHED. THE 8 LSB OF THE EMT INSTRUCTION ARE THE ERROR CODE. THIS CODE IS USED TO ACCESS A TABLE OF ERROR MESSAGES AND ERROR DATA STORAGE LOCATIONS.
- B) IF THE TEST THAT FAILED DID NOT FAIL PREVIOUSLY DURING THIS PASS, A COMPLETE ERROR REPORT IS MADE. IF THE TEST THAT FAILED FAILED MOR THAT ONCE DURING THE CURRENT PASS, ONLY THE DATA RELATING TO THE FAILUER IS TYPED. IF SW13=1, NO ERROR TYPEOUT IS MADE.
- C) THE ROUTINE NOW CHECKS FOR HALT ON ERROR. IF SW15=1 THE PROGRAM WILL HALT WITH THE PC OF THE CALL TO THE ERROR ROUTINE IN RD. IF SW15=0, THE PROGRAM WILL NOT HALT, BUT WILL CHECK FOR ESCAPE TO NEXT TEST.
- D) IF SW10=0, THE ROUTINE WILL RETURN TO THE TEST IN PROGRESS. IF SW10=1, THE ROUTINE WILL ABORT THE CURRENT TEST, AND TRANSFER TO THE NEXT TEST IN SEQUENCE, THRU THE ROUTINE "SCOPER".

5.2.8 TRPSRV (TRAP DECODE AND DISPATCH)

THIS ROUTINE DECODES THE 8 LSB OF THE TRAP INSTRUCTION THAT CAUSED TH PROGRAM INTERRUPT, AND TRANSFERS CONTROL TO THE ROUTINE THRU THE TABLE "TRPTAB" USING THE 8 LSB OF THE TRAP INSTRUCTION AS AN OFFSET TO THE POINTER TO THE ROUTINE TO BE ENTERED.



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- 5.3 PROGRAM AND OR OPERATOR ACTION
- 5.3.1 PROGRAM START WITH ALL SWITCHES DOWN
  - 5.3.1.1 REFER TO SECTIONS 4.3.1 AND 4.3.2 FOR INITIAL PROGRAM BEHAVIOR.
  - 5.3.1.2 AFTER "R" HAS BEEN TYPED BY THE PROGRAM, TEST EXECUTION WILL BEGIN. EACH TEST WILL BE REPEATED A SELECTED NUMBER OF ITERATIONS (SEE LISTING FOR EXACT NUMBER FOR EACH TEST) AND THEN THE PROGRAM WILL PROCEED TO THE NEXT TEST.
  - 5.3.1.3 WHEN ALL ITERATIONS HAVE BEEN COMPLETED, THE PROGRAM WILL TYPE "DZDHB" AND THEN RESTART TESTING AT TEST 1 (LOCATION T1 IN THE PROGRAM).
  - 5.3.1.4 IF AN ERROR OCCURS, THE PROGRAM WILL TYPE AN APPROPRIATE ERROR MESSAGE, AND THEN CONTINUE THE TEST IN PROGRESS.
- 5.3.2 PROGRAM START WITH SW00=1  
THE PROGRAM WILL PERFORM AS DESCRIBED IN 4.3.1 AND 5.3.1
- 5.3.3 PROGRAM START WITH SW01=1
  - 5.3.3.1 REFER TO SECTION 4.3.4 FOR INITIAL PROGRAM BEHAVIOR
  - 5.3.3.2 TEST EXECUTION WILL START AT THE ADDRESS SPECIFIED AND WILL CONTINUE AS DESCRIBED IN 5.3.1.2
  - 5.3.3.3 AFTER "DZDHB" HAS BEEN TYPED, THE PROGRAM WILL RESUME TESTING AT TEST 1
- 5.3.4 PROGRAM OPERATION WITH SW15=1  
SAME AS 5.3.1, EXCEPT THAT IN THE CASE OF AN ERROR, THE PROGRAM WILL HALT AFTER THE ERROR TYPEOUT, AND THE PC+2 OF THE CALL TO THE ERROR ROUTINE WILL BE DISPLAYED IN RO.
- 5.3.5 PROGRAM OPERATION WITH SW13=1  
SAME AS 5.3.1 EXCEPT THAT NO ERROR TYPEOUTS WILL OCCUR
- 5.3.6 PROGRAM OPERATION WITH SW11=1  
SAME AS 5.3.1 EXCEPT THAT EACH TEST WILL BE REPEATED ONCE ONLY
- 5.3.7 PROGRAM OPERATION WITH SW10=1  
SAME AS 5.3.1, EXCEPT THAT IN THE CASE OF AN ERROR THE CURRENT TEST WILL BE ABORTED, AND THE PROGRAM WILL PROCEED TO THE NEXT TEST IN SEQUENCE.



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5. (CONT'D)

5.3.8 PROGRAM OPERATION WITH SW14=1, OR SW09=1

THESE FUNCTIONS ARE NORMALLY USED FOR TROUBLE SHOOTING.  
SEE SECTION 6.3 FOR THEIR USE.

6. ERRORS

6.1 ERROR HALTS

THE ERROR MESSAGE FORMAT FOR ALL ERROR TYPEOUTS  
IS AS FOLLOWS

PC+2 MESSAGE  
HEADER (IF APPLICABLE)  
DATA (IF APPLICABLE)

WHERE  
PC+2 IS THE ADDRESS OF THE CALL TO THE ERROR HANDLER + 2  
MESSAGE IS AN ASCII MESSAGE DESCRIBING (BRIEFLY) THE FAILURE  
HEADER IS A DESCRIPTION OF THE DATA TO FOLLOW  
DATA IS OCTAL INFORMATION RELATING TO THE CAUSE OF THE FAILURE  
IF THE SAME ERROR OCCURS IN A GIVEN TEST ON THE SAME  
PASS, AND IF DATA IS ASSOCIATED WITH THAT ERROR, ONLY  
DATA IS TYPED ON SUCCEEDING ERROR TYPEOUTS

IF NO DATA IS ASSOCIATED WITH THE ERROR  
THE COMPLETE ERROR MESSAGE IS TYPED.

6.1.1 ERROR DESCRIPTIONS

SEE LISTING FOR DETAILS OF ERRORS

6.2 ERROR RECOVERY

6.2.1 SW15=0

IF THE PROGRAM IS RUN WITH SW15=0, NO OPERATOR ACTION IS  
REQUIRED TO CONTINUE TESTING

6.2.2 SW15=1

IF THE PROGRAM IS RUN WITH SW15=1, TO CONTINUE TESTING  
AFTER THE PROGRAM HAS HALTED, PRESS THE PROCESSOR  
CONSOLE CONTINUE SWITCH

6.3 SCOPE LOOPING

6.3.1 TO SCOPE ON A SPECIFIC TEST, SET SW14=1 AND SW13=1  
THIS WILL CAUSE THE PROGRAM TO CONTINUOUSLY LOOP ON THE  
SAME TEST, AND WILL CAUSE ALL ERROR TYPEOUTS TO BE INHIBITED

6.3.2 TO SCOPE ON A SPECIFIC VALUE OF A PARAMETER WITHIN  
A TEST, SET SW09=1 TO FREEZE THE DATA  
(SEE LISTING FOR THOSE TESTS THAT INCORPORATE THIS FEATURE)



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6. (CONT'D)  
6.3.3 PROGRAM START TO SCOPE LOOP ON SELECTED TEST  
PERFORM SECTION 4.3.4 WITH SW14=1

7. RESTRICTIONS

7.1 STARTING  
THE DM11 TEST CARD MUST BE INSTALLED

7.2 RUNNING  
NONE

8. MISCELLANEOUS

8.1 EXECUTION TIME  
THE TIME FOR ONE PASS OF THE PROGRAM (END OF  
TYPEOUT OF DZDHB TO END OF TYPEOUT OF DZDHB)  
IS GIVEN FOR VARIOUS PROCESSORS IN THE TABLE BELOW

PROCESSOR	TIME
PDP-11/05,10	
PDP-11/20	
PDP-11/40	
PDP-11/45	



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9. PROGRAM DESCRIPTION

THE PROGRAM FIRST TESTS THE BUS ADDRESS AND BYTE COUNT MEMORIES FOR ADDRESSABILITY. THE TEST IS PERFORMED IN THE FOLLOWING MANNER:

A) EACH LOCATION OF THE MEMORY TO BE TESTED IS LOADED WITH ITS ADDRESS, DUPLICATED EVERY 4 BITS. THE BINARY CONTENTS OF EACH LOCATION IS SHOWN BELOW

LOCATION	CONTENTS			
00	0000	0000	0000	0000
01	0001	0001	0001	0001
02	0010	0010	0010	0010
03	0011	0011	0011	0011
...	...	...	...	...
16	1110	1110	1110	1110
17	1111	1111	1111	1111

THE ABOVE PATTERN WAS CHOSEN SINCE THE MEMORY IS COMPOSED OF FOUR (4) CHIPS EACH HAVING A CAPACITY OF 16 WORDS BY FOUR (4) BITS. IF ANY OF THE FOUR CHIPS IS ADDRESSED INCORRECTLY, THE CONTENTS OF THAT CHIP WILL BE INCORRECT AND WILL INDICATION WHAT LOCATION WAS ACTUALLY ADDRESSED.

AFTER THE ABOVE TESTS HAVE BEEN COMPLETED, EACH LOCATION IN BOTH THE BUS ADDRESS AND BYTE COUNT MEMORIES ARE TESTED TO VERIFY THAT ALL BITS CAN BE SET TO 1S AND CLEARED TO 0S

THE NEXT GROUP OF TESTS VERIFY THAT A SELECTED ADDRESS IN EITHER THE BYTE COUNT OR BUS ADDRESS MEMORY CAN BE SET TO A SELECTED VALUE WITHOUT CHANGING THE CONTENTS OF ANY OTHER LOCATION IN THAT MEMORY.

THE NEXT GROUP OF TESTS SETS ALL LOCATIONS IN EITHER THE BYTE COUNT OR BUS ADDRESS MEMORY TO 1S, CLEARS A SELECTED LOCATION TO 0S, AND VERIFY THAT ONLY THE SELECTED LOCATION WAS AFFECTED.

THE FINAL GROUP OF TESTS VERIFIES THAT THE MEMORY EXTENTION BITS OF THE BUS ADDRESS MEMORY CAN BE SET AND CLEARED.

10. LISTING

↑

;DH11 MEMORY TEST  
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;STARTING PROCEDURE  
;LOAD PROGRAM  
;LOAD ADDRESS 000200



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DZDHB MACY11 27(732) 04-MAY-76 13:57 PAGE 13  
DZDHB8.PFC

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:PRESS START  
:PROGRAM WILL TYPE DH11 MEMORY TEST  
:PROGRAM WILL TYPE "VECTOR ADDRESS-"  
:TYPE IN THE ADDRESS OF THE RECEIVER INTERRUPT VECTOR  
:FOR THE DH11 TO BE TESTED, FOLLOWED BY <CARRIAGE RETURN>  
:PROGRAM WILL TYPE "CONTROL REGISTER ADDRESS-"  
:TYPE IN THE ADDRESS OF THE SYSTEM CONTROL REGISTER  
:FOR THE DH11 TO BE TESTED, FOLLOWED BY <CARRIAGE RETURN>  
:PROGRAM WILL TYPE "R" TO INDICATE THAT TESTING HAS STARTED  
:AT THE END OF A PASS, PROGRAM WILL TYPE " DZDHB "  
:AND THEN RESUM TESTING
```

## ;SWITCH REGISTER OPTIONS

100000  
040000  
020000  
010000  
004000  
002000  
001000  
000400  
000100  
000040  
000020  
000010  
000004  
000002  
000001

SW15=100000  
SW14=40000  
SW13=20000  
SW12=10000  
SW11=4000  
SW10=2000  
SW09=1000  
SW08=400  
SW06=100  
SW05=40  
SW04=20  
SW03=10  
SW02=4  
SW01=2  
SW00=1

```
:=1, HALT ON ERROR  
:=1, LOOP ON CURRENT TEST  
:=1, INHIBIT ERROR TYPEOUT  
  
:=1, INHIBIT ITERATIONS  
:=1, ESCAPE TO NEXT TEST ON ERROR  
:=1, LOOP WITH CURRENT DATA
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```
:RESTART PROGRAM AT SELECTED TEST  
:RESELECT VECTOR AND CONTROL REGISTER  
:ADDRESS AFTER PROGRAM RESTART
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;REGISTER DEFINITIONS

000000	RD=%0	: GENERAL REGISTER
000001	R1=%1	: GENERAL REGISTER
000002	R2=%2	: GENERAL REGISTER
000003	R3=%3	: GENERAL REGISTER
000004	R4=%4	: GENERAL REGISTER
000005	R5=%5	: GENERAL REGISTER
000006	SP=%6	: PROCESSOR STACK POINTER
000007	PC=%7	: PROGRAM COUNTER

;LOCATION EQUIVALENCIES

177570	SMR=177570	: CONSOLE SWITCH REGISTER
177570	LIGHTS=177570	: PDP-11/45 DISPLAY REGISTER
177776	PS=177776	: PROCESSOR STATUS WORD
012606	STACK=ENDC00+200	: START OF PROCESSOR STACK

;INSTRUCTION DEFINITIONS

005746	PUSH1SP=5746	: DECREMENT PROCESSOR STACK 1 WORD
005726	POP1SP=5726	: INCREMENT PROCESSOR STACK 1 WORD
010046	PUSHR0=10046	: SAVE R0 ON STACK
012600	POPR0=12600	: RESTORE R0 FROM STACK
024646	PUSH2SP=24646	: DECREMENT STACK TWICE
022626	POP2SP=22626	: INCREMENT STACK TWICE
	.EQUIV ENT,HLT	: BASIC DEFINITION OF ERROR CALL

100000	BIT15=100000
040000	BIT14=40000
020000	BIT13=20000
010000	BIT12=10000
004000	BIT11=4000
002000	BIT10=2000
001000	BIT09=1000
000400	BIT08=400
000200	BIT07=200
000100	BIT06=100
000040	BIT05=40
000020	BIT04=20
000010	BIT03=10
000004	BIT02=4
000002	BIT01=2
000001	BIT00=1



```

573                                     ;TRAPCATCAER FOR ILLEGAL INTERRUPTS
574                                     .=0
575 000000 000002                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
576 000002 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
577 000004 000006                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
578 000006 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
579 000010 000012                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
580 000012 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
581 000014 000016                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
582 000016 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
583 000020 000022                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
584 000022 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
585 000024 000026                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
586 000026 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
587 000030 000032                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
588 000032 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
589 000034 000036                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
590 000036 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
591 000040 000042                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
592 000042 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
593 000044 000046                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
594 000046 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
595 000050 000052                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
596 000052 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
597 000054 000056                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
598 000056 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
599 000060 000062                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
600 000062 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
601 000064 000066                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
602 000066 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
603 000070 000072                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
604 000072 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
605 000074 000076                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
606 000076 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
607 000100 000102                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
608 000102 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
609 000104 000106                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
610 000106 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
611 000110 000112                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
612 000112 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
613 000114 000116                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
614 000116 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
615 000120 000122                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
616 000122 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
617 000124 000126                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
618 000126 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
619 000130 000132                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
620 000132 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
621 000134 000136                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
622 000136 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
623 000140 000142                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
624 000142 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
625 000144 000146                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
626 000146 000000                      HALT     ;EXAMINE STACK TO FIND CAUSE
627 000150 000152                      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
628 000152 000100                      HALT     ;EXAMINE STACK TO FIND CAUSE

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629	000154	000156	.+2	:UNEXPECTED TRAP TO THIS LOCATION
630	000156	000000	HALT	:EXAMINE STACK TO FIND CAUSE
631	000160	000162	.+2	:UNEXPECTED TRAP TO THIS LOCATION
632	000162	000000	HALT	:EXAMINE STACK TO FIND CAUSE
633	000164	000166	.+2	:UNEXPECTED TRAP TO THIS LOCATION
634	000166	000000	HALT	:EXAMINE STACK TO FIND CAUSE
635	000170	000172	.+2	:UNEXPECTED TRAP TO THIS LOCATION
636	000172	000000	HALT	:EXAMINE STACK TO FIND CAUSE
637	000174	000176	.+2	:UNEXPECTED TRAP TO THIS LOCATION
638	000176	000000	HALT	:EXAMINE STACK TO FIND CAUSE
639	000200	000202	.+2	:UNEXPECTED TRAP TO THIS LOCATION
640	000202	000000	HALT	:EXAMINE STACK TO FIND CAUSE
641	000204	000206	.+2	:UNEXPECTED TRAP TO THIS LOCATION
642	000206	000000	HALT	:EXAMINE STACK TO FIND CAUSE
643	000210	000212	.+2	:UNEXPECTED TRAP TO THIS LOCATION
644	000212	000000	HALT	:EXAMINE STACK TO FIND CAUSE
645	000214	000216	.+2	:UNEXPECTED TRAP TO THIS LOCATION
646	000216	000000	HALT	:EXAMINE STACK TO FIND CAUSE
647	000220	000222	.+2	:UNEXPECTED TRAP TO THIS LOCATION
648	000222	000000	HALT	:EXAMINE STACK TO FIND CAUSE
649	000224	000226	.+2	:UNEXPECTED TRAP TO THIS LOCATION
650	000226	000000	HALT	:EXAMINE STACK TO FIND CAUSE
651	000230	000232	.+2	:UNEXPECTED TRAP TO THIS LOCATION
652	000232	000000	HALT	:EXAMINE STACK TO FIND CAUSE
653	000234	000236	.+2	:UNEXPECTED TRAP TO THIS LOCATION
654	000236	000000	HALT	:EXAMINE STACK TO FIND CAUSE
655	000240	000242	.+2	:UNEXPECTED TRAP TO THIS LOCATION
656	000242	000000	HALT	:EXAMINE STACK TO FIND CAUSE
657	000244	000246	.+2	:UNEXPECTED TRAP TO THIS LOCATION
658	000246	000000	HALT	:EXAMINE STACK TO FIND CAUSE
659	000250	000252	.+2	:UNEXPECTED TRAP TO THIS LOCATION
660	000252	000000	HALT	:EXAMINE STACK TO FIND CAUSE
661	000254	000256	.+2	:UNEXPECTED TRAP TO THIS LOCATION
662	000256	000000	HALT	:EXAMINE STACK TO FIND CAUSE
663	000260	000262	.+2	:UNEXPECTED TRAP TO THIS LOCATION
664	000262	000000	HALT	:EXAMINE STACK TO FIND CAUSE
665	000264	000266	.+2	:UNEXPECTED TRAP TO THIS LOCATION
666	000266	000000	HALT	:EXAMINE STACK TO FIND CAUSE
667	000270	000272	.+2	:UNEXPECTED TRAP TO THIS LOCATION
668	000272	000000	HALT	:EXAMINE STACK TO FIND CAUSE
669	000274	000276	.+2	:UNEXPECTED TRAP TO THIS LOCATION
670	000276	000000	HALT	:EXAMINE STACK TO FIND CAUSE
671	000300	000302	.+2	:UNEXPECTED TRAP TO THIS LOCATION
672	000302	000000	HALT	:EXAMINE STACK TO FIND CAUSE
673	000304	000306	.+2	:UNEXPECTED TRAP TO THIS LOCATION
674	000306	000000	HALT	:EXAMINE STACK TO FIND CAUSE
675	000310	000312	.+2	:UNEXPECTED TRAP TO THIS LOCATION
676	000312	000000	HALT	:EXAMINE STACK TO FIND CAUSE
677	000314	000316	.+2	:UNEXPECTED TRAP TO THIS LOCATION
678	000316	000000	HALT	:EXAMINE STACK TO FIND CAUSE
679	000320	000322	.+2	:UNEXPECTED TRAP TO THIS LOCATION
680	000322	000000	HALT	:EXAMINE STACK TO FIND CAUSE
681	000324	000326	.+2	:UNEXPECTED TRAP TO THIS LOCATION
682	000326	000000	HALT	:EXAMINE STACK TO FIND CAUSE
683	000330	000332	.+2	:UNEXPECTED TRAP TO THIS LOCATION
684	000332	000000	HALT	:EXAMINE STACK TO FIND CAUSE



685	000334	000336	.+2	:UNEXPECTED TRAP TO THIS LOCATION
686	000336	000000	HALT	:EXAMINE STACK TO FIND CAUSE
687	000340	000342	.+2	:UNEXPECTED TRAP TO THIS LOCATION
688	000342	000000	HALT	:EXAMINE STACK TO FIND CAUSE
689	000344	000346	.+2	:UNEXPECTED TRAP TO THIS LOCATION
690	000346	000000	HALT	:EXAMINE STACK TO FIND CAUSE
691	000350	000352	.+2	:UNEXPECTED TRAP TO THIS LOCATION
692	000352	000000	HALT	:EXAMINE STACK TO FIND CAUSE
693	000354	000356	.+2	:UNEXPECTED TRAP TO THIS LOCATION
694	000356	000000	HALT	:EXAMINE STACK TO FIND CAUSE
695	000360	000362	.+2	:UNEXPECTED TRAP TO THIS LOCATION
696	000362	000000	HALT	:EXAMINE STACK TO FIND CAUSE
697	000364	000366	.+2	:UNEXPECTED TRAP TO THIS LOCATION
698	000366	000000	HALT	:EXAMINE STACK TO FIND CAUSE
699	000370	000372	.+2	:UNEXPECTED TRAP TO THIS LOCATION
700	000372	000000	HALT	:EXAMINE STACK TO FIND CAUSE
701	000374	000376	.+2	:UNEXPECTED TRAP TO THIS LOCATION
702	000376	000000	HALT	:EXAMINE STACK TO FIND CAUSE
703	000400	000402	.+2	:UNEXPECTED TRAP TO THIS LOCATION
704	000402	000000	HALT	:EXAMINE STACK TO FIND CAUSE
705	000404	000406	.+2	:UNEXPECTED TRAP TO THIS LOCATION
706	000406	000000	HALT	:EXAMINE STACK TO FIND CAUSE
707	000410	000412	.+2	:UNEXPECTED TRAP TO THIS LOCATION
708	000412	000000	HALT	:EXAMINE STACK TO FIND CAUSE
709	000414	000416	.+2	:UNEXPECTED TRAP TO THIS LOCATION
710	000416	000000	HALT	:EXAMINE STACK TO FIND CAUSE
711	000420	000422	.+2	:UNEXPECTED TRAP TO THIS LOCATION
712	000422	000000	HALT	:EXAMINE STACK TO FIND CAUSE
713	000424	000426	.+2	:UNEXPECTED TRAP TO THIS LOCATION
714	000426	000000	HALT	:EXAMINE STACK TO FIND CAUSE
715	000430	000432	.+2	:UNEXPECTED TRAP TO THIS LOCATION
716	000432	000000	HALT	:EXAMINE STACK TO FIND CAUSE
717	000434	000436	.+2	:UNEXPECTED TRAP TO THIS LOCATION
718	000436	000000	HALT	:EXAMINE STACK TO FIND CAUSE
719	000440	000442	.+2	:UNEXPECTED TRAP TO THIS LOCATION
720	000442	000000	HALT	:EXAMINE STACK TO FIND CAUSE
721	000444	000446	.+2	:UNEXPECTED TRAP TO THIS LOCATION
722	000446	000000	HALT	:EXAMINE STACK TO FIND CAUSE
723	000450	000452	.+2	:UNEXPECTED TRAP TO THIS LOCATION
724	000452	000000	HALT	:EXAMINE STACK TO FIND CAUSE
725	000454	000456	.+2	:UNEXPECTED TRAP TO THIS LOCATION
726	000456	000000	HALT	:EXAMINE STACK TO FIND CAUSE
727	000460	000462	.+2	:UNEXPECTED TRAP TO THIS LOCATION
728	000462	000000	HALT	:EXAMINE STACK TO FIND CAUSE
729	000464	000466	.+2	:UNEXPECTED TRAP TO THIS LOCATION
730	000466	000000	HALT	:EXAMINE STACK TO FIND CAUSE
731	000470	000472	.+2	:UNEXPECTED TRAP TO THIS LOCATION
732	000472	000000	HALT	:EXAMINE STACK TO FIND CAUSE
733	000474	000476	.+2	:UNEXPECTED TRAP TO THIS LOCATION
734	000476	000000	HALT	:EXAMINE STACK TO FIND CAUSE
735	000500	000502	.+2	:UNEXPECTED TRAP TO THIS LOCATION
736	000502	000000	HALT	:EXAMINE STACK TO FIND CAUSE
737	000504	000506	.+2	:UNEXPECTED TRAP TO THIS LOCATION
738	000506	000000	HALT	:EXAMINE STACK TO FIND CAUSE
739	000510	000512	.+2	:UNEXPECTED TRAP TO THIS LOCATION
740	000512	000000	HALT	:EXAMINE STACK TO FIND CAUSE









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831                                     ;STANDARD INTERRUPT VECTORS
832
833
834                                     . =24
835 000024 000024 PFAIL ;POWER FAIL HANDLER
836 000026 000340 340 ;SERVICE AT LEVEL 7
837 000030 010142 ERRORS ;ERROR HANDLER
838 000032 000340 340 ;SERVICE AT LEVEL 7
839 000034 010344 TRPSRV ;GENERAL HANDLER DISPATCH SERVICE
840 000036 000340 340 ;SERVICE AT LEVEL 7
841
842 000200 000167 000574 . =200 JMP START ;GO TO START OF PROGRAM
843
844
845
846
847 ;DEFINITIONS FOR TRAP SUBROUTINE CALLS
848 ;POINTERS TO SUBROUTINES CAN BE FOUND STARTING
849 ;AT LOCATION "TRPTAB"
850
851 104400 SCOPE=TRAP+Y ;SCOPE LOOP AND ITERATION HANDLER
852 104401 TYPE=TRAP+Y ;TELETYPE OUTPUT ROUTINE
853 104402 OCTASC=TRAP+Y ;OCTAL TO ASCII CONVERSION
854 104403 INSTR=TRAP+Y ;INPUT ASCII STRING
855 104404 INSTR=TRAP+Y ;STRING INPUT ERROR
856 104405 PARAM=TRAP+Y ;CONVERT STRING TO OCTAL, CHECK LIMITS
857 104406 SAVOSP=TRAP+Y ;SAVE RD-RS, PC
858 104407 RESDS=TRAP+Y ;RESTORE RD-RS
104410 SCOPE1=TRAP+Y ;CHECK FOR FREEZE ON CURRENT DATA
  
```







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937
938
939
940
941
942
943
944
945 001274 012767 000340 176474 T1: MOV      #340,PS           ;DISABLE ALL INTERRUPTS
946 001302 012767 000100 007734 MOV      #100,ICOUNT      ;SET UP FOR 100 ITERATIONS
947 001310 012767 001410 007722 MOV      #48,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
948 001316 012700 000020 MOV      #20,R0          ;SET UP TO ADDRESS 20 (OCTAL)
949                                     ;LOCATIONS IN THE BUS ADDRESS MEMORY
950 001322 005004                                     ;START AT ADDRESS 0
951 001324 005002
952 001326 010477 007644 1S: MOV      R4,2DHSCR      ;SELECT ADDRESS IN BUS ADDRESS
953                                     ;MEMORY TO BE ADDRESSED
954 001332 010277 007646 MOV      R2,2DHBA        ;LOAD MEMORY LOCATION
955 001336 062702 010421 ADD      #10421,R2       ;WITH ITS ADDRESS
956 001342 005204 INC      R4              ;ADVANCE TO NEXT ADDRESS
957 001344 005300 DEC      R0
958 001346 001367 BNE     1S              ;CONTINUE IF NOT DONE
959 001350 012700 000020 MOV      #20,R0          ;SET UP TO CHECK
960                                     ;EACH MEMORY ADDRESS
961 001354 005004                                     ;START AT ADDRESS 0
962 001356 005002
963 001360 010477 007612 2S: MOV      R4,2DHSCR      ;ADDRESS MEMORY LOCATION
964 001364 017703 007614 MOV      2DHBA,R3        ;READ CONTENTS OF MEMORY
965 001370 020203 CMP      R2,R3           ;WAS MEMORY LOCATION LOADED
966                                     ;WITH ITS ADDRESS
967 001372 001401 BEQ     3S
968 001374 104001 HLT     1
969 001376 005204 INC      R4              ;BUS ADDRESS MEMORY ERROR
970 001400 062702 010421 3S: ADD      #10421,R2       ;ADVANCE TO NEXT LOCATION
971 001404 005300 DEC      R0
972 001406 001364 BNE     2S
973 001410 104400 4S: SCOPE          ;CONTINUE IF NOT DONE
974
975
976
977
978
979
980
981
982 001412 012767 000340 176356 T2: MOV      #340,PS           ;DISABLE ALL INTERRUPTS
983 001420 012767 000100 007616 MOV      #100,ICOUNT      ;SET UP FOR 100 ITERATIONS
984 001426 012767 001526 007604 MOV      #48,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
985 001434 012700 000020 MOV      #20,R0          ;SET UP TO ADDRESS 20 (OCTAL)
986                                     ;LOCATIONS IN THE BYTE COUNT MEMORY
987 001440 005004                                     ;START AT ADDRESS 0
988 001442 005002
989 001444 010477 007526 1S: MOV      R4,2DHSCR      ;SELECT ADDRESS IN BYTE COUNT
990                                     ;MEMORY TO BE ADDRESSED
991 001450 010277 007532 MOV      R2,2DHBC        ;LOAD MEMORY LOCATION
  
```



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992	001454	062702	010421		ADD	#10421,R2	;WITH ITS ADDRESS	
993	001460	005204			INC	R4	;ADVANCE TO NEXT ADDRESS	
994	001462	005300			DEC	R0		
995	001464	001367			BNE	1\$	;CONTINUE IF NOT DONE	
996	001466	012700	000020		MOV	#20,R0	;SET UP TO CHECK	
997							;EACH MEMORY ADDRESS	
998	001472	005004			CLR	R4	;START AT ADDRESS 0	
999	001474	005002			CLR	R2		
1000	001476	010477	007474	2\$:	MOV	R4,2DHSCR	;ADDRESS MEMORY LOCATION	
1001	001502	017703	007500		MOV	2DHBC,R3	;READ CONTENTS OF MEMORY	
1002	001506	020203			CMP	R2,R3	;WAS MEMORY LOCATION LOADED	
1003							;WITH ITS ADDRESS	
1004	001510	001401			BEG	3\$		
1005	001512	104002			HLT	2	;BYTE COUNT MEMORY ERROR	
1006	001514	005204		3\$:	INC	R4	;ADVANCE TO NEXT LOCATION	
1007	001516	062702	010421		ADD	#10421,R2		
1008	001522	005300			DEC	R0		
1009	001524	001364			BNE	2\$	;CONTINUE IF NOT DONE	
1010	001526	104400		4\$:	SCOPE			
1011								
1012							;BUS ADDRESS MEMORY DATA TEST	
1013							;VERIFY THAT ADDRESS 0 OF BUS ADDRESS MEMORY	
1014							;CAN BE SET TO 177777 AND CLEARED TO 0	
1015								
1016	001530	012767	000340	176240	T3:	MOV	#340,PS	;DISABLE ALL INTERRUPTS
1017	001536	012767	000100	007500		MOV	#100,ICOUNT	;SET UP FOR 100 ITERATIONS
1018	001544	012767	001624	007466		MOV	#2\$,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
1019	001552	012705	177777			MOV	#177777,R5	;EXPECTED RESULT=177777
1020	001556	012777	000000	007412		MOV	#0,2DHSCR	;SELECT LOCATION 0
1021							;OF BUS ADDRESS MEMORY	
1022	001564	012777	177777	007412		MOV	#177777,2DHBA	;WRITE 177777 INTO MEMORY
1023	001572	017704	007406			MOV	2DHBA,R4	;READ CONTENTS OF MEMORY LOCATION
1024	001576	020504				CMP	R5,R4	;COMPARE EXPECTED AND
1025	001600	001401				BEG	1\$	;RECEIVED MEMORY CONTENTS
1026	001602	104003				HLT	3	;BUS ADDRESS MEMORY ERROR
1027	001604	005005			1\$:	CLR	R5	;EXPECTED RESULT AFTER CLEAR=0
1028	001606	042777	177777	007370		BIC	#177777,2DHBA	;CLEAR MEMORY LOCATION
1029	001614	017704	007364			MOV	2DHBA,R4	;READ CONTENTS OF BUS ADDRESS
1030							;MEMORY ADDRESS 0	
1031	001620	001401				BEG	2\$	
1032	001622	104003				HLT	3	;BUS ADDRESS MEMORY ERROR
1033							;ADDRESS 0 NOT 0, ERROR	
1034	001624	104400		2\$:	SCOPE			
1035								
1036							;BUS ADDRESS MEMORY DATA TEST	
1037							;VERIFY THAT ADDRESS 1 OF BUS ADDRESS MEMORY	
1038							;CAN BE SET TO 177777 AND CLEARED TO 0	
1039								
1040	001626	012767	000340	176142	T4:	MOV	#340,PS	;DISABLE ALL INTERRUPTS
1041	001634	012767	000100	007402		MOV	#100,ICOUNT	;SET UP FOR 100 ITERATIONS
1042	001642	012767	001722	007370		MOV	#2\$,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
1043	001650	012705	177777			MOV	#177777,R5	;EXPECTED RESULT=177777
1044	001654	012777	000001	007314		MOV	#1,2DHSCR	;SELECT LOCATION 1
1045							;OF BUS ADDRESS MEMORY	
1046	001662	012777	177777	007314		MOV	#177777,2DHBA	;WRITE 177777 INTO MEMORY
1047	001670	017704	007310			MOV	2DHBA,R4	;READ CONTENTS OF MEMORY LOCATION

1048	001674	020504				CMP	R5,R4		:COMPARE EXPECTED AND
1049	001676	001401				BEQ	1\$		:RECEIVED MEMORY CONTENTS
1050	001730	104003				HLT	3		:BUS ADDRESS MEMORY ERROR
1051	001702	005005			1\$:	CLR	R5		:EXPECTED RESULT AFTER CLEAR=0
1052	001704	042777	177777	007272		BIC	#177777,2DHBA		:CLEAR MEMORY LOCATION
1053	001712	017704	007266			MOV	2DHBA,R4		:READ CONTENTS OF BUS ADDRESS
1054									:MEMORY ADDRESS 1
1055	001716	001401				BEQ	2\$		:BUS ADDRESS MEMORY ERROR
1056	001720	104003				HLT	3		:ADDRESS 1 NOT 0, ERROR
1057									
1058	001722	104400			2\$:	SCOPE			
1059									
1060									:BUS ADDRESS MEMORY DATA TEST
1061									:VERIFY THAT ADDRESS 2 OF BUS ADDRESS MEMORY
1062									:CAN BE SET TO 177777 AND CLEARED TO 0
1063									
1064	001724	012767	000340	176044	T\$:	MOV	#340,PS		:DISABLE ALL INTERRUPTS
1065	001732	012767	000100	007304		MOV	#100,ICOUNT		:SET UP FOR 100 ITERATIONS
1066	001740	012767	002020	007272		MOV	#2\$,ESCAPE		:SET UP TO ESCAPE TO NEXT TEST
1067	001746	012705	177777			MOV	#177777,R5		:EXPECTED RESULT=177777
1068	001752	012777	000002	007216		MOV	#2,2DHSCR		:SELECT LOCATION 2
1069									:OF BUS ADDRESS MEMORY
1070	001760	012777	177777	007216		MOV	#177777,2DHBA		:WRITE 177777 INTO MEMORY
1071	001766	017704	007212			MOV	2DHBA,R4		:READ CONTENTS OF MEMORY LOCATION
1072	001772	020504				CMP	R5,R4		:COMPARE EXPECTED AND
1073	001774	001401				BEQ	1\$		:RECEIVED MEMORY CONTENTS
1074	001776	104003				HLT	3		:BUS ADDRESS MEMORY ERROR
1075	002000	005005			1\$:	CLR	R5		:EXPECTED RESULT AFTER CLEAR=0
1076	002002	042777	177777	007174		BIC	#177777,2DHBA		:CLEAR MEMORY LOCATION
1077	002010	017704	007170			MOV	2DHBA,R4		:READ CONTENTS OF BUS ADDRESS
1078									:MEMORY ADDRESS 2
1079	002014	001401				BEQ	2\$		:BUS ADDRESS MEMORY ERROR
1080	002016	104003				HLT	3		:ADDRESS 2 NOT 0, ERROR
1081									
1082	002020	104400			2\$:	SCOPE			
1083									
1084									:BUS ADDRESS MEMORY DATA TEST
1085									:VERIFY THAT ADDRESS 3 OF BUS ADDRESS MEMORY
1086									:CAN BE SET TO 177777 AND CLEARED TO 0
1087									
1088	002022	012767	000340	175746	T6:	MOV	#340,PS		:DISABLE ALL INTERRUPTS
1089	002030	012767	000100	007206		MOV	#100,ICOUNT		:SET UP FOR 100 ITERATIONS
1090	002036	012767	002116	007174		MOV	#2\$,ESCAPE		:SET UP TO ESCAPE TO NEXT TEST
1091	002044	012705	177777			MOV	#177777,R5		:EXPECTED RESULT=177777
1092	002050	012777	000003	007120		MOV	#3,2DHSCR		:SELECT LOCATION 3
1093									:OF BUS ADDRESS MEMORY
1094	002056	012777	177777	007120		MOV	#177777,2DHBA		:WRITE 177777 INTO MEMORY
1095	002064	017704	007114			MOV	2DHBA,R4		:READ CONTENTS OF MEMORY LOCATION
1096	002070	020504				CMP	R5,R4		:COMPARE EXPECTED AND
1097	002072	001401				BEQ	1\$		:RECEIVED MEMORY CONTENTS
1098	002074	104003				HLT	3		:BUS ADDRESS MEMORY ERROR
1099	002076	005005			1\$:	CLR	R5		:EXPECTED RESULT AFTER CLEAR=0
1100	002100	042777	177777	007076		BIC	#177777,2DHBA		:CLEAR MEMORY LOCATION
1101	002106	017704	007072			MOV	2DHBA,R4		:READ CONTENTS OF BUS ADDRESS
1102									:MEMORY ADDRESS 3
1103	002112	001401				BEQ	2\$		



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1104 002114 104003          HLT      3          ;BUS ADDRESS MEMORY ERROR
1105                                     ;ADDRESS 3 NOT 0, ERROR
1106 002116 104400          2S:     SCOPE
1107
1108                                     ;BUS ADDRESS MEMORY DATA TEST
1109                                     ;VERIFY THAT ADDRESS 4 OF BUS ADDRESS MEMORY
1110                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1111
1112 002120 012767 000340 175650 T7:     MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1113 002126 012767 000100 007110      MOV      #100,ICOUNT     ;SET UP FOR 100 ITERATIONS
1114 002134 012767 002214 007076      MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1115 002142 012705 177777          MOV      #177777,R5     ;EXPECTED RESULT=177777
1116 002146 012777 000004 007022      MOV      #4,ADHSCR      ;SELECT LOCATION 4
1117                                     ;OF BUS ADDRESS MEMORY
1118 002154 012777 177777 007022      MOV      #177777,ADHBA  ;WRITE 177777 INTO MEMORY
1119 002162 017704 007016          MOV      ADHBA,R4       ;READ CONTENTS OF MEMORY LOCATION
1120 002166 020504          CMP      R5,R4         ;COMPARE EXPECTED AND
1121 002170 001401          BEQ      1S           ;RECEIVED MEMORY CONTENTS
1122 002172 104003          HLT      3           ;BUS ADDRESS MEMORY ERROR
1123 002174 005005          1S:     CLR      R5           ;EXPECTED RESULT AFTER CLEAR=0
1124 002176 042777 177777 007000      BIC      #177777,ADHBA ;CLEAR MEMORY LOCATION
1125 002204 017704 006774          MOV      ADHBA,R4       ;READ CONTENTS OF BUS ADDRESS
1126                                     ;MEMORY ADDRESS 4
1127 002210 001401          BEQ      2S           ;BUS ADDRESS MEMORY ERROR
1128 002212 104003          HLT      3           ;ADDRESS 4 NOT 0, ERROR
1129
1130 002214 104400          2S:     SCOPE
1131
1132                                     ;BUS ADDRESS MEMORY DATA TEST
1133                                     ;VERIFY THAT ADDRESS 5 OF BUS ADDRESS MEMORY
1134                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1135
1136 002216 012767 000340 175552 T10:    MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1137 002224 012767 000100 007012      MOV      #100,ICOUNT     ;SET UP FOR 100 ITERATIONS
1138 002232 012767 002312 007000      MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1139 002240 012705 177777          MOV      #177777,R5     ;EXPECTED RESULT=177777
1140 002244 012777 000005 006724      MOV      #5,ADHSCR      ;SELECT LOCATION 5
1141                                     ;OF BUS ADDRESS MEMORY
1142 002252 012777 177777 006724      MOV      #177777,ADHBA  ;WRITE 177777 INTO MEMORY
1143 002260 017704 006720          MOV      ADHBA,R4       ;READ CONTENTS OF MEMORY LOCATION
1144 002264 020504          CMP      R5,R4         ;COMPARE EXPECTED AND
1145 002266 001401          BEQ      1S           ;RECEIVED MEMORY CONTENTS
1146 002270 104003          HLT      3           ;BUS ADDRESS MEMORY ERROR
1147 002272 005005          1S:     CLR      R5           ;EXPECTED RESULT AFTER CLEAR=0
1148 002274 042777 177777 006702      BIC      #177777,ADHBA ;CLEAR MEMORY LOCATION
1149 002302 017704 006676          MOV      ADHBA,R4       ;READ CONTENTS OF BUS ADDRESS
1150                                     ;MEMORY ADDRESS 5
1151 002306 001401          BEQ      2S           ;BUS ADDRESS MEMORY ERROR
1152 002310 104003          HLT      3           ;ADDRESS 5 NOT 0, ERROR
1153
1154 002312 104400          2S:     SCOPE
1155
1156                                     ;BUS ADDRESS MEMORY DATA TEST
1157                                     ;VERIFY THAT ADDRESS 6 OF BUS ADDRESS MEMORY
1158                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1159

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1160	002314	012767	000340	175454	T11:	MOV	#340,PS	:DISABLE ALL INTERRUPTS
1161	002322	012767	000100	006714		MOV	#100,ICOUNT	:SET UP FOR 100 ITERATIONS
1162	002330	012767	002410	006702		MOV	#25,ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
1163	002336	012705	177777			MOV	#177777,R5	:EXPECTED RESULT=177777
1164	002342	012777	000006	006626		MOV	#6,ADHSCR	:SELECT LOCATION 6
1165								:OF BUS ADDRESS MEMORY
1166	002350	012777	177777	006626		MOV	#177777,ADHBA	:WRITE 177777 INTO MEMORY
1167	002356	017704	006622			MOV	ADHBA,R4	:READ CONTENTS OF MEMORY LOCATION
1168	002362	020504				CMP	R5,R4	:COMPARE EXPECTED AND
1169	002364	001401				BEQ	15	:RECEIVED MEMORY CONTENTS
1170	002366	104003				HLT	3	:BUS ADDRESS MEMORY ERROR
1171	002370	005005			15:	CLR	R5	:EXPECTED RESULT AFTER CLEAR=0
1172	002372	042777	177777	006604		BIC	#177777,ADHBA	:CLEAR MEMORY LOCATION
1173	002400	017704	006600			MOV	ADHBA,R4	:READ CONTENTS OF BUS ADDRESS
1174								:MEMORY ADDRESS 6
1175	002404	001401				BEQ	25	
1176	002406	104003				HLT	3	:BUS ADDRESS MEMORY ERROR
1177								:ADDRESS 6 NOT 0, ERROR
1178	002410	104400			25:	SCOPE		
1179								
1180								:BUS ADDRESS MEMORY DATA TEST
1181								:VERIFY THAT ADDRESS 7 OF BUS ADDRESS MEMORY
1182								:CAN BE SET TO 177777 AND CLEARED TO 0
1183								
1184	002412	012767	000340	175356	T12:	MOV	#340,PS	:DISABLE ALL INTERRUPTS
1185	002420	012767	000100	006616		MOV	#100,ICOUNT	:SET UP FOR 100 ITERATIONS
1186	002426	012767	002506	006604		MOV	#25,ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
1187	002434	012705	177777			MOV	#177777,R5	:EXPECTED RESULT=177777
1188	002440	012777	000007	006530		MOV	#7,ADHSCR	:SELECT LOCATION 7
1189								:OF BUS ADDRESS MEMORY
1190	002446	012777	177777	006530		MOV	#177777,ADHBA	:WRITE 177777 INTO MEMORY
1191	002454	017704	006524			MOV	ADHBA,R4	:READ CONTENTS OF MEMORY LOCATION
1192	002460	020504				CMP	R5,R4	:COMPARE EXPECTED AND
1193	002462	001401				BEQ	15	:RECEIVED MEMORY CONTENTS
1194	002464	104003				HLT	3	:BUS ADDRESS MEMORY ERROR
1195	002466	005005			15:	CLR	R5	:EXPECTED RESULT AFTER CLEAR=0
1196	002470	042777	177777	006506		BIC	#177777,ADHBA	:CLEAR MEMORY LOCATION
1197	002476	017704	006502			MOV	ADHBA,R4	:READ CONTENTS OF BUS ADDRESS
1198								:MEMORY ADDRESS 7
1199	002502	001401				BEQ	25	
1200	002504	104003				HLT	3	:BUS ADDRESS MEMORY ERROR
1201								:ADDRESS 7 NOT 0, ERROR
1202	002506	104400			25:	SCOPE		
1203								
1204								:BUS ADDRESS MEMORY DATA TEST
1205								:VERIFY THAT ADDRESS 10 OF BUS ADDRESS MEMORY
1206								:CAN BE SET TO 177777 AND CLEARED TO 0
1207								
1208	002510	012767	000340	175260	T13:	MOV	#340,PS	:DISABLE ALL INTERRUPTS
1209	002516	012767	000100	006520		MOV	#100,ICOUNT	:SET UP FOR 100 ITERATIONS
1210	002524	012767	002604	006506		MOV	#25,ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
1211	002532	012705	177777			MOV	#177777,R5	:EXPECTED RESULT=177777
1212	002536	012777	000010	006432		MOV	#10,ADHSCR	:SELECT LOCATION 10
1213								:OF BUS ADDRESS MEMORY
1214	002544	012777	177777	006432		MOV	#177777,ADHBA	:WRITE 177777 INTO MEMORY
1215	002552	017704	006426			MOV	ADHBA,R4	:READ CONTENTS OF MEMORY LOCATION



1216	002556	020504				CMP	R5,R4		:COMPARE EXPECTED AND
1217	002560	001401				BEQ	15		:RECEIVED MEMORY CONTENTS
1218	002562	104003				HLT	3		:BUS ADDRESS MEMORY ERROR
1219	002564	005005			15:	CLR	R5		:EXPECTED RESULT AFTER CLEAR=0
1220	002566	042777	177777	006410		BIC	#177777,20HBA		:CLEAR MEMORY LOCATION
1221	002574	017704	006404			MOV	20HBA,R4		:READ CONTENTS OF BUS ADDRESS
1222									:MEMORY ADDRESS 10
1223	002600	001401				BEQ	25		
1224	002602	104003				HLT	3		:BUS ADDRESS MEMORY ERROR
1225									:ADDRESS 10 NOT 0, ERROR
1226	002604	104400			25:	SCOPE			
1227									
1228									:BUS ADDRESS MEMORY DATA TEST
1229									:VERIFY THAT ADDRESS 11 OF BUS ADDRESS MEMORY
1230									:CAN BE SET TO 177777 AND CLEARED TO 0
1231									
1232	002606	012767	000340	175162	T14:	MOV	#340,PS		:DISABLE ALL INTERRUPTS
1233	002614	012767	000100	006422		MOV	#100,ICOUNT		:SET UP FOR 100 ITERATIONS
1234	002622	012767	002702	006410		MOV	#25,ESCAPE		:SET UP TO ESCAPE TO NEXT TEST
1235	002630	012705	177777			MOV	#177777,R5		:EXPECTED RESULT=177777
1236	002634	012777	000011	006334		MOV	#11,20HSCR		:SELECT LOCATION 11
1237									:OF BUS ADDRESS MEMORY
1238	002642	012777	177777	006334		MOV	#177777,20HBA		:WRITE 177777 INTO MEMORY
1239	002650	017704	006330			MOV	20HBA,R4		:READ CONTENTS OF MEMORY LOCATION
1240	002654	020504				CMP	R5,R4		:COMPARE EXPECTED AND
1241	002656	001401				BEQ	15		:RECEIVED MEMORY CONTENTS
1242	002660	104003				HLT	3		:BUS ADDRESS MEMORY ERROR
1243	002662	005005			15:	CLR	R5		:EXPECTED RESULT AFTER CLEAR=0
1244	002664	042777	177777	006312		BIC	#177777,20HBA		:CLEAR MEMORY LOCATION
1245	002672	017704	006306			MOV	20HBA,R4		:READ CONTENTS OF BUS ADDRESS
1246									:MEMORY ADDRESS 11
1247	002676	001401				BEQ	25		
1248	002700	104003				HLT	3		:BUS ADDRESS MEMORY ERROR
1249									:ADDRESS 11 NOT 0, ERROR
1250	002702	104400			25:	SCOPE			
1251									
1252									:BUS ADDRESS MEMORY DATA TEST
1253									:VERIFY THAT ADDRESS 12 OF BUS ADDRESS MEMORY
1254									:CAN BE SET TO 177777 AND CLEARED TO 0
1255									
1256	002704	012767	000340	175064	T15:	MOV	#340,PS		:DISABLE ALL INTERRUPTS
1257	002712	012767	000100	006324		MOV	#100,ICOUNT		:SET UP FOR 100 ITERATIONS
1258	012720	012767	003000	006312		MOV	#25,ESCAPE		:SET UP TO ESCAPE TO NEXT TEST
1259	002726	012705	177777			MOV	#177777,R5		:EXPECTED RESULT=177777
1260	002732	012777	000012	006236		MOV	#12,20HSCR		:SELECT LOCATION 12
1261									:OF BUS ADDRESS MEMORY
1262	002740	012777	177777	006236		MOV	#177777,20HBA		:WRITE 177777 INTO MEMORY
1263	002746	017704	006232			MOV	20HBA,R4		:READ CONTENTS OF MEMORY LOCATION
1264	002752	020504				CMP	R5,R4		:COMPARE EXPECTED AND
1265	002754	001401				BEQ	15		:RECEIVED MEMORY CONTENTS
1266	002756	104003				HLT	3		:BUS ADDRESS MEMORY ERROR
1267	002760	005005			15:	CLR	R5		:EXPECTED RESULT AFTER CLEAR=0
1268	002762	042777	177777	006214		BIC	#177777,20HBA		:CLEAR MEMORY LOCATION
1269	002770	017704	006210			MOV	20HBA,R4		:READ CONTENTS OF BUS ADDRESS
1270									:MEMORY ADDRESS 12
1271	002774	001401				BEQ	25		



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1272 002776 104003          HLT      3          ;BUS ADDRESS MEMORY ERROR
1273                                     ;ADDRESS 12 NOT 0, ERROR
1274 003000 104400          2S:     SCOPE
1275                                     ;BUS ADDRESS MEMORY DATA TEST
1276                                     ;VERIFY THAT ADDRESS 13 OF BUS ADDRESS MEMORY
1277                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1278
1279
1280 003002 012767 000340 174766 T16:     MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1281 003010 012767 000100 006226     MOV      #100,ICOUNT    ;SET UP FOR 100 ITERATIONS
1282 003016 012767 003076 006214     MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1283 003024 012705 177777             MOV      #177777,RS     ;EXPECTED RESULT=177777
1284 003030 012777 000013 006140     MOV      #13,ZDHSCR     ;SELECT LOCATION 13
1285                                     ;OF BUS ADDRESS MEMORY
1286 003036 012777 177777 006140     MOV      #177777,ZHBA   ;WRITE 177777 INTO MEMORY
1287 003044 017704 006134             MOV      ZHBA,R4        ;READ CONTENTS OF MEMORY LOCATION
1288 003050 020504             CMP      R5,R4         ;COMPARE EXPECTED AND
1289 003052 001401             BEQ     1S             ;RECEIVED MEMORY CONTENTS
1290 003054 104003             HLT     3              ;BUS ADDRESS MEMORY ERROR
1291 003056 005005             1S:     CLR      RS          ;EXPECTED RESULT AFTER CLEAR=0
1292 003060 042777 177777 006116     BIC     #177777,ZHBA   ;CLEAR MEMORY LOCATION
1293 003066 017704 006112             MOV      ZHBA,R4        ;READ CONTENTS OF BUS ADDRESS
1294                                     ;MEMORY ADDRESS 13
1295 003072 001401             BEQ     2S             ;BUS ADDRESS MEMORY ERROR
1296 003074 104003             HLT     3              ;ADDRESS 13 NOT 0, ERROR
1297
1298 003076 104400          2S:     SCOPE
1299
1300                                     ;BUS ADDRESS MEMORY DATA TEST
1301                                     ;VERIFY THAT ADDRESS 14 OF BUS ADDRESS MEMORY
1302                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1303
1304 003100 012767 000340 174670 T17:     MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1305 003106 012767 000100 006130     MOV      #100,ICOUNT    ;SET UP FOR 100 ITERATIONS
1306 003114 012767 003174 006116     MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1307 003122 012705 177777             MOV      #177777,RS     ;EXPECTED RESULT=177777
1308 003126 012777 000014 006042     MOV      #14,ZDHSCR     ;SELECT LOCATION 14
1309                                     ;OF BUS ADDRESS MEMORY
1310 003134 012777 177777 006042     MOV      #177777,ZHBA   ;WRITE 177777 INTO MEMORY
1311 003142 017704 006036             MOV      ZHBA,R4        ;READ CONTENTS OF MEMORY LOCATION
1312 003146 020504             CMP      R5,R4         ;COMPARE EXPECTED AND
1313 003150 001401             BEQ     1S             ;RECEIVED MEMORY CONTENTS
1314 003152 104003             HLT     3              ;BUS ADDRESS MEMORY ERROR
1315 003154 005005             1S:     CLR      RS          ;EXPECTED RESULT AFTER CLEAR=0
1316 003156 042777 177777 006020     BIC     #177777,ZHBA   ;CLEAR MEMORY LOCATION
1317 003164 017704 006014             MOV      ZHBA,R4        ;READ CONTENTS OF BUS ADDRESS
1318                                     ;MEMORY ADDRESS 14
1319 003170 001401             BEQ     2S             ;BUS ADDRESS MEMORY ERROR
1320 003172 104003             HLT     3              ;ADDRESS 14 NOT 0, ERROR
1321
1322 003174 104400          2S:     SCOPE
1323
1324                                     ;BUS ADDRESS MEMORY DATA TEST
1325                                     ;VERIFY THAT ADDRESS 15 OF BUS ADDRESS MEMORY
1326                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1327

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1328 003176 012767 000340 174572 T20:  MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1329 003204 012767 000100 006037  MOV      #100,ICOUNT    ;SET UP FOR 100 ITERATIONS
1330 003212 012767 003272 006020  MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1331 003220 012705 177777  MOV      #177777,RS     ;EXPECTED RESULT=177777
1332 003224 012777 000015 005744  MOV      #15,ZDHSCR     ;SELECT LOCATION 15
1333                                     ;OF BUS ADDRESS MEMORY
1334 003232 012777 177777 005744  MOV      #177777,ZDHBA  ;WRITE 177777 INTO MEMORY
1335 003240 017704 005740  MOV      ZDHBA,R4       ;READ CONTENTS OF MEMORY LOCATION
1336 003244 020504  CMP      R5,R4         ;COMPARE EXPECTED AND
1337 003246 001401  BEQ     15             ;RECEIVED MEMORY CONTENTS
1338 003250 104003  HLT     3             ;BUS ADDRESS MEMORY ERROR
1339 003252 005005  CLR     RS            ;EXPECTED RESULT AFTER CLEAR=0
1340 003254 042777 177777 005722 1S:   BIC     #177777,ZDHBA  ;CLEAR MEMORY LOCATION
1341 003262 017704 005716  MOV      ZDHBA,R4     ;READ CONTENTS OF BUS ADDRESS
1342                                     ;MEMORY ADDRESS 15
1343 003266 001401  BEQ     25
1344 003270 104003  HLT     3             ;BUS ADDRESS MEMORY ERROR
1345                                     ;ADDRESS 15 NOT 0, ERROR
1346 003272 104400 2S:   SCOPE
1347                                     ;BUS ADDRESS MEMORY DATA TEST
1348                                     ;VERIFY THAT ADDRESS 16 OF BUS ADDRESS MEMORY
1349                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1350
1351 003274 012767 000340 174474 T21:  MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1352 003302 012767 000100 005734  MOV      #100,ICOUNT    ;SET UP FOR 100 ITERATIONS
1353 003310 012767 003370 005722  MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1354 003316 012705 177777  MOV      #177777,RS     ;EXPECTED RESULT=177777
1355 003322 012777 000016 005646  MOV      #16,ZDHSCR     ;SELECT LOCATION 16
1356                                     ;OF BUS ADDRESS MEMORY
1357 003330 012777 177777 005646  MOV      #177777,ZDHBA  ;WRITE 177777 INTO MEMORY
1358 003336 017704 005642  MOV      ZDHBA,R4       ;READ CONTENTS OF MEMORY LOCATION
1359 003342 020504  CMP      R5,R4         ;COMPARE EXPECTED AND
1360 003344 001401  BEQ     15             ;RECEIVED MEMORY CONTENTS
1361 003346 104003  HLT     3             ;BUS ADDRESS MEMORY ERROR
1362 003350 005005  CLR     RS            ;EXPECTED RESULT AFTER CLEAR=0
1363 003352 042777 177777 005624 1S:   BIC     #177777,ZDHBA  ;CLEAR MEMORY LOCATION
1364 003360 017704 005620  MOV      ZDHBA,R4     ;READ CONTENTS OF BUS ADDRESS
1365                                     ;MEMORY ADDRESS 16
1366 003364 001401  BEQ     25
1367 003366 104003  HLT     3             ;BUS ADDRESS MEMORY ERROR
1368                                     ;ADDRESS 16 NOT 0, ERROR
1369 003370 104400 2S:   SCOPE
1370                                     ;BUS ADDRESS MEMORY DATA TEST
1371                                     ;VERIFY THAT ADDRESS 17 OF BUS ADDRESS MEMORY
1372                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1373
1374 003372 012767 000340 174376 T22:  MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1375 003400 012767 000100 005636  MOV      #100,ICOUNT    ;SET UP FOR 100 ITERATIONS
1376 003406 012767 003466 005624  MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1377 003414 012705 177777  MOV      #177777,RS     ;EXPECTED RESULT=177777
1378 003420 012777 000017 005550  MOV      #17,ZDHSCR     ;SELECT LOCATION 17
1379                                     ;OF BUS ADDRESS MEMORY
1380 003426 012777 177777 005550  MOV      #177777,ZDHBA  ;WRITE 177777 INTO MEMORY
1381 003434 017704 005544  MOV      ZDHBA,R4       ;READ CONTENTS OF MEMORY LOCATION

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# E03

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1384	003440	030504					CMP	R5,R4		:COMPARE EXPECTED AND
1385	003442	001401					BEQ	15		:RECEIVED MEMORY CONTENTS
1386	003444	104003					HLT	3		:BUS ADDRESS MEMORY ERROR
1387	003446	005005					CLR	R5		:EXPECTED RESULT AFTER CLEAR=0
1388	003450	042777	177777	005526		15:	BIC	#177777,2DHBA		:CLEAR MEMORY LOCATION
1389	003456	017704	005522				MOV	2DHBA,R4		:READ CONTENTS OF BUS ADDRESS
1390										:MEMORY ADDRESS 17
1391	003462	001401					BEQ	25		
1392	003464	104003					HLT	3		:BUS ADDRESS MEMORY ERROR
1393										:ADDRESS 17 NOT 0, ERROR
1394	003466	104400				25:	SCOPE			
1395										
1396										:BYTE COUNT MEMORY DATA TEST
1397										:VERIFY THAT ADDRESS 0 OF BYTE COUNT MEMORY
1398										:CAN BE SET TO 177777 AND CLEARED TO 0
1399										
1400	003470	012767	000340	174300		T2:	MOV	#340,PS		:DISABLE ALL INTERRUPTS
1401	003476	012767	000100	005540			MOV	#100,ICOUNT		:SET UP FOR 100 ITERATIONS
1402	003504	012767	003564	005526			MOV	#25,ESCAPE		:SET UP TO ESCAPE TO NEXT TEST
1403	003512	012705	177777				MOV	#177777,R5		:EXPECTED RESULT=177777
1404	003516	012777	000000	005452			MOV	#0,2DHSCR		:SELECT LOCATION 0
1405										:OF BYTE COUNT MEMORY
1406	003524	012777	177777	005454			MOV	#177777,2DHBC		:WRITE 177777 INTO MEMORY
1407	003532	017704	005450				MOV	2DHBC,R4		:READ CONTENTS OF MEMORY LOCATION
1408	003536	020504					CMP	R5,R4		:COMPARE EXPECTED AND
1409	003540	001401					BEQ	15		:RECEIVED MEMORY CONTENTS
1410	003542	104004					HLT	4		:BYTE COUNT MEMORY ERROR
1411	003544	005005				15:	CLR	R5		:EXPECTED RESULT AFTER CLEAR=0
1412	003546	042777	177777	005432			BIC	#177777,2DHBC		:CLEAR MEMORY LOCATION
1413	003554	017704	005426				MOV	2DHBC,R4		:READ CONTENTS OF BYTE COUNT
1414										:MEMORY ADDRESS 0
1415	003560	001401					BEQ	25		
1416	003562	104004					HLT	4		:BYTE COUNT MEMORY ERROR
1417										:ADDRESS 0 NOT 0, ERROR
1418	003564	104400				25:	SCOPE			
1419										
1420										:BYTE COUNT MEMORY DATA TEST
1421										:VERIFY THAT ADDRESS 1 OF BYTE COUNT MEMORY
1422										:CAN BE SET TO 177777 AND CLEARED TO 0
1423										
1424	003566	012767	000340	174202		T24:	MOV	#340,PS		:DISABLE ALL INTERRUPTS
1425	003574	012767	000100	005442			MOV	#100,ICOUNT		:SET UP FOR 100 ITERATIONS
1426	003602	012767	003662	005430			MOV	#25,ESCAPE		:SET UP TO ESCAPE TO NEXT TEST
1427	003610	012705	177777				MOV	#177777,R5		:EXPECTED RESULT=177777
1428	003614	012777	000001	005354			MOV	#1,2DHSCR		:SELECT LOCATION 1
1429										:OF BYTE COUNT MEMORY
1430	003622	012777	177777	005356			MOV	#177777,2DHBC		:WRITE 177777 INTO MEMORY
1431	003630	017704	005352				MOV	2DHBC,R4		:READ CONTENTS OF MEMORY LOCATION
1432	003634	020504					CMP	R5,R4		:COMPARE EXPECTED AND
1433	003636	001401					BEQ	15		:RECEIVED MEMORY CONTENTS
1434	003640	104004					HLT	4		:BYTE COUNT MEMORY ERROR
1435	003642	005005				15:	CLR	R5		:EXPECTED RESULT AFTER CLEAR=0
1436	003644	042777	177777	005334			BIC	#177777,2DHBC		:CLEAR MEMORY LOCATION
1437	003652	017704	005330				MOV	2DHBC,R4		:READ CONTENTS OF BYTE COUNT
1438										:MEMORY ADDRESS 1
1439	003656	001401					BEQ	25		



# F03

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1440 003660 104004          HLT      4          ;BYTE COUNT MEMORY ERROR
1441                                     ;ADDRESS 1 NOT 0, ERROR
1442 003662 104400          2S:    SCOPE
1443
1444                                     ;BYTE COUNT MEMORY DATA TEST
1445                                     ;VERIFY THAT ADDRESS 2 OF BYTE COUNT MEMORY
1446                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1447
1448 003664 012767 000340 174104 T25:    MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1449 003672 012767 000100 005344      MOV      #100,ICOUNT     ;SET UP FOR 100 ITERATIONS
1450 003700 012767 003760 005332      MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1451 003706 012705 177777      MOV      #177777,R5     ;EXPECTED RESULT=177777
1452 003712 012777 000002 005256      MOV      #2,2DHSCR     ;SELECT LOCATION 2
1453                                     ;OF BYTE COUNT MEMORY
1454 003720 012777 177777 005260      MOV      #177777,2DHBC  ;WRITE 177777 INTO MEMORY
1455 003726 017704 005254      MOV      2DHBC,R4      ;READ CONTENTS OF MEMORY LOCATION
1456 003732 020504      CMP      R5,R4         ;COMPARE EXPECTED AND
1457 003734 001401      BEQ     1S            ;RECEIVED MEMORY CONTENTS
1458 003736 104004          HLT      4            ;BYTE COUNT MEMORY ERROR
1459 003740 005005          1S:    CLR      R5          ;EXPECTED RESULT AFTER CLEAR=0
1460 003742 042777 177777 005236      BIC     #177777,2DHBC  ;CLEAR MEMORY LOCATION
1461 003750 017704 005232      MOV     2DHBC,R4      ;READ CONTENTS OF BYTE COUNT
1462                                     ;MEMORY ADDRESS 2
1463 003754 001401      BEQ     2S            ;
1464 003756 104004          HLT      4            ;BYTE COUNT MEMORY ERROR
1465                                     ;ADDRESS 2 NOT 0, ERROR
1466 003760 104400          2S:    SCOPE
1467
1468                                     ;BYTE COUNT MEMORY DATA TEST
1469                                     ;VERIFY THAT ADDRESS 3 OF BYTE COUNT MEMORY
1470                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1471
1472 003762 012767 000340 174006 T26:    MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1473 003770 012767 000100 005246      MOV      #100,ICOUNT     ;SET UP FOR 100 ITERATIONS
1474 003776 012767 004056 005234      MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1475 004004 012705 177777      MOV      #177777,R5     ;EXPECTED RESULT=177777
1476 004010 012777 000003 005160      MOV      #3,2DHSCR     ;SELECT LOCATION 3
1477                                     ;OF BYTE COUNT MEMORY
1478 004016 012777 177777 005162      MOV      #177777,2DHBC  ;WRITE 177777 INTO MEMORY
1479 004024 017704 005156      MOV      2DHBC,R4      ;READ CONTENTS OF MEMORY LOCATION
1480 004030 020504      CMP      R5,R4         ;COMPARE EXPECTED AND
1481 004032 001401      BEQ     1S            ;RECEIVED MEMORY CONTENTS
1482 004034 104004          HLT      4            ;BYTE COUNT MEMORY ERROR
1483 004036 005005          1S:    CLR      R5          ;EXPECTED RESULT AFTER CLEAR=0
1484 004040 042777 177777 005140      BIC     #177777,2DHBC  ;CLEAR MEMORY LOCATION
1485 004046 017704 005134      MOV     2DHBC,R4      ;READ CONTENTS OF BYTE COUNT
1486                                     ;MEMORY ADDRESS 3
1487 004052 001401      BEQ     2S            ;
1488 004054 104004          HLT      4            ;BYTE COUNT MEMORY ERROR
1489                                     ;ADDRESS 3 NOT 0, ERROR
1490 004056 104400          2S:    SCOPE
1491
1492                                     ;BYTE COUNT MEMORY DATA TEST
1493                                     ;VERIFY THAT ADDRESS 4 OF BYTE COUNT MEMORY
1494                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1495

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1496	004060	012767	000340	173710	T27:	MOV	#340,PS	;DISABLE ALL INTERRUPTS
1497	004066	012767	000100	005150		MOV	#100,ICOUNT	;SET UP FOR 100 ITERATIONS
1498	004074	012767	004154	005136		MOV	#25,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
1499	004102	012705	177777			MOV	#177777,RS	;EXPECTED RESULT=177777
1500	004106	012777	000004	005062		MOV	#4,2DHSCR	;SELECT LOCATION 4
1501								;OF BYTE COUNT MEMORY
1502	004114	012777	177777	005064		MOV	#177777,2DHBC	;WRITE 177777 INTO MEMORY
1503	004122	017704	005060			MOV	2DHBC,R4	;READ CONTENTS OF MEMORY LOCATION
1504	004126	020504				CMP	RS,R4	;COMPARE EXPECTED AND
1505	004130	001401				BEQ	15	;RECEIVED MEMORY CONTENTS
1506	004132	104004				HLT	4	;BYTE COUNT MEMORY ERROR
1507	004134	005005			15:	CLR	RS	;EXPECTED RESULT AFTER CLEAR=0
1508	004136	042777	177777	005042		BIC	#177777,2DHBC	;CLEAR MEMORY LOCATION
1509	004144	017704	005036			MOV	2DHBC,R4	;READ CONTENTS OF BYTE COUNT
1510								;MEMORY ADDRESS 4
1511	004150	001401				BEQ	25	
1512	004152	104004				HLT	4	;BYTE COUNT MEMORY ERROR
1513								;ADDRESS 4 NOT 0, ERROR
1514	004154	104400			25:	SCOPE		
1515								
1516								;BYTE COUNT MEMORY DATA TEST
1517								;VERIFY THAT ADDRESS 5 OF BYTE COUNT MEMORY
1518								;CAN BE SET TO 177777 AND CLEARED TO 0
1519								
1520	004156	012767	000340	173612	T30:	MOV	#340,PS	;DISABLE ALL INTERRUPTS
1521	004164	012767	000100	005052		MOV	#100,ICOUNT	;SET UP FOR 100 ITERATIONS
1522	004172	012767	004252	005040		MOV	#25,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
1523	004200	012705	177777			MOV	#177777,RS	;EXPECTED RESULT=177777
1524	004204	012777	000005	004764		MOV	#5,2DHSCR	;SELECT LOCATION 5
1525								;OF BYTE COUNT MEMORY
1526	004212	012777	177777	004766		MOV	#177777,2DHBC	;WRITE 177777 INTO MEMORY
1527	004220	017704	004762			MOV	2DHBC,R4	;READ CONTENTS OF MEMORY LOCATION
1528	004224	020504				CMP	RS,R4	;COMPARE EXPECTED AND
1529	004226	001401				BEQ	15	;RECEIVED MEMORY CONTENTS
1530	004230	104004				HLT	4	;BYTE COUNT MEMORY ERROR
1531	004232	005005			15:	CLR	RS	;EXPECTED RESULT AFTER CLEAR=0
1532	004234	042777	177777	004744		BIC	#177777,2DHBC	;CLEAR MEMORY LOCATION
1533	004242	017704	004740			MOV	2DHBC,R4	;READ CONTENTS OF BYTE COUNT
1534								;MEMORY ADDRESS 5
1535	004246	001401				BEQ	25	
1536	004250	104004				HLT	4	;BYTE COUNT MEMORY ERROR
1537								;ADDRESS 5 NOT 0, ERROR
1538	004252	104400			25:	SCOPE		
1539								
1540								;BYTE COUNT MEMORY DATA TEST
1541								;VERIFY THAT ADDRESS 6 OF BYTE COUNT MEMORY
1542								;CAN BE SET TO 177777 AND CLEARED TO 0
1543								
1544	004254	012767	000340	173514	T31:	MOV	#340,PS	;DISABLE ALL INTERRUPTS
1545	004262	012767	000100	004754		MOV	#100,ICOUNT	;SET UP FOR 100 ITERATIONS
1546	004270	012767	004350	004742		MOV	#25,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
1547	004276	012705	177777			MOV	#177777,RS	;EXPECTED RESULT=177777
1548	004302	012777	000006	004666		MOV	#6,2DHSCR	;SELECT LOCATION 6
1549								;OF BYTE COUNT MEMORY
1550	004310	012777	177777	004670		MOV	#177777,2DHBC	;WRITE 177777 INTO MEMORY
1551	004316	017704	004664			MOV	2DHBC,R4	;READ CONTENTS OF MEMORY LOCATION



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1552	004322	020504				CMP	R5,R4		:COMPARE EXPECTED AND
1553	004324	001401				BEQ	2S		:RECEIVED MEMORY CONTENTS
1554	004326	104004				HLT	4		:BYTE COUNT MEMORY ERROR
1555	004330	005005			1S:	CLR	R5		:EXPECTED RESULT AFTER CLEAR=0
1556	004332	042777	177777	004646		BIC	#177777,2DHBC		:CLEAR MEMORY LOCATION
1557	004340	017704	004642			MOV	2DHBC,R4		:READ CONTENTS OF BYTE COUNT
1558									:MEMORY ADDRESS 6
1559	004344	001401				BEQ	2S		
1560	004346	104004				HLT	4		:BYTE COUNT MEMORY ERROR
1561									:ADDRESS 6 NOT 0, ERROR
1562	004350	104400			2S:	SCOPE			
1563									
1564									:BYTE COUNT MEMORY DATA TEST
1565									:VERIFY THAT ADDRESS 7 OF BYTE COUNT MEMORY
1566									:CAN BE SET TO 177777 AND CLEARED TO 0
1567									
1568	004352	012767	000340	173416	T32:	MOV	#340,PS		:DISABLE ALL INTERRUPTS
1569	004360	012767	000100	004656		MOV	#100,ICOUNT		:SET UP FOR 100 ITERATIONS
1570	004366	012767	004446	004644		MOV	#2S,ESCAPE		:SET UP TO ESCAPE TO NEXT TEST
1571	004374	012705	177777			MOV	#177777,R5		:EXPECTED RESULT=177777
1572	004400	012777	000007	004570		MOV	#7,2DHSCR		:SELECT LOCATION 7
1573									:OF BYTE COUNT MEMORY
1574	004406	012777	177777	004572		MOV	#177777,2DHBC		:WRITE 177777 INTO MEMORY
1575	004414	017704	004566			MOV	2DHBC,R4		:READ CONTENTS OF MEMORY LOCATION
1576	004420	020504				CMP	R5,R4		:COMPARE EXPECTED AND
1577	004422	001401				BEQ	1S		:RECEIVED MEMORY CONTENTS
1578	004424	104004				HLT	4		:BYTE COUNT MEMORY ERROR
1579	004426	005005			1S:	CLR	R5		:EXPECTED RESULT AFTER CLEAR=0
1580	004430	042777	177777	004550		BIC	#177777,2DHBC		:CLEAR MEMORY LOCATION
1581	004436	017704	004544			MOV	2DHBC,R4		:READ CONTENTS OF BYTE COUNT
1582									:MEMORY ADDRESS 7
1583	004442	001401				BEQ	2S		
1584	004444	104004				HLT	4		:BYTE COUNT MEMORY ERROR
1585									:ADDRESS 7 NOT 0, ERROR
1586	004446	104400			2S:	SCOPE			
1587									
1588									:BYTE COUNT MEMORY DATA TEST
1589									:VERIFY THAT ADDRESS 10 OF BYTE COUNT MEMORY
1590									:CAN BE SET TO 177777 AND CLEARED TO 0
1591									
1592	004450	012767	000340	173320	T33:	MOV	#340,PS		:DISABLE ALL INTERRUPTS
1593	004456	012767	000100	004560		MOV	#100,ICOUNT		:SET UP FOR 100 ITERATIONS
1594	004464	012767	004544	004546		MOV	#2S,ESCAPE		:SET UP TO ESCAPE TO NEXT TEST
1595	004472	012705	177777			MOV	#177777,R5		:EXPECTED RESULT=177777
1596	004476	012777	000010	004472		MOV	#10,2DHSCR		:SELECT LOCATION 10
1597									:OF BYTE COUNT MEMORY
1598	004504	012777	177777	004474		MOV	#177777,2DHBC		:WRITE 177777 INTO MEMORY
1599	004512	017704	004470			MOV	2DHBC,R4		:READ CONTENTS OF MEMORY LOCATION
1600	004516	020504				CMP	R5,R4		:COMPARE EXPECTED AND
1601	004520	001401				BEQ	1S		:RECEIVED MEMORY CONTENTS
1602	004522	104004				HLT	4		:BYTE COUNT MEMORY ERROR
1603	004524	005005			1S:	CLR	R5		:EXPECTED RESULT AFTER CLEAR=0
1604	004526	042777	177777	004452		BIC	#177777,2DHBC		:CLEAR MEMORY LOCATION
1605	004534	017704	004446			MOV	2DHBC,R4		:READ CONTENTS OF BYTE COUNT
1606									:MEMORY ADDRESS 10
1607	004540	001401				BEQ	2S		

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1608 004542 104004          HLT      4          ;BYTE COUNT MEMORY ERROR
1609                                     ;ADDRESS 10 NOT 0, ERROR
1610 004544 104400          2S:    SCOPE
1611
1612                                     ;BYTE COUNT MEMORY DATA TEST
1613                                     ;VERIFY THAT ADDRESS 11 OF BYTE COUNT MEMORY
1614                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1615
1616 004546 012767 000340 173222 T34:    MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1617 004554 012767 000100 004462      MOV      #100,ICOUNT     ;SET UP FOR 100 ITERATIONS
1618 004562 012767 004642 004450      MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1619 004570 012705 177777          MOV      #177777,R5     ;EXPECTED RESULT=177777
1620 004574 012777 000011 004374      MOV      #11,2DHSCR     ;SELECT LOCATION 11
1621                                     ;OF BYTE COUNT MEMORY
1622 004602 012777 177777 004376      MOV      #177777,2DHBC  ;WRITE 177777 INTO MEMORY
1623 004610 017704 004372          MOV      2DHBC,R4       ;READ CONTENTS OF MEMORY LOCATION
1624 004614 020504          CMP      R5,R4          ;COMPARE EXPECTED AND
1625 004616 001401          BEQ     1S              ;RECEIVED MEMORY CONTENTS
1626 004620 104004          HLT     4              ;BYTE COUNT MEMORY ERROR
1627 004622 005005          CLR     R5              ;EXPECTED RESULT AFTER CLEAR=0
1628 004624 042777 177777 004354      BIC     #177777,2DHBC  ;CLEAR MEMORY LOCATION
1629 004632 017704 004350          MOV      2DHBC,R4       ;READ CONTENTS OF BYTE COUNT
1630                                     ;MEMORY ADDRESS 11
1631 004636 001401          BEQ     2S              ;BYTE COUNT MEMORY ERROR
1632 004640 104004          HLT     4              ;ADDRESS 11 NOT 0, ERROR
1633
1634 004642 104400          2S:    SCOPE
1635
1636                                     ;BYTE COUNT MEMORY DATA TEST
1637                                     ;VERIFY THAT ADDRESS 12 OF BYTE COUNT MEMORY
1638                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1639
1640 004644 012767 000340 173124 T35:    MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1641 004652 012767 000100 004364      MOV      #100,ICOUNT     ;SET UP FOR 100 ITERATIONS
1642 004660 012767 004740 004352      MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1643 004666 012705 177777          MOV      #177777,R5     ;EXPECTED RESULT=177777
1644 004672 012777 000012 004276      MOV      #12,2DHSCR     ;SELECT LOCATION 12
1645                                     ;OF BYTE COUNT MEMORY
1646 004700 012777 177777 004300      MOV      #177777,2DHBC  ;WRITE 177777 INTO MEMORY
1647 004706 017704 004274          MOV      2DHBC,R4       ;READ CONTENTS OF MEMORY LOCATION
1648 004712 020504          CMP      R5,R4          ;COMPARE EXPECTED AND
1649 004714 001401          BEQ     1S              ;RECEIVED MEMORY CONTENTS
1650 004716 104004          HLT     4              ;BYTE COUNT MEMORY ERROR
1651 004720 005005          CLR     R5              ;EXPECTED RESULT AFTER CLEAR=0
1652 004722 042777 177777 004256      BIC     #177777,2DHBC  ;CLEAR MEMORY LOCATION
1653 004730 017704 004252          MOV      2DHBC,R4       ;READ CONTENTS OF BYTE COUNT
1654                                     ;MEMORY ADDRESS 12
1655 004734 001401          BEQ     2S              ;BYTE COUNT MEMORY ERROR
1656 004736 104004          HLT     4              ;ADDRESS 12 NOT 0, ERROR
1657
1658 004740 104400          2S:    SCOPE
1659
1660                                     ;BYTE COUNT MEMORY DATA TEST
1661                                     ;VERIFY THAT ADDRESS 13 OF BYTE COUNT MEMORY
1662                                     ;CAN BE SET TO 177777 AND CLEARED TO 0
1663

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1664	004742	012767	000340	173026	T36:	MOV	#340,PS	:DISABLE ALL INTERRUPTS
1665	004750	012767	000100	004266		MOV	#100,ICOUNT	:SET UP FOR 100 ITERATIONS
1666	004756	012767	005036	004254		MOV	#25,ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
1667	004764	012705	177777			MOV	#177777,RS	:EXPECTED RESULT=177777
1668	004770	012777	000013	004200		MOV	#13,2DHSCR	:SELECT LOCATION 13
1669								:OF BYTE COUNT MEMORY
1670	004776	012777	177777	004202		MOV	#177777,2DHBC	:WRITE 177777 INTO MEMORY
1671	005004	017704	004176			MOV	2DHBC,R4	:READ CONTENTS OF MEMORY LOCATION
1672	005010	020504				CMP	RS,R4	:COMPARE EXPECTED AND
1673	005012	001401				BEQ	15	:RECEIVED MEMORY CONTENTS
1674	005014	104004				HLT	4	:BYTE COUNT MEMORY ERROR
1675	005016	005005			15:	CLR	RS	:EXPECTED RESULT AFTER CLEAR=0
1676	005020	042777	177777	004160		BIC	#177777,2DHBC	:CLEAR MEMORY LOCATION
1677	005026	017704	004154			MOV	2DHBC,R4	:READ CONTENTS OF BYTE COUNT
1678								:MEMORY ADDRESS 13
1679	005032	001401				BEQ	25	
1680	005034	104004				HLT	4	:BYTE COUNT MEMORY ERROR
1681								:ADDRESS 13 NOT 0, ERROR
1682	005036	104400			25:	SCOPE		
1683								
1684								:BYTE COUNT MEMORY DATA TEST
1685								:VERIFY THAT ADDRESS 14 OF BYTE COUNT MEMORY
1686								:CAN BE SET TO 177777 AND CLEARED TO 0
1687								
1688	005040	012767	000340	172730	T37:	MOV	#340,PS	:DISABLE ALL INTERRUPTS
1689	005046	012767	000100	004170		MOV	#100,ICOUNT	:SET UP FOR 100 ITERATIONS
1690	005054	012767	005134	004156		MOV	#25,ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
1691	005062	012705	177777			MOV	#177777,RS	:EXPECTED RESULT=177777
1692	005066	012777	000014	004102		MOV	#14,2DHSCR	:SELECT LOCATION 14
1693								:OF BYTE COUNT MEMORY
1694	005074	012777	177777	004104		MOV	#177777,2DHBC	:WRITE 177777 INTO MEMORY
1695	005102	017704	004100			MOV	2DHBC,R4	:READ CONTENTS OF MEMORY LOCATION
1696	005106	020504				CMP	RS,R4	:COMPARE EXPECTED AND
1697	005110	001401				BEQ	15	:RECEIVED MEMORY CONTENTS
1698	005112	104004				HLT	4	:BYTE COUNT MEMORY ERROR
1699	005114	005005			15:	CLR	RS	:EXPECTED RESULT AFTER CLEAR=0
1700	005116	042777	177777	004062		BIC	#177777,2DHBC	:CLEAR MEMORY LOCATION
1701	005124	017704	004056			MOV	2DHBC,R4	:READ CONTENTS OF BYTE COUNT
1702								:MEMORY ADDRESS 14
1703	005130	001401				BEQ	25	
1704	005132	104004				HLT	4	:BYTE COUNT MEMORY ERROR
1705								:ADDRESS 14 NOT 0, ERROR
1706	005134	104400			25:	SCOPE		
1707								
1708								:BYTE COUNT MEMORY DATA TEST
1709								:VERIFY THAT ADDRESS 15 OF BYTE COUNT MEMORY
1710								:CAN BE SET TO 177777 AND CLEARED TO 0
1711								
1712	005136	012767	000340	172632	T40:	MOV	#340,PS	:DISABLE ALL INTERRUPTS
1713	005144	012767	000100	004072		MOV	#100,ICOUNT	:SET UP FOR 100 ITERATIONS
1714	005152	012767	005232	004060		MOV	#25,ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
1715	005160	012705	177777			MOV	#177777,RS	:EXPECTED RESULT=177777
1716	005164	012777	000015	004004		MOV	#15,2DHSCR	:SELECT LOCATION 15
1717								:OF BYTE COUNT MEMORY
1718	005172	012777	177777	004006		MOV	#177777,2DHBC	:WRITE 177777 INTO MEMORY
1719	005200	017704	004002			MOV	2DHBC,R4	:READ CONTENTS OF MEMORY LOCATION

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1720	005204	020504					CMP	R5,R4	;COMPARE EXPECTED AND
1721	005206	001401					BEQ	15	;RECEIVED MEMORY CONTENTS
1722	005210	104004					HLT	4	;BYTE COUNT MEMORY ERROR
1723	005212	005005			15:		CLR	R5	;EXPECTED RESULT AFTER CLEAR=0
1724	005214	042777	177777	003764			BIC	#177777,2DHBC	;CLEAR MEMORY LOCATION
1725	005222	017704	003760				MOV	2DHBC,R4	;READ CONTENTS OF BYTE COUNT
1726									;MEMORY ADDRESS 15
1727	005226	001401					BEQ	25	
1728	005230	104004					HLT	4	;BYTE COUNT MEMORY ERROR
1729									;ADDRESS 15 NOT 0, ERROR
1730	005232	104400			25:		SCOPE		
1731									
1732									;BYTE COUNT MEMORY DATA TEST
1733									;VERIFY THAT ADDRESS 16 OF BYTE COUNT MEMORY
1734									;CAN BE SET TO 177777 AND CLEARED TO 0
1735									
1736	005234	012767	000340	172534	T41:		MOV	#340,PS	;DISABLE ALL INTERRUPTS
1737	005242	012767	000100	003774			MOV	#100,ICOUNT	;SET UP FOR 100 ITERATIONS
1738	005250	012767	005330	003762			MOV	#25,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
1739	005256	012705	177777				MOV	#177777,R5	;EXPECTED RESULT=177777
1740	005262	012777	000016	003706			MOV	#16,2DHSCR	;SELECT LOCATION 16
1741									;OF BYTE COUNT MEMORY
1742	005270	012777	177777	003710			MOV	#177777,2DHBC	;WRITE 177777 INTO MEMORY
1743	005276	017704	003704				MOV	2DHBC,R4	;READ CONTENTS OF MEMORY LOCATION
1744	005302	020504					CMP	R5,R4	;COMPARE EXPECTED AND
1745	005304	001401					BEQ	15	;RECEIVED MEMORY CONTENTS
1746	005306	104004					HLT	4	;BYTE COUNT MEMORY ERROR
1747	005310	005005			15:		CLR	R5	;EXPECTED RESULT AFTER CLEAR=0
1748	005312	042777	177777	003666			BIC	#177777,2DHBC	;CLEAR MEMORY LOCATION
1749	005320	017704	003662				MOV	2DHBC,R4	;READ CONTENTS OF BYTE COUNT
1750									;MEMORY ADDRESS 16
1751	005324	001401					BEQ	25	
1752	005326	104004					HLT	4	;BYTE COUNT MEMORY ERROR
1753									;ADDRESS 16 NOT 0, ERROR
1754	005330	104400			25:		SCOPE		
1755									
1756									;BYTE COUNT MEMORY DATA TEST
1757									;VERIFY THAT ADDRESS 17 OF BYTE COUNT MEMORY
1758									;CAN BE SET TO 177777 AND CLEARED TO 0
1759									
1760	005332	012767	000340	172436	T42:		MOV	#340,PS	;DISABLE ALL INTERRUPTS
1761	005340	012767	000100	003676			MOV	#100,ICOUNT	;SET UP FOR 100 ITERATIONS
1762	005346	012767	005426	003664			MOV	#25,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
1763	005354	012705	177777				MOV	#177777,R5	;EXPECTED RESULT=177777
1764	005360	012777	000017	003610			MOV	#17,2DHSCR	;SELECT LOCATION 17
1765									;OF BYTE COUNT MEMORY
1766	005366	012777	177777	003612			MOV	#177777,2DHBC	;WRITE 177777 INTO MEMORY
1767	005374	017704	003606				MOV	2DHBC,R4	;READ CONTENTS OF MEMORY LOCATION
1768	005400	020504					CMP	R5,R4	;COMPARE EXPECTED AND
1769	005402	001401					BEQ	15	;RECEIVED MEMORY CONTENTS
1770	005404	104004					HLT	4	;BYTE COUNT MEMORY ERROR
1771	005406	005005			15:		CLR	R5	;EXPECTED RESULT AFTER CLEAR=0
1772	005410	042777	177777	003570			BIC	#177777,2DHBC	;CLEAR MEMORY LOCATION
1773	005416	017704	003564				MOV	2DHBC,R4	;READ CONTENTS OF BYTE COUNT
1774									;MEMORY ADDRESS 17
1775	005422	001401					BEQ	25	



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1776 005424 104004          HLT      4          ;BYTE COUNT MEMORY ERROR
1777                                     ;ADDRESS 17 NOT 0, ERROR
1778 005426 104400          2S:    SCOPE
1779
1780                                     ;BUS ADDRESS MEMORY TEST
1781                                     ;CLEAR ALL LOCATIONS IN BUS ADDRESS MEMORY
1782                                     ;SET SELECTED LOCATION TO VALUE 177777
1783                                     ;VERIFY THAT SELECTED LOCATION WAS SET
1784                                     ;TO 177777
1785                                     ;VERIFY THAT NO OTHER LOCATION WAS MODIFIED.
1786
1787 005430 012767 000340 172340 T43:  MOV     #340,PS          ;DISABLE ALL INTERRUPTS
1788 005436 012767 000100 003600      MOV     #100,ICOUNT      ;SET UP FOR 100 ITERATIONS
1789 005444 012767 005602 003566      MOV     #65,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
1790 005452 012767 005476 003562      MOV     #25,FREEZ1      ;SET UP TO LOOP WITH DATA
1791 005460 012700 000020          MOV     #20,R0          ;SET UP TO TEST 20(OCTAL)
1792                                     ;LOCATIONS IN BUS ADDRESS MEMORY
1793 005464 005003          CLR     R3              ;FIRST LOCATION TO BE
1794                                     ;WRITTEN INTO IS 0
1795 005466 012701 000020          1S:    MOV     #20,R1      ;SET UP TO CLEAR 20 (OCTAL)
1796                                     ;LOCATIONS IN BUS ADDRESS MEMORY
1797 005472 005077 003500          CLR     2DHSCR          ;START AT LOCATION 0
1798 005476 005077 003502          2S:    CLR     2DHBA      ;CLEAR LOCATION IN
1799                                     ;BUS ADDRESS MEMORY
1800 005502 005277 003470          INC     2DHSCR          ;ADVANCE TO NEXT LOCATION
1801 005506 005301          DEC     R1              ;CONTINUE CLEARING
1802 005510 001372          BNE     2S              ;IF NOT DONE
1803 005512 010377 003460          MOV     R3,2DHSCR       ;SELECT ADDRESS TO BE TESTED
1804 005516 012777 177777 003460      MOV     #177777,2DHBA   ;WRITE 177777 INTO LOCATION
1805 005524 005077 003446          CLR     2DHSCR          ;ADDRESS LOCATION 0
1806 005530 012701 000020          MOV     #20,R1          ;SET UP TO CHECK ALL ADDRESSES
1807                                     ;IN BUS ADDRESS MEMORY
1808 005534 012705 177777          3S:    MOV     #177777,R5 ;177777=EXPECTED RESULT
1809                                     ;IF ADDRESS READ IS LOCATION
1810                                     ;WRITTEN INTO
1811 005540 017704 003440          MOV     2DHBA,R4        ;READ MEMORY LOCATION
1812 005544 027703 003426          CMP     2DHSCR,R3       ;IF LINE NUMBER=ADDRESS
1813                                     ;OF LOCATION WRITTEN INTO
1814                                     ;EXPECTED CONTENTS=177777
1815 005550 001401          BEQ     4S              ;OTHERWISE, EXPECTED RESULTS=0
1816 005552 005005          CLR     R5              ;DOES MEMORY LOCATION CONTAIN
1817 005554 020504          4S:    CMP     R5,R4      ;EXPECTED RESULT
1818 005556 001401          BEQ     5S              ;EXPECTED RESULT
1819 005560 104003          HLT     3              ;BUS ADDRESS MEMORY ERROR
1820 005562 104410          5S:    SCOPE1          ;CHECK FOR LOOP WITH CURRENT DATA
1821 005564 005277 003406          INC     2DHSCR          ;CHECK CONTENTS OF NEXT LOCATION
1822 005570 005301          DEC     R1              ;
1823 005572 001360          BNE     3S              ;
1824 005574 005203          INC     R3              ;NEXT ADDRESS TO BE WRITTEN
1825 005576 005300          DEC     R0              ;
1826 005600 001332          BNE     1S              ;
1827 005602 104400          6S:    SCOPE          ;CHECK FOR ITERATIONS, LOOP
1828
1829                                     ;BUS ADDRESS MEMORY TEST
1830                                     ;CLEAR ALL LOCATIONS IN BUS ADDRESS MEMORY
1831                                     ;SET SELECTED LOCATION TO VALUE 125252

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# M03

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1832                                     ;VERIFY THAT SELECTED LOCATION WAS SET
1833                                     ;TO 125252.
1834                                     ;VERIFY THAT NO OTHER LOCATION WAS MODIFIED.
1835
1836 005604 012767 000340 172164 T44:  MOV    #340,PS           ;DISABLE ALL INTERRUPTS
1837 005612 012767 000100 003424      MOV    #100,ICOUNT      ;SET UP FOR 100 ITERATIONS
1838 005620 012767 005756 003412      MOV    #6$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
1839 005626 012767 005652 003406      MOV    #2$,FREEZ1      ;SET UP TO LOOP WITH DATA
1840 005634 012700 000020                MOV    #20,R0          ;SET UP TO TEST 20(OCTAL)
1841                                     ;LOCATIONS IN BUS ADDRESS MEMORY
1842 005640 005003                CLR    R3              ;FIRST LOCATION TO BE
1843                                     ;WRITTEN INTO IS 0
1844 005642 012701 000020          15:  MOV    #20,R1          ;SET UP TO CLEAR 20 (OCTAL)
1845                                     ;LOCATIONS IN BUS ADDRESS MEMORY
1846 005646 005077 003324          25:  CLR    2DHSCR        ;START AT LOCATION 0
1847 005652 005077 003326          CLR    2DHBA          ;CLEAR LOCATION IN
1848                                     ;BUS ADDRESS MEMORY
1849 005656 005277 003314          INC    2DHSCR         ;ADVANCE TO NEXT LOCATION
1850 005662 005301                DEC    R1              ;CONTINUE CLEARING
1851 005664 001372                BNE    2$             ;IF NOT DONE
1852 005666 010377 003304          MOV    R3,2DHSCR      ;SELECT ADDRESS TO BE TESTED
1853 005672 012777 125252 003304      MOV    #125252,2DHBA ;WRITE 125252 INTO LOCATION
1854 005700 005077 003272          CLR    2DHSCR        ;ADDRESS LOCATION 0
1855 005704 012701 000020          MOV    #20,R1        ;SET UP TO CHECK ALL ADDRESSES
1856                                     ;IN BUS ADDRESS MEMORY
1857 005710 012705 125252          35:  MOV    #125252,R5   ;125252=EXPECTED RESULT
1858                                     ;IF ADDRESS READ IS LOCATION
1859                                     ;WRITTEN INTO
1860 005714 017704 003264          MOV    2DHBA,R4      ;READ MEMORY LOCATION
1861 005720 027703 003252          CMP    2DHSCR,R3     ;IF LINE NUMBER=ADDRESS
1862                                     ;OF LOCATION WRITTEN INTO
1863                                     ;EXPECTED CONTENTS=125252
1864 005724 001401                BEQ    4$             ;OTHERWISE, EXPECTED RESULTS=0
1865 005726 005005                CLR    R5             ;DOES MEMORY LOCATION CONTAIN
1866 005730 020504          45:  CMP    R5,R4        ;EXPECTED RESULT
1867 005732 001401                BEQ    5$             ;BUS ADDRESS MEMORY ERROR
1868 005734 104003                HLT    3              ;CHECK FOR LOOP WITH CURRENT DATA
1869 005736 104410          55:  SCOPE1           ;CHECK CONTENTS OF NEXT LOCATION
1870 005740 005277 003232          INC    2DHSCR
1871 005744 005301                DEC    R1
1872 005746 001360                BNE    35
1873 005750 005203                INC    R3
1874 005752 005300                DEC    R0
1875 005754 001332                BNE    1$
1876 005756 104400          65:  SCOPE                ;NEXT ADDRESS TO BE WRITTEN
1877                                     ;CHECK FOR ITERATIONS, LOOP
1878                                     ;BUS ADDRESS MEMORY TEST
1879                                     ;CLEAR ALL LOCATIONS IN BUS ADDRESS MEMORY
1880                                     ;SET SELECTED LOCATION TO VALUE 52525
1881                                     ;VERIFY THAT SELECTED LOCATION WAS SET
1882                                     ;TO 52525.
1883                                     ;VERIFY THAT NO OTHER LOCATION WAS MODIFIED.
1884
1885 005760 012767 000340 172010 T45:  MOV    #340,PS           ;DISABLE ALL INTERRUPTS
1886 005766 012767 000100 003250      MOV    #100,ICOUNT      ;SET UP FOR 100 ITERATIONS
1887 005774 012767 006132 003236      MOV    #6$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST

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# N03

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1888	006002	012767	006026	003232		MOV	#25, FREEZ1	:SET UP TO LOOP WITH DATA
1889	006010	012700	000020			MOV	#20, R0	:SET UP TO TEST 20(OCTAL)
1890								:LOCATIONS IN BUS ADDRESS MEMORY
1891	006014	005003				CLR	R3	:FIRST LOCATION TO BE
1892								:WRITTEN INTO IS 0
1893	006016	012701	000020		1S:	MOV	#20, R1	:SET UP TO CLEAR 20 (OCTAL)
1894								:LOCATIONS IN BUS ADDRESS MEMORY
1895	006022	005077	003150			CLR	2DHSCR	:START AT LOCATION 0
1896	006026	005077	003152		2S:	CLR	2DHBA	:CLEAR LOCATION IN
1897								:BUS ADDRESS MEMORY
1898	006032	005277	003140			INC	2DHSCR	:ADVANCE TO NEXT LOCATION
1899	006036	005301				DEC	R1	:CONTINUE CLEARING
1900	006040	001372				BNE	2S	:IF NOT DONE
1901	006042	010377	003130			MOV	R3, 2DHSCR	:SELECT ADDRESS TO BE TESTED
1902	006046	012777	052525	003130		MOV	#52525, 2DHBA	:WRITE 52525 INTO LOCATION
1903	006054	005077	003116			CLR	2DHSCR	:ADDRESS LOCATION 0
1904	006060	012701	000020			MOV	#20, R1	:SET UP TO CHECK ALL ADDRESSES
1905								:IN BUS ADDRESS MEMORY
1906	006064	012705	052525		3S:	MOV	#52525, R5	:52525=EXPECTED RESULT
1907								:IF ADDRESS READ IS LOCATION
1908								:WRITTEN INTO
1909	006070	017704	003110			MOV	2DHBA, R4	:READ MEMORY LOCATION
1910	006074	027703	003076			CMP	2DHSCR, R3	:IF LINE NUMBER=ADDRESS
1911								:OF LOCATION WRITTEN INTO
1912								:EXPECTED CONTENTS=52525
1913	006100	001401				BEG	4S	
1914	006102	005005				CLR	R5	:OTHERWISE, EXPECTED RESULTS=0
1915	006104	020504			4S:	CMP	R5, R4	:DOES MEMORY LOCATION CONTAIN
1916	006106	001401				BEG	5S	:EXPECTED RESULT
1917	006110	104003				HLT	3	:BUS ADDRESS MEMORY ERROR
1918	006112	104410			5S:	SCOPE 1		:CHECK FOR LOOP WITH CURRENT DATA
1919	006114	005277	003056			INC	2DHSCR	:CHECK CONTENTS OF NEXT LOCATION
1920	006120	005301				DEC	R1	
1921	006122	001360				BNE	JS	
1922	006124	005203				INC	R3	:NEXT ADDRESS TO BE WRITTEN
1923	006126	005300				DEC	R0	
1924	006130	001332				BNE	1S	
1925	006132	104400			6S:	SCOPE		:CHECK FOR ITERATIONS, LOOP
1926								
1927								:BYTE COUNT MEMORY TEST
1928								:CLEAR ALL LOCATIONS IN BYTE COUNT MEMORY
1929								:SET SELECTED LOCATION TO VALUE 177777
1930								:VERIFY THAT SELECTED LOCATION WAS SET
1931								:TO 177777.
1932								:VERIFY THAT NO OTHER LOCATION WAS MODIFIED.
1933								
1934	006134	012767	000340	171634	T46:	MOV	#340, PS	:DISABLE ALL INTERRUPTS
1935	006142	012767	000100	003074		MOV	#100, ICOUNT	:SET UP FOR 100 ITERATIONS
1936	006150	012767	006306	003062		MOV	#65, ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
1937	006156	012767	006202	003056		MOV	#25, FREEZ1	:SET UP TO LOOP WITH DATA
1938	006164	012700	000020			MOV	#20, R0	:SET UP TO TEST 20(OCTAL)
1939								:LOCATIONS IN BYTE COUNT MEMORY
1940	006170	005003				CLR	R3	:FIRST LOCATION TO BE
1941								:WRITTEN INTO IS 0
1942	006172	012701	000020		1S:	MOV	#20, R1	:SET UP TO CLEAR 20 (OCTAL)
1943								:LOCATIONS IN BYTE COUNT MEMORY



1944	006176	005077	002774			CLR	2DHSCR		
1945	006202	005077	003000	25:		CLR	2DHBC		:START AT LOCATION 0
1946									:CLEAR LOCATION IN
1947	006206	005277	002764			INC	2DHSCR		:BYTE COUNT MEMORY
1948	006212	005301				DEC	R1		:ADVANCE TO NEXT LOCATION
1949	006214	001372				BNE	25		:CONTINUE CLEARING
1950	006216	010377	002754			MOV	R3,2DHSCR		:IF NOT DONE
1951	006222	012777	177777	002756		MOV	8177777,2DHBC		:SELECT ADDRESS TO BE TESTED
1952	006230	005077	002742			CLR	2DHSCR		:WRITE 177777 INTO LOCATION
1953	006234	012701	000020			MOV	820,R1		:ADDRESS LOCATION 0
1954									:SET UP TO CHECK ALL ADDRESSES
1955	006240	012705	177777	35:		MOV	8177777,R5		:IN BYTE COUNT MEMORY
1956									:177777=EXPECTED RESULT
1957									:IF ADDRESS READ IS LOCATION
1958	006244	017704	002736			MOV	2DHBC,R4		:WRITTEN INTO
1959	006250	027703	002722			CHP	2DHSCR,R3		:READ MEMORY LOCATION
1960									:IF LINE NUMBER=ADDRESS
1961									:OF LOCATION WRITTEN INTO
1962	006254	001401				BEQ	45		:EXPECTED CONTENTS=177777
1963	006256	005005				CLR	R5		
1964	006260	020504		45:		CHP	R5,R4		:OTHERWISE, EXPECTED RESULTS=0
1965	006262	001401				BEQ	55		:DOES MEMORY LOCATION CONTAIN
1966	006264	104004				HLT	4		:EXPECTED RESULT
1967	006266	104410		55:		SCOPE1			:BYTE COUNT MEMORY ERROR
1968	006270	005277	002702			INC	2DHSCR		:CHECK FOR LOOP WITH CURRENT DATA
1969	006274	005301				DEC	R1		:CHECK CONTENTS OF NEXT LOCATION
1970	006276	001360				BNE	35		
1971	006300	005203				INC	R3		:NEXT ADDRESS TO BE WRITTEN
1972	006302	005300				DEC	R0		
1973	006304	001332				BNE	15		
1974	006306	104400		65:		SCOPE			:CHECK FOR ITERATIONS, LOOP
1975									
1976									:BYTE COUNT MEMORY TEST
1977									:CLEAR ALL LOCATIONS IN BYTE COUNT MEMORY
1978									:SET SELECTED LOCATION TO VALUE 125252
1979									:VERIFY THAT SELECTED LOCATION WAS SET
1980									:TO 125252.
1981									:VERIFY THAT NO OTHER LOCATION WAS MODIFIED.
1982									
1983	006310	012767	000340	171460	T47:	MOV	8340,PS		:DISABLE ALL INTERRUPTS
1984	006316	012767	000100	002720		MOV	8100,ICOUNT		:SET UP FOR 100 ITERATIONS
1985	006324	012767	006462	002706		MOV	865,ESCAPE		:SET UP TO ESCAPE TO NEXT TEST
1986	006332	012767	006356	002702		MOV	825,FREEZ1		:SET UP TO LOOP WITH DATA
1987	006340	012700	000020			MOV	820,R0		:SET UP TO TEST 20(OCTAL)
1988									:LOCATIONS IN BYTE COUNT MEMORY
1989	006344	005003				CLR	R3		:FIRST LOCATION TO BE
1990									:WRITTEN INTO IS 0
1991	006346	012701	000020		15:	MOV	820,R1		:SET UP TO CLEAR 20 (OCTAL)
1992									:LOCATIONS IN BYTE COUNT MEMORY
1993	006352	005077	002620			CLR	2DHSCR		:START AT LOCATION 0
1994	006356	005077	002624		25:	CLR	2DHBC		:CLEAR LOCATION IN
1995									:BYTE COUNT MEMORY
1996	006362	005277	002610			INC	2DHSCR		:ADVANCE TO NEXT LOCATION
1997	006366	005301				DEC	R1		:CONTINUE CLEARING
1998	006370	001372				BNE	25		:IF NOT DONE
1999	006372	010377	002600			MOV	R3,2DHSCR		:SELECT ADDRESS TO BE TESTED



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2000 006376 012777 125252 002602      MOV      #125252,20HBC      ;WRITE 125252 INTO LOCATION
2001 006404 005077 002566              CLR      20HSCR           ;ADDRESS LOCATION 0
2002 006410 012701 000020              MOV      #20,R1          ;SET UP TO CHECK ALL ADDRESSES
2003                                ;IN BYTE COUNT MEMORY
2004 006414 012705 125252      38:     MOV      #125252,R5      ;125252=EXPECTED RESULT
2005                                ;IF ADDRESS READ IS LOCATION
2006                                ;WRITTEN INTO
2007 006420 017704 002562      MOV      20HBC,R4        ;READ MEMORY LOCATION
2008 006424 027703 002546      CMP      20HSCR,R3      ;IF LINE NUMBER=ADDRESS
2009                                ;OF LOCATION WRITTEN INTO
2010                                ;EXPECTED CONTENTS=125252
2011 006430 001401              BEQ      48              ;OTHERWISE, EXPECTED RESULTS=0
2012 006432 005005              CLR      R5              ;DOES MEMORY LOCATION CONTAIN
2013 006434 020504      48:     CMP      R5,R4          ;EXPECTED RESULT
2014 006436 001401              BEQ      58              ;EXPECTED RESULT
2015 006440 104004              HLT                     ;BYTE COUNT MEMORY ERROR
2016 006442 104410      58:     SCOPE1          ;CHECK FOR LOOP WITH CURRENT DATA
2017 006444 005277 002526      INC      20HSCR         ;CHECK CONTENTS OF NEXT LOCATION
2018 006450 005301      DEC      R1
2019 006452 001360      BNE     38
2020 006454 005203      INC      R3
2021 006456 005300      DEC      R0
2022 006460 001332      BNE     18
2023 006462 104400      68:     SCOPE          ;CHECK FOR ITERATIONS, LOOP
2024
2025                                ;BYTE COUNT MEMORY TEST
2026                                ;CLEAR ALL LOCATIONS IN BYTE COUNT MEMORY
2027                                ;SET SELECTED LOCATION TO VALUE 52525
2028                                ;VERIFY THAT SELECTED LOCATION WAS SET
2029                                ;TO 52525.
2030                                ;VERIFY THAT NO OTHER LOCATION WAS MODIFIED.
2031
2032 006464 012767 000340 171304 T50:   MOV      #340,PS
2033 006472 012767 000100 002544   MOV      #100,ICOUNT
2034 006500 012767 006636 002532   MOV      #65,ESCAPE
2035 006506 012767 006532 002526   MOV      #25,FREEZ1
2036 006514 012700 000020              MOV      #20,R0
2037                                ;SET UP TO TEST 20(OCTAL)
2038                                ;LOCATIONS IN BYTE COUNT MEMORY
2039 006520 005003              CLR      R3              ;FIRST LOCATION TO BE
2040                                ;WRITTEN INTO IS 0
2041 006522 012701 000020      18:     MOV      #20,R1      ;SET UP TO CLEAR 20 (OCTAL)
2042                                ;LOCATIONS IN BYTE COUNT MEMORY
2043 006526 005077 002444      28:     CLR      20HSCR     ;START AT LOCATION 0
2044 006532 005077 002450      CLR      20HBC         ;CLEAR LOCATION IN
2045                                ;BYTE COUNT MEMORY
2046 006536 005277 002434      INC      20HSCR         ;ADVANCE TO NEXT LOCATION
2047 006542 005301      DEC      R1              ;CONTINUE CLEARING
2048 006544 001372      BNE     28              ;IF NOT DONE
2049 006546 010377 002424      MOV      R3,20HSCR      ;SELECT ADDRESS TO BE TESTED
2050 006552 012777 052525 002426   MOV      #52525,20HBC  ;WRITE 52525 INTO LOCATION
2051 006560 005077 002412      CLR      20HSCR         ;ADDRESS LOCATION 0
2052 006564 012701 000020      MOV      #20,R1          ;SET UP TO CHECK ALL ADDRESSES
2053                                ;IN BYTE COUNT MEMORY
2054 006570 012705 052525      38:     MOV      #52525,R5      ;52525=EXPECTED RESULT
2055                                ;IF ADDRESS READ IS LOCATION
2056                                ;WRITTEN INTO

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2056	006574	017704	002406		MOV	20HBC,R4	:	READ MEMORY LOCATION	
2057	006600	027703	002372		CMP	20HSCR,R3	:	IF LINE NUMBER=ADDRESS	
2058							:	OF LOCATION WRITTEN INTO	
2059							:	EXPECTED CONTENTS=52525	
2060	006604	001401			BEQ	48			
2061	006606	005005			CLR	R5	:	OTHERWISE, EXPECTED RESULTS=0	
2062	006610	020504		48:	CMP	R5,R4	:	DOES MEMORY LOCATION CONTAIN	
2063	006612	001401			BEQ	58	:	EXPECTED RESULT	
2064	006614	104004			HLT	4	:	BYTE COUNT MEMORY ERROR	
2065	006616	104410		58:	SCOPE1		:	CHECK FOR LOOP WITH CURRENT DATA	
2066	006620	005277	002352		INC	20HSCR	:	CHECK CONTENTS OF NEXT LOCATION	
2067	006624	005301			DEC	R1			
2068	006626	001360			BNE	R3			
2069	006630	005203			INC	R3	:	NEXT ADDRESS TO BE WRITTEN	
2070	006632	005300			DEC	R0			
2071	006634	001332			BNE	18			
2072	006636	104400		68:	SCOPE		:	CHECK FOR ITERATIONS, LOOP	
2073									
2074							:	BUS ADDRESS MEMORY TEST	
2075							:	SET ALL LOCATIONS IN BUS ADDRESS MEMORY TO 177777	
2076							:	SET SELECTED LOCATION TO VALUE 0	
2077							:	VERIFY THAT SELECTED LOCATION WAS SET	
2078							:	TO 0.	
2079							:	VERIFY THAT NO OTHER LOCATION WAS MODIFIED.	
2080									
2081	006640	012767	000340	171130	T51:	MOV	#340,PS	:	DISABLE ALL INTERRUPTS
2082	006646	012767	000100	002370		MOV	#100,ICOUNT	:	SET UP FOR 100 ITERATIONS
2083	006654	012767	007014	002356		MOV	#68,ESCAPE	:	SET UP TO ESCAPE TO NEXT TEST
2084	006662	012767	006706	002352		MOV	#28,FREEZ1	:	SET UP TO LOOP WITH DATA
2085	006670	012700	000020			MOV	#20,R0	:	SET UP TO TEST 20(OCTAL)
2086							:	LOCATIONS IN BUS ADDRESS MEMORY	
2087	006674	005003				CLR	R3	:	FIRST LOCATION TO BE
2088							:	WRITTEN INTO IS 0	
2089	006676	012701	000020		18:	MOV	#20,R1	:	SET UP TO SET 20(OCTAL)
2090							:	LOCATIONS IN BUS ADDRESS MEMORY TO 177777	
2091	006702	005077	002270			CLR	20HSCR	:	START AT LOCATION 0
2092	006706	012777	177777	002270	28:	MOV	#177777,20HBA	:	SET LOCATION IN
2093							:	BUS ADDRESS MEMORY	
2094	006714	005277	002256			INC	20HSCR	:	ADVANCE TO NEXT LOCATION
2095	006720	005301				DEC	R1	:	CONTINUE SETTING
2096	006722	001371				BNE	R3	:	IF NOT DONE
2097	006724	010377	002246			MOV	R3,20HSCR	:	SELECT ADDRESS TO BE TESTED
2098	006730	012777	000000	002246		MOV	#0,20HBA	:	WRITE 0 INTO LOCATION
2099	006736	005077	002234			CLR	20HSCR	:	ADDRESS LOCATION 0
2100	006742	012701	000020			MOV	#20,R1	:	SET UP TO CHECK ALL ADDRESSES
2101							:	IN BUS ADDRESS MEMORY	
2102	006746	012705	000000		38:	MOV	#0,R5	:	0=EXPECTED RESULT
2103							:	IF ADDRESS READ IS LOCATION	
2104							:	WRITTEN INTO	
2105	006752	017704	002226			MOV	20HBA,R4	:	READ MEMORY LOCATION
2106	006756	027703	002214			CMP	20HSCR,R3	:	IF LINE NUMBER=ADDRESS
2107							:	OF LOCATION WRITTEN INTO	
2108							:	EXPECTED CONTENTS=0	
2109	006762	001401				BEQ	48		
2110	006764	005105				COM	R5	:	OTHERWISE, EXPECTED RESULTS=177777
2111	006766	020504		48:	CMP	R5,R4	:	DOES MEMORY LOCATION CONTAIN	



2112	006770	001401				BEG	55		: EXPECTED RESULT
2113	006772	104003				HLT	3		: BUS ADDRESS MEMORY ERROR
2114	006774	104410			55:	SCOPE1			: CHECK FOR LOOP WITH CURRENT DATA
2115	006776	005277	002174			INC	2DHSCR		: CHECK CONTENTS OF NEXT LOCATION
2116	007002	005301				DEC	R1		
2117	007004	001360				BNE	35		: NEXT ADDRESS TO BE WRITTEN
2118	007006	005203				INC	R3		
2119	007010	005300				DEC	R0		
2120	007012	001331				BNE	15		
2121	007014	104400			65:	SCOPE			: CHECK FOR ITERATIONS, LOOP
2122									
2123									
2124									
2125									
2126									
2127									
2128									
2129									
2130	007016	012767	000340	170752	T52:	MOV	8340,PS		: DISABLE ALL INTERRUPTS
2131	007024	012767	000100	002212		MOV	8100,ICOUNT		: SET UP FOR 100 ITERATIONS
2132	007032	012767	007172	002200		MOV	868,ESCAPE		: SET UP TO ESCAPE TO NEXT TEST
2133	007040	012767	007064	002174		MOV	825,FREEZ1		: SET UP TO LOOP WITH DATA
2134	007046	012700	000020			MOV	820,R0		: SET UP TO TEST 20(OCTAL)
2135									: LOCATIONS IN BYTE COUNT MEMORY
2136	007052	005003				CLR	R3		: FIRST LOCATION TO BE
2137									: WRITTEN INTO IS 0
2138	007054	012701	000020		15:	MOV	820,R1		: SET UP TO SET 20 (OCTAL)
2139									: LOCATIONS IN BYTE COUNT MEMORY TO 177777
2140	007060	005077	002112			CLR	2DHSCR		: START AT LOCATION 0
2141	007064	012777	177777	002114	25:	MOV	8177777,2DHBC		: SET LOCATION IN
2142									: BYTE COUNT MEMORY
2143	007072	005277	002100			INC	2DHSCR		: ADVANCE TO NEXT LOCATION
2144	007076	005301				DEC	R1		: CONTINUE SETTING
2145	007100	001371				BNE	25		: IF NOT DONE
2146	007102	010377	002070			MOV	R3,2DHSCR		: SELECT ADDRESS TO BE TESTED
2147	007106	012777	000000	002072		MOV	80,2DHBC		: WRITE 0 INTO LOCATION
2148	007114	005077	002056			CLR	2DHSCR		: ADDRESS LOCATION 0
2149	007120	012701	000020			MOV	820,R1		: SET UP TO CHECK ALL ADDRESSES
2150									: IN BYTE COUNT MEMORY
2151	007124	012705	000000		35:	MOV	80,R5		: 0=EXPECTED RESULT
2152									: IF ADDRESS READ IS LOCATION
2153									: WRITTEN INTO
2154	007130	017704	002052			MOV	2DHBC,R4		: READ MEMORY LOCATION
2155	007134	027703	002036			CMP	2DHSCR,R3		: IF LINE NUMBER=ADDRESS
2156									: OF LOCATION WRITTEN INTO
2157									: EXPECTED CONTENTS=0
2158	007140	001401				BEG	45		
2159	007142	005105				COM	R5		: OTHERWISE, EXPECTED RESULTS=177777
2160	007144	020504			45:	CMP	R5,R4		: DOES MEMORY LOCATION CONTAIN
2161	007146	001401				BEG	55		: EXPECTED RESULT
2162	007150	104004				HLT	4		: BYTE COUNT MEMORY ERROR
2163	007152	104410			55:	SCOPE1			: CHECK FOR LOOP WITH CURRENT DATA
2164	007154	005277	002016			INC	2DHSCR		: CHECK CONTENTS OF NEXT LOCATION
2165	007160	005301				DEC	R1		
2166	007162	001360				BNE	35		
2167	007164	005203				INC	R3		: NEXT ADDRESS TO BE WRITTEN

2168	007166	005300			DEC	R0		
2169	007170	001331			BNE	15		
2170	007172	104400		6S:	SCOPE			;CHECK FOR ITERATIONS, LOOP
2171								
2172								;MEMORY EXTENSION MEMORY TEST
2173								;VERIFY THAT LOW AND HIGH ORDER MEMORY EXTENSION BIT CAN BE
2174								;SET AND CLEARED IN SELECTED MEMORY EXTENSION MEMORY LOCATION
2175	007174	012767	000340	170574	T53:	MOV	#340,PS	;DISABLE ALL INTERRUPTS
2176	007202	012767	000100	002034		MOV	#100,ICOUNT	;SET UP FOR 100 ITERATIONS
2177	007210	012767	007364	002022		MOV	#65,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
2178	007216	012767	007242	002016		MOV	#25,FREEZ1	;SET UP TO LOOP WITH DATA
2179	007224	012700	000020			MOV	#20,R0	;SET UP TO TEST 20(OCTAL)
2180								LOCATIONS IN MEMORY EXTENSION MEMORY
2181	007230	005003				CLR	R3	FIRST LOCATION TO BE
2182								WRITTEN INTO IS 0
2183	007232	012701	000020		1S:	MOV	#20,R1	;SET UP TO CLEAR 20 (OCTAL)
2184								LOCATIONS IN MEMORY EXTENSION MEMORY
2185	007236	005077	001734			CLR	2DHSCR	START AT LOCATION 0
2186	007242	042777	000060	001726	2S:	BIC	#60,2DHSCR	CLEAR LOCATION IN
2187	007250	012777	000000	001726		MOV	#0,2DHBA	MEMORY EXTENSION MEMORY
2188	007256	005277	001714			INC	2DHSCR	ADVANCE TO NEXT LOCATION
2189	007262	005301				DEC	R1	CONTINUE CLEARING
2190	007264	001366				BNE	25	IF NOT DONE
2191	007266	010377	001704			MOV	R3,2DHSCR	SELECT ADDRESS TO BE TESTED
2192	007272	052777	000060	001676		BIS	#60,2DHSCR	WRITE LOW AND HIGH INTO LOCATION
2193	007300	012777	000000	001676		MOV	#0,2DHBA	LOAD ADDRESS
2194	007306	005077	001664			CLR	2DHSCR	ADDRESS LOCATION 0
2195	007312	012701	000020			MOV	#20,R1	SET UP TO CHECK ALL ADDRESSES
2196								IN MEMORY EXTENSION MEMORY
2197	007316	012765	000300		3S:	MOV	#300,R5	;LOW AND HIGH=EXPECTED RESULT
2198								IF ADDRESS READ IS LOCATION
2199								WRITTEN INTO
2200	007322	017704	001666			MOV	2DHSSR,R4	READ MEMORY LOCATION
2201	007326	027703	001644			CHP	2DHSCR,R3	IF LINE NUMBER=ADDRESS
2202								OF LOCATION WRITTEN INTO
2203								EXPECTED CONTENTS=LOW AND HIGH
2204	007332	001401				BEG	45	
2205	007334	005005				CLR	R5	OTHERWISE, EXPECTED RESULTS=0
2206	007336	020504			4S:	CHP	R5,R4	DOES MEMORY LOCATION CONTAIN
2207	007340	001401				BEG	55	EXPECTED RESULT
2208	007342	104005				HLT	5	MEMORY EXTENSION DATA ERROR
2209	007344	104410			5S:	SCOPE1		CHECK FOR LOOP WITH CURRENT DATA
2210	007346	005277	001624			INC	2DHSCR	CHECK CONTENTS OF NEXT LOCATION
2211	007352	005301				DEC	R1	
2212	007354	001360				BNE	30	
2213	007356	005203				INC	R3	NEXT ADDRESS TO BE WRITTEN
2214	007360	005300				DEC	R0	
2215	007362	001323				BNE	15	
2216	007364	104400			6S:	SCOPE		;CHECK FOR ITERATIONS, LOOP
2217								
2218								;MEMORY EXTENSION MEMORY TEST
2219								;VERIFY THAT LOW ORDER MEMORY EXTENSION BIT CAN BE
2220								;SET AND CLEARED IN SELECTED MEMORY EXTENSION MEMORY LOCATION
2221	007366	012767	000340	170402	T54:	MOV	#340,PS	;DISABLE ALL INTERRUPTS
2222	007374	012767	000100	001642		MOV	#100,ICOUNT	;SET UP FOR 100 ITERATIONS
2223	007402	012767	007556	001630		MOV	#65,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST



2224	007410	012767	007434	001624		MOV	#25, FREEZ1		:SET UP TO LOOP WITH DATA
2225	007416	012700	000020			MOV	#20, R0		:SET UP TO TEST 20(OCTAL)
2226									:LOCATIONS IN MEMORY EXTENSION MEMORY
2227	007422	005003				CLR	R3		:FIRST LOCATION TO BE
2228									:WRITTEN INTO IS 0
2229	007424	012701	000020		15:	MOV	#20, R1		:SET UP TO CLEAR 20 (OCTAL)
2230									:LOCATIONS IN MEMORY EXTENSION MEMORY
2231	007430	005077	001542			CLR	2DHSCR		:START AT LOCATION 0
2232	007434	042777	000060	001534	25:	BIC	#60, 2DHSCR		:CLEAR LOCATION IN
2233	007442	012777	000000	001534		MOV	#0, 2DHBA		:MEMORY EXTENSION MEMORY
2234	007450	005277	001522			INC	2DHSCR		:ADVANCE TO NEXT LOCATION
2235	007454	005301				DEC	R1		:CONTINUE CLEARING
2236	007456	001366				BNE	25		:IF NOT DONE
2237	007460	010377	001512			MOV	R3, 2DHSCR		:SELECT ADDRESS TO BE TESTED
2238	007464	052777	000020	001504		BIS	#20, 2DHSCR		:WRITE LOW INTO LOCATION
2239	007472	012777	000000	001504		MOV	#0, 2DHBA		:LOAD ADDRESS
2240	007500	005077	001472			CLR	2DHSCR		:ADDRESS LOCATION 0
2241	007504	012701	000020			MOV	#20, R1		:SET UP TO CHECK ALL ADDRESSES
2242									:IN MEMORY EXTENSION MEMORY
2243	007510	012705	000100		35:	MOV	#100, R5		:LOW=EXPECTED RESULT
2244									:IF ADDRESS READ IS LOCATION
2245									:WRITTEN INTO
2246	007514	017704	001474			MOV	2DHSSR, R4		:READ MEMORY LOCATION
2247	007520	027703	001452			CMP	2DHSCR, R3		:IF LINE NUMBER=ADDRESS
2248									:OF LOCATION WRITTEN INTO
2249									:EXPECTED CONTENTS=LOW
2250	007524	001401				BEQ	45		:OTHERWISE, EXPECTED RESULTS=0
2251	007526	005005				CLR	R5		:DOES MEMORY LOCATION CONTAIN
2252	007530	020504			45:	CMP	R5, R4		:EXPECTED RESULT
2253	007532	001401				BEQ	55		:MEMORY EXTENSION DATA ERROR
2254	007534	104005				HLT	5		:CHECK FOR LOOP WITH CURRENT DATA
2255	007536	104410			55:	SCOPE1			:CHECK CONTENTS OF NEXT LOCATION
2256	007540	005277	001432			INC	2DHSCR		
2257	007544	005301				DEC	R1		
2258	007546	001360				BNE	35		:NEXT ADDRESS TO BE WRITTEN
2259	007550	005203				INC	R3		
2260	007552	005300				DEC	R0		
2261	007554	001323				BNE	15		:CHECK FOR ITERATIONS, LOOP
2262	007556	104400			65:	SCOPE			
2263									:MEMORY EXTENSION MEMORY TEST
2264									:VERIFY THAT HIGH ORDER MEMORY EXTENSION BIT CAN BE
2265									:SET AND CLEARED IN SELECTED MEMORY EXTENSION MEMORY LOCATION
2266	007560	012767	000340	170210	T55:	MOV	#340, P5		:DISABLE ALL INTERRUPTS
2267	007566	012767	000100	001450		MOV	#100, ICOUNT		:SET UP FOR 100 ITERATIONS
2268	007574	012767	007750	001436		MOV	#65, ESCAPE		:SET UP TO ESCAPE TO NEXT TEST
2269	007602	012767	007626	001432		MOV	#25, FREEZ1		:SET UP TO LOOP WITH DATA
2270	007610	012700	000020			MOV	#20, R0		:SET UP TO TEST 20(OCTAL)
2271									:LOCATIONS IN MEMORY EXTENSION MEMORY
2272									:FIRST LOCATION TO BE
2273	007614	005003				CLR	R3		:WRITTEN INTO IS 0
2274									:SET UP TO CLEAR 20 (OCTAL)
2275	007616	012701	000020		15:	MOV	#20, R1		:LOCATIONS IN MEMORY EXTENSION MEMORY
2276									:START AT LOCATION 0
2277	007622	005077	001350			CLR	2DHSCR		:CLEAR LOCATION IN
2278	007626	042777	000060	001342	25:	BIC	#60, 2DHSCR		:MEMORY EXTENSION MEMORY
2279	007634	012777	000000	001342		MOV	#0, 2DHBA		

2280	007642	005277	001330			INC	2DHSCR	;ADVANCE TO NEXT LOCATION
2281	007646	005301				DEC	R1	;CONTINUE CLEARING
2282	007650	001366				BNE	25	;IF NOT DONE
2283	007652	010377	001320			MOV	R3,2DHSCR	;SELECT ADDRESS TO BE TESTED
2284	007656	052777	000040	001312		BIS	#40,2DHSCR	;WRITE HIGH INTO LOCATION
2285	007664	012777	000000	001312		MOV	#0,2DHBA	;LOAD ADDRESS
2286	007672	005077	001300			CLR	2DHSCR	;ADDRESS LOCATION 0
2287	007676	012701	000020			MOV	#20,R1	;SET UP TO CHECK ALL ADDRESSES
2288								;IN MEMORY EXTENSION MEMORY
2289	007702	012705	000200		35:	MOV	#200,R5	;HIGH=EXPECTED RESULT
2290								;IF ADDRESS READ IS LOCATION
2291								;WRITTEN INTO
2292	007706	017704	001302			MOV	2DHSSR,R4	;READ MEMORY LOCATION
2293	007712	027703	001260			CMF	2DHSCR,R3	;IF LINE NUMBER=ADDRESS
2294								;OF LOCATION WRITTEN INTO
2295								;EXPECTED CONTENTS=HIGH
2296	007716	001401				BEQ	45	
2297	007720	005005				CLR	R5	;OTHERWISE, EXPECTED RESULTS=0
2298	007722	020504			45:	CMF	R5,R4	;DOES MEMORY LOCATION CONTAIN
2299	007724	001401				BEQ	55	;EXPECTED RESULT
2300	007726	104005				HLT	5	;MEMORY EXTENSION DATA ERROR
2301	007730	104410			55:	SCOPE1		;CHECK FOR LOOP WITH CURRENT DATA
2302	007732	005277	001240			INC	2DHSCR	;CHECK CONTENTS OF NEXT LOCATION
2303	007736	005301				DEC	R1	
2304	007740	001360				BNE	35	
2305	007742	005203				INC	R3	;NEXT ADDRESS TO BE WRITTEN
2306	007744	005300				DEC	R0	
2307	007746	001323				BNE	15	
2308	007750	104400			65:	SCOPE		;CHECK FOR ITERATIONS, LOOP



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;END OF PASS
;TYPE NAME OF TEST
;UPDATE PASS COUNT
;CHECK FOR EXIT TO ACT-11
;RESTART TEST

EOP:  TYPE
      NEPASS
      CLR      LAST
      CLR      ERRFLG
      INC      PASCNT
      MOV      PASCNT,LIGHTS
      MOV      #42,R1
      BEQ      RESTRT
;TYPE NAME OF TEST
;CLEAR LAST ERROR PC
;CLEAR ERROR FLAG
;UPDATE PASS COUNT
;DISPLAY PASS COUNT
;CHECK FOR ACT-11 OR DDP
;IF NOT, CONTINUE TESTING

LOGICAL: JSR      PC,(R1)
          NOP
          NOP
          NOP
RESTRT:  JMP      BEGIN
;CHECK FOR LOOP ON CURRENT TEST
;CHECK FOR ITERATION SUPPRESSION

010024 032767 002000 167536 SCOPER: BIT      #SW10,SMR
010032 001030
010034 032767 040000 167526 1S:  BIT      #SW14,SMR
010042 001021
010044 032767 004000 167516
010052 001006
010054 005267 001166
010060 026767 001162 001156
010066 001007
010070 005067 001152 2S:  CLR      LPCNT
010074 005067 001130
010100 011667 001132
010104 000002
010106 016716 001124 3S:  MOV      RETURN,(SP)
010112 000002
010114 005767 001110 4S:  TST      ERRFLG
010120 001745
010122 000762
;CHECK FOR FREEZE ON CURRENT DATA

010124 032767 001000 167436 SCOP1R: BIT      #SW09,SMR
010132 001402
010134 016716 001102
010140 000002 1S:  BEQ      1S
          MOV      FREEZ1,(SP)
          RTI

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010143 032767 020000 167420 ERRORS: BIT      @SW13,SWR
010144 001051          BNE      HALTS
010145 021667 001116          CMP      (SP),LAST
010146 001404          BEQ      IS
010147 011667 001110          MOV      (SP),LAST
010148 005067 001040          CLR      ERRFLG
010149 104406          IS:     SAVOSP
010172 011605          MOV      (SP),R5
010174 162705 000002          SUB      @2,R5
010200 011504          MOV      (R5),R4
010202 006304          ASL      R4
010204 006304          ASL      R4
010206 042704 177001          BIC      @177001,R4
010212 062704 011752          ADD      @ERRTAB,R4
010216 012467 000034          MOV      (R4)+,ERRMSG
010222 011467 000042          MOV      (R4),DATABP
010224 005767 000776          TST      ERRFLG
010232 001403          BEQ      TYPMSG
010234 005767 000030          TST      DATABP
010240 001007          BNE      TYPDAT
010242 104402          TYPMSG: OCTASC
010244 010336          ERTAB0
010246 012767 000001 000754          MOV      @1,ERRFLG
010254 104401          TYPE
010256 000000          ERRMSG: 0
010260 005767 000004          TYPDAT: TST      DATABP
010264 001402          BEQ      RESREG
010266 104402          OCTASC
010270 000000          DATABP: 0
010272 104407          RESREG: RESOS
010274 005767 167270          HALTS:  TST      SWR
010300 100005          BPL      EXITER
010302 010046          PUSHRO
010304 016600 000002          MOV      2(SP),R0
010310 000000          HALT
010312 012600          POPRO
010314 005267 000714          EXITER: INC      ERRCNT
010320 032767 002000 167242          BIT      @SW10,SWR
010326 001402          BEQ      IS
010330 016716 000704          MOV      ESCAPE,(SP)
010334 000002          IS:     RTI
010336 000001          ERTAB0: 1
010340 006          .BYTE  6,2
010342 011266          SAVPC

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; TRAP DISPATCH SERVICE
; ARGUMENT OF TRAP IS EXTRACTED
; AND USED AS OFFSET TO OBTAIN POINTER
; TO SELECTED SUBROUTINE

010344 011646 000002 TRPSRV: MOV (SP), -(SP) ; GET PC OF RETURN
010346 162716 000002 SUB #2, (SP) ; =PC OF TRAP
010350 017616 000000 MOV #2(SP), (SP) ; GET TRAP
010356 006316 TRPOK: RSL (SP) ; MULTIPLY TRAP ARG BY 2
010360 042716 177001 BIC #177001, (SP) ; CLEAR UNWANTED BITS
010364 062716 011672 ADD #TRPTAB, (SP) ; POINTER TO SUBROUTINE ADDRESS
010370 017616 000000 MOV #2(SP), (SP) ; SUBROUTINE ADDRESS
010374 000136 JMP #2(SP)+ ; GO TO SUBROUTINE

; SAVE PC OF TEST THAT FAILED AND RO-R5
010376 016667 000004 000662 SV0SP: MOV 4(SP), SAVPC

; SAVE RO-R5
010404 010567 000652 SV05: MOV R5, SAVR5
010410 010467 000644 MOV R4, SAVR4
010414 010367 000636 MOV R3, SAVR3
010420 010267 000630 MOV R2, SAVR2
010424 010167 000622 MOV R1, SAVR1
010430 010067 000614 MOV R0, SAVR0
010434 000002 RTI
; RESTORE RO-R5
010436 016700 000606 RS05: MOV SAVR0, R0
010442 016701 000604 MOV SAVR1, R1
010446 016702 000602 MOV SAVR2, R2
010450 016703 000600 MOV SAVR3, R3
010456 016704 000576 MOV SAVR4, R4
010462 016705 000574 MOV SAVR5, R5
010466 000002 RTI
  
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;TELETYPE OUTPUT ROUTINE
010470 017605 000000          TYPGR:  MOV    @ (SP), R5
010474 062716 000002          ADD    @2, (SP)
010500 105777 000466          1S:    TSTB  @TPCSR
010504 100375                    BPL    1S
010506 105715                    TSTB  (R5)
010510 001001                    BNE   2S
010512 000002                    RTI
010514 112577 000454          2S:    MOVB  (R5)+, @TPDBR
010520 000767                    BR    1S

;ASCII STRING INPUT ROUTINE
010522 017667 000000 000006  INSTRG: MOV    @ (SP), MSG
010530 062716 000002          ADD    @2, (SP)
010534 104401          INSTR1: TYPE
010536 000000          MSG:    0
010540 012704 011714          MOV    @INBUF, R4
010544 012703 000007          MOV    @7, R3
010550 105777 000412          1S:    TSTB  @TKCSR
010554 100375                    BPL    1S
010556 117714 000406          MOVB  @TKDBR, (R4)
010562 142714 000200          BICB  @200, (R4)
010566 122427 000015          CMPB  (R4)+, @15
010572 001413          BEQ   INSTR2
010574 117777 000370 000372  2S:    MOVB  @TKDBR, @TPDBR
010602 105777 000364          TSTB  @TPCSR
010606 100375                    BPL    2S
010610 005303                    DEC   R3
010612 001356                    BNE   1S
010614 104401          INSTR2: TYPE
010616 011547          NGM
010620 000745          BR    INSTR1
010622 000002          INSTR2: RTI
  
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2183 010624 011605
2184 010626 012567 000146
2185 010632 012567 000144
2186 010636 012567 000142
2187 010642 112567 000140
2188 010646 112567 000135
2189 010652 010516
2190 010654 005005
2191 010656 012704 011714
2192 010662 122714 000015
2193 010666 001420
2194 010670 121427 000060
2195 010674 002415
2196 010676 121427 000067
2197 010702 003012
2198 010704 142714 000060
2199 010710 152405
2200 010712 122714 000015
2201 010716 001406
2202 010720 006305
2203 010722 006305
2204 010724 006305
2205 010726 000760
2206 010730 104404
2207 010732 000750
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2210 010734 020567 000042
2211 010740 101373
2212 010742 020567 000032
2213 010746 103770
2214 010750 136705 000032
2215 010754 001365
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2219 010756 016704 000022
2220 010762 010524
2221 010764 062705 000002
2222 010770 105367 000013
2223 010774 001372
2224 010776 000002
2225 011000 000010
2226 011002 000000
2227 011004 000000
2228 011006 000000
2229 011007
  
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;CONVERT ASCII STRING TO OCTAL

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PARAMS: MOV (SP),R5
MOV (R5)+,LOLIM
MOV (R5)+,HILIM
MOV (R5)+,DEVADR
MOVB (R5)+,LOBITS
MOVB (R5)+,ADRCNT
MOV R5,(SP)
PARAM1: CLR R5
MOV %INBUF,R4
CMPB #15,(R4)
BEQ PARERR
IS: CMPB (R4),#60
BLT PARERR
CMPB (R4),#67
BGT PARERR
BICB #60,(R4)
BISB (R4)+,R5
CMPB #15,(R4)
BEQ LIMITS
ASL R5
ASL R5
ASL R5
BR IS
PARERR: INSTER
BR PARAM1
  
```

;TEST TO SEE IF NUMBER IS WITHIN LIMITS

```

LIMITS: CMP R5,HILIM
BHI PARERR
CMP R5,LOLIM
BLO PARERR
BITB LOBITS,R5
BNE PARERR
  
```

;STORE NUMBER AT SPECIFIED ADDRESS

```

IS: MOV DEVADR,R4
MOV R5,(R4)+
ADD #2,R5
DECB ADRCNT
BNE IS
RTI
  
```

```

LOLIM: 0
HILIM: 0
DEVADR: 0
LOBITS: 0
ADRCNT=LOBITS+1
  
```

;CONVERT OCTAL NUMBER TO ASCII AND OUTPUT TO TELEPRINTER

```

2530
2531
2532
2533
2534
2535
2536
2537
2538
2539
2540
2541
2542
2543
2544
2545
2546
2547
2548
2549
2550
2551
2552
2553
2554
2555
2556
2557
2558
2559
2560
2561
2562
2563
2564
2565
2566
2567
2568
2569
2570
2571
011010 104401
011012 011553
011014 017601 000000
011020 062716 000002
011024 012167 000130
011030 112167 000126
011034 112167 000123
011040 013167 000120
011044 016704 000114
011050 116705 000106
011054 012700 011726
011060 010403
011062 042703 177770
011066 062703 000260
011072 110320
011074 006204
011076 006204
011100 006204
011102 005305
011104 001365
011106 012703 011740
011112 114023
011114 105367 000042
011120 001374
011122 105767 000035
011126 001405
011130 112723 000240
011134 105367 000023
011140 001373
011142 105013
011144 104401
011146 011740
011150 005367 000004
011154 001325
011156 000002
011160 000000
011162 000000
011163 011163
011164 000000

```

```

OCTASN: TYPE
MCRLF
MOV @ (SP), R1
ADD @2 (SP)
MOV (R1)+, WRDCNT
1S: MOVB (R1)+, CHRCNT
MOVB (R1)+, SPACNT
MOV @ (R1)+, BINWRD
2S: MOV BINWRD, R4
MOVB CHRCNT, R5
MOV @TEMP, R0
3S: MOV R4, R3
BIC @177770, R3
ADD @260, R3
MOVB R3, (R0)+
ASR R4
ASR R4
ASR R4
DEC R5
BNE 3S
MOV @MDATA, R3
4S: MOVB -(R0), (R3)+
DECB CHRCNT
BNE 4S
TSTB SPACNT
BEQ 6S
5S: MOVB @240, (R3)+
DECB SPACNT
BNE 5S
6S: CLRB (R3)
TYPE
MDATA
DEC WRDCNT
BNE 1S
RTI
WRDCNT: 0
CHRCNT: 0
SPACNT=CHRCNT+1
BINWRD: 0

```



011166 177560  
 011170 177562  
 011172 177564  
 011174 177566  
 011176 000000  
 011200 000000  
 011202 000000  
 011204 000000  
 011206 000000  
 011210 000000  
 011212 000000  
 011214 000000  
 011216 000000  
 011220 000000  
 011222 000000  
 011224 000000  
 011226 000000  
 011238 000000  
 011239 000000  
 011240 000000  
 011242 000000  
 011244 000000  
 011246 000000  
 011248 000000  
 011250 000000  
 011252 000000  
 011254 000000  
 011256 000000  
 011258 000000  
 011260 000000  
 011262 000000  
 011264 000000  
 011266 000000  
 011270 000000  
 011272 000000  
 011274 000000

;INDIRECT POINTERS

TKCSR: 177560  
 TKDBR: 177562  
 TPCSR: 177564  
 TPDBR: 177566  
 DHSCR: 0  
 DHNRC: 0  
 DHLPR: 0  
 DHBA: 0  
 DHBC: 0  
 DHBAR: 0  
 DHBCR: 0  
 DHSSR: 0  
 DHSLR: 0  
 DHVVEC: 0  
 DHRLVL: 0  
 DHTVEC: 0  
 DHTLVL: 0

;PROGRAM VARIABLES

ERRFLG: 0 ;ERROR FLAG  
 PASCNT: 0 ;PASS COUNT  
 ERRCNT: 0 ;ERROR COUNT  
 RETURN: 0 ;SCOPE RETURN ADDRESS FOR TEST LOOPING  
 ESCAPE: 0 ;ADDRESS FOR ERROR ESCAPE  
 FREEZ1: 0 ;DATA LOOPING RETURN ADDRESS  
 ICOUNT: 0 ;ITERATION COUNT FOR TEST IN PROGRESS  
 LPCNT: 0 ;NUMBER OF ITERATIONS THIS TEST  
 SAVR0: 0 ;R0 SAVE AREA  
 SAVR1: 0 ;R1 SAVE AREA  
 SAVR2: 0 ;R2 SAVE AREA  
 SAVR3: 0 ;R3 SAVE ARE  
 SAVR4: 0 ;R4 SAVE AREA  
 SAVR5: 0 ;R5 SAVE AREA  
 SAVSP: 0 ;STACK POINTER SAVE AREA  
 SAVPC: 0 ;CALLING ROUTINE SAVE AREA  
 INIFLG: 0 ;PROGRAM INITIALIZATION FLAG  
 STFLG: 0 ;PROGRAM START FLAG  
 LAST: 0 ;LAST ERROR PC

011276  
011300  
011300  
011300  
011300  
011306  
011310  
011312  
011316  
011320  
011330  
011332  
011334  
011340  
011342  
011344  
011346  
011350  
011352  
011354  
011362  
011370  
011374  
011400  
011404  
011406  
011410  
011412  
011414  
011416  
011422  
011426  
011432  
011434  
011440

010046  
010146  
010246  
010346  
010446  
010546  
016746  
010667  
012767  
000000  
000777  
166506  
177742  
011334  
016706  
012605  
012604  
012603  
012602  
012601  
012600  
012767  
012767  
012706  
005067  
005267  
001375  
104402  
011432  
104401  
011556  
005067  
005067  
000177  
000001  
000006  
000207

166474

166442  
166406

177606  
177646  
177604

000002

;ENTER HERE ON POWER FAILURE

```
PFAIL:  MOV    RO, -(SP)           ;SAVE RO-RS ON PROCESSOR STACK
        MOV    R1, -(SP)
        MOV    R2, -(SP)
        MOV    R3, -(SP)
        MOV    R4, -(SP)
        MOV    R5, -(SP)
        MOV    SP, SAVSP          ;SAVE STACK POINTER
        MOV    @RESTART, 24       ;SET UP FOR POWER UP TRAP
        HALT                               ;HALT ON POWER DOWN NORMAL
        BR
```

;PROCESSOR WILL TRAP HERE WHEN POWER IS RESTORED

```
RESTAR: MOV    SAVSP, SP          ;RESTORE STACK POINTER
        MOV    (SP)+, R5          ;RESTORE RO-RS
        MOV    (SP)+, R4
        MOV    (SP)+, R3
        MOV    (SP)+, R2
        MOV    (SP)+, R1
        MOV    (SP)+, RO
        MOV    @PFAIL, 24        ;SET UP FOR POWER FAILURE
        MOV    @340, PS
        MOV    @STACK, SP
        CLR    TEMP
        INC    TEMP
        BNE    .-4
        OCTASC
        PFTAB
        TYPE
        @PFAIL
        CLR    ERRFLG
        CLR    LAST
        JMP    @RETURN
PFTAB:  1
        6, 2
        RETURN
```



```

011442 005015 042012 030510
011450 020061 042515 047515
011456 054522 052040 051505
011464 020124 005015 000
011471 015 053015 041505
011479 047524 020123 042101
011504 051104 051505 026523
011512 000
011513 015 041412 047117
011514 051124 046117 051040
011515 043505 051511 042524
011516 020123 042101 051104
011517 051505 026523 000
011518 040 037440 000
011519 015 000012
011556 020040 047520 042527
011557 020122 040506 046111
011572 051125 026105 050040
011600 047522 051107 046501
011606 051040 051505 040524
011614 052122 040440 020124
011622 042524 052123 044440
011630 020116 051120 043517
011636 042522 051523 000
011643 015 042012 042132
011650 041110 000
011653 015 051012 000
011657 015 052012 051505
011664 020124 041520 000055

```

```

MTITLE: .ASCIZ <15><12><12>/DH11 MEMORY TEST /<15><12>
MVECTO: .ASCIZ <15><12>/VECTOR ADDRESS-/
MREGAD: .ASCIZ <15><12>/CONTROL REGISTER ADDRESS-/
MOM: .ASCIZ / ?/
MCRLF: .ASCIZ <15><12>
MPFAIL: .ASCIZ / POWER FAILURE, PROGRAM RESTART AT TEST IN PROGRESS/
MEPASS: .ASCIZ <15><12>/DZDHB/
MR: .ASCIZ <15><12>/R/
MTSTPC: .ASCIZ <15><12>/TEST PC-/

```

;TABLE OF POINTERS FOR TRAP DECODING

```

TRPTAB: SCOPER
        TYPER
        OCTASN
        INSTRG
        INSTRE
        PARAMS
        SVOSP
        RSOS
        SCOP1R

```

;BUFFERS FOR INPUT-OUTPUT

```

INBUF: 0
.=.+10
TEMP: 0
.=.+10
MDATA: 0
.=.+10

```

;TABLE OF POINTERS TO ERROR MESSAGES AND DATA

```

ERRTAB: 0
        0

```

2708	011756	012002				EM1		
2709	011760	012340				DT1		
2710	011762	012064				EM2		
2711	011764	012340				DT1		
2712	011766	012145				EM3		
2713	011770	012356				DT2		
2714	011772	012213				EM4		
2715	011774	012356				DT2		
2716	011776	012260				EM5		
2717	012000	012370				DT3		
2718	012002	052502	020123	042101	EM1:	.ASCIZ	/BUS ADDRESS MEMORY ERROR/<15><12>/EXP	REC ADDRESS/
2719	012010	051104	051505	020123				
2720	012016	042515	047515	054522				
2721	012024	042440	051122	051117				
2722	012032	005015	054105	020120				
2723	012040	020040	020040	042522				
2724	012046	020103	020040	020040				
2725	012054	042101	051104	051505				
2726	012062	000123						
2727	012064	054502	042524	041440	EM2:	.ASCIZ	/BYTE COUNT MEMORY ERROR/<15><12>/EXP	REC ADDRESS/
2728	012072	052517	052116	046440				
2729	012100	046505	051117	020131				
2730	012106	051105	047522	006522				
2731	012114	042412	050130	020040				
2732	012122	020040	051040	041505				
2733	012130	020040	020040	040440				
2734	012136	042104	042522	051523				
2735	012144	000						
2736	012145	102	051523	040440	EM3:	.ASCIZ	/BUS ADDRESS MEMORY ERROR/<15><12>/EXP	REC/
2737	012153	042104	042522	051523				
2738	012160	046440	046505	051117				
2739	012166	020131	051105	047522				
2740	012174	006522	042412	050130				
2741	012202	020040	020040	051040				
2742	012210	041505	000					
2743	012213	102	052131	020105	EM4:	.ASCIZ	/BYTE COUNT MEMORY ERROR/<15><12>/EXP	REC/
2744	012220	047503	047125	020124				
2745	012226	042515	047515	054522				
2746	012234	042440	051122	051117				
2747	012242	005015	054105	020120				
2748	012250	020040	020040	042522				
2749	012256	000103						
2750	012260	042515	047515	054522	EM5:	.ASCIZ	/MEMORY EXTENSION ERROR/<15><12>/EXP	REC ADDRESS/
2751	012266	042440	052130	047105				
2752	012274	044523	047117	042440				
2753	012302	051122	051117	005015				
2754	012310	054105	020120	020040				
2755	012316	020040	042522	020103				
2756	012324	020040	020040	042101				
2757	012332	051104	051505	000123				
2758					.EVEN			
2759	012340	000003			DT1:			
2760	012342	006	002		.BYTE	3		
2761	012344	011254			.BYTE	6 2	SAVR2	
2762	012346	006	002		.BYTE	6 2	SAVR3	
2763	012350	011256						



2764	012352	002	000	.BYTE	2 0
2765	012354	011250			SAVR4
2766	012356	000002		DT2:	2
2767	012360	006	002	.BYTE	6 2
2768	012362	011262			SAVR5
2769	012364	006	002	.BYTE	6 2
2770	012366	011260			SAVR4
2771	012370	000003		DT3:	3
2772	012372	006	002	.BYTE	6 2
2773	012374	011262			SAVR5
2774	012376	006	002	.BYTE	6 2
2775	012400	011260			SAVR4
2776	012402	002	000	.BYTE	2 0
2777	012404	011256			SAVR3
2778	012406	000000		ENDCOD:	0
2779		000001		.END	

















VEC2	001070	880	883#											
WRDCNT	011160	2537#	2565#	2568#										
X	= 000000	1#												
XADRS	= 000020	1011#	1035#	1059#	1083#	1107#	1131#	1155#	1179#	1203#	1227#	1251#	1275#	1299#
		1323#	1347#	1371#	1395#	1419#	1443#	1467#	1491#	1515#	1539#	1563#	1587#	1611#
		1635#	1659#	1683#	1707#	1731#	1755#	1779#						
XCADRS=	000020	1011#	1035#	1059#	1083#	1107#	1131#	1155#	1179#	1203#	1227#	1251#	1275#	1299#
		1323#	1347#	1371#	1395#	1419#	1443#	1467#	1491#	1515#	1539#	1563#	1587#	1611#
		1635#	1659#	1683#	1707#	1731#	1755#	1779#						
XN	= 000056	1#	945	948#	982	985#	1016	1019#	1040	1043#	1064	1067#	1088	1091#
		1112	1115#	1136	1139#	1160	1163#	1184	1187#	1208	1211#	1232	1235#	1256
		1259#	1280	1283#	1304	1307#	1328	1331#	1352	1355#	1376	1379#	1400	1403#
		1424	1427#	1448	1451#	1472	1475#	1496	1499#	1520	1523#	1544	1547#	1568
		1571#	1592	1595#	1616	1619#	1640	1643#	1664	1667#	1688	1691#	1712	1715#
		1736	1739#	1760	1763#	1787	1791#	1836	1840#	1885	1889#	1934	1938#	1983
		1987#	2032	2036#	2081	2085#	2130	2134#	2175	2179#	2221	2225#	2267	2271#
Y	= 000011	1#	850	851#	852#	853#	854#	855#	856#	857#	858#	859#		
.	= 012410	574#	575	577	579	581	583	585	587	589	591	593	595	597
		599	601	603	605	607	609	611	613	615	617	619	621	623
		625	627	629	631	633	635	637	639	641	643	645	647	649
		651	653	655	657	659	661	663	665	667	669	671	673	675
		677	679	681	683	685	687	689	691	693	695	697	699	701
		703	705	707	709	711	713	715	717	719	721	723	725	727
		729	731	733	735	737	739	741	743	745	747	749	751	753
		755	757	759	761	763	765	767	769	771	773	775	777	779
		781	783	785	787	789	791	793	795	797	799	801	803	805
		807	809	811	813	815	817	819	821	823	825	827	829	834#
		841#	859#	2625	2641	2697#	2699#	2701#						





# N05

DZDMB MACY11 27(732) 04-MAY-76 13:57 PAGE 69  
 DZDMB.PFC CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

ADD	888	889	955	970	992	1007	2376	2417	2447	2459	2521	2536	2546		
ASL	2373	2374	2415	2501	2502	2503									
ASR	2548	2549	2550												
BEQ	882	920	967	1004	1025	1031	1049	1055	1073	1079	1097	1103	1121	1127	1145
	1151	1169	1175	1193	1199	1217	1223	1241	1247	1265	1271	1289	1295	1313	1319
	1337	1343	1361	1367	1385	1391	1409	1415	1433	1439	1457	1463	1481	1487	1505
	1511	1529	1535	1553	1559	1577	1583	1601	1607	1625	1631	1649	1655	1673	1679
	1697	1703	1721	1727	1745	1751	1769	1775	1815	1818	1864	1867	1913	1916	1962
	1965	2011	2014	2060	2063	2109	2112	2158	2161	2204	2207	2250	2253	2296	2299
	2324	2351	2357	2366	2380	2389	2401	2469	2492	2500	2558				
BGT	2496														
BHI	2511														
BIC	1028	1052	1076	1100	1124	1148	1172	1196	1220	1244	1268	1292	1316	1340	1364
	1388	1412	1436	1460	1484	1508	1532	1556	1580	1604	1628	1652	1676	1700	1724
	1748	1772	2186	2232	2278	2375	2416	2545							
BICB	2467	2497													
BIS	2192	2238	2284												
BISB	2498														
BIT	881	919	2335	2337	2339	2356	2363	2400							
BITB	2514														
BLO	2513														
BLT	2494														
BNE	878	891	911	932	958	972	995	1009	1802	1823	1826	1851	1872	1875	1900
	1921	1924	1949	1970	1973	1998	2019	2022	2047	2068	2071	2096	2117	2120	2145
	2166	2169	2190	2212	2215	2236	2258	2261	2282	2304	2307	2336	2338	2340	2343
	2364	2382	2451	2474	2515	2523	2552	2556	2561	2566	2641				
BPL	2394	2449	2465	2472											
BR	880	929	2352	2454	2477	2504	2506	2625							
CLR	871	872	873	874	875	887	950	951	961	962	987	988	998	999	1027
	1051	1075	1099	1123	1147	1171	1195	1219	1243	1267	1291	1315	1339	1363	1387
	1411	1435	1459	1483	1507	1531	1555	1579	1603	1627	1651	1675	1699	1723	1747
	1771	1793	1797	1798	1805	1816	1842	1846	1847	1854	1865	1891	1895	1896	1903
	1914	1947	1944	1945	1952	1963	1989	1993	1994	2001	2012	2038	2042	2043	2050
	2061	2067	2091	2099	2136	2140	2148	2181	2185	2194	2205	2227	2271	2240	2251
	2273	2277	2286	2297	2311	2320	2344	2345	2368	2489	2639	2646	2647		
CLRB	2562														
CMP	890	965	1002	1024	1048	1072	1096	1120	1144	1168	1192	1216	1240	1264	1288
	1312	1336	1360	1384	1408	1432	1456	1480	1504	1528	1552	1576	1600	1624	1648
	1672	1696	1720	1744	1768	1812	1817	1861	1866	1910	1915	1959	1964	2008	2013
	2057	2062	2106	2111	2155	2160	2201	2206	2247	2252	2293	2298	2342	2365	2510
	2512														
CMPB	2468	2491	2493	2495	2499										
COM	912	933	2110	2159											
DEC	957	971	994	1008	1801	1822	1825	1850	1871	1874	1899	1920	1923	1948	1969
	1972	1997	2018	2021	2046	2067	2070	2095	2116	2119	2144	2165	2168	2189	2211
	2214	2235	2257	2260	2281	2303	2306	2473	2551	2565					
	2522	2555	2560												
DECB	554														
ENT	576	578	580	582	584	586	588	590	592	594	596	598	600	602	604
HALT	606	608	610	612	614	616	618	620	622	624	626	628	630	632	634
	636	638	640	642	644	646	648	650	652	654	656	658	660	662	664
	666	668	670	672	674	676	678	680	682	684	686	688	690	692	694
	696	698	700	702	704	706	708	710	712	714	716	718	720	722	724
	726	728	730	732	734	736	738	740	742	744	746	748	750	752	754
	756	758	760	762	764	766	768	770	772	774	776	778	780	782	784
	786	788	790	792	794	796	798	800	802	804	806	808	810	812	814







.EVEN	2758														
.IF	878	880	908	948	985	1019	1043	1067	1091	1115	1139	1163	1187	1211	1235
	1259	1283	1307	1331	1355	1379	1403	1427	1451	1475	1499	1523	1547	1571	1595
	1619	1643	1667	1691	1715	1739	1763	1790	1839	1888	1937	1986	2035	2084	2133
	2178	2224	2270												
.IFF	880	881	969	1005	1026	1027	1032	1033	1050	1051	1056	1057	1074	1075	1080
.IIF	867	968													
	1081	1098	1099	1104	1105	1122	1123	1128	1129	1146	1147	1152	1153	1170	1171
	1176	1177	1194	1195	1200	1201	1218	1219	1224	1225	1242	1243	1248	1249	1266
	1267	1272	1273	1290	1291	1296	1297	1314	1315	1320	1321	1338	1339	1344	1345
	1362	1363	1368	1369	1386	1387	1392	1393	1410	1416	1434	1440	1458	1464	1482
	1488	1506	1512	1530	1536	1554	1560	1578	1584	1602	1608	1626	1632	1650	1656
	1674	1680	1698	1704	1722	1728	1746	1752	1770	1776	1819	1820	1868	1869	1917
	1918	1966	2015	2064	2113	2114	2162								
.IRP	2578														
.LIST	1	488	507	851	852	853	854	855	856	857	858	859	936	948	985
	1011	1019	1035	1043	1059	1067	1083	1091	1107	1115	1131	1139	1155	1163	1179
	1187	1203	1211	1227	1235	1251	1259	1275	1283	1299	1307	1323	1331	1347	1355
	1371	1379	1395	1403	1419	1427	1443	1451	1467	1475	1491	1499	1515	1523	1539
	1547	1563	1571	1587	1595	1611	1619	1635	1643	1659	1667	1683	1691	1707	1715
	1731	1739	1755	1763	1779	1791	1840	1889	1938	1987	2036	2085	2134	2179	2225
	2271														
.MACRO	1	859	936												
.NLIST	1	488	507	851	852	853	854	855	856	857	858	859	936	948	985
	1011	1019	1035	1043	1059	1067	1083	1091	1107	1115	1131	1139	1155	1163	1179
	1187	1203	1211	1227	1235	1251	1259	1275	1283	1299	1307	1323	1331	1347	1355
	1371	1379	1395	1403	1419	1427	1443	1451	1467	1475	1491	1499	1515	1523	1539
	1547	1563	1571	1587	1595	1611	1619	1635	1643	1659	1667	1683	1691	1707	1715
	1731	1739	1755	1763	1779	1791	1840	1889	1938	1987	2036	2085	2134	2179	2225
	2271														
.PAGE	526	573	831	859	2360	2407	2443	2479	2530	2572	2612	2652			
.REM	1														
.REPT	575	1011	1395												
.TITLE	507														

ERRORS DETECTED: 0  
 DEFAULT GLOBALS GENERATED: 0

\*DZDHB, DZDHB, SEQ/SOL/CRF/PAGNUM=DSKZ:UTIL2.P11, DSKN:DZDHB.PFC  
 RUN-TIME: 13 22 3 SECONDS  
 RUN-TIME RATIO: 108/40=2.6  
 CORE USED: 12K (23 PAGES)

