



EXIT CODE=0000

#:SAS

\*\*\*\*\* CLOCK= 23 /05 /72 AT 16H-48M-26S-



```

00000          IDENT  DUMPSA
00001          *
00002          *
00003          ENTRY  DUMPSA
00004          ASR    EQU    /10
00005          PTP    EQU    /30
00006          S      EQU    1
00007          H      EQU    0
00008          XOFF   EQU    X'13'
00009          ROUT   EQU    X'FF'
00010          TON    EQU    X'11'
00011          *
00012          TOFF   EQU    X'14'
00013          * STORE IN A1 DEVICE ADDRESS : /10 FOR ASR
00014          *                                     /30 FOR PTP
00015          *
00016          * STORE IN A2 FORMAT OF OUTPUT D /4 FOR 4*4 FORMAT
00017          *                                     /8 FOR 8*8 FORMAT
00018          *
00019          *
00020          * CAUTION D NO CHECK IS MADE ON VALIDITY
00021          *
00022          * START AT INIT
00023          * ON HALT WITH -1 IN A1, THE DUMPSA IS MODIFIED ACCORDING TO USER
00024          * REQUIREMENTS
00025          *
00026          * IT MAY BE DUMPED AND THEN LOADED DIRECTLY BY BOOTSTRAP
00027          INIT    EQU    *
00028          0000    E920    CWK    A1, /10 → ASR
00029          0002    0010
00030          0004    5000    0004    RF(0)    HALT
00031          0006    8320    LDK.L    A3, /FFC0
00032          0008    FFC0
00033          000A    A341    ✓AN.S    A3, PP1
00034          000C    0000    R    000A    ✓AN.S    A3, PP2
00035          000E    A341
00036          0010    0000    R    000E    ✓AN.S    A3, PP3
00037          0012    A341
00038          0014    0000    R    0012    ✓AN.S    A3, PP4
00039          0016    A341
00040          0018    0000    R    0016    ✓AN.S    A3, PP5
00041          001A    A341
00042          001C    0000    R    001A    ✓AN.S    A3, PP6
00043          001E    A341
00044          0020    0000    R    001E    ✓AN.S    A3, PP7
00045          0022    A341
00046          0024    0000    R    0022    ✓AN.S    A3, PP8
00047          0026    A341
00048          0028    0000    R    0026    ✓AN.S    A3, PP9
00049          002A    A341
00050          002C    0000    R    002A

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DUMPSA

|       |      |      |        |       |             |                         |
|-------|------|------|--------|-------|-------------|-------------------------|
| 00040 | 002E | A941 |        | ✓OR.S | A1,PP1      |                         |
|       | 0030 | 0000 | R 000A |       |             |                         |
| 00041 | 0032 | A941 |        | ✓OR.S | A1,PP2      |                         |
|       | 0034 | 0000 | R 000E |       |             |                         |
| 00042 | 0036 | A941 |        | ✓OR.S | A1,PP3      |                         |
|       | 0038 | 0000 | R 0012 |       |             |                         |
| 00043 | 003A | A941 |        | ✓OR.S | A1,PP4      |                         |
|       | 003C | 0000 | R 0016 |       |             |                         |
| 00044 | 003E | A941 |        | ✓OR.S | A1,PP5      |                         |
|       | 0040 | 0000 | R 001A |       |             |                         |
| 00045 | 0042 | A941 |        | ✓OR.S | A1,PP6      |                         |
|       | 0044 | 0000 | R 001E |       |             |                         |
| 00046 | 0046 | A941 |        | ✓OR.S | A1,PP7      |                         |
|       | 0048 | 0000 | R 0022 |       |             |                         |
| 00047 | 004A | A941 |        | ✓OR.S | A1,PP8      |                         |
|       | 004C | 0000 | R 0026 |       |             |                         |
| 00048 | 004E | A941 |        | ✓OR.S | A1,PP9      |                         |
|       | 0050 | 0000 | R 002A |       |             |                         |
| 00049 | 0052 | EA20 |        | CWK   | A2,4        |                         |
|       | 0054 | 0004 |        |       |             |                         |
| 00050 | 0056 | 5000 | 0004   | RF(0) | HALT        |                         |
| 00051 | 0058 | 8340 |        | ✓LD   | A3,M1       |                         |
|       | 005A | 0000 | R 0058 |       |             |                         |
| 00052 | 005C | 8341 |        | ✓ST   | A3,EIGHT1   |                         |
|       | 005E | 0000 | R 005C |       |             |                         |
| 00053 | 0060 | 8340 |        | ✓LD   | A3,M2       |                         |
|       | 0062 | 0000 | R 0060 |       |             |                         |
| 00054 | 0064 | 8341 |        | ✓ST   | A3,EIGHT2   |                         |
|       | 0066 | 0000 | R 0064 |       |             |                         |
| 00055 | 0068 | 8340 |        | ✓LD   | A3,M3       |                         |
|       | 006A | 0000 | R 0068 |       |             |                         |
| 00056 | 006C | 8341 |        | ✓ST   | A3,EIGHT3   |                         |
|       | 006E | 0000 | R 006C |       |             |                         |
| 00057 | 0070 | 8340 |        | ✓LD   | A3,M4       |                         |
|       | 0072 | 0000 | R 0070 |       |             |                         |
| 00058 | 0074 | 8341 |        | ✓ST   | A3,EIGHT4   |                         |
|       | 0076 | 0000 | R 0074 |       |             |                         |
| 00059 | 0078 | 8340 |        | ✓LD   | A3,M4+2     |                         |
|       | 007A | 0000 | R 0070 |       |             |                         |
| 00060 | 007C | 8341 |        | ✓ST   | A3,EIGHT4+2 |                         |
|       | 007E | 0000 | R 0074 |       |             |                         |
| 00061 |      |      |        | HALT  | EQU         | *                       |
| 00062 | 0080 | 8120 |        |       | LDK.L       | A1,/FFFF                |
|       | 0082 | FFFF |        |       |             |                         |
| 00063 | 0084 | 207F |        | HLT   |             |                         |
| 00064 | 0086 | 5700 | 0086   | RF(7) | DUMPSA      | READY TO START THE DUMP |
| 00065 | 0088 | 0602 |        | M1    | LDK         | A6,2                    |
| 00066 | 008A | 0508 |        | M2    | LDK         | A5,8                    |
| 00067 | 008C | 27FF |        | M3    | ANK         | A7,/FF                  |
| 00068 | 008E | 8F20 |        | M4    | AB.L        | Y4                      |
|       | 0090 | 0000 | R 008E |       |             |                         |

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00069 *****
00070 *
00071 * HERE ONLY STARTS THE USEFULL PART ONCE INITIALIZATION HAS
00072 * BEEN PERFORMED
00073 *
00074 *****
00075 0092 STACK RES 2
00076 DUMPSA EQU *
00077 0096 87A0 LDK.L A15,STACK
00078 0098 0092 R LDK.L A1,/FFFF
00079 009C FFFF
00079 009E 4100 WIM A1
00080 00A0 20BF INH
00081 00A2 9A0C SUR A2,A3
00082 00A4 3A21 SRA1 A2
00083 00A6 1201 ADK A2,1 A2= WORD COUNT
00084 00A8 0100 LDK A1,0
00085 PP1 EQU *
00086 00AA 4100 CIO A1,S,ASR PTP PUT ASR IN OUTPUT
00087 00AC 5C04 RB(4) *-2
00088 00AE 0111 LDK A1,TON OUTPUT TAPE-ON
00089 PP2 EQU *
00090 00B0 4110 OTR A1,0,ASR PTP
00091 00B2 5C04 RB(4) *-2
00092 00B4 0480 LDK A4,/80 OUTPUT 128 NULLS ON TAPPE
00093 00B6 0100 LDK A1,0
00094 PP3 EQU *
00095 00B8 4110 OTR A1,0,ASR PTP
00096 00BA 5C04 RB(4) *-2
00097 00BC 1C01 SUK A4,1
00098 00BE 5C08 RB(4) *-6
00099 00C0 01FF LDK A1,ROUT OUTPUT RUB-OUT
00100 PP4 EQU *
00101 00C2 4110 OTR A1,0,ASR PTP
00102 00C4 5C04 RB(4) *-2
00103 00C6 0100 LDK A1,0 A1 = CHECKSUM
00104 00C8 8408 LDR A4,A2 A4 = WORD COUNT
00105 00CA F7A1 CF A15,S4
00106 00CC 0000 R 00CA OUTPUT WORD COUNT
00107 00CE 820C LDR A2,A3
00108 00D0 1A02 SUK A2,2
00109 00D2 F7A1 CF A15,S4
00110 00D4 0000 R 00CA DB1 LDR* A2,A3 OUTPUT CODE WORD
00111 00D8 B108 XRR A1,A2 CHECKSUM
00112 00DA F7A1 CF A15,S4
00113 00DC 0000 R 00D2
00113 00DE 1302 ADK A3,2
00114 00E0 1C01 SUK A4,1 DECREMENT WORD COUNT

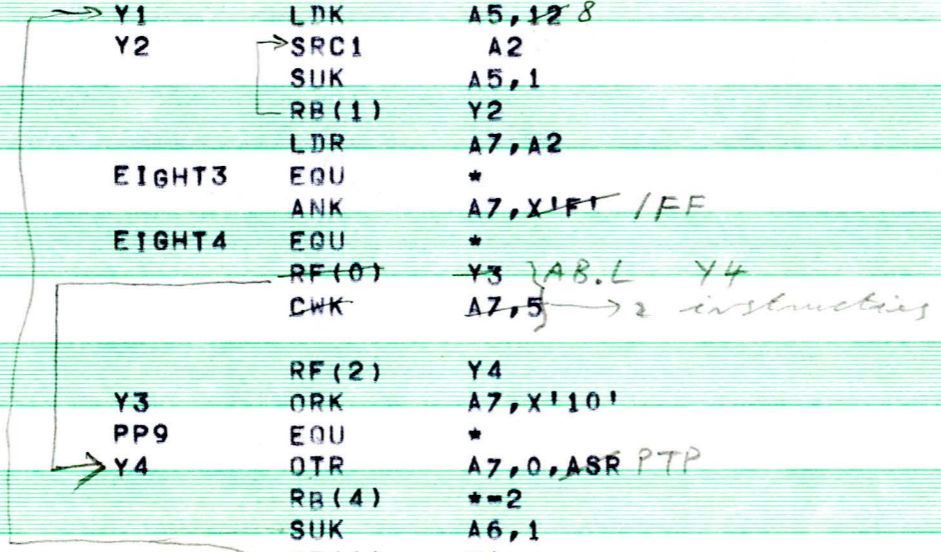
```

*{ A3 = first Adr to be dumped  
A2 = last Adr to be dumped*

DUMPSA

```

00115 00E2 590E          RB(1)  DB1      NOT YET FINISHED LOOP
00116 00E4 8204          LDR    A2,A1    OUTPUT CHECKSUM
00117 00E6 F7A1          CF      A15,S4
00118 00E8 0000 R 00DA
00119 00EA 0213          LDK    A2,XOFF  OUTPUT X-OFF
00120 00EC 4210          EQU    PP5      *
00121 00EE 5C04          OTR    A2,0,ASR PTP
00122 00F0 0214          RB(4)  *-2
00123 00F2 4210          LDK    A2,TOFF  OUTPUT T-OFF
00124 00F4 5C04          EQU    PP6      *
00125 00F6 4290          OTR    A2,0,ASR PTP
00126 00F8 49D0          RB(4)  *-2
00127 00FA 5C04          EQU    PP7      *
00128 00FC 207F          CIO    A2,H,ASR PTP
00129 00FE 0604          EQU    PP8      *
00130 0100 050C          SST    A1,ASR PTP
00131 0102 3AE1          RB(4)  *-2
00132 0104 1D01          HLT
00133 0106 5906          *
00134 0108 8708          *
00135 010A 270F          EIGHT1 EQU    *
00136 010C 5000          S4     LDK    A6,A2
00137 010E EF20          EIGHT2 EQU    *
00138 0110 0005          Y1     LDK    A5,128
00139 0112 5200          Y2     SRC1   A2
00140 0114 2F10          SUK    A5,1
00141 0116 4710          RB(1)  Y2
00142 0118 5C04          LDR    A7,A2
00143 011A 1E01          EIGHT3 EQU    *
00144 011C 591E          ANK    A7,X'1FF'
00145 011E 97A0          EIGHT4 EQU    *
00146 0120 0004          RF(0) Y3 } AB.L Y4
00147 0122 8F3E          CWK    A7,5 } 2 instructions
00148 0124 0004          RF(2)  Y4
00149 0126 0004          ORK    A7,X'10'
00150 0128 0004          EQU    PP9      *
00151 012A 0004          OTR    A7,0,ASR PTP
00152 012C 0004          RB(4)  *-2
00153 012E 0004          SUK    A6,1
00154 0130 0004          RB(1)  Y1
00155 0132 0004          ADK.L  A15,4
00156 0134 0004          ABR*   A15
00157 0136 0004          *
00158 0138 0004          *
00159 013A 0004          *
                                END
ASS.ERR. 00000
    
```



DMH 002

DUMPSA

| **SYMBOL** | **VALUE* |        | **SYMBOL** | **VALUE* |        | **SYMBOL** | **VALUE* |        |
|------------|----------|--------|------------|----------|--------|------------|----------|--------|
| Y3         | 0114     | R      | Y2         | 0102     | R      | Y1         | 0100     | R      |
| DB1        | 00D6     | R      | S4         | 00FE     | R      | STACK      | 0092     | R      |
| Y4         | 0116     | R      | EIGHT4     | 010C     | R      | M4         | 008E     | R      |
| EIGHT3     | 010A     | R      | M3         | 008C     | R      | EIGHT2     | 0100     | R      |
| M2         | 008A     | R      | EIGHT1     | 00FE     | R      | M1         | 0088     | R      |
| PP9        | 0116     | R      | PP8        | 00F8     | R      | PP7        | 00F6     | R      |
| PP6        | 00F2     | R      | PP5        | 00EC     | R      | PP4        | 00C2     | R      |
| PP3        | 00B8     | R      | PP2        | 00B0     | R      | PP1        | 00AA     | R      |
| HALT       | 0080     | R      | INIT       | 0000     | UNUSED | T0FF       | 0014     | A      |
| TON        | 0011     | A      | ROUT       | 00FF     | A      | X0FF       | 0013     | A      |
| H          | 0000     | A      | S          | 0001     | A      | PTP        | 0030     | UNUSED |
| ASR        | 0010     | A      | DUMPSA     | 0096     | R      | A15        | 000F     | A      |
| A14        | 000D     | UNUSED | A13        | 000B     | UNUSED | A12        | 0009     | UNUSED |
| A11        | 0007     | UNUSED | A10        | 0005     | UNUSED | A9         | 0003     | UNUSED |
| A8         | 0001     | UNUSED | A7         | 000E     | A      | A6         | 000C     | A      |
| A5         | 000A     | A      | A4         | 0008     | A      | A3         | 0006     | A      |
| A2         | 0004     | A      | A1         | 0002     | A      |            |          |        |

EXIT CODE=0000

DUMPSA

#SAS

\*\*\*\*\* CLOCK= 23 /05 /72 AT 16H-49M- 1S-

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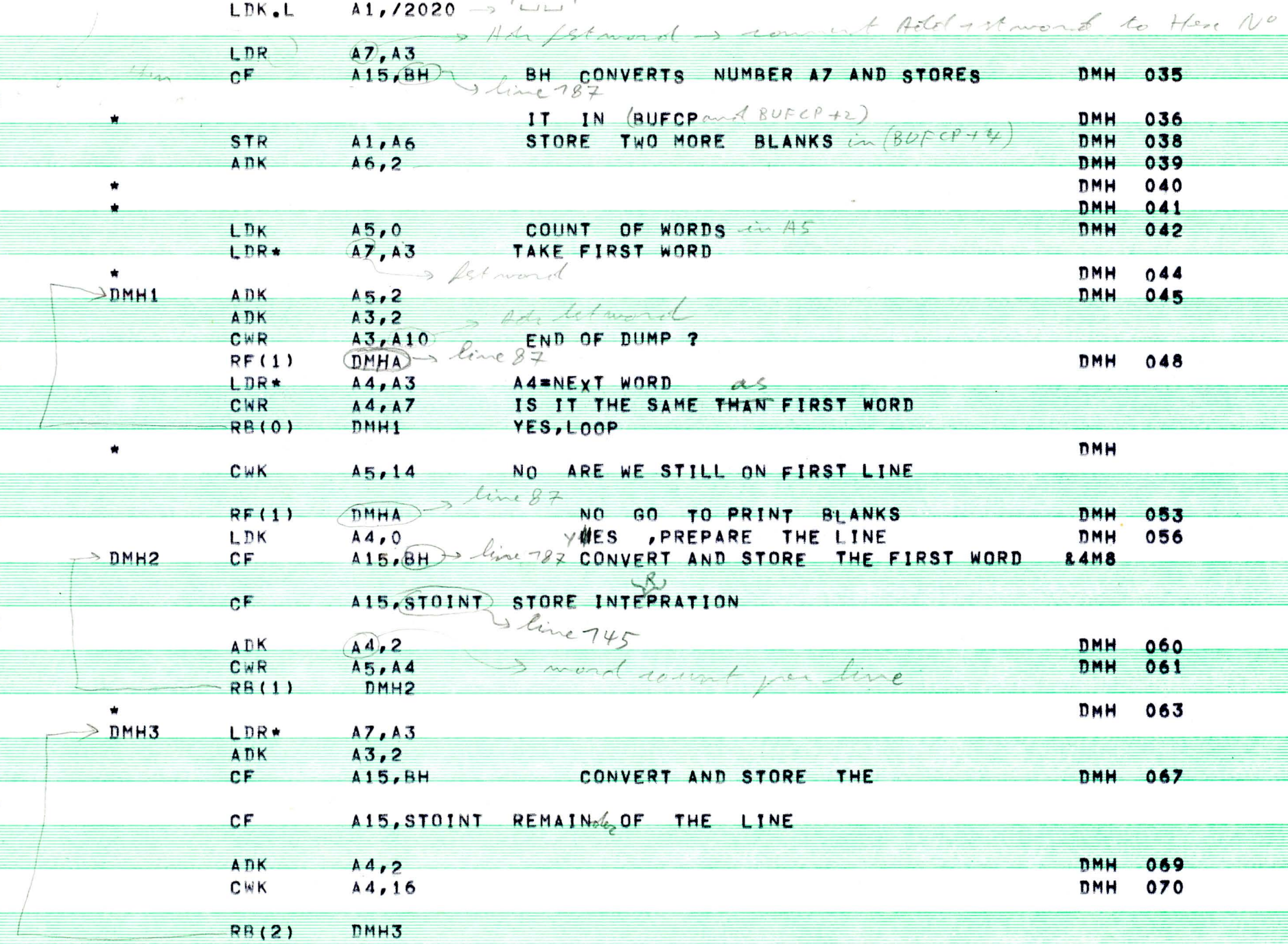
00000          IDENT  DMLPSA
00001          *
00002          *
00003          *STAND ALONE HEXADECIMAL MEMORY DUMP.          DMH 001
00004          * THIS MODULE OUTPUT THE CONTENT OF CORE MEMORY  DMH 004
00005          * ON ASR OR LINE PRINTER EITHER ON BUS OR MX
00006          *
00007          *
00008          * ENTRY CONDITIONS
00009          *
00010          * SET BIT 0 IF PROGRAMMED CHANNEL          A8=DEVICE ADDRESS → 106 for LP
00011          *                                     A9=FIRST ADDRESS TO BE DUMPED
00012          *                                     A10=LAST ADDRESS TO BE DUMPED
00013          *
00014          *
00015 0000 8120          LDK.L  A1,/FFFF
00016 0002 FFFF
00017 0004 4100          WIM     A1          SET IT MASK FOR P850
00018 0006 87A0          LDK.L  A15,STACK
00019 0008 0000 R 0006
00020 000A 010C          LDK     A1,/0C → = FF
00021 000C E141          SC     A1,BUFCP-1 → line 274
00022 000E 0000 R 000C
00023 0010 8120          LDK.L  A1,-50
00024 0012 FFCE
00025 0014 8141          ST     A1,LINE → line 129
00026 0016 0000 R 0014
00027 0018 8102          LDR     A1,A8 → LP: 00C6 ; ASR: 00D0
00028 001A 29C0          ORK     A1,/C0 → line 112
00029 001C E141          SC     A1,CIO LNE+1 SET CIO INST
00030 001E 0000 R 001C
00031 0020 E141          SC     A1,SST LNE+1 SET SST INST → line 126
00032 0022 0000 R 0020
00033 0024 8102          LDR     A1,A8
00034 0026 5100 0026    RF(1)  DEVMX    BRANCH IF DEVICE ON MX
00035          * ELSE GENERATE OTR AND HALT
00036 0028 E141          SC     A1,OTR LNE+1 → line 120
00037 002A 0000 R 0028
00038 002C 2980          ORK     A1,/80 → LP: 0086 ; ASR: 0090
00039 002E E141          SC     A1,HLT LNE+1
00040 0030 0000 R 002E
00041 0032 0100          LDK     A1,0 → line 109
00042 0034 8141          ST     A1,MULTX SET FLAG TO 0 FOR BUS
00043 0036 0000 R 0034
00044 0038 5700 0038    RF     COMM
00045          EQU     *
00046 003A 3941          SLL1   A1 } → |A1| * 4
00047 003C 3941          SLL1   A1 } → = 198 for LP
00048 003E 1180          ADK     A1,/80
00049 0040 8141          ST     A1,MULTX SET MULTIPLEX ADDRESS
00050 0042 0000 R 0034

```

*Handwritten notes:*  
 → 106 for LP  
 → LP: 00C6 ; ASR: 00D0  
 → line 112  
 → line 126  
 → LP: 0086 ; ASR: 0090  
 → line 109  
 → MULTX = Addr Max Addr + 4 \* (Max Dev Addr - 1)  
 // 184 Absolute  
 → = 198 for LP

DMZPSA

| Address | Operation | Registers   | Comments   | Label   |
|---------|-----------|-------------|--|---------|
| 00040   | COMM      | EQU *       |  |         |
| 00041   | LDR       | A3, A9      | <i>→ Addr 1st word</i>                                     |         |
| 00042   | ORK.L     | A10, /E     | <i>→ 2di 1st word</i>                                      |         |
| 00043   | ANK.L     | A3, /FFF0   |  |         |
| 00044   | LDK.L     | A6, BUFCP   | A6 = ADDRESS WHERE TO STORE CHARACTERS                     | DMH0    |
| 00045   | LDK.L     | A1, /2020   | <i>→ 'LW'</i>  |         |
| 00046   | LDR       | A7, A3      | <i>→ Addr 1st word → convert Addr → 1st word to Hex No</i> |         |
| 00047   | CF        | A15, BH     | BH CONVERTS NUMBER A7 AND STORES                           | DMH 035 |
| 00048   | *         |             | IT IN (BUFCP and BUFCP+2)                                  | DMH 036 |
| 00049   | STR       | A1, A6      | STORE TWO MORE BLANKS in (BUFCP+4)                         | DMH 038 |
| 00050   | ADK       | A6, 2       |  | DMH 039 |
| 00051   | *         |             |  | DMH 040 |
| 00052   | *         |             |  | DMH 041 |
| 00053   | LDK       | A5, 0       | COUNT OF WORDS in A5                                       | DMH 042 |
| 00054   | LDR*      | A7, A3      | TAKE FIRST WORD  |         |
| 00055   | *         |             | <i>→ 1st word</i>  | DMH 044 |
| 00056   | ADK       | A5, 2       |  | DMH 045 |
| 00057   | ADK       | A3, 2       | <i>→ Addr 1st word</i>                                     |         |
| 00058   | CWR       | A3, A10     | END OF DUMP ?  |         |
| 00059   | RF(1)     | DMHA        | <i>→ line 87</i>   | DMH 048 |
| 00060   | LDR*      | A4, A3      | A4 = NEXT WORD as  |         |
| 00061   | CWR       | A4, A7      | IS IT THE SAME THAN FIRST WORD                             |         |
| 00062   | RB(0)     | DMH1        | YES, LOOP  |         |
| 00063   | *         |             |  | DMH     |
| 00064   | CWK       | A5, 14      | NO ARE WE STILL ON FIRST LINE                              |         |
| 00065   | RF(1)     | DMHA        | <i>→ line 87</i>   | DMH 053 |
| 00066   | LDK       | A4, 0       | NO GO TO PRINT BLANKS                                      | DMH 056 |
| 00067   | CF        | A15, BH     | YES, PREPARE THE LINE                                      |         |
| 00068   | CF        | A15, STOINT | CONVERT AND STORE THE FIRST WORD                           | DMH 058 |
| 00069   | ADK       | A4, 2       | <i>→ line 745</i>  | DMH 060 |
| 00070   | CWR       | A5, A4      | <i>→ word count per line</i>                               | DMH 061 |
| 00071   | RB(1)     | DMH2        |  |         |
| 00072   | *         |             |  | DMH 063 |
| 00073   | LDR*      | A7, A3      |  |         |
| 00074   | ADK       | A3, 2       |  |         |
| 00075   | CF        | A15, BH     | CONVERT AND STORE THE                                      | DMH 067 |
| 00076   | CF        | A15, STOINT | REMAINING OF THE LINE                                      |         |
| 00077   | ADK       | A4, 2       |  | DMH 069 |
| 00078   | CWK       | A4, 16      |  | DMH 070 |
| 00079   | RB(2)     | DMH3        |  |         |



*n of char to be printed*

|       |      |      |        |       |            |   |                              |
|-------|------|------|--------|-------|------------|---|------------------------------|
| 00080 | 009C | 0648 |        | LDK   | A6,72      |   |                              |
| 00081 | 009E | F7A1 |        | CF    | A15,CIO    | CALL OUTPUT FUNCTION                                  |                              |
|       | 00A0 | 0000 | R 009E |       |            |   |                              |
| 00082 | 00A2 | E80A |        | CWR   | A3,A10     | END OF DUMP ?   |                              |
| 00083 | 00A4 | 5A58 |        | RB(2) | DMH0       | NO, LOOP TO BEGIN                                     | DMH 077                      |
| 00084 | 00A6 | 207F |        | HLT   |            | HLT*****  |                              |
| 00085 |      |      |        |       |            | ** THIS IS THE CASE WHERE ALL THE NUMBERS OF THE LINE | DMH 084                      |
| 00086 |      |      |        |       |            | ** ARE IDENTICAL                                      | DMH 085                      |
| 00087 | 00A8 | F7A1 |        | DMHA  | CF         | A15,BH  | CONVERT AND STORE FIRST WORD |
|       | 00AA | 0000 | R 008C |       |            |   |                              |
| 00088 | 00AC | A320 |        | ANK.L | A3,/FFF0   |   |                              |
|       | 00AE | FFF0 |        |       |            |   |                              |
| 00089 | 00B0 | 060C |        | LDK   | A6,12      | NUMBER OF CHARACTER IN BUFCP                          |                              |
| 00090 | 00B2 | 5F16 |        | RB(7) | DMH5       |   |                              |
| 00091 |      |      |        | *     |            |   |                              |
| 00092 |      |      |        | *     |            |   |                              |
| 00093 |      |      |        | ***** |            |   |                              |
| 00094 |      |      |        | ***** |            |   |                              |
| 00095 |      |      |        | *     |            |   |                              |
| 00096 |      |      |        | *     |            |   |                              |
| 00097 | 00B4 | 20BF |        | CIO   | INH        | PRIN OF A LINE ROUTINE                                |                              |
| 00098 | 00B6 | B93F |        | MSR   | 2,A15      |   |                              |
| 00099 | 00B8 | 1602 |        | ADK   | A6,2       | A6=LENGTH TO OUTPUT                                   |                              |
| 00100 | 00BA | 8118 |        | LDR   | A1,A6      |   |                              |
| 00101 | 00BC | F904 |        | C1R   | A1,A1      |   |                              |
| 00102 | 00BE | A120 |        | ANK.L | A1,/FFF    |   |                              |
|       | 00C0 | 0FFF |        |       |            |   |                              |
| 00103 | 00C2 | 1101 |        | ADK   | A1,1       |   |                              |
| 00104 | 00C4 | A920 |        | ORK.L | A1,/8000   | 1ST MULTIPLEX WORD COMPUTED                           |                              |
|       | 00C6 | 8000 |        |       |            |   |                              |
| 00105 | 00C8 | 8218 |        | LDR   | A2,A6      |   |                              |
| 00106 | 00CA | 1A01 |        | SUK   | A2,1       |   |                              |
| 00107 | 00CC | 9220 |        | ADK.L | A2,BUFCP-2 | SECOND MULTIPLEX WORD                                 |                              |
|       | 00CE | 0000 | R 004E |       |            |   |                              |
| 00108 | 00D0 | B941 |        | MS    | 2,MULTX    | SET MULTIPLEX LOCATIONS                               |                              |
|       | 00D2 | 0000 | R 0040 |       |            |   |                              |
| 00109 |      |      |        | MULTX | EQU        | *-2   |                              |
| 00110 | 00D4 | 9041 |        | IM    | LINE       |   |                              |
|       | 00D6 | 0000 | R 0014 |       |            |   |                              |
| 00111 | 00D8 | 0100 |        | LDK   | A1,0       |   |                              |
| 00112 | 00DA | 4180 | X X    | CIO   | A1,0,0     |   |                              |
| 00113 | 00DC | 8140 |        | LD    | A1,MULTX   |   |                              |
|       | 00DE | 00D2 | R      |       |            |   |                              |
| 00114 | 00E0 | 5400 | 0020   | RF(4) | SSTLNE     | JUMP TO SST IF MX                                     |                              |
| 00115 | 00E2 | 8220 |        | LDK.L | A2,BUFCP-2 |   |                              |
|       | 00E4 | 0000 | R 00CC |       |            |   |                              |
| 00116 | 00E6 | 010A |        | LDK   | A1,/A      |   |                              |
| 00117 | 00E8 | E141 |        | SC    | A1,BUFCP-1 |   |                              |
|       | 00EA | 0000 | R 00E2 |       |            |   |                              |
| 00118 |      |      |        | PRNT  | EQU        | *   |                              |
| 00119 | 00EC | E128 |        | LCR   | A1,A2      |   |                              |

*first 8 hex digits of example of char count*  
*within digit 1-2=00 without*  
*F=no meaning*  
*as far as flow, possible*  
*without affecting*

*last character address*

*for 108 for LP mode*  
*line 129*

*1, TX or 7, LP*

*2F*

DMLPSA

```

00120 00EE 4100      OTRLNE  OTR      A1,0,0] → TY or LP
00121 00F0 5C04      RB(4)   *-2
00122 00F2 1201      ADK     A2,1
00123 00F4 1E01      SUK     A6,1
00124 00F6 5C0C      RB(4)   PRNT
00125 00F8 4180      HLTLINE CIO     A1,0,0] → 0, TY or 0, LP
00126 00FA 49C0      → SSSLNE SST     A1,0] → TY or LP
00127 00FC 5C04      RB(4)   *-2      LOOP UNTIL LINE
00128 00FE 8120      LDK.L   A1,0=*-*]     IS PRINTED
0100 0000

```

```

00129      LINE    EQU     *-2
00130 0102 5400 0102  RF(4)   RETURN → FF
00131 0104 010C      LDK     A1,/C]
00132 0106 E141      SC      A1,BUFCP-1      FORM FEED
0108 0000 R 00E8      LDK.L   A1,-50      REINITIALIZE LINE
00133 010A 8120      LDK.L   A1,-50
010C FFCE
00134 010E 8141      ST      A1,LINE     COUNT
0110 0100 R
00135 0112 5700 0112  RF      RTN
00136 0114 010A      LDK     A1,/0A] → LF
00137 0116 E141      SC      A1,BUFCP-1
0118 0000 R 0106
00138 011A B93E      RTN     MLR     2,A15
00139 011C F03E      RTN     A15

```

```

00140 *****
00141 * STORE INTEPRATION ROUTINE
00142 * A7 CONTAINS THE CHARACTERS TO BE STORED
00143 *
00144 *

```

```

00145 011E 823F      STOINT  STR     A2,A15
00146 0120 873F      STR     A7,A15
00147 0122 0200      LDK     A2,0
00148 0124 E09C      ECR     A8,A7
00149 0126 27FF      DMH2C  ANK     A7,/FF ←
00150 0128 EF20      CWK     A7,/20 → 'L'
012A 0020
00151 012C 5200 012C  RF(2)   DMH2A
00152 012E EF20      CWK     A7,/60
0130 0060
00153 0132 5200 0132  RF(2)   DMH2B
00154 0134 0720      DMH2A  LDK     A7,/20
00155 0136 1200      DMH2B  ADK     A2,0
00156 0138 5100 0138  RF(1)   DMH2D
00157 013A E751      SC      A7,BUFCP+57,A4
013C 0000 R 0116
00158 013E 8702      LDR     A7,A8
00159 0140 1201      ADK     A2,1
00160 0142 5F1E      RB(7)   DMH2C
00161 0144 E751      → DMH2D SC     A7,BUFCP+56,A4
0146 0000 R 013A

```

|       |      |      |      |                 |  |     |     |
|-------|------|------|------|-----------------|--|-----|-----|
| 00162 | 0148 | 873E |      | LDR*            | A7,A15   |     |     |
| 00163 | 014A | 823E |      | LDR*            | A2,A15   |     |     |
| 00164 | 014C | F03E |      | RTN             | A15  |     |     |
| 00165 |      |      |      | *               |  |     |     |
| 00166 |      |      |      | *               |  |     |     |
| 00167 |      |      |      | *****           |  |     |     |
| 00168 |      |      |      | *****           |  |     |     |
| 00169 |      |      |      | *               |  |     |     |
| 00170 |      |      |      | *****           |  |     |     |
| 00171 |      |      |      | *****           |  |     |     |
| 00172 |      |      |      | * BH SUBROUTINE | CONVERT THE NUMBER GIVEN IN A7                   | DMH | 100 |
| 00173 |      |      |      | *               | INTO HEXADECIMAL CHARACTERS , AND STORE IN BUFCP | DMH | 101 |
| 00174 |      |      |      | *               | AFTER THAT PUT A BLANK LOCATION IN (BUFCP-2)     | DMH | 102 |
| 00175 |      |      |      | *               |  | DMH | 103 |
| 00176 |      |      |      | *               |  | DMH | 104 |
| 00177 |      |      |      | *               | UPON ENTRY A7= NUMBER (BINARY) TO CONVERT)       | DMH | 105 |
| 00178 |      |      |      | *               | A6= ADDRESS OF STORING AREA                      | DMH | 106 |
| 00179 |      |      |      | *               | A1= BLANKS                                       | DMH | 107 |
| 00180 |      |      |      | *               |  | DMH | 108 |
| 00181 |      |      |      | *               | UPON EXIT A6 IS UPDATED                          | DMH | 109 |
| 00182 |      |      |      | *               | A7 NOT DESTROYED                                 | DMH | 110 |
| 00183 |      |      |      | *               |  | DMH | 111 |
| 00184 |      |      |      | *               |  | DMH | 112 |
| 00185 |      |      |      | *****           |  | DMH | 113 |
| 00186 |      |      |      | *****           |  | DMH | 114 |
| 00187 | 014E | 853F |      | BH              | STR A5,A15                                       | DMH | 115 |
| 00188 | 0150 | 843F |      |                 | STR A4,A15                                       | DMH | 116 |
| 00189 | 0152 | 0404 |      |                 | LDK A4,4   | DMH | 118 |
| 00190 | 0154 | 050C |      | BH0             | LDK A5,12  |     |     |
| 00191 | 0156 | 3FE1 |      | BH1             | SRC1 A7  |     |     |
| 00192 | 0158 | 1D01 |      |                 | SUK A5,1   | DMH | 122 |
| 00193 | 015A | 5906 |      |                 | RB(1) RH1  | DMH | 123 |
| 00194 | 015C | 050F |      |                 | LDK A5,X'F'                                      | DMH | 125 |
| 00195 | 015E | A51C |      |                 | ANR A5,A7  | DMH | 126 |
| 00196 | 0160 | 1530 |      |                 | ADK A5,X'30'                                     | DMH | 127 |
| 00197 | 0162 | ED20 |      |                 | CWK A5,X'3A'                                     | DMH | 128 |
|       | 0164 | 003A |      |                 |  |     |     |
| 00198 | 0166 | 5200 | 0166 |                 | RF(2) BH2  | DMH | 129 |
| 00199 | 0168 | 1507 |      |                 | ADK A5,X'7'                                      | DMH | 130 |
| 00200 | 016A | F539 |      | BH2             | SCR A5,A6  | DMH | 131 |
| 00201 | 016C | 1601 |      |                 | ADK A6,1   | DMH | 132 |
| 00202 | 016E | 1C01 |      |                 | SUK A4,1   | DMH | 133 |
| 00203 | 0170 | EC20 |      |                 | CWK A4,0   | DMH | 134 |
|       | 0172 | 0000 |      |                 |  |     |     |
| 00204 | 0174 | 5922 |      |                 | RB(1) RH0  |     |     |
| 00205 | 0176 | 8139 |      |                 | STR A1,A6  | DMH | 136 |
| 00206 | 0178 | 1602 |      |                 | ADK A6,2   | DMH | 137 |
| 00207 | 017A | 843E |      |                 | LDR* A4,A15                                      |     |     |
| 00208 | 017C | 853E |      |                 | LDR* A5,A15                                      |     |     |
| 00209 | 017E | F03E |      |                 | RTN A15  |     |     |
| 00210 |      |      |      | *****           |  |     |     |

SHIFT OF TWELVE (RIGHT CIRCULAR)  
 $\rightarrow \equiv SLC \setminus A7, 4$

STORE VIA A6

IS IT FINISHED

YES , STORE 2 BLANKS

DMLPSA

```
00211      *
00212      *
00213      *
00214 0180 0D0A      DATA  /0D0A  => CR and LF
00215 0182      BUFCP  RES    36
00216      ENDAD  EQU    *-2
00217 01CA      RES    10
00218      STACK  EQU    *-2
00219      *
00220      *
00221      END
ASS.ERR. 00000
```

| **SYMBOL** | **VALUE* |        | **SYMBOL** | **VALUE* |        | **SYMBOL** | **VALUE* |        |
|------------|----------|--------|------------|----------|--------|------------|----------|--------|
| ENDAD      | 0108     | UNUSED | BH2        | 016A     | R      | BH1        | 0156     | R      |
| BH0        | 0154     | R      | DMH2D      | 0144     | R      | DMH2B      | 0136     | R      |
| DMH2A      | 0134     | R      | DMH2C      | 0126     | R      | RTN        | 011A     | R      |
| RETURN     | 0114     | R      | PRNT       | 00EC     | R      | CIO        | 00B4     | R      |
| DMH5       | 009E     | R      | DMH3       | 0088     | R      | STOINT     | 011E     | R      |
| DMH2       | 007A     | R      | DMHA       | 00A8     | R      | DMH1       | 0064     | R      |
| BH         | 014E     | R      | DMH0       | 004E     | R      | COMM       | 0044     | R      |
| MULTX      | 00D2     | R      | HLLNE      | 00F8     | R      | OTRLNE     | 00EE     | R      |
| DEVMX      | 003A     | R      | SSTLNE     | 00FA     | R      | CIOLNE     | 00DA     | R      |
| LINE       | 0100     | R      | BUFCP      | 0182     | R      | STACK      | 01DC     | R      |
| A15        | 000F     | A      | A14        | 000D     | UNUSED | A13        | 000B     | UNUSED |
| A12        | 0009     | UNUSED | A11        | 0007     | UNUSED | A10        | 0005     | A      |
| A9         | 0003     | A      | A8         | 0001     | A      | A7         | 000E     | A      |
| A6         | 000C     | A      | A5         | 000A     | A      | A4         | 0008     | A      |
| A3         | 0006     | A      | A2         | 0004     | A      | A1         | 0002     | A      |



EXIT CODE=0000