

NI-488.2 for Windows, Version 2.8.1

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Thank you for using NI-488.2 for Windows, Version 2.8.1.

This file contains release notes, patent information, and last-minute information for the NI-488.2 for Windows software. Some information in this file may be too recent to be included in the official documentation set.

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Release Notes

NI-488.2 for Windows, Version 2.8.1, is the latest driver offering from [National Instruments](#). Every attempt has been made to maintain backward compatibility with the installed base of existing NI-488.2 applications.

Physical Address Extensions on Windows Server 2003 R2

Support for Windows Server 2003 R2 may require disabling physical address extensions (PAE). To learn how this might affect your use of Windows Server 2003 and what actions you might need to take, visit ni.com/info and enter the info code *PAESupport*.

Win16 and DOS Support

Win16 and DOS support are not available on Windows Vista and later operating systems.

Borland Builder and Delphi

Starting with NI-488.2 for Windows, Version 2.6, the Borland Builder and Delphi examples were removed from the distribution. These examples are still available at our Web site, ni.com. When upgrading from NI-488.2 for Windows, Version 2.5.2 or lower, any Borland Builder and Delphi files installed by the lower version of NI-488.2 will be removed.

NI-488.2 .NET Framework Help

When installing on a system that already has a version of .NET Framework installed, **NI-488.2 .NET Framework Help** will appear in the **Start** menu next to other NI-488.2 shortcuts. This help requires a viewer, available with Visual Studio or other .NET development environments. If you do not have a viewer installed, you will receive a **Missing Shortcut** error when you try to launch the help.

Upgrading from Released NI-488.2 Versions

This driver allows upgrades starting from NI-488.2 for Windows, Version 2.0, on Windows XP. To install over software lower than Version 2.0 on Windows XP, you must uninstall the lower version first. To uninstall on Windows XP, go to the **Control Panel** and select **Add/Remove Programs**.

Unsupported NI-488.2 Versions on Windows Vista

NI-488.2 for Windows, Version 2.5.2, was the first version to support Windows Vista. If you installed a version of NI-488.2 lower than Version 2.5.2 on Windows Vista, you must uninstall it. To uninstall on Windows Vista, go to the **Control Panel** and select **Programs and Features**. After uninstalling the unsupported driver on Windows Vista, you must run a clean-up utility. For this utility and more information, visit ni.com and search for KnowledgeBase 46BH366K.

Unsupported NI-488.2 Versions on Windows 7

NI-488.2 for Windows, Version 2.7.2, was the first version to support Windows 7. If you installed a version of NI-488.2 lower than Version 2.7.2 on Windows 7, you must uninstall it. To uninstall on Windows 7, go to the **Control Panel** and select **Uninstall a Program**.

Downgrading to Lower NI-488.2 Versions

You must uninstall a higher version before installing a lower version.

For more information about changes in NI-488.2 for Windows, Version 2.8.1, review the [Enhancements and Bug Fixes in Version 2.8.1](#) section.

Supported Interfaces

NI-488.2 for Windows, Version 2.8.1, supports GPIB communication using the following hardware.

GPIB Interface	Windows XP SP3/Server 2003 R2 (32-Bit)	Windows 7/Vista SP2 (32-Bit)	Windows 7/Vista SP2/Server 2008 R2 (64-Bit)
AT-GPIB/TNT (PnP)	Yes	No	No
GPIB-ENET/100	Yes	Yes	Yes
GPIB-ENET/1000	Yes	Yes	Yes
GPIB-USB-B	Yes	Yes	Yes
GPIB-USB-HS	Yes	Yes	Yes
NI ExpressCard-GPIB	Yes	Yes	Yes
NI PCIe-GPIB	Yes	Yes	Yes
NI PCIe-GPIB+	Yes	Yes	Yes
PCI-GPIB	Yes	Yes	Yes
PCI-GPIB+	Yes	Yes	Yes
PCI-GPIB/LP	Yes	Yes	Yes
PCI-8212	Yes	Yes	Yes
PCI-8232	Yes	Yes	Yes
PCMCIA-GPIB	Yes	No	No
PCMCIA-GPIB+	Yes	No	No
PMC-GPIB	Yes	Yes	Yes
PXI-GPIB	Yes	Yes	Yes
PXI-8212	Yes	Yes	Yes
PXI-8232	Yes	Yes	Yes

Supported GPIB Analyzer Interfaces

NI-488.2 for Windows, Version 2.8.1, supports GPIB Analyzer functionality using the following hardware.

GPIB Interface	Windows XP SP3/Server 2003 R2 (32-Bit)	Windows 7/Vista SP2 (32-Bit)	Windows 7/Vista SP2/Server 2008 R2 (64-Bit)
NI PCIe-GPIB+	Yes	Yes	Yes
PCI-GPIB+	Yes	Yes	Yes

PCMCIA-GPIB+	Yes	No	No
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Compatible Software

This driver version is recommended for use with the following National Instruments software:

- NI-VISA 4.6.2 and 5.0
- LabVIEW 8.5.1, 8.6.1, 2009, and 2010
- LabWindows/CVI 8.5.1 and 2009
- Measurement Studio 2009 and 2010

Check our Web site, ni.com, for more information about compatible software released later than this driver.

Measurement Studio Examples

The Measurement Studio examples install to various directories, depending on the following:

- The component installed
- The Visual Studio or .NET Framework version that the example supports
- The Measurement Studio version installed
- The operating system

For detailed information on examples for Measurement Studio, refer to *Where To Find Examples* in the *NI Measurement Studio Help*.

Microsoft Visual Studio Support

The following table lists the programming languages and Microsoft Visual Studio versions supported by NI-488.2.

Programming Language	Visual Studio Versions Supported by NI-488.2
ANSI C	6.0, 2003, 2005, 2008, and 2010 ¹
Visual C++ MFC	2005 ² and 2008 ³
.NET Framework 2.0 Languages (C# and Visual Basic.NET)	2005 ⁴
.NET Framework 3.5 Languages (C# and Visual Basic.NET)	2008
.NET Framework 4.0 Languages (C# and Visual Basic.NET)	2010
Visual Basic	6.0 ⁵
¹ Microsoft Visual C/C++ 6.0 and 2003 do not support 64-bit GPIB applications. ² Requires Measurement Studio 8.0.1 - Measurement Studio 2009. ³ Requires Measurement Studio 8.6 - Measurement Studio 2009. ⁴ Microsoft Visual Studio .NET 2005 does not support 64-bit GPIB applications. ⁵ Visual Basic 6.0 does not support 64-bit GPIB applications.	

NI-488.2 for Windows, version 2.8.1 is the last release that includes full feature support for Visual C++ MFC 2005 and 2008. Additions made to the NI-488.2 API after version 2.8.1 will not be reflected in the Visual C++ MFC support.

If you are using .NET Framework 1.1 or Visual C++ MFC 2003 and you need NI-488.2 support, you must use NI-488.2 2.8 or earlier. However, if you installed .NET Framework 1.1 or Visual C++ MFC 2003 support from a previous version of NI-488, upgrading to version 2.8.1 will not remove that support. For more information on NI-488.2 support for .NET Framework 1.1 or Visual C++ MFC 2003, including considerations for users upgrading from NI-488.2 2.8 or earlier, visit ni.com/info and enter the info code 488mvs03.

Borland Support

NI-488.2 includes ANSI C support for Borland 5.02.

Enhancements and Bug Fixes in Version 2.8.1

.NET Support

NI-488.2 for Windows, Version 2.8.1, adds .NET Framework 4.0 support. It is available as an option in the Feature tree during installation.

Enhancements and Bug Fixes in Version 2.8

New Hardware Support

NI-488.2 for Windows, Version 2.8, adds support for the GPIB-ENET/1000. For information about the differences between the GPIB-ENET/1000 and the GPIB-ENET/100, visit ni.com and search for KnowledgeBase 5BPER2G2.

Windows Server Support

NI-488.2 for Windows, Version 2.8, adds support for Windows Server 2003 R2 (32-bit only) and Windows Server 2008 R2. Refer to the [Supported Interfaces](#) table for the list of supported hardware.

Windows 2000

Support for Windows 2000 is discontinued in this release.

Traditional Chinese

Traditional Chinese translations are discontinued in this release.

Enhancements and Bug Fixes in Version 2.7.3

Decrease in Performance in NI-488.2, Version 2.7.2 or older

A significant performance decrease may be encountered when performing I/O with DMA enabled. This issue impacted all PCI, PCI Express, PXI, and PMC interfaces, including the built-in GPIB ports on PXI and VXI controllers. This will happen with NI-488.2, Version 2.7.2, and older versions of NI-488.2 on systems where other NI software has been updated. This has been fixed.

Enhancements and Bug Fixes in Version 2.7.2

Windows 7 Support

NI-488.2 for Windows, Version 2.7.2, adds support for Windows 7 x86 (32-bit) and Windows 7 x64 (64-bit). Refer to the [Supported Interfaces](#) table for the list of hardware supported on Windows 7.

Possible Failure on `ibln()` and `FindLstn()`

182620: PCI type GPIB interfaces (PCI, PCIe, PMC, PXI) were not waiting the recommended time of 1.5 ms for instruments to respond to `ibln()` and `FindLstn()` calls. This typically would affect only older instruments with significantly slow response time and does not affect most recent instruments. This has been fixed.

PXI-GPIB Communication Failures Across MXI-Express

173210: BIOS incompatibilities on some systems prevented PXI-GPIB DMA from functioning properly across a MXI-Express link. Affected systems would fail all transfers larger than 32 bytes when configured for DMA mode. This issue has been fixed.

Possible Hang with USB GPIB Interfaces

171428: Terminating a process that is using a USB GPIB interface could cause the process to hang and possibly a bluescreen. This has been fixed.

Enhancements and Bug Fixes in Version 2.7.1

.NET Support

NI-488.2 for Windows, Version 2.7.1, adds support for 64-bit user mode in .NET Framework 3.5. You now can create 64-bit applications with .NET Framework 3.5.

For additional information, refer to *Working with 64-bit .NET Support for NI-488.2* in the *NI-488.2 .NET Framework 3.5 Help*. This help file is available at **Start»All Programs»National Instruments»NI-488.2»NI-488.2 .NET Framework 3.5 Help** when the .NET Framework 3.5 Languages Support is installed on the system.

Enhancements and Bug Fixes in Version 2.7

New Hardware Support

NI-488.2 for Windows, Version 2.7, adds support for the NI PCIe-GPIB+ Controller/Analyzer board.

Analyzer Support

This release adds support for the GPIB Analyzer on Windows Vista x64 (64-bit).

35095: Updated message displayed when using the Analyzer application without analyzer hardware present.

128461: The analyzer button is enabled in Measurement & Automation Explorer only when an analyzer interface is selected.

.NET Support

NI-488.2 for Windows, Version 2.7, adds Measurement Studio 2008 support. Measurement Studio 2008 support is selectable in the Feature tree during installation.

GPIB-ENET/100

The serial number of a GPIB-ENET/100 can now be queried using the `ibask` function call.

USB

135269: If a USB interface was removed while the system was shutting down, a runtime error could occur. This has been fixed.

Enhancements and Bug Fixes in Version 2.6

64-bit Application Interface

NI-488.2 for Windows, Version 2.6, adds a 64-bit application interface that allows users to create 64-bit applications on Windows Vista x64 (64-bit) using `ni4882.obj`. Using the 32-bit version of `ni4882.obj`, users can use the same NI4882 API to build corresponding 32-bit applications with no source code changes. The 32-bit applications based on `ni4882.obj` are compatible on systems with NI-488.2 for Windows, versions 1.7 and later.

For more information about the new NI4882 API, refer to the *NI-488.2 Help*.

Portable Configuration

This release adds support in Measurement & Automation Explorer (MAX) for the standard Export and Import wizard. This allows you to transfer the NI-488.2 configuration settings for supported GPIB interfaces.

Configuration Privileges

By default, only users with Administrator privileges can update NI-488.2 configuration settings in MAX. For less restrictive environments, this release adds an option in the MAX **Tools** menu to allow privileges to all users for updating configuration settings. Only a user with Administrator privileges can set the option.

.NET Support

NI-488.2 for Windows, Version 2.6, adds .NET Framework 3.5 support and Visual Studio 2005 support fixes. They are options in the Feature tree during installation.

Application Interface and Examples

The Application Interface (formerly called Language Interface) and example files have moved.

The `NIEXTCCOMPILERSUPP` environment variable is provided as an alias to the location of C language support files. You can use this variable when compiling and linking an application. The Application Interface files (header and library files to include in applications) moved to a centralized location to prevent users from accidentally overwriting them and to provide this `NIEXTCCOMPILERSUPP` environment variable.

You can access the examples through **Start»Programs»National Instruments»NI-488.2»Examples**. The examples require the new NI4882 API.

For more information about the new NI4882 API, refer to the *NI-488.2 Help*.

Real-Time Option

This release includes the option of installing NI-488.2 for LabVIEW Real-Time parts from the Feature tree during installation. See the `ReadMeRT.html` file for more information about NI-488.2 for LabVIEW Real-Time.

Serial Poll Bluescreen

41151: In rare cases, a `PAGE_FAULT_IN_NONPAGED_AREA` bluescreen appeared while the driver executed a serial poll. This has been fixed.

ibnotify Error

40815: In rare cases, using `ibnotify` with GPIB USB interfaces produced an error message, where *x* and *y* represent memory addresses: **The instruction at x referenced memory at y. The memory could not be "read."** This has been fixed.

Enhancements and Bug Fixes in Version 2.5.2

Windows Vista

NI-488.2 for Windows, Version 2.5.2, adds support for Windows Vista x86 (32-bit) and Windows Vista x64 (64-bit). Refer to the [Supported Interfaces](#) table for the list of hardware supported on Windows Vista.

Usability

This driver includes several usability improvements, including the following:

- The GPIB Getting Started Wizard is replaced with a new Welcome screen.
- The Add New Hardware Wizard is replaced with a new Add GPIB-ENET/100 Wizard.
- The Troubleshooting Wizard is replaced with a new Troubleshooting Utility.
- Changing GPIB configuration properties is better integrated into Measurement & Automation Explorer.

For more details about these utilities and tools, refer to the *NI-488.2 Help*.

Power Management

NI-488.2 for Windows, Versions 2.2 through 2.4.x, attempt to prevent the system from going to standby or hibernate if there is an application with an open NI-488.2 handle. To satisfy Windows Vista requirements, this has changed to no longer prevent the system from going to standby or hibernate. After the system returns from standby or hibernate, take the handle offline and open a new handle, because any subsequent calls from the previously opened handle will return the `EPWR` error code, except for `ibon1`

0.

.NET Support

This driver adds .NET 2005 language support and .NET 2003 language support fixes via the native .NET API. They are options in the Feature tree during installation.

Note that prior versions of NI-488.2 for Windows offered two options for .NET support to make it easier to update existing applications. The NI-488.2 wrapper interface, which previously was available on the CD in the `Microsoft .NET Language Interface` directory, has been removed from the current distribution. The NI-488.2 wrapper interface is still available at our Web site, ni.com.

Language Interface and Examples

The Language Interface and example files have moved from the `Program Files\National Instruments\NI-488.2\Languages` directory to the `Users\Public\Documents\National Instruments\NI-488.2\Languages` directory on Windows Vista and the `Documents and Settings\All Users\Documents\National Instruments\NI-488.2\Languages` directory on Windows XP/2000. This change satisfies Windows Vista requirements, when allowing users to save changes or add files to the directory. Note that the *NI-488.2 Help* incorrectly describes the location for .NET examples.

Analyzer NMI Parity Error

3Q4GJOAU: On certain machines, a bluescreen describing an NMI Parity Error appeared on installing a PCI-GPIB+ interface. This has been fixed.

GPIB-USB-HS

GPIB-USB-HS performance has improved and is optimized for whether it is connected to a full-speed or high-speed port.

SRQ

3R296C5E: If an event handler was installed to handle service request (SRQ) events, the events could fail to trigger if the session was currently locked exclusively. This has been fixed.

Enhancements and Bug Fixes in Version 2.4

New Hardware Support

NI-488.2 for Windows, Version 2.4, adds support for GPIB-USB-HS, NI ExpressCard-GPIB, and a revised version of the PCI-GPIB+ Controller/Analyzer board.

GPIB-USB-A

Support for the obsolete GPIB-USB-A interface is discontinued in this release.

ibcmd and Serial Poll Performance

3I191NAK: Driver version 2.3 performance during `ibcmd` and serial poll calls was lower than version 2.2. This has been fixed and improved over version 2.2.

Documentation

Documentation has been updated for various features.

Enhancements and Bug Fixes in Version 2.3

New Language Support

NI-488.2 for Windows, Version 2.3, adds language support for Chinese (Traditional), Chinese (Simplified), and Korean. This is in addition to English and Japanese languages supported by the previous versions of NI-488.2 for Windows. All components of this release have been localized with the exception of:

- NI-488.2 Interactive Control Utility
- GPIB Analyzer Software
- Measurement and Automation Explorer (MAX)
- NI-VISA
- User documentation

This release also includes new getting started documentation in all languages supported, available through the View Documentation utility on the NI-488.2 for Windows CD.

Windows 98/Me

Windows 98/Me support is discontinued in this release.

Microsoft Sysprep Utility

3B18A578: The Sysprep utility would cause a crash in some cases of deployment. This has been fixed.

ibcmda and ibstop

3D9ES759: An `ibstop` call was unable to stop asynchronous `ibcmda` calls. This has been fixed.

Utilities

Some cosmetic issues with GPIB utilities have been fixed.

Enhancements and Bug Fixes in Version 2.2

AT-GPIB/TNT (PnP)

NI-488.2 for Windows, Version 2.2, adds support for the AT-GPIB/TNT (PnP) interface.

PCI-Express™ Interface for GPIB

NI-488.2 for Windows, Version 2.2, adds support for the NI PCIe-GPIB, a PCI-Express™ Interface for GPIB.

Power Management

NI-488.2 for Windows, Version 2.2, adds the `EPWR` error code. This error indicates that the interface lost power. This may occur when the system goes to standby or hibernate mode. The NI-488.2 driver attempts to prevent the system from going to standby or hibernate if there is an application with an open NI-488.2 handle.

.NET Support

National Instruments provides two interfaces for developing GPIB-based applications in Microsoft Visual Studio .NET 2003 or later:

- The native .NET API
- The NI-488.2 wrapper interface

We recommend the native .NET API as the preferred method of developing GPIB .NET applications because of its superior integration into the Microsoft Visual Studio .NET IDE. The native .NET API can be installed from the NI-488.2 CD by selecting it from the custom installation section. It is installed in the `National Instruments\Measurement Studio` subdirectory. Full integrated help for this API is available inside the Visual Studio .NET environment. The NI-488.2 wrapper interface can be found on the CD in the `Microsoft .NET Language Interface` directory.

New `ibask` option

NI-488.2 for Windows, Version 2.2, adds the `IbaSerialNumber` option to `ibask`. This allows customers to query the serial number of the board that they are using. The `ibask` call will return a 32-bit serial number for supported interfaces. The driver will return with `ERR` bit set in `ibsta`, and `iberr` set to `ECAP` for unsupported interfaces. This feature is not supported with the Visual Basic language interface. The VB language interface for `ibask` does not handle unsigned 32-bit numbers.

PCMCIA-GPIB

34EHULAW: Older National Instruments PCMCIA-GPIB devices would not enumerate properly with the 2.1 driver. This has been fixed.

`ibnotify`

2Q379FSL: The driver sometimes would not call the `ibnotify` callback, or call the `ibnotify` callback improperly when waiting for `RQS`. This has been fixed.

`ibconfig`

35LEK99F: The driver would hang if a device-level `ibconfig` was called with `IbcSPollTime`, `IbcPAD`, or `IbcSAD` when an `ibnotify` call on the same device descriptor was in progress. This has been fixed.

Memory leak

36NARLXY: The driver had a small memory leak when being used by VISA. This has been fixed.

Analyzer

2SJC9C00: The GPIB Analyzer application would crash when launched with some video cards. This has been fixed.

DOS

2XFEF2Q6: Enabling DOS support worked improperly when logging in as a different user than it was enabled as. This has been fixed.

Enhancements and Bug Fixes in Version 2.1

PCMCIA-GPIB

NI-488.2 for Windows, Version 2.1, adds support for the PCMCIA-GPIB interface. Following the precedent of Version 2.0 of the driver, which unified the driver for the PCI, ENET, and USB interfaces, this version ensures that those interfaces along with the PCMCIA-GPIB can function simultaneously with the same driver.

Analyzer

NI-488.2 for Windows, Version 2.1, supports the GPIB analyzer portion of the PCI-GPIB+ and PCMCIA-GPIB+ on the Windows XP/2000 operating systems. This support was previously only available on Windows NT/98/95.

Enhancements and Bug Fixes in Version 2.0

Installer

NI-488.2 for Windows, Version 2.0, improves the installation experience for the user.

Windows XP/2000

In the past, there were separate drivers for plug-in interface boards (PCI-GPIB, etc.), the GPIB-ENET family, and the GPIB-USB-A. Only one of these three could be installed and used at any one time. NI-488.2 for Windows, Version 2.0, removes this restriction. All supported interfaces function simultaneously with the same driver.

User Mode

NI-488.2 for Windows, Version 2.0, resolves the issue that prevents users running the software in USER mode (as opposed to ADMINISTRATOR mode).

Internationalized Software Support

NI-488.2 for Windows, Version 2.0, offers an improved localized solution in Japanese.

Win16 and DOS Support

NI-488.2 for Windows, Version 2.0, does not support Win16 applications for Windows Me/9x platforms. Win16 support is available under Windows XP/2000. To use these applications under Windows Me/9x, you must use a previous version of NI-488.2 for Windows. DOS support is available on all operating systems this driver supports.

Contacting National Instruments

Thank you for your interest in NI-488.2 for Windows. We appreciate communicating with the people who use our products. We are also very interested in hearing about the applications you develop using our products. Our Web site, ni.com, provides advanced support and services and contact information.

Patent Information

For patents covering [National Instruments](http://ni.com) products, refer to the appropriate location: **Help»Patents** in your software, the `patents.txt` file on your CD, or ni.com/patents.

Credits

This product includes components that use mDNSResponder. In regards to the mDNSResponder library, the following notice applies:

This product includes software developed by the Apple Computer, Inc. that is subject to the Apache License, Version 2.0 (the "mDNSResponder License"), a copy of which may be found at <http://www.apache.org/licenses/LICENSE-2.0>. Copyright © 2002–2003 Apple Computer, Inc. All rights reserved. Certain modifications have been made by National Instruments Corporation to the version of mDNSResponder library used in this product; such modifications are Copyright © 2008 National Instruments Corporation. The content of this notice is for informational purposes only and does not modify the mDNSResponder License. See the mDNSResponder License for the specific language governing permissions and limitations relating to the mDNSResponder library.

After installing the NI-488.2 software, the mDNSResponder Free and Open Source Software notice can be found on your system under `[NationalInstruments]\Shared\mDNS Responder\mDNS Responder FOSS notices.pdf`, where `[NationalInstruments]` refers to the directory where you installed your National Instruments software.