

PCI-1671UP High-Performance GPIB PCI Interface Card

USB-4671 High-Performance GPIB USB Interface Module

Introduction and Installation

Your interface board consists of hardware and software that fully implement the IEEE 488 standard, also known as GPIB. This document enables you to install, configure, test, and verify your installation. Other documentation, including the GPIB Programming Reference Manual, is available in the root directory on your software CD in Adobe Portable Document Format (PDF). To view these PDF files, you must have Adobe Acrobat Reader version 4.0 or later installed on your system. If you do not have this program, refer to the Adobe Systems Incorporated Web site, <http://www.adobe.com/products/acrobat/readstep2.html>, to download the Acrobat Reader program. There is no charge for this download.

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Notes

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Part No: 2003167100

Step 1. Install the Software

Follow these steps to install the software:

The installer should start automatically when you insert the CD supplied with the interface card into the drive. If it does not, explore the CD drive and double-click **setup.exe** in the:

`CD\Drivers\GPIB\PCI-1671` directory to start the installer. You can also start the installer by selecting **Start>Run** and choosing **setup.exe** from the CD directory.

Please Note that NI-488.2 driver must be removed before running "setup.exe" to avoid confliction.

Proceed through the installer screens by clicking the *Next* button until you see the *Select Features* window, where you can choose the features to install. Click on each feature for a brief description. All features are installed by default, but you can choose not to install support for the programming features you will not use. After you select your features and complete the installation, all necessary files will be in the `C:\Program Files\GPIB-488` directory.

A dialog box will prompt you to reboot the system when you finish the installation. Click the *Yes* button to reboot.

Step 2. Install the Hardware

USB Devices

Follow these steps to install the hardware:

Remove the unit from its protective packaging. Save the anti-static bubble wrap.

Before connecting the USB card to your GPIB instruments, ensure that the instruments and PC are at the same ground potential. Failure to do so could damage the instruments, PC, or USB card.

Plug the USB card into an available USB port.

USB devices are plug and play. These devices configure automatically. There is no need to power cycle your PC.

PCI Devices

Follow these steps to install the hardware:

Handle the board only by the edges. Static electric discharge can damage the integrated circuits on the board. Remove the interface board from its protective packaging by grasping the metal rear panel. Save the anti-static bubble package.

- Power off the computer.
- Unplug the power cord.
- Remove the computer cover.
- Install the board in any available slot.
- Use the screw to attach the rear panel bracket to the computer case.
- Reinstall the computer cover.
- Plug in the computer and power it on.

For PCI cards in a plug-and-play operating system, the card should configure automatically if you have installed the software first. If you see a message about an unrecognized board and a prompt for a disk, insert the software CD as instructed by the operating system.

Step 3. Test the Interface

Follow these steps to test the interface:

- Go to **Start>Programs>GPIB-488** and select **GPIB Diagnostic** to run the hardware test program. You can also execute the test program directly by running **GPIBDiagnostic.exe** in the **C:\Program Files\GPIB-488\utilities** directory.
- This program tests and reports on the status of your IEEE 488 board(s).
- Go to **Start>Programs>GPIB-488** and select **GPIB Interactive Control** to run the interactive program, which allows you to communicate with the device. You can also execute the test program directly by running **GPIBInteractiveControl.exe** in the **C:\Program Files\GPIB-488\utilities** directory.
- At the prompt, type **ibfind gpib0**. You should see the prompt change to **gpib0**.
- Type **ibdev** and enter the parameters based on your device settings.
- The prompt should now have changed to **User_>.**
- Type **ibwrt "*idn?"** and you should see a status of 0100, CMLP and a count of 5, indicating the data was sent to the device successfully.
- Type **ibrd 1000** and press **<Enter>**. You should see the device identification string from the device indicating that communication was successful.

Note 1: "*idn?" is for 488.2 devices only. For the devices that support only 488.1, we suggest to use "GPIBInteractiveControl.exe" to proceed with the tests.

Note 2: For more detail about using IEEE-488 commands, please refer to the "GPIBProgrammingReferenceManual.pdf".

Writing Custom Programs

To use your interface for custom applications, you need to write specialized software. We have made this easy by providing a simple set of high-level routines you can use with all popular programming languages.

The GPIB software includes the 488.1 library, the 488.2 library, and a set of utility programs.

The 488.1 library consists of all of the functions and subroutines that begin with the letters "ib". The 488.1 library routines refer to devices on the GPIB bus by their device names and handles rather than by their GPIB addresses.

The 488.2 library consists of all the routines that do not begin with the letters "ib". The 488.2 library routines refer to devices on the GPIB bus by their GPIB addresses rather than by their names or handles.

For more information, refer to the *GPIB Programming Reference Manual*, available in the root directory on your software CD in Adobe Portable Document Format (PDF).