



NI-488.2 Troubleshooting Utility Help

June 2008, 370367F-01

Use this help file to get information about errors reported by the NI-488.2 Troubleshooting Utility.

For more information about this help file, refer to the following topics:

[Using Help](#)

[Important Information](#)

[Technical Support and Professional Services](#)

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Using Help

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Conventions

This help file uses the following formatting and typographical conventions:

» The » symbol leads you through nested menu items and dialog box options to a final action. The sequence **File»Page Setup»Options** directs you to pull down the **File** menu, select the **Page Setup** item, and select **Options** from the last dialog box.



This icon denotes a note, which alerts you to important information.

bold Bold text denotes items that you must select or click in the software, such as menu items and dialog box options. Bold text also denotes parameter names.

green Underlined text in this color denotes a link to a help topic, help file, or Web address.

italic Italic text denotes variables, emphasis, cross references, or an introduction to a key concept. Italic text also denotes text that is a placeholder for a word or value that you must supply.

monospace Text in this font denotes text or characters that you should enter from the keyboard, sections of code, programming examples, and syntax examples. This font is also used for the proper names of disk drives, paths, directories, programs, subprograms, subroutines, device names, functions, operations, variables, filenames, and extensions.

monospace bold Bold text in this font denotes the messages and responses that the computer automatically prints to the screen. This font also emphasizes lines of code that are different from the other examples.

monospace italic Italic text in this font denotes text that is a placeholder for a word or value that you must supply.

Navigating Help (Windows Only)

To navigate this help file, use the **Contents**, **Index**, and **Search** tabs to the left of this window or use the following toolbar buttons located above the tabs:

- **Hide**—Hides the navigation pane from view.
- **Locate**—Locates the currently displayed topic in the **Contents** tab, allowing you to view related topics.
- **Back**—Displays the previously viewed topic.
- **Forward**—Displays the topic you viewed before clicking the **Back** button.
- **Options**—Displays a list of commands and viewing options for the help file.

Searching Help (Windows Only)

Use the **Search** tab to the left of this window to locate content in this help file. If you want to search for words in a certain order, such as "related documentation," add quotation marks around the search words as shown in the example. Searching for terms on the **Search** tab allows you to quickly locate specific information and information in topics that are not included on the **Contents** tab.

Wildcards

You also can search using asterisk (*) or question mark (?) wildcards. Use the asterisk wildcard to return topics that contain a certain string. For example, a search for "prog*" lists topics that contain the words "program," "programmatically," "progress," and so on.

Use the question mark wildcard as a substitute for a single character in a search term. For example, "?ext" lists topics that contain the words "next," "text," and so on.




Note Wildcard searching will not work on Simplified Chinese, Traditional Chinese, Japanese, and Korean systems.

Nested Expressions

Use nested expressions to combine searches to further refine a search. You can use Boolean expressions and wildcards in a nested expression. For example, "example AND (program OR VI)" lists topics that contain "example program" or "example VI." You cannot nest expressions more than five levels.

Boolean Expressions

Click the  button to add Boolean expressions to a search. The following Boolean operators are available:

- **AND** (default)—Returns topics that contain both search terms. You do not need to specify this operator unless you are using nested expressions.
- **OR**—Returns topics that contain either the first or second term.
- **NOT**—Returns topics that contain the first term without the second term.
- **NEAR**—Returns topics that contain both terms within eight words of each other.


Search Options

Use the following checkboxes on the **Search** tab to customize a search:

- **Search previous results**—Narrows the results from a search that returned too many topics. You must remove the checkmark from this checkbox to search all topics.
- **Match similar words**—Broadens a search to return topics that contain words similar to the search terms. For example, a search for "program" lists topics that include the words "programs," "programming," and so on.
- **Search titles only**—Searches only in the titles of topics.

Printing Help File Topics (Windows Only)

Complete the following steps to print an entire book from the **Contents** tab:

1. Right-click the book.
2. Select **Print** from the shortcut menu to display the **Print Topics** dialog box.
3. Select the **Print the selected heading and all subtopics** option.
 **Note** Select **Print the selected topic** if you want to print the single topic you have selected in the **Contents** tab.
4. Click the **OK** button.

Printing PDF Documents

This help file may contain links to PDF documents. To print PDF documents, click the print button located on the Adobe Acrobat Viewer toolbar.

Unknown NI-488.2 Software Error

An unknown NI-488.2 software problem has occurred. Try the following to resolve the problem before calling National Instruments:

1. Restart your system.
2. Run the NI-488.2 Troubleshooting Utility again.

If you still have the problem, try the following:

1. Reinstall NI-488.2 for Windows.
2. Restart your system.
3. Run the NI-488.2 Troubleshooting Utility again.

Determining Resource Conflicts

Use the Windows Device Manager to determine which resources have a conflict.

1. Click this button accesses the
Device Manager.
2. Select the device that has the resource conflict and click the **Properties** button. A yellow exclamation point (!) indicates the device with the resource conflict.
3. Select the **Resources** tab and click the **Set Configuration Manually** button.
4. View the conflicting resource information to determine which resource conflicts with which device.
5. Click **OK** when you are finished.
6. In the **System Settings Change** dialog, click **Yes** to restart the computer or **No** if you want to restart the computer later.

Address Resource Conflict

This error occurs if the address resources assigned to a GPIB interface conflict with the address resources being used by other devices in the system.

Typically, resource conflicts occur when your system contains hardware that is configured to use the same resources as your GPIB interface. Resource conflicts are detected by NI-488.2 when the driver is loaded. If there is a resource conflict, the driver fails to load and records an error in the [Event Viewer](#) describing why it failed to load.

[Determine the resource](#) that caused the conflict and select new resources that are not in conflict.

Use the [Windows System Information tool](#) to get a list of the resource usage that is known to the operating system. This utility displays a list of I/O addresses, interrupt levels, and DMA channels that are currently in use.

Once you know what resources are in conflict, run the Windows Device Manager utility to configure the new conflict-free resources.

Device Manager.

[Click here to access the Windows](#)

Interrupt Resource Conflict

This error occurs if the interrupt resource assigned to a GPIB interface conflicts with the interrupt resource being used by another device in the system.

Typically, resource conflicts occur when your system contains hardware that is configured to use the same resources as your GPIB interface. Resource conflicts are detected by NI-488.2 when the driver is loaded. If there is a resource conflict, the driver fails to load and records an error in the [Event Viewer](#) describing why it failed to load.

[Determine the resource](#) that caused the conflict and select new resources that are not in conflict.

Use the [Windows System Information tool](#) to get a list of the resource usage that is known to the operating system. This utility displays a list of I/O addresses, interrupt levels, and DMA channels that are currently in use.

Once you know what resources are in conflict, run the Windows Device Manager utility to configure the new conflict-free resources.

Device Manager.

[Click here to access the Windows](#)

DMA Resource Conflict

This error occurs if the DMA resource assigned to a GPIB interface conflicts with the DMA resource being used by another device in the system.

Typically, resource conflicts occur when your system contains hardware that is configured to use the same resources as your GPIB interface. Resource conflicts are detected by NI-488.2 when the driver is loaded. If there is a resource conflict, the driver fails to load and records an error in the [Event Viewer](#) describing why it failed to load.

[Determine the resource](#) that caused the conflict and select new resources that are not in conflict.

Use the [Windows System Information tool](#) to get a list of the resource usage that is known to the operating system. This utility displays a list of I/O addresses, interrupt levels, and DMA channels that are currently in use.

Once you know what resources are in conflict, run the Windows Device Manager utility to configure the new conflict-free resources.

Device Manager.

[Click here to access the Windows](#)

Event Viewer

The Event Viewer is used to maintain a system log. If the NI-488.2 driver fails to start properly, it records entries in the system log that explain why it failed to start.

Follow these steps to use the Event Viewer:

1. [Click here to access the Event Viewer.](#)
2. From the left window pane, select **System Log** if you are running Windows 2000. For Windows XP, this option is called **System**. For Windows Vista, expand **Windows Logs** and select **System**.
3. For Windows 2000/XP, select the **View** menu and make sure **All Records** and **Newest First** are selected. For Windows Vista, select the **View** menu and make sure **Sort By Date and Time** is selected.
4. Begin examining the event details from the top of the list. To view event details, double-click on the event.
5. The events of interest are those with the word **gpib** in the **Source** column. You are looking for GPIB-related events that mention a resource conflict. You can ignore all other GPIB-related events.
6. Note the very first resource conflict encountered. You need to know the type of resource conflict, for example, I/O address, IRQ, or DMA. You also need to know which board the conflict is for; for example, board #0 means that there is a conflict with GPIB0.



Note Be careful not to look past the last event logged since the system started. The event whose **Source** is **EventLog** with a description of **The Event log service was started** is the first event logged when the system starts up.

One or More Missing GPIB Interfaces

NI-488.2 did not recognize every GPIB interface. There are several reasons why you might encounter this problem:

GPIB interface is not properly installed

Refer to the *GPIB Hardware Guide* to verify that your GPIB interface is correctly installed. Rerun the NI-488.2 Troubleshooting Utility.

Guide.

Click here to open the *GPIB Hardware*

GPIB interface is not properly configured

If Windows or NI-488.2 cannot configure the hardware, it is listed in the Device Manager with a yellow exclamation icon. Select the malfunctioning device and uninstall it. Then refresh the Device Manager to reattempt configuration.

Click here to access the Device
Manager.

Windows has not finished installing the hardware

Complete the Found New Hardware Wizard for each GPIB interface. If you canceled the Found New Hardware Wizard, reboot your system and make sure the wizard finishes adding the GPIB hardware.

GPIB-ENET/100 has not been added to the system

You must run the Add GPIB-ENET/100 Wizard before using your interface. The wizard guides you through the process of adding a GPIB-ENET/100.

ENET/100 Wizard.

[Click here to run the Add GPIB-](#)

GPIB interface has been removed from the system

You have removed the GPIB interface from the system. For Plug-and-Play GPIB interfaces, click on the link below to launch the Device Manager. Right-click on your computer's name in the list and select **Scan for hardware changes**. You may also reboot your computer to allow the operating system to detect and install your GPIB interface. For the GPIB-ENET/100, rerun the Add GPIB-ENET/100 wizard.

Manager.

[Click here to access the Device](#)

ENET/100 Wizard.

[Click here to run the Add GPIB-](#)

Unknown Hardware Error

An unknown GPIB hardware error has been encountered. The basic problem is that your hardware is not being correctly recognized by the system. Several of the possible causes for this problem are listed below:

The NI-488.2 driver for your GPIB interface failed to load correctly due to a resource conflict

Typically, resource conflicts occur when your system contains hardware that is configured to use the same resources as your GPIB interface. Resource conflicts are detected by NI-488.2 when the driver is loaded. If there is a resource conflict, the driver fails to load and records an error in the [Event Viewer](#) describing why it failed to load.

Use the [Windows System Information tool](#) to get a list of the resource usage that is known to the operating system. This utility displays a list of I/O addresses, interrupt levels, and DMA channels that are currently in use.

Once you know what resources are in conflict, run the Windows Device Manager utility to configure the new conflict-free resources.

Device Manager.

[Click here to access the Windows](#)

Your GPIB interface is incorrectly installed or configured

Verify that your GPIB interface is correctly installed and configured. For information about the installation and configuration of your GPIB hardware, refer to the *GPIB Hardware Guide*.

Guide.

Click here to open the *GPIB Hardware*

Your GPIB interface appears to be installed correctly and working properly, but the NI-488.2 Troubleshooting Utility still reports this error

Try restarting your computer and rerunning the NI-488.2 Troubleshooting Utility. If problems persist, contact [National Instruments](#) for more help.

Hardware Error: Incorrect ENET/100 Firmware Version

The firmware revision on the GPIB-ENET/100 is incorrect. To upgrade the firmware, use the Firmware Update utility. The latest GPIB-ENET/100 firmware image can be found through the [Technical Support](#) section of ni.com.

To launch the utility, follow these steps:

1. [Click here to start](#)
Measurement & Automation Explorer.
2. Open **Devices and Interfaces**.
3. Right-click on any GPIB-ENET/100 interface and select **Update Firmware** from the menu.

Missing IP Address ENET/100

The GPIB-ENET/100 is not powered on and ready to operate, or the IP address is either unspecified or incorrectly specified. Follow these steps to resolve the problem:

1. Ensure that the GPIB-ENET/100 is powered on. The PWR/RDY LED should be steady yellow or orange.
2. Go to **Start»Settings»Control Panel»Network and Dial-up Connections**. Verify that there is a Local Area Connection and it is enabled. Right-click on the Local Area Connection and select **Properties**. Ensure that TCP/IP is listed and selected in the Local Area Connection properties.
3. Verify that the GPIB-ENET/100 has been properly assigned an IP address or hostname by doing the following:
 - a. [Click here to start the NI Ethernet Device Configuration utility](#).
 - b. Look for the GPIB-ENET/100 interface you want to configure on the list of network devices. You can identify your interface by its serial number or Ethernet address printed on the baseplate label.
 - c. Record the IP address or hostname of your interface from the IP address/hostname field. If there was an error, or the interface shows up as unconfigured, refer to the *GPIB Hardware Guide* for instructions on configuring the interface.

[Click here to open the](#)

GPIB Hardware Guide.

- d. The NI Ethernet Device Configuration utility can discover your GPIB-ENET/100 only if it is on the same subnet as the computer running the utility. If you cannot determine the IP address using the NI Ethernet Device Configuration utility, contact your network administrator.
4. Verify that the IP address is set correctly for your GPIB interface.

- a. [Click here to start Measurement & Automation Explorer.](#)
 - b. Under Measurement & Automation Explorer, expand the **Devices and Interfaces** folder. Look for the GPIB interface you want to configure on the list of network devices.
 - c. Click on the interface name and view the GPIB interface properties.
 - d. Verify that the **IP Address** field matches the IP address or hostname from step 3.
5. Verify that the GPIB-ENET/100 is correctly configured for your network. The easiest way to do this is to use a network utility called ping. Open a command window and type in the following command:

```
ping <IPaddress>
```

where <IPaddress> is the IP address assigned to your GPIB-ENET/100 in step 3. If you are accessing a GPIB-ENET/100 via a hostname, type in the following command instead:

```
ping <hostname>
```

If the ping utility is unable to communicate with the GPIB-ENET/100, verify your IP address/hostname with your network administrator.

6. If these steps do not resolve the issue, delete the GPIB-

ENET/100 interface from MAX and run the Add GPIB-ENET/100 wizard again.

7. ENET/100 Wizard.

[Click here to run the Add GPIB-](#)

Launch Ethernet Device Configuration Utility

Use the NI Ethernet Device Configuration utility if you need to manually configure the network parameters of the GPIB-ENET/100. If your network uses DHCP, the network configuration is performed automatically at startup and you do not need to run this utility unless you want to change the hostname. Consult your network administrator if you do not know whether your network uses DHCP.

[Click here to start the NI Ethernet Device Configuration utility.](#)

Refer to the *GPIB Hardware Guide* for information about using the utility to configure the network settings for your GPIB-ENET/100.

[Click here to open the *GPIB Hardware Guide*.](#)

Important Information

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Warranty

The GPIB hardware is warranted against defects in materials and workmanship for a period of one year from the date of shipment, as evidenced by receipts or other documentation. National Instruments will, at its option, repair or replace equipment that proves to be defective during the warranty period. This warranty includes parts and labor.

The media on which you receive National Instruments software are warranted not to fail to execute programming instructions, due to defects in materials and workmanship, for a period of 90 days from date of shipment, as evidenced by receipts or other documentation. National Instruments will, at its option, repair or replace software media that do not execute programming instructions if National Instruments receives notice of such defects during the warranty period. National Instruments does not warrant that the operation of the software shall be uninterrupted or error free.

A Return Material Authorization (RMA) number must be obtained from the factory and clearly marked on the outside of the package before any equipment will be accepted for warranty work. National Instruments will pay the shipping costs of returning to the owner parts which are covered by warranty.

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Windows System Information Tool

The Windows System Information Tool collects and displays your system configuration information. Use this tool to determine which resources in the system are currently in use. The information provided by this utility is a useful guide for selecting conflict-free resources.

The Windows System Information tool has been started for you. Follow these steps to use it:

1. [Click here to access the](#)
System Information Tool.
2. Select **Hardware Resources** from the left window pane.
3. Use the IRQs, I/O and DMA folders to view in-use resources.
4. When you are finished, click the **x** in the top right corner to exit the System Information utility.

Use System Information to find free resources. For example, if you are experiencing an interrupt resource conflict, view the IRQ resources that are being used and determine which are available. Note an available IRQ resource and then use the Windows Device Manager utility to configure NI-488.2 to use that available IRQ resource for the GPIB interface. Make sure to modify the GPIB hardware settings to match the new resources if your GPIB interface is *not* a Plug-and-Play interface (for example, an AT-GPIB/TNT).

For more information about configuring a non-Plug-and-Play GPIB interface, refer to the *GPIB Hardware Guide*.

[Click here to open the *GPIB Hardware*](#)

Guide.

Device Manager.

[Click here to access the Windows](#)

Branch Offices

Office	Telephone Number
Australia	1800 300 800
Austria	43 0 662 45 79 90 0
Belgium	32 0 2 757 00 20
Brazil	55 11 3262 3599
Canada	800 433 3488
China	86 21 6555 7838
Czech Republic	420 224 235 774
Denmark	45 45 76 26 00
Finland	385 0 9 725 725 11
France	33 0 1 48 14 24 24
Germany	49 0 89 741 31 30
India	91 80 51190000
Israel	972 0 3 6393737
Italy	39 02 413091
Japan	81 3 5472 2970
Korea	82 02 3451 3400
Lebanon	961 0 1 33 28 28
Malaysia	1800 887710
Mexico	01 800 010 0793
Netherlands	31 0 348 433 466
New Zealand	0800 553 322
Norway	47 0 66 90 76 60
Poland	48 22 3390150
Portugal	351 210 311 210
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Singapore	1800 226 5886
Slovenia	386 3 425 4200

South Africa	27 0 11 805 8197
Spain	34 91 640 0085
Sweden	46 0 8 587 895 00
Switzerland	41 56 200 51 51
Taiwan	886 02 2377 2222
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United Kingdom	44 0 1635 523545
United States (Corporate)	512 683 0100