

DH11

STATIC LOGIC TEST
MD-11-DZDHA-B

EP-DZDHA-B-DL-A
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FIGHE 1 OF 1

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The image displays a grid of 140 small diagrams or data tables, arranged in 10 columns and 14 rows. Each cell in the grid contains a small schematic or data set, likely representing a static logic test for the MD-11-DZDHA-B system. The diagrams are densely packed and appear to be technical drawings or data tables. The right side of the page is mostly blank, with a faint vertical line separating it from the grid.

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- 2. REQUIREMENTS
 - 2.1 EQUIPMENT
 - PDP-11 FAMILY STANDARD COMPUTER WITH 8KW OF MEMORY
 - ASR-33 TELETYPE OR EQUIVALENT
 - DH11 ASYNCHRONOUS MULTIPLEXER
 - DH11 MAINTENANCE CARD INSTALLED
 - 2.2 STORAGE
 - THE PROGRAM LOADS INTO 8KW OF MEMORY
- 3. LOADING PROCEDURE
 - THE STANDART PROCEDURE FOR LOADING ABSOLUTE BINARY TAPES IS TO BE USED
- 4. STARTING PROCEDURE
 - 4.1 CONTROL SWITCH SETTINGS
 - 4.1.1 AFTER PROGRAM LOAD (INITIAL PROGRAM START)
 - ALL CONSOLE SWITCHES DOWN
 - 4.1.2 TO MODIFY DEVICE VECTOR AND CONTROL REGISTER ADDRESSES AFTER PROGRAM RESTART
 - SW00=1
 - 4.1.3 TO START PROGRAM AT SELECTED TEST AFTER PROGRAM RESTART
 - SW01=1
 - 4.2 STARTING ADDRESS
 - THE STARTING ADDRESS FOR ALL TESTS IS 000200
 - THE RESTART ADDRESS FOR ALL TESTS I 0002000
 - THE STARTING ADDRESS TO ENTER A SELECTED TEST IS 000200
 - 4.3 PROGRAM AND/OR OPERATOR ACTION
 - 4.3.1 INITIAL PROGRAM START
 - 4.3.1.1 LOAD PROGRAM INTO MEMORY
 - 4.3.1.2 LOAD ADDRESS 000200
 - 4.3.1.3 CLEAR CONSOLE SWITCHES
 - 4.3.1.4 PRESS START
 - 4.3.1.5 THE PROGRAM WILL TYPE "DH11 STATIC LOGIC TEST" AND WILL THEN TYPE "VECTOR ADDRESS-" AND WAIT FOR AN INPUT FROM THE TELETYPE KEYBOARD.

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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 STATIC LOGIC TEST" AND WILL THEN CONTINUE AS DESCRIBED IN 4.3.1.9

4.3.3 PROGRAM RESTART WITH SW00=1

4.3.3.1 LOAD ADDRESS 000200
4.3.3.2 SET SW01=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 SW01=1

4.3.4.1 LOAD ADDRESS 000200
4.3.4.2 SET SW01=1
4.3.4.3 PRESS START
4.3.4.4 THE PROGRAM WILL TYPE "DH11 STATIC LOGIC 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 000000-000776)

THIS ROUTINE IS USED TO INTERCEPT UNEXPECTED INTERRUPTS AND TRAPS. THE AREA FROM 000000-000776 IS LOADED WITH THE FOLLOWING SEQUENCE

2
0
4
0

772
0
776
0

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 DHI1 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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5.2.4 EOP (END OF PASS)

THIS ROUTINE IS ENTERED ONCE PER PASS AFTER ALL TESTS HAVE BEEN COMPLETED. THIS ROUTINE TYPES THE MAINDEC IDENTIFICATION CODE OF THE PROGRAM, CLEARS ERROR FLAGS AND UPDATES THE PASS COUNT. IF THE PROGRAM WAS LOADED UNDER ACT11 OR DDP, THE ROUTINE CHECKS FOR RETURN TO THE ACT11 OR DDP MONITOR. IF THE PROGRAM IS NOT UNDER MONITOR CONTROL, THE ROUTINE TRANSFERS TO BEGIN.

5.2.5 SCOPER (SCOPE LOOP AND ITERATION HANDLER)

THIS ROUTINE IS ENTERED EACH TIME A TEST IS COMPLETED. THE ROUTINE CHECKS FOR THE FOLLOWING UPON ENTRY
A) IF SW10=1, THE ROUTINE WILL TRANSFER TO THE NEXT TEST IN SEQUENCE, AFTER CLEARING ERROR FLAGS.
B) IF SW11=1, THE ROUTINE WILL TRANSFER TO THE NEXT TEST SEQUENCE, AFTER CLEARING ERROR FLAGS.
C) IF SW14=1, THE ROUTINE WILL LOOP ON THE CURRENT TEST REGARDLESS OF THE ITERATION COUNT.

IF NONE OF THE ABOVE IS TRUE, THE ROUTINE WILL ADD 1 TO THE COUNT OF TEST ITERATIONS, AND COMPARE THIS VALUE TO THE NUMBER OF ITERATIONS THAT SHOULD BE PERFORMED. IF THESE NUMBERS ARE EQUAL, THE ROUTINE WILL TRANSFER TO THE NEXT TEST IN SEQUENCE. IF THE NUMBERS ARE NOT EQUAL, THE TEST CURRENTLY IN PROGRESS WILL BE REPEATED.

5.2.6 SCOP1R (FREEZE ON CURRENT DATA)

THE CALL TO THIS ROUTINE FOLLOWS IMMEDIATELY AFTER THE CALL TO THE ERROR HANDLER IN THOSE TESTS THAT HAVE VARIABLE PARAMETERS. THIS ROUTINE IS ALWAYS ENTERED IN THOSE TESTS, WHETHER OR NOT AN ERROR OCCURS. IF SW09=1, THE ROUTINE WILL TRANSFER CONTROL BACK TO THE TEST AT A POINT WHICH WILL ALLOW REPEATING THE FUNCTION UNDER TEST CONTINUOUSLY WITH THE SAME DATA. IF THIS OPTION IS SELECTED, THE ROUTINE "SCOPER" IS NEVER ENTERED AND ITERATION COUNTS WILL NOT BE UPDATED.

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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 ENT INSTRUCTION ITSELF IS FETCHED. THE 8 LSB OF THE ENT 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 RO. 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 "DZDHA" 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 "DZDHA" 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)
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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 TYPE 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 INHIBITED6.3.2 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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9. PROGRAM DESCRIPTION

THIS PROGRAM IS A LOW LEVEL TEST OF DH11 CONTROL REGISTERS.

THE PROGRAM BEGINS BY CHECKING THE ADDRESSABILITY OF EACH DH11 REGISTER WITHOUT CONCERN FOR ANY DATA CONTENT. THE PURPOSE OF THESE TESTS IS TO VERIFY THAT THE ADDRESS SELECTORS FOR THE VARIOUS REGISTERS ARE FUNCTIONING.

THE NEXT SET OF TESTS VERIFIES THAT EACH DH11 REGISTER CAN BE MASTER CLEARED, AFTER ALL READ/WRITE BITS HAVE BEEN SET TO 1. THIS TEST DOES NOT VERIFY THAT ALL BITS HAVE BEEN SET, ONLY THAT THEY HAVE BEEN CLEARED.

THE NEXT GROUP OF TESTS EXERCISES EACH READ/WRITE BIT IN THE DH11 SYSTEM CONTROL REGISTER, IN BOTH NORMAL AND MAINTENANCE MODES OF OPERATION. IN NORMAL MODE, EACH READ/WRITE BIT IS SET AND CLEARED, AND READ ONLY BITS ARE CHECKED FOR READ ONLY FUNCTION.

IN MAINTENANCE MODE, THE BITS THAT ARE READ ONLY IN NORMAL MODE ARE CHECKED FOR READ/WRITE OPERATION.

THE NEXT GROUP OF TESTS CHECKS EACH READ/WRITE BIT OF THE DH11 LINE PARAMATER REGISTER, BREAK CONTROL REGISTER AND SILO STATUS REGISTER FOR READ/WRITE CAPABILITY. EACH BIT OF EACH REGISTER IS CHECKED IN AN INDIVIDUAL TEST LOOP.

THE FINAL GROUP OF TESTS CHECKS CLEARING OF A SINGLE BIT IN EACH OF THE LINE PARAMETER, BREAK CONTROL AND SILO STATUS REGISTERS WITH ALL OTHER READ/WRITE BITS SET TO 1.

AFTER ALL TESTS HAVE BEEN COMPLETED, THE PROGRAM TYPES "DZDHA" AND RESTARTS THE SEQUENCE OF TESTING JUST DESCRIBED.

10. LISTING

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;DH11 STATIC LOGIC TEST
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;STARTING PROCEDURE
;LOAD PROGRAM
;LOAD ADDRESS 000200
;PRESS START
;PROGRAM WILL TYPE DH11 STATIC LOGIC 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

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533;AT THE END OF A PASS, PROGRAM WILL TYPE " DZDHA "
;AND THEN RESUM TESTING

;SWITCH REGISTER OPTIONS

100000
040000
020000
010000
004000
002000
001000
000400
000100
000020
000010
000004
000002
000001SW15=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;RESTART PROGRAM AT SELECTED TEST
;RESELECT VECTOR AND CONTROL REGISTER
;ADDRESS AFTER PROGRAM RESTART

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536                ;REGISTER DEFINITIONS
537
538                R0=%0                ;GENERAL REGISTER
539                R1=%1                ;GENERAL REGISTER
540                R2=%2                ;GENERAL REGISTER
541                R3=%3                ;GENERAL REGISTER
542                R4=%4                ;GENERAL REGISTER
543                R5=%5                ;GENERAL REGISTER
544                SP=%6                ;PROCESSOR STACK POINTER
545                PC=%7                ;PROGRAM COUNTER
546
547                ;LOCATION EQUIVALENCIES
548
549                SMR=177570           ;CONSOLE SWITCH REGISTER
550                LIGHTS=177570       ;PDP-11/45 DISPLAY REGISTER
551                PS=177776           ;PROCESSOR STATUS WORD
552                STACK=ENDCOD+200;START OF PROCESSOR STACK
553
554                ;INSTRUCTION DEFINITIONS
555
556                PUSH1SP=5746         ;DECREMENT PROCESSOR STACK 1 WORD
557                POP1SP=5726         ;INCREMENT PROCESSOR STACK 1 WORD
558                PUSHRO=10046        ;SAVE R0 ON STACK
559                POPRO=12600         ;RESTORE R0 FROM STACK
560                PUSH2SP=24646       ;DECREMENT STACK TWICE
561                POP2SP=22626        ;INCREMENT STACK TWICE
562                .EQUIV EMT,H.T      ;BASIC DEFINITION OF ERROR CALL
563
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565                BIT15=100000
566                BIT14=40000
567                BIT13=20000
568                BIT12=10000
569                BIT11=4000
570                BIT10=2000
571                BIT09=1000
572                BIT08=400
573                BIT07=200
574                BIT06=100
575                BIT05=40
576                BIT04=20
577                BIT03=10
578                BIT02=4
579                BIT01=2
580                BIT00=1

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581                                     ;TRAPCATCAER FOR ILLEGAL INTERRUPTS
582                                     .=0
583 000000 000002                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
584 000002 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
585 000004 000006                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
586 000006 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
587 000010 000012                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
588 000012 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
589 000014 000016                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
590 000016 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
591 000020 000022                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
592 000022 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
593 000024 000026                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
594 000026 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
595 000030 000032                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
596 000032 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
597 000034 000036                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
598 000036 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
599 000040 000042                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
600 000042 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
601 000044 000046                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
602 000046 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
603 000050 000052                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
604 000052 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
605 000054 000056                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
606 000056 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
607 000060 000062                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
608 000062 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
609 000064 000066                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
610 000066 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
611 000070 000072                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
612 000072 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
613 000074 000076                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
614 000076 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
615 000100 000102                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
616 000102 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
617 000104 000106                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
618 000106 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
619 000110 000112                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
620 000112 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
621 000114 000116                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
622 000116 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
623 000120 000122                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
624 000122 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
625 000124 000126                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
626 000126 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
627 000130 000132                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
628 000132 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
629 000134 000136                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
630 000136 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
631 000140 000142                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
632 000142 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
633 000144 000146                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
634 000146 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
635 000150 000152                       .+2      ;UNEXPECTED TRAP TO THIS LOCATION
636 000152 000000                       HALT     ;EXAMINE STACK TO FIND CAUSE
  
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637	000154	000156	.+2	:UNEXPECTED TRAP TO THIS LOCATION
638	000156	000000	HALT	:EXAMINE STACK TO FIND CAUSE
639	000160	000162	.+2	:UNEXPECTED TRAP TO THIS LOCATION
640	000162	000000	HALT	:EXAMINE STACK TO FIND CAUSE
641	000164	000166	.+2	:UNEXPECTED TRAP TO THIS LOCATION
642	000166	000000	HALT	:EXAMINE STACK TO FIND CAUSE
643	000170	000172	.+2	:UNEXPECTED TRAP TO THIS LOCATION
644	000172	000000	HALT	:EXAMINE STACK TO FIND CAUSE
645	000174	000176	.+2	:UNEXPECTED TRAP TO THIS LOCATION
646	000176	000000	HALT	:EXAMINE STACK TO FIND CAUSE
647	000200	000202	.+2	:UNEXPECTED TRAP TO THIS LOCATION
648	000202	000000	HALT	:EXAMINE STACK TO FIND CAUSE
649	000204	000206	.+2	:UNEXPECTED TRAP TO THIS LOCATION
650	000206	000000	HALT	:EXAMINE STACK TO FIND CAUSE
651	000210	000212	.+2	:UNEXPECTED TRAP TO THIS LOCATION
652	000212	000000	HALT	:EXAMINE STACK TO FIND CAUSE
653	000214	000216	.+2	:UNEXPECTED TRAP TO THIS LOCATION
654	000216	000000	HALT	:EXAMINE STACK TO FIND CAUSE
655	000220	000222	.+2	:UNEXPECTED TRAP TO THIS LOCATION
656	000222	000000	HALT	:EXAMINE STACK TO FIND CAUSE
657	000224	000226	.+2	:UNEXPECTED TRAP TO THIS LOCATION
658	000226	000000	HALT	:EXAMINE STACK TO FIND CAUSE
659	000230	000232	.+2	:UNEXPECTED TRAP TO THIS LOCATION
660	000232	000000	HALT	:EXAMINE STACK TO FIND CAUSE
661	000234	000236	.+2	:UNEXPECTED TRAP TO THIS LOCATION
662	000236	000000	HALT	:EXAMINE STACK TO FIND CAUSE
663	000240	000242	.+2	:UNEXPECTED TRAP TO THIS LOCATION
664	000242	000000	HALT	:EXAMINE STACK TO FIND CAUSE
665	000244	000246	.+2	:UNEXPECTED TRAP TO THIS LOCATION
666	000246	000000	HALT	:EXAMINE STACK TO FIND CAUSE
667	000250	000252	.+2	:UNEXPECTED TRAP TO THIS LOCATION
668	000252	000000	HALT	:EXAMINE STACK TO FIND CAUSE
669	000254	000256	.+2	:UNEXPECTED TRAP TO THIS LOCATION
670	000256	000000	HALT	:EXAMINE STACK TO FIND CAUSE
671	000260	000262	.+2	:UNEXPECTED TRAP TO THIS LOCATION
672	000262	000000	HALT	:EXAMINE STACK TO FIND CAUSE
673	000264	000266	.+2	:UNEXPECTED TRAP TO THIS LOCATION
674	000266	000000	HALT	:EXAMINE STACK TO FIND CAUSE
675	000270	000272	.+2	:UNEXPECTED TRAP TO THIS LOCATION
676	000272	000000	HALT	:EXAMINE STACK TO FIND CAUSE
677	000274	000276	.+2	:UNEXPECTED TRAP TO THIS LOCATION
678	000276	000000	HALT	:EXAMINE STACK TO FIND CAUSE
679	000300	000302	.+2	:UNEXPECTED TRAP TO THIS LOCATION
680	000302	000000	HALT	:EXAMINE STACK TO FIND CAUSE
681	000304	000306	.+2	:UNEXPECTED TRAP TO THIS LOCATION
682	000306	000000	HALT	:EXAMINE STACK TO FIND CAUSE
683	000310	000312	.+2	:UNEXPECTED TRAP TO THIS LOCATION
684	000312	000000	HALT	:EXAMINE STACK TO FIND CAUSE
685	000314	000316	.+2	:UNEXPECTED TRAP TO THIS LOCATION
686	000316	000000	HALT	:EXAMINE STACK TO FIND CAUSE
687	000320	000322	.+2	:UNEXPECTED TRAP TO THIS LOCATION
688	000322	000000	HALT	:EXAMINE STACK TO FIND CAUSE
689	000324	000326	.+2	:UNEXPECTED TRAP TO THIS LOCATION
690	000326	000000	HALT	:EXAMINE STACK TO FIND CAUSE
691	000330	000332	.+2	:UNEXPECTED TRAP TO THIS LOCATION
692	000332	000000	HALT	:EXAMINE STACK TO FIND CAUSE

693	000334	000336	.+2	:UNEXPECTED TRAP TO THIS LOCATION
694	000336	000000	HALT	:EXAMINE STACK TO FIND CAUSE
695	000340	000342	.+2	:UNEXPECTED TRAP TO THIS LOCATION
696	000342	000000	HALT	:EXAMINE STACK TO FIND CAUSE
697	000344	000346	.+2	:UNEXPECTED TRAP TO THIS LOCATION
698	000346	000000	HALT	:EXAMINE STACK TO FIND CAUSE
699	000350	000352	.+2	:UNEXPECTED TRAP TO THIS LOCATION
700	000352	000000	HALT	:EXAMINE STACK TO FIND CAUSE
701	000354	000356	.+2	:UNEXPECTED TRAP TO THIS LOCATION
702	000356	000000	HALT	:EXAMINE STACK TO FIND CAUSE
703	000360	000362	.+2	:UNEXPECTED TRAP TO THIS LOCATION
704	000362	000000	HALT	:EXAMINE STACK TO FIND CAUSE
705	000364	000366	.+2	:UNEXPECTED TRAP TO THIS LOCATION
706	000366	000000	HALT	:EXAMINE STACK TO FIND CAUSE
707	000370	000372	.+2	:UNEXPECTED TRAP TO THIS LOCATION
708	000372	000000	HALT	:EXAMINE STACK TO FIND CAUSE
709	000374	000376	.+2	:UNEXPECTED TRAP TO THIS LOCATION
710	000376	000000	HALT	:EXAMINE STACK TO FIND CAUSE
711	000400	000402	.+2	:UNEXPECTED TRAP TO THIS LOCATION
712	000402	000000	HALT	:EXAMINE STACK TO FIND CAUSE
713	000404	000406	.+2	:UNEXPECTED TRAP TO THIS LOCATION
714	000406	000000	HALT	:EXAMINE STACK TO FIND CAUSE
715	000410	000412	.+2	:UNEXPECTED TRAP TO THIS LOCATION
716	000412	000000	HALT	:EXAMINE STACK TO FIND CAUSE
717	000414	000416	.+2	:UNEXPECTED TRAP TO THIS LOCATION
718	000416	000000	HALT	:EXAMINE STACK TO FIND CAUSE
719	000420	000422	.+2	:UNEXPECTED TRAP TO THIS LOCATION
720	000422	000000	HALT	:EXAMINE STACK TO FIND CAUSE
721	000424	000426	.+2	:UNEXPECTED TRAP TO THIS LOCATION
722	000426	000000	HALT	:EXAMINE STACK TO FIND CAUSE
723	000430	000432	.+2	:UNEXPECTED TRAP TO THIS LOCATION
724	000432	000000	HALT	:EXAMINE STACK TO FIND CAUSE
725	000434	000436	.+2	:UNEXPECTED TRAP TO THIS LOCATION
726	000436	000000	HALT	:EXAMINE STACK TO FIND CAUSE
727	000440	000442	.+2	:UNEXPECTED TRAP TO THIS LOCATION
728	000442	000000	HALT	:EXAMINE STACK TO FIND CAUSE
729	000444	000446	.+2	:UNEXPECTED TRAP TO THIS LOCATION
730	000446	000000	HALT	:EXAMINE STACK TO FIND CAUSE
731	000450	000452	.+2	:UNEXPECTED TRAP TO THIS LOCATION
732	000452	000000	HALT	:EXAMINE STACK TO FIND CAUSE
733	000454	000456	.+2	:UNEXPECTED TRAP TO THIS LOCATION
734	000456	000000	HALT	:EXAMINE STACK TO FIND CAUSE
735	000460	000462	.+2	:UNEXPECTED TRAP TO THIS LOCATION
736	000462	000000	HALT	:EXAMINE STACK TO FIND CAUSE
737	000464	000466	.+2	:UNEXPECTED TRAP TO THIS LOCATION
738	000466	000000	HALT	:EXAMINE STACK TO FIND CAUSE
739	000470	000472	.+2	:UNEXPECTED TRAP TO THIS LOCATION
740	000472	000000	HALT	:EXAMINE STACK TO FIND CAUSE
741	000474	000476	.+2	:UNEXPECTED TRAP TO THIS LOCATION
742	000476	000000	HALT	:EXAMINE STACK TO FIND CAUSE
743	000500	000502	.+2	:UNEXPECTED TRAP TO THIS LOCATION
744	000502	000000	HALT	:EXAMINE STACK TO FIND CAUSE
745	000504	000506	.+2	:UNEXPECTED TRAP TO THIS LOCATION
746	000506	000000	HALT	:EXAMINE STACK TO FIND CAUSE
747	000510	000512	.+2	:UNEXPECTED TRAP TO THIS LOCATION
748	000512	000000	HALT	:EXAMINE STACK TO FIND CAUSE

749	000514	000516	.+2	:UNEXPECTED TRAP TO THIS LOCATION
750	000516	000000	HALT	:EXAMINE STACK TO FIND CAUSE
751	000520	000522	.+2	:UNEXPECTED TRAP TO THIS LOCATION
752	000522	000000	HALT	:EXAMINE STACK TO FIND CAUSE
753	000524	000526	.+2	:UNEXPECTED TRAP TO THIS LOCATION
754	000526	000000	HALT	:EXAMINE STACK TO FIND CAUSE
755	000530	000532	.+2	:UNEXPECTED TRAP TO THIS LOCATION
756	000532	000000	HALT	:EXAMINE STACK TO FIND CAUSE
757	000534	000536	.+2	:UNEXPECTED TRAP TO THIS LOCATION
758	000536	000000	HALT	:EXAMINE STACK TO FIND CAUSE
759	000540	000542	.+2	:UNEXPECTED TRAP TO THIS LOCATION
760	000542	000000	HALT	:EXAMINE STACK TO FIND CAUSE
761	000544	000546	.+2	:UNEXPECTED TRAP TO THIS LOCATION
762	000546	000000	HALT	:EXAMINE STACK TO FIND CAUSE
763	000550	000552	.+2	:UNEXPECTED TRAP TO THIS LOCATION
764	000552	000000	HALT	:EXAMINE STACK TO FIND CAUSE
765	000554	000556	.+2	:UNEXPECTED TRAP TO THIS LOCATION
766	000556	000000	HALT	:EXAMINE STACK TO FIND CAUSE
767	000560	000562	.+2	:UNEXPECTED TRAP TO THIS LOCATION
768	000562	000000	HALT	:EXAMINE STACK TO FIND CAUSE
769	000564	000566	.+2	:UNEXPECTED TRAP TO THIS LOCATION
770	000566	000000	HALT	:EXAMINE STACK TO FIND CAUSE
771	000570	000572	.+2	:UNEXPECTED TRAP TO THIS LOCATION
772	000572	000000	HALT	:EXAMINE STACK TO FIND CAUSE
773	000574	000576	.+2	:UNEXPECTED TRAP TO THIS LOCATION
774	000576	000000	HALT	:EXAMINE STACK TO FIND CAUSE
775	000600	000602	.+2	:UNEXPECTED TRAP TO THIS LOCATION
776	000602	000000	HALT	:EXAMINE STACK TO FIND CAUSE
777	000604	000606	.+2	:UNEXPECTED TRAP TO THIS LOCATION
778	000606	000000	HALT	:EXAMINE STACK TO FIND CAUSE
779	000610	000612	.+2	:UNEXPECTED TRAP TO THIS LOCATION
780	000612	000000	HALT	:EXAMINE STACK TO FIND CAUSE
781	000614	000616	.+2	:UNEXPECTED TRAP TO THIS LOCATION
782	000616	000000	HALT	:EXAMINE STACK TO FIND CAUSE
783	000620	000622	.+2	:UNEXPECTED TRAP TO THIS LOCATION
784	000622	000000	HALT	:EXAMINE STACK TO FIND CAUSE
785	000624	000626	.+2	:UNEXPECTED TRAP TO THIS LOCATION
786	000626	000000	HALT	:EXAMINE STACK TO FIND CAUSE
787	000630	000632	.+2	:UNEXPECTED TRAP TO THIS LOCATION
788	000632	000000	HALT	:EXAMINE STACK TO FIND CAUSE
789	000634	000636	.+2	:UNEXPECTED TRAP TO THIS LOCATION
790	000636	000000	HALT	:EXAMINE STACK TO FIND CAUSE
791	000640	000642	.+2	:UNEXPECTED TRAP TO THIS LOCATION
792	000642	000000	HALT	:EXAMINE STACK TO FIND CAUSE
793	000644	000646	.+2	:UNEXPECTED TRAP TO THIS LOCATION
794	000646	000000	HALT	:EXAMINE STACK TO FIND CAUSE
795	000650	000652	.+2	:UNEXPECTED TRAP TO THIS LOCATION
796	000652	000000	HALT	:EXAMINE STACK TO FIND CAUSE
797	000654	000656	.+2	:UNEXPECTED TRAP TO THIS LOCATION
798	000656	000000	HALT	:EXAMINE STACK TO FIND CAUSE
799	000660	000662	.+2	:UNEXPECTED TRAP TO THIS LOCATION
800	000662	000000	HALT	:EXAMINE STACK TO FIND CAUSE
801	000664	000666	.+2	:UNEXPECTED TRAP TO THIS LOCATION
802	000666	000000	HALT	:EXAMINE STACK TO FIND CAUSE
803	000670	000672	.+2	:UNEXPECTED TRAP TO THIS LOCATION
804	000672	000000	HALT	:EXAMINE STACK TO FIND CAUSE

805	000674	000676	.+2	:UNEXPECTED TRAP TO THIS LOCATION
806	000676	000000	HALT	:EXAMINE STACK TO FIND CAUSE
807	000700	000702	.+2	:UNEXPECTED TRAP TO THIS LOCATION
808	000702	000000	HALT	:EXAMINE STACK TO FIND CAUSE
809	000704	000706	.+2	:UNEXPECTED TRAP TO THIS LOCATION
810	000706	000000	HALT	:EXAMINE STACK TO FIND CAUSE
811	000710	000712	.+2	:UNEXPECTED TRAP TO THIS LOCATION
812	000712	000000	HALT	:EXAMINE STACK TO FIND CAUSE
813	000714	000716	.+2	:UNEXPECTED TRAP TO THIS LOCATION
814	000716	000000	HALT	:EXAMINE STACK TO FIND CAUSE
815	000720	000722	.+2	:UNEXPECTED TRAP TO THIS LOCATION
816	000722	000000	HALT	:EXAMINE STACK TO FIND CAUSE
817	000724	000726	.+2	:UNEXPECTED TRAP TO THIS LOCATION
818	000726	000000	HALT	:EXAMINE STACK TO FIND CAUSE
819	000730	000732	.+2	:UNEXPECTED TRAP TO THIS LOCATION
820	000732	000000	HALT	:EXAMINE STACK TO FIND CAUSE
821	000734	000736	.+2	:UNEXPECTED TRAP TO THIS LOCATION
822	000736	000000	HALT	:EXAMINE STACK TO FIND CAUSE
823	000740	000742	.+2	:UNEXPECTED TRAP TO THIS LOCATION
824	000742	000000	HALT	:EXAMINE STACK TO FIND CAUSE
825	000744	000746	.+2	:UNEXPECTED TRAP TO THIS LOCATION
826	000746	000000	HALT	:EXAMINE STACK TO FIND CAUSE
827	000750	000752	.+2	:UNEXPECTED TRAP TO THIS LOCATION
828	000752	000000	HALT	:EXAMINE STACK TO FIND CAUSE
829	000754	000756	.+2	:UNEXPECTED TRAP TO THIS LOCATION
830	000756	000000	HALT	:EXAMINE STACK TO FIND CAUSE
831	000760	000762	.+2	:UNEXPECTED TRAP TO THIS LOCATION
832	000762	000000	HALT	:EXAMINE STACK TO FIND CAUSE
833	000764	000766	.+2	:UNEXPECTED TRAP TO THIS LOCATION
834	000766	000000	HALT	:EXAMINE STACK TO FIND CAUSE
835	000770	000772	.+2	:UNEXPECTED TRAP TO THIS LOCATION
836	000772	000000	HALT	:EXAMINE STACK TO FIND CAUSE
837	000774	000776	.+2	:UNEXPECTED TRAP TO THIS LOCATION
838	000776	000000	HALT	:EXAMINE STACK TO FIND CAUSE

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839                                     ;STANDARD INTERRUPT VECTORS
840
841
842                                     . =24
843 000024 017502                       PFAIL                               ;POWER FAIL HANDLER
844 000026 000340                       340                               ;SERVICE AT LEVEL 7
845 000030 016346                       ERRORS                             ;ERROR HANDLER
846 000032 000340                       340                               ;SERVICE AT LEVEL 7
847 000034 016550                       TRPSRV                             ;GENERAL HANDLER DISPATCH SERVICE
848 000036 000340                       340                               ;SERVICE AT LEVEL 7
849
850 000200 000167 000574                 . =200                               JMP      START                       ;GO TO START OF PROGRAM
851
852
853                                     ;DEFINITIONS FOR TRAP SUBROUTINE CALLS
854                                     ;POINTERS TO SUBROUTINES CAN BE FOUND STARTING
855                                     ;AT LOCATION "TRPTAB"
856
857
858 104400                               SCOPE=TRAP+Y                       ;SCOPE LOOP AND ITERATION HANDLER
859 104401                               TYPE=TRAP+Y                       ;TELETYPE OUTPUT ROUTINE
860 104402                               OCTASC=TRAP+Y                     ;OCTAL TO ASCII CONVERSION
861 104403                               INSTR=TRAP+Y                      ;INPUT ASCII STRING
862 104404                               INSTER=TRAP+Y                    ;STRING INPUT ERROR
863 104405                               PARAM=TRAP+Y                     ;CONVERT STRING TO OCTAL, CHECK LIMITS
864 104406                               SAVDSP=TRAP+Y                   ;SAVE RD-RS, PC
865 104407                               RESOS=TRAP+Y                    ;RESTORE RD-RS
866 104410                               SCOPE1=TRAP+Y                   ;CHECK FOR FREEZE ON CURRENT DATA
867
868 000046 016214                 . =46                               LOGICAL
869 000052 000052                 . =52
870 000052 040000                 40000

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871          001000          .=1000
872
873          ;PROGRAM INITIALIZATION
874          ;LOCK OUT INTERRUPTS
875          ;SET UP PROCESSOR STACK
876          ;SET UP POWER FAIL VECTOR
877          ;CLEAR PROGRAM FLAGS AND COUNTS
878          ;TYPE TITLE MESSAGE
879
880 001000 012767 000340 176770 START: MOV      #340,PS          ;LOCK OUT INTERRUPTS
881 001006 012706 021106          MOV      #STACK,SP        ;SET UP PROCESSOR STACK
882 001012 012737 017502 000024 MOV      #PFAIL,3#24     ;SET UP POWER FAIL TRAP
883 001020 005067 016452          CLR      STFLG           ;CLEAR TEST START FLAG
884 001024 005067 016406          CLR      PASCNT         ;CLEAR PASS COUNT
885 001030 005067 016404          CLR      ERRCNT        ;CLEAR ERROR COUNT
886 001034 005067 016374          CLR      ERRFLG        ;CLEAR ERROR FLAG
887 001040 005067 016370          CLR      ERRFLG        ;CLEAR LAST ERROR PC
888 001044 104401 017646          TYPE    ,MTITLE        ;TYPE TITLE MESSAGE
889 001050 005767 016420          TST     INIFLG         ;CHECK INITIALIZATION FLAG
890 001054 001001          BNE     VEC1           ;IF NOT 0, CHECK SWITCHES
891                                     ;FOR REINITIALIZATION
892 001056 000404          BR      VEC2
893 001060 032767 000001 176502 VEC1: BIT      #SW00,SWR        ;IF SW00=1, GET NEW VECTOR
894 001066 001445          BEQ     BEGIN          ;AND CSR
895 001070 012701 000300          VEC2: MOV      #300,R1
896 001074 012702 000302          MOV      #302,R2
897 001100 012703 000004          MOV      #4,R3
898 001104 010211          IS:  MOV      R2,(R1)   ;RESTORE TRAPCATCHER
899 001106 005012          CLR      (R2)         ;IN FLOATING VECTOR AREA
900 001110 060301          ADD     R3,R1
901 001112 060302          ADD     R3,R2
902 001114 020127 001000          CMP     R1,#1000
903 001120 001371          BNE     IS
904 001122 104403          INSTR          ;INPUT ADDRESS OF DEVICE VECTOR
905 001124 017703          MVECTOR        ;MESSAGE "VECTOR ADDRESS-"
906 001126 104405          PARAM         ;CONVERT STRING TO OCTAL
907 001130 000300          300           ;LOW LIMIT
908 001132 000770          770           ;HIGH LIMIT
909 001134 017424          DHRVEC        ;LOCATIONS TO BE FILLED
910 001136          003          ;NUMBER OF LOCATIONS
911 001137          004          ;LSB MASK
912 001140 104403          INSTR          ;INPUT ADDRESS OF DEVICE CSR
913 001142 017725          MREGAD        ;MESSAGE "CONTROL REGISTER ADDRESS-"
914 001144 104405          PARAM         ;CONVERT STRING TO OCTAL
915 001146 000000          0            ;LOW LIMIT
916 001150 177776          177776       ;HIGH LIMIT
917 001152 017402          DHSCR        ;LOCATIONS TO BE FILLED
918 001154          007          ;NUMBER OF LOCATIONS
919 001155          010          ;LSB MASK
920 001156 016767 016236 016236 .BYTE   MOV      DHSSR,DHSLR  ;SET UP ADDRESS OF SILO
921 001164 005267 016232          INC      DHSLR        ;STATUS REGISTER HIGH BYTE
922 001170 005767 016300          TST     INIFLG        ;IF INITIALIZATION FLAG
923 001174 001002          BNE     BEGIN        ;IS CLEARED
924 001176 005167 016272          COM     INIFLG        ;SET IT
925
926          ;PROGRAM START
  
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927                                     ;CHECK FOR PROGRAM START AT SELECTED ADDRESS
928
929 001202 012767 000340 176566 BEGIN: MOV      #340,PS          ;LOCK OUT INTERRUPTS
930 001210 012706 021106          MOV      #STACK,SP       ;SET UP PROCESSOR STACK
931 001214 032767 000002 176346 BIT      #SW01,SWR       ;IF SW01=1
932 001222 001410          BEQ      1$              ;GET PC FOR PROGRAM START
933 001224 104403          INSTR                     ;GET PC
934 001226 020071          MTSTPC                    ;MESSAGE "TEST PC"
935 001230 104405          PARAM                     ;CONVERT STRING TO OCTAL
936 001232 000000          0
937 001234 017500          17500
938 001236 000207          RETURN
939 001240          001          .BYTE 1
940 001241          001          .BYTE 1
941 001242 000410          BR      2$
942 001244 012767 001274 016170 1$:  MOV      #T1,RETURN      ;NORMAL START, TEST 1
943 001252 005767 016220          TST      STFLG          ;IF LOOPING, BYPASS TYPEOUT
944 001256 001004          BNE     3$
945 001260 005167 016212          COM     STFLG
946 001264 104401 020065          2$:  TYPE     MR
947 001270 000177 016146          3$:  JMP      #RETURN      ;TYPE "R" TO INDICATE START
                                     ;START TESTING

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948
949
950
951
952
953
954 001274 012767 000340 176474 T1:  MOV    #340,PS           ;DISABLE ALL INTERRUPTS
955 001302 012767 000100 016140      MOV    #100,ICOUNT      ;SET UP FOR 100 ITERATIONS
956 001310 012767 001346 016126      MOV    #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
957 001316 012737 001340 000004      MOV    #1$,#4          ;SET UP TIME OUT TRAP
958 001324 012737 000340 000006      MOV    #340,#6        ;
959 001332 005777 016044              TST    DHSCR           ;ADDRESS DH11 SYSTEM CONTROL
960                                ;REGISTER
961 001336 000406              BR     3$             ;NO TRAP, REGISTER RESPONDS
962                                ;TO ADDRESSING
963 001340 016705 016036      1$:  MOV    DHSCR,R5       ;REGISTER DID NOT RESPOND
964 001344 104000              HLT    0              ;TIME OUT TRAP, DH11 SYSTEM CONTROL
965                                ;REGISTER DID NOT RESPOND
966 001346 012716 001354      2$:  MOV    #3$, (SP)     ;SET UP TO RETURN FROM TRAP
967 001352 000002              RTI                    ;RETURN FROM TRAP
968 001354 012737 000006 000004  3$:  MOV    #6,#4          ;
969 001362 005037 000006              CLR    #6             ;RESTORE TRAP CATCHER
970 001366 104400              SCOPE                 ;CHECK FOR ITERATIONS, LOOP
971
972                                ;DH11 NEXT RECEIVED CHARACTER REGISTER ADDRESSING TEST
973                                ;VERIFY THAT DH11 NEXT RECEIVED CHARACTER REGISTER RESPONDS TO ADDRESSING
974                                ;IF DH11 NEXT RECEIVED CHARACTER REGISTER DOES NOT RESPOND, A BUSS ERROR TRAP
975                                ;WILL OCCUR, AND AN ERROR MESSAGE WILL BE TYPED.
976
977 001370 012767 000340 176400 T2:  MOV    #340,PS           ;DISABLE ALL INTERRUPTS
978 001376 012767 000100 016044      MOV    #100,ICOUNT      ;SET UP FOR 100 ITERATIONS
979 001404 012767 001442 016032      MOV    #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
980 001412 012737 001434 000004      MOV    #1$,#4          ;SET UP TIME OUT TRAP
981 001420 012737 000340 000006      MOV    #340,#6        ;
982 001426 005777 015752              TST    DHNRC          ;ADDRESS DH11 NEXT RECEIVED CHARACTER
983                                ;REGISTER
984 001432 000406              BR     3$             ;NO TRAP, REGISTER RESPONDS
985                                ;TO ADDRESSING
986 001434 016705 015744      1$:  MOV    DHNRC,R5       ;REGISTER DID NOT RESPOND
987 001440 104000              HLT    0              ;TIME OUT TRAP, DH11 NEXT RECEIVED CHARACTER
988                                ;REGISTER DID NOT RESPOND
989 001442 012716 001450      2$:  MOV    #3$, (SP)     ;SET UP TO RETURN FROM TRAP
990 001446 000002              RTI                    ;RETURN FROM TRAP
991 001450 012737 000006 000004  3$:  MOV    #6,#4          ;
992 001456 005037 000006              CLR    #6             ;RESTORE TRAP CATCHER
993 001462 104400              SCOPE                 ;CHECK FOR ITERATIONS, LOOP
994
995                                ;DH 11 LINE PARAMETER REGISTER ADDRESSING TEST
996                                ;VERIFY THAT DH 11 LINE PARAMETER REGISTER RESPONDS TO ADDRESSING
997                                ;IF DH 11 LINE PARAMETER REGISTER DOES NOT RESPOND, A BUSS ERROR TRAP
998                                ;WILL OCCUR, AND AN ERROR MESSAGE WILL BE TYPED.
999
1000 001464 012767 000340 176304 T3:  MOV    #340,PS           ;DISABLE ALL INTERRUPTS
1001 001472 012767 000100 015750      MOV    #100,ICOUNT      ;SET UP FOR 100 ITERATIONS
1002 001500 012767 001536 015736      MOV    #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
1003 001506 012737 001530 000004      MOV    #1$,#4          ;SET UP TIME OUT TRAP
  
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1004 001514 012737 000340 000006      MOV    #340, @#6
1005 001522 005777 015660              TST    @DHLPR      ;ADDRESS DH 11 LINE PARAMETER
1006                                ;REGISTER
1007 001526 000406              BR     3$          ;NO TRAP, REGISTER RESPONDS
1008                                ;TO ADDRESSING
1009 001530 016705 015652      1$:  MOV    DHLPR, R5  ;REGISTER DID NOT RESPOND
1010 001534 104000              HLT    0           ;TIME OUT TRAP, DH 11 LINE PARAMETER
1011                                ;REGISTER DID NOT RESPOND
1012 001536 012716 001544      2$:  MOV    #3$, (SP)  ;SET UP TO RETURN FROM TRAP
1013 001542 000002              RTI                    ;RETURN FROM TRAP
1014 001544 012737 000006 000004 3$:  MOV    #6, @#4
1015 001552 005037 000006              CLR    @#6        ;RESTORE TRAP CATCHER
1016 001556 104400              SCOPE              ;CHECK FOR ITERATIONS, LOOP
1017
1018                                ;DH11 BUS ADDRESS REGISTER ADDRESSING TEST
1019                                ;VERIFY THAT DH11 BUS ADDRESS REGISTER RESPONDS TO ADDRESSING
1020                                ;IF DH11 BUS ADDRESS REGISTER DOES NOT RESPOND, A BUSS ERROR TRAP
1021                                ;WILL OCCUR, AND AN ERROR MESSAGE WILL BE TYPED.
1022
1023 001560 012767 000340 176210  T4:  MOV    #340, PS    ;DISABLE ALL INTERRUPTS
1024 001566 012767 000100 015654      MOV    #100, ICOUNT ;SET UP FOR 100 ITERATIONS
1025 001574 012767 001632 015642      MOV    @2$, ESCAPE  ;SET UP TO ESCAPE TO NEXT TEST
1026 001602 012737 001624 000004      MOV    #1$, @#4     ;SET UP TIME OUT TRAP
1027 001610 012737 000340 000006      MOV    #340, @#6
1028 001616 005777 015566              TST    @DHBA      ;ADDRESS DH11 BUS ADDRESS
1029                                ;REGISTER
1030 001622 000406              BR     3$          ;NO TRAP, REGISTER RESPONDS
1031                                ;TO ADDRESSING
1032 001624 016705 015560      1$:  MOV    DHBA, R5   ;REGISTER DID NOT RESPOND
1033 001630 104000              HLT    0           ;TIME OUT TRAP, DH11 BUS ADDRESS
1034                                ;REGISTER DID NOT RESPOND
1035 001632 012716 001640      2$:  MOV    #3$, (SP)  ;SET UP TO RETURN FROM TRAP
1036 001636 000002              RTI                    ;RETURN FROM TRAP
1037 001640 012737 000006 000004 3$:  MOV    #6, @#4
1038 001646 005037 000006              CLR    @#6        ;RESTORE TRAP CATCHER
1039 001652 104400              SCOPE              ;CHECK FOR ITERATIONS, LOOP
1040
1041                                ;DH11 BYTE COUNT REGISTER ADDRESSING TEST
1042                                ;VERIFY THAT DH11 BYTE COUNT REGISTER RESPONDS TO ADDRESSING
1043                                ;IF DH11 BYTE COUNT REGISTER DOES NOT RESPOND, A BUSS ERROR TRAP
1044                                ;WILL OCCUR, AND AN ERROR MESSAGE WILL BE TYPED.
1045
1046 001654 012767 000340 176114  T5:  MOV    #340, PS    ;DISABLE ALL INTERRUPTS
1047 001662 012767 000100 015560      MOV    #100, ICOUNT ;SET UP FOR 100 ITERATIONS
1048 001670 012767 001726 015546      MOV    @2$, ESCAPE  ;SET UP TO ESCAPE TO NEXT TEST
1049 001676 012737 001720 000004      MOV    #1$, @#4     ;SET UP TIME OUT TRAP
1050 001704 012737 000340 000006      MOV    #340, @#6
1051 001712 005777 015474              TST    @DHBC      ;ADDRESS DH11 BYTE COUNT
1052                                ;REGISTER
1053 001716 000406              BR     3$          ;NO TRAP, REGISTER RESPONDS
1054                                ;TO ADDRESSING
1055 001720 016705 015466      1$:  MOV    DHBC, R5   ;REGISTER DID NOT RESPOND
1056 001724 104000              HLT    0           ;TIME OUT TRAP, DH11 BYTE COUNT
1057                                ;REGISTER DID NOT RESPOND
1058 001726 012716 001734      2$:  MOV    #3$, (SP)  ;SET UP TO RETURN FROM TRAP
1059 001732 000002              RTI                    ;RETURN FROM TRAP

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1060 001734 012737 000006 000004 3$:  MOV    #6,2#4
1061 001742 005037 000006                CLR    2#6                ;RESTORE TRAP CATCHER
1062 001746 104400                SCOPE                ;CHECK FOR ITERATIONS, LOOP
1063
1064                ;DH11 BREAK CONTROL REGISTER ADDRESSING TEST
1065                ;VERIFY THAT DH11 BREAK CONTROL REGISTER RESPONDS TO ADDRESSING
1066                ;IF DH11 BREAK CONTROL REGISTER DOES NOT RESPOND, A BUSS ERROR TRAP
1067                ;WILL OCCUR, AND AN ERROR MESSAGE WILL BE TYPED.
1068
1069 001750 012767 000340 176020 T6:  MOV    #340,PS                ;DISABLE ALL INTERRUPTS
1070 001756 012767 000100 015464    MOV    #100,ICOUNT            ;SET UP FOR 100 ITERATIONS
1071 001764 012767 002022 015452    MOV    #2$,ESCAPE            ;SET UP TO ESCAPE TO NEXT TEST
1072 001772 012737 002014 000004    MOV    #1$,2#4                ;SET UP TIME OUT TRAP
1073 002000 012737 000340 000006    MOV    #340,2#6
1074 002006 005777 015404                TST    2DHBCR                ;ADDRESS DH11 BREAK CONTROL
1075                                ;REGISTER
1076 002012 000406                BR     3$                    ;NO TRAP, REGISTER RESPONDS
1077                                ;TO ADDRESSING
1078 002014 016705 015376                1$:  MOV    DHBCR,RS            ;REGISTER DID NOT RESPOND
1079 002020 104000                HLT    0                    ;TIME OUT TRAP, DH11 BREAK CONTROL
1080                                ;REGISTER DID NOT RESPOND
1081 002022 012716 002030                2$:  MOV    #3$, (SP)            ;SET UP TO RETURN FROM TRAP
1082 002026 000002                RTI                                ;RETURN FROM TRAP
1083 002030 012737 000006 000004 3$:  MOV    #6,2#4
1084 002036 005037 000006                CLR    2#6                ;RESTORE TRAP CATCHER
1085 002042 104400                SCOPE                ;CHECK FOR ITERATIONS, LOOP
1086
1087                ;BUS ACTIVE REGISTER ADDRESSING TEST
1088                ;VERIFY THAT BUS ACTIVE REGISTER RESPONDS TO ADDRESSING
1089                ;IF BUS ACTIVE REGISTER DOES NOT RESPOND, A BUSS ERROR TRAP
1090                ;WILL OCCUR, AND AN ERROR MESSAGE WILL BE TYPED.
1091
1092 002044 012767 000340 175724 T7:  MOV    #340,PS                ;DISABLE ALL INTERRUPTS
1093 002052 012767 000100 015370    MOV    #100,ICOUNT            ;SET UP FOR 100 ITERATIONS
1094 002060 012767 002116 015356    MOV    #2$,ESCAPE            ;SET UP TO ESCAPE TO NEXT TEST
1095 002066 012737 002110 000004    MOV    #1$,2#4                ;SET UP TIME OUT TRAP
1096 002074 012737 000340 000006    MOV    #340,2#6
1097 002102 005777 015306                TST    2DHBAR                ;ADDRESS BUS ACTIVE
1098                                ;REGISTER
1099 002106 000406                BR     3$                    ;NO TRAP, REGISTER RESPONDS
1100                                ;TO ADDRESSING
1101 002110 016705 015300                1$:  MOV    DHBAR,RS            ;REGISTER DID NOT RESPOND
1102 002114 104000                HLT    0                    ;TIME OUT TRAP, BUS ACTIVE
1103                                ;REGISTER DID NOT RESPOND
1104 002116 012716 002124                2$:  MOV    #3$, (SP)            ;SET UP TO RETURN FROM TRAP
1105 002122 000002                RTI                                ;RETURN FROM TRAP
1106 002124 012737 000006 000004 3$:  MOV    #6,2#4
1107 002132 005037 000006                CLR    2#6                ;RESTORE TRAP CATCHER
1108 002136 104400                SCOPE                ;CHECK FOR ITERATIONS, LOOP
1109
1110                ;SILO STATUS REGISTER ADDRESSING TEST
1111                ;VERIFY THAT SILO STATUS REGISTER RESPONDS TO ADDRESSING
1112                ;IF SILO STATUS REGISTER DOES NOT RESPOND, A BUSS ERROR TRAP
1113                ;WILL OCCUR, AND AN ERROR MESSAGE WILL BE TYPED.
1114
1115 002140 012767 000340 175630 T10:  MOV    #340,PS                ;DISABLE ALL INTERRUPTS

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M02

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1116 002146 012767 000100 015274      MOV      #100,ICOUNT      ;SET UP FOR 100 ITERATIONS
1117 002154 012767 002212 015262      MOV      #25,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
1118 002162 012737 002204 000004      MOV      #15,204         ;SET UP TIME OUT TRAP
1119 002170 012737 000340 000006      MOV      #340,206
1120 002176 005777 015216                TST      @DHSSR          ;ADDRESS SILO STATUS
1121                                ;REGISTER
1122 002202 000406                BR       3$              ;NO TRAP, REGISTER RESPONDS
1123                                ;TO ADDRESSING
1124 002204 016705 015210                1$:     MOV      DHSSR,R5  ;REGISTER DID NOT RESPOND
1125 002210 104000                HLT      0               ;TIME OUT TRAP, SILO STATUS
1126                                ;REGISTER DID NOT RESPOND
1127 002212 012716 002220                2$:     MOV      #3$, (SP) ;SET UP TO RETURN FROM TRAP
1128 002216 000002                RTI
1129 002220 012737 000006 000004 3$:     MOV      #6,204         ;RETURN FROM TRAP
1130 002226 005037 000006                CLR      @06
1131 002232 104400                SCOPE                    ;RESTORE TRAP CATCHER
1132                                ;CHECK FOR ITERATIONS, LOOP
1133
1134                                ;MASTER CLEAR TEST
1135                                ;SET SYSTEM CONTROL REGISTER TO 'CDATA'
1136                                ;ISSUE MASTER CLEAR
1137                                ;VERIFY THAT SYSTEM CONTROL WAS CLEARED
1138
1139 002234 012767 000340 175534  T11:   MOV      #340,PS        ;DISABLE ALL INTERRUPTS
1140 002242 012767 004000 015200      MOV      #4000,ICOUNT   ;SET UP FOR 4000 ITERATIONS
1141 002250 012767 002312 015166      MOV      #15,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1142 002256 012777 173777 015116      MOV      #173777,@DHSCR ;SET SYSTEM CONTROL REGISTER
1143                                ;TO 173777
1144 002264 052777 004000 015110      BIS      #BIT11,@DHSCR  ;ISSUE MASTER CLEAR
1145 002272 017704 015104                MOV      @DHSCR,R4      ;(R4)=ACTUAL DATA IN
1146                                ;SYSTEM CONTROL REGISTER
1147 002276 005704                TST      R4              ;VERIFY THAT SYSTEM CONTROL REGISTER
1148                                ;WAS CLEARED
1149 002300 001404                BEQ      1$
1150 002302 005005                CLR      R5              ;(R5)=EXPECTED DATA IN
1151                                ;SYSTEM CONTROL REGISTER, 0
1152 002304 016703 015072                MOV      DHSCR,R3       ;GET REGISTER ADDRESS
1153 002310 104005                HLT      5               ;MASTER CLEAR FAILED
1154 002312 104400                1$:     SCOPE                    ;CHECK FOR ITERATIONS, LOOP
1155
1156                                ;MASTER CLEAR TEST
1157                                ;SET LINE PARAMETER REGISTER TO 'CDATA'
1158                                ;ISSUE MASTER CLEAR
1159                                ;VERIFY THAT LINE PARAMETER WAS CLEARED
1160
1161 002314 012767 000340 175454  T12:   MOV      #340,PS        ;DISABLE ALL INTERRUPTS
1162 002322 012767 004000 015120      MOV      #4000,ICOUNT   ;SET UP FOR 4000 ITERATIONS
1163 002330 012767 002372 015106      MOV      #15,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1164 002336 012777 177777 015042      MOV      #177777,@DHLPR ;SET LINE PARAMETER REGISTER
1165                                ;TO 177777
1166 002344 052777 004000 015030      BIS      #BIT11,@DHSCR  ;ISSUE MASTER CLEAR
1167 002352 017704 015030                MOV      @DHLPR,R4      ;(R4)=ACTUAL DATA IN
1168                                ;LINE PARAMETER REGISTER
1169 002356 005704                TST      R4              ;VERIFY THAT LINE PARAMETER REGISTER
1170                                ;WAS CLEARED
1171 002360 001404                BEQ      1$

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1172 002362 005005          CLR      R5          ;(R5)=EXPECTED DATA IN
1173                                     ;LINE PARAMETER REGISTER, 0
1174 002364 016703 015016  MOV     DHLPR,R3     ;GET REGISTER ADDRESS
1175 002370 104005          HLT     5            ;MASTER CLEAR FAILED
1176 002372 104400          1S:    SCOPE        ;CHECK FOR ITERATIONS, LOOP
1177
1178                                     ;MASTER CLEAR TEST
1179                                     ;SET BREAK CONTROL REGISTER TO 'CDATA'
1180                                     ;ISSUE MASTER CLEAR
1181                                     ;VERIFY THAT BREAK CONTROL WAS CLEARED
1182
1183 002374 012767 000340 175374 T13:  MOV     #340,PS      ;DISABLE ALL INTERRUPTS
1184 002402 012767 004000 015040  MOV     #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
1185 002410 012767 002452 015026  MOV     #1$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
1186 002416 012777 177777 014772  MOV     #177777,DHBCR ;SET BREAK CONTROL REGISTER
1187                                     ;TO 177777
1188 002424 052777 004000 014750  BIS     #BIT11,DHSCR  ;ISSUE MASTER CLEAR
1189 002432 017704 014760  MOV     DHBCR,R4     ;(R4)=ACTUAL DATA IN
1190                                     ;BREAK CONTROL REGISTER
1191 002436 005704          TST     R4           ;VERIFY THAT BREAK CONTROL REGISTER
1192                                     ;WAS CLEARED
1193 002440 001404          BEQ     1$
1194 002442 005005          CLR     R5          ;(R5)=EXPECTED DATA IN
1195                                     ;BREAK CONTROL REGISTER, 0
1196 002444 016703 014746  MOV     DHBCR,R3     ;GET REGISTER ADDRESS
1197 002450 104005          HLT     5            ;MASTER CLEAR FAILED
1198 002452 104400          1S:    SCOPE        ;CHECK FOR ITERATIONS, LOOP
1199
1200                                     ;MASTER CLEAR TEST
1201                                     ;SET SILO STATUS REGISTER TO 'CDATA'
1202                                     ;ISSUE MASTER CLEAR
1203                                     ;VERIFY THAT SILO STATUS WAS CLEARED
1204
1205 002454 012767 000340 175314 T14:  MOV     #340,PS      ;DISABLE ALL INTERRUPTS
1206 002462 012767 004000 014760  MOV     #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
1207 002470 012767 002536 014746  MOV     #1$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
1208 002476 012777 100077 014714  MOV     #100077,DHSSR ;SET SILO STATUS REGISTER
1209                                     ;TO 100077
1210 002504 052777 004000 014670  BIS     #BIT11,DHSCR  ;ISSUE MASTER CLEAR
1211 002512 017704 014702  MOV     DHSSR,R4     ;(R4)=ACTUAL DATA IN
1212                                     ;SILO STATUS REGISTER
1213 002516 042704 077700  BIC     #77700,R4    ;CLEAR UNWANTED BITS
1214 002522 005704          TST     R4           ;VERIFY THAT SILO STATUS REGISTER
1215                                     ;WAS CLEARED
1216 002524 001404          BEQ     1$
1217 002526 005005          CLR     R5          ;(R5)=EXPECTED DATA IN
1218                                     ;SILO STATUS REGISTER, 0
1219 002530 016703 014664  MOV     DHSSR,R3     ;GET REGISTER ADDRESS
1220 002534 104005          HLT     5            ;MASTER CLEAR FAILED
1221 002536 104400          1S:    SCOPE        ;CHECK FOR ITERATIONS, LOOP
1222
1223                                     ;SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)
1224                                     ;SET LINE SELECT BIT 0 IN SYSTEM CONTROL REGISTER
1225                                     ;VERIFY THAT LINE SELECT BIT 0 WAS SET
1226                                     ;CLEAR LINE SELECT BIT 0
1227                                     ;VERIFY THAT LINE SELECT BIT 0 WAS CLEARED

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1228
1229 002540 012767 000340 175230 T15: MOV #340,PS ;DISABLE ALL INTERRUPTS
1230 002546 012767 004000 014674 MOV #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
1231 002554 012767 002624 014662 MOV #25,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1232 002562 016703 014614 MOV DHSCR,R3 ;PUT ADDRESS OF SYSTEM CONTROL REGISTER IN R3
1233 002566 012713 000001 MOV #BIT00,(R3) ;SET LINE SELECT BIT 0
1234 002572 022713 000001 CMP #BIT00,(R3) ;VERIFY THAT LINE SELECT BIT 0 WAS SET
1235 002576 001404 BEQ 1$
1236 002600 012705 000001 MOV #BIT00,R5 ;(R5)= EXPECTED VALUE
1237 ; IN SYSTEM CONTROL REGISTER
1238 ; LINE SELECT BIT 0
1239 002604 011304 MOV (R3),R4 ;(R4)=ACTUAL DATA IN
1240 ; SYSTEM CONTROL REGISTER
1241 002606 104001 HLT 1 ;SYSTEM CONTROL REGISTER
1242 ;WRITE/READ ERROR
1243 002610 042713 000001 1$: BIC #BIT00,(R3) ;CLEAR LINE SELECT BIT 0
1244 002614 001403 BEQ 2$
1245 002616 005005 CLR R5 ;(R5)=EXPECTED DATA IN
1246 ; SYSTEM CONTROL REGISTER, 0
1247 002620 011304 MOV (R3),R4 ;(R4)=ACTUAL DATA IN
1248 ; SYSTEM CONTROL REGISTER
1249 002622 104001 HLT 1 ;SYSTEM CONTROL REGISTER
1250 ;WRITE/READ ERROR
1251 002624 104400 2$: SCOPE ;CHECK FOR ITERATIONS, LOOP
1252
1253 ;SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)
1254 ;SET LINE SELECT BIT 1 IN SYSTEM CONTROL REGISTER
1255 ;VERIFY THAT LINE SELECT BIT 1 WAS SET
1256 ;CLEAR LINE SELECT BIT 1
1257 ;VERIFY THAT LINE SELECT BIT 1 WAS CLEARED
1258
1259 002626 012767 000340 175142 T16: MOV #340,PS ;DISABLE ALL INTERRUPTS
1260 002634 012767 004000 014606 MOV #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
1261 002642 012767 002712 014574 MOV #25,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1262 002650 016703 014526 MOV DHSCR,R3 ;PUT ADDRESS OF SYSTEM CONTROL REGISTER IN R3
1263 002654 012713 000002 MOV #BIT01,(R3) ;SET LINE SELECT BIT 1
1264 002660 022713 000002 CMP #BIT01,(R3) ;VERIFY THAT LINE SELECT BIT 1 WAS SET
1265 002664 001404 BEQ 1$
1266 002666 012705 000002 MOV #BIT01,R5 ;(R5)= EXPECTED VALUE
1267 ; IN SYSTEM CONTROL REGISTER
1268 ; LINE SELECT BIT 1
1269 002672 011304 MOV (R3),R4 ;(R4)=ACTUAL DATA IN
1270 ; SYSTEM CONTROL REGISTER
1271 002674 104001 HLT 1 ;SYSTEM CONTROL REGISTER
1272 ;WRITE/READ ERROR
1273 002676 042713 000002 1$: BIC #BIT01,(R3) ;CLEAR LINE SELECT BIT 1
1274 002702 001403 BEQ 2$
1275 002704 005005 CLR R5 ;(R5)=EXPECTED DATA IN
1276 ; SYSTEM CONTROL REGISTER, 0
1277 002706 011304 MOV (R3),R4 ;(R4)=ACTUAL DATA IN
1278 ; SYSTEM CONTROL REGISTER
1279 002710 104001 HLT 1 ;SYSTEM CONTROL REGISTER
1280 ;WRITE/READ ERROR
1281 002712 104400 2$: SCOPE ;CHECK FOR ITERATIONS, LOOP
1282
1283 ;SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)

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1284                                     ;SET LINE SELECT BIT 2 IN SYSTEM CONTROL REGISTER
1285                                     ;VERIFY THAT LINE SELECT BIT 2 WAS SET
1286                                     ;CLEAR LINE SELECT BIT 2
1287                                     ;VERIFY THAT LINE SELECT BIT 2 WAS CLEARED
1288
1289 002714 012767 000340 175054 T17: MOV #340,PS ;DISABLE ALL INTERRUPTS
1290 002722 012767 004000 014520 MOV #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
1291 002730 012767 003000 014506 MOV #25,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1292 002736 016703 014440 MOV DHSCR,R3 ;PUT ADDRESS OF SYSTEM CONTROL REGISTER IN R3
1293 002742 012713 000004 MOV #BIT02,(R3) ;SET LINE SELECT BIT 2
1294 002746 022713 000004 CMP #BIT02,(R3) ;VERIFY THAT LINE SELECT BIT 2 WAS SET
1295 002752 001404 BEQ 1$
1296 002754 012705 000004 MOV #BIT02,R5 ;(R5)= EXPECTED VALUE
1297                                     ;IN SYSTEM CONTROL REGISTER
1298                                     ;LINE SELECT BIT 2
1299 002760 011304 MOV (R3),R4 ;(R4)=ACTUAL DATA IN
1300                                     ;SYSTEM CONTROL REGISTER
1301 002762 104001 HLT 1 ;SYSTEM CONTROL REGISTER
1302                                     ;WRITE/READ ERROR
1303 002764 042713 000004 1$: BIC #BIT02,(R3) ;CLEAR LINE SELECT BIT 2
1304 002770 001403 BEQ 2$
1305 002772 005005 CLR R5 ;(R5)=EXPECTED DATA IN
1306                                     ;SYSTEM CONTROL REGISTER, 0
1307 002774 011304 MOV (R3),R4 ;(R4)=ACTUAL DATA IN
1308                                     ;SYSTEM CONTROL REGISTER
1309 002776 104001 HLT 1 ;SYSTEM CONTROL REGISTER
1310                                     ;WRITE/READ ERROR
1311 003000 104400 2$: SCOPE ;CHECK FOR ITERATIONS, LOOP
1312
1313                                     ;SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)
1314                                     ;SET LINE SELECT BIT 3 IN SYSTEM CONTROL REGISTER
1315                                     ;VERIFY THAT LINE SELECT BIT 3 WAS SET
1316                                     ;CLEAR LINE SELECT BIT 3
1317                                     ;VERIFY THAT LINE SELECT BIT 3 WAS CLEARED
1318
1319 003002 012767 000340 174766 T20: MOV #340,PS ;DISABLE ALL INTERRUPTS
1320 003010 012767 004000 014432 MOV #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
1321 003016 012767 003066 014420 MOV #25,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1322 003024 016703 014352 MOV DHSCR,R3 ;PUT ADDRESS OF SYSTEM CONTROL REGISTER IN R3
1323 003030 012713 000010 MOV #BIT03,(R3) ;SET LINE SELECT BIT 3
1324 003034 022713 000010 CMP #BIT03,(R3) ;VERIFY THAT LINE SELECT BIT 3 WAS SET
1325 003040 001404 BEQ 1$
1326 003042 012705 000010 MOV #BIT03,R5 ;(R5)= EXPECTED VALUE
1327                                     ;IN SYSTEM CONTROL REGISTER
1328                                     ;LINE SELECT BIT 3
1329 003046 011304 MOV (R3),R4 ;(R4)=ACTUAL DATA IN
1330                                     ;SYSTEM CONTROL REGISTER
1331 003050 104001 HLT 1 ;SYSTEM CONTROL REGISTER
1332                                     ;WRITE/READ ERROR
1333 003052 042713 000010 1$: BIC #BIT03,(R3) ;CLEAR LINE SELECT BIT 3
1334 003056 001403 BEQ 2$
1335 003060 005005 CLR R5 ;(R5)=EXPECTED DATA IN
1336                                     ;SYSTEM CONTROL REGISTER, 0
1337 003062 011304 MOV (R3),R4 ;(R4)=ACTUAL DATA IN
1338                                     ;SYSTEM CONTROL REGISTER
1339 003064 104001 HLT 1 ;SYSTEM CONTROL REGISTER

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1340                                     ;WRITE/READ ERROR
1341 003066 104400                2S:  SCOPE                ;CHECK FOR ITERATIONS, LOOP
1342
1343                                     ;SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)
1344                                     ;SET MEMORY EXTENSION BIT 0 IN SYSTEM CONTROL REGISTER
1345                                     ;VERIFY THAT MEMORY EXTENSION BIT 0 WAS SET
1346                                     ;CLEAR MEMORY EXTENSION BIT 0
1347                                     ;VERIFY THAT MEMORY EXTENSION BIT 0 WAS CLEARED
1348
1349 003070 012767 000340 174700 T21:  MOV      #340,PS                ;DISABLE ALL INTERRUPTS
1350 003076 012767 004000 014344      MOV      #4000,ICOUNT          ;SET UP FOR 4000 ITERATIONS
1351 003104 012767 003154 014332      MOV      #25,ESCAPE          ;SET UP TO ESCAPE TO NEXT TEST
1352 003112 016703 014264              MOV      DHSCR,R3           ;PUT ADDRESS OF SYSTEM CONTROL REGISTER IN R3
1353 003116 012713 000020              MOV      #BIT04,(R3)        ;SET MEMORY EXTENSION BIT 0
1354 003122 022713 000020              CMP      #BIT04,(R3)        ;VERIFY THAT MEMORY EXTENSION BIT 0 WAS SET
1355 003126 001404                      BEQ      1$
1356 003130 012705 000020              MOV      #BIT04,R5          ;(R5)= EXPECTED VALUE
1357                                     ;IN SYSTEM CONTROL REGISTER
1358                                     ;MEMORY EXTENSION BIT 0
1359 003134 011304                      MOV      (R3),R4           ;(R4)=ACTUAL DATA IN
1360                                     ;SYSTEM CONTROL REGISTER
1361 003136 104001                      HLT      1                 ;SYSTEM CONTROL REGISTER
1362                                     ;WRITE/READ ERROR
1363 003140 042713 000020                1$:  BIC      #BIT04,(R3)        ;CLEAR MEMORY EXTENSION BIT 0
1364 003144 001403                      BEQ      2$
1365 003146 005005                      CLR      R5                ;(R5)=EXPECTED DATA IN
1366                                     ;SYSTEM CONTROL REGISTER, 0
1367 003150 011304                      MOV      (R3),R4           ;(R4)=ACTUAL DATA IN
1368                                     ;SYSTEM CONTROL REGISTER
1369 003152 104001                      HLT      1                 ;SYSTEM CONTROL REGISTER
1370                                     ;WRITE/READ ERROR
1371 003154 104400                2S:  SCOPE                ;CHECK FOR ITERATIONS, LOOP
1372
1373                                     ;SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)
1374                                     ;SET MEMORY EXTENSION BIT 1 IN SYSTEM CONTROL REGISTER
1375                                     ;VERIFY THAT MEMORY EXTENSION BIT 1 WAS SET
1376                                     ;CLEAR MEMORY EXTENSION BIT 1
1377                                     ;VERIFY THAT MEMORY EXTENSION BIT 1 WAS CLEARED
1378
1379 003156 012767 000340 174612 T22:  MOV      #340,PS                ;DISABLE ALL INTERRUPTS
1380 003164 012767 004000 014256      MOV      #4000,ICOUNT          ;SET UP FOR 4000 ITERATIONS
1381 003172 012767 003242 014244      MOV      #25,ESCAPE          ;SET UP TO ESCAPE TO NEXT TEST
1382 003200 016703 014176              MOV      DHSCR,R3           ;PUT ADDRESS OF SYSTEM CONTROL REGISTER IN R3
1383 003204 012713 000040              MOV      #BIT05,(R3)        ;SET MEMORY EXTENSION BIT 1
1384 003210 022713 000040              CMP      #BIT05,(R3)        ;VERIFY THAT MEMORY EXTENSION BIT 1 WAS SET
1385 003214 001404                      BEQ      1$
1386 003216 012705 000040              MOV      #BIT05,R5          ;(R5)= EXPECTED VALUE
1387                                     ;IN SYSTEM CONTROL REGISTER
1388                                     ;MEMORY EXTENSION BIT 1
1389 003222 011304                      MOV      (R3),R4           ;(R4)=ACTUAL DATA IN
1390                                     ;SYSTEM CONTROL REGISTER
1391 003224 104001                      HLT      1                 ;SYSTEM CONTROL REGISTER
1392                                     ;WRITE/READ ERROR
1393 003226 042713 000040                1$:  BIC      #BIT05,(R3)        ;CLEAR MEMORY EXTENSION BIT 1
1394 003232 001403                      BEQ      2$
1395 003234 005005                      CLR      R5                ;(R5)=EXPECTED DATA IN

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1396                                     ;SYSTEM CONTROL REGISTER, 0
1397 003236 011304      MOV      (R3),R4      ;(R4)=ACTUAL DATA IN
1398                                     ;SYSTEM CONTROL REGISTER
1399 003240 104001      HLT      1             ;SYSTEM CONTROL REGISTER
1400                                     ;WRITE/READ ERROR
1401 003242 104400      2S:    SCOPE          ;CHECK FOR ITERATIONS, LOOP
1402
1403                                     ;SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)
1404                                     ;SET RECEIVER INTERRUPT ENABLE IN SYSTEM CONTROL REGISTER
1405                                     ;VERIFY THAT RECEIVER INTERRUPT ENABLE WAS SET
1406                                     ;CLEAR RECEIVER INTERRUPT ENABLE
1407                                     ;VERIFY THAT RECEIVER INTERRUPT ENABLE WAS CLEARED
1408
1409 003244 012767 000340 174524 T23:  MOV      #340,PS      ;DISABLE ALL INTERRUPTS
1410 003252 012767 004000 014170      MOV      #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
1411 003260 012767 003330 014156      MOV      #25,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
1412 003266 016703 014110      MOV      DHSR,R3      ;PUT ADDRESS OF SYSTEM CONTROL REGISTER IN R3
1413 003272 012713 000100      MOV      #BIT06,(R3)  ;SET RECEIVER INTERRUPT ENABLE
1414 003276 022713 000100      CMP      #BIT06,(R3)  ;VERIFY THAT RECEIVER INTERRUPT ENABLE WAS SET
1415 003302 001404      BEQ      1$
1416 003304 012705 000100      MOV      #BIT06,R5    ;(R5)= EXPECTED VALUE
1417                                     ;IN SYSTEM CONTROL REGISTER
1418                                     ;RECEIVER INTERRUPT ENABLE
1419 003310 011304      MOV      (R3),R4      ;(R4)=ACTUAL DATA IN
1420                                     ;SYSTEM CONTROL REGISTER
1421 003312 104001      HLT      1             ;SYSTEM CONTROL REGISTER
1422                                     ;WRITE/READ ERROR
1423 003314 042713 000100      1S:    BIC      #BIT06,(R3) ;CLEAR RECEIVER INTERRUPT ENABLE
1424 003320 001403      BEQ      2$
1425 003322 005005      CLR      R5           ;(R5)=EXPECTED DATA IN
1426                                     ;SYSTEM CONTROL REGISTER, 0
1427 003324 011304      MOV      (R3),R4      ;(R4)=ACTUAL DATA IN
1428                                     ;SYSTEM CONTROL REGISTER
1429 003326 104001      HLT      1             ;SYSTEM CONTROL REGISTER
1430                                     ;WRITE/READ ERROR
1431 003330 104400      2S:    SCOPE          ;CHECK FOR ITERATIONS, LOOP
1432
1433                                     ;SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)
1434                                     ;SET MAINTENANCE MODE IN SYSTEM CONTROL REGISTER
1435                                     ;VERIFY THAT MAINTENANCE MODE WAS SET
1436                                     ;CLEAR MAINTENANCE MODE
1437                                     ;VERIFY THAT MAINTENANCE MODE WAS CLEARED
1438
1439 003332 012767 000340 174436 T24:  MOV      #340,PS      ;DISABLE ALL INTERRUPTS
1440 003340 012767 004000 014102      MOV      #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
1441 003346 012767 003416 014070      MOV      #25,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
1442 003354 016703 014022      MOV      DHSR,R3      ;PUT ADDRESS OF SYSTEM CONTROL REGISTER IN R3
1443 003360 012713 001000      MOV      #BIT09,(R3)  ;SET MAINTENANCE MODE
1444 003364 022713 001000      CMP      #BIT09,(R3)  ;VERIFY THAT MAINTENANCE MODE WAS SET
1445 003370 001404      BEQ      1$
1446 003372 012705 001000      MOV      #BIT09,R5    ;(R5)= EXPECTED VALUE
1447                                     ;IN SYSTEM CONTROL REGISTER
1448                                     ;MAINTENANCE MODE
1449 003376 011304      MOV      (R3),R4      ;(R4)=ACTUAL DATA IN
1450                                     ;SYSTEM CONTROL REGISTER
1451 003400 104001      HLT      1             ;SYSTEM CONTROL REGISTER

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1508                                     ; TRANSMITTER INTERRUPT ENABLE
1509 003552 011304                       MOV      (R3),R4                       ; (R4)=ACTUAL DATA IN
1510                                     ; SYSTEM CONTROL REGISTER
1511 003554 104001                       HLT      1                             ; SYSTEM CONTROL REGISTER
1512                                     ; WRITE/READ ERROR
1513 003556 042713 020000 15:           BIC      #BIT13,(R3)                   ; CLEAR TRANSMITTER INTERRUPT ENABLE
1514 003562 001403                       BEQ      25
1515 003564 005005                       CLR      R5                             ; (R5)=EXPECTED DATA IN
1516                                     ; SYSTEM CONTROL REGISTER, 0
1517 003566 011304                       MOV      (R3),R4                       ; (R4)=ACTUAL DATA IN
1518                                     ; SYSTEM CONTROL REGISTER
1519 003570 104001                       HLT      1                             ; SYSTEM CONTROL REGISTER
1520                                     ; WRITE/READ ERROR
1521 003572 104400 25:                   SCOPE                                   ; CHECK FOR ITERATIONS, LOOP
1522
1523                                     ; SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)
1524                                     ; SET TRANSMITTER DONE IN SYSTEM CONTROL REGISTER
1525                                     ; VERIFY THAT TRANSMITTER DONE WAS SET
1526                                     ; CLEAR TRANSMITTER DONE
1527                                     ; VERIFY THAT TRANSMITTER DONE WAS CLEARED
1528
1529 003574 012767 000340 174174 T27:    MOV      #340,PS                       ; DISABLE ALL INTERRUPTS
1530 003602 012767 004000 013640        MOV      #4000,ICOUNT                  ; SET UP FOR 4000 ITERATIONS
1531 003610 012767 003660 013626        MOV      #25,ESCAPE                   ; SET UP TO ESCAPE TO NEXT TEST
1532 003616 016703 013560                MOV      DHSCR,R3                     ; PUT ADDRESS OF SYSTEM CONTROL REGISTER IN R3
1533 003622 012713 100000                MOV      #BIT15,(R3)                  ; SET TRANSMITTER DONE
1534 003626 022713 100000                CMP      #BIT15,(R3)                  ; VERIFY THAT TRANSMITTER DONE WAS SET
1535 003632 001404                       BEQ      15
1536 003634 012705 100000                MOV      #BIT15,R5                     ; (R5)= EXPECTED VALUE
1537                                     ; IN SYSTEM CONTROL REGISTER
1538                                     ; TRANSMITTER DONE
1539 003640 011304                       MOV      (R3),R4                       ; (R4)=ACTUAL DATA IN
1540                                     ; SYSTEM CONTROL REGISTER
1541 003642 104001                       HLT      1                             ; SYSTEM CONTROL REGISTER
1542                                     ; WRITE/READ ERROR
1543 003644 042713 100000 15:           BIC      #BIT15,(R3)                   ; CLEAR TRANSMITTER DONE
1544 003650 001403                       BEQ      25
1545 003652 005005                       CLR      R5                             ; (R5)=EXPECTED DATA IN
1546                                     ; SYSTEM CONTROL REGISTER, 0
1547 003654 011304                       MOV      (R3),R4                       ; (R4)=ACTUAL DATA IN
1548                                     ; SYSTEM CONTROL REGISTER
1549 003656 104001                       HLT      1                             ; SYSTEM CONTROL REGISTER
1550                                     ; WRITE/READ ERROR
1551 003660 104400 25:                   SCOPE                                   ; CHECK FOR ITERATIONS, LOOP
1552
1553                                     ; SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)
1554                                     ; VERIFY THAT CHARACTER AVAILABLE IS READ ONLY IN NORMAL MODE
1555
1556 003662 012767 000340 174106 T30:    MOV      #340,PS                       ; DISABLE ALL INTERRUPTS
1557 003670 012767 004000 013552        MOV      #4000,ICOUNT                  ; SET UP FOR 4000 ITERATIONS
1558 003676 012767 003734 013540        MOV      #15,ESCAPE                   ; SET UP TO ESCAPE TO NEXT TEST
1559 003704 012777 000200 013470        MOV      #BIT07,2DHSCR                 ; ATTEMPT TO WRITE
1560                                     ; CHARACTER AVAILABLE IN
1561                                     ; SYSTEM CONTROL REGISTER
1562 003712 005777 013464                TST      2DHSCR                        ; WAS CHARACTER AVAILABLE SET
1563 003716 001406                       BEQ      15

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1564	003720	005005				CLR	R5		;(R5)=EXPECTED DATA
1565									;IN SYSTEM CONTROL REGISTER, 0
1566	003722	017704	013454			MOV	2DHSCR,R4		;(R4)=ACTUAL DATA IN SYSTEM
1567									;CONTROL REGISTER
1568	003726	016703	013450			MOV	DHSCR,R3		;ADDRESS OF SYSTEM CONTROL REGISTER
1569	003732	104001				HLT	1		;SYSTEM CONTROL REGISTER
1570									;WRITE/READ ERROR
1571	003734	104400			15:		SCOPE		
1572									
1573									;SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)
1574									;VERIFY THAT CLEAR NON EXISTANT MEMORY IS READ ONLY IN NORMAL MODE
1575									
1576	003736	012767	000340	174032	T31:	MOV	#340,PS		;DISABLE ALL INTERRUPTS
1577	003744	012767	004000	013476		MOV	#4000,ICOUNT		;SET UP FOR 4000 ITERATIONS
1578	003752	012767	004010	013464		MOV	#1\$,ESCAPE		;SET UP TO ESCAPE TO NEXT TEST
1579	003760	012777	000400	013414		MOV	#BIT08,2DHSCR		;ATTEMPT TO WRITE
1580									;CLEAR NON EXISTANT MEMORY IN
1581									;SYSTEM CONTROL REGISTER
1582	003766	005777	013410			TST	2DHSCR		;WAS CLEAR NON EXISTANT MEMORY SET
1583	003772	001406				BEQ	1\$		
1584	003774	005005				CLR	R5		;(R5)=EXPECTED DATA
1585									;IN SYSTEM CONTROL REGISTER, 0
1586	003776	017704	013400			MOV	2DHSCR,R4		;(R4)=ACTUAL DATA IN SYSTEM
1587									;CONTROL REGISTER
1588	004002	016703	013374			MOV	DHSCR,R3		;ADDRESS OF SYSTEM CONTROL REGISTER
1589	004006	104001				HLT	1		;SYSTEM CONTROL REGISTER
1590									;WRITE/READ ERROR
1591	004010	104400			15:		SCOPE		
1592									
1593									;SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)
1594									;VERIFY THAT NON EXISTANT MEMORY IS READ ONLY IN NORMAL MODE
1595									
1596	004012	012767	000340	173756	T32:	MOV	#340,PS		;DISABLE ALL INTERRUPTS
1597	004020	012767	004000	013422		MOV	#4000,ICOUNT		;SET UP FOR 4000 ITERATIONS
1598	004026	012767	004064	013410		MOV	#1\$,ESCAPE		;SET UP TO ESCAPE TO NEXT TEST
1599	004034	012777	002000	013340		MOV	#BIT10,2DHSCR		;ATTEMPT TO WRITE
1600									;NON EXISTANT MEMORY IN
1601									;SYSTEM CONTROL REGISTER
1602	004042	005777	013334			TST	2DHSCR		;WAS NON EXISTANT MEMORY SET
1603	004046	001406				BEQ	1\$		
1604	004050	005005				CLR	R5		;(R5)=EXPECTED DATA
1605									;IN SYSTEM CONTROL REGISTER, 0
1606	004052	017704	013324			MOV	2DHSCR,R4		;(R4)=ACTUAL DATA IN SYSTEM
1607									;CONTROL REGISTER
1608	004056	016703	013320			MOV	DHSCR,R3		;ADDRESS OF SYSTEM CONTROL REGISTER
1609	004062	104001				HLT	1		;SYSTEM CONTROL REGISTER
1610									;WRITE/READ ERROR
1611	004064	104400			15:		SCOPE		
1612									
1613									;SYSTEM CONTROL REGISTER WRITE/READ TEST (NORMAL MODE)
1614									;VERIFY THAT MASTER CLEAR IS READ ONLY IN NORMAL MODE
1615									
1616	004066	012767	000340	173702	T33:	MOV	#340,PS		;DISABLE ALL INTERRUPTS
1617	004074	012767	004000	013346		MOV	#4000,ICOUNT		;SET UP FOR 4000 ITERATIONS
1618	004102	012767	004140	013334		MOV	#1\$,ESCAPE		;SET UP TO ESCAPE TO NEXT TEST
1619	004110	012777	004000	013264		MOV	#BIT11,2DHSCR		;ATTEMPT TO WRITE

1676	004270	104001			HLT	1		; SYSTEM CONTROL REGISTER
1677								; WRITE/READ ERROR
1678	004272	042713	001000		15:	BIC	#BIT09,(R3)	; CLEAR MAINTENANCE MODE
1679	004276	042713	000200			BIC	#BIT07,(R3)	; ATTEMPT TO CLEAR CHARACTER AVAILABLE
1680	004302	022713	000200			CMP	#BIT07,(R3)	; CHARACTER AVAILABLE SHOULD BE SET
1681	004306	001403				BEQ	25	
1682	004310	012705	000200			MOV	#BIT07,R5	; (R5)=EXPECTED DATA IN
1683								; SYSTEM CONTROL REGISTER
1684								; CHARACTER AVAILABLE
1685	004314	104001				HLT	1	; SYSTEM CONTROL REGISTER
1686								; WRITE/READ ERROR
1687	004316	052713	001000		25:	BIS	#BIT09,(R3)	; SET MAINTENANCE MODE
1688	004322	042713	000200			BIC	#BIT07,(R3)	; CLEAR CHARACTER AVAILABLE
1689	004326	022713	001000			CMP	#BIT09,(R3)	; EXPECT ONLY MAINTENANCE
1690								; MODE TO BE SET
1691	004332	001404				BEQ	35	
1692	004334	012705	001000			MOV	#BIT09,R5	; (R5)=EXPECTED DATA IN
1693								; SYSTEM CONTROL REGISTER,
1694								; MAINTENANCE MODE BIT
1695	004340	011304				MOV	(R3),R4	; (R4)=ACTUAL DATA IN
1696								; SYSTEM CONTROL REGISTER
1697	004342	104001				HLT	1	; SYSTEM CONTROL REGISTER
1698								; WRITE/READ ERROR
1699	004344	104400			35:	SCOPE		; CHECK FOR ITERATIONS, LOOP
1700								; SYSTEM CONTROL REGISTER WRITE/READ TEST (MAINTENANCE MODE)
1701								; SET MAINTENANCE MODE
1702								; SET NON EXISTANT MEMORY IN SYSTEM CONTROL REGISTER
1703								; VERIFY THAT NON EXISTANT MEMORY WAS SET
1704								; CLEAR MAINTENANCE MODE
1705								; VERIFY THAT NON EXISTANT MEMORY CANNOT BE CLEARED
1706								; SET MAINTENANCE MODE
1707								; CLEAR NON EXISTANT MEMORY
1708								; VERIFY THAT NON EXISTANT MEMORY WAS CLEARED
1709								
1710	004346	012767	000340	173422	T36:	MOV	#340,PS	; DISABLE ALL INTERRUPTS
1711	004354	012767	004000	013066		MOV	#4000,ICOUNT	; SET UP FOR 4000 ITERATIONS
1712	004362	012767	004474	013054		MOV	#35,ESCAPE	; SET UP TO ESCAPE TO NEXT TEST
1713	004370	016703	013006			MOV	DHSCR,R3	; PUT ADDRESS OF SYSTEM CONTROL REGISTER IN R3
1714	004374	012713	001000			MOV	#BIT09,(R3)	; SET MAINTENANCE MODE
1715	004400	052713	002000			BIS	#BIT09,(R3)	; SET NON EXISTANT MEMORY
1716	004404	022713	003000			CMP	#BIT09,BIT10,(R3)	; VERIFY THAT NON EXISTANT MEMORY
1717								; AND MAINTENANCE MODE ARE SET
1718	004410	001404				BEQ	15	
1719	004412	012705	003000			MOV	#BIT09+BIT10,R5	; (R5)=EXPECTED DATA
1720								; IN SYSTEM CONTROL REGISTER
1721								; MAINTENANCE MODE AND NON EXISTANT MEMORY
1722	004416	011304				MOV	(R3),R4	; (R4)=ACTUAL DATA IN
1723								; SYSTEM CONTROL REGISTER
1724	004420	104001				HLT	1	; SYSTEM CONTROL REGISTER
1725								; WRITE/READ ERROR
1726	004422	042713	001000		15:	BIC	#BIT09,(R3)	; CLEAR MAINTENANCE MODE
1727	004426	042713	002000			BIC	#BIT10,(R3)	; ATTEMPT TO CLEAR NON EXISTANT MEMORY
1728	004432	022713	002000			CMP	#BIT10,(R3)	; NON EXISTANT MEMORY SHOULD BE SET
1729	004436	001403				BEQ	25	
1730	004440	012705	002000			MOV	#BIT10,R5	; (R5)=EXPECTED DATA IN
1731								; SYSTEM CONTROL REGISTER


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1788 004614 012705 001000      MOV      #BIT09,R5      ;(R5)=EXPECTED DATA IN
1789                                     ;SYSTEM CONTROL REGISTER,
1790                                     ;MAINTENANCE MODE BIT
1791 004620 011304      MOV      (R3),R4      ;(R4)=ACTUAL DATA IN
1792                                     ;SYSTEM CONTROL REGISTER
1793 004622 104001      HLT      1      ;SYSTEM CONTROL REGISTER
1794                                     ;WRITE/READ ERROR
1795 004624 104400      3$:      SCOPE      ;CHECK FOR ITERATIONS, LOOP
1796
1797                                     ;LINE PARAMETER REGISTER DATA TEST
1798                                     ;SET BIT 0 IN LINE PARAMETER TO 1
1799                                     ;VERIFY THAT BIT 0 WAS SET
1800                                     ;CLEAR BIT 0
1801                                     ;VERIFY THAT BIT 0 WAS CLEARED
1802
1803 004626 012767 000340 173142 T40:  MOV      #340,PS      ;DISABLE ALL INTERRUPTS
1804 004634 012767 004000 012606      MOV      #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
1805 004642 012767 004714 012574      MOV      #2$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
1806 004650 012777 004000 012524      MOV      #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
1807 004656 016703 012524      MOV      DHLPR,R3     ;SET UP POINTER TO LINE PARAMETER
1808 004662 012705 000001      MOV      #1,R5        ;BIT 0 WILL BE SET IN LINE PARAMETER
1809 004666 010513      MOV      R5,(R3)      ;SET BIT 0
1810 004670 011304      MOV      (R3),R4      ;GET CONTENTS OF LINE PARAMETER
1811 004672 020504      CMP      R5,R4        ;WAS BIT 0 SET
1812 004674 001401      BEQ      1$          ;
1813 004676 104002      HLT      2          ;LINE PARAMETER REGISTER ERROR
1814 004700 040513      1$:      BIC      R5,(R3)      ;CLEAR BIT 0
1815 004702 011304      MOV      (R3),R4      ;READ CONTENTS OF LINE PARAMETER
1816 004704 005704      TST      R4          ;WAS BIT 0 CLEARED
1817 004706 001402      BEQ      2$          ;
1818 004710 005005      CLR      R5          ;
1819 004712 104002      HLT      2          ;LINE PARAMETER REGISTER ERROR
1820 004714 104400      2$:      SCOPE
1821
1822                                     ;LINE PARAMETER REGISTER DATA TEST
1823                                     ;SET BIT 1 IN LINE PARAMETER TO 1
1824                                     ;VERIFY THAT BIT 1 WAS SET
1825                                     ;CLEAR BIT 1
1826                                     ;VERIFY THAT BIT 1 WAS CLEARED
1827
1828 004716 012767 000340 173052 T41:  MOV      #340,PS      ;DISABLE ALL INTERRUPTS
1829 004724 012767 004000 012516      MOV      #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
1830 004732 012767 005004 012504      MOV      #2$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
1831 004740 012777 004000 012434      MOV      #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
1832 004746 016703 012434      MOV      DHLPR,R3     ;SET UP POINTER TO LINE PARAMETER
1833 004752 012705 000002      MOV      #2,R5        ;BIT 1 WILL BE SET IN LINE PARAMETER
1834 004756 010513      MOV      R5,(R3)      ;SET BIT 1
1835 004760 011304      MOV      (R3),R4      ;GET CONTENTS OF LINE PARAMETER
1836 004762 020504      CMP      R5,R4        ;WAS BIT 1 SET
1837 004764 001401      BEQ      1$          ;
1838 004766 104002      HLT      2          ;LINE PARAMETER REGISTER ERROR
1839 004770 040513      1$:      BIC      R5,(R3)      ;CLEAR BIT 1
1840 004772 011304      MOV      (R3),R4      ;READ CONTENTS OF LINE PARAMETER
1841 004774 005704      TST      R4          ;WAS BIT 1 CLEARED
1842 004776 001402      BEQ      2$          ;
1843 005000 005005      CLR      R5

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1844 005002 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
1845 005004 104400          2$:      SCOPE
1846
1847          ;LINE PARAMETER REGISTER DATA TEST
1848          ;SET BIT 2 IN LINE PARAMETER TO 1
1849          ;VERIFY THAT BIT 2 WAS SET
1850          ;CLEAR BIT 2
1851          ;VERIFY THAT BIT 2 WAS CLEARED
1852
1853 005006 012767 000340 172762 T42:  MOV     #340,PS          ;DISABLE ALL INTERRUPTS
1854 005014 012767 004000 012426      MOV     #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
1855 005022 012767 005074 012414      MOV     #2$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1856 005030 012777 004000 012344      MOV     #BIT11,JDHSCR  ;MASTER CLEAR INTERFACE
1857 005036 016703 012344      MOV     DHLPR,R3       ;SET UP POINTER TO LINE PARAMETER
1858 005042 012705 000004      MOV     #4,R5          ;BIT 2 WILL BE SET IN LINE PARAMETER
1859 005046 010513      MOV     R5,(R3)        ;SET BIT 2
1860 005050 011304      MOV     (R3),R4        ;GET CONTENTS OF LINE PARAMETER
1861 005052 020504      CMP     R5,R4          ;WAS BIT 2 SET
1862 005054 001401      BEQ     1$
1863 005056 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
1864 005060 040513          1$:      BIC     R5,(R3)        ;CLEAR BIT 2
1865 005062 011304      MOV     (R3),R4        ;READ CONTENTS OF LINE PARAMETER
1866 005064 005704      TST     R4             ;WAS BIT 2 CLEARED
1867 005066 001402      BEQ     2$
1868 005070 005005      CLR     R5
1869 005072 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
1870 005074 104400          2$:      SCOPE
1871
1872          ;LINE PARAMETER REGISTER DATA TEST
1873          ;SET BIT 4 IN LINE PARAMETER TO 1
1874          ;VERIFY THAT BIT 4 WAS SET
1875          ;CLEAR BIT 4
1876          ;VERIFY THAT BIT 4 WAS CLEARED
1877
1878 005076 012767 000340 172672 T43:  MOV     #340,PS          ;DISABLE ALL INTERRUPTS
1879 005104 012767 004000 012336      MOV     #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
1880 005112 012767 005164 012324      MOV     #2$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1881 005120 012777 004000 012254      MOV     #BIT11,JDHSCR  ;MASTER CLEAR INTERFACE
1882 005126 016703 012254      MOV     DHLPR,R3       ;SET UP POINTER TO LINE PARAMETER
1883 005132 012705 000020      MOV     #20,R5         ;BIT 4 WILL BE SET IN LINE PARAMETER
1884 005136 010513      MOV     R5,(R3)        ;SET BIT 4
1885 005140 011304      MOV     (R3),R4        ;GET CONTENTS OF LINE PARAMETER
1886 005142 020504      CMP     R5,R4          ;WAS BIT 4 SET
1887 005144 001401      BEQ     1$
1888 005146 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
1889 005150 040513          1$:      BIC     R5,(R3)        ;CLEAR BIT 4
1890 005152 011304      MOV     (R3),R4        ;READ CONTENTS OF LINE PARAMETER
1891 005154 005704      TST     R4             ;WAS BIT 4 CLEARED
1892 005156 001402      BEQ     2$
1893 005160 005005      CLR     R5
1894 005162 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
1895 005164 104400          2$:      SCOPE
1896
1897          ;LINE PARAMETER REGISTER DATA TEST
1898          ;SET BIT 5 IN LINE PARAMETER TO 1
1899          ;VERIFY THAT BIT 5 WAS SET

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1900                                     ;CLEAR BIT 5
1901                                     ;VERIFY THAT BIT 5 WAS CLEARED
1902
1903 005166 012767 000340 172602 T44: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1904 005174 012767 004000 012246     MOV      #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
1905 005202 012767 005254 012234     MOV      #2$,ESCAPE       ;SET UP TO ESCAPE TO NEXT TEST
1906 005210 012777 004000 012164     MOV      #BIT11,2DHSCR    ;MASTER CLEAR INTERFACE
1907 005216 016703 012164             MOV      DHLPR,R3         ;SET UP POINTER TO LINE PARAMETER
1908 005222 012705 000040             MOV      #40,R5          ;BIT 5 WILL BE SET IN LINE PARAMETER
1909 005226 010513                     MOV      R5,(R3)         ;SET BIT 5
1910 005230 011304                     MOV      (R3),R4         ;GET CONTENTS OF LINE PARAMETER
1911 005232 020504                     CMP      R5,R4           ;WAS BIT 5 SET
1912 005234 001401                     BEQ      1$
1913 005236 104002                     HLT      2
1914 005240 040513 1$: BIC      R5,(R3)        ;LINE PARAMETER REGISTER ERROR
1915 005242 011304                     MOV      (R3),R4        ;CLEAR BIT 5
1916 005244 005704                     TST      R4              ;READ CONTENTS OF LINE PARAMETER
1917 005246 001402                     BEQ      2$              ;WAS BIT 5 CLEARED
1918 005250 005005                     CLR      R5
1919 005252 104002                     HLT      2
1920 005254 104400 2$: SCOPE          ;LINE PARAMETER REGISTER ERROR
1921
1922                                     ;LINE PARAMETER REGISTER DATA TEST
1923                                     ;SET BIT 6 IN LINE PARAMETER TO 1
1924                                     ;VERIFY THAT BIT 6 WAS SET
1925                                     ;CLEAR BIT 6
1926                                     ;VERIFY THAT BIT 6 WAS CLEARED
1927
1928 005256 012767 000340 172512 T45: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1929 005264 012767 004000 012156     MOV      #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
1930 005272 012767 005344 012144     MOV      #2$,ESCAPE       ;SET UP TO ESCAPE TO NEXT TEST
1931 005300 012777 004000 012074     MOV      #BIT11,2DHSCR    ;MASTER CLEAR INTERFACE
1932 005306 016703 012074             MOV      DHLPR,R3         ;SET UP POINTER TO LINE PARAMETER
1933 005312 012705 000100             MOV      #100,R5         ;BIT 6 WILL BE SET IN LINE PARAMETER
1934 005316 010513                     MOV      R5,(R3)         ;SET BIT 6
1935 005320 011304                     MOV      (R3),R4         ;GET CONTENTS OF LINE PARAMETER
1936 005322 020504                     CMP      R5,R4           ;WAS BIT 6 SET
1937 005324 001401                     BEQ      1$
1938 005326 104002                     HLT      2
1939 005330 040513 1$: BIC      R5,(R3)        ;LINE PARAMETER REGISTER ERROR
1940 005332 011304                     MOV      (R3),R4        ;CLEAR BIT 6
1941 005334 005704                     TST      R4              ;READ CONTENTS OF LINE PARAMETER
1942 005336 001402                     BEQ      2$              ;WAS BIT 6 CLEARED
1943 005340 005005                     CLR      R5
1944 005342 104002                     HLT      2
1945 005344 104400 2$: SCOPE          ;LINE PARAMETER REGISTER ERROR
1946
1947                                     ;LINE PARAMETER REGISTER DATA TEST
1948                                     ;SET BIT 7 IN LINE PARAMETER TO 1
1949                                     ;VERIFY THAT BIT 7 WAS SET
1950                                     ;CLEAR BIT 7
1951                                     ;VERIFY THAT BIT 7 WAS CLEARED
1952
1953 005346 012767 000340 172422 T46: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1954 005354 012767 004000 012066     MOV      #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
1955 005362 012767 005434 012054     MOV      #2$,ESCAPE       ;SET UP TO ESCAPE TO NEXT TEST
    
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1956 005370 012777 004000 012004  MOV      #BIT11,JDHSCR      ;MASTER CLEAR INTERFACE
1957 005376 016703 012004          MOV      DHLPR,R3        ;SET UP POINTER TO LINE PARAMETER
1958 005402 012705 000200          MOV      #200,R5        ;BIT 7 WILL BE SET IN LINE PARAMETER
1959 005406 010513          MOV      R5,(R3)        ;SET BIT 7
1960 005410 011304          MOV      (R3),R4        ;GET CONTENTS OF LINE PARAMETER
1961 005412 020504          CMP      R5,R4          ;WAS BIT 7 SET
1962 005414 001401          BEQ      1$            ;
1963 005416 104002          HLT      2              ;LINE PARAMETER REGISTER ERROR
1964 005420 040513 1$:      BIC      R5,(R3)        ;CLEAR BIT 7
1965 005422 011304          MOV      (R3),R4        ;READ CONTENTS OF LINE PARAMETER
1966 005424 005704          TST      R4            ;WAS BIT 7 CLEARED
1967 005426 001402          BEQ      2$            ;
1968 005430 005005          CLR      R5            ;
1969 005432 104002          HLT      2              ;LINE PARAMETER REGISTER ERROR
1970 005434 104400 2$:      SCOPE
1971
1972          ;LINE PARAMETER REGISTER DATA TEST
1973          ;SET BIT 10 IN LINE PARAMETER TO 1
1974          ;VERIFY THAT BIT 10 WAS SET
1975          ;CLEAR BIT 10
1976          ;VERIFY THAT BIT 10 WAS CLEARED
1977
1978 005436 012767 000340 172332 T47:  MOV      #340,PS        ;DISABLE ALL INTERRUPTS
1979 005444 012767 004000 011776  MOV      #4000,ICOUNT   ;SET UP FOR 4000 ITERATIONS
1980 005452 012767 005524 011764  MOV      #2$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
1981 005460 012777 004000 011714  MOV      #BIT11,JDHSCR  ;MASTER CLEAR INTERFACE
1982 005466 016703 011714          MOV      DHLPR,R3        ;SET UP POINTER TO LINE PARAMETER
1983 005472 012705 000400          MOV      #400,R5        ;BIT 10 WILL BE SET IN LINE PARAMETER
1984 005476 010513          MOV      R5,(R3)        ;SET BIT 10
1985 005500 011304          MOV      (R3),R4        ;GET CONTENTS OF LINE PARAMETER
1986 005502 020504          CMP      R5,R4          ;WAS BIT 10 SET
1987 005504 001401          BEQ      1$            ;
1988 005506 104002          HLT      2              ;LINE PARAMETER REGISTER ERROR
1989 005510 040513 1$:      BIC      R5,(R3)        ;CLEAR BIT 10
1990 005512 011304          MOV      (R3),R4        ;READ CONTENTS OF LINE PARAMETER
1991 005514 005704          TST      R4            ;WAS BIT 10 CLEARED
1992 005516 001402          BEQ      2$            ;
1993 005520 005005          CLR      R5            ;
1994 005522 104002          HLT      2              ;LINE PARAMETER REGISTER ERROR
1995 005524 104400 2$:      SCOPE
1996
1997          ;LINE PARAMETER REGISTER DATA TEST
1998          ;SET BIT 11 IN LINE PARAMETER TO 1
1999          ;VERIFY THAT BIT 11 WAS SET
2000          ;CLEAR BIT 11
2001          ;VERIFY THAT BIT 11 WAS CLEARED
2002
2003 005526 012767 000340 172242 T50:  MOV      #340,PS        ;DISABLE ALL INTERRUPTS
2004 005534 012767 004000 011706  MOV      #4000,ICOUNT   ;SET UP FOR 4000 ITERATIONS
2005 005542 012767 005614 011674  MOV      #2$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2006 005550 012777 004000 011624  MOV      #BIT11,JDHSCR  ;MASTER CLEAR INTERFACE
2007 005556 016703 011624          MOV      DHLPR,R3        ;SET UP POINTER TO LINE PARAMETER
2008 005562 012705 001000          MOV      #1000,R5       ;BIT 11 WILL BE SET IN LINE PARAMETER
2009 005566 010513          MOV      R5,(R3)        ;SET BIT 11
2010 005570 011304          MOV      (R3),R4        ;GET CONTENTS OF LINE PARAMETER
2011 005572 020504          CMP      R5,R4          ;WAS BIT 11 SET

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2012	005574	001401				BEQ	1\$		
2013	005576	104002				HLT	2		;LINE PARAMETER REGISTER ERROR
2014	005600	040513			1\$:	BIC	R5, (R3)		;CLEAR BIT 11
2015	005602	011304				MOV	(R3), R4		;READ CONTENTS OF LINE PARAMETER
2016	005604	005704				TST	R4		;WAS BIT 11 CLEARED
2017	005606	001402				BEQ	2\$		
2018	005610	005005				CLR	R5		
2019	005612	104002				HLT	2		;LINE PARAMETER REGISTER ERROR
2020	005614	104400			2\$:	SCOPE			
2021									
2022									;LINE PARAMETER REGISTER DATA TEST
2023									;SET BIT 12 IN LINE PARAMETER TO 1
2024									;VERIFY THAT BIT 12 WAS SET
2025									;CLEAR BIT 12
2026									;VERIFY THAT BIT 12 WAS CLEARED
2027									
2028	005616	012767	000340	172152	T51:	MOV	#340, PS		;DISABLE ALL INTERRUPTS
2029	005624	012767	004000	011616		MOV	#4000, ICOUNT		;SET UP FOR 4000 ITERATIONS
2030	005632	012767	005704	011604		MOV	#2\$ ESCAPE		;SET UP TO ESCAPE TO NEXT TEST
2031	005640	012777	004000	011534		MOV	#BIT11, ZOHSCR		;MASTER CLEAR INTERFACE
2032	005646	016703	011534			MOV	DHLPR, R3		;SET UP POINTER TO LINE PARAMETER
2033	005652	012705	002000			MOV	#2000, R5		;BIT 12 WILL BE SET IN LINE PARAMETER
2034	005656	010513				MOV	R5, (R3)		;SET BIT 12
2035	005660	011304				MOV	(R3), R4		;GET CONTENTS OF LINE PARAMETER
2036	005662	020504				CMP	R5, R4		;WAS BIT 12 SET
2037	005664	001401				BEQ	1\$		
2038	005666	104002				HLT	2		;LINE PARAMETER REGISTER ERROR
2039	005670	040513			1\$:	BIC	R5, (R3)		;CLEAR BIT 12
2040	005672	011304				MOV	(R3), R4		;READ CONTENTS OF LINE PARAMETER
2041	005674	005704				TST	R4		;WAS BIT 12 CLEARED
2042	005676	001402				BEQ	2\$		
2043	005700	005005				CLR	R5		
2044	005702	104002				HLT	2		;LINE PARAMETER REGISTER ERROR
2045	005704	104400			2\$:	SCOPE			
2046									
2047									;LINE PARAMETER REGISTER DATA TEST
2048									;SET BIT 13 IN LINE PARAMETER TO 1
2049									;VERIFY THAT BIT 13 WAS SET
2050									;CLEAR BIT 13
2051									;VERIFY THAT BIT 13 WAS CLEARED
2052									
2053	005706	012767	000340	172062	T52:	MOV	#340, PS		;DISABLE ALL INTERRUPTS
2054	005714	012767	004000	011526		MOV	#4000, ICOUNT		;SET UP FOR 4000 ITERATIONS
2055	005722	012767	005774	011514		MOV	#2\$ ESCAPE		;SET UP TO ESCAPE TO NEXT TEST
2056	005730	012777	004000	011444		MOV	#BIT11, ZOHSCR		;MASTER CLEAR INTERFACE
2057	005736	016703	011444			MOV	DHLPR, R3		;SET UP POINTER TO LINE PARAMETER
2058	005742	012705	004000			MOV	#4000, R5		;BIT 13 WILL BE SET IN LINE PARAMETER
2059	005746	010513				MOV	R5, (R3)		;SET BIT 13
2060	005750	011304				MOV	(R3), R4		;GET CONTENTS OF LINE PARAMETER
2061	005752	020504				CMP	R5, R4		;WAS BIT 13 SET
2062	005754	001401				BEQ	1\$		
2063	005756	104002				HLT	2		;LINE PARAMETER REGISTER ERROR
2064	005760	040513			1\$:	BIC	R5, (R3)		;CLEAR BIT 13
2065	005762	011304				MOV	(R3), R4		;READ CONTENTS OF LINE PARAMETER
2066	005764	005704				TST	R4		;WAS BIT 13 CLEARED
2067	005766	001402				BEQ	2\$		

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2068 005770 005005          CLR      R5
2069 005772 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
2070 005774 104400          2S:     SCOPE
2071
2072          ;LINE PARAMETER REGISTER DATA TEST
2073          ;SET BIT 14 IN LINE PARAMETER TO 1
2074          ;VERIFY THAT BIT 14 WAS SET
2075          ;CLEAR BIT 14
2076          ;VERIFY THAT BIT 14 WAS CLEARED
2077
2078 005776 012767 000340 171772 T53:   MOV      #340,PS          ;DISABLE ALL INTERRUPTS
2079 006004 012767 004000 011436      MOV      #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
2080 006012 012767 006064 011424      MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2081 006020 012777 004000 011354      MOV      #BIT11,2DHSCR  ;MASTER CLEAR INTERFACE
2082 006026 015703 011354          MOV      DHLPR,R3       ;SET UP POINTER TO LINE PARAMETER
2083 006032 012705 010000          MOV      #10000,R5      ;BIT 14 WILL BE SET IN LINE PARAMETER
2084 006036 010513          MOV      R5,(R3)        ;SET BIT 14
2085 006040 011304          MOV      (R3),R4        ;GET CONTENTS OF LINE PARAMETER
2086 006042 020504          CMP      R5,R4          ;WAS BIT 14 SET
2087 006044 001401          BEQ      1S
2088 006046 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
2089 006050 040513          1S:     BIC      R5,(R3)    ;CLEAR BIT 14
2090 006052 011304          MOV      (R3),R4        ;READ CONTENTS OF LINE PARAMETER
2091 006054 005704          TST      R4             ;WAS BIT 14 CLEARED
2092 006056 001402          BEQ      2S
2093 006060 005005          CLR      R5
2094 006062 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
2095 006064 104400          2S:     SCOPE
2096
2097          ;LINE PARAMETER REGISTER DATA TEST
2098          ;SET BIT 15 IN LINE PARAMETER TO 1
2099          ;VERIFY THAT BIT 15 WAS SET
2100          ;CLEAR BIT 15
2101          ;VERIFY THAT BIT 15 WAS CLEARED
2102
2103 006066 012767 000340 171702 T54:   MOV      #340,PS          ;DISABLE ALL INTERRUPTS
2104 006074 012767 004000 011346      MOV      #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
2105 006102 012767 006154 011334      MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2106 006110 012777 004000 011264      MOV      #BIT11,2DHSCR  ;MASTER CLEAR INTERFACE
2107 006116 016703 011264          MOV      DHLPR,R3       ;SET UP POINTER TO LINE PARAMETER
2108 006122 012705 020000          MOV      #20000,R5      ;BIT 15 WILL BE SET IN LINE PARAMETER
2109 006126 010513          MOV      R5,(R3)        ;SET BIT 15
2110 006130 011304          MOV      (R3),R4        ;GET CONTENTS OF LINE PARAMETER
2111 006132 020504          CMP      R5,R4          ;WAS BIT 15 SET
2112 006134 001401          BEQ      1S
2113 006136 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
2114 006140 040513          1S:     BIC      R5,(R3)    ;CLEAR BIT 15
2115 006142 011304          MOV      (R3),R4        ;READ CONTENTS OF LINE PARAMETER
2116 006144 005704          TST      R4             ;WAS BIT 15 CLEARED
2117 006146 001402          BEQ      2S
2118 006150 005005          CLR      R5
2119 006152 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
2120 006154 104400          2S:     SCOPE
2121
2122          ;LINE PARAMETER REGISTER DATA TEST
2123          ;SET BIT 16 IN LINE PARAMETER TO 1

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E04

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2124                                     ;VERIFY THAT BIT 16 WAS SET
2125                                     ;CLEAR BIT 16
2126                                     ;VERIFY THAT BIT 16 WAS CLEARED
2127
2128 006156 012767 000340 171612 T55:  MOV    #340,PS           ;DISABLE ALL INTERRUPTS
2129 006164 012767 004000 011256      MOV    #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
2130 006172 012767 006244 011244      MOV    #25,ESCAPE       ;SET UP TO ESCAPE TO NEXT TEST
2131 006200 012777 004000 011174      MOV    #BIT11,JDHSCR    ;MASTER CLEAR INTERFACE
2132 006206 016703 011174              MOV    DMLPR,R3         ;SET UP POINTER TO LINE PARAMETER
2133 006212 012705 040000              MOV    #40000,R5        ;BIT 16 WILL BE SET IN LINE PARAMETER
2134 006216 010513              MOV    R5,(R3)         ;SET BIT 16
2135 006220 011304              MOV    (R3),R4         ;GET CONTENTS OF LINE PARAMETER
2136 006222 020504              CMP    R5,R4          ;WAS BIT 16 SET
2137 006224 001401              BEQ    1$              ;
2138 006226 104002              HLT    2                ;LINE PARAMETER REGISTER ERROR
2139 006230 040513 1$:          BIC    R5,(R3)         ;CLEAR BIT 16
2140 006232 011304              MOV    (R3),R4         ;READ CONTENTS OF LINE PARAMETER
2141 006234 005704              TST    R4              ;WAS BIT 16 CLEARED
2142 006236 001402              BEQ    2$              ;
2143 006240 005005              CLR    R5              ;
2144 006242 104002              HLT    2                ;LINE PARAMETER REGISTER ERROR
2145 006244 104400 2$:          SCOPE
2146
2147                                     ;LINE PARAMETER REGISTER DATA TEST
2148                                     ;SET BIT 17 IN LINE PARAMETER TO 1
2149                                     ;VERIFY THAT BIT 17 WAS SET
2150                                     ;CLEAR BIT 17
2151                                     ;VERIFY THAT BIT 17 WAS CLEARED
2152
2153 006246 012767 000340 171522 T56:  MOV    #340,PS           ;DISABLE ALL INTERRUPTS
2154 006254 012767 004000 011166      MOV    #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
2155 006262 012767 006334 011154      MOV    #25,ESCAPE       ;SET UP TO ESCAPE TO NEXT TEST
2156 006270 012777 004000 011104      MOV    #BIT11,JDHSCR    ;MASTER CLEAR INTERFACE
2157 006276 016703 011104              MOV    DMLPR,R3         ;SET UP POINTER TO LINE PARAMETER
2158 006302 012705 100000              MOV    #100000,R5       ;BIT 17 WILL BE SET IN LINE PARAMETER
2159 006306 010513              MOV    R5,(R3)         ;SET BIT 17
2160 006310 011304              MOV    (R3),R4         ;GET CONTENTS OF LINE PARAMETER
2161 006312 020504              CMP    R5,R4          ;WAS BIT 17 SET
2162 006314 001401              BEQ    1$              ;
2163 006316 104002              HLT    2                ;LINE PARAMETER REGISTER ERROR
2164 006320 040513 1$:          BIC    R5,(R3)         ;CLEAR BIT 17
2165 006322 011304              MOV    (R3),R4         ;READ CONTENTS OF LINE PARAMETER
2166 006324 005704              TST    R4              ;WAS BIT 17 CLEARED
2167 006326 001402              BEQ    2$              ;
2168 006330 005005              CLR    R5              ;
2169 006332 104002              HLT    2                ;LINE PARAMETER REGISTER ERROR
2170 006334 104400 2$:          SCOPE
2171
2172                                     ;BREAK CONTROL REGISTER DATA TEST
2173                                     ;SET BIT 0 IN BREAK CONTROL TO 1
2174                                     ;VERIFY THAT BIT 0 WAS SET
2175                                     ;CLEAR BIT 0
2176                                     ;VERIFY THAT BIT 0 WAS CLEARED
2177
2178 006336 012767 000340 171432 T57:  MOV    #340,PS           ;DISABLE ALL INTERRUPTS
2179 006344 012767 004000 011076      MOV    #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
  
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2180	006352	012767	006424	011064		MOV	#25,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
2181	006360	012777	004000	011014		MOV	#BIT11,DMHSCR	;MASTER CLEAR INTERFACE
2182	006366	016703	011024			MOV	DMHSCR,R3	;SET UP POINTER TO BREAK CONTROL
2183	006372	012705	000001			MOV	#1,R5	;BIT 0 WILL BE SET IN BREAK CONTROL
2184	006376	010513				MOV	R5,(R3)	;SET BIT 0
2185	006400	011304				MOV	(R3),R4	;GET CONTENTS OF BREAK CONTROL
2186	006402	020504				CMP	R5,R4	;WAS BIT 0 SET
2187	006404	001401				BEQ	1\$	
2188	006406	104003				HLT	3	;BREAK CONTROL REGISTER ERROR
2189	006410	040513			1\$:	BIC	R5,(R3)	;CLEAR BIT 0
2190	006412	011304				MOV	(R3),R4	;READ CONTENTS OF BREAK CONTROL
2191	006414	005704				TST	R4	;WAS BIT 0 CLEARED
2192	006416	001402				BEQ	2\$	
2193	006420	005005				CLR	R5	
2194	006422	104003				HLT	3	;BREAK CONTROL REGISTER ERROR
2195	006424	104400			2\$:	SCOPE		
2196								
2197								
2198								
2199								
2200								
2201								
2202								
2203	006426	012767	000340	171342	T60:	MOV	#340,PS	;DISABLE ALL INTERRUPTS
2204	006434	012767	004000	011006		MOV	#4000,ICOUNT	;SET UP FOR 4000 ITERATIONS
2205	006442	012767	006514	010774		MOV	#25,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
2206	006450	012777	004000	010724		MOV	#BIT11,DMHSCR	;MASTER CLEAR INTERFACE
2207	006456	016703	010734			MOV	DMHSCR,R3	;SET UP POINTER TO BREAK CONTROL
2208	006462	012705	000002			MOV	#2,R5	;BIT 1 WILL BE SET IN BREAK CONTROL
2209	006466	010513				MOV	R5,(R3)	;SET BIT 1
2210	006470	011304				MOV	(R3),R4	;GET CONTENTS OF BREAK CONTROL
2211	006472	020504				CMP	R5,R4	;WAS BIT 1 SET
2212	006474	001401				BEQ	1\$	
2213	006476	104003				HLT	3	;BREAK CONTROL REGISTER ERROR
2214	006500	040513			1\$:	BIC	R5,(R3)	;CLEAR BIT 1
2215	006502	011304				MOV	(R3),R4	;READ CONTENTS OF BREAK CONTROL
2216	006504	005704				TST	R4	;WAS BIT 1 CLEARED
2217	006506	001402				BEQ	2\$	
2218	006510	005005				CLR	R5	
2219	006512	104003				HLT	3	;BREAK CONTROL REGISTER ERROR
2220	006514	104400			2\$:	SCOPE		
2221								
2222								
2223								
2224								
2225								
2226								
2227								
2228	006516	012767	000340	171252	T61:	MOV	#340,PS	;DISABLE ALL INTERRUPTS
2229	006524	012767	004000	010716		MOV	#4000,ICOUNT	;SET UP FOR 4000 ITERATIONS
2230	006532	012767	006604	010704		MOV	#25,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
2231	006540	012777	004000	010634		MOV	#BIT11,DMHSCR	;MASTER CLEAR INTERFACE
2232	006546	016703	010644			MOV	DMHSCR,R3	;SET UP POINTER TO BREAK CONTROL
2233	006552	012705	000004			MOV	#4,R5	;BIT 2 WILL BE SET IN BREAK CONTROL
2234	006556	010513				MOV	R5,(R3)	;SET BIT 2
2235	006560	011304				MOV	(R3),R4	;GET CONTENTS OF BREAK CONTROL

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2236 006562 020504          CMP      R5,R4          ;WAS BIT 2 SET
2237 006564 001401          BEQ      1$
2238 006566 104003          HLT      3              ;BREAK CONTROL REGISTER ERROR
2239 006570 040513          1$:    BIC      R5,(R3)      ;CLEAR BIT 2
2240 006572 011304          MOV      (R3),R4       ;READ CONTENTS OF BREAK CONTROL
2241 006574 005704          TST      R4            ;WAS BIT 2 CLEARED
2242 006576 001402          BEQ      2$
2243 006600 005005          CLR      R5
2244 006602 104003          HLT      3              ;BREAK CONTROL REGISTER ERROR
2245 006604 104400          2$:    SCOPE
2246
2247          ;BREAK CONTROL REGISTER DATA TEST
2248          ;SET BIT 3 IN BREAK CONTROL TO 1
2249          ;VERIFY THAT BIT 3 WAS SET
2250          ;CLEAR BIT 3
2251          ;VERIFY THAT BIT 3 WAS CLEARED
2252
2253 006606 012767 000340 171162 T62:  MOV      #340,PS        ;DISABLE ALL INTERRUPTS
2254 006614 012767 004000 010626  MOV      #4000,ICOUNT   ;SET UP FOR 4000 ITERATIONS
2255 006622 012767 006674 010614  MOV      #2$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2256 006630 012777 004000 010544  MOV      #BIT11,DHSCR   ;MASTER CLEAR INTERFACE
2257 006636 016703 010554  MOV      DHSCR,R3      ;SET UP POINTER TO BREAK CONTROL
2258 006642 012705 000010  MOV      #10,R5        ;BIT 3 WILL BE SET IN BREAK CONTROL
2259 006646 010513  MOV      R5,(R3)       ;SET BIT 3
2260 006650 011304  MOV      (R3),R4       ;GET CONTENTS OF BREAK CONTROL
2261 006652 020504  CMP      R5,R4        ;WAS BIT 3 SET
2262 006654 001401  BEQ      1$
2263 006656 104003  HLT      3              ;BREAK CONTROL REGISTER ERROR
2264 006660 040513          1$:    BIC      R5,(R3)      ;CLEAR BIT 3
2265 006662 011304          MOV      (R3),R4       ;READ CONTENTS OF BREAK CONTROL
2266 006664 005704          TST      R4            ;WAS BIT 3 CLEARED
2267 006666 001402          BEQ      2$
2268 006670 005005          CLR      R5
2269 006672 104003          HLT      3              ;BREAK CONTROL REGISTER ERROR
2270 006674 104400          2$:    SCOPE
2271
2272          ;BREAK CONTROL REGISTER DATA TEST
2273          ;SET BIT 4 IN BREAK CONTROL TO 1
2274          ;VERIFY THAT BIT 4 WAS SET
2275          ;CLEAR BIT 4
2276          ;VERIFY THAT BIT 4 WAS CLEARED
2277
2278 006676 012767 000340 171072 T63:  MOV      #340,PS        ;DISABLE ALL INTERRUPTS
2279 006704 012767 004000 010536  MOV      #4000,ICOUNT   ;SET UP FOR 4000 ITERATIONS
2280 006712 012767 006764 010524  MOV      #2$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2281 006720 012777 004000 010454  MOV      #BIT11,DHSCR   ;MASTER CLEAR INTERFACE
2282 006726 016703 010464  MOV      DHSCR,R3      ;SET UP POINTER TO BREAK CONTROL
2283 006732 012705 000020  MOV      #20,R5        ;BIT 4 WILL BE SET IN BREAK CONTROL
2284 006736 010513  MOV      R5,(R3)       ;SET BIT 4
2285 006740 011304  MOV      (R3),R4       ;GET CONTENTS OF BREAK CONTROL
2286 006742 020504  CMP      R5,R4        ;WAS BIT 4 SET
2287 006744 001401  BEQ      1$
2288 006746 104003  HLT      3              ;BREAK CONTROL REGISTER ERROR
2289 006750 040513          1$:    BIC      R5,(R3)      ;CLEAR BIT 4
2290 006752 011304          MOV      (R3),R4       ;READ CONTENTS OF BREAK CONTROL
2291 006754 005704          TST      R4            ;WAS BIT 4 CLEARED

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2292 006756 001402          BEQ      25
2293 006760 005005          CLR      R5
2294 006762 104003          HLT      3          ;BREAK CONTROL REGISTER ERROR
2295 006764 104400          25:      SCOPE
2296
2297          ;BREAK CONTROL REGISTER DATA TEST
2298          ;SET BIT 5 IN BREAK CONTROL TO 1
2299          ;VERIFY THAT BIT 5 WAS SET
2300          ;CLEAR BIT 5
2301          ;VERIFY THAT BIT 5 WAS CLEARED
2302
2303 006766 012767 000340 171002 T64:  MOV      #340,PS          ;DISABLE ALL INTERRUPTS
2304 006774 012767 004000 010446      MOV      #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
2305 007002 012767 007054 010434      MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2306 007010 012777 004000 010364      MOV      #BIT11,DMHSCR  ;MASTER CLEAR INTERFACE
2307 007016 016703 010374          MOV      DMHCR,R3       ;SET UP POINTER TO BREAK CONTROL
2308 007022 012705 000040          MOV      #40,R5         ;BIT 5 WILL BE SET IN BREAK CONTROL
2309 007026 010513          MOV      R5,(R3)        ;SET BIT 5
2310 007030 011304          MOV      (R3),R4        ;GET CONTENTS OF BREAK CONTROL
2311 007032 020504          CMP      R5,R4          ;WAS BIT 5 SET
2312 007034 001401          BEQ      15
2313 007036 104003          HLT      3          ;BREAK CONTROL REGISTER ERROR
2314 007040 040513          15:      BIC      R5,(R3)        ;CLEAR BIT 5
2315 007042 011304          MOV      (R3),R4        ;READ CONTENTS OF BREAK CONTROL
2316 007044 005704          TST      R4             ;WAS BIT 5 CLEARED
2317 007046 001402          BEQ      25
2318 007050 005005          CLR      R5
2319 007052 104003          HLT      3          ;BREAK CONTROL REGISTER ERROR
2320 007054 104400          25:      SCOPE
2321
2322          ;BREAK CONTROL REGISTER DATA TEST
2323          ;SET BIT 6 IN BREAK CONTROL TO 1
2324          ;VERIFY THAT BIT 6 WAS SET
2325          ;CLEAR BIT 6
2326          ;VERIFY THAT BIT 6 WAS CLEARED
2327
2328 007056 012767 000340 170712 T65:  MOV      #340,PS          ;DISABLE ALL INTERRUPTS
2329 007064 012767 004000 010356      MOV      #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
2330 007072 012767 007144 010344      MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2331 007100 012777 004000 010274      MOV      #BIT11,DMHSCR  ;MASTER CLEAR INTERFACE
2332 007106 016703 010304          MOV      DMHCR,R3       ;SET UP POINTER TO BREAK CONTROL
2333 007112 012705 000100          MOV      #100,R5        ;BIT 6 WILL BE SET IN BREAK CONTROL
2334 007116 010513          MOV      R5,(R3)        ;SET BIT 6
2335 007120 011304          MOV      (R3),R4        ;GET CONTENTS OF BREAK CONTROL
2336 007122 020504          CMP      R5,R4          ;WAS BIT 6 SET
2337 007124 001401          BEQ      15
2338 007126 104003          HLT      3          ;BREAK CONTROL REGISTER ERROR
2339 007130 040513          15:      BIC      R5,(R3)        ;CLEAR BIT 6
2340 007132 011304          MOV      (R3),R4        ;READ CONTENTS OF BREAK CONTROL
2341 007134 005704          TST      R4             ;WAS BIT 6 CLEARED
2342 007136 001402          BEQ      25
2343 007140 005005          CLR      R5
2344 007142 104003          HLT      3          ;BREAK CONTROL REGISTER ERROR
2345 007144 104400          25:      SCOPE
2346
2347          ;BREAK CONTROL REGISTER DATA TEST
  
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2348                                     ;SET BIT 7 IN BREAK CONTROL TO 1
2349                                     ;VERIFY THAT BIT 7 WAS SET
2350                                     ;CLEAR BIT 7
2351                                     ;VERIFY THAT BIT 7 WAS CLEARED
2352
2353 007146 012767 000340 170622 T66:  MOV    #340,PS                ;DISABLE ALL INTERRUPTS
2354 007154 012767 004000 010266      MOV    #4000,ICOUNT          ;SET UP FOR 4000 ITERATIONS
2355 007162 012767 007234 010254      MOV    #2$,ESCAPE           ;SET UP TO ESCAPE TO NEXT TEST
2356 007170 012777 004000 010204      MOV    #BIT11,2DHSCR        ;MASTER CLEAR INTERFACE
2357 007176 016703 010214              MOV    DHBCR,R3             ;SET UP POINTER TO BREAK CONTROL
2358 007202 012705 000200              MOV    #200,R5              ;BIT 7 WILL BE SET IN BREAK CONTROL
2359 007206 010513                      MOV    R5,(R3)              ;SET BIT 7
2360 007210 011304                      MOV    (R3),R4              ;GET CONTENTS OF BREAK CONTROL
2361 007212 020504                      CMP    R5,R4                ;WAS BIT 7 SET
2362 007214 001401                      BEQ    1$
2363 007216 104003                      HLT    3                    ;BREAK CONTROL REGISTER ERROR
2364 007220 040513 1$:                BIC    R5,(R3)              ;CLEAR BIT 7
2365 007222 011304                      MOV    (R3),R4              ;READ CONTENTS OF BREAK CONTROL
2366 007224 005704                      TST    R4                   ;WAS BIT 7 CLEARED
2367 007226 001402                      BEQ    2$
2368 007230 005005                      CLR    R5
2369 007232 104003                      HLT    3                    ;BREAK CONTROL REGISTER ERROR
2370 007234 104400 2$:                SCOPE
2371
2372                                     ;BREAK CONTROL REGISTER DATA TEST
2373                                     ;SET BIT 10 IN BREAK CONTROL TO 1
2374                                     ;VERIFY THAT BIT 10 WAS SET
2375                                     ;CLEAR BIT 10
2376                                     ;VERIFY THAT BIT 10 WAS CLEARED
2377
2378 007236 012767 000340 170532 T67:  MOV    #340,PS                ;DISABLE ALL INTERRUPTS
2379 007244 012767 004000 010176      MOV    #4000,ICOUNT          ;SET UP FOR 4000 ITERATIONS
2380 007252 012767 007324 010164      MOV    #2$,ESCAPE           ;SET UP TO ESCAPE TO NEXT TEST
2381 007260 012777 004000 010114      MOV    #BIT11,2DHSCR        ;MASTER CLEAR INTERFACE
2382 007266 016703 010124              MOV    DHBCR,R3             ;SET UP POINTER TO BREAK CONTROL
2383 007272 012705 000400              MOV    #400,R5              ;BIT 10 WILL BE SET IN BREAK CONTROL
2384 007276 010513                      MOV    R5,(R3)              ;SET BIT 10
2385 007300 011304                      MOV    (R3),R4              ;GET CONTENTS OF BREAK CONTROL
2386 007302 020504                      CMP    R5,R4                ;WAS BIT 10 SET
2387 007304 001401                      BEQ    1$
2388 007306 104003                      HLT    3                    ;BREAK CONTROL REGISTER ERROR
2389 007310 040513 1$:                BIC    R5,(R3)              ;CLEAR BIT 10
2390 007312 011304                      MOV    (R3),R4              ;READ CONTENTS OF BREAK CONTROL
2391 007314 005704                      TST    R4                   ;WAS BIT 10 CLEARED
2392 007316 001402                      BEQ    2$
2393 007320 005005                      CLR    R5
2394 007322 104003                      HLT    3                    ;BREAK CONTROL REGISTER ERROR
2395 007324 104400 2$:                SCOPE
2396
2397                                     ;BREAK CONTROL REGISTER DATA TEST
2398                                     ;SET BIT 11 IN BREAK CONTROL TO 1
2399                                     ;VERIFY THAT BIT 11 WAS SET
2400                                     ;CLEAR BIT 11
2401                                     ;VERIFY THAT BIT 11 WAS CLEARED
2402
2403 007326 012767 000340 170442 T70:  MOV    #340,PS                ;DISABLE ALL INTERRUPTS

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2404 007334 012767 004000 010106      MOV      #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
2405 007342 012767 007414 010074      MOV      #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
2406 007350 012777 004000 010024      MOV      #BIT11,DMHSCR   ;MASTER CLEAR INTERFACE
2407 007356 016703 010034          MOV      DMHCR,R3       ;SET UP POINTER TO BREAK CONTROL
2408 007362 012705 001000          MOV      #1000,R5       ;BIT 11 WILL BE SET IN BREAK CONTROL
2409 007366 010513          MOV      R5,(R3)       ;SET BIT 11
2410 007370 011304          MOV      (R3),R4       ;GET CONTENTS OF BREAK CONTROL
2411 007372 020504          CMP      R5,R4         ;WAS BIT 11 SET
2412 007374 001401          BEQ     1$            ;BREAK CONTROL REGISTER ERROR
2413 007376 104003          HLT     3             ;CLEAR BIT 11
2414 007400 040513      1$:    BIC     R5,(R3)       ;READ CONTENTS OF BREAK CONTROL
2415 007402 011304          MOV      (R3),R4       ;WAS BIT 11 CLEARED
2416 007404 005704          TST     R4
2417 007406 001402          BEQ     2$            ;BREAK CONTROL REGISTER ERROR
2418 007410 005005          CLR     R5
2419 007412 104003          HLT     3
2420 007414 104400      2$:    SCOPE          ;BREAK CONTROL REGISTER DATA TEST
2421          ;SET BIT 12 IN BREAK CONTROL TO 1
2422          ;VERIFY THAT BIT 12 WAS SET
2423          ;CLEAR BIT 12
2424          ;VERIFY THAT BIT 12 WAS CLEARED
2425
2426
2427
2428 007416 012767 000340 170352 T71:  MOV      #340,PS       ;DISABLE ALL INTERRUPTS
2429 007424 012767 004000 010016      MOV      #4000,ICOUNT   ;SET UP FOR 4000 ITERATIONS
2430 007432 012767 007504 010004      MOV      #2$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2431 007440 012777 004000 007734      MOV      #BIT11,DMHSCR  ;MASTER CLEAR INTERFACE
2432 007446 016703 007744          MOV      DMHCR,R3       ;SET UP POINTER TO BREAK CONTROL
2433 007452 012705 002000          MOV      #2000,R5      ;BIT 12 WILL BE SET IN BREAK CONTROL
2434 007456 010513          MOV      R5,(R3)       ;SET BIT 12
2435 007460 011304          MOV      (R3),R4       ;GET CONTENTS OF BREAK CONTROL
2436 007462 020504          CMP      R5,R4         ;WAS BIT 12 SET
2437 007464 001401          BEQ     1$            ;BREAK CONTROL REGISTER ERROR
2438 007466 104003          HLT     3             ;CLEAR BIT 12
2439 007470 040513      1$:    BIC     R5,(R3)       ;READ CONTENTS OF BREAK CONTROL
2440 007472 011304          MOV      (R3),R4       ;WAS BIT 12 CLEARED
2441 007474 005704          TST     R4
2442 007476 001402          BEQ     2$            ;BREAK CONTROL REGISTER ERROR
2443 007500 005005          CLR     R5
2444 007502 104003          HLT     3
2445 007504 104400      2$:    SCOPE          ;BREAK CONTROL REGISTER DATA TEST
2446          ;SET BIT 13 IN BREAK CONTROL TO 1
2447          ;VERIFY THAT BIT 13 WAS SET
2448          ;CLEAR BIT 13
2449          ;VERIFY THAT BIT 13 WAS CLEARED
2450
2451
2452
2453 007506 012767 000340 170262 T72:  MOV      #340,PS       ;DISABLE ALL INTERRUPTS
2454 007514 012767 004000 007726      MOV      #4000,ICOUNT   ;SET UP FOR 4000 ITERATIONS
2455 007522 012767 007574 007714      MOV      #2$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2456 007530 012777 004000 007644      MOV      #BIT11,DMHSCR  ;MASTER CLEAR INTERFACE
2457 007536 016703 007654          MOV      DMHCR,R3       ;SET UP POINTER TO BREAK CONTROL
2458 007542 012705 004000          MOV      #4000,R5      ;BIT 13 WILL BE SET IN BREAK CONTROL
2459 007546 010513          MOV      R5,(R3)       ;SET BIT 13
  
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2460 007550 011304      MOV      (R3),R4      ;GET CONTENTS OF BREAK CONTROL
2461 007552 020504      CMP      R5,R4      ;WAS BIT 13 SET
2462 007554 001401      BEQ     1$
2463 007556 104003      HLT     3            ;BREAK CONTROL REGISTER ERROR
2464 007560 040513      1$:    BIC     R5,(R3)   ;CLEAR BIT 13
2465 007562 011304      MOV      (R3),R4      ;READ CONTENTS OF BREAK CONTROL
2466 007564 005704      TST     R4            ;WAS BIT 13 CLEARED
2467 007566 001402      BEQ     2$
2468 007570 005005      CLR     R5
2469 007572 104003      HLT     3            ;BREAK CONTROL REGISTER ERROR
2470 007574 104400      2$:    SCOPE
2471
2472      ;BREAK CONTROL REGISTER DATA TEST
2473      ;SET BIT 14 IN BREAK CONTROL TO 1
2474      ;VERIFY THAT BIT 14 WAS SET
2475      ;CLEAR BIT 14
2476      ;VERIFY THAT BIT 14 WAS CLEARED
2477
2478 007576 012767 000340 170172 T73:  MOV     #340,PS      ;DISABLE ALL INTERRUPTS
2479 007604 012767 004000 007636      MOV     #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
2480 007612 012767 007664 007624      MOV     #2$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
2481 007620 012777 004000 007554      MOV     #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
2482 007626 016703 007564      MOV     DHBCR,R3     ;SET UP POINTER TO BREAK CONTROL
2483 007632 012705 010000      MOV     #10000,RS    ;BIT 14 WILL BE SET IN BREAK CONTROL
2484 007636 010513      MOV     R5,(R3)     ;SET BIT 14
2485 007640 011304      MOV     (R3),R4     ;GET CONTENTS OF BREAK CONTROL
2486 007642 020504      CMP     R5,R4      ;WAS BIT 14 SET
2487 007644 001401      BEQ     1$
2488 007646 104003      HLT     3            ;BREAK CONTROL REGISTER ERROR
2489 007650 040513      1$:    BIC     R5,(R3)   ;CLEAR BIT 14
2490 007652 011304      MOV     (R3),R4     ;READ CONTENTS OF BREAK CONTROL
2491 007654 005704      TST     R4            ;WAS BIT 14 CLEARED
2492 007656 001402      BEQ     2$
2493 007660 005005      CLR     R5
2494 007662 104003      HLT     3            ;BREAK CONTROL REGISTER ERROR
2495 007664 104400      2$:    SCOPE
2496
2497      ;BREAK CONTROL REGISTER DATA TEST
2498      ;SET BIT 15 IN BREAK CONTROL TO 1
2499      ;VERIFY THAT BIT 15 WAS SET
2500      ;CLEAR BIT 15
2501      ;VERIFY THAT BIT 15 WAS CLEARED
2502
2503 007666 012767 000340 170102 T74:  MOV     #340,PS      ;DISABLE ALL INTERRUPTS
2504 007674 012767 004000 007546      MOV     #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
2505 007702 012767 007754 007534      MOV     #2$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
2506 007710 012777 004000 007464      MOV     #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
2507 007716 016703 007474      MOV     DHBCR,R3     ;SET UP POINTER TO BREAK CONTROL
2508 007722 012705 020000      MOV     #20000,RS    ;BIT 15 WILL BE SET IN BREAK CONTROL
2509 007726 010513      MOV     R5,(R3)     ;SET BIT 15
2510 007730 011304      MOV     (R3),R4     ;GET CONTENTS OF BREAK CONTROL
2511 007732 020504      CMP     R5,R4      ;WAS BIT 15 SET
2512 007734 001401      BEQ     1$
2513 007736 104003      HLT     3            ;BREAK CONTROL REGISTER ERROR
2514 007740 040513      1$:    BIC     R5,(R3)   ;CLEAR BIT 15
2515 007742 011304      MOV     (R3),R4     ;READ CONTENTS OF BREAK CONTROL

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2516 007744 005704          TST      R4          ;WAS BIT 15 CLEARED
2517 007746 001402          BEQ      2$
2518 007750 005005          CLR      R5
2519 007752 104003          HLT      3          ;BREAK CONTROL REGISTER ERROR
2520 007754 104400          2$: SCOPE
2521
2522          ;BREAK CONTROL REGISTER DATA TEST
2523          ;SET BIT 16 IN BREAK CONTROL TO 1
2524          ;VERIFY THAT BIT 16 WAS SET
2525          ;CLEAR BIT 16
2526          ;VERIFY THAT BIT 16 WAS CLEARED
2527
2528 007756 012767 000340 170012 T75: MOV      #340,PS      ;DISABLE ALL INTERRUPTS
2529 007764 012767 004000 007456 MOV      #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
2530 007772 012767 010044 007444 MOV      #2$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
2531 010000 012777 004000 007374 MOV      #BIT11,DHSCR ;MASTER CLEAR INTERFACE
2532 010006 016703 007404      MOV      DHBCR,R3    ;SET UP POINTER TO BREAK CONTROL
2533 010012 012705 040000      MOV      #40000,R5   ;BIT 16 WILL BE SET IN BREAK CONTROL
2534 010016 010513      MOV      R5,(R3)     ;SET BIT 16
2535 010020 011304      MOV      (R3),R4     ;GET CONTENTS OF BREAK CONTROL
2536 010022 020504      CMP      R5,R4       ;WAS BIT 16 SET
2537 010024 001401      BEQ      1$
2538 010026 104003          HLT      3          ;BREAK CONTROL REGISTER ERROR
2539 010030 040513          1$: BIC      R5,(R3)   ;CLEAR BIT 16
2540 010032 011304      MOV      (R3),R4     ;READ CONTENTS OF BREAK CONTROL
2541 010034 005704          TST      R4          ;WAS BIT 16 CLEARED
2542 010036 001402          BEQ      2$
2543 010040 005005          CLR      R5
2544 010042 104003          HLT      3          ;BREAK CONTROL REGISTER ERROR
2545 010044 104400          2$: SCOPE
2546
2547          ;BREAK CONTROL REGISTER DATA TEST
2548          ;SET BIT 17 IN BREAK CONTROL TO 1
2549          ;VERIFY THAT BIT 17 WAS SET
2550          ;CLEAR BIT 17
2551          ;VERIFY THAT BIT 17 WAS CLEARED
2552
2553 010046 012767 000340 167722 T76: MOV      #340,PS      ;DISABLE ALL INTERRUPTS
2554 010054 012767 004000 007366 MOV      #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
2555 010062 012767 010134 007354 MOV      #2$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
2556 010070 012777 004000 007304 MOV      #BIT11,DHSCR ;MASTER CLEAR INTERFACE
2557 010076 016703 007314      MOV      DHBCR,R3    ;SET UP POINTER TO BREAK CONTROL
2558 010102 012705 100000      MOV      #100000,R5  ;BIT 17 WILL BE SET IN BREAK CONTROL
2559 010106 010513      MOV      R5,(R3)     ;SET BIT 17
2560 010110 011304      MOV      (R3),R4     ;GET CONTENTS OF BREAK CONTROL
2561 010112 020504      CMP      R5,R4       ;WAS BIT 17 SET
2562 010114 001401      BEQ      1$
2563 010116 104003          HLT      3          ;BREAK CONTROL REGISTER ERROR
2564 010120 040513          1$: BIC      R5,(R3)   ;CLEAR BIT 17
2565 010122 011304      MOV      (R3),R4     ;READ CONTENTS OF BREAK CONTROL
2566 010124 005704          TST      R4          ;WAS BIT 17 CLEARED
2567 010126 001402          BEQ      2$
2568 010130 005005          CLR      R5
2569 010132 104003          HLT      3          ;BREAK CONTROL REGISTER ERROR
2570 010134 104400          2$: SCOPE
2571

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2628                                     ;VERIFY THAT BIT 2 WAS SET
2629                                     ;CLEAR BIT 2
2630                                     ;VERIFY THAT BIT 2 WAS CLEARED
2631
2632 010336 012767 000340 167432 T101: MOV     #340,PS           ;DISABLE ALL INTERRUPTS
2633 010344 012767 004000 007076      MOV     #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
2634 010352 012767 010434 007064      MOV     #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
2635 010360 012777 004000 007014      MOV     #BIT11,JDHSCR   ;MASTER CLEAR INTERFACE
2636 010366 016703 007026              MOV     DHSSR,R3        ;SET UP POINTER TO SILO STATUS
2637 010372 012705 000004              MOV     #4,R5           ;BIT 2 WILL BE SET IN SILO STATUS
2638 010376 010513                    MOV     R5,(R3)         ;SET BIT 2
2639 010400 011304                    MOV     (R3),R4         ;GET CONTENTS OF SILO STATUS
2640 010402 042704 000700              BIC     #700,R4        ;CLEAR UNWANTED BITS
2641 010406 020504                    CMP     R5,R4           ;WAS BIT 2 SET
2642 010410 001401                    BEQ     1$
2643 010412 104004                    HLT     4               ;SILO STATUS REGISTER ERROR
2644 010414 040513 1$:              BIC     R5,(R3)         ;CLEAR BIT 2
2645 010416 011304                    MOV     (R3),R4         ;READ CONTENTS OF SILO STATUS
2646 010420 042704 000700              BIC     #700,R4        ;CLEAR UNWANTED BITS
2647 010424 005704                    TST     R4              ;WAS BIT 2 CLEARED
2648 010426 001402                    BEQ     2$
2649 010430 005005                    CLR     R5
2650 010432 104004                    HLT     4               ;SILO STATUS REGISTER ERROR
2651 010434 104400 2$:              SCOPE
2652
2653                                     ;SILO STATUS REGISTER DATA TEST
2654                                     ;SET BIT 3 IN SILO STATUS TO 1
2655                                     ;VERIFY THAT BIT 3 WAS SET
2656                                     ;CLEAR BIT 3
2657                                     ;VERIFY THAT BIT 3 WAS CLEARED
2658
2659 010436 012767 000340 167332 T102: MOV     #340,PS           ;DISABLE ALL INTERRUPTS
2660 010444 012767 004000 006776      MOV     #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
2661 010452 012767 010534 006764      MOV     #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
2662 010460 012777 004000 006714      MOV     #BIT11,JDHSCR   ;MASTER CLEAR INTERFACE
2663 010466 016703 006726              MOV     DHSSR,R3        ;SET UP POINTER TO SILO STATUS
2664 010472 012705 000010              MOV     #10,R5          ;BIT 3 WILL BE SET IN SILO STATUS
2665 010476 010513                    MOV     R5,(R3)         ;SET BIT 3
2666 010500 011304                    MOV     (R3),R4         ;GET CONTENTS OF SILO STATUS
2667 010502 042704 000700              BIC     #700,R4        ;CLEAR UNWANTED BITS
2668 010506 020504                    CMP     R5,R4           ;WAS BIT 3 SET
2669 010510 001401                    BEQ     1$
2670 010512 104004                    HLT     4               ;SILO STATUS REGISTER ERROR
2671 010514 040513 1$:              BIC     R5,(R3)         ;CLEAR BIT 3
2672 010516 011304                    MOV     (R3),R4         ;READ CONTENTS OF SILO STATUS
2673 010520 042704 000700              BIC     #700,R4        ;CLEAR UNWANTED BITS
2674 010524 005704                    TST     R4              ;WAS BIT 3 CLEARED
2675 010526 001402                    BEQ     2$
2676 010530 005005                    CLR     R5
2677 010532 104004                    HLT     4               ;SILO STATUS REGISTER ERROR
2678 010534 104400 2$:              SCOPE
2679
2680                                     ;SILO STATUS REGISTER DATA TEST
2681                                     ;SET BIT 4 IN SILO STATUS TO 1
2682                                     ;VERIFY THAT BIT 4 WAS SET
2683                                     ;CLEAR BIT 4

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2684                                     ;VERIFY THAT BIT 4 WAS CLEARED
2685
2686 010536 012767 000340 167232 T103: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
2687 010544 012767 004000 006676      MOV      #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
2688 010552 012767 010634 006664      MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2689 010560 012777 004000 006614      MOV      #BIT11,JDHSCR  ;MASTER CLEAR INTERFACE
2690 010566 016703 006626              MOV      DHSCR,R3       ;SET UP POINTER TO SILO STATUS
2691 010572 012705 000020              MOV      #20,R5         ;BIT 4 WILL BE SET IN SILO STATUS
2692 010576 010513              MOV      R5,(R3)       ;SET BIT 4
2693 010600 011304              MOV      (R3),R4        ;GET CONTENTS OF SILO STATUS
2694 010602 042704 000700      BIC      #700,R4        ;CLEAR UNWANTED BITS
2695 010606 020504              CMP      R5,R4          ;WAS BIT 4 SET
2696 010610 001401      BEQ      1$             ;SILO STATUS REGISTER ERROR
2697 010612 104004              HLT      4              ;CLEAR BIT 4
2698 010614 040513      1$:      BIC      R5,(R3)      ;READ CONTENTS OF SILO STATUS
2699 010616 011304              MOV      (R3),R4        ;CLEAR UNWANTED BITS
2700 010620 042704 000700      BIC      #700,R4        ;WAS BIT 4 CLEARED
2701 010624 005704              TST      R4
2702 010626 001402      BEQ      2$             ;SILO STATUS REGISTER ERROR
2703 010630 005005              CLR      R5
2704 010632 104004              HLT      4
2705 010634 104400      2$:      SCOPE
2706
2707                                     ;SILO STATUS REGISTER DATA TEST
2708                                     ;SET BIT 5 IN SILO STATUS TO 1
2709                                     ;VERIFY THAT BIT 5 WAS SET
2710                                     ;CLEAR BIT 5
2711                                     ;VERIFY THAT BIT 5 WAS CLEARED
2712
2713 010636 012767 000340 167132 T104: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
2714 010644 012767 004000 006576      MOV      #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
2715 010652 012767 010734 006564      MOV      #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2716 010660 012777 004000 006514      MOV      #BIT11,JDHSCR  ;MASTER CLEAR INTERFACE
2717 010666 016703 006526              MOV      DHSCR,R3       ;SET UP POINTER TO SILO STATUS
2718 010672 012705 000040              MOV      #40,R5         ;BIT 5 WILL BE SET IN SILO STATUS
2719 010676 010513              MOV      R5,(R3)       ;SET BIT 5
2720 010700 011304              MOV      (R3),R4        ;GET CONTENTS OF SILO STATUS
2721 010702 042704 000700      BIC      #700,R4        ;CLEAR UNWANTED BITS
2722 010706 020504              CMP      R5,R4          ;WAS BIT 5 SET
2723 010710 001401      BEQ      1$             ;SILO STATUS REGISTER ERROR
2724 010712 104004              HLT      4              ;CLEAR BIT 5
2725 010714 040513      1$:      BIC      R5,(R3)      ;READ CONTENTS OF SILO STATUS
2726 010716 011304              MOV      (R3),R4        ;CLEAR UNWANTED BITS
2727 010720 042704 000700      BIC      #700,R4        ;WAS BIT 5 CLEARED
2728 010724 005704              TST      R4
2729 010726 001402      BEQ      2$             ;SILO STATUS REGISTER ERROR
2730 010730 005005              CLR      R5
2731 010732 104004              HLT      4
2732 010734 104400      2$:      SCOPE
2733
2734                                     ;SILO STATUS REGISTER DATA TEST
2735                                     ;SET BIT 17 IN SILO STATUS TO 1
2736                                     ;VERIFY THAT BIT 17 WAS SET
2737                                     ;CLEAR BIT 17
2738                                     ;VERIFY THAT BIT 17 WAS CLEARED
2739
    
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2740 010736 012767 000340 167032 T105: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
2741 010744 012767 004000 006476      MOV      #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
2742 010752 012767 011034 006464      MOV      #2$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2743 010760 012777 004000 006414      MOV      #BIT11,DMHSCR  ;MASTER CLEAR INTERFACE
2744 010766 016703 006426          MOV      DHSSR,R3       ;SET UP POINTER TO SILO STATUS
2745 010772 012705 100000          MOV      #100000,R5     ;BIT 17 WILL BE SET IN SILO STATUS
2746 010776 010513          MOV      R5,(R3)        ;SET BIT 17
2747 011000 011304          MOV      (R3),R4        ;GET CONTENTS OF SILO STATUS
2748 011002 042704 000700      BIC      #700,R4        ;CLEAR UNWANTED BITS
2749 011006 020504          CMP      R5,R4          ;WAS BIT 17 SET
2750 011010 001401          BEQ      1$
2751 011012 104004          HLT      4              ;SILO STATUS REGISTER ERROR
2752 011014 040513          BIC      R5,(R3)        ;CLEAR BIT 17
2753 011016 011304          MOV      (R3),R4        ;READ CONTENTS OF SILO STATUS
2754 011020 042704 000700      BIC      #700,R4        ;CLEAR UNWANTED BITS
2755 011024 005704          TST      R4             ;WAS BIT 17 CLEARED
2756 011026 001402          BEQ      2$
2757 011030 005005          CLR      R5
2758 011032 104004          HLT      4              ;SILO STATUS REGISTER ERROR
2759 011034 104400      2$: SCOPE
2760
2761          ;LINE PARAMETER REGISTER DATA TEST
2762          ;SET ALL READ/WRITE BITS IN LINE PARAMETER REGISTER TO 1$
2763          ;CLEAR BIT 0
2764          ;VERIFY THAT BIT 0 WAS CLEARED
2765          ;RESTORE BIT 0
2766          ;VERIFY THAT BIT 0 WAS SET
2767
2768 011036 012767 000340 166732 T106: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
2769 011044 012767 004000 006376      MOV      #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
2770 011052 012767 011140 006364      MOV      #2$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2771 011060 012777 004000 006314      MOV      #BIT11,DMHSCR  ;MASTER CLEAR INTERFACE
2772 011066 016703 006314          MOV      DHLPR,R3       ;SET UP POINTER TO LINE PARAMETER
2773 011072 012705 177766          MOV      #177766,R5     ;(R5)=EXPECTED DATA
2774
2775 011076 012713 177767          MOV      #177767,(R3)   ;IN LINE PARAMETER REGISTER, 177766
2776
2777 011102 042713 000001      BIC      #1,(R3)        ;CLEAR BIT 0
2778 011106 011304          MOV      (R3),R4        ;GET CONTENTS OF LINE PARAMETER
2779 011110 020504          CMP      R5,R4          ;WAS BIT 0 CLEARED
2780 011112 001401          BEQ      1$
2781 011114 104002          HLT      2              ;LINE PARAMETER REGISTER ERROR
2782 011116 052713 000001      BIS      #1,(R3)        ;SET BIT 0
2783 011122 011304          MOV      (R3),R4
2784 011124 022704 177767      CMP      #177767,R4     ;WAS BIT 0 SET
2785 011130 001403          BEQ      2$
2786 011132 012705 177767          MOV      #177767,R5     ;(R5)=EXPECTED DATA IN
2787
2788 011136 104002          HLT      2              ;LINE PARAMETER REGISTER, 177767
2789 011140 104400      2$: SCOPE          ;LINE PARAMETER REGISTER ERROR
2790
2791          ;LINE PARAMETER REGISTER DATA TEST
2792          ;SET ALL READ/WRITE BITS IN LINE PARAMETER REGISTER TO 1$
2793          ;CLEAR BIT 1
2794          ;VERIFY THAT BIT 1 WAS CLEARED
2795          ;RESTORE BIT 1

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2796                                     ;VERIFY THAT BIT 1 WAS SET
2797
2798 011142 012767 000340 166626 T107: MOV #340,PS ;DISABLE ALL INTERRUPTS
2799 011150 012767 004000 006272 MOV #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
2800 011156 012767 011244 006260 MOV #25,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
2801 011164 012777 004000 006210 MOV #BIT11,DMHSCR ;MASTER CLEAR INTERFACE
2802 011172 016703 006210 MOV DMLPR,R3 ;SET UP POINTER TO LINE PARAMETER
2803 011176 012705 177765 MOV #177765,R5 ;(R5)=EXPECTED DATA
2804                                     ;IN LINE PARAMETER REGISTER, 177765
2805 011202 012713 177767 MOV #177767,(R3) ;SET ALL READ/WRITE BITS
2806                                     ;IN LINE PARAMETER REGISTER
2807 011206 042713 000002 BIC #2,(R3) ;CLEAR BIT 1
2808 011212 011304 MOV (R3),R4 ;GET CONTENTS OF LINE PARAMETER
2809 011214 020504 CMP R5,R4 ;WAS BIT 1 CLEARED
2810 011216 001401 BEQ 15
2811 011220 104002 HLT 2 ;LINE PARAMETER REGISTER ERROR
2812 011222 052713 000002 15: BIS #2,(R3) ;SET BIT 1
2813 011226 011304 MOV (R3),R4
2814 011230 022704 177767 CMP #177767,R4 ;WAS BIT 1 SET
2815 011234 001403 BEQ 25
2816 011236 012705 177767 MOV #177767,R5 ;(R5)=EXPECTED DATA IN
2817                                     ;LINE PARAMETER REGISTER, 177767
2818 011242 104002 HLT 2 ;LINE PARAMETER REGISTER ERROR
2819 011244 104400 25: SCOPE
2820
2821 ;LINE PARAMETER REGISTER DATA TEST
2822 ;SET ALL READ/WRITE BITS IN LINE PARAMETER REGISTER TO 15
2823 ;CLEAR BIT 2
2824 ;VERIFY THAT BIT 2 WAS CLEARED
2825 ;RESTORE BIT 2
2826 ;VERIFY THAT BIT 2 WAS SET
2827
2828 011246 012767 000340 166522 T110: MOV #340,PS ;DISABLE ALL INTERRUPTS
2829 011254 012767 004000 006166 MOV #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
2830 011262 012767 011350 006154 MOV #25,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
2831 011270 012777 004000 006104 MOV #BIT11,DMHSCR ;MASTER CLEAR INTERFACE
2832 011276 016703 006104 MOV DMLPR,R3 ;SET UP POINTER TO LINE PARAMETER
2833 011302 012705 177763 MOV #177763,R5 ;(R5)=EXPECTED DATA
2834                                     ;IN LINE PARAMETER REGISTER, 177763
2835 011306 012713 177767 MOV #177767,(R3) ;SET ALL READ/WRITE BITS
2836                                     ;IN LINE PARAMETER REGISTER
2837 011312 042713 000004 BIC #4,(R3) ;CLEAR BIT 2
2838 011316 011304 MOV (R3),R4 ;GET CONTENTS OF LINE PARAMETER
2839 011320 020504 CMP R5,R4 ;WAS BIT 2 CLEARED
2840 011322 001401 BEQ 15
2841 011324 104002 HLT 2 ;LINE PARAMETER REGISTER ERROR
2842 011326 052713 000004 15: BIS #4,(R3) ;SET BIT 2
2843 011332 011304 MOV (R3),R4
2844 011334 022704 177767 CMP #177767,R4 ;WAS BIT 2 SET
2845 011340 001403 BEQ 25
2846 011342 012705 177767 MOV #177767,R5 ;(R5)=EXPECTED DATA IN
2847                                     ;LINE PARAMETER REGISTER, 177767
2848 011346 104002 HLT 2 ;LINE PARAMETER REGISTER ERROR
2849 011350 104400 25: SCOPE
2850
2851 ;LINE PARAMETER REGISTER DATA TEST

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2908 011556 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
2909 011560 104400          2S:    SCOPE
2910
2911          ;LINE PARAMETER REGISTER DATA TEST
2912          ;SET ALL READ/WRITE BITS IN LINE PARAMETER REGISTER TO 1S
2913          ;CLEAR BIT 6
2914          ;VERIFY THAT BIT 6 WAS CLEARED
2915          ;RESTORE BIT 6
2916          ;VERIFY THAT BIT 6 WAS SET
2917
2918 011562 012767 000340 166206 T113:  MOV     #340,PS          ;DISABLE ALL INTERRUPTS
2919 011570 012767 004000 005652      MOV     #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
2920 011576 012767 011664 005640      MOV     #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2921 011604 012777 004000 005570      MOV     #BIT11,JDHSCR  ;MASTER CLEAR INTERFACE
2922 011612 016703 005570              MOV     DHLPR,R3       ;SET UP POINTER TO LINE PARAMETER
2923 011616 012705 177667              MOV     #177667,R5     ;(R5)=EXPECTED DATA
2924                          ;IN LINE PARAMETER REGISTER, 177667
2925 011622 012713 177767              MOV     #177767,(R3)   ;SET ALL READ/WRITE BITS
2926                          ;IN LINE PARAMETER REGISTER
2927 011626 042713 000100              BIC     #100,(R3)     ;CLEAR BIT 6
2928 011632 011304              MOV     (R3),R4       ;GET CONTENTS OF LINE PARAMETER
2929 011634 020504              CMP     R5,R4         ;WAS BIT 6 CLEARED
2930 011636 001401              BEQ     1S
2931 011640 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
2932 011642 052713 000100          1S:    BIS     #100,(R3)   ;SET BIT 6
2933 011646 011304              MOV     (R3),R4
2934 011650 022704 177767              CMP     #177767,R4    ;WAS BIT 6 SET
2935 011654 001403              BEQ     2S
2936 011656 012705 177767              MOV     #177767,R5     ;(R5)=EXPECTED DATA IN
2937                          ;LINE PARAMETER REGISTER, 177767
2938 011662 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
2939 011664 104400          2S:    SCOPE
2940
2941          ;LINE PARAMETER REGISTER DATA TEST
2942          ;SET ALL READ/WRITE BITS IN LINE PARAMETER REGISTER TO 1S
2943          ;CLEAR BIT 7
2944          ;VERIFY THAT BIT 7 WAS CLEARED
2945          ;RESTORE BIT 7
2946          ;VERIFY THAT BIT 7 WAS SET
2947
2948 011666 012767 000340 166102 T114:  MOV     #340,PS          ;DISABLE ALL INTERRUPTS
2949 011674 012767 004000 005546      MOV     #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
2950 011702 012767 011770 005534      MOV     #25,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
2951 011710 012777 004000 005464      MOV     #BIT11,JDHSCR  ;MASTER CLEAR INTERFACE
2952 011716 016703 005464              MOV     DHLPR,R3       ;SET UP POINTER TO LINE PARAMETER
2953 011722 012705 177567              MOV     #177567,R5     ;(R5)=EXPECTED DATA
2954                          ;IN LINE PARAMETER REGISTER, 177567
2955 011726 012713 177767              MOV     #177767,(R3)   ;SET ALL READ/WRITE BITS
2956                          ;IN LINE PARAMETER REGISTER
2957 011732 042713 000200              BIC     #200,(R3)     ;CLEAR BIT 7
2958 011736 011304              MOV     (R3),R4       ;GET CONTENTS OF LINE PARAMETER
2959 011740 020504              CMP     R5,R4         ;WAS BIT 7 CLEARED
2960 011742 001401              BEQ     1S
2961 011744 104002          HLT      2          ;LINE PARAMETER REGISTER ERROR
2962 011746 052713 000200          1S:    BIS     #200,(R3)   ;SET BIT 7
2963 011752 011304              MOV     (R3),R4
  
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2964 011754 022704 177767          CMP      #177767,R4          ;WAS BIT 7 SET
2965 011760 001403          BEQ      2$
2966 011762 012705 177767          MOV      #177767,R5          ;(R5)=EXPECTED DATA IN
2967                                ;LINE PARAMETER REGISTER, 177767
2968 011766 104002          HLT      2                    ;LINE PARAMETER REGISTER ERROR
2969 011770 104400          2$: SCOPE
2970                                ;LINE PARAMETER REGISTER DATA TEST
2971                                ;SET ALL READ/WRITE BITS IN LINE PARAMETER REGISTER TO 15
2972                                ;CLEAR BIT 10
2973                                ;VERIFY THAT BIT 10 WAS CLEARED
2974                                ;RESTORE BIT 10
2975                                ;VERIFY THAT BIT 10 WAS SET
2976
2977
2978 011772 012767 000340 165776 T115: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
2979 012000 012767 004000 005442 MOV      #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
2980 012006 012767 012074 005430 MOV      #2$,ESCAPE        ;SET UP TO ESCAPE TO NEXT TEST
2981 012014 012777 004000 005360 MOV      #BIT11,JDHSCR     ;MASTER CLEAR INTERFACE
2982 012022 016703 005360          MOV      DHLPR,R3         ;SET UP POINTER TO LINE PARAMETER
2983 012026 012705 177367          MOV      #177367,R5       ;(R5)=EXPECTED DATA
2984                                ;IN LINE PARAMETER REGISTER, 177367
2985 012032 012713 177767          MOV      #177767,(R3)     ;SET ALL READ/WRITE BITS
2986                                ;IN LINE PARAMETER REGISTER
2987 012036 042713 000400          BIC      #400,(R3)        ;CLEAR BIT 10
2988 012042 011304          MOV      (R3),R4          ;GET CONTENTS OF LINE PARAMETER
2989 012044 020504          CMP      R5,R4            ;WAS BIT 10 CLEARED
2990 012046 001401          BEQ      1$
2991 012050 104002          HLT      2                    ;LINE PARAMETER REGISTER ERROR
2992 012052 052713 000400          1$: BIS      #400,(R3)     ;SET BIT 10
2993 012056 011304          MOV      (R3),R4
2994 012060 022704 177767          CMP      #177767,R4       ;WAS BIT 10 SET
2995 012064 001403          BEQ      2$
2996 012066 012705 177767          MOV      #177767,R5       ;(R5)=EXPECTED DATA IN
2997                                ;LINE PARAMETER REGISTER, 177767
2998 012072 104002          HLT      2                    ;LINE PARAMETER REGISTER ERROR
2999 012074 104400          2$: SCOPE
3000                                ;LINE PARAMETER REGISTER DATA TEST
3001                                ;SET ALL READ/WRITE BITS IN LINE PARAMETER REGISTER TO 15
3002                                ;CLEAR BIT 11
3003                                ;VERIFY THAT BIT 11 WAS CLEARED
3004                                ;RESTORE BIT 11
3005                                ;VERIFY THAT BIT 11 WAS SET
3006
3007
3008 012076 012767 000340 165672 T116: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
3009 012104 012767 004000 005336 MOV      #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
3010 012112 012767 012200 005324 MOV      #2$,ESCAPE        ;SET UP TO ESCAPE TO NEXT TEST
3011 012120 012777 004000 005254 MOV      #BIT11,JDHSCR     ;MASTER CLEAR INTERFACE
3012 012126 016703 005254          MOV      DHLPR,R3         ;SET UP POINTER TO LINE PARAMETER
3013 012132 012705 176767          MOV      #176767,R5       ;(R5)=EXPECTED DATA
3014                                ;IN LINE PARAMETER REGISTER, 176767
3015 012136 012713 177767          MOV      #177767,(R3)     ;SET ALL READ/WRITE BITS
3016                                ;IN LINE PARAMETER REGISTER
3017 012142 042713 001000          BIC      #1000,(R3)       ;CLEAR BIT 11
3018 012146 011304          MOV      (R3),R4          ;GET CONTENTS OF LINE PARAMETER
3019 012150 020504          CMP      R5,R4            ;WAS BIT 11 CLEARED

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3020	012152	001401				BEG	15		
3021	012154	104002				HLT	2		;LINE PARAMETER REGISTER ERROR
3022	012156	052713	001000		15:	BIS	#1000,(R3)		;SET BIT 11
3023	012162	011304				MOV	(R3),R4		
3024	012164	022704	177767			CMP	#177767,R4		;WAS BIT 11 SET
3025	012170	001403				BEG	25		
3026	012172	012705	177767			MOV	#177767,R5		; (R5)=EXPECTED DATA IN
3027									;LINE PARAMETER REGISTER, 177767
3028	012176	104002				HLT	2		;LINE PARAMETER REGISTER ERROR
3029	012200	104400			25:	SCOPE			
3030									
3031									;LINE PARAMETER REGISTER DATA TEST
3032									;SET ALL READ/WRITE BITS IN LINE PARAMETER REGISTER TO 15
3033									;CLEAR BIT 12
3034									;VERIFY THAT BIT 12 WAS CLEARED
3035									;RESTORE BIT 12
3036									;VERIFY THAT BIT 12 WAS SET
3037									
3038	012202	012767	000340	165566	T117:	MOV	#340,PS		;DISABLE ALL INTERRUPTS
3039	012210	012767	004000	005232		MOV	#4000,ICOUNT		;SET UP FOR 4000 ITERATIONS
3040	012216	012767	012304	005220		MOV	#25,ESCAPE		;SET UP TO ESCAPE TO NEXT TEST
3041	012224	012777	004000	005150		MOV	#BIT11,3DHSCR		;MASTER CLEAR INTERFACE
3042	012232	016703	005150			MOV	DHLPR,R3		;SET UP POINTER TO LINE PARAMETER
3043	012236	012705	175767			MOV	#175767,R5		; (R5)=EXPECTED DATA
3044									;IN LINE PARAMETER REGISTER, 175767
3045	012242	012713	177767			MOV	#177767,(R3)		;SET ALL READ/WRITE BITS
3046									;IN LINE PARAMETER REGISTER
3047	012246	042713	002000			BIC	#2000,(R3)		;CLEAR BIT 12
3048	012252	011304				MOV	(R3),R4		;GET CONTENTS OF LINE PARAMETER
3049	012254	020504				CMP	R5,R4		;WAS BIT 12 CLEARED
3050	012256	001401				BEG	15		
3051	012260	104002				HLT	2		;LINE PARAMETER REGISTER ERROR
3052	012262	052713	002000		15:	BIS	#2000,(R3)		;SET BIT 12
3053	012266	011304				MOV	(R3),R4		
3054	012270	022704	177767			CMP	#177767,R4		;WAS BIT 12 SET
3055	012274	001403				BEG	25		
3056	012276	012705	177767			MOV	#177767,R5		; (R5)=EXPECTED DATA IN
3057									;LINE PARAMETER REGISTER, 177767
3058	012302	104002				HLT	2		;LINE PARAMETER REGISTER ERROR
3059	012304	104400			25:	SCOPE			
3060									
3061									;LINE PARAMETER REGISTER DATA TEST
3062									;SET ALL READ/WRITE BITS IN LINE PARAMETER REGISTER TO 15
3063									;CLEAR BIT 13
3064									;VERIFY THAT BIT 13 WAS CLEARED
3065									;RESTORE BIT 13
3066									;VERIFY THAT BIT 13 WAS SET
3067									
3068	012306	012767	000340	165462	T120:	MOV	#340,PS		;DISABLE ALL INTERRUPTS
3069	012314	012767	004000	005126		MOV	#4000,ICOUNT		;SET UP FOR 4000 ITERATIONS
3070	012322	012767	012410	005114		MOV	#25,ESCAPE		;SET UP TO ESCAPE TO NEXT TEST
3071	012330	012777	004000	005044		MOV	#BIT11,3DHSCR		;MASTER CLEAR INTERFACE
3072	012336	016703	005044			MOV	DHLPR,R3		;SET UP POINTER TO LINE PARAMETER
3073	012342	012705	173767			MOV	#173767,R5		; (R5)=EXPECTED DATA
3074									;IN LINE PARAMETER REGISTER, 173767
3075	012346	012713	177767			MOV	#177767,(R3)		;SET ALL READ/WRITE BITS

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3188 012726 012767 000340 165042 T124: MOV #340,PS ;DISABLE ALL INTERRUPTS
3189 012734 012767 004000 004506 MOV #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
3190 012742 012767 013030 004474 MOV #25,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
3191 012750 012777 004000 004424 MOV #BIT11,DHSCR ;MASTER CLEAR INTERFACE
3192 012756 016703 004424 MOV DHLPR,R3 ;SET UP POINTER TO LINE PARAMETER
3193 012762 012705 077767 MOV #77767,R5 ;(R5)=EXPECTED DATA
3194 ;IN LINE PARAMETER REGISTER, 77767
3195 012766 012713 177767 MOV #177767,(R3) ;SET ALL READ/WRITE BITS
3196 ;IN LINE PARAMETER REGISTER
3197 012772 042713 100000 BIC #100000,(R3) ;CLEAR BIT 17
3198 012776 011304 MOV (R3),R4 ;GET CONTENTS OF LINE PARAMETER
3199 013000 020504 CMP R5,R4 ;WAS BIT 17 CLEARED
3200 013002 001401 BEQ 15
3201 013004 104002 HLT 2 ;LINE PARAMETER REGISTER ERROR
3202 013006 052713 100000 15: BIS #100000,(R3) ;SET BIT 17
3203 013012 011304 MOV (R3),R4
3204 013014 022704 177767 CMP #177767,R4 ;WAS BIT 17 SET
3205 013020 001403 BEQ 25
3206 013022 012705 177767 MOV #177767,R5 ;(R5)=EXPECTED DATA IN
3207 ;LINE PARAMETER REGISTER, 177767
3208 013026 104002 HLT 2 ;LINE PARAMETER REGISTER ERROR
3209 013030 104400 25: SCOPE
3210
3211 ;BREAK CONTROL REGISTER DATA TEST
3212 ;SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 15
3213 ;CLEAR BIT 0
3214 ;VERIFY THAT BIT 0 WAS CLEARED
3215 ;RESTORE BIT 0
3216 ;VERIFY THAT BIT 0 WAS SET
3217
3218 013032 012767 000340 164736 T125: MOV #340,PS ;DISABLE ALL INTERRUPTS
3219 013040 012767 004000 004402 MOV #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
3220 013046 012767 013134 004370 MOV #25,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
3221 013054 012777 004000 004320 MOV #BIT11,DHSCR ;MASTER CLEAR INTERFACE
3222 013062 016703 004330 MOV DHBCR,R3 ;SET UP POINTER TO BREAK CONTROL
3223 013066 012705 177776 MOV #177776,R5 ;(R5)=EXPECTED DATA
3224 ;IN BREAK CONTROL REGISTER, 177776
3225 013072 012713 177777 MOV #177777,(R3) ;SET ALL READ/WRITE BITS
3226 ;IN BREAK CONTROL REGISTER
3227 013076 042713 000001 BIC #1,(R3) ;CLEAR BIT 0
3228 013102 011304 MOV (R3),R4 ;GET CONTENTS OF BREAK CONTROL
3229 013104 020504 CMP R5,R4 ;WAS BIT 0 CLEARED
3230 013106 001401 BEQ 15
3231 013110 104003 HLT 3 ;BREAK CONTROL REGISTER ERROR
3232 013112 052713 000001 15: BIS #1,(R3) ;SET BIT 0
3233 013116 011304 MOV (R3),R4
3234 013120 022704 177777 CMP #177777,R4 ;WAS BIT 0 SET
3235 013124 001403 BEQ 25
3236 013126 012705 177777 MOV #177777,R5 ;(R5)=EXPECTED DATA IN
3237 ;BREAK CONTROL REGISTER, 177777
3238 013132 104003 HLT 3 ;BREAK CONTROL REGISTER ERROR
3239 013134 104400 25: SCOPE
3240
3241 ;BREAK CONTROL REGISTER DATA TEST
3242 ;SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 15
3243 ;CLEAR BIT 1

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3244                                     ;VERIFY THAT BIT 1 WAS CLEARED
3245                                     ;RESTORE BIT 1
3246                                     ;VERIFY THAT BIT 1 WAS SET
3247
3248 013136 012767 000340 164632 T126: MOV      #340,PS           ;DISABLE ALL INTERRUPTS
3249 013144 012767 004000 004276      MOV      #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
3250 013152 012767 013240 004264      MOV      #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
3251 013160 012777 004000 004214      MOV      #BIT11,DHSCR    ;MASTER CLEAR INTERFACE
3252 013166 016703 004224              MOV      DHBCR,R3        ;SET UP POINTER TO BREAK CONTROL
3253 013172 012705 177775              MOV      #177775,R5     ;(R5)=EXPECTED DATA
3254                                     ;IN BREAK CONTROL REGISTER, 177775
3255 013176 012713 177777              MOV      #177777,(R3)   ;SET ALL READ/WRITE BITS
3256                                     ;IN BREAK CONTROL REGISTER
3257 013202 042713 000002              BIC      #2,(R3)        ;CLEAR BIT 1
3258 013206 011304                    MOV      (R3),R4        ;GET CONTENTS OF BREAK CONTROL
3259 013210 020504                    CMP      R5,R4          ;BIT 1 CLEARED
3260 013212 001401                    BEQ     1$              ;
3261 013214 104003                    HLT     3               ;K CONTROL REGISTER ERROR
3262 013216 052713 000002 1$:      BIS      #2,(R3)        ;SET 1
3263 013222 011304                    MOV      (R3),R4
3264 013224 022704 177777              MOV      #177777,R4    ;WAS BIT 1 SET
3265 013230 001403                    BEQ     2$              ;
3266 013232 012705 177777              MOV      #177777,R5     ;(R5)=EXPECTED DATA IN
3267                                     ;BREAK CONTROL REGISTER, 177777
3268 013236 104003                    HLT     3               ;BREAK CONTROL REGISTER ERROR
3269 013240 104400 2$:      SCOPE
3270
3271                                     ;BREAK CONTROL REGISTER DATA TEST
3272                                     ;SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 1$
3273                                     ;CLEAR BIT 2
3274                                     ;VERIFY THAT BIT 2 WAS CLEARED
3275                                     ;RESTORE BIT 2
3276                                     ;VERIFY THAT BIT 2 WAS SET
3277
3278 013242 012767 000340 164526 T127: MOV      #340,PS           ;DISABLE ALL INTERRUPTS
3279 013250 012767 004000 004172      MOV      #4000,ICOUNT      ;SET UP FOR 4000 ITERATIONS
3280 013256 012767 013344 004160      MOV      #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
3281 013264 012777 004000 004110      MOV      #BIT11,DHSCR    ;MASTER CLEAR INTERFACE
3282 013272 016703 004120              MOV      DHBCR,R3        ;SET UP POINTER TO BREAK CONTROL
3283 013276 012705 177773              MOV      #177773,R5     ;(R5)=EXPECTED DATA
3284                                     ;IN BREAK CONTROL REGISTER, 177773
3285 013302 012713 177777              MOV      #177777,(R3)   ;SET ALL READ/WRITE BITS
3286                                     ;IN BREAK CONTROL REGISTER
3287 013306 042713 000004              BIC      #4,(R3)        ;CLEAR BIT 2
3288 013312 011304                    MOV      (R3),R4        ;GET CONTENTS OF BREAK CONTROL
3289 013314 020504                    CMP      R5,R4          ;WAS BIT 2 CLEARED
3290 013316 001401                    BEQ     1$              ;
3291 013320 104003                    HLT     3               ;BREAK CONTROL REGISTER ERROR
3292 013322 052713 000004 1$:      BIS      #4,(R3)        ;SET BIT 2
3293 013326 011304                    MOV      (R3),R4
3294 013330 022704 177777              CMP      #177777,R4    ;WAS BIT 2 SET
3295 013334 001403                    BEQ     2$              ;
3296 013336 012705 177777              MOV      #177777,R5     ;(R5)=EXPECTED DATA IN
3297                                     ;BREAK CONTROL REGISTER, 177777
3298 013342 104003                    HLT     3               ;BREAK CONTROL REGISTER ERROR
3299 013344 104400 2$:      SCOPE

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3300
3301      ;BREAK CONTROL REGISTER DATA TEST
3302      ;SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 15
3303      ;CLEAR BIT 3
3304      ;VERIFY THAT BIT 3 WAS CLEARED
3305      ;RESTORE BIT 3
3306      ;VERIFY THAT BIT 3 WAS SET
3307
3308 013346 012767 000340 164422 T130: MOV      #340,PS      ;DISABLE ALL INTERRUPTS
3309 013354 012767 004000 004066      MOV      #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
3310 013362 012767 013450 004054      MOV      #2$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
3311 013370 012777 004000 004004      MOV      #BIT11,DMSCR ;MASTER CLEAR INTERFACE
3312 013376 016703 004014      MOV      DHBCR,R3    ;SET UP POINTER TO BREAK CONTROL
3313 013402 012705 177767      MOV      #177767,R5  ;(R5)=EXPECTED DATA
3314      ;IN BREAK CONTROL REGISTER, 177767
3315 013406 012713 177777      MOV      #177777,(R3);SET ALL READ/WRITE BITS
3316      ;IN BREAK CONTROL REGISTER
3317 013412 012713 000010      BIC      #10,(R3)    ;CLEAR BIT 3
3318 013416 011304      MOV      (R3),R4    ;GET CONTENTS OF BREAK CONTROL
3319 013420 020504      CMP      R5,R4      ;WAS BIT 3 CLEARED
3320 013422 001401      BEQ     1$
3321 013424 104003      HLT     3
3322 013426 052713 000010      1$:     BIS      #10,(R3) ;BREAK CONTROL REGISTER ERROR
3323 013432 011304      MOV      (R3),R4    ;SET BIT 3
3324 013434 022704 177777      CMP      #177777,R4 ;WAS BIT 3 SET
3325 013440 001403      BEQ     2$
3326 013442 012705 177777      MOV      #177777,R5 ;(R5)=EXPECTED DATA IN
3327      ;BREAK CONTROL REGISTER, 177777
3328 013446 104003      HLT     3           ;BREAK CONTROL REGISTER ERROR
3329 013450 104400      2$:     SCOPE
3330
3331      ;BREAK CONTROL REGISTER DATA TEST
3332      ;SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 15
3333      ;CLEAR BIT 4
3334      ;VERIFY THAT BIT 4 WAS CLEARED
3335      ;RESTORE BIT 4
3336      ;VERIFY THAT BIT 4 WAS SET
3337
3338 013452 012767 000340 164316 T131: MOV      #340,PS      ;DISABLE ALL INTERRUPTS
3339 013460 012767 004000 003762      MOV      #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
3340 013466 012767 013554 003750      MOV      #2$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
3341 013474 012777 004000 003700      MOV      #BIT11,DMSCR ;MASTER CLEAR INTERFACE
3342 013502 016703 003710      MOV      DHBCR,R3    ;SET UP POINTER TO BREAK CONTROL
3343 013506 012705 177757      MOV      #177757,R5  ;(R5)=EXPECTED DATA
3344      ;IN BREAK CONTROL REGISTER, 177757
3345 013512 012713 177777      MOV      #177777,(R3);SET ALL READ/WRITE BITS
3346      ;IN BREAK CONTROL REGISTER
3347 013516 042713 000020      BIC      #20,(R3)    ;CLEAR BIT 4
3348 013522 011304      MOV      (R3),R4    ;GET CONTENTS OF BREAK CONTROL
3349 013524 020504      CMP      R5,R4      ;WAS BIT 4 CLEARED
3350 013526 001401      BEQ     1$
3351 013530 104003      HLT     3
3352 013532 052713 000020      1$:     BIS      #20,(R3) ;BREAK CONTROL REGISTER ERROR
3353 013536 011304      MOV      (R3),R4    ;SET BIT 4
3354 013540 022704 177777      CMP      #177777,R4 ;WAS BIT 4 SET
3355 013544 001403      BEQ     2$

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3356 013546 012705 177777      MOV      #177777,R5      ;(R5)=EXPECTED DATA IN
3357                                ;BREAK CONTROL REGISTER, 177777
3358 013552 104003      HLT      3              ;BREAK CONTROL REGISTER ERROR
3359 013554 104400      2$:      SCOPE
3360
3361                                ;BREAK CONTROL REGISTER DATA TEST
3362                                ;SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 15
3363                                ;CLEAR BIT 5
3364                                ;VERIFY THAT BIT 5 WAS CLEARED
3365                                ;RESTORE BIT 5
3366                                ;VERIFY THAT BIT 5 WAS SET
3367
3368 013556 012767 000340 164212 T132:  MOV      #340,PS        ;DISABLE ALL INTERRUPTS
3369 013564 012767 004000 003656      MOV      #4000,ICOUNT   ;SET UP FOR 4000 ITERATIONS
3370 013572 012767 013660 003644      MOV      #2$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
3371 013600 012777 004000 003574      MOV      #BIT11,DMHSCR  ;MASTER CLEAR INTERFACE
3372 013606 016703 003604              MOV      DMHCR,R3      ;SET UP POINTER TO BREAK CONTROL
3373 013612 012705 177737              MOV      #177737,R5    ;(R5)=EXPECTED DATA
3374                                ;IN BREAK CONTROL REGISTER, 177737
3375 013616 012713 177777      MOV      #177777,(R3)  ;SET ALL READ/WRITE BITS
3376                                ;IN BREAK CONTROL REGISTER
3377 013622 042713 000040      BIC      #40,(R3)      ;CLEAR BIT 5
3378 013626 011304              MOV      (R3),R4      ;GET CONTENTS OF BREAK CONTROL
3379 013630 020504              CMP      R5,R4        ;WAS BIT 5 CLEARED
3380 013632 001401              BEQ      1$
3381 013634 104003              HLT      3              ;BREAK CONTROL REGISTER ERROR
3382 013636 052713 000040      1$:      BIS      #40,(R3)  ;SET BIT 5
3383 013642 011304              MOV      (R3),R4
3384 013644 022704 177777      CMP      #177777,R4   ;WAS BIT 5 SET
3385 013650 001403              BEQ      2$
3386 013652 012705 177777      MOV      #177777,R5   ;(R5)=EXPECTED DATA IN
3387                                ;BREAK CONTROL REGISTER, 177777
3388 013656 104003      HLT      3              ;BREAK CONTROL REGISTER ERROR
3389 013660 104400      2$:      SCOPE
3390
3391                                ;BREAK CONTROL REGISTER DATA TEST
3392                                ;SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 15
3393                                ;CLEAR BIT 6
3394                                ;VERIFY THAT BIT 6 WAS CLEARED
3395                                ;RESTORE BIT 6
3396                                ;VERIFY THAT BIT 6 WAS SET
3397
3398 013662 012767 000340 164106 T133:  MOV      #340,PS        ;DISABLE ALL INTERRUPTS
3399 013670 012767 004000 003552      MOV      #4000,ICOUNT   ;SET UP FOR 4000 ITERATIONS
3400 013676 012767 013764 003540      MOV      #2$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
3401 013704 012777 004000 003470      MOV      #BIT11,DMHSCR  ;MASTER CLEAR INTERFACE
3402 013712 016703 003500              MOV      DMHCR,R3      ;SET UP POINTER TO BREAK CONTROL
3403 013716 012705 177677              MOV      #177677,R5    ;(R5)=EXPECTED DATA
3404                                ;IN BREAK CONTROL REGISTER, 177677
3405 013722 012713 177777      MOV      #177777,(R3)  ;SET ALL READ/WRITE BITS
3406                                ;IN BREAK CONTROL REGISTER
3407 013726 042713 000100      BIC      #100,(R3)     ;CLEAR BIT 6
3408 013732 011304              MOV      (R3),R4      ;GET CONTENTS OF BREAK CONTROL
3409 013734 020504              CMP      R5,R4        ;WAS BIT 6 CLEARED
3410 013736 001401              BEQ      1$
3411 013740 104003      HLT      3              ;BREAK CONTROL REGISTER ERROR

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3412 013742 052713 000100      1S:  BIS      #100,(R3)          ;SET BIT 6
3413 013746 011304              MOV      (R3),R4
3414 013750 022704 177777      CMP      #177777,R4      ;WAS BIT 6 SET
3415 013754 001403              BEQ      2S
3416 013756 012705 177777      MOV      #177777,R5      ;(R5)=EXPECTED DATA IN
3417                                ;BREAK CONTROL REGISTER, 177777
3418 013762 104003              HLT      3                ;BREAK CONTROL REGISTER ERROR
3419 013764 104400              2S:  SCOPE
3420                                ;BREAK CONTROL REGISTER DATA TEST
3421                                ;SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 1S
3422                                ;CLEAR BIT 7
3423                                ;VERIFY THAT BIT 7 WAS CLEARED
3424                                ;RESTORE BIT 7
3425                                ;VERIFY THAT BIT 7 WAS SET
3426
3428 013766 012767 000340 164002 T134: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
3429 013774 012767 004000 003446      MOV      #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
3430 014002 012767 014070 003434      MOV      #2S,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
3431 014010 012777 004000 003364      MOV      #BIT11,2DHSCR   ;MASTER CLEAR INTERFACE
3432 014016 016703 003374              MOV      DHBCR,R3        ;SET UP POINTER TO BREAK CONTROL
3433 014022 012705 177577      MOV      #177577,R5      ;(R5)=EXPECTED DATA
3434                                ;IN BREAK CONTROL REGISTER, 177577
3435 014026 012713 177777      MOV      #177777,(R3)    ;SET ALL READ/WRITE BITS
3436                                ;IN BREAK CONTROL REGISTER
3437 014032 042713 000200      BIC      #200,(R3)       ;CLEAR BIT 7
3438 014036 011304              MOV      (R3),R4        ;GET CONTENTS OF BREAK CONTROL
3439 014040 020504              CMP      R5,R4          ;WAS BIT 7 CLEARED
3440 014042 001401              BEQ      1S
3441 014044 104003              HLT      3                ;BREAK CONTROL REGISTER ERROR
3442 014046 052713 000200      1S:  BIS      #200,(R3)    ;SET BIT 7
3443 014052 011304              MOV      (R3),R4
3444 014054 022704 177777      CMP      #177777,R4      ;WAS BIT 7 SET
3445 014060 001403              BEQ      2S
3446 014062 012705 177777      MOV      #177777,R5      ;(R5)=EXPECTED DATA IN
3447                                ;BREAK CONTROL REGISTER, 177777
3448 014066 104003              HLT      3                ;BREAK CONTROL REGISTER ERROR
3449 014070 104400              2S:  SCOPE
3450                                ;BREAK CONTROL REGISTER DATA TEST
3451                                ;SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 1S
3452                                ;CLEAR BIT 10
3453                                ;VERIFY THAT BIT 10 WAS CLEARED
3454                                ;RESTORE BIT 10
3455                                ;VERIFY THAT BIT 10 WAS SET
3456
3458 014072 012767 000340 163676 T135: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
3459 014100 012767 004000 003342      MOV      #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
3460 014106 012767 014174 003330      MOV      #2S,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
3461 014114 012777 004000 003260      MOV      #BIT11,2DHSCR   ;MASTER CLEAR INTERFACE
3462 014122 016703 003270              MOV      DHBCR,R3        ;SET UP POINTER TO BREAK CONTROL
3463 014126 012705 177377      MOV      #177377,R5      ;(R5)=EXPECTED DATA
3464                                ;IN BREAK CONTROL REGISTER, 177377
3465 014132 012713 177777      MOV      #177777,(R3)    ;SET ALL READ/WRITE BITS
3466                                ;IN BREAK CONTROL REGISTER
3467 014136 042713 000400      BIC      #400,(R3)       ;CLEAR BIT 10
    
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3468 014142 011304          MOV      (R3),R4          ;GET CONTENTS OF BREAK CONTROL
3469 014144 020504          CMP      R5,R4          ;WAS BIT 10 CLEARED
3470 014146 001401          BEQ     1$              ;
3471 014150 104003          HLT     3              ;BREAK CONTROL REGISTER ERROR
3472 014152 052713 000400 1$: BIS      #400,(R3)      ;SET BIT 10
3473 014156 011304          MOV      (R3),R4
3474 014160 022704 177777      CMP      #177777,R4      ;WAS BIT 10 SET
3475 014164 001403          BEQ     2$              ;
3476 014166 012705 177777      MOV      #177777,R5      ;(R5)=EXPECTED DATA IN
3477                                ;BREAK CONTROL REGISTER, 177777
3478 014172 104003          HLT     3              ;BREAK CONTROL REGISTER ERROR
3479 014174 104400 2$: SCOPE
3480
3481                                ;BREAK CONTROL REGISTER DATA TEST
3482                                ;SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 1$
3483                                ;CLEAR BIT 11
3484                                ;VERIFY THAT BIT 11 WAS CLEARED
3485                                ;RESTORE BIT 11
3486                                ;VERIFY THAT BIT 11 WAS SET
3487
3488 014176 012767 000340 163572 T136: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
3489 014204 012767 004000 003236      MOV      #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
3490 014212 012767 014300 003224      MOV      #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
3491 014220 012777 004000 003154      MOV      #BIT11,JOHSCR   ;MASTER CLEAR INTERFACE
3492 014226 016703 003164          MOV      DHBCR,R3        ;SET UP POINTER TO BREAK CONTROL
3493 014232 012705 176777      MOV      #176777,R5      ;(R5)=EXPECTED DATA
3494                                ;IN BREAK CONTROL REGISTER, 176777
3495 014236 012713 177777      MOV      #177777,(R3)    ;SET ALL READ/WRITE BITS
3496                                ;IN BREAK CONTROL REGISTER
3497 014242 042713 001000      BIC     #1000,(R3)      ;CLEAR BIT 11
3498 014246 011304          MOV      (R3),R4        ;GET CONTENTS OF BREAK CONTROL
3499 014250 020504          CMP      R5,R4          ;WAS BIT 11 CLEARED
3500 014252 001401          BEQ     1$              ;
3501 014254 104003          HLT     3              ;BREAK CONTROL REGISTER ERROR
3502 014256 052713 001000 1$: BIS      #1000,(R3)    ;SET BIT 11
3503 014262 011304          MOV      (R3),R4
3504 014264 022704 177777      CMP      #177777,R4      ;WAS BIT 11 SET
3505 014270 001403          BEQ     2$              ;
3506 014272 012705 177777      MOV      #177777,R5      ;(R5)=EXPECTED DATA IN
3507                                ;BREAK CONTROL REGISTER, 177777
3508 014276 104003          HLT     3              ;BREAK CONTROL REGISTER ERROR
3509 014300 104400 2$: SCOPE
3510
3511                                ;BREAK CONTROL REGISTER DATA TEST
3512                                ;SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 1$
3513                                ;CLEAR BIT 12
3514                                ;VERIFY THAT BIT 12 WAS CLEARED
3515                                ;RESTORE BIT 12
3516                                ;VERIFY THAT BIT 12 WAS SET
3517
3518 014302 012767 000340 163466 T137: MOV      #340,PS          ;DISABLE ALL INTERRUPTS
3519 014310 012767 004000 003132      MOV      #4000,ICOUNT    ;SET UP FOR 4000 ITERATIONS
3520 014316 012767 014404 003120      MOV      #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
3521 014324 012777 004000 003050      MOV      #BIT11,JOHSCR   ;MASTER CLEAR INTERFACE
3522 014332 016703 003060          MOV      DHBCR,R3        ;SET UP POINTER TO BREAK CONTROL
3523 014336 012705 175777      MOV      #175777,R5      ;(R5)=EXPECTED DATA

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3524                                     ; IN BREAK CONTROL REGISTER, 175777
3525 014342 012713 177777             MOV      #177777, (R3)           ; SET ALL READ/WRITE BITS
3526                                     ; IN BREAK CONTROL REGISTER
3527 014346 042713 002000             BIC      #2000, (R3)           ; CLEAR BIT 12
3528 014352 011304                     MOV      (R3), R4             ; GET CONTENTS OF BREAK CONTROL
3529 014354 020504                     CMP      R5, R4              ; WAS BIT 12 CLEARED
3530 014356 001401                     BEQ      1$
3531 014360 104003                     HLT      3
3532 014362 052713 002000             1$:    BIS      #2000, (R3)           ; BREAK CONTROL REGISTER ERROR
3533 014366 011304                     MOV      (R3), R4             ; SET BIT 12
3534 014370 022704 177777             CMP      #177777, R4          ; WAS BIT 12 SET
3535 014374 001403                     BEQ      2$
3536 014376 012705 177777             MOV      #177777, R5          ; (R5)=EXPECTED DATA IN
3537                                     ; BREAK CONTROL REGISTER, 177777
3538 014402 104003                     HLT      3
3539 014404 104400             2$:    SCOPE                   ; BREAK CONTROL REGISTER ERROR
3540                                     ; BREAK CONTROL REGISTER DATA TEST
3541                                     ; SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 15
3542                                     ; CLEAR BIT 13
3543                                     ; VERIFY THAT BIT 13 WAS CLEARED
3544                                     ; RESTORE BIT 13
3545                                     ; VERIFY THAT BIT 13 WAS SET
3546
3547
3548 014406 012767 000340 163362 T140: MOV      #340, PS             ; DISABLE ALL INTERRUPTS
3549 014414 012767 004000 003026     MOV      #4000, ICOUNT        ; SET UP FOR 4000 ITERATIONS
3550 014422 012767 014510 003014     MOV      #2$, ESCAPE          ; SET UP TO ESCAPE TO NEXT TEST
3551 014430 012777 004000 002744     MOV      #BIT11, DMSCR        ; MASTER CLEAR INTERFACE
3552 014436 016703 002754             MOV      DMSCR, R3           ; SET UP POINTER TO BREAK CONTROL
3553 014442 012705 173777             MOV      #173777, R5          ; (R5)=EXPECTED DATA
3554                                     ; IN BREAK CONTROL REGISTER, 173777
3555 014446 012713 177777             MOV      #177777, (R3)           ; SET ALL READ/WRITE BITS
3556                                     ; IN BREAK CONTROL REGISTER
3557 014452 042713 004000             BIC      #4000, (R3)           ; CLEAR BIT 13
3558 014456 011304                     MOV      (R3), R4             ; GET CONTENTS OF BREAK CONTROL
3559 014460 020504                     CMP      R5, R4              ; WAS BIT 13 CLEARED
3560 014462 001401                     BEQ      1$
3561 014464 104003                     HLT      3
3562 014466 052713 004000             1$:    BIS      #4000, (R3)           ; BREAK CONTROL REGISTER ERROR
3563 014472 011304                     MOV      (R3), R4             ; SET BIT 13
3564 014474 022704 177777             CMP      #177777, R4          ; WAS BIT 13 SET
3565 014500 001403                     BEQ      2$
3566 014502 012705 177777             MOV      #177777, R5          ; (R5)=EXPECTED DATA IN
3567                                     ; BREAK CONTROL REGISTER, 177777
3568 014506 104003                     HLT      3
3569 014510 104400             2$:    SCOPE                   ; BREAK CONTROL REGISTER ERROR
3570                                     ; BREAK CONTROL REGISTER DATA TEST
3571                                     ; SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 15
3572                                     ; CLEAR BIT 14
3573                                     ; VERIFY THAT BIT 14 WAS CLEARED
3574                                     ; RESTORE BIT 14
3575                                     ; VERIFY THAT BIT 14 WAS SET
3576
3577
3578 014512 012767 000340 163256 T141: MOV      #340, PS             ; DISABLE ALL INTERRUPTS
3579 014520 012767 004000 002722     MOV      #4000, ICOUNT        ; SET UP FOR 4000 ITERATIONS

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3636                                     ;VERIFY THAT BIT 16 WAS SET
3637
3638 014722 012767 000340 163046 T143: MOV #340,PS ;DISABLE ALL INTERRUPTS
3639 014730 012767 004000 002512 MOV #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
3640 014736 012767 015024 002500 MOV #2$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
3641 014744 012777 004000 002430 MOV #BIT11,DHSCR ;MASTER CLEAR INTERFACE
3642 014752 016703 002440 MOV DHBCR,R3 ;SET UP POINTER TO BREAK CONTROL
3643 014756 012705 137777 MOV #137777,R5 ;(R5)=EXPECTED DATA
3644                                     ;IN BREAK CONTROL REGISTER, 137777
3645 014762 012713 177777 MOV #177777,(R3) ;SET ALL READ/WRITE BITS
3646                                     ;IN BREAK CONTROL REGISTER
3647 014766 042713 040000 BIC #40000,(R3) ;CLEAR BIT 16
3648 014772 011304 MOV (R3),R4 ;GET CONTENTS OF BREAK CONTROL
3649 014774 020504 CMP R5,R4 ;WAS BIT 16 CLEARED
3650 014776 001401 BEQ 1$
3651 015000 104003 HLT 3 ;BREAK CONTROL REGISTER ERROR
3652 015002 052713 040000 15: BIS #40000,(R3) ;SET BIT 16
3653 015006 011304 MOV (R3),R4
3654 015010 022704 177777 CMP #177777,R4 ;WAS BIT 16 SET
3655 015014 001403 BEQ 2$
3656 015016 012705 177777 MOV #177777,R5 ;(R5)=EXPECTED DATA IN
3657                                     ;BREAK CONTROL REGISTER, 177777
3658 015022 104003 HLT 3 ;BREAK CONTROL REGISTER ERROR
3659 015024 104400 25: SCOPE
3660
3661 ;BREAK CONTROL REGISTER DATA TEST
3662 ;SET ALL READ/WRITE BITS IN BREAK CONTROL REGISTER TO 15
3663 ;CLEAR BIT 17
3664 ;VERIFY THAT BIT 17 WAS CLEARED
3665 ;RESTORE BIT 17
3666 ;VERIFY THAT BIT 17 WAS SET
3667
3668 015026 012767 000340 162742 T144: MOV #340,PS ;DISABLE ALL INTERRUPTS
3669 015034 012767 004000 002406 MOV #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
3670 015042 012767 015130 002374 MOV #2$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
3671 015050 012777 004000 002324 MOV #BIT11,DHSCR ;MASTER CLEAR INTERFACE
3672 015056 016703 002334 MOV DHBCR,R3 ;SET UP POINTER TO BREAK CONTROL
3673 015062 012705 077777 MOV #77777,R5 ;(R5)=EXPECTED DATA
3674                                     ;IN BREAK CONTROL REGISTER, 77777
3675 015066 012713 177777 MOV #177777,(R3) ;SET ALL READ/WRITE BITS
3676                                     ;IN BREAK CONTROL REGISTER
3677 015072 042713 100000 BIC #100000,(R3) ;CLEAR BIT 17
3678 015076 011304 MOV (R3),R4 ;GET CONTENTS OF BREAK CONTROL
3679 015100 020504 CMP R5,R4 ;WAS BIT 17 CLEARED
3680 015102 001401 BEQ 1$
3681 015104 104003 HLT 3 ;BREAK CONTROL REGISTER ERROR
3682 015106 052713 100000 15: BIS #100000,(R3) ;SET BIT 17
3683 015112 011304 MOV (R3),R4
3684 015114 022704 177777 CMP #177777,R4 ;WAS BIT 17 SET
3685 015120 001403 BEQ 2$
3686 015122 012705 177777 MOV #177777,R5 ;(R5)=EXPECTED DATA IN
3687                                     ;BREAK CONTROL REGISTER, 177777
3688 015126 104003 HLT 3 ;BREAK CONTROL REGISTER ERROR
3689 015130 104400 25: SCOPE
3690
3691 ;SILO STATUS REGISTER DATA TEST
    
```

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3692                                     ;SET ALL READ/WRITE BITS IN SILO STATUS REGISTER TO 15
3693                                     ;CLEAR BIT 0
3694                                     ;VERIFY THAT BIT 0 WAS CLEARED
3695                                     ;RESTORE BIT 0
3696                                     ;VERIFY THAT BIT 0 WAS SET
3697
3698 015132 012767 000340 162636 T145: MOV #340,PS ;DISABLE ALL INTERRUPTS
3699 015140 012767 004000 002302 MOV #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
3700 015146 012767 015244 002270 MOV #2$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
3701 015154 012777 004000 002220 MOV #BIT11,DHSCR ;MASTER CLEAR INTERFACE
3702 015162 016703 002232 MOV DHSSR,R3 ;SET UP POINTER TO SILO STATUS
3703 015166 012705 100076 MOV #CLRBIT,R5 ;(R5)=EXPECTED DATA
3704                                     ;IN SILO STATUS REGISTER, CLRBIT
3705 015172 012713 100077 MOV #100077,(R3) ;SET ALL READ/WRITE BITS
3706                                     ;IN SILO STATUS REGISTER
3707 015176 042713 000001 BIC #1,(R3) ;CLEAR BIT 0
3708 015202 011304 MOV (R3),R4 ;GET CONTENTS OF SILO STATUS
3709 015204 042704 077700 BIC #77700,R4 ;CLEAR UNWANTED BITS
3710 015210 020504 CMP R5,R4 ;WAS BIT 0 CLEARED
3711 015212 001401 BEQ 1$
3712 015214 104004 HLT 4 ;SILO STATUS REGISTER ERROR
3713 015216 052713 000001 1$: BIS #1,(R3) ;SET BIT 0
3714 015222 011304 MOV (R3),R4
3715 015224 042704 077700 BIC #77700,R4 ;CLEAR UNWANTED BITS
3716 015230 022704 100077 CMP #100077,R4 ;WAS BIT 0 SET
3717 015234 001403 BEQ 2$
3718 015236 012705 100077 MOV #100077,R5 ;(R5)=EXPECTED DATA IN
3719                                     ;SILO STATUS REGISTER, 100077
3720 015242 104004 HLT 4 ;SILO STATUS REGISTER ERROR
3721 015244 104400 2$: SCOPE
3722
3723                                     ;SILO STATUS REGISTER DATA TEST
3724                                     ;SET ALL READ/WRITE BITS IN SILO STATUS REGISTER TO 15
3725                                     ;CLEAR BIT 1
3726                                     ;VERIFY THAT BIT 1 WAS CLEARED
3727                                     ;RESTORE BIT 1
3728                                     ;VERIFY THAT BIT 1 WAS SET
3729
3730 015246 012767 000340 162522 T146: MOV #340,PS ;DISABLE ALL INTERRUPTS
3731 015254 012767 004000 002166 MOV #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
3732 015262 012767 015360 002154 MOV #2$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
3733 015270 012777 004000 002104 MOV #BIT11,DHSCR ;MASTER CLEAR INTERFACE
3734 015276 016703 002116 MOV DHSSR,R3 ;SET UP POINTER TO SILO STATUS
3735 015302 012705 100075 MOV #CLRBIT,R5 ;(R5)=EXPECTED DATA
3736                                     ;IN SILO STATUS REGISTER, CLRBIT
3737 015306 012713 100077 MOV #100077,(R3) ;SET ALL READ/WRITE BITS
3738                                     ;IN SILO STATUS REGISTER
3739 015312 042713 000002 BIC #2,(R3) ;CLEAR BIT 1
3740 015316 011304 MOV (R3),R4 ;GET CONTENTS OF SILO STATUS
3741 015320 042704 077700 BIC #77700,R4 ;CLEAR UNWANTED BITS
3742 015324 020504 CMP R5,R4 ;WAS BIT 1 CLEARED
3743 015326 001401 BEQ 1$
3744 015330 104004 HLT 4 ;SILO STATUS REGISTER ERROR
3745 015332 052713 000002 1$: BIS #2,(R3) ;SET BIT 1
3746 015336 011304 MOV (R3),R4
3747 015340 042704 077700 BIC #77700,R4 ;CLEAR UNWANTED BITS
    
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H06

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3748 015344 022704 100077      CMP      #100077,R4      ;WAS BIT 1 SET
3749 015350 001403              BEQ      2$
3750 015352 012705 100077      MOV      #100077,R5      ;(R5)=EXPECTED DATA IN
3751                                ;SILO STATUS REGISTER, 100077
3752 015356 104004              HLT      4              ;SILO STATUS REGISTER ERROR
3753 015360 104400      2$:  SCOPE
3754
3755                                ;SILO STATUS REGISTER DATA TEST
3756                                ;SET ALL READ/WRITE BITS IN SILO STATUS REGISTER TO 15
3757                                ;CLEAR BIT 2
3758                                ;VERIFY THAT BIT 2 WAS CLEARED
3759                                ;RESTORE BIT 2
3760                                ;VERIFY THAT BIT 2 WAS SET
3761
3762 015362 012767 000340 162406 T147:  MOV      #340,PS      ;DISABLE ALL INTERRUPTS
3763 015370 012767 004000 002052      MOV      #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
3764 015376 012767 015474 002040      MOV      #2$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
3765 015404 012777 004000 001770      MOV      #BIT11,2DHSCR ;MASTER CLEAR INTERFACE
3766 015412 016703 002002              MOV      DHSSR,R3      ;SET UP POINTER TO SILO STATUS
3767 015416 012705 100073              MOV      #CLRBIT,R5    ;(R5)=EXPECTED DATA
3768                                ;IN SILO STATUS REGISTER, CLRBIT
3769 015422 012713 100077              MOV      #100077,(R3)  ;SET ALL READ/WRITE BITS
3770                                ;IN SILO STATUS REGISTER
3771 015426 042713 000004              BIC      #4,(R3)      ;CLEAR BIT 2
3772 015432 011304              MOV      (R3),R4      ;GET CONTENTS OF SILO STATUS
3773 015434 042704 077700              BIC      #77700,R4    ;CLEAR UNWANTED BITS
3774 015440 020504              CMP      R5,R4        ;WAS BIT 2 CLEARED
3775 015442 001401              BEQ      1$
3776 015444 104004              HLT      4              ;SILO STATUS REGISTER ERROR
3777 015446 052713 000004      1$:  BIS      #4,(R3)      ;SET BIT 2
3778 015452 011304              MOV      (R3),R4
3779 015454 042704 077700              BIC      #77700,R4    ;CLEAR UNWANTED BITS
3780 015460 022704 100077              CMP      #100077,R4   ;WAS BIT 2 SET
3781 015464 001403              BEQ      2$
3782 015466 012705 100077              MOV      #100077,R5    ;(R5)=EXPECTED DATA IN
3783                                ;SILO STATUS REGISTER, 100077
3784 015472 104004              HLT      4              ;SILO STATUS REGISTER ERROR
3785 015474 104400      2$:  SCOPE
3786
3787                                ;SILO STATUS REGISTER DATA TEST
3788                                ;SET ALL READ/WRITE BITS IN SILO STATUS REGISTER TO 15
3789                                ;CLEAR BIT 3
3790                                ;VERIFY THAT BIT 3 WAS CLEARED
3791                                ;RESTORE BIT 3
3792                                ;VERIFY THAT BIT 3 WAS SET
3793
3794 015476 012767 000340 162272 T150:  MOV      #340,PS      ;DISABLE ALL INTERRUPTS
3795 015504 012767 004000 001736      MOV      #4000,ICOUNT ;SET UP FOR 4000 ITERATIONS
3796 015512 012767 015610 001724      MOV      #2$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
3797 015520 012777 004000 001654      MOV      #BIT11,2DHSCR ;MASTER CLEAR INTERFACE
3798 015526 016703 001666              MOV      DHSSR,R3      ;SET UP POINTER TO SILO STATUS
3799 015532 012705 100067              MOV      #CLRBIT,R5    ;(R5)=EXPECTED DATA
3800                                ;IN SILO STATUS REGISTER, CLRBIT
3801 015536 012713 100077              MOV      #100077,(R3)  ;SET ALL READ/WRITE BITS
3802                                ;IN SILO STATUS REGISTER
3803 015542 042713 000010              BIC      #10,(R3)     ;CLEAR BIT 3

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3804 015546 011304          MOV      (R3),R4          ;GET CONTENTS OF SILO STATUS
3805 015550 042704 077700  BIC      #77700,R4       ;CLEAR UNWANTED BITS
3806 015554 020504          CMP      R5,R4           ;WAS BIT 3 CLEARED
3807 015556 001401          BEQ      1$              ;
3808 015560 104004          HLT      4                ;SILO STATUS REGISTER ERROR
3809 015562 052713 000010  1$:     BIS      #10,(R3)     ;SET BIT 3
3810 015566 011304          MOV      (R3),R4
3811 015570 042704 077700  BIC      #77700,R4       ;CLEAR UNWANTED BITS
3812 015574 022704 100077  CMP      #100077,R4      ;WAS BIT 3 SET
3813 015600 001403          BEQ      2$              ;
3814 015602 012705 100077  MOV      #100077,R5      ;(R5)=EXPECTED DATA IN
3815                                     ;SILO STATUS REGISTER, 100077
3816 015606 104004          HLT      4                ;SILO STATUS REGISTER ERROR
3817 015610 104400          2$:     SCOPE
3818                                     ;SILO STATUS REGISTER DATA TEST
3819                                     ;SET ALL READ/WRITE BITS IN SILO STATUS REGISTER TO 1$
3820                                     ;CLEAR BIT 4
3821                                     ;VERIFY THAT BIT 4 WAS CLEARED
3822                                     ;RESTORE BIT 4
3823                                     ;VERIFY THAT BIT 4 WAS SET
3824
3825
3826 015612 012767 000340 162156  T151:  MOV      #340,PS          ;DISABLE ALL INTERRUPTS
3827 015620 012767 004000 001622  MOV      #4000,ICOUNT     ;SET UP FOR 4000 ITERATIONS
3828 015626 012767 015724 001610  MOV      #2$,ESCAPE       ;SET UP TO ESCAPE TO NEXT TEST
3829 015634 012777 004000 001540  MOV      #BIT11,DHSCR     ;MASTER CLEAR INTERFACE
3830 015642 016703 001552  MOV      DHSSR,R3         ;SET UP POINTER TO SILO STATUS
3831 015646 012705 100057  MOV      #CLRBIT,R5      ;(R5)=EXPECTED DATA
3832                                     ;IN SILO STATUS REGISTER, CLRBIT
3833 015652 012713 100077  MOV      #100077,(R3)    ;SET ALL READ/WRITE BITS
3834                                     ;IN SILO STATUS REGISTER
3835 015656 042713 000020  BIC      #20,(R3)        ;CLEAR BIT 4
3836 015662 011304          MOV      (R3),R4
3837 015664 042704 077700  BIC      #77700,R4       ;GET CONTENTS OF SILO STATUS
3838 015670 020504          CMP      R5,R4           ;CLEAR UNWANTED BITS
3839 015672 001401          BEQ      1$              ;WAS BIT 4 CLEARED
3840 015674 104004          HLT      4                ;SILO STATUS REGISTER ERROR
3841 015676 052713 000020  1$:     BIS      #20,(R3)     ;SET BIT 4
3842 015702 011304          MOV      (R3),R4
3843 015704 042704 077700  BIC      #77700,R4       ;CLEAR UNWANTED BITS
3844 015710 022704 100077  CMP      #100077,R4      ;WAS BIT 4 SET
3845 015714 001403          BEQ      2$              ;
3846 015716 012705 100077  MOV      #100077,R5      ;(R5)=EXPECTED DATA IN
3847                                     ;SILO STATUS REGISTER, 100077
3848 015722 104004          HLT      4                ;SILO STATUS REGISTER ERROR
3849 015724 104400          2$:     SCOPE
3850                                     ;SILO STATUS REGISTER DATA TEST
3851                                     ;SET ALL READ/WRITE BITS IN SILO STATUS REGISTER TO 1$
3852                                     ;CLEAR BIT 5
3853                                     ;VERIFY THAT BIT 5 WAS CLEARED
3854                                     ;RESTORE BIT 5
3855                                     ;VERIFY THAT BIT 5 WAS SET
3856
3857
3858 015726 012767 000340 162042  T152:  MOV      #340,PS          ;DISABLE ALL INTERRUPTS
3859 015734 012767 004000 001506  MOV      #4000,ICOUNT     ;SET UP FOR 4000 ITERATIONS

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JOB

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3860	015742	012767	016040	001474		MOV	#2\$ ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
3861	015750	012777	004000	001424		MOV	#BIT11, DMSCR	;MASTER CLEAR INTERFACE
3862	015756	016703	001436			MOV	DHSSR, R3	;SET UP POINTER TO SILO STATUS
3863	015762	012705	100037			MOV	#CLRBIT, R5	; (R5)=EXPECTED DATA
3864								; IN SILO STATUS REGISTER, CLRBIT
3865	015766	012713	100077			MOV	#100077, (R3)	;SET ALL READ/WRITE BITS
3866								; IN SILO STATUS REGISTER
3867	015772	042713	000040			BIC	#40, (R3)	;CLEAR BIT 5
3868	015776	011304				MOV	(R3), R4	;GET CONTENTS OF SILO STATUS
3869	016000	042704	077700			BIC	#77700, R4	;CLEAR UNWANTED BITS
3870	016004	020504				CMP	R5, R4	; WAS BIT 5 CLEARED
3871	016006	001401				BEQ	1\$	
3872	016010	104004				HLT	4	;SILO STATUS REGISTER ERROR
3873	016012	052713	000040		1\$:	BIS	#40, (R3)	;SET BIT 5
3874	016016	011304				MOV	(R3), R4	
3875	016020	042704	077700			BIC	#77700, R4	;CLEAR UNWANTED BITS
3876	016024	022704	100077			CMP	#100077, R4	; WAS BIT 5 SET
3877	016030	001403				BEQ	2\$	
3878	016032	012705	100077			MOV	#100077, R5	; (R5)=EXPECTED DATA IN
3879								;SILO STATUS REGISTER, 100077
3880	016036	104004				HLT	4	;SILO STATUS REGISTER ERROR
3881	016040	104400			2\$:	SCOPE		
3882								
3883								;SILO STATUS REGISTER DATA TEST
3884								;SET ALL READ/WRITE BITS IN SILO STATUS REGISTER TO 1\$
3885								;CLEAR BIT 17
3886								;VERIFY THAT BIT 17 WAS CLEARED
3887								;RESTORE BIT 17
3888								;VERIFY THAT BIT 17 WAS SET
3889								
3890	016042	012767	000340	161726	T153:	MOV	#340, PS	;DISABLE ALL INTERRUPTS
3891	016050	012767	004000	001372		MOV	#4000, ICOUNT	;SET UP FOR 4000 ITERATIONS
3892	016056	012767	016154	001360		MOV	#2\$ ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
3893	016064	012777	004000	001310		MOV	#BIT11, DMSCR	;MASTER CLEAR INTERFACE
3894	016072	016703	001322			MOV	DHSSR, R3	;SET UP POINTER TO SILO STATUS
3895	016076	012705	000077			MOV	#CLRBIT, R5	; (R5)=EXPECTED DATA
3896								; IN SILO STATUS REGISTER, CLRBIT
3897	016102	012713	100077			MOV	#100077, (R3)	;SET ALL READ/WRITE BITS
3898								; IN SILO STATUS REGISTER
3899	016106	042713	100000			BIC	#100000, (R3)	;CLEAR BIT 17
3900	016112	011304				MOV	(R3), R4	;GET CONTENTS OF SILO STATUS
3901	016114	042704	077700			BIC	#77700, R4	;CLEAR UNWANTED BITS
3902	016120	020504				CMP	R5, R4	; WAS BIT 17 CLEARED
3903	016122	001401				BEQ	1\$	
3904	016124	104004				HLT	4	;SILO STATUS REGISTER ERROR
3905	016126	052713	100000		1\$:	BIS	#100000, (R3)	;SET BIT 17
3906	016132	011304				MOV	(R3), R4	
3907	016134	042704	077700			BIC	#77700, R4	;CLEAR UNWANTED BITS
3908	016140	022704	100077			CMP	#100077, R4	; WAS BIT 17 SET
3909	016144	001403				BEQ	2\$	
3910	016146	012705	100077			MOV	#100077, R5	; (R5)=EXPECTED DATA IN
3911								;SILO STATUS REGISTER, 100077
3912	016152	104004				HLT	4	;SILO STATUS REGISTER ERROR
3913	016154	104400			2\$:	SCOPE		

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3915
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3922 016156 104401
3923 016160 020055
3924 016162 005067 001312
3925 016166 005067 001242
3926 016172 005267 001240
3927 016176 016767 001234 161364
3928 016204 013701 000042
3929 016210 001405
3930 016212 000005
3931 016214 004711
3932 016216 007240
3933 016220 000240
3934 016222 000240
3935 016224 000167 162752
3936
3937
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3940 016230 032767 002000 161332
3941 016236 001030
3942 016240 032767 040000 161322
3943 016246 001021
3944 016250 032767 004000 161312
3945 016256 001006
3946 016260 005267 001166
3947 016264 026767 001162 001156
3948 016272 001007
3949 016274 005067 001152
3950 016300 005067 001130
3951 016304 011667 001132
3952 016310 000002
3953 016312 016716 001124
3954 016316 000002
3955 016320 005767 001110
3956 016324 001745
3957 016326 000762
3958
3959
3960
3961 016330 032767 001000 161232
3962 016336 001402
3963 016340 016716 001102
3964 016344 000002
3965
3966
3967
3968 016346 032767 020000 161214
3969 016354 001051
    
```

```

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

```

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

```

LOGICAL: JSR PC,(R1)
          NOP
          NOP
          NOP
    
```

```

RESTRT: JMP BEGIN
    
```

```

;CHECK FOR LOOP ON CURRENT TEST
;CHECK FOR ITERATION SUPPRESSION
    
```

```

SCOPER: BIT #SW10,SWR
        BNE 4$
1$: BIT #SW14,SWR
   BNE 3$
        BIT #SW11,SWR
        BNE 2$
        INC LPCNT
        CMP LPCNT,ICOUNT
        BNE 3$
2$: CLR LPCNT
   CLR ERRFLG
   MOV (SP),RETURN
   RTI
3$: MOV RETURN,(SP)
   RTI
4$: TST ERRFLG
   BEQ 1$
   BR 2$
    
```

```

;CHECK FOR FREEZE ON CURRENT DATA
    
```

```

SCOP1R: BIT #SW09,SWR
        BEQ 1$
1$: MOV FREEZ1,(SP)
   RTI
    
```

```

;ERROR HANDLER
    
```

```

ERRORS: BIT #SW13,SWR
        BNE HALTS
    
```



```

4026                                     ;TELETYPE OUTPUT ROUTINE
4027
4028 016602 017605 000000          TYPBR: MOV      2(SP),R5
4029 016606 062716 000002          ADD      #2,(SP)
4030 016612 105777 000560          1$:  TSTB   2TPCSR
4031 016616 10C375                   BPL      1$
4032 016620 105715                   TSTB   (R5)
4033 016622 001001                   BNE     2$
4034 016624 000002                   RTI
4035 016626 112577 000546          2$:  MOVB   (R5)+,2TPDBR
4036 016632 000767                   BR      1$
    
```

```

4037                                     ;ASCII STRING INPUT ROUTINE
4038
4039
4040 016634 017667 000000 000006  INSTRG: MOV      2(SP),MSG
4041 016642 062716 000002          ADD      #2,(SP)
4042 016646 104401          INSTR1: TYPE
4043 016650 000000          MSG:    0
4044 016652 012704 020126          MOV      #INBUF,R4
4045 016656 012703 000007          MOV      #7,R3
4046 016662 105777 000504          1$:  TSTB   2TKCSR
4047 016666 100375                   BPL      1$
4048 016670 117714 000500          MOVB   2TKDBR,(R4)
4049 016674 142714 000200          BICB   #200,(R4)
4050 016700 122427 000015          CMPB   (R4)+,#15
4051 016704 001413          BEQ    INSTR2
4052 016706 117777 000462 000464  2$:  MOVB   2TKDBR,2TPDBR
4053 016714 105777 000456          TSTB   2TPCSR
4054 016720 100375                   BPL      2$
4055 016722 005303                   DEC     R3
4056 016724 001356                   BNE     1$
4057 016726 104401          INSTR2: TYPE
4058 016730 017761          MGN
4059 016732 000745          BR      INSTR1
4060 016734 000002          INSTR2: RTI
    
```

```

4061                                     ;CONVERT ASCII STRING TO OCTAL
4062
4063
4064 016736 011605          PARAMS: MOV      (SP),R5
4065 016740 012567 000146          MOV      (R5)+,LOLIM
4066 016744 012567 000144          MOV      (R5)+,HILIM
4067 016750 012567 000142          MOV      (R5)+,DEVADR
4068 016754 112567 000140          MOVB   (R5)+,LOBITS
4069 016760 112567 000135          MOVB   (R5)+,ADRCNT
4070 016764 010516          MOV      R5,(SP)
4071 016766 005005          PARAM1: CLR      R5
4072 016770 012704 020126          MOV      #INBUF,R4
4073 016774 122714 000015          CMPB   #15,(R4)
4074 017000 001420          BEQ    PARERR
4075 017002 121427 000060          1$:  CMPB   (R4),#60
4076 017006 002415          BLT    PARERR
4077 017010 121427 000067          CMPB   (R4),#67
4078 017014 003012          BGT    PARERR
4079 017016 142714 000060          BICB   #60,(R4)
4080 017022 152405          BISB   (R4)+,R5
4081 017024 122714 000015          CMPB   #15,(R4)
    
```

4082	017030	001406	
4083	017032	006305	
4084	017034	006305	
4085	017036	006305	
4086	017040	000760	
4087	017042	104404	
4088	017044	000750	
4089			
4090			
4091			
4092	017046	020567	000042
4093	017052	101373	
4094	017054	020567	000032
4095	017060	103770	
4096	017062	136705	000032
4097	017066	001365	
4098			
4099			
4100			
4101	017070	016704	000022
4102	017074	010524	
4103	017076	062705	000002
4104	017102	105367	000013
4105	017106	001372	
4106	017110	000002	
4107	017112	000000	
4108	017114	000000	
4109	017116	000000	
4110	017120	000000	
4111		017121	
4112			
4113			
4114			
4115	017122	104401	
4116	017124	017765	
4117	017126	017601	000000
4118	017132	062716	000002
4119	017136	012167	000130
4120	017142	112167	000126
4121	017146	112167	000123
4122	017152	013167	000120
4123	017156	016704	000114
4124	017162	116705	000106
4125	017166	012700	020140
4126	017172	010403	
4127	017174	042703	177770
4128	017200	062703	000260
4129	017204	110320	
4130	017206	006204	
4131	017210	006204	
4132	017212	006204	
4133	017214	005305	
4134	017216	001365	
4135	017220	012703	020152
4136	017224	114023	
4137	017226	105367	000042

```

BEQ      LIMITS
ASL      R5
ASL      R5
ASL      R5
BR       1$
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

1$:      MOV      DEVADR,R4
          MOV      R5,(R4)+
          ADD      #2,R5
          DECB    ADCNT
          BNE     1$
          RTI

LOLIM:   0
HILIM:   0
DEVADR:  0
LOBITS:  0
ADCNT=LOBITS+1

;CONVERT OCTAL NUMBER TO ASCII AND OUTPUT TO TELEPRINTER

OCTASN:  TYPE
          MCRLF
          MOV      2(SP),R1
          ADD      #2,(SP)
          MOV      (R1)+,WRDCNT
1$:      MOV      (R1)+,CHRCNT
          MOV      (R1)+,SPACNT
          MOV      2(R1)+,BINWRD
2$:      MOV      BINWRD,R4
          MOV      CHRCNT,R5
          MOV      #TEMP,R0
3$:      MOV      R4,R3
          BIC      #177770,R3
          ADD      #260,R3
          MOV      R3,(R0)+
          ASR      R4
          ASR      R4
          ASR      R4
          DEC      R5
          BNE     3$
          MOV      #MDATA,R3
4$:      MOV      -(R0),(R3)+
          DECB    CHRCNT
  
```

4138	017232	001374				BNE	48
4139	017234	105767	000035			TSTB	SPACNT
4140	017240	001405				BEQ	68
4141	017242	112723	000240		55:	MOVB	8240,(R3)+
4142	017246	105367	000023			DECB	SPACNT
4143	017252	001373				BNE	58
4144	017254	105013			65:	CLRB	(R3)
4145	017256	104401				TYPE	
4146	017260	020152				MDATA	
4147	017262	005367	000004			DEC	WRDCNT
4148	017266	001325				BNE	8
4149	017270	000002				RTI	
4150	017272	000000				WRDCNT:	0
4151	017274	000000				CHRCNT:	0
4152		017275				SPACNT=CHRCNT+1	
4153	017276	000000				BINWRD:	0
4154							
4155							;SAVE PC OF TEST THAT FAILED AND RO-R5
4156							
4157	017300	016667	000004	000164	SVOSP:	MOV	4(SP),SAVPC
4158							
4159							;SAVE RO-R5
4160							
4161	017306	010567	000154		SVOS:	MOV	R5,SAVR5
4162	017312	010467	000146			MOV	R4,SAVR4
4163	017316	010367	000140			MOV	R3,SAVR3
4164	017322	010267	000132			MOV	R2,SAVR2
4165	017326	010167	000124			MOV	R1,SAVR1
4166	017332	010067	000116			MOV	RO,SAVR0
4167	017336	000002				RTI	
4168							;RESTORE RO-R5
4169							
4170	017340	016700	000110		RSOS:	MOV	SAVR0,RO
4171	017344	016701	000106			MOV	SAVR1,R1
4172	017350	016702	000104			MOV	SAVR2,R2
4173	017354	016703	000102			MOV	SAVR3,R3
4174	017360	016704	000100			MOV	SAVR4,R4
4175	017364	016705	000076			MOV	SAVR5,R5
4176	017370	000002				RTI	
4177							;INDIRECT POINTERS
4178							
4179	017372	177560			TKCSR:	177560	
4180	017374	177562			TKDBR:	177562	
4181	017376	177564			TPCSR:	177564	
4182	017400	177566			TPDBR:	177566	
4183	017402	000000			DHSCR:	0	
4184	017404	000000			DHNRC:	0	
4185	017406	000000			DHLPR:	0	
4186	017410	000000			DHFA:	0	
4187	017412	000000			DHBC:	0	
4188	017414	000000			DHBAR:	0	
4189	017416	000000			DHBCR:	0	
4190	017420	000000			DHSSR:	0	
4191	017422	000000			DHSLR:	0	
4192	017424	000000			DHRVEC:	0	
4193	017426	000000			DHRLVL:	0	

4194 017430 000000
 4195 017432 000000
 4196
 4197
 4198 017434 000000
 4199 017436 000000
 4200 017440 000000
 4201 017442 000000
 4202 017444 000000
 4203 017446 000000
 4204 017450 000000
 4205 017452 000000
 4206 017454 000000
 4207 017456 000000
 4208 017460 000000
 4209 017462 000000
 4210 017464 000000
 4211 017466 000000
 4212 017470 000000
 4213 017472 000000
 4214 017474 000000
 4215 017476 000000
 4216 017500 000000
 4217
 4218
 4219
 4220 017502 010046
 4221 017504 010146
 4222 017506 010246
 4223 017510 010346
 4224 017512 010446
 4225 017514 010546
 4226 017516 016746 160302
 4227 017522 010667 177742
 4228 017526 012767 017540 160270
 4229 017534 000000
 4230 017536 000777
 4231
 4232
 4233
 4234 017540 016706 177724
 4235 017544 012605
 4236 017546 012604
 4237 017550 012603
 4238 017552 012602
 4239 017554 012601
 4240 017556 012600
 4241 017560 012767 017502 160236
 4242 017566 012767 000340 160202
 4243 017574 012706 021106
 4244 017600 005067 000334
 4245 017604 005267 000330
 4246 017610 001375
 4247 017612 104402
 4248 017614 017636
 4249 017616 104401

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
 ;ENTER HERE ON POWER FAILURE
 PFAIL: MOV R0, -(SP) ;SAVE R0-R5 ON PROCESSOR STACK
 MOV R1, -(SP)
 MOV R2, -(SP)
 MOV R3, -(SP)
 MOV R4, -(SP)
 MOV R5, -(SP)
 MOV 24, -(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 R0-R5
 MOV (SP)+, R4
 MOV (SP)+, R3
 MOV (SP)+, R2
 MOV (SP)+, R1
 MOV (SP)+, R0
 MOV #PFAIL, 24 ;SET UP FOR POWER FAILURE
 MOV #340, PS
 MOV #STACK, SP
 CLR TEMP
 INC TEMP
 BNE .-4
 OCTASC
 PFTAB
 TYPE

4250	017620	017770			MPFAIL	
4251	017622	005067	177606		CLR	ERRFLG
4252	017626	005067	177646		CLR	LAST
4253	017632	000177	177604		JMP	RETURN
4254	017636	000001		PFTAB:	1	
4255	017640	000006	000002		6,2	
4256	017644	000207			RETURN	
4257	017646	005015	042012	030510	MTITLE:	.ASCIZ <15><12><12>/DM11 STATIC LOGIC TEST /<15><12>
4258	017654	020061	052123	052101		
4259	017662	041511	046040	043517		
4260	017670	041511	052040	051505		
4261	017676	020124	005015	000	MVECTO:	.ASCIZ <15><12>/VECTOR ADDRESS-/
4262	017703	015	053012	041505		
4263	017710	047524	020122	042101		
4264	017716	051104	051505	026523		
4265	017724	000			MREGAD:	.ASCIZ <15><12>/CONTROL REGISTER ADDRESS-/
4266	017725	015	041412	047117		
4267	017732	051124	046117	051040		
4268	017740	043505	051511	042524		
4269	017746	020122	042101	051104		
4270	017754	051505	026523	000	MM:	.ASCIZ / ?/
4271	017761	040	037440	000	MCRLF:	.ASCIZ <15><12>
4272	017765	015	000012		MPFAIL:	.ASCIZ / POWER FAILURE, PROGRAM RESTART AT TEST IN PROGRESS/
4273	017770	020040	047520	042527		
4274	017776	020122	040506	046111		
4275	020004	051125	026105	050040		
4276	020012	047522	051107	046501		
4277	020020	051040	051505	040524		
4278	020026	052122	040440	020124		
4279	020034	042524	052123	044440		
4280	020042	020116	051120	043517		
4281	020050	042522	051523	000	MEPASS:	.ASCIZ <15><12>/DZDHA/
4282	020055	015	042012	042132		
4283	020062	040510	000		MR:	.ASCIZ <15><12>/R/
4284	020065	015	051012	000	MTSTPC:	.ASCIZ <15><12>/TEST PC-/
4285	020071	015	052012	051505		
4286	020076	020124	041520	000055		
4287						
4288						
4289						
4290	020104	016230				
4291	020106	016602				
4292	020110	017122				
4293	020112	016634				
4294	020114	016726				
4295	020116	016736				
4296	020120	017300				
4297	020122	017340				
4298	020124	016330				
4299						
4300						
4301						
4302	020126	000000				
4303		020140				
4304	020140	000000				
4305		020152				

;TABLE OF POINTERS FOR TRAP DECODING

TRPTAB:	SCOPER
	TYPER
	OCTASN
	INSTRG
	INSTRE
	PARAMS
	SVOSP
	RSOS
	SCOPIR

;BUFFERS FOR INPUT-OUTPUT

INBUF:	0
.+.10	
TEMP:	0
.+.10	

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```

4306 020152 000000          MDATA: 0
4307                020164          .=.+10
4308
4309                ;TABLE OF POINTERS TO ERROR MESSAGES AND DATA
4310
4311                ERRTAB:
4312 020164 020214          EMO
4313 020166 020562          DT0
4314 020170 020256          EM1
4315 020172 020670          DT1
4316 020174 020345          EM2
4317 020176 020670          DT1
4318 020200 020434          EM3
4319 020202 020670          DT1
4320 020204 020522          EM4
4321 020206 020670          DT1
4322 020210 020606          EM5
4323 020212 020670          DT1
4324 020214 042522 044507 052123  EMO:  .ASCII /REGISTER DID NOT RESPOND/
4325 020222 051105 042040 042111
4326 020230 047040 052117 051040
4327 020236 051505 047520 042116
4328 020244 005015 042101 051104          .ASCIZ <15><12>/ADDRESS/
4329 020252 051505 000123
4330 020256 054523 052123 046505  EMI:  .ASCII /SYSTEM CONTROL REGISTER ERROR/
4331 020264 041440 047117 051124
4332 020272 046117 051040 043505
4333 020300 051511 042524 020122
4334 020306 051105 047522          122
4335 020313          015 042412 050130          .ASCIZ <15><12>/EXP      REC      ADDRESS/
4336 020320 020040 020040 051040
4337 020326 041505 020040 020040
4338 020334 040440 042104 042522
4339 020342 051523          000
4340 020345          114 047111 020105  EMI:  .ASCII /LINE PARAMETER REGISTER ERROR/
4341 020352 040520 040522 042515
4342 020360 042524 020122 042522
4343 020366 044507 052123 051105
4344 020374 042440 051122 051117
4345 020402 005015 054105 020120          .ASCIZ <15><12>/EXP      REC      ADDRESS/
4346 020410 020040 020040 042522
4347 020416 020103 020040 020040
4348 020424 042101 051104 051505
4349 020432 000123
4350 020434 051102 040505 020113  EM3:  .ASCII /BREAK CONTROL REGISTER ERROR/
4351 020442 047503 052116 047522
4352 020450 020114 042522 044507
4353 020456 052123 051105 042440
4354 020464 051122 051117
4355 020470 005015 054105 020120          .ASCIZ <15><12>/EXP      REC      ADDRESS/
4356 020476 020040 020040 042522
4357 020504 020103 020040 020040
4358 020512 042101 051104 051505
4359 020520 000123
4360 020522 044523 047514 051440  EM4:  .ASCII /SILO STATUS REGISTER ERROR/
4361 020530 040524 052524 020123
  
```

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4362	020536	042522	044507	052123			
4363	020544	051105	042440	051122			
4364	020552	051117					
4365	020554	005015	054105	020120	.ASCIZ	<15><12>/EXP	REC ADDRESS/
4366	020562	020040	020040	042522			
4367	020570	020103	020040	020040			
4368	020576	042101	051104	051505			
4369	020604	000123					
4370	020606	040515	052123	051105	EMS:	.ASCII	/MASTER CLEAR ERROR/
4371	020614	041440	042514	051101			
4372	020622	042440	051122	051117			
4373	020630	005015	054105	020120	.ASCIZ	<15><12>/EXP	REC ADDRESS/
4374	020636	020040	020040	042522			
4375	020644	020103	020040	020040			
4376	020652	042101	051104	051505			
4377	020660	000123					
4378					.EVEN		
4379	020662	000001			DT0:	1	
4380	020664	006	000		.BYTE	6,0	
4381	020666	017466				SAVR5	
4382	020670	000003			DT1:	3	
4383	020672	006	002		.BYTE	6,2	
4384	020674	017466				SAVR5	
4385	020676	006	002		.BYTE	6,2	
4386	020700	017464				SAVR4	
4387	020702	006	000		.BYTE	6,0	
4388	020704	017462				SAVR3	
4389	020706	000000			ENDCOD:	0	
4390		000001			.END		

ADRCNT= 017121	4069#	4104#	4111#																
BEGIN 001202	894	923	929#	3935															
BINARD 017276	4122#	4123	4153#																
BITC = 000020	1796#	1821#	1846#	1871#	1896#	1921#	1946#	1971#	1996#	2021#	2046#	2071#	2096#						
	2121#	2146#	2171#	2196#	2221#	2246#	2271#	2296#	2321#	2346#	2371#	2396#	2421#						
	2446#	2471#	2496#	2521#	2546#	2571#	2598#	2625#	2652#	2679#	2706#	2733#	2760#						
	2790#	2820#	2850#	2880#	2910#	2940#	2970#	3000#	3030#	3060#	3090#	3120#	3150#						
	3180#	3210#	3240#	3270#	3300#	3330#	3360#	3390#	3420#	3450#	3480#	3510#	3540#						
	3570#	3600#	3630#	3660#	3690#	3722#	3754#	3786#	3818#	3850#	3882#	3914#							
BITCLR= 000077	2760#	2790#	2820#	2850#	2880#	2910#	2940#	2970#	3000#	3030#	3060#	3090#	3120#						
	3150#	3180#	3210#	3240#	3270#	3300#	3330#	3360#	3390#	3420#	3450#	3480#	3510#						
	3540#	3570#	3600#	3630#	3660#	3690#	3722#	3754#	3786#	3818#	3850#	3882#	3914#						
BITX = 000000	1796#	1821#	1846#	1871#	1896#	1921#	1946#	1971#	1996#	2021#	2046#	2071#	2096#						
	2121#	2146#	2171#	2196#	2221#	2246#	2271#	2296#	2321#	2346#	2371#	2396#	2421#						
	2446#	2471#	2496#	2521#	2546#	2571#	2598#	2625#	2652#	2679#	2706#	2733#	2760#						
	2790#	2820#	2850#	2880#	2910#	2940#	2970#	3000#	3030#	3060#	3090#	3120#	3150#						
	3180#	3210#	3240#	3270#	3300#	3330#	3360#	3390#	3420#	3450#	3480#	3510#	3540#						
	3570#	3600#	3630#	3660#	3690#	3722#	3754#	3786#	3818#	3850#	3882#	3914#							
BIT00 = 000001	580#	1233	1234	1236	1243														
BIT01 = 000002	579#	1263	1264	1266	1273														
BIT02 = 000004	578#	1293	1294	1296	1303														
BIT03 = 000010	577#	1323	1324	1326	1333														
BIT04 = 000020	576#	1353	1354	1356	1363														
BIT05 = 000040	575#	1383	1384	1386	1393														
BIT06 = 000100	574#	1413	1414	1416	1423														
BIT07 = 000200	573#	1559	1667	1668	1671	1679	1680	1682	1688										
BIT08 = 000400	572#	1579																	
BIT09 = 001000	571#	1443	1444	1446	1453	1666	1668	1671	1678	1687	1689	1692	1714						
	1716	1719	1726	1735	1737	1740	1762	1764	1767	1774	1783	1785	1788						
BIT10 = 002000	570#	1599	1715	1716	1719	1727	1728	1730	1736										
BIT11 = 004000	569#	1144	1166	1188	1210	1619	1806	1831	1856	1881	1906	1931	1956						
	1981	2006	2031	2056	2081	2106	2131	2156	2181	2206	2231	2256	2281						
	2306	2331	2356	2381	2406	2431	2456	2481	2506	2531	2556	2581	2608						
	2635	2662	2689	2716	2743	2771	2801	2831	2861	2891	2921	2951	2981						
	3011	3041	3071	3101	3131	3161	3191	3221	3251	3281	3311	3341	3371						
	3401	3431	3461	3491	3521	3551	3581	3611	3641	3671	3701	3733	3765						
	3797	3829	3861	3893															
BIT12 = 010000	568#	1473	1474	1476	1483														
BIT13 = 020000	567#	1503	1504	1506	1513														
BIT14 = 040000	566#	1639	1763	1764	1767	1775	1776	1778	1784										
BIT15 = 100000	565#	1533	1534	1536	1543														
CBIT = 000020	1796#	2171#	2571#	2760#	3210#	3690#													
CCRBIT= 077777	2760#	2790#	2820#	2850#	2880#	2910#	2940#	2970#	3000#	3030#	3060#	3090#	3120#						
	3150#	3180#	3690#	3722#	3754#	3786#	3818#	3850#	3882#										
CHRCNT 017274	4120#	4124	4137#	4151#	4152														
CLRBIT= 000077	2760#	2790#	2820#	2850#	2880#	2910#	2940#	2970#	3000#	3030#	3060#	3090#	3120#						
	3150#	3180#	3210#	3240#	3270#	3300#	3330#	3360#	3390#	3420#	3450#	3480#	3510#						
	3540#	3570#	3600#	3630#	3660#	3690#	3703	3722#	3735	3754#	3767	3786#	3799						
	3818#	3831	3850#	3863	3882#	3895													
DATABP 016474	3983#	3986	3993	3996#															
DEVAOR 017116	4067#	4101	4109#																
DHBA 017410	1028	1032	4186#																
DHBA 017414	1097	1101	4188#																
DHBC 017412	1051	1055	4187#																
DHBCR 017416	1074	1078	1186#	1189	1196	2182	2207	2232	2257	2282	2307	2332	2357						
	2382	2407	2432	2457	2482	2507	2532	2557	3222	3252	3282	3312	3342						

RESREG	016476	3994	3997#											
RESTAR	017540	4228	4234#											
RESTRY	016224	3929	3935#											
RESOS =	104407	865#	3997											
RETURN	017442	942#	947	3951#	3953	4201#	4253							
RSOS	017340	4170#	4297											
R0	=:000000	538#	4001#	4125#	4129#	4136	4166	4170#	4220	4240#				
R1	=:000001	539#	895#	898#	900#	902	3928#	3931	4117#	4119	4120	4121	4122	4165
		4171#	4221	4239#										
R2	=:000002	540#	896#	898	899#	901#	4164	4172#	4222	4238#				
R3	=:000003	541#	897#	900	901	1152#	1174#	1196#	1219#	1232#	1233#	1234	1239	1243#
		1247	1262#	1263#	1264	1269	1273#	1277	1292#	1293#	1294	1299	1303#	1307
		1322#	1323#	1324	1329	1333#	1337	1352#	1353#	1354	1359	1363#	1367	1382#
		1383#	1384	1389	1393#	1397	1412#	1413#	1414	1419	1423#	1427	1442#	1443#
		1444	1449	1453#	1457	1472#	1473#	1474	1479	1483#	1487	1502#	1503#	1504
		1509	1513#	1517	1532#	1533#	1534	1539	1543#	1547	1568#	1588#	1608#	1628#
		1648#	1665#	1666#	1667#	1668	1674	1678#	1679#	1680	1687#	1688#	1689	1695
		1713#	1714#	1715#	1716	1722	1726#	1727#	1728	1735#	1736#	1737	1743	1761#
		1762#	1763#	1764	1770	1774#	1775#	1776	1783#	1784#	1785	1791	1807#	1809#
		1810	1814#	1815	1832#	1834#	1835	1839#	1840	1857#	1859#	1860	1864#	1865
		1882#	1884#	1885	1889#	1890	1907#	1909#	1910	1914#	1915	1932#	1934#	1935
		1939#	1940	1957#	1959#	1960	1964#	1965	1982#	1984#	1985	1989#	1990	2007#
		2009#	2010	2014#	2015	2032#	2034#	2035	2039#	2040	2057#	2059#	2060	2064#
		2065	2082#	2084#	2085	2089#	2090	2107#	2109#	2110	2114#	2115	2132#	2134#
		2135	2139#	2140	2157#	2159#	2160	2164#	2165	2182#	2184#	2185	2189#	2190
		2207#	2209#	2210	2214#	2215	2232#	2234#	2235	2239#	2240	2257#	2259#	2260
		2264#	2265	2282#	2284#	2285	2289#	2290	2307#	2309#	2310	2314#	2315	2332#
		2334#	2335	2339#	2340	2357#	2359#	2360	2364#	2365	2382#	2384#	2385	2389#
		2390	2407#	2409#	2410	2414#	2415	2432#	2434#	2435	2439#	2440	2457#	2459#
		2460	2464#	2465	2482#	2484#	2485	2489#	2490	2507#	2509#	2510	2514#	2515
		2532#	2534#	2535	2539#	2540	2557#	2559#	2560	2564#	2565	2582#	2584#	2585
		2590#	2591	2609#	2611#	2612	2617#	2618	2636#	2638#	2639	2644#	2645	2663#
		2665#	2666	2671#	2672	2690#	2692#	2693	2698#	2699	2717#	2719#	2720	2725#
		2726	2744#	2746#	2747	2752#	2753	2772#	2775#	2777#	2778	2782#	2783	2802#
		2805#	2807#	2808	2812#	2813	2832#	2835#	2837#	2838	2842#	2843	2862#	2865#
		2867#	2868	2872#	2873	2892#	2895#	2897#	2898	2902#	2903	2922#	2925#	2927#
		2928	2932#	2933	2952#	2955#	2957#	2958	2962#	2963	2982#	2985#	2987#	2988
		2992#	2993	3012#	3015#	3017#	3018	3022#	3023	3042#	3045#	3047#	3048	3052#
		3053	3072#	3075#	3077#	3078	3082#	3083	3102#	3105#	3107#	3108	3112#	3113
		3132#	3135#	3137#	3138	3142#	3143	3162#	3165#	3167#	3168	3172#	3173	3192#
		3195#	3197#	3198	3202#	3203	3222#	3225#	3227#	3228	3232#	3233	3252#	3255#
		3257#	3258	3262#	3263	3282#	3285#	3287#	3288	3292#	3293	3312#	3315#	3317#
		3318	3322#	3323	3342#	3345#	3347#	3348	3352#	3353	3372#	3375#	3377#	3378
		3382#	3383	3402#	3405#	3407#	3408	3412#	3413	3432#	3435#	3437#	3438	3442#
		3443	3462#	3465#	3467#	3468	3472#	3473	3492#	3495#	3497#	3498	3502#	3503
		3522#	3525#	3527#	3528	3532#	3533	3552#	3555#	3557#	3558	3562#	3563	3582#
		3585#	3587#	3588	3592#	3593	3612#	3615#	3617#	3618	3622#	3623	3642#	3645#
		3647#	3648	3652#	3653	3672#	3675#	3677#	3678	3682#	3683	3702#	3705#	3707#
		3708	3713#	3714	3734#	3737#	3739#	3740	3745#	3746	3766#	3769#	3771#	3772
		3777#	3778	3798#	3801#	3803#	3804	3809#	3810	3830#	3833#	3835#	3836	3841#
		3842	3862#	3865#	3867#	3868	3873#	3874	3894#	3897#	3899#	3900	3905#	3906
		4045#	4055#	4126#	4127#	4128#	4129	4135#	4136#	4141#	4144#	4163	4173#	4223
		4237#												
R4	=:000004	542#	1145#	1147	1167#	1169	1189#	1191	1211#	1213#	1214	1239#	1247#	1269#
		1277#	1299#	1307#	1329#	1337#	1359#	1367#	1389#	1397#	1419#	1427#	1449#	1457#
		1479#	1487#	1509#	1517#	1539#	1547#	1566#	1586#	1606#	1626#	1646#	1674#	1695#

1722*	1743*	1770*	1791*	1810*	1811	1815*	1816	1835*	1836	1840*	1841	1860*
1861	1865*	1866	1885*	1886	1890*	1891	1910*	1911	1915*	1916	1935*	1936
1940*	1941	1960*	1961	1965*	1966	1985*	1986	1990*	1991	2010*	2011	2015*
2016	2035*	2036	2040*	2041	2060*	2061	2065*	2066	2085*	2086	2090*	2091
2110*	2111	2115*	2116	2135*	2136	2140*	2141	2160*	2161	2165*	2166	2185*
2186	2190*	2191	2210*	2211	2215*	2216	2235*	2236	2240*	2241	2260*	2261
2265*	2266	2285*	2286	2290*	2291	2310*	2311	2315*	2316	2335*	2336	2340*
2341	2360*	2361	2365*	2366	2385*	2386	2390*	2391	2410*	2411	2415*	2416
2435*	2436	2440*	2441	2460*	2461	2465*	2466	2485*	2486	2490*	2491	2510*
2511	2515*	2516	2535*	2536	2540*	2541	2560*	2561	2565*	2566	2585*	2586*
2587	2591*	2592*	2593	2612*	2613*	2614	2618*	2619*	2620	2639*	2640*	2641
2645*	2646*	2647	2666*	2667*	2668	2672*	2673*	2674	2693*	2694*	2695	2699*
2700*	2701	2720*	2721*	2722	2726*	2727*	2728	2747*	2748*	2749	2753*	2754*
2755	2778*	2779	2783*	2784	2808*	2809	2813*	2814	2838*	2839	2843*	2844
2868*	2869	2873*	2874	2898*	2899	2903*	2904	2928*	2929	2933*	2934	2958*
2959	2963*	2964	2988*	2989	2993*	2994	3018*	3019	3023*	3024	3048*	3049
3053*	3054	3078*	3079	3083*	3084	3108*	3109	3113*	3114	3138*	3139	3143*
3144	3168*	3169	3173*	3174	3198*	3199	3203*	3204	3228*	3229	3233*	3234
3258*	3259	3263*	3264	3288*	3289	3293*	3294	3318*	3319	3323*	3324	3348*
3349	3353*	3354	3378*	3379	3383*	3384	3408*	3409	3413*	3414	3438*	3439
3443*	3444	3468*	3469	3473*	3474	3498*	3499	3503*	3504	3528*	3529	3533*
3534	3558*	3559	3563*	3564	3588*	3589	3593*	3594	3618*	3619	3623*	3624
3648*	3649	3653*	3654	3678*	3679	3683*	3684	3708*	3709*	3710	3714*	3715*
3716	3740*	3741*	3742	3746*	3747*	3748	3772*	3773*	3774	3778*	3779*	3780
3804*	3805*	3806	3810*	3811*	3812	3836*	3837*	3838	3842*	3843*	3844	3868*
3869*	3870	3874*	3875*	3876	3900*	3901*	3902	3906*	3907*	3908	3977*	3978*
3979*	3980*	3981*	3982	3983	4044*	4048*	4049*	4050	4072*	4073	4075	4077
4079*	4080	4081	4101*	4102*	4123*	4126	4130*	4131*	4132*	4162	4174*	4224
4236*												
543*	963*	986*	1009*	1032*	1055*	1078*	1101*	1124*	1150*	1172*	1194*	1217*
1236*	1245*	1266*	1275*	1296*	1305*	1326*	1335*	1356*	1365*	1386*	1395*	1416*
1425*	1446*	1455*	1476*	1485*	1506*	1515*	1536*	1545*	1564*	1584*	1604*	1624*
1644*	1671*	1682*	1692*	1719*	1730*	1740*	1767*	1778*	1788*	1808*	1809	1811
1814	1818*	1833*	1834	1836	1839	1843*	1858*	1859	1861	1864	1868*	1883*
1884	1886	1889	1893*	1908*	1909	1911	1914	1918*	1933*	1934	1936	1939
1943*	1958*	1959	1961	1964	1968*	1983*	1984	1986	1989	1993*	2008*	2009
2011	2014	2018*	2033*	2034	2036	2039	2043*	2058*	2059	2061	2064	2068*
2083*	2084	2086	2089	2093*	2108*	2109	2111	2114	2118*	2133*	2134	2136
2139	2143*	2158*	2159	2161	2164	2168*	2183*	2184	2186	2189	2193*	2208*
2209	2211	2214	2218*	2233*	2234	2236	2239	2243*	2258*	2259	2261	2264
2268*	2283*	2284	2286	2289	2293*	2308*	2309	2311	2314	2318*	2333*	2334
2336	2339	2343*	2358*	2359	2361	2364	2368*	2383*	2384	2386	2389	2393*
2408*	2409	2411	2414	2418*	2433*	2434	2436	2439	2443*	2458*	2459	2461
2464	2468*	2483*	2484	2486	2489	2493*	2508*	2509	2511	2514	2518*	2533*
2534	2536	2539	2543*	2558*	2559	2561	2564	2568*	2583*	2584	2587	2590
2595*	2610*	2611	2614	2617	2622*	2637*	2638	2641	2644	2649*	2664*	2665
2668	2671	2676*	2691*	2692	2695	2698	2703*	2718*	2719	2722	2725	2730*
2745*	2746	2749	2752	2757*	2773*	2779	2786*	2803*	2809	2816*	2833*	2839
2846*	2863*	2869	2876*	2893*	2899	2906*	2923*	2929	2936*	2953*	2959	2966*
2983*	2989	2996*	3013*	3019	3026*	3043*	3049	3056*	3073*	3079	3086*	3103*
3109	3116*	3133*	3139	3146*	3163*	3169	3176*	3193*	3199	3206*	3223*	3229
3236*	3253*	3259	3266*	3283*	3289	3296*	3313*	3319	3326*	3343*	3349	3356*
3373*	3379	3386*	3403*	3409	3416*	3433*	3439	3446*	3463*	3469	3476*	3493*
3499	3506*	3523*	3529	3536*	3553*	3559	3566*	3583*	3589	3596*	3613*	3619
3626*	3643*	3649	3656*	3673*	3679	3686*	3703*	3710	3718*	3735*	3742	3750*
3767*	3774	3782*	3799*	3806	3814*	3831*	3838	3846*	3863*	3870	3878*	3895*

RS =%000005

T153	016042	3890#
T16	002626	1259#
T17	002714	1289#
T2	001370	977#
T20	003002	1319#
T21	003070	1349#
T22	003156	1379#
T23	003244	1409#
T24	003332	1439#
T25	003420	1469#
T26	003506	1499#
T27	003574	1529#
T3	001464	1000#
T30	003662	1556#
T31	003736	1576#
T32	004012	1596#
T33	004066	1616#
T34	004142	1636#
T35	004216	1662#
T36	004346	1710#
T37	004476	1758#
T4	001560	1023#
T40	004626	1803#
T41	004716	1828#
T42	005006	1853#
T43	005076	1878#
T44	005166	1903#
T45	005256	1928#
T46	005346	1953#
T47	005436	1978#
T5	001654	1046#
T50	005526	2003#
T51	005616	2028#
T52	005706	2053#
T53	005776	2078#
T54	006066	2103#
T55	006156	2128#
T56	006246	2153#
T57	006336	2178#
T6	001750	1069#
T60	006426	2203#
T61	006516	2228#
T62	006606	2253#
T63	006676	2278#
T64	006766	2303#
T65	007056	2328#
T66	007146	2353#
T67	007236	2378#
T7	002044	1092#
T70	007326	2403#
T71	007416	2428#
T72	007506	2453#
T73	007576	2478#
T74	007666	2503#
T75	007756	2528#
T76	010046	2553#

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DZDMAB.PFC CROSS REFERENCE TABLE -- MACRO NAMES

.TRPSR	18	4012
.TRPTA	18	4287
.TYPER	18	4025
.VARIA	18	4196

E08

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 DZDMAB.PFC CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

ADD	900	901	3981	4022	4029	4041	4103	4118	4128						
ASL	3978	3979	4020	4083	4084	4085									
ASR	4130	4131	4132												
BEQ	894	932	1149	1171	1193	1216	1235	1244	1265	1274	1295	1304	1325	1334	1355
	1364	1385	1394	1415	1424	1445	1454	1475	1484	1505	1514	1535	1544	1563	1583
	1603	1623	1643	1670	1681	1691	1718	1729	1739	1766	1777	1787	1812	1817	1837
	1842	1862	1867	1887	1892	1912	1917	1937	1942	1962	1967	1987	1992	2012	2017
	2037	2042	2062	2067	2087	2092	2112	2117	2137	2142	2162	2167	2187	2192	2212
	2217	2237	2242	2262	2267	2287	2292	2312	2317	2337	2342	2362	2367	2387	2392
	2412	2417	2437	2442	2462	2467	2487	2492	2512	2517	2537	2542	2562	2567	2588
	2594	2615	2621	2642	2648	2669	2675	2696	2702	2723	2729	2750	2756	2780	2785
	2810	2815	2840	2845	2870	2875	2900	2905	2930	2935	2960	2965	2990	2995	3020
	3025	3050	3055	3080	3085	3110	3115	3140	3145	3170	3175	3200	3205	3230	3235
	3260	3265	3290	3295	3320	3325	3350	3355	3380	3385	3410	3415	3440	3445	3470
	3475	3500	3505	3530	3535	3560	3565	3590	3595	3620	3625	3650	3655	3680	3685
	3711	3717	3743	3749	3775	3781	3807	3813	3839	3845	3871	3877	3903	3909	3929
	3956	3962	3971	3985	3994	4006	4051	4074	4082	4140					
BGT	4078														
BHI	4093														
BIC	1213	1243	1273	1303	1333	1363	1393	1423	1453	1483	1513	1543	1678	1679	1688
	1726	1727	1736	1774	1775	1784	1814	1839	1864	1889	1914	1939	1964	1989	2014
	2039	2064	2089	2114	2139	2164	2189	2214	2239	2264	2289	2314	2339	2364	2389
	2414	2439	2464	2489	2514	2539	2564	2586	2590	2592	2613	2617	2619	2640	2644
	2646	2667	2671	2673	2694	2698	2700	2721	2725	2727	2748	2752	2754	2777	2807
	2837	2867	2897	2927	2957	2987	3017	3047	3077	3107	3137	3167	3197	3227	3257
	3287	3317	3347	3377	3407	3437	3467	3497	3527	3557	3587	3617	3647	3677	3707
	3709	3715	3739	3741	3747	3771	3773	3779	3803	3805	3811	3835	3837	3843	3867
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BITB	4096														
BLO	4095														
BLT	4076														
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	4138	4143	4148	4246											
BPL	3999	4031	4047	4054											
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	2468	2493	2518	2543	2568	2595	2622	2649	2676	2703	2730	2757	3924	3925	3949
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 DZDHAB.PFC CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

CMPB
 COM
 DEC
 DECB
 EMT
 HALT

INC
 JMP
 JSR
 MOV

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924	945													
4055	4133	4147												
4104	4137	4142												
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 DZDHAB.PFC CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

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	2081	2096	2106	2121	2131	2146	2156	2171	2181	2206	2231	2256	2281	2306	2331
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 DZDHAB.PFC CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

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	2981	3000	3011	3030	3041	3060	3071	3090	3101	3120	3131	3150	3161	3180	3191
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	1806	1821	1831	1846	1856	1871	1881	1896	1906	1921	1931	1946	1956	1971	1981
	1996	2006	2021	2031	2046	2056	2071	2081	2096	2106	2121	2131	2146	2156	2171
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ERRORS DETECTED: 0
 DEFAULT GLOBALS GENERATED: 0

*DZDHAB,DZDHAB.SEQ/CRF/SOL=UTIL2.P11,DZDHAB.PFC
 RUN-TIME: 23 38 6 SECONDS
 RUN-TIME RATIO: 129/69=1.8
 CORE USED: 12K (23 PAGES)

