

DATA.MAC V1.0

SUBTTL CP/M PLUS Data Equates
PAGE

VER DEF1 4 ;Version 4 module
.Z80

;Revision 2.2 Allowed for user selection of drive size within a Winchester
;Revision 3.0 Allowed for systems with terminals and no VFC/IVC
;Revision 3.1 Allowed for user selection of directory allocation
;Revision 3.2 Separate SHD routines, smaller keyboard buffer
;Revision 3.3 Alternate IVC/SVC permitted with MAP CPU
;Revision 3.4 Winchester seen as 1 track per head
;Revision 4.00 Radical rewrite to permit external assignment

VNMAC MACRO
DEFB "4.00"
ENDM

VERNUM MACRO
VNMAC
DEFB " 05/02/85"
ENDM

T EQU -1 ;T(true)
F EQU NOT T ;F(false)

;These equates are less likely to change
;Equates likely to change are entered in SYSTEM.MAC

* DISK EQUATES *

;Drive and format density
DDEN EQU 0 ;Double density
SDEN EQU 1 ;Single density
;Drive and format type
TP96 EQU 0 ;96tpi drive or format
TP48 EQU 1 ;48tpi drive/format
TP8 EQU 2 ;8" drive/format
;Side handling
TRKCRY EQU 0 ;Tracks carry on from track 0 side 2
TRKREV EQU 1 ;Tracks are reversed on side 2
SSID EQU 2 ;Single sided
SECCYL EQU 3 ;Sectors continue on side 2 (starting again at 0)
;
TRKCYL EQU 4 ;Track Cylindrical, (Even side 1 Odd side 2)

SPSK EQU 1 ;Special sector skew (defined by macro)-

;Winchester drive assignment
R201 EQU 1 ;Rodime 201
MS3 EQU 2 ;Mini Scribe 3
R103 EQU 3 ;Rodime 103
R204 EQU 4 ;Rodime 204
R202 EQU 5 ;Rodime 202
B6188 EQU 6 ;BASF 6188 (15Mbyte)
ST212 EQU 7 ;Seagate ST212
B6185 EQU 8 ;BASF 6185 (27Mbyte)
ATAS46 EQU 9 ;ATASI 3046
NEXTW EQU 10 ;Next available assignment Winchester

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;groupy drive assignment
STNDRD EQU 1 ;Standard 96 tpi DS drives
MICROP EQU 2 ;Micropolis
PERTEC EQU 3 ;Pertec FD250
DR7200 EQU 4 ;DRE 7200 8"
CAN96 EQU 5 ;Canon 1/3rd height 96tpi
CAN48 EQU 6 ;Canon 1/3rd height 48tpi
NEXTF EQU 7 ;Next available assignment Drive

;Format assignment, These must be the same as those in FORMATS.DAT
NULLF EQU 255 ;Empty format for assignment
MAP96D EQU 1 ;MAP 96tpi DSDD
MAP96S EQU 2 ;MAP 96tpi SSDD
MAP48 EQU 3 ;MAP 48tpi DSDD
IBMS EQU 4 ;Standard 8" SSSD
NASS EQU 5 ;Nascom 96tpi SSDD
SBRAIN EQU 7 ;Superbrain QD 48tpi DSDD (35Tk)
EZPRIN EQU 8 ;Easi-Print 96tpi DSDD
GEMSD EQU 11 ;Gemini 48tpi DSSD
BBC80 EQU 24 ;BBC CP/M 96tpi DSSD

;BBC special skew macro
SPK24 MACRO
SP24: DEFB 0,1,4,5,8,9,2,3,6,7
ENDM

TAND8 EQU 76 ;TANDY 8" DSDD

;Winchester data
;Rodime 201
CYL1 EQU 320 ;Cylinders
RWC1 EQU 132 ;Reduced write cylinder
HDS1 EQU 2 ;Heads
WPC1 EQU 0 ;Write pre-comp cylinder

;Miniscribe 3 Seagate ST225
CYL2 EQU 612 ;Cylinders
RWC2 EQU 612 ;Reduced write cylinder
HDS2 EQU 24 ;Heads
WPC2 EQU 0 ;Write pre-comp cylinder

;Rodime 103
CYL3 EQU 192 ;Cylinders
RWC3 EQU 96 ;Reduced write cylinder
HDS3 EQU 6 ;Heads
WPC3 EQU 0 ;Write pre-comp cylinder

;Rodime 204
CYL4 EQU 320 ;Cylinders
RWC4 EQU 132 ;Reduced write cylinder
HDS4 EQU 8 ;Heads
WPC4 EQU 0 ;Write pre-comp cylinder

;Rodime 202
CYL5 EQU 320 ;Cylinders
RWC5 EQU 132 ;Reduced write cylinder
HDS5 EQU 4 ;Heads
WPC5 EQU 0 ;Write pre-comp cylinder

;BASF 6188
CYL6 EQU 360 ;Cylinders
RWC6 EQU 256 ;Reduced write cylinder
HDS6 EQU 4 ;Heads
WPC6 EQU 128 ;Write pre-comp cylinder

;Seagate ST212
CYL7 EQU 306 ;Cylinders
RWC7 EQU 306 ;Reduced write cylinder (not supported)
HDS7 EQU 4 ;Heads
WPC7 EQU 128 ;Write pre-comp cylinder

;BASF 6185
CYL8 EQU 440 ;Cylinders
RWC8 EQU 256 ;Reduced write cylinder
HDS8 EQU 6 ;Heads
WPC8 EQU 128 ;Write pre-comp cylinder

;ATASI 3046
CYL9 EQU 645 ;Cylinders
RWC9 EQU 645/2 ;Reduced write cylinder
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CYL7 EQU 306 ;Cylinders
RWC7 EQU 306 ;Reduced write cylinder (not supported)
HDS7 EQU 4 ;Heads
WPC7 EQU 128 ;Write pre-comp cylinder

;BASF 6185
CYL8 EQU 440 ;Cylinders
RWC8 EQU 256 ;Reduced write cylinder
HDS8 EQU 6 ;Heads
WPC8 EQU 128 ;Write pre-comp cylinder

;ATASI 3046
CYL9 EQU 645 ;Cylinders
RWC9 EQU 645/2 ;Reduced write cylinder
HDS9 EQU 7 ;Heads
WPC9 EQU 0 ;Write pre-comp cylinder

;Drive parameters
;All purpose 96 tpi DS drive parameters, linked headload with motor
;Includes TEAC FD55, TOSHIBA, CANNON, BASF
STP1 EQU 3 ;Step rate
;HDL1 EQU 0 ;Head load timing
STL1 EQU 20 ;Track settling time
;DTY1 EQU TP96 ;96tpi drive

;Micropolis
STP2 EQU 10 ;Step rate
;HDL2 EQU 0 ;Head load timing
STL2 EQU 10 ;Track settling time
;DTY2 EQU TP96 ;96tpi drive

;Pertec
STP3 EQU 25 ;Step rate
HDL3 EQU 35 ;Head load timing
STL3 EQU 10 ;Track settling time
DTY3 EQU TP48 ;48tpi drive

;DRE 7200 8"
STP4 EQU 6 ;Step rate
HDL4 EQU 35 ;Head load timing
STL4 EQU 14 ;Track settling time
DTY4 EQU TP8 ;8" drive

;Canon 1/3rd height drives 96 tpi, not linked head load with motor
STP5 EQU 3 ;Step rate
HDL5 EQU 20 ;Head load timing
STL5 EQU 10 ;Track settling time
;DTY5 EQU TP96 ;96tpi drive

;Canon 1/3rd height drives 48 tpi
STP6 EQU 6 ;Step rate
HDL6 EQU 20 ;Head load timing
STL6 EQU 10 ;Track settling time
DTY6 EQU TP48 ;48tpi drive

;First Format data macro
FDAT1 MACRO @FN,FY_,DN_,SC_,BK_,DL_,MT_,OF_,MS_,
FTY&@FN EQU FY_
DEN&@FN EQU DN_
SEC&@FN EQU SC_
BLK&@FN EQU BK_
DAL&@FN EQU DL_
TPS&@FN EQU MT_
OFF&@FN EQU OF_
SPS&@FN EQU MS_
ENDM

;Second Format data macro
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CYL7 EQU 306 ;Cylinders
RWC7 EQU 306 ;Reduced write cylinder (not supported)
HDS7 EQU 4 ;Heads
WPC7 EQU 128 ;Write pre-comp cylinder

;BASF 6185
CYL8 EQU 440 ;Cylinders
RWC8 EQU 256 ;Reduced write cylinder
HDS8 EQU 6 ;Heads
WPC8 EQU 128 ;Write pre-comp cylinder

;ATASI 3046
CYL9 EQU 645 ;Cylinders
RWC9 EQU 645/2 ;Reduced write cylinder
HDS9 EQU 7 ;Heads
WPC9 EQU 0 ;Write pre-comp cylinder

;Drive parameters
;All purpose 96 tpi DS drive parameters, linked headload with motor
;Includes TEAC FD55, TOSHIBA, CANNON, BASF
STP1 EQU 3 ;Step rate
;HDL1 EQU 0 ;Head load timing
STL1 EQU 20 ;Track settling time
;DTY1 EQU TP96 ;96tpi drive

;Micropolis
STP2 EQU 10 ;Step rate
;HDL2 EQU 0 ;Head load timing
STL2 EQU 10 ;Track settling time
;DTY2 EQU TP96 ;96tpi drive

;Pertec
STP3 EQU 25 ;Step rate
HDL3 EQU 35 ;Head load timing
STL3 EQU 10 ;Track settling time
DTY3 EQU TP48 ;48tpi drive

;DRE 7200 8"
STP4 EQU 6 ;Step rate
HDL4 EQU 35 ;Head load timing
STL4 EQU 14 ;Track settling time
DTY4 EQU TP8 ;8" drive

;Canon 1/3rd height drives 96 tpi, not linked head load with motor
STP5 EQU 3 ;Step rate
HDL5 EQU 20 ;Head load timing
STL5 EQU 10 ;Track settling time
;DTY5 EQU TP96 ;96tpi drive

;Canon 1/3rd height drives 48 tpi
STP6 EQU 6 ;Step rate
HDL6 EQU 20 ;Head load timing
STL6 EQU 10 ;Track settling time
DTY6 EQU TP48 ;48tpi drive

;First Format data macro
FDAT1 MACRO @FN,FY_,DN_,SC_,BK_,DL_,MT_,OF_,MS_
FTY&@FN EQU FY_
DEN&@FN EQU DN_
SEC&@FN EQU SC_
BLK&@FN EQU BK_
DAL&@FN EQU DL_
TPS&@FN EQU MT_
OFF&@FN EQU OF_
SPS&@FN EQU MS_
ENDM

;Second Format data macro
FDAT2 MACRO @FN,UL_,EM_,CS_,CT_,SW_,SF_,DT_,BF_,SY_,DM_,TK_
IF UL_ NE 0
UL&@FN EQU UL_
ENDIF
IF EM_
EM&@FN EQU EM_
ENDIF
IF CS_ NE 0
CS&@FN EQU CS_
ENDIF
IF CT_ NE 0
CT&@FN EQU CT_
ENDIF
IF SW_ NE 0
SW&@FN EQU SW_
ENDIF

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;VAL EQU UL_ ;CS_,EXM_,CGS_,SKW_,SOF_,INV_,BSF_,SCY_,DDM_
IF UL_ NE 0
VAL&@FN EQU UL_
ENDIF
IF EM_
EXM&@FN EQU EM_
ENDIF
IF CS_ NE 0
CGS&@FN EQU CS_
ENDIF
IF CT_ NE 0
CGT&@FN EQU CT_
ENDIF
IF SW_ NE 0
SKW&@FN EQU SW_
ENDIF
IF SF_
SOF&@FN EQU SF_
ENDIF
IF DT_
INV&@FN EQU DT_
ENDIF
IF BF_
BSF&@FN EQU BF_
ENDIF
IF SY_
SCY&@FN EQU SY_
ENDIF
IF DM_
DDM&@FN EQU DM_
ENDIF
;;Logical Tracks
IF (CS_ EQ SECCYL) OR (CS_ EQ SSID)
MXT&@FN EQU TPS&@FN
ELSE
MXT&@FN EQU TPS&@FN*2
ENDIF
;;Logical sectors
IF (CS_ EQ SECCYL)
MXS&@FN EQU SPS&@FN*2
ELSE
MXS&@FN EQU SPS&@FN
ENDIF

ENDM

;Null format, NULLF
;This format is designed to provide :-
;700 allocation blocks
;512 directory entries
;Data and Directory buffers for 1024 byte sectors
;Skew tables for 50 sectors per track (Allocated internally)
FN DEFL NULLF
; _FTY,_DEN,_SEC,__BLK,DAL,TPS,OFF,SPS
FDAT1 %FN, 0, 0, 1024, 2048, 8, 140, 0, 10
; UAL,EXM,___CGS,CGT, SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN, 0, F, SSID, 0, 0, F, F, F, F, F, F

;MAP 80 96tpi DSDD
FN DEFL MAP96D
; _FTY,_DEN,_SEC,__BLK,DAL,TPS,OFF,SPS
FDAT1 %FN,TP96,DDEN, 512, 4096, 1, 80, 2, 10
; UAL,EXM,___CGS,CGT, SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN, 0, F,TRKCRY, 0, 0, F, F, F, F, F, F

;MAP 80 96tpi SSDD
FN DEFL MAP96S
; _FTY,_DEN,_SEC,__BLK,DAL,TPS,OFF,SPS
FDAT1 %FN,TP96,DDEN, 512, 4096, 1, 80, 2, 10
; UAL,EXM,___CGS,CGT, SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN, 0, F, SSID, 0, 0, F, F, F, F, F, F

```

;FDAT1 %FN,TP96,DDEN,512,4096,1,80,2,10
UAL,EXM,CGS,CGT,SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN,0,F,TRKCRY,0,0,F,F,F,F,F

;MAP 80 96tpi SSDD

FN DEFL MAP96S

_FTY,_DEN,_SEC,_BLK,DAL,TPS,OFF,SPS
FDAT1 %FN,TP96,DDEN,512,4096,1,80,2,10
UAL,EXM,CGS,CGT,SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN,0,F,SSID,0,0,F,F,F,F,F

;MAP 80 48tpi DSDD

FN DEFL MAP48

_FTY,_DEN,_SEC,_BLK,DAL,TPS,OFF,SPS
FDAT1 %FN,TP48,DDEN,512,2048,2,35,1,10
UAL,EXM,CGS,CGT,SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN,0,F,SECCYL,0,0,F,F,F,F,F

;IBM 3740 8" SSSD

FN DEFL IBMS

_FTY,_DEN,_SEC,_BLK,DAL,TPS,OFF,SPS
FDAT1 %FN,TP8,SDEN,128,1024,2,77,2,26
UAL,EXM,CGS,CGT,SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN,0,T,SSID,0,6,T,F,F,F,F

;NASCOM 96TPI SSDD

FN DEFL NASS

_FTY,_DEN,_SEC,_BLK,DAL,TPS,OFF,SPS
FDAT1 %FN,TP96,DDEN,512,2048,2,77,2,10
UAL,EXM,CGS,CGT,SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN,0,F,SSID,0,0,T,F,F,F,F

;SUPERBRAIN 48tpi DSDD (35TK)

FN DEFL SBRAIN

_FTY,_DEN,_SEC,_BLK,DAL,TPS,OFF,SPS
FDAT1 %FN,TP48,DDEN,512,2048,1,35,2,10
UAL,EXM,CGS,CGT,SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN,0,F,TRKCRY,0,2,T,T,F,F,F

;EASI-PRINT 96TPI DSDD

FN DEFL EZPRIN

_FTY,_DEN,_SEC,_BLK,DAL,TPS,OFF,SPS
FDAT1 %FN,TP96,DDEN,512,2048,6,80,2,10
UAL,EXM,CGS,CGT,SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN,0,F,TRKCRY,0,0,F,F,F,F

;Gemini/Henlec 48tpi DSSD

FN DEFL GEMSD

_FTY,_DEN,_SEC,_BLK,DAL,TPS,OFF,SPS
FDAT1 %FN,TP48,SDEN,128,1024,2,35,3,18
UAL,EXM,CGS,CGT,SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN,0,F,TRKCRY,0,4,T,F,F,F,F

;BBC CP/M 96tpi DSSD

FN DEFL BBC80

_FTY,_DEN,_SEC,_BLK,DAL,TPS,OFF,SPS
FDAT1 %FN,TP96,SDEN,256,2048,2,80,3,10
UAL,EXM,CGS,CGT,SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN,0,F,TRKREV,0,SPSK,F,F,T,F,F

;TANDY 8" DSSD

FN DEFL TAND8

_FTY,_DEN,_SEC,_BLK,DAL,TPS,OFF,SPS
FDAT1 %FN,TP8,DDEN,1024,2048,3,77,2,8
UAL,EXM,CGS,CGT,SKW,SOF,INV,BSF,SCY,DDM
FDAT2 %FN,0,F,TRKCRY,0,3,T,F,F,F

SUBTTL Utility Macros

PAGE

```
*          ORACLE MACROS      *
*****  
  
;Make an address label for current location from param 1 & 2  
MAKLOC MACRO B,@X1  
B@X1:  
    ENDM  
  
;Make a label called param 1&2 from 3&4  
MAKLAB MACRO B1,@X1,B2,@X2  
B1@X1 DEFL B2@X2  
ENDM  
  
;Make label called param 1 from 2&3&4  
M3LAB MACRO LBL,B,@X1,@X2  
LBL DEFL B@X1&@X2  
ENDM  
  
;Make a label called param 1 from 2&3  
MLAB1 MACRO LBL,B,@X  
IFDEF B@X  
LBL DEFL B@X  
ELSE  
LBL DEFL 0  
ENDIF  
ENDM  
  
;Make 2 labels called param 1 from 2&3, and param 4 from 5&6  
MLAB2 MACRO LBL1,B1,@X1,LBL2,B2,@X2  
IFDEF B1@X1  
LBL1 DEFL B1@X1  
ELSE  
LBL1 DEFL 0  
ENDIF  
IFDEF B2@X2  
LBL2 DEFL B2@X2  
ELSE  
LBL2 DEFL 0  
ENDIF  
ENDM  
  
;Display a selected label during assembly  
SHOW MACRO MESSG,LAB,RAD  
.RADIX RAD  
PRSIZE MESSG,%LAB,RAD  
.RADIX 10  
ENDM  
  
DEC EQU 10  
HEX EQU 16  
  
PRSIZE MACRO MESSAG,LABEL,RADX  
IF2  
.PRINTX " &MESSAG LABEL RADX "  
ENDIF  
ENDM  
  
;Test for multi macro expansion, return FIRST T if first call  
MULTI MACRO X,@X,@Y  
FIRST DEFL F  
  
    IF1  
X@X@Y DEFL X@X@Y+1  
    IF X@X@Y LT 2  
FIRST DEFL T  
ENDIF  
ENDIF  
  
    IF2  
X@X@Y DEFL X@X@Y+100  
    IF X@X@Y LT 200  
FIRST DEFL T  
ENDIF  
ENDIF
```

```

X&@X&@Y DEFL X&@X&@Y+1
IF X&@X&@Y LT 2
FIRST DEFL T
ENDIF
ENDIF

IF2
X&@X&@Y DEFL X&@X&@Y+100
IF X&@X&@Y LT 200
FIRST DEFL T
ENDIF
ENDIF

ENDM

;Assign skew space for assignable drive
ASGSKW MACRO @DN
SK&@DN: DEFS 50
ENDM

;Make a special skew table
SPCSKW MACRO @FM
IF1
P&@FM DEFL P&@FM+1           ; ;Each skew once only
IF P&@FM GT 1
EXITM
ENDIF
ENDIF

IF2
P&@FM DEFL P&@FM+100          ; ;Each skew once only
IF P&@FM GT 199
EXITM
ENDIF
ENDIF

SPK&@FM
ENDM

;Make a standard skew
; SKEW MACRO
; 1 Physical sectors per track
; 2 Skew factor

SKEW MACRO @S,@K
LOCAL ?B,?S
K&@S&@K:
?B DEFL 0           ; ;Start with base 0
?S DEFL 0           ; ;Start with sector 0

REPT @S
DEFB ?S
?S DEFL ?S+@K      ; ;Add skew factor
IF ?S GE @S        ; ;Overflow
?S DEFL ?S-@S
IF ?S EQ ?B        ; ;Return to old base
?S DEFL ?S+1
?B DEFL ?B+1
ENDIF
ENDIF
ENDM

ENDM

SUBTTL Signon message macros
PAGE

*****
*      SIGNON MESSAGE MACROS      *
*****

```

WINMES MACRO

```
IF DRVW EQ R201
DEFB "RODIME R201"
ENDIF

IF DRVW EQ M33 ST25
DEFB "M33 SCRIBE 25" SEAGAT 25
ENDIF

IF DRVW EQ R103
DEFB "RODIME 103"
ENDIF

IF DRVW EQ R204
DEFB "RODIME 204"
ENDIF

IF DRVW EQ R202
DEFB "RODIME 202"
ENDIF

IF DRVW EQ B6188
DEFB "BASF 6188"
ENDIF

IF DRVW EQ ST212
DEFB "SEAGAT 212"
ENDIF

IF DRVW EQ B6185
DEFB "BASF 6185"
ENDIF

IF DRVW EQ ATAS46
DEFB "ATASI 3046"
ENDIF
```

ENDM

DRVMES MACRO ?DT

```
;Drives
IF ?DT EQ STNDRD
DEFB "DS 96tpi"
ENDIF

IF ?DT EQ MICROP
DEFB "MICROPOLIS"
ENDIF

IF ?DT EQ PERTEC
DEFB "PERTEC 250"
ENDIF

IF ?DT EQ DR7200
DEFB "DRE 7200"
ENDIF

IF ?DT EQ CAN96
DEFB "CANON 96"
ENDIF

IF ?DT EQ CAN48
DEFB "CANON 48"
ENDIF
```

ENDM

;Formats

FRMMES MACRO ?FM

```
IF ?FM EQ NULLF
DEFB "ASSIGNABLE"
ENDIF
```

```

IF ?DT EQ CAN48
DEFB "CANON 48"
ENDIF

ENDM

;Formats
FRMMES MACRO ?FM

    IF ?FM EQ NULLF
    DEFB "ASSIGNABLE"
    ENDIF

    IF ?FM EQ MAP96D
    DEFB "MAP96 DS"
    ENDIF

    IF ?FM EQ MAP96S
    DEFB "MAP96 SS"
    ENDIF

    IF ?FM EQ MAP48
    DEFB "MAP 48tpi"
    ENDIF

    IF ?FM EQ IBMS
    DEFB "IBM 3740"
    ENDIF

    IF ?FM EQ NASS
    DEFB "NASCOM SS"
    ENDIF

    IF ?FM EQ SBRN
    DEFB "S/BRAIN SD"
    ENDIF

    IF ?FM EQ EZPRIN
    DEFB "EASI-PRINT"
    ENDIF

    IF ?FM EQ GEMSD
    DEFB "GEMINI SD"
    ENDIF

    IF ?FM EQ BBC80
    DEFB "BBC CRM 80"
    ENDIF

    IF ?FM EQ TAND8
    DEFB "TANDY 8in "
    ENDIF

ENDM

```

;VIRTUAL DISK FORMAT	
SECV EQU 128	;Sector size
BLKV EQU 2048	;Allocation size
MXSV EQU 4096/SECV	;Sectors per 4K track
MXTV EQU 15*16	;15 arrays of 16 tracks (1Mb)
OFFV EQU 16	;Reserved 4K tracks

;FDC ports	
F2797 EQU 0E0H	;FDC always here
FDCCOM EQU F2797	;Command register
FDCSTA EQU F2797	;Status register
FDCTRK EQU F2797+1	;Track register
FDCSEC EQU F2797+2	;Sector register
FDCCDAT EQU F2797+3	;Data register

```
ENDIF  
IF ?FM EQ MAP96S  
DEFB "MAP96 SS"  
ENDIF
```

```
IF ?FM EQ MAP48  
DEFB "MAP 48tpi"  
ENDIF
```

```
IF ?FM EQ IBMS  
DEFB "IBM 3740"  
ENDIF
```

```
IF ?FM EQ NASS  
DEFB "NASCOM SS"  
ENDIF
```

```
IF ?FM EQ SBRN  
DEFB "S/BRAIN QD"  
ENDIF
```

```
IF ?FM EQ EZPRIN  
DEFB "EASI-PRINT"  
ENDIF
```

```
IF ?FM EQ GEMSD  
DEFB "GEMINI SD"  
ENDIF
```

```
IF ?FM EQ BBC80  
DEFB "BBC CPM 80"  
ENDIF
```

```
IF ?FM EQ TAND8  
DEFB "TANDY 8in "  
ENDIF
```

```
ENDM
```

```
; VIRTUAL DISK FORMAT  
SECV EQU 128 ;Sector size  
BLKV EQU 2048 ;Allocation size  
MXSV EQU 4096/SECV ;Sectors per 4K track  
MTV EQU 15*16 ;15 arrays of 16 tracks (1Mb)  
OFFV EQU 16 ;Reserved 4K tracks
```

```
; FDC ports  
F2797 EQU 0E0H ;FDC always here  
FDCCOM EQU F2797 ;Command register  
FDCSTA EQU F2797 ;Status register  
FDCTRK EQU F2797+1 ;Track register  
FDCSEC EQU F2797+2 ;Sector register  
FDCDAT EQU F2797+3 ;Data register  
DRVPRTR EQU F2797+4 ;Drive select port  
STAPRT EQU F2797+4 ;DRQ/IRQ/READY
```

```
; 2797 Commands  
RESTOR EQU 08H ;Restore command  
SEKTRK EQU 18H ;Seek command  
RDSEC EQU 88H ;Read Sector  
WRSEC EQU 0A8H ;Write sector  
CLRFDC EQU 0D0H ;Clear command  
READID EQU 0C0H ;Read ID header  
STEPIN EQU 48H ;Step in  
STPOUT EQU 68H ;Step out  
WRTRK EQU 0F0H ;Write track
```

```
; VDISK parameters  
PPAG EQU 0FEH ;Mapping port  
PAGE0 EQU 0C0H ;
```

```
; Specify if SIOs CTC channel is clocked at 1 or 2 Mhz  
SLOW EQU 1 ;1Mhz  
FAST EQU 2 ;2Mhz
```

```
; ****  
; * GENERAL EQUATES *  
; ****
```

```
MSCNT EQU 0F9H ;0F9H=4MHz
```

```
; CP/M details
```

DRVPRT EQU F277714 ;Drive select port
STAPRT EQU F2797+4 ;DREQ/IRQ/READY

; 2797 Commands
RESTOR EQU 08H ;Restore command
SEKTRK EQU 18H ;Seek command
RDSEC EQU 88H ;Read Sector
WRSEC EQU 0A8H ;Write sector
CLRFDC EQU 0D0H ;Clear command
READID EQU 0C0H ;Read ID header
STEPIN EQU 48H ;Step in
STPOUT EQU 68H ;Step out
WRTRK EQU 0F0H ;Write track

; VDISK parameters
PFAG EQU 0FEH ;Mapping port
PAGE0 EQU 0C0H ;

; Specify if SIOs CTC channel is clocked at 1 or 2 Mhz
SLOW EQU 1 ;1Mhz
FAST EQU 2 ;2Mhz

; ****
* GENERAL EQUATES *

MSCNT EQU 0F9H ;0F9H=4MHz

; CP/M details
BDDOS EQU 5
CCP EQU 0100H ;Console Command Processor load address
CCPLEN EQU 0C80H ;Length of CCP.COM
FCBLEN EQU 32 ;File Control Block length
RECSIZ EQU 0080H ;CP/M record size

; Common control characters
CTLC EQU 3
BELL EQU 7
BS EQU 8
TAB EQU 9
LF EQU 0AH
CS EQU 0CH
CR EQU 0DH
CTLQ EQU 11H
CTLS EQU 13H
CX EQU 18H
CLS EQU 1AH
ESC EQU 1BH

; Equates for mode byte bit fields

MBINF EQU 000000001B ;Device may do input
MBOUT EQU 000000010B ;Device may do output
MBIO EQU MBINP+MBOUT

MBSOFT EQU 00000100B ;Software selectable baud rates

MBSERL EQU 00001000B ;Device may use protocol
MBXNXF EQU 00010000B ;XON/XOFF protocol enabled

NOBAUD EQU 0 ;No baud rate associated with this device
B50 EQU 1 ;50 baud
B75 EQU 2 ;75 baud
B110 EQU 3 ;110 baud
B134 EQU 4 ;134.5 baud
B150 EQU 5 ;150 baud
B300 EQU 6 ;300 baud
B600 EQU 7 ;600 baud
B1200 EQU 8 ;1200 baud
B1800 EQU 9 ;1800 baud
B2400 EQU 10 ;2400 baud
B3600 EQU 11 ;3600 baud
B4800 EQU 12 ;4800 baud
B7200 EQU 13 ;7200 baud
B9600 EQU 14 ;9600 baud
B19200 EQU 15 ;19.2k baud

VIDWID EQU 80
VIDHT EQU 25