TC11

BASIC LOGIC

MD-11-DZTCA-A

EP DZTCA A DL-A

OCT 1976

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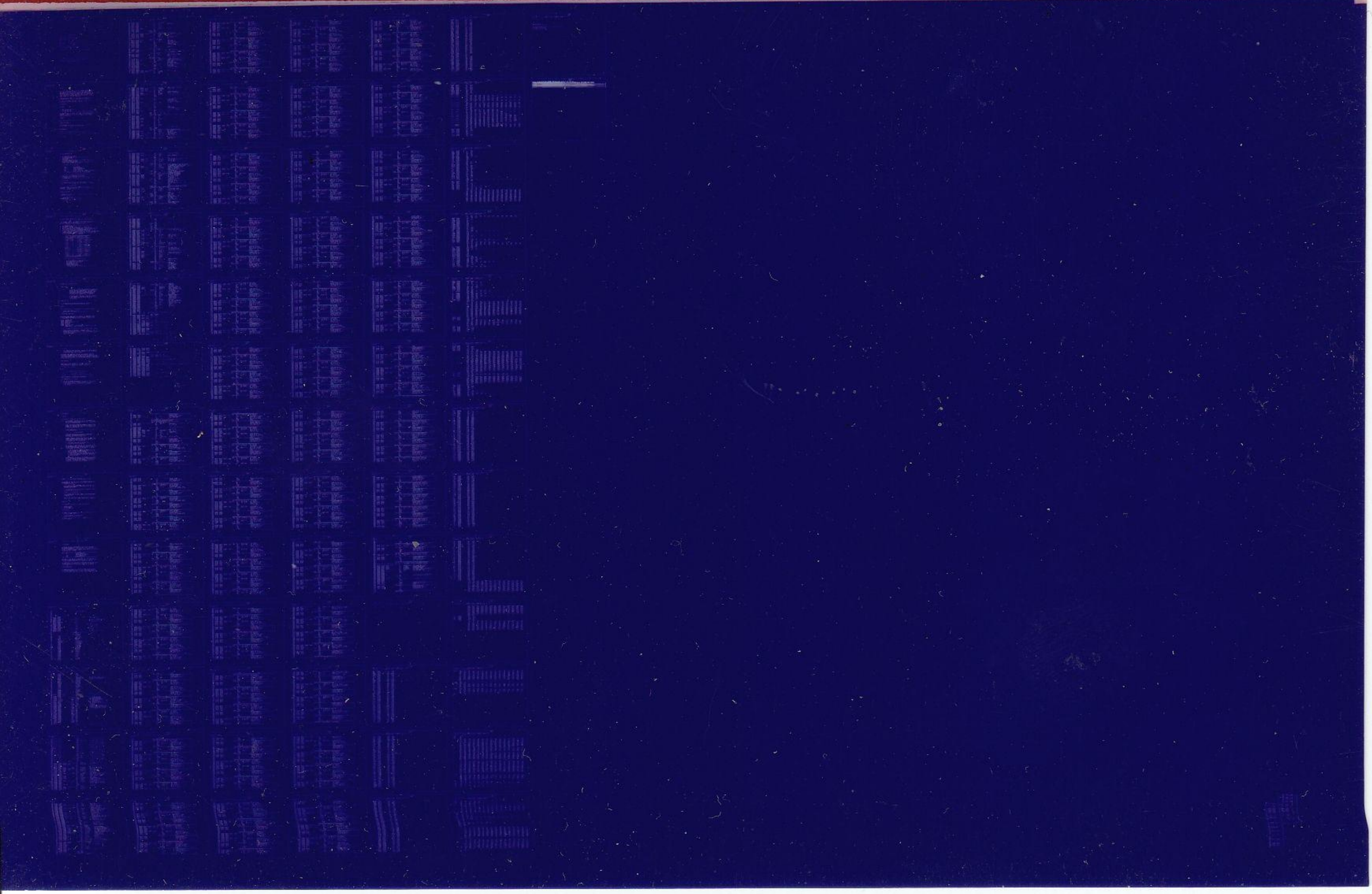

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IDENTIFICATION

PRODUCT CODE: MAINDEC-11-DZTCA-A-D

PRODUCT NAME: TC1 - TC11 TEST 1

DATE: MAY 1, 1972

MAINTAINER: DIAGNOSTIC GROUP

AUTHOR: L. R. KOLLER

THIS MAINDEC OBSOLETES MAINDEC-11-D3AB

TC1 - TC11 TEST 1 IS PART 1 OF A FIVE PROGRAM PACKAGE
USED TO TEST THE TC11 DECTAPE CONTROL.

1. ABSTRACT

TC1 - TC11 TEST 1 IS PART 1 OF A FIVE PROGRAM PACKAGE USED TO TEST THE TC11 DECTAPE CONTROL. TC1 IS A BIT CHECKER PROGRAM THAT CHECKS THAT EACH OF THE CONTROL'S REGISTERS CAN BE REFERENCED WITHOUT CAUSING BUS ERROR TRAPS, THAT READ-WRITE BITS CAN BE SET AND CLEAR, THAT READ-WRITE BITS ARE CLEARED BY RESET INSTRUCTION, AND THAT READ ONLY BITS ARE SET TO THEIR POWER CLEAR STATE BY RESET INSTRUCTION.

A SPECIAL ROUTINE (TEST 0) IS AVAILABLE IN THE PROGRAM AS A MAINTENANCE AID IN ADJUSTING THE TC11 CONTROL DELAYS.

ALL EXECUTION TIMES QUOTED ARE TYPICAL OF A 11/20 SYSTEM. EXECUTION TIMES IN OTHER PDP-11 SYSTEMS WILL VARY.

2. REQUIREMENTS

2.1 EQUIPMENT

A. PDP-11 SYSTEM (4K CORE).
B. ASR33/35 TELETYPE.
C. TC11 DECTAPE CONTROL AND AT LEAST ONE TU56 DUAL TRANSPORT.

THE TELETYPE AND TC11 CONTROL MUST HAVE THEIR STANDARD PERIPHERAL ADDRESSES, INTERRUPT LEVELS, AND INTERRUPT VECTOR ADDRESSES. REFER TO SECTION 7.2 IF YOUR SYSTEM DOES NOT HAVE STANDARD PERIPHERAL ADDRESSES.

2.2 STORAGE

THIS PROGRAM USES LOCATIONS 000000 THROUGH 016000.

3. LOADING PROCEDURE

THIS PROGRAM'S OBJECT TAPE IS PUNCHED IN ABSOLUTE FORMAT.
THE ABS LOADER IS USED TO LOAD THE PROGRAM.

4. USE PROCEDURE

SECTION 4.1 DESCRIBES USE PROCEDURE FOR RUNNING TC1 TEST.

SECTION 4.2 DESCRIBES USE OF TC11 DELAY ADJUSTMENT MAINTENANCE ROUTINE.

4.1 TC1 TEST USE PROCEDURE

A. ALL TRANSPORTS MUST BE OFF
B. SET WRTM SWITCH AND WALL SWITCH TO OFF POSITION.
C. LOAD ADDRESS 000200.
D. PRESS START.
E. THE PROGRAM IDENTIFIES ITSELF, TYPES SETUP INSTRUCTIONS, SR OPTIONS MESSAGE, AND HALTS.
F. PERFORM SETUP (STEPS A AND B), AND SELECT DESIRED SR OPTIONS, IF ANY. NORMAL SR SETTING IS 000000.

THIS PROGRAM'S SR OPTIONS ARE:

```
SR15 = 1          HALT ON ERROR
SR14 = 1          ENTER SCOPE MODE
SR13 = 1          INHIBIT ERROR PRINTOUT
SR11 = 1          INHIBIT ITERATION
SR10 = 1          HALT AT END OF TEST CURRENTLY EXECUTING
SR9  = 1          SELECT THE TEST SPECIFIED BY SR7 THROUGH SR0
SR7 THROUGH SR0 - NUMBER OF TEST TO BE SELECTED
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SECTION 7.1 GIVES A COMPLETE EXPLANATION OF SR OPTIONS.

G. PRESS CONT. THE PROGRAM BEGINS EXECUTION.
H. AT THE END OF EACH PASS THE TELETYPE BELL RINGS ONCE, AND THE CHARACTER "*" IS TYPED.
I. REFER TO SECTION 6.2 IF ERROR PRINTOUTS OCCUR.

EXECUTION TIME:

A. ONE NORMAL ERROR FREE PASS TAKES APPROXIMATELY 1 MINUTE.
B. ONE SINGLE ITERATION PASS (SR11=1) TAKES ABOUT 13 SECONDS.

******NOTE******

THE SINGLE ITERATION PASS IS A CONVENIENT WAY TO QUICKLY DETERMINE IF ANY SOLID PROBLEMS EXIST. FOR A THOROUGH TEST, THE NORMAL ITERATION PASS SHOULD BE RUN.

4.11 RESTART PROCEDURE

TO RESTART THE PROGRAM WITHOUT GENERATING THE INITIAL PRINTOUTS PROCEED AS FOLLOWS:

A. LOAD ADDRESS 001000
B. PERFORM STEP F OF PREVIOUS PROCEDURE.
C. PRESS START.
D. GO TO STEP G OF PREVIOUS PROCEDURE.

4.2 TC11 DELAY ADJUSTMENT MAINTENANCE ROUTINE - USE PROCEDURE

THIS PROGRAM'S TEST 0 IS A SPECIAL MAINTENANCE ROUTINE USED AS AN AID IN ADJUSTING THE VARIOUS DELAYS IN THE TC11 CONTROL. A SCOPE IS REQUIRED. TO USE PROCEED AS FOLLOWS:

A. ALL TRANSPORTS MUST BE OFF. WRTMSW -OFF, WALLSW - OFF.
B. LOAD ADDRESS 001000.
C. SET SR9 = 1, AND SR7 THROUGH SR0 TO 0. PRESS START.
D. TEST 0 IDENTIFIES ITSELF, REFERS USER TO THIS DOCUMENT, AND HALTS.
E. THERE ARE TEN DELAYS TO BE ADJUSTED BY MEANS OF THIS ROUTINE. AN 11TH DELAY ADJUSTMENT IS DESCRIBRD UNDER STEP G.
F. TO ADJUST THE FIRST TEN DELAYS PRESS CONT AND USING THE TABLE BELOW DISPLAY AND ADJUST THE POSITIVE PULSE FOR THE TIME SPECIFIED. THE SR SETTINGS DESCRIBED APPLY TO A PDP11/20 ONLY. FOR OTHER SYSTEMS SET SR TO OBTAIN APPROPRIATE WAVESHAPE.

PIN#	SR SETTING	ADJUST FOR	USING
D11H2	070000	120 MSECS	LOWER POT
D05H2	010000	10 MSECS	LOWER POT
D11K1	40	70 USECS	UPPER POT
D05K1	10	10 USECS	UPPER POT
B10K1	10	10 USECS	UPPER POT
A10F2	0	500 NSECS	UPPER POT
A10T2	0	500 NSECS	LOWER POT
D10T2	0	500 NSECS	LOWER POT
C04H2	10	#1-5 USEC	LOWER POT
C04K1	10	7 USECS	UPPER POT

ADJUST POT FOR MINIMUM TIME.

G. TO ADJUST THE 11TH DELAY PROCEED AS FOLLOWS:

1. SELECT UNIT0/REMOTE/NO TAPE/WRITE ENABLE.
2. SET WRTM SWITCH TO ON POSITION.
3. SET CONSOLE HALT SWITCH DOWN.
4. LOAD ADDRESS OF TCCM.
5. DEPOSIT NUMBER 000013.
6. DISREGARD ANY TRANSPORT MOTION.
7. DISPLAY PIN B10H2, AND ADJUST LOWER POT FOR 8.33 USECS.

5. PROGRAM AND/OR OPERATOR ACTION

5.1 NORMAL HALTS

LOC 001714 — COMMON HALT. THIS HALT IS CONTAINED IN A SUBROUTINE THAT IS CALLED BY THOSE PARTS OF THE PROGRAM THAT REQUIRE THAT THE PROCESSOR STOP. THIS HALT NORMALLY OCCURS UPON COMPLETION OF NON-ERROR PRINTOUTS. THE CONSOLE DATA LIGHTS DISPLAY THE ADDRESS OF INSTRUCTION THAT GENERATED THE HALT REQUEST.

LOC 001372 — ROUTINE END HALT. THIS HALT OCCURS UPON COMPLETION OF THE CURRENT TEST ROUTINE IF SR10 IS SET. THE CONSOLE DATA LIGHTS DISPLAY THE NUMBER OF THE TEST JUST COMPLETED.

5.2 NORMAL PRINTOUTS

ALL NON-ERROR PRINTOUTS ARE NORMAL PRINTOUTS. INSTRUCTION, TITLE, AND USER ERROR PRINTOUTS ARE NORMAL PRINTOUTS.

6. ERRORS

ERRORS ARE REPORTED IN THIS PROGRAM BY THE FOLLOWING METHODS:

A. UNCONDITIONAL ERROR HALTS, OR
B. ERROR PRINTOUT FOLLOWED BY OPTIONAL ERROR HALT.

6.1 UNCONDITIONAL ERROR HALTS

AN UNCONDITIONAL ERROR HALT WILL OCCUR AT THE ADDRESSES LISTED BELOW IF THROUGH HARDWARE OR SOFTWARE FAILURE, PROGRAM CONTROL IS TRANSFERRED TO AN UNEXPECTED AREA BETWEEN 000000 AND 000176.

000002 RESERVED AREA
000006 ERROR TRAP
000012 RESERVED INSTRUCTION TRAP
000016 DEBUG TRAP
000022 IOT TRAP
000026 POWER FAIL TRAP
000040 THROUGH 000176 - SYSTEM SOFTWARE AND INTERRUPT VECTOR AREA, EXCEPT FOR TC11 AND TTY VECTORS.

TO FIND OUT WHERE THE PROGRAM WAS AT THE TIME THE FAILURE OCCURRED,

A. EXAMINE CONTENTS OF REGISTER 6. (ADDRESS 177706).
B. TRANSFER THE CONTENTS OF REG 6 TO THE SR, LOAD ADDRESS AND EXAMINE.
C. THE DATA SHOWN IN THE DATA LIGHTS IS THE VALUE OF THE PC WHEN THE FAILURE OCCURRED.
D. LOCATE IN PROGRAM LISTING THE DISPLAYED PC VALUE.

(6.1 CONT'D)

E. THE INSTRUCTION THAT IMMEDIATELY PRECEDES THE ONE REFFRENCED BY THE DISPLAYED PC VALUE IS THE INSTRUCTION THAT WAS/WAS BEING EXECUTED WHEN THE FAILURE OCCURRED.

AN UNCONDITIONAL ERROR HALT FAILURE IS AN ABNORMAL CONDITION INDICATING A HARDWARE FAILURE, OR MOST UNLIKELY, A PROGRAM FAILURE. THIS PROGRAM ASSUMES THAT THE PROCESSOR IS IN OPERATING CONDITION IN ORDER TO PERFORM ITS TESTS. ANY FURTHER STEPS REQUIRED TO DIAGNOSE AN AN UNCONDITIONAL ERROR HALT ARE NOT WITHIN THE SCOPE OF THIS PROGRAM.

6.2 ERROR PRINTOUTS

ERROR PRINTOUTS ARE GENERATED BY THE "ERR" SUBROUTINE. THE "ERR" SUBROUTINE IS CALLED BY AN "ERROR" STATEMENT IN THE PROGRAM LISTING. AN ERROR PRINTOUT LOOKS AS FOLLOWS:

T XXX PC OYYYYY ICNT ZZZZ.

WHERE:

T XXX IS THE NUMBER OF FAILING ROUTINE (OCTAL),

PC OYYYYY IS THE ADDRESS OF ERROR CALL,

ICNT ZZZZ. IS THE ITERATION COUNT AT TIME OF FAILURE.

AFTER THE PRINTOUT IS COMPLETED, THE PROGRAM WILL HALT AT COMMON ERROR HALT AT LOC C01726 IF SR15 IS SET.

WHEN AN ERROR PRINTOUT OCCURS:

A. LOOK UP THE ADDRESS REFERENCED BY PC OYYYYY IN THE LISTING.
B. OPPOSITE THE PC VALUE AN "ERROR" STATEMENT WILL BE FOUND, AND IN THE COMMENTS SECTION, A DESCRIPTION OF THE ERROR.
C. AT THE BEGINNING OF THE TEST ROUTINE A DESCRIPTION OF THE TEST WILL BE FOUND.

7. MISCELLANEOUS

7.1 SR OPTIONS

THE STANDARD SR OPTIONS ARE DESCRIBED HERE.

SR15 HALT ON ERROR. WITH SR15 SET TO A 1, THE PROGRAM WILL HALT AFTER AN ERROR OCCURS. PRESSING CONT WILL CAUSE PROGRAM TO RESUME OPERATION.

SR14 SCOPE. THIS OPTION CAUSES THE PROGRAM TO REMAIN IN THE CURRENT TEST ROUTINE. WHEN THE OPTION IS REMOVED, THE PROGRAM WILL COMPLETE THE CURRENT ROUTINE, AND WILL THEN GO ON TO THE NEXT ROUTINE.

SR13 INHIBIT ERROR PRINTOUT. THIS OPTION IF SET, WILL REMOVE ALL ERROR PRINTOUTS.

*****NOTE*****

SCOPE MODE OPERATION IS ACHIEVED BY LOCKING THE PROGRAM IN THE CURRENT ROUTINE, INHIBITING ERROR PRINTOUTS, AND BYPASSING ERROR HALTS.

SR11 INHIBIT ITERATION. SETTING THIS OPTION WILL CAUSE THE PROGRAM TO EXECUTE EACH TEST ONLY ONCE, INSTEAD OF THE NORMAL NUMBER OF ITERATIONS SELECTED FOR EACH TEST. TWO POSSIBLE USES OF THIS OPTION ARE:

A. QUICK PASS. EACH TEST IS RUN ONLY ONCE.
B. TO SKIP OVER A FAILING ROUTINE.

SR10 HALT AT END OF CURRENT ROUTINE. WITH THE OPTION SET, THE PROGRAM WILL HALT AT THE END OF EACH TEST, AND DISPLAY IN DATA LIGHTS THE NUMBER OF THE TEST JUST COMPLETED. THREE POSSIBLE USES OF THIS OPTION ARE:

A. TO STEP THROUGH THE PROGRAM ONE ROUTINE AT A TIME.
B. WHEN THE PROGRAM HAS BEEN RUNNING FOR A WHILE, TO FIND OUT HOW FAR IT HAS PROGRESSED.
C. IN CASE OF A BLOW UP, ETC., TO STEP THROUGH ONE TEST AT A TIME UNTIL THE FAILURE REOCCURS. THE ROUTINE FOLLOWING THE PREVIOUSLY COMPLETED ROUTINE WOULD BE THE FAILING ROUTINE.

SR9 SELECT ROUTINE. WITH SR9 SET, THE PROGRAM WILL GO AND EXECUTE THE ROUTINE INDICATED BY SR7 THROUGH SR0, AFTER THE CURRENT ROUTINE HAS BEEN COMPLETED. IF THE OPTION IS REMOVED, THE PROGRAM WILL PROCEED TO EXECUTE THE ROUTINES FOLLOWING THE SELECTED ROUTINE.

7.2 TESTING TC11 AT NON-STANDWRD ADDRESSES AND/OR VECTORS

THIS PROGRAM CAN TEST THE TC11 AT NON-STANDARD ADDRESSES AND VECTORS PROVIDED THOSE ADDRESSES AND VECTORS ARE PROVIDED TO THE PROGRAM AS FOLLOWS:

A. AFTER LOADING PROGRAM REFER TO PROGRAM LISTING AND CHANGE LOCATIONS 001004 THRCUGH 001020 TO REFLECT THE NEW TC11 ADDRESSES AND VECTORS.

B. IF THE TELETYPE IS ALSO AT NON STANDARD ADDRESSES, CHANGE LOCATIONS 001022 AND 001024 ALSO.

C. PROCEED TO USE THE PROGRAM, OR

D. USING STANDARD DUMP ROUTINES, DUMP OUT THE ENTIRE PROGRAM IN ABSOLUTE FORMAT TO HAVE AN OBJECT TAPE THAT REFLECTS YOUR SYSTEM, OR

E. DUMP OUT ONLY LOCATIONS 001004 THROUGH 001024 IN ABSOLUTE FORMAT, AND LOAD IT ALSO AFTER LOADING THE MAIN PROGRAM.

8. DESCRIPTION

THIS PROGRAM IS ORGANIZED INTO THREE MAIN SECTIONS:

A. CONTROL ROUTINE,
B. TEST ROUTINES,
C. COMMON SUBROUTINES

8.1 CONTROL ROUTINE

THE CONTROL ROUTINE ASSUMES CONTROL WHEN THE PROGRAM IS STARTED. IT HAS THE FOLLOWING FUNCTIONS:

A. CONTROLS SEQUENCE OF TEST ROUTINES.
B. HONORS AND ACTS ON SR OPTIONS.

THE CONTROL ROUTINE IS CALLED FROM A TEST ROUTINE BY THE "SCOPE" STATEMENT.

8.2 TEST ROUTINES

THE ACTUAL TESTING IS PERFORMED BY A SET OF TEST ROUTINES THAT ARE NUMBERED SEQUENTIALLY FROM 0 TO 225 (OCTAL). EACH TEST ROUTINE IS PRECEDED BY A TEST HEADER THAT IS USED BY THE CONTROL ROUTINE IN ORDER TO PROPERLY SEQUENCE THROUGH THE TESTS. THE HEADER LOOKS AS FOLLOWS: (EXAMPLE)

```
**********************************************************************
T20:    20              ;ROUTINE NUMBER 20.                          *
        T2.             ;ADDRESS OF NEXT ROUTINE                     *
        :30.            ;TEST ITERATION COUNT                        *
        BAGA            ;SCOPE ENTRY POINT                           *
**********************************************************************
```

THE FIRST 2 ITEMS ARE SELF EXPLANATORY. THE TEST ITERATION COUNT INDICATES TO THE CONTROL ROUTINE THE NUMBER OF TIMES THE TEST SHOULD BE PERFORMED BEFORE GOING ON TO THE NEXT ROUTINE.

THE SCOPE ENTRY POINT INDICATES TO THE CONTROL ROUTINE THE ADDRESS IT SHOULD RETURN TO AFTER THE FIRST ITERATION. THE ADDRESS MAY NOT NECCESARILY POINT TO THE FIRST INSTRUCTION OF THE TEST.

8.3 COMMON SUBROUTINES

ALL SUBROUTINES NEEDED BY EITHER THE CONTROL ROUTINE OR TEST ROUTINES ARE GROUPED TOGETHER. THE MOST SIGNIFICANT SUBROUTINE IS THE "ERR" SUBROUTINE, WHICH IS CALLED BY AN "ERROR" STATEMENT AND TYPES THE TEST NUMBER AND PC VALUE WHEN A FAILURE OCCURS.

```
                                !
                                        .LIST   BIN,SEQ,LD,ME
                                        .NLIST  MC,MD
                                        .ABS
                                ;
                        000000          .=0
000000  000002                  .+2                     ;UNASSIGNED TRAP
000002  000000                  HALT
000004  000006          MACHER: .+2                     ;SP OVERFLOW, BUS ERROR TRAP
000006  000000                  HALT
000010  000012                  .+2                     ;RESERVED INSTRUCTION TRAP
000012  000000                  HALT
000014  000016                  .+2                     ;TRACE TRAP
000016  000000                  HALT
000020  000022                  .+2                     ;TRAP TO CALL IOX
000022  000000                  HALT
000024  000026                  .+2                     ;POWER FAIL TRAP
000026  000000                  HALT
000030  001510          EMTV:   EMTINT                  ;EMT TRAP
000032  000340                  PRTY7
000034  000036          TRPV:   .+2                     ;TRAP TRAP. SIMILAR TO EMT.
000036  000000                  HALT
                                ,LOC 40 THROUGH 376 FILLED WITH .+2 AND HALT.
                                .LIST
                                ;EQUATE STATEMENTS
                        177570          SR=177570
                        177776          CC=177776
                        177776          PSW=177776
                        001000          SPBOT=1000
                        000240          NOP=240
                        000000          OPEN=0
                        100000          MANUAL=BIT15
                        100000          BIT15=100000
                        040000          BIT14=40000
                        020000          BIT13=20000
                        010000          BIT12=10000
                        004000          BIT11=4000
                        002000          BIT10=2000
                        001000          BIT9=1000
                        000400          BIT8=400
                        000200          BIT7=200
                        000100          BIT6=100
                        000040          BIT5=40
                        000020          BIT4=20
                        000010          BIT3=10
                        000004          BIT2=4
                        000002          BIT1=2
                        000001          BIT0=1
                        000000          R0=%0
                        000001          R1=%1
                        000002          R2=%2
                        000003          R3=%3
                        000004          R4=%4
```

```
                000005                  R5=%5
                000006                  R6=%6
                000007                  R7=%7
                000007                  PC=%7
                005726                  POPSP=5726              ;POP THE STACK. SAME AS TST (6)+
                022626                  POPSP2=022626           ;POP STACK TWICE. SAME AS CMP (6)+,(6)+
                000340                  PRTY7=340               ;PRIORITY LEVEL DEFINITIONS
                000300                  PRTY6=300
                000240                  PRTY5=240
                000200                  PRTY4=200
                000140                  PRTY3=140
                000100                  PRTY2=100
                000040                  PRTY1=40
                000000                  PRTY0=0
                000007                  BELL=007
                177777                  TLAST=-1
                177777                  X=-1
                020000                  MAINT=BIT13
                000002                  RNUM=BIT1
                000001                  DO=BIT0
                000000                  EMTX=0
                000200                  .=200
000200  000167  000724                  JMP     START           ;GO TO START OF PROGRAM.
                001000                  .=1000
001000  000167  000154                  JMP     GETRDY
001004  177340          TCST:   177340  ;TC11 STATUS REGISTER.
001006  177342          TCCM:   177342  ;TC11 COMMAND REGISTER.
001010  177344          TCWC:   177344  ;TC11 WORD COUNT REGISTER.
001012  177346          TCBA:   177346  ;TC11 BUS ADDRESS REGISTER.
001014  177350          TCDT:   177350  ;TC11 DATA REGISTER.
001016  000214          TCVTR:  214     ;TC11 INTERRUPT VECTOR
001020  000300          TCLVL:  PRTY6   ;TC11 INTERRUPT PRIORITY LEVEL.
001022  177564          TPS:    177564  ;LSP CSR
001024  177566          TPB:    177566  ;LSP BUFFER
001026  000000          ICTR:   OPEN    ;CONTAINS CURRENT ITERATION COUNT
001030  000000          ICNT:   OPEN    ;CONTAINS ACCUMULATED ITERATION COUNT.
001032  003514          KSTART: TO      ;CONTAINS STARTING ROUTINE ADDR.
001034  000000          SCOPTR: OPEN    ;CONTAINS CURRENT SCOPE POINTER.
001036  000000          RTNNO:  OPEN
001040  000000          NXTST:  OPEN
001042  000000          CURTST: OPEN
001044  000000          RCNT:   OPEN
001046  000000          CRBUF:  OPEN
001050  000000          CRBUFA: OPEN
001052  000000          CARMSK: OPEN
001054  000000          ERCTR:  OPEN
001056  000000          CTRA:   OPEN
001060  000000          CTRB:   OPEN
001062  000000          CTRC:   OPEN
001064  000000          CTRD:   OPEN
001066  000000          PRVCNT: OPEN
001070  000000          RNDNMB: OPEN
001072  000000          TEMP:   OPEN
001074                  EMTTAB:
001074  002222                  .WORD   TYP             ;POINTER FOR EMT CALL TYPE
                                .LIST
```

```
                                                .WORD   TYPS            ;POINTER FOR EMT CALL TYPES
                                                .LIST
                                                .WORD   STAL            ;POINTER FOR EMT CALL STALL
                                                .LIST
                                                .WOPD   ERR             ;POINTER FOR EMT CALL ERROR
                                                .LIST
                                                .WORD   DTCHK           ;POINTER FOR EMT CALL DATCHK
                                                .LIST
                                                .WORD   CHLT            ;POINTER FOR EMT CALL CHALT
                                                .LIST
                                                .WORD   STTCV           ;POINTER FOR EMT CALL STC11V
                                                .LIST
                                                .WORD   EHLT            ;POINTER FOR EMT CALL EHALT
                                                .LIST
                                                .WORD   SRSETT          ;POINTER FOR EMT CALL SRESET
                                                .LIST
                                                .WORD   CHAINN          ;POINTER FOR EMT CALL SCOPE
                                                .LIST
                                                .WORD   SAVRG           ;POINTER FOR EMT CALL SAVREG
                                                .LIST
                                                .WORD   RSTRG           ;POINTER FOR EMT CALL RSTREG
                                                .LIST
                                                .WORD   ERR1            ;POINTER FOR EMT CALL ERROR1
                                                .LIST
                                                .WORD   DLY             ;POINTER FOR EMT CALL DELAY
                                                .LIST
001130  012706  001000          START:  MOV     #SPBOT,%6       ;SET BOTTOM OF SP STACK.
001134  012767  000340  176634          MOV     #PRTY7,PSW      ;SET PRIORITY 7.
001142  012767  000006  176634          MOV     #6,MACHER
001150  104000                          TYPE                    ;TYPE TITLE AND INSTRUCTIONS.
001152  003314                          POTIT
001154  004767  000516          SRSET:  JSR     %7,SETSR        ;SET SR OPTIONS DESIRED
001160  016767  177646  177652  GETRDY: MOV     KSTART,NXTST    ;ADDR OF 1ST ROUTINE TO NXTST
001166  012767  000006  176610  GTRDYX: MOV     #6,MACHER       ;RESET MACHER TRAP.
001174  012767  000340  176574          MOV     #PRTY7,PSW      ;SET PRIORITY 7.
001202  012706  001000                  MOV     #SPBOT,R6       ;SET BOTTOM OF STACK.
001206  104010                          SRESET                  ;ISSUE RESET.
001210  004767  000226          GTRDYA: JSR     R7,FORWD        ;ROLL FORWARD TO "NEXT" ROUTINE.
001214  032767  001000  176346  GTRDYB: BIT     #BIT9,SR        ;CHECK SELECT ROUTINE SWITCH
001222  001002                          BNE     GTRDYC          ;BRANCH IF SELECT ROUTINE SWITCH IS SET.
001224  000177  177612                  JMP     @CURTST         ;GO RUN CURRENT ROUTINE.
001230  016700  176334          GTRDYC: MOV     SR,R0           ;(SR) TO R0
001234  042700  177400                  BIC     #177400,R0      ;MASK UNDESIRED BITS
001240  126700  177572                  CMPB    RTNNO,R0        ;COMPARE RTNNO TO (R0)
001244  001002                          BNE     GTRDYD          ;BRANCH IF ROUTINE NOT FOUND YET.
001246  000177  177570                  JMP     @CURTST         ;GO RUN ROUTINE.
001252  022767  177777  177560  GTRDYD: CMP     #-1,NXTST       ;NO. CHECK FOR LAST ROUTINE.
001260  001353                          BNE     GTRDYA          ;BRANCH IF NOT LAST ROUTINE.
001262  104000                          TYPE                    ;TYPE INCORRECT RTN SELECTED.
001264  003271                          AINCRT
001266  104005                          CHALT                   ;COMMON HALT.
001270  000733                          BR      GETRDY          ;START OVER.
001272  016667  000002  177476  CHAINN: MOV     2(6),776        ;
001300  016767  177530  177466          MOV     SCOPTR,774      ;
001306  012706  000774                  MOV     #774,R6         ;
001312  005267  177512                  INC     ICNT            ;INCREMENT ICNT.
```

```
595  001316  001002                          BNE     CHNAC           ;BR IF RESULT NOT 0.
596  001320  005167  177504                  COM     ICNT            ;RESET ICNT TO -1.
597  001324  032767  040000  176236  CHNAC:  BIT     #BIT14,SR       ;CHECK FOR SCOPE OPTION.
598  001332  001401                          BEQ     CHNA            ;BRANCH IF SCOPE SW NOT SET.
599  001334  000002                  CHNAB:  RTI                     ;RETURN TO ROUTINE.
600  001336  032767  004000  176224  CHNA:   BIT     #BIT11,SR       ;TEST INHIBIT ITERATION SWITCH
601  001344  001003                          BNE     CHNAA           ;BRANCH IF INHIBIT ITERATION SW SET.
602  001346  005367  177454                  DEC     ICTR            ;DECREMENT ITERATION COUNT.
603  001352  001370                          BNE     CHNAB           ;BRANCH IF COUNT NOT 0.
604  001354  022626                  CHNAA:  POPSP2                  ;POP STACK TWICE
605  001356  032767  002000  176204          BIT     #BIT10,SR       ;ROUTINE END HALT SW SET? (SR10)
606  001364  001403                          BEQ     CHNB            ;BRANCH IF NOT SET.
607  001366  016700  177444                  MOV     RTNNO,R0        ;TEST # TO R0.
608  001372  000000                          HALT                    ;ROUTINE END HALT. TEST # IN LIGHTS.
609  001374  032767  001000  176166  CHNB:   BIT     #BIT9,SR        ;CHECK SELECT ROUTINE SWITCH
610  001402  001266                          BNE     GETRDY          ;BRANCH IF SELECT RTN SW SET
611  001404  022767  177777  177426          CMP     #-1,NXTST       ;LAST TEST?
612  001412  001265                          BNE     GTRDYX          ;BRANCH IF NOT LAST TEST.
613  001414  104000                          TYPE                    ;TYPE PROGRAM END BELL.
614  001416  003310                          .PRGEND
615  001420  013700  000042                  MOV     @#42,R0         ;GET CONTENTS OF 42.
616  001424  001405                          BEQ     HERE            ;BR IF 0.
617  001426  000005                          RESET                   ;NON-ZERO. ISSUE RESET.
618  001430  004710                  LOGIC:  JSR     PC,(0)          ;RETURN TO MONITOR.
619  001432  000240  000240  000240          .WORD   NOP,NOP,NOP
620  001440  000647                  HERE:   BR      GETRDY          ;GO REPEAT PROGRAM.
621  001442  016705  177372          FORWD:  MOV     NXTST,R5        ;ADDR OF NEXT ROUTINE TO R5.
622  001446  012567  177364                  MOV     (5)+,RTNNO      ;GET NEXT ROUTINE NUMBER.
623  001452  012567  177362                  MOV     (5)+,NXTST      ;GET ADDR OF NEXT "NEXT" ROUTINE.
624  001456  012567  177344                  MOV     (5)+,ICTR       ;GET ITERATION COUNT.
625  001462  012567  177346                  MOV     (5)+,SCOPTR     ;GET SCOPE LOOP ENTRY POINTER.
626  001466  010567  177350          FORWDA: MOV     R5,CURTST       ;ADDR OF NOW CURRENT TEST TO CURTST.
627  001472  012767  000001  177330          MOV     #1,ICNT         ;PRESET ICNT TO 1.
628  001500  016767  177332  176062          MOV     RTNNO,SR        ;DISPLAY ROUTINE #.
629  001506  000207                          RTS     R7              ;EXIT FORWD SUBROUTINE.
630  001510  010046                  EMTINT: MOV     R0,-(6)         ;PUSH R0.
631  001512  016600  000002                  MOV     2(6),R0         ;GET EMT PC.
632  001516  014000                          MOV     -(0),R0         ;GET EMT CALL.
633  001520  006300                          ASL     R0              ;TIMES 2.
634  001522  016000  171074                  MOV     EMTTAB-10000(0),R0      ;FORM EMT ADDR.
635  001526  000200                          RTS     R0              ;GO TO EMT RTN. RESTORE R0.
636                           ;SAVE REGS 0 TO 4 SUBROUTINE.
637  001530  012667  000030          SAVRG:  MOV     (6)+,SVRPC      ;SAVE PC AND PSW.
638  001534  012667  000026                  MOV     (6)+,SVRPSW
639  001540  010446                          MOV     %4   ,5)        ;SAVE REGS 0 - 4
640  001542  010346                          MOV     %3,  o)         ;IN STACK.
641  001544  010246                          MOV     %2,-(6)
642  001546  010146                          MOV     %1,-(6)
643  001550  010046                          MOV     %0,-(6)
644  001552  016746  000010                  MOV     SVRPSW,-(6)     ;RESTORE PC AND PSW.
645  001556  016746  000002                  MOV     SVRPC,-(6)
646  001562  000002                          RTI                     ;EXIT.
647  001564  000000                  SVRPC:  OPEN
648  001566  000000                  SVRPSW: OPEN
649                           ;RESTORE REGS 0 TO 4 SUBROUTINE.
650  001570  012667  000030          RSTRG:  MOV     (6)+,RSTPC      ;SAVE PC AND PSW.
```

```
                                                MOV     (6)+,RSTPSW
                                                MOV     (6)+,%0         ;RESTORE REGS 0 - 4
                                                MOV     (6)+,%1         ;FROM STACK.
                                                MOV     (6)+,%2
                                                MOV     (6)+,%3
                                                MOV     (6)+,%4
                                                MOV     RSTPSW,-(6)     ;RESTORE PC AND PSW.
                                                MOV     RSTPC,-(6)
                                                RTI                     ;EXIT
                                        RSTPC:  OPEN
                                        RSTPSW: OPEN
                                        ;ROUTINE TO SET TC11 INTERRUPT VECTOR AND PRIORITY
                                        STCV:   MOV     @(6),STPRA+2    ;MOVE VECTOR ADDR TO STPRA+2
                                                ADD     #2,@%6          ;SET UP EXIT
                                                MOV     TCVTR,%1
                                        STPRA:  MOV     #OPEN,(1)+      ;SET VECTOR ADDRESS
                                                MOV     TCLVL,(1)+      ;SET PRIORITY
                                                RTI                     ;EXIT
                                        ;ROUTINE TO ISSUE RESET.
                                        SRSETT: MOV     #52525,%0       ;DATA TO R0.
                                                COM     %0              ;COMPLEMENT (R0).
                                                MOV     %0,SRSETT+2     ;(R0) TO SRSETT+2.
                                                RESET                   ;ISSUE RESET. (R0) IS
                                                RTI                     ;DISPLAYED. EXIT.
                                        SETSR:  TYPE                    ;TYPE SELECT OPTION MESSAGE.
                                                ASETSR
                                                CHALT                   ;COMMON HALT.
                                                RTS     %7              ;EXIT.
                                        ;COMMON HALT ROUTINE
                                        CHLT:   MOV     @%6,%0          ;DEVELOP ADDRESS OF CALLER.
                                                SUB     #2,%0
                                                HALT                    ;HALT. ADDRESS OF CALL INSTRUCTION
                                                RTI                     ;IN DATA LIGHTS.
                                        ;CONDITIONAL ERROR HALT ROUTINE.
                                        EHLT:   TST     SR              ;CHECK FOR HALT ON ERROR.
                                                BPL     EHLTA           ;BRANCH IF NO HALT DESIRED.
                                                HALT                    ;HALT.
                                        EHLTA:  RTI                     ;IN DATA LIGHTS.
                                        ;DATA CHECK ROUTINE.
                                        DTCHK:  CMP     CRBUF,CRBUFA    ;COMPARE EXPECTED AND RECEIVED
                                                BEQ     DTCHKA          ;CHARS. BRANCH IF SAME.
                                                JSR     %5,OACNV        ;GO TO OCTAL TO ASCII CONVERT.
                                                CRBUF                   ;SOURCE ADDR.
                                                AWAS                    ;DESTINATION ADDR.
                                                3                       ;#OF DIGITS TO CONVERT.
                                                JSR     %5,OACNV        ;GO TO OCTAL TO ASCII CONVERT.
                                                CRBUFA                  ;SOURCE ADDR.
                                                AASB                    ;DESTINATION ADDR.
                                                3                       ;#OF DIGITS TO CONVERT.
                                                ERROR1
                                                ERDAT
                                        DTCHKA: RTI                     ; EXIT.
                                        ERR:    MOV     #-1,ERRB        ;SET UP ONE MESSAGE CALL.
                                                MOV     #240,ERRB+2
                                                CLR     ERRE
                                                BR      ERRA
```

```
                                ERR1:   MOV     @%6,ERRB        ;DEVELOP ADDT'L MESSAGE ADDR.
                                        MOV     @ERRB,ERRB      ;STORE AT ERRB.
                                        MOV     #-1,ERRB+2
                                        MOV     #2,ERRE
                                ERRA:   BIT     #BIT13,SR       ;INHIBIT ERROR PRINT?
                                        BNE     ERRC            ;BRANCH TO INHIBIT PRINT.
                                        MOV     @%6,ERRD        ;DEVELOP CALLING ADDR.
                                        SUB     #2,ERRD
                                        JSR     R5,OACNV        ;CONVERT TEST # TO ASCII.
                                        RTNNO
                                        ATNUMB
                                        3
                                        JSR     %5,OACNV        ;GO TO OCTAL TO ASCII CONVERT.
                                        ERRD                    ;SOURCE ADDR.
                                        APC                     ;DESTINATION ADDR.
                                        6                       ;#OF DIGITS TO CONVERT.
                                        JSR     R5,BDCNV        ;CONVERT ICNT TO DECIMAL ASCII.
                                        ICNT
                                        AICNT
                                        5
                                        TYPES                   ;TYPE:
                                        EMO                     ;ERROR HEADER,
                                ERRB:   OPEN                    ;ADDT'L ERROR MESSAGE IF ANY.
                                        -1
                                ERRC:   EHALT                   ;GO ERR HALT IF DESIRED.
                                        ADD     ERRE,@%6
                                        RTI                     ;EXIT.
                                ERRD:   OPEN
                                ERRE:   OPEN
                                ;RANDOM NUMBER GENERATOR. ROUTINE EXITS WITH NUMBER IN REGISTER 0.
                                RNGEN:  MOV     RP1,%0
                                        ROL     %0
                                        ROL     %0
                                        ADD     RP2,%0
                                        MOV     %0,RP1
                                        ROL     %0
                                        ROL     %0
                                        ADD     RP2,%0
                                        ROL     %0
                                        ROL     %0
                                        MOV     %0,RP2
                                        MOV     RP1,%0
                                        RTS     %7              ;EXIT. NUMBER IN R0
                                RP1:    1233
                                RP2:    7622
                                ;SUBROUTINE TO OUTPUT ASCII MESSAGE ON TELETYPE PRINTER.
                                TYP:    MOV     @%6,%0          ;GET ADDRESS THAT CONTAINS MESSAGE ADDRESS.
                                        ADD     #2,@%6          ;SET UP EXIT.
                                        MOV     @%0,%0          ;ADDRESS OF MESSAGE TO R0.
                                TYPA:   MOVB    (0)+,TYPDAT     ;GET CHARACTER
                                        BNE     TYPC            ;BRANCH IF NOT TERMINATOR..
                                        MOVB    #177,TYPDAT     ;OUTPUT RUBOUT.
                                        JSR     %7,TYPD
                                        RTI                     ;TERMINATOR CHAR. DONE. EXIT.
                                TYPC:   CMPB    #45,TYPDAT      ;CHECK FOR"%".
                                        BEQ     TYPF            ;BRANCH IF"%"
```

```
                                                JSR     %7,TYPD         ;TYPE CHAR IN TYPDAT
                                                BR      TYPA
002272  116777  000040  176524        TYPD:   MOVB    TYPDAT,@TPB     ;OUTPUT CHARACTER TO PRINTER
002300  105777  176516                        TSTB    @TPS            ;WAIT FOR DONE FLAG.
002304  100375                                BPL     .-4
002306  000207                                RTS     %7              ;EXIT
002310  112767  000015  000020        TYPF:   MOVB    #15,TYPDAT      ;MOVE CARRIAGE RETURN CODE TO TYPDAT
002316  004767  177750                        JSR     %7,TYPD         ;GO TYPE CHAR.
002322  112767  000012  000006        TYPG:   MOVB    #12,TYPDAT      ;MOVE LF CODE TO TYPDAT.
002330  004767  177736                        JSR     %7,TYPD         ;GO TYPE CHAR.
002334  000736                                BR      TYPA
002336  000000                        TYPDAT: OPEN
                                        ;SUBROUTINE TO OUTPUT A SERIES OF ASCII MESSAGES ON TELETYPE PRINTER
002340  011600                        TYPS:   MOV     @%6,%0          ;GET ADDRESS THAT CONTAINS MESSAGE ADDRESS
002342  062716  000002                        ADD     #2,@%6          ;UPDATE TO NEXT MESSAGE ADDRESS
002346  011067  000014                        MOV     @.0,TYPSB       ;ADDRESS OF MESSAGE TO TYPSB
002352  022767  177777  000006              CMP     #-1,TYPSB       ;CHECK FOR TERMINATOR
002360  001001                                BNE     TYPSA           ;BRANCH IF NOT TERMINATOR.
002362  000002                                RTI                     ;TERMINATOR, EXIT
002364  104000                        TYPSA:  TYPE                    ;CALL ON TYP SUB TO TYPE MESSAGE
002366  000000                        TYPSB:  OPEN                    ;ADDRESS OF MESSAGE GOES HERE
002370  000763                                BR      TYPS            ;GO PROCESS NEXT MESSAGE
                                        ;SUBROUTINE TO DELAY A SPECIFIED NUMBER OF MILLISECONDS
002372  011667  000036                DLY:    MOV     @%6,DLCNT       ;GET DELAY COUNT ADDRESS.
002376  062716  000002                        ADD     #2,@%6          ;SET UP EXIT ADDRESS
002402  017746  000026                        MOV     @DLCNT,-(6)     ;DELAY COUNT TO STACK
002406  005067  175364                        CLR     PSW             ;SET PRIORITY 0
002412  012746  000226                DLYA:   MOV     #226,-(6)       ;1 MSEC COUNT TO STACK
002416  005316                        DLYB:   DEC     @%6             ;DECREMENT 1 MSEC COUNT
002420  001376                                BNE     DLYB            ;BRANCH IF NOT 0.
002422  005726                                POPSP                   ;ZERO. UNCOVER MSECS. COUNT.
002424  005316                                DEC     @%6             ;DECREMENT IT
002426  001371                                BNE     DLYA            ;BR IF NOT DONE DELAYING
002430  005726                                POPSP                   ;DONE
002432  000002                                RTI                     ;EXIT.
002434  000000                        DLCNT:  OPEN                    ;CONTAINS MILLISECONDS COUNT ADDRESS.
                                        ;SUBROUTINE TO STALL A RANDOM NUMBER OF MILLISECONDS. MAXIMUM STALL
                                        ;DETERMINED BY CONTENTS OF LOC STLMSK.
002436  004767  177506                STAL:   JSR     %7,RNGEN        ;GO GET RANDOM NUMBER.
002442  046700  000014                        BIC     STLMSK,%0       ;# IN R0. APPLY STALL MASK.
002446  001404                                BEQ     STALB           ;BRANCH IF RESULT IS 0.
002450  010067  000002                        MOV     %0,STALA
002454  104015                                DELAY                   ;DELAY
002456  000000                        STALA:  OPEN                    ;DELAY COUNT
002460  000002                        STALB:  RTI                     ;DONE. EXIT.
002462  000000                        STLMSK: OPEN                    ;STALL MASK.
                                        ;SUBROUTINE TO GENERATE RANDOM CHARACTER COUNT
002464  004767  177460                GRCNT:  JSR     %7,RNGEN        ;GET RANDOM NUMBER
002470  046700  000010                        BIC     RCMSK,%0        ;APPLY MASK
002474  001773                                BEQ     GRCNT           ;TRY AGAIN IF RESULT 0
002476  010067  000004                        MOV     %0,RNCNT        ;COUNT TO RNCNT
002502  000207                                RTS     %7              ;EXIT.
002504  000000                        RCMSK:  OPEN                    ;RANDOM CHARACTER MASK.
002506  000000                        RNCNT:  OPEN                    ;RANDOM CHARACTER COUNT.
                                        ;SUBROUTINE TO INITIALIZE BINARY COUNT PATTERNS
002510  012767  177777  000014        INBIN:  MOV     #-1,?IND        ;SET ALL VARIABLES
```

```
819  002516  004567  000222                  JSR     %5,BMOVE        ;TO MINUS 1.
820  002522  002532                          RIND
821  002524  002533                          RIND+1
822  002526  000013                          11.
823  002530  000207                          RTS     %7              ;EXIT
824  002532  000000                  RIND:   OPEN
825  002534  000000                  PTO:    OPEN
826  002536  000000                  PT1:    OPEN
827  002540  000000                  FIND:   OPEN
828  002542  000000                  PTOP:   OPEN
829  002544  000000                  PT1P:   OPEN
830                                  ;SPECIAL BINARY COUNT PATTERN SUBROUTINE. EXITS WITH BIN CHAR IN R0
831  002546  016767  177762  177762  GTBIN:  MOV     PTO,PT1         ,PREVIOUS BIN CHAR TO PT1
832  002554  005167  177756                  COM     PT1
833  002560  005167  177746                  COM     RIND
834  002564  001002                          BNE     .+6
835  002566  005267  177744                  INC     PT1
836  002572  042767  177400  177736          BIC     #177400,PT1     ;MASK TO 8 BITS
837  002600  016767  177732  177726          MOV     PT1,PTO         ;SAVE BIN CHAR IN PTO
838  002606  016700  177724                  MOV     PT1,%0          ;BIN CHAR TO R0.
839  002612  000207                          RTS     %7              ;EXIT.
840  002614  016767  177722  177722  GTBINP: MOV     PT1P,PT1P       ;PREVIOUS BIN CHAR TO PT1P
841  002622  005167  177716                  COM     PT1P
842  002626  005167  177706                  COM     PINC
843  002632  001002                          BNE     .+6
844  002634  005267  177704                  INC     PT1P
845  002640  042767  177400  177676          BIC     #177400,PT1P    ;MASK TO 8 BITS.
846  002646  016767  177672  177666          MOV     PT1P,PTOP       ;SAVE BIN CHAR IN PTOP.
847  002654  016701  177664                  MOV     PT1P,%1         ;BIN CHAR TO R1.
848  002660  000207                          RTS     %7              ;EXIT.
849                                  ;OCTAL TO ASCII CONVERT ROUTINE
850  002662  013567  000054          OACNV:  MOV     @(5)+,OACNVX    ;GET OCTAL VALUE.
851  002666  012501                          MOV     (5)+,%1         ;GET DESTINATION ADDR.
852  002670  012502                          MOV     (5)+,%2         ;GET CONVERT COUNT.
853  002672  060201                          ADD     %2,%1           ;DEVELOP ADDR TO STORE 1ST CHAR.
854  002674  016703  000042          OACNVA: MOV     OACNVX,%3
855  002700  042703  177770                  BIC     #177770,%3      ;ISOLATE LEAST SIGNIFICANT DIGIT.
856  002704  062703  000060                  ADD     #60,%3          ;CONVERT DIGIT TO ASCII.
857  002710  110341                          MOVB    %3,-(1)         ;STORE ASCII CHARACTER.
858  002712  042767  000007  000022          BIC     #7,OACNVX
859  002720  006067  000016                  ROR     OACNVX
860  002724  006067  000012                  ROR     OACNVX
861  002730  006067  000006                  ROR     OACNVX
862  002734  005302                          DEC     %2              ;DONE ALL DIGITS?
863  002736  001356                          BNE     OACNVA          ;BRANCH IF NOT DONE.
864  002740  000205                          RTS     %5              ;DONE. EXIT.
865  002742  000000                  OACNVX: OPEN
866                                  ;SUBROUTINE TO MOVE A VARIABLE NUMBER OF BYTES.
867  002744  104012                  BMOVE:  SAVREG                  ;SAVE REGS.
868  002746  012501                          MOV     (5)+,%1         ;GET"FROM"ADDRESS
869  002750  012502                          MOV     (5)+,%2         ;GET"TO"ADDRESS
870  002752  012503                          MOV     (5)+,%3         ;GET COUNT
871  002754  112122                  BMOVA:  MOVB    (1)+,(2)+       ;MOVE BYTE
872  002756  005303                          DEC     %3              ;DECREMENT COUNT
873  002760  001375                          BNE     BMOVA           ;BRANCH IF NOT DONE.
874  002762  104013                          RSTREG                  ;RESTORE REGS.
```

```
                                        RTS     %5                      ;DONE EXIT
                                ;BINARY TO DECIMAL ASCII CONVERT SUBROUTINE.
                                BDCNV:  SAVREG                          ;SAVE REGS.
                                        MOV     @(5)+,R1                ;GET BINARY VALUE.
                                        MOV     #DECVAL,R0              ;ADDR OF DECVAL TO R0.
                                        MOV     #TENPWR,R2              ;ADDR OF 10 POWER TO R2.
                                        MOV     #5,R3                   ;SET UP FOR 5 CONVERSIONS.
                                BDCNVA: CLR     R4                      ;CLEAR RESULT.
                                BDCNVB: SUB     (2),R1                  ;10 POWER FROM VALUE.
                                        BCS     BDCNVC                  ;BR IF UNSUCCESSFUL.
                                        INC     R4                      ;;1 TO RESULT.
                                        BR      BDCNVB                  ;DO IT AGAIN.
                                BDCNVC: ADD     (2),R1                  ;RESTORE SUBTRACTED VALUE.
                                        ADD     #60,R4  ;CONVERT RESULT TO ASCII.
                                        MOVB    R4,(0)+                 ;STORE RESULT.
                                        TST     (2)+                    ;UPDATE 10 POWER ADDR.
                                        DEC     R3                      ;DONE 5 TIMES?
                                        BNE     BDCNVA                  ;BR IF NOT.
                                        MOV     (5)+,R1                 ;GET ADDR TO STORE ASCII.
                                        MOV     (5)+,R2                 ;GET # OF DIGITS REQUIRED.
                                        ADD     R2,R1                   ;START WITH LSD.
                                BDCNVD: MOVB    -(0),-(1)               ;TRANSFER CHARACTER.
                                        DEC     R2                      ;DONE?
                                        BNE     BDCNVD                  ;BR IF NOT.
                                        RSTREG                          ;RESTORE REGS.
                                        RTS     R5                      ;EXIT.
                                TENPWR: 10000.
                                        1000.
                                        100.
                                        10.
                                        1
                                DECVAL: .BYTE   040,040,040,040,040,040
                                ;ASCII MESSAGES
                                EMO:    .ASCII  '%%T '
                                ATNUMB: .ASCII  '     PC '
                                APC:    .ASCII  '        ICNT '
                                AICNT:  .ASCIZ  '     .%'
                                ERDAT:  .ASCII  '  DATA ERR  S/B: '
                                AASB:   .ASCII  '         WAS: '
                                AWAS:   .ASCII  '         PREVIOUS WAS '
                                APWAS:  .ASCIZ  '     . '
                                ASETSR: .ASCIZ  '%SET SR OPTIONS. NORMAL SR =0'
```

```
   931  003246  047511  051516  020056
   932  003254  047516  046522  046101
   933  003262  051440  020122  030075
   934  003270     000
   935  003271     045  047111  040526  AINCRT: .ASCIZ  '%INVALID TEST.'
   936  003276  044514  020104  042524
   937  003304  052123  000056
   938  003310     007                  APGEND: .BYTE   007
   939  003311     045  000052                  .ASCIZ  '%*'
   940  003314  022445  041524  020061  POTIT:  .ASCII  '%%TC1 TC11 TEST 1%'
   941  003322  041524  030461  052040
   942  003330  051505  020124  022461
   943  003336  046101  020114  047125          .ASCIZ  'ALL UNITS MUST BE DESELECTED'
   944  003344  052111  020123  052515
   945  003352  052123  041040  020105
   946  003360  042504  042523  042514
   947  003366  052103  042105     000  TOMSG:  .ASCII  '%%ROUTINE 0. TC11 CONTROL DELAY ADJUSTMENT ROUTINE.'
   948  003373     045  051045  052517
   949  003400  044524  042516  030040
   950  003406  020056  041524  030461
   951  003414  041440  047117  051124
   952  003422  046117  042040  046105
   953  003430  054501  040440  045104
   954  003436  051525  046524  047105
   955  003444  020124  047522  052125
   956  003452  047111  027105
   957  003456  051045  043105  051105          .ASCIZ  '%REFER TO PROGRAM DOCUMENT.%%'
   958  003464  052040  020117  051120
   959  003472  043517  040522  020115
   960  003500  047504  052503  042515
   961  003506  052116  022456  000045
   962                                  .EVEN
```

```
                                ;*******************************************************************************
000514  000000                  T0:     0                       ;ROUTINE NUMBER 0                               *
000516  003614                          T1                      ;ADDRESS OF NEXT ROUTINE                        *
000520  000001                          1                       ;TEST ITERATION COUNT                           *
000522  003524                          XAA                     ;SCOPE ENTRY POINT                              *
                                        .LIST
                                ;*******************************************************************************
                                ;TC11 CONTROL DELAY ADJUSTMENTS ROUTINE.
                                ;ROUTINE CAN BE EXECUTED ONLY BY SELECTING ROUTINE 0.
                                ;SR9=1 , SR6 THROUGH SR0 SET TO 0.
003524  032767  001000  174036  XAA:    BIT     #BIT9,SR        ;ROUTINE SELECT SWITCH SET?
003532  001001                        BNE     XAB             ;BR IF YES.
003534  104011                        SCOPE                   ;NO. GET OUT.
                                ;
003536  104000                  XAB:    TYPE                    ;TYPE ID AND INSTRUCTIONS.
003540  003373                          TOMSG
003542  104005                          CHALT                   ;WAIT FOR USER.
003544  012777  020003  175234  XAC:    MOV     #MAINT!RNUM!DO,@TCCM
003552  012777  000100  175224          MOV     #100,@TCST      ;SET CLOCK FOR TF1.
003560  005067  175244                  CLR     ICNT            ;CLEAR TIMER.
003564  005267  175240          XAD:    INC     ICNT            ;INCREMENT TIMER.
003570  026767  175234  173772          CMP     ICNT,SR
003576  101772                          BLOS    XAD
003600  005077  175200                  CLR     @TCST
003604  012777  021000  175174          MOV     #21000,@TCCM    ;SET 120 MSEC DELAY.
003612  000754                          BR      XAC
                                ;*******************************************************************************
003614  000001                  T1:     1                       ;ROUTINE NUMBER 1                               *
003616  003646                          T2                      ;ADDRESS OF NEXT ROUTINE                        *
003620  001750                          1000.                   ;TEST ITERATION COUNT                           *
003622  003624                          AAA                     ;SCOPE ENTRY POINT                              *
                                        .LIST
                                ;*******************************************************************************
                                ;TEST ABILITY TO REFERENCE TCCM WITHOUT TRAPPING.
003624  012767  003640  174152  AAA:    MOV     #AAB,MACHER     ;SET UP BUS ERROR TRAP.
003632  005777  175150                  TST     @TCCM           ;REFERENCE RREG.
003636  104011                        SCOPE                   ;OK IF NO TRAP OCCURS. SCOPE.
003640  104003                  AAB:    ERROR                   ;TRAPPED WHEN REFERENCING RREG.
003642  022626                          POPSP2
003644  104011                        SCOPE                   ;SCOPE
                                ;*******************************************************************************
003646  000002                  T2:     2                       ;ROUTINE NUMBER 2                               *
003650  003700                          T3                      ;ADDRESS OF NEXT ROUTINE                        *
003652  001750                          1000.                   ;TEST ITERATION COUNT                           *
003654  003656                          ABA                     ;SCOPE ENTRY POINT                              *
                                        .LIST
                                ;*******************************************************************************
                                ;TEST ABILITY TO REFERENCE TCST WITHOUT TRAPPING.
003656  012767  003672  174120  ABA:    MOV     #ABB,MACHER     ;SET UP BUS ERROR TRAP.
003664  005777  175114                  TST     @TCST           ;REFERENCE RREG.
003670  104011                        SCOPE                   ;OK IF NO TRAP OCCURS. SCOPE.
003672  104003                  ABB:    ERROR                   ;TRAPPED WHEN REFERENCING RREG.
003674  022626                          POPSP2
003676  104011                        SCOPE                   ;SCOPE
                                ;*******************************************************************************
```

```
1019  003700  000003                  T3:     3                       ;ROUTINE NUMBER 3                       *
1020  003702  003732                          T4                      ;ADDRESS OF NEXT ROUTINE                *
1021  003704  001750                          1000.                   ;TEST ITERATION COUNT                   *
1022  003706  003710                          ACA                     ;SCOPE ENTRY POINT                      *
1023                                          .LIST
1024                                  ;*************************************************************************
1025                                  ;TEST ABILITY TO REFERENCE TCDT WITHOUT TRAPPING.
1026  003710  012767  003724  174066  ACA:    MOV     #ACB,MACHER     ;SET UP BUS ERROR TRAP.
1027  003716  005777  175072                  TST     @TCDT           ;REFERENCE RREG.
1028  003722  104011                          SCOPE                   ;OK IF NO TRAP OCCURS. SCOPE.
1029  003724  104003                  ACB:    ERROR                   ;TRAPPED WHEN REFERENCING RREG.
1030  003726  022626                          POPSP2
1031  003730  104011                          SCOPE                   ;SCOPE
1032                                  ;*************************************************************************
1033  003732  000004                  T4:     4                       ;ROUTINE NUMBER 4                       *
1034  003734  003764                          T5                      ;ADDRESS OF NEXT ROUTINE                *
1035  003736  001750                          1000.                   ;TEST ITERATION COUNT                   *
1036  003740  003742                          ADA                     ;SCOPE ENTRY POINT                      *
1037                                          .LIST
1038                                  ;*************************************************************************
1039                                  ;TEST ABILITY TO REFERENCE TCBA WITHOUT TRAPPING.
1040  003742  012767  003756  174034  ADA:    MOV     #ADB,MACHER     ;SET UP BUS ERROR TRAP.
1041  003750  005777  175036                  TST     @TCBA           ;REFERENCE RREG.
1042  003754  104011                          SCOPE                   ;OK IF NO TRAP OCCURS. SCOPE.
1043  003756  104003                  ADB:    ERROR                   ;TRAPPED WHEN REFERENCING RREG.
1044  003760  022626                          POPSP2
1045  003762  104011                          SCOPE                   ;SCOPE
1046                                  ;*************************************************************************
1047  003764  000005                  T5:     5                       ;ROUTINE NUMBER 5                       *
1048  003766  004016                          T6                      ;ADDRESS OF NEXT ROUTINE                *
1049  003770  001750                          1000.                   ;TEST ITERATION COUNT                   *
1050  003772  003774                          AEA                     ;SCOPE ENTRY POINT                      *
1051                                          .LIST
1052                                  ;*************************************************************************
1053                                  ;TEST ABILITY TO REFERENCE TCWC WITHOUT TRAPPING.
1054  003774  012767  004010  174002  AEA:    MOV     #AEB,MACHER     ;SET UP BUS ERROR TRAP.
1055  004002  005777  175002                  TST     @TCWC           ;REFERENCE RREG.
1056  004006  104011                          SCOPE                   ;OK IF NO TRAP OCCURS. SCOPE.
1057  004010  104003                  AEB:    ERROR                   ;TRAPPED WHEN REFERENCING RREG.
1058  004012  022626                          POPSP2
1059  004014  104011                          SCOPE                   ;SCOPE
1060                                  ;*************************************************************************
1061  004016  000006                  T6:     6                       ;ROUTINE NUMBER 6                       *
1062  004020  004072                          T7                      ;ADDRESS OF NEXT ROUTINE                *
1063  004022  000144                          100.                    ;TEST ITERATION COUNT                   *
1064  004024  004026                          AFA                     ;SCOPE ENTRY POINT                      *
1065                                          .LIST
1066                                  ;*************************************************************************
1067                                  ;TEST THAT TCDT BIT0 CAN BE SET, AND CLEARED.
1068  004026  052777  000001  174760  AFA:    BIS     #BIT0,@TCDT     ;SET TCDT BIT0.
1069  004034  032777  000001  174752          BIT     #BIT0,@TCDT     ;SEE IF BIT IS SET.
1070  004042  001002                          BNE     .+6             ;BRANCH IF SET.
1071  004044  104003                          ERROR                   ;TCDT BIT0 FAILED TO SET.
1072  004046  104011                          SCOPE
1073  004050  042777  000001  174736          BIC     #BIT0,@TCDT     ;CLEAR TCDT BIT0.
1074  004056  032777  000001  174730          BIT     #BIT0,@TCDT     ;SEE IF BIT IS CLEAR.
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1075  004064  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1076  004066  104003                        ERROR                   ;TCDT BIT0 FAILED TO CLEAR.
1077  004070  104011                        SCOPE                   ;SCOPE.
1078                                ;*****************************************************************************
1079  004072  000007                T7:     7                       ;ROUTINE NUMBER 7                           *
1080  004074  004126                        T10                     ;ADDRESS OF NEXT ROUTINE                    *
1081  004076  000012                        10.                     ;TEST ITERATION COUNT                       *
1082  004100  004102                        BAFA                    ;SCOPE ENTRY POINT                          *
1083                                        .LIST
1084                                ;*****************************************************************************
1085                                ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT0
1086  004102  052777  000C01  174704 BAFA:   BIS     #BIT0,@TCDT     ;SET TCDT BIT0
1087  004110  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
1088  004112  032777  000001  174674        BIT     #BIT0,@TCDT     ;SEE IF BIT IS CLEAR.
1089  004120  001401                        BEQ     BAFB            ;BR IF BIT IS CLEAR.
1090  004122  104003                        ERROR                   ;RESET FAILED TO CLEAR TCDT BIT0
1091  004124  104011                BAFB:   SCOPE                   ;SCOPE.
1092                                ;*****************************************************************************
1093  004126  000010                T10:    10                      ;ROUTINE NUMBER 10                          *
1094  004130  004202                        T11                     ;ADDRESS OF NEXT ROUTINE                    *
1095  004132  000144                        100.                    ;TEST ITERATION COUNT                       *
1096  004134  004136                        AGA                     ;SCOPE ENTRY POINT                          *
1097                                        .LIST
1098                                ;*****************************************************************************
1099                                ;TEST THAT TCDT BIT1 CAN BE SET, AND CLEARED.
1100  004136  052777  000002  174650 AGA:    BIS     #BIT1,@TCDT     ;SET TCDT BIT1.
1101  004144  032777  000002  174642        BIT     #BIT1,@TCDT     ;SEE IF BIT IS SET.
1102  004152  001002                        BNE     .+6             ;BRANCH IF SET.
1103  004154  104003                        ERROR                   ;TCDT BIT1 FAILED TO SET.
1104  004156  104011                        SCOPE
1105  004160  042777  000002  174626        BIC     #BIT1,@TCDT     ;CLEAR TCDT BIT1.
1106  004166  032777  000002  174620        BIT     #BIT1,@TCDT     ;SEE IF BIT IS CLEAR.
1107  004174  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1108  004176  104003                        ERROR                   ;TCDT BIT1 FAILED TO CLEAR.
1109  004200  104011                        SCOPE                   ;SCOPE.
1110                                ;*****************************************************************************
1111  004202  000011                T11:    11                      ;ROUTINE NUMBER 11                          *
1112  004204  004236                        T12                     ;ADDRESS OF NEXT ROUTINE                    *
1113  004206  000012                        10.                     ;TEST ITERATION COUNT                       *
1114  004210  004212                        BAGA                    ;SCOPE ENTRY POINT                          *
1115                                        .LIST
1116                                ;*****************************************************************************
1117                                ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT1
1118  004212  052777  000002  174574 BAGA:   BIS     #BIT1,@TCDT     ;SET TCDT BIT1
1119  004220  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
1120  004222  032777  000002  174564        BIT     #BIT1,@TCDT     ;SEE IF BIT IS CLEAR.
1121  004230  001401                        BEQ     BAGB            ;BR IF BIT IS CLEAR.
1122  004232  104003                        ERROR                   ;RESET FAILED TO CLEAR TCDT BIT1
1123  004234  104011                BAGB:   SCOPE                   ;SCOPE.
1124                                ;*****************************************************************************
1125  004236  000012                T12:    12                      ;ROUTINE NUMBER 12                          *
1126  004240  004312                        T13                     ;ADDRESS OF NEXT ROUTINE                    *
1127  004242  000144                        100.                    ;TEST ITERATION COUNT                       *
1128  004244  004246                        AHA                     ;SCOPE ENTRY POINT                          *
1129                                        .LIST
1130                                ;*****************************************************************************
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                                        ;TEST THAT TCDT BIT2 CAN BE SET, AND CLEARED.
004246  052777  000004  174540  AHA:    BIS     #BIT2,@TCDT     ;SET TCDT BIT2.
004254  032777  000004  174532          BIT     #BIT2,@TCDT     ;SEE IF BIT IS SET.
004262  001002                          BNE     .+6             ;BRANCH IF SET.
004264  104003                          ERROR                   ;TCDT BIT2 FAILED TO SET.
004266  104011                          SCOPE
004270  042777  000004  174516          BIC     #BIT2,@TCDT     ;CLEAR TCDT BIT2.
004276  032777  000004  174510          BIT     #BIT2,@TCDT     ;SEE IF BIT IS CLEAR.
004304  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
004306  104003                          ERROR                   ;TCDT BIT2 FAILED TO CLEAR.
004310  104011                          SCOPE                   ;SCOPE.
                                        ;*****************************************************************
004312  000013                  T13:    13                      ;ROUTINE NUMBER 13                      *
004314  004346                          T14                     ;ADDRESS OF NEXT ROUTINE                *
004316  000012                          10.                     ;TEST ITERATION COUNT                   *
004320  004322                          BAHA                    ;SCOPE ENTRY POINT                      *
                                        .LIST
                                        ;*****************************************************************
                                        ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT2
004322  052777  000004  174464  BAHA:   BIS     #BIT2,@TCDT     ;SET TCDT BIT2
004330  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
004332  032777  000004  174454          BIT     #BIT2,@TCDT     ;SEE IF BIT IS CLEAR.
004340  001401                          BEQ     BAHB            ;BR IF BIT IS CLEAR.
004342  104003                          ERROR                   ;RESET FAILED TO CLEAR TCDT BIT2
004344  104011                  BAHB:   SCOPE                   ;SCOPE.
                                        ;*****************************************************************
004346  000014                  T14:    14                      ;ROUTINE NUMBER 14                      *
004350  004422                          T15                     ;ADDRESS OF NEXT ROUTINE                *
004352  000144                          100.                    ;TEST ITERATION COUNT                   *
004354  004356                          AIA                     ;SCOPE ENTRY POINT                      *
                                        .LIST
                                        ;*****************************************************************
                                        ;TEST THAT TCDT BIT3 CAN BE SET, AND CLEARED.
004356  052777  000010  174430  AIA:    BIS     #BIT3,@TCDT     ;SET TCDT BIT3.
004364  032777  000010  174422          BIT     #BIT3,@TCDT     ;SEE IF BIT IS SET.
004372  001002                          BNE     .+6             ;BRANCH IF SET.
004374  104003                          ERROR                   ;TCDT BIT3 FAILED TO SET.
004376  104011                          SCOPE
004400  042777  000010  174406          BIC     #BIT3,@TCDT     ;CLEAR TCDT BIT3.
004406  032777  000010  174400          BIT     #BIT3,@TCDT     ;SEE IF BIT IS CLEAR.
004414  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
004416  104003                          ERROR                   ;TCDT BIT3 FAILED TO CLEAR.
004420  104011                          SCOPE                   ;SCOPE.
                                        ;*****************************************************************
004422  000015                  T15:    15                      ;ROUTINE NUMBER 15                      *
004424  004456                          T16                     ;ADDRESS OF NEXT ROUTINE                *
004426  000012                          10.                     ;TEST ITERATION COUNT                   *
004430  004432                          BAIA                    ;SCOPE ENTRY POINT                      *
                                        .LIST
                                        ;*****************************************************************
                                        ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT3
004432  052777  000010  174354  BAIA:   BIS     #BIT3,@TCDT     ;SET TCDT BIT3
004440  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
004442  032777  000010  174344          BIT     #BIT3,@TCDT     ;SEE IF BIT IS CLEAR.
004450  001401                          BEQ     BAIB            ;BR IF BIT IS CLEAR.
004452  104003                          ERROR                   ;RESET FAILED TO CLEAR TCDT BIT3
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1187  004454  104011                  BAIB:   SCOPE                   ;SCOPE.
1188
1189  004456  000016                  T16:    16                      ;ROUTINE NUMBER 16                      *
1190  004460  004532                          T17                     ;ADDRESS OF NEXT ROUTINE                *
1191  004462  000144                          100.                    ;TEST ITERATION COUNT                   *
1192  004464  004466                          AJA                     ;SCOPE ENTRY POINT                      *
1193                                          .LIST
1194                                  ;*******************************************************************************
1195                                  ;TEST THAT TCDT BIT4 CAN BE SET, AND CLEARED.
1196  004466  052777  000020  174320  AJA:    BIS     #BIT4,@TCDT     ;SET TCDT BIT4.
1197  004474  032777  000020  174312          BIT     #BIT4,@TCDT     ;SEE IF BIT IS SET.
1198  004502  001002                          BNE     .+6             ;BRANCH IF SET.
1199  004504  104003                          ERROR                   ;TCDT BIT4 FAILED TO SET
1200  004506  104011                          SCOPE
1201  004510  042777  000020  174276          BIC     #BIT4,@TCDT     ;CLEAR TCDT BIT4.
1202  004516  032777  000020  174270          BIT     #BIT4,@TCDT     ;SEE IF BIT IS CLEAR.
1203  004524  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1204  004526  104003                          ERROR                   ;TCDT BIT4 FAILED TO CLEAR.
1205  004530  104011                          SCOPE                   ;SCOPE.
1206                                  ;*******************************************************************************
1207  004532  000017                  T17:    17                      ;ROUTINE NUMBER 17                      *
1208  004534  004566                          T20                     ;ADDRESS OF NEXT ROUTINE                *
1209  004536  000012                          10.                     ;TEST ITERATION COUNT                   *
1210  004540  004542                          BAJA                    ;SCOPE ENTRY POINT                      *
1211                                          .LIST
1212                                  ;*******************************************************************************
1213                                  ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT4
1214  004542  052777  000020  174244  BAJA:   BIS     #BIT4,@TCDT     ;SET TCDT BIT4
1215  004550  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
1216  004552  032777  000020  174234          BIT     #BIT4,@TCDT     ;SEE IF BIT IS CLEAR.
1217  004560  001401                          BEQ     BAJB            ;BR IF BIT IS CLEAR.
1218  004562  104003                          ERROR                   ;RESET FAILED TO CLEAR TCDT BIT4
1219  004564  104011                  BAJB:   SCOPE                   ;SCOPE.
1220                                  ;*******************************************************************************
1221  004566  000020                  T20:    20                      ;ROUTINE NUMBER 20                      *
1222  004570  004642                          T21                     ;ADDRESS OF NEXT ROUTINE                *
1223  004572  000144                          100.                    ;TEST ITERATION COUNT                   *
1224  004574  004576                          AKA                     ;SCOPE ENTRY POINT                      *
1225                                          .LIST
1226                                  ;*******************************************************************************
1227                                  ;TEST THAT TCDT BIT5 CAN BE SET, AND CLEARED.
1228  004576  052777  000040  174210  AKA:    BIS     #BIT5,@TCDT     ;SET TCDT BIT5.
1229  004604  032777  000040  174202          BIT     #BIT5,@TCDT     ;SEE IF BIT IS SET.
1230  004612  001002                          BNE     .+6             ;BRANCH IF SET.
1231  004614  104003                          ERROR                   ;TCDT BIT5 FAILED TO SET.
1232  004616  104011                          SCOPE
1233  004620  042777  000040  174166          BIC     #BIT5,@TCDT     ;CLEAR TCDT BIT5.
1234  004626  032777  000040  174160          BIT     #BIT5,@TCDT     ;SEE IF BIT IS CLEAR.
1235  004634  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1236  004636  104003                          ERROR                   ;TCDT BIT5 FAILED TO CLEAR.
1237  004640  104011                          SCOPE                   ;SCOPE.
1238                                  ;*******************************************************************************
1239  004642  000021                  T21:    21                      ;ROUTINE NUMBER 21                      *
1240  004644  004666                          T22                     ;ADDRESS OF NEXT ROUTINE                *
1241  004646  000012                          10.                     ;TEST ITERATION COUNT                   *
1242  004650  004656                          BAKA                    ;SCOPE ENTRY POINT                      *
```

```
                                        .LIST
                                ;*****************************************************************************
                                ;TEST THAT RESET INSTRUCTION CLEARS TCDT BITS
004652  052777  000040  174134 BAKA:   BIS     #BIT5,@TCDT     ;SET TCDT BITS
004660  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
004662  032777  000040  174124        BIT     #BIT5,@TCDT     ;SEE IF BIT IS CLEAR.
004670  001401                        BEQ     BAKB            ;BR IF BIT IS CLEAR.
004672  104003                        ERROR                   ;RESET FAILED TO CLEAR TCDT BITS
004674  104011                BAKB:   SCOPE                   ;SCOPE.
                                ;*****************************************************************************
004676  000022                T22:    22                      ;ROUTINE NUMBER 22                      *
004700  004752                        T23                     ;ADDRESS OF NEXT ROUTINE                *
004702  000144                        100.                    ;TEST ITERATION COUNT                   *
004704  004706                        ALA                     ;SCOPE ENTRY POINT                      *
                                        .LIST
                                ;*****************************************************************************
                                ;TEST THAT TCDT BIT6 CAN BE SET, AND CLEARED.
004706  052777  000100  174100 ALA:    BIS     #BIT6,@TCDT     ;SET TCDT BIT6.
004714  032777  000100  174072        BIT     #BIT6,@TCDT     ;SEE IF BIT IS SET.
004722  001002                        BNE     .+6             ;BRANCH IF SET.
004724  104003                        ERROR                   ;TCDT BIT6 FAILED TO SET.
004726  104011                        SCOPE
004730  042777  000100  174056        BIC     #BIT6,@TCDT     ;CLEAR TCDT BIT6.
004736  032777  000100  174050        BIT     #BIT6,@TCDT     ;SEE IF BIT IS CLEAR.
004744  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
004746  104003                        ERROR                   ;TCDT BIT6 FAILED TO CLEAR.
004750  104011                        SCOPE                   ;SCOPE.
                                ;*****************************************************************************
004752  000023                T23:    23                      ;ROUTINE NUMBER 23                      *
004754  005006                        T24                     ;ADDRESS OF NEXT ROUTINE                *
004756  000012                        10.                     ;TEST ITERATION COUNT                   *
004760  004762                        BALA                    ;SCOPE ENTRY POINT                      *
                                        .LIST
                                ;*****************************************************************************
                                ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT6
004762  052777  000100  174024 BALA:   BIS     #BIT6,@TCDT     ;SET TCDT BIT6
004770  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
004772  032777  000100  174014        BIT     #BIT6,@TCDT     ;SEE IF BIT IS CLEAR.
005000  001401                        BEQ     BALB            ;BR IF BIT IS CLEAR.
005002  104003                        ERROR                   ;RESET FAILED TO CLEAR TCDT BIT6
005004  104011                BALB:   SCOPE                   ;SCOPE.
                                ;*****************************************************************************
005006  000024                T24:    24                      ;ROUTINE NUMBER 24                      *
005010  005062                        T25                     ;ADDRESS OF NEXT ROUTINE                *
005012  000144                        100.                    ;TEST ITERATION COUNT                   *
005014  005016                        AMA                     ;SCOPE ENTRY POINT                      *
                                        .LIST
                                ;*****************************************************************************
                                ;TEST THAT TCDT BIT7 CAN BE SET, AND CLEARED.
005016  052777  000200  173770 AMA:    BIS     #BIT7,@TCDT     ;SET TCDT BIT7.
005024  032777  000200  173762        BIT     #BIT7,@TCDT     ;SEE IF BIT IS SET.
005032  001002                        BNE     .+6             ;BRANCH IF SET.
005034  104003                        ERROR                   ;TCDT BIT7 FAILED TO SET.
005036  104011                        SCOPE
005040  042777  000200  173746        BIC     #BIT7,@TCDT     ;CLEAR TCDT BIT7.
005046  032777  000200  173740        BIT     #BIT7,@TCDT     ;SEE IF BIT IS CLEAR.
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1299  005054  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1300  005056  104003                        ERROR                   ;TCDT BIT7 FAILED TO CLEAR.
1301  005060  104011                        SCOPE                   ;SCOPE.
1302                                  ;*************************************************************************
1303  005062  000025                  T25:  25                      ;ROUTINE NUMBER 25                       *
1304  005064  005116                        T26                     ;ADDRESS OF NEXT ROUTINE                 *
1305  005066  000012                        10.                     ;TEST ITERATION COUNT                    *
1306  005070  005072                        BAMA                    ;SCOPE ENTRY POINT                       *
1307                                        .LIST
1308                                  ;*************************************************************************
1309                                  ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT7
1310  005072  052777  000200  173714  BAMA: BIS     #BIT7,@TCDT     ;SET TCDT BIT7
1311  005100  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
1312  005102  032777  000200  173704        BIT     #BIT7,@TCDT     ;SEE IF BIT IS CLEAR.
1313  005110  001401                        BEQ     BAMB            ;BR IF BIT IS CLEAR.
1314  005112  104003                        ERROR                   ;RESET FAILED TO CLEAR TCDT BIT7
1315  005114  104011                  BAMB: SCOPE                   ;SCOPE.
1316                                  ;*************************************************************************
1317  005116  000026                  T26:  26                      ;ROUTINE NUMBER 26                       *
1318  005120  005172                        T27                     ;ADDRESS OF NEXT ROUTINE                 *
1319  005122  000144                        100.                    ;TEST ITERATION COUNT                    *
1320  005124  005126                        ANA                     ;SCOPE ENTRY POINT                       *
1321                                        .LIST
1322                                  ;*************************************************************************
1323                                  ;TEST THAT TCDT BIT8 CAN BE SET, AND CLEARED.
1324  005126  052777  000400  173660  ANA:  BIS     #BIT8,@TCDT     ;SET TCDT BIT8.
1325  005134  032777  000400  173652        BIT     #BIT8,@TCDT     ;SEE IF BIT IS SET.
1326  005142  001002                        BNE     .+6             ;BRANCH IF SET.
1327  005144  104003                        ERROR                   ;TCDT BIT8 FAILED TO SET.
1328  005146  104011                        SCOPE
1329  005150  042777  000400  173636        BIC     #BIT8,@TCDT     ;CLEAR TCDT BIT8.
1330  005156  032777  000400  173630        BIT     #BIT8,@TCDT     ;SEE IF BIT IS CLEAR.
1331  005164  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1332  005166  104003                        ERROR                   ;TCDT BIT8 FAILED TO CLEAR.
1333  005170  104011                        SCOPE                   ;SCOPE.
1334                                  ;*************************************************************************
1335  005172  000027                  T27:  27                      ;ROUTINE NUMBER 27                       *
1336  005174  005226                        T30                     ;ADDRESS OF NEXT ROUTINE                 *
1337  005176  000012                        10.                     ;TEST ITERATION COUNT                    *
1338  005200  005202                        BANA                    ;SCOPE ENTRY POINT                       *
1339                                        .LIST
1340                                  ;*************************************************************************
1341                                  ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT8
1342  005202  052777  000400  173604  BANA: BIS     #BIT8,@TCDT     ;SET TCDT BIT8
1343  005210  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
1344  005212  032777  000400  173574        BIT     #BIT8,@TCDT     ;SEE IF BIT IS CLEAR.
1345  005220  001401                        BEQ     BANB            ;BR IF BIT IS CLEAR.
1346  005222  104003                        ERROR                   ;RESET FAILED TO CLEAR TCDT BIT8
1347  005224  104011                  BANB: SCOPE                   ;SCOPE.
1348                                  ;*************************************************************************
1349  005226  000030                  T30:  30                      ;ROUTINE NUMBER 30                       *
1350  005230  005302                        T31                     ;ADDRESS OF NEXT ROUTINE                 *
1351  005232  000144                        100.                    ;TEST ITERATION COUNT                    *
1352  005234  005236                        AOA                     ;SCOPE ENTRY POINT                       *
1353                                        .LIST
1354                                  ;*************************************************************************
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1355                                                ;TEST THAT TCDT BIT9 CAN BE SET, AND CLEARED.
1356  005236  052777  001000  173550  AOA:    BIS     #BIT9,@TCDT     ;SET TCDT BIT9.
1357  005244  032777  001000  173542          BIT     #BIT9,@TCDT     ;SEE IF BIT IS SET.
1358  005252  001002                          BNE     .+6             ;BRANCH IF SET.
1359  005254  104003                          ERROR                   ;TCDT BIT9 FAILED TO SET.
1360  005256  104011                          SCOPE
1361  005260  042777  001000  173526          BIC     #BIT9,@TCDT     ;CLEAR TCDT BIT9.
1362  005266  032777  001000  173520          BIT     #BIT9,@TCDT     ;SEE IF BIT IS CLEAR.
1363  005274  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1364  005276  104003                          ERROR                   ;TCDT BIT9 FAILED TO CLEAR.
1365  005300  104011                          SCOPE                   ;SCOPE.
1366                                          ;*****************************************************************************
1367  005302  000031                  T31:    31                      ;ROUTINE NUMBER 31                                  *
1368  005304  005336                          T32                     ;ADDRESS OF NEXT ROUTINE                            *
1369  005306  000012                          10.                     ;TEST ITERATION COUNT                               *
1370  005310  005312                          BAOA                    ;SCOPE ENTRY POINT                                  *
1371                                          .LIST
1372                                          ;*****************************************************************************
1373                                          ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT9
1374  005312  052777  001000  173474  BAOA:   BIS     #BIT9,@TCDT     ;SET TCDT BIT9
1375  005320  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
1376  005322  032777  001000  173464          BIT     #BIT9,@TCDT     ;SEE IF BIT IS CLEAR.
1377  005330  001401                          BEQ     BAOB            ;BR IF BIT IS CLEAR.
1378  005332  104003                          ERROR                   ;RESET FAILED TO CLEAR TCDT BIT9
1379  005334  104011                  BAOB:   SCOPE                   ;SCOPE.
1380                                          ;*****************************************************************************
1381  005336  000032                  T32:    32                      ;ROUTINE NUMBER 32                                  *
1382  005340  005412                          T33                     ;ADDRESS OF NEXT ROUTINE                            *
1383  005342  000144                          100.                    ;TEST ITERATION COUNT                               *
1384  005344  005346                          APA                     ;SCOPE ENTRY POINT                                  *
1385                                          .LIST
1386                                          ;*****************************************************************************
1387                                          ;TEST THAT TCDT BIT10 CAN BE SET, AND CLEARED.
1388  005346  052777  002000  173440  APA:    BIS     #BIT10,@TCDT    ;SET TCDT BIT10.
1389  005354  032777  002000  173432          BIT     #BIT10,@TCDT    ;SEE IF BIT IS SET.
1390  005362  001002                          BNE     .+6             ;BRANCH IF SET.
1391  005364  104003                          ERROR                   ;TCDT BIT10 FAILED TO SET.
1392  005366  104011                          SCOPE
1393  005370  042777  002000  173416          BIC     #BIT10,@TCDT    ;CLEAR TCDT BIT10.
1394  005376  032777  002000  173410          BIT     #BIT10,@TCDT    ;SEE IF BIT IS CLEAR.
1395  005404  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1396  005406  104003                          ERROR                   ;TCDT BIT10 FAILED TO CLEAR.
1397  005410  104011                          SCOPE                   ;SCOPE.
1398                                          ;*****************************************************************************
1399  005412  000033                  T33:    33                      ;ROUTINE NUMBER 33                                  *
1400  005414  005446                          T34                     ;ADDRESS OF NEXT ROUTINE                            *
1401  005416  000012                          10.                     ;TEST ITERATION COUNT                               *
1402  005420  005422                          BAPA                    ;SCOPE ENTRY POINT                                  *
1403                                          .LIST
1404                                          ;*****************************************************************************
1405                                          ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT10
1406  005422  052777  002000  173364  BAPA:   BIS     #BIT10,@TCDT    ;SET TCDT BIT10
1407  005430  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
1408  005432  032777  002000  173354          BIT     #BIT10,@TCDT    ;SEE IF BIT IS CLEAR.
1409  005440  001401                          BEQ     BAPB            ;BR IF BIT IS CLEAR.
1410  005442  104003                          ERROR                   ;RESET FAILED TO CLEAR TCDT BIT10
```

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1411  005444  104011                    BAPB:   SCOPE                           ;SCOPE.
1412                                    ;*******************************************************************
1413  005446  000034                    T34:    34                              ;ROUTINE NUMBER 34                *
1414  005450  005522                            T35                             ;ADDRESS OF NEXT ROUTINE          *
1415  005452  000144                            100.                            ;TEST ITERATION COUNT             *
1416  005454  005456                            AQA                             ;SCOPE ENTRY POINT                *
1417                                            .LIST
1418                                    ;*******************************************************************
1419                                    ;TEST THAT TCDT BIT11 CAN BE SET, AND CLEARED.
1420  005456  052777  004000  173330    AQA:    BIS     #BIT11,@TCDT            ;SET TCDT BIT11.
1421  005464  032777  004000  173322            BIT     #BIT11,@TCDT            ;SEE IF BIT IS SET.
1422  005472  001002                            BNE     .+6                     ;BRANCH IF SET.
1423  005474  104003                            ERROR                           ;TCDT BIT11 FAILED TO SET.
1424  005476  104011                            SCOPE
1425  005500  042777  004000  173306            BIC     #BIT11,@TCDT            ;CLEAR TCDT BIT11.
1426  005506  032777  004000  173300            BIT     #BIT11,@TCDT            ;SEE IF BIT IS CLEAR.
1427  005514  001401                            BEQ     .+4                     ;BRANCH IF BIT IS CLEAR.
1428  005516  104003                            ERROR                           ;TCDT BIT11 FAILED TO CLEAR.
1429  005520  104011                            SCOPE                           ;SCOPE.
1430                                    ;*******************************************************************
1431  005522  000035                    T35:    35                              ;ROUTINE NUMBER 35                *
1432  005524  005556                            T36                             ;ADDRESS OF NEXT ROUTINE          *
1433  005526  000012                            10.                             ;TEST ITERATION COUNT             *
1434  005530  005532                            BAQA                            ;SCOPE ENTRY POINT                *
1435                                            .LIST
1436                                    ;*******************************************************************
1437                                    ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT11
1438  005532  052777  004000  173254    BAQA:   BIS     #BIT11,@TCDT            ;SET TCDT BIT11
1439  005540  104010                            SRESET                          ;ISSUE RESET TO CLEAR BIT.
1440  005542  032777  004000  173244            BIT     #BIT11,@TCDT            ;SEE IF BIT IS CLEAR.
1441  005550  001401                            BEQ     BAQB                    ;BR IF BIT IS CLEAR.
1442  005552  104003                            ERROR                           ;RESET FAILED TO CLEAR TCDT BIT11
1443  005554  104011                    BAQB:   SCOPE                           ;SCOPE.
1444                                    ;*******************************************************************
1445  005556  000036                    T36:    36                              ;ROUTINE NUMBER 36                *
1446  005560  005632                            T37                             ;ADDRESS OF NEXT ROUTINE          *
1447  005562  000144                            100.                            ;TEST ITERATION COUNT             *
1448  005564  005566                            ARA                             ;SCOPE ENTRY POINT                *
1449                                            .LIST
1450                                    ;*******************************************************************
1451                                    ;TEST THAT TCDT BIT12 CAN BE SET, AND CLEARED.
1452  005566  052777  010000  173220    ARA:    BIS     #BIT12,@TCDT            ;SET TCDT BIT12.
1453  005574  032777  010000  173212            BIT     #BIT12,@TCDT            ;SEE IF BIT IS SET.
1454  005602  001002                            BNE     .+6                     ;BRANCH IF SET.
1455  005604  104003                            ERROR                           ;TCDT BIT12 FAILED TO SET.
1456  005606  104011                            SCOPE
1457  005610  042777  01000      '6            BIC     #BIT12,@TCDT            ;CLEAR TCDT BIT12.
1458  005616  032777  01000(       'C            BIT     #BIT12,@TCDT            ;SEE IF BIT IS CLEAR.
1459  005624  001401                            BEQ     .+4                     ;BRANCH IF BIT IS CLEAR.
1460  005626  104003                            ERROR                           ;TCDT BIT12 FAILED TO CLEAR.
1461  005630  104011                            SCOPE                           ;SCOPE.
1462                                    ;*******************************************************************
1463  005632  000037                    T37:    37                              ;ROUTINE NUMBER 37                *
1464  005634  005666                            T40                             ;ADDRESS OF NEXT ROUTINE          *
1465  005636  000012                            10.                             ;TEST ITERATION COUNT             *
1466  005640  005642                            BARA                            ;SCOPE ENTRY POINT                *
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                                        .LIST
                                ;*************************** ****************************************
                                ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT12
005642  052777  010000  173144  BARA:   BIS     #BIT12,@TCDT    ;SET TCDT BIT12
005650  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
005652  032777  010000  173134          BIT     #BIT12,@TCDT    ;SEE IF BIT IS CLEAR.
005660  001401                          BEQ     BARB            ;BR IF BIT IS CLEAR.
005662  104003                          ERROR                   ;RESET FAILED TO CLEAR TCDT BIT12
005664  104011                  BARB:   SCOPE                   ;SCOPE.
                                ;*****************************************************************
005666  000040                  T40:    40                      ;ROUTINE NUMBER 40              *
005670  005742                          T41                     ;ADDRESS OF NEXT ROUTINE        *
005672  000144                          100.                    ;TEST ITERATION COUNT           *
005674  005676                          ASA                     ;SCOPE ENTRY POINT              *
                                        .LIST
                                ;*****************************************************************
                                ;TEST THAT TCDT BIT13 CAN BE SET, AND CLEARED.
005676  052777  020000  173110  ASA:    BIS     #BIT13,@TCDT    ;SET TCDT BIT13.
005704  032777  020000  173102          BIT     #BIT13,@TCDT    ;SEE IF BIT IS SET.
005712  001002                          BNE     .+6             ;BRANCH IF SET.
005714  104003                          ERROR                   ;TCDT BIT13 FAILED TO SET.
005716  104011                          SCOPE
005720  042777  020000  173066          BIC     #BIT13,@TCDT    ;CLEAR TCDT BIT13.
005726  032777  020000  173060          BIT     #BIT13,@TCDT    ;SEE IF BIT IS CLEAR.
005734  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
005736  104003                          ERROR                   ;TCDT BIT13 FAILED TO CLEAR.
005740  104011                          SCOPE                   ;SCOPE.
                                ;*****************************************************************
005742  000041                  T41:    41                      ;ROUTINE NUMBER 41              *
005744  005776                          T42                     ;ADDRESS OF NEXT ROUTINE        *
005746  000012                          10.                     ;TEST ITERATION COUNT           *
005750  005752                          BASA                    ;SCOPE ENTRY POINT              *
                                        .LIST
                                ;*****************************************************************
                                ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT13
005752  052777  020000  173034  BASA:   BIS     #BIT13,@TCDT    ;SET TCDT BIT13
005760  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
005762  032777  020000  173024          BIT     #BIT13,@TCDT    ;SEE IF BIT IS CLEAR.
005770  001401                          BEQ     BASB            ;BR IF BIT IS CLEAR.
005772  104003                          ERROR                   ;RESET FAILED TO CLEAR TCDT BIT13
005774  104011                  BASB:   SCOPE                   ;SCOPE.
                                ;*****************************************************************
005776  000042                  T42:    42                      ;ROUTINE NUMBER 42              *
006000  006052                          T43                     ;ADDRESS OF NEXT ROUTINE        *
006002  000144                          100.                    ;TEST ITERATION COUNT           *
006004  006006                          ATA                     ;SCOPE ENTRY POINT              *
                                        .LIST
                                ;*****************************************************************
                                ;TEST THAT TCDT BIT14 CAN BE SET, AND CLEARED.
006006  052777  040000  173000  ATA:    BIS     #BIT14,@TCDT    ;SET TCDT BIT14.
006014  032777  040000  172772          BIT     #BIT14,@TCDT    ;SEE IF BIT IS SET.
006022  001002                          BNE     .+6             ;BRANCH IF SET.
006024  104003                          ERROR                   ;TCDT BIT14 FAILED TO SET.
006026  104011                          SCOPE
006030  042777  040000  172756          BIC     #BIT14,@TCDT    ;CLEAR TCDT BIT14.
006036  032777  040000  172750          BIT     #BIT14,@TCDT    ;SEE IF BIT IS CLEAR.
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1523  006044  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1524  006046  104003                        ERROR                   ;TCDT BIT14 FAILED TO CLEAR.
1525  006050  104011                        SCOPE                   ;SCOPE.
1526                          ;*****************************************************************************
1527  006052  000043          T43:    43                              ;ROUTINE NUMBER 43                      *
1528  006054  006106                        T44                     ;ADDRESS OF NEXT ROUTINE                *
1529  006056  000012                        10.                     ;TEST ITERATION COUNT                   *
1530  006060  006062                        BATA                    ;SCOPE ENTRY POINT                      *
1531                                        .LIST
1532                          ;*****************************************************************************
1533                          ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT14
1534  006062  052777  040000  172724  BATA:  BIS     #BIT14,@TCDT    ;SET TCDT BIT14
1535  006070  104010                        RESET                   ;ISSUE RESET TO CLEAR BIT.
1536  006072  032777  040000  172714        BIT     #BIT14,@TCDT    ;SEE IF BIT IS CLEAR.
1537  006100  001401                        BEQ     BATB            ;BR IF BIT IS CLEAR.
1538  006102  104003                        ERROR                   ;RESET FAILED TO CLEAR TCDT BIT14
1539  006104  104011          BATB:   SCOPE                           ;SCOPE.
1540                          ;*****************************************************************************
1541  006106  000044          T44:    44                              ;ROUTINE NUMBER 44                      *
1542  006110  006162                        T45                     ;ADDRESS OF NEXT ROUTINE                *
1543  006112  000144                        100.                    ;TEST ITERATION COUNT                   *
1544  006114  006116                        AUA                     ;SCOPE ENTRY POINT                      *
1545                                        .LIST
1546                          ;*****************************************************************************
1547                          ;TEST THAT TCDT BIT15 CAN BE SET, AND CLEARED.
1548  006116  052777  100000  172670  AUA:   BIS     #BIT15,@TCDT    ;SET TCDT BIT15.
1549  006124  032777  100000  172662        BIT     #BIT15,@TCDT    ;SEE IF BIT IS SET.
1550  006132  001002                        BNE     .+6             ;BRANCH IF SET.
1551  006134  104003                        ERROR                   ;TCDT BIT15 FAILED TO SET.
1552  006136  104011                        SCOPE
1553  006140  042777  100000  172646        BIC     #BIT15,@TCDT    ;CLEAR TCDT BIT15.
1554  006146  032777  100000  172640        BIT     #BIT15,@TCDT    ;SEE IF BIT IS CLEAR.
1555  006154  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1556  006156  104003                        ERROR                   ;TCDT BIT15 FAILED TO CLEAR.
1557  006160  104011                        SCOPE                   ;SCOPE.
1558                          ;*****************************************************************************
1559  006162  000045          T45:    45                              ;ROUTINE NUMBER 45                      *
1560  006164  006216                        T46                     ;ADDRESS OF NEXT ROUTINE                *
1561  006166  000012                        10.                     ;TEST ITERATION COUNT                   *
1562  006170  006172                        BAUA                    ;SCOPE ENTRY POINT                      *
1563                                        .LIST
1564                          ;*****************************************************************************
1565                          ;TEST THAT RESET INSTRUCTION CLEARS TCDT BIT15
1566  006172  052777  100000  172614  BAJA:  BIS     #BIT15,@TCDT    ;SET TCDT BIT15
1567  006200  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
1568  006202  032777  100000  172604        BIT     #BIT15,@TCDT    ;SEE IF BIT IS CLEAR.
1569  006210  001401                        BEQ     BAUB            ;BR IF BIT IS CLEAR.
1570  006212  104003                        ERROR                   ;RESET FAILED TO CLEAR TCDT BIT15
1571  006214  104011          BAUB:   SCOPE                           ;SCOPE.
1572                          ;*****************************************************************************
1573  006216  000046          T46:    46                              ;ROUTINE NUMBER 46                      *
1574  006220  006272                        T47                     ;ADDRESS OF NEXT ROUTINE                *
1575  006222  000144                        100.                    ;TEST ITERATION COUNT                   *
1576  006224  006226                        AVA                     ;SCOPE ENTRY POINT                      *
1577                                        .LIST
1578                          ;*****************************************************************************
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1579                                        ;TEST THAT TCBA BIT1 CAN BE SET, AND CLEARED.
1580  006226  052777  000002  172556  AVA:  BIS     #BIT1,@TCBA     ;SET TCBA BIT1.
1581  006234  032777  000002  172550        BIT     #BIT1,@TCBA     ;SEE IF BIT IS SET.
1582  006242  001002                       BNE     .+6             ;BRANCH IF SET.
1583  006244  104003                       ERROR                   ;TCBA BIT1 FAILED TO SET.
1584  006246  104011                       SCOPE
1585  006250  042777  000002  172534       BIC     #BIT1,@TCBA     ;CLEAR TCBA BIT1.
1586  006256  032777  000002  172526       BIT     #BIT1,@TCBA     ;SEE IF BIT IS CLEAR.
1587  006264  001401                       BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1588  006266  104003                       ERROR                   ;TCBA BIT1 FAILED TO CLEAR.
1589  006270  104011                       SCOPE                   ;SCOPE.
1590                                      ;*****************************************************************************
1591  006272  000047                     T47:  47                  ;ROUTINE NUMBER 47                                *
1592  006274  006326                       T50                     ;ADDRESS OF NEXT ROUTINE                          *
1593  006276  000012                       10.                     ;TEST ITERATION COUNT                             *
1594  006300  006302                       BAVA                    ;SCOPE ENTRY POINT                                *
1595                                        .LIST
1596                                      ;*****************************************************************************
1597                                      ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT1
1598  006302  052777  000002  172502  BAVA: BIS     #BIT1,@TCBA     ;SET TCBA BIT1
1599  006310  104010                       SRESET                  ;ISSUE RESET TO CLEAR BIT.
1600  006312  032777  000002  172472       BIT     #BIT1,@TCBA     ;SEE IF BIT IS CLEAR.
1601  006320  001401                       BEQ     BAVB            ;BR IF BIT IS CLEAR.
1602  006322  104003                       ERROR                   ;RESET FAILED TO CLEAR TCBA BIT1
1603  006324  104011                 BAVB: SCOPE                   ;SCOPE.
1604                                      ;*****************************************************************************
1605  006326  000050                     T50:  50                  ;ROUTINE NUMBER 50                                *
1606  006330  006402                       T51                     ;ADDRESS OF NEXT ROUTINE                          *
1607  006332  000144                       100.                    ;TEST ITERATION COUNT                             *
1608  006334  006336                       AWA                     ;SCOPE ENTRY POINT                                *
1609                                        .LIST
1610                                      ;*****************************************************************************
1611                                      ;TEST THAT TCBA BIT2 CAN BE SET, AND CLEARED.
1612  006336  052777  000004  172446  AWA:  BIS     #BIT2,@TCBA     ;SET TCBA BIT2.
1613  006344  032777  000004  172440        BIT     #BIT2,@TCBA     ;SEE IF BIT IS SET.
1614  006352  001002                       BNE     .+6             ;BRANCH IF SET.
1615  006354  104003                       ERROR                   ;TCBA BIT2 FAILED TO SET.
1616  006356  104011                       SCOPE
1617  006360  042777  000004  172424       BIC     #BIT2,@TCBA     ;CLEAR TCBA BIT2.
1618  006366  032777  000004  172416       BIT     #BIT2,@TCBA     ;SEE IF BIT IS CLEAR.
1619  006374  001401                       BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1620  006376  104003                       ERROR                   ;TCBA BIT2 FAILED TO CLEAR.
1621  006400  104011                       SCOPE                   ;SCOPE.
1622                                      ;*****************************************************************************
1623  006402  000051                     T51:  51                  ;ROUTINE NUMBER 51                                *
1624  006404  006436                       T52                     ;ADDRESS OF NEXT ROUTINE                          *
1625  006406  000012                       10.                     ;TEST ITERATION COUNT                             *
1626  006410  006412                       BAWA                    ;SCOPE ENTRY POINT                                *
1627                                        .LIST
1628                                      ;*****************************************************************************
1629                                      ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT2
1630  006412  052777  000004  172372  BAWA: BIS     #BIT2,@TCBA     ;SET TCBA BIT2
1631  006420  104010                       SRESET                  ;ISSUE RESET TO CLEAR BIT.
1632  006422  032777  000004  172362       BIT     #BIT2,@TCBA     ;SEE IF BIT IS CLEAR.
1633  006430  001401                       BEQ     BAWB            ;BR IF BIT IS CLEAR.
1634  006432  104003                       ERROR                   ;RESET FAILED TO CLEAR TCBA BIT2
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  1635  006434  104011                    BAWB:   SCOPE                           ;SCOPE.
  1636
  1637  006436  000052                    T52:    52                              ;ROUTINE NUMBER 52                      *
  1638  006440  006512                            T53                             ;ADDRESS OF NEXT ROUTINE                *
  1639  006442  000144                            100.                            ;TEST ITERATION COUNT                   *
  1640  006444  006446                            AXA                             ;SCOPE ENTRY POINT                      *
  1641                                            .LIST
  1642
  1643                                    ;TEST THAT TCBA BIT3 CAN BE SET, AND CLEARED.
  1644  006446  052777  000010  172336    AXA:    BIS     #BIT3,@TCBA             ;SET TCBA BIT3.
  1645  006454  032777  000010  172330            BIT     #BIT3,@TCBA             ;SEE IF BIT IS SET.
  1646  006462  001002                            BNE     .+6                     ;BRANCH IF SET.
  1647  006464  104003                            ERROR                           ;TCBA BIT3 FAILED TO SET.
  1648  006466  104011                            SCOPE
  1649  006470  042777  000010  172314            BIC     #BIT3,@TCBA             ;CLEAR TCBA BIT3.
  1650  006476  032777  000010  172306            BIT     #BIT3,@TCBA             ;SEE IF BIT IS CLEAR.
  1651  006504  001401                            BEQ     .+4                     ;BRANCH IF BIT IS CLEAR.
  1652  006506  104003                            ERROR                           ;TCBA BIT3 FAILED TO CLEAR.
  1653  006510  104011                            SCOPE                           ;SCOPE.
  1654
  1655  006512  000053                    T53:    53                              ;ROUTINE NUMBER 53                      *
  1656  006514  006546                            T54                             ;ADDRESS OF NEXT ROUTINE                *
  1657  006516  000012                            10.                             ;TEST ITERATION COUNT                   *
  1658  006520  006522                            BAXA                            ;SCOPE ENTRY POINT                      *
  1659                                            .LIST
  1660
  1661                                    ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT3
  1662  006522  052777  000010  172262    BAXA:   BIS     #BIT3,@TCBA             ;SET TCBA BIT3
  1663  006530  104010                            SRESET                          ;ISSUE RESET TO CLEAR BIT.
  1664  006532  032777  000010  172252            BIT     #BIT3,@TCBA             ;SEE IF BIT IS CLEAR.
  1665  006540  001401                            BEQ     BAXB                    ;BR IF BIT IS CLEAR.
  1666  006542  104003                            ERROR                           ;RESET FAILED TO CLEAR TCBA BIT3
  1667  006544  104011                    BAXB:   SCOPE                           ;SCOPE.
  1668
  1669  006546  000054                    T54:    54                              ;ROUTINE NUMBER 54                      *
  1670  006550  006622                            T55                             ;ADDRESS OF NEXT ROUTINE                *
  1671  006552  000144                            100.                            ;TEST ITERATION COUNT                   *
  1672  006554  006556                            AYA                             ;SCOPE ENTRY POINT                      *
  1673                                            .LIST
  1674
  1675                                    ;TEST THAT TCBA BIT4 CAN BE SET, AND CLEARED.
  1676  006556  052777  000020  172226    AYA:    BIS     #BIT4,@TCBA             ;SET TCBA BIT4.
  1677  006564  032777  000020  172220            BIT     #BIT4,@TCBA             ;SEE IF BIT IS SET.
  1678  006572  001002                            BNE     .+6                     ;BRANCH IF SET.
  1679  006574  104003                            ERROR                           ;TCBA BIT4 FAILED TO SET.
  1680  006576  104011                            SCOPE
  1681  006600  042777  000020  172204            BIC     #BIT4,@TCBA             ;CLEAR TCBA BIT4.
  1682  006606  032777  000020  172176            BIT     #BIT4,@TCBA             ;SEE IF BIT IS CLEAR.
  1683  006614  001401                            BEQ     .+4                     ;BRANCH IF BIT IS CLEAR.
  1684  006616  104003                            ERROR                           ;TCBA BIT4 FAILED TO CLEAR.
  1685  006620  104011                            SCOPE                           ;SCOPE.
  1686
  1687  006622  000055                    T55:    55                              ;ROUTINE NUMBER 55                      *
  1688  006624  006656                            T56                             ;ADDRESS OF NEXT ROUTINE                *
  1689  006626  000012                            10.                             ;TEST ITERATION COUNT                   *
  1690  006630  006632                            BAYA                            ;SCOPE ENTRY POINT                      *
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1691                                            .LIST
1692                                    ;*****************************************************************
1693                                    ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT4
1694  006632  052777  000020  172152  BAYA:   BIS     #BIT4,@TCBA     ;SET TCBA BIT4
1695  006640  104010                  SRESET                  ;ISSUE RESET TO CLEAR BIT.
1696  006642  032777  000020  172142          BIT     #BIT4,@TCBA     ;SEE IF BIT IS CLEAR.
1697  006650  001401                  BEQ     BAYB            ;BR IF BIT IS CLEAR.
1698  006652  104003                  ERROR                   ;RESET FAILED TO CLEAR TCBA BIT4
1699  006654  104011          BAYB:   SCOPE                   ;SCOPE.
1700                                  ;*****************************************************************
1701  006656  000056                  T56:    56                      ;ROUTINE NUMBER 56                      *
1702  006660  006732                          T57                     ;ADDRESS OF NEXT ROUTINE                *
1703  006662  000144                          100.                    ;TEST ITERATION COUNT                   *
1704  006664  006666                          AZA                     ;SCOPE ENTRY POINT                      *
1705                                          .LIST
1706                                  ;*****************************************************************
1707                                  ;TEST THAT TCBA BITS CAN BE SET, AND CLEARED.
1708  006666  052777  000040  172116  AZA:    BIS     #BIT5,@TCBA     ;SET TCBA BITS.
1709  006674  032777  000040  172110          BIT     #BIT5,@TCBA     ;SEE IF BIT IS SET.
1710  006702  001002                  BNE     .+6             ;BRANCH IF SET.
1711  006704  104003                  ERROR                   ;TCBA BITS FAILED TO SET.
1712  006706  104011                  SCOPE
1713  006710  042777  000040  172074          BIC     #BIT5,@TCBA     ;CLEAR TCBA BIT5.
1714  006716  032777  000040  172066          BIT     #BIT5,@TCBA     ;SEE IF BIT IS CLEAR.
1715  006724  001401                  BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1716  006726  104003                  ERROR                   ;TCBA BITS FAILED TO CLEAR.
1717  006730  104011                  SCOPE                   ;SCOPE.
1718                                  ;*****************************************************************
1719  006732  000057                  T57:    57                      ;ROUTINE NUMBER 57                      *
1720  006734  006766                          T60                     ;ADDRESS OF NEXT ROUTINE                *
1721  006736  000012                          10.                     ;TEST ITERATION COUNT                   *
1722  006740  006742                          BAZA                    ;SCOPE ENTRY POINT                      *
1723                                          .LIST
1724                                  ;*****************************************************************
1725                                  ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT5
1726  006742  052777  000040  172042  BAZA:   BIS     #BIT5,@TCBA     ;SET TCBA BIT5
1727  006750  104010                  SRESET                  ;ISSUE RESET TO CLEAR BIT.
1728  006752  032777  000040  172032          BIT     #BIT5,@TCBA     ;SEE IF BIT IS CLEAR.
1729  006760  001401                  BEQ     BAZB            ;BR IF BIT IS CLEAR.
1730  006762  104003                  ERROR                   ;RESET FAILED TO CLEAR TCBA BIT5
1731  006764  104011          BAZB:   SCOPE                   ;SCOPE.
1732                                  ;*****************************************************************
1733  006766  000060                  T60:    60                      ;ROUTINE NUMBER 60                      *
1734  006770  007042                          T61                     ;ADDRESS OF NEXT ROUTINE                *
1735  006772  000144                          100.                    ;TEST ITERATION COUNT                   *
1736  006774  006776                          AABA                    ;SCOPE ENTRY POINT                      *
1737                                          .LIST
1738                                  ;*****************************************************************
1739                                  ;TEST THAT TCBA BIT6 CAN BE SET, AND CLEARED.
1740  006776  052777  000100  172006  AABA:   BIS     #BIT6,@TCBA     ;SET TCBA BIT6.
1741  007004  032777  000100  172000          BIT     #BIT6,@TCBA     ;SEE IF BIT IS SET.
1742  007012  001002                  BNE     .+6             ;BRANCH IF SET.
1743  007014  104003                  ERROR                   ;TCBA BIT6 FAILED TO SET.
1744  007016  104011                  SCOPE
1745  007020  042777  000100  171764          BIC     #BIT6,@TCBA     ;CLEAR TCBA BIT6.
1746  007026  032777  000100  171756          BIT     #BIT6,@TCBA     ;SEE IF BIT IS CLEAR.
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1747  007034  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1748  007036  104003                        ERROR                   ;TCBA BIT6 FAILED TO CLEAR.
1749  007040  104011                        SCOPE                   ;SCOPE.
1750                                  ;*****************************************************************************
1751  007042  000061                T61:    61                      ;ROUTINE NUMBER 61                          *
1752  007044  007076                        T62                     ;ADDRESS OF NEXT ROUTINE                    *
1753  007046  000012                        10.                     ;TEST ITERATION COUNT                       *
1754  007050  007052                        BAABA                   ;SCOPE ENTRY POINT                          *
1755                                        .LIST
1756                                  ;*****************************************************************************
1757                                  ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT6
1758  007052  052777  000100  171732 BAABA:  BIS     #BIT6,@TCBA     ;SET TCBA BIT6
1759  007060  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
1760  007062  032777  000100  171722        BIT     #BIT6,@TCBA     ;SEE IF BIT IS CLEAR.
1761  007070  001401                        BEQ     BAABB           ;BR IF BIT IS CLEAR.
1762  007072  104003                        ERROR                   ;RESET FAILED TO CLEAR TCBA BIT6
1763  007074  104011                BAABB:  SCOPE                   ;SCOPE.
1764                                  ;*****************************************************************************
1765  007076  000062                T62:    62                      ;ROUTINE NUMBER 62                          *
1766  007100  007152                        T63                     ;ADDRESS OF NEXT ROUTINE                    *
1767  007102  000144                        100.                    ;TEST ITERATION COUNT                       *
1768  007104  007106                        ABBA                    ;SCOPE ENTRY POINT                          *
1769                                        .LIST
1770                                  ;*****************************************************************************
1771                                  ;TEST THAT TCBA BIT7 CAN BE SET, AND CLEARED.
1772  007106  052777  000200  171676 ABBA:   BIS     #BIT7,@TCBA     ;SET TCBA BIT7.
1773  007114  032777  000200  171670        BIT     #BIT7,@TCBA     ;SEE IF BIT IS SET.
1774  007122  001002                        BNE     .+6             ;BRANCH IF SET.
1775  007124  104003                        ERROR                   ;TCBA BIT7 FAILED TO SET.
1776  007126  104011                        SCOPE
1777  007130  042777  000200  171654        BIC     #BIT7,@TCBA     ;CLEAR TCBA BIT7.
1778  007136  032777  000200  171646        BIT     #BIT7,@TCBA     ;SEE IF BIT IS CLEAR.
1779  007144  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
1780  007146  104003                        ERROR                   ;TCBA BIT7 FAILED TO CLEAR.
1781  007150  104011                        SCOPE                   ;SCOPE.
1782                                  ;*****************************************************************************
1783  007152  000063                T63:    63                      ;ROUTINE NUMBER 63                          *
1784  007154  007206                        T64                     ;ADDRESS OF NEXT ROUTINE                    *
1785  007156  000012                        10.                     ;TEST ITERATION COUNT                       *
1786  007160  007162                        BABBA                   ;SCOPE ENTRY POINT                          *
1787                                        .LIST
1788                                  ;*****************************************************************************
1789                                  ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT7
1790  007162  052777  000200  171622 BABBA:  BIS     #BIT7,@TCBA     ;SET TCBA BIT7
1791  007170  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
1792  007172  032777  000200  171612        BIT     #BIT7,@TCBA     ;SEE IF BIT IS CLEAR.
1793  007200  001401                        BEQ     BABBB           ;BR IF BIT IS CLEAR.
1794  007202  104003                        ERROR                   ;RESET FAILED TO CLEAR TCBA BIT7
1795  007204  104011                BABBB:  SCOPE                   ;SCOPE.
1796                                  ;*****************************************************************************
1797  007206  000064                T64:    64                      ;ROUTINE NUMBER 64                          *
1798  007210  007262                        T65                     ;ADDRESS OF NEXT ROUTINE                    *
1799  007212  000144                        100.                    ;TEST ITERATION COUNT                       *
1800  007214  007216                        ACBA                    ;SCOPE ENTRY POINT                          *
1801                                        .LIST
1802                                  ;*****************************************************************************
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 1803                                          ;TEST THAT TCBA BIT8 CAN BE SET, AND CLEARED.
 1804  007216  052777  000400  171566  ACBA:   BIS     #BIT8,@TCBA     ;SET TCBA BIT8.
 1805  007224  032777  000400  171560          BIT     #BIT8,@TCBA     ;SEE IF BIT IS SET.
 1806  007232  001002                          BNE     .+6             ;BRANCH IF SET.
 1807  007234  104003                          ERROR                   ;TCBA BIT8 FAILED TO SET.
 1808  007236  104011                          SCOPE
 1809  007240  042777  000400  171544          BIC     #BIT8,@TCBA     ;CLEAR TCBA BIT8.
 1810  007246  032777  000400  171536          BIT     #BIT8,@TCBA     ;SEE IF BIT IS CLEAR.
 1811  007254  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
 1812  007256  104003                          ERROR                   ;TCBA BIT8 FAILED TO CLEAR.
 1813  007260  104011                          SCOPE                   ;SCOPE.
 1814                                  ;*****************************************************************************
 1815  007262  000065                  T65:    65                      ;ROUTINE NUMBER 65                          *
 1816  007264  007316                          T66                     ;ADDRESS OF NEXT ROUTINE                    *
 1817  007266  000012                          10.                     ;TEST ITERATION COUNT                       *
 1818  007270  007272                          BACBA                   ;SCOPE ENTRY POINT                          *
 1819                                          .LIST
 1820                                  ;*****************************************************************************
 1821                                  ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT8
 1822  007272  052777  000400  171512  BACBA:  BIS     #BIT8,@TCBA     ;SET TCBA BIT8
 1823  007300  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
 1824  007302  032777  000400  171502          BIT     #BIT8,@TCBA     ;SEE IF BIT IS CLEAR.
 1825  007310  001401                          BEQ     BACBB           ;BR IF BIT IS CLEAR.
 1826  007312  104003                          ERROR                   ;RESET FAILED TO CLEAR TCBA BIT8
 1827  007314  104011                  BACBB:  SCOPE                   ;SCOPE.
 1828                                  ;*****************************************************************************
 1829  007316  000066                  T66:    66                      ;ROUTINE NUMBER 66                          *
 1830  007320  007372                          T67                     ;ADDRESS OF NEXT ROUTINE                    *
 1831  007322  000144                          100.                    ;TEST ITERATION COUNT                       *
 1832  007324  007326                          ADBA                    ;SCOPE ENTRY POINT                          *
 1833                                          .LIST
 1834                                  ;*****************************************************************************
 1835                                  ;TEST THAT TCBA BIT9 CAN BE SET, AND CLEARED.
 1836  007326  052777  001000  171456  ADBA:   BIS     #BIT9,@TCBA     ;SET TCBA BIT9.
 1837  007334  032777  001000  171450          BIT     #BIT9,@TCBA     ;SEE IF BIT IS SET.
 1838  007342  001002                          BNE     .+6             ;BRANCH IF SET.
 1839  007344  104003                          ERROR                   ;TCBA BIT9 FAILED TO SET.
 1840  007346  104011                          SCOPE
 1841  007350  042777  001000  171434          BIC     #BIT9,@TCBA     ;CLEAR TCBA BIT9.
 1842  007356  032777  001000  171426          BIT     #BIT9,@TCBA     ;SEE IF BIT IS CLEAR.
 1843  007364  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
 1844  007366  104003                          ERROR                   ;TCBA BIT9 FAILED TO CLEAR.
 1845  007370  104011                          SCOPE                   ;SCOPE.
 1846                                  ;*****************************************************************************
 1847  007372  000067                  T67:    67                      ;ROUTINE NUMBER 67                          *
 1848  007374  007426                          T70                     ;ADDRESS OF NEXT ROUTINE                    *
 1849  007376  000012                          10.                     ;TEST ITERATION COUNT                       *
 1850  007400  007402                          BADBA                   ;SCOPE ENTRY POINT                          *
 1851                                          .LIST
 1852                                  ;*****************************************************************************
 1853                                  ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT9
 1854  007402  052777  001000  171402  BADBA:  BIS     #BIT9,@TCBA     ;SET TCBA BIT9
 1855  007410  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
 1856  007412  032777  001000  171372          BIT     #BIT9,@TCBA     ;SEE IF BIT IS CLEAR.
 1857  007420  001401                          BEQ     BADBB           ;BR IF BIT IS CLEAR.
 1858  007422  104003                          ERROR                   ;RESET FAILED TO CLEAR TCBA BIT9
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 1859  007424  104011                  BADBB:  SCOPE                           ;SCOPE.
 1860
 1861  007426  000070                  T70:    70                              ;ROUTINE NUMBER 70                      *
 1862  007430  007502                          T71                             ;ADDRESS OF NEXT ROUTINE                *
 1863  007432  000144                          100.                            ;TEST ITERATION COUNT                   *
 1864  007434  007436                          AEBA                            ;SCOPE ENTRY POINT                      *
 1865                                          .LIST
 1866
 1867                                  ;TEST THAT TCBA BIT10 CAN BE SET, AND CLEARED.
 1868  007436  052777  002000  171346  AEBA:   BIS     #BIT10,@TCBA            ;SET TCBA BIT10.
 1869  007444  032777  002000  171340          BIT     #BIT10,@TCBA            ;SEE IF BIT IS SET.
 1870  007452  001002                          BNE     .+6                     ;BRANCH IF SET.
 1871  007454  104003                          ERROR                           ;TCBA BIT10 FAILED TO SET.
 1872  007456  104011                          SCOPE
 1873  007460  042777  002000  171324          BIC     #BIT10,@TCBA            ;CLEAR TCBA BIT10.
 1874  007466  032777  002000  171316          BIT     #BIT10,@TCBA            ;SEE IF BIT IS CLEAR.
 1875  007474  001401                          BEQ     .+4                     ;BRANCH IF BIT IS CLEAR
 1876  007476  104003                          ERROR                           ;TCBA BIT10 FAILED TO CLEAR.
 1877  007500  104011                          SCOPE                           ;SCOPE.
 1878
 1879  007502  000071                  T71:    71                              ;ROUTINE NUMBER 71                      *
 1880  007504  007536                          T72                             ;ADDRESS OF NEXT ROUTINE                *
 1881  007506  000012                          10.                             ;TEST ITERATION COUNT                   *
 1882  007510  007512                          BAEBA                           ;SCOPE ENTRY POINT                      *
 1883                                          .LIST
 1884
 1885                                  ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT10
 1886  007512  052777  002000  171272  BAEBA:  BIS     #BIT10,@TCBA            ;SET TCBA BIT10
 1887  007520  104010                          SRESET                          ;ISSUE RESET TO CLEAR BIT.
 1888  007522  032777  002000  171262          BIT     #BIT10,@TCBA            ;SEE IF BIT IS CLEAR.
 1889  007530  001401                          BEQ     BAEBB                   ;BR IF BIT IS CLEAR.
 1890  007532  104003                          ERROR                           ;RESET FAILED TO CLEAR TCBA BIT10
 1891  007534  104011                  BAEBB:  SCOPE                           ;SCOPE.
 1892
 1893  007536  000072                  T72:    72                              ;ROUTINE NUMBER 72                      *
 1894  007540  007612                          T73                             ;ADDRESS OF NEXT ROUTINE                *
 1895  007542  000144                          100.                            ;TEST ITERATION COUNT                   *
 1896  007544  007546                          AFBA                            ;SCOPE ENTRY POINT                      *
 1897                                          .LIST
 1898
 1899                                  ;TEST THAT TCBA BIT11 CAN BE SET, AND CLEARED.
 1900  007546  052777  004000  171236  AFBA:   BIS     #BIT11,@TCBA            ;SET TCBA BIT11.
 1901  007554  032777  004000  171230          BIT     #BIT11,@TCBA            ;SEE IF BIT IS SET.
 1902  007562  001002                          BNE     .+6                     ;BRANCH IF SET.
 1903  007564  104003                          ERROR                           ;TCBA BIT11 FAILED TO SET.
 1904  007566  104011                          SCOPE
 1905  007570  042777  004000  171214          BIC     #BIT11,@TCBA            ;CLEAR TCBA BIT11.
 1906  007576  032777  004000  171206          BIT     #BIT11,@TCBA            ;SEE IF BIT IS CLEAR.
 1907  007604  001401                          BEQ     .+4                     ;BRANCH IF BIT IS CLEAR.
 1908  007606  104003                          ERROR                           ;TCBA BIT11 FAILED TO CLEAR.
 1909  007610  104011                          SCOPE                           ;SCOPE.
 1910
 1911  007612  000073                  T73:    73                              ;ROUTINE NUMBER 73                      *
 1912  007614  007646                          T74                             ;ADDRESS OF NEXT ROUTINE                *
 1913  007616  000012                          10.                             ;TEST ITERATION COUNT                   *
 1914  007620  007622                          BAFBA                           ;SCOPE ENTRY POINT                      *
```

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                                        .LIST
                                ;*****************************************************************************
                                ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT11
007622  052777  004000  171162  BAFBA:  BIS     #BIT11,@TCBA    ;SET TCBA BIT11
007630  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
007632  032777  004000  171152        BIT     #BIT11,@TCBA    ;SEE IF BIT IS CLEAR.
007640  001401                        BEQ     BAFBB           ;BR IF BIT IS CLEAR.
007642  104003                        ERROR                   ;RESET FAILED TO CLEAR TCBA BIT11
007644  104011                BAFBB:  SCOPE                   ;SCOPE.
                                ;*****************************************************************************
007646  000074                T74:    74                      ;ROUTINE NUMBER 74                      *
007650  007722                        T75                     ;ADDRESS OF NEXT ROUTINE                *
007652  000144                        100.                    ;TEST ITERATION COUNT                   *
007654  007656                        AGBA                    ;SCOPE ENTRY POINT                      *
                                        .LIST
                                ;*****************************************************************************
                                ;TEST THAT TCBA BIT12 CAN BE SET, AND CLEARED.
007656  052777  010000  171126  AGBA:  BIS     #BIT12,@TCBA    ;SET TCBA BIT12.
007664  032777  010000  171120        BIT     #BIT12,@TCBA    ;SEE IF BIT IS SET.
007672  001002                        BNE     .+6             ;BRANCH IF SET.
007674  104003                        ERROR                   ;TCBA BIT12 FAILED TO SET.
007676  104011                        SCOPE
007700  042777  010000  171104        BIC     #BIT12,@TCBA    ;CLEAR TCBA BIT12.
007706  032777  010000  171076        BIT     #BIT12,@TCBA    ;SEE IF BIT IS CLEAR.
007714  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
007716  104003                        ERROR                   ;TCBA BIT12 FAILED TO CLEAR.
007720  104011                        SCOPE                   ;SCOPE.
                                ;*****************************************************************************
007722  000075                T75:    75                      ;ROUTINE NUMBER 75                      *
007724  007756                        T76                     ;ADDRESS OF NEXT ROUTINE                *
007726  000012                        10.                     ;TEST ITERATION COUNT                   *
007730  007732                        BAGBA                   ;SCOPE ENTRY POINT                      *
                                        .LIST
                                ;*****************************************************************************
                                ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT12
007732  052777  010000  171052  BAGBA:  BIS     #BIT12,@TCBA    ;SET TCBA BIT12
007740  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
007742  032777  010000  171042        BIT     #BIT12,@TCBA    ;SEE IF BIT IS CLEAR.
007750  001401                        BEQ     BAGBB           ;BR IF BIT IS CLEAR.
007752  104003                        ERROR                   ;RESET FAILED TO CLEAR TCBA BIT12
007754  104011                BAGBB:  SCOPE                   ;SCOPE.
                                ;*****************************************************************************
007756  000076                T76:    76                      ;ROUTINE NUMBER 76                      *
007760  010032                        T77                     ;ADDRESS OF NEXT ROUTINE                *
007762  000144                        100.                    ;TEST ITERATION COUNT                   *
007764  007766                        AHBA                    ;SCOPE ENTRY POINT                      *
                                        .LIST
                                ;*****************************************************************************
                                ;TEST THAT TCBA BIT13 CAN BE SET, AND CLEARED.
007766  052777  020000  171016  AHBA:  BIS     #BIT13,@TCBA    ;SET TCBA BIT13.
007774  032777  020000  171010        BIT     #BIT13,@TCBA    ;SEE IF BIT IS SET.
010002  001002                        BNE     .+6             ;BRANCH IF SET.
010004  104003                        ERROR                   ;TCBA BIT13 FAILED TO SET.
010006  104011                        SCOPE
010010  042777  020000  170774        BIC     #BIT13,@TCBA    ;CLEAR TCBA BIT13.
010016  032777  020000  170766        BIT     #BIT13,@TCBA    ;SEE IF BIT IS CLEAR.
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 1971  010024  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
 1972  010026  104003                        ERROR                   ;TCBA BIT13 FAILED TO CLEAR.
 1973  010030  104011                        SCOPE                   ;SCOPE.
 1974                          ;*************************************************************************
 1975  010032  000077          T77:    77                      ;ROUTINE NUMBER 77                      *
 1976  010034  010066                  T100                    ;ADDRESS OF NEXT ROUTINE                *
 1977  010036  000012                  10.                     ;TEST ITERATION COUNT                   *
 1978  010040  010042                  BAHBA                   ;SCOPE ENTRY POINT                      *
 1979                                  .LIST
 1980                          ;*************************************************************************
 1981                          ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT13
 1982  010042  052777  020000  170742  BAHBA:  BIS     #BIT13,@TCBA    ;SET TCBA BIT13
 1983  010050  104010                  SRESET                  ;ISSUE RESET TO CLEAR BIT.
 1984  010052  032777  020000  170732          BIT     #BIT13,@TCBA    ;SEE IF BIT IS CLEAR.
 1985  010060  001401                  BEQ     BAHBB           ;BR IF BIT IS CLEAR.
 1986  010062  104003                  ERROR                   ;RESET FAILED TO CLEAR TCBA BIT13
 1987  010064  104011          BAHBB:  SCOPE                   ;SCOPE.
 1988                          ;*************************************************************************
 1989  010066  000100          T100:   100                     ;ROUTINE NUMBER 100                     *
 1990  010070  010142                  T101                    ;ADDRESS OF NEXT ROUTINE                *
 1991  010072  000144                  100.                    ;TEST ITERATION COUNT                   *
 1992  010074  010076                  AIBA                    ;SCOPE ENTRY POINT                      *
 1993                                  .LIST
 1994                          ;*************************************************************************
 1995                          ;TEST THAT TCBA BIT14 CAN BE SET, AND CLEARED.
 1996  010076  052777  040000  170706  AIBA:   BIS     #BIT14,@TCBA    ;SET TCBA BIT14.
 1997  010104  032777  040000  170700          BIT     #BIT14,@TCBA    ;SEE IF BIT IS SET.
 1998  010112  001002                  BNE     .+6             ;BRANCH IF SET.
 1999  010114  104003                  ERROR                   ;TCBA BIT14 FAILED TO SET.
 2000  010116  104011                  SCOPE
 2001  010120  042777  040000  170664          BIC     #BIT14,@TCBA    ;CLEAR TCBA BIT14.
 2002  010126  032777  040000  170656          BIT     #BIT14,@TCBA    ;SEE IF BIT IS CLEAR.
 2003  010134  001401                  BEQ     .+6             ;BRANCH IF BIT IS CLEAR.
 2004  010136  104003                  ERROR                   ;TCBA BIT14 FAILED TO CLEAR.
 2005  010140  104011                  SCOPE                   ;SCOPE.
 2006                          ;*************************************************************************
 2007  010142  000101          T101:   101                     ;ROUTINE NUMBER 101                     *
 2008  010144  010176                  T102                    ;ADDRESS OF NEXT ROUTINE                *
 2009  010146  000012                  10.                     ;TEST ITERATION COUNT                   *
 2010  010150  010152                  BAIBA                   ;SCOPE ENTRY POINT                      *
 2011                                  .LIST
 2012                          ;*************************************************************************
 2013                          ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT14
 2014  010152  052777  040000  170632  BAIBA:  BIS     #BIT14,@TCBA    ;SET TCBA BIT14
 2015  010160  104010                  SRESET                  ;ISSUE RESET TO CLEAR BIT.
 2016  010162  032777  040000  170622          BIT     #BIT14,@TCBA    ;SEE IF BIT IS CLEAR.
 2017  010170  001401                  BEQ     BAIBB           ;BR IF BIT IS CLEAR.
 2018  010172  104003                  ERROR                   ;RESET FAILED TO CLEAR TCBA BIT14
 2019  010174  104011          BAIBB:  SCOPE                   ;SCOPE.
 2020                          ;*************************************************************************
 2021  010176  000102          T102:   102                     ;ROUTINE NUMBER 102                     *
 2022  010200  010252                  T103                    ;ADDRESS OF NEXT ROUTINE                *
 2023  010202  000144                  100.                    ;TEST ITERATION COUNT                   *
 2024  010204  010206                  AJBA                    ;SCOPE ENTRY POINT                      *
 2025                                  .LIST
 2026                          ;*************************************************************************
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2027
2028  010206  052777  100000  170576  AJBA:   BIS     #BIT15,@TCBA    ;SET TCBA BIT15.
2029  010214  032777  100000  170570          BIT     #BIT15,@TCBA    ;SEE IF BIT IS SET.
2030  010222  001002                          BNE     .+6             ;BRANCH IF SET.
2031  010224  104003                          ERROR                   ;TCBA BIT15 FAILED TO SET.
2032  010226  104011                          SCOPE
2033  010230  042777  100000  170554          BIC     #BIT15,@TCBA    ;CLEAR TCBA BIT15.
2034  010236  032777  100000  170546          BIT     #BIT15,@TCBA    ;SEE IF BIT IS CLEAR.
2035  010244  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2036  010246  104003                          ERROR                   ;TCBA BIT15 FAILED TO CLEAR.
2037  010250  104011                          SCOPE                   ;SCOPE.
2038                                  ;*****************************************************************************
2039  010252  000103                  T103:   103                     ;ROUTINE NUMBER 103                         *
2040  010254  010306                          T104                    ;ADDRESS OF NEXT ROUTINE                    *
2041  010256  000012                          10.                     ;TEST ITERATION COUNT                       *
2042  010260  010262                          BAJBA                   ;SCOPE ENTRY POINT                          *
2043                                          .LIST
2044                                  ;*****************************************************************************
2045                                  ;TEST THAT RESET INSTRUCTION CLEARS TCBA BIT15
2046  010262  052777  100000  170522  BAJBA:  BIS     #BIT15,@TCBA    ;SET TCBA BIT15
2047  010270  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2048  010272  032777  100000  170512          BIT     #BIT15,@TCBA    ;SEE IF BIT IS CLEAR.
2049  010300  001401                          BEQ     BAJBB           ;BR IF BIT IS CLEAR.
2050  010302  104003                          ERROR                   ;RESET FAILED TO CLEAR TCBA BIT15
2051  010304  104011                  BAJBB:  SCOPE                   ;SCOPE.
2052                                  ;*****************************************************************************
2053  010306  000104                  T104:   104                     ;ROUTINE NUMBER 104                         *
2054  010310  010362                          T105                    ;ADDRESS OF NEXT ROUTINE                    *
2055  010312  000144                          100.                    ;TEST ITERATION COUNT                       *
2056  010314  010316                          AKBA                    ;SCOPE ENTRY POINT                          *
2057                                          .LIST
2058                                  ;*****************************************************************************
2059                                  ;TEST THAT TCWC BIT0 CAN BE SET, AND CLEARED.
2060  010316  052777  000001  170464  AKBA:   BIS     #BIT0,@TCWC     ;SET TCWC BIT0.
2061  010324  032777  000001  170456          BIT     #BIT0,@TCWC     ;SEE IF BIT IS SET.
2062  010332  001002                          BNE     .+6             ;BRANCH IF SET.
2063  010334  104003                          ERROR                   ;TCWC BIT0 FAILED TO SET.
2064  010336  104011                          SCOPE
2065  010340  042777  000001  170442          BIC     #BIT0,@TCWC     ;CLEAR TCWC BIT0.
2066  010346  032777  000001  170434          BIT     #BIT0,@TCWC     ;SEE IF BIT IS CLEAR.
2067  010354  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2068  010356  104003                          ERROR                   ;TCWC BIT0 FAILED TO CLEAR.
2069  010360  104011                          SCOPE                   ;SCOPE.
2070                                  ;*****************************************************************************
2071  010362  000105                  T105:   105                     ;ROUTINE NUMBER 105                         *
2072  010364  010416                          T106                    ;ADDRESS OF NEXT ROUTINE                    *
2073  010366  000012                          10.                     ;TEST ITERATION COUNT                       *
2074  010370  010372                          BAKBA                   ;SCOPE ENTRY POINT                          *
2075                                          .LIST
2076                                  ;*****************************************************************************
2077                                  ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT0
2078  010372  052777  000001  170410  BAKBA:  BIS     #BIT0,@TCWC     ;SET TCWC BIT0
2079  010400  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2080  010402  032777  000001  170400          BIT     #BIT0,@TCWC     ;SEE IF BIT IS CLEAR.
2081  010410  001401                          BEQ     BAKBB           ;BR IF BIT IS CLEAR.
2082  010412  104003                          ERROR                   ;RESET FAILED TO CLEAR TCWC BIT0
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 2093  010414  104011                    BAKBB:  SCOPE                           ;SCOPE.
 2094                                    ;*****************************************************************************
 2095  010416  000106                    T106:   106                             ;ROUTINE NUMBER 106                    *
 2096  010420  010472                            T107                            ;ADDRESS OF NEXT ROUTINE               *
 2097  010422  000144                            100.                            ;TEST ITERATION COUNT                  *
 2098  010424  010426                            ALBA                            ;SCOPE ENTRY POINT                     *
 2099                                            .LIST
 2100                                    ;*****************************************************************************
 2101                                    ;TEST THAT TCWC BIT1 CAN BE SET, AND CLEARED.
 2102  010426  052777  000002  170354    ALBA:   BIS     #BIT1,@TCWC             ;SET TCWC BIT1.
 2103  010434  032777  000002  170346            BIT     #BIT1,@TCWC             ;SEE IF BIT IS SET.
 2104  010442  001002                            BNE     .+6                     ;BRANCH IF SET.
 2105  010444  104003                            ERROR                           ;TCWC BIT1 FAILED TO SET.
 2106  010446  104011                            SCOPE
 2107  010450  042777  000002  170332            BIC     #BIT1,@TCWC             ;CLEAR TCWC BIT1.
 2108  010456  032777  000002  170324            BIT     #BIT1,@TCWC             ;SEE IF BIT IS CLEAR.
 2109  010464  001401                            BEQ     .+4                     ;BRANCH IF BIT IS CLEAR.
 2110  010466  104003                            ERROR                           ;TCWC BIT1 FAILED TO CLEAR.
 2111  010470  104011                            SCOPE                           ;SCOPE.
 2112                                    ;*****************************************************************************
 2113  010472  000107                    T107:   107                             ;ROUTINE NUMBER 107                    *
 2114  010474  010526                            T110                            ;ADDRESS OF NEXT ROUTINE               *
 2115  010476  000012                            10.                             ;TEST ITERATION COUNT                  *
 2116  010500  010502                            BALBA                           ;SCOPE ENTRY POINT                     *
 2117                                            .LIST
 2118                                    ;*****************************************************************************
 2119                                    ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT1
 2120  010502  052777  000002  170300    BALBA:  BIS     #BIT1,@TCWC             ;SET TCWC BIT1
 2121  010510  104010                            SRESET                          ;ISSUE RESET TO CLEAR BIT.
 2122  010512  032777  000002  170270            BIT     #BIT1,@TCWC             ;SEE IF BIT IS CLEAR.
 2123  010520  001401                            BEQ     BALBB                   ;BR IF BIT IS CLEAR.
 2124  010522  104003                            ERROR                           ;RESET FAILED TO CLEAR TCWC BIT1
 2125  010524  104011                    BALBB:  SCOPE                           ;SCOPE.
 2126                                    ;*****************************************************************************
 2127  010526  000110                    T110:   110                             ;ROUTINE NUMBER 110                    *
 2128  010530  010602                            T111                            ;ADDRESS OF NEXT ROUTINE               *
 2129  010532  000144                            100.                            ;TEST ITERATION COUNT                  *
 2130  010534  010536                            AMBA                            ;SCOPE ENTRY POINT                     *
 2131                                            .LIST
 2132                                    ;*****************************************************************************
 2133                                    ;TEST THAT TCWC BIT2 CAN BE SET, AND CLEARED.
 2134  010536  052777  000004  170244    AMBA:   BIS     #BIT2,@TCWC             ;SET TCWC BIT2.
 2135  010544  032777  000004  170236            BIT     #BIT2,@TCWC             ;SEE IF BIT IS SET.
 2136  010552  001002                            BNE     .+6                     ;BRANCH IF SET.
 2137  010554  104003                            ERROR                           ;TCWC BIT2 FAILED TO SET.
 2138  010556  104011                            SCOPE
 2139  010560  042777  000004  170222            BIC     #BIT2,@TCWC             ;CLEAR TCWC BIT2.
 2140  010566  032777  000004  170214            BIT     #BIT2,@TCWC             ;SEE IF BIT IS CLEAR.
 2141  010574  001401                            BEQ     .+4                     ;BRANCH IF BIT IS CLEAR.
 2142  010576  104003                            ERROR                           ;TCWC BIT2 FAILED TO CLEAR.
 2143  010600  104011                            SCOPE                           ;SCOPE.
 2144                                    ;*****************************************************************************
 2145  010602  000111                    T111:   111                             ;ROUTINE NUMBER 111                    *
 2146  010604  010636                            T112                            ;ADDRESS OF NEXT ROUTINE               *
 2147  010606  000012                            10.                             ;TEST ITERATION COUNT                  *
 2148  010610  010612                            BAMBA                           ;SCOPE ENTRY POINT                     *
```

```
                                        .LIST
                                ;*******************************************************************
                                ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT2
010612  052777  000004  170170 BAMBA:  BIS     #BIT2,@TCWC     ;SET TCWC BIT2
010620  104010                 SRESET                          ;ISSUE RESET TO CLEAR BIT.
010622  032777  000004  170160         BIT     #BIT2,@TCWC     ;SEE IF BIT IS CLEAR.
010630  001401                 BEQ     BAMBB                   ;BR I  BIT IS CLEAR.
010632  104003                 ERROR                           ;RESE  FAILED TO CLEAR TCWC BIT2
010634  104011 BAMBB:  SCOPE                                   ;SCOPE.
                                ;*******************************************************************
000112  T112:   112                             ;ROUTINE NUMBER 112                             *
010712          T113                            ;ADDRESS OF NEXT ROUTINE                        *
000144          100.                            ;TEST ITERATION COUNT                           *
010646          ANBA                            ;SCOPE ENTRY POINT                              *
                                        .LIST
                                ;*******************************************************************
                                ;TEST THAT TCWC BIT3 CAN BE SET, AND CLEARED.
010646  052777  000010  170134 ANBA:   BIS     #BIT3,@TCWC     ;SET TCWC BIT3.
010654  032777  000010  170126         BIT     #BIT3,@TCWC     ;SEE IF BIT IS SET.
010662  001002                 BNE     .+6                     ;BRANCH IF SET.
010664  104003                 ERROR                           ;TCWC BIT3 FAILED TO SET.
010666  104011                 SCOPE
010670  042777  000010  170112         BIC     #BIT3,@TCWC     ;CLEAR TCWC BIT3.
010676  032777  000010  170104         BIT     #BIT3,@TCWC     ;SEE IF BIT IS CLEAR.
010704  001401                 BEQ     .+4                     ;BRANCH IF BIT IS CLEAR.
010706  104003                 ERROR                           ;TCWC BIT3 FAILED TO CLEAR.
010710  104011                 SCOPE                           ;SCOPE.
                                ;*******************************************************************
000113  T113:   113                             ;ROUTINE NUMBER 113                             *
010746          T114                            ;ADDRESS OF NEXT ROUTINE                        *
000012          10.                             ;TEST ITERATION COUNT                           *
010722          BANBA                           ;SCOPE ENTRY POINT                              *
                                        .LIST
                                ;*******************************************************************
                                ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT3
010722  052777  000010  170060 BANBA:  BIS     #BIT3,@TCWC     ;SET TCWC BIT3
010730  104010                 SRESET                          ;ISSUE RESET TO CLEAR BIT.
010732  032777  000010  170050         BIT     #BIT3,@TCWC     ;SEE IF BIT IS CLEAR.
010740  001401                 BEQ     BANBB                   ;BR IF BIT IS CLEAR.
010742  104003                 ERROR                           ;RESET FAILED TO CLEAR TCWC BIT3
010744  104011 BANBB:  SCOPE                                   ;SCOPE.
                                ;*******************************************************************
000114  T114:   114                             ;ROUTINE NUMBER 114                             *
010750          T115                            ;ADDRESS OF NEXT ROUTINE                        *
000144          100.                            ;TEST ITERATION COUNT                           *
010754          AOBA                            ;SCOPE ENTRY POINT                              *
                                        .LIST
                                ;*******************************************************************
                                ;TEST THAT TCWC BIT4 CAN BE SET, AND CLEARED.
010756  052777  000020  170024 AOBA:   BIS     #BIT4,@TCWC     ;SET TCWC BIT4.
010764  032777  000020  170016         BIT     #BIT4,@TCWC     ;SEE IF BIT IS SET.
010772  001002                 BNE     .+6                     ;BRANCH IF SET.
010774  104003                 ERROR                           ;TCWC BIT4 FAILED TO SET.
010776  104011                 SCOPE
011000  042777  000020  170002         BIC     #BIT4,@TCWC     ;CLEAR TCWC BIT4.
011006  032777  000020  167774         BIT     #BIT4,@TCWC     ;SEE IF BIT IS CLEAR.
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2195  011014  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2196  011016  104003                        ERROR                   ;TCWC BIT4 FAILED TO CLEAR.
2197  011020  104011                        SCOPE                   ;SCOPE.
2198                                ;*****************************************************************************
2199  011022  000115                T115:   115                     ;ROUTINE NUMBER 115                         *
2200  011024  011056                        T116                    ;ADDRESS OF NEXT ROUTINE                    *
2201  011026  000012                        10.                     ;TEST ITERATION COUNT                       *
2202  011030  011032                        BAOBA                   ;SCOPE ENTRY POINT                          *
2203                                        .LIST
2204                                ;*****************************************************************************
2205                                ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT4
2206  011032  052777  000020  167750 BAOBA:  BIS     #BIT4,@TCWC     ;SET TCWC BIT4
2207  011040  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
2208  011042  032777  000020  167740        BIT     #BIT4,@TCWC     ;SEE IF BIT IS CLEAR.
2209  011050  001401                        BEQ     BAOBB           ;BR IF BIT IS CLEAR.
2210  011052  104003                        ERROR                   ;RESET FAILED TO CLEAR TCWC BIT4
2211  011054  104011                BAOBB:  SCOPE                   ;SCOPE.
2212                                ;*****************************************************************************
2213  011056  000116                T116:   116                     ;ROUTINE NUMBER 116                         *
2214  011060  011132                        T117                    ;ADDRESS OF NEXT ROUTINE                    *
2215  011062  000144                        100.                    ;TEST ITERATION COUNT                       *
2216  011064  011066                        APBA                    ;SCOPE ENTRY POINT                          *
2217                                        .LIST
2218                                ;*****************************************************************************
2219                                ;TEST THAT TCWC BITS CAN BE SET, AND CLEARED.
2220  011066  052777  000040  167714 APBA:   BIS     #BIT5,@TCWC     ;SET TCWC BITS.
2221  011074  032777  000040  167706        BIT     #BIT5,@TCWC     ;SEE IF BIT IS SET.
2222  011102  001002                        BNE     .+6             ;BRANCH IF SET.
2223  011104  104003                        ERROR                   ;TCWC BITS FAILED TO SET.
2224  011106  104011                        SCOPE
2225  011110  042777  000040  167672        BIC     #BIT5,@TCWC     ;CLEAR TCWC BITS.
2226  011116  032777  000040  167664        BIT     #BIT5,@TCWC     ;SEE IF BIT IS CLEAR.
2227  011124  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2228  011126  104003                        ERROR                   ;TCWC BITS FAILED TO CLEAR.
2229  011130  104011                        SCOPE                   ;SCOPE.
2230                                ;*****************************************************************************
2231  011132  000117                T117:   117                     ;ROUTINE NUMBER 117                         *
2232  011134  011166                        T120                    ;ADDRESS OF NEXT ROUTINE                    *
2233  011136  000012                        10.                     ;TEST ITERATION COUNT                       *
2234  011140  011142                        BAPBA                   ;SCOPE ENTRY POINT                          *
2235                                        .LIST
2236                                ;*****************************************************************************
2237                                ;TEST THAT RESET INSTRUCTION CLEARS TCWC BITS
2238  011142  052777  000040  167640 BAPBA:  BIS     #BIT5,@TCWC     ;SET TCWC BITS
2239  011150  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
2240  011152  032777  000040  167630        BIT     #BIT5,@TCWC     ;SEE IF BIT IS CLEAR.
2241  011160  001401                        BEQ     BAPBB           ;BR IF BIT IS CLEAR.
2242  011162  104003                        ERROR                   ;RESET FAILED TO CLEAR TCWC BITS
2243  011164  104011                BAPBB:  SCOPE                   ;SCOPE.
2244                                ;*****************************************************************************
2245  011166  000120                T120:   120                     ;ROUTINE NUMBER 120                         *
2246  011170  011242                        T121                    ;ADDRESS OF NEXT ROUTINE                    *
2247  011172  000144                        100.                    ;TEST ITERATION COUNT                       *
2248  011174  011176                        AQBA                    ;SCOPE ENTRY POINT                          *
2249                                        .LIST
2250                                ;*****************************************************************************
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2251                                        ;TEST THAT TCWC BIT6 CAN BE SET, AND CLEARED.
2252  011176  052777  000100  167604  AQBA:   BIS     #BIT6,@TCWC     ;SET TCWC BIT6.
2253  011204  032777  000100  167576          BIT     #BIT6,@TCWC     ;SEE IF BIT IS SET.
2254  011212  001002                          BNE     .+6             ;BRANCH IF SET.
2255  011214  104003                          ERROR                   ;TCWC BIT6 FAILED TO SET.
2256  011216  104011                          SCOPE
2257  011220  042777  000100  167562          BIC     #BIT6,@TCWC     ;CLEAR TCWC BIT6.
2258  011226  032777  000100  167554          BIT     #BIT6,@TCWC     ;SEE IF BIT IS CLEAR.
2259  011234  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2260  011236  104003                          ERROR                   ;TCWC BIT6 FAILED TO CLEAR.
2261  011240  104011                          SCOPE                   ;SCOPE.
2262                                      ;*****************************************************************
2263  011242  000121                      T121:   121                 ;ROUTINE NUMBER 121                 *
2264  011244  011276                          T122                    ;ADDRESS OF NEXT ROUTINE            *
2265  011246  000012                          10.                     ;TEST ITERATION COUNT               *
2266  011250  011252                          BAQBA                   ;SCOPE ENTRY POINT                  *
2267                                          .LIST
2268                                      ;*****************************************************************
2269                                      ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT6
2270  011252  052777  000100  167530  BAQBA:  BIS     #BIT6,@TCWC     ;SET TCWC BIT6
2271  011260  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2272  011262  032777  000100  167520          BIT     #BIT6,@TCWC     ;SEE IF BIT IS CLEAR.
2273  011270  001401                          BEQ     BAQBB           ;BR IF BIT IS CLEAR.
2274  011272  104003                          ERROR                   ;RESET FAILED TO CLEAR TCWC BIT6
2275  011274  104011                  BAQBB:  SCOPE                   ;SCOPE.
2276                                      ;*****************************************************************
2277  011276  000122                      T122:   122                 ;ROUTINE NUMBER 122                 *
2278  011300  011352                          T123                    ;ADDRESS OF NEXT ROUTINE            *
2279  011302  000144                          100.                    ;TEST ITERATION COUNT               *
2280  011304  011306                          ARBA                    ;SCOPE ENTRY POINT                  *
2281                                          .LIST
2282                                      ;*****************************************************************
2283                                      ;TEST THAT TCWC BIT7 CAN BE SET, AND CLEARED.
2284  011306  052777  000200  167474  ARBA:   BIS     #BIT7,@TCWC     ;SET TCWC BIT7.
2285  011314  032777  000200  167466          BIT     #BIT7,@TCWC     ;SEE IF BIT IS SET.
2286  011322  001002                          BNE     .+6             ;BRANCH IF SET.
2287  011324  104003                          ERROR                   ;TCWC BIT7 FAILED TO SET.
2288  011326  104011                          SCOPE
2289  011330  042777  000200  167452          BIC     #BIT7,@TCWC     ;CLEAR TCWC BIT7.
2290  011336  032777  000200  167444          BIT     #BIT7,@TCWC     ;SEE IF BIT IS CLEAR.
2291  011344  001401                          BEQ      +4             ;BRANCH IF BIT IS CLEAR.
2292  011346  104003                          ERROR                   ;TCWC BIT7 FAILED TO CLEAR.
2293  011350  104011                          SCOPE                   ;SCOPE.
2294                                      ;*****************************************************************
2295  011352  000123                      T123:   123                 ;ROUTINE NUMBER 123                 *
2296  011354  011406                          T124                    ;ADDRESS OF NEXT ROUTINE            *
2297  011356  000012                          10.                     ;TEST ITERATION COUNT               *
2298  011360  011362                          BARBA                   ;SCOPE ENTRY POINT                  *
2299                                          .LIST
2300                                      ;*****************************************************************
2301                                      ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT7
2302  011362  052777  000200  167420  BARBA:  BIS     #BIT7,@TCWC     ;SET TCWC BIT7
2303  011370  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2304  011372  032777  000200  167410          BIT     #BIT7,@TCWC     ;SEE IF BIT IS CLEAR.
2305  011400  001401                          BEQ     BARBB           ;BR IF BIT IS CLEAR.
2306  011402  104003                          ERROR                   ;RESET FAILED TO CLEAR TCWC BIT7
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2307  011404  104011                  BARBB:  SCOPE                   ;SCOPE.
2308
2309  011406  000124                  T124:   124                     ;ROUTINE NUMBER 124                     *
2310  011410  011462                          T125                    ;ADDRESS OF NEXT ROUTINE                *
2311  011412  000144                          100.                    ;TEST ITERATION COUNT                   *
2312  011414  011416                          ASBA                    ;SCOPE ENTRY POINT                      *
2313                                          .LIST
2314                                  ;*******************************************************************
2315                                  ;TEST THAT TCWC BIT8 CAN BE SET, AND CLEARED.
2316  011416  052777  000400  167364  ASBA:   BIS     #BIT8,@TCWC     ;SET TCWC BIT8.
2317  011424  032777  000400  167356          BIT     #BIT8,@TCWC     ;SEE IF BIT IS SET.
2318  011432  001002                          BNE     .+6             ;BRANCH IF SET.
2319  011434  104003                          ERROR                   ;TCWC BIT8 FAILED TO SET.
2320  011436  104011                          SCOPE
2321  011440  042777  000400  167342          BIC     #BIT8,@TCWC     ;CLEAR TCWC BIT8.
2322  011446  032777  000400  167334          BIT     #BIT8,@TCWC     ;SEE IF BIT IS CLEAR.
2323  011454  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2324  011456  104003                          ERROR                   ;TCWC BIT8 FAILED TO CLEAR.
2325  011460  104011                          SCOPE                   ;SCOPE.
2326                                  ;*******************************************************************
2327  011462  000125                  T125:   125                     ;ROUTINE NUMBER 125                     *
2328  011464  011516                          T126                    ;ADDRESS OF NEXT ROUTINE                *
2329  011466  000012                          10.                     ;TEST ITERATION COUNT                   *
2330  011470  011472                          BASBA                   ;SCOPE ENTRY POINT                      *
2331                                          .LIST
2332                                  ;*******************************************************************
2333                                  ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT8
2334  011472  052777  000400  167310  BASBA:  BIS     #BIT8,@TCWC     ;SET TCWC BIT8
2335  011500  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2336  011502  032777  000400  167300          BIT     #BIT8,@TCWC     ;SEE IF BIT IS CLEAR.
2337  011510  001401                          BEQ     BASBB           ;BR IF BIT IS CLEAR.
2338  011512  104003                          ERROR                   ;RESET FAILED TO CLEAR TCWC BIT8
2339  011514  104011                  BASBB:  SCOPE                   ;SCOPE.
2340                                  ;*******************************************************************
2341  011516  000126                  T126:   126                     ;ROUTINE NUMBER 126                     *
2342  011520  011572                          T127                    ;ADDRESS OF NEXT ROUTINE                *
2343  011522  000144                          100.                    ;TEST ITERATION COUNT                   *
2344  011524  011526                          ATBA                    ;SCOPE ENTRY POINT                      *
2345                                          .LIST
2346                                  ;*******************************************************************
2347                                  ;TEST THAT TCWC BIT9 CAN BE SET, AND CLEARED.
2348  011526  052777  001000  167254  ATBA:   BIS     #BIT9,@TCWC     ;SET TCWC BIT9.
2349  011534  032777  001000  167246          BIT     #BIT9,@TCWC     ;SEE IF BIT IS SET.
2350  011542  001002                          BNE     .+6             ;BRANCH IF SET.
2351  011544  104003                          ERROR                   ;TCWC BIT9 FAILED TO SET.
2352  011546  104011                          SCOPE
2353  011550  042777  001000  167232          BIC     #BIT9,@TCWC     ;CLEAR TCWC BIT9.
2354  011556  032777  001000  167224          BIT     #BIT9,@TCWC     ;SEE IF BIT IS CLEAR.
2355  011564  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2356  011566  104003                          ERROR                   ;TCWC BIT9 FAILED TO CLEAR.
2357  011570  104011                          SCOPE                   ;SCOPE.
2358                                  ;*******************************************************************
2359  011572  000127                  T127:   127                     ;ROUTINE NUMBER 127                     *
2360  011574  011626                          T130                    ;ADDRESS OF NEXT ROUTINE                *
2361  011576  000012                          10.                     ;TEST ITERATION COUNT                   *
2362  011600  011602                          BATBA                   ;SCOPE ENTRY POINT                      *
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2363                                            .LIST
2364                                            ;*****************************************************************************
2365                                            ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT9
2366  011602  052777  001000  167200  BATBA:    BIS     #BIT9,@TCWC     ;SET TCWC BIT9
2367  011610  104010                           SRESET                  ;ISSUE RESET TO CLEAR BIT.
2368  011612  032777  001000  167170           BIT     #BIT9,@TCWC     ;SEE IF BIT IS CLEAR.
2369  011620  001401                           BEQ     BATBB           ;BR IF BIT IS CLEAR.
2370  011622  104003                           ERROR                   ;RESET FAILED TO CLEAR TCWC BIT9
2371  011624  104011                 BATBB:    SCOPE                   ;SCOPE.
2372                                            ;*****************************************************************************
2373  011626  000130                 T130:     130                     ;ROUTINE NUMBER 130                             *
2374  011630  011702                           T131                    ;ADDRESS OF NEXT ROUTINE                        *
2375  011632  000144                           100.                    ;TEST ITERATION COUNT                           *
2376  011634  011636                           AUBA                    ;SCOPE ENTRY POINT                              *
2377                                            .LIST
2378                                            ;*****************************************************************************
2379                                            ;TEST THAT TCWC BIT10 CAN BE SET, AND CLEARED.
2380  011636  052777  002000  167144  AUBA:    BIS     #BIT10,@TCWC    ;SET TCWC BIT10.
2381  011644  032777  002000  167136           BIT     #BIT10,@TCWC    ;SEE IF BIT IS SET.
2382  011652  001002                           BNE     .+6             ;BRANCH IF SET.
2383  011654  104003                           ERROR                   ;TCWC BIT10 FAILED TO SET.
2384  011656  104011                           SCOPE
2385  011660  042777  002000  167122           BIC     #BIT10,@TCWC    ;CLEAR TCWC BIT10.
2386  011666  032777  002000  167114           BIT     #BIT10,@TCWC    ;SEE IF BIT IS CLEAR.
2387  011674  001401                           BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2388  011676  104003                           ERROR                   ;TCWC BIT10 FAILED TO CLEAR.
2389  011700  104011                           SCOPE                   ;SCOPE.
2390                                            ;*****************************************************************************
2391  011702  000131                 T131:     131                     ;ROUTINE NUMBER 131                             *
2392  011704  011736                           T132                    ;ADDRESS OF NEXT ROUTINE                        *
2393  011706  000012                           10.                     ;TEST ITERATION COUNT                           *
2394  011710  011712                           BAUBA                   ;SCOPE ENTRY POINT                              *
2395                                            .LIST
2396                                            ;*****************************************************************************
2397                                            ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT10
2398  011712  052777  002000  167070  BAUBA:    BIS     #BIT10,@TCWC    ;SET TCWC BIT10
2399  011720  104010                           SRESET                  ;ISSUE RESET TO CLEAR BIT.
2400  011722  032777  002000  167060           BIT     #BIT10,@TCWC    ;SEE IF BIT IS CLEAR.
2401  011730  001401                           BEQ     BAUBB           ;BR IF BIT IS CLEAR.
2402  011732  104003                           ERROR                   ;RESET FAILED TO CLEAR TCWC BIT10
2403  011734  104011                 BAJBB:    SCOPE                   ;SCOPE.
2404                                            ;*****************************************************************************
2405  011736  000132                 T132:     132                     ;ROUTINE NUMBER 132                             *
2406  011740  012012                           T133                    ;ADDRESS OF NEXT ROUTINE                        *
2407  011742  000144                           100.                    ;TEST ITERATION COUNT                           *
2408  011744  011746                           AVBA                    ;SCOPE ENTRY POINT                              *
2409                                            .LIST
2410                                            ;*****************************************************************************
2411                                            ;TEST THAT TCWC BIT11 CAN BE SET, AND CLEARED.
2412  011746  052777  004000  167034  AVBA:    BIS     #BIT11,@TCWC    ;SET TCWC BIT11.
2413  011754  032777  004000  167026           BIT     #BIT11,@TCWC    ;SEE IF BIT IS SET.
2414  011762  001002                           BNE     .+6             ;BRANCH IF SET.
2415  011764  104003                           ERROR                   ;TCWC BIT11 FAILED TO SET.
2416  011766  104011                           SCOPE
2417  011770  042777  004000  167012           BIC     #BIT11,@TCWC    ;CLEAR TCWC BIT11.
2418  011776  032777  004000  167004           BIT     #BIT11,@TCWC    ;SEE IF BIT IS CLEAR.
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 2419  012004  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
 2420  012006  104003                        ERROR                   ;TCWC BIT11 FAILED TO CLEAR.
 2421  012010  104011                        SCOPE                   ;SCOPE.
 2422                                  ;*************************************************************************
 2423  012012  000133                  T133: 133                     ;ROUTINE NUMBER 133                     *
 2424  012014  012046                        T134                    ;ADDRESS OF NEXT ROUTINE                *
 2425  012016  000012                        10.                     ;TEST ITERATION COUNT                   *
 2426  012020  012022                        BAVBA                   ;SCOPE ENTRY POINT                      *
 2427                                        .LIST
 2428                                  ;*************************************************************************
 2429                                  ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT11
 2430  012022  052777  004000  166760  BAVBA: BIS     #BIT11,@TCWC    ;SET TCWC BIT11
 2431  012030  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
 2432  012032  032777  004000  166750        BIT     #BIT11,@TCWC    ;SEE IF BIT IS CLEAR.
 2433  012040  001401                        BEQ     BAVBB           ;BR IF BIT IS CLEAR.
 2434  012042  104003                        ERROR                   ;RESET FAILED TO CLEAR TCWC BIT11
 2435  012044  104011                  BAVBB: SCOPE                   ;SCOPE.
 2436                                  ;*************************************************************************
 2437  012046  000134                  T134: 134                     ;ROUTINE NUMBER 134                     *
 2438  012050  012122                        T135                    ;ADDRESS OF NEXT ROUTINE                *
 2439  012052  000144                        100.                    ;TEST ITERATION COUNT                   *
 2440  012054  012056                        AWBA                    ;SCOPE ENTRY POINT                      *
 2441                                        .LIST
 2442                                  ;*************************************************************************
 2443                                  ;TEST THAT TCWC BIT12 CAN BE SET, AND CLEARED.
 2444  012056  052777  010000  166724  AWBA:  BIS     #BIT12,@TCWC    ;SET TCWC BIT12.
 2445  012064  032777  010000  166716        BIT     #BIT12,@TCWC    ;SEE IF BIT IS SET.
 2446  012072  001002                        BNE     .+6             ;BRANCH IF SET.
 2447  012074  104003                        ERROR                   ;TCWC BIT12 FAILED TO SET.
 2448  012076  104011                        SCOPE
 2449  012100  042777  010000  166702        BIC     #BIT12,@TCWC    ;CLEAR TCWC BIT12.
 2450  012106  032777  010000  166674        BIT     #BIT12,@TCWC    ;SEE IF BIT IS CLEAR.
 2451  012114  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
 2452  012116  104003                        ERROR                   ;TCWC BIT12 FAILED TO CLEAR.
 2453  012120  104011                        SCOPE                   ;SCOPE.
 2454                                  ;*************************************************************************
 2455  012122  000135                  T135: 135                     ;ROUTINE NUMBER 135                     *
 2456  012124  012156                        T136                    ;ADDRESS OF NEXT ROUTINE                *
 2457  012126  000012                        10.                     ;TEST ITERATION COUNT                   *
 2458  012130  012132                        BAWBA                   ;SCOPE ENTRY POINT                      *
 2459                                        .LIST
 2460                                  ;*************************************************************************
 2461                                  ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT12
 2462  012132  052777  010000  166650  BAWBA: BIS     #BIT12,@TCWC    ;SET TCWC BIT12
 2463  012140  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
 2464  012142  032777  010000  166640        BIT     #BIT12,@TCWC    ;SEE IF BIT IS CLEAR.
 2465  012150  001401                        BEQ     BAWBB           ;BR IF BIT IS CLEAR.
 2466  012152  104003                        ERROR                   ;RESET FAILED TO CLEAR TCWC BIT12
 2467  012154  104011                  BAWBB: SCOPE                   ;SCOPE.
 2468                                  ;*************************************************************************
 2469  012156  000136                  T136: 136                     ;ROUTINE NUMBER 136                     *
 2470  012160  012232                        T137                    ;ADDRESS OF NEXT ROUTINE                *
 2471  012162  000144                        100.                    ;TEST ITERATION COUNT                   *
 2472  012164  012166                        AXBA                    ;SCOPE ENTRY POINT                      *
 2473                                        .LIST
 2474                                  ;*************************************************************************
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2475                                        ;TEST THAT TCWC BIT13 CAN BE SET, AND CLEARED.
2476  012166  052777  020000  166614  AXBA:   BIS     #BIT13,@TCWC    ;SET TCWC BIT13.
2477  012174  032777  020000  166606          BIT     #BIT13,@TCWC    ;SEE IF BIT IS SET.
2478  012202  001002                          BNE     .+6             ;BRANCH IF SET.
2479  012204  104003                          ERROR                   ;TCWC BIT13 FAILED TO SET.
2480  012206  104011                          SCOPE
2481  012210  042777  020000  166572          BIC     #BIT13,@TCWC    ;CLEAR TCWC BIT13.
2482  012216  032777  020000  166564          BIT     #BIT13,@TCWC    ;SEE IF BIT IS CLEAR.
2483  012224  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2484  012226  104003                          ERROR                   ;TCWC BIT13 FAILED TO CLEAR.
2485  012230  104011                          SCOPE                   ;SCOPE.
2486                                      ;*****************************************************************************
2487  012232  000137                      T137:   137                 ;ROUTINE NUMBER 137                          *
2488  012234  012266                              T140                ;ADDRESS OF NEXT ROUTINE                     *
2489  012236  000012                              10.                 ;TEST ITERATION COUNT                        *
2490  012240  012242                              BAXBA               ;SCOPE ENTRY POINT                           *
2491                                              .LIST
2492                                      ;*****************************************************************************
2493                                      ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT13
2494  012242  052777  020000  166540  BAXBA:  BIS     #BIT13,@TCWC    ;SET TCWC BIT13
2495  012250  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2496  012252  032777  020000  166530          BIT     #BIT13,@TCWC    ;SEE IF BIT IS CLEAR.
2497  012260  001401                          BEQ     BAXBB           ;BR IF BIT IS CLEAR.
2498  012262  104003                          ERROR                   ;RESET FAILED TO CLEAR TCWC BIT13
2499  012264  104011                  BAXBB:  SCOPE                   ;SCOPE.
2500                                      ;*****************************************************************************
2501  012266  000140                      T140:   140                 ;ROUTINE NUMBER 140                          *
2502  012270  012342                              T141                ;ADDRESS OF NEXT ROUTINE                     *
2503  012272  000144                              100.                ;TEST ITERATION COUNT                        *
2504  012274  012276                              AYBA                ;SCOPE ENTRY POINT                           *
2505                                              .LIST
2506                                      ;*****************************************************************************
2507                                      ;TEST THAT TCWC BIT14 CAN BE SET, AND CLEARED.
2508  012276  052777  040000  166504  AYBA:   BIS     #BIT14,@TCWC    ;SET TCWC BIT14.
2509  012304  032777  040000  166476          BIT     #BIT14,@TCWC    ;SEE IF BIT IS SET.
2510  012312  001002                          BNE     .+6             ;BRANCH IF SET.
2511  012314  104003                          ERROR                   ;TCWC BIT14 FAILED TO SET.
2512  012316  104011                          SCOPE
2513  012320  042777  040000  166462          BIC     #BIT14,@TCWC    ;CLEAR TCWC BIT14.
2514  012326  032777  040000  166454          BIT     #BIT14,@TCWC    ;SEE IF BIT IS CLEAR.
2515  012334  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2516  012336  104003                          ERROR                   ;TCWC BIT14 FAILED TO CLEAR.
2517  012340  104011                          SCOPE                   ;SCOPE.
2518                                      ;*****************************************************************************
2519  012342  000141                      T141:   141                 ;ROUTINE NUMBER 141                          *
2520  012344  012376                              T142                ;ADDRESS OF NEXT ROUTINE                     *
2521  012346  000012                              10.                 ;TEST ITERATION COUNT                        *
2522  012350  012352                              BAYBA               ;SCOPE ENTRY POINT                           *
2523                                              .LIST
2524                                      ;*****************************************************************************
2525                                      ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT14
2526  012352  052777  040000  166430  BAYBA:  BIS     #BIT14,@TCWC    ;SET TCWC BIT14
2527  012360  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2528  012362  032777  040000  166420          BIT     #BIT14,@TCWC    ;SEE IF BIT IS CLEAR.
2529  012370  001401                          BEQ     BAYBB           ;BR IF BIT IS CLEAR.
2530  012372  104003                          ERROR                   ;RESET FAILED TO CLEAR TCWC BIT14
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2531  012374  104011                  BAYBB:  SCOPE                   ;SCOPE.
2532                                  ;*************************************************************************
2533  012376  000142                  T142:   142                     ;ROUTINE NUMBER 142                     *
2534  012400  012452                          T143                    ;ADDRESS OF NEXT ROUTINE                *
2535  012402  000144                          100.                    ;TEST ITERATION COUNT                   *
2536  012404  012406                          AZBA                    ;SCOPE ENTRY POINT                      *
2537                                          .LIST
2538                                  ;*************************************************************************
2539                                  ;TEST THAT TCWC BIT15 CAN BE SET, AND CLEARED.
2540  012406  052777  100000  166374  AZBA:   BIS     #BIT15,@TCWC    ;SET TCWC BIT15.
2541  012414  032777  100000  166366          BIT     #BIT15,@TCWC    ;SEE IF BIT IS SET.
2542  012422  001002                          BNE     .+6             ;BRANCH IF SET.
2543  012424  104003                          ERROR                   ;TCWC BIT15 FAILED TO SET.
2544  012426  104011                          SCOPE
2545  012430  042777  100000  166352          BIC     #BIT15,@TCWC    ;CLEAR TCWC BIT15.
2546  012436  032777  100000  166344          BIT     #BIT15,@TCWC    ;SEE IF BIT IS CLEAR.
2547  012444  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2548  012446  104003                          ERROR                   ;TCWC BIT15 FAILED TO CLEAR.
2549  012450  104011                          SCOPE                   ;SCOPE.
2550                                  ;*************************************************************************
2551  012452  000143                  T143:   143                     ;ROUTINE NUMBER 143                     *
2552  012454  012506                          T144                    ;ADDRESS OF NEXT ROUTINE                *
2553  012456  000012                          10.                     ;TEST ITERATION COUNT                   *
2554  012460  012462                          BAZBA                   ;SCOPE ENTRY POINT                      *
2555                                          .LIST
                                      ;*************************************************************************
                                      ;TEST THAT RESET INSTRUCTION CLEARS TCWC BIT15
2559  012462  052777  100000  166320  BAZBA:  BIS     #BIT15,@TCWC    ;SET TCWC BIT15
2560  012470  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2561  012472  032777  100000  166310          BIT     #BIT15,@TCWC    ;SEE IF BIT IS CLEAR.
2562  012500  001401                          BEQ     BAZBB           ;BR IF BIT IS CLEAR.
2563  012502  104003                          ERROR                   ;RESET FAILED TO CLEAR TCWC BIT15
2564  012504  104011                  BAZBB:  SCOPE                   ;SCOPE.
2565                                  ;*************************************************************************
2566  012506  000144                  T144:   144                     ;ROUTINE NUMBER 144                     *
2567  012510  012544                          T145                    ;ADDRESS OF NEXT ROUTINE                *
2568  012512  001750                          1000.                   ;TEST ITERATION COUNT                   *
2569  012514  012516                          AACA                    ;SCOPE ENTRY POINT                      *
2570                                          .LIST
2571                                  ;*************************************************************************
2572                                  ;TEST THAT TCDT CAN BE SET TO 125252
2573  012516  012777  125252  166270  AACA:   MOV     #125252,@TCDT   ;SET TCDT TO VALUE.
2574  012524  022777  125252  166262          CMP     #125252,@TCDT   ;SEE IF TCDT IS SET TO VALUE.
2575  012532  001401                          BEQ     AACB            ;BRANCH IF TCDT IS SET CORRECTLY.
2576  012534  104003                          ERROR                   ;TCDT DID NOT SET TO VALUE.
2577  012536  005077  166252          AACB:   CLR     @TCDT           ;CLEAR TCDT
2578  012542  104011                          SCOPE
2579                                  ;*************************************************************************
2580  012544  000145                  T145:   145                     ;ROUTINE NUMBER 145                     *
2581  012546  012602                          T146                    ;ADDRESS OF NEXT ROUTINE                *
2582  012550  001750                          1000.                   ;TEST ITERATION COUNT                   *
2583  012552  012554                          ABCA                    ;SCOPE ENTRY POINT                      *
2584                                          .LIST
2585                                  ;*************************************************************************
2586                                  ;TEST THAT TCDT CAN BE SET TO 052525
2587  012554  012777  052525  166232  ABCA:   MOV     #052525,@TCDT   ;SET TCDT TO VALUE.
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2587  012562  022777  052525  166224          CMP     #052525,@TCDT   ;SEE IF TCDT IS SET TO VALUE.
2588  012570  001401                          BEQ     ABCB            ;BRANCH IF TCDT IS SET CORRECTLY.
2589  012572  104003                          ERROR                   ;TCDT DID NOT SET TO VALUE.
2590  012574  005077  166214          ABCB:   CLR     @TCDT           ;CLEAR TCDT
2591  012600  104011                          SCOPE
2592                                  ;*****************************************************************
2593  012602  000146                  T146:   146                     ;ROUTINE NUMBER 146                *
2594  012604  012640                          T147                    ;ADDRESS OF NEXT ROUTINE           *
2595  012606  001750                          1000.                   ;TEST ITERATION COUNT              *
2596  012610  012612                          ACCA                    ;SCOPE ENTRY POINT                 *
2597                                          .LIST
2598                                  ;*****************************************************************
2599                                  ;TEST THAT TCDT CAN BE SET TO 177777
2600  012612  012777  177777  166174  ACCA:   MOV     #177777,@TCDT   ;SET TCDT TO VALUE.
2601  012620  022777  177777  166166          CMP     #177777,@TCDT   ;SEE IF TCDT IS SET TO VALUE.
2602  012626  001401                          BEQ     ACCB            ;BRANCH IF TCDT IS SET CORRECTLY.
2603  012630  104003                          ERROR                   ;TCDT DID NOT SET TO VALUE.
2604  012632  005077  166156          ACCB:   CLR     @TCDT           ;CLEAR TCDT
2605  012636  104011                          SCOPE
2606                                  ;*****************************************************************
2607  012640  000147                  T147:   147                     ;ROUTINE NUMBER 147                *
2608  012642  012676                          T150                    ;ADDRESS OF NEXT ROUTINE           *
2609  012644  001750                          1000.                   ;TEST ITERATION COUNT              *
2610  012646  012650                          ADCA                    ;SCOPE ENTRY POINT                 *
2611                                          .LIST
2612                                  ;*****************************************************************
2613                                  ;TEST THAT TCBA CAN BE SET TO 125252
2614  012650  012777  125252  166134  ADCA:   MOV     #125252,@TCBA   ;SET TCBA TO VALUE.
2615  012656  022777  125252  166126          CMP     #125252,@TCBA   ;SEE IF TCBA IS SET TO VALUE.
2616  012664  001401                          BEQ     ADCB            ;BRANCH IF TCBA IS SET CORRECTLY.
2617  012666  104003                          ERROR                   ;TCBA DID NOT SET TO VALUE.
2618  012670  005077  166116          ADCB:   CLR     @TCBA           ;CLEAR TCBA
2619  012674  104011                          SCOPE
2620                                  ;*****************************************************************
2621  012676  000150                  T150:   150                     ;ROUTINE NUMBER 150                *
2622  012700  012734                          T151                    ;ADDRESS OF NEXT ROUTINE           *
2623  012702  001750                          1000.                   ;TEST ITERATION COUNT              *
2624  012704  012706                          AECA                    ;SCOPE ENTRY POINT                 *
2625                                          .LIST
2626                                  ;*****************************************************************
2627                                  ;TEST THAT TCBA CAN BE SET TO 052524
2628  012706  012777  052524  166076  AECA:   MOV     #052524,@TCBA   ;SET TCBA TO VALUE.
2629  012714  022777  052524  166070          CMP     #052524,@TCBA   ;SEE IF TCBA IS SET TO VALUE.
2630  012722  001401                          BEQ     AECB            ;BRANCH IF TCBA IS SET CORRECTLY.
2631  012724  104003                          ERROR                   ;TCBA DID NOT SET TO VALUE.
2632  012726  005077  166060          AECB:   CLR     @TCBA           ;CLEAR TCBA
2633  012732  104011                          SCOPE
2634                                  ;*****************************************************************
2635  012734  000151                  T151:   151                     ;ROUTINE NUMBER 151                *
2636  012736  012772                          T152                    ;ADDRESS OF NEXT ROUTINE           *
2637  012740  001750                          1000.                   ;TEST ITERATION COUNT              *
2638  012742  012744                          AFCA                    ;SCOPE ENTRY POINT                 *
2639                                          .LIST
2640                                  ;*****************************************************************
2641                                  ;TEST THAT TCBA CAN BE SET TO 177776
2642  012744  012777  177776  166040  AFCA:   MOV     #177776,@TCBA   ;SET TCBA TO VALUE.
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2643  012752  022777  177776  166032          CMP     #177776,@TCBA   ;SEE IF TCBA IS SET TO VALUE.
2644  012760  001401                          BEQ     AFCB            ;BRANCH IF TCBA IS SET CORRECTLY.
2645  012762  104003                          ERROR                   ;TCBA DID NOT SET TO VALUE.
2646  012764  005077  166022          AFCB:   CLR     @TCBA           ;CLEAR TCBA
2647  012770  104011                          SCOPE
2648                                  ;*****************************************************************************
2649  012772  000152                  T152:   152                     ;ROUTINE NUMBER 152                         *
2650  012774  013030                          T153                    ;ADDRESS OF NEXT ROUTINE                    *
2651  012776  001750                          1000.                   ;TEST ITERATION COUNT                       *
2652  013000  013002                          AGCA                    ;SCOPE ENTRY POINT                          *
2653                                          .LIST
2654                                  ;*****************************************************************************
2655                                  ;TEST THAT TCWC CAN BE SET TO 125252
2656  013002  012777  125252  166000  AGCA:   MOV     #125252,@TCWC   ;SET TCWC TO VALUE.
2657  013010  022777  125252  165772          CMP     #125252,@TCWC   ;SEE IF TCWC IS SET TO VALUE.
2658  013016  001401                          BEQ     AGCB            ;BRANCH IF TCWC IS SET CORRECTLY.
2659  013020  104003                          ERROR                   ;TCWC DID NOT SET TO VALUE.
2660  013022  005077  165762          AGCB:   CLR     @TCWC           ;CLEAR TCWC
2661  013026  104011                          SCOPE
2662                                  ;*****************************************************************************
2663  013030  000153                  T153:   153                     ;ROUTINE NUMBER 153                         *
2664  013032  013066                          T154                    ;ADDRESS OF NEXT ROUTINE                    *
2665  013034  001750                          1000.                   ;TEST ITERATION COUNT                       *
2666  013036  013040                          AHCA                    ;SCOPE ENTRY POINT                          *
2667                                          .LIST
2668                                  ;*****************************************************************************
2669                                  ;TEST THAT TCWC CAN BE SET TO 052525
2670  013040  012777  052525  165742  AHCA:   MOV     #052525,@TCWC   ;SET TCWC TO VALUE.
2671  013046  022777  052525  165734          CMP     #052525,@TCWC   ;SEE IF TCWC IS SET TO VALUE.
2672  013054  001401                          BEQ     AHCB            ;BRANCH IF TCWC IS SET CORRECTLY.
2673  013056  104003                          ERROR                   ;TCWC DID NOT SET TO VALUE.
2674  013060  005077  165724          AHCB:   CLR     @TCWC           ;CLEAR TCWC
2675  013064  104011                          SCOPE
2676                                  ;*****************************************************************************
2677  013066  000154                  T154:   154                     ;ROUTINE NUMBER 154                         *
2678  013070  013124                          T155                    ;ADDRESS OF NEXT ROUTINE                    *
2679  013072  001750                          1000.                   ;TEST ITERATION COUNT                       *
2680  013074  013076                          AICA                    ;SCOPE ENTRY POINT                          *
2681                                          .LIST
2682                                  ;*****************************************************************************
2683                                  ;TEST THAT TCWC CAN BE SET TO 177777
2684  013076  012777  177777  165704  AICA:   MOV     #177777,@TCWC   ;SET TCWC TO VALUE.
2685  013104  022777  177777  165676          CMP     #177777,@TCWC   ;SEE IF TCWC IS SET TO VALUE.
2686  013112  001401                          BEQ     AICB            ;BRANCH IF TCWC IS SET CORRECTLY.
2687  013114  104003                          ERROR                   ;TCWC DID NOT SET TO VALUE.
2688  013116  005077  165666          AICB:   CLR     @TCWC           ;CLEAR TCWC
2689  013122  104011                          SCOPE
2690                                  ;*****************************************************************************
2691  013124  000155                  T155:   155                     ;ROUTINE NUMBER 155                         *
2692  013126  013200                          T156                    ;ADDRESS OF NEXT ROUTINE                    *
2693  013130  000144                          100.                    ;TEST ITERATION COUNT                       *
2694  013132  013134                          AJCA                    ;SCOPE ENTRY POINT                          *
2695                                          .LIST
2696                                  ;*****************************************************************************
2697                                  ;TEST THAT TCCM BIT1 CAN BE SET, AND CLEARED.
2698  013134  052777  000002  165644  AJCA:   BIS     #BIT1,@TCCM     ;SET TCCM BIT1.
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2699  013142  032777  000002  165636          BIT     #BIT1,@TCCM     ;SEE IF BIT IS SET.
2700  013150  001002                          BNE     .+6             ;BRANCH IF SET.
2701  013152  104003                          ERROR                   ;TCCM BIT1 FAILED TO SET.
2702  013154  104011                          SCOPE
2703  013156  042777  000002  165622          BIC     #BIT1,@TCCM     ;CLEAR TCCM BIT1.
2704  013164  032777  000002  165614          BIT     #BIT1,@TCCM     ;SEE IF BIT IS CLEAR.
2705  013172  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2706  013174  104003                          ERROR                   ;TCCM BIT1 FAILED TO CLEAR.
2707  013176  104011                          SCOPE                   ;SCOPE.
2708                          ;*****************************************************************************
2709  013200  000156                  T156:   156                     ;ROUTINE NUMBER 156                     *
2710  013202  013234                          T157                    ;ADDRESS OF NEXT ROUTINE                *
2711  013204  000012                          10.                     ;TEST ITERATION COUNT                   *
2712  013206  013210                          BAJCA                   ;SCOPE ENTRY POINT                      *
2713                                           .LIST
2714                          ;*****************************************************************************
2715                          ;TEST THAT RESET INSTRUCTION CLEARS TCCM BIT1
2716  013210  052777  000002  165570  BAJCA:  BIS     #BIT1,@TCCM     ;SET TCCM BIT1
2717  013216  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2718  013220  032777  000002  165560          BIT     #BIT1,@TCCM     ;SEE IF BIT IS CLEAR.
2719  013226  001401                          BEQ     BAJCB           ;BR IF BIT IS CLEAR.
2720  013230  104003                          ERROR                   ;RESET FAILED TO CLEAR TCCM BIT1
2721  013232  104011                  BAJCB:  SCOPE                   ;SCOPE.
2722                          ;*****************************************************************************
2723  013234  000157                  T157:   157                     ;ROUTINE NUMBER 157                     *
2724  013236  013310                          T160                    ;ADDRESS OF NEXT ROUTINE                *
2725  013240  000144                          100.                    ;TEST ITERATION COUNT                   *
2726  013242  013244                          AKCA                    ;SCOPE ENTRY POINT                      *
2727                                           .LIST
2728                          ;*****************************************************************************
2729                          ;TEST THAT TCCM BIT2 CAN BE SET, AND CLEARED.
2730  013244  052777  000004  165534  AKCA:   BIS     #BIT2,@TCCM     ;SET TCCM BIT2.
2731  013252  032777  000004  165526          BIT     #BIT2,@TCCM     ;SEE IF BIT IS SET.
2732  013260  001002                          BNE     .+6             ;BRANCH IF SET.
2733  013262  104003                          ERROR                   ;TCCM BIT2 FAILED TO SET.
2734  013264  104011                          SCOPE
2735  013266  042777  000004  165512          BIC     #BIT2,@TCCM     ;CLEAR TCCM BIT2.
2736  013274  032777  000004  165504          BIT     #BIT2,@TCCM     ;SEE IF BIT IS CLEAR.
2737  013302  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2738  013304  104003                          ERROR                   ;TCCM BIT2 FAILED TO CLEAR.
2739  013306  104011                          SCOPE                   ;SCOPE.
2740                          ;*****************************************************************************
2741  013310  000160                  T160:   160                     ;ROUTINE NUMBER 160                     *
2742  013312  013344                          T161                    ;ADDRESS OF NEXT ROUTINE                *
2743  013314  000012                          10.                     ;TEST ITERATION COUNT                   *
2744  013316  013320                          BAKCA                   ;SCOPE ENTRY POINT                      *
2745                                           .LIST
2746                          ;*****************************************************************************
2747                          ;TEST THAT RESET INSTRUCTION CLEARS TCCM BIT1
2748  013320  052777  000002  165460  BAKCA:  BIS     #BIT1,@TCCM     ;SET TCCM BIT1
2749  013326  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2750  013330  032777  000002  165450          BIT     #BIT1,@TCCM     ;SEE IF BIT IS CLEAR.
2751  013336  001401                          BEQ     BAKCB           ;BR IF BIT IS CLEAR.
2752  013340  104003                          ERROR                   ;RESET FAILED TO CLEAR TCCM BIT1
2753  013342  104011                  BAKCB:  SCOPE                   ;SCOPE.
2754                          ;*****************************************************************************
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2755  013344  000161                    T161:   161                     ;ROUTINE NUMBER 161                     *
2756  013346  013420                            T162                    ;ADDRESS OF NEXT ROUTINE                *
2757  013350  000144                            100.                    ;TEST ITERATION COUNT                   *
2758  013352  013354                            ALCA                    ;SCOPE ENTRY POINT                      *
2759                                            .LIST
2760                                  ;*********************************************************************
2761                                  ;TEST THAT TCCM BIT3 CAN BE SET, AND CLEARED.
2762  013354  052777  000010  165424  ALCA:   BIS     #BIT3,@TCCM     ;SET TCCM BIT3.
2763  013362  032777  000010  165416  .       BIT     #BIT3,@TCCM     ;SEE IF BIT IS SET.
2764  013370  001002                          BNE     .+6             ;BRANCH IF SET.
2765  013372  104003                          ERROR                   ;TCCM BIT3 FAILED TO SET.
2766  013374  104011                          SCOPE
2767  013376  042777  000010  165402          BIC     #BIT3,@TCCM     ;CLEAR TCCM BIT3.
2768  013404  032777  000010  165374          BIT     #BIT3,@TCCM     ;SEE IF BIT IS CLEAR.
2769  013412  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2770  013414  104003                          ERROR                   ;TCCM BIT3 FAILED TO CLEAR.
2771  013416  104011                          SCOPE                   ;SCOPE.
2772                                  ;*********************************************************************
2773  013420  000162                    T162:   162                     ;ROUTINE NUMBER 162                     *
2774  013422  013454                            T163                    ;ADDRESS OF NEXT ROUTINE                *
2775  013424  000012                            10.                     ;TEST ITERATION COUNT                   *
2776  013426  013430                            BALCA                   ;SCOPE ENTRY POINT                      *
2777                                            .LIST
2778                                  ;*********************************************************************
2779                                  ;TEST THAT RESET INSTRUCTION CLEARS TCCM BIT3
2780  013430  052777  000010  165350  BALCA:  BIS     #BIT3,@TCCM     ;SET TCCM BIT3
2781  013436  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2782  013440  032777  000010  165340          BIT     #BIT3,@TCCM     ;SEE IF BIT IS CLEAR.
2783  013446  001401                          BEQ     BALCB           ;BR IF BIT IS CLEAR.
2784  013450  104003                          ERROR                   ;RESET FAILED TO CLEAR TCCM BIT3
2785  013452  104011                  BALCB:  SCOPE                   ;SCOPE.
2786                                  ;*********************************************************************
2787  013454  000163                    T163:   163                     ;ROUTINE NUMBER 163                     *
2788  013456  013530                            T164                    ;ADDRESS OF NEXT ROUTINE                *
2789  013460  000144                            100.                    ;TEST ITERATION COUNT                   *
2790  013462  013464                            AMCA                    ;SCOPE ENTRY POINT                      *
2791                                            .LIST
2792                                  ;*********************************************************************
2793                                  ;TEST THAT TCCM BIT4 CAN BE SET, AND CLEARED.
2794  013464  052777  000020  165314  AMCA:   BIS     #BIT4,@TCCM     ;SET TCCM BIT4.
2795  013472  032777  000020  165306          BIT     #BIT4,@TCCM     ;SEE IF BIT IS SET.
2796  013500  001002                          BNE     .+6             ;BRANCH IF SET.
2797  013502  104003                          ERROR                   ;TCCM BIT4 FAILED TO SET.
2798  013504  104011                          SCOPE
2799  013506  042777  000020  165272          BIC     #BIT4,@TCCM     ;CLEAR TCCM BIT4.
2800  013514  032777  000020  165264          BIT     #BIT4,@TCCM     ;SEE IF BIT IS CLEAR.
2801  013522  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2802  013524  104003                          ERROR                   ;TCCM BIT4 FAILED TO CLEAR.
2803  013526  104011                          SCOPE                   ;SCOPE.
2804                                  ;*********************************************************************
2805  013530  000164                    T164:   164                     ;ROUTINE NUMBER 164                     *
2806  013532  013564                            T165                    ;ADDRESS OF NEXT ROUTINE                *
2807  013534  000012                            10.                     ;TEST ITERATION COUNT                   *
2808  013536  013540                            BAMCA                   ;SCOPE ENTRY POINT                      *
2809                                            .LIST
2810                                  ;*********************************************************************
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2811                                    ;TEST THAT RESET INSTRUCTION CLEARS TCCM BIT4
2812  013540  052777  000020  165240  BAMCA:  BIS     #BIT4,@TCCM     ;SET TCCM BIT4
2813  013546  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2814  013550  032777  000020  165230          BIT     #BIT4,@TCCM     ;SEE IF BIT IS CLEAR.
2815  013556  001401                          BEQ     BAMCB           ;BR IF BIT IS CLEAR.
2816  013560  104003                          ERROR                   ;RESET FAILED TO CLEAR TCCM BIT4
2817  013562  104011                  BAMCB:  SCOPE                   ;SCOPE.
2818                                    ;*****************************************************************
2819  013564  000165                  T165:   165                     ;ROUTINE NUMBER 165                     *
2820  013566  013640                          T166                    ;ADDRESS OF NEXT ROUTINE                *
2821  013570  000144                          100.                    ;TEST ITERATION COUNT                   *
2822  013572  013574                          ANCA                    ;SCOPE ENTRY POINT                      *
2823                                          .LIST
2824                                    ;*****************************************************************
2825                                    ;TEST THAT TCCM BITS CAN BE SET, AND CLEARED.
2826  013574  052777  000040  165204  ANCA:   BIS     #BIT5,@TCCM     ;SET TCCM BITS.
2827  013602  032777  000040  165176          BIT     #BIT5,@TCCM     ;SEE IF BIT IS SET.
2828  013610  001002                          BNE     .+6             ;BRANCH IF SET.
2829  013612  104003                          ERROR                   ;TCCM BITS FAILED TO SET.
2830  013614  104011                          SCOPE
2831  013616  042777  000040  165162          BIC     #BIT5,@TCCM     ;CLEAR TCCM BITS.
2832  013624  032777  000040  165154          BIT     #BIT5,@TCCM     ;SEE IF BIT IS CLEAR.
2833  013632  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2834  013634  104003                          ERROR                   ;TCCM BITS FAILED TO CLEAR.
2835  013636  104011                          SCOPE                   ;SCOPE.
2836                                    ;*****************************************************************
2837  013640  000166                  T166:   166                     ;ROUTINE NUMBER 166                     *
2838  013642  013674                          T167                    ;ADDRESS OF NEXT ROUTINE                *
2839  013644  000012                          10.                     ;TEST ITERATION COUNT                   *
2840  013646  013650                          BANCA                   ;SCOPE ENTRY POINT                      *
2841                                          .LIST
2842                                    ;*****************************************************************
2843                                    ;TEST THAT RESET INSTRUCTION CLEARS TCCM BITS
2844  013650  052777  000040  165130  BANCA:  BIS     #BIT5,@TCCM     ;SET TCCM BITS
2845  013656  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
2846  013660  032777  000040  165120          BIT     #BIT5,@TCCM     ;SEE IF BIT IS CLEAR.
2847  013666  001401                          BEQ     BANCB           ;BR IF BIT IS CLEAR.
2848  013670  104003                          ERROR                   ;RESET FAILED TO CLEAR TCCM BITS
2849  013672  104011                  BANCB:  SCOPE                   ;SCOPE.
2850                                    ;*****************************************************************
2851  013674  000167                  T167:   167                     ;ROUTINE NUMBER 167                     *
2852  013676  013750                          T170                    ;ADDRESS OF NEXT ROUTINE                *
2853  013700  000144                          100.                    ;TEST ITERATION COUNT                   *
2854  013702  013704                          AOCA                    ;SCOPE ENTRY POINT                      *
2855                                          .LIST
2856                                    ;*****************************************************************
2857                                    ;TEST THAT TCCM BIT6 CAN BE SET, AND CLEARED.
2858  013704  052777  000100  165074  AOCA:   BIS     #BIT6,@TCCM     ;SET TCCM BIT6.
2859  013712  032777  000100  165066          BIT     #BIT6,@TCCM     ;SEE IF BIT IS SET.
2860  013720  001002                          BNE     .+6             ;BRANCH IF SET.
2861  013722  104003                          ERROR                   ;TCCM BIT6 FAILED TO SET.
2862  013724  104011                          SCOPE
2863  013726  042777  000100  165052          BIC     #BIT6,@TCCM     ;CLEAR TCCM BIT6.
2864  013734  032777  000100  165044          BIT     #BIT6,@TCCM     ;SEE IF BIT IS CLEAR.
2865  013742  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
2866  013744  104003                          ERROR                   ;TCCM BIT6 FAILED TO CLEAR.
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 2867  013746  104011                        SCOPE                   ;SCOPE.
 2868                                ;*****************************************************************
 2869  013750  000170                 T170:  170                     ;ROUTINE NUMBER 170                *
 2870  013752  014004                        T171                    ;ADDRESS OF NEXT ROUTINE           *
 2871  013754  000012                        10.                     ;TEST ITERATION COUNT              *
 2872  013756  013760                        BAOCA                   ;SCOPE ENTRY POINT                 *
 2873                                        .LIST
 2874                                ;*****************************************************************
 2875                                ;TEST THAT RESET INSTRUCTION CLEARS TCCM BIT6
 2876  013760  052777  000100  165020 BAOCA:  BIS     #BIT6,@TCCM     ;SET TCCM BIT6
 2877  013766  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
 2878  013770  032777  000100  165010        BIT     #BIT6,@TCCM     ;SEE IF BIT IS CLEAR.
 2879  013776  001401                        BEQ     BAOCB           ;BR IF BIT IS CLEAR.
 2880  014000  104003                        ERROR                   ;RESET FAILED TO CLEAR TCCM BIT6
 2881  014002  104011                 BAOCB: SCOPE                   ;SCOPE.
 2882                                ;*****************************************************************
 2883  014004  000171                 T171:  171                     ;ROUTINE NUMBER 171                *
 2884  014006  014060                        T172                    ;ADDRESS OF NEXT ROUTINE           *
 2885  014010  000144                        100.                    ;TEST ITERATION COUNT              *
 2886  014012  014014                        APCA                    ;SCOPE ENTRY POINT                 *
 2887                                        .LIST
 2888                                ;*****************************************************************
 2889                                ;TEST THAT TCCM BIT8 CAN BE SET, AND CLEARED.
 2890  014014  052777  000400  164764 APCA:   BIS     #BIT8,@TCCM     ;SET TCCM BIT8.
 2891  014022  032777  000400  164756        BIT     #BIT8,@TCCM     ;SEE IF BIT IS SET.
 2892  014030  001002                        BNE     .+6             ;BRANCH IF SET.
 2893  014032  104003                        ERROR                   ;TCCM BIT8 FAILED TO SET.
 2894  014034  104011                        SCOPE
 2895  014036  042777  000400  164742        BIC     #BIT8,@TCCM     ;CLEAR TCCM BIT8.
 2896  014044  032777  000400  164734        BIT     #BIT8,@TCCM     ;SEE IF BIT IS CLEAR.
 2897  014052  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
 2898  014054  104003                        ERROR                   ;TCCM BIT8 FAILED TO CLEAR.
 2899  014056  104011                        SCOPE                   ;SCOPE.
 2900                                ;*****************************************************************
 2901  014060  000172                 T172:  172                     ;ROUTINE NUMBER 172                *
 2902  014062  014114                        T173                    ;ADDRESS OF NEXT ROUTINE           *
 2903  014064  000012                        10.                     ;TEST ITERATION COUNT              *
 2904  014066  014070                        BAPCA                   ;SCOPE ENTRY POINT                 *
 2905                                        .LIST
 2906                                ;*****************************************************************
 2907                                ;TEST THAT RESET INSTRUCTION CLEARS TCCM BIT8
 2908  014070  052777  000400  164710 BAPCA:  BIS     #BIT8,@TCCM     ;SET TCCM BIT8
 2909  014076  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
 2910  014100  032777  000400  164700        BIT     #BIT8,@TCCM     ;SEE IF BIT IS CLEAR.
 2911  014106  001401                        BEQ     BAPCB           ;BR IF BIT IS CLEAR.
 2912  014110  104003                        ERROR                   ;RESET FAILED TO CLEAR TCCM BIT8
 2913  014112  104011                 BAPCB: SCOPE                   ;SCOPE.
 2914                                ;*****************************************************************
 2915  014114  000173                 T173:  173                     ;ROUTINE NUMBER 173                *
 2916  014116  014170                        T174                    ;ADDRESS OF NEXT ROUTINE           *
 2917  014120  000144                        100.                    ;TEST ITERATION COUNT              *
 2918  014122  014124                        AQCA                    ;SCOPE ENTRY POINT                 *
 2919                                        .LIST
 2920                                ;*****************************************************************
 2921                                ;TEST THAT TCCM BIT9 CAN BE SET, AND CLEARED.
 2922  014124  052777  001000  164654 AQCA:   BIS     #BIT9,@TCCM     ;SET TCCM BIT9.
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 2923  014132  032777  001000  164646          BIT     #BIT9,@TCCM     ;SEE IF BIT IS SET.
 2924  014140  001002                          BNE     .+6             ;BRANCH IF SET.
 2925  014142  104003                          ERROR                   ;TCCM BIT9 FAILED TO SET.
 2926  014144  104011                          SCOPE
 2927  014146  042777  001000  164632          BIC     #BIT9,@TCCM     ;CLEAR TCCM BIT9.
 2928  014154  032777  001000  164624          BIT     #BIT9,@TCCM     ;SEE IF BIT IS CLEAR.
 2929  014162  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
 2930  014164  104003                          ERROR                   ;TCCM BIT9 FAILED TO CLEAR.
 2931  014166  104011                          SCOPE                   ;SCOPE.
 2932                                  ;*****************************************************************************
 2933  014170  000174                  T174:   174                     ;ROUTINE NUMBER 174                         *
 2934  014172  014224                          T175                    ;ADDRESS OF NEXT ROUTINE                    *
 2935  014174  000012                          10.                     ;TEST ITERATION COUNT                       *
 2936  014176  014200                          BAQCA                   ;SCOPE ENTRY POINT                          *
 2937                                          .LIST
 2938                                  ;*****************************************************************************
 2939                                  ;TEST THAT RESET INSTRUCTION CLEARS TCCM BIT9
 2940  014200  052777  001000  164600  BAQCA:  BIS     #BIT9,@TCCM     ;SET TCCM BIT9
 2941  014206  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
 2942  014210  032777  001000  164570          BIT     #BIT9,@TCCM     ;SEE IF BIT IS CLEAR.
 2943  014216  001401                          BEQ     BAQCB           ;BR IF BIT IS CLEAR.
 2944  014220  104003                          ERROR                   ;RESET FAILED TO CLEAR TCCM BIT9
 2945  014222  104011                  BAQCB:  SCOPE                   ;SCOPE.
 2946                                  ;*****************************************************************************
 2947  014224  000175                  T175:   175                     ;ROUTINE NUMBER 175                         *
 2948  014226  014300                          T176                    ;ADDRESS OF NEXT ROUTINE                    *
 2949  014230  000144                          100.                    ;TEST ITERATION COUNT                       *
 2950  014232  014234                          ARCA                    ;SCOPE ENTRY POINT                          *
 2951                                          .LIST
 2952                                  ;*****************************************************************************
 2953                                  ;TEST THAT TCCM BIT10 CAN BE SET, AND CLEARED.
 2954  014234  052777  002000  164544  ARCA:   BIS     #BIT10,@TCCM    ;SET TCCM BIT10.
 2955  014242  032777  002000  164536          BIT     #BIT10,@TCCM    ;SEE IF BIT IS SET.
 2956  014250  001002                          BNE     .+6             ;BRANCH IF SET.
 2957  014252  104003                          ERROR                   ;TCCM BIT10 FAILED TO SET.
 2958  014254  104011                          SCOPE
 2959  014256  042777  002000  164522          BIC     #BIT10,@TCCM    ;CLEAR TCCM BIT10.
 2960  014264  032777  002000  164514          BIT     #BIT10,@TCCM    ;SEE IF BIT IS CLEAR.
 2961  014272  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
 2962  014274  104003                          ERROR                   ;TCCM BIT10 FAILED TO CLEAR.
 2963  014276  104011                          SCOPE                   ;SCOPE.
 2964                                  ;*****************************************************************************
 2965  014300  000176                  T176:   176                     ;ROUTINE NUMBER 176                         *
 2966  014302  014334                          T177                    ;ADDRESS OF NEXT ROUTINE                    *
 2967  014304  000012                          10.                     ;TEST ITERATION COUNT                       *
 2968  014306  014310                          BARCA                   ;SCOPE ENTRY POINT                          *
 2969                                          .LIST
 2970                                  ;*****************************************************************************
 2971                                  ;TEST THAT RESET INSTRUCTION CLEARS TCCM BIT10
 2972  014310  052777  002000  164470  BARCA:  BIS     #BIT10,@TCCM    ;SET TCCM BIT10
 2973  014316  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
 2974  014320  032777  002000  164460          BIT     #BIT10,@TCCM    ;SEE IF BIT IS CLEAR.
 2975  014326  001401                          BEQ     BARCB           ;BR IF BIT IS CLEAR.
 2976  014330  104003                          ERROR                   ;RESET FAILED TO CLEAR TCCM BIT10
 2977  014332  104011                  BARCB:  SCOPE                   ;SCOPE.
 2978                                  ;*****************************************************************************
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 2979  014334  000177                    T177:   177                     ;ROUTINE NUMBER 177                     *
 2980  014336  014410                            T200                    ;ADDRESS OF NEXT ROUTINE                *
 2981  014340  000144                            100.                    ;TEST ITERATION COUNT                   *
 2982  014342  014344                            ASCA                    ;SCOPE ENTRY POINT                      *
 2983                                            .LIST
 2984                                    ;*********************************************************** ************
 2985                                    ;TEST THAT TCCM BIT11 CAN BE SET, AND CLEARED.
 2986  014344  052777  004000  164434    ASCA:   BIS     #BIT11,@TCCM    ;SET TCCM BIT11.
 2987  014352  032777  004000  164426            BIT     #BIT11,@TCCM    ;SEE IF BIT IS SET.
 2988  014360  001002                            BNE     .+6             ;BRANCH IF SET.
 2989  014362  104003                            ERROR                   ;TCCM BIT11 FAILED TO SET.
 2990  014364  104011                            SCOPE
 2991  014366  042777  004000  164412            BIC     #BIT11,@TCCM    ;CLEAR TCCM BIT11.
 2992  014374  032777  004000  164404            BIT     #BIT11,@TCCM    ;SEE IF BIT IS CLEAR.
 2993  014402  001401                            BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
 2994  014404  104003                            ERROR                   ;TCCM BIT11 FAILED TO CLEAR.
 2995  014406  104011                            SCOPE                   ;SCOPE.
 2996                                    ;*********************************************************************
 2997  014410  000200                    T200:   200                     ;ROUTINE NUMBER 200                     *
 2998  014412  014444                            T201                    ;ADDRESS OF NEXT ROUTINE                *
 2999  014414  000012                            10.                     ;TEST ITERATION COUNT                   *
 3000  014416  014420                            BASCA                   ;SCOPE ENTRY POINT                      *
 3001                                            .LIST
 3002                                    ;*********************************************************************
 3003                                    ;TEST THAT RESET INSTRUCTION CLEARS TCCM BIT11
 3004  014420  052777  004000  164360    BASCA:  BIS     #BIT11,@TCCM    ;SET TCCM BIT11
 3005  014426  104010                            SRESET                  ;ISSUE RESET TO CLEAR BIT.
 3006  014430  032777  004000  164350            BIT     #BIT11,@TCCM    ;SEE IF BIT IS CLEAR.
 3007  014436  001401                            BEQ     BASCB           ;BR IF BIT IS CLEAR.
 3008  014440  104003                            ERROR                   ;RESET FAILED TO CLEAR TCCM BIT11
 3009  014442  104011                    BASCB:  SCOPE                   ;SCOPE.
 3010                                    ;*********************************************************************
 3011  014444  000201                    T201:   201                     ;ROUTINE NUMBER 201                     *
 3012  014446  014520                            T202                    ;ADDRESS OF NEXT ROUTINE                *
 3013  014450  000144                            100.                    ;TEST ITERATION COUNT                   *
 3014  014452  014454                            ATCA                    ;SCOPE ENTRY POINT                      *
 3015                                            .LIST
 3016                                    ;*********************************************************************
 3017                                    ;TEST THAT TCCM BIT12 CAN BE SET, AND CLEARED.
 3018  014454  052777  010000  164324    ATCA:   BIS     #BIT12,@TCCM    ;SET TCCM BIT12.
 3019  014462  032777  010000  164316            BIT     #BIT12,@TCCM    ;SEE IF BIT IS SET.
 3020  014470  001002                            BNE     .+6             ;BRANCH IF SET.
 3021  014472  104003                            ERROR                   ;TCCM BIT12 FAILED TO SET.
 3022  014474  104011                            SCOPE
 3023  014476  042777  010000  164302            BIC     #BIT12,@TCCM    ;CLEAR TCCM BIT12.
 3024  014504  032777  010000  164274            BIT     #BIT12,@TCCM    ;SEE IF BIT IS CLEAR.
 3025  014512  001401                            BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
 3026  014514  104003                            ERROR                   ;TCCM BIT12 FAILED TO CLEAR.
 3027  014516  104011                            SCOPE                   ;SCOPE.
 3028                                    ;*********************************************************************
 3029  014520  000202                    T202:   202                     ;ROUTINE NUMBER 202                     *
 3030  014522  014554                            T203                    ;ADDRESS OF NEXT ROUTINE                *
 3031  014524  000012                            10.                     ;TEST ITERATION COUNT                   *
 3032  014526  014530                            BATCA                   ;SCOPE ENTRY POINT                      *
 3033                                            .LIST
 3034                                    ;*********************************************************************
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3035
3036  014530  052777  010000  164250  BATCA:  BIS     #BIT12,@TCCM    ;SET TCCM BIT12
3037  014536  104010                          SRESET                  ;ISSUE RESET TO CLEAR BIT.
3038  014540  032777  010000  164240          BIT     #BIT12,@TCCM    ;SEE IF BIT IS CLEAR.
3039  014546  001401                          BEQ     BATCB           ;BR IF BIT IS CLEAR.
3040  014550  104003                          ERROR   ~               ;RESET FAILED TO CLEAR TCCM BIT12
3041  014552  104011                  BATCB:  SCOPE                   ;SCOPE.
3042                                  ;*****************************************************************
3043  014554  000203                  T203:   203                     ;ROUTINE NUMBER 203                     *
3044  014556  014630                          T204                    ;ADDRESS OF NEXT ROUTINE                *
3045  014560  000144                          100.                    ;TEST ITERATION COUNT                   *
3046  014562  014564                          AUCA                    ;SCOPE ENTRY POINT                      *
3047                                          .LIST
3048                                  ;*****************************************************************
3049                                  ;TEST THAT TCCM BIT13 CAN BE SET, AND CLEAPED.
3050  014564  052777  020000  164214  AUCA:   BIS     #BIT13,@TCCM    ;SET TCCM BIT13.
3051  014572  032777  020000  164206          BIT     #BIT13,@TCCM    ;SEE IF BIT IS SET.
3052  014600  001002                          BNE     .+6             ;BRANCH IF SET.
3053  014602  104003                          ERROR                   ;TCCM BIT13 FAILED TO SET.
3054  014604  104011                          SCOPE
3055  014606  042777  020000  164172          BIC     #BIT13,@TCCM    ;CLEAR TCCM BIT13.
3056  014614  032777  020000  164164          BIT     #BIT13,@TCCM    ;SEE IF BIT IS CLEAR.
3057  014622  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
3058  014624  104003                          ERROR                   ;TCCM BIT13 FAILED TO CLEAR.
3059  014626  104011                          SCOPE                   ;SCOPE.
3060                                  ;*****************************************************************
3061  014630  000204                  T204:   204                     ;ROUTINE NUMBER 204                     *
3062  014632  014664                          T205                    ;ADDRESS OF NEXT ROUTINE                *
3063  014634  000012                          10.                     ;TEST ITERATION COUNT                   *
3064  014636  014640                          BAUCA                   ;SCOPE ENTRY POINT                      *
3065                                          .LIST
3066                                  ;*****************************************************************
3067                                  ;TEST THAT RESET INSTRUCTION CLEARS TCCM BIT13
3068  014640  052777  020000  164140  BAUCA:  BIS     #BIT13,@TCCM    ;SET TCCM BIT13
3069  014646  104010                          SRESET                  ;ISS : RESET TO CLEAR BIT.
3070  014650  032777  020000  164130          BIT     #BIT13,@TCCM    ;SEE .F BIT IS CLEAR.
3071  014656  001401                          BEQ     BAUCB           ;BR IF BIT IS CLEAR.
3072  014660  104003                          ERROR   ~               ;RESET FAILED TO CLEAR TCCM BIT13
3073  014662  104011                  BAUCB:  SCOPE                   ;SCOPE.
3074                                  ;*****************************************************************
3075  014664  000205                  T205:   205                     ;ROUTINE NUMBER 205                     *
3076  014666  014740                          T206                    ;ADDRESS OF NEXT ROUTINE                *
3077  014670  000144                          100.                    ;TEST ITERATION COUNT                   *
3078  014672  014674                          AVCA                    ;SCOPE ENTRY POINT                      *
3079                                          .LIST
3080                                  ;********* *****************************************************
3081                                  ;TEST THAT TCST BIT0 CAN BE SET, AND CLEARED.
3082  014674  052777  000001  164102  AVCA:   BIS     #BIT0,@TCST     ;SET TCST BIT0.
3083  014702  032777  000001  164074          BIT     #BIT0,@TCST     ;SEE IF BIT IS SET.
3084  014710  001002                          BNE     .+6             ;BRANCH IF SET.
3085  014712  104003                          ERROR                   ;TCST BIT0 FAILED TO SET.
3086  014714  104011                          SCOPE
3087  014716  042777  000001  164060          BIC     #BIT0,@TCST     ;CLEAR TCST BIT0.
3088  014724  032777  000001  164052          BIT     #BIT0,@TCST     ;SEE IF BIT IS CLEAR.
3089  014732  001401                          BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
3090  014734  104003                          ERROR                   ;TCST BIT0 FAILED TO CLEAR.
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3091  014736  104011                        SCOPE                   ;SCOPE.
3092                                ;*****************************************************************************
3093  014740  000206                T206:   206                     ;ROUTINE NUMBER 206                         *
3094  014742  014774                        T207                    ;ADDRESS OF NEXT ROUTINE                    *
3095  014744  000012                        10.                     ;TEST ITERATION COUNT                       *
3096  014746  014750                        BAVCA                   ;SCOPE ENTRY POINT                          *
3097                                        .LIST
3098                                ;*****************************************************************************
3099                                ;TEST THAT RESET INSTRUCTION CLEARS TCST BIT0
3100  014750  052777  000001  164026 BAVCA:  BIS     #BIT0,@TCST     ;SET TCST BIT0
3101  014756  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
3102  014760  032777  000001  164016        BIT     #BIT0,@TCST     ;SEE IF BIT IS CLEAR.
3103  014766  001401                        BEQ     BAVCB           ;BR IF BIT IS CLEAR.
3104  014770  104003                        ERROR                   ;RESET FAILED TO CLEAR TCST BIT0
3105  014772  104011                BAVCB:  SCOPE                   ;SCOPE.
3106                                ;*****************************************************************************
3107  014774  000207                T207:   207                     ;ROUTINE NUMBER 207                         *
3108  014776  015050                        T210                    ;ADDRESS OF NEXT ROUTINE                    *
3109  015000  000144                        100.                    ;TEST ITERATION COUNT                       *
3110  015002  015004                        AWCA                    ;SCOPE ENTRY POINT                          *
3111                                        .LIST
3112                                ;*****************************************************************************
3113                                ;TEST THAT TCST BIT1 CAN BE SET, AND CLEARED.
3114  015004  052777  000002  163772 AWCA:   BIS     #BIT1,@TCST     ;SET TCST BIT1.
3115  015012  032777  000002  163764        BIT     #BIT1,@TCST     ;SEE IF BIT IS SET.
3116  015020  001002                        BNE     .+6             ;BRANCH IF SET.
3117  015022  104003                        ERROR                   ;TCST BIT1 FAILED TO SET.
3118  015024  104011                        SCOPE
3119  015026  042777  000002  163750        BIC     #BIT1,@TCST     ;CLEAR TCST BIT1.
3120  015034  032777  000002  163742        BIT     #BIT1,@TCST     ;SEE IF BIT IS CLEAR.
3121  015042  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
3122  015044  104003                        ERROR                   ;TCST BIT1 FAILED TO CLEAR.
3123  015046  104011                        SCOPE                   ;SCOPE.
3124                                ;*****************************************************************************
3125  015050  000210                T210:   210                     ;ROUTINE NUMBER 210                         *
3126  015052  015104                        T211                    ;ADDRESS OF NEXT ROUTINE                    *
3127  015054  000012                        10.                     ;TEST ITERATION COUNT                       *
3128  015056  015060                        BAWCA                   ;SCOPE ENTRY POINT                          *
3129                                        .LIST
3130                                ;*****************************************************************************
3131                                ;TEST THAT RESET INSTRUCTION CLEARS TCST BIT1
3132  015060  052777  000002  163716 BAWCA:  BIS     #BIT1,@TCST     ;SET TCST BIT1
3133  015066  104010                        SRESET                  ;ISSUE RESET TO CLEAR BIT.
3134  015070  032777  000002  163706        BIT     #BIT1,@TCST     ;SEE IF BIT IS CLEAR.
3135  015076  001401                        BEQ     BAWCB           ;BR IF BIT IS CLEAR.
3136  015100  104003                        ERROR                   ;RESET FAILED TO CLEAR TCST BIT1
3137  015102  104011                BAWCB:  SCOPE                   ;SCOPE.
3138                                ;*****************************************************************************
3139  015104  000211                T211:   211                     ;ROUTINE NUMBER 211                         *
3140  015106  015132                        T212                    ;ADDRESS OF NEXT ROUTINE                    *
3141  015110  000144                        100.                    ;TEST ITERATION COUNT                       *
3142  015112  015114                        AXCA                    ;SCOPE ENTRY POINT                          *
3143                                        .LIST
3144                                ;*****************************************************************************
3145                                ;TEST THAT TCCM BIT7 IS SET FOLLOWING RESET INSTRUCTION.
3146  015114  032777  000200  163664 AXCA:   BIT     #BIT7,@TCCM     ;SEE IF TCCM BIT7 IS SET.
```

```
3147  015122  001001                        BNE     .+4             ;BRANCH IF BIT IS SET.
3148  015124  104003                        ERROR                   ;TCCM BIT7 NOT SET AFTER RESET.
3149  015126  104010                        SRESET                  ;ISSUE RESET.
3150  015130  104011                        SCOPE                   ;SCOPE
3151                                ;*************************************************************************
3152  015132  000212                T212:   212                     ;ROUTINE NUMBER 212                     *
3153  015134  015160                        T213                    ;ADDRESS OF NEXT ROUTINE                *
3154  015136  000012                        10.                     ;TEST ITERATION COUNT                   *
3155  015140  015142                        AYCA                    ;SCOPE ENTRY POINT                      *
3156                                        .LIST
3157                                ;*************************************************************************
3158                                ;TEST THAT TCCM BIT15 IS CLEAR FOLLOWING A RESET INSTRUCTION.
3159  015142  032777  100000  163636 AYCA:   BIT     #BIT15,@TCCM    ;SEE IF TCCM BIT15 IS CLEAR
3160  015150  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
3161  015152  104003                        ERROR                   ;TCCM BIT15 NOT CLEAR AFTER RESET.
3162  015154  104010                        SRESET                  ;ISSUE RESET.
3163  015156  104011                        SCOPE                   ;SCOPE
3164                                ;*************************************************************************
3165  015160  000213                T213:   213                     ;ROUTINE NUMBER 213                     *
3166  015162  015206                        T214                    ;ADDRESS OF NEXT ROUTINE                *
3167  015164  000012                        10.                     ;TEST ITERATION COUNT                   *
3168  015166  015170                        AZCA                    ;SCOPE ENTRY POINT                      *
3169                                        .LIST
3170                                ;*************************************************************************
3171                                ;TEST THAT TCST BIT7 IS CLEAR FOLLOWING A RESET INSTRUCTION.
3172  015170  032777  000200  163606 AZCA:   BIT     #BIT7,@TCST     ;SEE IF TCST BIT7 IS CLEAR
3173  015176  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
3174  015200  104003                        ERROR                   ;TCST BIT7 NOT CLEAR AFTER RESET.
3175  015202  104010                        SRESET                  ;ISSUE RESET.
3176  015204  104011                        SCOPE                   ;SCOPE
3177                                ;*************************************************************************
3178  015206  000214                T214:   214                     ;ROUTINE NUMBER 214                     *
3179  015210  015234                        T215                    ;ADDRESS OF NEXT ROUTINE                *
3180  015212  000012                        10.                     ;TEST ITERATION COUNT                   *
3181  015214  015216                        AADA                    ;SCOPE ENTRY POINT                      *
3182                                        .LIST
3183                                ;*************************************************************************
3184                                ;TEST THAT TCST BIT8 IS CLEAR FOLLOWING A RESET INSTRUCTION.
3185  015216  032777  000400  163560 AADA:   BIT     #BIT8,@TCST     ;SEE IF TCST BIT8 IS CLEAR
3186  015224  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
3187  015226  104003                        ERROR                   ;TCST BIT8 NOT CLEAR AFTER RESET.
3188  015230  104010                        SRESET                  ;ISSUE RESET.
3189  015232  104011                        SCOPE                   ;SCOPE
3190                                ;*************************************************************************
3191  015234  000215                T215:   215                     ;ROUTINE NUMBER 215                     *
3192  015236  015262                        T216                    ;ADDRESS OF NEXT ROUTINE                *
3193  015240  000012                        10.                     ;TEST ITERATION COUNT                   *
3194  015242  015244                        ABDA                    ;SCOPE ENTRY POINT                      *
3195                                        .LIST
3196                                ;*************************************************************************
3197                                ;TEST THAT TCST BIT9 IS CLEAR FOLLOWING A RESET INSTRUCTION.
3198  015244  032777  001000  163532 ABDA:   BIT     #BIT9,@TCST     ;SEE IF TCST BIT9 IS CLEAR
3199  015252  001401                        BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
3200  015254  104003                        ERROR                   ;TCST BIT9 NOT CLEAR AFTER RESET.
3201  015256  104010                        SRESET                  ;ISSUE RESET.
3202  015260  104011                        SCOPE                   ;SCOPE
```

```
3203                                    ;*****************************************************************************
3204  015262  000216                    T216:   216                     ;ROUTINE NUMBER 216                         *
3205  015264  015310                            T217                    ;ADDRESS OF NEXT ROUTINE                    *
3206  015266  000012                            10.                     ;TEST ITERATION COUNT                       *
3207  015270  015272                            ACDA                    ;SCOPE ENTRY POINT                          *
3208                                            .LIST
3209                                    ;*****************************************************************************
3210                                    ;TEST THAT TCST BIT10 IS CLEAR FOLLOWING A RESET INSTRUCTION.
3211  015272  032777  002000  163504    ACDA:   BIT     #BIT10,@TCST    ;SEE IF TCST BIT10 IS CLEAR
3212  015300  001401                            BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
3213  015302  104003                            ERROR                   ;TCST BIT10 NOT CLEAR AFTER RESET.
3214  015304  104010                            SRESET                  ;ISSUE RESET.
3215  015306  104011                            SCOPE                   ;SCOPE
3216                                    ;*****************************************************************************
3217  015310  000217                    T217:   217                     ;ROUTINE NUMBER 217                         *
3218  015312  015336                            T220                    ;ADDRESS OF NEXT ROUTINE                    *
3219  015314  000012                            10.                     ;TEST ITERATION COUNT                       *
3220  015316  015320                            ADDA                    ;SCOPE ENTRY POINT                          *
3221                                            .LIST
3222                                    ;*****************************************************************************
3223                                    ;TEST THAT TCST BIT13 IS CLEAR FOLLOWING A RESET INSTRUCTION.
3224  015320  032777  020000  163456    ADDA:   BIT     #BIT13,@TCST    ;SEE IF TCST BIT13 IS CLEAR
3225  015326  001401                            BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
3226  015330  104003                            ERROR                   ;TCST BIT13 NOT CLEAR AFTER RESET.
3227  015332  104010                            SRESET                  ;ISSUE RESET.
3228  015334  104011                            SCOPE                   ;SCOPE
3229                                    ;*****************************************************************************
3230  015336  000220                    T220:   220                     ;ROUTINE NUMBER 220                         *
3231  015340  015364                            T221                    ;ADDRESS OF NEXT ROUTINE                    *
3232  015342  000012                            10.                     ;TEST ITERATION COUNT                       *
3233  015344  015346                            AEDA                    ;SCOPE ENTRY POINT                          *
3234                                            .LIST
3235                                    ;*****************************************************************************
3236                                    ;TEST THAT TCST BIT14 IS CLEAR FOLLOWING A RESET INSTRUCTION.
3237  015346  032777  040000  163430    AEDA:   BIT     #BIT14,@TCST    ;SEE IF TCST BIT14 IS CLEAR
3238  015354  001401                            BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
3239  015356  104003                            ERROR                   ;TCST BIT14 NOT CLEAR AFTER RESET.
3240  015360  104010                            SRESET                  ;ISSUE RESET.
3241  015362  104011                            SCOPE                   ;SCOPE
3242                                    ;*****************************************************************************
3243  015364  000221                    T221:   221                     ;ROUTINE NUMBER 221                         *
3244  015366  015412                            T222                    ;ADDRESS OF NEXT ROUTINE                    *
3245  015370  000012                            10.                     ;TEST ITERATION COUNT                       *
3246  015372  015374                            AFDA                    ;SCOPE ENTRY POINT                          *
3247                                            .LIST
3248                                    ;*****************************************************************************
3249                                    ;TEST THAT TCST BIT15 IS CLEAR FOLLOWING A RESET INSTRUCTION.
3250  015374  032777  100000  163402    AFDA:   BIT     #BIT15,@TCST    ;SEE IF TCST BIT15 IS CLEAR
3251  015402  001401                            BEQ     .+4             ;BRANCH IF BIT IS CLEAR.
3252  015404  104003                            ERROR                   ;TCST BIT15 NOT CLEAR AFTER RESET.
3253  015406  104010                            SRESET                  ;ISSUE RESET.
3254  015410  104011                            SCOPE                   ;SCOPE
3255                                    ;*****************************************************************************
3256  015412  000222                    T222:   222                     ;ROUTINE NUMBER 222                         *
3257  015414  015434                            T223                    ;ADDRESS OF NEXT ROUTINE                    *
3258  015416  023420                            10000.                  ;TEST ITERATION COUNT                       *
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3259  015420  015422                        CAAA                    ;SCOPE ENTRY POINT                      *
3260                                        .LIST
3261                                ;**********************************************************************
3262                                ;TEST ABILITY TO SET RANDOM NUMBERS IN DATA REGISTER.
3263  015422  016767  163366  000114  CAAA: MOV     TCDT,REGADR     ;ADDR OF TCDT REG TO REGADR.
3264  015430  000167  000040          JMP     CXXA
3265                                ;**********************************************************************
3266  015434  000223                T223:   223                     ;ROUTINE NUMBER 223                     *
3267  015436  015456                        T224                    ;ADDRESS OF NEXT ROUTINE                *
3268  015440  023420                        10000.                  ;TEST ITERATION COUNT                   *
3269  015442  015444                        CBBA                    ;SCOPE ENTRY POINT                      *
3270                                        .LIST
3271                                ;**********************************************************************
3272                                ;TEST ABILITY TO SET RANDOM NUMBERS IN WORD COUNT REGISTER.
3273  015444  016767  163340  000072  CBBA: MOV     TCWC,REGADR     ;ADDR OF TCWC REG TO REGADR.
3274  015452  000167  000016          JMP     CXXA
3275                                ;**********************************************************************
3276  015456  000224                T224:   224                     ;ROUTINE NUMBER 224                     *
3277  015460  015572                        T225                    ;ADDRESS OF NEXT ROUTINE                *
3278  015462  023420                        10000.                  ;TEST ITERATION COUNT                   *
3279  015464  015466                        CCCA                    ;SCOPE ENTRY POINT                      *
3280                                        .LIST
3281                                ;**********************************************************************
3282                                ;TEST ABILITY TO SET RANDOM NUMBERS IN BUS ADDRESS REGISTER.
3283  015466  016767  163320  000050  CCCA: MOV     TCBA,REGADR     ;ADDR OF TCBA REG TO REGADR.
3284                                ;
3285  015474  017767  000044  163364  CXXA: MOV     @REGADR,PRVCNT  ;SAVE CURRENT REG CONTENTS.
3286  015502  004767  164442          JSR     PC,RNGEN        ;GENERATE RANDOM NUMBER.
3287  015506  010067  163356          MOV     R0,RNDNMB       ;SAVE RANDOM NUMBER.
3288  015512  010077  000026          MOV     R0,@REGADR      ;MOVE RANDOM NUMBER TO TEST REGISTER.
3289  015516  027767  000022  163344  CMP     @REGADR,RNDNMB  ;CHECK RANDOM # AND REG CONTENTS.
3290  015524  001421                  BEQ     CXXX            ;BR IF BOTH SAME. (OK).
3291  015526  004567  165130          JSR     R5,OACNV        ;CONVERT EXPECTED CONTENTS TO ASCII.
3292  015532  001070                  RNDNMB
3293  015534  003160                  AASB
3294  015536  000006                  6
3295  015540  004567  165116          JSR     R5,OACNV        ;CONVERT CONTENTS OF TEST REG TO ASCII.
3296  015544  000000          REGADR: OPEN                    ;ADDR OF TEST REG IS STORED HERE.
3297  015546  003176                  AWAS
3298  015550  000006                  6
3299  015552  004567  165104          JSR     R5,OACNV        ;CONVERT PREVIOUS REGISTER CONTENTS TO ASCII.
3300  015556  001066                  PRVCNT
3301  015560  003224                  APWAS
3302  015562  000006                  6
3303  015564  104014                  ERROR1                  ;CONTENTS OF REG NOT SAME AS DATA THAT
3304  015566  003137                  ERDAT                   ;PROGRAM TRIED TO LOAD.
3305  015570  104011          CXXX:   SCOPE                   ;SCOPE.
3306                                ;**********************************************************************
3307  015572  000225                T225:   225                     ;ROUTINE NUMBER 225                     *
3308  015574  177777                        TLAST                   ;ADDRESS OF NEXT ROUTINE                *
3309  015576  000001                        1                       ;TEST ITERATION COUNT                   *
3310  015600  015602                        ZZZA                    ;SCOPE ENTRY POINT                      *
3311                                        .LIST
3312                                ;**********************************************************************
3313                                ;DUMMY END TEST.
3314  015602  104011          ZZZA:   SCOPE
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  3315          000001                          .END
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AAA	003624	994	998#	
AAB	003640	998	1001#	
AABA	006776	1736	1740#	
AACA	012516	2568	2572#	
AACB	012536	2574	2576#	
AADA	015216	3181	3185#	
AASB	003160	698	920#	3293
ABA	003656	1008	1012#	
ABB	003672	1012	1015#	
ABBA	007106	1768	1772#	
ABCA	012554	2582	2586#	
ABCB	012574	2588	2590#	
ABDA	015244	3194	3198#	
ACA	003710	1022	1026#	
ACB	003724	1026	1029#	
ACBA	007216	1800	1804#	
ACCA	012612	2596	2600#	
ACCB	012632	2602	2604#	
ACDA	015272	3207	3211#	
ADA	003742	1036	1040#	
ADB	003756	1040	1043#	
ADBA	007326	1832	1836#	
ADCA	012650	2610	2614#	
ADCB	012670	2616	2618#	
ADDA	015320	3220	3224#	
AEA	003774	1050	1054#	
AEB	004010	1054	1057#	
AEBA	007436	1864	1868#	
AECA	012706	2624	2628#	
AECB	012726	2630	2632#	
AEDA	015346	3233	3237#	
AFA	004026	1064	1068#	
AFBA	007546	1896	1900#	
AFCA	012744	2638	2642#	
AFCB	012764	2644	2646#	
AFDA	015374	3246	3250#	
AGA	004136	1096	1100#	
AGBA	007656	1928	1932#	
AGCA	013002	2652	2656#	
AGCB	013022	2658	2660#	
AHA	004246	1128	1132#	
AHBA	007766	1960	1964#	
AHCA	013040	2666	2670#	
AHCB	013060	2672	2674#	
AIA	004356	1160	1164#	
AIBA	010076	1992	1996#	
AICA	013076	2680	2684#	
AICB	013116	2686	2688#	
AICNT	003127	725	915#	
AINCRT	003271	588	935#	
AJA	004466	1192	1196#	
AJBA	010206	2024	2028#	
AJCA	013134	2694	2698#	
AKA	004576	1224	1228#	
AKBA	010316	2056	2060#	
AKCA	013244	2726	2730#	

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ALA     004706          1256    1260#
ALBA    010426          2088    2092#
ALCA    013354          2758    2762#
AMA     005016          1238    1292#
AMBA    010536          2120    2124#
AMCA    013464          2790    2794#
ANA     005126          1320    1324#
ANBA    010646          2152    2156#
ANCA    013574          2822    2826#
AOA     005236          1352    1356#
AOBA    010756          2184    2188#
AOCA    013704          2854    2858#
APA     005346          1384    1388#
APBA    011066          2216    2220#
APC     003112           721     912#
APCA    014014          2886    2890#
APGEND  003310           614     938#
APWAS   003224           927#   3301
AQA     005456          1416    1420#
AQBA    011176          2248    2252#
AQCA    014124          2918    2922#
ARA     005566          1448    1452#
ARBA    011306          2280    2284#
ARCA    014234          2950    2954#
ASA     005676          1480    1484#
ASBA    011416          2312    2316#
ASCA    014344          2982    2986#
ASETSR  003233           676     929#
ATA     006006          1512    1516#
ATBA    011526          2344    2348#
ATCA    014454          3014    3018#
ATNUMB  003102           717     910#
AUA     006116          1544    1548#
AUBA    011636          2376    2380#
AUCA    014564          3046    3050#
AVA     006226          1576    1580#
AVBA    011746          2408    2412#
AVCA    014674          3078    3082#
AWA     006336          1609    1612#
AWAS    003176           694     923#   3297
AWBA    012056          2440    2444#
AWCA    015004          3110    3114#
AXA     006446          1640    1644#
AXBA    012166          2472    2476#
AXCA    015114          3142    3146#
AYA     006556          1672    1676#
AYBA    012276          2504    2508#
AYCA    015142          3155    3159#
AZA     006666          1704    1708#
AZBA    012406          2536    2540#
AZCA    015170          3168    3172#
BAABA   007052          1754    1758#
BAABB   007074          1761    1763#
BABBA   007162          1786    1790#
BABBB   007204          1793    1795#
BACBA   007272          1818    1822#
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BACBB	007314	1825	1827#
BADBA	007402	1850	1854#
BADBB	007424	1857	1859#
BAEBA	007512	1882	1886#
BAEBB	007534	1889	1891#
BAFA	004102	1082	1086#
BAFB	004124	1089	1091#
BAFBA	007622	1914	1918#
BAFBB	007644	1921	1923#
BAGA	004212	1114	1118#
BAGB	004234	1121	1123#
BAGBA	007732	1946	1950#
BAGBB	007754	1953	1955#
BAHA	004322	1146	1150#
BAHB	004344	1153	1155#
BAHBA	010042	1978	1982#
BAHBB	010064	1985	1987#
BAIA	004432	1178	1182#
BAIB	004454	1185	1187#
BAIBA	010152	2010	2014#
BAIBB	010174	2017	2019#
BAJA	004542	1210	1214#
BAJB	004564	1217	1219#
BAJBA	010262	2042	2046#
BAJBB	010304	2049	2051#
BAJCA	013210	2712	2716#
BAJCB	013232	2719	2721#
BAKA	004652	1242	1246#
BAKB	004674	1249	1251#
BAKBA	010372	2074	2078#
BAKBB	010414	2081	2083#
BAKCA	013320	2744	2748#
BAKCB	013342	2751	2753#
BALA	004762	1274	1278#
BALB	005004	1281	1283#
BALBA	010502	2106	2110#
BALBB	010524	2113	2115#
BALCA	013430	2776	2780#
BALCB	013452	2783	2785#
BAMA	005072	1306	1310#
BAMB	005114	1313	1315#
BAMBA	010612	2138	2142#
BAMBB	010634	2145	2147#
BAMCA	013540	2808	2812#
BAMCB	013562	2815	2817#
BANA	005202	1338	1342#
BANB	005224	1345	1347#
BANBA	010722	2170	2174#
BANBB	010744	2177	2179#
BANCA	013650	2840	2844#
BANCB	013672	2847	2849#
BAOA	005312	1370	1374#
BAOB	005334	1377	1379#
BAOBA	011032	2202	2206#
BAOBB	011054	2209	2211#
BAOCA	013760	2872	2876#

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BAQCB   014002          2979    2891#
BAPA    005422          1402    1406#
BAPB    005444          1409    1411#
BAPBA   011142          2234    2238#
BAPBB   011164          2241    2243#
BAPCA   014070          2904    2908#
BAPCB   014112          2911    2913#
BAQA    005532          1434    1438#
BAQB    005554          1441    1443#
BAQBA   011252          2266    2270#
BAQBB   011274          2273    2275#
BAQCA   014200          2936    2940#
BAQCB   014222          2943    2945#
BARA    005642          1466    1470#
BARB    005664          1473    1475#
BARBA   011362          2298    2302#
BARBB   011404          2305    2307#
BARCA   014310          2968    2972#
BARCB   014332          2975    2977#
BASA    005752          1498    1502#
BASB    005774          1505    1507#
BASBA   011472          2330    2334#
BASBB   011514          2337    2339#
BASCA   014420          3000    3004#
BASCB   014442          3007    3009#
BATA    006062          1530    1534#
BATB    006104          1537    1539#
BATBA   011602          2362    2366#
BATBB   011624          2369    2371#
BATCA   014530          3032    3036#
BATCB   014552          3039    3041#
BAUA    006172          1562    1566#
BAUB    006214          1569    1571#
BAUBA   011712          2394    2398#
BAUBB   011734          2401    2403#
BAUCA   014640          3064    3068#
BAUCB   014662          3071    3073#
BAVA    006302          1594    1598#
BAVB    006324          1601    1603#
BAVBA   012022          2426    2430#
BAVBB   012044          2433    2435#
BAVCA   014750          3096    3100#
BAVCB   014772          3103    3105#
BAWA    006412          1626    1630#
BAWB    006434          1633    1635#
BAWBA   012132          2458    2462#
BAWBB   012154          2465    2467#
BAWCA   015060          3128    3132#
BAWCB   015102          3135    3137#
BAXA    006522          1658    1662#
BAXB    006544          1665    1667#
BAXBA   012242          2490    2494#
BAXBB   012264          2497    2499#
BAYA    006632          1690    1694#
BAYB    006654          1697    1699#
BAYBA   012352          2522    2526#
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D2TCAA.P11 CROSS REFERENCE TABLE -- USER SYMBOLS

```
BAYBB   012374          2529    2531#
BAZA    006742          1722    1726#
BAZB    006764          1729    1731#
BAZBA   012462          2554    2559#
BAZBB   012504          2561    2563#
BDCNV   002766           723     877#
BDCNVA  003006           882#    892
BDCNVB  003010           883#    896
BDCNVC  003020           884     887#
BDCNVD  003044           896#    898
BELL  = 000007           497#
BIT0  = 000001           477#    502     1068    1069    1073    1074    1086    1088    2060    2061    2065    2066    2078
                        2080    3082    3083    3087    3088    3100    3102
BIT1  = 000002           476#    501     1100    1101    1105    1106    1118    1120    1580    1581    1585    1596    1598
                        1600    2092    2093    2097    2098    2110    2112    2698    2699    2703    2704    2716    2718
                        2748    2750    3114    3115    3119    3120    3132    3134
BIT10 = 002000           467#    605     1388    1389    1393    1394    1406    1408    1868    1869    1973    1974    1886
                        1988    2380    2381    2385    2386    2398    2400    2954    2955    2959    2960    2972    2974
                        3211
BIT11 = 004000           466#    600     1420    1421    1425    1426    1438    1440    1900    1901    1905    1906    1918
                        1920    2412    2413    2417    2418    2430    2432    2986    2987    2991    2992    3004    3006
BIT12 = 010000           465#    1452    1453    1457    1458    1470    1472    1932    1933    1937    1938    1950    1952
                        2444    2445    2449    2450    2462    2464    3018    3019    3023    3024    3036    3038
BIT13 = 020000           464#    500     711     1484    1485    1489    1490    1502    1504    1964    1965    1969    1970
                        1982    1984    2476    2477    2481    2482    2494    2496    3050    3051    3055    3056    3068
                        3070    3224
BIT14 = 040000           463#    597     1516    1517    1521    1522    1534    1536    1996    1997    2001    2002    2014
                        2016    2508    2509    2513    2514    2526    2528    3237
BIT15 = 100000           461     462#    1548    1549    1553    1554    1566    1568    2028    2029    2033    2034    2046
                        2048    2540    2541    2545    2546    2558    2560    3159    3250
BIT2  = 000004           475#    1132    1133    1137    1138    1150    1152    1612    1613    1617    1618    1630    1632
                        2124    2125    2129    2130    2142    2144    2730    2731    2735    2736
BIT3  = 000010           474#    1164    1165    1169    1170    1182    1184    1644    1645    1649    1650    1662    1664
                        2156    2157    2161    2162    2174    2176    2762    2763    2767    2768    2780    2792
BIT4  = 000020           473#    1196    1197    1201    1202    1214    1216    1676    1677    1681    1682    1694    1696
                        2188    2189    2193    2194    2206    2208    2794    2795    2799    2800    2812    2814
BIT5  = 000040           472#    1228    1229    1233    1234    1246    1248    1708    1709    1713    1714    1726    1728
                        2220    2221    2225    2226    2238    2240    2826    2827    2831    2832    2844    2846
BIT6  = 000100           471#    1260    1261    1265    1266    1278    1280    1740    1741    1745    1746    1758    1760
                        2252    2253    2257    2258    2270    2272    2858    2859    2863    2864    2876    2878
BIT7  = 000200           470#    1292    1293    1297    1298    1310    1312    1772    1773    1777    1778    1790    1792
                        2284    2285    2289    2290    2302    2304    3146    3172
BIT8  = 000400           469#    1324    1325    1329    1330    1342    1344    1804    1805    1809    1810    1822    1824
                        2316    2317    2321    2322    2334    2336    2890    2891    2895    2996    2908    2910    3185
BIT9  = 001000           468#    577     609     974     1356    1357    1361    1362    1374    1376    1836    1837    1841
                        1842    1854    1856    2348    2349    2353    2354    2366    2368    2922    2923    2927    2929
                        2940    2942    3198
BMOVA   002754          871#    873
BMOVE   002744          819     867#
CAAA    015422          3259    3263#
CARMSK  001052           527#
CBBA    015444          3269    3273#
CC    = 177776           456#
CCCA    015466          3279    3283#
CHAINN  001272           555     591#
CHALT = 104005           548#    589     677     980
```

```
CHLT    001706            547     680*
CHNA    001336            598     600*
CHNAA   001354            601     604*
CHNAB   001334            599*    603
CHNAC   001324            595     597*
CHNB    001374            606     609*
CRBUF   001046            525*    690     693
CRBUFA  001050            526*    690     697
CTRA    001056            529*
CTRB    001060            530*
CTRC    001062            531*
CTRD    001064            532*
CURTST  001042            523*    579     584     626*
CXXA    015474           3264    3274    3285*
CXXX    015570           3290    3305*
DATCHK= 104004            546*
DECVAL  003070            879     906*
DELAY = 104015            564*    805
DLCNT   002434            786*    788     798*
DLY     002372            563     786*
DLYA    002412            790*    795
DLYB    002416            791*    792
D0    = 000001            502*    981
DTCHK   001732            545     690*
DTCHKA  001772            691     702*
EHALT = 104007            552*    731
EHLT    001720            551     685*
EHLTA   001730            686     688*
EMTINT  001510            448     530*
EMTTAB  001074            536*    634
EMTV    000030            448*
EMTX  = 000016            503*    538*    540*    542*    544*    546*    548*    550*    552*    554*    556*    558*    560*
                          562*    564*
EM0     003076            728     909*
ERCTR   001054            528*
ERDAT   003137            701     917*    3304
ERR     001774            543     703*
ERRA    002044            706     711*
ERRB    002130            703*    704*    707*    708*    709*    729*
ERRC    002134            712     731*
ERRD    002144            713*    714*    720     734*
ERRE    002146            705*    710*    732     735*
ERROR = 104003            544*   1001    1015    1029    1043    1057    1071    1076    1090    1103    1108    1122    1135
                          1140   1154    1167    1172    1186    1199    1204    1219    1231    1236    1250    1263    1269
                          1262   1295    1300    1314    1327    1332    1346    1359    1364    1378    1391    1396    1410
                          1423   1428    1442    1455    1460    1474    1487    1492    1506    1519    1524    1539    1551
                          1556   1570    1583    1588    1602    1615    1620    1634    1647    1652    1666    1679    1684
                          1698   1711    1716    1730    1743    1748    1762    1775    1780    1794    1807    1812    1826
                          1839   1844    1858    1871    1876    1890    1903    1908    1922    1935    1940    1954    1967
                          1972   1986    1999    2004    2018    2031    2036    2050    2063    2068    2082    2095    2100
                          2114   2127    2132    2146    2159    2164    2178    2191    2196    2210    2223    2228    2242
                          2255   2260    2274    2287    2292    2306    2319    2324    2338    2351    2356    2370    2383
                          2388   2402    2415    2420    2434    2447    2452    2466    2479    2484    2498    2511    2516
                          2530   2543    2548    2562    2575    2589    2603    2617    2631    2645    2659    2673    2687
                          2701   2706    2720    2733    2738    2752    2765    2770    2784    2797    2802    2816    2829
                          2834   2848    2861    2866    2880    2893    2898    2912    2925    2930    2944    2957    2962
```

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                    2976    2989    2994    3008    3021    3026    3040    3053    3058    3072    3085    3090    3104
                    3117    3122    3136    3148    3161    3174    3187    3200    3213    3226    3239    3252
ERROR1= 104014       562*    700    3303
ERR1    002016       561     707*
FORWD   001442       576     621*
FORWDA  001466       626*
GETRDY  001160       507     571*    590     610     620
GRCNT   002464       810*    812
GTBIN   002546       831*
GTBINP  002614       840*
GTRDYA  001210       576*    586
GTRDYB  001214       577*
GTRDYC  001230       578     580*
GTRDYD  001252       583     585*
GTRDYX  001166       572*    612
HERE    001440       616     620*
ICNT    001030       518*    594*    596*    627*    724     983*    984*    985
ICTR    001026       517*    602*    624*
INBIN   002510       818*
KSTART  001032       519*    571
LOGIC   001430       618*
MACHER  000004       438*    567*    572*    998*    1012*   1026*   1040*   1054*
MAINT = 020000       500*    981
MANUAL= 100000       461*
NOP   = 000240       459*    619
NXTST   001040       522*    571*    585     611     621     623*
OACNV   002662       692     696     715     719     850*    3291    3295    3299
OACNVA  002674       854*    863
OACNVX  002742       850*    854     858*    859*    860*    861*    865*
OPEN  = 000000       460*    517     518     520     521     522     523     524     525     526     527     528     529
                     530     531     532     533     534     535     647     648     660     661     666     729     734
                     735     774     783     798     806     808     815     816     824     825     826     827     828
                     829     865    3296
PC    =%000007       486*    618*   3286*
PIND    002540       827*    842*
POPSP = 005726       487*    793     796
POPSP2= 022626       488*    604    1002    1016    1030    1044    1058
PRTY0 = 000000       496*
PRTY1 = 000040       495*
PRTY2 = 000100       494*
PRTY3 = 000140       493*
PRTY4 = 000200       492*
PRTY5 = 000240       491*
PRTY6 = 000300       490*    514
PRTY7 = 000340       449     489*    566     573
PRVCNT  001066       533*   3285*   3300
PSW   = 177776       457*    566*    573*    789*
PTO     002534       825*    831     837*
PTOP    002542       828*    840     846*
PTI     002536       826*    831*    832*    835*    836*    837     838
PTIP    002544       829*    840*    841*    844*    845*    846     847
POTIT   003314       569     940*
RCMSK   002504       811     815*
RCNT    001044       524*
REGADR  015544      3263*   3273*   3283*   3285    3288*   3289    3296*
RIND    002532       818*    820     821     824*    833*
```

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RNCNT   002506            813*   816*
RNDNMB  001070            534*  3287*  3289  3292
RNGEN   002150            737*   801    810  3286
RNUM  = 000002            501*   981
RP1     002216            737    741*   748   750*
RP2     002220            740    744    747*  751*
RSTPC   001624            650*   658    660*
RSTPSW  001626            651*   657    661*
RSTREG= 104013            560*   874    899
RSTRG   001570            559    650*
RTNNO   001036            521*   582    607   622*  628   716
R0    =%000000            478*   580*   581*  582   607*  615*  630   631*  632*  633*  634*  635*  879*
                         3287   3288
R1    =%000001            479*   878*   883*  887*  893*  895*
R2    =%000002            480*   880*   894*  895   897*
R3    =%000003            481*   881*   891*
R4    =%000004            482*   882*   885*  888*  889
R5    =%000005            483*   621*   626   715*  723*  900*  3291*  3295*  3299*
R6    =%000006            484*   574*   593*
R7    =%000007            485*   576*   629*
SAVREG= 104012            558*   867    877
SAVRG   001530            557    637*
SCOPE = 104011            556*   976   1000  1003  1014  1017  1028  1031  1042  1045  1056  1059  1072
                         1077  1091  1104  1109  1123  1136  1141  1155  1168  1173  1187  1200  1205
                         1219  1232  1237  1251  1264  1269  1283  1296  1301  1315  1328  1333  1347
                         1360  1365  1379  1392  1397  1411  1424  1429  1443  1456  1461  1475  1488
                         1493  1507  1520  1525  1539  1552  1557  1571  1584  1589  1603  1616  1621
                         1635  1648  1653  1667  1680  1685  1699  1712  1717  1731  1744  1749  1763
                         1776  1781  1795  1808  1813  1827  1840  1845  1859  1872  1877  1891  1904
                         1909  1923  1936  1941  1955  1968  1973  1987  2000  2005  2019  2032  2037
                         2051  2064  2069  2083  2096  2101  2115  2128  2133  2147  2160  2165  2179
                         2192  2197  2211  2224  2229  2243  2256  2261  2275  2289  2293  2307  2320
                         2325  2339  2352  2357  2371  2384  2389  2403  2416  2421  2435  2448  2453
                         2467  2480  2485  2499  2512  2517  2531  2544  2549  2563  2577  2591  2605
                         2619  2633  2647  2661  2675  2689  2702  2707  2721  2734  2739  2753  2766
                         2771  2785  2798  2803  2817  2830  2835  2849  2862  2867  2881  2894  2899
                         2913  2926  2931  2945  2958  2963  2977  2990  2995  3009  3022  3027  3041
                         3054  3059  3073  3086  3091  3105  3118  3123  3137  3150  3163  3176  3189
                         3202  3215  3228  3241  3254  3305  3314
SCOPTR  001034            520*   592    625*
SETSR   001676            570    675*
SPBOT = 001000            458*   565    574
SR    = 177570            455*   577    580   597   600   605   609   628*  685   711   974   985
SRESET= 104010            554*   575   1087  1119  1151  1183  1215  1247  1279  1311  1343  1375  1407
                         1439  1471  1503  1535  1567  1599  1631  1663  1695  1727  1759  1791  1823
                         1855  1887  1919  1951  1983  2015  2047  2079  2111  2143  2175  2207  2239
                         2271  2303  2335  2367  2399  2431  2463  2495  2527  2559  2717  2749  2781
                         2813  2845  2877  2909  2941  2973  3005  3037  3069  3101  3133  3149  3162
                         3175  3188  3201  3214  3227  3240  3253
SRSET   001154            570*
SPSETT  001660            553    670*   672*
STAL    002436            541    801*
STALA   002456            804*   806*
STALB   002460            803    807*
STALL = 104002            542*
START   001130            505    565*
```

DZTCAA.P11 CROSS REFERENCE TABLE -- USER SYMBOLS

```
STC11V= 104006  550#
STLMSK  002462  802  808#
STPRA   001646  663*  666#
STTCV   001630  549  663#
SVRPC   001564  637*  645  647#
SVRPSW  001566  638*  644  648#
TCBA    001012  511#  1041  1580*  1581  1585*  1586  1598*  1600  1612*  1613  1617*  1618  1630*
                1632  1644*  1645  1649*  1650  1662*  1664  1676*  1677  1681*  1682  1694*  1696
                1708*  1709  1713*  1714  1726*  1728  1740*  1741  1745*  1746  1758*  1760  1772*
                1773  1777*  1778  1790*  1792  1804*  1805  1809*  1810  1822*  1824  1836*  1837
                1841*  1842  1854*  1856  1868*  1869  1873*  1874  1886*  1888  1900*  1901  1905*
                1906  1918*  1920  1932*  1933  1937*  1938  1950*  1952  1964*  1965  1969*  1970
                1982*  1984  1996*  1997  2001*  2002  2014*  2016  2028*  2029  2033*  2034  2045*
                2048  2614*  2615  2618*  2628*  2629  2632*  2642*  2643  2646*  3283
TCCM    001006  509#  981*  988*  999  2698*  2699  2703*  2704  2716*  2718  2730*  2731  2735*
                2736  2748*  2750  2762*  2763  2767*  2768  2780*  2782  2794*  2795  2799*  2800
                2812*  2814  2826*  2827  2831*  2832  2844*  2846  2858*  2859  2863*  2864  2876*
                2978  2890*  2891  2895*  2896  2908*  2910  2922*  2923  2927*  2928  2940*  2942
                2954*  2955  2959*  2960  2972*  2974  2986*  2987  2991*  2992  3004*  3006  3018*
                3019  3023*  3024  3036*  3038  3050*  3051  3055*  3056  3068*  3070  3146  3159
TCDT    001014  512#  1027  1068*  1069  1073*  1074  1086*  1088  1100*  1101  1105*  1106  1118*
                1120  1132*  1133  1137*  1138  1150*  1152  1164*  1165  1169*  1170  1182*  1184
                1196*  1197  1201*  1202  1214*  1216  1228*  1229  1233*  1234  1246*  1248  1260*
                1261  1265*  1266  1278*  1280  1292*  1293  1297*  1298  1310*  1312  1324*  1325
                1329*  1330  1342*  1344  1356*  1357  1361*  1362  1374*  1376  1388*  1389  1393*
                1394  1406*  1408  1420*  1421  1425*  1426  1438*  1440  1452*  1453  1457*  1458
                1470*  1472  1484*  1485  1489*  1490  1502*  1504  1516*  1517  1521*  1522  1534*
                1536  1548*  1549  1553*  1554  1566*  1568  2572*  2573  2576*  2586*  2587  2590*
                2600*  2601  2604*  3263
TCLVL   001020  514#  667
TCST    001004  508#  982*  987*  1013  3082*  3083  3087*  3088  3100*  3102  3114*  3115  3119*
                3120  3132*  3134  3172  3185  3198  3211  3224  3237  3250
TCVTR   001016  513#  665
TCWC    001010  510#  1055  2060*  2061  2065*  2066  2078*  2080  2092*  2093  2097*  2098  2110*
                2112  2124*  2125  2129*  2130  2142*  2144  2156*  2157  2161*  2162  2174*  2176
                2188*  2189  2193*  2194  2206*  2208  2220*  2221  2225*  2226  2238*  2240  2252*
                2253  2257*  2258  2270*  2272  2284*  2285  2289*  2290  2302*  2304  2316*  2317
                2321*  2322  2334*  2336  2348*  2349  2353*  2354  2366*  2368  2380*  2381  2385*
                2386  2398*  2400  2412*  2413  2417*  2418  2430*  2432  2444*  2445  2449*  2450
                2462*  2464  2476*  2477  2481*  2482  2494*  2496  2508*  2509  2513*  2514  2526*
                2528  2540*  2541  2545*  2546  2558*  2560  2656*  2657  2660*  2670*  2671  2674*
                2684*  2685  2688*  3273
TEMP    001072  535#
TENPWR  003056  880  901#
TLAST = 177777  498#  3308
TPB     001024  516#  765*
TPS     001022  515#  766
TRPV    000034  450#
TYP     002222  537  753
TYPA    002232  756#  764  773
TYPC    002254  757  761#
TYPD    002272  759  763  765#  770  772
TYPDAT  002336  756*  758*  761  765  769*  771*  774#
TYPE  = 104000  538#  568  587  613  675  782  978
TYPES = 104001  540#  727
TYPF    002310  762  769#
```

```
TYPG    002322            771#
TYPS    002340            539     776#    784
TYPSA   002364            780     782#
TYPSB   002366            778*    779     783#
TO      003514            519     965#
TOMSG   003373            948#    979
T1      003614            966     991#
T10     004126           1080    1093#
T100    010066           1976    1989#
T101    010142           1990    2007#
T102    010176           2008    2021#
T103    010252           2022    2039#
T104    010306           2040    2053#
T105    010362           2054    2071#
T106    010416           2072    2085#
T107    010472           2086    2103#
T11     004202           1094    1111#
T110    010526           2104    2117#
T111    010602           2118    2135#
T112    010636           2136    2149#
T113    010712           2150    2167#
T114    010746           2168    2181#
T115    011022           2182    2199#
T116    011056           2200    2213#
T117    011132           2214    2231#
T12     004236           1112    1125#
T120    011166           2232    2245#
T121    011242           2246    2263#
T122    011276           2264    2277#
T123    011352           2278    2295#
T124    011406           2296    2309#
T125    011462           2310    2327#
T126    011516           2328    2341#
T127    011572           2342    2359#
T13     004312           1126    1143#
T130    011626           2360    2373#
T131    011702           2374    2391#
T132    011736           2392    2405#
T133    012012           2406    2423#
T134    012046           2424    2437#
T135    012122           2438    2455#
T136    012156           2456    2469#
T137    012232           2470    2487#
T14     004346           1144    1157#
T140    012266           2488    2501#
T141    012342           2502    2519#
T142    012376           2520    2533#
T143    012452           2534    2551#
T144    012506           2552    2565#
T145    012544           2566    2579#
T146    012602           2580    2593#
T147    012640           2594    2607#
T15     004422           1158    1175#
T150    012676           2608    2621#
T151    012734           2622    2635#
T152    012772           2636    2649#
```

D2TCAA.P11 CROSS REFERENCE TABLE -- USER SYMBOLS

T153	013030	2650	2663#
T154	013066	2664	2677#
T155	013124	2678	2691#
T156	013200	2692	2709#
T157	013234	2710	2723#
T16	004456	1176	1189#
T160	013310	2724	2741#
T161	013344	2742	2755#
T162	013420	2756	2773#
T163	013454	2774	2787#
T164	013530	2788	2805#
T165	013564	2806	2819#
T166	013640	2820	2837#
T167	013674	2838	2851#
T17	004532	1190	1207#
T170	013750	2852	2869#
T171	014004	2870	2883#
T172	014060	2884	2901#
T173	014114	2902	2915#
T174	014170	2916	2933#
T175	014224	2934	2947#
T176	014300	2948	2965#
T177	014334	2966	2979#
T2	003646	992	1005#
T20	004566	1208	1221#
T200	014410	2980	2997#
T201	014444	2998	3011#
T202	014520	3012	3029#
T203	014554	3030	3043#
T204	014630	3044	3061#
T205	014664	3062	3075#
T206	014740	3076	3093#
T207	014774	3094	3107#
T21	004642	1222	1239#
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T211	015104	3126	3139#
T212	015132	3140	3152#
T213	015160	3153	3165#
T214	015206	3166	3178#
T215	015234	3179	3191#
T216	015262	3192	3204#
T217	015310	3205	3217#
T22	004676	1240	1253#
T220	015336	3218	3230#
T221	015364	3231	3243#
T222	015412	3244	3256#
T223	015434	3257	3266#
T224	015456	3267	3276#
T225	015572	3277	3307#
T23	004752	1254	1271#
T24	005006	1272	1285#
T25	005062	1286	1303#
T26	005116	1304	1317#
T27	005172	1318	1335#
T3	003700	1006	1019#
T30	005226	1336	1349#

T31	005302	1350	1367#
T32	005336	1368	1381#
T33	005412	1382	1399#
T34	005446	1400	1413#
T35	005522	1414	1431#
T36	005556	1432	1445#
T37	005632	1446	1463#
T4	003732	1020	1033#
T40	005666	1464	1477#
T41	005742	1478	1495#
T42	005776	1496	1509#
T43	006052	1510	1527#
T44	006106	1528	1541#
T45	006162	1542	1559#
T46	006216	1560	1573#
T47	006272	1574	1591#
T5	003764	1034	1047#
T50	006326	1592	1605#
T51	006402	1606	1623#
T52	006436	1624	1637#
T53	006512	1638	1655#
T54	006546	1656	1669#
T55	006622	1670	1687#
T56	006656	1688	1701#
T57	006732	1702	1719#
T6	004016	1048	1061#
T60	006766	1720	1733#
T61	007042	1734	1751#
T62	007076	1752	1765#
T63	007152	1766	1783#
T64	007206	1784	1797#
T65	007262	1798	1815#
T66	007316	1816	1829#
T67	007372	1830	1847#
T7	004072	1062	1079#
T70	007426	1848	1861#
T71	007502	1862	1879#
T72	007536	1880	1893#
T73	007612	1894	1911#
T74	007646	1912	1925#
T75	007722	1926	1943#
T76	007756	1944	1957#
T77	010032	1958	1975#

X = 000225

499#	964	969#	990	995#	1004	1009#	1018	1023#	1032	1037#	1046	1051#
1060	1065#	1078	1083#	1092	1097#	1110	1115#	1124	1129#	1142	1147#	1156
1161#	1174	1179#	1188	1193#	1206	1211#	1220	1225#	1238	1243#	1252	1257#
1270	1275#	128"	1289#	1302	1307#	1316	1321#	1334	1339#	1348	1353#	1366
1371#	1380	1385#	1398	1403#	1412	1417#	1430	1435#	1444	1449#	1462	1467#
1476	1481#	1494	1499#	1508	1513#	1526	1531#	1540	1545#	1558	1563#	1572
1577#	1590	1595#	1604	1609#	1622	1627#	1636	1641#	1654	1659#	1668	1673#
1686	1691#	1700	1705#	1718	1723#	1732	1737#	1750	1755#	1764	1769#	1782
1787#	1796	1801#	1814	1819#	1828	1833#	1846	1851#	1860	1865#	1878	1883#
1892	1897#	1910	1915#	1924	1929#	1942	1947#	1956	1961#	1974	1979#	1988
1993#	2006	2011#	2020	2025#	2038	2043#	2052	2057#	2070	2075#	2084	2089#
2102	2107#	2116	2121#	2134	2139#	2148	2153#	2166	2171#	2180	2185#	2198
2203#	2212	2217#	2230	2235#	2244	2249#	2262	2267#	2276	2281#	2294	2299#

DZTCAA.P11 CROSS REFERENCE TABLE -- MACRO NAMES

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EMTDEF    435#   537   539   541   543   545   547   549   551   553   555   557   559   561   563
TSTA      433#   964   990  1004  1018  1032  1046  1060  1078  1092  1110  1124  1142  1156  1174
         1188  1206  1220  1238  1252  1270  1284  1302  1316  1334  1348  1366  1380  1398  1412
         1430  1444  1462  1476  1494  1508  1526  1540  1558  1572  1590  1604  1622  1636  1654
         1668  1686  1700  1718  1732  1750  1764  1782  1796  1814  1828  1846  1860  1878  1892
         1910  1924  1942  1956  1974  1988  2006  2020  2038  2052  2070  2094  2102  2116  2134
         2148  2166  2180  2198  2212  2230  2244  2262  2276  2294  2308  2326  2340  2358  2372
         2390  2404  2422  2436  2454  2468  2486  2500  2518  2532  2550  2564  2578  2592  2606
         2620  2634  2648  2662  2676  2690  2708  2722  2740  2754  2772  2786  2804  2818  2836
         2850  2868  2882  2900  2914  2932  2946  2964  2978  2996  3010  3028  3042  3060  3074
         3092  3106  3124  3138  3151  3164  3177  3190  3203  3216  3229  3242  3255  3265  3275
         3306
TSTBR     435#  3151  3164  3177  3190  3203  3216  3229  3242
TSTBRS    435#  3138
TSTBRW    433#  1060  1092  1124  1156  1188  1220  1252  1284  1316  1348  1380  1412  1444  1476
         1508  1540  1572  1604  1636  1668  1700  1732  1764  1796  1828  1860  1892  1924  1956
         1988  2020  2052  2084  2116  2148  2180  2212  2244  2276  2308  2340  2372  2404  2436
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         3074  3106
TSTREF    433#   990  1004  1018  1032  1046
TSTRES    435#  1078  1110  1142  1174  1206  1238  1270  1302  1334  1366  1398  1430  1462  1494
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         2006  2038  2070  2102  2134  2166  2198  2230  2262  2294  2326  2358  2390  2422  2454
         2486  2518  2550  2708  2740  2772  2804  2836  2868  2900  2932  2964  2996  3028  3060
         3092  3124
TSTST     433#  2564  2578  2592  2606  2620  2634  2648  2662  2676
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DZTCAA.P11 CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

```
HALT     437   439   441   443   445   447   451   453   608   682   687
INC      594   835   844   885   984
JMP      505   507   579   584  3264  3274
JSR      570   576   618   692   696   715   719   723   759   763   770   772   801   810   8.9
        3286  3291  3295  3299
MOV      565   566   567   571   572   573   574   580   591   592   593   607   615   621   622
         623   624   625   626   627   628   630   631   632   634   637   638   639   640   641
         642   643   644   645   650   651   652   653   654   655   656   657   658   663   665
         666   667   670   672   680   703   704   707   708   709   710   713   737   741   747
         748   753   755   776   778   786   788   790   804   813   818   831   837   838   840
         846   847   850   851   852   854   868   869   870   878   879   880   881   893   894
         981   982   988   998  1012  1026  1040  1054  2572  2586  2600  2614  2628  2642  2656
        2670  2684  3263  3273  3283  3285  3287  3288
MOVB     756   758   765   769   771   857   871   889   896
RESET    617   673
ROL      738   739   742   743   745   746
ROR      859   860   861
RTI      599   646   659   668   674   683   688   702   723   760   781   797   807
RTS      629   635   678   749   768   814   823   839   848   864   875   900
SUB      681   714   883
TST      685   890   999  1013  1027  1041  1055
TSTB     766
.ABS     431
.ASCII   909   910   912   917   920   923   940   948
.ASCIZ   915   927   929   935   939   943   957
.BYTE    906   938
.END    3315
.EVEN    962
.LIST      1   429   453   538   540   542   544   546   548   550   552   554   556   558   560
         562   564   969   995  1009  1023  1037  1051  1065  1083  1097  1115  1129  1147  1161
        1179  1193  1211  1225  1243  1257  1275  1289  1307  1321  1339  1353  1371  1385  1403
        1417  1435  1449  1467  1481  1499  1513  1531  1545  1563  1577  1595  1609  1627  1641
        1659  1673  1691  1705  1723  1737  1755  1769  1787  1801  1819  1833  1851  1865  1883
        1897  1915  1929  1947  1961  1979  1993  2011  2025  2043  2057  2075  2089  2107  2121
        2139  2153  2171  2185  2203  2217  2235  2249  2267  2281  2299  2313  2331  2345  2363
        2377  2395  2409  2427  2441  2459  2473  2491  2505  2523  2537  2555  2569  2583  2597
        2611  2625  2639  2653  2667  2681  2695  2713  2727  2745  2759  2777  2791  2809  2823
        2841  2855  2873  2887  2905  2919  2937  2951  2969  2983  3001  3015  3033  3047  3065
        3079  3097  3111  3129  3143  3156  3169  3182  3195  3208  3221  3234  3247  3260  3270
        3280  3311
.MACR     433   435
.NLIST      1   430   453   538   540   542   544   546   548   550   552   554   556   558   560
         562   564   969   995  1009  1023  1037  1051  1065  1083  1097  1115  1129  1147  1161
        1179  1193  1211  1225  1243  1257  1275  1289  1307  1321  1339  1353  1371  1385  1403
        1417  1435  1449  1467  1481  1499  1513  1531  1545  1563  1577  1595  1609  1627  1641
        1659  1673  1691  1705  1723  1737  1755  1769  1787  1801  1819  1833  1851  1865  1883
        1897  1915  1929  1947  1961  1979  1993  2011  2025  2043  2057  2075  2089  2107  2121
        2139  2153  2171  2185  2203  2217  2235  2249  2267  2281  2299  2313  2331  2345  2363
        2377  2395  2409  2427  2441  2459  2473  2491  2505  2523  2537  2555  2569  2583  2597
        2611  2625  2639  2653  2667  2681  2695  2713  2727  2745  2759  2777  2791  2809  2823
        2841  2855  2873  2887  2905  2919  2937  2951  2969  2983  3001  3015  3033  3047  3065
        3079  3097  3111  3129  3143  3156  3169  3182  3195  3208  3221  3234  3247  3260  3270
        3280  3311
.REM        1
.REPT     453
.TITLE      1
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TC1 - TC11 TEST 1       MACY11 27(732)  08-SEP-76  09:06  PAGE 82
DZTCAA.P11      CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

.WORD     537     539     541     543     545     547     549     551     553     555     557     559     561     563     619


 ERRORS DETECTED:  0
 DEFAULT GLOBALS GENERATED:  0

 *DZTCAA,DZTCAA.SEQ/SOL/CRF/DS:ERF2/EN:ABS=DSKM:DZTCAA.P11
 RUN-TIME:  14 26 5 SECONDS
 RUN-TIME RATIO: 84/47=1.7
 CORE USED:  12K  (24 PAGES)
```

Spooler runtime 14 Seconds, 62 KCS, 37 disk reads, 3 disk writes, 79 pages