Agilent SPT
PCIE Exerciser Gen3

Installation Guide

Agilent Technologies

Notices

Trademarks

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Installation Guides

You can find the installation guides for different components of the product on the product CD. Agilent recommends you to do not switch on the instrument before you have understood all the applicable installation instructions and have met all the installation prerequisites.

Where to find more information

You can find more information about System Protocol Tester from the following link:

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

We continually improve our software. Therefore, we recommend you to check the following link to download and install the latest version:

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

You can also look to search a local contact for assistance on the following link:

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

Warranty

Technology Licenses

Restricted Rights Legend

Safety Notices

Safety Symbols on Instruments

Indicates warning or caution. If you see this symbol on a product, you must refer to the manuals for specific Warning or Caution information to avoid personal injury or damage to the product.

Frame or chassis ground terminal. Typically connects to the equipment's metal frame.

Indicates hazardous voltages and potential for electrical shock.

Indicates that antistatic precautions should be taken.

Indicates hot surface. Please do not touch.

Indicates laser radiation turned on.

CSA is the Canadian certification mark to demonstrate compliance with the Safety requirements.

CE compliance marking to the EU Safety and EMC Directives.

ISM GRP-1A classification according to the international EMC standard.

ICES/NMB-001 compliance marking to the Canadian EMC standard.

Safety Summary

General Safety Precautions

The following general safety precautions must be observed during all phases of operation of this instrument. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the instrument.

Agilent Technologies Inc. assumes no liability for the customer's failure to comply with these requirements.

Before operation, review the instrument and manual for safety markings and instructions. You must follow these to ensure safe operation and to maintain the instrument in safe condition.

General

This product is a Safety Class 1 instrument (provided with a protective earth terminal). The protective features of this product may be impaired if it is used in a manner not specified in the operation instructions.

All Light Emitting Diodes (LEDs) used in this product are Class 1 LEDs as per IEC 60825-1.

Environment Conditions

This instrument is intended for indoor use in an installation category II, pollution degree 2 environment. It is designed to operate at a maximum relative humidity of 95% and at altitudes of up to 2000 meters.

Refer to the specifications tables for the ac mains voltage requirements and ambient operating temperature range.

Before Applying Power

Verify that all safety precautions are taken. The power cable inlet of the instrument serves as a device to disconnect from the mains in case of hazard. The instrument must be positioned so that the operator can easily access the power cable inlet. When the instrument is rack mounted the rack must be provided with an easily accessible mains switch.

Ground the Instrument

To minimize shock hazard, the instrument chassis and cover must be connected to an electrical protective earth ground. The instrument must be connected to the ac power mains through a grounded power cable, with the ground wire firmly connected to an electrical ground (safety ground) at the power outlet. Any interruption of the protective (grounding) conductor or disconnection of the protective earth terminal will cause a potential shock hazard that could result in personal injury.

Do Not Operate in an Explosive Atmosphere

Do not operate the instrument in the presence of flammable gases or fumes.

Do Not Remove the Instrument Cover

Operating personnel must not remove instrument covers. Component replacement and internal adjustments must be made only by qualified personnel.

Instruments that appear damaged or defective should be made inoperative and secured against unintended operation until they can be repaired by qualified service personnel.

Environmental Information

| | This product complies with the WEEE Directive (2002/96/EC) marking requirements. The affixed label indicates that you must not discard this electrical/ electronic product in domestic household waste.

Product Category: With reference to the equipment types in the WEEE Directive Annex I, this product is classed as a "Monitoring and Control instrumentation" product.

Do not dispose in domestic household waste.

To return unwanted products, contact your local Agilent office, or see www.agilent.com/environment/product/ for more information. |

Printing History

Agilent Technologies, Inc. can issue revisions between the product releases to reflect the latest and correct information in the guide. Agilent Technologies, Inc. also reserves its right to not issue a new edition of the guide for every system release.

The name of the guide and its part number are:

Manual Name: Agilent Protocol Exerciser for PCI Express- Installation Guide

Manual Part Number: E2960-91012

The edition number of the guide, publishing time of the guide, and applicable release number of the product are given in the following table.

Edition	Published	Applicable Release
1	June, 2010	8.1

Contents

1

Planning the PCIE Exerciser Gen3 Installation

This chapter provides information to help you plan the hardware setup and software installation for PCIE Exerciser. It lists the system requirements that should be met before you start installing Protocol Exerciser on Controller PC and client PC. The chapter also provides information on the requirements that should be met for setting up the U4305A Exerciser card.

Planning Considerations

This topic describes some planning considerations before starting with setting up the hardware and software for PCIE Exerciser.

- **Emulation mode of the Exerciser card**: The U4305A exerciser card can emulate a root complex or a PCIe endpoint. The hardware setup is based on whether you want to use it to stimulate and load a System Under Test for LTSSM system level testing or to stimulate a DUT into various LTSSM test scenarios. If you want to load and stress a server system under test, you can use multiple exerciser cards.

- **Identifying the Controller system and client PCs**

  A controller system hosts the full PCIE Exerciser functionality including all software components and hardware support services of Exerciser. This system is connected to the PCIE Exerciser card(s) and communicates with the exerciser card(s) through protocol exerciser sessions that you create using the Protocol Exerciser software. You can connect upto four exerciser cards to a controller system through USB.

  A client PC hosts only the software applications (Protocol Exerciser GUI). No hardware support services are available on a client PC and consequently, it cannot create a session with the Exerciser card. A client PC communicates with the Controller system and acts as a remote client accessing existing Protocol Exerciser sessions on the Controller system.

  Based on your specific needs, identify the PCs that you want to configure as clients and the server system that will act as the controller system.

  Ensure that the Hardware and Software Requirements for Installation are met on the Controller system and client PCs before starting installation.

- **Protocol Exerciser software setup type**

  You can install Protocol Exerciser in Client and Full setup types. On a remote client, you should install the Client only setup type. The system connected to the Exerciser card becomes the Controller system with remote clients communicating with it. This system should have the Protocol Exerciser software installed in the Full setup type.

Hardware and Software Requirements for Installation

Prior to starting the installation process, ensure that all the system requirements to install the PCIE Exerciser software are in place.

In the following sections, you will learn about:

- Controller PC Requirements
- Client PC Requirements
- Requirements for the U4305A Exerciser Card

Controller PC Requirements

On the Controller PC, following are the system requirements:

- USB 2.0 interface for each exerciser card
- Pentium® processor 1 GHz or equivalent
- Windows XP (with Service Pack 2) or Windows 7 (Enterprise or Professional 32-bit) operating system
- At least 256 MB RAM. For better performance, Agilent recommends you to install 512 MB RAM or higher.
- At least 500 MB free disk space on the C drive

Client PC Requirements

On the Client PC, following are the system requirements:

- Pentium® processor 1 GHz or equivalent.
- Windows XP (with Service Pack 2) or Windows 7 (Enterprise or Professional 32-bit) operating system
- At least 256 MB RAM. For better performance, Agilent recommends you to install 512 MB RAM or higher.
- At least 500 MB free disk space on the C drive.
- Microsoft .NET Framework 2.0

NOTE	If you do not have Microsoft .NET Framework 2.0, you can find it on the installation CD.

Requirements for the U4305A Exerciser Card

Following are the power, memory, and environmental specifications for the U4305A Exerciser card:

Power requirements

AC Power requirements: 100V-240V at 3.5A max 50-60Hz

Exerciser Power dissipation: 70W (max)

Memory requirements

There is no external memory module required for the Exerciser card.

Environment specifications

Temperature	Operating: 0 °C to + 45 °C	Storage: -40 °C to +70 °C
Humidity	Operating: 15% to 95% (non-condensing)	
Altitude	2000m max	

2
Setting Up the Hardware for Protocol Exerciser

Once all the system requirements are in place, you need to start setting up the hardware for Protocol Exerciser.

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Setting Up the U4305A Exerciser Card

You can set up hardware for Protocol Exerciser by plugging one or multiple exerciser cards into the motherboard, or by mounting them on the backplane board.

Figure 1 displays the U4305A exerciser card.
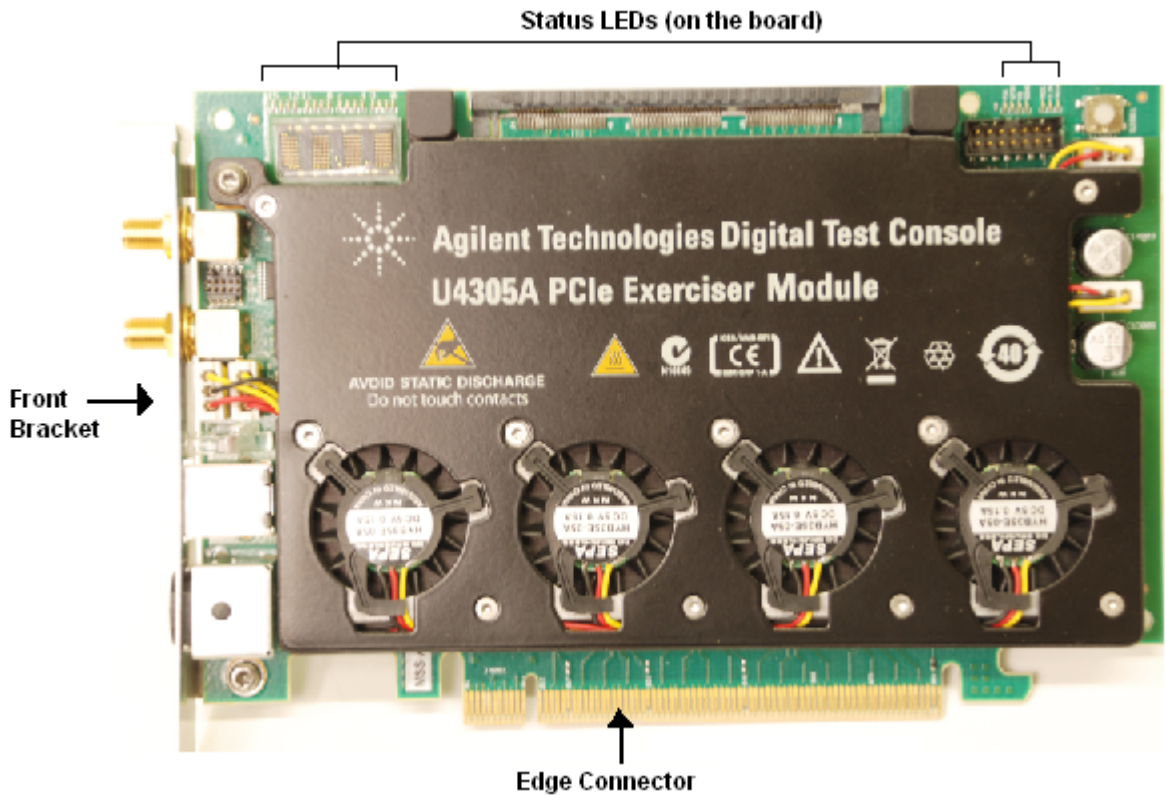
Figure 1   U4305A Exerciser card

NOTE	For more information on U4305A exerciser card and its components, refer to *Agilent Protocol Exerciser for PCI Express, Hardware Guide* and *Agilent Protocol Exerciser for PCI Express, User's Guide*.

To Set Up Exerciser Card as a Root Complex

You generally mount an exerciser card on backplane when you want to test a PCIe endpoint. The main application of this board is in testing an add-in card, such as a LAN or graphic card. In this scenario, exerciser card acts as a root

complex (USC) to test a PCI Express end point. When you use the backplane, Exerciser card communicates to the DUT through the bottom connectors.

To set up exerciser card to act as a root complex:

1 Connect the exerciser card with external power supply using the power supply connector on the front bracket of the card.

2 Connect the exerciser card with the Controller PC using the USB cable.

3 Plug the exerciser card's *Edge Connector* into one PCIe connector of backplane and the DUT into the other PCIe connector.

This completes the hardware setup for Protocol Exerciser card acting as a root complex.

Figure 2 displays a sample setup of exerciser card mounted on the backplane board. The card is connected to a controller system through USB.
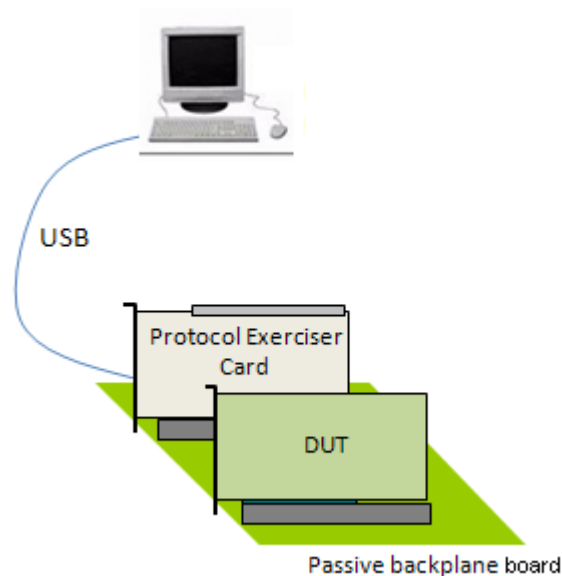
Figure 2   Exerciser Card mounted on a backplane

To Set Up Exerciser Card as a PCIE Endpoint

You plug the exerciser card into a motherboard under test when you want to exercise the System Under Test (SUT) with various test scenarios for LTSSM testing. In this case, the exerciser card acts as a normal PCIe device (DSC) to test a PCI Express root complex.

To set up exerciser card to act as a PCIe endpoint:

1 Connect the exerciser card with external power supply using the power supply connector on the front bracket of the card.

2 Connect the exerciser card with the Controller PC using the USB cable.

3 Plug the exerciser card's *Edge Connector* into the system under test's motherboard.

Figure 3 displays a sample setup of exerciser card plugged into a system motherboard. The card is connected to a controller system through USB.
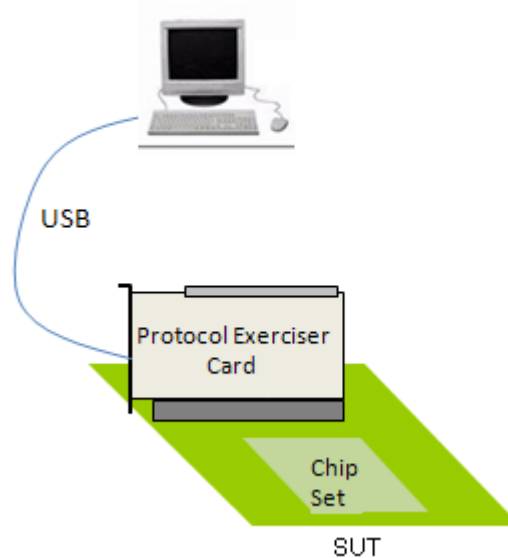

Figure 3   Exerciser Card plugged into a motherboard

CAUTION   Components on the I/O module are sensitive to the static electricity. Therefore, take necessary anti-static precautions, such as wear a grounded wrist strap, to minimize the possibility of electrostatic damage. Also, you should not operate a chassis with empty slots. Fill empty slots with blanking plates to ensure correct operation of the chassis.

CAUTION   This product is a plug-in printed board and has no encloser. For the purpose of safe use when utilized outside of PCI Slots, the product may only be operated under supervision and on surfaces complying with flammability class V-1 or better acc. to IEC60695 or UL94.
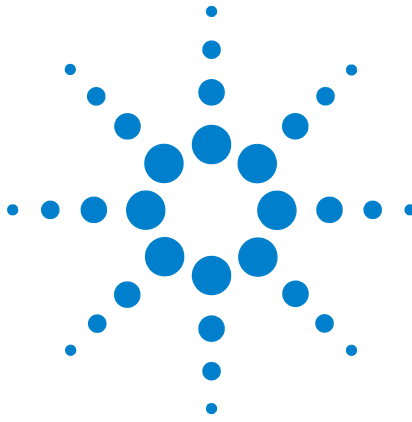
3
Installing Protocol Exerciser for PCI Express

Once you have set up the hardware for Protocol Exerciser, you can start installing Protocol Exerciser on Controller and client PCs.

Installing Protocol Exerciser

The following section provides step-by-step instructions on installing Protocol Exerciser software.

Installing PCIE Exerciser Gen3 Software

1 Insert the installation CD in the CD drive.

The installation page appears.

| NOTE | If the installation page does not appear automatically, do the following:
1 Access the CD drive using Windows Explorer.
2 Browse to the **PCIEExerciser** folder.
3 Double-click the **setup.exe** file.

Running Setup.exe takes you to the message box that is otherwise displayed when you click Run in Step 4, or to the License Agreement screen that is otherwise displayed when you click Next in Step 6, whichever is applicable. |

2 Click **Installation**.

The Install System Protocol Tester Software page appears.

3 Click the **Agilent SPT Protocol Exerciser for PCI Express** hyperlink.

The File Download - Security Warning dialog box appears. This dialog box prompts if you want to run or save the `setup.exe` file.

4 Click **Run**.

If legacy components are installed on your computer, then a message box appears and prompts you to remove them.

To remove legacy components, do the following:

a Click **Yes**. The uninstallation process starts. Once this process ends, the Uninstall Complete screen of the wizard appears.

b Click **Finish**.

This takes you back to the Install System Protocol Tester Software page.

5 Repeat Steps 3 and 4.

This time, the welcome screen of the installation wizard appears.

6 Click **Next**.

The License Agreement screen appears.

7 Click **Yes**.

The **Setup Type** screen appears. This screen prompts you to select the setup type of Protocol Exerciser that best suits your need.

8 Select one of the following options:

a **Client (GUI only)**: Select if you want to install only the Client software on your PC. The PC will then act as a client for the controller PC hosting the full Protocol Exerciser software.

b **Controller + Client (Full)**: Select if you want to install both the Controller and Client software on your PC. The PC will then act as the Controller PC for remote clients.

Refer to the topic Planning Considerations on page 10 to know more about clients and controller system.

9 Click **Next**.

The Start copying files screen appears.

10 Click **Next**.

If you have chosen to install the client (GUI Only) setup of Protocol Exerciser, then the installation of the exerciser software is initiated and you move to step 13. If you have chosen to install the full setup of Protocol Exerciser in step 8, the welcome screen for the Agilent SPT WAR FTP Daemon setup wizard is displayed. If an existing version of Agilent SPT WAR FTP Daemon is found, the setup wizard first uninstalls the existing version and reinstalls the required version.

11 Click **Next**.

The License Agreement page of Agilent SPT WAR FTP Daemon setup wizard is displayed.

12 Click **Next**.

This completes the installation of Agilent SPT WAR FTP Daemon and the Protocol Exerciser installation continues.

13 Clear the **View Readme.txt** check box if you do not want to view the `Readme.txt` file.

14 Click **Next**.

The Update Complete screen appears.

15 Choose whether you want to restart the computer now or later if you have installed the Controller and client setup of Protocol Exerciser.

16 Click **Finish**.

This completes the PCIE Exerciser Gen3 software installation.

Verifying the Protocol Exerciser Installation

You can verify if the Protocol Exerciser is installed successfully by performing the following steps:

- The **Agilent SPT** folder is added in the Programs folder.
- The Protocol Exerciser GUI is accessible from the **Agilent SPT** > **PCIE Exerciser 8.1 Release** > **Exerciser GUI** option.
- On the desktop, the **SPT Control Panel** icon is added that provides access to SPT tools and utilities.

Configuring DCOM Settings for Remote Access

After you have installed Protocol Exerciser on the Controller PC (full setup) and client PC (GUI only setup), you need to configure DCOM settings on these PCs to allow the Client PCs to communicate remotely with the Controller PC.

If you have installed the GUI and the hardware support services for Protocol Exerciser (full mode installation) on a single PC and do not have any remote clients accessing Protocol Exerciser sessions on this PC, then you need not configure DCOM settings. However, if you have remote clients with the client installation of Protocol Exerciser, then you need to configure the DCOM settings on the remote clients and controller PC.

Configuring DCOM Settings on Windows XP

To configure the DCOM settings on Windows XP:

1 Click **Start** > **Run**.

The **Run** dialog box appears.

2 Type **dcomcnfg** in the **Open** editable drop-down list.

3 Click **OK**.

The **Component Services** window appears.

4 Select **Component Services** under **Console Root**.

5 Click the **Configure My Computer ( )** icon on the toolbar.

The **My Computer Properties** window appears.

6 Click the **Default Properties** tab.

7 Ensure the following:

- The **Enable Distributed COM on this computer** option is selected.
- The **Default Authentication Level** is set to **Connect**.
- The **Default Impersonation Level** is set to **Identify**.

8 Click the **COM Security** tab.

9 Modify access permissions to allow local and remote access for the System, NETWORK, INTERACTIVE,

Everyone, and ANONYMOUS LOGON user types. To do this:

1 Click **Edit Default** in the **Access Permissions** section. The **Access Permission** dialog box appears.

2 Select **NETWORK** in the Group or user names list box.

3 Select the **Allow** check box for the Local Access and Remote Access options in the **Permissions for NETWORK** list box.

4 Repeat Steps 2 and 3 for the System, INTERACTIVE, SELF and Everyone user accounts.

5 Click **OK**.

6 Click **Edit Limits** in the **Access Permissions** section. The **Access Permission** dialog box appears.

7 Select **ANONYMOUS LOGON** in the Group or user names list box.

8 Select the **Allow** check box for the Local Access and Remote Access options in the Permissions for ANONYMOUS LOGON list box.

9 Repeat Steps 7 and 8 for the Everyone user account.

10 Click **OK**.

10 Modify launch and activation permissions for the System, INTERACTIVE, NETWORK, Administrators, and Everyone user types. To do this:

1 Click **Edit Default** in the **Launch and Activation Permissions** section. The **Access Permission** dialog box appears.

2 Select **NETWORK** in the Group or user names list box.

3 Select the **Allow** check box for the Local Access and Remote Access options in the **Permissions for NETWORK** list box.

4 Repeat Steps 2 and 3 for the System, Everyone, Administrators and INTERACTIVE user accounts.

5 Click **OK**.

6 Click **Edit Limits** in the **Launch and Activation Permissions** section. The **Access Permission** dialog box appears.

7 Select **Administrators** in the Group or user names list box.

8 Select the **Allow** check boxes for the Local Launch, Local Activation, Remote Launch, and Remote

Activation options in the **Permissions for Administrators** list box.

9 Repeat Steps 7 and 8 for the Everyone and ANONYMOUS LOGON user account.

10 Click **OK**.

11 Click **Apply**.

12 Click **OK**.

13 Select **Component Services** > **Computers** > **My Computer** > **DCOM Config under Console Root**.

This displays a list of processes in the DCOM Config pane on the right.

14 Right-click the **ResourceManager** application in the DCOM Config pane.

15 Click **Properties** from the shortcut menu.

The **ResourceManager Properties** dialog box appears.

1 Click the **General** tab.

2 Select **Default** from the **Authentication Level** drop-down list.

3 Click the **Location** tab.

4 Select **Run application on this computer**.

5 Click the **Security** tab.

6 For Launch and Activation Permissions, choose **Use Default**.

7 For Access Permissions, choose **Use Default**.

8 Click the **Identity** tab.

9 Select the interactive user option. If this option is not available in ResourceManager, select the System Account(Services Only)) option.

10 Click **Apply**.

11 Click **OK**.

16 Repeat Steps 14 and 15 for the sessionexec application.

17 Select **File** > **Exit**.

18 Restart the computer.

Index

C

D

E

H

I

M

P

S

E2960-91012

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