Computer Upgrade Instructions for NanoScope© Systems

254.1 Introduction

The replacement computer installation includes both hardware and software upgrades. Depending on the revision of Digital Signal Processing (DSP) board in your NanoScope, it may be necessary to discard it (Rev. A), perform a simple circuit modification and swap it into the new computer (Rev. B), or swap it into the new computer unaltered (Rev. C).

Unmodified Rev. B DSP boards interfere with the operation of the drives on the replacement computer. Included in this kit are complete step-by-step instructions on how to successfully upgrade your NanoScope (including the simple Rev. B modification), pictures of the procedure, and a list of the necessary tools.

In order to complete the installation of the replacement computer upgrade, it will be necessary to perform the following tasks. Read them carefully before you start. If you are unable to complete the tasks, please locate someone who can.

Software:

- Copy files from old computer onto floppy disks for installation onto the new computer.
- Copy files from floppy disk onto new computer.

Document Revision History: Support Note 254

Rev.	Date	Sections	Ref. DCR	Approval
Rev. A	04AUG1998	Released.	244	*CCF*

Hardware:

- Identify the revision of the DSP board in your old computer.
- If necessary, perform minor modification of the DSP board to make compatible with your new system
- Install the DSP board as necessary.
- Remove the Interface board from your old computer; install in your new computer.

List of necessary tools (all types):

- Flathead screwdriver
- Phillips screwdriver
- Needlenose pliers
  For Rev. B installation:
- 60 W Soldering iron
- Rosin Core Solder
- 26-30 ga. wire
- X-Acto Razor or other utility knife

254.1.1 PHASE 1

Step 1. Copy files from the old computer's C:\SPM\EQUIP directory onto floppy disk. The files will be copied into the new C:\SPM\EQUIP directory in the new replacement computer in a later step.

Step 2. If you have a Dimension or other automatic stage system, copy the old computer's C:\SPM\PAR directory files onto a floppy disk. The files will be copied into the new C:\SPM\PAR directory on the replacement computer.

Step 3. Copy any vital information onto a suitable storage device in a later step.

254.1.2 PHASE 2

Step 1. Unpack your new replacement computer.

Step 2. Using a Phillips screwdriver, remove the cover on your new computer.

Step 3. Disconnect all cables from your old computer

Step 4. Using a screwdriver, remove the cover from your old computer.

Step 5. In your old computer, notice the DSP and Interface boards. The DSP board will have two short jumper cables attaching it to the Interface board.

Step 6. Using a Phillips screwdriver, remove the screws that retain the DSP and Interface boards. Carefully remove the DSP and Interface boards from your old computer.

Step 7. Identify the revision of DSP board in your old computer. The revision of your DSP board will be found near the Digital Instruments logo on the component side (the side with all the chips on it).

If you have no revision sticker, then you have a Rev. A DSP board.
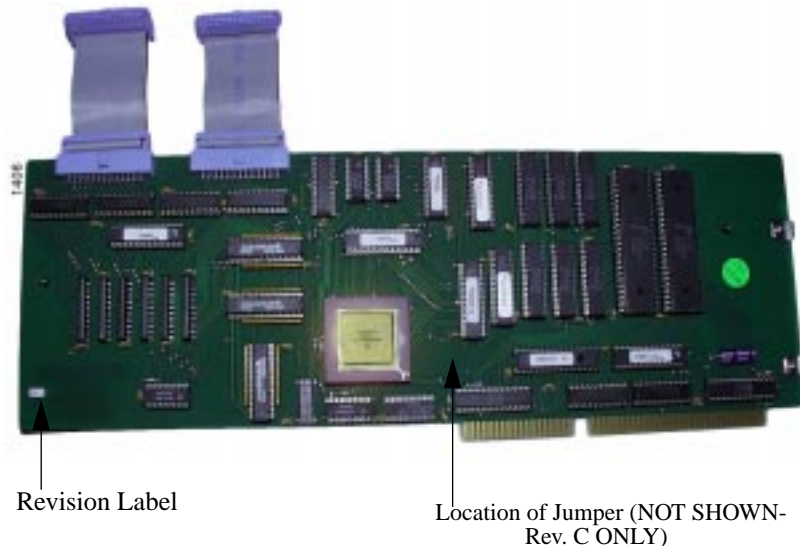

Revision Label   Location of Jumper (NOT SHOWN-
                                                                    Rev. C ONLY)

Figure 254- 1. DSP board, component side. Note label in lower left hand corner denoting Revision A, B, or C.

Step 8. If you have a Rev. A DSP board (NS III only), then please proceed to **PHASE 5** for Interface Board installation instructions.

*(Your Rev. A DSP board is not compatible with the new NanoScope software. A new DSP board has been shipped **pre-installed** in your new replacement computer.)*

Step 9. If you have a Rev. B DSP board (NSE Rev. E), please proceed to **PHASE 3**

Step 10. If you have a Rev. C DSP board (NSE Rev. F), please proceed to **PHASE 4**

254.1.3 PHASE 3

Step 1. If you have a Rev. B (or E) DSP board, then it is not directly compatible with your new computer. Minor modifications are necessary before installation into your new replacement computer. A trace must be cut and a jumper wire must be soldered onto the board to prevent hardware interference in your new system.

Step 2. Assemble the following tools for the modification of the Rev. B DSP board.

- 60 W Soldering Iron
- Rosin Core Solder
- 26-30 ga. wire
- X-Acto Razor or other utility knife

Step 3. Using the razor knife, carefully cut the trace identified by the X's in the Figure below. A portion of the trace must be removed by gently peeling away the area between the two cuts.
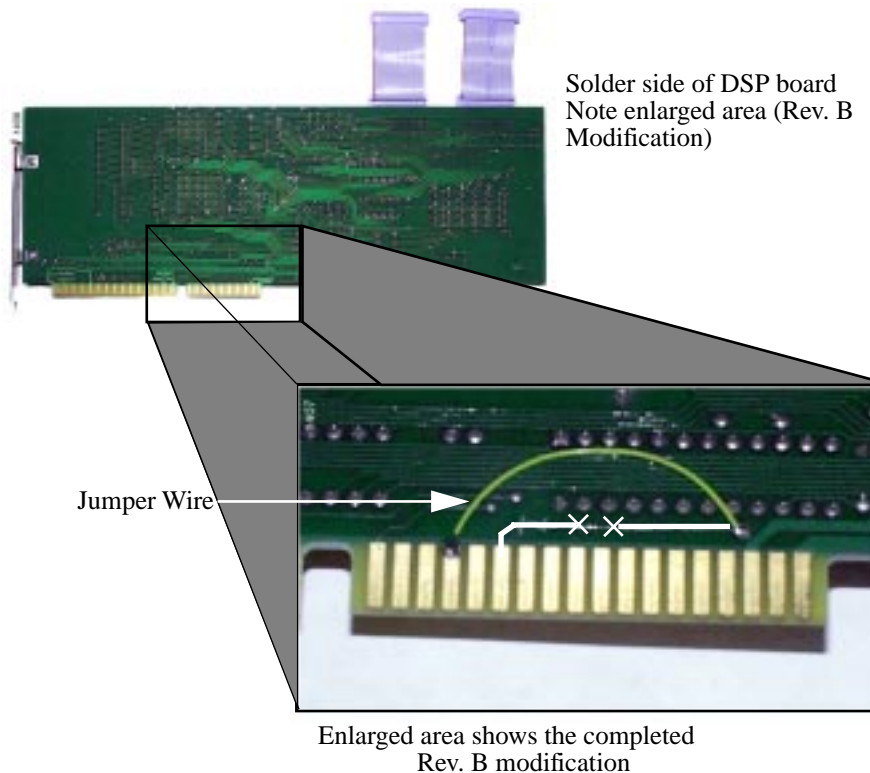
Solder side of DSP board
Note enlarged area (Rev. B Modification)

Jumper Wire

Enlarged area shows the completed
Rev. B modification

Figure 254- 2. Completed Rev. B Modification. Trace is identified by white line. X's mark the spot where the trace was cut and removed.

Step 4. Solder the 26-30 ga. jumper wire from the feed through eyelet to the fourth gold contact on the edge connector. Be careful not to solder the wire past the middle of the contact, because it will prevent the edge connector from properly connecting to the computer.

Step 5. Install the modified DSP board into your new computer by sliding it into one of the empty slots. DI recommends the 2nd slot from the bottom.

Step 6. Please proceed to **PHASE 5** for Interface installation instructions.

254.1.4 PHASE 4

Step 1. The Rev. C (or F) board may be identified by a red jumper that sits to the right of the gold square chip on the component side. The jumper is labeled and has three interrupt settings: 15 (left pins), 11 (middle pins), and 10 (right pins).

Step 2. Before installing the Rev. C DSP board into your new computer, make sure that the jumper is set to interrupt 11 (middle pins).

Step 3. The Rev. C board may now be installed directly into the replacement computer by sliding it into one of the appropriate slots. DI recommends the 2nd slot from the bottom.

254.1.5 PHASE 5

Note: Because of the arrangement of the computer hardware, either the DSP or Interface boards will end up sitting on TOP of the drive ribbon cables. Gently push them down when installing the boards.

Step 1. Install the Interface board into your new computer by sliding it into the slot next to the DSP board. DI recommends the bottom slot. It may be necessary to remove the DSP board in order to get access to the bottom slot.
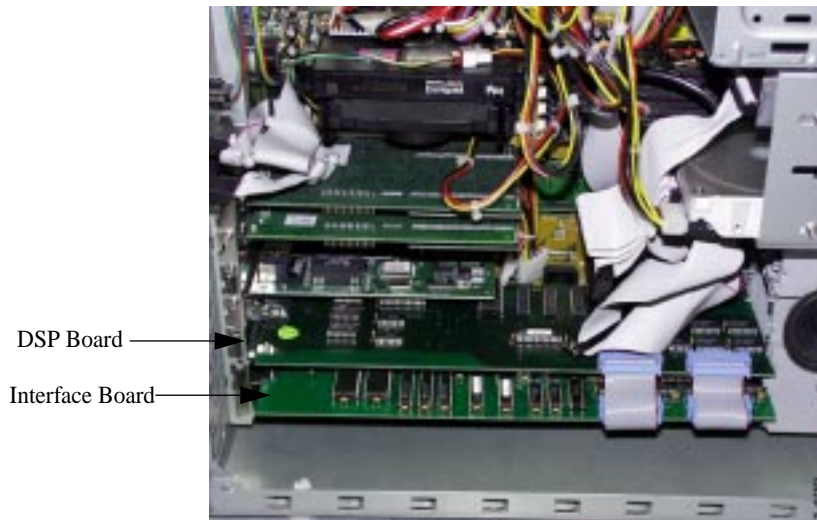

Figure 254- 3. New DSP and Interface board installed in computer.

Step 2. Carefully replace the screws securing the DSP and Interface boards with a screwdriver.

Step 3. Connect the Interface and DSP boards together using the jumper cables from the old DSP/Interface board.

Step 4. Re-connect computer to keyboard, mouse, and monitor, etc.

Step 5. Start the computer and allow the system to boot up.

Step 6. Copy the C:\SPM\EQUIP files that were previously backed up on floppy disk into the replacement computers C:\SPM\EQUIP directory (from **PHASE 1**).

Step 7. If necessary, copy the C:\SPM\PAR files that were previously backed up on floppy disk into the replacement computers C:\SPM\PAR directory (from **PHASE 1**).

Step 8. The replacement computer should now be capable of operating your Nano-Scope system.