Agilent IO Libraries Read Me

Agilent IO Libraries for Windows®

Version M.01.01.04

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General Information
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This IO Libraries package supports Windows 98 SE, Windows Me, Windows NT® 4.0, Windows 2000, Window XP Professional and Windows XP Home.

After you have installed the Agilent IO Libraries, you can double-click on the 'IO Libraries Readme' icon in the 'Agilent IO Libraries' folder to view the latest information about the Agilent IO Libraries.

These information and troubleshooting files are in HTML format and reside in the 'readme' subdirectory of the main IO Libraries installation directory. If you have installed the IO Libraries in the default location, these files are located in:

C:\Program Files\Agilent\IO Libraries

These files are also present in the 'readme' subdirectory on the Agilent IO Libraries CD-ROM.

Note that you must have a web browser installed on your computer to view these files.

Electronic manuals are also included on the CD-ROM in the 'Manuals' subdirectory. Setup options also allow you to install these manuals on the hard drive. They are installed in the 'Manuals' subdirectory of the main IO Libraries installation directory.

To view the electronic manuals that are included with IO Libraries you will need Adobe® Acrobat® Reader version 3.01 or later installed on your computer. You can obtain the latest Acrobat Reader from Adobe's web site at: http://www.adobe.com by clicking on the 'Get Acrobat Reader' icon.

Adobe Acrobat Reader can also be installed from the IO Libraries CD-ROM. Double-click on the icon in the 'Adobe' subdirectory of the CD-ROM to install it.

New Features and Changes
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- Agilent VISA COM now installed when the IO Libraries are installed.

* If an earlier version of Agilent VISA COM is already installed, the earlier version will be upgraded.

* If a later version of Agilent VISA COM is already installed, the later version will not be overwritten.

- The VISA 3.0 spec was still in draft form at the time of the M.01.01.04 release of the IO Libraries.

* The support provided in this release is based latest draft available at the time of this release.

- Support for USB instruments has been added.

* Unplug USB instruments before installing or upgrading the Agilent IO Libraries.

* If using USB, Windows XP is recommended and XP Service Pack 1 (SP1) or later MUST be installed. On some occasions, installing SP1 does not properly update the USB driver files. It is highly recommended that you validate the versions that were installed. See the Instrument I/O | IO Libraries Troubleshooting section of the Agilent Developer Network (ADN) Knowledge Library at: http://www.agilent.com/find/adnknowledge for details.

* If using USB on Windows 2000, full speed operation (12 Mb/sec) is supported. High speed operation (480Mb/sec) is planned with a future Windows 2000 service pack.

* On Windows 98SE and Windows ME, full speed operation is supported and high speed operation is allowed but
not supported.

* For up-to-date information on supported USB configurations and operating systems, see the Instrument I/O | IO Libraries Troubleshooting section of the Agilent Developer Network (ADN) Knowledge
Library at: http://www.agilent.com/find/adnknowledge

- Known Issues:

* On some Windows XP installations, the Agilent IO Libraries installation program will generate an 'IKernel.exe Application
Error' at the very end of the installation process after you click 'Finish' in the dialog box which indicates that the
Agilent IO Libraries have been successfully installed. The Application Error dialog box will display a message similar to
the following:
The instruction at "0x771c741a" referenced memory at
"0x00164780". The memory could not be "read".
This error can safely be ignored since it occurs after the IO Libraries have been successfully installed. It appears to be
a problem in the InstallShield 6.31 kernel which occurs as it is exiting after a successful installation.

* On Windows XP, a registry patch is installed when the IO Libraries are installed to fix a problem where Windows XP
may not detect a USB device when it is plugged in.

+ This problem can occur if there are no other USB devices attached to the computer.

+ This patch is described in Microsoft® Knowledge Base Article Q134634.

+ Under the HKEY_LOCAL_MACHINE:\SYSTEM:\CurrentControlSet:\Services:\Usb
key, a REG_DWORD value named DisableSelectiveSuspend is created and set to 1.

+ The Microsoft knowledge base article does not describe any adverse side-effects of creating and setting this value and
our testing has not revealed any problems either.

* It is recommended that you power a USB device before plugging in the USB cable and that you unplug the USB cable before powering it off. Powering USB device on or off while its USB cable is attached to the computer can adversely affect the Windows USB drivers and cause problems with communications to other USB devices attached to the computer. This is a generic USB problem, not specifically related to the IO Libraries and USB instruments.

* The issues below affect Agilent IO Libraries version L.02.00 and later:

+ The format of the Microsoft library (.lib) files has changed. You must use Microsoft Visual C++ version 6.0 or later to
link with the .lib files in this release. This change was required because the IO Libraries are now being built with
MSVC 7 which does not offer a linker option to generate a.lib file in the older format.

+ On Windows NT 4.0, this version of the Agilent IO Libraries requires the following be installed to supply Microsoft DLL's
that are not present on a bare Windows NT 4.0 installation:

= Service Pack 6 or later -- oleacc.dll.

= Microsoft Internet Explorer version 4.0 or later -- shlwapi.dll.

Fixes
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- A problem was fixed where long delays occurred with viOpenDefaultRM when network devices were configured but
turned off.

- Numeric values in a VISA resource string may now be either hex (e.g. 0x1234) or decimal. In addition leading zeros on
decimal numbers are now ignored.

- A potential problem on Windows 98 and Windows ME with GPIB cards not initializing properly if the IO Libraries were uninstalled and then reinstalled has been fixed.

- A problem where viLock could return a VI_ERROR_RSRC_LOCKED error when a LAN resource was locked by a session on a different computer has been fixed.

Issues
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- Use of the %F (file pointer) SICL format specifier is not recommended.

* The %F specifier uses a file pointer returned from an fopen call. If this pointer is opened in an application and passed to a DLL (as it is will be to Sicl32.dll when calling ipriintf or iscanf), it will only be valid if both the application and the DLL load the same copy of the runtime libraries. Sicl32.dll is built using the
Microsoft mult-threaded DLL version of the runtime libraries. Since we routinely upgrade to newer versions of Microsoft Visual C as we develop new versions of the IO Libraries, applications which use the %F format specifier that were compiled to work with one version of the IO Libraries will fail (usually with an access
violation) when run under a newer version.

- The 82357 USB to GPIB converter will fail to install correctly
on Windows 98SE systems if USBSCAN.SYS is not present.

* USBSCAN.SYS is a Microsoft driver that is required for 82357 operation, but it may not be installed on some Windows 98 systems.
* If USBSCAN.SYS is not present on your system, after installing the IO Libraries and then plugging in an 82357, the 'Adding New Hardware' wizard will prompt you for the location of USBSCAN.SYS. This file is present on the Windows 98SE installation disk.
* For more detailed instructions on this topic, refer to the 82357 USB/GPIB Troubleshooting Guide topic in the
Troubleshooting Guide

- 82341C GPIB cards and E2075A GPIO cards are not supported on Windows Me.

* Due to Windows configuration manager changes made by Microsoft, these ISA cards are very difficult to configure and can cause the computer to hang during the configuration process. Refer to the html troubleshooting page for more information.

- The 82341D GPIB card is not supported on Windows 2000.

* Note, however, that the 82341C card is supported.

- The Adaptec PCI to 1394 card which originally shipped with the E8491 VXI to 1394 interface is not supported on Windows 2000.

* This original card was not OHCI compliant and only OHCI 1394 cards are supported on Windows 2000.
* The E8491 is now shipping with an OHCI compliant card which is supported on Windows 2000.

- Beginning with the J.01.00 release, the default paths for IO Libraries and VISA have changed to: ':\Program Files:\Agilent:\IO Libraries' for SICL ':\Program Files:\VISA' for VISA If you are installing over a previous version of the IO Libraries, the directories will not be changed.

- We recommend downloading a Windows 2000 hotfix from Microsoft to resolve two known problems which affect the E8491.

* Block write and I-SCPI performance on the E8491 on Windows 2000 are significantly reduced due to the workaround for a memory leak in the 1394 driver.
* Performance problems and missed interrupts on Windows 2000 are possible due to a busy-acknowledge defect in the 1394 driver. This is known to affect some E8491 firmware downloads and some
I-SCPI and VXIplug&play drivers.
* Microsoft has implemented a hotfix which solves both of these problems. Go to
http://www.microsoft.com and search for 'Q262814' to find the Knowledge Base article with

information on obtaining the hotfix. If you have difficulty, contact Agilent Support for more information.
* The hotfix must be obtained from Microsoft. Microsoft does not allow Agilent to distribute Windows 2000 hotfixes.
* Microsoft has stated that this fix will be included in the Windows 2000 Service Pack 2 when it becomes available.
* The E8491 driver will sense the presence of the hotfix or Service Pack 2 and automatically switch to a higher performance mode if either is installed.

- We recommend downloading a Windows 98/Me hotfix from Microsoft to resolve a known Windows 98/Me IEEE 1394 problem which affects the E8491.

* Performance problems and missed interrupts on Windows 98 and Windows Me are possible due to a busy-acknowledge defect in the 1394 driver. This is known to affect some E8491 firmware downloads and some I-SCPI and VXIplug&play drivers.
* Microsoft has implemented a hotfix which solves this problem. You can find out more about this hotfix by going to http://www.microsoft.com and searching for Q252183 to find the Knowledge Base information
on obtaining the hotfix. If you have difficulty, contact Agilent Support for more information.
* The hotfix must be obtained from Microsoft. Microsoft does not allow Agilent to distribute Windows hotfixes.

- There is a memory leak in Windows 98 which may affect the IO Libraries operation.

* We have observed a 4 Kb memory leak each time any program that dynamically links the Microsoft msvcrt.dll (even a program that does not do IO) is run and then exits on Windows 98. This DLL is the C runtime library supplied with Microsoft Visual Studio® and it is used by many products.
* The IO Libraries dynamically link to msvcrt.dll so any program using SICL and / or Agilent VISA will exhibit this problem.
* If your application involves starting and stopping programs many times, you will eventually run out of memory. Windows 98 will gradually become sluggish and eventually quit. The only solution to this problem is to reboot.
* We are reporting this defect to Microsoft but there is no resolution yet available.
* Note: If in Microsoft Visual Studio, you choose 'Multithreaded DLL' in the 'Use run-time library:' box
on the C/C++ Code Generation tab, your application will dynamically load msvcrt.dll.

- When three or more E8491's are connected to a single IEEE 1394 interface card, certain topologies may not work.

* In certain topologies the E8491 hardware is not properly identified on the 1394 bus. This will result in inconsistent behavior when the VXI resource manager tries to configure instruments in the VXI card cages.
* Behavior may include timeout errors while attempting to communicate with a particular instrument, and / or instruments appearing in cages where they are not actually located.
* Try reversing the cable connections to the ports on the host interface card. In general, cable connections with longer chains of E8491's should be on lower host ports.

- Don't re-run setup too quickly.

* After the IO Libraries Setup program exits, it takes several seconds to clean up and unload itself from memory. If Setup is re-run before this process is complete, you may see an error message or find that the re-installation does not behave as expected.

* Be sure to wait until the 'InstallShield Wizard' box on the Windows task bar has disappeared before attempting to re-run the IO Libraries Setup.

- Installing on dual boot systems can cause problems.

* Installing the IO Libraries on dual boot systems that share a common 'Program Files' directory between two operating systems is not recommended and may cause problems.
* If the IO Libraries are installed in the same directory for both operating systems (e.g. 'Program Files:\Agilent:\IO Libraries'), files for one OS may overwrite files for the other OS.
* InstallShield uses a directory under 'Program Files' to log the name and location of files for later un-installation as well as the components that are currently installed. Uninstalling or modifying an installation on one OS may affect the files for the other OS rather that the currently booted OS, even if these files are installed in different directories.

- After installation on Windows 95 and Windows 98, Windows may fail to boot.

* When adding paths to the PATH statement in Autoexec.bat, InstallShield does not recognize '@PATH' as a path statement. It will create a second 'SET PATH' statement. If there is a second PATH statement, it will replace the existing Windows PATH and end up removing the Windows directories from the PATH.
* If Windows fails to boot with a message 'Cannot find WIN.COM, unable to continue loading Windows', you will need to edit the additional PATH statement in Autoexec.bat so the Windows directories are again included in the PATH.

= From the DOS prompt type:

'c:\windows\command\edit c:\autoexec.bat'

(Substitute the actual paths if you have a non-standard installation.)
= Find the last 'SET PATH=...' statement and insert '%path%;' immediately after the equals sign. (e.g. 'SET PATH=%path%;...' and don't forget the semi-colon separator.)
= Save the modified file and reboot. Windows should now boot normally.

- If the E8491 is very busy and an IEEE 1394 bus reset occurs, it may become unresponsive and require a reset of the E8491 and/or a reboot of the computer.

* This problem can occur when another 1394 device is added or removed while the E8491 is busy.

Contact Support
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- The Agilent IO Libraries support web page is: http://www.agilent.com/find/iolib

- For Telephone support:

* In the US, the phone number for support is 800-452-4844.
* In the Canada, the phone number for support is 877-894-4414.
* Outside the US and Canada, contact your country's Agilent support organization. A list of contact information for other countries is available on the Agilent website at: http://www.agilent.com/find/assist.

Downloading the Latest Version of the Agilent IO Libraries

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- You can download the latest Agilent IO Libraries from: http://www.agilent.com/find/adniolib.

- For notes, patches and bug fixes, explore the Agilent IO Libraries support web page at: http://www.agilent.com/find/iolib_support.