VERS 7


```
0001                    ********************************************************************************
0002                    *       M  O  D  4
0003                    ********************************************************************************
0004                            IDT   'MOD4'
0005  0000                      RORG
0006          0320  DRCRU     EQU   >320          DECREMENTER CRU BASE ADDRESS
0007          0360  FLGCRU    EQU   >360          FLAG REGISTER CRU BASE ADDRESS
0008          03C0  P0DATA    EQU   >3C0          P0 - P15 CRU BASE ADDRESS
0009          03E0  P16DTA    EQU   >3E0          P16 - P31 CRU BASE ADDRESS
0010                *
0011                *
0012                *       WORKSPACE / REGISTER ASSIGNMENTS
0013          0001  GENR1     EQU   1             GENERAL REGISTER 1
0014          0002  GENR2     EQU   2             GENERAL REGISTER 2
0015          0003  GENR3     EQU   3             GENERAL REGISTER 3
0016          0004  GENR4     EQU   4             GENERAL REGISTER 4
0017          0005  STROBE    EQU   5             STROBE COUNTER
0018          0006  MILISC    EQU   6             MILISECOND COUNTER
0019          0008  CT5060    EQU   8             50/60 HERTZ COUNTER
0020          0009  FLSHCT    EQU   9             FLASH TIME COUNTER
0021          000A  MS3       EQU   10            3 MILESCOND COUNTER
0022          000C  CRUBAD    EQU   12            CRU BASE ADDRESS STORE
0023                *
0024                *
0025                *       WORKSPACE 2 REGISTER ASSIGNMENTS
0026                *R0     USED FOR 60 SEC DELAY ON KEYIN
0027          0001  GENRB1    EQU   1             GENERAL REGISTER 1
0028          0002  GENRB2    EQU   2             GENERAL REGISTER 2
0029          0003  GENRB3    EQU   3             GENERAL REGISTER 3
0030          0004  GENRB4    EQU   4             GENERAL REGISTER 4
0031          0005  MS500     EQU   5               500 MSEC COUNTER
0032          0006  DELAY     EQU   6             DELAY COUNTER
0033          0007  PROGPT    EQU   7             PLAY AT SEQUENCE POINTER
0034          0008  GOTOPT    EQU   8             GOTO SEQUENCE POINTER
0035          0009  FTNPT     EQU   9             FUNCTION SEQUENCE POINTER
0036          000A  MEMIPT    EQU   10            MEMORY INPUT SEQUENCE POINTER
0037          000D  TMPIPT    EQU   13             TEMPORARY INPUT STORE
0038                *
0039                *
0040                *
0041                *       FLAG ASSIGNMENTS IN FLAG REGISTER
0042                *
0043          0000  ARWFLG    EQU   0             AUTO REWIND FLAG
0044          0001  RRLFLG    EQU   1             RECORD RELEASE FLAG
0045          0002  RPSFLG    EQU   2             RECORD PAUSE FLAG
0046          0003  RECFLG    EQU   3             RECORD FLAG
0047          0004  MIPFLG    EQU   4             MEMORY INPUT FLAG
0048          0005  TCLFLG    EQU   5             TAPE CALIBRATED FLAG
0049          0006  EOTFLG    EQU   6             END OF TAPE FLAG
0050          0007  DLYFLG    EQU   7             DELAY FLAG
0051          0008  PRGFLG    EQU   8             PLAY AT PROGRAM FLAG
0052          0009  FUNFLG    EQU   9             FUNCTION RUNNING FLAG
0053          000A  FFWFLG    EQU   10            FAST FORWARD FLAG
0054          000B  DSPTIM    EQU   11            DISPLAY TIME FLAG
0055          000C  DSPUD     EQU   12            DISPLAY UPDATE FLAG
```

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0056          000D  FLSFLG   EQU   13            FLASH DISPLAY FLAG
0057          000E  DSPON    EQU   14            DISPLAY ON FLAG
0058          000F  GOTOFG   EQU   15            GOTO FLAG
0059          0000  CKCAL    EQU   0             CLOCK CALIBRATED FLAG
0060          0001  LOCFLG   EQU   1             LOCAL KEYBOARD INPUT FLAG
0061          0002  REMFLG   EQU   2             REMOTE KEYBOARD INPUT FLAG
0062          0003  CKSTAT   EQU   3             CLOCK INPUT STATUS
0063          0004  CKSTFG   EQU   4             CLOCK SET FLAG
0064          0005  TPSTAT   EQU   5             TAPE COUNT INPUT STATUS
0065                *
0066                *
0067                *
0068                *
0069          0027  CON23    EQU   39            DECIMAL POINT - DISC INDICATOR
0070                *
0071                *
0072                *         INPUT-OUTPUT LINE ASSIGNMENTS
0073                *
0074                *
0075                *
0076          0030  CLKIP    EQU   48            REAL TIME CLOCK INPUT
0077          0031  REMIP    EQU   49            REMOTE SIGNAL INPUT
0078          003F  TAPIP    EQU   63            TAPE COUNTER SIGNAL INPUT
0079          0040  RECAWD   EQU   64            RECORD ALLOWED INPUT
0080          0041  TAPIND   EQU   65            TAPE CASSETTE INDICATOR
0081          0042  TAPOWR   EQU   66            TAPE POWER SWITCH
0082          0043  FFWD     EQU   67            FAST FORWARD CONTROL SWITCH
0083          0044  REWD     EQU   68            REWIND CONTROL SWITCH
0084          0045  RECDSP   EQU   69            RECORDING DISPLAY LED
0085          0046  GRAMSP   EQU   70            GRAMOPHONE STOP CONTROL
0086          0047  DSCPT    EQU   71            DEC POINT- DISC INDICATOR
0087          004F  MUTE     EQU   79            MUTING CONTROL
0088                *
0089                *
0090          0E00  WKSP2    EQU   >E00          WORKSPACE 2 ADDRESS
0091          0E20  WKSP1    EQU   >E20          WORKSPACE 1 ADDRESS
0092          0E80  DCAPC    EQU   >E80          DECIMAL ADD CORRECT ADDRESS
0093          0EA4  DCSPC    EQU   >EA4          DECIMAL SUBTRACT ADDRESS
0094                         DEF LOC2
0095                         DEF SETKEY,PLAY,ATKEY,SELOP,VOLUD,DIGT5,DISP
0096                         DEF REMA,REMB,REMC,LOC1,LOC3,PRGFTN,PRGREC
0097                         DEF PRGTIM,TAPCNT,TAPCTD,RECST,GOTOST,FLAGS3
0098                         DEF RTCNST,CN5060,TIME,VOLSEL,DSTRB,FLAGS1,FLAGS2
0099                         DEF IPDGT,FLDC,FDCON,REFCON,TEMDSP,TPCNCK
0100                         REF TKEY,DLYUD2,LABS53,STBY,LABD5,DLYUD
0101                         REF RECKEY,ERROR,LABB3,PKEY,LABB2
0102                         REF LABT6
0103                *
0104                *
0105                *
0106                *
0107                *         CLOCK SET KEY DECODE SECTION
0108  0000  0460   ERRORK   B     @ERROR
      0002  0000
0109                *
```

```
0110  0004  0202  SETKEY  LI    GENRB2,1
      0006  0001
0111  0008  1F0B          TB    DSPTIM          TEST FOR CURRENT DISPLAY
0112  000A  16--          JNE   LABT27
0113  000C  C802          MOV   GENRB2,@FLAGS3            STORE DISPLAY STATUS
      000E  ----
0114  0010  1E0C  LABT27  SBZ   DSPUD           RESET DISPLAY UPDATE FLAG
      000A**1602
0115  0012  1E0B  LABF3   SBZ   DSPTIM          RESET DISPLAYING TIME
0116  0014  0720          SETO  @TEMDSP         BLAND DISPLAY
      0016  ----
0117  0018  1E47          SBZ   DSCPT           SWITCH OFF DECIMAL POINT
0118  001A  020A  LABF6    LI    MEMIPT,LABF1    SET UP RETURN ADDRESS
      001C  ----
0119  001E  1D04          SBO   MIPFLG          SET MEMORY INPUT FLAG
0120  0020  04CD          CLR   TMPIPT           CLEAR INPUT STORE
0121  0022  0460          B     @LABD5          GO FIND KEY SPACE
      0024  0000
0122  0026  0460  LABB2B   B     @LABB2
      0028  0000
0123  002A  0460  LABH7A   B     @LABH7
      002C  ----
0124  002E  1E04  STBYC    SBZ   MIPFLG
0125  0030  0460          B     @STBY
      0032  0000
0126                *
0127                LABF1
      001C**0034'
0128  0034  C000          MOV   R0,R0             60 SECC TIME UP
0129  0036  16--          JNE   LABT28                    NOT YET
0130                LABTUP
0131  0038  C0A0          MOV   @FLAGS3,GENRB2            TEST FOR PLAY AT SEQ
      003A  ----
0132  003C  0AE2          SLA   GENRB2,14
0133  003E  18F5          JOC   LABH7A          GOTO PLAY AT SEQUENCE
0134  0040  10--          JMP   LABF5                     TIME OUT
0135                LABT28
      0036**1605
0136  0042  0281          CI    GENRB1,10       CHECK FOR STAND BY
      0044  000A
0137  0046  13F3          JEQ   STBYC
0138  0048  028D          CI    TMPIPT,>999       CHECK NO OF DIGITD
      004A  0999
0139  004C  12--          JLE   LABT29
0140                LABT31
0141  004E  0281          CI    GENRB1,11          TEST IF OK KEY
      0050  000B
0142  0052  16D6          JNE   ERRORK
0143  0054  C34D          MOV   TMPIPT,TMPIPT   CHECK FOR INPUT .0
0144  0056  13F0          JEQ   LABTUP
0145  0058  10--          JMP   LABF2           GO AND CHECK TIME INPUT
0146                *
0147  005A  0281  LABT29   CI    GENRB1,10       CHECK FOR VALID DIGIT
      005C  000A
      004C**1206
```

```
0148  005E  1A--            JL    LABT30          VALID DIGIT
0149  0060  10F6            JMP   LABT31          CHECK IF OK KEY
0150                  *
0151                  LABT30
      005E**1A01
0152  0062  0A4D            SLA   TMPIPT,4         SHIFT UP FOR NEXT DIGIT
0153  0064  A341            A     GENRB1,TMPIPT    ADD ON NEXT DIGIT
0154  0066  C80D            MOV   TMPIPT,@TEMDSP DISPLAY NEW VALUE
      0068  ----
0155  006A  0460            B     @LABD5           GO FIND KEY SPACE
      006C  0024'
0156                  *
0157                  LABF2
      0058**100A
0158  006E  028D            CI    TMPIPT,>2400     TEST FOR TOP OF RANGE
      0070  2400
0159  0072  1BCF            JH    LABF3            OUTSIDE RANGE SO START AGAIN
0160  0074  06CD            SWPB  TMPIPT
0161  0076  028D            CI    TMPIPT,>5923     TEST MINUTES
      0078  5923
0162  007A  1BCB            JH    LABF3            OUTSIDE RANGE SO START AGAIN
0163  007C  06CD            SWPB  TMPIPT
0164  007E  C0A0            MOV   @FLAGS3,GENRB2             TEST FOR PLAY AT SEQ
      0080  ----
0165  0082  0AE2            SLA   GENRB2,14
0166  0084  18--            JOC   LABH4            GO TO PLAY AT SEQUENCE
0167  0086  C80D            MOV   TMPIPT,@TIME     STORE NEW TIMR
      0088  ----
0168  008A  C820            MOV   @CN5060,@2*CT5060+WKSP1
      008C  ----
      008E  0E30
0169  0090  1D0C  LABF5     SBO   DSPUD            SET DISPLAY UPDATE
      0040**1027
0170  0092  1D0B            SBO   DSPTIM           DISPLAY TIME
0171  0094  1E04            SBZ   MIPFLG           RESET MEMORY INPUT FLAG
0172  0096  1D47            SBO   DSCPT            SWITCH ON DECIMAL POINT
0173  0098  0209            LI    FTNPT,LABF4      SET UP RETURN ADDRESS
      009A  ----
0174  009C  0202            LI    GENRB2,2000      DELAY FOR 2 SEC SHOWING
      009E  07D0
0175  00A0  0460            B     @DLYUD           NEW TIME
      00A2  0000
0176                  *
0177  00A4  C0A0  LABF4     MOV   @FLAGS3,GENRB2
      00A6  ----
      009A**00A4'
0178  00A8  0AF2            SLA   GENRB2,15        TEST FOR
0179  00AA  0A12            SLA   GENRB2,1         DISPLAYING TIME
0180  00AC  18--            JOC   LABD5A           WAS DISPLAYING TIME
0181  00AE  1E0B            SBZ   DSPTIM           RESET TIME DISPLAY
0182  00B0  04E0            CLR   @FLAGS3          NOT RECORDING
      00B2  ----
0183  00B4  1E47            SBZ   DSCPT            SWITCH OFF DECIMAL POINT
0184  00B6  0460  LABD5A    B     @LABD5
      00B8  006C'
```

```
      00AC**1804
0185                  *         END OF FUNCTION
0186                  *
0187                  *
0188                  *
0189                  *
0190                  *         PLAY AT KEY DECODE
0191                  PLAY
0192  00BA  0202               LI    GENRB2,4          FLAG FOR PLAY AT
      00BC  0004
0193  00BE  1F0B               TB    DSPTIM            TIMER DISPLAYED
0194  00C0  16--               JNE   LABT32
0195  00C2  0582               INC   GENRB2            SET FLAG FOR TIME
0196                  LABT32
      00C0**1601
0197  00C4  C802               MOV   GENRB2,@FLAGS3
      00C6  ----
0198  00C8  1E08               SBZ   PRGFLG          RESET PROGRAM FLAG
0199  00CA  1E0C               SBZ   DSPUD            RESET DISPLAY UPDATE
0200  00CC  0720               SETO  @TEMDSP         BLANK DISPLAY
      00CE  ----
0201  00D0  1E0B               SBZ   DSPTIM          RESET TIME DISPLAY
0202  00D2  1E47               SBZ   DSCPT           SWITCH OFF DECIMAL POINT
0203  00D4  1D04               SBO   MIPFLG          SET MEMORY INPUT FLAG
0204  00D6  04C9               CLR   FTNPT           CLEAR TEMPORARY STORE
0205  00D8  020A               LI    MEMIPT,LABH1    SET RETURN ADDRESS
      00DA  ----
0206  00DC  0460               B     @LABD5          GO FIND KEY SPACE
      00DE  00B8'
0207                  *
0208                  LABH1
      00DA**00E0'
0209  00E0  C000               MOV R0,R0              TEST FOR TIME OUT
0210  00E2  13--               JEQ   LABH7           TIME OUT
0211  00E4  0281               CI    GENRB1,6        IS INPUT P1 TO P6 OR GRAMOPHON
      00E6  0006
0212  00E8  12--               JLE   LABT33
0213  00EA  0281               CI    GENRB1,10       IS INPUT STAND BY
      00EC  000A
0214  00EE  13--               JEQ   LABT34          STAND BY
0215  00F0  0281               CI    GENRB1,11        IS INPUT TAPE PLAY
      00F2  000B
0216  00F4  16--               JNE   ERRORD
0217  00F6  1F4F               TB    MUTE            IS MACHINE STATUS IN STANDBY
0218  00F8  13--               JEQ   LABT34
0219  00FA  1E42               SBZ   TAPOWR          SWITCH TAPE POWER FOR DISPLAY
0220  00FC  C801  LABT34       MOV   GENRB1,@PRGFTN            STORE PROGRAMMED FU
      00FE  ----
      00EE**1306
      00F8**1301
0221  0100  020A               LI    MEMIPT,LABH2    SET UP RETURN ADDRESS
      0102  ----
0222  0104  0460               B     @LABD5          GO FIND KEY SPACE
      0106  00DE'
0223                  LABT33
```

```
      00E8**120F
0224  0108  1F4F          TB    MUTE           GRAMOPHONE INPUT
0225  010A  13F8          JEQ   LABT34
0226  010C  C041          MOV   GENRB1,GENRB1    TEST FOR PHONO
0227  010E  13--          JEQ   LABT35
0228  0110  06A0          BL    @DIGT5           DISPLAY IN DIGIT 5
      0112  ----
0229  0114  10F3          JMP   LABT34
0230                 *
0231                 LABT35
      010E**1303
0232  0116  06A0          BL    @SELOP           DATA TO OUTPUT SELECTOR
      0118  ----
0233  011A  0201          LI    GENRB1,4
      011C  0004
0234  011E  06A0          BL    @DIGT5
      0120  ----
0235  0122  04C1          CLR   GENRB1
0236  0124  10EB          JMP   LABT34
0237                 *
0238                 LABH2
      0102**0126'
0239  0126  C000          MOV   R0,R0
0240  0128  13--          JEQ   LABH7
0241  012A  0281          CI    GENRB1,10      CHECK FOR STAND BY
      012C  000A
0242  012E  13--          JEQ   STBYB
0243  0130  0281          CI    GENRB1,9       CHECK FOR PROGRAMMED RECORD
      0132  0009
0244  0134  13--          JEQ   LABT36
0245  0136  04E0          CLR   @PRGREC        NOT RECORDING
      0138  ----
0246  013A  0281  LABH3    CI    GENRB1,30      CHECK FOR AT KEY
      013C  001E
0247  013E  16--          JNE   ERRORD
0248  0140  0460          B     @LABF6         GO LOAD IN PROGRAMMED TIME
      0142  001A'
0249                 *
0250                 LABT36
      0134**1307
0251  0144  1F01          TB    RRLFLG         TEST FOR RECORD RELEASE
0252  0146  16--          JNE   ERRORD
0253  0148  1F4F          TB    MUTE           TEST FOR STAND BY MODE
0254  014A  13--          JEQ   LABT37
0255  014C  1E45          SBZ   RECDSP         SWITCH ON RECORD DISPLAY
0256  014E  0720  LABT37   SETO  @PRGREC        PROGRAM RECORD REQUEST
      0150  ----
      014A**1301
0257  0152  020A          LI    MEMIPT,LABH3   SET UP RETURN POINT
      0154  013A'
0258  0156  0460          B     @LABD5
      0158  0106'
0259                 *
0260                 LABH4
      0084**186A
```

```
0261  015A  C80D          MOV   TMPIPT,@PRGTIM  STORE INPUT TIME
      015C  ----
0262  015E  1D47          SBO   DSCPT           SET OUTPUT POINT ON
0263  0160  1D0B          SBO   DSPTIM          DISPLAY TIME
0264  0162  0209          LI    FTNPT,LABH5     SET UP RETURN ADDRESS
      0164  ----
0265  0166  0202          LI    GENRB2,2000     DISPLAY TIME FOR 2 SECONDS
      0168  07D0
0266  016A  1E04          SBZ   MIPFLG          RESET MEMORY INPUT FLAG
0267  016C  0460          B     @DLYUD
      016E  00A2'
0268                     *
0269  0170  1D08  LABH5   SBO   PRGFLG          SET PROGRAM FLAG
      0164**0170'
0270  0172  0207          LI    PROGPT,LABH6    SET UP SEQUENCE RETURN ADDRESS
      0174  ----
0271                     LABH7
      002C**0176'
      00E2**1349
      0128**1326
0272  0176  1E04          SBZ   MIPFLG          RESET MEMORY INPUT FLAG
0273  0178  1F4F          TB    MUTE
0274  017A  16--          JNE   STBYB
0275  017C  1D0C          SBO   DSPUD           DISPLAY UPDATE
0276  017E  1D0B          SBO   DSPTIM          DISPLAY TIME
0277  0180  1D47          SBO   DSCPT           SET DECIMAL POINT
0278  0182  C060          MOV   @FLAGS3,GENRB1  PREV FLAGS
      0184  ----
0279  0186  0202          LI    GENRB2,1
      0188  0001
0280  018A  2042          COC   GENRB2,GENRB1   CHECK FOR DISPLAY
0281  018C  13--          JEQ   LABT39          PREVIOUS DISPLAY WAS TIME
0282  018E  1E0B          SBZ   DSPTIM          PREVIOUS DISPLAY WAS TAPE COUN
0283  0190  1E47          SBZ   DSCPT             RESET DECIMAL
0284                     *
0285  0192  04E0  LABT39   CLR   @FLAGS3         CLEAR FLAGS3
      0194  ----
      018C**1302
0286  0196  0460          B     @LABD5
      0198  0158'
0287                     *
0288                     *     WHEN PROGRAM TIME ARRIVES DO FUNCTION IF POSSIBLE
0289  019A  8820  LABH6   C     @PRGTIM,@TIME IS IT TIME FOR PROGRAMMED FUNC
      019C  ----
      019E  ----
      0174**019A'
0290  01A0  13--          JEQ   LABT50
0291  01A2  0460          B     @LABB3          NOT TIME YET
      01A4  0000
0292                     LABT50
      01A0**1302
0293  01A6  1D09          SBO   FUNFLG
0294  01A8  C060          MOV   @PRGFTN,GENRB1  FUNCTION
      01AA  ----
0295  01AC  16--          JNE   LABT40          TEST FOR GRAMOPHONE PLAY
```

```
0296  01AE  0207          LI    PROGPT,LABH10
      01B0  ----
0297  01B2  0460          B     @PKEY          GO AND PLAY GRAMOPHONE
      01B4  0000
0298  01B6  0460  ERRORD   B     @ERROR
      01B8  0002'
      00F4**1660
      013E**163B
      0146**1637
0299  01BA  0281  LABT40   CI    GENRB1,6
      01BC  0006
      01AC**1606
0300  01BE  1B--          JH    LABT41         TEST FOR P1 TO P6
0301  01C0  0207          LI    PROGPT,LABH10
      01C2  ----
0302  01C4  0460          B     @LABS53        GO AND PLAY FM STATION
      01C6  0000
0303  01C8  0207  LABT41   LI    PROGPT,LABH9
      01CA  ----
      01BE**1B04
0304  01CC  0281          CI    GENRB1,10      TEST FOR STAND BY
      01CE  000A
0305  01D0  13--          JEQ   STBYB
0306  01D2  0460          B     @TKEY          GO AND PLAY TAPE
      01D4  0000
0307                      *
0308  01D6  1E08  LABH9    SBZ   PRGFLG         FUNCTION ACTIVATED
      01CA**01D6'
0309  01D8  0460          B     @LABD5         GO FIND KEY SPACE
      01DA  0198'
0310                      *
0311                      *
0312  01DC  C060  LABH10   MOV   @PRGREC,GENRB1          TEST FOR RECORDING
      01DE  ----
      01B0**01DC'
      01C2**01DC'
0313  01E0  13FA          JEQ   LABH9          NOT RECORDING
0314  01E2  1D09          SBO   FUNFLG         SET FUNCTION FLAG
0315  01E4  0209          LI    FTNPT,LABH11   SET UP RETURN POINT
      01E6  ----
0316  01E8  1E08          SBZ   PRGFLG         RESET PROGRAM FLAG
0317  01EA  0202          LI    GENRB2,700     SET UP DELAY FOR 700 MS
      01EC  02BC
0318  01EE  0460          B     @DLYUD
      01F0  016E'
0319                      *
0320  01F2  0207  LABH11   LI    PROGPT,LABH12  SET UP RETURN POINT
      01F4  ----
      01E6**01F2'
0321  01F6  1D08          SBO   PRGFLG         SET PROGRAM FLAG
0322  01F8  0460          B     @RECKEY        GO SET UP RECORD PAUSE
      01FA  0000
0323                      *
0324                      LABH12
      01F4**01FC'
```

```
0325  01FC  1D09          SBO   FUNFLG
0326  01FE  0209          LI    FTNPT,LABH13  SET UP RETURN ADDRESS
      0200  ----
0327  0202  1E08          SBZ   PRGFLG        RESET PROGRAM FLAG
0328  0204  0460          B     @DLYUD2       DELAY FOR 200 MS
      0206  0000
0329  0208  0460  STBYB    B     @LABT6
      020A  0000
      012E**136C
      017A**1646
      01D0**131B
0330                *
0331  020C  0207  LABH13   LI    PROGPT,LABH9  SET UP RETURN ADDRESS
      020E  01D6'
      0200**020C'
0332  0210  1D08          SBO   PRGFLG        SET PROGRAM FLAG
0333  0212  0460          B     @RECKEY       GO AND RECORD
      0214  01FA'
0334                *     END OF FUNCTION
0335                *
0336                *
0337                *     DECODE OF AT KEY
0338                *
0339  0216  0201  ATKEY    LI    GENRB1,30     LOAD FUNCTION NUMBER
      0218  001E
0340  021A  1F04          TB    MIPFLG
0341  021C  16CC          JNE   ERRORD
0342  021E  04CD          CLR   TMPIPT        CLEAR INPUT REG
0343  0220  045A          B     *MEMIPT       GO TO RIGHT PLACE
0344                *     END OF FUNCTION
0345                *
0346                *
0347                *
0348                *
0349                *
0350                *     SUBROUTINE FOR OUTPUTTING FUNCTION SELECTOR DATA
0351                *
0352  0222  0A81  SELOP     SLA   GENRB1,8      SWITCH ROUND FOR OUTPUTTING
      0118**0222'
0353  0224  020C          LI    CRUBAD,P16DTA+16      POINT TO SELECTOR
      0226  03F0
0354  0228  30C1          LDCR  GENRB1,3      OUTPUT 3 BITS
0355  022A  020C          LI    CRUBAD,FLGCRU BACK TO FLAG REGISTER
      022C  0360
0356  022E  0881          SRA   GENRB1,8      SWITCH DATA BACK
0357  0230  045B          B     *11           RETURN
0358                *
0359                *
0360                *     SUBROUTINE FOR UPDATING VOLUME CONTROL
0361                *
0362  0232  0A82  VOLUD     SLA   GENRB2,8      SWITCH DATA ROUND
0363  0234  020C          LI    CRUBAD,P16DTA+22    POINT TO VOLUME DATA
      0236  03F6
0364  0238  3102          LDCR  GENRB2,4      OUTPUT 4 BITS
0365  023A  020C          LI    CRUBAD,FLGCRU BACK TO FLAG REGISTER
```

```
      023C  0360
0366  023E  045B            B     *11           RETURN
0367                  *
0368                  *
0369                  *     SUBROUTINE FOR UPDATING 5TH DIGIT
0370                  *
0371  0240  C120  DIGT5    MOV   @DISP+8,GENRB4        PICK UP DISPLAY WORD
      0242  ----
      0112**0240'
      0120**0240'
0372  0244  0244           ANDI  GENRB4,>87FF   CLEAR DISPLAY DIGIT
      0246  87FF
0373  0248  0AB1           SLA   GENRB1,11     LINE UP NEW DATA
0374  024A  A101           A     GENRB1,GENRB4 ADD ON NEW DATA
0375  024C  C804           MOV   GENRB4,@DISP+8          UPDATE DISPLAY DATA
      024E  ----
0376  0250  08B1           SRA   GENRB1,11
0377  0252  045B           B     *11           RETURN
0378                  *
0379                  *
0380                  *
0381                  *
0382                  *
0383                  *
0384  0E00                AORG  >E00
0385                  *
0386                  *      RAM DEFINITION
0387                  *      WORKSPACE 2
0388  0E00        WKSP2R  BSS   32
0389                  *
0390                  *      WORKSPACE 1
0391  0E20        WKSP1R  BSS   32
0392                  *
0393                  *      DISPLAY AND STROBE DATA
0394  0E40        DISP    BSS   10
      0242**0E48
      024E**0E48
0395  0E4A  0000  REMA    DATA  0             REMOTE INPUT A
0396  0E4C  0000  REMB    DATA  0             REMOTE INPUT B
0397  0E4E  0000  REMC    DATA  0             REMOTE INPUT C
0398  0E50  0000  LOC1    DATA  0             LOCAL INPUT 1
0399  0E52  0000  LOC2    DATA  0             LOCAL INPUT 2
0400  0E54  0000  LOC3    DATA  0             LOCAL INPUT 3
0401  0E56  0000  PRGFTN  DATA  0             PROGRAMMED FUNCTION
      00FE**0E56
      01AA**0E56
0402  0E58  0000  PRGREC  DATA  0             PROGRAMMED RECORD
      0138**0E58
      0150**0E58
      01DE**0E58
0403  0E5A  0000  PRGTIM  DATA  0             PROGRAMMED TIME
      015C**0E5A
      019C**0E5A
0404  0E5C  0000  TAPCNT  DATA  0             TAPE COUNTER STORE
0405  0E5E  0000  TAPCTD  DATA  0             TAPE COUNTER FOR DISPLAY
```

```
0406  0E60  0000  RECST   DATA  0          RECORD START STORE
0407  0E62  0000  GOTOST  DATA  0          GOTO STORE
0408  0E64  0000  FLAGS3  DATA  0          FLAG REGISTER 3
      000E**0E64
      003A**0E64
      0080**0E64
      00A6**0E64
      00B2**0E64
      00C6**0E64
      0184**0E64
      0194**0E64
0409  0E66  0000  RTCNST  DATA  0          REQUIRED TAPE COUNT STORE
0410  0E68  0000  CN5060  DATA  0          MAINS CONSTANT STORE
      008C**0E68
0411  0E6A  0000  TIME    DATA  0          TIME STORE
      0088**0E6A
      019E**0E6A
0412  0E6C  0000  VOLSEL  DATA  0          VOLUME AND FUNCTION SELECTOR ST
0413  0E6E  0000  DSTRB   DATA  0          DATA INPUT STROBE STORE
0414  0E70  0000  FLAGS1  DATA  0          FLAG REG 1
0415  0E72  0000  FLAGS2  DATA  0          FLAG REG 2
0416  0E74  0000  IPDGT   DATA  0          INPUT DIGIT STORE
0417  0E76  0000  FLDC    DATA  0          FLASH DISPLAY COUNT
0418  0E78  0000  FDCON   DATA  0          FLASH DISPLAY CONSTANT
0419  0E7A  0000  REFCON  DATA  0          RECORD DISPLAY FLASH CONSTANT
0420  0E7C  0000  TEMDSP  DATA  0          TEMPORARY DISPLAY STORE
      0016**0E7C
      0068**0E7C
      00CE**0E7C
0421  0E7E  0000  TPCNCK  DATA  0          TAPE COUNT CHECK
0422              *
0423              *
0424              *        DECIMAL ADD CORRECT ROUTINE
0425              *
0426  0E80  0202  DCAPCR  LI    GENR2,>0A00
      0E82  0A00
0427  0E84  20C2          CDC   GENR2,GENR3  CHECK FOR DECIMAL CARRY ON LS I
0428  0E86  16--          JNE   RLAB1        NO CARRY
0429  0E88  0243          ANDI   GENR3,>F0FF ZERO LS DIGIT
      0E8A  F0FF
0430  0E8C  0223          AI    GENR3,>1000  INCREMENT MS DIGIT
      0E8E  1000
0431  0E90  0202          LI    GENR2,>A000  CHECK FOR DECIMAL CARRY ON MS I
      0E92  A000
0432  0E94  20C2          CDC   GENR2,GENR3
0433  0E96  16--          JNE   RLAB1        NO CARRY
0434  0E98  0243          ANDI  GENR3,>0FFF  ZERO MS DIGIT
      0E9A  0FFF
0435  0E9C  0202          LI    GENR2,>FFFF
      0E9E  FFFF
0436  0EA0  0B22          SRC   GENR2,2       SET CARRY BIT IN STATUS STORE
0437  0EA2  045B  RLAB1   B     *11
      0E86**160D
      0E96**1605
0438              *
```

```
0421  0E7E  0000  TPCNCK   DATA  0              TAPE COUNT CHECK
0422                *
0423                *
0424                *        DECIMAL ADD CORRECT ROUTINE
0425                *
0426  0E80  0202  DCAPCR   LI    GENR2,>0A00
      0E82  0A00
0427  0E84  20C2           COC   GENR2,GENR3    CHECK FOR DECIMAL CARRY ON LS I
0428  0E86  16--           JNE   RLAB1          NO CARRY
0429  0E88  0243           ANDI   GENR3,>F0FF   ZERO LS DIGIT
      0E8A  F0FF
0430  0E8C  0223           AI    GENR3,>1000    INCREMENT MS DIGIT
      0E8E  1000
0431  0E90  0202           LI    GENR2,>A000    CHECK FOR DECIMAL CARRY ON MS I
      0E92  A000
0432  0E94  20C2           COC   GENR2,GENR3
0433  0E96  16--           JNE   RLAB1          NO CARRY
0434  0E98  0243           ANDI  GENR3,>0FFF    ZERO MS DIGIT
      0E9A  0FFF
0435  0E9C  0202           LI    GENR2,>FFFF
      0E9E  FFFF
0436  0EA0  0B22           SRC   GENR2,2         SET CARRY BIT IN STATUS STORE
0437  0EA2  045B  RLAB1    B     *11
      0E86**160D
      0E96**1605
0438                *
```



```
0439                *
0440                *
0441                *        DECIMAL SUBTRACT CORRECT ROUTINE
0442                *
0443  0EA4  0202  DCSPCR   LI    GENR2,>0F00
      0EA6  0F00
0444  0EA8  20C2           COC   GENR2,GENR3    CHECK FOR CARRY ON LS DIGIT
0445  0EAA  16--           JNE   RLAB2          NO CARRY
0446  0EAC  0243           ANDI  GENR3,>F9FF    LS DIGIT GOES TO 9
      0EAE  F9FF
0447  0EB0  0202           LI    GENR2,>F000
      0EB2  F000
0448  0EB4  20C2           COC   GENR2,GENR3    CHECK FOR CARRY ON MS DIGIT
0449  0EB6  16--           JNE   RLAB2          NO CARRY
0450  0EB8  0243           ANDI  GENR3,>9FFF    MS DIGIT GOES TO 9
      0EBA  9FFF
0451  0EBC  045B  RLAB2    B     *11
      0EAA**1608
      0EB6**1602
0452                      END
```

0000 ERRORS

ASM/TERM?