Contents

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CROMEMCO CDOS Z80 ASSEMBLER version 02.15                PAGE 0001
Boot Strap Loader for Teletek's FDC-II

                        0002 ;
                        0003 ;Date:  7-1-80
                        0004 ;
                        0005 ;Revision date:  9-23-80
                        0006 ;
                        0007 ;Copyright (C) 1980, Teletek Enterprises, Inc.
                        0008 ;
                        0009 ;Written by Aram Perez
                        0010 ;
                        0011 ;
     (F400)             0012 BUFF    EQU     0F400H          ;On-board buffer
     (0064)             0013 DMA2    EQU     64H             ;DMA chan 2
     (0065)             0014 DMA2L   EQU     65H             ; "    "  " length
     (0068)             0015 DMAM    EQU     68H             ; "  mode
     (0070)             0016 FDCST   EQU     70H             ;FDC status
     (0071)             0017 FDCDT   EQU     71H             ; "  data
     (0073)             0018 STAT    EQU     73H             ;On-board status
                        0019 ;(DMA is the 8257 chip and FDC is the 765 chip.)
                        0020 ;
     (0103)             0021 SBL     EQU     103H            ;Standard boot location
                        0022 ;
     (FFFF)             0023 USERR   EQU     0FFFFH          ;User error routine address
                        0024 ;
0000                    0025         ORG     0
0000 3EC3               0026         LD      A,0C3H          ;Put at JPBT a jump
0002 321F00             0027         LD      (JPBT),A        ;to BTSTRP  (copy the jump
0005 210301             0028         LD      HL,BTSTRP       ;statement into RAM)
0008 222000             0029         LD      (JPBT+1),HL
000B 112200             0030         LD      DE,TBL
000E 010701             0031         LD      BC,BSLEN
0011 1A                 0032 MOVE    LD      A,(DE)
0012 77                 0033         LD      (HL),A
0013 13                 0034         INC     DE
0014 23                 0035         INC     HL
0015 0B                 0036         DEC     BC
0016 78                 0037         LD      A,B
0017 B1                 0038         OR      C
0018 C21100             0039         JP      NZ,MOVE
001B 3E80               0040         LD      A,80H
001D D373               0041         OUT     (STAT),A
001F C30301             0042 JPBT    JP      BTSTRP
     (0022)             0043 TBL     EQU     $               ;Tempo boot location
                        0044 ;
                        0045 ;The Boot Strap Loader starts at 0103H:
0022                    0046         ORG     SBL
0103 C30C01             0047 BTSTRP  JP      INIT
0106 C38401             0048         JP      SEEK
0109 C3B201             0049         JP      READ
                        0050 ;
                        0051 ;INIT initializes the FDC chip for mini or maxi-drive depending
                        0052 ;on bit 1 (if zero then maxi and if one then mini-drive).  It
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                        0053 ;also initializes the DMA chip.  Next drive 0 is recalibrated
                        0054 ;and the first sector on track zero is read in and executed at
                        0055 ;location 0000H.
010C  310001            0056 INIT    LD      SP,100H         ;Set up stack
010F  DB73              0057         IN      A,(STAT)        ;Get status and check drv size
                        0058         ;If size is maxi then SRT=10 ms, HUT=240 ms & HLT=36 ms.
0111  11226F            0059         LD      DE,6F22H
0114  E602              0060         AND     2               ;Maxi-drive?
0116  CA2301            0061         JP      Z,INIT1         ;Yes, so jump
0119  3E12              0062         LD      A,18            ;No, it's a mini-drive
011B  320602            0063         LD      (EOT),A         ;Correct EOT
011E  3E10              0064         LD      A,10H
                        0065         ;Since mini then SRT=32 ms, HUT=480 ms, and HLT=42 ms.
0120  11280F            0066         LD      DE,0F28H
                        0067 INIT1   ;Set bit 7 high (must ALWAYS be high) and
                        0068         ;turn on motor, bit 2.
0123  F684              0069         OR      84H
0125  D373              0070         OUT     (STAT),A        ;Set correct clock speed
0127  3E03              0071         LD      A,3
0129  CD7901            0072         CALL    WRCMD           ;Set timing constants on FDC
012C  7A                0073         LD      A,D
012D  CD7901            0074         CALL    WRCMD
0130  7B                0075         LD      A,E
0131  CD7901            0076         CALL    WRCMD
0134  3E84              0077         LD      A,84H           ;Set up DMA chip
0136  D368              0078         OUT     (DMAM),A        ;Auto-load mode
0138  97                0079         SUB     A
0139  D364              0080         OUT     (DMA2),A
013B  D364              0081         OUT     (DMA2),A        ;Addr= 0000
                        0082 ;
                        0083 ;Now do a 2 second delay approx. (1 second @ 4 Mhz) to give
                        0084 ;time for the DC motor to reach correct speed.
013D  0E02              0085         LD      C,2
013F  11748B            0086 INIT2   LD      DE,35700
0142  E3                0087 INIT3   EX      (SP),HL
0143  E3                0088         EX      (SP),HL
0144  1B                0089         DEC     DE
0145  7A                0090         LD      A,D
0146  B3                0091         OR      E
0147  C24201            0092         JP      NZ,INIT3
014A  0D                0093         DEC     C
014B  C23F01            0094         JP      NZ,INIT2
                        0095 ;
                        0096 ;Call the user initialization routine.
014E  CD0902            0097         CALL    UINIT
                        0098 ;
                        0099 ;Now RECALIBRATE drive 0
0151  3E07              0100 REC     LD      A,7
0153  CD7901            0101         CALL    WRCMD
0156  97                0102         SUB     A
0157  CD7901            0103         CALL    WRCMD
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CROMEMCO CDOS Z80 ASSEMBLER version 02.15                    PAGE 0003
Boot Strap Loader for Teletek's FDC-II
015A  CD9401      0104          CALL    SINST           ;Do SENSE INTERRUPT
015D  C25101      0105          JP      NZ,REC
                  0106 ;
                  0107 ;Now try to read in first sector and execute it.
0160  01010A      0108          LD      BC,0A01H
0163  118000      0109          LD      DE,128
0166  210000      0110          LD      HL,0
0169  CDB201      0111 RD1ST    CALL    READ            ;Read in first sector and
016C  CA0000      0112          JP      Z,0             ;execute it if no errors
016F  05          0113          DEC     B
0170  C26901      0114          JP      NZ,RD1ST
                  0115 ;
                  0116 ;ERR is the error routine if the first sector can not be read
                  0117 ;in after 10 tries.  Normally it is an endless loop; but by
                  0118 ;changing the "JP ERR" statement to 3 NOP's and putting the
                  0119 ;correct "USERR" address in the next jump statement, a user
                  0120 ;may report the cause of the error or take any appropiate
                  0121 ;action he may wish to take
0173  C37301      0122 ERR      JP      ERR             ;Endless loop
0176  C3FFFF      0123          JP      USERR           ;Jp to user error routine
                  0124 ;
                  0125 ;WRCMD sends the command bytes to the FDC.
0179  F5          0126 WRCMD    PUSH    AF              ;Save command
017A  DB70        0127 WRC      IN      A,(FDCST)
017C  07          0128          RLCA                    ;RQM=1?
017D  D27A01      0129          JP      NC,WRC          ;No
0180  F1          0130          POP     AF              ;Yes, get and send cmd
0181  D371        0131          OUT     (FDCDT),A
0183  C9          0132          RET
                  0133 ;
                  0134 ;SEEK will seek the track in register C.  The zero flag
                  0135 ;is set if no errors occurred.
0184  3E0F        0136 SEEK     LD      A,15
0186  CD7901      0137          CALL    WRCMD
0189  97          0138          SUB     A
018A  CD7901      0139          CALL    WRCMD
018D  79          0140          LD      A,C             ;Get track
018E  320202      0141          LD      (TRK),A         ;and save it
0191  CD7901      0142          CALL    WRCMD
                  0143 ;
                  0144 ;SINST does a SENSE INTERRUPT STATUS command.  The zero flag
                  0145 ;is set if no erros occurred.
0194  DB73        0146 SINST    IN      A,(STAT)
0196  07          0147          RLCA                    ;Interrupt from FDC
0197  D29401      0148          JP      NC,SINST        ;No
019A  3E08        0149          LD      A,8
019C  D371        0150          OUT     (FDCDT),A
019E  CDA901      0151          CALL    INFDC           ;Get and save ST0
01A1  F5          0152          PUSH    AF
01A2  CDA901      0153          CALL    INFDC           ;Get PCN
01A5  F1          0154          POP     AF
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CROMEMCO CDOS Z80 ASSEMBLER version 02.15                    PAGE 0004
Boot Strap Loader for Teletek's FDC-II

01A6  E6C0          0155          AND     0C0H            ;Set error flag
01A8  C9            0156          RET
                    0157 ;
                    0158 ;INFDC inputs data from the FDC.
01A9  DB70          0159 INFDC    IN      A,(FDCST)
01AB  07            0160          RLCA                    ;RQM=1?
01AC  D2A901        0161          JP      NC,INFDC        ;No
01AF  DB71          0162          IN      A,(FDCDT)       ;Get data
01B1  C9            0163          RET
                    0164 ;
                    0165 ;READ will read the sector in register C to memory pointed by
                    0166 ;register pair HL.  Enter with DE= 128*(no. of sectors to
                    0167 ;read).  On exit, register C is the "Result Phase" sector.
                    0168 ;The zero flag is set if no errors occurred.
01B2  C5            0169 READ     PUSH    BC
01B3  D5            0170          PUSH    DE
01B4  79            0171          LD      A,C
01B5  320402        0172          LD      (SECT),A        ;Save sector to read
01B8  1B            0173          DEC     DE
01B9  7B            0174          LD      A,E
01BA  D365          0175          OUT     (DMA2L),A       ;Set DMA length
01BC  7A            0176          LD      A,D
01BD  F640          0177          OR      40H
01BF  D365          0178          OUT     (DMA2L),A
01C1  010709        0179          LD      BC,907H
01C4  110002        0180          LD      DE,CMD
01C7  1A            0181 RD0      LD      A,(DE)          ;Send the 9 cmd bytes
01C8  CD7901        0182          CALL    WRCMD
01CB  13            0183          INC     DE
01CC  05            0184          DEC     B
01CD  C2C701        0185          JP      NZ,RD0
01D0  DB73          0186 RD1      IN      A,(STAT)
01D2  07            0187          RLCA                    ;FDC interrupt?
01D3  D2D001        0188          JP      NC,RD1          ;No
01D6  110A02        0189          LD      DE,ST0
01D9  CDA901        0190 RD2      CALL    INFDC           ;Get 7 "Result Phase" bytes
01DC  12            0191          LD      (DE),A
01DD  13            0192          INC     DE
01DE  0D            0193          DEC     C
01DF  C2D901        0194          JP      NZ,RD2
01E2  3A0A02        0195          LD      A,(ST0)
01E5  E6C0          0196          AND     0C0H            ;Error?
01E7  C2F901        0197          JP      NZ,RD4          ;Yes
01EA  D1            0198          POP     DE              ;No, so move data
01EB  D5            0199          PUSH    DE              ;to (HL) thru (HL+DE)
01EC  0100F4        0200          LD      BC,BUFF         ;from on-board buffer
01EF  0A            0201 RD3      LD      A,(BC)
01F0  77            0202          LD      (HL),A
01F1  03            0203          INC     BC
01F2  23            0204          INC     HL
01F3  1B            0205          DEC     DE
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CROMEMCO CDOS Z80 ASSEMBLER version 02.15                    PAGE 0005
Boot Strap Loader for Teletek's FDC-II

01F4  7A          0206          LD      A,D
01F5  B3          0207          OR      E
01F6  C2EF01      0208          JP      NZ,RD3
01F9  D1          0209 RD4      POP     DE
01FA  C1          0210          POP     BC
01FB  3A0F02      0211          LD      A,(RPS)
01FE  4F          0212          LD      C,A
01FF  C9          0213          RET
                  0214 ;
                  0215 ;Command data for reading 1st sector:
0200  0600        0216 CMD      DB      6,0
0202  0000        0217 TRK      DB      0,0
0204  0100        0218 SECT     DB      1,0
0206  1A0780      0219 EOT      DB      26,7,128
                  0220 ;
                  0221 ;User initialization routine.
0209  C9          0222 UINIT    RET                     ;Not implemented
                  0223 ;
      (0107)      0224 BSLEN    EQU     $-BTSTRP
                  0225 ;
020A  (0007)      0226 STO      DS      7               ;Result Phase data
      (020F)      0227 RPS      EQU     STO+5           ;   "     "   sector
                  0228 ;
0211  (0000)      0229          END

Errors            0
```

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CROMEMCO CDOS Z80 ASSEMBLER version 02.15                    PAGE 0001
CP/M 1.4 Cold Start Loader for FDC-II

                        0002 ;
                        0003 ;Version 8-15-80
                        0004 ;
                        0005 ;Written by Aram Perez
                        0006 ;
     (0106)             0007 SEEK:   EQU     106H          ;Seek trk in C
     (0109)             0008 READ:   EQU     109H          ;Read sect in C to (HL)
                        0009 ;
     (0020)             0010 MEM:    EQU     32            ;Memory size in K's
     (3C00)             0011 BASE:   EQU     (MEM-17)*1024
     (6500)             0012 CCP:    EQU     2900H+BASE
     (7A00)             0013 BIOS:   EQU     3E00H+BASE
                        0014 ;
0000                    0015         ORG     0
                        0016 ;
0000  210065            0017         LD      HL,CCP
0003  110004            0018         LD      DE,8*128      ;Read 8 sectors at a time
0006  0603              0019         LD      B,3
0008  CD0901            0020 RD0:    CALL    READ          ;Read trk 0, sect's 2-25
000B  C20B00            0021 ERR:    JP      NZ,ERR        ;Loop if error
000E  05                0022         DEC     B
000F  C20800            0023         JP      NZ,RD0
0012  118000            0024         LD      DE,128
0015  CD0901            0025         CALL    READ          ;Read sector 26
0018  110004            0026         LD      DE,8*128
001B  0603              0027         LD      B,3
001D  CD0601            0028         CALL    SEEK          ;Seek trk 1
0020  CD0901            0029 RD1:    CALL    READ          ;Read trk 1, sect's 1-24
0023  C20B00            0030         JP      NZ,ERR
0026  05                0031         DEC     B
0027  C22000            0032         JP      NZ,RD1
002A  110001            0033         LD      DE,2*128      ;Read sectors 25,26
002D  CD0901            0034         CALL    READ
0030  C20B00            0035         JP      NZ,ERR
0033  C3007A            0036         JP      BIOS
                        0037 ;
0036  (0000)            0038         END

Errors                  0
```

```
CROMEMCO CDOS Z80 ASSEMBLER version 02.15                    PAGE 0001
CP/M 1.4 BIOS for Teletek's FDC-II.

                        0002 ;
                        0003 ;Version 8-15-80
                        0004 ;
                        0005 ;Written by Aram Perez
                        0006 ;
     (F400)             0007 BUFF   EQU   0F400H        ;DMA buffer
     (0064)             0008 DMA2   EQU   64H           ;DMA chan 2 addr
     (0065)             0009 DMA2L  EQU   65H           ; "   "   2 length
     (0068)             0010 DMAM   EQU   68H           ;DMA mode
     (0070)             0011 FDCST  EQU   70H           ;FDC status
     (0071)             0012 FDCDT  EQU   71H           ;FDC data
     (0073)             0013 FDCINT EQU   73H           ;FDC interrupt
                        0014 ;
     (000A)             0015 RETRYS EQU   10            ;No. of error retrys
                        0016 ;
     (0020)             0017 MEM    EQU   32            ;Memory size in K's
     (3C00)             0018 BASE   EQU   (MEM-17)*1024
     (6500)             0019 CCP    EQU   2900H+BASE
     (6D00)             0020 BDOS   EQU   3100H+BASE
                        0021 ;
     (0004)             0022 CDRV   EQU   4             ;Current drive
                        0023 ;
     (0001)             0024 STAT   EQU   01H           ;Console status
     (0000)             0025 DATA   EQU   00H           ;Console data
     (0001)             0026 DAV    EQU   01H           ;Data available
     (0002)             0027 TRD    EQU   02H           ;Transmiter ready
                        0028 ;
0000                    0029        ORG   3E00H+BASE
                        0030 ;
7A00  C32D7A            0031        JP    BOOT
7A03  C3867A            0032 JWBT   JP    WBOOT
7A06  C3F17A            0033        JP    CONST
7A09  C3F97A            0034        JP    CONIN
7A0C  C3047B            0035        JP    CONOUT
7A0F  C30F7B            0036        JP    LIST
7A12  C3107B            0037        JP    PUNCH
7A15  C3117B            0038        JP    READER
7A18  C3147B            0039        JP    HOME
7A1B  C33B7B            0040        JP    SELDSK
7A1E  C35A7B            0041        JP    SETTRK
7A21  C3797B            0042        JP    SETSEC
7A24  C37E7B            0043        JP    SETDMA
7A27  C3847B            0044        JP    READ
7A2A  C3CA7B            0045        JP    WRITE
                        0046 ;
                        0047 BOOT   ;First initialize I/O ports if necessary.
7A2D  CD357C            0048        CALL  INIT
                        0049 ;
7A30  21367C            0050        LD    HL,SOMSG      ;Print sign-on message
7A33  CD737A            0051        CALL  PMSG
7A36  CDF97A            0052        CALL  CONIN
```

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CP/M 1.4 BIOS for Teletek's FDC-II.

```
7A39  4F          0053         LD    C,A
7A3A  CD047B      0054         CALL  CONOUT
7A3D  D631        0055         SUB   '1'
7A3F  32BE7C      0056         LD    (NDRV),A      ;Save no. of drives
7A42  3EFF        0057         LD    A,-1
7A44  32C27C      0058         LD    (DMARW),A     ;Upset DMARW
7A47  21B57C      0059         LD    HL,FCDAT      ;Set up cmd buffer
7A4A  11C37C      0060         LD    DE,CMD
7A4D  0609        0061         LD    B,9
7A4F  CD7D7A      0062         CALL  LDIR
7A52  3EC3        0063 BT      LD    A,0C3H        ;Set up jump vectors
7A54  320000      0064         LD    (0),A
7A57  320500      0065         LD    (5),A
7A5A  21037A      0066         LD    HL,JWBT
7A5D  220100      0067         LD    (1),HL
7A60  21066D      0068         LD    HL,BDOS+6
7A63  220600      0069         LD    (6),HL
7A66  218000      0070         LD    HL,80H        ;Set init DMA addr
7A69  22BF7C      0071         LD    (DMA),HL
7A6C  3AC47C      0072         LD    A,(DRV)
7A6F  4F          0073         LD    C,A
7A70  C30065      0074         JP    CCP
                  0075 ;
                  0076 ;Print message terminated with bit 7 high on last byte.
7A73  4E          0077 PMSG    LD    C,(HL)        ;Print ASCII message
7A74  23          0078         INC   HL
7A75  CD047B      0079         CALL  CONOUT
7A78  B7          0080         OR    A
7A79  F8          0081         RET   M             ;Exit if bit 7 set
7A7A  C3737A      0082         JP    PMSG
                  0083 ;
                  0084 ;Imitate a Z-80 LDIR.
7A7D  7E          0085 LDIR    LD    A,(HL)        ;Imitate a Z-80 LDIR
7A7E  12          0086         LD    (DE),A
7A7F  23          0087         INC   HL
7A80  13          0088         INC   DE
7A81  05          0089         DEC   B
7A82  C27D7A      0090         JP    NZ,LDIR
7A85  C9          0091         RET
                  0092 ;
7A86  318000      0093 WBOOT   LD    SP,80H        ;Set up stack
7A89  3E84        0094         LD    A,84H         ;Auto load
7A8B  D368        0095         OUT   DMAM,A
7A8D  97          0096         SUB   A             ;Addr= 0000
7A8E  D364        0097         OUT   DMA2,A
7A90  D364        0098         OUT   DMA2,A
7A92  21B57C      0099 WBT     LD    HL,FCDAT      ;Set up FDC cmd buffer
7A95  11C37C      0100         LD    DE,CMD
7A98  0609        0101         LD    B,9
7A9A  CD7D7A      0102         CALL  LDIR
7A9D  CD147B      0103         CALL  HOME
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CP/M 1.4 BIOS for Teletek's FDC-II.

```
7AA0  210065      0104          LD      HL,CCP
7AA3  0603        0105          LD      B,3
7AA5  3E02        0106          LD      A,2           ;Start at sector 2
7AA7  110004      0107 WBT0     LD      DE,8*128      ;Read 8 sectors at a time
7AAA  32C27C      0108          LD      (DMARW),A     ;Upset DMARW
7AAD  22BF7C      0109 WBT1     LD      (DMA),HL
7AB0  32C77C      0110          LD      (SECT),A
7AB3  CD877B      0111          CALL    READM
7AB6  C2E57A      0112          JP      NZ,WBERR
7AB9  3AD17C      0113          LD      A,(STO+5)     ;Get next sector
7ABC  32C77C      0114          LD      (SECT),A
7ABF  05          0115          DEC     B
7AC0  C2AD7A      0116          JP      NZ,WBT1
7AC3  22BF7C      0117          LD      (DMA),HL
7AC6  32C27C      0118          LD      (DMARW),A
7AC9  CD847B      0119          CALL    READ          ;Read sector 26 or 17
7ACC  3AC57C      0120          LD      A,(TRK)
7ACF  B7          0121          OR      A
7AD0  C2DF7A      0122          JP      NZ,WBT2
7AD3  010102      0123          LD      BC,201H       ;Read trk 1, sectors 1-17
7AD6  E5          0124          PUSH    HL
7AD7  CD5A7B      0125          CALL    SETTRK
7ADA  E1          0126          POP     HL
7ADB  79          0127          LD      A,C
7ADC  C3A77A      0128          JP      WBTO
7ADF  3A0400      0129 WBT2     LD      A,(CDRV)      ;Restore current drive
7AE2  C3527A      0130          JP      BT
                  0131 ;
7AE5  217C7C      0132 WBERR    LD      HL,WBER
7AE8  CD737A      0133          CALL    PMSG
7AEB  CDF97A      0134          CALL    CONIN
7AEE  C3927A      0135          JP      WBT
                  0136 ;
7AF1  DB01        0137 CONST    IN      A,(STAT)      ;Console status
7AF3  E601        0138          AND     DAV
7AF5  C8          0139          RET     Z
7AF6  3EFF        0140          LD      A,-1
7AF8  C9          0141          RET
                  0142 ;
7AF9  CDF17A      0143 CONIN    CALL    CONST         ;Console input
7AFC  CAF97A      0144          JP      Z,CONIN
7AFF  DB00        0145          IN      A,(DATA)
7B01  E67F        0146          AND     7FH
7B03  C9          0147          RET
                  0148 ;
7B04  DB01        0149 CONOUT   IN      A,(STAT)      ;Console output
7B06  E602        0150          AND     TRD           ;Ready?
7B08  CA047B      0151          JP      Z,CONOUT      ;No
7B0B  79          0152          LD      A,C
7B0C  D300        0153          OUT     (DATA),A
7B0E  C9          0154          RET
```

```
                        0155 ;
7B0F  C9                0156 LIST    RET                ;Listing device
                        0157 ;
7B10  C9                0158 PUNCH   RET                ;Punch device
                        0159 ;
7B11  3E1A              0160 READER  LD      A,1AH      ;Reader device
7B13  C9                0161         RET
                        0162 ;
7B14  3E07              0163 HOME    LD      A,7        ;Recalibrate
7B16  CD2D7C            0164         CALL    WRCMD
7B19  3AC47C            0165         LD      A,(DRV)
7B1C  CD2D7C            0166         CALL    WRCMD
7B1F  CDFF7B            0167         CALL    WTRLTS
7B22  C8                0168         RET     Z
7B23  CD297B            0169         CALL    SKHMER
7B26  C3147B            0170         JP      HOME
                        0171 ;
7B29  21617C            0172 SKHMER  LD      HL,SHER    ;Seek/Home error
7B2C  CD737A            0173         CALL    PMSG
7B2F  3AC47C            0174         LD      A,(DRV)
7B32  C641              0175         ADD     'A'
7B34  4F                0176         LD      C,A
7B35  CD047B            0177         CALL    CONOUT     ;Print drive
7B38  C3F97A            0178         JP      CONIN
                        0179 ;
7B3B  3ABE7C            0180 SELDSK  LD      A,(NDRV)   ;Check no. of drives
7B3E  B9                0181         CP      C
7B3F  DA477B            0182         JP      C,SDERR
7B42  79                0183         LD      A,C
7B43  32C47C            0184         LD      (DRV),A
7B46  C9                0185         RET
                        0186 ;
7B47  218E7C            0187 SDERR   LD      HL,SDER
7B4A  CD737A            0188         CALL    PMSG
7B4D  79                0189         LD      A,C
7B4E  C641              0190         ADD     'A'
7B50  4F                0191         LD      C,A
7B51  CD047B            0192         CALL    CONOUT
7B54  CD737A            0193         CALL    PMSG
7B57  C3867A            0194         JP      WBOOT
                        0195 ;
7B5A  79                0196 SETTRK  LD      A,C        ;Set track
7B5B  32C57C            0197         LD      (TRK),A
7B5E  3E0F              0198 SKTRK   LD      A,15       ;Seek the track
7B60  CD2D7C            0199         CALL    WRCMD
7B63  3AC47C            0200         LD      A,(DRV)
7B66  CD2D7C            0201         CALL    WRCMD
7B69  3AC57C            0202         LD      A,(TRK)
7B6C  CD2D7C            0203         CALL    WRCMD
7B6F  CDFF7B            0204         CALL    WTRLTS
7B72  C8                0205         RET     Z
```

CROMEMCO CDOS Z80 ASSEMBLER version 02.15 PAGE 0005
CP/M 1.4 BIOS for Teletek's FDC-II.

```
7B73  CD297B      0206          CALL    SKHMER
7B76  C35E7B      0207          JP      SKTRK
                  0208 ;
7B79  79          0209 SETSEC   LD      A,C             ;Set sector
7B7A  32C77C      0210          LD      (SECT),A
7B7D  C9          0211          RET
                  0212 ;
7B7E  60          0213 SETDMA   LD      H,B             ;Set DMA addr
7B7F  69          0214          LD      L,C
7B80  22BF7C      0215          LD      (DMA),HL
7B83  C9          0216          RET
                  0217 ;
7B84  118000      0218 READ     LD      DE,128          ;Read 1 sector
7B87  C5          0219 READM    PUSH    BC
7B88  D5          0220          PUSH    DE
7B89  0E0A        0221          LD      C,RETRYS
7B8B  0640        0222          LD      B,40H
7B8D  3AC27C      0223          LD      A,(DMARW)
7B90  B8          0224          CP      B
7B91  3E06        0225          LD      A,6
7B93  C4BB7B      0226          CALL    NZ,PDMA
7B96  CDF17B      0227 RD       CALL    RDWRT
7B99  CAA67B      0228          JP      Z,MVDT          ;Jp if no errors
7B9C  0D          0229          DEC     C
7B9D  C2967B      0230          JP      NZ,RD
7BA0  3E01        0231          LD      A,1
7BA2  B7          0232          OR      A
7BA3  D1          0233          POP     DE
7BA4  C1          0234          POP     BC
7BA5  C9          0235          RET
7BA6  2ABF7C      0236 MVDT     LD      HL,(DMA)        ;Move data to DMA addr
7BA9  D1          0237          POP     DE
7BAA  D5          0238          PUSH    DE
7BAB  0100F4      0239          LD      BC,BUFF
7BAE  0A          0240 MOV      LD      A,(BC)
7BAF  77          0241          LD      (HL),A
7BB0  03          0242          INC     BC
7BB1  23          0243          INC     HL
7BB2  1B          0244          DEC     DE
7BB3  7A          0245          LD      A,D
7BB4  B3          0246          OR      E
7BB5  C2AE7B      0247          JP      NZ,MOV
7BB8  D1          0248          POP     DE
7BB9  C1          0249          POP     BC
7BBA  C9          0250          RET
                  0251 ;
7BBB  32C37C      0252 PDMA     LD      (CMD),A         ;Prog DMA
7BBE  1B          0253          DEC     DE
7BBF  7B          0254          LD      A,E
7BC0  D365        0255          OUT     DMA2L,A
7BC2  78          0256          LD      A,B
```

CROMEMCO CDOS Z80 ASSEMBLER version 02.15 PAGE 0006
CP/M 1.4 BIOS for Teletek's FDC-II.

```
7BC3  32C27C      0257          LD      (DMARW),A
7BC6  B2          0258          OR      D
7BC7  D365        0259          OUT     DMA2L,A
7BC9  C9          0260          RET
                  0261 ;
7BCA  2ABF7C      0262 WRITE    LD      HL,(DMA)        ;Write 1 sector
7BCD  1100F4      0263          LD      DE,BUFF
7BD0  0680        0264          LD      B,128
7BD2  CD7D7A      0265          CALL    LDIR            ;Move data into buffer
7BD5  0E0A        0266          LD      C,RETRYS
7BD7  118000      0267          LD      DE,128
7BDA  0680        0268          LD      B,80H
7BDC  3AC27C      0269          LD      A,(DMARW)
7BDF  B8          0270          CP      B
7BE0  3E05        0271          LD      A,5
7BE2  C4BB7B      0272          CALL    NZ,PDMA
7BE5  CDF17B      0273 WRIT     CALL    RDWRT
7BE8  C8          0274          RET     Z
7BE9  0D          0275          DEC     C
7BEA  C2E57B      0276          JP      NZ,WRIT
7BED  3E01        0277          LD      A,1
7BEF  B7          0278          OR      A
7BF0  C9          0279          RET
                  0280 ;
7BF1  21C37C      0281 RDWRT    LD      HL,CMD
7BF4  0609        0282          LD      B,9
7BF6  7E          0283 RW       LD      A,(HL)          ;Send cmd data to 765
7BF7  23          0284          INC     HL
7BF8  CD2D7C      0285          CALL    WRCMD
7BFB  05          0286          DEC     B
7BFC  C2F67B      0287          JP      NZ,RW
                  0288 ;
7BFF  DB73        0289 WTRLTS   IN      A,FDCINT        ;Wait for results
7C01  07          0290          RLCA
7C02  D2FF7B      0291          JP      NC,WTRLTS               ;Jp if no interrupt
7C05  21CC7C      0292          LD      HL,STO
7C08  CD257C      0293          CALL    INFDC
7C0B  DA187C      0294          JP      C,WTRL
7C0E  3E08        0295          LD      A,8             ;Do SENSE INTERRUPT STATUS
7C10  D371        0296          OUT     FDCDT,A
7C12  CD257C      0297 WTRLT    CALL    INFDC
7C15  D21F7C      0298          JP      NC,WTR
7C18  DB71        0299 WTRL     IN      A,FDCDT
7C1A  77          0300          LD      (HL),A
7C1B  23          0301          INC     HL
7C1C  C3127C      0302          JP      WTRLT
7C1F  3ACC7C      0303 WTR      LD      A,(STO)         ;Check for errors
7C22  E6C0        0304          AND     0C0H
7C24  C9          0305          RET
                  0306 ;
7C25  DB70        0307 INFDC    IN      A,FDCST         ;Wait till RQM set
```

```
CROMEMCO CDOS Z80 ASSEMBLER version 02.15                    PAGE 0007
CP/M 1.4 BIOS for Teletek's FDC-II.

7C27  07          0308          RLCA
7C28  D2257C      0309          JP      NC,INFDC
7C2B  07          0310          RLCA                    ;Check DIO
7C2C  C9          0311          RET
                  0312 ;
7C2D  F5          0313 WRCMD    PUSH    AF
7C2E  CD257C      0314          CALL    INFDC
7C31  F1          0315          POP     AF
7C32  D371        0316          OUT     FDCDT,A
7C34  C9          0317          RET
                  0318 ;
7C35  C9          0319 INIT     RET             ;Initialize if necessary
                  0320 ;
7C36  4644432D    0321 SOMSG    DB      'FDC-II CP/M ',MEM/10+'0',MEM MOD 10 +'0'
      49492043
      502F4D20
      3332
7C44  4B205665    0322          DB      'K Version.',13,10
      7273696F
      6E2E0D0A
7C50  486F7720    0323          DM      'How many drives?
      6D616E79
      20647269
      7665733F
      A0
7C61  0D0A5365    0324 SHER     DM      13,10,'Seek/Home error on drive '
      656B2F48
      6F6D6520
      6572726F
      72206F6E
      20647269
      7665A0
7C7C  0D0A5761    0325 WBER     DM      13,10,'Warm boot error!'
      726D2062
      6F6F7420
      6572726F
      72A1
7C8E  44726976    0326 SDER     DM      'Drive '
      65A0
7C94  20697320    0327          DB      ' is not on line!',13,10
      6E6F7420
      6F6E206C
      696E6521
      0D0A
7CA6  5265626F    0328          DM      'Rebooting CP/M.'
      6F74696E
      67204350
      2F4DAE
                  0329 ;
7CB5  06000000    0330 FCDAT    DB      6,0,0,0,1,0,26,7,128    ;Set-up data for FDC
      01001A07
```

```
CROMEMCO CDOS Z80 ASSEMBLER version 02.15                    PAGE 0008
CP/M 1.4 BIOS for Teletek's FDC-II.

      80
                        0331 ;
7CBE  (0001)            0332 NDRV   DS    1          ;No. of drives
7CBF  (0002)            0333 DMA    DS    2          ;DMA address
7CC1  (0001)            0334 CHAR   DS    1          ;Holds a char
7CC2  (0001)            0335 DMARW  DS    1          ;DMA read/write
7CC3  (0009)            0336 CMD    DS    9          ;FDC command buffer
      (7CC4)            0337 DRV    EQU   CMD+1      ;Drive
      (7CC5)            0338 TRK    EQU   CMD+2      ;Track
      (7CC7)            0339 SECT   EQU   CMD+4      ;Sector
7CCC  (0007)            0340 STO    DS    7          ;FDC result phase status
                        0341 ;
7CD3  (0000)            0342        END

Errors                  0
```

```
CROMEMCO CDOS Z80 ASSEMBLER version 02.15                    PAGE 0001
Format Program for FDC-II

                        0002 ;FORMAT is a program that formats 8 inch diskettes in a
                        0003 ;IBM compatible form using Teletek's FDC-II.  It can format
                        0004 ;in either single or double density formats.
                        0005 ;It runs on any CP/M system.
                        0006 ;
                        0007 ;Copyright (C) 1979, Teletek Enterprises, Inc.
                        0008 ;
                        0009 ;Revision date: 11-27-79  Release 1.0
                        0010 ;
                        0011 ;Written by Aram Perez
                        0012 ;
     (F400)             0013 DMAB:    EQU     0F400H          ;DMA buffer
     (0064)             0014 DMA2:    EQU     64H             ; "  chan 2 addr
     (0065)             0015 DMA2L:   EQU     65H             ; "    "  2 length
     (0068)             0016 DMAM:    EQU     68H             ; "  mode
     (0070)             0017 FDCST:   EQU     70H             ;FDC status
     (0071)             0018 FDCDT:   EQU     71H             ; "  data
     (0073)             0019 FDCINT:  EQU     73H             ; "  interrupt
     (0002)             0020 PCH:     EQU     2               ;CP/M print char
     (0009)             0021 PRINT:   EQU     9               ; "     "   string
     (000A)             0022 RDBUFF:  EQU     10              ; "   read buffer
0000                    0023          ORG     100H
     (0100)             0024 STAK:    EQU     $               ;Set stack at 100H
0100 C30802             0025          JP      START
0103 436F7079           0026          DB      'Copyright (C) 1979, Teletek '
     72696768
     74202843
     29203139
     37392C20
     54656C65
     74656B20
011F E6E0               0027 STMODE:  AND     0E0H            ;Set mode
0121 32D101             0028          LD      (FMODE),A
0124 213D01             0029          LD      HL,MFM
0127 E640               0030          AND     40H             ;MFM?
0129 C22F01             0031          JP      NZ,STMU         ;Yes
012C 214101             0032          LD      HL,FM           ;No, FM
012F 11D601             0033 STMU:    LD      DE,FBPS
0132 0604               0034          LD      B,4
0134 7E                 0035 STM:     LD      A,(HL)          ;Set up N,EOT,GPL & DTL
0135 12                 0036          LD      (DE),A
0136 23                 0037          INC     HL
0137 13                 0038          INC     DE
0138 05                 0039          DEC     B
0139 C23401             0040          JP      NZ,STM
013C C9                 0041          RET
013D 011A0E00           0042 MFM:     DB      1,26,14,0
0141 001A0780           0043 FM:      DB      0,26,7,128
0145 32D201             0044 STHDR:   LD      (FHDR),A        ;Set head/drive
0148 E604               0045          AND     4
014A CA4F01             0046          JP      Z,SHD
```

CROMEMCO CDOS Z80 ASSEMBLER version 02.15 PAGE 0002
Format Program for FDC-II

```
014D  3E01        0047          LD      A,1
014F  32D401      0048 SHD:     LD      (FHD),A       ;Set head
0152  C9          0049          RET
0153  F5          0050 WRCMD:   PUSH    AF            ;Write command to FDC
0154  CD5B01      0051          CALL    INFDC
0157  F1          0052          POP     AF
0158  D371        0053          OUT     FDCDT,A
015A  C9          0054          RET
015B  DB70        0055 INFDC:   IN      A,FDCST       ;Input from FDC status
015D  07          0056          RLCA
015E  D25B01      0057          JP      NC,INFDC      ;Jp if no RQM
0161  07          0058          RLCA                  ;Set C with DIO
0162  C9          0059          RET
0163  3E07        0060 RECAL:   LD      A,7           ;Recalibrate
0165  CD5301      0061          CALL    WRCMD
0168  3AD201      0062          LD      A,(FHDR)
016B  CD5301      0063          CALL    WRCMD
016E  C38501      0064          JP      WTRLTS
0171  32D301      0065 SEEK:    LD      (FTRK),A      ;Set/seek a track
0174  3E0F        0066          LD      A,15
0176  CD5301      0067          CALL    WRCMD
0179  3AD201      0068          LD      A,(FHDR)
017C  CD5301      0069          CALL    WRCMD
017F  3AD301      0070          LD      A,(FTRK)
0182  CD5301      0071          CALL    WRCMD
0185  DB73        0072 WTRLTS:  IN      A,FDCINT      ;Wait for results
0187  07          0073          RLCA
0188  D28501      0074          JP      NC,WTRLTS     ;Jp if no interrupt
018B  11DA01      0075          LD      DE,STO
018E  CD5B01      0076          CALL    INFDC
0191  DA9E01      0077          JP      C,WTRL
0194  3E08        0078          LD      A,8           ;Do SENSE INTERRUPT STATUS
0196  D371        0079          OUT     FDCDT,A
0198  CD5B01      0080 WTRLT:   CALL    INFDC
019B  D2A501      0081          JP      NC,WTR
019E  DB71        0082 WTRL:    IN      A,FDCDT
01A0  12          0083          LD      (DE),A
01A1  13          0084          INC     DE
01A2  C39801      0085          JP      WTRLT
01A5  3ADA01      0086 WTR:     LD      A,(STO)       ;Check for errors
01A8  E6C0        0087          AND     0C0H
01AA  C9          0088          RET
01AB  C5          0089 READ:    PUSH    BC            ;Read from disk
01AC  D5          0090          PUSH    DE            ;DE= # of bytes to read
01AD  1B          0091          DEC     DE
01AE  7B          0092          LD      A,E
01AF  D365        0093          OUT     DMA2L,A       ;Set DMA length
01B1  7A          0094          LD      A,D
01B2  F640        0095          OR      40H
01B4  D365        0096          OUT     DMA2L,A
01B6  11D101      0097          LD      DE,FMODE
```

CROMEMCO CDOS Z80 ASSEMBLER version 02.15 PAGE 0003
Format Program for FDC-II

```
01B9  1A          0098          LD      A,(DE)          ;Get mode
01BA  13          0099          INC     DE
01BB  F606        0100          OR      6
01BD  CD5301      0101          CALL    WRCMD           ;Send READ command
01C0  0608        0102          LD      B,8
01C2  1A          0103 RDC:     LD      A,(DE)
01C3  13          0104          INC     DE
01C4  CD5301      0105          CALL    WRCMD
01C7  05          0106          DEC     B
01C8  C2C201      0107          JP      NZ,RDC
01CB  CD8501      0108          CALL    WTRLTS
01CE  D1          0109          POP     DE
01CF  C1          0110          POP     BC
01D0  C9          0111          RET
01D1  (0001)      0112 FMODE:   DS      1               ;Floppy mode
01D2  (0001)      0113 FHDR:    DS      1               ;   "    head/drive
01D3  (0001)      0114 FTRK:    DS      1               ;   "    track (C)
01D4  (0001)      0115 FHD:     DS      1               ;   "    head (H)
01D5  (0001)      0116 FSECT:   DS      1               ;   "    sector (R)
01D6  (0001)      0117 FBPS:    DS      1               ;   "    bytes/sector (N)
01D7  (0001)      0118 FEOT:    DS      1               ;   "    end of track
01D8  (0001)      0119 FGPL:    DS      1               ;   "    gap length
01D9  (0001)      0120 FDTL:    DS      1               ;   "    data length
01DA  (0007)      0121 STO:     DS      7               ;   "    STO,ST1,ST2,C,H,R,N
01E1  0E09        0122 PSTR:    LD      C,PRINT         ;Print string
01E3  C30500      0123          JP      5
01E6  CDE101      0124 INSTR:   CALL    PSTR            ;Inputs a string
01E9  116705      0125          LD      DE,BUFF
01EC  3E02        0126          LD      A,2
01EE  12          0127          LD      (DE),A
01EF  0E0A        0128          LD      C,RDBUFF
01F1  CD0500      0129          CALL    5
01F4  3E0A        0130          LD      A,10
01F6  CD0202      0131          CALL    OCH
01F9  3A6805      0132          LD      A,(BUFF+1)
01FC  B7          0133          OR      A
01FD  C8          0134          RET     Z
01FE  3A6905      0135          LD      A,(BUFF+2)
0201  C9          0136          RET
0202  0E02        0137 OCH:     LD      C,PCH           ;Print char
0204  5F          0138          LD      E,A
0205  C30500      0139          JP      5
0208  3E84        0140 START:   LD      A,84H           ;DMA auto load
020A  D368        0141          OUT     DMAM,A
020C  97          0142          SUB     A               ;Set DMA addr
020D  D364        0143          OUT     DMA2,A
020F  D364        0144          OUT     DMA2,A
0211  3C          0145          INC     A
0212  32D501      0146          LD      (FSECT),A
0215  11B603      0147          LD      DE,FMT
0218  CDE101      0148          CALL    PSTR
```

```
CROMEMCO CDOS Z80 ASSEMBLER version 02.15                    PAGE 0004
Format Program for FDC-II

021B  216105      0149          LD      HL,SC
021E  361A        0150          LD      (HL),26         ;SC, no. of sectors/track
0220  23          0151          INC     HL
0221  23          0152          INC     HL
0222  36E5        0153          LD      (HL),0E5H       ;D, filler byte
0224  11F703      0154 CHDR:    LD      DE,EDRV         ;Input drive
0227  CDE601      0155          CALL    INSTR
022A  E65F        0156          AND     5FH             ;Convert to uppper case
022C  32F904      0157          LD      (DRIVE),A
022F  D641        0158          SUB     'A'
0231  325F05      0159          LD      (DRV),A         ;Save drive
0234  FE00        0160          CP      0
0236  DA2402      0161          JP      C,CHDR
0239  FE04        0162          CP      4
023B  D22402      0163          JP      NC,CHDR
023E  111804      0164 INSD:    LD      DE,ESD          ;Input side (head)
0241  CDE601      0165          CALL    INSTR
0244  320105      0166          LD      (SIDE),A
0247  D630        0167          SUB     30H
0249  326605      0168          LD      (HEAD),A
024C  FE00        0169          CP      0
024E  DA3E02      0170          JP      C,INSD
0251  FE02        0171          CP      2
0253  D23E02      0172          JP      NC,INSD
0256  87          0173          ADD     A
0257  87          0174          ADD     A
0258  215F05      0175          LD      HL,DRV
025B  B6          0176          OR      (HL)
025C  77          0177          LD      (HL),A
025D  CD4501      0178          CALL    STHDR           ;Set head/drive
0260  310001      0179 POPT:    LD      SP,STAK         ;Set stack
0263  113204      0180          LD      DE,OPT
0266  CDE601      0181          CALL    INSTR           ;Input an option
0269  32EE04      0182          LD      (OPTION),A      ;Get & save option
026C  D630        0183          SUB     '0'
026E  3D          0184          DEC     A
026F  CA0000      0185          JP      Z,0             ;Return to CP/M
0272  3D          0186          DEC     A
0273  CA2402      0187          JP      Z,CHDR          ;Change head/drive
0276  3D          0188          DEC     A
0277  CA8502      0189          JP      Z,FS            ;Single density
027A  3D          0190          DEC     A
027B  CA9C02      0191          JP      Z,FD            ;Double density
027E  3D          0192          DEC     A
027F  CAB302      0193          JP      Z,FDS           ;Double density, trk 0 single
0282  C36002      0194          JP      POPT
0285  215E05      0195 FS:      LD      HL,CMD
0288  360D        0196          LD      (HL),0DH        ;Format single density
028A  23          0197          INC     HL
028B  23          0198          INC     HL
028C  3600        0199          LD      (HL),0          ;N
```

CROMEMCO CDOS Z80 ASSEMBLER version 02.15 PAGE 0005
Format Program for FDC-II

```
028E  23          0200          INC     HL
028F  23          0201          INC     HL
0290  361B        0202          LD      (HL),1BH        ;GPL
0292  23          0203          INC     HL
0293  23          0204          INC     HL
0294  364D        0205          LD      (HL),77         ;Last track to format+1
0296  CDE102      0206 FS1:     CALL    FORMAT
0299  C39602      0207          JP      FS1
029C  215E05      0208 FD:      LD      HL,CMD
029F  364D        0209          LD      (HL),4DH        ;Format double density
02A1  23          0210          INC     HL
02A2  23          0211          INC     HL
02A3  3601        0212          LD      (HL),1  ;N
02A5  23          0213          INC     HL
02A6  23          0214          INC     HL
02A7  3636        0215          LD      (HL),36H        ;GPL
02A9  23          0216          INC     HL
02AA  23          0217          INC     HL
02AB  364D        0218          LD      (HL),77         ;Last track to format+1
02AD  CDE102      0219 FD1:     CALL    FORMAT
02B0  C3AD02      0220          JP      FD1
02B3  215E05      0221 FDS:     LD      HL,CMD
02B6  360D        0222          LD      (HL),0DH        ;Format double density, with
02B8  23          0223          INC     HL
02B9  23          0224          INC     HL
02BA  3600        0225          LD      (HL),0  ;N      1st trk single density
02BC  23          0226          INC     HL
02BD  23          0227          INC     HL
02BE  361B        0228          LD      (HL),1BH        ;GPL
02C0  23          0229          INC     HL
02C1  23          0230          INC     HL
02C2  3601        0231          LD      (HL),1          ;Last track to format+1
02C4  CDE102      0232          CALL    FORMAT
02C7  DAB302      0233          JP      C,FDS           ;Jp if error
02CA  215E05      0234          LD      HL,CMD
02CD  364D        0235          LD      (HL),4DH        ;Format double density
02CF  23          0236          INC     HL
02D0  23          0237          INC     HL
02D1  3601        0238          LD      (HL),1  ;N
02D3  23          0239          INC     HL
02D4  23          0240          INC     HL
02D5  3636        0241          LD      (HL),36H        ;GPL
02D7  23          0242          INC     HL
02D8  23          0243          INC     HL
02D9  364D        0244          LD      (HL),77         ;Last track to format+1
02DB  CD0003      0245          CALL    FRM
02DE  C3B302      0246          JP      FDS
02E1  11D204      0247 FORMAT:  LD      DE,RDY          ;First wait till user ready
02E4  CDE601      0248          CALL    INSTR
02E7  F620        0249          OR      20H             ;Convert to lower case
02E9  FE79        0250          CP      'y'
```

CROMEMCO CDOS Z80 ASSEMBLER version 02.15 PAGE 0006
Format Program for FDC-II

```
02EB C26002      0251          JP      NZ,POPT         ;User is not ready
02EE CD6301      0252 FORM:    CALL    RECAL           ;First recalibrate
02F1 CA0003      0253          JP      Z,FRM
02F4 0E0B        0254          LD      C,11
02F6 CD0500      0255          CALL    5               ;Check console status
02F9 0F          0256          RRCA                    ;Char ready?
02FA DA6002      0257          JP      C,POPT          ;Yes
02FD C3EE02      0258          JP      FORM            ;No, continue till recalibrated
0300 326505      0259 FRM:     LD      (TRK),A         ;Save track
0303 CD7101      0260          CALL    SEEK
0306 CA1203      0261          JP      Z,FRM1
0309 110B05      0262          LD      DE,FERR         ;Floppy disk error
030C CDE101      0263          CALL    PSTR
030F C36002      0264          JP      POPT
0312 3E02        0265 FRM1:    LD      A,2             ;Two retrys max
0314 326B05      0266 FRM2:    LD      (FTRY),A
0317 3A6005      0267          LD      A,(N)           ;Get N
031A 2A6505      0268          LD      HL,(TRK)        ;Get trk (L) & head (H)
031D 1100F4      0269          LD      DE,DMAB
0320 EB          0270          EX      DE,HL
0321 01011A      0271          LD      BC,1A01H
0324 73          0272 FRM3:    LD      (HL),E          ;C
0325 23          0273          INC     HL
0326 72          0274          LD      (HL),D          ;H
0327 23          0275          INC     HL
0328 71          0276          LD      (HL),C          ;R
0329 23          0277          INC     HL
032A 77          0278          LD      (HL),A          ;N
032B 23          0279          INC     HL
032C 0C          0280          INC     C
032D 05          0281          DEC     B
032E C22403      0282          JP      NZ,FRM3
0331 3E67        0283          LD      A,[4*26]-1
0333 D365        0284          OUT     DMA2L,A         ;Set DMA length
0335 3E80        0285          LD      A,80H
0337 D365        0286          OUT     DMA2L,A         ;Set DMA to write
0339 7C          0287          LD      A,H
033A 215E05      0288          LD      HL,CMD
033D 0606        0289          LD      B,6
033F 7E          0290 FRM4:    LD      A,(HL)          ;Send command, head/drive,
0340 23          0291          INC     HL              ;N, SC, GPL and D
0341 CD5301      0292          CALL    WRCMD
0344 05          0293          DEC     B
0345 C23F03      0294          JP      NZ,FRM4
0348 CD8501      0295          CALL    WTRLTS
034B 3A5E05      0296          LD      A,(CMD)
034E CD1F01      0297          CALL    STMODE          ;Set read mode
0351 21000D      0298          LD      HL,26*128
0354 3AD601      0299          LD      A,(FBPS)
0357 B7          0300          OR      A
0358 CA5C03      0301          JP      Z,FRM5
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035B  29          0302          ADD     HL,HL
035C  EB          0303 FRM5:    EX      DE,HL           ;DE= bytes/track
035D  3E05        0304          LD      A,5             ;Try reading 5 times
035F  326C05      0305 VERF:    LD      (RTRY),A
0362  CDAB01      0306          CALL    READ
0365  C27403      0307          JP      NZ,VERR         ;Jp if error
0368  3A6505      0308          LD      A,(TRK)
036B  3C          0309          INC     A
036C  216405      0310          LD      HL,LTRK
036F  BE          0311          CP      (HL)            ;Last track?
0370  C20003      0312          JP      NZ,FRM          ;No
0373  C9          0313          RET
0374  3A6C05      0314 VERR:    LD      A,(RTRY)
0377  3D          0315          DEC     A
0378  C25F03      0316          JP      NZ,VERF         ;Try read again
037B  3A6B05      0317          LD      A,(FTRY)
037E  3D          0318          DEC     A
037F  C21403      0319          JP      NZ,FRM2         ;Try format again
0382  112005      0320          LD      DE,BAD          ;Bad sector
0385  CDE101      0321          CALL    PSTR
0388  3ADF01      0322          LD      A,(STO+5)
038B  CDA203      0323          CALL    PHX             ;Print bad sector no
038E  112805      0324          LD      DE,BAD1
0391  CDE101      0325          CALL    PSTR
0394  3A6505      0326          LD      A,(TRK)
0397  CDA203      0327          CALL    PHX             ;Print track
039A  113305      0328          LD      DE,BAD2
039D  CDE101      0329          CALL    PSTR
03A0  37          0330          SCF                     ;Set error flag
03A1  C9          0331          RET
03A2  F5          0332 PHX:     PUSH    AF              ;Print A in hex
03A3  1F          0333          RRA
03A4  1F          0334          RRA
03A5  1F          0335          RRA
03A6  1F          0336          RRA
03A7  CDAB03      0337          CALL    PHX1
03AA  F1          0338          POP     AF
03AB  E60F        0339 PHX1:    AND     0FH
03AD  C690        0340          ADD     90H
03AF  27          0341          DAA
03B0  CE40        0342          ADC     40H
03B2  27          0343          DAA
03B3  C30202      0344          JP      0CH
03B6  0D0A5465    0345 FMT:     DB      13,10,'Teletek''','s FDC-II Format Program'
      6C657465
      6B277320
      4644432D
      49492046
      6F726D61
      74205072
      6F677261
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Format Program for FDC-II

      6D
03D7  205B5265      0346          DB      ' [Release 1.0]'
      6C656173
      6520312E
      305D
03E5  0D0A4350      0347          DB      13,10,'CP/M Version.',13,10,'$'
      2F4D2056
      65727369
      6F6E2E0D
      0A24
03F7  456E7465      0348 EDRV:    DB      'Enter the drive (A, B, C or D)? $'
      72207468
      65206472
      69766520
      28412C20
      422C2043
      206F7220
      44293F20
      24
0418  456E7465      0349 ESD:     DB      'Enter the side (0 or 1)? $'
      72207468
      65207369
      64652028
      30206F72
      2031293F
      2024
0432  0D0A4F70      0350 OPT:     DB      13,10,'Options for FORMAT:',13,10
      74696F6E
      7320666F
      7220464F
      524D4154
      3A0D0A
0449  312E2045      0351          DB      '1. Exit',13,10,'2. Change drive and/or side'
      7869740D
      0A322E20
      4368616E
      67652064
      72697665
      20616E64
      2F6F7220
      73696465
046D  0D0A332E      0352          DB      13,10,'3. Single density',13,10
      2053696E
      676C6520
      64656E73
      6974790D
      0A
0482  342E2044      0353          DB      '4. Double density',13,10
      6F75626C
      65206465
      6E736974
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CROMEMCO CDOS Z80 ASSEMBLER version 02.15                    PAGE 0009
Format Program for FDC-II

      790D0A
0495  352E2044     0354          DB      '5. Double density (track 0 single'
      6F75626C
      65206465
      6E736974
      79202874
      7261636B
      20302073
      696E676C
      65
04B6  2064656E     0355          DB      ' density)',13,10,'Enter option #: $'
      73697479
      290D0A45
      6E746572
      206F7074
      696F6E20
      233A2024
04D2  52656164     0356 RDY:     DB      'Ready to format with option '
      7920746F
      20666F72
      6D617420
      77697468
      206F7074
      696F6E20
04EE  (0001)       0357 OPTION:  DS      1               ;Option
04EF  206F6E20     0358          DB      ' on drive '
      64726976
      6520
04F9  (0001)       0359 DRIVE:   DS      1               ;Drive
04FA  2C207369     0360          DB      ', side '
      646520
0501  (0001)       0361 SIDE:    DS      1               ;Side (head)
0502  2028592F     0362          DB      ' (Y/N)? $'
      4E293F20
      24
050B  0D0A466C     0363 FERR:    DB      13,10,'Floppy seek error!$'
      6F707079
      20736565
      6B206572
      726F7221
      24
0520  53656374     0364 BAD:     DB      'Sector $'
      6F722024
0528  206F6E20     0365 BAD1:    DB      ' on track $'
      74726163
      6B2024
0533  20697320     0366 BAD2:    DB      ' is bad.',13,10,'Try again or '
      6261642E
      0D0A5472
      79206167
      61696E20
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CROMEMCO CDOS Z80 ASSEMBLER version 02.15                    PAGE 0010
Format Program for FDC-II

      6F7220
054A  616E6F74     0367          DB     'another diskette.',13,10,'$'
      68657220
      6469736B
      65747465
      2E0D0A24
                   0368 ;
                   0369 ;
055E  (0001)       0370 CMD:     DS     1
055F  (0001)       0371 DRV:     DS     1
0560  (0001)       0372 N:       DS     1
0561  (0001)       0373 SC:      DS     1
0562  (0001)       0374 GPL:     DS     1
0563  (0001)       0375 FB:      DS     1
0564  (0001)       0376 LTRK:    DS     1
0565  (0001)       0377 TRK:     DS     1
0566  (0001)       0378 HEAD:    DS     1
0567  (0004)       0379 BUFF:    DS     4
056B  (0001)       0380 FTRY:    DS     1              ;Format retrys
056C  (0001)       0381 RTRY:    DS     1              ;Read retrys
056D  (0000)       0382          END

Errors             0
```