

Agilent OpenLAB CDS ChemStation Edition

Agilent IO Libraries Suite 15.5 or
higher



Agilent Technologies

Notices

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Software Revision

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In This Guide ...

This manual describes how to install and configure the IO Libraries Suite for use with the Agilent OpenLAB CDS ChemStation edition C.01.xx.

1 Installing the Agilent IO Library Suite and Drivers

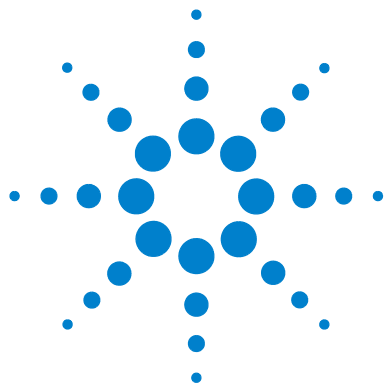
This chapter outlines the installation of the IO Library Suite which is necessary to control 82357 A/B USB-GPIB Interfaces. Secondly it outlines the installation and the configuration of Interface Drivers and changes made by the installation.

2 Installation troubleshooting

This chapter gives support in case of installation problems. In addition it gives instructions how to change or remove your installation.

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Installing the Agilent IO Library Suite and Drivers

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This chapter outlines the installation of the IO Library Suite which is necessary to control 82357 A/B USB-GPIB Interfaces. Secondly it outlines the installation and the configuration of Interface Drivers and changes made by the installation.



Prerequisites

To use the 82357 A/B USB-GPIB Interface, it is necessary to install or upgrade the corresponding driver and configuration software. The IO libraries are part of the OpenLAB CDS Master installer. It is possible to manually install the IO libraries later like outlined in this document. The installables of the IO Libraries are present in Disk 3 of your OpenLAB CDS CD-ROM or the Agilent GPIB Libraries for Instrument control CD-ROM. To install IO Libraries suite 15.5 proceed according to the steps described in this manual.

The Agilent Open Lab CDS ChemStation Edition C.01.xx and greater requires version 15.5 of IO Libraries Suite. These libraries are supported under Windows XP Professional, Windows Vista and Windows 7.

NOTE

These Libraries are NOT supported on Windows 2008 Server R2. Therefore they may not be installed on Agilent Instrument Controller (=AIC). Hence such an AIC will not be able to support LC/MS, CE/MS or any instrument requiring GPIB.

NOTE

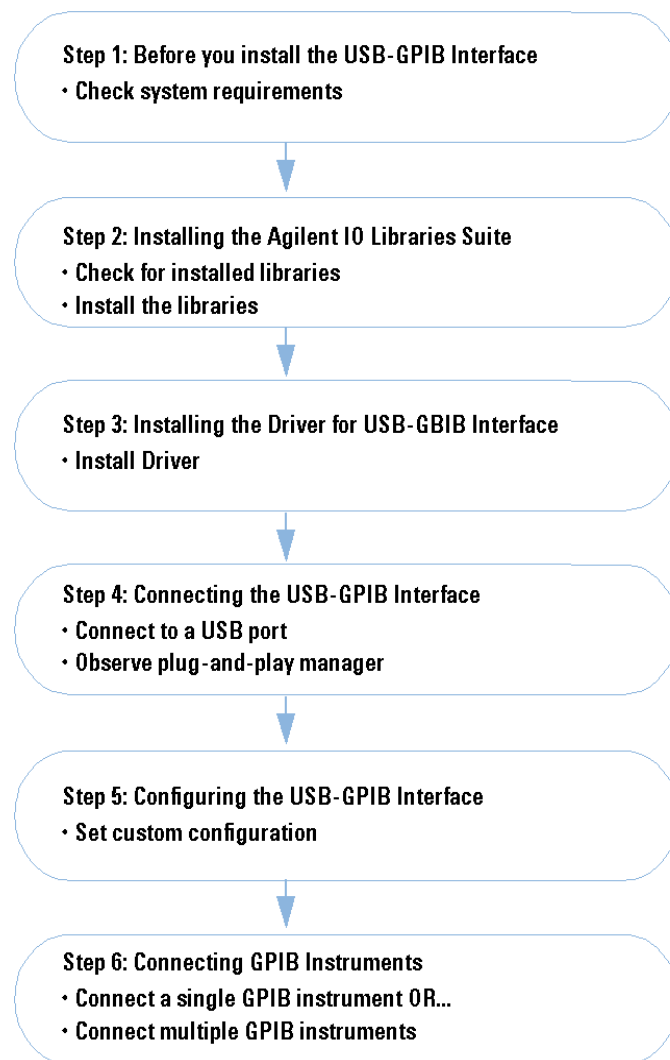
Before installing the GPIB Interface Driver, verify that this communication component is supported for your instrument in use. Refer to the table below.

Table 1 GPIB and Analytical Hardware Compatibility Matrix

Instrument	Agilent 82357A	Agilent 82357B
1600 Capillary Electrophoresis	Yes	Yes
Agilent 6890A / 6890 Plus GC	No	Yes

Installing the IO Library Suite

The IO Libraries are part of the Master Installer of the Agilent OpenLAB CDS. It is possible to install the IO libraries any time later like outlined below.



1 Installing the Agilent IO Library Suite and Drivers

Installing the IO Library Suite

To establish the communication to your instrument using the IO Library suite, you need to perform the following steps:

- 1 Install IO Library Suite *before* connecting any USB-GPIB Interface. Otherwise disconnect your devices and remove the USB-GPIB Interfaces from your PC.
- 2 Re-connect your device and initialize/install your USB-GPIB Interface Drivers.
- 3 Start the Agilent Connection Expert to configure your connection see [“Configure the 82357 A/B USB-GPIB Interface”](#) on page 12.

NOTE

You must have administrator privileges to install the IO Library Suite and to run the Agilent Connection Expert later for configuration.

NOTE

IO Libraries Suite 15.5 requires Microsoft Visual C++ Redistributable, VISA Shared Components and IVI Shared Components and Microsoft .NET Framework to be installed prior the installation of the application. If these components are not present, they will be installed by the IO Library Suite automatically, before starting the IO Library Suite installation.

- 1 Disconnect any USB/GPIB interface connected to your PC.
- 2 Close all other applications on your PC.
- 3 Use the Windows Explorer to navigate to Disk 3 of your OpenLAB CDS ChemStation CD-ROM, and locate the setup.exe in the Agilent_IO_Libraries directory. If Microsoft C++ Redistributable, VISA Shared Components and IVI Shared Components are not present, the InstallShield comes up and will list the application as requirement. Press **Install** to start the installation of the Microsoft C++ Redistributable, VISA Shared Components and IVI Shared Components.

The IO Suite InstallWizard Welcome Screen is displayed afterwards.

- 4 Click **Next** and on the upcoming License Agreement Screen, accept the License Agreement and then click **Next** to continue the upgrade.
- 5 Select **Typical** for the installation type and press **Next** to continue.
- 6 On the upcoming window, verify the path statements for the installation and press **Install** to start the installation process. The system will start now installing the files to your disk.


- 7 The IO Libraries have been successfully installed now. Leave the screen with **Finish**. You will see the IO Control icon  in the taskbar notification area of your PC screen. (The taskbar notification area is where the clock is usually displayed).



Figure 1 Finish Device Driver Installation in Windows XP

- 8 Reboot your PC.

Install the USB-GPIB Interfaces Drivers

NOTE

Depending on your PC and previously installed software/hardware, the driver initialization and installation procedure may slightly differ compared to the outline in this document. Please compare the screens carefully.

- 1 Connect your 82357A/B USB-GPIB Interface to your PC. Leave your instrument switched off.
- 2 As the operating system starts after power cycling, a tool tip will notify about new hardware (see [Figure 2](#) on page 10).

Now running the installation, the system will

- 1 Find the new hardware



Figure 2 Found New Hardware

- 2 Recognize the 82357A/B

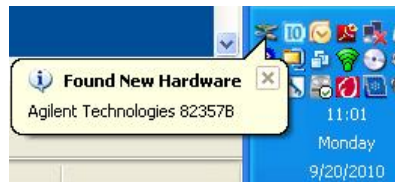


Figure 3 Recognize New Hardware

- 3 Initialize the new hardware



Figure 4 Initialize New Hardware

The hardware wizard can detect the following hardware:

- Agilent Technologies 82357 USB- GPIB Interface

Please wait till the initialization went through. The tool tip will inform you that the hardware is ready to use.

Configure the 82357 A/B USB-GPIB Interface

The Agilent Connection Expert is a software utility that helps you to quickly get your instruments connected to your PC and troubleshoot connectivity problems. You can use Connection Expert to:

- Configure instrument I/O interfaces
- Automatically discover instruments that are connected to your PC or to your local area network (not recommended for ChemStation Instruments)
- Browse the structure and connections of your test system (including your PC, instruments, and interfaces)
- Detect and troubleshoot connectivity problems in your system

NOTE

Starting the Agilent Connection Expert the system autodetects all available devices. This can lead to connection issues using the Electrophoresis System. Please follow the outline steps in this document and do not use the available **Refresh all** function.


- 1 Start the Connection Expert by clicking the IO Control (IO icon ) in the Windows notification area, and click **Agilent Connection Expert** (see [Figure 5](#) on page 12).



Figure 5 Run Connection Expert

- 2 Close the Welcome Screen of the Connection Expert.
The Connection Expert automatically detects most interfaces and instruments, and will assign names and other default configuration

settings. You can click on them to see their properties (displayed in the right-hand pane). In order to use it with ChemStation controlled instruments, the interfaces and devices need to be configured manually for proper communication.

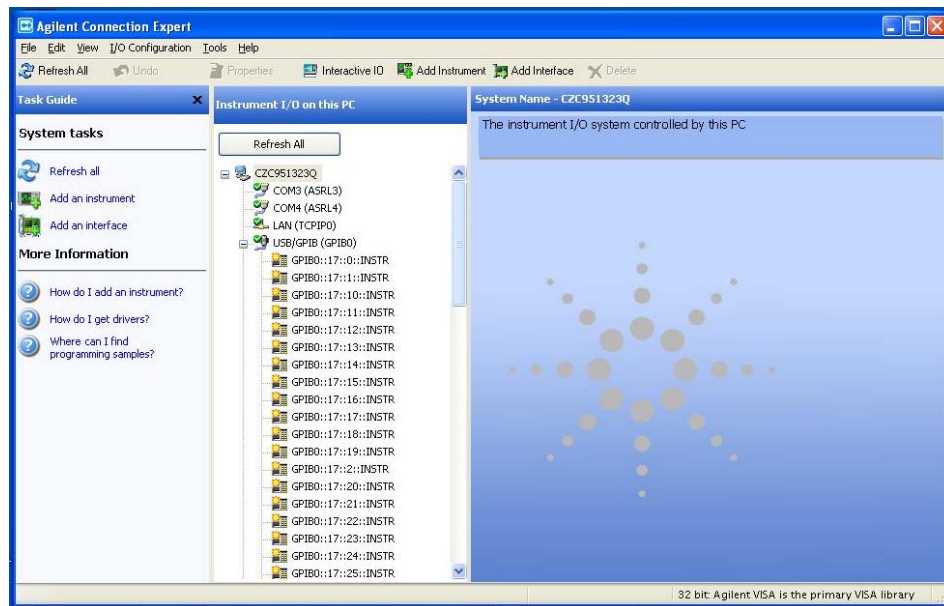


Figure 6 Connection Expert with online instrument automatically configured

If your GPIB Instrument is switched on, the Connection Wizard automatically detects the online instrument and assigns the default configuration.

NOTE

In case of the Capillary Electrophoresis, this assignment is not correct. The connection needs to be established manually. Leave this instrument turned off! This prevents the assignment of incorrect default configuration.

- 3 In the section **Instrument I/O of this PC** all currently available communication ports are listed. Select the first port, e.g. COM 1 and press delete (using the Task Guide, Menu Bar or the right mouse-click function). Please remove ALL available ports one after the other.

1 Installing the Agilent IO Library Suite and Drivers

Configure the 82357 A/B USB-GPIB Interface

4 In the section **System Tasks** select **add an Interface**.

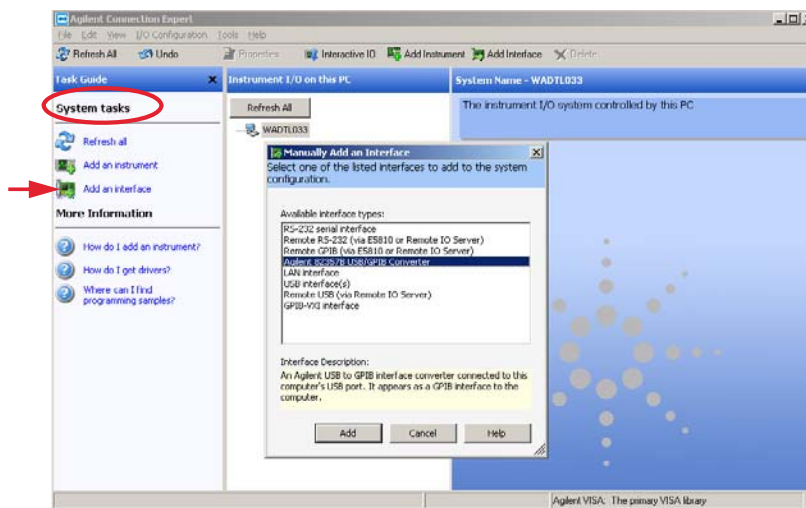


Figure 7 Connection expert: Manually Add an Interface

5 Select your interface type from the list of available interface types and press **Add**. Using ChemStation Instruments the following interface types are supported:

- Agilent 82357A USB/GPIB Converter
- Agilent 82357B USB/GPIB Converter

NOTE

If you are not sure, if your instrument supports the mentioned interfaces, please consult Chapter 1.

6 The next window allows to modify the configuration of the chosen interface, see [Figure 8](#) on page 15.

- Set the **GPIB address** to **30**
- set the **SICL Interface ID** to **hp82341**
- deselect the **Auto-discover instruments connected to this interface** option
- press **OK** to finish the configuration.

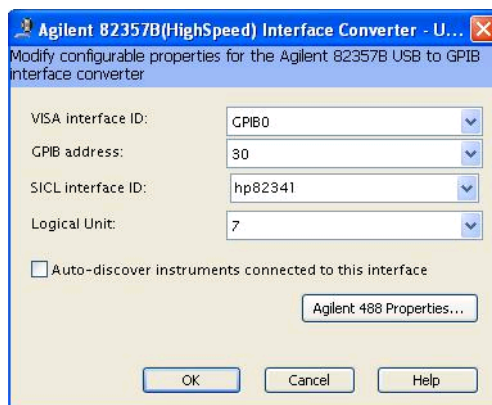


Figure 8 Configuration Parameter 82357A/B USB/GPIB Interface

- 7 Locate your interfaces in the explorer pane. You can click on them to see their properties. It is possible to rename the labels of the interfaces. You can observe their state, and it is also displayed in the right-hand pane if communication to the interface or instrument has been successfully established, it will be in the *Verified* state, denoted by a green check mark.
- 8 The configuration of your interfaces or GPIB card is now finished. Exit or close **Agilent Connection Expert** and reboot your PC.
- 9 Switch your instrument on, and configure your Instrument using the ChemStation Configuration editor, as described in the manual *Installing your ChemStation*, before starting the Agilent Open Lab CDS ChemStation Program.

What has been changed by the Installation?

The instrument connection requires a full installation of the 15.5, therefore the whole library packages including SICL and VISA were installed and several program icons were created. In addition, an Agilent IO Control was created.

The Agilent IO Libraries Suite program group is now present in the Program List, as well as the "IO" icon in the left corner. It is possible to start the Agilent Connection Expert via both options.

Table 2 Agilent IO Libraries Suite Program Items

Program item	Contains / opens
Documentation	PDF User Guides etc. for SICL, VISA, etc.
Help	Help Files for all Program items
Programming Samples	Programming examples for Excel, Visual Basic 6, Visual Basic .NET, etc.
Agilent Connection Expert	Opens the Agilent Connection Expert. Use to configure your connection interface
15.5 Readme	Opens 15.5 Readme
Utilities	Lists the available IO Libraries Suite Utilities

IO Control Services and Processes

NOTE

The services and processes listed below are present for plain ChemStation configuration. Additional services and processes (Agilent.TMFFramework) are present depending on your configuration (e.g. remote Services).

The following table lists the IO Control related services and processes,

- present after the installing the IO Control
- present during online connection to a USB/GPIB Interface

Table 3 IO Control Services

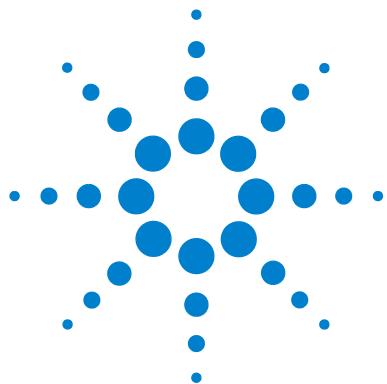
Service	Present after/during
Agilent IO Libraries Service	after installation

Table 4 IO Control Processes

Process	Present after/during
Agilent.TMFramework.Connectivity. AgilentIOLibrariesService.exe	after installation
Agilent.TMFramework.Connectivity. AgilentNkoServer.exe	after installation
Agilent.TMFramework.Connectivity. AgilentIOServer.exe	after installation
hsiclsk.exe	Online Session of ChemStation using USB/GPIB

Changing Your Installation or Removing IO Libraries Suite

- 1** Click **Start > Settings > Control Panel > Add or Remove Programs**
- 2** Select **Agilent IO Libraries Suite15.5**
- 3** Click **Change/Remove**
- 4** Select the action you want to take:
 - **Modify:** Adds, replaces, or removes selected features. You can change your installation from primary to side-by-side or from side-by-side to primary by using this option. You can also use this to install manuals or sample code if you did not initially install them.
 - **Repair:** Reinstalls all features.
 - **Remove:** Removes the product from your PC.



2 Installation troubleshooting

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Problems with Plug and Play option using 82357A/B USB-GPIB
Interface [21](#)

This chapter gives support in case of installation problems. In addition it gives instructions how to change or remove your installation.



Installation Troubleshooting

If you encounter problems while installing the IO Libraries Suite, the following steps may help.

- 1** Close or cancel all **InstallShield Wizard** and other *Agilent IO Libraries Suite* windows. Exit any other applications on your system.
- 2** Use the Windows Explorer to navigate to Disk 3 of your OpenLAB CDS ChemStation CD-ROM, and locate the setup.exe in the Agilent_IO_Libries directory.

This restarts the installation process.

- 3** If you see the standard **InstallShield Wizard**, step through the installation process as described in this chapter.
- 4** If you see **Modify**, **Repair**, and **Remove** options, select **Repair**.
This will reinstall all installed features of IO Libraries Suite.
- 5** If this does not solve the problem, restart the installation again, select **Remove**, and then reinstall the product.

Problems with Plug and Play option using 82357A/B USB-GPIB Interface

Operating systems using Plug and Play may show problems during the installation of the appropriate drivers for the USB-GPIB Interface.

In order to overcome problems related to Plug and Play, please follow the steps to install the card successfully.

- 1 Verify the status of the USB-GPIB Interface in the Device Manager: **Start > Settings > Control Panel**, double-click **System > Hardware Tab > Device Manager > GPIB Interfaces**.

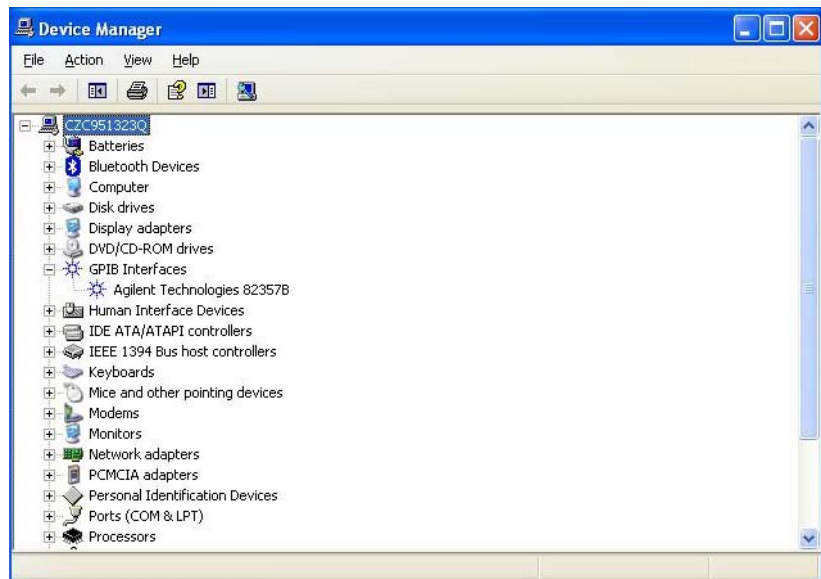


Figure 9 Device Manager Windows XP USB-GPIB Interface, correctly installed

2 Installation troubleshooting

Problems with Plug and Play option using 82357A/B USB-GPIB Interface

- 2 If a yellow exclamation mark is attached to the USB-GPIB Interface (see [Figure 10](#) on page 22) the driver needs to be installed a second time as in “[Install the USB-GPIB Interfaces Drivers](#)” on page 10.

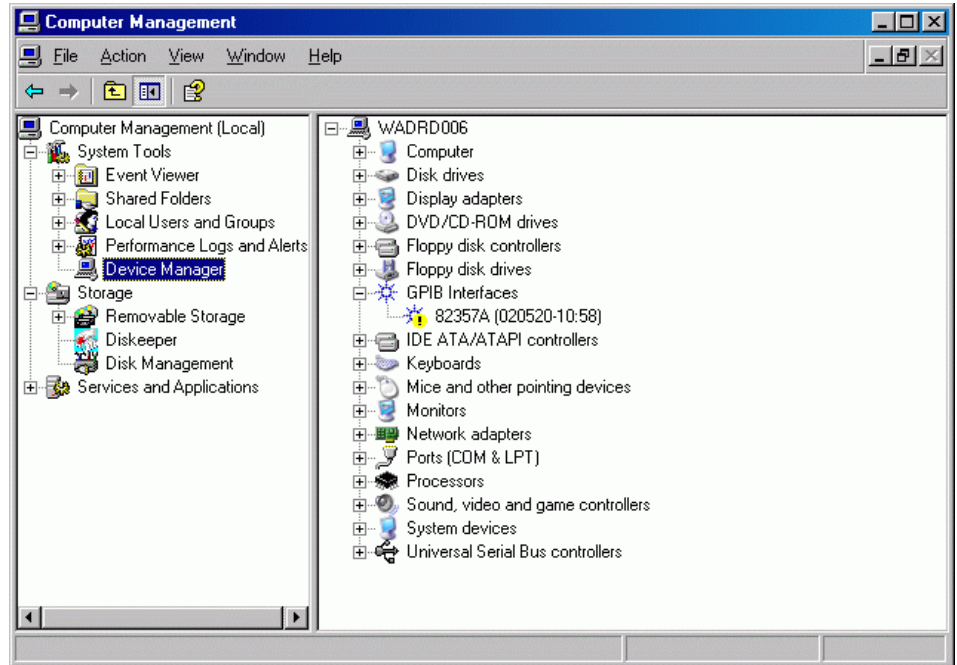



Figure 10 Device Manager Windows XP after first installation of USB-GPIB Interface

- 3 After the second installation, the system detects the USB device automatically and allows you to configure the device properly. Start the **Agilent Connection Expert** to configure your GPIB connection.
- 4 Start the IO Config Utility by clicking on the Icon , and choose **Agilent Connection Expert** to configure your GPIB Interface (see “[Configure the 82357 A/B USB-GPIB Interface](#)” on page 12).
- 5 From the list of available interface types, choose the **82357 USB to GPIB**.

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In This Book

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