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LOCTR OBJECT TEXT      STMT SOURCE STATEMENT      COPYRIGHT IBM CORP 1976
3          COPY LOG5002      ** MAP EC HISTORY **
4          *****
5          *** PREREQUISITES ***
6          *****
7          NONE
8          *****
9          *** MODIFICATIONS ***
10         *****
11         CHANGE MADE TO CORRECT 4952 PPROBLEM
12         *****
13         *** REA'S INCORPORATED ***
14         *****
15         NONE
16         *****
17         *** SPECIAL INSTRUCTIONS ***
18         *****
19         NONE
20         *****
21         *** E. C. HISTORY ***
22         *****
23         DATE 01OCT76 DATE 02DEC76 DATE 15MAR77 DATE 10JUN77
24         E.C. 578468 E.C. 578469 E.C. 578714 E.C. 578625
25         *****
26         DATE 20JAN78 DATE 06NOV78 DATE 15JAN79 DATE
27         E.C. 755331 E.C. 755551 E.C. 375147 E.C.
28         *****
29         I5002 START X'2500' START ADDRESS OF ALL 'I' TYPE PROG
30         @QUES EQU X'0100' EQUATED VALUE FOR MDI STATEMENT
31         @FIXT EQU X'0101' EQUATED VALUE FOR MDI STATEMENT
32         @STOP EQU X'0102' EQUATED VALUE FOR MDI STATEMENT
33         @SCALO EQU X'0200' EQUATED VALUE FOR MDI STATEMENT
34         @INPT EQU X'0300' EQUATED VALUE FOR MDI STATEMENT
35         @QUXX EQU X'0400' EQUATED VALUE FOR MDI STATEMENT
36         @TUXX EQU X'0500' EQUATED VALUE FOR MDI STATEMENT
37         @NVLD EQU X'0600' EQUATED VALUE FOR MDI STATEMENT
38         EQ EQU X'0000' EQUATE FOR EQUAL
39         NE EQU X'0004' EQUATE FOR NOT EQUAL
40         HI EQU X'0008' EQUATE FOR HIGH
41         NH EQU X'000C' EQUATE FOR NOT HIGH
42         LO EQU X'0014' EQUATE FOR LOW
43         NL EQU X'0018' EQUATE FOR NOT LOW
44         LT EQU X'001C' EQUATE FOR LESS THAN
45         LE EQU X'000C' EQUATE FOR LESS THAN OR EQUAL TO
46         GT EQU X'0008' EQUATE FOR GREATER THAN
47         GE EQU X'0014' EQUATE FOR GREATER THAN OR EQUAL TO
48         ON EQU X'0200' EQUATE FOR ON
49         OF EQU X'0202' EQUATE FOR OFF
50         MX EQU X'0204' EQUATE FOR MIXED
51         EBC EQU X'0000' EQUATE FOR EBCDIC DATA TRANSFER
52         HEX EQU X'0001' EQUATE FOR HEX DATA TRANSFER
53         XTRNL EQU X'0001' EQUATE FOR EXTERNAL REFERENCE
54         INTRNL EQU X'0000' EQUATE FOR INTERNAL REFERENCE
55         PARM EQU X'0000' EQUATE INDICATING PARAMETER
56         DA EQU X'0011' EQUATE FOR DEVICE ADDRESS
57         UA EQU X'0002' EQUATE FOR UNIT ADDRESS
58         DUMMY EQU X'0000' DUMMY EQUATE
59         PID EQU *-X'0D00' ADDRESS OF MDI HEADER
60         PTYPE EQU *-X'22CE' ADDRESS OF PROCESSOR TYPE FIELD
61         STEPNUM EQU PID+X'000C' ADDRESS OF DECIMAL STEP NUMBER
62         OPWD1 EQU PID+X'000E' ADDRESS OF OPTION WORD ONE
63         OPWD2 EQU PID+X'0010' ADDRESS OF OPTION WORD TWO
64         TUSTATUS EQU PID+X'0018' ADDRESS OF TU STATUS WORD
65         TUWORK EQU PID+X'001A' ADDRESS OF TU WORK AREA
66         TUPARM1 EQU PID+X'009A' ADDRESS OF PARM 1 POINTER
67         TUPARM2 EQU PID+X'009B' ADDRESS OF PARM 2 POINTER
68         TUPARM3 EQU PID+X'009C' ADDRESS OF PARM 3 POINTER
69         TUPARM4 EQU PID+X'009D' ADDRESS OF PARM 4 POINTER
70         TUPARM5 EQU PID+X'009E' ADDRESS OF PARM 5 POINTER
71         TUPARM6 EQU PID+X'009F' ADDRESS OF PARM 6 POINTER
72         TUPARM7 EQU PID+X'00A0' ADDRESS OF PARM 7 POINTER
73         TUPARM8 EQU PID+X'00A1' ADDRESS OF PARM 8 POINTER
74         TUPARM9 EQU PID+X'00A2' ADDRESS OF PARM 9 POINTER
75         TUPARM10 EQU PID+X'00A3' ADDRESS OF PARM 10 POINTER
76         TUPARM11 EQU PID+X'00A4' ADDRESS OF PARM 11 POINTER
77         TUPARM12 EQU PID+X'00A5' ADDRESS OF PARM 12 POINTER
78         TUPARM13 EQU PID+X'00A6' ADDRESS OF PARM 13 POINTER
79         TUPARM14 EQU PID+X'00A7' ADDRESS OF PARM 14 POINTER
80         TUPARM15 EQU PID+X'00A8' ADDRESS OF PARM 15 POINTER
81         TUPARM16 EQU PID+X'00A9' ADDRESS OF PARM 16 POINTER
82         TUMSGWTR EQU PID+X'00BA' ADDRESS OF -> TO COMMON MSG WRITER
83         TUUA EQU PID+X'00BE' ADDRESS OF UNIT ADDRESS IN EBC
84         TUDA EQU PID+X'00C0' ADDRESS OF DEVICE ADDRESS IN EBC
85         TUBUFF EQU PID+X'00C2' ADDRESS OF LAST USED WORD IN MAP
86         TULAST EQU PID+X'00C4' ADDRESS OF LAST ADDRESSABLE WORD
87         TURESULN EQU PID+X'00C6' ADDRESS OF LENGTH OF TU RESULTS
88         TURESUL EQU PID+X'00C8' ADDRESS OF TU RESULTS FIELD
89         MAPNAME EQU PID+X'00FC' ADDRESS OF MAP NAME FIELD IN HEX
90         TUINPT EQU PID+X'0148' ADDRESS OF SINPT DATA
91         PARMARA EQU PID+X'016E' ADDRESS OF SINPT INPUT AREA
92         @DCADD1 EQU PID+X'01B8' MDI POINTER
93         @DCADD2 EQU PID+X'01BA' MDI POINTER
94         SUPSTAT EQU PID+X'01C4' ADDRESS OF MDI STATUS
95         DEVADD EQU PID+X'01D0' ADDRESS OF DEVICE ADDRESS TABLE 0
96         DEVADD1 EQU PID+X'01DA' ADDRESS OF DEVICE ADDRESS TABLE 1
97         DEVADD2 EQU PID+X'01E4' ADDRESS OF DEVICE ADDRESS TABLE 2
98         DEVADD3 EQU PID+X'01EE' ADDRESS OF DEVICE ADDRESS TABLE 3
99         DEVADD4 EQU PID+X'01F8' ADDRESS OF DEVICE ADDRESS TABLE 4
100        DEVADD5 EQU PID+X'0202' ADDRESS OF DEVICE ADDRESS TABLE 5
101        DEVADD6 EQU PID+X'020C' ADDRESS OF DEVICE ADDRESS TABLE 6
102        DEVADD7 EQU PID+X'0216' ADDRESS OF DEVICE ADDRESS TABLE 7
103        PRINT OFF

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002500
000100
000101
000102
000200
000201
000300
000400
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000600
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000004
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00000C
000014
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00001C
00000C
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000204
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000002
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001800
000232
00180C
00180E
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00182C
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00185C
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00188E
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001900
001902
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001908
00190A
00190C
00190E
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001916

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LOCTR OBJECT TEXT      STMT SOURCE STATEMENT      COPYRIGHT IBM CORP 1976
002500 2574          201          DC A(ENTPT) POINT TO MAP ENTRY POINT TABLE
202          *****
203          *****
204          *****
205          *****
206          THE FOLLOWING TABLES ARE USED BY THE MDI SUPERVISOR (D3C00)
207          TO LOCATE THE CORRECT RULE TO INVOKE TO OBTAIN THE PROPER
208          PARAMETERS TO PASS TO THE TUS AND TO PASS TO THE OPERATOR
209          THE INDICATED MESSAGE(S). THERE ARE FOUR TABLES USED FOR THIS
210          PURPOSE THEY ARE:
211          *****
212          STEP AND RULE ADDRESS TABLE
213          THIS TABLE GIVES THE ADDRESS OF THE RULE TO INVOKE AND
214          THE ASSOCIATED STEP DECIMAL STEP NUMBER OF THAT RULE.
215          ENTRIES ARE AS FOLLOWS:
216          A) AN ADDRESS OF THE RULE DC START AREA
217          B) THE STEP NUMBER IN DECIMAL
218          C) AN EQUATE FOR THE STEP NUMBER
219          *****
220          RULE INFORMATION TABLE
221          THIS TABLE CONTAINS THE REQUIRED INFORMATION TO EXECUTE
222          THE APPROPRIATE RULE UNDER MDI. EACH RULE HAS ITS OWN
223          UNIQUELY DEFINED AREA INDICATED BELOW. END OF TABLE IS
224          INDICATED WITH A X'0000' FOR THE RULE EQUATE.
225          *****
226          $QUES
227          A) RULE EQUATE X'0100'
228          B) ADDRESS OF THE YES LEG RULE
229          *****
230          $FIXT
231          A) RULE EQUATE X'0101'
232          B) ADDRESS OF MESSAGE TO PRINT
233          *****
234          $STOP
235          A) RULE EQUATE X'0102'
236          B) ADDRESS OF MESSAGE
237          *****
238          $GOTO
239          A) RULE EQUATE X'0200'
240          B) ADDRESS OF MESSAGE
241          C) NAME OF MAP TO GO TO
242          D) ENTRY POINT WITHIN GO TO MAP TO USE
243          E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE
244          *****
245          $CALL
246          A) RULE EQUATE X'0201'
247          B) ADDRESS OF MESSAGE
248          C) NAME OF MAP TO CALL
249          D) ENTRY POINT WITHIN CALLED MAP TO USE
250          E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE
251          *****
252          $INPT
253          A) RULE EQUATE X'0300'
254          B) INPUT TYPE (EBCDIC OR HEX)
255          C) ADDRESS OF YES LEG RULE
256          D) DESTINATION LOCATION OF INPUT DATA
257          E) LENGTH OF INPUT DATA
258          F) LOWER LIMIT OF GOOD DATA
259          G) HIGHER LIMIT OF GOOD DATA
260          *****
261          $QUXX
262          A) RULE EQUATE X'0400'
263          B) ADDRESS OF YES LEG RULE
264          C) TU BRANCH TO ADDRESS (INITIAL)
265          D) TU BRANCH TO ADDRESS (SECONDARY)
266          E) LENGTH OF PARAMETER IN BYTES
267          F) PARAMETER TO PASS TO TU
268          G) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER
269          *****
270          $TUXX
271          A) RULE EQUATE X'0500'
272          B) ADDRESS OF YES LEG RULE
273          C) TU BRANCH TO ADDRESS
274          D) TYPE OF COMPARE TO MAKE ON RESULTS
275          E) LENGTH OF COMPARED RESULTS
276          F) MASK FIELD FOR COMPARE
277          G) LENGTH OF PARAMETER IN BYTES
278          H) PARAMETER TO PASS TO THE TU
279          I) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER
280          *****
281          $NVLD
282          A) RULE EQUATE X'0600'
283          *****
284          ENTRY POINT TABLE
285          THIS TABLE CONTAINS THE ENTRY POINTS WITHIN THE MAP THAT
286          THE MAP CAN BE ENTERED FROM THESE ENTRY POINTS ARE
287          REFERENCED BY NAME AND ADDRESS. ENTRIES ARE AS FOLLOWS:
288          *****
289          A) NAME OF ENTRY POINT
290          B) ADDRESS OF ENTRY POINT RULE TABLE
291          *****
292          THE ENTRY POINT TABLE END IS INDICATED BY A X'0000'
293          *****
294          MESSAGE TABLE
295          THIS TABLE CONTAINS THE MESSAGE PASSED TO THE OPERATOR
296          VIA THE MDI SUPERVISOR. THE TABLE IS AS FOLLOWS:
297          *****
298          A) EQUATE FOR START OF MESSAGE BLOCK
299          B) NUMBER OF LINES OF MESSAGE
300          C) LENGTH OF FOLLOWING LINE
301          D) FIRST LINE OF MESSAGE
302          E) LENGTH OF FOLLOWING LINE
303          F) SECOND LINE OF MESSAGE
304          G) ETC.
305          *****
306          *****
307          *****
308          *****

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LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
311 *****
312 *****
313 **
314 ** STEP AND RULE ADDRESS TABLE **
315 **
316 *****
317 *****
318 DC AL2(N00001)
319 DC XL2'0001'

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425 *****
426 *****
427 F00085 EQU *
428 DC AL2(0003)
429 DC A(0046)
430 DC C10046'RE-CONFIGURE DISKETTE OR PUT THE TIMER DEVICE '

LOCTR OBJECT TEXT STMT SOURCE STATEMENT
000004 543 BS4 EQU 4
000005 544 BS5 EQU 5
000006 545 BS6 EQU 6
000007 546 BS7 EQU 7
000008 547 BS8 EQU 8
000009 548 BS9 EQU 9
00000A 549 BS10 EQU 10
00000B 550 BS11 EQU 11
00000C 551 BS12 EQU 12
00000D 552 BS13 EQU 13
00000E 553 BS14 EQU 14
00000F 554 BS15 EQU 15
002646 555 COPY T5000
556 EQU *
557 T5000 EQU *
558 *****
559 *****
560 **
561 ** T I M E R D I A G N O S T I C **
562 ** (BASIC FUNCTION TEST) **
563 **
564 **
565 ** THIS DIAGNOSTIC TESTS ALL THE FUNCTIONS OF THE **
566 ** TIMER ATTACHMENT EXCEPT THE EXTERNAL GATE AND **
567 ** THE EXTERNAL CLOCK CIRCUITRY. **
568 **
569 ** DO NOT RUN WITH STOP ON ADDRESS ON, AS THIS **
570 ** CAUSES ALL MACHINE LANGUAGE INSTRUCTIONS TO **
571 ** TAKE MORE TIME TO EXECUTE, AND ANY ROUTINES **
572 ** WHICH DEPEND UPON PRECISE SOFTWARE TIMING LOOPS **
573 ** WILL DETECT FALSE ERRORS. **
574 **
575 ** WHEN AN ERROR IS DETECTED, INSTRUCTIONS ARE **
576 ** GIVEN TO REPLACE THE TIMER ATTACHMENT. A PRINTOUT **
577 ** GIVING THE FAILING INTERNAL ROUTINE/CHECKPOINT, **
578 ** THE ADDRESS IN THE PROGRAM WHERE THE **
579 ** ERROR WAS DETECTED, AND THE STATUS WORD IS **
580 ** PRINTED. **
581 ** THE STATUS WORD BITS SIGNIFIGANCE ARE- **
582 ** BIT-00 TEST STARTED - TURNED ON AT **
583 ** BEGINNING, AND OFF AT END OF TEST. **
584 ** BIT-14 AN UNEXPECTED TIMER INTERRUPT **
585 ** OCCURED. **
586 ** BIT-15 ANY ERROR OCCURED BIT **
587 **
588 *****
589 *****
590 **
591 ** MVWZ TURESUL,R1 ZERO STATUS WORD
592 ** B TO BRANCH TO START TEST
593 **
594 *****
595 *****
596 ** NAME- DELAY SUBROUTINE
597 **
598 ** PURPOSE- PROVIDE ANY NUMBER OF 10 USEC DELAYS
599 ** BEFORE RETURNING TO THE CALLER. 'DEL1'
600 ** CAN BE CHECKED ANYTIME FROM A HIGHER
601 ** LEVEL TO DETERMINE WHAT THE REMAINING
602 ** COUNT IS.
603 **
604 ** CALLING SEQUENCE-R6 MUST CONTAIN THE RETURN ADDR.
605 ** R5 MUST CONTAIN THE HEX NUMBER OF 10
606 ** MICROSEC. DELAYS (MINUS 1).
607 **
608 ** RETURN- TO ADDRESS CONTAINED IN R6.
609 **
610 *****
611 DEL EQU *
612 MVW R5,DEL1 SET COUNT IN STORAGE
613 MVW R6,DEL2+2 SET UP RETURN
614 DELX AWI *-1,DEL1 RETURN **
615 DEL2 BZ *-1,DEL1 RETURN * 10 USEC-
616 NOP * PEP-
617 NOP * PASS. - ON 4955
618 J DELX LOOP **
619 DEL1 DC A(*-*)
620 SI DC A(*-*)
621 AL DC X'0023' 4953
622 CL DC X'0025' 4955
623 **
624 *****
625 *****
626 ** NAME- MACHINE CHECK SUBROUTINE
627 **
628 ** PURPOSE- TO FIELD MACHINE CHECKS WHEN THEY OCCUR,
629 ** TERMINATE THE PROGRAM, PRINT A MESSAGE, AND
630 ** RETURN TO THE DCP.
631 **
632 ** CALLING SEQUENCE- VIA MACHINE CHECK XFER VECTOR.
633 **
634 ** RETURN- EVENTUALLY TO THE DCP.
635 *****
636 MK EQU *
637 DIS 1 DISABLE INTERRUPTS
638 CPPSR SVPSW PUT PSW IN STORAGE
639 MVW X'0008',EA SET UP ER ADDR FOR INTER SUBR
640 BAL INTER,R7 PRINT INTERNAL RTN/CKPT MSSG
641 SVPSW,BADDR SET UP TO CONVERT PSW
642 MVW BADDR,R2 PUT PSW IN R2
643 MVA DADDR,PARM3 PUT DATA ADDR IN CNTL BLK
644 MVA PARM2,R7 PUT CNTL BLK ADDR IN R7
645 SVC HTOE HEX TO EBCDIC
646 HVD BADDR,PSW PUT EBCDIC PSW IN MSSG
647 *
648 MVW PID+10,R0 PUT STEP NUMBER IN R0
649 MVA PID+10,PARM3 PUT DATA ADDR IN CNTL BLK
650 SVC HTOE HEX TO EBCDIC
651 MVD BADDR,RTN PUT EBCDIC RTN IN MSSG
652 *
653 MVW PID+12,R1 PUT ADDR. & TYPE CODE IN R1
654 MVA PID+12,PARM3 PUT DATA ADDR IN CNTL BLK
655 SVC HTOE HEX TO EBCDIC
656 MVD BADDR,CKPT PUT EBCDIC RTN IN MSSG
657 *
658 MVW EA,R3 PUT SAVED IAR IN R3
659 MVD EEA,IAR PUT EBCDIC IAR IN MSSG

LOCTR OBJECT TEXT STMT SOURCE STATEMENT
660 *
661 *
662 HVA PARM1,R7 GET CNTL BLK ADDR
663 MVW SI,R4 PUT ADDR OF LAST IDCB USED IN R4
664 OUT PRINT MESSAGE
665 B EEND
666 SVPSW DC A(*-*)
667 *****
668 ** NAME- ENDING SUBROUTINES
669 **
670 ** PURPOSE- END PROGRAM EXECUTION WHEN GOOD RUNS AND
671 ** ERRORS OCCUR.
672 **
673 **
674 ** CALLING SEQUENCE- BRANCH TO THE CORRECT LABELS.
675 **
676 ** RETURN- TO THE DCP.
677 *****
678 BBB EQU *
679 DIS 1 DISABLE INTERRUPTS
680 OWI 1,TURESUL SET ERROR CONDITION FOR MDI
681 IO RS0 RESET EVEN TIMER
682 IO RS1 RESET ODD TIMER
683 BAL OFF,R7 GET TO LVL 3
684 BAL INTER,R7 PRINT INTERNAL RTN/CKPT NUMBER
685 * THE ADDRESS THAT ERROR OCCURED
686 * AT AND THE STATUS WORD-
687 * BIT 0= TEST STARTED BIT
688 * BIT 14= UNEXPECTED TIMER INT
689 * BIT 15= ERROR OCCURED BIT
690 J EEND
691 *
692 ** GOOD END ROUTINE
693 **
694 GEND EQU *
695 DIS 1
696 BAL OFF,R7 GET TO LVL 3
697 MVWI 0,TURESUL SET STATUS WORD TO 0
698 *
699 CEND EQU *
700 MVW SAVA,R1 GET XFER VECTOR ADDRESS
701 HVD SDCP,(R1) RESTORE DCP XFER VECTORS
702 MVW SAVA1,X'000A' RESTORE DCP MCK RPN ADDR
703 EN 1
704 MVA CEND1,LLSB GO TO LVL 0 AND THEN LEX VIA SVC -
705 MVWI 0,R7 EXIT SO THAT THE DCP DOESNT GET-
706 SELB R7,LLSB MESSED UP.
707 *
708 GOBCK B *-
709 CEND1 SVC EXIT RETURN TO DCP ON LEVEL 3
710 * ERROR END ROUTINE - TURN ON ERROR BITS IN STATUS WORD
711 * BEFORE COMING HERE.
712 **
713 EEND EQU *
714 MVW TURESUL,R1 GET STATUS WORD
715 NWI X'7FFF',R1 TURN OFF TEST STARTED BIT
716 MVW R1,TURESUL PUT STATUS WORD BACK
717 J CEND
718 *
719 ERTN EQU *
720 HVA ERTN,EA SET ADDR TO BE PRINTED
721 J UNSET
722 *
723 ORTN EQU *
724 HVA ORTN,EA SET ADDR TO BE PRINTED
725 UNSET OWI X'0002',TURESUL SET UNEX INT BIT IN STAT WD
726 J BBB
727 *
728 INTER EQU *
729 MVW R7,RINTE+2 SET UP RETURN
730 MVA IRPN,PARM3 PUT DATA ADDR IN CNTL BLK
731 MVA PARM2,R7 PUT ADDR OF CNTL BLK IN R7
732 SVC HTOE HEX TO EBCDIC
733 HVD BADDR,IRC PUT EBCDIC DATA IN MSSG
734 MVA BADDR,PARM3 PUT DATA ADDR IN CNTL BLOCK
735 SVC HTOE HEX TO EBCDIC
736 HVD BADDR,EEA PUT EBCDIC DATA IN MSSG
737 MVA TURESUL,PARM3 PUT DATA ADDR IN CNTL BLOCK
738 HTOE HEX TO EBCDIC
739 HVD BADDR,STAT PUT EBCDIC DATA IN MSSG
740 RCHSG,R7
741 MVA OPWD1,R4
742 TBT (R4,5)
743 JN FINTE
744 MVW IRTN,R4 JUMP IF NO PPINT IS ON
745 HVA EA,R3 PUT INTERNAL RTN/CKPT IN R4
746 ANI -4,R3 * R3 HAS THE ADDRESS THAT THE-
747 * FAILURE WAS DETECTED AT.
748 MVWI 0,R2 ZERO R2
749 MVW PID+12,R1 PUT ADDR. & TYPE CODE IN R1
750 MVW PID+10,R0 PUT STEP NUMBER IN R0
751 SVC OUT PRINT MESSAGE
752 *-
753 RINTE B
754 *
755 EA DC A(*-*)
756 IRTN DC A(*-*)
757 ICKPT EQU A(*-*)
758 IRTN+1
759 *
760 RCMS DC C'INTERNAL RTN/CKPT='
761 IRC DC A(*-*)
762 *
763 EA DC C' ER ADDR='
764 *
765 EEA DC 2A(*-*)
766 DC C', STAT WD='
767 STAT DC 2A(*-*)
768 DC X'0000'
769 *
770 *
771 SDCP DC 2A(*-*)
772 DUMVE DC A(IDCB)
773 DC A(IDCB+2)
774 *
775 IDCB DC A(ERTN)
776 DC A(ORTN)
777 *
778 SAVA1 DC A(*-*)
779 DC X'00C0'
780 PARM1 DC A(MKMSG)
781 BADDR DC 2A(*-*)

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0027F2 0000 775 DADDR DC A(*-*)
0027F4 0002 776 PARM2 DC A(2)
0027F6 0000 777 PARM3 DC A(*-*)
0027F8 27EE 778 PARM4 DC A(BADDR)
0027FA 3803 779 DC X'3803'

LOCTR OBJECT TEXT STMT SOURCE STATEMENT
893 SBCL0 DC A(*-*)
894 SBCL1 DC A(*-*)
895 DELS0 DC A(*-*)
896 DELS1 DC A(*-*)
897 ADIRN DC A(AIO) DDB
898 ADIR DC A(AI1) DDB
899 ADIR DC A(ADIRN)
900 DC A(ADIRN+2)

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0029B6 6F03 2B0E 1011 BAL E,R7 BAD C.C.
0029BA 4020 2668 29D4 1012 STOP1 EQU *
0029B8 680C 29D4 1013 MVA ST1,SI
0029C4 6F04 29CC 1014 IO ST1
0029C8 6F03 2B0E 1015 BCC 7,STOPR STOP TIMER
0029CC 68C2 0000 1016 BAL E,R7 BAD CC
1017 STOPR B (R6) RETURN
1018 *
1019 STO DC X'6E00' EVEN ADDR STOP IDCB
1020 DC A(*-*)
1021 ST1 DC X'6E00'
1022 DC A(*-*)
1023 *****
1024 * NAME- DEVICE RESET ROUTINE
1025 *
1026 * PURPOSE- ISSUE RESET COMMANDS TO TIMERS.
1027 *
1028 * CALLING SEQUENCE-R6 MUST CONTAIN RETURN ADDRESS.
1029 * USE ENTRY POINT 'RSETO' FOR EVEN,
1030 * AND 'RSET1' FOR ODD.
1031 *
1032 *
1033 * RETURN- TO ADDRESS CONTAINED IN R6.
1034 *****
1035 RSETO EQU *
1036 MVA RS0,SI
1037 IO RS0 RESET TIMER
1038 BAL 7,RSETR
1039 E,R7 BAD CC
1040 RSET1 EQU *
1041 MVA RS1,SI
1042 IO RS1 RESET TIMER
1043 BCC 7,RSETR
1044 E,R7 BAD CC
1045 RSETR B (R6) RETURN
1046 *
1047 RS0 DC X'6F00' RESET EVEN TMR IDCB
1048 DC A(*-*)
1049 RS1 DC X'6F00' RESET ODD TMR IDCB
1050 DC A(*-*)
1051 *****
1052 * NAME- READ TIMER VAUE SUBROUTINE
1053 *
1054 * PURPOSE- READ TIMER VALUE REGISTERS
1055 *
1056 * CALLING SEQUENCE-R6 MUST CONTAIN THE RETURN ADDRESS.
1057 * USE ENTRY POINT 'RDHO' FOR EVEN, AND,
1058 * 'RDM1' FOR ODD.
1059 *
1060 * RETURN- TO ADDRESS CONTAINED IN R6 - R5 WILL
1061 * CONTAIN THE DATA THAT WAS READ.
1062 *****
1063 RDVO EQU *
1064 MVA RV0,SI
1065 IO RV0 READ TIMER VALUE
1066 BCC 7,RDV00
1067 E,R7 BAD CC
1068 BAL 7,RDV00 GET READ DATA
1069 RDV00 MVW R(2),R5 (R6) RETURN
1070 B
1071 RDV1 EQU *
1072 MVA RV1,SI
1073 IO RV1 READ TIMER VALUE
1074 BCC 7,RDV11
1075 E,R7 BAD CC
1076 RDV11 MVW R(3),R5 (R6) GET TIMER DATA
1077 B RETURN
1078 *
1079 RV0 DC X'2400' READ TMR VAL IDCB
1080 RV2 DC A(*-*)
1081 RV1 DC X'2400' READ TMR VAL IDCB
1082 RV3 DC A(*-*)
1083 *****
1084 * NAME- READ TIMER MODE SUBROUTINE
1085 *
1086 * PURPOSE- READ TIMER MODE REGISTERS.
1087 *
1088 * CALLING SEQUENCE-R6 MUST CONTAIN THE RETURN ADDRESS.
1089 * USE ENTRY POINT 'RDNO' FOR EVEN, AND
1090 * 'RDM1' FOR ODD.
1091 *
1092 * RETURN- TO ADDRESS CONTAINED IN R6 - R5 WILL
1093 * CONTAIN THE DATA THAT WAS READ.
1094 *****
1095 RDM0 EQU *
1096 MVA RMO,SI
1097 IO RMO READ TIMER MODE
1098 BCC 7,RDM00
1099 E,R7 BAD CC
1100 RDH00 MVW R(2),R5 (R6) GET MODE DATA
1101 B RETURN
1102 RDM1 EQU *
1103 MVA RM1,SI
1104 IO RM1 READ TMR MODE
1105 BCC 7,RDM11
1106 E,R7 BAD CC
1107 RDH11 MVW R(3),R5 (R6) GET MODE DATA
1108 B RETURN
1109 *
1110 RMO DC X'2500' READ TIMER MODE IDCB
1111 RM2 DC A(*-*)
1112 RM1 DC X'2500' READ TIMER MODE IDCB
1113 RM3 DC A(*-*)
1114 *****
1115 * NAME- SET MODE SUBROUTINE
1116 *
1117 * PURPOSE- WRITE TO THE TIMER MODE REGISTERS.
1118 *
1119 * CALLING SEQUENCE-R6 MUST CONTAIN THE RETURN ADDRESS.
1120 * R5 MUST CONTAIN THE DATA TO BE WRITTEN.
1121 * USE ENTRY POINT 'SETMO' FOR EVEN, AND
1122 * 'SETH1' FOR ODD.
1123 *
1124 * RETURN- TO ADDRESS CONTAINED IN R6.
1125 *****
1126 SETMO EQU *

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002A80 6D0D 2AB2 1129 MVW R5,RD2 PUT MODE DATA IN IDCB
002A84 4020 2668 2AB0 1130 MVA RD0,SI
002A8A 680C 2AB0 1131 IO RD0,SI SET MODE
002A8E 6F04 2AAC 1132 BCC 7,SETHR
002A92 6F03 2B0E 1133 BAL E,R7 BAD CC
002A96 1134 SETM1 EQU *
002A96 6D0D 2AB6 1135 MVW R5,RD3 PUT MODE DATA IN IDCB
002A9A 4020 2668 2AB4 1136 MVA RD1,SI
002AA0 680C 2AB4 1137 IO RD1 SET MODE
002AA4 6F04 2AAC 1138 BCC 7,SETHR
002AA8 6F03 2B0E 1139 BAL E,R7 BAD CC
002AAC 68C2 0000 1140 SETMR B (R6) RETURN
1141 *
1142 RD0 DC X'6500' EVEN ADDR SET MODE IDCB
1143 RD2 DC A(*-*)
1144 RD1 DC X'6500' ODD ADDR SET MODE IDCB
1145 RD3 DC A(*-*)
1146 *****
1147 * NAME- SET TIMER VALUE SUBROUTINE
1148 *
1149 * PURPOSE- WRITE TO TIMER VALUE REGISTERS.
1150 *
1151 * CALLING SEQUENCE-R6 MUST CONTAIN THE RETURN ADDRESS.
1152 * R5 MUST CONTAIN THE DATA TO BE WRITTEN.
1153 * USE ENTRY POINT 'SETO' FOR EVEN, AND
1154 * 'SETH1' FOR ODD.
1155 *
1156 * RETURN- TO ADDRESS CONTAINED IN R6.
1157 *****
1158 SETO EQU *
1159 MVW R5,SETV2 PUT TMR VAL DATA IN IDCB
1160 MVA SETV0,SI
1161 IO SETV0 SET VALUE
1162 BCC 7,SETR
1163 E,R7 BAD CC
1164 SET1 EQU *
1165 MVW R5,SETV3 PUT TMR VAL DATA IN IDCB
1166 MVA SETV1,SI
1167 IO SETV1 SET VALUE
1168 BCC 7,SETR
1169 E,R7 BAD CC
1170 SETR B (R6) RETURN
1171 *
1172 SETV0 DC X'6400' EVEN ADDR SET VAL IDCB
1173 SETV2 DC A(*-*)
1174 SETV1 DC X'6400' ODD ADDR SET VAL IDCB
1175 SETV3 DC A(*-*)
1176 *****
1177 * NAME- PREPARE TIMERS SUBROUTINE
1178 *
1179 * PURPOSE- ISSUE PREPARE COMMAND TO TIMERS.
1180 *
1181 * CALLING SEQUENCE-R6 MUST CONTAIN THE RETURN ADDRESS.
1182 * R5 MUST CONTAIN THE PREPARE DATA WORD.
1183 *
1184 * RETURN- TO ADDRESS CONTAINED IN R6.
1185 *****
1186 PRE EQU *
1187 MVW R5,PREPD PUT PREP DATA IN IDCB
1188 MVA IPREP,SI
1189 IO IPREP PREPARE
1190 BCC 7,PRE1
1191 BAL E,R7 BAD CC
1192 PRE1 B (R6)
1193 *
1194 IPREP DC X'6000' PREP IDCB
1195 PREPD DC A(*-*)
1196 *****
1197 * NAME- ERROR DETECTED SUBROUTINE
1198 *
1199 * PURPOSE- HANDLE PROGRAM DETECTED ERRORS
1200 *
1201 * CALLING SEQUENCE-R7 MUST CONTAIN THE ADDRESS THAT THE
1202 * ERROR WAS DETECTED AT.
1203 *
1204 * RETURN- EVENTUALLY TO THE DCP
1205 *****
1206 E EQU *
1207 MVW R7,EA SAVE ADDR IN R7
1208 AWI -4,EA SUBTRACT 4 BYTES FROM SAVED ADDR
1209 B BBB
1210 *****
1211 * NAME- COPY CURRENT LEVEL SUBROUTINE
1212 *
1213 * PURPOSE- TO VERIFY THAT CPU IS ON THE SPECIFIED
1214 * LEVEL.
1215 *
1216 * CALLING SEQUENCE-R6 MUST CONTAIN THE RETURN ADDRESS.
1217 * R5 MUST CONTAIN THE RIGHT JUSTIFIED S/B
1218 * CURRENT LEVEL DATA.
1219 *
1220 * RETURN- OCCURS TO ADDRESS CONTAINED IN R6 ONLY IF
1221 * CURRENT LEVEL IS THE SAME AS IS SPECIFIED
1222 * IN R5.
1223 *****
1224 COPY EQU *
1225 CACL R7
1226 CV R5,R7 IS CPU ON THE RIGHT LEVEL?
1227 JE COPY1 JUMP IF YES
1228 BAL E,R7 ON WRONG LEVEL
1229 B (R6)
1230 *****
1231 * NAME- TIMER INTERRUPT TEST SUBROUTINE
1232 *
1233 * PURPOSE- THE ADDRESSED TIMER IS STARTED APERIODIC
1234 * WITH THE VALUE SET TO 0. CONDITION CODES
1235 * ARE CHECKED AT OIO AND INTERRUPT TIMES.
1236 * STOPS OCCUR IF CC IS INCORRECT.
1237 *
1238 * CALLING SEQUENCE-R6 MUST CONTAIN THE RETURN ADDRESS.
1239 * TIMERS MUST BE PREPARED AND MODE MUST BE
1240 * SET. THE TRANSFER VECTORS MUST BE ALREADY
1241 * SET UP. THESE ROUTINES CAN BE USED ON
1242 * ANY LEVEL.
1243 *****
1244 COPY1 EQU *
1245 CACL R7
1246 CV R5,R7
1247 JE COPY1
1248 BAL E,R7
1249 B (R6)

LOCTR OBJECT TEXT STMT SOURCE STATEMENT
1248 * RETURN- TO ADDRESS CONTAINED IN R6.
1249 *****
1250 *****
1251 ITES0 EQU *
1252 MVR R6, ITESR+2 SET UP RETURN
1253 SLL 16, R5
1254 BAL SET0, R6 SET EVEN TMR VAL TO 0
1255 MVA IT3, INTR0 SET INT EXP STATE
1256 MVA STAP, SI
1257 IO START EVEN TIMER
1258 BCC E, R7
1259 BAL BAD CC
1260 *
1261 IT2 LEX ,
1262 *
1263 IT3 EQU *
1264 ITESR B *-
1265 STAP DC X'6700' RETURN
1266 DC A(*-*) START EVEN TMR - APERIODIC
1267 *
1268 ITES1 EQU *
1269 MVR R6, ITER+2 SET UP RETURN
1270 SLL 16, R5
1271 BAL SET1, R6 SET ODD TMR VAL TO 0
1272 MVA IT7, INTR1 SET INT EXP STATE
1273 MVA STP, SI
1274 IO START ODD THR
1275 BCC 7, IT6
1276 BAL BAD CC
1277 *
1278 IT6 LEX ,
1279 *
1280 IT7 EQU *
1281 ITER B *-
1282 *
1283 STP DC X'6700' RETURN
1284 DC A(*-*) START ODD TMR - APERIODIC
1285 XFFFF DC X'FFFF'
1286 XFFFC DC X'FFFC'
1287 EVENM DC A(*-*)
1288 EVENV DC A(*-*)
1289 ODDM DC A(*-*)
1290 ODDV DC A(*-*)
1291 *****
1292 * NAME- TIMER INTERRUPT SERVICE SUBROUTINES.
1293 *
1294 *
1295 * PURPOSE- TO SERVICE TIMER INTERRUPTS, CHECK COND.
1296 * CODES, AND CHECK INTERRUPT IDS.
1297 *
1298 * CALLING SEQUENCE-PLACE ADDRESSES OF THESE ROUTINES ('INT0
1299 * FOR EVEN AND 'INT1' FOR ODD) IN THE
1300 * APPROPRIATE TRANSFER VECTORS. BEFORE
1301 * CAUSING AN INTERRUPT PUT THE RETURN ADDRESS
1302 * IN 'INTRO' FOR EVEN, 'INTR1' FOR ODD. IF
1303 * THESE POSITIONS ARE ZERO WHEN AN INTERRUPT
1304 * OCCURS, NO INTERRUPT IS EXPECTED, AND THAT
1305 * IS AN ERROR CONDITION. THE POSITIONS ARE
1306 * ZEROED JUST BEFORE RETURN OCCURS.
1307 *
1308 * RETURN- TO ADDRESS CONTAINED IN 'INTRO' OR 'INTR1'.
1309 *****
1310 INTO EQU *
1311 BCC 3, INT00
1312 BAL E, R7 BAD CC AT INT TIME
1313 INTO BAL STOP0, R6 STOP TIMER 0
1314 INTOA CW ID0, R7
1315 JE INTO1
1316 BAL E, R7 BAD INTERRUPT ID
1317 INTO1 TWI -1, INTRO WAS INT EXPECTED?
1318 JNZ INTO2 JUMP IF YES
1319 BAL UNEXPECTED INTERRUPT
1320 INTO2 MVWZ INTO, R7 ZERO INT EXP FLAG
1321 B (R7) RETURN
1322 INTRO DC A(*-*)
1323 AINT DC A(AINT0)
1324 DC A(AINT1)
1325 AINT0 DC A(INT0) DDB
1326 AINT1 DC A(INT1) DDB
1327 ISAV DC 2A(*-*)
1328 ID0 DC A(*-*)
1329 ID1 DC A(*-*)
1330 SAVA DC A(*-*)
1331 *
1332 INT1 EQU *
1333 BCC 3, INT10
1334 BAL E, R7 BAD CC
1335 INT10 BAL STOP1, R6 STOP TIMER 1
1336 INT1A CW ID1, R7
1337 JE INT11
1338 BAL E, R7 BAD INTERRUPT ID
1339 INT11 TWI -1, INTR1 WAS INTERRUPT EXPECTED?
1340 JNZ INT12 JUMP IF YES
1341 BAL UNEXPECTED INTERRUPT
1342 INT12 MVWZ INTR1, R7 ZERO INT EXP FLAG
1343 B (R7) RETURN
1344 INTR1 DC A(*-*)
1345 *
1346 CODE4 DC A(EC4)
1347 DC A(OC4)
1348 *
1349 EC4 EQU *
1350 BCC 4, INT00
1351 BAL E, R7 WRONG C.C.
1352 *
1353 OC4 EQU *
1354 BCC 4, INT10
1355 BAL E, R7 WRONG C.C.
1356 *
1357 C4 DC A(E4)
1358 DC A(O4)
1359 *
1360 E4 EQU *
1361 BCC 4, INTOA
1362 BAL E, R7 WRONG C.C.

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1363 *
1364 04 EQU *
1365 BCC 4, INT1A
1366 BAL E, R7 WRONG C.C.
1367 *
1368 CC2 DC A(E2)
1369 DC A(O2)
1370 *
1371 CC6 DC A(E6)
1372 DC A(O6)
1373 *
1374 CC7 DC A(E7)
1375 DC A(O7)
1376 *
1377 E2 EQU *
1378 BCC 2, INTOA
1379 BAL E, R7 WRONG C.C.
1380 *
1381 02 EQU *
1382 BCC 2, INT1A
1383 BAL E, R7 WRONG C.C.
1384 *
1385 E6 EQU *
1386 BCC 6, INTOA
1387 BAL E, R7 WRONG C.C.
1388 *
1389 06 EQU *
1390 BCC 6, INT1A
1391 BAL E, R7 WRONG C.C.
1392 *
1393 E7 EQU *
1394 BCC 7, INTOA
1395 BAL E, R7 WRONG C.C.
1396 *
1397 07 EQU *
1398 BCC 7, INT1A
1399 BAL E, R7 WRONG C.C.
1400 *
1401 *****
1402 AEN DC A(EN)
1403 ST DC X'0000'
1404 DC X'FFFF'
1405 DC X'AAAA'
1406 DC X'8005'
1407 DC X'8001'
1408 DC X'4002'
1409 DC X'2004'
1410 DC X'1008'
1411 DC X'0180'
1412 DC X'0240'
1413 DC X'0420'
1414 DC X'0810'
1415 DC X'0101'
1416 DC X'0202'
1417 DC X'0404'
1418 DC X'0808'
1419 DC X'1010'
1420 DC X'2020'
1421 DC X'4040'
1422 EN DC X'8080'
1423 *
1424 AENN DC A(ENN)
1425 STT DC X'0000'
1426 DC X'0001'
1427 DC X'0002'
1428 DC X'0003'
1429 DC X'0004'
1430 DC X'0005'
1431 DC X'0006'
1432 DC X'0007'
1433 DC X'0008'
1434 DC X'0009'
1435 DC X'000A'
1436 DC X'000B'
1437 DC X'000C'
1438 DC X'000E'
1439 ENN DC X'000F'
1440 *
1441 X0001 DC X'0001'
1442 LLSB DC 2A(*-*)
1443 DC X'00D0'
1444 DC 2A(*-*)
1445 DLLSB DC 2A(*-*)
1446 DC X'0090'
1447 DC 8A(*-*)
1448 DC 30A(*-*)
1449 *
1450 *****
1451 * NAME- INTERRUPT ROUTINES TO RECORD THE
1452 * SEQUENCE IN WHICH THE TIMERS INTERRUPT.
1453 *
1454 *
1455 * PURPOSE- SEE NAME OF ROUTINE.
1456 *
1457 * CALLING SEQUENCE-USE 'SETUP' ENTRY POINT TO SET UP THE
1458 * INTERRUPT ROUTINES. R6 IS LINK REGISTER.
1459 *
1460 * RETURN- AFTER INTERRUPTS OCCUR, A LEX IS ISSUED,
1461 * SO A LOWER LEVEL MUST BE PENDING IN
1462 * ORDER TO RESUME EXECUTION.
1463 *****
1464 CC3 DC A(EC3) DDB
1465 DC A(OC3) DDB
1466 EC3Z DC A(*-*)
1467 OC3Z DC A(*-*)
1468 *
1469 EC3 EQU *
1470 BCC 3, EC3A
1471 BAL E, R7 BAD C.C.
1472 EC3A BAL STOP0, R6 STOP EVEN
1473 TWI -1, INTRO WAS INT EXPECTED?
1474 JNZ EC3B JUMP IF YES
1475 BAL E, R7 UNEXPECTED INTERRUPT
1476 EC3B MVWZ X'0000', INTRO ZERO INT EXP FLAG
1477 MVW OC3Z, EC3Z * 1ST TIMER TO INT WILL-

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00342E 4020 2668 2AB4 2173 T117 MVA RD1,SI
003434 680C 2AB4 2174 IO RD1
003438 6904 3440 2175 BCC 1,T118
00343C 6F03 2B0E 2176 BAL E,R7
003440 4020 2668 28AE 2177 T118 MVA IDCB1,SI
003446 680C 28AE 2178 IO IDCB1
00344A 6904 3452 2179 BCC 1,T119
00344E 6F03 2B0E 2180 BAL E,R7
003452 4020 2668 2B7E 2181 T119 MVA STP,SI
003458 680C 2B7E 2182 IO STP
00345C 6904 3464 2183 BCC 1,T120
003460 6F03 2B0E 2184 BAL E,R7
2185 *
2186 * NOW VERIFY THAT CC 7 OCCURS, WITH AN INTERRUPT PENDING,
2187 * WHEN IT SHOULD
2188 *
2189 *
2190 T120 EQU *
2191 AWI 1,IRTN
2192 MVA F10,SI
2193 IO F10
2194 BCC 7,T121
2195 BAL E,R7
2196 CW F12,F11
2197 JZ T122
2198 BAL E,R7
2199 T122 BAL RDV1,R6
2200 T123 BAL RDV1,R6
2201 CWI X'000C',R5
2202 JZ T124
2203 BAL E,R7
2204 *
2205 * VERIFY THAT STOP CMD GETS BUSY.
2206 *
2207 T124 MVA ST1,SI
2208 IO ST1
2209 BCC 1,T125
2210 BAL E,R7
2211 T125 BAL RSET1,R6
2212 *
2213 * NOW SET LVL 2 PENDING, LEX, AND VERIFY THAT NO INT. OCCURS.
2214 *
2215 T126 EQU *
2216 AWI 1,IRTN
2217 MVA T127,LLSB
2218 MVWI 2,R7
2219 SELB R7,LLSB
2220 LEX ,
2221 *
2222 * SHOULD BE ON LVL 2 NOW
2223 *
2224 T127 MVWI 2,R5
2225 BAL COPY,R6
2226 *
2227 * NOW GET AN INTERRUPT PENDING ON LVL 2, THEN REPREPARE
2228 * TO LVL 1 WITH THE I-BIT ON.
2229 *
2230 *
2231 T130 EQU *
2232 AWI 1,IRTN
2233 MVWI X'000C',R5
2234 BAL SETM0,R6
2235 MVWI X'30',R5
2236 BAL SET0,R6
2237 MVA T131,INTRO
2238 MVWI 3,R5
2239 BAL PRE,R6
2240 MVA STAP,SI
2241 IO STAP
2242 BCC 7,T131
2243 BAL E,R7
2244 T131 LEX ,
2245 *
2246 * SHOULD BE ON LVL 1 NOW
2247 *
2248 T132 EQU *
2249 AWI 1,IRTN
2250 CWI X'0000',INTRO
2251 JZ T133
2252 BAL E,R7
2253 T133 MVWI 1,R5
2254 BAL COPY,R6
2255 *
2256 MVA STAP,SI
2257 IO STAP
2258 BCC 7,T134
2259 BAL E,R7
2260 T134 MVA T135A,INTRO
2261 MVWI 5,R5
2262 BAL PRE,R6
2263 T135 LEX ,
2264 *
2265 * SHOULD BE ON LVL 2 NOW.
2266 *
2267 T135A EQU *
2268 AWI 1,IRTN
2269 CWI X'0000',INTRO
2270 JZ T136
2271 BAL E,R7
2272 T136 MVWI 2,R5
2273 BAL COPY,R6
2274 *
2275 * NOW VERIFY THAT THE I-BIT OF THE PREPARE FIELD WORKS OK.
2276 *
2277 *
2278 MVA T138,LLSB
2279 MVWI 3,R7
2280 SELB R7,LLSB
2281 *
2282 MVA STAP,SI
2283 IO STAP
2284 BCC 7,T137
2285 BAL E,R7
2286 T137 MVWI 4,R5
2287 BAL PRE,R6
2288 *
2289 *

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2290 * SHOULD BE ON LVL 3 NOW, AND NO INTERRUPT SHOULD HAVE
2291 * OCCURED.
2292 *
2293 T138 EQU *
2294 AWI 1,IRTN
2295 MVWI 3,R5
2296 BAL COPY,R6
2297 MVA T139,INTRO
2298 MVWI 5,R5
2299 BAL PRE,R6
2300 LEX ,
2301 *
2302 * SHOULD BE ON LVL 2 NOW, INTERRUPT SHOULD HAVE OCCURED, AND
2303 * LVL 3 SHOULD BE PENDING.
2304 *
2305 *
2306 T139 CWI X'0000',INTRO
2307 JZ T140
2308 BAL E,R7
2309 T140 MVWI 2,R5
2310 BAL COPY,R6
2311 *
2312 * VERIFY TIMER 0 GETS CC2, WHEN IT SHOULD.
2313 *
2314 T141 EQU *
2315 AWI 1,IRTN
2316 MVW SAVA,RO
2317 MVA CC2,(R1)
2318 MVWI X'000C',R5
2319 BAL SETM0,R6
2320 BAL SETM1,R6
2321 MVWI 1,R5
2322 BAL SETC,R6
2323 BAL SET1,R6
2324 *
2325 T142 MVA T143,INTRO
2326 BAL STPE0,R6
2327 MVWI 2,R5
2328 BAL DEL,R6
2329 LEX ,
2330 *
2331 T143 EQU *
2332 BAL RSET0,R6
2333 *
2334 * VERIFY TIMER 1 GETS CC2 WHEN IT SHOULD.
2335 *
2336 T144 EQU *
2337 AWI 1,IRTN
2338 MVW SAVA,R1
2339 MVA CC2+2,(R1+2)
2340 MVA T145,INTR1
2341 BAL STPE1,R6
2342 MVWI 2,R5
2343 BAL DEL,R6
2344 LEX ,
2345 *
2346 T145 EQU *
2347 BAL RSET1,R6
2348 BAL RSET0,R6
2349 BAL LVL0,R7
2350 *
2351 *
2352 * NAME-
2353 * TIMER ACCURACY TESTS
2354 *
2355 * PURPOSE-
2356 * VERIFY THAT TIMERS ARE ABLE TO PROVIDE
2357 * CORRECT DELAYS BEFORE INTERRUPTING.
2358 * METHOD-
2359 * N O T E - THIS TEST WILL NOT RUN WITH
2360 * STOP ON ADDRESS ON!!!
2361 * SET A VALUE IN THE TIMER, START IT, DELAY
2362 * WITH A SOFTWARE LOOP, SERVICE INTERRUPT
2363 * WHEN IT OCCURS, READ REMAINING DELAY VALUE
2364 * OF SOFTWARE LOOP AND VERIFY THAT TIMER
2365 * TOOK PROPER TIME BEFORE INTERRUPTING.
2366 * DO THIS FOR ALL TIME BASES ON BOTH TIMERS.
2367 *
2368 *
2369 *
2370 T82 EQU *
2371 MVWI X'0900',IRTN
2372 MVWI 1,R5
2373 BAL PRE,R6
2374 MVA T82A,LLSB
2375 MVWI 1,R7
2376 SELB R7,LLSB
2377 LEX ,
2378 EQU *
2379 MVW SAVA,RO
2380 MVD (R0),ISAV
2381 MVD ADDR,(R0)
2382 MVWI 0,R5
2383 BAL SETM0,R6
2384 BAL SETM1,R6
2385 MVWI X'000B',R5
2386 BAL SET1,R6
2387 MVWI -1,DELS0
2388 MVWI 0,SBC1
2389 MVWI 0,SBCLO
2390 *
2391 CB PTYDE,CL+1
2392 JE T82A1
2393 CB PTYDE,AL+1
2394 JNE T82AX
2395 MVWI X'0019',R5
2396 J T82A2
2397 T82AX MVWI X'0012',R5
2398 J T82A2
2399 *
2400 T82A1 MVWI 49,R5
2401 T82A2 MVA STAP,SI
2402 IO STAP
2403 BCC 7,T83
2404 BAL E,R7
2405 *
2406 T83 BAL DEL,R6

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
42	@FIXT	ABSOLUTE. HEX VALUE(0000101)
44	@GOTO	ABSOLUTE. HEX VALUE(0000200)
41	@QUES	ABSOLUTE. HEX VALUE(0000100)
43	@STOP	ABSOLUTE. HEX VALUE(0000102)
48	@TUXX	ABSOLUTE. HEX VALUE(0000500)
899	ADIR	ADDRESS. HEX LOCATION(000028E4) IN CSECT(I5002) LENGTH(2)
897	ADIRN	ADDRESS. HEX LOCATION(000028E0) IN CSECT(I5002) LENGTH(2)
1402	AEN	ADDRESS. HEX LOCATION(00002C5C) IN CSECT(I5002) LENGTH(2)
1424	AENN	ADDRESS. HEX LOCATION(00002C86) IN CSECT(I5002) LENGTH(2)
1323	AINT	ADDRESS. HEX LOCATION(00002BBA) IN CSECT(I5002) LENGTH(2)
1325	AINTO	ADDRESS. HEX LOCATION(00002BBE) IN CSECT(I5002) LENGTH(2)
1326	AINT1	ADDRESS. HEX LOCATION(00002BC0) IN CSECT(I5002) LENGTH(2)
881	AI0	ADDRESS. HEX LOCATION(000028B2) IN CSECT(I5002) LENGTH(1)
884	AI01	ADDRESS. HEX LOCATION(000028BA) IN CSECT(I5002) LENGTH(6)
889	AI02	ADDRESS. HEX LOCATION(000028CE) IN CSECT(I5002) LENGTH(4)
902	AI1	ADDRESS. HEX LOCATION(000028E8) IN CSECT(I5002) LENGTH(1)
905	AI11	ADDRESS. HEX LOCATION(000028F0) IN CSECT(I5002) LENGTH(6)
910	AI12	ADDRESS. HEX LOCATION(00002904) IN CSECT(I5002) LENGTH(4)
621	AL	ADDRESS. HEX LOCATION(0000266A) IN CSECT(I5002) LENGTH(2)
774	BADDR	ADDRESS. HEX LOCATION(000027EE) IN CSECT(I5002) LENGTH(2)
678	BBB	ADDRESS. HEX LOCATION(000026D8) IN CSECT(I5002) LENGTH(1)
2723	B61A	ADDRESS. HEX LOCATION(00003A5A) IN CSECT(I5002) LENGTH(1)
2811	B66A	ADDRESS. HEX LOCATION(00003B6E) IN CSECT(I5002) LENGTH(4)
2888	B71A	ADDRESS. HEX LOCATION(00003C6E) IN CSECT(I5002) LENGTH(4)
2894	B72A	ADDRESS. HEX LOCATION(00003C88) IN CSECT(I5002) LENGTH(4)
2897	B73A	ADDRESS. HEX LOCATION(00003C92) IN CSECT(I5002) LENGTH(4)
2990	B79AA	ADDRESS. HEX LOCATION(00003DDC) IN CSECT(I5002) LENGTH(4)
2993	B79BA	ADDRESS. HEX LOCATION(00003DE6) IN CSECT(I5002) LENGTH(4)
2984	B79X	ADDRESS. HEX LOCATION(00003DC2) IN CSECT(I5002) LENGTH(4)
1368	CC2	ADDRESS. HEX LOCATION(00002C20) IN CSECT(I5002) LENGTH(2)
1464	CC3	ADDRESS. HEX LOCATION(00002D02) IN CSECT(I5002) LENGTH(2)
698	CEND	ADDRESS. HEX LOCATION(000026FE) IN CSECT(I5002) LENGTH(1)
708	CEND1	ADDRESS. HEX LOCATION(00002720) IN CSECT(I5002) LENGTH(2)
783	CKPT	ADDRESS. HEX LOCATION(00002810) IN CSECT(I5002) LENGTH(2)
622	CL	ADDRESS. HEX LOCATION(0000266C) IN CSECT(I5002) LENGTH(2)
980	CMDR	ADDRESS. HEX LOCATION(0000297C) IN CSECT(I5002) LENGTH(1)
1228	COPY	ADDRESS. HEX LOCATION(00002B1C) IN CSECT(I5002) LENGTH(1)
1233	COPY1	ADDRESS. HEX LOCATION(00002B26) IN CSECT(I5002) LENGTH(4)
993	C10	ADDRESS. HEX LOCATION(000029A4) IN CSECT(I5002) LENGTH(2)
986	C5	ADDRESS. HEX LOCATION(00002992) IN CSECT(I5002) LENGTH(1)
775	.DADDR	ADDRESS. HEX LOCATION(000027F2) IN CSECT(I5002) LENGTH(2)
611	DEL	ADDRESS. HEX LOCATION(0000264E) IN CSECT(I5002) LENGTH(1)
895	DELS0	ADDRESS. HEX LOCATION(000028DC) IN CSECT(I5002) LENGTH(2)
896	DELS1	ADDRESS. HEX LOCATION(000028DE) IN CSECT(I5002) LENGTH(2)
614	DELX	ADDRESS. HEX LOCATION(00002656) IN CSECT(I5002) LENGTH(6)
619	DEL1	ADDRESS. HEX LOCATION(00002666) IN CSECT(I5002) LENGTH(2)
615	DEL2	ADDRESS. HEX LOCATION(0000265C) IN CSECT(I5002) LENGTH(4)
108	DEVADD	ADDRESS. HEX LOCATION(000019D0) IN CSECT(I5002) LENGTH(1)
1445	DLLSB	ADDRESS. HEX LOCATION(00002CB0) IN CSECT(I5002) LENGTH(2)

DECLARED	NAME	ATTRIBUTES AND REFERENCES
70	DUMMY	ABSOLUTE. HEX VALUE(00000000)
765	DUMVE	ADDRESS. HEX LOCATION(000027E0) IN CSECT(I5002) LENGTH(2)
1209	E	ADDRESS. HEX LOCATION(00002B0E) IN CSECT(I5002) LENGTH(1)
752	EA	ADDRESS. HEX LOCATION(000027A2) IN CSECT(I5002) LENGTH(2)
1469	EC3	ADDRESS. HEX LOCATION(00002D0A) IN CSECT(I5002) LENGTH(1)
1472	EC3A	ADDRESS. HEX LOCATION(00002D12) IN CSECT(I5002) LENGTH(4)
1476	EC3B	ADDRESS. HEX LOCATION(00002D22) IN CSECT(I5002) LENGTH(6)
1466	EC3Z	ADDRESS. HEX LOCATION(00002D06) IN CSECT(I5002) LENGTH(2)
1349	EC4	ADDRESS. HEX LOCATION(00002BFC) IN CSECT(I5002) LENGTH(1)
759	EEA	ADDRESS. HEX LOCATION(000027C8) IN CSECT(I5002) LENGTH(2)
712	EEND	ADDRESS. HEX LOCATION(00002722) IN CSECT(I5002) LENGTH(1)
1422	EN	ADDRESS. HEX LOCATION(00002C84) IN CSECT(I5002) LENGTH(2)
1440	ENN	ADDRESS. HEX LOCATION(00002CA6) IN CSECT(I5002) LENGTH(2)
405	ENTPT	ADDRESS. HEX LOCATION(00002574) IN CSECT(I5002) LENGTH(1)
50	EQ	ABSOLUTE. HEX VALUE(00000000)
718	ERTN	ADDRESS. HEX LOCATION(00002730) IN CSECT(I5002) LENGTH(1)
1287	EVENM	ADDRESS. HEX LOCATION(00002B86) IN CSECT(I5002) LENGTH(2)
1288	EVENV	ADDRESS. HEX LOCATION(00002B88) IN CSECT(I5002) LENGTH(2)
467	EXIT	ABSOLUTE. HEX VALUE(00000006)
1528	E1	ADDRESS. HEX LOCATION(00002DB4) IN CSECT(I5002) LENGTH(6)
1377	E2	ADDRESS. HEX LOCATION(00002C2C) IN CSECT(I5002) LENGTH(1)
1540	E3X	ADDRESS. HEX LOCATION(00002DE0) IN CSECT(I5002) LENGTH(6)
1360	E4	ADDRESS. HEX LOCATION(00002C10) IN CSECT(I5002) LENGTH(1)
1544	E4X	ADDRESS. HEX LOCATION(00002DF2) IN CSECT(I5002) LENGTH(1)
1548	E5X	ADDRESS. HEX LOCATION(00002DFE) IN CSECT(I5002) LENGTH(6)
1385	E6	ADDRESS. HEX LOCATION(00002C3C) IN CSECT(I5002) LENGTH(1)
1551	E6X	ADDRESS. HEX LOCATION(00002E0A) IN CSECT(I5002) LENGTH(1)
1393	E7	ADDRESS. HEX LOCATION(00002C4C) IN CSECT(I5002) LENGTH(1)
427	F00085	ADDRESS. HEX LOCATION(0000257E) IN CSECT(I5002) LENGTH(1)
435	F00091	ADDRESS. HEX LOCATION(000025EC) IN CSECT(I5002) LENGTH(1)
439	F00100	ADDRESS. HEX LOCATION(000025F2) IN CSECT(I5002) LENGTH(1)
447	F00103	ADDRESS. HEX LOCATION(00002618) IN CSECT(I5002) LENGTH(1)
451	F00106	ADDRESS. HEX LOCATION(00002630) IN CSECT(I5002) LENGTH(1)
443	F00111	ADDRESS. HEX LOCATION(0000260A) IN CSECT(I5002) LENGTH(1)
956	F10	ADDRESS. HEX LOCATION(0000296E) IN CSECT(I5002) LENGTH(2)
957	F11	ADDRESS. HEX LOCATION(00002970) IN CSECT(I5002) LENGTH(2)
958	F12	ADDRESS. HEX LOCATION(00002972) IN CSECT(I5002) LENGTH(2)
959	F13	ADDRESS. HEX LOCATION(00002974) IN CSECT(I5002) LENGTH(2)
960	F14	ADDRESS. HEX LOCATION(00002976) IN CSECT(I5002) LENGTH(2)
694	GEND	ADDRESS. HEX LOCATION(000026F2) IN CSECT(I5002) LENGTH(1)
707	GOBCK	ADDRESS. HEX LOCATION(0000271C) IN CSECT(I5002) LENGTH(4)
487	HTOE	ABSOLUTE. HEX VALUE(0000001A)
787	IAP	ADDRESS. HEX LOCATION(00002824) IN CSECT(I5002) LENGTH(2)
768	IDCB	ADDRESS. HEX LOCATION(000027E4) IN CSECT(I5002) LENGTH(2)
858	IDCB0	ADDRESS. HEX LOCATION(000028AA) IN CSECT(I5002) LENGTH(2)
860	IDCB1	ADDRESS. HEX LOCATION(000028AE) IN CSECT(I5002) LENGTH(2)
1328	ID0	ADDRESS. HEX LOCATION(00002BC6) IN CSECT(I5002) LENGTH(2)
1329	ID1	ADDRESS. HEX LOCATION(00002BC8) IN CSECT(I5002) LENGTH(2)

DECLARED	NAME	ATTRIBUTES AND REFERENCES
727	INTER	ADDRESS. HEX LOCATION(00002746) IN CSECT(I5002) LENGTH(1) 640 684
66	INTRNL	ABSOLUTE. HEX VALUE(00000000) 385
1322	INTRO	ADDRESS. HEX LOCATION(00002BB8) IN CSECT(I5002) LENGTH(2) 1255 1317 1320 1473 1476 1496 1980 1992 2084 2237 2250 2260 2269 2297 2306 2325
1344	INTR1	ADDRESS. HEX LOCATION(00002BF6) IN CSECT(I5002) LENGTH(2) 1272 1339 1342 1486 1489 1497 2014 2025 2085
1310	INT0	ADDRESS. HEX LOCATION(00002B8E) IN CSECT(I5002) LENGTH(1) 1325
1314	INT0A	ADDRESS. HEX LOCATION(00002B9A) IN CSECT(I5002) LENGTH(4) 1361 1378 1386 1394
1313	INT00	ADDRESS. HEX LOCATION(00002B96) IN CSECT(I5002) LENGTH(4) 1311 1350
1317	INT01	ADDRESS. HEX LOCATION(00002BA4) IN CSECT(I5002) LENGTH(6) 1315
1320	INT02	ADDRESS. HEX LOCATION(00002BB0) IN CSECT(I5002) LENGTH(4) 1318
1332	INT1	ADDRESS. HEX LOCATION(00002BCC) IN CSECT(I5002) LENGTH(1) 1326
1336	INT1A	ADDRESS. HEX LOCATION(00002BD8) IN CSECT(I5002) LENGTH(4) 1365 1382 1390 1398
1335	INT10	ADDRESS. HEX LOCATION(00002BD4) IN CSECT(I5002) LENGTH(4) 1333 1354
1339	INT11	ADDRESS. HEX LOCATION(00002BE2) IN CSECT(I5002) LENGTH(6) 1337
1342	INT12	ADDRESS. HEX LOCATION(00002BEE) IN CSECT(I5002) LENGTH(4) 1340
1196	IPREP	ADDRESS. HEX LOCATION(00002B0A) IN CSECT(I5002) LENGTH(2) 935 1190 1191
757	IRC	ADDRESS. HEX LOCATION(000027BA) IN CSECT(I5002) LENGTH(2) 732
753	IRTN	ADDRESS. HEX LOCATION(000027A4) IN CSECT(I5002) LENGTH(2) 729 743 750 752 1536 1564 1602 1622 1634 1655 1682 1715 1752 1990 1835 1878 1913 1970 1985 2000 2013 2018 2033 2051 2081 2116 2134 2153 2191 2216 2232 2249 2268 2294 2315 2337 2369 2451 2522 2593 2685 2869 2966
1327	ISAV	ADDRESS. HEX LOCATION(00002BC2) IN CSECT(I5002) LENGTH(2) 1792 2042 2378
1281	ITER	ADDRESS. HEX LOCATION(00002B7A) IN CSECT(I5002) LENGTH(4) 1269
1264	ITESR	ADDRESS. HEX LOCATION(00002B4E) IN CSECT(I5002) LENGTH(4) 1252
1251	ITES0	ADDRESS. HEX LOCATION(00002B2A) IN CSECT(I5002) LENGTH(1) 1800 1810 1819 1827 1839 1851 1857 1866 1881
1268	ITES1	ADDRESS. HEX LOCATION(00002B56) IN CSECT(I5002) LENGTH(1) 1803 1809 1821 1830 1842 1848 1860 1869 1878 1887 1899 1908 1917 1929 1935 1947
1261	IT2	ADDRESS. HEX LOCATION(00002B4C) IN CSECT(I5002) LENGTH(2) 1258
1263	IT3	ADDRESS. HEX LOCATION(00002B4E) IN CSECT(I5002) LENGTH(1) 1255
1278	IT6	ADDRESS. HEX LOCATION(00002B78) IN CSECT(I5002) LENGTH(2) 1275
1280	IT7	ADDRESS. HEX LOCATION(00002B7A) IN CSECT(I5002) LENGTH(1) 1272
40	I5002	CSECT. START(00002500) LENGTH(6688) ESDID(1) 40
1443	LLSB	ADDRESS. HEX LOCATION(00002CAA) IN CSECT(I5002) LENGTH(2) 703 705 803 805 824 826 2045 2047 2145 2147 2217 2219 2278 2280 2372 2374 2660 2662 2711 2713 2733 2735 2752 2754 2779 2780 2799 2801 2820 2822 2837 2839 2863 2864 2880 2882 2904 2906 2927 2929 2960 2961 2976 2978 2999 3001 3022 3024 3054 3055 3057
822	LVO	ADDRESS. HEX LOCATION(00002854) IN CSECT(I5002) LENGTH(1) 1531 2080 2349
827	LVOA	ADDRESS. HEX LOCATION(00002866) IN CSECT(I5002) LENGTH(4) 824
833	LWOR	ADDRESS. HEX LOCATION(0000287E) IN CSECT(I5002) LENGTH(4) 823
636	MK	ADDRESS. HEX LOCATION(0000266E) IN CSECT(I5002) LENGTH(1) 1528
780	MKMSG	ADDRESS. HEX LOCATION(000027FC) IN CSECT(I5002) LENGTH(10) 773
360	N00001	ADDRESS. HEX LOCATION(00002530) IN CSECT(I5002) LENGTH(2) 318 415
372	N00002	ADDRESS. HEX LOCATION(00002542) IN CSECT(I5002) LENGTH(2) 321
375	N00003	ADDRESS. HEX LOCATION(00002546) IN CSECT(I5002) LENGTH(2) 324
378	N00004	ADDRESS. HEX LOCATION(0000254A) IN CSECT(I5002) LENGTH(2) 327
381	N00005	ADDRESS. HEX LOCATION(0000254E) IN CSECT(I5002) LENGTH(2) 330 376
387	N00006	ADDRESS. HEX LOCATION(0000255A) IN CSECT(I5002) LENGTH(2) 333 373 418
390	N00007	ADDRESS. HEX LOCATION(0000255E) IN CSECT(I5002) LENGTH(2) 336
393	N00008	ADDRESS. HEX LOCATION(00002562) IN CSECT(I5002) LENGTH(2) 339 388
396	N00009	ADDRESS. HEX LOCATION(00002566) IN CSECT(I5002) LENGTH(2) 342
399	N00010	ADDRESS. HEX LOCATION(0000256A) IN CSECT(I5002) LENGTH(2) 345 394
402	N00011	ADDRESS. HEX LOCATION(0000256E) IN CSECT(I5002) LENGTH(2) 348 361
1482	OC3	ADDRESS. HEX LOCATION(00002D36) IN CSECT(I5002) LENGTH(1) 1465
1485	OC3A	ADDRESS. HEX LOCATION(00002D3E) IN CSECT(I5002) LENGTH(4) 1483
1489	OC3B	ADDRESS. HEX LOCATION(00002D4E) IN CSECT(I5002) LENGTH(6) 1487
1467	OC3Z	ADDRESS. HEX LOCATION(00002D08) IN CSECT(I5002) LENGTH(2) 1477 1490 1491 1495 2775 2855 2955 3046
1353	OC4	ADDRESS. HEX LOCATION(00002C04) IN CSECT(I5002) LENGTH(1) 1347

DECLARED	NAME	ATTRIBUTES AND REFERENCES
1289	ODDM	ADDRESS. HEX LOCATION(00002B8A) IN CSECT(I5002) LENGTH(2) 1639 1665
1290	ODDV	ADDRESS. HEX LOCATION(00002B8C) IN CSECT(I5002) LENGTH(2) 1636 1670 1699
801	OFF	ADDRESS. HEX LOCATION(0000282C) IN CSECT(I5002) LENGTH(1) 683 696
811	OPFR	ADDRESS. HEX LOCATION(00002850) IN CSECT(I5002) LENGTH(4) 802 803
75	OPWD1	ADDRESS. HEX LOCATION(0000180E) IN CSECT(I5002) LENGTH(1) 740
721	ORTN	ADDRESS. HEX LOCATION(00002738) IN CSECT(I5002) LENGTH(1) 722 769
461	OUT	ABSOLUTE. HEX VALUE(00000000) 664 749
1381	O2	ADDRESS. HEX LOCATION(00002C34) IN CSECT(I5002) LENGTH(1) 1369
1364	O4	ADDRESS. HEX LOCATION(00002C18) IN CSECT(I5002) LENGTH(1) 1358
1389	O6	ADDRESS. HEX LOCATION(00002C44) IN CSECT(I5002) LENGTH(1) 1372
1397	O7	ADDRESS. HEX LOCATION(00002C54) IN CSECT(I5002) LENGTH(1) 1375
104	PARHARA	ADDRESS. HEX LOCATION(0000196E) IN CSECT(I5002) LENGTH(1) 370
773	PARM1	ADDRESS. HEX LOCATION(000027EC) IN CSECT(I5002) LENGTH(2) 662
776	PARM2	ADDRESS. HEX LOCATION(000027F4) IN CSECT(I5002) LENGTH(2) 644 730
777	PARM3	ADDRESS. HEX LOCATION(000027F6) IN CSECT(I5002) LENGTH(2) 643 649 654 729 733 736
856	PERTN	ADDRESS. HEX LOCATION(000028A6) IN CSECT(I5002) LENGTH(4) 849 854
72	PID	ADDRESS. HEX LOCATION(00001800) IN CSECT(I5002) LENGTH(1) 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 648 649 653 654 747 748
1188	PRE	ADDRESS. HEX LOCATION(00002AF0) IN CSECT(I5002) LENGTH(1) 1795 1808 1817 1826 1847 1856 1865 1886 1895 1904 1925 1934 1943 2055 2157 2239 2262 2287 2299 2371
1197	PREPD	ADDRESS. HEX LOCATION(00002B0C) IN CSECT(I5002) LENGTH(2) 1189
1194	PRE1	ADDRESS. HEX LOCATION(00002B06) IN CSECT(I5002) LENGTH(4) 1192
785	PSW	ADDRESS. HEX LOCATION(0000281A) IN CSECT(I5002) LENGTH(2) 646
73	PTYPE	ADDRESS. HEX LOCATION(00000232) IN CSECT(I5002) LENGTH(1) 2390 2392 2418 2420 2460 2462 2490 2492 2531 2533 2561 2563 2602 2604 2632 2634 2702 2704 2790 2792 2873 2875 2970 2972
756	RCMS	ADDRESS. HEX LOCATION(000027A8) IN CSECT(I5002) LENGTH(18) 789
789	RCMSG	ADDRESS. HEX LOCATION(0000282A) IN CSECT(I5002) LENGTH(2) 739
1096	RDMO	ADDRESS. HEX LOCATION(00002A44) IN CSECT(I5002) LENGTH(1) 1630 1659 1693 1761 2125
1101	RDH00	ADDRESS. HEX LOCATION(00002A56) IN CSECT(I5002) LENGTH(4) 1099
1103	RDH1	ADDRESS. HEX LOCATION(00002A5E) IN CSECT(I5002) LENGTH(1) 1638 1664 1683 1766 2200
1108	RDH11	ADDRESS. HEX LOCATION(00002A70) IN CSECT(I5002) LENGTH(4) 1106
1064	RDV0	ADDRESS. HEX LOCATION(00002A08) IN CSECT(I5002) LENGTH(1) 1627 1674 1688 1724 1986 2001 2124
1069	RDV00	ADDRESS. HEX LOCATION(00002A1A) IN CSECT(I5002) LENGTH(4) 1067
1071	RDV1	ADDRESS. HEX LOCATION(00002A22) IN CSECT(I5002) LENGTH(1) 1635 1669 1698 1729 2019 2034 2199
1076	RDV11	ADDRESS. HEX LOCATION(00002A34) IN CSECT(I5002) LENGTH(4) 1074
1142	RDO	ADDRESS. HEX LOCATION(00002AB0) IN CSECT(I5002) LENGTH(2) 933 1130 1131 2099 2100
1144	RD1	ADDRESS. HEX LOCATION(00002AB4) IN CSECT(I5002) LENGTH(2) 946 1136 1137 2173 2174
1143	RD2	ADDRESS. HEX LOCATION(00002AB2) IN CSECT(I5002) LENGTH(2) 1129
1145	RD3	ADDRESS. HEX LOCATION(00002AB6) IN CSECT(I5002) LENGTH(2) 1135
750	RINTE	ADDRESS. HEX LOCATION(0000279E) IN CSECT(I5002) LENGTH(4) 728 742
1111	RH0	ADDRESS. HEX LOCATION(00002A78) IN CSECT(I5002) LENGTH(2) 932 1097 1098
1113	RH1	ADDRESS. HEX LOCATION(00002A7C) IN CSECT(I5002) LENGTH(2) 945 1104 1105
1112	RH2	ADDRESS. HEX LOCATION(00002A7A) IN CSECT(I5002) LENGTH(2) 1101
1114	RH3	ADDRESS. HEX LOCATION(00002A7E) IN CSECT(I5002) LENGTH(2) 1108
1045	RSETR	ADDRESS. HEX LOCATION(000029FC) IN CSECT(I5002) LENGTH(4) 1038 1043
1035	RSET0	ADDRESS. HEX LOCATION(000029D8) IN CSECT(I5002) LENGTH(1) 1656 2078 2139 2332 2348 2688
1040	RSET1	ADDRESS. HEX LOCATION(000029EA) IN CSECT(I5002) LENGTH(1) 1679 2079 2211 2347 2687
1047	RS0	ADDRESS. HEX LOCATION(00002A00) IN CSECT(I5002) LENGTH(2) 681 930 1036 1037
1049	RS1	ADDRESS. HEX LOCATION(00002A04) IN CSECT(I5002) LENGTH(2) 682 943 1041 1042
781	RTN	ADDRESS. HEX LOCATION(00002806) IN CSECT(I5002) LENGTH(2) 651
1079	RV0	ADDRESS. HEX LOCATION(00002A3C) IN CSECT(I5002) LENGTH(2) 931 1065 1066
1081	RV1	ADDRESS. HEX LOCATION(00002A40) IN CSECT(I5002) LENGTH(2) 944 1072 1073
1080	RV2	ADDRESS. HEX LOCATION(00002A3E) IN CSECT(I5002) LENGTH(2) 1069
1082	RV3	ADDRESS. HEX LOCATION(00002A42) IN CSECT(I5002) LENGTH(2) 1076

DECLARED	NAME	ATTRIBUTES AND REFERENCES
2196	T121	2183 ADDRESS. HEX LOCATION(0000347C) IN CSECT(I5002) LENGTH(6)
2199	T122	2194 ADDRESS. HEX LOCATION(00003488) IN CSECT(I5002) LENGTH(4)
2207	T124	2197 ADDRESS. HEX LOCATION(0000349A) IN CSECT(I5002) LENGTH(6)
2211	T125	2202 ADDRESS. HEX LOCATION(000034AC) IN CSECT(I5002) LENGTH(4)
2224	T127	2209 ADDRESS. HEX LOCATION(000034C6) IN CSECT(I5002) LENGTH(4)
2244	T131	2217 ADDRESS. HEX LOCATION(00003504) IN CSECT(I5002) LENGTH(2)
2248	T132	2242 ADDRESS. HEX LOCATION(00003506) IN CSECT(I5002) LENGTH(1)
2253	T133	2237 ADDRESS. HEX LOCATION(00003518) IN CSECT(I5002) LENGTH(4)
2260	T134	2251 ADDRESS. HEX LOCATION(00003532) IN CSECT(I5002) LENGTH(6)
2267	T135A	2258 ADDRESS. HEX LOCATION(00003542) IN CSECT(I5002) LENGTH(1)
2272	T136	2260 ADDRESS. HEX LOCATION(00003554) IN CSECT(I5002) LENGTH(4)
2286	T137	2270 ADDRESS. HEX LOCATION(0000357C) IN CSECT(I5002) LENGTH(4)
2293	T138	2284 ADDRESS. HEX LOCATION(00003586) IN CSECT(I5002) LENGTH(1)
2306	T139	2278 ADDRESS. HEX LOCATION(000035A4) IN CSECT(I5002) LENGTH(6)
2309	T140	2297 ADDRESS. HEX LOCATION(000035B0) IN CSECT(I5002) LENGTH(4)
2331	T143	2307 ADDRESS. HEX LOCATION(000035F2) IN CSECT(I5002) LENGTH(1)
2346	T145	2325 ADDRESS. HEX LOCATION(0000361A) IN CSECT(I5002) LENGTH(1)
1623	T20	2340 ADDRESS. HEX LOCATION(00002E8C) IN CSECT(I5002) LENGTH(1)
1664	T26	1600 ADDRESS. HEX LOCATION(00002ED6) IN CSECT(I5002) LENGTH(4)
1669	T27	1661 ADDRESS. HEX LOCATION(00002EE4) IN CSECT(I5002) LENGTH(4)
1674	T28	1666 ADDRESS. HEX LOCATION(00002EF2) IN CSECT(I5002) LENGTH(4)
1679	T29	1671 ADDRESS. HEX LOCATION(00002F00) IN CSECT(I5002) LENGTH(4)
1563	T3	1676 ADDRESS. HEX LOCATION(00002E0A) IN CSECT(I5002) LENGTH(1)
1688	T30	1610 ADDRESS. HEX LOCATION(00002F1A) IN CSECT(I5002) LENGTH(4)
1693	T31	1685 ADDRESS. HEX LOCATION(00002F28) IN CSECT(I5002) LENGTH(4)
1698	T32	1690 ADDRESS. HEX LOCATION(00002F34) IN CSECT(I5002) LENGTH(4)
1714	T33	1695 ADDRESS. HEX LOCATION(00002F42) IN CSECT(I5002) LENGTH(1)
1719	T34	1700 ADDRESS. HEX LOCATION(00002F50) IN CSECT(I5002) LENGTH(2)
1729	T35	1738 ADDRESS. HEX LOCATION(00002F68) IN CSECT(I5002) LENGTH(4)
1734	T36	1726 ADDRESS. HEX LOCATION(00002F74) IN CSECT(I5002) LENGTH(4)
1751	T37	1731 ADDRESS. HEX LOCATION(00002F84) IN CSECT(I5002) LENGTH(1)
1756	T38	1735 ADDRESS. HEX LOCATION(00002F92) IN CSECT(I5002) LENGTH(2)
1766	T39	1775 ADDRESS. HEX LOCATION(00002FAA) IN CSECT(I5002) LENGTH(4)
1771	T40	1763 ADDRESS. HEX LOCATION(00002FB6) IN CSECT(I5002) LENGTH(4)
1789	T41	1768 ADDRESS. HEX LOCATION(00002FC6) IN CSECT(I5002) LENGTH(1)
557	T5000	1772 ADDRESS. HEX LOCATION(00002646) IN CSECT(I5002) LENGTH(1)
2730	T58A	362 ADDRESS. HEX LOCATION(00003A6C) IN CSECT(I5002) LENGTH(1)
2752	T58B	2705 ADDRESS. HEX LOCATION(00003AB2) IN CSECT(I5002) LENGTH(6)
2765	T61	2703 ADDRESS. HEX LOCATION(00003ADE) IN CSECT(I5002) LENGTH(1)
2744	T61A	2752 ADDRESS. HEX LOCATION(00003AA0) IN CSECT(I5002) LENGTH(1)
2771	T62	2733 ADDRESS. HEX LOCATION(00003AEE) IN CSECT(I5002) LENGTH(6)
2775	T63	2728 2749 ADDRESS. HEX LOCATION(00003AFA) IN CSECT(I5002) LENGTH(6)
2778	T64	2772 ADDRESS. HEX LOCATION(00003B06) IN CSECT(I5002) LENGTH(4)
2784	T64A	2776 ADDRESS. HEX LOCATION(00003B14) IN CSECT(I5002) LENGTH(1)
2817	T64B	2779 ADDRESS. HEX LOCATION(00003B80) IN CSECT(I5002) LENGTH(1)
2837	T64C	2793 ADDRESS. HEX LOCATION(00003BC6) IN CSECT(I5002) LENGTH(6)
2850	T66	2791 ADDRESS. HEX LOCATION(00003BF2) IN CSECT(I5002) LENGTH(4)
2831	T66A	2837 ADDRESS. HEX LOCATION(00003BB4) IN CSECT(I5002) LENGTH(4)
2855	T66AA	2820 ADDRESS. HEX LOCATION(00003C02) IN CSECT(I5002) LENGTH(6)
2859	T67	2815 2835 ADDRESS. HEX LOCATION(00003C0E) IN CSECT(I5002) LENGTH(6)
2862	T68	2856 ADDRESS. HEX LOCATION(00003C1A) IN CSECT(I5002) LENGTH(4)
2868	T69	2860 ADDRESS. HEX LOCATION(00003C28) IN CSECT(I5002) LENGTH(1)
2903	T69A	2863 ADDRESS. HEX LOCATION(00003CA4) IN CSECT(I5002) LENGTH(1)
2927	T69X	2876 ADDRESS. HEX LOCATION(00003CFE) IN CSECT(I5002) LENGTH(6)
2935	T71	2874 ADDRESS. HEX LOCATION(00003D22) IN CSECT(I5002) LENGTH(4)
		2933

DECLARED	NAME	ATTRIBUTES AND REFERENCES
2912	T71A	2910 ADDRESS. HEX LOCATION(00003CC8) IN CSECT(I5002) LENGTH(4)
2942	T72	2940 ADDRESS. HEX LOCATION(00003D3C) IN CSECT(I5002) LENGTH(4)
2918	T72A	2916 ADDRESS. HEX LOCATION(00003CE2) IN CSECT(I5002) LENGTH(4)
2946	T73	2927 ADDRESS. HEX LOCATION(00003D46) IN CSECT(I5002) LENGTH(4)
2921	T73A	2914 ADDRESS. HEX LOCATION(00003CEC) IN CSECT(I5002) LENGTH(4)
2951	T74	2901 2925 ADDRESS. HEX LOCATION(00003D56) IN CSECT(I5002) LENGTH(6)
2955	T75	2952 ADDRESS. HEX LOCATION(00003D62) IN CSECT(I5002) LENGTH(6)
2959	T76	2956 ADDRESS. HEX LOCATION(00003DEE) IN CSECT(I5002) LENGTH(4)
2965	T77	2960 ADDRESS. HEX LOCATION(00003D7C) IN CSECT(I5002) LENGTH(1)
3022	T77A	2971 ADDRESS. HEX LOCATION(00003E52) IN CSECT(I5002) LENGTH(6)
2999	T77AX	2973 ADDRESS. HEX LOCATION(00003DF8) IN CSECT(I5002) LENGTH(6)
3031	T79	3028 ADDRESS. HEX LOCATION(00003E76) IN CSECT(I5002) LENGTH(4)
3037	T79A	3035 ADDRESS. HEX LOCATION(00003E90) IN CSECT(I5002) LENGTH(4)
3013	T79AA	3035 ADDRESS. HEX LOCATION(00003E36) IN CSECT(I5002) LENGTH(4)
3041	T79B	3011 ADDRESS. HEX LOCATION(00003E9A) IN CSECT(I5002) LENGTH(4)
3016	T79BA	3022 ADDRESS. HEX LOCATION(00003E40) IN CSECT(I5002) LENGTH(4)
3046	T79C	2999 ADDRESS. HEX LOCATION(00003EAA) IN CSECT(I5002) LENGTH(6)
3050	T79D	2999 3020 ADDRESS. HEX LOCATION(00003EB6) IN CSECT(I5002) LENGTH(6)
3054	T79E	3047 ADDRESS. HEX LOCATION(00003EC2) IN CSECT(I5002) LENGTH(6)
3059	T79F	3051 ADDRESS. HEX LOCATION(00003ED8) IN CSECT(I5002) LENGTH(1)
3007	T79X	3054 ADDRESS. HEX LOCATION(00003E1C) IN CSECT(I5002) LENGTH(4)
2050	T81	3005 ADDRESS. HEX LOCATION(000032E8) IN CSECT(I5002) LENGTH(1)
2376	T82A	2045 ADDRESS. HEX LOCATION(00003644) IN CSECT(I5002) LENGTH(1)
2396	T82AX	2372 ADDRESS. HEX LOCATION(00003690) IN CSECT(I5002) LENGTH(4)
2399	T82A1	2393 ADDRESS. HEX LOCATION(00003696) IN CSECT(I5002) LENGTH(4)
2400	T82A2	2391 ADDRESS. HEX LOCATION(0000369A) IN CSECT(I5002) LENGTH(6)
2405	T83	2395 2397 ADDRESS. HEX LOCATION(000036AC) IN CSECT(I5002) LENGTH(4)
2410	T83A	2402 ADDRESS. HEX LOCATION(000036C0) IN CSECT(I5002) LENGTH(1)
2414	T83B	2408 ADDRESS. HEX LOCATION(000036CA) IN CSECT(I5002) LENGTH(4)
2415	T83C	2416 ADDRESS. HEX LOCATION(000036CE) IN CSECT(I5002) LENGTH(4)
2427	T833A	2413 ADDRESS. HEX LOCATION(000036F0) IN CSECT(I5002) LENGTH(4)
2428	T833B	2419 ADDRESS. HEX LOCATION(000036F4) IN CSECT(I5002) LENGTH(6)
2424	T833C	2423 2425 ADDRESS. HEX LOCATION(000036EA) IN CSECT(I5002) LENGTH(4)
2434	T84	2421 ADDRESS. HEX LOCATION(0000370C) IN CSECT(I5002) LENGTH(4)
2439	T84A	2431 ADDRESS. HEX LOCATION(00003720) IN CSECT(I5002) LENGTH(1)
2443	T84B	2433 ADDRESS. HEX LOCATION(0000372A) IN CSECT(I5002) LENGTH(4)
2444	T84C	2445 ADDRESS. HEX LOCATION(0000372E) IN CSECT(I5002) LENGTH(4)
2469	T85A	2442 ADDRESS. HEX LOCATION(00003774) IN CSECT(I5002) LENGTH(4)
2466	T85AX	2461 ADDRESS. HEX LOCATION(0000376E) IN CSECT(I5002) LENGTH(4)
2470	T85B	2463 ADDRESS. HEX LOCATION(00003778) IN CSECT(I5002) LENGTH(6)
2475	T86	2465 2467 ADDRESS. HEX LOCATION(0000378A) IN CSECT(I5002) LENGTH(4)
2480	T86A	2472 ADDRESS. HEX LOCATION(0000379E) IN CSECT(I5002) LENGTH(1)
2484	T86B	2478 ADDRESS. HEX LOCATION(000037A8) IN CSECT(I5002) LENGTH(4)
2485	T86C	2486 ADDRESS. HEX LOCATION(000037AC) IN CSECT(I5002) LENGTH(4)
2499	T87A	2483 ADDRESS. HEX LOCATION(000037D4) IN CSECT(I5002) LENGTH(4)
2496	T87AX	2491 ADDRESS. HEX LOCATION(000037CE) IN CSECT(I5002) LENGTH(4)
2500	T87B	2493 ADDRESS. HEX LOCATION(000037D8) IN CSECT(I5002) LENGTH(6)
2505	T88	2495 2497 ADDRESS. HEX LOCATION(000037EA) IN CSECT(I5002) LENGTH(4)
2510	T88A	2502 ADDRESS. HEX LOCATION(000037FE) IN CSECT(I5002) LENGTH(1)
2514	T88B	2508 ADDRESS. HEX LOCATION(00003808) IN CSECT(I5002) LENGTH(4)
2515	T88C	2516 ADDRESS. HEX LOCATION(0000380C) IN CSECT(I5002) LENGTH(4)
2540	T89A	2513 ADDRESS. HEX LOCATION(00003852) IN CSECT(I5002) LENGTH(4)
2537	T89AX	2532 ADDRESS. HEX LOCATION(0000384C) IN CSECT(I5002) LENGTH(4)
2541	T89B	2534 ADDRESS. HEX LOCATION(00003856) IN CSECT(I5002) LENGTH(6)
2546	T90	2536 2538 ADDRESS. HEX LOCATION(00003868) IN CSECT(I5002) LENGTH(4)
2551	T90A	2543 ADDRESS. HEX LOCATION(0000387C) IN CSECT(I5002) LENGTH(1)

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
2555	T90B	2549 ADDRESS. HEX LOCATION(00003886) IN CSECT(I5002) LENGTH(4)
2556	T90C	2557 ADDRESS. HEX LOCATION(0000388A) IN CSECT(I5002) LENGTH(4)
2570	T91A	2554 ADDRESS. HEX LOCATION(000038B2) IN CSECT(I5002) LENGTH(4)
2567	T91AX	2562 ADDRESS. HEX LOCATION(000038AC) IN CSECT(I5002) LENGTH(4)
2571	T91B	2564 ADDRESS. HEX LOCATION(000038B6) IN CSECT(I5002) LENGTH(6)
2576	T92	2566 2568 ADDRESS. HEX LOCATION(000038C8) IN CSECT(I5002) LENGTH(4)
2581	T92A	2573 ADDRESS. HEX LOCATION(000038DC) IN CSECT(I5002) LENGTH(1)
2585	T92B	2579 ADDRESS. HEX LOCATION(000038E6) IN CSECT(I5002) LENGTH(4)
2586	T92C	2587 ADDRESS. HEX LOCATION(000038EA) IN CSECT(I5002) LENGTH(4)
2611	T93A	2584 ADDRESS. HEX LOCATION(00003930) IN CSECT(I5002) LENGTH(4)
2612	T93B	2603 ADDRESS. HEX LOCATION(00003934) IN CSECT(I5002) LENGTH(6)
2608	T93BX	2607 2609 ADDRESS. HEX LOCATION(0000392A) IN CSECT(I5002) LENGTH(4)
2617	T94	2605 ADDRESS. HEX LOCATION(00003946) IN CSECT(I5002) LENGTH(4)
2622	T94A	2614 ADDRESS. HEX LOCATION(0000395A) IN CSECT(I5002) LENGTH(1)
2626	T94B	2620 ADDRESS. HEX LOCATION(00003964) IN CSECT(I5002) LENGTH(4)
2627	T94C	2628 ADDRESS. HEX LOCATION(00003968) IN CSECT(I5002) LENGTH(4)
2641	T95A	2625 ADDRESS. HEX LOCATION(00003990) IN CSECT(I5002) LENGTH(4)
2642	T95B	2633 ADDRESS. HEX LOCATION(00003994) IN CSECT(I5002) LENGTH(6)
2638	T95BX	2637 2639 ADDRESS. HEX LOCATION(0000398A) IN CSECT(I5002) LENGTH(4)
2647	T96	2635 ADDRESS. HEX LOCATION(000039A6) IN CSECT(I5002) LENGTH(4)
2652	T96A	2644 ADDRESS. HEX LOCATION(000039BA) IN CSECT(I5002) LENGTH(1)
2656	T96B	2650 ADDRESS. HEX LOCATION(000039C4) IN CSECT(I5002) LENGTH(4)
2657	T96C	2658 ADDRESS. HEX LOCATION(000039C8) IN CSECT(I5002) LENGTH(4)
2664	T98	2655 ADDRESS. HEX LOCATION(000039DE) IN CSECT(I5002) LENGTH(1)
1984	T99B	2660 ADDRESS. HEX LOCATION(00003222) IN CSECT(I5002) LENGTH(1)
1992	T99C	1980 ADDRESS. HEX LOCATION(0000323C) IN CSECT(I5002) LENGTH(6)
1997	T99D	1988 1990 ADDRESS. HEX LOCATION(00003254) IN CSECT(I5002) LENGTH(2)
1999	T99E	1995 ADDRESS. HEX LOCATION(00003256) IN CSECT(I5002) LENGTH(1)
2012	T99F	1992 ADDRESS. HEX LOCATION(00003270) IN CSECT(I5002) LENGTH(1)
2017	T99G	2003 2005 ADDRESS. HEX LOCATION(00003282) IN CSECT(I5002) LENGTH(1)
2025	T99H	2014 ADDRESS. HEX LOCATION(0000329C) IN CSECT(I5002) LENGTH(6)
2030	T99I	2021 2023 ADDRESS. HEX LOCATION(000032B4) IN CSECT(I5002) LENGTH(2)
2032	T99J	2028 ADDRESS. HEX LOCATION(000032B6) IN CSECT(I5002) LENGTH(1)
2040	T99K	2025 ADDRESS. HEX LOCATION(000032D0) IN CSECT(I5002) LENGTH(1)
723	UNSET	2036 2038 ADDRESS. HEX LOCATION(0000273E) IN CSECT(I5002) LENGTH(6)
962	ZFFFF	720 ADDRESS. HEX LOCATION(0000297A) IN CSECT(I5002) LENGTH(2)
		2407 2436 2477 2507 2548 2578 2619 2649