

# 1680-Series Logic Analyzers

## Quick Start/Installation

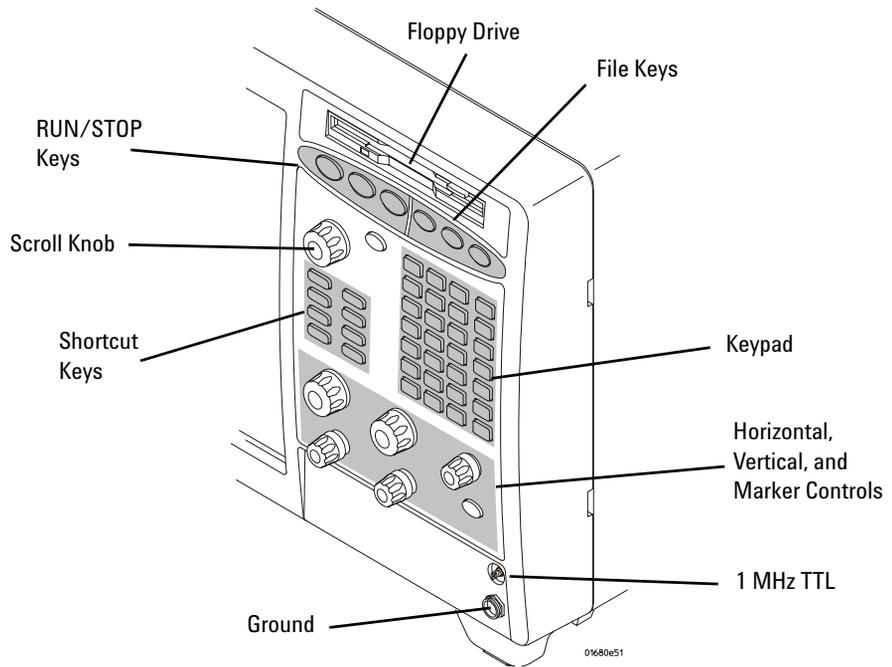
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# Product Overview

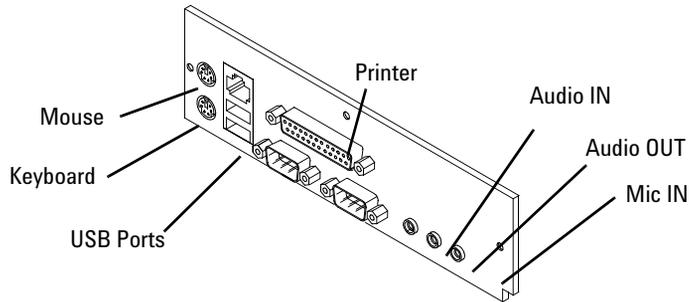
## Front Panel

Refer to the online help in the logic analyzer for information on using the analyzer.



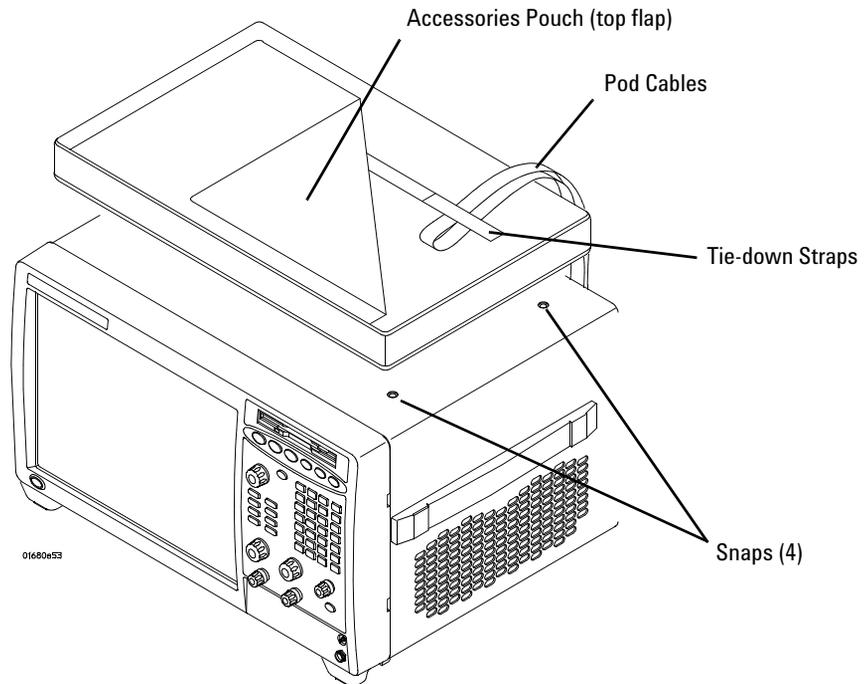
## Rear Panel

Before you turn on the system, connect your mouse and keyboard to the 1680-series logic analyzer rear panel. A connected mouse and keyboard are required for normal system use. The following rear panel figure is representative. Yours may look different.



## Accessories Pouch

Snap the accessories pouch to the top of the 1680-series logic analyzer. Use it to store probe leads, accessories, or manuals. Use the tie-down straps under the flap to conveniently hold pod cables not in use or during transport.



## First-Time Power Up Considerations

The first time you turn on the logic analyzer, the Windows® Welcome session starts. Your logic analyzer configuration and the answers to the Windows Welcome questions are affected by how you choose to use the logic analyzer.

### NOTE

Use the Enter and arrow keys on the attached keyboard. The logic analyzer front-panel keys do not work until Windows is running.

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## Determine Whether the Instrument will be Connected to the Network

### NOTE

If you plan to use COM automation to programmatically control a logic analyzer from a remote computer, be aware that the remote computer and the logic analyzer must both have the same kind of network membership; that is, they must both be members of a "Workgroup", or they must both be members of a "Domain". This is due to the security requirements of Distributed COM.

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### Standalone

You are going to use the logic analyzer as a standalone instrument (no LAN connection). Printing requires a printer attached to the logic analyzer, sharing files is done via USB flash drive or floppy disk.

### Connected to a Network

If you require the ability to print, share files, remotely control the logic analyzer, etc. over the network, you need to either join a workgroup or domain.

## Get Network Setup Information

For networking, find out whether the network that your instrument will be connected to uses the Microsoft Workgroup model or Microsoft Domain model. In order for your instrument to perform tasks over the network (print, transfer files, etc.) your instrument must be configured appropriately for the networking model in use at your site.

Information you may require to complete your network configuration may include, but is not limited to,

- The Workgroup or Domain name.
- Methodology for assigning IP addresses at your site (for example, DHCP).
- Domain Name Service (DNS).

Other network information that may be readily available from your network administrator.

## Answering Windows Welcome Questions

Once you have determined how you want to use your logic analyzer and your network configuration, power up your logic analyzer and answer the Windows Welcome questions.

**Table 1** Answering Windows Welcome Questions

	Standalone (No LAN)	Workgroup	Domain
Help protect your PC	N/A	Choose "Help protect my PC by turning on Automatic Updates now".	Choose "Help protect my PC by turning on Automatic Updates now".
What's your computer's name? (After answering, wait several minutes for next question to appear)	If your organization has a standard naming scheme, use that scheme. Otherwise, choose a descriptive name that follows the suggestions on the screen (less than 15 characters, etc.)		
What's your administrator password?	Agilent recommends entering an administrator password for administrator accounts. See <a href="#">page 8</a> for actions that require administrator accounts.		
Is this computer in a domain?	No (Is given WORKGROUP membership)	No (Is given WORKGROUP membership)	Yes Enter the domain name the logic analyzer will log onto.
Enter your domain settings.	N/A	N/A	Enter the name/password of a user who can add the logic analyzer to the domain.
Checking your Internet connectivity	Press 'Skip'	Wait for this to finish.	Wait for this to finish.
How will this computer connect to the Internet?	N/A	N/A	Choose the appropriate answer.
Setting up a high-speed connection?	N/A	N/A	Enter either the fixed IP/DNS assigned by your network administrator or select "Obtain Automatically".

**Table 1** Answering Windows Welcome Questions

	<b>Standalone (No LAN)</b>	<b>Workgroup</b>	<b>Domain</b>
(If LAN connected) Will this computer connect to the Internet directly, or through a network?	N/A	Choose "Yes, through a network" (Agilent does not support connecting to the internet through a modem directly connected to the logic analyzer.)	N/A
(If LAN is not connected) Windows unable to determine LAN connectivity.	N/A	You are told to set up LAN later.	N/A
Ready to register with Microsoft	Windows XP is already enabled to run on the logic analyzer. This registration is to allow Microsoft to contact you.		
Who will use this computer?	For All: Entering names here lets multiple users use the logic analyzer with administrator permissions. By default their passwords will be blank.		

### **If expected Windows Welcome questions do not appear**

During first-time power-up, depending on the configuration of your network, some of the Windows Welcome questions that should appear, like "Is this computer in a domain?", may not appear.

If this occurs, you need to change the logic analyzer's network setup (after the first-time power up) using the normal Windows XP methods (see "[Changing Network Settings](#)" on page 15).

## **Additional First-Time Setup Steps**

### **Establishing an Administrator Account (recommended for standalone and networked instruments)**

Agilent recommends that you set up an Administrator account for your logic analyzer. You have to be logged in to the Administrator account to do the following:

- Install most software (applies whether the instrument is networked or standalone).
- Change the workgroup.
- Perform "Windows Updates".
- Change firewall settings.

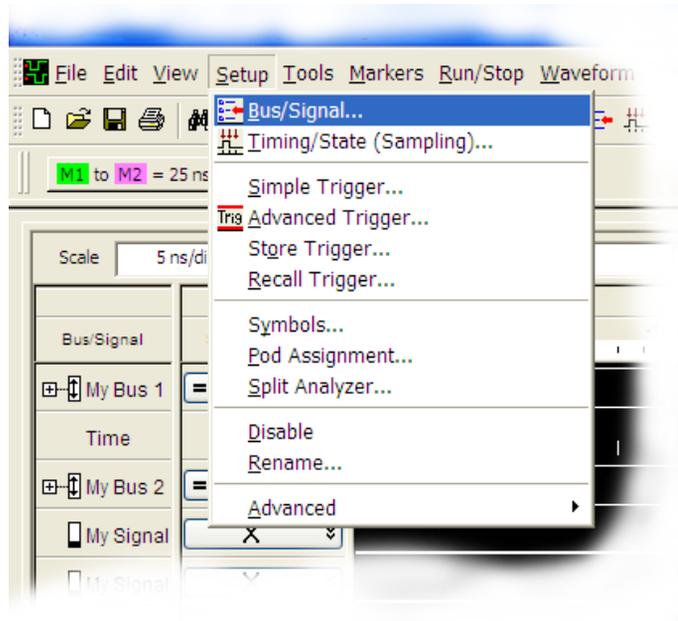
### **Protecting the Instrument's Operating System**

Microsoft recommends the following three steps to ensure the instrument's PC is protected.

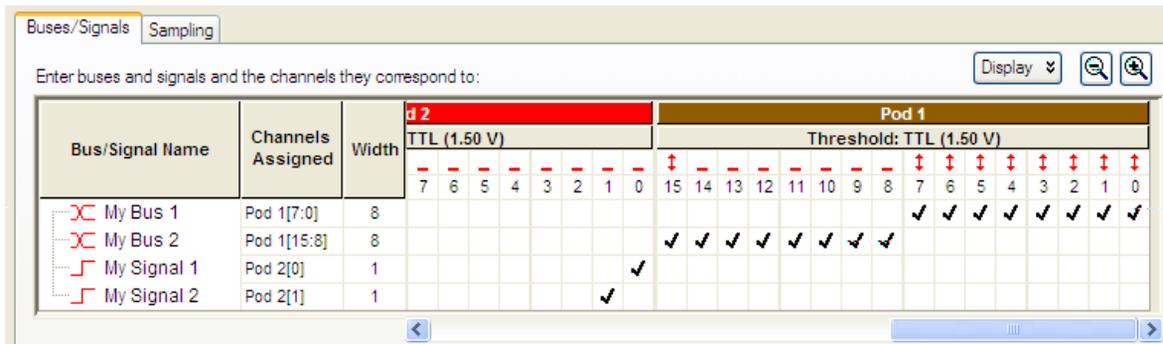
- 1** Use an internet firewall.
- 2** Get operating system updates.
- 3** Use up-to-date antivirus software.

## Making a Measurement

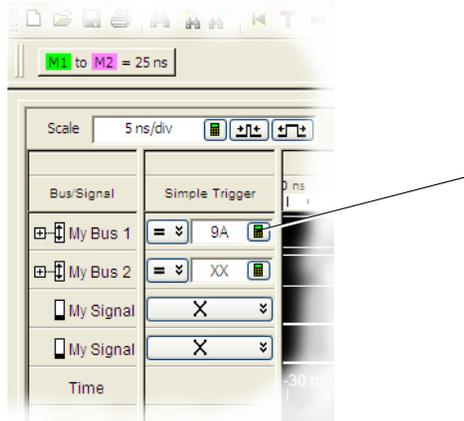
- 1 Start up the logic analyzer, connect to your target system, and select **Setup>Bus/Signal**.



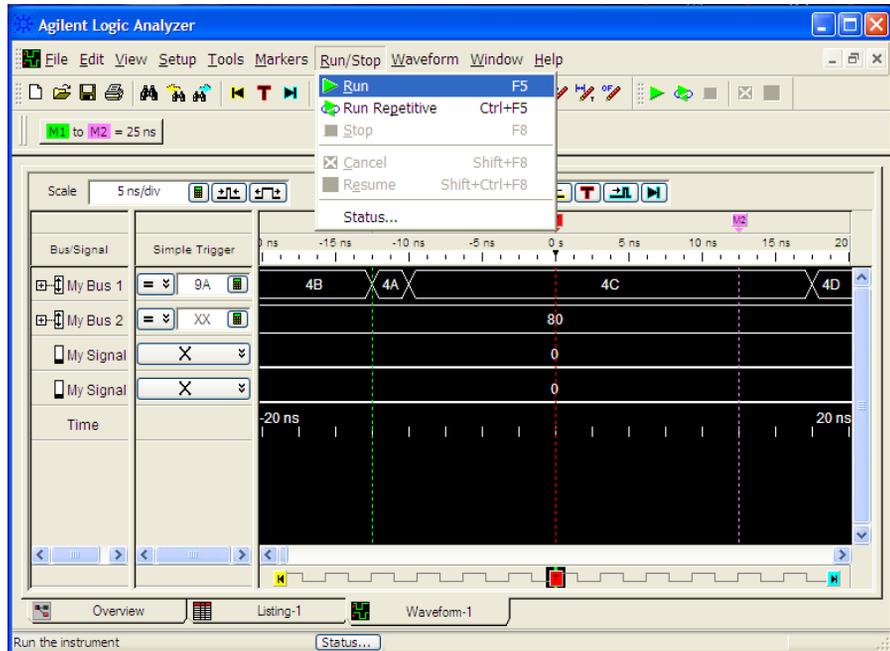
- 2 Assign buses and signals and click OK.



3 Enter a trigger value.

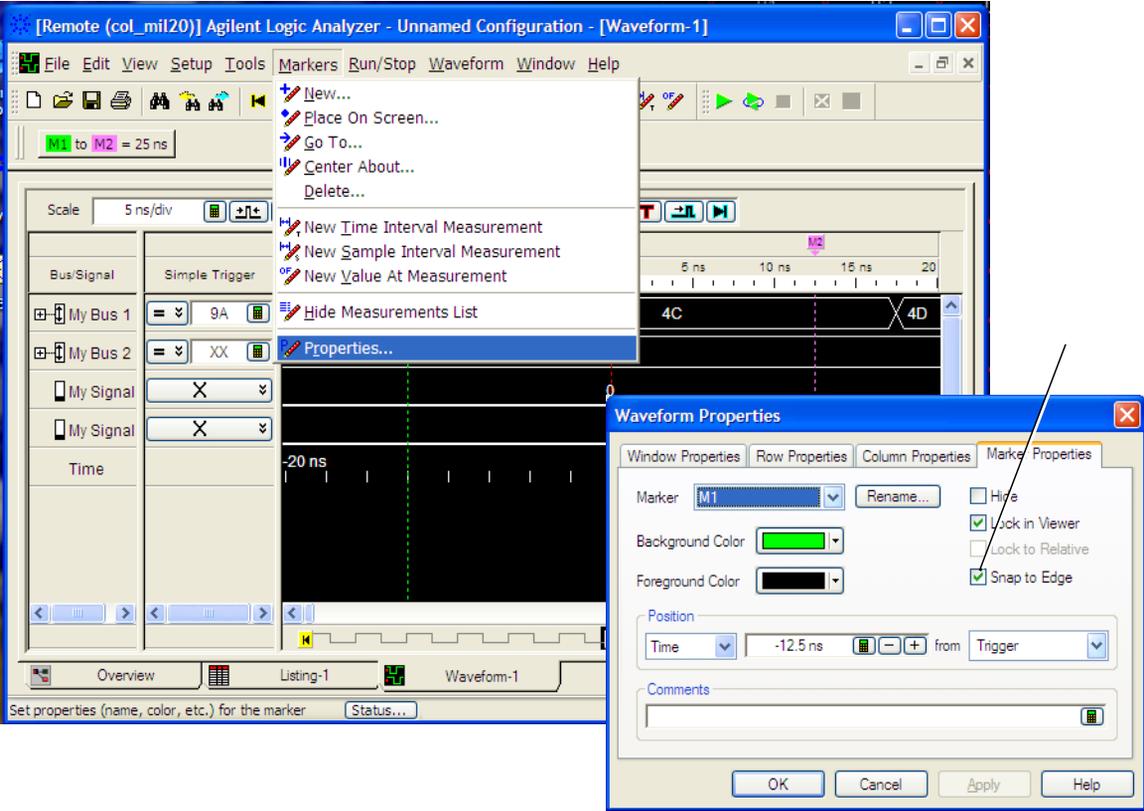


4 Acquire and view data.



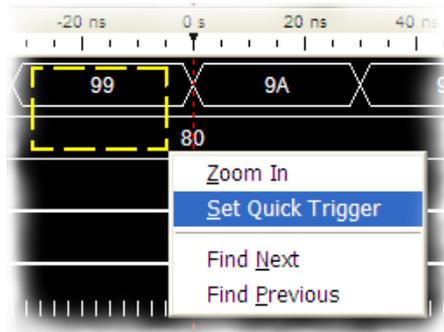
# Snap to Edge Markers

You can set the markers to jump to the nearest edge of a waveform. A yellow target will show which edge the marker will jump to.



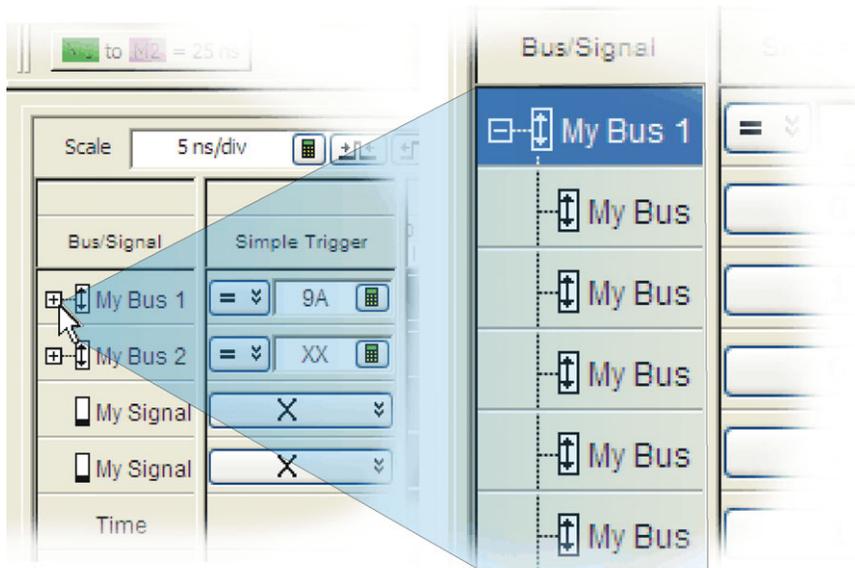
## Left-Click Menus

Drag a box around parts of the data. When you release the mouse button, a menu appears.



## Tree Structure Labels

Show individual signals in buses by clicking on the + to expand.



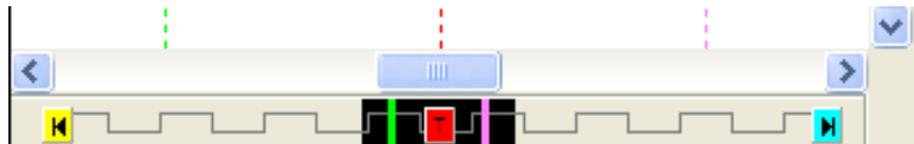
## Offline Analysis

Install the *Agilent Logic Analyzer* application on another Windows XP or Windows 2000 computer and you can analyze data without the 1680-series logic analyzer.

- 1 Follow the instructions in “[Software Installation and Upgrades](#)” on page 20 to load the 1680-series logic analyzer software on your PC.
- 2 Acquire a trace with the logic analyzer.
- 3 Save a configuration file with data.
- 4 Copy the file to the PC being used for offline analysis.
- 5 From the *Agilent Logic Analyzer* application software on your PC, open the configuration file.

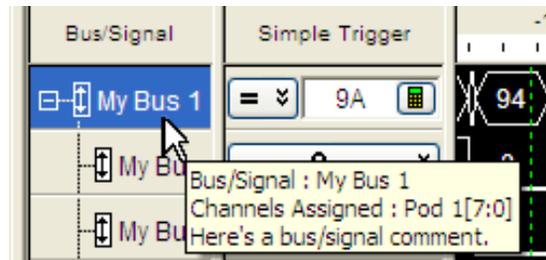
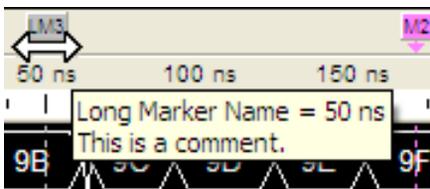
## Marker Overview

The marker overview display shows marker locations within the data and the part of data currently being displayed.



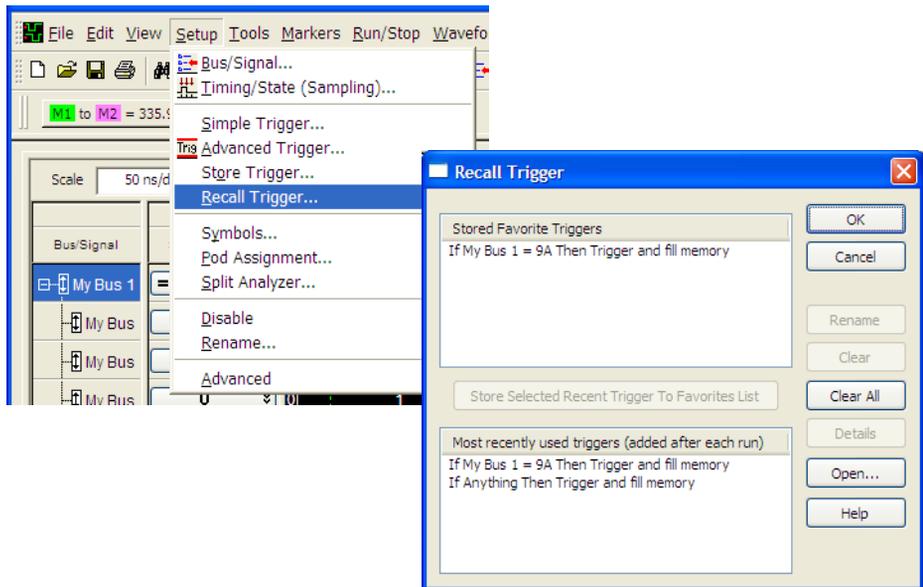
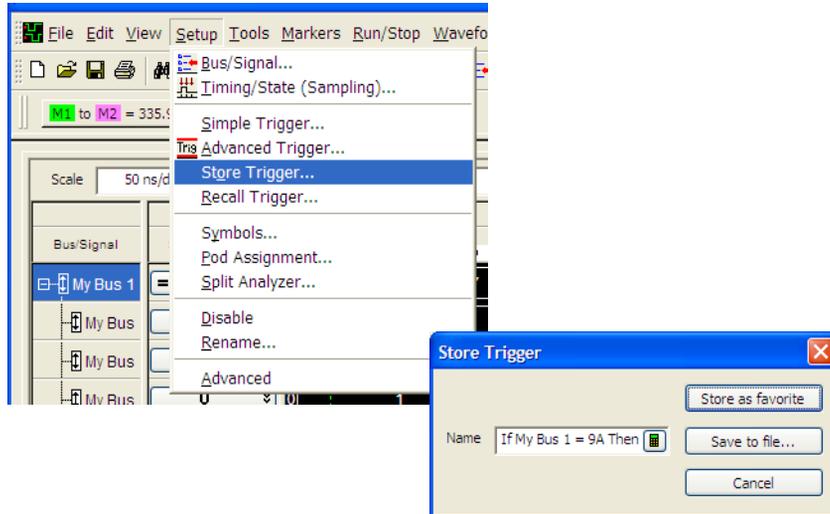
## Tool Tips

Pause the cursor over a tool icon and a “Tool Tip Window” will appear.



# Trigger History

Save and recall trigger settings.



## Probing

Probing is the key to effective and efficient use of logic analyzers. Agilent Technologies offers a wide variety of probing accessories that support general-purpose and application-specific measurement needs. We provide reliable, electrically and mechanically unobtrusive probes that make it easy to connect your Agilent logic analyzer to your system under test. For more information on Agilent probes:

- See the quick reference card that came with your logic analyzer for an overview of probing solutions.
- Go to [www.agilent.com/find/logic\\_analyzer\\_probes](http://www.agilent.com/find/logic_analyzer_probes) for the most up-to-date information on probe compatibility with a given logic analyzer and purchasing information.
- Go to [www.agilent.com](http://www.agilent.com) and search for Probing Solutions for Logic Analyzers (publication 5968-4632E) for a catalog of detailed probing information.

To connect and set up a probe, follow the instructions in the User's Guide that came with the probe.

## Changing Network Settings

To make network changes after the first-time power up:

- To change from a workgroup to a domain or vice versa, click **Start** then right click on **My Computer** and select **Properties**. Select the Computer Name tab and click **Change**.
- To change network connection properties, click **Start>Control Panel>Network Connections**. Select the connection you want to change and click **Change settings of this connection**.

For more information on changing network settings, refer to the Windows XP online help.

## Changing Windows Firewall Settings

When 1680-series logic analyzers are shipped from the factory, the Windows Firewall is enabled and set up with the exceptions required by the logic analyzer.

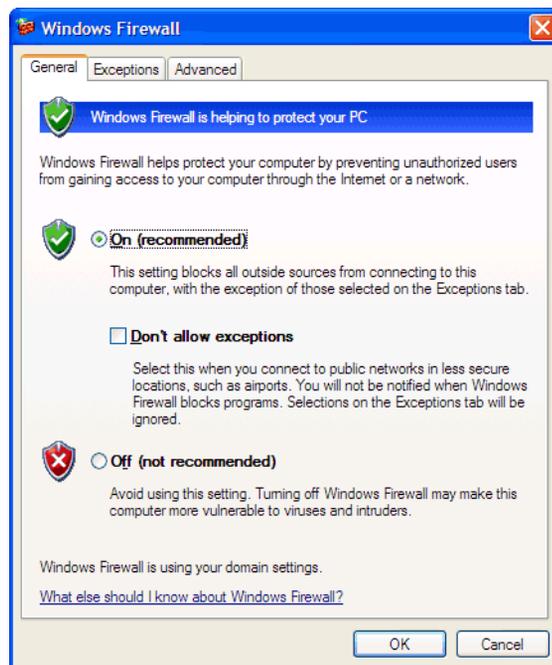
### To give other applications/ports access through the firewall

For example, you may need to change firewall settings in order to:

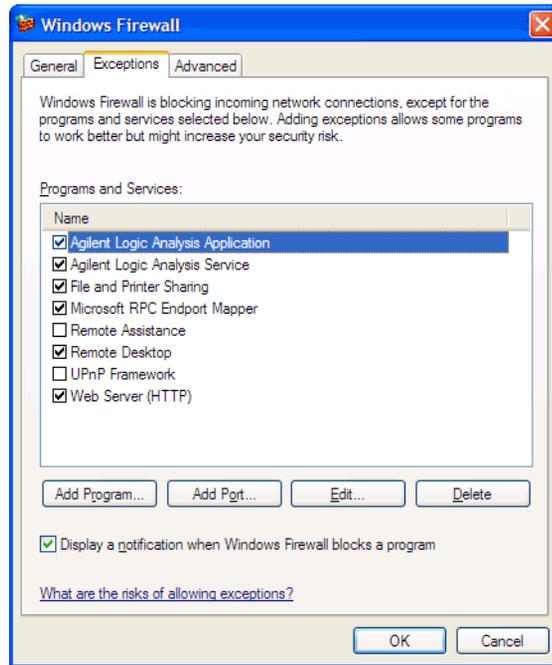
- Use NetOp to remotely control the logic analyzer.
- Use RealVNC to remotely control the logic analyzer.

To change firewall settings to give other applications/ports access:

- 1 From the Windows Start menu, choose **Start>Control Panel**.
- 2 In the Control Panel window, open **Windows Firewall**.



- 3 In the Windows Firewall dialog, click the **Exceptions** tab.



- 4 In the Exceptions tab, if the program or service is listed, check its box to enable it; otherwise, click **Add Program...** to give unlisted applications permission to penetrate the firewall, or click **Add Port...** to give unlisted ports access through the firewall.

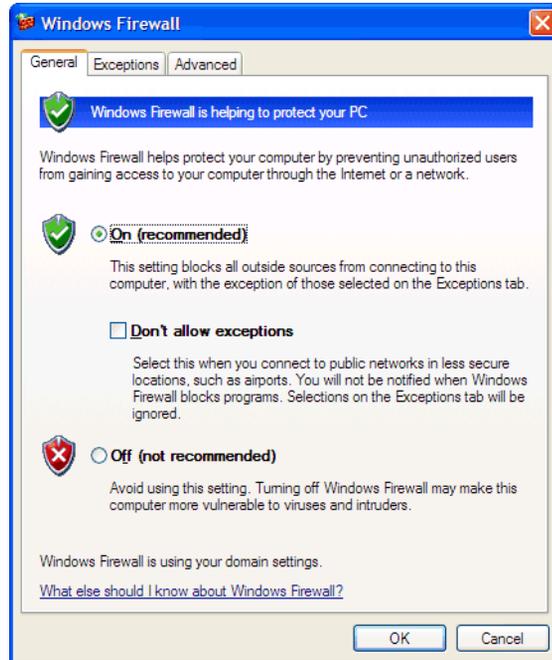
Refer to the application's documentation for information on port numbers or other firewall setup information.

## NOTE

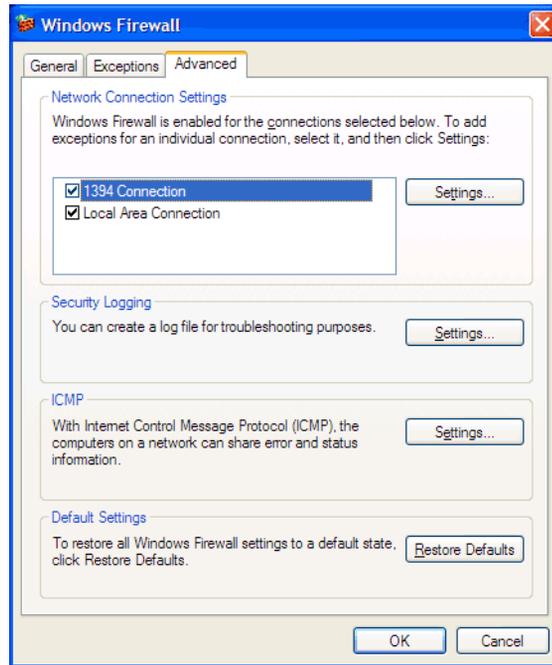
Note that there are separate Windows Firewall profiles: Domain for when the computer has domain membership, and Standard for when the computer has workgroup membership. If you change the type of membership, any changes you made to the Windows Firewall settings will have to be made again.

## To restore the logic analyzer firewall defaults

- 1 From the Windows Start menu, choose **Start>Control Panel**.
- 2 In the Control Panel window, open **Windows Firewall**.



- 3 In the Windows Firewall dialog, click the **Advanced** tab.



- 4 In the Advanced tab, click **Restore Defaults** to restore the default Windows Firewall settings.
- 5 In the confirmation dialog, Click **Yes**.
- 6 Click **OK** to close the Windows Firewall dialog.
- 7 From the Windows Start menu, choose **Start>Run**; then, enter or select the file “C:\Program Files\Agilent Technologies\Logic Analyzer\agFirewSP2.wsf”, and click **OK**.

The logic analyzer firewall defaults enable the following exceptions:

- Agilent Logic Analysis Application program.
- Agilent Logic Analysis Service program.
- File and Printer Sharing.
- Microsoft RPC Endport Mapper TCP port.
- Remote Desktop service.
- Web Server (HTTP) port.

The logic analyzer firewall defaults also enable the following ICMP (Internet Control Message Protocol) settings:

- Allow incoming echo request.
- Allow outgoing destination unreachable.
- Allow outgoing time exceeded.

## NOTE

Note that there are separate Windows Firewall profiles: Domain for when the computer has domain membership, and Standard for when the computer has workgroup membership. When you restore the logic analyzer firewall defaults, the defaults for both profiles are restored.

## Software Installation and Upgrades

### Agilent Logic Analyzer Software

The Agilent 1680-series logic analyzers are shipped with software already installed, including any licensed optional products that you may have purchased. The licensing process (described below) has been performed and the (\*.lic) license file is in place.

To upgrade the logic analyzer software, insert a product CD and click **INSTALL PRODUCTS>Install Logic Analyzer**. Note that newer versions of the Agilent Logic Analyzer software will automatically uninstall the previous version as a step in the upgrade. (User files in the "Documents and Settings" tree are not affected.)

To install the logic analyzer software onto your PC for offline processing, insert the product CD into your PC drive, click **INSTALL PRODUCTS>"Install Logic Analyzer**.

Logic analyzer product software can be downloaded from the web at:  
[http://www.agilent.com/find/16900\\_SW\\_Download](http://www.agilent.com/find/16900_SW_Download)

Logic analyzer product CDs can be ordered from this web-site:  
<http://software.cos.agilent.com/LogicAnalyzerSW>

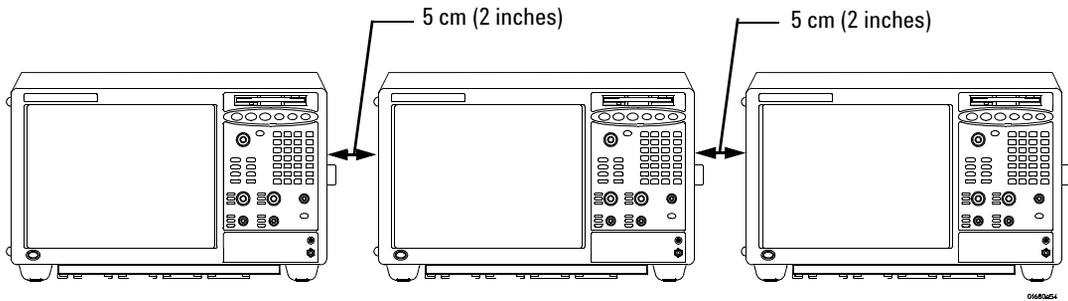
To be notified when software upgrades are available for downloading from the web, please sign up for e-mail notifications at:  
<http://www.agilent.com/find/emailupdates>

## Optional Products

If applicable, follow the instructions on the entitlement certificate that came with your purchase to enable the optional tool.

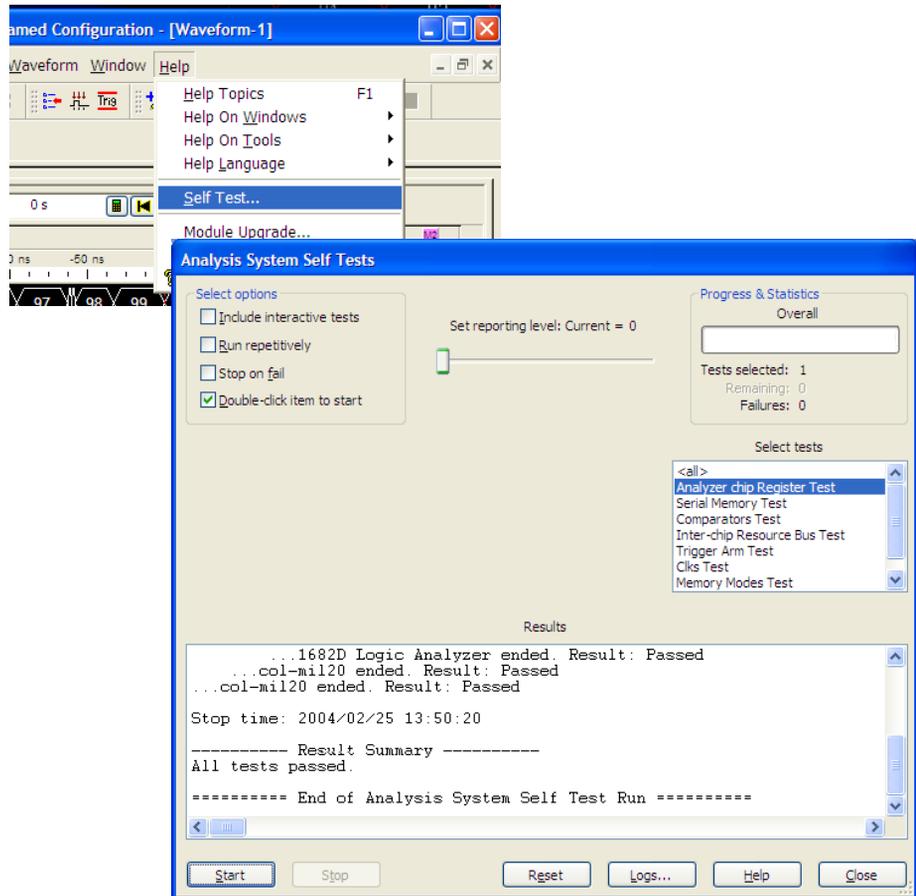
## Proper Cooling

Allow at least 5 cm (2 inches) of space between instruments for proper cooling.



## Self-Test

To run self-tests go to **Help>Self Test** and then select the desired test.



## Emergency Recovery

Follow the instructions provided with the recovery CD to restore your system software. This will only restore factory program files. User files and other programs will then need to be restored from your backup files.

## Specifications and Characteristics

The following electrical and operating characteristics are not specifications, but are typical operating characteristics for the Agilent 1680-series logic analyzers.

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### Electrical Characteristics

<b>Power Requirements</b>	Frame:: 115/230 Vac +/- 20%, 48-66Hz, 610W Max CAT II (Line voltage in appliance and to wall outlet) Pollution degree 2
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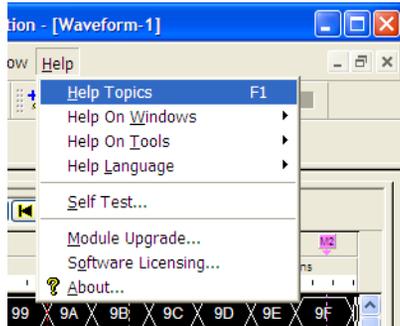
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### Environmental Characteristics (Operating)

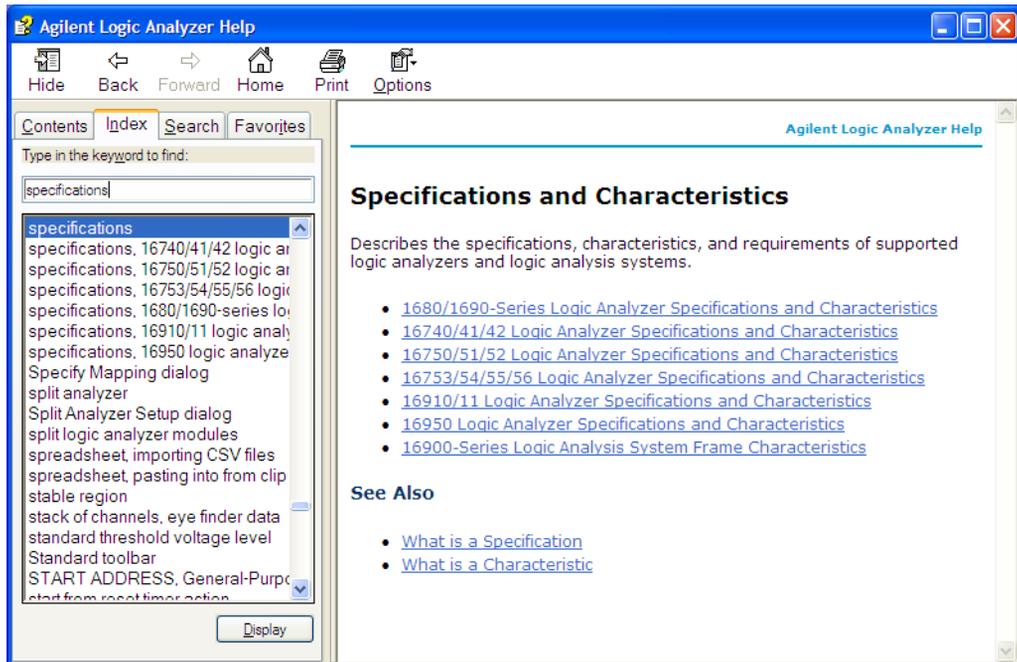
<b>Temperature</b>	Instrument: 0° to + 50° C (+32° to +122° F) Disk Media: 10° to + 40° C (+50° to +104° F) Probes/cables: 0° to + 65° C (+32° to +149° F)
<b>Altitude</b>	3,000 m (10,000 ft)
<b>Humidity</b>	Relative humidity 8 to 80% at 40° C (104° F). Avoid sudden, extreme temperature changes which could cause condensation on the circuit board. For indoor use only.

More specifications and characteristics for your instrument and measurement modules are in the on-line help. To find them go to:

**1 Click Help>Help Topics.**



**2 Click Reference>Specifications and Characteristics.**



## Safety Notices

This apparatus has been designed and tested in accordance with IEC Publication 1010, Safety Requirements for Measuring Apparatus, and has been supplied in a safe condition. This is a Safety Class I instrument (provided with terminal for protective earthing). Before applying power, verify that the correct safety precautions are taken (see the following warnings). In addition, note the external markings on the instrument that are described under "Safety Symbols."

### Warnings

- Before turning on the instrument, you must connect the protective earth terminal of the instrument to the protective conductor of the (mains) power cord. The mains plug shall only be inserted in a socket outlet provided with a protective earth contact. You must not negate the protective action by using an extension cord (power cable) without a protective conductor (grounding). Grounding one conductor of a two-conductor outlet is not sufficient protection.
- Only fuses with the required rated current, voltage, and specified type (normal blow, time delay, etc.) should be used. Do not use repaired fuses or short-circuited fuse holders. To do so could cause a shock or fire hazard.
- If you energize this instrument by an auto transformer (for voltage reduction or mains isolation), the common terminal must be connected to the earth terminal of the power source.
- Whenever it is likely that the ground protection is impaired, you must make the instrument inoperative and secure it against any unintended operation.
- Service instructions are for trained service personnel. To avoid dangerous electric shock, do not perform any service unless qualified to do so. Do not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.
- Do not install substitute parts or perform any unauthorized modification to the instrument.
- Capacitors inside the instrument may retain a charge even if the instrument is disconnected from its source of supply.

- Do not operate the instrument in the presence of flammable gasses or fumes. Operation of any electrical instrument in such an environment constitutes a definite safety hazard.
- Do not use the instrument in a manner not specified by the manufacturer.
- To optimize your comfort and productivity, it is important that you set up your work area correctly and use your equipment properly. Refer to [http://www.agilent.com/quality/Working\\_In\\_Comfort.pdf](http://www.agilent.com/quality/Working_In_Comfort.pdf) for set-up and use recommendations
- Position equipment so that it is not difficult to disconnect the power cord.

### To clean the instrument

If the instrument requires cleaning:

- 1 Remove power from the instrument.
- 2 Clean the external surfaces of the instrument with a soft cloth dampened with a mixture of mild detergent and water.
- 3 Make sure that the instrument is completely dry before reconnecting it to a power source.

### Safety Symbols



Instruction manual symbol: the product is marked with this symbol when it is necessary for you to refer to the instruction manual in order to protect against damage to the product.



Hazardous voltage symbol.



Earth terminal symbol: Used to indicate a circuit common connected to grounded chassis.



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Printed in Malaysia October 2004



Manual part number 01680-97012



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