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CP/M MACRO ASSEM 2.0    #001    mds cold start loader at 3000h

                        TITLE   'mds cold start loader at 3000h'
                ;
                ;       MDS-800 COLD START LOADER FOR CP/M 2.0
                ;
                ;       VERSION 2.0 AUGUST, 1979
                ;
0000 =          FALSE   EQU     0
FFFF =          TRUE    EQU     NOT FALSE
0000 =          TESTING EQU     FALSE   ;IF TRUE, THEN GO TO MON80 ON ERRORS
                ;
                        IF      TESTING
                BIAS    EQU     03400H
                        ENDIF
                        IF      NOT TESTING
0000 =          BIAS    EQU     0000H
                        ENDIF
0000 =          CPMB    EQU     BIAS            ;BASE OF DOS LOAD
0806 =          BDOS    EQU     806H+BIAS       ;ENTRY TO DOS FOR CALLS
1880 =          BDOSE   EQU     1880H+BIAS      ;END OF DOS LOAD
1600 =          BOOT    EQU     1600H+BIAS      ;COLD START ENTRY POINT
1603 =          RBOOT   EQU     BOOT+3          ;WARM START ENTRY POINT
                ;
3000                    ORG     03000H  ;LOADED DOWN FROM HARDWARE BOOT AT 3000H
                ;
1880 =          BDOSL   EQU     BDOSE-CPMB
0002 =          NTRKS   EQU     2       ;NUMBER OF TRACKS TO READ
0031 =          BDOSS   EQU     BDOSL/128       ;NUMBER OF SECTORS IN DOS
0019 =          BDOS0   EQU     25      ;NUMBER OF BDOS SECTORS ON TRACK 0
0018 =          BDOS1   EQU     BDOSS-BDOS0     ;NUMBER OF SECTORS ON TRACK 1
                ;
F800 =          MON80   EQU     0F800H  ;INTEL MONITOR BASE
FF0F =          RMON80  EQU     0FF0FH  ;RESTART LOCATION FOR MON80
0078 =          BASE    EQU     078H    ;'BASE' USED BY CONTROLLER
0079 =          RTYPE   EQU     BASE+1  ;RESULT TYPE
007B =          RBYTE   EQU     BASE+3  ;RESULT BYTE
007F =          RESET   EQU     BASE+7  ;RESET CONTROLLER
                ;
0078 =          DSTAT   EQU     BASE    ;DISK STATUS PORT
0079 =          ILOW    EQU     BASE+1  ;LOW IOPB ADDRESS
007A =          IHIGH   EQU     BASE+2  ;HIGH IOPB ADDRESS
00FF =          BSW     EQU     0FFH    ;BOOT SWITCH
0003 =          RECAL   EQU     3H      ;RECALIBRATE SELECTED DRIVE
0004 =          READF   EQU     4H      ;DISK READ FUNCTION
0100 =          STACK   EQU     100H    ;USE END OF BOOT FOR STACK
                ;
                RSTART:
3000 310001             LXI     SP,STACK;IN CASE OF CALL TO MON80
                ;       CLEAR DISK STATUS
3003 DB79               IN      RTYPE
3005 DB7B               IN      RBYTE
                ;       CHECK IF BOOT SWITCH IS OFF
                COLDSTART:
3007 DBFF               IN      BSW
3009 E602               ANI     02H     ;SWITCH ON?
300B C20730             JNZ     COLDSTART
                ;       CLEAR THE CONTROLLER
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CP/M MACRO ASSEM 2.0    #002    mds cold start loader at 3000h

 300E D37F              OUT     RESET   ;LOGIC CLEARED
                ;
                ;
 3010 0602              MVI     B,NTRKS ;NUMBER OF TRACKS TO READ
 3012 214230            LXI     H,IOPB0
                ;
                START:
                ;
                ;       READ FIRST/NEXT TRACK INTO CPMB
 3015 7D                MOV     A,L
 3016 D379              OUT     ILOW
 3018 7C                MOV     A,H
 3019 D37A              OUT     IHIGH
 301B DB78      WAIT0:  IN      DSTAT
 301D E604              ANI     4
 301F CA1B30            JZ      WAIT0
                ;
                ;       CHECK DISK STATUS
 3022 DB79              IN      RTYPE
 3024 E603              ANI     11B
 3026 FE02              CPI     2
                ;
                        IF      TESTING
                        CNC     RMON80  ;GO TO MONITOR IF 11 OR 10
                        ENDIF
                        IF      NOT TESTING
 3028 D20030            JNC     RSTART  ;RETRY THE LOAD
                        ENDIF
                ;
 302B DB7B              IN      RBYTE   ;I/O COMPLETE, CHECK STATUS
                ;       IF NOT READY, THEN GO TO MON80
 302D 17                RAL
 302E DC0FFF            CC      RMON80  ;NOT READY BIT SET
 3031 1F                RAR             ;RESTORE
 3032 E61E              ANI     11110B  ;OVERRUN/ADDR ERR/SEEK/CRC/XXXX
                ;
                        IF      TESTING
                        CNZ     RMON80  ;GO TO MONITOR
                        ENDIF
                        IF      NOT TESTING
 3034 C20030            JNZ     RSTART  ;RETRY THE LOAD
                        ENDIF
                ;
                ;
 3037 110700            LXI     D,IOPBL ;LENGTH OF IOPB
 303A 19                DAD     D       ;ADDRESSING NEXT IOPB
 303B 05                DCR     B       ;COUNT DOWN TRACKS
 303C C21530            JNZ     START
                ;
                ;
                ;       JMP TO BOOT TO PRINT INITIAL MESSAGE, AND SET UP JMPS
 303F C30016            JMP     BOOT
                ;
                ;       PARAMETER BLOCKS
 3042 80        IOPB0:  DB      80H     ;IOCW, NO UPDATE
 3043 04                DB      READF   ;READ FUNCTION
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CP/M MACRO ASSEM 2.0     #003    mds cold start loader at 3000h

 3044 19                 DB      BDOS0   ;# SECTORS TO READ ON TRACK 0
 3045 00                 DB      0       ;TRACK 0
 3046 02                 DB      2       ;START WITH SECTOR 2 ON TRACK 0
 3047 0000               DW      CPMB    ;START AT BASE OF BDOS
 0007 =          IOPBL   EQU     $-IOPB0
                 ;
 3049 80         IOPB1:  DB      80H
 304A 04                 DB      READF
 304B 18                 DB      BDOS1   ;SECTORS TO READ ON TRACK 1
 304C 01                 DB      1       ;TRACK 1
 304D 01                 DB      1       ;SECTOR 1
 304E 800C               DW      CPMB+BDOS0*128  ;BASE OF SECOND READ
                 ;
 3050                    END
```

0078 BASE	0806 BDOS	0019 BDOS0	0018 BDOS1	1880 BDOSE
1880 BDOSL	0031 BDOSS	0000 BIAS	1600 BOOT	00FF BSW
3007 COLDSTART	0000 CPMB	0078 DSTAT	0000 FALSE	007A IHIGH
0079 ILOW	3042 IOPB0	3049 IOPB1	0007 IOPBL	F800 MON80
0002 NTRKS	1603 RBOOT	007B RBYTE	0004 READF	0003 RECAL
007F RESET	FF0F RMON80	3000 RSTART	0079 RTYPE	0100 STACK
3015 START	0000 TESTING	FFFF TRUE	301B WAIT0	