

READ THIS FIRST!

Your Test System Quick Start


The following pages further explore each step.

Step 1. Install Agilent's IO Libraries Suite

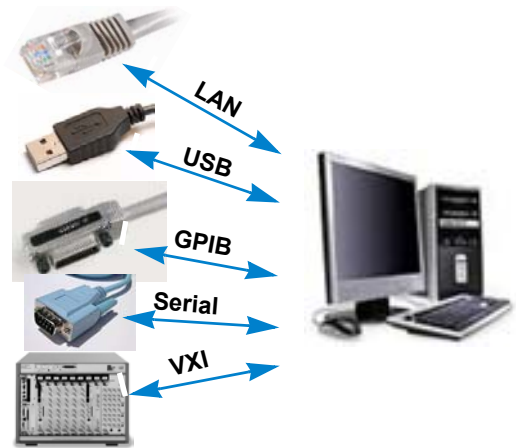


Always install Agilent IO Libraries first! Install from either:

- The Agilent Automation-Ready CD,
- OR
- Download the latest version from:
www.agilent.com/find/iosuite

After IO Libraries are installed, the Agilent IO icon () appears in the taskbar notification area.

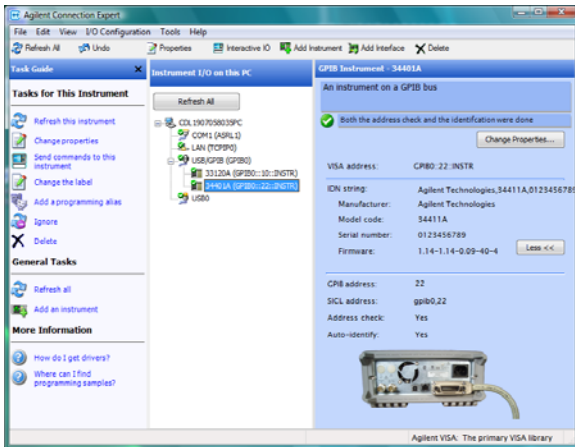
Step 2. Connect your instruments and install drivers



Connect your test instruments to your PC and power them on. Install the instrument drivers from either:

- The Product Reference CD you received with your Agilent instrument. It has drivers, documentation, etc.
- OR
- Download the latest Agilent instrument drivers from:
www.agilent.com/find/instrument_drivers

Step 3. Configure interfaces, identify and communicate with instruments



Run Agilent Connection Expert. It identifies and configures each interface and instrument connected to your PC. Use Interactive IO (a utility program installed with IO Libraries) to verify communication with each instrument.

Step 4. Write your test program

```
viError = visa32.viLock(session, visa32.VI_EXCLUSIVE_LOCK, 2000, "", loc
ErrorHandler(session, viError);

// Send *idn? query to the device
viError = visa32.viPrintf(session, "*IDN?\n");
ErrorHandler(session, viError);

// Read the results from the device
System.Text.StringBuilder idnString = new System.Text.StringBuilder(1000);
viError = visa32.viScanf(session, "%1000s", idnString);
ErrorHandler(session, viError);

// Unlock this Exclusive Lock so other processes and threads can use it
visa32.viUnlock(session);

// Write the results to the Console display
Console.WriteLine("Identification String: " + idnString.ToString());

// Release the Shared Lock.
visa32.viUnlock(session);

// Close the session
visa32.viClose(session);
visa32.viClose(resourceManager);
}

// Error Handling Function
public static void ErrorHandler(int session, int viError)
```

Whether you program with Microsoft® Visual Studio® (C# or VB) using the VISA library, Agilent VEE Pro, or even NI LabVIEW, you are now ready to write your test

Step 1: Install Agilent's IO Libraries Suite



The *Agilent Automation-Ready CD* contains Agilent's IO Libraries Suite. This is a collection of libraries (such as VISA, SICL, and VISA-COM) that give you the ability to control your instruments from a test and measurement program. These libraries support popular programming languages such as Agilent VEE Pro, C, C++, C#, Microsoft® Visual Basic 6.0, Visual Basic .NET, National Instruments' LabVIEW, and others. The suite also includes utilities that help you quickly and easily configure and manage instruments connected to your PC.


Important

Install and run Agilent IO Libraries before you do anything else because it installs drivers (such as USB drivers) necessary to control your instruments.


- 1 Close all applications on your computer. Insert the Automation-Ready CD in your CD-ROM drive.

OR...

If you downloaded the IO Libraries software (www.agilent.com/find/iosuite), run the installation.

- 2 Follow the instructions as prompted during the installation. Accept all default directories specified in the installation.
- 3 After the IO Libraries have been successfully installed, you will see the Agilent IO Control () in the taskbar notification area of your computer screen.

For more information

- Refer to the Agilent IO Libraries Connectivity Guide for installation information. The Connectivity Guide is available from the Agilent IO Control icon () after installing IO Libraries Suite. It is also available on-line at: www.agilent.com/find/iosuite. It also provides interface troubleshooting information.
- Installing the Agilent IO Libraries also installs the Interchangeable Virtual Instrument (IVI) Shared Components. The IVI Shared Components are required before installing IVI Drivers (e.g., IVI-COM, IVI-C). For more IVI shared Components information, refer to: <http://www.ivifoundation.org>. You can download an IVI Getting Started Guide which provides excellent information on using IVI drivers in a variety of programming environments such as C++, Visual C# or Visual Basic .NET, LabVIEW®, MATLAB®, Agilent VEE Pro, and others.

Step 2: Connect your Instruments, Install Instrument-Specific Drivers

Connect all of your test instruments to your PC and power them on. Agilent's Connection Expert (see Step 3) recognizes instruments connected via LAN, USB, GPIB, even serial (RS-232) connected to the COM port and VXI instruments connected over Firewire or GPIB.



Install the instrument drivers


Install the Agilent instrument drivers from the Product Reference CD you received with each of your Agilent instruments. This CD contains instrument drivers, documentation (help files), Application Notes, etc.

Or, download and install the latest Agilent instrument drivers from www.agilent.com/find/instrument_drivers

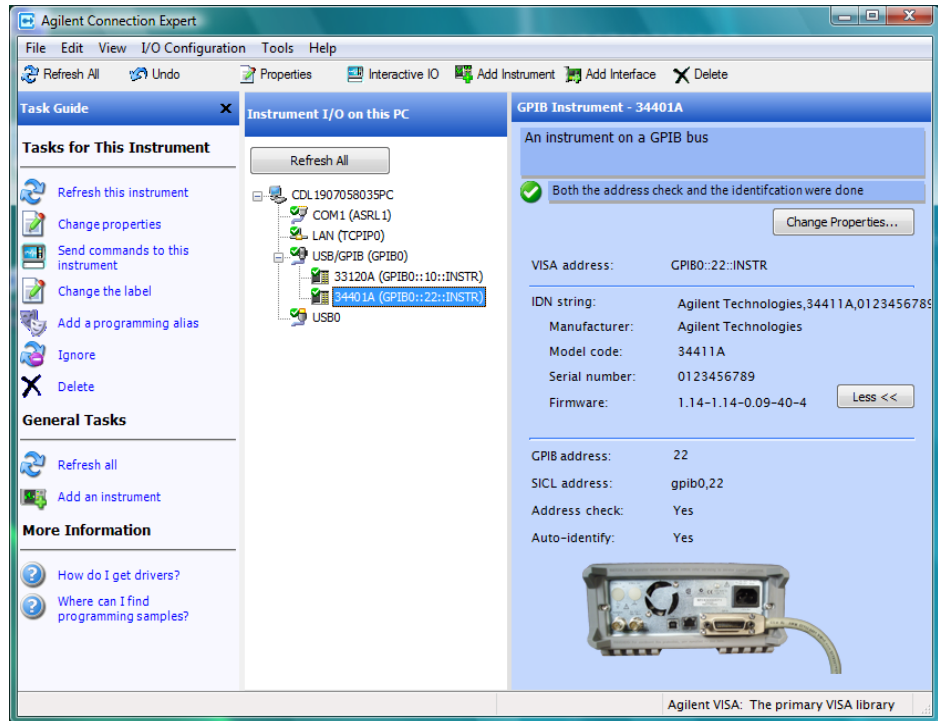
For more information

- Refer to your test instrument's user documentation (generally on a CD provided with the instrument) for interface connection information, instrument addressing, etc. You may need to refer to your instrument's operating manual for the interface connection and addressing information.
- Refer to the Agilent IO Libraries Connectivity Guide for installation information. Chapters 3 through 5 provide specific interface information.

Step 3: Configure Interfaces, Identify and Communicate with Instruments

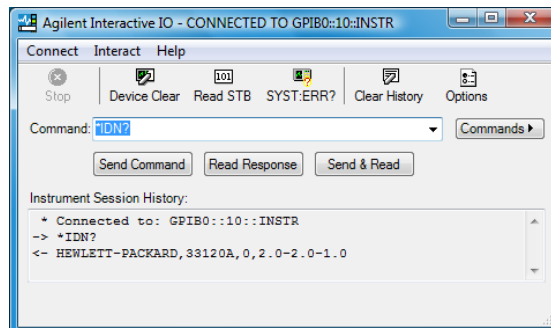
Run Agilent's Connection Expert -- double click the Agilent IO Control () in the taskbar notification area of your computer screen. If it is already running, click the **Refresh All** button.

All of your instrument interfaces (COM, LAN, USB, GPIB) should be listed. Instruments connected to the interfaces should also be listed (for LAN instruments, right-click on the LAN interface and select **Add Instrument**).



Verify instrument communications

Right-click on an instrument and select **Send Commands To This Instrument**. The Agilent Interactive IO application opens allowing you to send SCPI commands and receive/display the response from that instrument.



For more information:

- For specific test instrument programming information, including instrument drivers, the SCPI programming language, and specific programming examples, refer to your instrument's user or programming manual (these are often on the CD provided with your instrument).


Step 4. Write Your Test Program(s)

At this point, you have installed Agilent's IO Libraries Suite, connected all of your test instruments and installed their drivers, and you have verified that each instrument can communicate with your test PC. The final step is to write your test program. We can't tell you how to write your test system program, but we can provide some example programs, and overall guidance.

Where to go next

- Chapter 6 in the Agilent Connectivity Guide provides a basic programming overview including addressing instruments and sample programs.
- Several example programs using C++, C#, and Microsoft Visual Basic are provided as part of the Agilent IO Libraries Suite installation. These are located in the following directory on your PC:
C:\Program Files\Agilent\IO Libraries Suite\ProgrammingSamples
- For specific test instrument programming information, including instrument drivers, the SCPI instrument control language, and specific programming examples, refer to your instrument's user or programming manual (these are often on the CD provided with your instrument).

For more information:

- For IVI Shared Components information, refer to: **<http://www.ivifoundation.org>**. You can download an IVI Getting Started Guide which provides excellent information on using IVI drivers in a variety of programming environments such as C++, Visual C# or Visual Basic .NET, LabVIEW[®], MATLAB[®], Agilent VEE Pro, and others
- Agilent IO Libraries Suite provides several utility programs that are available under the **Tools...** menu. They are also available from the IO icon ().
 - One utility, named IO Monitor, traces messages generated by Agilent's IO Libraries (VISA, SICL, and VISA COM). You can use these i/o messages to analyze communication between your test and measurement instruments and the controller PC
 - Another Agilent utility is Interactive LXI. This utility allows you to monitor and control LXI trigger events and IEEE 1588 timing (clock information, PTP messages, etc.).
- Refer to the Agilent Application notes at: **<http://www.agilent.com/find/systemcomponents>**



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Agilent Open simplifies the process of connecting and programming test systems to help engineers design, validate and manufacture electronic products. Agilent offers open connectivity for a broad range of system-ready instruments, open industry software, PC-standard I/O and global support, which are combined to more easily integrate test system development.



www.lxistandard.org

LXI is the LAN-based successor to GPIB, providing faster, more efficient connectivity. Agilent is a founding member of the LXI consortium.

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