

**Installation and
Configuration
Guide for Windows**

HP I/O Libraries

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Installation and
Configuration Guide
for Windows



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Contents

1. Introduction

Overview of the HP I/O Libraries	1-3
HP VISA	1-5
Support	1-5
Users	1-6
HP VTL	1-7
Support	1-7
Users	1-7
HP SICL	1-8
Support	1-8
Users	1-8
Support Summary for the HP I/O Libraries	1-9
Where to Go Next	1-10

2. Installing and Configuring the HP I/O Libraries

Preparing to Install the HP I/O Libraries	2-3
Verifying the Product Package	2-4
Verifying the Hardware Requirements	2-5
Verifying the Software Requirements	2-7
32-bit HP VISA and HP SICL	2-7
16-bit HP VISA, HP VTL, and HP SICL	2-8
Installing the HP I/O Libraries	2-9
Installation on Windows 95	2-10
What Happened During Installation	2-12
Where to Go Next	2-12
Installation on Windows NT	2-13
What Happened During Installation	2-15
Where to Go Next	2-15
Installation on Windows 3.1	2-16
What Happened During Installation	2-18
Where to Go Next	2-18
Configuring the HP I/O Libraries	2-19
Configuration of an HP 82341 or HP 82340 HP-IB with EISA Computers	2-20
Configuration on Windows 95	2-2
Running the HP I/O Libraries Configuration Utility	2-2

Starting the LAN Server	2-24
Stopping the LAN Server	2-24
Where to Go Next	2-24
Configuration on Windows NT	2-25
Running the HP I/O Libraries Configuration Utility	2-25
Starting the LAN Server	2-27
Stopping the LAN Server	2-27
Where to Go Next	2-28
Configuration on Windows 3.1	2-29
Configuring HP SICL	2-29
Running the HP SICL Configuration Utility	2-30
Where to Go Next	2-30
Configuring HP VTL	2-31
Running the HP VTL Configuration Utility	2-31
Where to Go Next	2-32
3. Documentation for the HP I/O Libraries	
HP VISA and HP VTL Documentation	3-3
HP SICL Documentation	3-4
A. RS-232 Cables and HP Instruments	
General Purpose Cables and Connectors	A-3
Recommendations	A-9
Testing the PC-to-Instrument RS-232 Interface	A-10
B. Installing the HP I/O Libraries from 3.5-inch Disks	
Installation on Windows 95	B-3
What Happened During Installation	B-5
Where to Go Next	B-6
Installation on Windows NT	B-7
What Happened During Installation	B-9
Where to Go Next	B-10
Installation on Windows 3.1	B-11
What Happened During Installation	B-12
Where to Go Next	B-13

Index

Introduction

Introduction

Welcome to the *HP I/O Libraries Installation and Configuration Guide for Windows*. This guide provides an overview of the HP I/O Libraries and explains how to install and configure the libraries on Microsoft® Windows™ environments. This guide also lists the other documentation you can follow either to use or develop I/O applications and instrument drivers with the HP I/O Libraries.

This first chapter provides an overview of the HP I/O Libraries, including a summary of which Windows environments, I/O interfaces, and programming languages are supported for each of the libraries. In addition, this guide contains the following chapters and appendices:

- **Chapter 2 - Installing and Configuring the HP I/O Libraries** explains how to install and configure the libraries on each Windows environment.
- **Chapter 3 - Documentation for the HP I/O Libraries** provides a list of the other manuals and online help you can follow either to use or develop I/O applications and instrument drivers with the libraries.
- **Appendix A - RS-232 Cables and HP Instruments** lists and explains RS-232 cables you can use to connect HP instruments to PCs, printers, and modems.
- **Appendix B - Installing the HP I/O Libraries from 3.5-inch Disks** explains how to install the libraries if you purchased the option for 3.5-inch disks for installation of the HP I/O Libraries.

This guide also contains an **Index**.

Overview of the HP I/O Libraries

The HP I/O Libraries consist of the following three libraries:

- **HP Virtual Instrument Software Architecture (VISA)** is an I/O library designed according to the *VXIplug&play* System Alliance that allows software developed from different vendors to run on the same system. There is a 32-bit and a 16-bit version of VISA. The 32-bit version is supported on Microsoft Windows 95TM and Windows NT[®]. The 16-bit version is supported on Windows 95 only.

Use VISA if you wish to use *VXIplug&play* instrument drivers in your applications, or if you want the I/O applications or instrument drivers that you develop to be compliant with *VXIplug&play* standards. If you are using new instruments or are developing new I/O applications or instrument drivers on Windows 95 or Windows NT, HP recommends that you use VISA.

- **HP VISA Transition Library (VTL)** is an I/O library that is a subset of the VISA library. Therefore, applications written for VTL will also work for VISA. This 16-bit library is supported on Microsoft Windows 3.1TM only.

Use VTL if you only need to use or develop 16-bit instrument drivers or I/O applications on Windows 3.1 that are *VXIplug&play* compliant, and you do not need all the functionality provided in VISA, such as locking.

- **HP Standard Instrument Control Library (SICL)** is an I/O library developed by HP that is portable across many I/O interfaces and systems. There is a 32-bit and a 16-bit version of SICL. The 32-bit version is supported on Microsoft Windows 95 and Windows NT. The 16-bit version is supported on Windows 95 and Windows 3.1.

Use SICL if you have been using SICL and want to remain compatible with software currently implemented in SICL.

NOTE

Since VISA/VTL and SICL are different libraries, you *cannot* use VISA/VTL functions and SICL functions in the same I/O applications.

The following subsections provide a more detailed description of each of these libraries. Also refer to the last section in this chapter, “Support Summary for the HP I/O Libraries,” for a summary of which Windows environments, I/O interfaces, and programming languages are supported for the libraries.

HP VISA

VISA (Virtual Instrument Software Architecture) is an I/O library that can be used to develop I/O applications and instrument drivers that comply with the *VXIplug&play* standards. Applications and instrument drivers developed with VISA can execute on *VXIplug&play* system frameworks that have the VISA I/O layer. Therefore, software from different vendors can be used together on the same system.

There is a 32-bit and a 16-bit version of VISA. Note that you can use one or both versions of VISA on your 32-bit computer when running the Windows 95 environment.

Support

The following two tables summarize the support for the 32-bit and 16-bit versions of VISA.

Support for 32-bit VISA

Environment	Interfaces	Programming Languages
Windows 95	GPIB, VXI, GPIB-VXI, RS-232, LAN ¹	C, C++, Visual BASIC ²
Windows NT	GPIB, GPIB-VXI, RS-232, LAN ¹	C, C++, Visual BASIC ²

¹ LAN support from within VISA occurs via an address translation such that a GPIB interface can be accessed remotely over a computer network.

² Although VISA supports the Visual BASIC programming language, the VISA manuals only support and show VISA programming techniques using the C and C++ programming languages at this time.

Support for 16-bit VISA

Environment	Interfaces	Programming Languages
Windows 95	GPIB, VXI, GPIB-VXI, RS-232	C, C++, Visual BASIC ³

³ Although VISA supports the Visual BASIC programming language, the VISA manuals only support and show VISA programming techniques using the C and C++ programming languages at this time.

Users

VISA has two specific users. The first user is the instrumentation end user who wants to use *VXIplug&play* instrument drivers in his or her applications. The second user is the instrument driver or I/O application developer who wants to be compliant with *VXIplug&play* standards.

Software development using VISA is intended for instrument I/O and C/C++ or Visual BASIC programmers who are familiar with the Windows 95 or Windows NT environment. If you will be performing the VISA installation and configuration on Windows NT, you must also have system administration privileges on your Windows NT system.

HP VTL

VTL (VISA Transition Library) is a 16-bit I/O library that can be used to create I/O applications and instrument drivers that comply with the *VXIplug&play* standards. Applications and instrument drivers developed with VTL can execute on *VXIplug&play* system frameworks that have the VTL and/or VISA I/O layer. Therefore, software from different vendors can be used together on the same system.

VTL is a subset of the VISA library and is interchangeable with native VISA calls. VTL does not have all of the functionality found in VISA, such as locking.

Support

The following table summarizes the support for VTL.

Support for 16-bit VTL

Environment	Interfaces	Programming Languages
Windows 3.1	GPIB, VXI, GPIB-VXI	C, C++

Users

VTL has two specific users. The first user is the instrumentation end user who wants to use *VXIplug&play* instrument drivers in his or her applications. The second user is the instrument driver or I/O application developer who wants to be compliant with *VXIplug&play* standards.

Software development using VTL is intended for instrument I/O and C/C++ programmers who are familiar with the Windows 3.1 environment.

HP SICL

SICL (Standard Instrument Control Library) is an I/O library developed by HP that is portable across many I/O interfaces and systems. There is a 32-bit and a 16-bit version of SICL. Note that you can use one or both versions of SICL on your 32-bit computer when running the Windows 95 environment.

Support

The following two tables summarize the support for the 32-bit and 16-bit versions of SICL.

Support for 32-bit SICL

Environment	Interfaces	Programming Languages
Windows 95	HP-IB, VXI ⁴ , RS-232, GPIO, LAN	C, C++, Visual BASIC
Windows NT	HP-IB, RS-232, GPIO, LAN	C, C++, Visual BASIC

Support for 16-bit SICL

Environment	Interfaces	Programming Languages
Windows 95	HP-IB, VXI ⁴ , RS-232, GPIO	C, C++, Visual BASIC
Windows 3.1	HP-IB, VXI ⁴ , RS-232	C, C++, Visual BASIC

⁴ SICL for the VXI interface is shipped with the HP VXI Embedded PC Controller and VXLink products.

Users

SICL is intended for instrument I/O and C/C++ or Visual BASIC programmers who are familiar with the Windows 95, Windows NT, or Windows 3.1 environment. If you will be performing the SICL installation and configuration on Windows NT, you must also have system administration privileges on your Windows NT system.

Support Summary for the HP I/O Libraries

The following table summarizes which Windows environments, I/O interfaces, and programming languages are supported for VISA, VTL, and SICL.

Support for the HP I/O Libraries

Environment	Library	GPIB/ HP-IB	VXI	GPIB-VXI	RS-232	GPIO	LAN	C/C++	Visual BASIC
Windows 95	VISA 32-bit	X	X	X	X		X ⁵	X	X ⁶
	VISA 16-bit	X	X	X	X			X	X ⁶
	SICL 32-bit	X	X ⁷		X	X	X	X	X
	SICL 16-bit	X	X ⁷		X	X		X	X
Windows NT	VISA 32-bit	X		X	X		X ⁵	X	X ⁶
	SICL 32-bit	X			X	X	X	X	X
Windows 3.1	VTL 16-bit	X	X	X				X	
	SICL 16-bit	X	X ⁷		X			X	X

⁵ LAN support from within VISA occurs via an address translation such that a GPIB interface can be accessed remotely over a computer network.

⁶ Although VISA supports the Visual BASIC programming language, the VISA manuals only support and show VISA programming techniques using the C and C++ programming languages at this time.

⁷ SICL for the VXI interface is shipped with the HP VXI Embedded PC Controller and VXLink products.

Where to Go Next

Now that you have a better understanding of VISA, VTL, and SICL, you are ready to install the HP I/O Libraries. Please go on to the next chapter, "Installing and Configuring the HP I/O Libraries."

**Installing and Configuring
the HP I/O Libraries**

Installing and Configuring the HP I/O Libraries

This chapter explains how to install and configure the HP I/O Libraries on your system. The main sections of this chapter are:

- Preparing to Install the HP I/O Libraries
- Installing the HP I/O Libraries on:
 - Windows 95
 - Windows NT
 - Windows 3.1
- Configuring the HP I/O Libraries on:
 - Windows 95
 - Windows NT
 - Windows 3.1

Preparing to Install the HP I/O Libraries

In this section, you will prepare for your installation by verifying the following for the HP I/O Libraries:

- Product package
- Hardware requirements
- Software requirements

Verifying the Product Package

If you ordered the HP I/O Libraries for Windows, you should have received the following items as part of your order:

- This manual (the *HP I/O Libraries Installation and Configuration Guide for Windows*)
- The HP VISA manual set, including:
 - *HP VISA User's Guide*
 - *HP VISA Quick Reference Guide for C Programmers*
- The HP SICL manual set, including:
 - *HP SICL User's Guide for Windows*
 - *HP SICL Reference Manual*
 - *HP SICL Quick Reference Guide for C Programmers*
 - *HP SICL Quick Reference Guide for Visual BASIC Programmers*
 - *RS-232 Cables Addendum*
- The HP I/O Libraries installation software, which is supplied on one CD-ROM, or (optionally) a set of 3.5-inch disks.
- HP Software Product License Agreement
- HP-IB interface card (as part of the HP 82341 or HP 82340 product)
- Computer Plug-in Accessories Warranty and Support information
- Complimentary Start-up Assistance information
- Customer Registration/Questionnaire Card

If you also ordered HP-IB and/or RS-232 cables, these may be shipped separately.

Verifying the Hardware Requirements

The HP I/O Libraries have the following minimum system hardware requirements:

- 80386-based personal computer.
- Sufficient memory to run one of the following:
 - Windows 95 (8 Mb RAM)
 - Windows NT (16 Mb RAM)
 - Windows 3.1 (4 Mb RAM)

Additional RAM may improve overall system performance.

- Available ISA or EISA I/O slots for plug-in HP-IB, RS-232, or GPIO interface cards, or for a LAN adaptor, as applicable.
- Available hard disk space for the VISA, VTL, and SICL software (refer to the installation setup program for specific requirements).

NOTE

It is strongly recommended that you install the hardware interface card(s) in your computer before you install the HP I/O Libraries software. To install each interface card, see the installation guide that was shipped with the interface card. For example, if you need to install an HP-IB card, see the *HP-IB Interface Installation Guide for HP I/O Libraries* for interface installation procedures.

Preparing to Install the HP I/O Libraries

NOTE

If you will use an RS-232 interface with VISA or SICL, refer to the RS-232 documentation provided with your particular Windows product. This is because VISA and SICL uses the RS-232 capabilities built into Windows.

For information about RS-232 cables, refer to Appendix A, "RS-232 Cables and HP Instruments," in this manual, as well as the *RS-232 Cables Addendum* included in your HP I/O Libraries product package.

NOTE

The HP 82335 HP-IB interface is *only* supported with 32-bit and 16-bit SICL on Windows 95, and with 16-bit SICL on Windows 3.1. Also, SICL does *not* support interrupt, SRQ, or non-controller functions with the HP 82335. If you require this functionality, you must use the HP 82341 or HP 82340 HP-IB interface.

Verifying the Software Requirements

This section lists the software requirements for:

- 32-bit HP VISA and HP SICL
- 16-bit HP VISA, HP VTL, and HP SICL

32-bit HP VISA
and HP SICL

To use 32-bit VISA and/or SICL on your system, you must have the following software:

- Either Microsoft Windows 95, or Windows NT version 3.51 or later (for Windows NT, see Note below)
- One of the following language tools:
 - Microsoft 32-bit Visual C++ version 2.0 or later, or other equivalent Microsoft 32-bit C/C++ language tools
 - Borland C++ version 4.0 or later
 - Microsoft 32-bit Visual BASIC version 4.0 or later

NOTE

This version of SICL requires Windows NT version 3.51 or later. This version of SICL will *not* run properly on Windows NT version 3.1 or 3.5.

Also, the WIN32 subsystem is the only subsystem supported with SICL on Windows NT. This includes support for both console and GUI applications. This means that you cannot use SICL with 16-bit (WIN16) applications on Windows NT.

Preparing to Install the HP I/O Libraries

16-bit HP VISA, HP VTL,
and HP SICL

To use 16-bit VISA, VTL, and/or SICL on your system, you must have the following software:

- MS-DOS version 5.0 or later (only needed for 16-bit VTL or SICL on Windows 3.1 or on Windows for Workgroups 3.1)
- Either Microsoft Windows 95 (for 16-bit VISA or SICL), or Windows 3.1 or Windows for Workgroups 3.1 (for 16-bit VTL or SICL)
- One of the following language tools:
 - Microsoft Visual C++ version 1.5 or later, or other equivalent Microsoft 16-bit C/C++ language tools
 - Borland C++ version 4.0 or later
 - Microsoft 16-bit Visual BASIC version 3.0 (only for 16-bit VISA on Windows 95, or for 16-bit SICL on Windows 95 or Windows 3.1)

NOTE

When installing Windows 95 or Windows 3.1 language tools for use with 16-bit VISA, VTL, or SICL, make sure that the libraries for programming with the Large memory model are loaded. If not, you may have difficulty developing your 16-bit VISA, VTL, or SICL applications.

Installing the HP I/O Libraries

NOTE

If you purchased the option for 3.5-inch disks for installation of the HP I/O Libraries, please follow the installation instructions provided in Appendix B, "Installing the HP I/O Libraries from 3.5-inch Disks," *instead of* the instructions in this section. (This section contains instructions for installation of the HP I/O Libraries from CD-ROM *only*.)

This section contains three subsections for installing the HP I/O Libraries from CD-ROM on:

- Windows 95
- Windows NT
- Windows 3.1

Refer to the following, appropriate installation subsection for the Windows environment you are using. If you have more than one Windows environment on your PC, and you want to use the HP I/O Libraries on more than one environment, you must perform the installation procedures in the following, appropriate subsections for *all* the Windows environments you will use with the HP I/O Libraries.

Installation on Windows 95

NOTE

To simplify the installation, both VISA and SICL will be installed on your Windows 95 environment during the following procedures. However, because VISA and SICL are different libraries, you *cannot* use VISA and SICL functions in the same I/O applications you develop in the future.

NOTE

If you are re-installing the HP I/O Libraries on Windows 95, ensure that all VISA and SICL applications, as well as the LAN server, are *not* running during the following installation procedures.

Follow these steps to install the 32-bit and 16-bit versions of the VISA and SICL software on Windows 95 from CD-ROM:

1. If you have not already done so, start up Windows 95.
2. Insert the CD-ROM labeled "HP I/O Libraries for Windows" in the CD-ROM drive. (Drive **e:** is used in these instructions.)
3. If the Setup program automatically starts, skip to the next step (step 4). However, if the Setup program does *not* automatically start on your PC, do the following to manually run the Setup program:
 - a. At the bottom of the screen, click on the **Start** button located next to the system task bar, then click on **Run**.
 - b. In the dialog box that is displayed, type **e:setup**. Then click the **OK** button.

4. After the InstallShield Wizard loads the Setup files needed for the installation, you see the **Welcome** dialog box. Click on the **Next** button in the **Welcome** dialog box to continue with the Setup program.
5. The Setup program displays the **Default Destination Directory** dialog box, which shows you the default directories in which you can install the files:
 - For SICL, the default is **C:\SICL** on your primary hard drive.
 - For VISA, the default is **C:\VXIPNP** on your primary hard drive. (*VXIPNP stands for VXiplug&play.*)

Either click on the **Next** button to accept the default directories, or edit the fields to select different directories for SICL and/or VISA and then click on the **Next** button.

6. The **Start Copying Files** dialog box displays all current settings for the installation. If you want to change any of the settings, click on the **Back** button. Otherwise, if you are satisfied with the settings, click on the **Next** button to start copying the files.

The Setup program automatically copies all of the VISA and SICL files onto your hard drive.

7. The **Setup Complete** dialog box is displayed when the installation has completed successfully. Click on the **Finish** button to end the Setup program.
8. When the installation setup is complete, remove the CD-ROM and store it in a safe location.

What Happened During
Installation

During installation, the setup program installed the 32-bit and 16-bit versions of VISA and SICL on your Windows 95 environment. It also created the following:

1. An **HP I/O Libraries** program group for VISA and SICL. It also defined an icon for each of the following:
 - **HP I/O Libraries Read Me** file
 - **SICL Help** (online help)
 - **VISA Help** (online help)
 - **I/O Config** utility
 - **Message Viewer** utility
 - **LAN Server**
2. A **VXIPNP (VXIplug&play)** start menu folder, where you can store your **VXIplug&play** drivers for VISA.

The Windows 95 registry was also modified by the setup program to record the locations of the **SICL** and **VXIPNP** directories. This change will have no other effect on your Windows environment.

NOTE

It is very important that you look through the HP I/O Libraries **Read Me** file (for VISA and SICL) before proceeding with any VISA or SICL application development. Double-click on the **Read Me** icon in the **HP I/O Libraries** program group to view this file.

Where to Go Next

You have now completed installing the HP I/O Libraries, including 32-bit and 16-bit VISA and SICL, on your Windows 95 environment. Please go on to the next main section, "Configuring the HP I/O Libraries," for instructions on how to configure your system to use the HP I/O Libraries.

Installation on Windows NT

NOTE

To simplify the installation, both VISA and SICL will be installed on your Windows NT environment during the following procedures. However, because VISA and SICL are different libraries, you *cannot* use VISA and SICL functions in the same I/O applications you develop in the future.

NOTE

You must have system administrator privileges to be able to install VISA and SICL on Windows NT.

NOTE

If you are re-installing the HP I/O Libraries on Windows NT, ensure that all VISA and SICL applications, including the LAN server, are *not* running during the following installation procedures.

Follow these steps to install the 32-bit versions of the VISA and SICL software on Windows NT from CD-ROM:

1. If you have not already done so, start up Windows NT.
2. Insert the CD-ROM labeled "HP I/O Libraries for Windows" in the CD-ROM drive. (Drive **e:** is used in these instructions.)

Installing the HP I/O Libraries

3. From the Program Manager menu, select **File | Run**.
4. In the dialog box, type **e:setup** and press **Enter**.
5. After the InstallShield Wizard loads the Setup files needed for the installation, you see the **Welcome** dialog box. Click on the **Next** button in the **Welcome** dialog box to continue with the Setup program.
6. The Setup program displays the **Default Destination Directory** dialog box, which shows you the default directories in which you can install the files:
 - For SICL, the default is **C:\SICL** on your primary hard drive.
 - For VISA, the default is **C:\VXIPNP** on your primary hard drive. (VXIPNP stands for *VXIplug&play*.)

Either click on the **Next** button to accept the default directories, or edit the fields to select different directories for SICL and/or VISA and then click on the **Next** button.

7. The **Start Copying Files** dialog box displays all current settings for the installation. If you want to change any of the settings, click on the **Back** button. Otherwise, if you are satisfied with the settings, click on the **Next** button to start copying the files.

The Setup program automatically copies all of the VISA and SICL files onto your hard drive.

8. The **Setup Complete** dialog box is displayed when the installation has completed successfully. Click on the **Finish** button to end the Setup program.
9. When the installation setup is complete, remove the CD-ROM and store it in a safe location.

What Happened During
Installation

During installation, the setup program installed the 32-bit versions of VISA and SICL on your Windows NT environment. It also created the following:

1. An **HP I/O Libraries** program group for VISA and SICL. It also defined an icon for each of the following:
 - **HP I/O Libraries Read Me** file
 - **SICL Help** (online help)
 - **VISA Help** (online help)
 - **I/O Config** utility
 - **LAN Server**
2. A **VXIPNP** (*VXIplug&play*) program group, where you can store your *VXIplug&play* drivers for VISA.

The Windows NT registry was also modified by the setup program to record the locations of the **SICL** and **VXIPNP** directories. This change will have no other effect on your Windows environment.

NOTE

It is very important that you look through the HP I/O Libraries **Read Me** file (for VISA and SICL) before proceeding with any VISA or SICL application development. Double-click on the **Read Me** icon in the **HP I/O Libraries** program group to view this file.

Where to Go Next

You have now completed installing the HP I/O Libraries, including 32-bit VISA and SICL, on your Windows NT environment. Please go on to the next main section, "Configuring the HP I/O Libraries," for instructions on how to configure your system to use the HP I/O Libraries.

Installation on Windows 3.1

NOTE

To simplify the installation, both VTL and SICL will be installed on your Windows 3.1 environment during the following procedures. However, because VTL and SICL are different libraries, you *cannot* use VTL and SICL functions in the same I/O applications you develop in the future.

Follow these steps to install the 16-bit versions of the VTL and SICL software on Windows 3.1 from CD-ROM:

1. If you have not already done so, start up Windows by typing **win** at the command prompt.
2. Insert the CD-ROM labeled "HP I/O Libraries for Windows" in the CD-ROM drive. (Drive **e:** is used in these instructions.)
3. From the Program Manager menu, select **File | Run**.
4. In the dialog box, type **e:setup** and press **Enter**.
5. The setup program displays a dialog box listing the three possible Windows environments, with the two environments (Windows 95 and Windows NT) greyed-out that are *not* currently running. This shows that you will be installing the HP I/O Libraries on the Windows 3.1 environment. Click on the **Windows 3.1** button.
6. The setup program displays a dialog box which explains that this program will install both the SICL and VTL I/O libraries. Click the **Continue** button.

7. The setup program prompts you for the directories in which to install the files:

- For SICL, the default is `C:\SICL` on your primary hard drive.
- For VTL, the default is `C:\VXIPNP` on your primary hard drive.
(VXIPNP stands for VXI*plug&play*.)

Either click the **Install** button to use the default locations for both SICL and VTL, or click **Set Location** to type in the desired directory for SICL and/or VTL and then click **Continue** and **Install**.

The setup program automatically copies all of the SICL and VTL files onto your hard drive.

8. The setup program displays a dialog box explaining that the program needs to modify the `AUTOEXEC.BAT` file. Either:

- Click on the **Modify** button to have the setup program modify the file and save a backup of the original as `AUTOEXEC.BAK`.

OR:

- Click on the **Skip** button to have the setup program modify a copy of the original file named `AUTOEXEC.IDL`.

9. The setup program then prompts you when it has completed successfully. When the setup is complete, remove the CD-ROM and store it in a safe location.



NOTE

If you did not install VTL in the default location (`C:\VXIPNP`), you must add the path to the new location in the `WIN.INI` file in your Windows directory. For example, if you installed VTL in `C:\MYDIR\VXIPNP`, add the following two lines at the end of the `WIN.INI` file:

```
[VXIPNP]  
VPNPPATH=C:\MYDIR
```

What Happened During
Installation

During installation, the setup program installed the 16-bit versions of VTL and SICL on your Windows 3.1 environment and created the following:

1. A **VXIPNP** (*VXIplug&play*) program group for VTL. It also defined an icon for each of the following:
 - **VTL Read Me First** file
 - **VTL Help** (online help)
 - **HP VTL Config** utility
 - **VTL Message Viewer** utility
2. An **HP SICL** program group. It also defined an icon for each of the following:
 - **SICL Read Me First** file
 - **SICL Help** (online help)
 - **SICL I/O Config** utility
 - **SICL Message Viewer** utility
 - **Instrument I/O Command Utility**

The Windows 3.1 **WIN.INI** file was also modified by the setup program to record the location of the **SICL** directory and the **VXIPNP** (for VTL) directory (if you used the default location for VTL—see the previous Note). This change will have no other effect on your Windows environment.

NOTE

It is very important that you look through the **Read Me First** files for VTL and SICL before proceeding with any VTL or SICL application development. Double-click on the **Read Me First** icon in the **VXIPNP** and in the **HP SICL** program groups to view these files.

Where to Go Next

You have now completed installing the HP I/O Libraries, including 16-bit VTL and SICL, on your Windows 3.1 environment. Please go on to the next section, "Configuring the HP I/O Libraries," for instructions on how to configure your system to use the HP I/O Libraries.

Configuring the HP I/O Libraries

This section first explains how to configure an HP 82341 or HP 82340 HP-IB interface for use in EISA computers. Then it provides three subsections for configuring the HP I/O Libraries on:

- Windows 95
- Windows NT
- Windows 3.1

If you do not need to configure an HP 82341 or HP 82340 for use in an EISA computer, simply skip the first subsection and go on to the following, appropriate configuration subsection for the Windows environment you are using.

If you have more than one Windows environment on your PC, and you have installed the HP I/O Libraries on more than one environment, you must perform the configuration procedures in the following, appropriate subsections for *all* the Windows environments you will use with the HP I/O Libraries.

NOTE

If you have not yet installed the hardware interface card(s) in your computer, you must do so before proceeding with the software configuration procedures in this section. To install each interface card, see the installation guide that was shipped with the interface card. For example, if you need to install an HP-IB card, see the *HP-IB Interface Installation Guide for HP I/O Libraries* for interface installation procedures.

Configuration of an HP 82341 or HP 82340 HP-IB with EISA Computers

Some personal computers have 32-bit EISA backplanes. If you installed an HP 82341 or HP 82340 HP-IB interface in an EISA slot, you may wish to run the EISA configuration utility provided with your computer. The EISA configuration utility will assign hardware resources to the interface to avoid system conflicts.

When you ran the HP I/O Libraries installation setup program, the EISA .CFG files were placed in the EISACFG directory under the SICL base directory (for example, under C:\SICL\EISACFG if you installed the SICL software in the default location).

When you run the EISA configuration utility and assign resources, be sure to note the settings for use with the configuration utility described in the next subsections.

Once you have run the EISA configuration utility, go on to the appropriate configuration subsection on the following pages for the Windows environment you are using. If you have more than one Windows environment on your PC, and you have installed the HP I/O Libraries on more than one environment, you must perform the configuration procedures in the following, appropriate subsections for *all* the Windows environments you will use with the HP I/O Libraries.

Configuration on Windows 95

NOTE

To configure your interfaces for use with SICL and VISA, do *not* attempt to manually edit the Windows 95 registry, or use either the **Add New Hardware Wizard** or **Device Manager** features of Windows 95. Instead, you must exclusively use the **I/O Config** utility, as explained in this section, to configure all interfaces used with SICL and VISA.

This subsection explains how to run the HP I/O Libraries configuration utility, **I/O Config**. This utility will configure your Windows 95 environment to use 32-bit and 16-bit VISA and SICL. When you finish running **I/O Config**, VISA and SICL will be completely installed and configured on your system.

Running the
HP I/O Libraries
Configuration Utility

NOTE

If there are any VISA or SICL applications running when changes are made using the **I/O Config** utility, these changes will not take effect until all currently executing applications have completed.

Configuring the HP I/O Libraries

Starting the LAN Server

If you configured the LAN server on this Windows 95 PC using **I/O Config**, you must now start the LAN server process on this system. To start the LAN server, you can *either*:

- Restart (reboot) this system now. When the system is restarted, the LAN server process (which is listed in the Windows 95 registry) will be started automatically.

Note that the LAN server will be started automatically each time this system is restarted (rebooted) in the future.

OR:

- Manually start the LAN server process on this system. To do this, click on the **LAN Server** icon in the **HP I/O Libraries** program group. The LAN server is now running. Note that you can minimize the **LAN Server** window so that the **LAN Server** process is listed on the Windows 95 task bar at the bottom of the screen.

Also note that the LAN server will be started automatically each time this system is restarted (rebooted) in the future.

Stopping the LAN Server

To stop the LAN server process from running on a Windows 95 PC, do the following:

1. Click on the **LAN Server** process listed in the Windows 95 task bar at the bottom of the screen. The **LAN Server** window opens on the screen.
2. Move your cursor into the **LAN Server** window. Then press **Ctrl-C** *simultaneously* on your keyboard. The LAN server process is stopped.

Where to Go Next

You have now completed configuring 32-bit and 16-bit VISA and SICL on Windows 95. Go on to the next chapter, "Documentation for the HP I/O Libraries," which lists other manuals and online help you should use next to develop I/O applications with VISA or SICL.

Configuration on Windows NT

This subsection explains how to run the HP I/O Libraries configuration utility, **I/O Config**. This utility will configure your Windows NT environment to use 32-bit VISA and SICL. When you finish running **I/O Config**, VISA and SICL will be completely installed and configured on your system.

Running the
HP I/O Libraries
Configuration Utility

NOTE

On Windows NT, you must have system administrator privileges to run the **I/O Config** utility. You may also be instructed to reboot the computer if you add or modify certain interfaces with the **I/O Config** utility. This is required in order to load or update the driver files for particular interfaces in the Windows NT kernel.

Run the **I/O Config** utility by double-clicking on the **I/O Config** icon in the **HP I/O Libraries** program group. The **I/O Config** utility is an interactive program that searches your system for installed interfaces that VISA and SICL support. (LAN is an exception to this — see the following Note.) You must select the interfaces you wish to use, and the **I/O Config** utility will choose a number of default parameters needed to configure each interface.

NOTE

The **I/O Config** utility *cannot* automatically detect a LAN interface. Therefore, if you have a LAN interface installed which you want to use with 32-bit VISA and/or SICL, simply select LAN from the list of possible interfaces you may configure within **I/O Config**. Then select the appropriate configuration parameters needed to configure your LAN interface for use with 32-bit VISA and/or SICL.

Any configurable hardware options, such as which computer interrupt line to use, plus important VISA and SICL configuration details will be displayed for each selected interface. If you have any questions about the use of the **I/O Config** utility for a specific interface, select the **Help** button within the interface's **I/O Config** dialog box.

In most cases, you will be able to use the automatic defaults. But if you need to change a value, either click on the arrows next to the value's field or, if there are no arrows, click on the field and type in the new value that you want.

You should note the name of the interface, such as **hpib7**, and the logical unit number of the interface for later use in your SICL applications, and the device address for later use in your VISA applications. However, note that you can run the **I/O Config** utility at any future time to check or make changes to the configuration settings of your interfaces.

NOTE

When you configure VISA on Windows NT via the **I/O Config** utility, the default configuration specifies that all VISA devices will be identified at application run-time. However, this is not ideal for all users. If you experience slow performance when running VISA applications, you may need to edit the VISA configuration to identify devices at configuration time (not at run-time). To edit the VISA configuration, see Appendix E, "Editing the Configuration," in the *HP VISA User's Guide*.

When you have finished configuring the interfaces, click on **OK** to store the changes you have made. You may now need to restart (reboot) your system for changes to take effect for particular interfaces you have added or changed.

If you:

- Will *not* use this system as a LAN server, you are now ready to begin creating I/O applications with VISA or SICL. Skip the next two subsections and continue on to the subsection titled "Where to Go Next."
- Will use this system as a LAN server, go on to the next subsection to start the LAN server on this system.

Starting the LAN Server

If you configured the LAN server on this Windows NT PC using *I/O Config*, you must now start the LAN server process on this system. To start the LAN server, you can *either*:

- Restart (reboot) this system now. This is only necessary if you did not have to restart the system after exiting the *I/O Config* utility. When the system is restarted, the LAN server process (which is listed in the Windows NT registry) will be started automatically.

Note that the LAN server will be started automatically each time this system is restarted (rebooted) in the future.

OR:

- Manually start the LAN server process on this system. To do this, click on the **LAN Server** icon in the **HP I/O Libraries** program group. The LAN server is now running.

Also note that the LAN server will be started automatically each time this system is restarted (rebooted) in the future.

Stopping the LAN Server

To stop the LAN server process from running on a Windows NT PC, do the following:

1. If iconized, click on the **LAN Server** process icon at the bottom of the screen. The **LAN Server** window opens on the screen.
2. Move your cursor into the **LAN Server** window. Then press **Ctrl-C** *simultaneously* on your keyboard. The LAN server process is stopped.

NOTE

If pressing **Ctrl-C** does not stop the LAN server process, click on the "toaster" button in the upper-left corner of the window and then close the window. After a few seconds, an **End Task** dialog box will appear. Press the **End Task** button. The LAN server process is now stopped.

Where to Go Next

You have now completed configuring 32-bit VISA and SICL on Windows NT. Go on to the next chapter, "Documentation for the HP I/O Libraries," which lists other manuals and online help you should use next to develop I/O applications with VISA or SICL.

Configuration on Windows 3.1

This subsection explains how to configure 16-bit VTL and SICL on Windows 3.1.

Configuring HP SICL

NOTE

If you will use VTL, you *must* first configure SICL. Therefore, please follow this subsection first to configure SICL. Then go on to the next subsection, "Configuring HP VTL," to configure VTL.

This subsection explains how to run the SICL configuration utility, **I/O Config**. This utility will configure your Windows 3.1 environment to use 16-bit SICL. When you finish running **I/O Config**, SICL will be completely installed and configured on your system.

Running the HP SICL Configuration Utility.

NOTE

On Windows 3.1, if there are any SICL applications running when changes are made using the **I/O Config** utility, these changes will not take effect until all currently executing SICL applications have completed.

Run the **SICL I/O Config** utility by double-clicking on the **I/O Config** icon in the **HP SICL** program group. The **SICL I/O Config** utility is an interactive program that searches your system for installed interfaces that SICL supports. You must select the interfaces you wish to use, and the **I/O Config** utility will choose a number of default parameters needed to configure each interface.

Any configurable hardware options, such as which computer interrupt line to use, plus important SICL configuration details will be displayed for each selected interface. If you have any questions about the use of the **I/O Config** utility for a specific interface, select **Help** from the **I/O Config** utility menu.

In most cases, you will be able to use the automatic defaults. But if you need to change a value, simply click on the field and select the new value that you want.

You should note the name of the interface, such as **hpib7**, and the logical unit number of the interface for later use in your SICL applications. However, note that you can run the **I/O Config** utility at any future time to check or make changes to the configuration settings of your interfaces.

When you have finished configuring the interfaces, click on **OK** and **Yes** to store the changes you have made. You are now ready to begin creating I/O applications with SICL.

Where to Go Next. If you wish to use VTL, continue on to the next subsection, "Configuring HP VTL." Otherwise, go on to the next chapter, "Documentation for the HP I/O Libraries," which lists other manuals and online help you should use next to develop I/O applications with SICL.

Configuring HP VTL

NOTE

To configure and use VTL, you *must* first configure SICL. If you have not already done so, please follow the previous subsection, "Configuring HP SICL," to configure SICL first. Then follow this subsection to configure VTL.

This subsection explains how to run the HP VTL configuration utility, **HP VTL Config**. This utility will configure your Windows 3.1 environment to use VTL. When you finish running **VTL Config**, VTL will be completely installed and configured on your system.

Running the HP VTL Configuration Utility.

NOTE

If there are any VTL applications running when changes are made using the **VTL Config** utility, these changes will not take effect until all currently executing VTL applications have completed.

Run the **VTL Config** utility by double-clicking on the **HP VTL Config** icon in the **VXIPNP** program group. The **VTL Config** utility is an interactive program that searches your system for installed interfaces that were previously configured via the **SICL I/O Config** utility. The **VTL Config** utility then configures those interfaces for use in VTL. It also prompts you to add a GPIB-VXI Command Module (that is, a VXI Command Module connected over GPIB), if applicable.

You should note the VTL name of the interface, such as **GPIB0**, for later use in your VTL applications. However, note that you can run the **VTL Config** utility at any future time to check or make changes to the configuration settings of your interfaces.

When the **VTL Config** utility has finished configuring the interfaces, click on **Done**. You are now ready to begin creating I/O applications or instrument drivers with VTL.

Where to Go Next. You have now completed configuring 16-bit VTL and SICL on Windows 3.1. Go on to the next chapter, "Documentation for the HP I/O Libraries," which lists other manuals and online help you should follow next to use VTL or SICL.

Documentation for the
HP I/O Libraries

Documentation for the HP I/O Libraries

After you have followed the instructions in Chapter 2 of this guide to install and configure the HP I/O Libraries, you can begin to use VISA, VTL, or SICL.

This chapter lists the manuals and online help you should follow next to use VISA, VTL, or SICL.

HP VISA and HP VTL Documentation

To use VISA or VTL, you should now go on to Chapter 1, “Introduction,” of the *HP VISA User's Guide*.

The following documentation is also helpful when using VISA or VTL:

- *HP VISA Quick Reference Guide for C Programmers* helps you find VISA or VTL function syntax information quickly.
- *HP VISA or HP VTL Online Help* is provided in the form of Windows Help.
- *HP VISA or HP VTL Example Programs* are provided online to help you develop VISA or VTL applications more easily.

The following documents may also be helpful when using VISA or VTL:

- *VXIplug&play System Alliance VISA Library Specification 4.3*
- *VXIplug&play System Alliance VISA Transition Library Specification 3.0*
- *IEEE Standard Codes, Formats, Protocols, and Common Commands - ANS/IEEE Standard 488.2-1992*

The following VXIbus Consortium specifications may also be helpful when using VISA over LAN:

- *TCP/IP Instrument Protocol Specification - VXI-11, Rev. 1.0*
- *TCP/IP-VXIbus Interface Specification - VXI-11.1, Rev. 1.0*
- *TCP/IP-IEEE 488.1 Interface Specification - VXI-11.2, Rev. 1.0*
- *TCP/IP-IEEE 488.2 Instrument Interface Specification - VXI-11.3, Rev. 1.0*

HP SICL Documentation

To use SICL, you should now go on to Chapter 1, "Introduction," of the *HP SICL User's Guide for Windows*.

The following documentation is also helpful when using SICL:

- *HP SICL Reference Manual* provides the function syntax and description of each SICL function.
- *HP SICL Quick Reference Guide for C Programmers* helps you find SICL function syntax information quickly if you are programming in C/C++.
- *HP SICL Quick Reference Guide for Visual BASIC Programmers* helps you find SICL function syntax information quickly if you are programming in Visual BASIC.
- *HP SICL Online Help* is provided in the form of Windows Help.
- *HP SICL Example Programs* are provided online to help you develop SICL applications more easily.

The following VXIbus Consortium specifications may also be helpful when using SICL over LAN:

- *TCP/IP Instrument Protocol Specification* - VXI-11, Rev. 1.0
- *TCP/IP-VXIbus Interface Specification* - VXI-11.1, Rev. 1.0
- *TCP/IP-IEEE 488.1 Interface Specification* - VXI-11.2, Rev. 1.0
- *TCP/IP-IEEE 488.2 Instrument Interface Specification* - VXI-11.3, Rev. 1.0

A

**RS-232 Cables and
HP Instruments**

RS-232 Cables and HP Instruments

Several RS-232 cables are available to use with HP instruments. Many will work, even though the actual connector pin-outs are different. There is also a choice of four connectors for RS-232: a male and a female DB25, and a male and a female DB9.

This appendix discusses some of the RS-232 cables and connectors that you may use to connect instruments to computers, printers, and modems. You should also refer to the *RS-232 Cables Addendum* insert included in your HP I/O Libraries product package. Together, this appendix and the insert should help you decide which RS-232 cabling to use with VISA or SICL for your particular situation.

Your instrument's manufacturer should also provide information on which control and handshaking lines are used. Having that information will give you a better understanding of the actual needs of your computer program and the cable needed. If you do not have that information, however, the cables listed in the *RS-232 Cables Addendum* will allow your instrument to work, but perhaps not optimally.

The *RS-232 Cables Addendum* insert lists alternate RS-232 cables. Although the cables that are known to work are listed in the insert, you still may have questions. The insert provides pin-out diagrams for the cables as a reference to help you resolve cabling problems.

General Purpose Cables and Connectors

Although the RS-232 standard defines 22 data and status/control lines, only 9 or fewer are commonly used. The following table shows the definitions for those lines. Only three lines (TX, RX, and signal ground) are required for bi-directional communication between Data Terminal Equipment (DTE, such as terminals or computers) and Data Communications Equipment (DCE, such as modems). The other lines serve as status/control lines between the DTE and DCE devices and help establish and maintain communication. DTE devices typically use male connectors (HP is the exception), and DCE devices use female connectors.

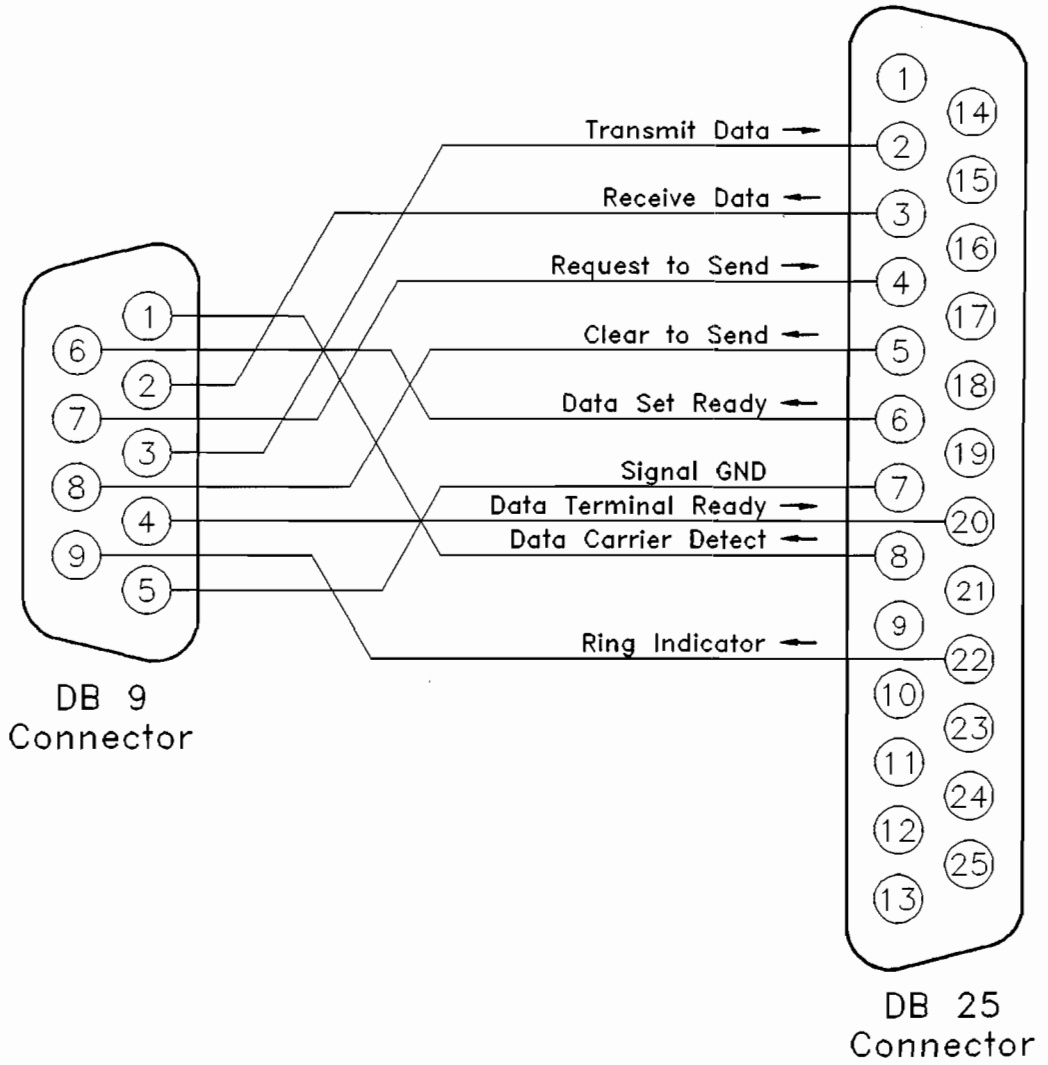
NOTE

All signal names in the RS-232 standard are from the perspective of the DTE device. The DTE *transmits* data on pin 2 and *receives* on pin 3 (25-pin connectors). The DCE transmits on pin 3 and receives on pin 2. This appendix follows this convention.

The status/control lines control the flow of data. Usually this is either the RTS/CTS or DTR/DSR pair. Cables used with the HP 34401A, 33102A, 53131A and 54600 series instruments should have four signals wired: the data pair RX/TX and the status line pair DTR/DSR. Each pair should be crossed from the instrument to the computer. Signal Ground (SG, GND) must be wired straight through. These HP instruments use the DTR/DSR pair for data flow control.

General Purpose Cables and Connectors**9-Pin to 25-Pin RS-232 Conversion**

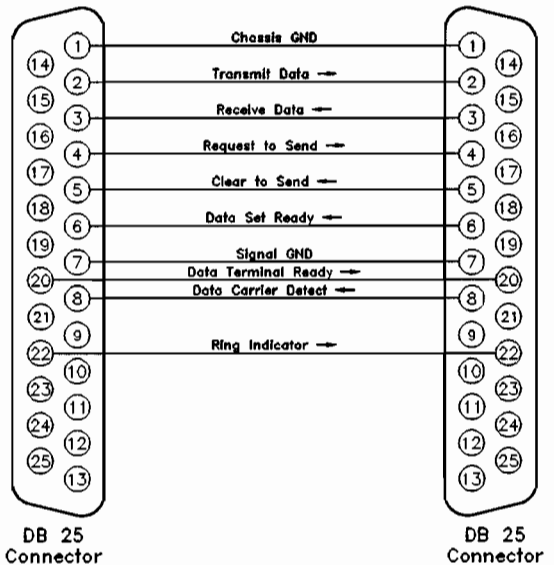
Signal Type	Pin Out		Name	Direction	Abbreviation
	9-pin	25-Pin			
Data	2	3	Received Data	In	RD, RX
Data	3	2	Transmitted Data	Out	TD, TX
Control	4	20	Data Terminal Ready	Out	DTR
Modem Status	6	6	Data Set Ready	In	DSR
Control	7	4	Request to Send	Out	RTS
Modem Status	8	5	Clear to Send	In	CTS
Modem Status	1	8	Carrier Detect	In	RLSD, CD
Modem Status	9	22	Ring Indicator	In	RI
Electrical	5	7	Signal Ground		GND, SG



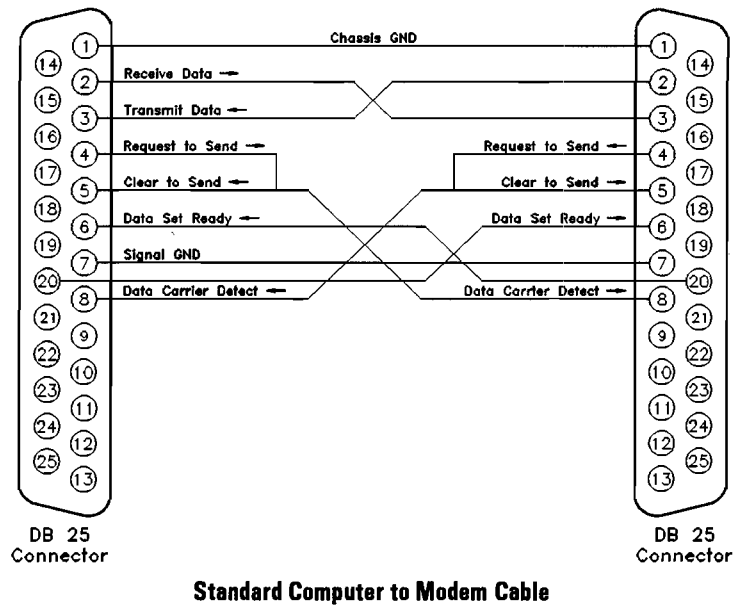
9-Pin to 25-Pin RS-232 Adapter

General Purpose Cables and Connectors

The following three figures show the wiring and pin-outs of three common, industry-standard cables. These three are not the only cables available. For additional information, refer to the the *RS-232 Cables Addendum* insert included in your HP I/O Libraries product package.



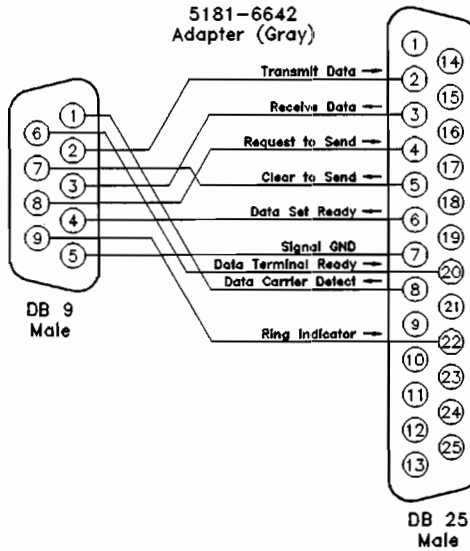
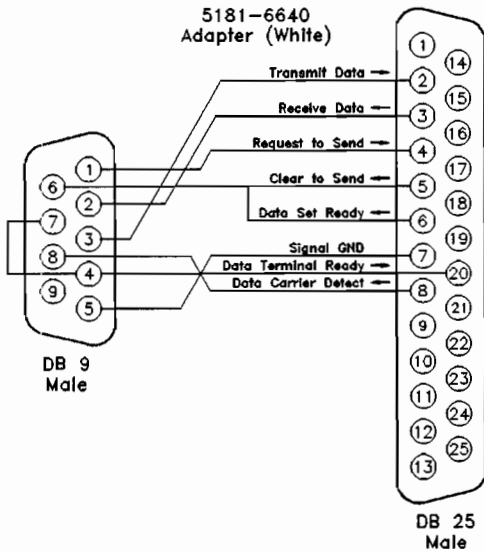
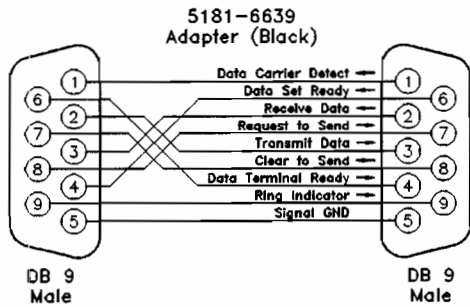
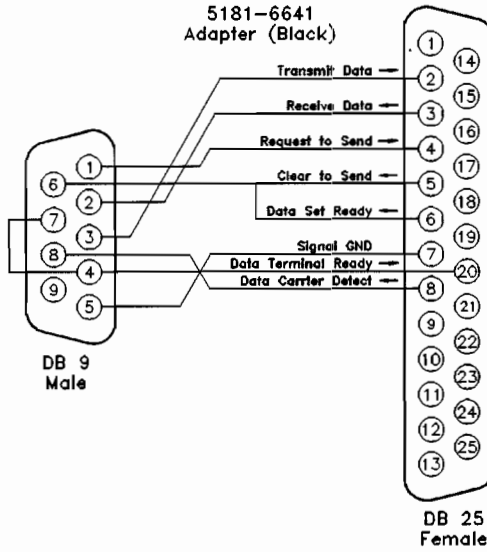
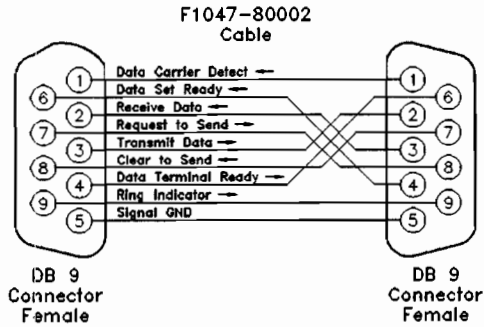
Standard Null Modem Cable (Typically Used for Printers)



One of HP's general purpose cables is the HP F1047-80002. It is a 9-pin female to 9-pin female wired as a null modem/printer cable. Four adapters are available for it that will accommodate almost any pin configuration, including modems. The following figure shows this cable and the four adapters. The HP 24542U cable also has the 9-pin female to 9-pin female connections. The adapters also work for this cable where only the two lines DSR/DTR are used.



General Purpose Cables and Connectors



HP F1047-80002 Cable with Adapters

Recommendations

The recommended cables for RS-232 are shown in the *RS-232 Cables Addendum* insert included in your HP I/O Libraries product package. The cables listed as alternatives may be more readily available, or work better in your specific VISA or SICL application. The list is based on current availability and on the existing literature and catalogs.

Testing the PC-to-Instrument RS-232 Interface

The following procedure tests the cable hook-up for rudimentary operation. It does not test any of the handshake lines used for RS-232. Not passing this test suggests that the incorrect cable is in use, the incorrect adapter is in use, the instrument set up is incorrect, or the set up of the computer and instrument do not match.

Follow these steps for a rudimentary test of the RS-232 interface between a PC and an HP 34401A, 33120A, 53131A (PC receives data only), or 54600 Series instrument.

1. Select a cable and connect the instrument to the PC.
2. Turn both on.
3. Select RS-232 on the instrument.
4. On the instrument:
 - a. Set the Baud rate to 1200; this is done because no handshaking is used in the test. A higher Baud rate may cause errors and hang up the interface.
 - b. Set the Parity to match the PC or printer, or check to see what parity is set on the instrument.
 - c. For the HP 34401A, check that the HP-IB address is *not* at 31.
 - d. Ensure that the instrument is set appropriately:

	34401A	33120A	54600 Series	53131A
Baud Rate	1200			1200
Data Bits	7	8	8	
Stop Bits	1	none	1	
Parity	Even	none	none	none

5. On the PC:

- a. Select the Terminal application, which is usually located in the Accessories program group.
- b. Select **Settings | Communications**. In the Communications dialog box, select the settings that match the instrument. Set the following:
Baud Rate 1200
Flow Control None
Connector Select the COM port that is connected to the instrument. Typically it is COM 1, unless you have a serial mouse or other device connected to COM 1, in which case it may be COM 2.
- c. Click on **OK** to save the settings.
- d. Select **Settings | Terminal Preferences**. In the Terminal Preference dialog box, select the following:

Terminal Modes	Line Wrap, Local Echo, Sound
CR->CR/LF	Outbound
Columns	80
Cursor	Block

- e. Click on **OK** to save the settings.
 - f. Do one of the following:
 - i. Type: `syst:rem` **Enter**.
The remote light on the instrument should come on if it has one.
 - ii. Type: `* idn?` **Enter**.
The instrument should respond with `HEWLETT PACKARD ...`
- Or:*
- i. From the menu, select **Settings | Function keys**.
 - ii. Under **Key Name** and **F1**, type: `Identify`.

- iii. Under **Command** in **F1**, type: `* idn?^J`. (The `^J` is **Ctrl-J** or line feed. It signals the end of the command to the instrument.)
- iv. Select **OK** to save the function key.
- v. From the menu, select **Settings | Show function keys**.
- vi. Select the function key labeled **Identify**.

The instrument should respond with **HEWLETT PACKARD . . .**

- g. Optionally, you may set up the other keys for the following commands:

Key Name	Command
Read Error	<code>syst:err?^J</code>
Version	<code>syst:ver?^J</code>
Cal Message	<code>cal:str?^J</code>

You can set up other, additional commands for the instrument. See the SCPI reference in your instrument's manual. Be sure to end the command with `^J`.

- h. Name and save the settings as a file for future use.

**Installing the
HP I/O Libraries
from 3.5-inch Disks**

Installing the HP I/O Libraries from 3.5-inch Disks

This appendix contains three sections for installing the HP I/O Libraries from 3.5-inch disks on:

- Windows 95
- Windows 3.1
- Windows NT

Refer to the following, appropriate installation section for the Windows environment you are using. If you have more than one Windows environment on your PC, and you want to use the HP I/O Libraries on more than one environment, you must perform the installation procedures in the following, appropriate sections for *all* the Windows environments you will use with the HP I/O Libraries.

Installation on Windows 95

NOTE

To simplify the installation, both VISA and SICL will be installed on your Windows 95 environment during the following procedures. However, because VISA and SICL are different libraries, you *cannot* use VISA and SICL functions in the same I/O applications you develop in the future.

NOTE

If you are re-installing the HP I/O Libraries on Windows 95, ensure that all VISA and SICL applications, as well as the LAN server, are *not* running during the following installation procedures.

Follow these steps to install the 32-bit and 16-bit versions of the VISA and SICL software on Windows 95 from 3.5-inch disks:

1. If you have not already done so, start up Windows 95.
2. Locate the software installation disk labeled "HP I/O Libraries for Windows 95 and Windows NT, Disk 1." Insert the disk in the appropriate disk drive. (Drive **a:** is used in these instructions.)
3. At the bottom of the screen, click on the **Start** button located next to the system task bar, then click on **Run**.
4. In the dialog box that is displayed, type **a:setup**. Then click the **OK** button.
5. After the InstallShield Wizard loads the Setup files needed for the installation, you see the **Welcome** dialog box. Click on the **Next** button in the **Welcome** dialog box to continue with the Setup program.

Installation on Windows 95

6. The Setup program displays the **Default Destination Directory** dialog box, which shows you the default directories in which you can install the files:
 - For SICL, the default is **C:\SICL** on your primary hard drive.
 - For VISA, the default is **C:\VXIPNP** on your primary hard drive. (VXIPNP stands for *VXIplug&play*.)

Either click on the **Next** button to accept the default directories, or edit the fields to select different directories for SICL and/or VISA and then click on the **Next** button.

7. The **Start Copying Files** dialog box displays all current settings for the installation. If you want to change any of the settings, click on the **Back** button. Otherwise, if you are satisfied with the settings, click on the **Next** button to start copying the files.

The Setup program automatically copies the VISA and SICL files onto your hard drive.

8. When prompted, remove the first 3.5-inch disk and insert the second disk labeled "HP I/O Libraries for Windows 95 and Windows NT, Disk 2." Similarly, when prompted, remove the second disk and insert the disk labeled "Disk 3."
9. The **Setup Complete** dialog box is displayed when the installation has completed successfully. Click on the **Finish** button to end the Setup program.
10. When the installation setup is complete, remove the third 3.5-inch disk and store all three disks in a safe location.

What Happened During Installation

During installation, the setup program installed the 32-bit and 16-bit versions of VISA and SICL on your Windows 95 environment. It also created the following:

1. An **HP I/O Libraries** program group for VISA and SICL. It also defined an icon for each of the following:
 - **HP I/O Libraries Read Me** file
 - **SICL Help** (online help)
 - **VISA Help** (online help)
 - **I/O Config** utility
 - **Message Viewer** utility
 - **LAN Server**
2. A **VXIPNP** (*VXIplug&play*) start menu folder, where you can store your *VXIplug&play* drivers for VISA.

The Windows 95 registry was also modified by the setup program to record the location of the **SICL** and **VXIPNP** directories. This change will have no other effect on your Windows environment.

NOTE

It is very important that you look through the HP I/O Libraries **Read Me** file (for VISA and SICL) before proceeding with any VISA or SICL application development. Double-click on the **Read Me** icon in the **HP I/O Libraries** program group to view this file.

Where to Go Next

You have now completed installing the HP I/O Libraries, including 32-bit and 16-bit VISA and SICL, on your Windows 95 environment. Please go on to the section titled “Configuring the HP I/O Libraries” in Chapter 2 of this guide for instructions on how to configure your system to use the HP I/O Libraries.

Installation on Windows NT

NOTE

To simplify the installation, both VISA and SICL will be installed on your Windows NT environment during the following procedures. However, because VISA and SICL are different libraries, you *cannot* use VISA and SICL functions in the same I/O applications you develop in the future.

NOTE

You must have system administrator privileges to be able to install VISA and SICL on Windows NT.

NOTE

If you are re-installing the HP I/O Libraries on Windows NT, ensure that all VISA and SICL applications, as well as the LAN server, are *not* running during the following installation procedures.

Follow these steps to install the 32-bit versions of the VISA and SICL software on Windows NT from 3.5-inch disks:

1. If you have not already done so, start up Windows NT.
2. Locate the software installation disk labeled "HP I/O Libraries for Windows 95 and Windows NT, Disk 1." Insert the disk in the appropriate disk drive. (Drive a: is used in these instructions.)

Installation on Windows NT

3. From the Program Manager menu, select **File | Run**.
4. In the dialog box, type **a:setup** and press **(Enter)**.
5. After the InstallShield Wizard loads the Setup files needed for the installation, you see the **Welcome** dialog box. Click on the **Next** button in the **Welcome** dialog box to continue with the Setup program.
6. The Setup program displays the **Default Destination Directory** dialog box, which shows you the default directories in which you can install the files:
 - For SICL, the default is **C:\SICL** on your primary hard drive.
 - For VISA, the default is **C:\VXIPNP** on your primary hard drive.
(**VXIPNP** stands for *VXIplug&play*.)

Either click on the **Next** button to accept the default directories, or edit the fields to select different directories for SICL and/or VISA and then click on the **Next** button.

7. The **Start Copying Files** dialog box displays all current settings for the installation. If you want to change any of the settings, click on the **Back** button. Otherwise, if you are satisfied with the settings, click on the **Next** button to start copying the files.

The Setup program automatically copies the VISA and SICL files onto your hard drive.

8. When prompted, remove the first 3.5-inch disk and insert the second disk labeled "HP I/O Libraries for Windows 95 and Windows NT, Disk 2." Similarly, when prompted, remove the second disk and insert the disk labeled "Disk 3."
9. The **Setup Complete** dialog box is displayed when the installation has completed successfully. Click on the **Finish** button to end the Setup program.
10. When the installation setup is complete, remove the third 3.5-inch disk and store all three disks in a safe location.

What Happened During Installation

During installation, the setup program installed the 32-bit versions of VISA and SICL on your Windows NT environment. It also created the following:

1. An **HP I/O Libraries** program group for VISA and SICL. It also defined an icon for each of the following:
 - **HP I/O Libraries Read Me** file
 - **SICL Help** (online help)
 - **VISA Help** (online help)
 - **I/O Config** utility
 - **LAN Server**
2. A **VXIPNP** (*VXIplug&play*) program group, where you can store your *VXIplug&play* drivers for VISA.

The Windows NT registry was also modified by the setup program to record the location of the **SICL** and **VXIPNP** directories. This change will have no other effect on your Windows environment.

NOTE

It is very important that you look through the **HP I/O Libraries Read Me** file (for VISA and SICL) before proceeding with any VISA or SICL application development. Double-click on the **Read Me** icon in the **HP I/O Libraries** program group to view this file.

Where to Go Next

You have now completed installing the HP I/O Libraries, including 32-bit VISA and SICL, on your Windows NT environment. Please go on to the section titled “Configuring the HP I/O Libraries” in Chapter 2 of this guide for instructions on how to configure your system to use the HP I/O Libraries.

Installation on Windows 3.1



NOTE

Both VTL and SICL will be installed on your Windows 3.1 environment during the following procedure. However, because VTL and SICL are different libraries, you *cannot* use VTL and SICL functions in the same I/O applications you develop in the future.

Follow these steps to install the 16-bit VTL and SICL software on Windows 3.1 from 3.5-inch disks:

1. If you have not already done so, start up Windows by typing **win** at the command prompt.
2. Locate the SICL software installation disk labeled "HP I/O Libraries, Standard Instrument Control Library, Windows 3.1." Insert the disk in the appropriate disk drive. (Drive **a:** is used in these instructions.)
3. From the Program Manager menu, select **File | Run**.
4. In the dialog box, type **a:setup** and press **Enter**.
5. The setup program displays a dialog box which explains that this program will install both the SICL and VTL I/O libraries. Click on the **Continue** button.
6. The setup program prompts you for the directories in which to install the files:
 - For SICL, the default is **C:\SICL** on your primary hard drive.
 - For VTL, the default is **C:\VXIPNP** on your primary hard drive. (**VXIPNP** stands for *VXIplug&play*.)

Either click on the **Install** button to use the default locations for both SICL and VTL, or click **Set Location** to type in the desired directory for SICL or VTL and then click on **Continue** and **Install**.

The setup program automatically copies all of the SICL files first.

Installation on Windows 3.1

7. When prompted, remove the SICL disk and insert the VTL disk labeled "HP I/O Libraries, VISA Transition Library 3.0, WIN System Framework."

The setup program then automatically copies all of the VTL files.

8. The setup program displays a dialog box explaining that the program needs to modify the `AUTOEXEC.BAT` file. Either:

- Click on the **Modify** button to have the setup program modify the file and save a backup of the original as `AUTOEXEC.BAK`.

OR:

- Click on the **Skip** button to have the setup program modify a copy of the original file named `AUTOEXEC.IOL`.

9. The setup program then prompts you when it has completed successfully. When the setup is complete, remove the VTL disk and store both the HP I/O Libraries disks (SICL and VTL) in a safe location.

What Happened During Installation

During installation, the setup program installed 16-bit SICL and VTL on your Windows 3.1 environment and created the following:

1. An HP SICL program group. It also defined an icon for each of the following:
 - SICL Read Me First file
 - SICL Help (online help)
 - SICL I/O Config utility
 - SICL Message Viewer utility
 - Instrument I/O Command Utility
2. A VXIPNP (*VXIplug&play*) program group for VTL. It also defined an icon for each of the following:
 - VTL Read Me First file
 - VTL Help (online help)
 - HP VTL Config utility
 - VTL Message Viewer utility

The Windows **WIN.INI** file was also modified by the setup program to record the location of the **SICL** directory and the **VXIPNP** directory (for **VTL**). This change will have no other effect on your Windows environment.

NOTE

It is very important that you look through the **Read Me First** files for **SICL** and **VTL** before proceeding with any **SICL** or **VTL** application development. Double-click on the **Read Me First** icon in the **HP SICL** and in the **VXIPNP** program groups to view these files.

Where to Go Next

You have now completed installing the HP I/O Libraries, including 16-bit **VTL** and **SICL**, on your Windows 3.1 environment. Please go on to the section titled "Configuring the HP I/O Libraries" in Chapter 2 of this guide for instructions on how to configure your system to use the HP I/O Libraries.



Index

Index

C Cabling, RS-232, A-2

Configuration

- EISA configuration file, 2-20
- HP 82341 or 82340 HP-IB with EISA, 2-20
- I/O **Config** utility on Windows 3.1, 2-30
- I/O **Config** utility on Windows 95, 2-21
- I/O **Config** utility on Windows NT, 2-25
 - on Windows 3.1, 2-29
 - on Windows 95, 2-21
 - on Windows NT, 2-25
- SICL on Windows 3.1, 2-29
- SICL on Windows NT, 2-25
- VISA and SICL on Windows 95, 2-21
- VISA on Windows NT, 2-25
- VTL **Config** utility, 2-31
- VTL on Windows 3.1, 2-31

D Documentation

- SICL, 3-4
- VISA, 3-3
- VTL, 3-3

E EISA Configuration File, 2-20

H Hardware Requirements, 2-5

HP I/O Libraries

- configuration of SICL on Windows 3.1, 2-29
- configuration of VISA and SICL on Windows 95, 2-21
- configuration of VISA and SICL on Windows NT, 2-25
- configuration of VTL on Windows 3.1, 2-31
- hardware requirements, 2-5
- installation on Windows 3.1 from 3.5-inch disks, B-11
- installation on Windows 3.1 from CD-ROM, 2-16
- installation on Windows 95 from 3.5-inch disks, B-3
- installation on Windows 95 from CD-ROM, 2-10
- installation on Windows NT from 3.5-inch disks, B-7
- installation on Windows NT from CD-ROM, 2-13
- overview, 1-3
- product package, 2-4
- software requirements, 2-7

I Installation

- on Windows 3.1 from 3.5-inch disks, B-11
- on Windows 3.1 from CD-ROM, 2-16
- on Windows 95 from 3.5-inch disks, B-3
- on Windows 95 from CD-ROM, 2-10
- on Windows NT from 3.5-inch disks, B-7
- on Windows NT from CD-ROM, 2-13
- RS-232 cables, A-2
- SICL on Windows NT from 3.5-inch disks, B-7
- SICL on Windows NT from CD-ROM, 2-13
- VISA and SICL on Windows 95 from 3.5-inch disks, B-3
- VISA and SICL on Windows 95 from CD-ROM, 2-10
- VISA on Windows NT from 3.5-inch disks, B-7
- VISA on Windows NT from CD-ROM, 2-13
- VTL and SICL on Windows 3.1 from 3.5-inch disks, B-11
- VTL and SICL on Windows 3.1 from CD-ROM, 2-16

Interface Configuration

- 16-bit SICL on Windows 3.1, 2-29
- 16-bit VTL on Windows 3.1, 2-31
- 32-bit VISA and SICL on Windows NT, 2-25
- VISA and SICL on Windows 95, 2-21

I/O Config Utility

- for 16-bit SICL on Windows 3.1, 2-30
- for 32-bit SICL on Windows NT, 2-25
- for VISA and SICL on Windows 95, 2-21

L LAN Server, Starting or Stopping, 2-24, 2-27

R Required Hardware, 2-5

- Required Software, 2-7
- RS-232 Cables, A-2

S Serial Cables, A-2

SICL

- configuration of 16-bit on Windows 3.1, 2-29
- configuration of 32-bit and 16-bit on Windows 95, 2-21
- configuration of 32-bit on Windows NT, 2-25
- documentation, 3-4
- hardware requirements, 2-5
- installation of 16-bit on Windows 3.1 from 3.5-inch disks, B-11
- installation of 16-bit on Windows 3.1 from CD-ROM, 2-16
- installation of 32-bit and 16-bit on Windows 95 from 3.5-inch disks, B-3
- installation of 32-bit and 16-bit on Windows 95 from CD-ROM, 2-10
- installation of 32-bit on Windows NT from 3.5-inch disks, B-7
- installation of 32-bit on Windows NT from CD-ROM, 2-13
- interface support, 1-8
- I/O Config utility for 16-bit on Windows 3.1, 2-30



