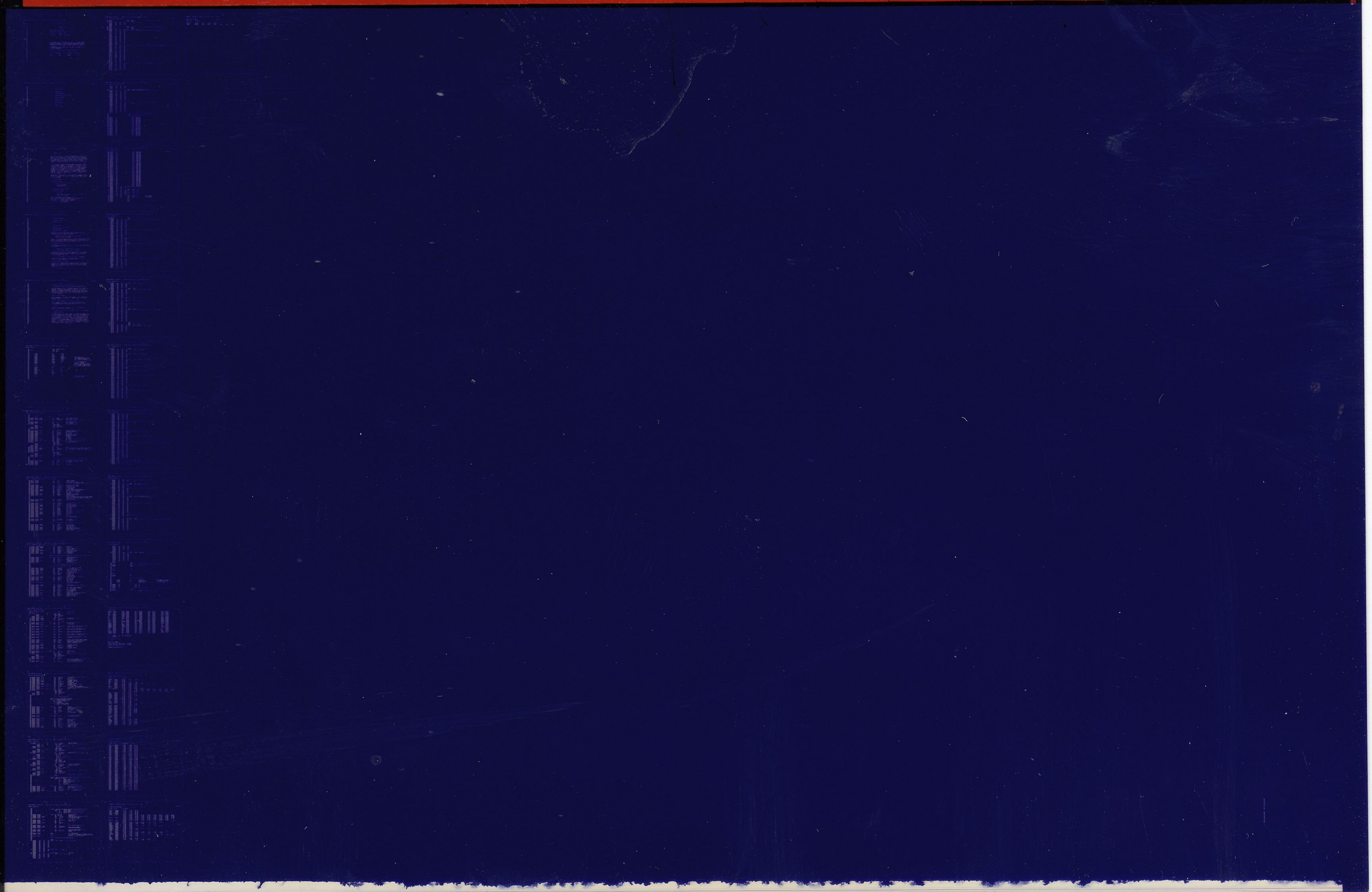
KDJ11-B

EEPROM ITA LANG LDR
COEEEA0

AH-FF25A-MC
1 OF 1 JUL 1985

digital
MADE IN USA



```
A ;;                                                                    SEQ 000
1
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                                .TITLE  COEEEA EEPROM ITA LANG LDR


                                                                .REM &

                                        IDENTIFICATION
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                                PRODUCT CODE:   AC-FF24A-MC

                                PRODUCT NAME:   COEEEA0 EEPROM ITA LANG LDR

                                PRODUCT DATE:   FEBRUARY, 1985

                                MAINTAINER:     DIAGNOSTIC ENGINEERING




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1. PROGRAM ABSTRACT

The KDJ11-B is a PDP-11 CPU that incorporates the J11 chip set as the heart of the processor. It is a quad height Q22 bus module. The KDJ11-B has two on-board ROM's. One of them, the 16-bit addressable ROM, contains the self-test and the boot codes. The other ROM, the 8-bit addressable one, contains the base area with hardware selection parameters, optional bootstraps, optional UFD (User Friendly Diagnostic) system desctiption area, and optional foreign language text.

On units to be shipped to non-English speaking countries, a dummy or "null" language is loaded into the EEPROM. The purpose of this is to disable English language error messages when the system is first installed. If and when the system passes its internal self tests, the user will be instructed to run a UFD (User Friendly Diagnostics) package which will be part of a "country kit" for each seperate language. The UFD package will use the local language for the particular country and, in addition, will load diagnostic and error messages in the local language into the EEPROM, so each subsequent power-up or reboot will have diagnostic and error messages in the user's own language.

The purpose of this program is to load the local language into the EEPROM. If it detects an error, the program will attempt to restore the "old" language, if any and will print a message informing the user of that fact.

2. SYSTEM REQUIREMENTS

Hardware Requirements

To run successfully this utility needs:

1. KDJ11-B CPU module
2. console terminal
3. at least 28K of memory

3. LOADING AND STARTING PROCEDURES

To start-up this program:

1. Boot XXDP+

2. Type "R NAME", where NAME is the name of the BIN or BIC file for this program.

The starting address of the program is 1000.
Note: if trying to restart the program in an arbitrary place after HALT on Break the following registers should be set up:

```
17777572=0       to disable memmory management
17777520=1000    to clear diagnostic mode (bit 8), but still save
                 HALT on Break
17777746=400     to flush the cache
```

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```

4. SPECIAL ENVIRONMENTS

The program is not APT compatible.

5. PROGRAM OPTIONS

None.

6. EXECUTION TIMES

The program runs in under 20 seconds.

7. ERROR INFORMATION

7.1 DEFECTIVE BYTE IN EEPROM

After each write, the Byte which should have been written is compared to the Byte in the proper location, and if it is not correct, the following error message is displayed:

```
EEPROM write error, PCR page n, address mmmmmm.
Data written qqq, data read rrr.
```

where n is the EEPROM page selected by the Page Control Register (PCR), mmmmmm is the physical address of the bad byte in question, qqq is the byte value that was written out to the address and rrr what was read back in after the write. (should be identical to qqq)

7.2 PROCESSOR NOT KDJ11-B

The program checks the type of CPU it is running on, which must be a KDJ11-B processor (MFPT returns 5 in r0). If not, the following message is printed:

```
Language area not supported by this processor.
```

7.3 "OLD" BOOT ROM CODE, LANGUAGE AREA NOT SUPPORTED

The program checks to see if the ROM code version is 7.0 or later. Earlier versions do not support the language area in the EEPROM and would print garbage if one was loaded. The program prints the following message in that case:

```
Current Boot ROM version does not support language area.
```

In addition, the language bit in the setup area of the EEPROM is cleared, to prevent "garbage" from being printed.

7.4 CHECKSUM ERROR IN SETUP AREA

The checksum in the setup area is checked to see if it contains a valid checksum. Also, bytes 6 and 103 (addresses 17765022 and 17765314, respectively) are checked to see if they contain 0 and 252 octal, respectively. If any of these conditions is not met, the following message is printed:

```
EEPROM checksum error in setup area.
```

No attempt is made to correct a checksum error.

7.5 DIFFERENCES BETWEEN UFD "QUIET" MODE AND "STANDALONE" MODE

When this program is run in UFD "Quiet" mode (which will usually be the case) none of the error messages will appear. If no error is detected, no messages whatsoever are printed. If any error is detected, the program will attempt to restore the UFD and language areas to the state they were in when the program was started. If the restoration was successful, the following message is printed in the user's language:

Unable to load <language>

where <language> is the name of the language. If the restoration was not successful, or there was no local language, the following message is printed.

Unable to load <language> - reverting to U.S. English

where <language> is as above. The program then clears the bit in the EEPROM setup area selecting a local language which means that the ROM English will be used from now on.

8. EXAMPLES

After booting XXDP+ and running the program, no message should appear, just the XXDP dot prompt (.)

If a problem occurred, one of the messages in section 7 should appear.

9. PROGRAM DESCRIPTION

The program consists of a body of code which loads the language into the local language area of the EEPROM. The routine that performs the write first checks the current value of the byte to be written and if it is the same, no write is performed. This is done to extend the life of the EEPROM. The write routine also checks the value in the EEPROM after the write to insure it was written correctly. After a succesful run, no message appears, after an unsuccessful attempt to write any of the bytes in the EEPROM, one of the message in section 7 appears. If run under UFD "Quiet" mode, no message is printed if the program was successful, otherwise one of the messages in 7.5 appear. In both cases, the XXDP prompt appears.

&

PROGRAM CONSTANTS

```
                                .SBTTL  PROGRAM CONSTANTS
000000                          .ENABL  ABS
                                .NLIST  MD,CND
                                .LIST   ME

177520          BCSR    =       177520
177522          PCR     =       177522
177522          PCRLB   =       177522
165000          E2PROM  =       165000
165316          E2PAR   =       E2PROM+316      ;E2PROM PARITY BYTE
165006          E2LLB   =       E2PROM+6        ;LOCAL LANGUAGE BIT IN E2PROM
166000          ENDE2R  =       E2PROM+1000     ;LAST ADDRESS OF E2PROM+2
173002          RMVTST  =       173002          ;WORD TO TEST ROM VERSION NUMBER
025370          DELAY   =       11000.
000140          LNGHDR  =       140             ;I.D. OF A LANGUAGE AREA
000040          UFDHDR  =       040             ;I.D. OF A UFD BLOCK
000002          RETRY   =       2               ;NUMBER OF ATTEMPTS TO WRITE A
                                                ;BYTE IN E2PROM BEFORE GIVING UP
000004          MAXERR  =       4               ;NO. OF ERRORS ALLOWED IN LOCAL
                                                ;LANGUAGE TEXT BEFORE QUITTING
177524          BDR     =       177524
000015          CR      =       15
000012          LF      =       12
000200          BIT7    =       200
000100          BIT6    =       100
000011          tab     =       11
000010          backsp  =       10
000040          space   =       40
000033          esc     =       33

001667          ROMSZ   =       FLEND-TEXT      ;SIZE IN BYTES OF TEXT TO BE
                                                ;LOADED INTO EEPROM
```

```
                                        .SBTTL  CHECK FOR CERTAIN EXCEPTIONS FIRST

                001000          .=1000

001000  005037  177522  START:  CLR     @#PCR           ;SELECT PAGE 0 OF EEPROM
001004  013746  177520          MOV     @#BCSR,-(SP)    ;SAVE OLD BCSR VALUE
001010  112737  000067  177520  MOVB    #67,@#BCSR      ;WRITE ENABLE THE E2PROM & ENABLE ROM

001016  000007                  MFPT                    ;GET PROCESSOR TYPE
001020  020027  000005          CMP     R0,#5           ;CHECK TO SEE IF ORION
001024  001404                  BEQ     1$              ;YES - CONTINUE
001026                          .TYPMSG #FMSG2          ;FIELD-SERVICE MESSAGE
                000001          .NARG   NARGS
                000027          .NTYPE  NTYPE,#FMSG2
001026  012700  002563            MOV   #FMSG2,R0
001032  104003                    EMT   3
001034  000443                  BR      99$

001036  012700  165000  1$:     MOV     #E2PROM,R0      ;STARTING ADDRESS TO CHECKSUM
001042  005001                  CLR     R1              ;INITIALIZE CHECKSUM
001044  012703  000151          MOV     #105.,R3        ;NO. OF BYTES TO CKSUM
001050  012005  201$:    MOV     (R0)+,R5        ;GET A BYTE
001052  042705  177400          BIC     #177400,R5      ;NO BUS NOISE, THANK YOU.
001056  060501                  ADD     R5,R1           ;ACCUMULATE CHECKSUM
001060  077305                  SOB     R3,201$         ;CONTINUE TILL DONE
001062  105701                  TSTB    R1              ;IS CKSUM 0?
001064  001007                  BNE     202$            ;NO, ERROR
001066  105737  165022          TSTB    @#E2PROM+22     ;BYTE TO TEST FOR VALID ROM, SHOULD BE 0
001072  001004                  BNE     202$            ;NO, ERROR
001074  123727  165314  000252  CMPB    @#E2PROM+314,#252       ;BYTE TO TEST FOR VALID ROM
001102  001404                  BEQ     300$            ;GO TO NEXT CHECK IF OK
001104                  202$:   .TYPMSG #FMSG4          ;FIELD SERVICE MESSAGE
                000001          .NARG   NARGS
                000027          .NTYPE  NTYPE,#FMSG4
001104  012700  002737            MOV   #FMSG4,R0
001110  104003                    EMT   3
001112  000414                  BR      99$             ;QUIT
001114  005067  001304  300$:    CLR     OLDSIZ          ;SET FLAG THAT ROM EXISTS, CURRENTLY NO LANGUAGE
001120  012737  000016  177522  MOV     #7*2,@#PCR      ;SEL. LAST PAGE OF 2K E2PROM, PG0 OF ROM
001126  023727  173002          CMP     @#RMVTST,(PC)+  ;SEE IF ROM VER. 7 OR LATER (CAN SUPPORT LANGUAGE AREA)
001132  000250                  CLN
001134  001405                  BEQ     2$              ;YES - CONTINUE
001136                          .TYPMSG #FMSG3
                000001          .NARG   NARGS
                000027          .NTYPE  NTYPE,#FMSG3
001136  012700  002644            MOV   #FMSG3,R0
001142  104003                    EMT   3
001144  000167  000636  99$:     JMP     QUIT1

                                        .SBTTL  SAVE OLD LANGUAGE/UFD AREA IN CASE IT MUST BE RESTORED

001150  012700  165776  2$:     MOV     #ENDE2R-2,R0    ;LAST ADDRESS (CKSUM) OF E2PROM
001154  012701  000005          MOV     #5,R1           ;NO. OF BYTES IN HEADER TO CHECKSUM
001160  010005                  MOV     R0,R5           ;SAVE ADDRESS
001162  005003                  CLR     R3              ;
001164  111004  4$:     MOVB    (R0),R4         ;GET A BYTE
001166  060403                  ADD     R4,R3           ;ACCUMULATE CHECKSUM
```

SAVE OLD LANGUAGE/UFD AREA IN CASE IT MUST BE RESTORED

```
355 001170  005740                      TST     -(R0)           ;CORRECT ADDRESS
356 001172  077104                      SOB     R1,4$           ;LOOP FOR 5 BYTES
357 001174  105703                      TSTB    R3              ;IF NOT ZERO, NO LANGUAGE LOADED
358 001176  001131                      BNE     WRLANG          ;NON-EXISTANT OR CORRUPTED LANGUAGE - SKIP
359
360 001200  014504                      MOV     -(R5),R4        ;HIGH BYTE OF BYTE COUNT
361 001202  014546                      MOV     -(R5),-(SP)     ;LOW BYTE OF BYTE COUNT
362 001204  110466  000001              MOVB    R4,1(SP)        ;SET UPPER BYTES OF SIZE
363 001210  042704  177437              BIC     #177437,R4      ;EXTRACT ID CODE
364 001214  012601                      MOV     (SP)+,R1        ;GET SIZE BACK
365 001216  042701  160000              BIC     #160000,R1      ;R1 NOW CONTAINS SIZE OF BLOCK IN BYTES
366 001222  062701  000005              ADD     #5,R1           ;ADD BYTE COUNT FOR HEADER BLOCK
367 001226  120427  000040              CMPB    R4,#UFDHDR      ;SEE IF IT IS A UFD BLOCK
368 001232  001013                      BNE     LANG            ;NO, CHECK FOR A LANGUAGE
369 001234  010104                      MOV     R1,R4           ;SAVE SIZE
370 001236  012702  005007              MOV     #BUFF,R2        ;ADDRESS OF SAVE BUFFER
371 001242  004767  000666              CALL    MOVROM          ;MOVE UFD AREA TO MEMORY
372 001246  001105                      BNE     WRLANG          ;BAD CKSUM, QUIT
373                                                             ;NOTE - R3 CONTAINS CHECKSUM OF BLOCK AND HEADER
374                                                             ;HOWEVER THE CHECKSUM OF HEADER IS ALREADY KNOWN
375                                                             ;TO BE 0 SO R3 IS A VALID CHECK OF UFD BLOCK
376 001250  010167  001150              MOV     R1,OLDSIZ       ;SAVE TOTAL SIZE
377 001254  010167  001146              MOV     R1,UFDSIZ       ;SAVE SIZE OF UFD AREA
378 001260  000500                      BR      WRLANG
379
380 001262  120427  000140      LANG:   CMPB    R4,#LNGHDR      ;IS THIS A LANGUAGE HEADER?
381 001266  001075                      BNE     WRLANG          ;NO - QUIT
382 001270  010167  001130              MOV     R1,OLDSIZ       ;SAVE SIZE FOR NOW
383 001274  062701  000005              ADD     #5,R1           ;ADD SIZE OF (POSSIBLE) UFD HEADER
384 001300  004767  001036              CALL    ROMADR          ;SET UP PCR AND R0
385 001304  005003                      CLR     R3              ;INITIALIZE CKSUM
386 001306  004767  001002              CALL    REAROM          ;GET A BYTE
387 001312  004767  000776              CALL    REAROM          ;GET A BYTE
388 001316  004767  000772              CALL    REAROM          ;GET A BYTE
389 001322  010546                      MOV     R5,-(SP)        ;SAVE LOW BYTE OF SIZE FOR LATER
390 001324  004767  000764              CALL    REAROM          ;GET A BYTE
391 001330  110566  000001              MOVB    R5,1(SP)        ;SAVE HIGH BYTE OF SIZE AND ID
392 001334  004767  000754              CALL    REAROM          ;GET A BYTE
393 001340  116600  000001              MOVB    1(SP),R0        ;GET I.D.
394 001344  012601                      MOV     (SP)+,R1        ;GET SIZE
395 001346  105703                      TSTB    R3              ;SEE IF VALID CKSUM
396 001350  001025                      BNE     1$              ;NO - WE HAVE LANGUAGE ONLY.
397
398 001352  042700  177437              BIC     #177437,R0      ;GET ID ONLY
399 001356  120027  000040              CMPB    R0,#UFDHDR      ;IS THIS A UFD BLOCK?
400 001362  001020                      BNE     1$              ;NO, IGNORE IT.
401
402                         ;WE HAVE BOTH A LANGUAGE AREA AND A UFD BLOCK.  SAVE THE UFD BLOCK.
403
404 001364  042701  160000              BIC     #160000,R1      ;GET RID OF ID
405 001370  062701  000005              ADD     #5,R1           ;SIZE OF HEADER
406 001374  010104                      MOV     R1,R4           ;BYTE COUNT TO MOVE
407 001376  010167  001024              MOV     R1,UFDSIZ       ;SAVE UFD SIZE
408 001402  066701  001016              ADD     OLDSIZ,R1       ;ADD SIZE OF LANGUAGE AREA
409 001406  012702  005007              MOV     #BUFF,R2        ;MEMORY ADDRESS TO SAVE TO
410 001412  004767  000516              CALL    MOVROM          ;SAVE UFD AREA
411 001416  001404                      BEQ     2$              ;YES, IT IS VALID, CONTINUE
```

```
SAVE OLD LANGUAGE/UFD AREA IN CASE IT MUST BE RESTORED

 412 001420  005067  001002                    CLR     UFDSIZ          ;NO UFD AREA
 413 001424  012702  005007          1$:       MOV     #BUFF,R2        ;RESET R2
 414 001430  016701  000770          2$:       MOV     OLDSIZ,R1       ;SIZE OF LANGUAGE AREA
 415 001434  010104                            MOV     R1,R4           ;BYTES TO MOVE
 416 001436  066767  000764  000760            ADD     UFDSIZ,OLDSIZ   ;OLDSIZ IS THE TOTAL SIZE
 417 001444  004767  000464                    CALL    MOVROM          ;SAVE LANGUAGE AREA
 418 001450  001404                            BEQ     WRLANG          ;LANGUAGE IS GOOD
 419 001452  005067  000746                    CLR     OLDSIZ          ;NO LANGUAGE
 420 001456  005067  000744                    CLR     UFDSIZ          ;NO UFD AREA
 421
 422                                  ;GENERATE CHECKSUM FOR FOREIGN LANGUAGE TEST FILE & WRITE TO THE MEMORY IMAGE
 423
 424 001462  012700  003120          WRLANG:   MOV     #TEXT,R0        ;ADDRESS OF BEGINNING OF TEXT
 425 001466  005001                            CLR     R1              ;INIT CHECKSUM
 426 001470  112002                  25$:      MOVB    (R0)+,R2        ;READ A BYTE
 427 001472  160201                            SUB     R2,R1           ;ACCUMULATE CHECKSUM
 428 001474  020027  005001                    CMP     R0,#CKSUM       ;FINISHED ALL TEXT ?
 429 001500  001373                            BNE     25$             ;NO-CONTINUE
 430 001502  110110                            MOVB    R1,(R0)         ;WRITE THE CHECKSUM
 431
 432                                          .SBTTL  LOAD LOCAL LANGUAGE INTO E2PROM
 433
 434                                  ;WRITE UFD & LOCAL LANGUAGE BLOCKS
 435
 436 001504  016701  000716                    MOV     UFDSIZ,R1       ;GET THE LENGTH OF THE UFD
 437 001510  062701  001667                    ADD     #ROMSZ,R1       ;... & THE TEXT AREA
 438 001514  004767  000622                    JSR     PC,ROMADR       ;COMPUTE E2PROM PAGE AND ADDR
 439 001520  016701  000702                    MOV     UFDSIZ,R1       ;SIZE OF UFD AREA TO SAVE
 440 001524  001406                            BEQ     40$             ;NO UFD AREA - SKIP
 441 001526  012702  005007                    MOV     #BUFF,R2        ;ADDRESS OF BEGINNING OF UFD AREA
 442 001532  112205                  35$:      MOVB    (R2)+,R5        ;GET SOME DATA
 443 001534  004767  000126                    CALL    E2WRIT          ;GO WRITE IT
 444 001540  077104                            SOB     R1,35$          ;FINISHED UFD?
 445                                                                   ;YES-DO LANGUAGE
 446 001542  012702  003120          40$:      MOV     #TEXT,R2        ;ADDRESS OF EEPROM LANGUAGE TEXT
 447 001546  012701  001667                    MOV     #ROMSZ,R1       ;BYTES TO MOVE
 448 001552  112205                  50$:      MOVB    (R2)+,R5        ;GET SOME DATA
 449 001554  004767  000106                    CALL    E2WRIT          ;WRITE A BYTE
 450 001560  077104                            SOB     R1,50$          ;ARE WE DONE?
 451                                                                   ;YES - EXIT
 452 001562  112705  000200                    MOVB    #BIT7,R5        ;TURN ON LOCAL LANGUAGE BIT IN
 453                                                                   ;SETUP AREA, THEN EXIT
 454
 455 001566  105037  177522          EXIT:     CLRB    @#PCRLB         ;SELECT PAGE 0
 456 001572  012700  165006                    MOV     #E2LLB,R0       ;E2PROM WORD CONTAINING LOCAL LANG. BIT
 457 001576  111001                            MOVB    (R0),R1
 458 001600  142701  177577                    BICB    #^CBIT7,R1      ;GET CURRENT LOCAL LANGUAGE BIT
 459 001604  120501                            CMPB    R5,R1           ;SEE IF BIT ALREADY CORRECT
 460 001606  001415                            BEQ     EXIT1           ;YES, JUST RETURN
 461 001610  112701  000200                    MOVB    #BIT7,R1        ;LOCAL LANGUAGE BIT
 462 001614  111005                            MOVB    (R0),R5         ;GET OLD WORD AGAIN
 463 001616  074105                            XOR     R1,R5           ;FLIP THE BIT
 464 001620  004767  000336                    CALL    WRBYTE          ;CHANGE LOCAL LANGUAGE BIT IN E2PROM
 465 001624  001006                            BNE     EXIT1           ;WOULD NOT WRITE, JUST GIVE UP
 466 001626  012700  165316                    MOV     #E2PAR,R0       ;ADDRESS OF CKSUM BYTE
 467 001632  111005                            MOVB    (R0),R5         ;GET OLD CKSUM BYTE
 468 001634  074105                            XOR     R1,R5           ;CORRECT THE CKSUM
```

LOAD LOCAL LANGUAGE INTO E2PROM

```
    469 001636  004767  000320                  CALL    WRBYTE          ;UPDATE E2ROM
    470
    471 001642                          EXIT1:  .FRCTYP #CRLF           ;COMPLETE LINE
                000001                          .NARG   NARGS
                000027                          .NTYPE  NTYPE,#CRLF
        001642  012700  002560                    MOV   #CRLF,R0
        001646  104044                           EMT   44
    472 001650  142716  000060                  BICB    #60,(SP)        ;BE SURE ROM IS DISABLED
    473 001654  012637  177520                  MOV     (SP)+,@#BCSR    ;RESTORE BCSR
    474 001660  005037  177522                  CLR     @#PCR           ;
    475 001664  000207                          RTS     PC
    476
    477 001666  004767  000270          E2WRIT: CALL    WRBYTE          ;WRITE THE BYTE TO E2PROM
    478 001672  001431                          BEQ     3$              ;OK THIS TIME
    479 001674  005267  000522                  INC     WERR            ;FLAG BAD BYTE
    480
    481 001700  026727  000516  000004         CMP     WERR,#MAXERR    ;CHECK TO SEE IF PAST THE MAXIMUM ERROR
    482 001706  003036                          BGT     QUIT            ;LIMIT OF BAD BYTES ALLOWED
    483
    484 001710  020227  003215                  CMP     R2,#M001        ;CHECK TO SEE IF ERROR IS IN MESSAGE
    485 001714  101433                          BLOS    QUIT            ;BYTE COUNT (MUST BE CORRECT)
    486
    487 001716  020227  005000                  CMP     R2,#MEND1       ;CHECK TO BE SURE DICTIONARY AND UFD
    488 001722  101030                          BHI     QUIT            ;BLOCKS ARE NOT CORRUPTED
    489
    490 001724  132705  000140                  BITB    #140,R5         ;CHECK TO SEE IF IT SHOULD BE A CONTROL
    491 001730  001425                          BEQ     QUIT            ;CODE (POSSIBLY DICTIONARY ENTRY)
    492
    493 001732  132710  000140                  BITB    #140,(R0)       ;IF CONTROL CODE (DICTIONARY REFERENCE
    494 001736  001422                          BEQ     QUIT            ;PERHAPS) CALL IT QUITS
    495
    496 001740  111004                          MOVB    (R0),R4         ;WE WILL LIVE WITH THIS ERROR, CORRECT
    497 001742  116703  003033                  MOVB    CKSUM,R3        ;THE CHECKSUM TO ACCOUNT FOR NEW VALUE
    498 001746  060503                          ADD     R5,R3           ;CANCEL OUT WHAT WAS SUPPOSED TO BE
    499 001750  160403                          SUB     R4,R3           ;CORRECT FOR ERRONEOUS VALUE
    500 001752  110367  003023                  MOVB    R3,CKSUM        ;PUT BACK CORRECTED VALUE
    501
    502 001756  062700  000002          3$:     ADD     #2,R0           ;INCREMENT LOCATION
    503 001762  020027  166000                  CMP     R0,#ENDE2R      ;FINISHED THIS PAGE ?
    504 001766  001005                          BNE     10$             ;NO-RETURN
    505 001770  012700  165000                  MOV     #E2PROM,R0      ;YES-RESET ADDRESS
    506 001774  062737  000002  177522          ADD     #2,@#PCR        ;INCREMENT PCR TO NEXT PAGE
    507 002002  000207                  10$:    RETURN
    508
    509 002004  005726                  QUIT:   TST     (SP)+           ;CORRECT STACK
    510 002006  032737  000100  000052  QUIT1:  BIT     #BIT6,@#52      ;SEE IF UFD QUIET
    511 002014  001403                          BEQ     5$              ;NO
    512 002016                                  .FRCTYP #MSG000         ;MESSAGE FOR USER IN HIS OWN LANGUAGE
                000001                          .NARG   NARGS
                000027                          .NTYPE  NTYPE,#MSG000
        002016  012700  003006                    MOV   #MSG000,R0
        002022  104044                           EMT   44
    513 002024  016701  000374          5$:     MOV     OLDSIZ,R1
    514 002030  100704                          BMI     EXIT1           ;ERROR WAS NOT ORION OR CKSUM ERROR, DO NOT
    515                                                                 ;TRY TO CLEAR LANGUAGE BIT
    516 002032  001427                          BEQ     40$             ;IF NO OLD LANGUAGE TO RESTORE
    517 002034  004767  000302                  JSR     PC,ROMADR       ;COMPUTE STARTING ADDRESS OF OLD LANG IN E2PROM
```

LOAD LOCAL LANGUAGE INTO E2PROM

```
                                        MOV     #BUFF,R2        ;STARTING ADDRESS OF OLD LANGUAGE TEXT
                                10$:    MOVB    (R2)+,R5        ;GET A BYTE
                                        CALL    WRBYTE          ;WRITE IT OUT
                                        BNE     40$             ;IF ERROR, GIVE UP
                                        ADD     #2,R0           ;INCREMENT LOCATION
                                        CMP     R0,#ENDE2R      ;FINISHED THIS PAGE ?
                                        BNE     20$             ;NO-CONTINUE
                                        MOV     #E2PROM,R0      ;YES-RESET ADDRESS
                                        ADD     #2,@#PCR        ;INCREMENT PCR TO NEXT PAGE
                                20$:    SOB     R1,10$          ;LOOP UNTIL DONE
                                        CMP     UFDSIZ,OLDSIZ   ;IF THE SAME THEN NO LANGUAGE
                                        BNE     EXIT1           ;IF LANGUAGE, LEAVE E2PROM LANG. BIT AS IT WAS
                                40$:    CLR     R5              ;TURN OFF LOCAL LANGUAGE BIT IN E2PROM
                                        BIT     BIT6,@#52       ;SEE IF UFD QUIET
                                        BEQ     EXIT            ;NO
                                        .FRCTYP #MSG001
                                        .NARG   NARGS
                                        .NTYPE  NTYPE,#MSG001
                                          MOV   #MSG001,R0
                                          EMT   44
                                        BR      EXIT            ;AND CALL IT A DAY

                                        .SBTTL  PROGRAM SUBROUTINES

                                ;MOVROM - MOVE BYTES FROM EEPROM TO MEMORY
                                ;ENTRY- R1 = STARTING ADDRESS IN EEPROM (# OF BYTES FROM END)
                                ;       R2 = ADDRESS OF MEMORY BUFFER
                                ;       R4 = # OF BYTES TO MOVE
                                ;EXIT   R1 - UNCHANGED
                                ;       R2 - UPDATED MEMORY ADDRESS
                                ;       R3 = (BYTE) 0 IF VALID CKSUM
                                ;       "Z" FLAG SET IF CKSUM VALID

                                MOVROM: MOV     R4,R3           ;SAVE R4
                                        CALL    ROMADR          ;LOAD PCR AND R0 WITH LANGUAGE START AREA
                                        MOV     R3,R4           ;RESTORE BYTE COUNT
                                        CLR     R3              ;INIT CHECKSUM
                                5$:     CALL    REAROM          ;GET A BYTE
                                        MOVB    R5,(R2)+        ;SAVE IT
                                        SOB     R4,5$           ;LOOP TILL DONE
                                        TSTB    R3              ;IS CHECKSUM GOOD?
                                        RETURN

                                WRBYTE: CMPB    R5,(R0)         ;IS THE NEW DATA DIFFERENT ?
                                        BEQ     10$             ;NO-DO NOT WRITE OVER

                                        MOV     #RETRY,R3
                                1$:     MOV     R5,(R0)         ;WRITE A LOCATION
                                        MOV     #DELAY,R4       ;11 MS WAIT
                                        SOB     R4,.            ;WASTE TIME
                                        CMPB    R5,(R0)         ;SEE IF IT TOOK
                                        BEQ     10$             ;YES, ALL OKAY
                                        SOB     R3,1$           ;IF AT FIRST YOU DON'T SUCCEED...
                                        MOVB    @#PCRLB,R4      ;PCR PAGE OF BAD BYTE
                                        ASRB    R4              ;CONVERT TO PAGE #
                                        ADD     #'0,R4          ;CONVERT TO OCTAL
                                        MOVB    R4,FMSG1A       ;STORE IT FOR PRINTING
```

PROGRAM SUBROUTINES

```
571 002226  010046                    MOV     R0,-(SP)        ;SAVE ROM ADDRESS
572 002230                             .ITOA   ,#FMSG1B        ;CONVERT ROM ADDRESS TO OCTAL
            000002                     .NARG   NARGS
            000027                        .NTYPE       NTYPE,#FMSG1B
    002230  012701  002500                 MOV  #FMSG1B,R1
    002234  104030                       EMT  30
573 002236                             .TYPMSG #FMSG1          ;PRINT OUT FIRST PART OF MESSAGE
            000001                     .NARG   NARGS
            000027                     .NTYPE  NTYPE,#FMSG1
    002236  012700  002430               MOV   #FMSG1,R0
    002242  104003                       EMT   3
574 002244  042705  177400             BIC     #177400,R5      ;MAKE SURE R5 IS POSITIVE AND A BYTE
575 002250                             .ITOA   R5,#DUMMY1      ;CONVERT TO OCTAL
            000002                     .NARG   NARGS
            000005                       .NTYPE       NTYPE,R5
    002250  010500                       MOV  R5,R0
            000027                       .NTYPE       NTYPE,#DUMMY1
    002252  012701  002526               MOV  #DUMMY1,R1
    002256  104030                       EMT  30
576 002260                             .TYPMSG #FMSG1C         ;PRINT OUT LAST 3 DIGITS OF NUMBER & MESSAGE
            000001                     .NARG   NARGS
            000027                     .NTYPE  NTYPE,#FMSG1C
    002260  012700  002531               MOV   #FMSG1C,R0
    002264  104003                       EMT   3
577 002266  013600                     MOV     @(SP)+,R0       ;GET BYTE AT ROM ADDRESS
578 002270  042700  177400             BIC     #177400,R0      ;GET RID OF BUS NOISE
579 002274                             .ITOA   ,#DUMMY2        ;CONVERT TO OCTAL
            000002                     .NARG   NARGS
            000027                        .NTYPE       NTYPE,#DUMMY2
    002274  012701  002551               MOV  #DUMMY2,R1
    002300  104030                       EMT  30
580 002302                             .TYPMSG #FMSG1D         ;PRINT LOWER 3 BYTES & REST OF MESSAGE
            000001                     .NARG   NARGS
            000027                     .NTYPE  NTYPE,#FMSG1D
    002302  012700  002554               MOV   #FMSG1D,R0
    002306  104003                       EMT   3
581 002310  000244                     CLZ                     ;COULDN'T DO IT, SET ERROR FLAG
582 002312  000207          10$:      RETURN
583
584                                    ;REAROM - READS A BYTE FROM E2PROM ADDRESS (R0)+ INTO R5. AUTOMATICLY ADJUSTS
585                                    ;PCRLB.  UPDATES CKSUM IN R3
586                                    ;       ENTRY - R0      ADDRESS IN ROM TO READ FROM
587                                    ;               R3      PARTIAL CKSUM
588                                    ;               PCRLB   CORRECT VALUE FOR BYTE TO READ
589                                    ;       EXIT    R0      ADDRESS OF NEXT BYTE
590                                    ;               R3      UPDATED CKSUM
591                                    ;               R5      BYTE READ
592                                    ;               PCRLB   CORRECT VALUE FOR NEXT BYTE
593
594 002314  012005          REAROM:   MOV     (R0)+,R5        ;GET A BYTE & UPDATE ADDR. BY 2
595 002316  060503                    ADD     R5,R3           ;UPDATE CKSUM
596 002320  020027  166000            CMP     R0,#ENDE2R      ;SEE IF WE SHOULD SWITCH PAGES
597 002324  001005                    BNE     10$             ;NO
598 002326  012700  165000            MOV     #E2PROM,R0      ;YES - GO TO START OF PAGE
599 002332  062737  000002  177522    ADD     #2,@#PCR                ;ADVANCE A PAGE
600 002340  000207          10$:      RETURN
601
```

```
                                        ;ROMADR - CALCULATE PAGE OFFSET FROM END OF ROM GIVEN SIZE IN BYTES
                                        ;       ENTRY - R1      SIZE IN BYTES
                                        ;       EXIT -  R0      INITIAL ADDRESS FOR FIRST BYTE IN ROM
                                        ;               R1      SIZE IN BYTES
                                        ;               PCRLB   CORRECT VALUE FOR FIRST BYTE IN ROM

002342  010100                  ROMADR: MOV     R1,R0           ;COPY BYTE COUNT
002344  010105                          MOV     R1,R5           ;SECOND COPY
002346  072527  177770                  ASH     #-8.,R5         ;DIVIDE BYTE COUNT BY 256. BYTE PAGES
002352  012704  000010                  MOV     #7+1,R4         ;LAST PAGE IN 2 K PART + 1
002356  160504                          SUB     R5,R4           ;STARTING PAGE NUMBER

002360  042700  177400                  BIC     #177400,R0      ;LEAVE ONLY BITS 7:0
002364  006300                          ASL     R0              ;DOUBLE VALUE
002366  001003                          BNE     20$
002370  012700  165000                  MOV     #E2PROM,r0      ;
002374  000406                          BR      30$             ;IF 0

002376  005400                  20$:    NEG     R0              ;MAKE STARTING ADDRESS BITS 8:0
002400  042700  177000                  BIC     #177000,R0      ;
002404  052700  165000                  BIS     #E2PROM,R0      ;MAKE A E2PROM ADDRESS
002410  005304                          DEC     R4              ;DECREMENT PAGE NUMBER BY 1

002412  006304                  30$:    ASL     R4              ;MAKE PAGE NUMBER CORRECT FOR PCR
002414  110437  177522                  MOVB    R4,@#PCRLB      ;CORRECT PAGE IN PCRLB
002420  000207                          RTS     PC              ;RETURN

002422  000000                  WERR:   0                       ;FLAG FOR BAD BYTE
002424  177777                  OLDSIZ: -1                      ;>0 - SIZE IN BYTES OF OLD LANGUAGE, 0 IF NO
                                                                ;LANGUAGE, -1 IF E2PROM MAY BE BAD/NONEXISTANT
002426  000000                  UFDSIZ: 0                       ;SIZE IN BYTES OF OLD UFD AREA

                                        .SBTTL  "FIELD SERVICE MODE" ERROR MESSAGES

                                        .ENABL LC
002430      105     105     120 FMSG1:  .ASCII  /EEPROM write error, PCR page /
002433      122     117     115
002436      040     167     162
002441      151     164     145
002444      040     145     162
002447      162     157     162
002452      054     040     120
002455      103     122     040
002460      160     141     147
002463      145     040
002465      130     054     040 FMSG1A: .ASCII  /X, address /
002470      141     144     144
002473      162     145     163
002476      163     040
002500                  FMSG1B: .BLKB   6               ;FOR ADDRESS
002506      015     012     104         .ASCIZ  <CR><LF>/Data written /
002511      141     164     141
002514      040     167     162
002517      151     164     164
002522      145     156     040
002525      000
```

"FIELD SERVICE MODE" ERROR MESSAGES

```
    642 002526                                  DUMMY1: .BLKB   3               ;3 UPPER BYTES NOT TO BE PRINTED
    643 002531                                  FMSG1C: .BLKB   3
    644 002534      054     040     104                 .ASCIZ  /, Data read /
        002537      141     164     141
        002542      040     162     145
        002545      141     144     040
        002550      000
    645 002551                                  DUMMY2: .BLKB   3               ;3 UPPER BYTES NOT TO BE PRINTED
    646 002554                                  FMSG1D: .BLKB   3
    647 002557      056                             .ASCII  /./
    648 002560      015     012     000         CRLF:   .ASCIZ  <CR><LF>
    649 002563      114     141     156         FMSG2:  .ASCIZ  /Language Area not supported on this processor./<CR><LF>
        002566      147     165     141
        002571      147     145     040
        002574      101     162     145
        002577      141     040     156
        002602      157     164     040
        002605      163     165     160
        002610      160     157     162
        002613      164     145     144
        002616      040     157     156
        002621      040     164     150
        002624      151     163     040
        002627      160     162     157
        002632      143     145     163
        002635      163     157     162
        002640      056     015     012
        002643      000
    650 002644      103     165     16?         FMSG3:  .ASCIZ  /Current boot ROM version does not support language area./<CR><LF>
        002647      162     145     156
        002652      164     040     142
        002655      157     157     164
        002660      040     122     117
        002663      115     040     166
        002666      145     162     163
        002671      151     157     156
        002674      040     144     157
        002677      145     163     040
        002702      156     157     164
        002705      040     163     165
        002710      160     160     157
        002713      162     164     040
        002716      154     141     156
        002721      147     165     141
        002724      147     145     040
        002727      141     162     145
        002732      141     056     015
        002735      012     000
    651 002737      103     150     145         FMSG4:  .ASCIZ  /Checksum error in EEPROM setup area./<CR><LF>
        002742      143     153     163
        002745      165     155     040
        002750      145     162     162
        002753      157     162     040
        002756      151     156     040
        002761      105     105     120
        002764      122     117     115
        002767      040     163     145
```

```
                002772  164     165     160
                002775  040     141     162
                003000  145     141     056
                003003  015     012     000
    652
    653 003006  015     111     155 MSG000: .ASCIZ  <CR>!Impossibilita' di caricare Italiano!
                003011  160     157     163
                003014  163     151     142
                003017  151     154     151
                003022  164     141     047
                003025  040     144     151
                003030  040     143     141
                003033  162     151     143
                003036  141     162     145
                003041  040     111     164
                003044  141     154     151
                003047  141     156     157
                003052  000
    654 003053  040     055     040 MSG001: .ASCIZ  ! - ritornare alla versione inglese.!<CR>
                003056  162     151     164
                003061  157     162     156
                003064  141     162     145
                003067  040     141     154
                003072  154     141     040
                003075  166     145     162
                003100  163     151     157
                003103  156     145     040
                003106  151     156     147
                003111  154     145     163
                003114  145     056     015
                003117  000
    655                                 .SBTTL  START OF AREA TO BE LOADED INTO E2PROM
    656
    657                                 .SBTTL  Italiano LANGUAGE TEXT
    658
    659 003120  075                     TEXT:   .BYTE   M001-TEXT
    660 003121  011                             .BYTE   M002-M001
    661 003122  002                             .BYTE   M003-M002
    662 003123  006                             .BYTE   M004-M003
    663 003124  006                             .BYTE   M005-M004
    664 003125  006                             .BYTE   M006-M005
    665 003126  002                             .BYTE   M007-M006
    666 003127  002                             .BYTE   M010-M007
    667 003130  002                             .BYTE   M011-M010
    668 003131  000                             .BYTE   M012-M011
    669 003132  000                             .BYTE   M013-M012
    670 003133  000                             .BYTE   M014-M013
    671 003134  000                             .BYTE   M015-M014
    672 003135  000                             .BYTE   M016-M015
    673 003136  000                             .BYTE   M017-M016
    674 003137  000                             .BYTE   M020-M017
    675 003140  040                             .BYTE   M021-M020
    676 003141  032                             .BYTE   M022-M021
    677 003142  025                             .BYTE   M023-M022
    678 003143  121                             .BYTE   M024-M023
    679 003144  022                             .BYTE   M025-M024
    680 003145  001                             .BYTE   M026-M025
```

Italiano LANGUAGE TEXT

```
    681 003146      032                             .BYTE   M027-M026
    682 003147      007                             .BYTE   M030-M027
    683 003150      013                             .BYTE   M031-M030
    684 003151      022                             .BYTE   M032-M031
    685 003152      002                             .BYTE   M033-M032
    686 003153      052                             .BYTE   M034-M033
    687 003154      000                             .BYTE   M035-M034
    688 003155      001                             .BYTE   M036-M035
    689 003156      000                             .BYTE   M037-M036
    690 003157      002                             .BYTE   M040-M037
    691 003160      031                             .BYTE   M041-M040
    692 003161      000                             .BYTE   M042-M041
    693 003162      016                             .BYTE   M043-M042
    694 003163      021                             .BYTE   M044-M043
    695 003164      027                             .BYTE   M045-M044
    696 003165      016                             .BYTE   M046-M045
    697 003166      017                             .BYTE   M047-M046
    698 003167      040                             .BYTE   M050-M047
    699 003170      022                             .BYTE   M051-M050
    700 003171      036                             .BYTE   M052-M051
    701 003172      026                             .BYTE   M053-M052
    702 003173      037                             .BYTE   M054-M053
    703 003174      022                             .BYTE   M055-M054
    704 003175      024                             .BYTE   M056-M055
    705 003176      070                             .BYTE   M057-M056
    706 003177      012                             .BYTE   M060-M057
    707 003200      000                             .BYTE   M061-M060
    708 003201      012                             .BYTE   M062-M061
    709 003202      002                             .BYTE   M063-M062
    710 003203      013                             .BYTE   M064-M063
    711 003204      032                             .BYTE   M065-M064
    712 003205      003                             .BYTE   M066-M065
    713 003206      025                             .BYTE   M067-M066
    714 003207      046                             .BYTE   M070-M067
    715 003210      012                             .BYTE   M071-M070
    716 003211      003                             .BYTE   M072-M071
    717 003212      072                             .BYTE   M073-M072
    718 003213      002                             .BYTE   M074-M073
    719 003214      037                             .BYTE   MEND1-M074
    720 003215      111     164     141     M001:   .ASCIZ  !Italiano!
        003220      154     151     141
        003223      156     157     000
    721 003226      077     000             M002:   .ASCIZ  !?!
    722 003230      107     125     111     M003:   .ASCIZ  !GUIDA!
        003233      104     101     000
    723 003236      101     126     126     M004:   .ASCIZ  !AVVIO!
        003241      111     117     000
    724 003244      114     111     123     M005:   .ASCIZ  !LISTA!
        003247      124     101     000
    725 003252      177     000             M006:   .ASCIZ  <177>           ;Setup command
    726 003254      177     000             M007:   .ASCIZ  <177>           ;Map command
    727 003256      177     000             M010:   .ASCIZ  <177>           ;Test command
    728 003260                              M011:
    729 003260                              M012:
    730 003260                              M013:
    731 003260                              M014:
    732 003260                              M015:
```

Italiano LANGUAGE TEXT

```
    733 003260                          M016:
    734 003260                          M017:
    735 003260   104   151   163  M020:   .ASCII  !Dispositivi!<TAB>!Unita'!<TAB><TAB>!Descrizione!<CR>
        003263   160   157   163
        003266   151   164   151
        003271   166   151   011
        003274   125   156   151
        003277   164   141   047
        003302   011   011   104
        003305   145   163   143
        003310   162   151   172
        003313   151   157   156
        003316   145   015
    736 003320   105   154   145  M021:   .ASCII  !Elenco programmi di avvio!<CR>
        003323   156   143   157
        003326   040   160   162
        003331   157   147   162
        003334   141   155   155
        003337   151   040   144
        003342   151   040   141
        003345   166   166   151
        003350   157   015
    737 003352   101   166   166  M022:   .ASCII  !Avvio del sistema da !
        003355   151   157   040
        003360   144   145   154
        003363   040   163   151
        003366   163   164   145
        003371   155   141   040
        003374   144   141   040
    738 003377   015   103   157  M023:   .ASCII  <CR>!Comando  Descrizione!<CR><CR>!AVVIO    Carica e avvia il!
        003402   155   141   156
        003405   144   157   040
        003410   040   104   145
        003413   163   143   162
        003416   151   172   151
        003421   157   156   145
        003424   015   015   101
        003427   126   126   111
        003432   117   040   040
        003435   040   040   103
        003440   141   162   151
        003443   143   141   040
        003446   145   040   141
        003451   166   166   151
        003454   141   040   151
        003457   154
    739 003460   040   163   151          .ASCII  ! sistema dal dispositivo!<CR>!LISTA!<TAB>! !
        003463   163   164   145
        003466   155   141   040
        003471   144   141   154
        003474   040   144   151
        003477   163   160   157
        003502   163   151   164
        003505   151   166   157
        003510   015   114   111
        003513   123   124   101
        003516   011   040
```

Italiano LANGUAGE TEXT

```
    740 003520     015     111     156  M024:   .ASCII  <CR>!In fase di prova !
        003523     040     146     141
        003526     163     145     040
        003531     144     151     040
        003534     160     162     157
        003537     166     141     040
    741 003542     057                  M025:   .ASCII  '/'
    742 003543     120     162     145  M026:   .ASCII  !Premere il tasto RITORNO: !
        003546     155     145     162
        003551     145     040     151
        003554     154     040     164
        003557     141     163     164
        003562     157     040     122
        003565     111     124     117
        003570     122     116     117
        003573     072     040
    743 003575     105     162     162  M027:   .ASCII  !Errore !
        003600     157     162     145
        003603     040
    744 003604     040     151     156  M030:   .ASCII  ! indirizzo !
        003607     144     151     162
        003612     151     172     172
        003615     157     040
    745 003617     124     145     163  M031:   .ASCII  !Test in esecuzione!
        003622     164     040     151
        003625     156     040     145
        003630     163     145     143
        003633     165     172     151
        003636     157     156     145
    746 003641     060     055          M032:   .ASCII  /0-/
    747 003643     015     111     156  M033:   .ASCII  <CR>!Introdurre un comando e premere RITORNO: !
        003646     164     162     157
        003651     144     165     162
        003654     162     145     040
        003657     165     156     040
        003662     143     157     155
        003665     141     156     144
        003670     157     040     145
        003673     040     160     162
        003676     145     155     145
        003701     162     145     040
        003704     122     111     124
        003707     117     122     116
        003712     117     072     040
    748 003715                          M034:
    749 003715     011                  M035:   .BYTE   TAB
    750 003716                          M036:
    751 003716     015     040          M037:   .BYTE   CR,SPACE
    752 003720     106     141     163  M040:   .ASCII  !Fase di avviamento da ROM!
        003723     145     040     144
        003726     151     040     141
        003731     166     166     151
        003734     141     155     145
        003737     156     164     157
        003742     040     144     141
        003745     040     122     117
        003750     115
```

```
    753 003751                          M041:
    754 003751  015     115     145     M042:   .ASCII  <CR>!Messaggio 06!<CR>
        003754  163     163     141
        003757  147     147     151
        003762  157     040     060
        003765  066     015
    755 003767  125     156     151     M043:   .ASCII  !Unita' non pronta!
        003772  164     141     047
        003775  040     156     157
        004000  156     040     160
        004003  162     157     156
        004006  164     141
    756 004010  123     165     160     M044:   .ASCII  !Supporto non caricabile!
        004013  160     157     162
        004016  164     157     040
        004021  156     157     156
        004024  040     143     141
        004027  162     151     143
        004032  141     142     151
        004035  154     145
    757 004037  115     141     156     M045:   .ASCII  !Manca il disco!
        004042  143     141     040
        004045  151     154     040
        004050  144     151     163
        004053  143     157
    758 004055  115     141     156     M046:   .ASCII  !Manca il nastro!
        004060  143     141     040
        004063  151     154     040
        004066  156     141     163
        004071  164     162     157
    759 004074  125     156     151     M047:   .ASCII  !Unita' di controllo inesistente,!
        004077  164     141     047
        004102  040     144     151
        004105  040     143     157
        004110  156     164     162
        004113  157     154     154
        004116  157     040     151
        004121  156     145     163
        004124  151     163     164
        004127  145     156     164
        004132  145     054
    760 004134  125     156     151     M050:   .ASCII  !Unita' inesistente!
        004137  164     141     047
        004142  040     151     156
        004145  145     163     151
        004150  163     164     145
        004153  156     164     145
    761 004156  116     165     155     M051:   .ASCII  !Numero dell'unita' non valido !
        004161  145     162     157
        004164  040     144     145
        004167  154     154     047
        004172  165     156     151
        004175  164     141     047
        004200  040     156     157
        004203  156     040     166
        004206  141     154     151
        004211  144     157     040
```

Italiano LANGUAGE TEXT

```
    762 004214      104     151     163  M052:   .ASCII  !Dispositivo non valido!
        004217      160     157     163
        004222      151     164     151
        004225      166     157     040
        004230      156     157     156
        004233      040     166     141
        004236      154     151     144
        004241      157
    763 004242      105     162     162  M053:   .ASCII  !Errore dell'unita' di controllo!
        004245      157     162     145
        004250      040     144     145
        004253      154     154     047
        004256      165     156     151
        004261      164     141     047
        004264      040     144     151
        004267      040     143     157
        004272      156     164     162
        004275      157     154     154
        004300      157
    764 004301      105     162     162  M054:   .ASCII  !Errore nell'unita'!
        004304      157     162     145
        004307      040     156     145
        004312      154     154     047
        004315      165     156     151
        004320      164     141     047
    765 004323      015     015     106  M055:   .ASCII  <CR><CR>!Fase di avviamento!
        004326      141     163     145
        004331      040     144     151
        004334      040     141     166
        004337      166     151     141
        004342      155     145     156
        004345      164     157
    766 004347      015     103     157  M056:   .ASCII  <CR>!Consultare la sezione sui guasti nel Manuale operativo!
        004352      156     163     165
        004355      154     164     141
        004360      162     145     040
        004363      154     141     040
        004366      163     145     172
        004371      151     157     156
        004374      145     040     163
        004377      165     151     040
        004402      147     165     141
        004405      163     164     151
        004410      040     156     145
        004413      154     040     115
        004416      141     156     165
        004421      141     154     145
        004424      040     157     160
        004427      145     162     141
        004432      164     151     166
        004435      157
    767 004436      015                     .ASCII  <CR>
    768 004437      033     133     062  M057:   .ASCII  <ESC>/[2J/       ;Erase screen
        004442      112
    769 004443      033     133     065          .ASCII  <ESC>/[5;0H/     ;Set cursor to line 5 and col 1
        004446      073     060     110
    770 004451                          M060:
```

Italiano LANGUAGE TEXT

```
    771 004451      115     145     163  M061:   .ASCII  !Messaggio !
        004454      163     141     147
        004457      147     151     157
        004462      040
    772 004463      015     015          M062:   .BYTE   CR,CR
    773 004465      015     015     113  M063:   .ASCII  <CR><CR>/KDJ11-B >/
        004470      104     112     061
        004473      061     055     102
        004476      040     076
    774 004500      015     105     162  M064:   .ASCII  <CR>!Errore di avvio di EPROM!<CR>
        004503      162     157     162
        004506      145     040     144
        004511      151     040     141
        004514      166     166     151
        004517      157     040     144
        004522      151     040     105
        004525      120     122     117
        004530      115     015
    775 004532      010     040     010  M065:   .BYTE   BACKSP,SPACE,BACKSP
    776 004535      015     103     157  M066:   .ASCII  <CR>!Comando non valido.!<CR>
        004540      155     141     156
        004543      144     157     040
        004546      156     157     156
        004551      040     166     141
        004554      154     151     144
        004557      157     056     015
    777 004562      015     015     111  M067:   .ASCII  <CR><CR>!I comandi sono Guida, Avvio e Lista.!
        004565      040     143     157
        004570      155     141     156
        004573      144     151     040
        004576      163     157     156
        004601      157     040     107
        004604      165     151     144
        004607      141     054     040
        004612      101     166     166
        004615      151     157     040
        004620      145     040     114
        004623      151     163     164
        004626      141     056
    778 004630      111     156     144  M070:   .ASCII  !Indirizzo !
        004633      151     162     151
        004636      172     172     157
        004641      040
    779 004642      040     075     040  M071:   .ASCII  / = /
    780 004645      111     156     164  M072:   .ASCII  !Introdurre numero unita' e dispositivo e premere RITORNO: !
        004650      162     157     144
        004653      165     162     162
        004656      145     040     156
        004661      165     155     145
        004664      162     157     040
        004667      165     156     151
        004672      164     141     047
        004675      040     145     040
        004700      144     151     163
        004703      160     157     163
        004706      151     164     151
        004711      166     157     040
```

J2

Italiano LANGUAGE TEXT

```
        004714      145      040      160
        004717      162      145      155
        004722      145      162      145
        004725      040      122      111
        004730      124      117      122
        004733      116      117      072
        004736      040
    781 004737      011      011           M073:   .ASCII  <TAB><TAB>
    782 004741      015      106      141  M074:   .ASCII  <CR>!Fase di avviamento automatico!<CR>
        004744      163      145      040
        004747      144      151      040
        004752      141      166      166
        004755      151      141      155
        004760      145      156      164
        004763      157      040      141
        004766      165      164      157
        004771      155      141      164
        004774      151      143      157
        004777      015
    783 005000                            MEND1:
    784                                   .SBTTL  NULL DICTIONARY BLOCK, CHECKSUM AND LANGUAGE HEADER
    785 005000                            wb:
    786 005000      001                   ENGWRD: .BYTE   ENDBLK-ENGWRD
    787 005001                            ENDBLK:
    788
    789
    790 005001                            WEND:
    791
    792 005001      000                   CKSUM:  .byte   0       ;checksum
    793
    794
    795 005002                            MEND:                           ;END OF NULL TEXT
    796
    797 005002                            ME:
    798 005002                            WE:
    799
    800                                   ;FOREIGN LANGUAGE HEADER
    801
    802           000002                  B1      =       WE-WB&377                       ;DICTIONARY BYTE COUNT 7:0
    803           000000                  B2      =       WE-WB&17400/256.                ;DICTIONARY BYTE COUNT 10:8
    804           000262                  B3      =       MEND-text&377                   ;TEXT BYTE COUNT 7:0
    805           000143                  B4      =       MEND-text&017400/256.!140       ;TEXT BYTE COUNT 12:8 & ID=011
    806
    807 005002      002                           .BYTE   B1
    808 005003      000                           .BYTE   B2
    809 005004      262                           .BYTE   B3
    810 005005      143                           .BYTE   B4
    811 005006      351                           .BYTE   -<B1+B2+B3+B4>&377              ;THIS BYTE IS HEADER CHECKSUM
    812
    813 005007                            FLEND:
    814 005007                            BUFF:           ;TEMPORARY SAVE AREA FOR OLD AREA
    815           001000                          .END    START
```

K2

Symbol table

```
BACKSP= 000010        FLEND   005007        M010    003256        M042    003751        M074    004741
BCSR  = 177520        FMSG1   002430        M011    003260        M043    003767        NARGS = 000001
BDR   = 177524        FMSG1A  002465        M012    003260        M044    004010        NTYPE = 000027
BIT6  = 000100        FMSG1B  002500        M013    003260        M045    004037        OLDSIZ  002424
BIT7  = 000200        FMSG1C  002531        M014    003260        M046    004055        PCR   = 177522
BUFF    005007        FMSG1D  002554        M015    003260        M047    004074        PCRLB = 177522
B1    = 000002        FMSG2   002563        M016    003260        M050    004134        QUIT    002004
B2    = 000000        FMSG3   002644        M017    003260        M051    004156        QUIT1   002006
B3    = 000262        FMSG4   002737        M020    003260        M052    004214        REAROM  002314
B4    = 000143        LANG    001262        M021    003320        M053    004242        RETRY = 000002
CKSUM   005001        LF    = 000012        M022    003352        M054    004301        RMVTST= 173002
CR    = 000015        LNGHDR= 000140        M023    003377        M055    004323        ROMADR  002342
CRLF    002560        MAXERR= 000004        M024    003520        M056    004347        ROMSZ = 001667
DELAY = 025370        ME      005002        M025    003542        M057    004437        SPACE = 000040
DUMMY1  002526        MEND    005002        M026    003543        M060    004451        START   001000
DUMMY2  002551        MEND1   005000        M027    003575        M061    004451        TAB   = 000011
ENDBLK  005001        MOVROM  002134        M030    003604        M062    004463        TEXT    003120
ENDE2R= 166000        MSG000  003006        M031    003617        M063    004465        UFDHDR= 000040
ENGWRD  005000        MSG001  003053        M032    003641        M064    004500        UFDSIZ  002426
ESC   = 000033        M001    003215        M033    003643        M065    004532        WB      005000
EXIT    001566        M002    003226        M034    003715        M066    004535        WE      005002
EXIT1   001642        M003    003230        M035    003715        M067    004562        WEND    005001
E2LLB = 165006        M004    003236        M036    003716        M070    004630        WERR    002422
E2PAR = 165316        M005    003244        M037    003716        M071    004642        WRBYTE  002162
E2PROM= 165000        M006    003252        M040    003720        M072    004645        WRLANG  001462
E2WRIT  001666        M007    003254        M041    003751        M073    004737

. ABS.  005007    000   (RW,I,GBL,ABS,OVR)
        000000    001   (RW,I,LCL,REL,CON)
Errors detected:  0

*** Assembler statistics


Work  file  reads: 0
Work  file writes: 0
Size of work file: 8553 Words  ( 34 Pages)
Size of core pool: 19402 Words  ( 74 Pages)
Operating  system: RSX-11M/PLUS (Under VAX/VMS)

Elapsed time: 00:00:14.44
OEEEA0.BIC,COEEEA0/CR/-SP=COEEEA0
```

L2

COEEEA0 CREATED BY MACRO ON 16-FEB-85 AT 22:46 PAGE 1

SEQ 0024

SYMBOL CROSS REFERENCE CREF V02

SYMBOL	VALUE	REFERENCES								
BACKSP	= 000010	#5-260	6-775	6-775						
BCSR	= 177520	#5-239	6-315	*6-316	*6-473					
BDR	= 177524	#5-254								
BIT6	= 000100	#5-258	6-510	6-531						
BIT7	= 000200	#5-257	6-452	6-458	6-461					
BUFF	005007	6-370	6-409	6-413	6-441	6-518	#6-814			
B1	= 000002	#6-802	6-807	6-811						
B2	= 000000	#6-803	6-808	6-811						
B3	= 000262	#6-804	6-809	6-811						
B4	= 000143	#6-805	6-810	6-811						
CKSUM	005001	6-428	6-497	*6-500	#6-792					
CR	= 000015	#5-255	6-641	6-648	6-649	6-650	6-651	6-653	6-654	6-735
		6-736	6-738	6-738	6-738	6-739	6-740	6-747	6-751	6-754
		6-754	6-765	6-765	6-766	6-767	6-772	6-772	6-773	6-773
		6-774	6-774	6-776	6-776	6-777	6-777	6-782	6-782	
CRLF	002560	6-471	6-471	#6-648						
DELAY	= 025370	#5-247	6-562							
DUMMY1	002526	6-575	6-575	#6-642						
DUMMY2	002551	6-579	6-579	#6-645						
ENDBLK	005001	6-786	#6-787							
ENDE2R	= 166000	#5-245	6-349	6-503	6-523	6-596				
ENGWRD	005000	#6-786	6-786							
ESC	= 000033	#5-262	6-768	6-769						
EXIT	001566	#6-455	6-532	6-534						
EXIT1	001642	6-460	6-465	#6-471	6-514	6-529				
E2LLB	= 165006	#5-244	6-456							
E2PAR	= 165316	#5-243	6-466							
E2PROM	= 165000	#5-242	5-243	5-244	5-245	6-324	6-333	6-335	6-505	6-525
		6-598	6-618	6-623						
E2WRIT	001666	6-443	6-449	#6-477						
FLEND	005007	5-264	#6-813							
FMSG1	002430	6-573	6-573	#6-638						
FMSG1A	002465	*6-570	#6-639							
FMSG1B	002500	6-572	6-572	#6-640						
FMSG1C	002531	6-576	6-576	#6-643						
FMSG1D	002554	6-580	6-580	#6-646						
FMSG2	002563	6-321	6-321	#6-649						
FMSG3	002644	6-344	6-344	#6-650						
FMSG4	002737	6-337	6-337	#6-651						
LANG	001262	6-368	#6-380							
LF	= 000012	#5-256	6-641	6-648	6-649	6-650	6-651			
LNGHDR	= 000140	#5-248	6-380							
MAXERR	= 000004	#5-252	6-481							
ME	005002	#6-797								
MEND	005002	#6-795	6-804	6-805						
MEND1	005000	6-487	6-719	#6-783						
MOVROM	002134	6-371	6-410	6-417	#6-547					
MSG000	003006	6-512	6-512	#6-653						
MSG001	003053	6-533	6-533	#6-654						
M001	003215	6-484	6-659	6-660	#6-720					
M002	003226	6-660	6-661	#6-721						
M003	003230	6-661	6-662	#6-722						

SYMBOL CROSS REFERENCE CREF V02

SYMBOL	VALUE	REFERENCES		
M004	003236	6-662	6-663	#6-723
M005	003244	6-663	6-664	#6-724
M006	003252	6-664	6-665	#6-725
M007	003254	6-665	6-666	#6-726
M010	003256	6-666	6-667	#6-727
M011	003260	6-667	6-668	#6-728
M012	003260	6-668	6-669	#6-729
M013	003260	6-669	6-670	#6-730
M014	003260	6-670	6-671	#6-731
M015	003260	6-671	6-672	#6-732
M016	003260	6-672	6-673	#6-733
M017	003260	6-673	6-674	#6-734
M020	003260	6-674	6-675	#6-735
M021	003320	6-675	6-676	#6-736
M022	003352	6-676	6-677	#6-737
M023	003377	6-677	6-678	#6-738
M024	003520	6-678	6-679	#6-740
M025	003542	6-679	6-680	#6-741
M026	003543	6-680	6-681	#6-742
M027	003575	6-681	6-682	#6-743
M030	003604	6-682	6-683	#6-744
M031	003617	6-683	6-684	#6-745
M032	003641	6-684	6-685	#6-746
M033	003643	6-685	6-686	#6-747
M034	003715	6-686	6-687	#6-748
M035	003715	6-687	6-688	#6-749
M036	003716	6-688	6-689	#6-750
M037	003716	6-689	6-690	#6-751
M040	003720	6-690	6-691	#6-752
M041	003751	6-691	6-692	#6-753
M042	003751	6-692	6-693	#6-754
M043	003767	6-693	6-694	#6-755
M044	004010	6-694	6-695	#6-756
M045	004037	6-695	6-696	#6-757
M046	004055	6-696	6-697	#6-758
M047	004074	6-697	6-698	#6-759
M050	004134	6-698	6-699	#6-760
M051	004156	6-699	6-700	#6-761
M052	004214	6-700	6-701	#6-762
M053	004242	6-701	6-702	#6-763
M054	004301	6-702	6-703	#6-764
M055	004323	6-703	6-704	#6-765
M056	004347	6-704	6-705	#6-766
M057	004437	6-705	6-706	#6-768
M060	004451	6-706	6-707	#6-770
M061	004451	6-707	6-708	#6-771
M062	004463	6-708	6-709	#6-772
M063	004465	6-709	6-710	#6-773
M064	004500	6-710	6-711	#6-774
M065	004532	6-711	6-712	#6-775
M066	004535	6-712	6-713	#6-776
M067	004562	6-713	6-714	#6-777

SYMBOL CROSS REFERENCE CREF V02

SYMBOL	VALUE	REFERENCES								
M070	004630	6-714	6-715	#6-778						
M071	004642	6-715	6-716	#6-779						
M072	004645	6-716	6-717	#6-780						
M073	004737	6-717	6-718	#6-781						
M074	004741	6-718	6-719	#6-782						
NARGS	- 000001	#6-321	6-321	#6-337	6-337	#6-344	6-344	#6-471	6-471	#6-512
		6-512	#6-533	6-533	#6-572	6-572	6-572	#6-573	6-573	#6-575
		6-575	6-575	#6-576	6-576	#6-579	6-579	6-579	#6-580	6-580
NTYPE	- 000027	#6-321	6-321	#6-337	6-337	#6-344	6-344	#6-471	6-471	#6-512
		6-512	#6-533	6-533	#6-572	6-572	#6-573	6-573	#6-575	6-575
		#6-575	6-575	#6-576	6-576	#6-579	6-579	#6-580	6-580	
OLDSIZ	002424	*6-339	*6-376	*6-382	6-408	6-414	*6-416	*6-419	6-513	6-528
		#6-631								
PCR	- 177522	#5-240	*6-314	*6-340	*6-474	*6-506	*6-526	*6-599		
PCRLB	- 177522	#5-241	*6-455	6-567	*6-627					
QUIT	002004	6-482	6-485	6-488	6-491	6-494	#6-509			
QUIT1	002006	6-345	#6-510							
REAROM	002314	6-386	6-387	6-388	6-390	6-392	6-551	#6-594		
RETRY	- 000002	#5-250	6-560							
RMVTST	- 173002	#5-246	6-341							
ROMADR	002342	6-384	6-438	6-517	6-548	#6-609				
ROMSZ	- 001667	#5-264	6-437	6-447						
SPACE	- 000040	#5-261	6-751	6-775						
START	001000	#6-314	6-815							
TAB	- 000011	#5-259	6-735	6-735	6-735	6-739	6-749	6-781	6-781	
TEXT	003120	5-264	6-424	6-446	#6-659	6-659	6-804	6-805		
UFDHDR	- 000040	#5-249	6-367	6-399						
UFDSIZ	002426	*6-377	*6-407	*6-412	6-416	*6-420	6-436	6-439	6-528	#6-633
WB	005000	#6-785	6-802	6-803						
WE	005002	#6-798	6-802	6-803						
WEND	005001	#6-790								
WERR	002422	*6-479	6-481	#6-630						
WRBYTE	002162	6-464	6-469	6-477	6-520	#6-557				
WRLANG	001462	6-358	6-372	6-378	6-381	6-418	#6-424			

MACRO CROSS REFERENCE CREF V02

MACRO NAME	REFERENCES						
.FRCTY	#5-299	6-471	6-512	6-533			
.ITOA	#5-278	6-572	6-575	6-579			
.TYPMS	#5-267	6-321	6-337	6-344	6-573	6-576	6-580