

!A

*** End of Pass 1

*** End of Pass 2

```
0800      1          ttl "Load LISA80 Source Code"
0800      2      ;
0800      3      ;
0800      4      ; LOADLISA80.L
0800      5      ;
0800      6      ;
0800      7      ; Load LISA80 Source Code (EPROM)
0800      8      ;
0800      9      ; 2024 February 14
0800     10      ;
0800     11      ;
0800     12      ; DOS 4.5, Build 06
0800     13      ;
0800     14      ; 2024 February 14
0800     15      ;
0800     16      ;
0800     17      ; Start of Source Code: 0x4000
0800     18      ; Start of Symbol List: 0x7800
0800     19      ;
0800     20      ;
0800     21      ; Copyright (c) 2024 February 14 by
0800     22      ; Walland Philip Vrbancic Jr
0800     23      ;
0800     24      ; 6223 East Peabody Street
0800     25      ; Long Beach, California 90808
0800     26      ; Unitied States of America
0800     27      ;
0800     28      ; All Rights Reserved
0800     29      ;
0800     30      ; This software is the confidential and
0800     31      ; proprietary intellectual property of
0800     32      ; Walland Philip Vrbancic Jr
0800     33      ;
0800     34      ;
0800     35      ; This program loads the DOS 4.5.06 version of LISA80 into
0800     36      ; Auxiliary memory from EPROM. The LISA80.3 code
0800     37      ; interfaces LISA80 and DOS.
0800     38      ;
0800     39      ;
0010     40      PTR1      epz $10
0012     41      PTR2      epz $12
0033     42      PROMPT    epz $33
0076     43      ASRUN     epz $76
00D8     44      ASONERR   epz $D8
0800     45      ;
0800     46      ;          enz
0800     47      ;
0000     48      ZERO      equ $00
0084     49      CTRLD     equ $84
0087     50      BELL      equ $87
008D     51      RETURN    equ $8D
00FF     52      NEGONE    equ $FF
0800     53      ;
0000     54      WARMNDX    equ $00
0800     55      ;
0001     56      LOADCMD    equ $01
0070     57      SRCHALL    equ $70
0800     58      ;
0028     59      LISA1PGS   equ $28
0010     60      LISA2PGS   equ $10
```

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0800          61 ;
03D0          62 DOSWARM equ $3D0
03D3          63 DOSCOLD equ $3D3
03EA          64 HOOKDOS equ $3EA
0800          65 ;
1000          66 PAGE10 equ $1000
D000          67 PAGED0 equ $D000
F800          68 PAGEF8 equ $F800
0800          69 ;
B7C0          70 XFERSTRT equ $B7C0
0800          71 ;
BCDC          72 SETUPJMP equ $BCDC
BCDF          73 SETUPFLG equ $BCDF
0800          74 ;
BFFA          75 INITVAL equ $BFFA
0800          76 ;
C008          77 AUXZPOFF equ $C008
C009          78 AUXZPON equ $C009
0800          79 ;
C080          80 RAM2WP equ $C080
C081          81 ROM2WE equ $C081
C082          82 ROM2WP equ $C082
C083          83 RAM2WE equ $C083
C08A          84 ROM1WP equ $C08A
C08B          85 RAM1WE equ $C08B
0800          86 ;
E000          87 COLDSTRT equ $E000
0800          88 ;
FB2F          89 INIT equ $FB2F
FC58          90 HOME equ $FC58
FD8E          91 CROUT equ $FD8E
FD8E          92 PRBYTE equ $FD8E
FDDA          93 COUT equ $FDDA
FE84          94 SETNORM equ $FE84
FE89          95 SETKBD equ $FE89
FE93          96 SETVID equ $FE93
0800          97 ;
0800          98 ;
0900          99 org $900
0900         100 obj $900
0900         101 usr
0900         102 ;
0900         103 ;
0900         104 ; The EPROM card puts the address of EPBINEOS in the Y and
0900         105 ; A registers. Capture that address and save it so that
0900         106 ; LISA80 can be downloaded from the EPROM card.
0900         107 ;
0900 8C 44 0A 108 sty EPBINJMP+1
0903 8D 45 0A 109 sta EPBINJMP+2
0906         110 ;
0906 20 58 FC 111 jsr HOME
0909 20 EA 03 112 jsr HOOKDOS
090C         113 ;
090C 2C 82 C0 114 bit ROM2WP
090F         115 ;
090F         116 ;
090F         117 ; Load LISA80.1 into Main memory, then copy to Auxiliary
090F         118 ; memory.
090F         119 ;
090F A0 48 120 ldy #EOS1DCB
0911 A9 0A 121 lda /EOS1DCB

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0913      122 ;
0913 20 43 0A 123      jsr EPBINJMP
0916      124 ;
0916 A2 01      125      ldx #1
0918      126 ;
0918 AD 4C 0A 127      lda DCB1STAT
091B D0 6B      128      bne ERROR
091D      129 ;
091D 2C 8B C0 130      bit RAM1WE
0920 2C 8B C0 131      bit RAM1WE
0923      132 ;
0923 A2 28      133      ldx #LISA1PGS
0925 20 AD 09 134      jsr MOVELISA
0928      135 ;
0928 20 D3 09 136      jsr COPYROM
092B      137 ;
092B      138 ;
092B      139 ; Load LISA80.2 into Main memory, then copy to Auxiliary
092B      140 ; memory.
092B      141 ;
092B A0 58      142      ldy #EOS2DCB
092D A9 0A      143      lda /EOS2DCB
092F      144 ;
092F 20 43 0A 145      jsr EPBINJMP
0932      146 ;
0932 A2 02      147      ldx #2
0934      148 ;
0934 AD 5C 0A 149      lda DCB2STAT
0937 D0 4F      150      bne ERROR
0939      151 ;
0939 2C 83 C0 152      bit RAM2WE
093C 2C 83 C0 153      bit RAM2WE
093F      154 ;
093F A2 10      155      ldx #LISA2PGS
0941 20 AD 09 156      jsr MOVELISA
0944      157 ;
0944      158 ;
0944      159 ; Load LISA80.3 into Main memory.
0944      160 ;
0944 A0 68      161      ldy #EOS3DCB
0946 A9 0A      162      lda /EOS3DCB
0948      163 ;
0948 20 43 0A 164      jsr EPBINJMP
094B      165 ;
094B A2 03      166      ldx #3
094D      167 ;
094D AD 6C 0A 168      lda DCB3STAT
0950 D0 36      169      bne ERROR
0952      170 ;
0952      171 ;
0952      172 ; Enable the SETUP80 DCB to be downloaded from the EPROM
0952      173 ; card.
0952      174 ;
0952 AC 44 0A 175      ldy EPBINJMP+1
0955 AD 45 0A 176      lda EPBINJMP+2
0958      177 ;
0958 8C DD BC 178      sty SETUPJMP+1
095B 8D DE BC 179      sta SETUPJMP+2
095E      180 ;
095E A9 01      181      lda #1
0960 8D DF BC 182      sta SETUPFLG

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0963      183 ;
0963      184 ;
0963      185 ; Initialize Main memory with ROM routines.
0963      186 ;
0963 A0 00      187      ldy #MSG1-MESGS
0965 20 37 0A  188      jsr PRTMSG
0968      189 ;
0968 A9 00      190      lda #ZERO
096A 85 33      191      sta PROMPT
096C 85 76      192      sta ASRUN
096E 85 D8      193      sta ASONERR
0970      194 ;
0970 20 F5 09  195      jsr INITHOOK
0973      196 ;
0973      197 ;
0973      198 ; Initialize Auxiliary memory with ROM routines.
0973      199 ;
0973 8D 09 C0  200      sta AUXZPON
0976      201 ;
0976 20 84 FE  202      jsr SETNORM
0979 20 2F FB  203      jsr INIT
097C 20 89 FE  204      jsr SETKBD
097F 20 93 FE  205      jsr SETVID
0982      206 ;
0982 2C 80 C0  207      bit RAM2WP
0985      208 ;
0985 4C 00 E0  209      jmp COLDSTRT
0988      210 ;
0988      211 ;
0988 8E 46 0A  212 ERROR stx DCBNUM
098B 8D 47 0A  213      sta DCBERR
098E      214 ;
098E A0 0D      215      ldy #MSG2-MESGS
0990 20 37 0A  216      jsr PRTMSG
0993      217 ;
0993 AD 46 0A  218      lda DCBNUM
0996 20 DA FD  219      jsr PRBYTE
0999      220 ;
0999 A0 2C      221      ldy #MSG3-MESGS
099B 20 37 0A  222      jsr PRTMSG
099E      223 ;
099E AD 47 0A  224      lda DCBERR
09A1 20 DA FD  225      jsr PRBYTE
09A4      226 ;
09A4 20 8E FD  227      jsr CROUT
09A7 20 8E FD  228      jsr CROUT
09AA      229 ;
09AA 4C D0 03  230      jmp DOSWARM
09AD      231 ;
09AD      232 ;
09AD 8D 09 C0  233 MOVELISA sta AUXZPON
09B0      234 ;
09B0 A0 00      235      ldy #PAGE10
09B2 A9 10      236      lda /PAGE10
09B4      237 ;
09B4 84 10      238      sty PTR1
09B6 85 11      239      sta PTR1+1
09B8      240 ;
09B8 A9 D0      241      lda /PAGED0
09BA      242 ;
09BA 84 12      243      sty PTR2

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```

09BC 85 13      244      sta PTR2+1
09BE           245      ;
09BE B1 10      246      ^1      lda (PTR1),Y
09C0 91 12      247      sta (PTR2),Y
09C2           248      ;
09C2 C8         249      iny
09C3 D0 F9      250      bne <1
09C5           251      ;
09C5 E6 11      252      inc PTR1+1
09C7 E6 13      253      inc PTR2+1
09C9           254      ;
09C9 CA         255      dex
09CA D0 F2      256      bne <1
09CC           257      ;
09CC 8D 08 C0    258      sta AUXZPOFF
09CF           259      ;
09CF 2C 82 C0    260      bit ROM2WP
09D2           261      ;
09D2 60          262      rts
09D3           263      ;
09D3           264      ;
09D3           265      ; Copy Main memory ROM to Auxiliary memory RAM.
09D3           266      ;
09D3 8D 09 C0    267      COPYROM sta AUXZPON
09D6           268      ;
09D6 2C 81 C0    269      bit ROM2WE
09D9 2C 81 C0    270      bit ROM2WE
09DC           271      ;
09DC A0 00       272      ldy #PAGEF8
09DE A2 F8       273      ldx /PAGEF8
09E0           274      ;
09E0 84 10       275      sty PTR1
09E2           276      ;
09E2 86 11       277      ^1      stx PTR1+1
09E4           278      ;
09E4 B1 10       279      ^2      lda (PTR1),Y
09E6 91 10       280      sta (PTR1),Y
09E8           281      ;
09E8 C8          282      iny
09E9 D0 F9       283      bne <2
09EB           284      ;
09EB E8          285      inx
09EC D0 F4       286      bne <1
09EE           287      ;
09EE 8D 08 C0    288      sta AUXZPOFF
09F1           289      ;
09F1 2C 82 C0    290      bit ROM2WP
09F4           291      ;
09F4 60          292      rts
09F5           293      ;
09F5           294      ;
09F5           295      ; Get address in HOOKDOS and save to RHOOKDOS.
09F5           296      ;
09F5 AE EB 03    297      INITHOOK ldx HOOKDOS+1
09F8 AD EC 03    298      lda HOOKDOS+2
09FB           299      ;
09FB 8E C1 B7    300      stx XFERSTRT+1
09FE 8D C2 B7    301      sta XFERSTRT+2
0A01           302      ;
0A01           303      ;
0A01           304      ; Get address of DOSCOLD and save to RDOSCOLD.

```

```

0A01          305 ;
0A01 AE D4 03 306      ldx DOSCOLD+1
0A04 AD D5 03 307      lda DOSCOLD+2
0A07          308 ;
0A07 8E C4 B7 309      stx XFERSTRT+4
0A0A 8D C5 B7 310      sta XFERSTRT+5
0A0D          311 ;
0A0D          312 ;
0A0D          313 ; Copy first eight INITVALS to RINITVAL.
0A0D          314 ;
0A0D AD FA BF 315      lda INITVAL
0A10 85 10     316      sta PTR1
0A12          317 ;
0A12 AD FB BF 318      lda INITVAL+1
0A15 85 11     319      sta PTR1+1
0A17          320 ;
0A17 A0 07     321      ld y #WARMNDX+7
0A19          322 ;
0A19 B1 10     323 ^1      lda (PTR1),Y
0A1B 99 C6 B7 324      sta XFERSTRT+6,Y
0A1E          325 ;
0A1E 88        326      dey
0A1F 10 F8     327      bpl <1
0A21          328 ;
0A21          329 ;
0A21          330 ; Copy Page 3 DOS vectors to PG3VCTRS.
0A21          331 ;
0A21 A0 2F     332      ld y #$2F
0A23          333 ;
0A23 B9 D0 03 334 ^2      lda DOSWARM,Y
0A26 99 CE B7 335      sta XFERSTRT+14,Y
0A29          336 ;
0A29 88        337      dey
0A2A 10 F7     338      bpl <2
0A2C          339 ;
0A2C          340 ;
0A2C          341 ; Get address of XHOOKDOS and save to HOOKDOS.
0A2C          342 ;
0A2C A2 FE     343      ld x #XFERSTRT+$3E
0A2E A9 B7     344      lda /XFERSTRT+$3E
0A30          345 ;
0A30 8E EB 03 346      stx HOOKDOS+1
0A33 8D EC 03 347      sta HOOKDOS+2
0A36          348 ;
0A36 60        349      rts
0A37          350 ;
0A37          351 ;
0A37 B9 78 0A 352 PRTMSG  lda MESSAGES,Y
0A3A F0 06     353      beq >1
0A3C          354 ;
0A3C 20 ED FD 355      jsr COUT
0A3F          356 ;
0A3F C8        357      iny
0A40 D0 F5     358      bne PRTMSG
0A42          359 ;
0A42 60        360 ^1      rts
0A43          361 ;
0A43          362 ;
0A43 4C 00 00 363 EPBINJMP jmp *-*          ; EPBINEOS
0A46          364 ;
0A46          365 ;

```

```

0A46          366   DCBNUM      dfs 1,ZERO
0A47          367   DCBERR      dfs 1,ZERO
0A48          368   ;
0A48          369   ;
0A48          370   EOS1DCB:
0A48          371   ;
0A48 01        372   DCB1CMD     byt LOADCMD
0A49 70        373   DCB1EP      byt SRCHALL
0A4A 00 10     374   DCB1ALT     adr PAGE10
0A4C FF        375   DCB1STAT    byt NEGONE
0A4D 08        376   DCB1LEN     byt FIL1LEN
0A4E 50 0A     377   DCB1ADR     adr FIL1NAM
0A50          378   ;
0A50 CC C9 D3  379   FIL1NAM     asc "LISA80.1"
0A53 C1 B8 B0
0A56 AE B1
0008          380   FIL1LEN     equ *-FIL1NAM
0A58          381   ;
0A58          382   ;
0A58          383   EOS2DCB:
0A58          384   ;
0A58 01        385   DCB2CMD     byt LOADCMD
0A59 70        386   DCB2EP      byt SRCHALL
0A5A 00 10     387   DCB2ALT     adr PAGE10
0A5C FF        388   DCB2STAT    byt NEGONE
0A5D 08        389   DCB2LEN     byt FIL2LEN
0A5E 60 0A     390   DCB2ADR     adr FIL2NAM
0A60          391   ;
0A60 CC C9 D3  392   FIL2NAM     asc "LISA80.2"
0A63 C1 B8 B0
0A66 AE B2
0008          393   FIL2LEN     equ *-FIL2NAM
0A68          394   ;
0A68          395   ;
0A68          396   EOS3DCB:
0A68          397   ;
0A68 01        398   DCB3CMD     byt LOADCMD
0A69 70        399   DCB3EP      byt SRCHALL
0A6A C0 B7     400   DCB3ALT     adr XFERSTRT
0A6C FF        401   DCB3STAT    byt NEGONE
0A6D 08        402   DCB3LEN     byt FIL3LEN
0A6E 70 0A     403   DCB3ADR     adr FIL3NAM
0A70          404   ;
0A70 CC C9 D3  405   FIL3NAM     asc "LISA80.3"
0A73 C1 B8 B0
0A76 AE B3
0008          406   FIL3LEN     equ *-FIL3NAM
0A78          407   ;
0A78          408   ;
0A78          409   MESGS:
0A78          410   ;
0A78 8D 84     411   MSG1        byt RETURN,CTRLD
0A7A CD CF CE  412             asc "MON C,I,O"
0A7D A0 C3 AC
0A80 C9 AC CF
0A83 8D 00     413             byt RETURN,ZERO
0A85          414   ;
0A85 8D 87 8D  415   MSG2        byt RETURN,BELL,RETURN
0A88 D5 EE E1  416             asc "Unable to load LISA80 DCB #"
0A8B E2 EC E5
0A8E A0 F4 EF

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```
0A91 A0 EC EF
0A94 E1 E4 A0
0A97 CC C9 D3
0A9A C1 B8 B0
0A9D A0 C4 C3
0AA0 C2 A0 A3
0AA3 00          417      byt ZERO
0AA4          418      ;
0AA4 8D 8D      419      MSG3      byt RETURN,RETURN
0AA6 A0 A0 A0   420      asc "      DCB returned error 0x"
0AA9 A0 C4 C3
0AAC C2 A0 F2
0AAF E5 F4 F5
0AB2 F2 EE E5
0AB5 E4 A0 E5
0AB8 F2 F2 EF
0ABB F2 A0 B0
0ABE F8
0ABF 00          421      byt ZERO
0AC0          422      ;
0AC0          423      ;
```

```
BSAVE LOADLISA80,D1,A$0900,B,L$01C0
```

```
0AC0          424      usr LOADLISA80,D1
0AC0          425      ;
0AC0          426      ;
CD D2

0AC0          427      dcm "CD D2"
0AC0          428      ;
0AC0          429      ;
0AC0          430      stt "LOADLISA80 Symbol Table"
0AC0          431      ;
0AC0          432      ;
0AC0          433      end 111
```

```
*** End of Assembly
```

Symbol List starts at 0x7800, ends at 0x7B3E, used 0x033E, remaining 0x3C5A

Symbols unsorted:

PTR1	0010	PTR2	0012	PROMPT	0033	ASRUN	0076	ASONERR	00D8
ZERO	0000	CTRLD	0084	BELL	0087	RETURN	008D	NEGONE	00FF
WARMNDX	0000	LOADCMD	0001	SRCHALL	0070	LISA1PGS	0028	LISA2PGS	0010
DOSWARM	03D0	DOSCOLD	03D3	HOOKDOS	03EA	PAGE10	1000	PAGED0	D000
PAGEF8	F800	XFERSTR	B7C0	SETUPJMP	BCDC	SETUPFLG	BCDF	INITVAL	BFFA
AUXZPOFF	C008	AUXZPON	C009	RAM2WP	C080	ROM2WE	C081	ROM2WP	C082
RAM2WE	C083	ROM1WP	C08A	RAM1WE	C08B	COLDSTRT	E000	INIT	FB2F
HOME	FC58	CROUT	FD8E	PRBYTE	FDDA	COUT	FDED	SETNORM	FE84
SETKBD	FE89	SETVID	FE93	ERROR	0988	MOVELISA	09AD	COPYROM	09D3
INITHOOK	09F5	PRTMSG	0A37	EPBINJMP	0A43	DCBNUM	0A46	DCBERR	0A47
EOS1DCB	0A48	DCB1CMD	0A48	DCB1EP	0A49	DCB1ALT	0A4A	DCB1STAT	0A4C
DCB1LEN	0A4D	DCB1ADR	0A4E	FIL1NAM	0A50	FIL1LEN	0008	EOS2DCB	0A58
DCB2CMD	0A58	DCB2EP	0A59	DCB2ALT	0A5A	DCB2STAT	0A5C	DCB2LEN	0A5D
DCB2ADR	0A5E	FIL2NAM	0A60	FIL2LEN	0008	EOS3DCB	0A68	DCB3CMD	0A68
DCB3EP	0A69	DCB3ALT	0A6A	DCB3STAT	0A6C	DCB3LEN	0A6D	DCB3ADR	0A6E
FIL3NAM	0A70	FIL3LEN	0008	MESGS	0A78	MESG1	0A78	MESG2	0A85
MESG3	0AA4								

Symbols alphabetically sorted:

ASONERR	00D8	ASRUN	0076	AUXZPOFF	C008	AUXZPON	C009	BELL	0087
COLDSTRT	E000	COPYROM	09D3	COUT	FDED	CROUT	FD8E	CTRLD	0084
DCB1ADR	0A4E	DCB1ALT	0A4A	DCB1CMD	0A48	DCB1EP	0A49	DCB1LEN	0A4D
DCB1STAT	0A4C	DCB2ADR	0A5E	DCB2ALT	0A5A	DCB2CMD	0A58	DCB2EP	0A59
DCB2LEN	0A5D	DCB2STAT	0A5C	DCB3ADR	0A6E	DCB3ALT	0A6A	DCB3CMD	0A68
DCB3EP	0A69	DCB3LEN	0A6D	DCB3STAT	0A6C	DCBERR	0A47	DCBNUM	0A46
DOSCOLD	03D3	DOSWARM	03D0	EOS1DCB	0A48	EOS2DCB	0A58	EOS3DCB	0A68
EPBINJMP	0A43	ERROR	0988	FIL1LEN	0008	FIL1NAM	0A50	FIL2LEN	0008
FIL2NAM	0A60	FIL3LEN	0008	FIL3NAM	0A70	HOME	FC58	HOOKDOS	03EA
INIT	FB2F	INITHOOK	09F5	INITVAL	BFFA	LISA1PGS	0028	LISA2PGS	0010
LOADCMD	0001	MESG1	0A78	MESG2	0A85	MESG3	0AA4	MESGS	0A78
MOVELISA	09AD	NEGONE	00FF	PAGE10	1000	PAGED0	D000	PAGEF8	F800
PRBYTE	FDDA	PROMPT	0033	PRTMSG	0A37	PTR1	0010	PTR2	0012
RAM1WE	C08B	RAM2WE	C083	RAM2WP	C080	RETURN	008D	ROM1WP	C08A
ROM2WE	C081	ROM2WP	C082	SETKBD	FE89	SETNORM	FE84	SETUPFLG	BCDF
SETUPJMP	BCDC	SETVID	FE93	SRCHALL	0070	WARMNDX	0000	XFERSTR	B7C0
ZERO	0000								

Symbols numerically sorted:

ZERO	0000	WARMNDX	0000	LOADCMD	0001	FIL3LEN	0008	FIL2LEN	0008
FIL1LEN	0008	PTR1	0010	LISA2PGS	0010	PTR2	0012	LISA1PGS	0028
PROMPT	0033	SRCHALL	0070	ASRUN	0076	CTRLD	0084	BELL	0087
RETURN	008D	ASONERR	00D8	NEGONE	00FF	DOSWARM	03D0	DOSCOLD	03D3
HOOKDOS	03EA	ERROR	0988	MOVELISA	09AD	COPYROM	09D3	INITHOOK	09F5
PRTMSG	0A37	EPBINJMP	0A43	DCBNUM	0A46	DCBERR	0A47	EOS1DCB	0A48
DCB1CMD	0A48	DCB1EP	0A49	DCB1ALT	0A4A	DCB1STAT	0A4C	DCB1LEN	0A4D
DCB1ADR	0A4E	FIL1NAM	0A50	EOS2DCB	0A58	DCB2CMD	0A58	DCB2EP	0A59
DCB2ALT	0A5A	DCB2STAT	0A5C	DCB2LEN	0A5D	DCB2ADR	0A5E	FIL2NAM	0A60
EOS3DCB	0A68	DCB3CMD	0A68	DCB3EP	0A69	DCB3ALT	0A6A	DCB3STAT	0A6C
DCB3LEN	0A6D	DCB3ADR	0A6E	FIL3NAM	0A70	MESGS	0A78	MESG1	0A78
MESG2	0A85	MESG3	0AA4	PAGE10	1000	XFERSTR	B7C0	SETUPJMP	BCDC
SETUPFLG	BCDF	INITVAL	BFFA	AUXZPOFF	C008	AUXZPON	C009	RAM2WP	C080
ROM2WE	C081	ROM2WP	C082	RAM2WE	C083	ROM1WP	C08A	RAM1WE	C08B

PAGED0	D000	COLDSTRT	E000	PAGEF8	F800	INIT	FB2F	HOME	FC58
CROUT	FD8E	PRBYTE	FD8E	COUT	FD8E	SETNORM	FE84	SETKBD	FE89
SETVID	FE93								