Installation Guide

Agilent Technologies
Signal Studio Software

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For signal generator warranty information, refer to the signal generator Installation Guide or Service Guide.

Documentation Questions or Comments

We welcome any questions or comments you may have about signal source documentation. Please E-mail us at **sources_manuals@am.exch.agilent.com**.

Contents

Contents

Signal Studio Software Installation Guide

This installation guide covers the following:

- Instrument Requirements

- Downloading the Signal Generator Firmware

- Loading the License Key

- PC Requirements

- Setting Up the GPIB Interface

- Setting Up the LAN Interface

- Installing the Signal Studio Software

Instrument Requirements

Signal Studio for 1xEV-DO (Option 404)
Signal Studio for Bluetooth (Option 406)

Instrument	Requirements
E4438C ESG Vector Signal Generator	Firmware revision C.02.20 or later One of the following baseband generator Options: Option 001 (Internal baseband generator with 8 Msample memory), Option 002 (Internal baseband generator with 32 Msample memory), Option 601 (Internal baseband generator with 8 Msample memory and digital bus capability), Option 602 (Internal baseband generator with 64 Msample memory and digital bus capability, *recommended*)

Signal Studio for Enhanced Multitone (Option 408)

Instrument	Requirements
E4438C ESG Vector Signal Generator	Firmware revision C.02.02 or later
	One of the following baseband generator Options: Option 001 (Internal baseband generator with 8 Msample memory), Option 002 (Internal baseband generator with 32 Msample memory), Option 601 (Internal baseband generator with 8 Msample memory and digital bus capability), Option 602 (Internal baseband generator with 64 Msample memory and digital bus capability, *recommended*)
E8267C PSG Vector Signal Generator	Firmware revision C.03.05 or later
	One of the following baseband generator Options: Option 002 (Internal baseband generator with 32 Msample memory), Option 602 (Internal baseband generator with 64 Msample memory and digital bus capability, *recommended*)
	Option 520 (250 kHz to 20 GHz frequency range)
E4440A, E4443A, or E4445A PSA Spectrum Analyzer	Firmware revision A.02.04 or later

Signal Studio for TD-SCDMA (TSM) (Option 411)

Instrument	Requirements
E4438C ESG Vector Signal Generator	Firmware revision C.02.51 or later
	One of the following baseband generator Options: Option 001 (Internal baseband generator with 8 Msample memory), Option 002 (Internal baseband generator with 32 Msample memory), Option 601 (Internal baseband generator with 8 Msample memory and digital bus capability), Option 602 (Internal baseband generator with 64 Msample memory and digital bus capability, *recommended*)

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Signal Studio for 1xEV-DV and cdma2000 (Option 414)

Instrument	Requirements
E4438C ESG Vector Signal Generator	Firmware revision C.03.20 or later
	One of the following baseband generator Options: Option 001 (Internal baseband generator with 8 Msample memory), Option 002 (Internal baseband generator with 32 Msample memory), Option 601 (Internal baseband generator with 8 Msample memory and digital bus capability), Option 602 (Internal baseband generator with 64 Msample memory and digital bus capability, *recommended*)
	Option 403 (Calibrated noise personality, *necessary for C/N capability*)

Signal Studio for 802.11 WLAN (Option 417)

Instrument	Requirements
E4438C ESG Vector Signal Generator	Firmware revision C.03.10 or later
	One of the following baseband generator Options: Option 001 (Internal baseband generator with 8 Msample memory), Option 002 (Internal baseband generator with 32 Msample memory), Option 601 (Internal baseband generator with 8 Msample memory and digital bus capability), Option 602 (Internal baseband generator with 64 Msample memory and digital bus capability, *recommended*)
	Option 506 (250 kHz to 6 GHz frequency range, *recommended to support all WLAN frequency bands*)
	Option UNJ (Enhanced phase noise performance, *required with Option 506*)
	Option 005 (6 GB internal hard drive, *recommended*)

Signal Studio for Pulse Building (Option 420)

Instrument	Requirements
E8267C PSG Vector Signal Generator	Firmware revision C.03.05 or later
	One of the following baseband generator Options: Option 002 (Internal baseband generator with 32 Msample memory), Option 602 (Internal baseband generator with 64 Msample memory and digital bus capability, *recommended*)
	Option 520 (250 kHz to 20 GHz frequency range)
	Option 1E6 (Narrow pulse below 3.2 GHz, (*recommended*)
	Option 005 (6 GB internal hard drive, (*recommended*)
	Option UNR (Enhanced phase noise performance, *recommended*)
E4440A, E4443A, E4445A, E4446A, or E4448A PSA Spectrum Analyzer (*optional*)	Firmware revision A.03.05 or later
E4403B, E4408B, or E4411B ESA-L Series Spectrum Analyzer (*optional*)	Firmware revision A.09.01 or later
E4401B, E4402B, E4404B, E4405B, or E4407B ESA-E Series Spectrum Analyzer (*optional*)	Firmware revision A.09.01 or later

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Signal Studio for Noise Power Ratio (Option 421)

Instrument	Requirements
E8267C PSG Vector Signal Generator	Firmware revision C.03.07 or later
	One of the following baseband generator Options: Option 002 (Internal baseband generator with 32 Msample memory), Option 602 (Internal baseband generator with 64 Msample memory and digital bus capability, *recommended*)
	Option 005 (6 GB internal hard drive *recommended*)
E4438C ESG Vector Signal Generator	Firmware revision C.03.20 or later
	One of the following baseband generator Options: Option 001 (Internal baseband generator with 8 Msample memory), Option 002 (Internal baseband generator with 32 Msample memory), Option 601 (Internal baseband generator with 8 Msample memory and digital bus capability), Option 602 (Internal baseband generator with 64 Msample memory and digital bus capability, *recommended*)
	Option 005 (6 GB internal hard drive *recommended*)
E4440A, E4443A, E4445A, E4446A, or E4448A PSA Spectrum Analyzer	Firmware revision A.04.05 or later

Downloading Signal Generator Firmware

CAUTION Before upgrading your firmware, click **Enhancements, Issues Resolved, and Hardware Compatibility** on the firmware release page for information on how the current revision will affect other instrument related software you are using.

You may need to upgrade the firmware in your signal generator to run the software. To load the latest version of firmware, perform the following steps:

1. Go to **http://www.agilent.com/find/upgradeassistant**.

2. Click the **PSG/ESG Upgrade Assistant** to download and install the program.

3. Click on the latest version of firmware for your signal generator model to download the firmware upgrade. Run the executable to place the firmware files in the Upgrade Assistant folder.

4. Run the PSG/ESG Upgrade Assistant and follow the program prompts.

Click **PSG/ESG Upgrade Assistant Upgrade Guide** if you would like more information.

Loading the License Key

You can download signal studio software for viewing, but you must have a license key before you can use the E4438C ESG Vector Signal Generator or the E8267C PSG Vector Signal Generator with the software. To purchase a license key, contact your sales engineer or local sales office. A list of sales offices can be found at the following web site:

http://www.agilent.com/find/assist

To load the license key into the instrument, complete the following steps:

1. Press **Utility** > **Instrument Adjustments** > **Instrument Options** > **Software Options**.

    2. Verify that the host ID shown on the display matches the host ID on the license key.

    3. Highlight the desired option using the up/down arrow keys or the front panel knob.

4. Press **Modify License Key**.

5. Enter the 12-character license key using the softkeys and the numeric keypad and press **Enter**.

6. Press **Proceed With Reconfiguration** > **Confirm Change (Instrument will Reboot)**.

NOTE   For more information on enabling a software option, refer to the signal generator user's guide.

PC Requirements

| NOTE | For service packs, contact Microsoft directly, or go to: http://www.microsoft.com |

| NOTE | To use Signal Studio Help systems you must have Internet Explorer®4.01 service pack 2.0 or later. |

Signal Studio for	PC Requirements
1xEV-DO (Option 404)	Windows 2000® or Windows NT® 4.0 (service pack 4 or later) Pentium® PC, 200 MHz or higher 64 MB RAM (128 MB for Windows 2000) 50 MB free disk space Installed Agilent IO Libraries (version L.01.00 or later) Installed GPIB IO interface card or LAN interface card

Signal Studio for	PC Requirements
Bluetooth (Option 406) 802.11 WLAN (Option 417) Enhanced Multitone (Option 408)	Windows XP Professional® (service pack 1 or later), Windows 2000®, or Windows NT® 4.0 (service pack 4 or later) Pentium® PC, 200 MHz or higher 64 MB RAM (128 MB for Windows 2000) 50 MB free disk space Installed Agilent IO Libraries (version L.01.00 or later) Installed GPIB IO interface card or LAN interface card

Signal Studio for	PC Requirements
TD-SCDMA (TSM) (Option 411)	Windows XP Professional® (service pack 1 or later) or Windows 2000® (service pack 3 or later)
	Microsoft .NET® Framework 1.0 (service pack 2 or later) in OS language version (See "Downloading the .NET Framework" on page 11)
	128 MB RAM (256 MB *recommended*)
	Pentium® family PC, 400 MHz or higher (800 MHz or higher, *recommended*)
	120 MB free disk space (100 MB for .NET framework, 20 MB for TD-SCDMA software) **NOTE**: 160 MB free disk space is required to install .NET framework.
	Minimum 800 x 600 screen resolution with normal font size (1024 x 768 *recommended*)
	Installed Agilent IO Libraries (version L.01.00 or later)
	Installed GPIB IO interface card or LAN interface card
	NOTE The Signal Studio for TD-SCDMA (TSM) application is not supported on a network drive.

Signal Studio for	PC Requirements
1xEV-DV and cdma2000 (Option 414)	Windows XP Professional® (service pack 1 or later), Windows 2000® (service pack 3 or later) or Windows NT® 4.0 (service pack 4 or later)
	Microsoft .NET® Framework 1.0 (service pack 2 or later) in OS language version (See "Downloading the .NET Framework" on page 11)
	256 MB RAM
	Pentium® 3 PC, 400 MHz or higher (800 MHz or higher, *recommended*)
	50 MB free disk space **NOTE**: 160 MB free disk space is required to install .NET framework.
	Minimum 1024 x 768 screen resolution with normal font size
	Installed Agilent IO Libraries (version L.02.00 or later)
	Installed GPIB IO interface card or LAN interface card

Signal Studio for	PC Requirements
Pulse Building (Option 420) Noise Power Ratio (Option 421)	Windows XP Professional® (service pack 1 or later) Windows 2000® (service pack 3 or later) or Windows NT® 4.0 (service pack 6a or later) Microsoft .NET® Framework 1.0 (service pack 2) in OS language version (See "Downloading the .NET Framework" on page 11) 256 MB RAM Pentium® 3 PC, 400 MHz or higher (800 MHz or higher *recommended*) 120 MB free disk space (100 MB for .NET framework, 20 MB for Pulse Building software) **NOTE**: 160 MB free disk space is required to install .NET framework. Minimum 800 x 600 screen resolution with normal font size (1024 x 768 or higher *recommended*) Installed Agilent IO Libraries (version L.02.01 or later) Installed GPIB IO interface card, LAN interface card, or USB/GPIB interface card

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Downloading the .NET Framework

NOTE   You must have administrator privileges on your PC before you can install the .NET Framework.

NOTE   ***You must have .NET Framework 1.0 installed***. You can have .NET Framework versions 1.0 and 1.1 installed at the same time.

Go to **http://msdn.microsoft.com/netframework/downloads/netframework10.aspx**.

1. Click "Download the .NET Framework 1.0".

2. Click "Microsoft .NET Framework 1.0 Redistributable".

3. Download version 1.0 of the .NET Framework.

4. Install both the .NET Framework 1.0 and service pack 2 or later.

Running .NET Software

Setting Securities

If the program is installed on a shared network drive you may not be able to run it because of the default security setting on most intranets. To run the software from a shared drive, you must adjust the security setting to grant more permissions to the local intranet.

See page 12 for details on setting the security level in Windows NT.

See page 13 for details on setting the security level in Windows 2000 and Windows XP Professional.

If you have installed the .NET Framework on your C:\ drive and you get the following security exception when you try to open the software, you must adjust the security level on your computer. Use the procedures indicated above, but select "My Computer" instead of "Local Intranet".

Figure 1   Security Exception Error
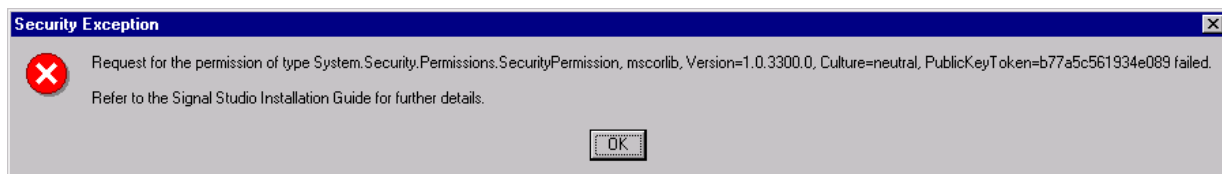
NOTE   For more details on .NET and security settings, go to http://www.microsoft.com.
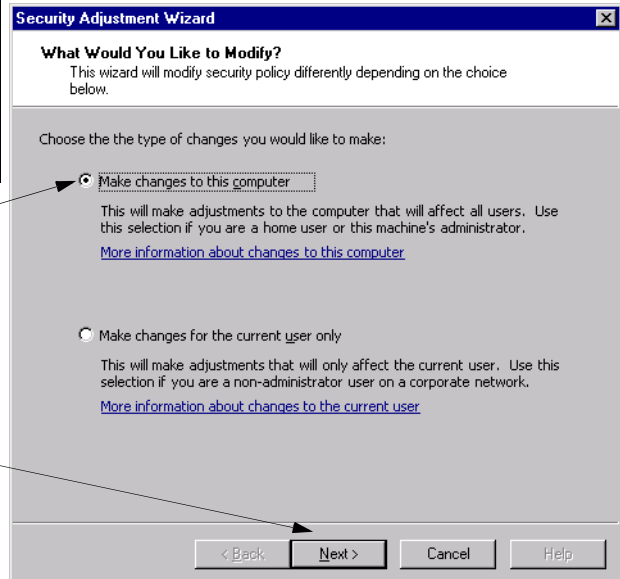
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Windows NT

1. To open the **.net Wizards** window, select **Start** > **Programs** > **Administrative Tools** > **Microsoft .NET Framework Wizards**

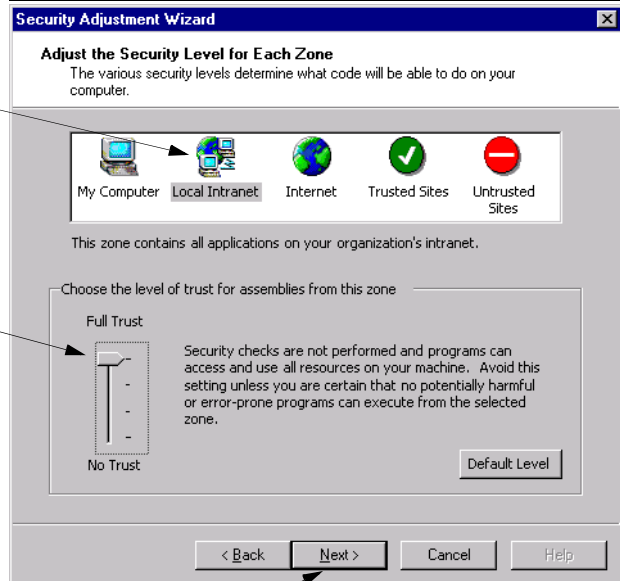2. To open the **Security Adjustment Wizard**, select **Adjust .net Security**

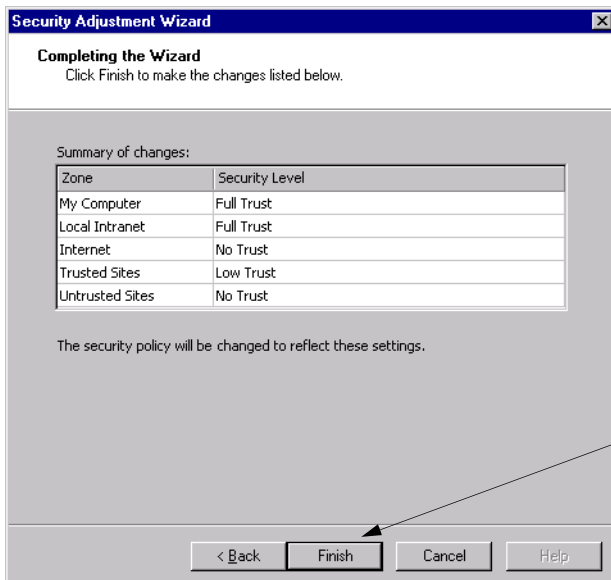3. Select **Make changes to this computer**

4. Click **Next >**

5. Select the **Local Intranet**

6. Move the slider up one position

7. Click **Next >**

8. Click **Finish**

Windows 2000 and Windows XP Professional

1. Open the Control Panel:

   Select: **Start** > **Settings** > **Control Panel**

2. Open the .NET Framework Configuration tool:

   In Windows 2000, select:
   Administrative Tools > **Microsoft .NET Framework Configuration**

   In Windows XP, select:
   Performance and Maintenance > **Administrative Tools** > **Microsoft .NET Framework Configuration**

3. Select **Expand Runtime Security Policy** > **Machine** > **Code Groups** > **All_code**

4. Select **LocalIntranet_Zone**.

5. Click the **Edit code group properties** link.

6. Select the **Permission set** tab.

7. In the **Permission set** drop-down list, select **Full Trust**, then click **OK**.

GPIB Interface Requirements

A GPIB interface card must be installed in your computer. Follow the installation instructions supplied by the GPIB interface card manufacturer. Once the GPIB interface card is installed, you must install an I/O library on your computer. The I/O library is typically supplied along with the GPIB interface card. The I/O libraries can be obtained from the manufacturer of the interface card.

The GPIB and its associated interface protocols are defined in the ANSI/IEEE standard 488.1-1987 and ANSI/IEEE standard 488.2-1992. For more information on these standards, refer to the IEEE website (**http://www.ieee.org**).

Installation of an Agilent GPIB interface card usually includes installation of the Agilent IO Libraries. If the National Instrument's GPIB interface card is installed, the NI-VISA libraries are usually installed on the PC. The difference between Agilent VISA and NI-VISA are the lower level libraries used; SICL and NI-488.2 respectively. For information on the supported GPIB interface cards refer to Table 1 and Table 2.

Table 1   Agilent-GPIB Interface Card for PC-Based Systems

Interface Card	Operating System	Agilent IO Libraries	Backplane/BUS	Max I/O (kB/sec)	Buffering
82350A for PCI bus computers	Windows 98/2000 NT/Me XP Professional	Agilent VISA/SICL L.01.00 or later For Option 420 (Agilent Signal Studio for Pulse Building) L.02.01 or later	PCI 32 bit	750	Built-in

NOTE The 82350A is the only Agilent GPIB interface card supported, however, other vendor cards are also supported.

Table 2 **NI-GPIB Interface Card for PC-Based Systems**

Interface Card	Operating System	NI IO Libraries	Backplane/BUS	Max I/O (Mbytes/s)
National Instrument PCI-GPIB	Windows 98/2000 NT/Me XP Professional	NI-VISA version 1.5 or later	PCI 32 bit	1.5 Mbytes/s
National Instrument PCMCIA-GPIB	Windows 98/2000 NT/Me XP Professional	NI-VISA version 1.5 or later	PCMCIA	1.5 Mbytes/s

NOTE If you are using a National Instruments GPIB interface card and have the NI-VISA libraries installed, you still must install Agilent IO Libraries to use Signal Studio software. Both libraries can reside on your computer.

If you use the Agilent IO libraries default installation, your GPIB interface card will be configured to work with Signal Studio software. The default installation will allow you to install and use the Agilent VISA libraries without affecting the use of your NI-VISA libraries.

LAN Interface Requirements

• A local area network (LAN) interface card

  Most computers have a LAN interface card as part of the hardware configuration. If your computer does not have a LAN card, you can get one from Agilent Technologies or another manufacturer.

• The Agilent IO libraries

  See Installing Agilent IO Libraries for details.

• A 10BaseT cable (to connect the PC to the LAN)

The LAN and its associated interface protocols are defined in the IEEE standard 802. For information on this standard, refer to the IEEE website.

Installing Agilent IO Libraries

Use the latest version of Agilent IO Libraries, or the version listed in the "PC Requirements" section for your particular Signal Studio software. Agilent IO Libraries are included with most Agilent interface products, or you can download Agilent IO Libraries from the Agilent website free of charge.

NOTE   If you are using a National Instruments GPIB interface card and have the NI-VISA libraries installed, you still must install Agilent IO Libraries to use Signal Studio software. Both libraries can reside on your computer.

If you use the Agilent IO libraries default installation, your GPIB interface card will be configured to work with Signal Studio software. The default installation will allow you to install and use the Agilent VISA libraries without affecting the use of your NI-VISA libraries.

Go to **http://www.agilent.com/find/iolib**. Click **InstallShield archive**, located after "IO Libraries for Windows 98/Me/NT/2000/XP Pro (X.##.##)", and follow the installation procedure.

If you have problems with the installation, or if you want to customize the installation, go to **http://www.agilent.com/find/iolib**. Click **Download**, following "IO Libraries Installation and Configuration Guide for Windows" for more information and a detailed installation procedure.

Setting Up the GPIB Interface

Signal Studio software can be configured to use the general purpose interface bus (GPIB) connection for instrument control.

If you have a GPIB interface card and have installed the Agilent IO Libraries, as previously described in this guide, you can configure the IO Libraries to communicate with the GPIB card.

NOTE	Signal Studio software uses the Agilent IO Libraries. If you have a National Instrument's GPIB interface card and National Instruments libraries on your computer, the Agilent IO library InstallShield Wizard will allow for both National Instruments and Agilent libraries to reside on your PC.

Configuring the Agilent 82350 GPIB Interface

To configure the GPIB interface, run the IO Config program. The IO Config program is included with the Agilent IO Libraries download, and is located in the **Start** > **Programs** >**Agilent IO Libraries** > **IO Config** directory.

|	
NOTE	If you have questions about the configuration, or require a custom installation, go to **http://www.agilent.com/find/iolib**. Click **Download**, following "IO Libraries Installation and Configuration Guide for Windows" for more information and a detailed installation procedure.

Configuring the National Instruments GPIB Interface

You can use the Agilent IO Libraries to configure a National Instruments GPIB interface card. Refer to the documentation provided with the NI-GPIB interface card for information on the installation, if necessary.

To configure the NI-GPIB interface:

1. Install the NI-GPIB interface card along with the NI-VISA libraries. After installation, run the NI-488.2 Getting Started Wizard to verify the installation. Refer to National Instruments documentation for help with the installation.

2. Install the Agilent IO Libraries as described in the Installing Agilent IO Libraries section of this guide. Make sure that the **2. SICL and side-by-side Agilent VISA Installation** is selected during the Agilent IO Libraries installation.

3. Run the IO Config program. The IO Config program is included with the Agilent IO Libraries download and is located in the **Start > Programs > Agilent IO Libraries > IO Config** directory.

NOTE	If you have questions about the configuration, or require a custom installation, go to **http://www.agilent.com/find/iolib**. Click **Download**, following "IO Libraries Installation and Configuration Guide for Windows" for more information and a detailed installation procedure.

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Connecting the GPIB Interface

Connect your PC to the signal generator using the GPIB interface cable as shown in Figure 2. The spectrum analyzer (Signal Studio for Enhanced Multitone and Signal Studio for Pulse Building only) can be connected to the signal generator via a second GPIB cable as shown in Figure 3. See the *ESG Vector Signal Generator User's Guide* or the *PSG Signal Generator User's Guide* for a listing of Agilent GPIB cables.
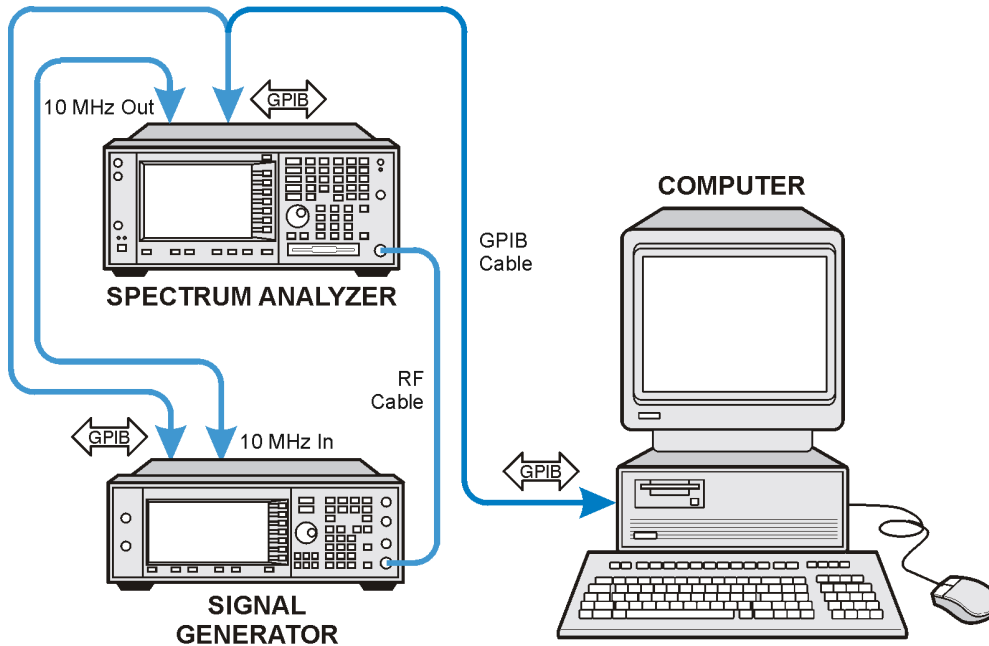
Equipment

- GPIB interface cable connecting the signal generator GPIB connector to the PC connector.

- Low-loss, high frequency RF cable connecting the RF output of the signal generator to the input of the spectrum analyzer to perform a signal generator calibration. (See Figure 3.)

- Two GPIB interface cables connecting the signal generator and the spectrum analyzer to the PC GPIB interface card. (See Figure 3.)

- BNC cable connecting the 10 MHz IN on the signal generator to the 10 MHz OUT on the spectrum analyzer. (See Figure 3.)

Figure 2 **Connecting the GPIB Interface**
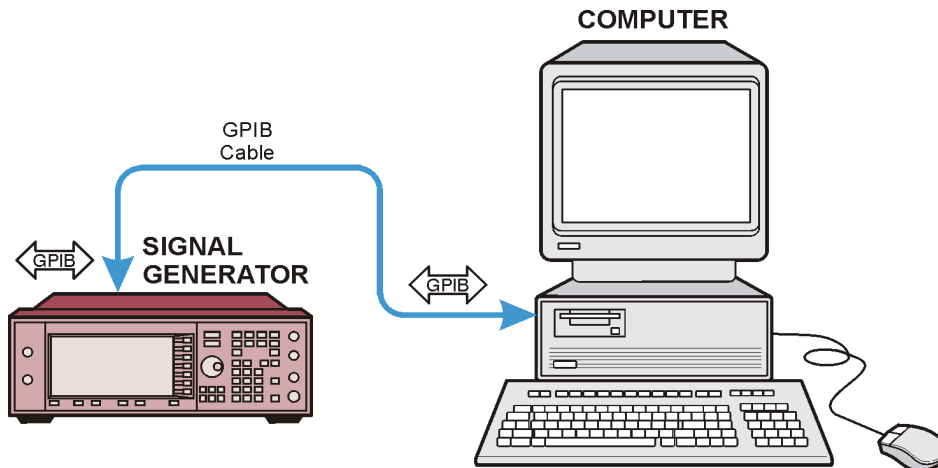
Figure 3 **Connecting the GPIB Interface (Signal Studio for Enhanced Multitone, Pulse Building, and Noise Power Ratio *only*)**

NOTE Use the spectrum analyzer's 10 MHz reference. On the spectrum analyzer, select **System** > **Reference** > **Freq Ref Int** and set **10 MHz Out** to **On**. The signal generator automatically detects and uses the external reference.

USB/GPIB Setup (Signal Studio for Enhanced Multitone, Pulse Building, and Noise Power Ratio *only*)

The USB serial I/O interface uses a direct connection from your PC USB port to a GPIB instrument.

Equipment

• 82357A USB/GPIB interface cable connecting the signal generator GPIB connector to the PC USB connector.

• Low-loss, high frequency RF cable connecting the RF output of the signal generator to the input of the spectrum analyzer to perform a signal generator calibration.

• GPIB cable connecting the signal generator to the spectrum analyzer.

• BNC cable connecting the 10 MHz IN on the signal generator to the 10 MHz OUT on the spectrum analyzer.

Figure 4 Connecting the USB/GPIB Interface
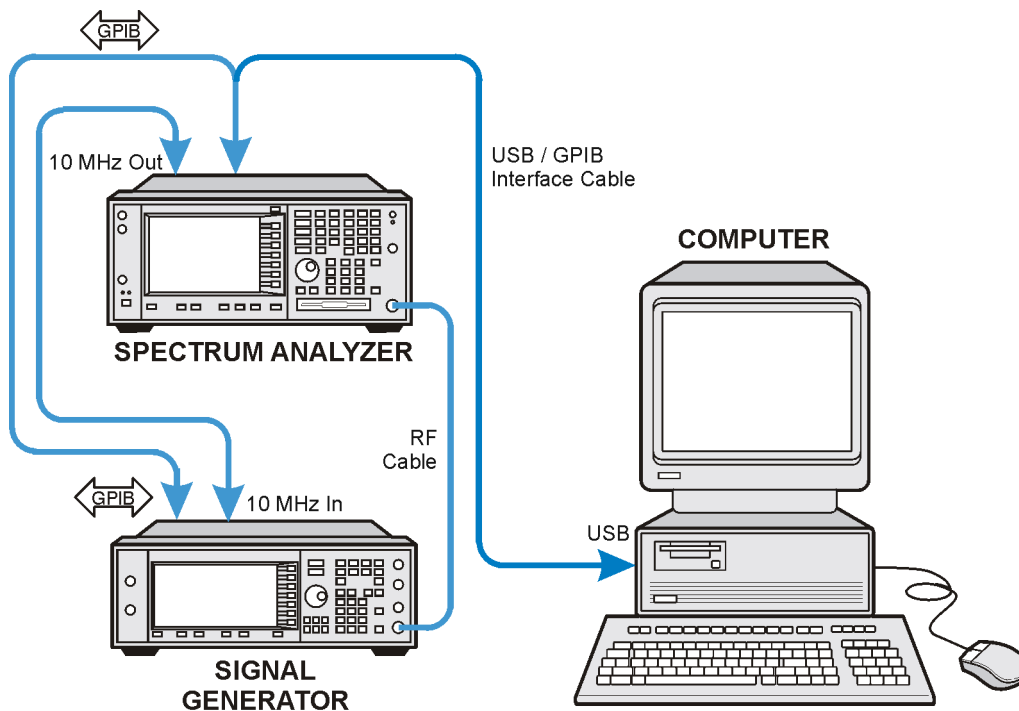
NOTE USB/GPIB is not supported for NT.

NOTE Use the spectrum analyzer's 10 MHz reference. On the spectrum analyzer, select **System** > **Reference** > **Freq Ref Int** and set **10 MHz Out** to **On**. The signal generator automatically detects and uses the external reference.

The Agilent 82357A USB/GPIB Interface provides a direct connection from the USB port on your laptop or desktop PC to GPIB instruments. The 82357A is a standard Plug and Play device. It is automatically detected and configured when connected to the computer USB port.

GPIB Verification

Depending on the type of GPIB interface card installed on your computer, you can use either the Agilent VISA Assistant or NI-488.2 Getting Started Wizard to verify the GPIB installation.

• Refer to the "NI-GPIB Interface Verification" on page 22 for information on verifying the NI-GPIB installation.

Agilent 82350 GPIB Interface Verification

With the equipment connected as shown in Figure 2, Figure 3, or Figure 4, perform the following steps:

1. Click on the blue IO icon in the task bar. The icon is located at the lower right of the PC display.

2. Click **Run VISA Assistant**.

NOTE   If a **Progress** window appears with a **Searching for knowledge base** title and a long time delay occurs (a minute or more), refer to "Communication Time Problems" on page 32.

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3. Click on the GPIB address for the signal generator. Refer to Figure 5.

Figure 5   **Visa Assistant**
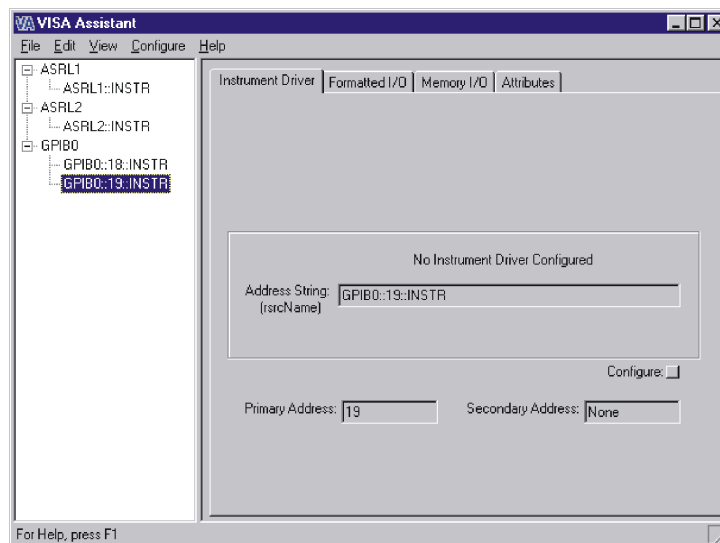
4. Click on the **Formatted I/O** tab on the **VISA Assistant** window.

5. Click the **SCPI** button in the **Instr.Lang** area at the lower right corner of the **VISA Assistant** window. Refer to Figure 6.

6. Click the ***IDN?** button in the **VISA Assistant** window. The response should be similar to that shown in Figure 6.

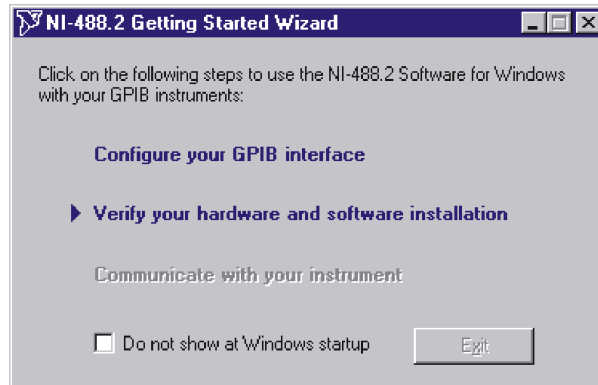**Figure 6   Remote IO Query**
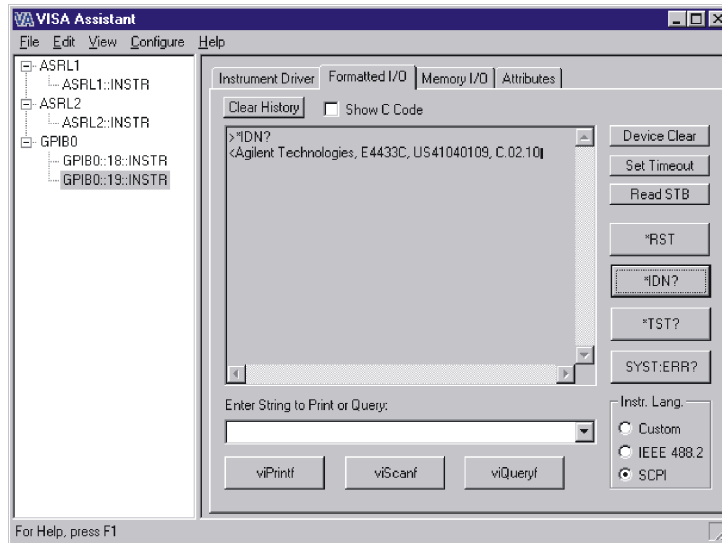
NI-GPIB Interface Verification

1. Connect the equipment as shown in Figure 2, Figure 3, or Figure 4.

2. Click **Start > Programs > National Instruments NI-488.2 > Getting Started Wizard**. A window will appear as shown in Figure 7.

Figure 7 **NI-488.2 Getting Started Wizard**

3. Click **Verify your hardware and software installation** in the **NI-488.2 Getting Started Wizard** window. A new window will appear as shown in Figure 8.

Figure 8 **NI-488.2 Verify**
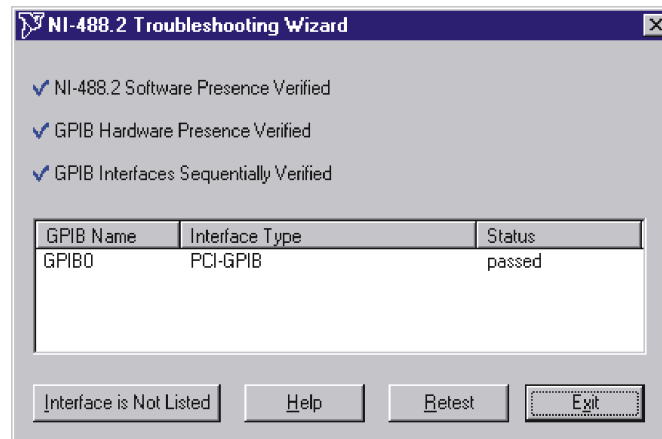
4. Click **Exit** to close the window after the NI-GPIB interface has been verified.

5. Click on **Communicate with your instrument** in the **NI-488.2 Getting Started Wizard** window as shown in Figure 9. This will check for instruments connected to the GPIB interface. Follow the instructions presented in each of the windows.

Figure 9   Communicate Using GPIB
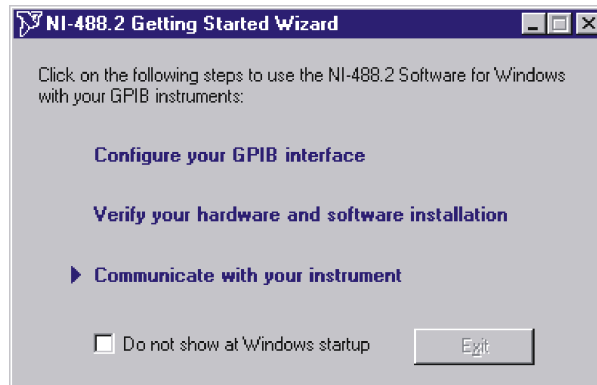
6. Click **Exit** when finished.

GPIB Interface Problems

If you experience problems communicating with or controlling instruments over the GPIB, perform the following steps:

1. Check to see that the instrument you are trying to communicate with is turned on.

2. Check to see that the GPIB cable connections are securely attached to the instrument and PC.

3. Verify that the GPIB address of the instrument is the same as that set in the **Visa Assistant** window as shown in Figure 5 on page 20.

4. Restart the computer. You must restart the PC to initialize the GPIB configuration.

5. Verify that the instrument you are trying to communicate with is using the SCPI (Standard Commands for Programming Instruments) language. For example, the signal generator supports 8656B, 8657A/B languages as well as SCPI. Refer to the instrument's manual for information on available languages and how to select the SCPI language.

Creating and Editing the intfcfg.ini File

If the Agilent IO Config utility did not detect the presence of a configured NI-488.2 GPIB interface, you can override the default search algorithm and directly specify this interface by creating and editing the `intfcfg.ini` file.

You must create the `intfcfg.ini` file. It is not installed during the Agilent IO Libraries configuration. If you have not previously created the `intfcfg.ini` file, you can create it by copying the sample `intfcfg.txt` file to `intfcfg.ini`. The file is located in the `intfcfg` subdirectory under the Agilent IO Libraries installation directory:

`C:\Program Files\Agilent\IO Libraries\intfcfg\intfcfg.txt` (if you used the default location).

NOTE   If you are using Windows explorer to create `intfcfg.ini`, make sure the **Hide File Extensions** is not set. If it is set, you will create the file `intfcfg.ini.txt`, which will not work.

To edit the `intfcfg.ini` file, perform the following steps:

1. Make a backup copy of the `intfdfg.ini` file.

2. Locate the [`CfgNi488`] section in the `intfcfg.ini` file.

3. Remove the leading semicolon from the appropriate `GPIBn=yes` line to force IO Config to recognize the NI-488.2 GPIB interface. Uncomment only the lines for which you have a configured NI-488.2 GPIB interface.

4. Save the modified `intfcfg.ini` file.

5. Run the Agilent IO Config utility. The GPIB NI-488.2 interface should now appear in the **Available Interface Types** area of the **IO Config-IO Libraries Configuration** window.

Communication Time Problems

If you experience a long delay (a minute or more) when trying to run the software, there might be an unresolved instrument IP address configured in the *IO Config* program. An unresolved IP address can affect GPIB communication. To check for this, perform the following steps:

1. Go to "Configuring the LAN Interface" on page 28 and do steps 1-5. Leave the **IO Config-IO Libraries Configuration** window open.

2. Click on **TCPIP0 lan** in the **IO Config-IO Libraries Configuration** window as shown in Figure 10.

**Figure 10**   **IO Config-IO Libraries Configuration**
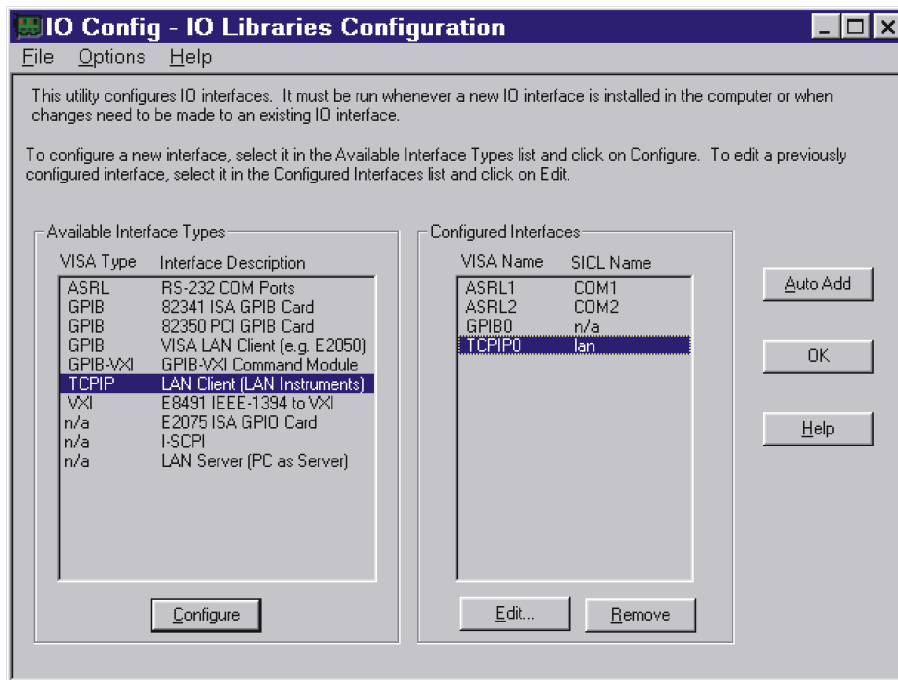
3. Click the **Edit** button on the **IO Config-IO Libraries Configuration** window shown in Figure 10.

4. Click the **Edit Visa Config.** button in the **LAN Client** window as shown in Figure 11.

Figure 11   **LAN Client**
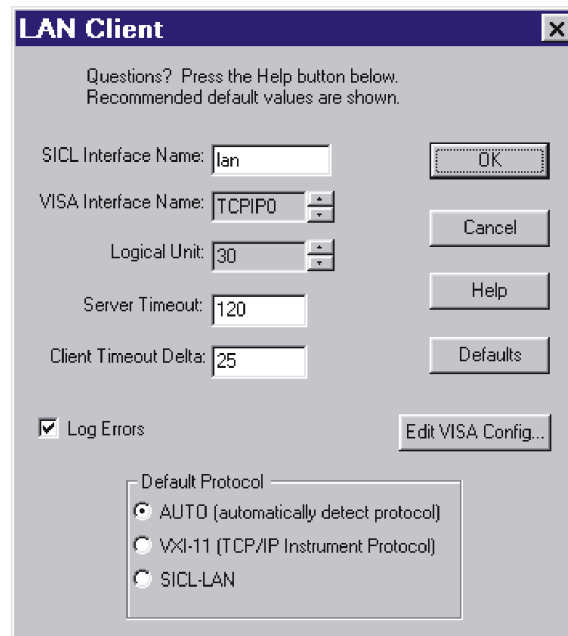
5. Verify that any device listed in the **TCPIP devices** window, shown in Figure 12, is turned on and that the IP address listed is correct. If any device address is incorrect or the instrument is off or no longer present on the interface:

   a. Click on the device address listed in the TCPIP0 INSTR devices present section of the **TCPIP devices** window.

   b. Click the **Remove device** button.

Figure 12   **TCPIP devices**
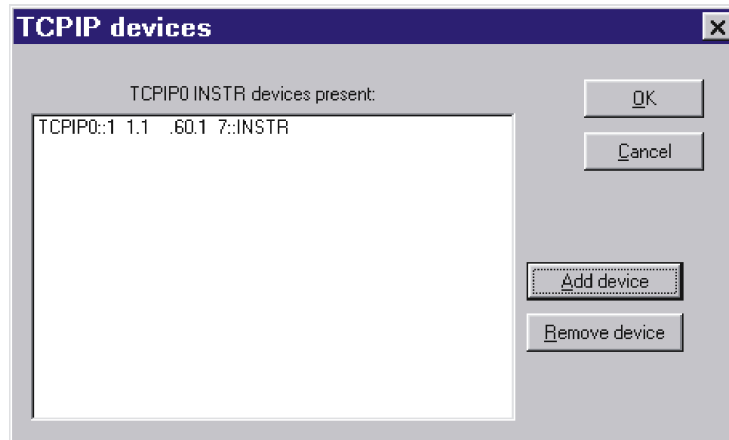
6. Click the **OK** button on successive forms to back out of the IO Config program.

If communication problems persist, you can edit the Hosts file using the following procedure:

1. Open the Hosts file using a text editor, such as Notepad.

2. Write the IP address for the signal generator and spectrum analyzer at the bottom of the file.

   (Refer to the example of a hosts file on page 27)

3. Save the file to `C:\WINNT\System32\drivers\etc`, and close the text editor.

NOTE   For Windows 98 and Windows Me you must create the Hosts file. Copy the following example of a hosts file and save it in the `C:\Windows` directory.

WARNING   Do not use **Save As** when saving the Hosts file. The Hosts file does not have a file extension!

The following is an example of a hosts file (for Windows 98) with references to the signal generator and spectrum analyzer IP addresses.

Copyright (c) 1998 Microsoft Corp.

#

This is a sample HOSTS file used by Microsoft TCP/IP stack for Windows98

#

This file contains the mappings of IP addresses to host names. Each

entry should be kept on an individual line. The IP address should

be placed in the first column followed by the corresponding host name.

The IP address and the host name should be separated by at least one

space.

Additionally, comments (such as these) may be inserted on individual

lines or following the machine name denoted by a '#' symbol.

#

For example:

#

102.54.94.97   rhino.acme.com   # source server

38.25.63.10   x.acme.com   # x client host

xxx.xxx.xxx.xxx   localhost

xxx.xxx.xxx.xxx   signal generator hostname

xxx.xxx.xxx.xxx   spectrum analyzer hostname

Agilent Technologies

Setting Up the LAN Interface

Configuring the LAN Interface

1. Run the IO Config program, located on your PC in the **Start** > **Programs** > **Agilent IO Libraries** directory. The IO Config - Agilent IO Libraries Configuration window (Figure 13) opens.

2. In the **Available Interface Types** list box, click **TCPIP LAN Client (LAN Instruments)**.

NOTE   Because the list of interface types depends on the interfaces installed on your PC, the list you see may differ from the list in Figure 13. Simply make the selections described in this procedure.

Figure 13   LAN IO Config

width:1655px; height:2174px
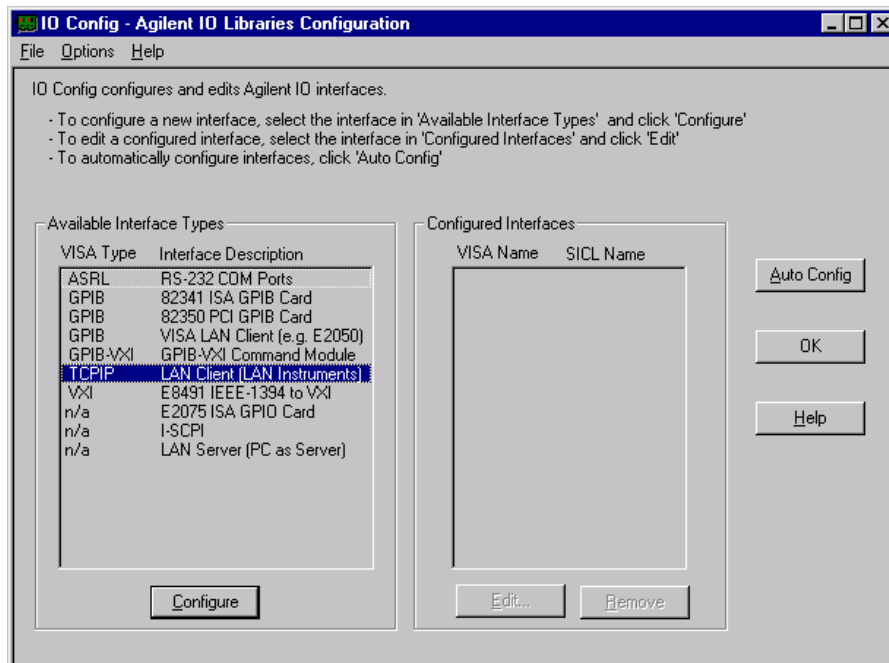
3. Click **Configure**. The LAN Client window appears, as shown in Figure 14.

4. In the **Default Protocol** area, select **AUTO (automatically detect protocol)**.

5. In the **LAN Client** window, click **OK**.

6. To finish the LAN interface configuration, click **OK** in the **IO Config - Agilent IO Libraries Configuration** window.

Figure 14   LAN Client
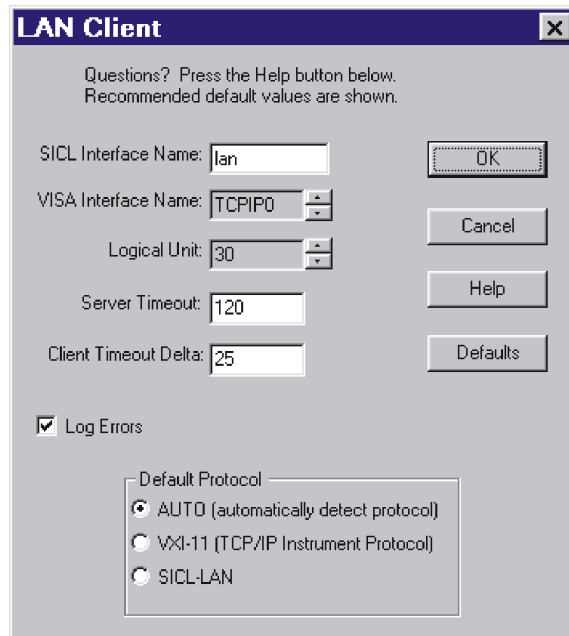
Connecting the LAN Interface

Connect the PC to the LAN and the signal generator to the LAN using 10BaseT cables as shown in Figure 15, or directly connect the PC to the signal generator using a 10BaseT cross-over cable as shown in Figure 16. If using a spectrum analyzer with Signal Studio for Enhanced Multitone or Signal Studio for Pulse Building, refer to Figure 17.

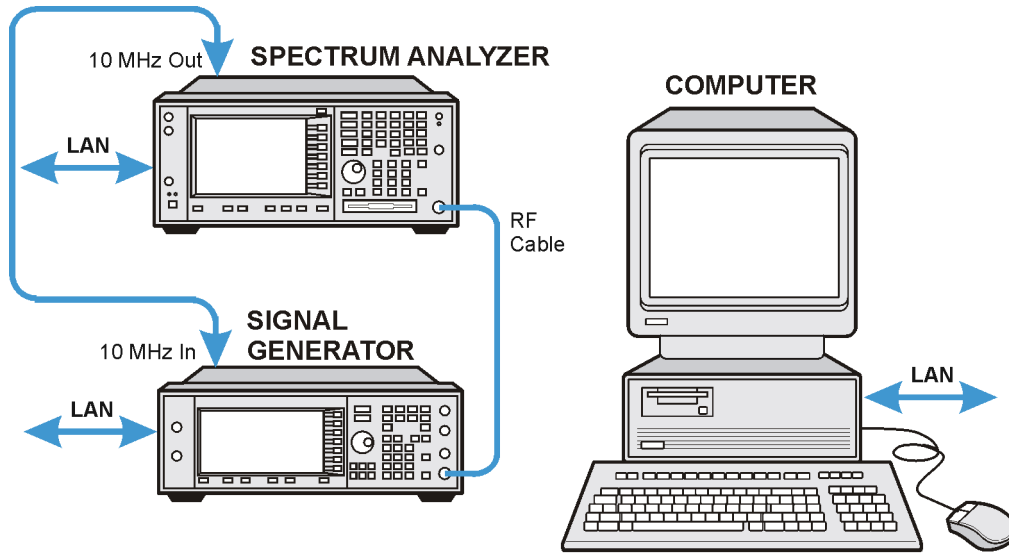**Figure 15   Connecting the LAN Interface to an Existing Network**
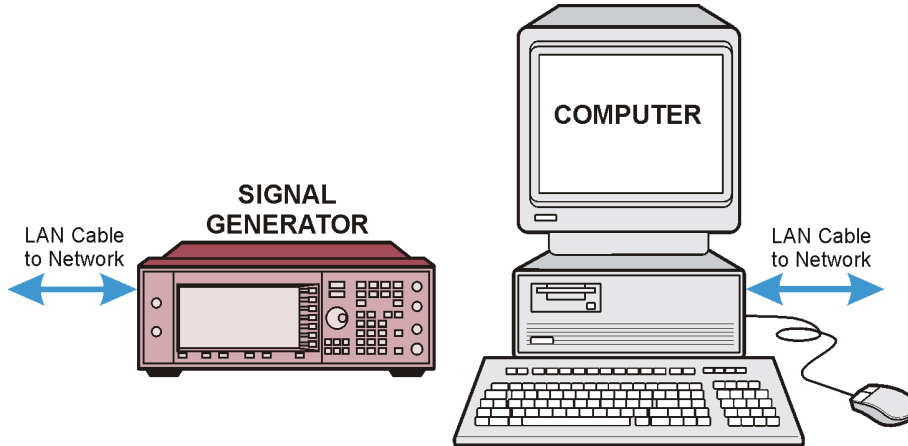
Figure 16   Connecting Directly Between the PC and the Signal Generator Using the LAN Interface
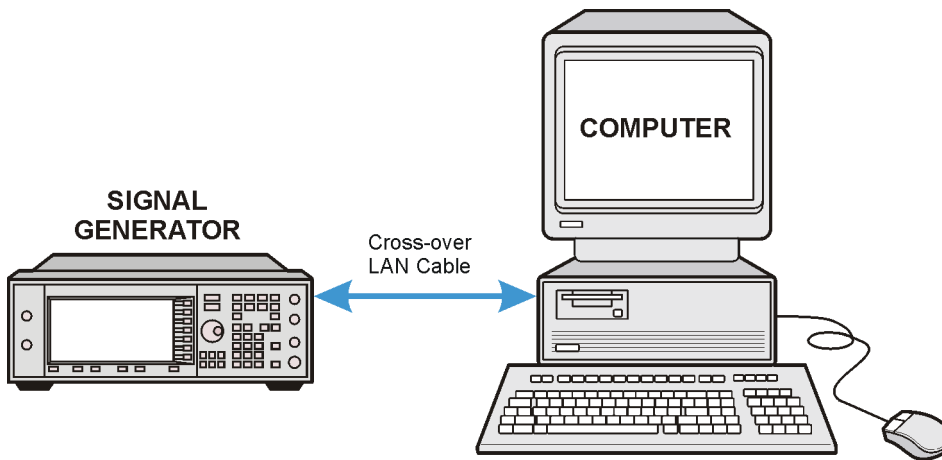
**Figure 17   Connecting the LAN Interface to an Existing Network
              (Signal Studio for Enhanced Multitone, Pulse Building, and Noise Power Ratio
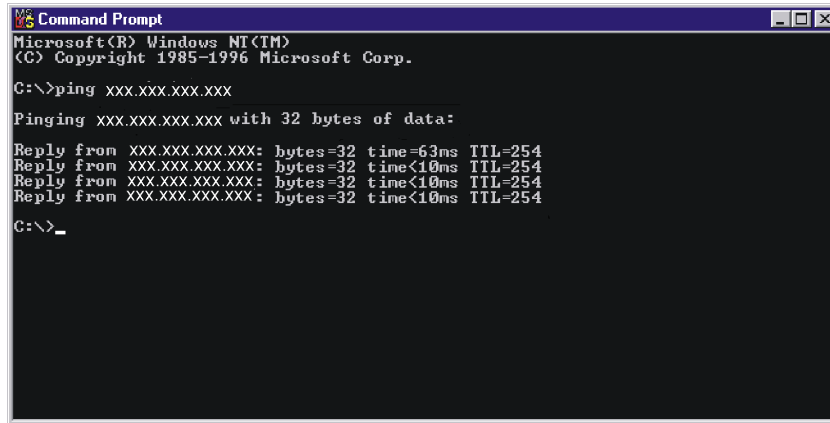   *only*)**

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Verifying LAN Communication

To verify LAN communication, use the ping program available on your computer. Go to **Start** > **Programs** > **MSDOS Command Prompt**.

At the `C:\>` prompt, enter `ping <IP address>` (where <IP address> is the IP address of the signal generator). If the ping program response is a "Reply" as shown in Figure 18, the IP address is correct, and communication can be established between the PC and the signal generator. If not, refer to "Troubleshooting LAN Interface Problems."

Figure 18   Ping Program

## Troubleshooting LAN Interface Problems

1. Ensure that the IP address of the signal generator is the same as that used in the ping program.

2. Ensure that the 10BaseT cable used is not a crossover cable.

3. If the ping program responds with a `Request timed out` message, the IP address might not be correct. Contact your IT department for further help.

Communication Time Problems

If you experience a long delay (a minute or more) when trying to run the software, there might be an unresolved instrument IP address configured in the IO Config program. An unresolved IP address can affect communication. To check for this, perform the following steps:

1. Go to "Configuring the LAN Interface" on page 28 and perform steps 1 through 5.

    Leave the **IO Config-IO Libraries Configuration** window (shown in Figure 19) open.

2. Click **TCPIP0 lan** > **Edit** > **Edit Visa Config.**

Figure 19   Editing the Visa Configuration
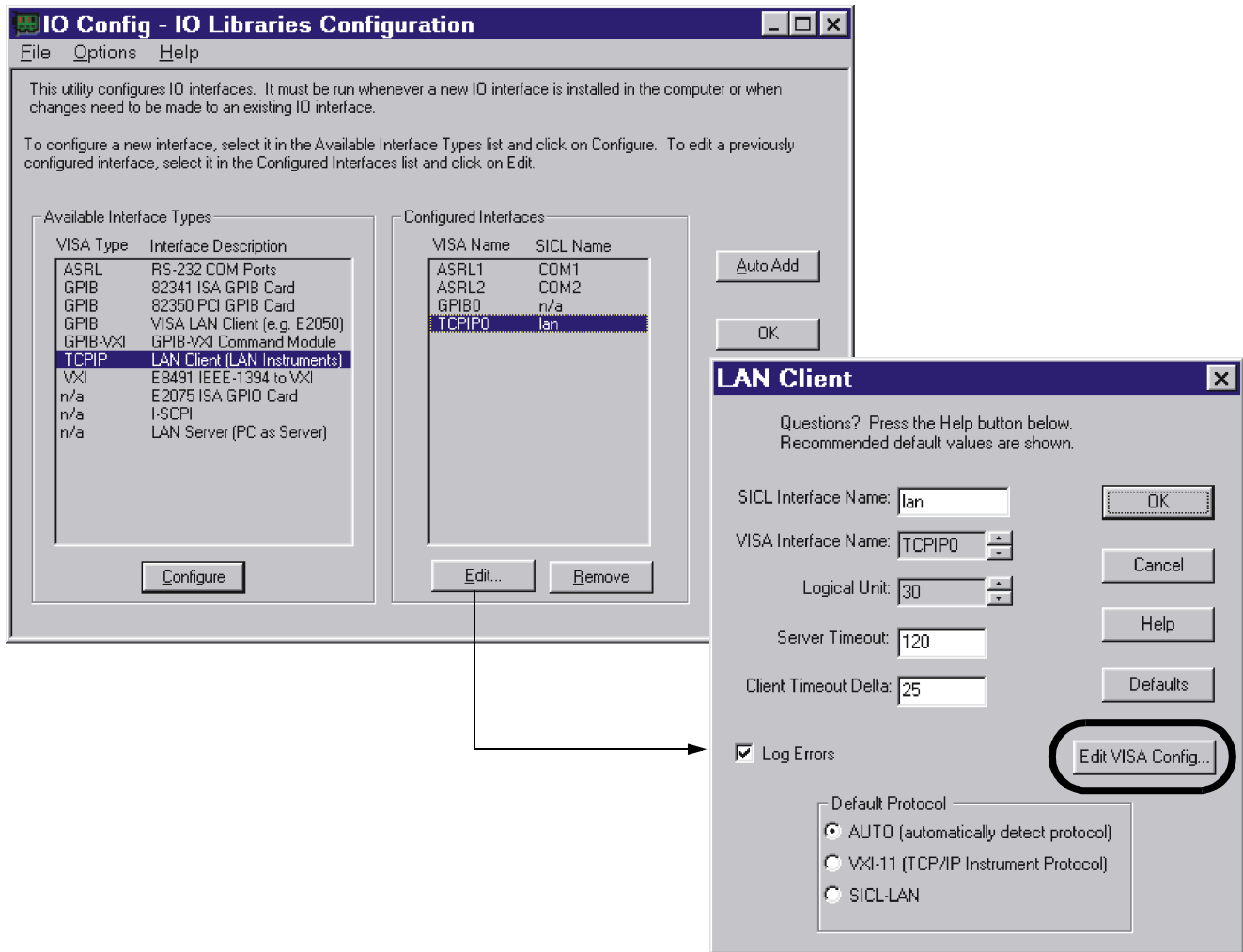
3. Select any devices present in the **TCPIP devices** window, shown in Figure 20, and click **Remove device**.

4. To back out of the IO Config program, click **OK** on successive forms.

Figure 20   TCPIP devices

Agilent Technologies

Installing the Signal Studio Software
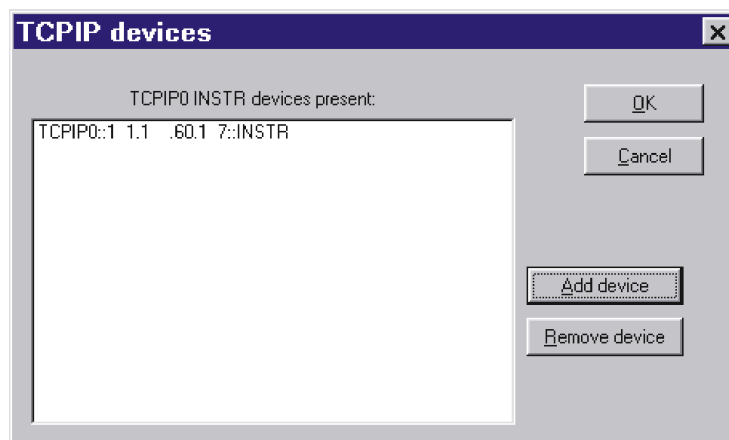
1. Go to **http://www.agilent.com/find/signalstudio**.

2. Click the **E4438C ESG Signal Studio Software** or **E8267C PSG Signal Studio Software** link, depending on the instrument you are using.

3. Click the link of the software you would like to install.

4. On the software application page, click the software link and follow the download instructions.

NOTE   The Signal Studio for TD-SCDMA (TSM) application is not supported on a network drive.