Upgrading DAP™ Software

The DAP Software upgrade package includes DAP™ Software and DAPL™. The software upgrade can be installed over existing DAP Software.

The INSTALL program installs the software on your system. INSTALL copies several files to your boot disk and adds some information to your system configuration files, which are named `CONFIG.SYS` and `AUTOEXEC.BAT`. Backup copies of these files are created with the `.BAK` extension so that the original versions can be recovered if needed. INSTALL automatically detects and replaces existing Data Acquisition Processor configuration lines in these files.

For information on the software upgrade's features, insert diskette 1 in drive A and enter the DOS command

```
TYPE A:README.TXT │MORE
```

The PC will display information about new software features, as well as any changes or corrections to the installation procedure or to the manuals.

To Install the DAP Software Upgrade:

1. Boot the computer using DOS.

2. Place DAP Software diskette 1 in drive A, and type `A:INSTALL`.

   INSTALL prompts for configuration information including Data Acquisition Processor type and software destination directories. INSTALL also provides software installation options.

3. If you are upgrading software for a DAP 801™ or DAP 2400™, swap the read-only memory (ROM) device(s) with the new ROM(s) provided in the upgrade package. Go to the "Upgrading DAPL ROMs" section of this Technical Note and follow the instructions for replacing ROMs. Return to this section when finished.

4. After running INSTALL verify that software installation was successful by rebooting your PC. Before you see the DOS prompt, the following lines should appear on your screen:

   ```
   ACCEL device driver 4.3 ...

   ACCEL driver initialization completed

   DAPL initialization completed
   ```

   The exact lines may vary slightly, depending upon configuration options. If a line is missing or if an error message appears, see the "Troubleshooting" section in Chapter 2 of the Hardware Manual.

5. When the DOS prompt is displayed, set the current directory to your DAPview™ directory and type the command:

    ```
    DV
    ```

    This command starts the DAPview program, allowing you to communicate interactively with the Data Acquisition Processor.

    When the DAPview program begins, the following lines should appear on your screen:

    ```
    *** DAPview [1.2] ***

    *** DAPL Interpreter [4.x XX/X] Serial# XXXXX *** #
    ```

    The appearance of the # prompt indicates that the Data Acquisition Processor is installed correctly.

    If the # prompt does not appear or if DAPview issues an error message and terminates, you have not established communication with the Data Acquisition Processor. See the end of Chapter 2 in the Hardware Manual for troubleshooting hints.

    Note: To exit from the DAPview program, press the Ctrl and Z keys simultaneously.

Upgrading DAPL ROMs

The firmware of a DAP 801 is contained on a ROM; the firmware of a DAP 2400 is contained on two ROMs. The ROM(s) must be replaced to upgrade the firmware on DAP 801s and DAP 2400s.

The instructions for replacing DAPL ROMs is slightly different for DAP 801s and DAP 2400s. Follow the directions for the model of Data Acquisition Processor you are upgrading.

**To Change the ROM on a DAP 801:**

1. Turn on your PC, enter the DAPview program, and verify that the Data Acquisition Processor is communicating properly. *It is very important to verify that the Data Acquisition Processor works correctly before upgrading a ROM*.

2. Turn off the PC's power, remove the PC's cover, and remove the Data Acquisition Processor from the PC.

    Wear a grounding strap at all times when handling the Data Acquisition Processor. If it is not possible to use a grounding strap, touching a metal screw on a grounded PC while handling the Data Acquisition Processor will offer some protection for the Data Acquisition Processor.

    When transporting the Data Acquisition Processor outside of the PC, be sure to shield the Data Acquisition Processor in a conductive bag. If a conductive bag is not available, shield the Data Acquisition Processor by wrapping it in aluminum foil.

    Static control is required for handling all electronic equipment. The Data Acquisition Processor is especially sensitive to static discharge, however, because it contains many high speed analog components. Static damage to analog components can cause subtle problems, including oscillation, increased settling time, and reduced slew rate. If you suspect that a Data Acquisition Processor has been affected by static discharge, return it to Microstar for repair and quality control testing.

3. Locate the ROM device on the Data Acquisition Processor. The ROM is a 32 pin device with a copyright sticker. It is labeled U6 on the printed circuit board (the label is underneath the device, so you will not see the label until you remove the device). Note that the notch is oriented so it is closest to the edge of the printed circuit board. The following diagram shows where the notch is located on a ROM.
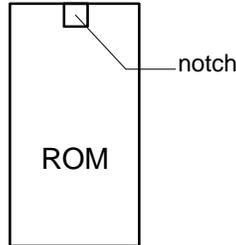
4. Touch a metal portion of your PC (to drain any static charge) and remove the ROM by gently prying at both ends with a screwdriver. Do not touch the metal pins of the ROM.

5. Remove the upgrade ROM from its shipping tube and install the ROM in the empty ROM socket.

   If the pins on the ROM are not lined up with the insertion holes on the socket, it may be necessary to bend them slightly. To do this, grasp the ROM by the edges without pins, being careful not to touch the pins. Place one pin side of the ROM on a table with the pins pointing away from you. Apply firm pressure where the pins are attached to the ROM and gently roll outward toward the ends of the pins. Repeat this process to bend the other row of pins.

   Once the pins are in line with the holes in the socket, push firmly until all of the narrow portions of the pins are inserted in the holes.

6. After the ROM is installed, recheck that it is installed in the correct orientation. The notch of the ROM should be pointing in the same direction as the notches of the other devices on the Data Acquisition Processor.

7. Place the Data Acquisition Processor back in the PC and turn on the PC.

8. Go to Step 4 of "To Install the DAP Software Upgrade" and resume the software installation process.

To Change the ROMs on a DAP 2400:

1. Turn on your PC, enter the DAPview program, and verify that the Data Acquisition Processor is communicating properly. *It is very important to verify that the Data Acquisition Processor works correctly before upgrading a ROM.*

2. Turn off the PC's power, remove the PC's cover, and remove the Data Acquisition Processor from the PC.

   Wear a grounding strap at all times when handling the Data Acquisition Processor. If it is not possible to use a grounding strap, touching a metal screw on a grounded PC while handling the Data Acquisition Processor will offer some protection for the Data Acquisition Processor.

   When transporting the Data Acquisition Processor outside of the PC, be sure to shield the Data Acquisition Processor in a conductive bag. If a conductive bag is not available, shield the Data Acquisition Processor by wrapping it in aluminum foil.

Static control is required when handling all electronic equipment. The Data Acquisition Processor is especially sensitive to static discharge, however, because it contains many high speed analog components. Static damage to analog components can cause subtle problems, including oscillation, increased settling time, and reduced slew rate. If you suspect that a Data Acquisition Processor has been affected by static discharge, return it to Microstar for repair and quality control testing.

3. Locate the two ROM devices on the Data Acquisition Processor. Each ROM is a 28-pin device with a copyright sticker. They are labeled U8 and U9 on the printed circuit board (the labels are underneath the devices, so you will not see each label until you remove each device). Note that the notches are oriented so they are closest to the edge of the printed circuit board. The diagram below shows where the notch is located on a ROM.
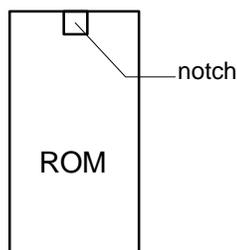
4. Touch a metal portion of your PC (to drain any static charge) and remove both ROMs by gently prying at each end with a screwdriver. Do not touch the metal pins of either ROM.

5. Remove the upgrade ROMs from their shipping tube and check the last line of their labels. The last line should be marked with the letter "E" or the letter "O." Install the ROM marked "E" into the socket marked U9. Install the ROM marked "O" into the socket marked U8. Make sure that the notch in each ROM is closest to the edge of the printed circuit board.

If the pins on a ROM are not lined up with the insertion holes on the socket, it may be necessary to bend them slightly. To do this, grasp the ROM by the edges without pins, being careful not to touch the pins. Place one pin side of the ROM on a table with the pins pointing away from you. Apply firm pressure where the pins are attached to the ROM and gently roll the ROM outward toward the ends of the pins. Repeat this process to bend the other row of pins.

Once the pins are in line with the holes in the socket, push firmly until all of the narrow portions of the pins are inserted in the holes.

6. After the ROMs are installed, recheck that they are installed in the correct orientation. The notch on each ROM should point in the same direction as the notches of the other devices on the Data Acquisition Processor.

7. Place the Data Acquisition Processor back in the PC and turn on the PC.

8. Go to Step 4 of "To Install the DAP Software Upgrade" and resume the software installation process.