

# **Agilent 16900-Series Logic Analysis System**

**Quick Start Guide for  
16700-Series Users**

# Notices

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## Manual Part Number

16900-92001

## Edition

First edition, March 2004

Printed in USA

Agilent Technologies, Inc.  
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Colorado Springs, CO 80907 USA

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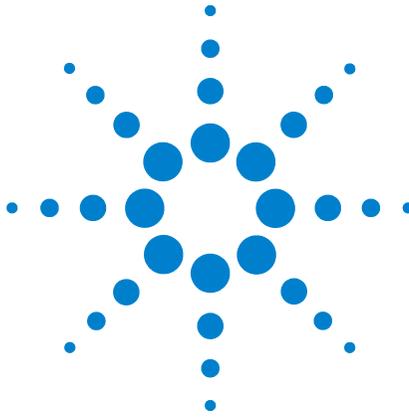
## Safety Notices

### CAUTION

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## Getting Started with the 16900-Series Logic Analysis System

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If you are familiar with the 16700-series logic analysis system, you will notice many similarities in the 16900-series logic analysis system; however, there are lots of improvements too.

By describing the key differences between the two logic analysis systems, this guide will help you quickly become productive with the new 16900-series logic analysis system.

### **About the *Agilent Logic Analyzer* Application**

The 16900-series logic analysis system is controlled by the *Agilent Logic Analyzer* application, a Windows-based user interface that also controls the 1680/90-series logic analyzers and can be used for *offline analysis* of data captured by 16900-series, 1680/90-series, and 16700-series logic analyzers.

The *Agilent Logic Analyzer* application can run on Windows XP/2000 computers and still connect to and control 16900-series logic analysis systems. This is called the *hosted power mode*, and it lets you improve the performance of the application when desired.

The *Agilent Logic Analyzer* application can control multiple 16900A or 16902A logic analysis system frames connected in a *multiframe* configuration and present all their modules as if they were in a single frame.



## Main Menu Navigation

In the 16700-series logic analysis system:

- The primary method of navigation is through the Window menu.
- The main menu bar provides access to a limited number of the system features.
- The Workspace window is used primarily by advanced users.
- There are lots of multi-tabbed dialogs.

In the *Agilent Logic Analyzer* application (which controls the 16900-series logic analysis system):

- You can access just about everything from the main menu.



- The Overview window is the main navigation aid for all users.
- There are separate dialogs for setup and advanced trigger, and there are relatively few multi-tabbed dialogs.

**Table 1** *Agilent Logic Analyzer* Menus to Know

Command	To
<b>Edit&gt;Find...</b>	Search for bus/signal values.
<b>Setup&gt;Bus/Signal...</b>	Set up buses and signals.
<b>Setup&gt;Timing/State (Sampling)...</b>	Choose the acquisition mode.
<b>Tools&gt;New Filter/Colorize...</b>	Add a Filter/Colorize tool.
<b>Markers&gt;New...</b>	Add new markers.
<b>Markers&gt;Go To...</b>	Go to a marker.
<b>Run/Stop&gt;Run</b>	Run the logic analyzer.

## Simple and Quick Triggers

In the 16700-series logic analysis system, the easiest way to set up triggers is by using the predefined trigger functions.

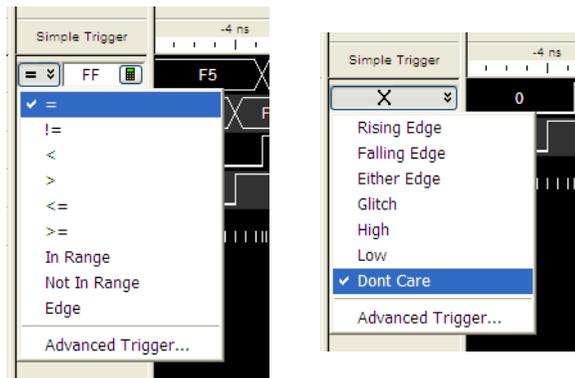
In the *Agilent Logic Analyzer* application (which controls the 16900-series logic analysis system):

- You can set up *simple triggers* from within the Waveform or Listing windows without having to open a trigger setup dialog.
- You can set up *quick triggers* by drawing a box around data in the Waveform or Listing window.

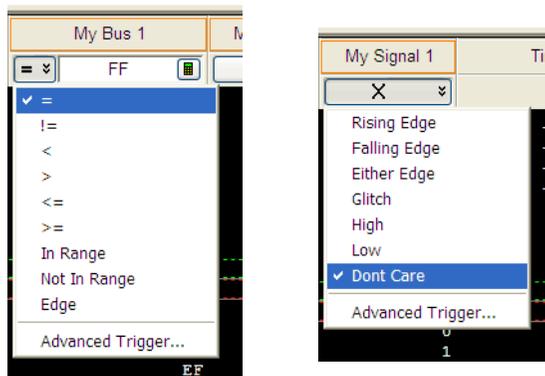
Simple and quick triggers let you set up a single trigger event defined as a combination of patterns, edges, etc., across any signals and buses.

### Simple Triggers

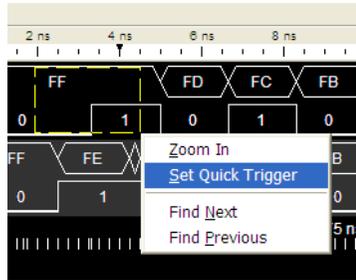
#### Waveform Display



#### Listing Display

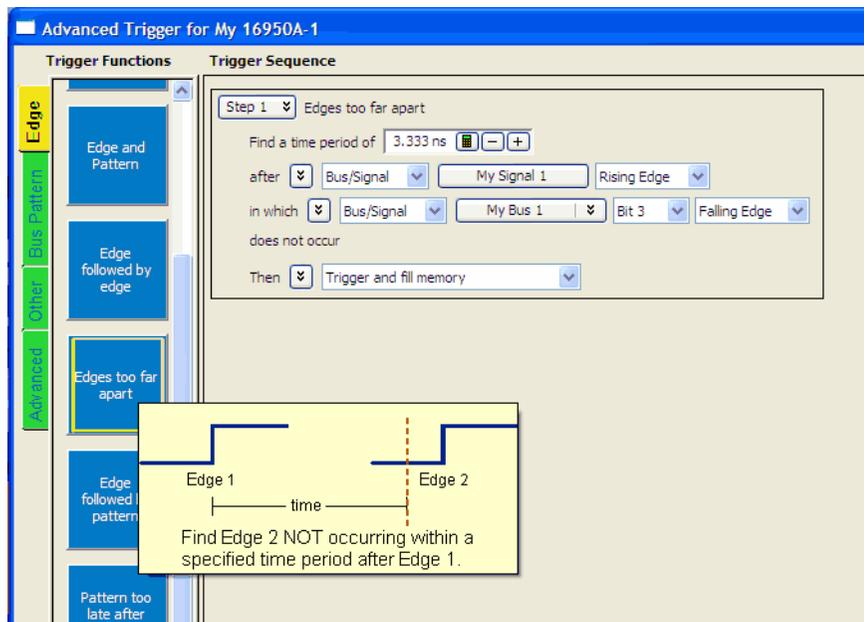


## Quick Triggers



## Advanced Triggers

When you need to set up triggers that are more complex than just finding particular bus/signal values (for example, when you need to trigger on a sequence of events in the device under test), you can set up *advanced triggers*. The advanced trigger dialog is similar to the Trigger tab in the 16700-series logic analysis system, where you can choose from predefined trigger functions.



With advanced triggers, you can customize a trigger using trigger functions as individual trigger events or as building blocks for complex scenarios.

To use a trigger function, drag-and-drop it into the Trigger Sequence area.

## How to Quickly Move Between Windows

In the *Agilent Logic Analyzer* application, you can quickly move between windows by clicking on the tabs at the bottom of the display.



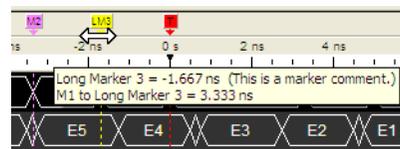
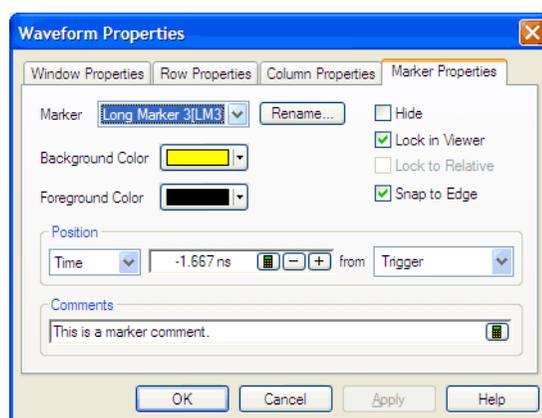
## Using Markers in Display Windows

In the 16700-series logic analysis system:

- You have two markers,  $x$  and  $o$ , that are local to each display tool.
- You also have two global markers,  $G1$  and  $G2$ , which are used in time-correlated measurements.

In the *Agilent Logic Analyzer* application (which controls the 16900-series logic analysis system):

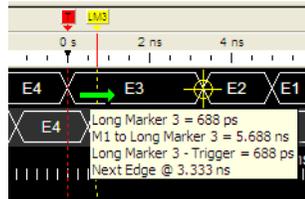
- You can have up to 1,024 markers.
- All markers are global.
- You can give markers long and short names, specify their color, and add comments (which appear in marker tool tips).



- On the front panel of the 16902A or 16903A, you can position markers by pressing the Choose button to select a marker and then by using the marker knob to position it.



- In the *Agilent Logic Analyzer* application, you can position markers by dragging-and-dropping them, placing them at the mouse cursor, placing them at the center of the display, or by changing the position property in the Marker Properties tab.
- When moving a marker in the Waveform display window, if the mouse cursor is over a waveform and the marker's Snap to Edge property is enabled, the cursor changes to a green "direction arrow" indicating the direction of the next valid edge. A yellow "cross hair" target appears on the edge at which the marker will be placed if you release the mouse button.



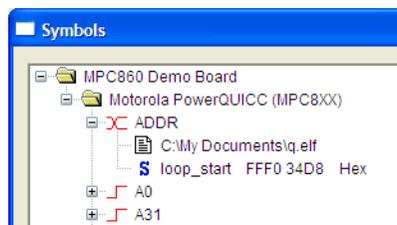
If you don't want the marker to snap to an edge, move the mouse cursor so that it is not over any waveforms before releasing the mouse button.

- You can set up *time interval*, *sample interval*, and *value at marker* measurements.
- When searching for bus/signal data values with Find, you can place markers where data values are found.

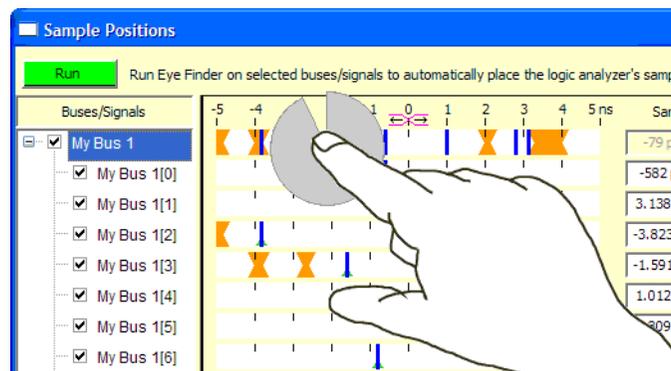
## Tips for Using the Touch Screen

The 16902A and 16903A logic analysis system frames have a touch screen. Here are some tips for using the touch screen:

- Use firm, even pressure on the touch screen.
- You may prefer to use a stylus.
- Use the front panel marker knobs to place markers. (Any marker can be selected using the choose button.)
- For trees, the touchable area around the +/- buttons is expanded.



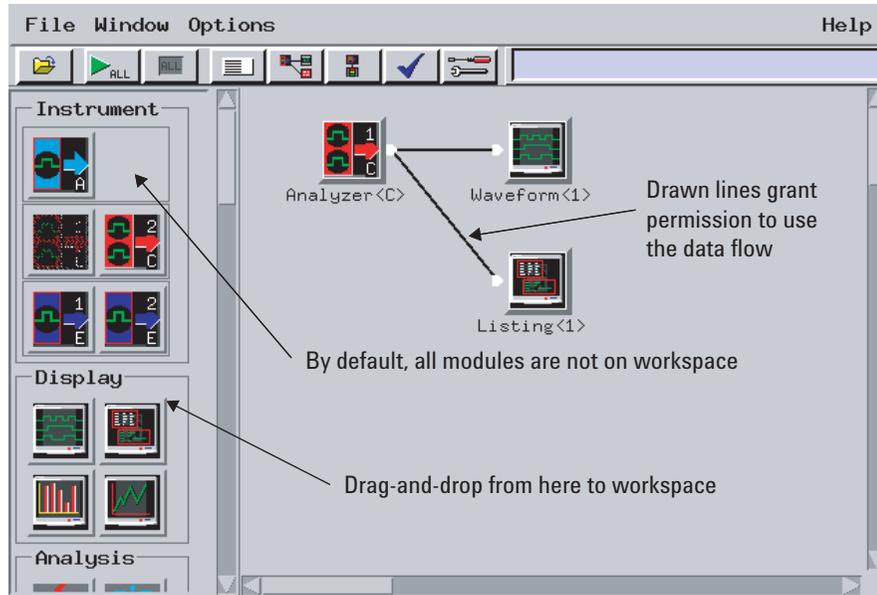
- For option selections, both the option and the caption are active.
- There is a Keyboard button on the front panel to open a keyboard dialog.
- Inside the *Agilent Logic Analyzer* application, most right mouse button behavior is accessible just by touching the screen. Outside the Agilent Logic Analyzer application, you can press down on the touch screen until a full circle is drawn around your finger; then, a right-click occurs.



## Using the Overview Window

The Overview window in the *Agilent Logic Analyzer* application looks like the Workspace window in the 16700-series logic analysis system, but it's different.

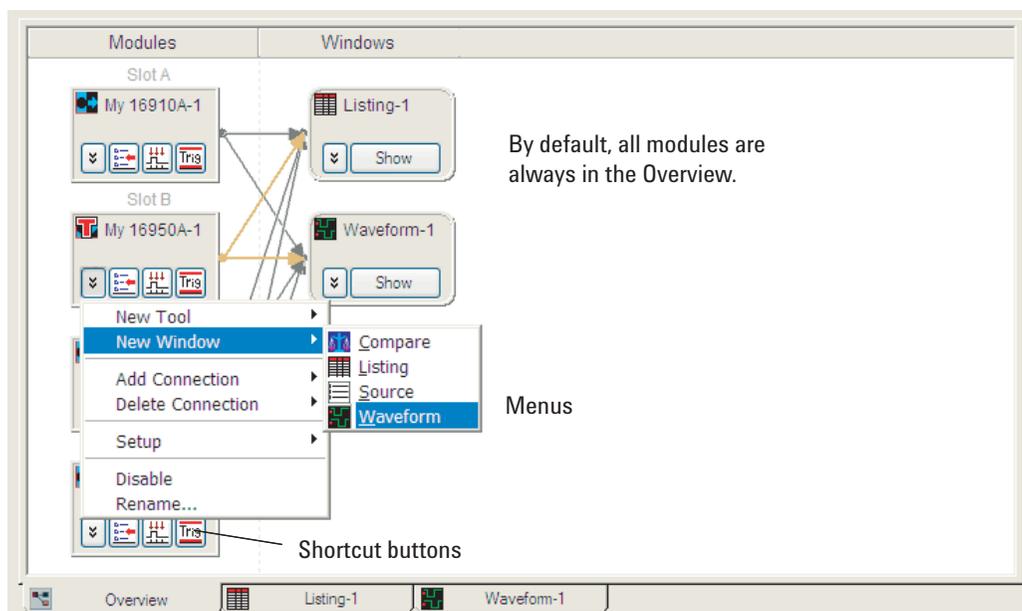
### In the 16700-series Workspace window



In the 16700-series Workspace window:

- Instruments, analysis tools, and displays are dragged onto the Workspace from the tool box.
- You draw lines between instruments, analysis tools, and displays to route data .
- Drawn lines give an analysis tool or window permission to use the data.

**In the *Agilent Logic Analyzer* application's Overview window**



No drag-and-drop.

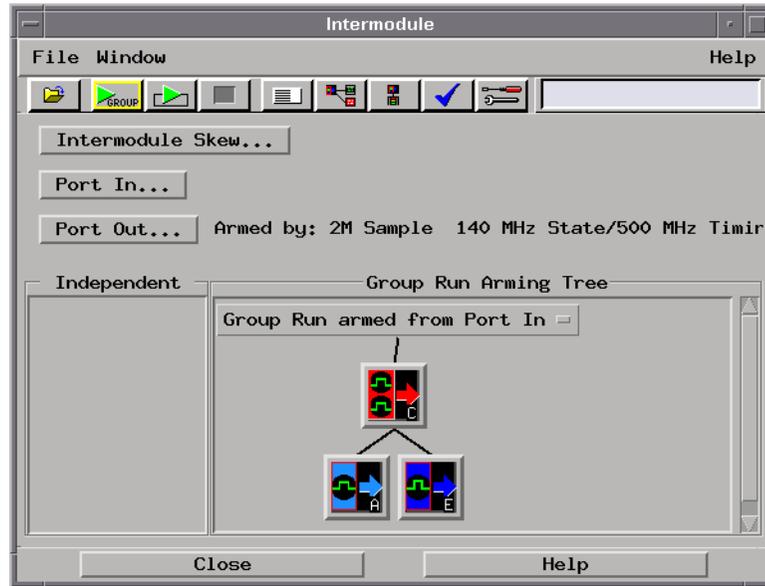
In the *Agilent Logic Analyzer* application's Overview window:

- All modules are always displayed.
- Tools and display windows are added via menu selections.
- Lines are automatically drawn between modules, tools, and windows to reflect how you are using data.

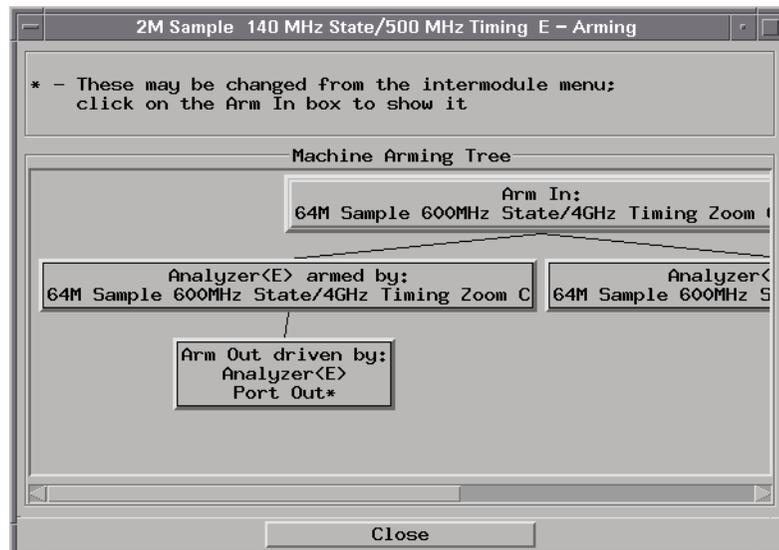
## Making Simple Inter-Module Measurements

In the 16700-series logic analysis system:

- There is an Inter-Module triggering dialog box.

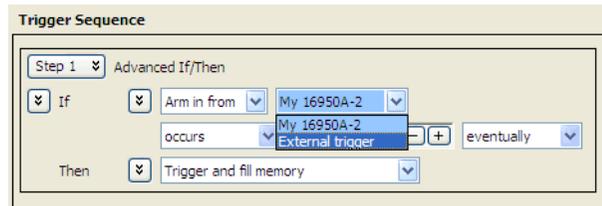


- For analyzers split into two machines, there is a separate arming tree dialog.



In the *Agilent Logic Analyzer* application (which controls the 16900-series logic analysis system):

- Inter-module triggers are set up just like any other event. (There is no special dialog for inter-module triggering.)



Notice that triggers from split analyzers are selected in the same place as external triggers from other instruments.

- The Trigger In and Trigger Out BNC connectors are set up through the External Trigger dialog.

