

Micronics Technology

SYDVD.ASM Assembly Instructions
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These instructions tell you how to assemble a new SY.DVD device driver with support for SPEED MOD. The HDOS 2.0 distribution disks are required. An assembled Micronics modified version of the Heath SY driver is included on the distribution disk. If this driver meets your needs, you do not need to assemble another driver. Simply PIP the Micronics SY.DVD supplied file to a SYSGENed disk and you are ready to run at 4 MHz!

1. Make a minimum system disk with PIP, INIT, SYSGEN, ASM and a word processor like EDIT or PIE. This disk will be referred to as "MT Disk 1" in these instructions.

2. Make another minimum system disk from MT Disk 1. This disk will be used for testing the modified SY driver. This will be called the "MT Test Disk"

3. Copy the SYDVD.ASM and SYINIT.ASM files from the Device Drivers disk to MT Disk 1.

4. Copy the files MAKMSD.ABS, TIME.ABS, SPEED.ABS from the Micronics Distribution disk to MT Disk 1. The MAKMSD.ASM supplied on your HDOS disks has been modified to work correctly. These changes are further described in issue 34 of REMark, page 28.

5. INIT a new disk. This disk will be called the "MT Data Disk."

6. Use PIP to copy all files on Software Tools disk (original HDOS disk) to MT Data Disk. Then use PIP to:

- a. Delete H47*. * from the MT Data Disk
- b. Delete ATH*. * from the MT Data Disk
- c. copy *.ACM from the Device Drivers disk to the MT Data Disk.

7. Mount the MT Disk 1 system disk in SY0: and the MT Data disk in SY1:

8. Assemble the file SYINIT.ASM by typing 'ASM XXINIT.SYS=SYINIT,SY1:'. If you get any assembly errors: The first errors will probably be associated with an "XTEXT filename" assembly language statement. This means that the assembler could not find the specified file on SY1:. PIP the missing file from the Device Driver or Software Tools disk and try the assembler again.

9. Starting at the Label SY1 in the file SYDVD.ASM, make the changes shown in the file MTDVD.CHG included on the Micronics distribution disk.

10. Assemble the file SYDVD.ASM by typing: ASM XX.DVD=SYDVD, SY1:

11. Run the program MAKMSD by typing: MAKMSD XX:

12. Use PIP to copy the file XX.DVD to the MT Test Disk as SY.DVD. With the new system disk in SY1: type:

```
PIP
SY1: SY.DVD=XX.DVD
```

13. You now have a 4 MHz system disk. Boot your system using this disk and run the program TIME. It should execute in 1.7 seconds. Remember that you must initialize disks and boot the system at 2 MHz. SPEED.ABS will toggle the speed and tell you the current operating speed.

14. If you have any questions, please call Micronics Technology at 904-8974257. Our business hours are from 6-8 PM CST Monday through Friday and 9-12 on Saturday.

Micronics Technology SPEED MOD installation instructions for
HUG SY: Device Driver, P/N 855-1095

by
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1. Modify the files DKH17.ASM, DKH17I.ASM and MFDVD.ACM per listings 1 and 2.
2. Assemble the two DKH17 files:

```
ASM DKH17.REL=DKH17.ASM
ASM DKH17I.REL=DKH17I.ASM
```

3. Combine the two assembled files:

```
COPY XX.DVD=DKH17.REL,DKH17I.REL
```

4. Run the program DVDDKGEN:

```
DVDDKGEN XX:
```

5. The XX.DVD produced by DVDDKGEN is the new SY: driver. To replace an SY.DVD on an existing disk, delete the old SY: driver:

```
DELETE SY.DVD
```

Do not reboot. Immediately copy the new SY: driver:

```
COPY SY.DVD=XX.DVD
```

Listing 1

Changes to MFDVD.ACM (shown by ** in remarks column)

```
.
.
MFDVD LXI BC,BOOTAL
LXI DE,BOOTA
LXI HL,D.CON
CALL $MOVE

LXI BC,MFVECSZ
LXI DE,MFVECTR
LXI HL,D.MOUNT
CALL $MOVE

CALL $TYPTX **
DB 'MT 4 MHZ SPEED MOD 27 MAR 86',NL,ENL **

XRA A
CALL MFDVSEL

.
.
.
```

NOTE: An `XTEXT TYPTX` statement must be included in the DKH17I.ASM file.

 LISTING 2

Changes to the DKH17.ASM (shown by ** in the remarks column)

```

      .
      .
      .
      ERRMI      . +DVD. ENT-*
      DS         . +DVD. ENT-*

      CPI        DC. MAX
      JC         MTSY1          **

      MVI        A, EC. I LR
      STC
      RET
      .
      .
DK52   ANA       A
      JMP       R. SYDD

MTSY1  PUSH     PSW          **
      MVI     A, 02H        ** MVI A, 22H for ORG 0 config
      STA     40066A        **
      OUT     362Q          **
      POP     PSW          **
      CALL   DK51          **
      PUSH   PSW          **
MTSY2  MVI     A, 12H        ** MVI A, 32H for ORG 0 config
      STA     40066A        **
      OUT     362Q          **
      POP     PSW          **
      RET
      .
      .
MTOFF  JMP     MTSY2+1       **
MTSYDD JMP     MTOFF         **

DK5LOAD EQU     *

      LHLD   SYDD+1
      PUSH  H
      CALL  MFDVD
      POP   H
      SHLD MTSYDD+1        **
      LXI  H, MTSYDD       **
      SHLD SYDD+1
      RET
      .
      .
SYDVD  EQU     *
      ERRNZ  *-DVD. ENT

      CPI    DC. MAX
      .
      .
***** JC     MTSY1          Jump to Micronics code for Legal entry point
*****
*      Illegal Driver Call

      MVI    A, EC. I LR
      STC
      RET
  
```

```

*          Di spatch Val id Driver Cal l
SY1       CPI          DC. LOD
          JNC          SY2          Process this entry

          ANA          A          Clear 'C'
          JMP          R. SYDD     Use the ROM routines

SY2       SUI          DC. LOD
          CALL         $TBRA       Process new routines
          SET          2027A-DC. LOD
          ERRNZ        *-. -DC. LOD

          ERRNZ        *-. -DC. LOD
          DB          SYLOAD-*     Load

          ERRNZ        *-. -DC. RDY
          DB          SYREDY-*     Ready

          ERRNZ        *-. -DC. MAX
          *****     All entries must be handled

MTSY1     PUSH         PSW
          LDA          MTINIT      Check if first time through code
          ORA          A           Yes, so print message and switch to 4 MHz
          JNZ          MTSY2       No, so jump around initialization code

*
          DB          OD9H         EXX instruction
          CALL         $TYPTX
          DB          'Micronics Technology 4 MHz ', 1BH, 'pSPEED MOD', 1BH
          DB          'q 14 Mar 87', NL, ENL
          DB          OD9H         EXX instruction
          MVI          A, 12H      BIT 4 is 4 MHz switch, BIT 2 is 2 ms clock
          STA          MTINIT      Set first time flag
          STA          40066A      Change the speed to 4 MHz
          OUT          362Q

MTSY2     LDA          40066A      Get the current value for Speed
          STA          MTSTOR      Save it
          ANI          10H        Check for 4 MHz operation
          JZ           MTSY3       at 2MHz, so skip slow down code
          MVI          A, 2        Slow to 2 MHz for disk access
          STA          40066A
          OUT          362Q
          POP         PSW         Restore A and flags for function call
          CALL        SY1
          PUSH        PSW
          LDA          MTSTOR      Get the original value
          ORI          2          Set the 2 ms clock bit
          STA          40066A      Set the speed back to 4 MHz
          OUT          362Q
          POP         PSW
          RET          Put A back and return

*
MTSY3     POP         PSW         Reset stack and jump to old routine
          JMP         SY1
          RET

*
MTSTOR    DB          0          Control port storage
MTINIT    DS          0          Initial flag
*****

```