

# PCI-X Bus Analysis Probe

For Use With Agilent Logic Analyzers

**FuturePlus Systems**

Power Tools For Bus Analysis

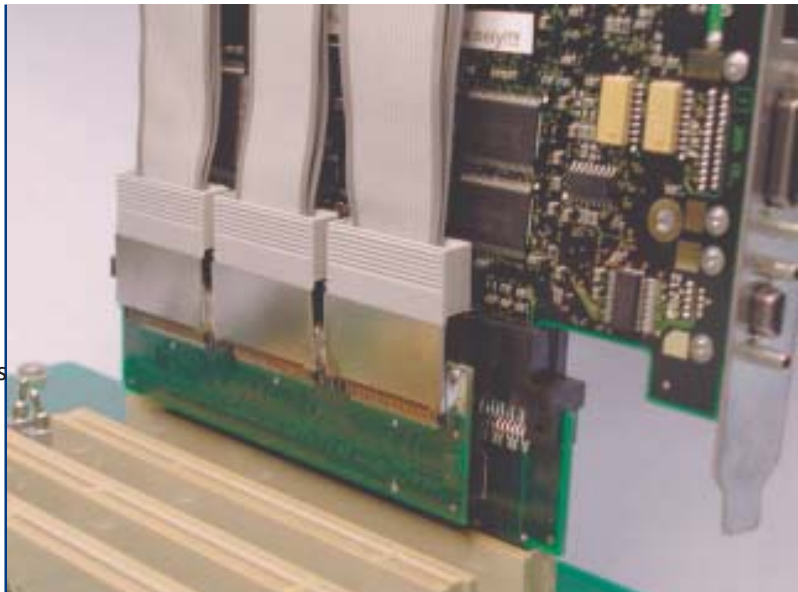


## PCI-X 1.0 Bus Analysis Probe

The FuturePlus® FS2010 provides a mechanical and electrical interface between a PCI-X bus and Agilent logic analyzers. Its interposer slot accepts a PCI-X add-in module, allowing analysis of the module, even in single-slot systems.

PCI-X bus transactions can be displayed in a variety of user-selectable abstractions, from timing waveforms to binary data to protocol transactions.

Included software provides symbols to enable quick, simple creation of complex triggers to capture the most difficult problems.



*FS 2010 Analysis Probe with add-in card under test*

### FS2010 Key Features

- Supports 32- or 64-bit PCI-X bus widths
- Perform PCI bus analysis with optional software
- Simultaneous 4 GHz timing analysis
- PCI-X analysis up to 133 MHz
- Protocol-decode software displays PCI-X level transactions
- Designed or use with Agilent logic analyzers

### A Versatile, Powerful Tool for PCI-X 1.0 Debugging and Validation

This versatile PCI-X 1.0 analysis probe enables simultaneous protocol decode and 4 GHz timing analysis at 133 MHz for 32- and 64-bit buses. Interposer functionality allows testing of adapter cards in single-slot PCI-X configurations.

The FS2010 supports a wide range of Agilent logic analysis systems from the very latest 16900A logic analysis system to the older 16700-series logic analysis systems.



### Helping You Design Tomorrow's Computer Buses, Today

FuturePlus Systems is the technology leader in protocol analysis tools for the computer design industry. Our analysis probes and software help you monitor and verify complex activities on your advanced-technology computer bus design. FuturePlus Systems offerings include bus-analysis solutions for HyperTransport®, PCI-X, DDR Memory, USB2.0, and most other popular computer buses.

## Interposer Design Lets You Probe Under Full Load

Use the FS2010 to probe your PCI-X bus with all slots under load. The probe's interposer functionality allows insertion of a PCI-X add-in card into a straddle-mount connector on the probe, thus preserving the availability of the slot being probed. The etch from the PCI-X bus is approximately 1 inch and is of near equal length. Since the FS2010 does not actively buffer the PCI-X bus signals, negligible skew is introduced by the probe. However, due to the extension of the bus, operation is not guaranteed in all systems. The connector on the top of the probe is keyed for 3.3 volts.

## Quick, Reliable Connection and Setup

The FS2010 provides an electrical, mechanical, and software interface to your logic analyzer for passive PCI-X bus state and timing analysis.

In State Analysis mode, the analyzer master clock is the PCI-X clock. The PCI-X transaction-decode software executes in the logic analyzer to decode key PCI-X bus signals and presents an easily-readable display that lists the transaction type, address, data and key status conditions such as wait states and retries. User-selectable post-processing filters allow display of only the transactions you need to see within the acquired data.

In Timing Analysis mode, the logic analyzer provides the master clock. Since the FS2010 provides an unbuffered copy of all the PCI-X

signals to the logic analyzer, it can provide timing analysis using either conventional-timing or timing-zoom mode.

## Protocol-decode Software and Powerful Triggering Quickly Isolate Elusive Faults

The FS2010 includes protocol-decode software that runs on your Agilent logic analyzer, where it translates acquired signals into easily-understood bus transaction mnemonics at the full bus speed. The FS2010 software includes symbols which convert HEX values. Using symbolic names simplifies the use of triggers and store-qualification to quickly capture complex problems for root cause analysis.

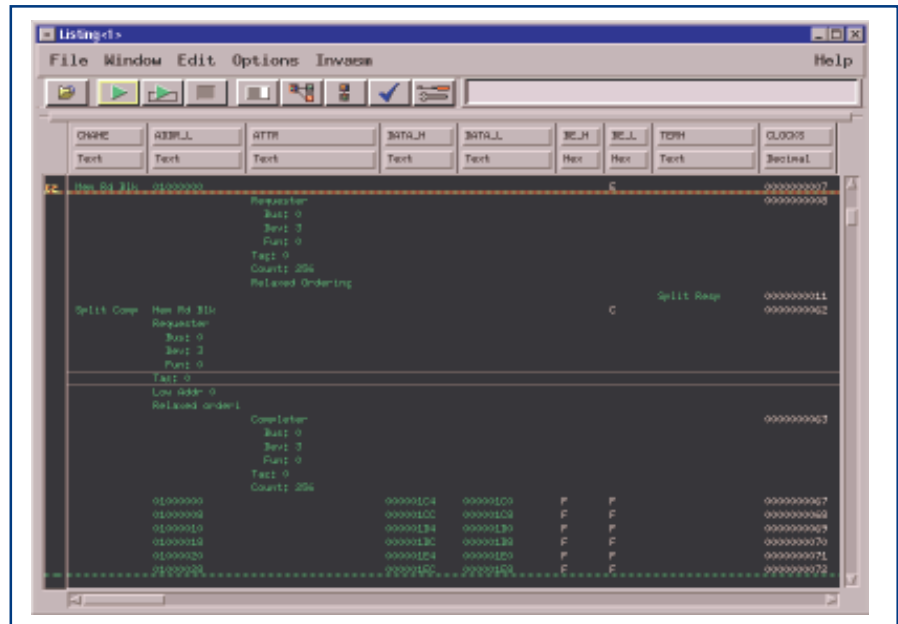
### Configuration Software for Quick, Easy Setup

The FS2010 includes automatic configuration software for all supported Agilent logic analyzers.

### PCI Bus Analysis Support

If you would like to use the FS2010 to probe the earlier 3.3V PCI bus, use the optional PCI protocol-decode software. Order the FS1110 for Agilent 16900-series logic analyzers or the FS1105 for Agilent 16700-series.

Please see the ordering Information in this document for more details.



Display listing of PCI-X Transaction Decode

### Transaction Viewer: A New Way to View Bus Transactions.

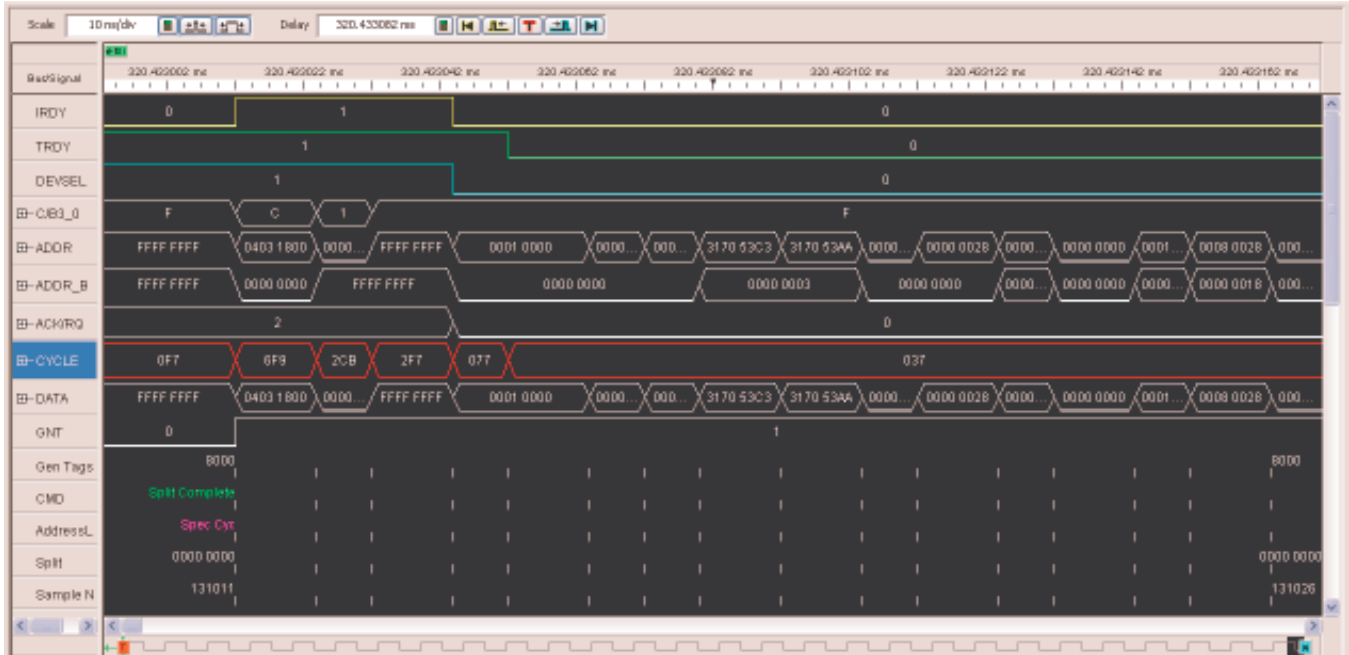
The FS2010's Transaction Viewer software runs on your 1680- or 16900-series logic analyzer, or on a PC to graphically display bus transactions. Start in highlevel summary view to quickly scan transactions. Then use the drill-down feature to expose lowerlevel details of transactions of interest.

### Software-only Analysis Solutions for Embedded or Custom Applications

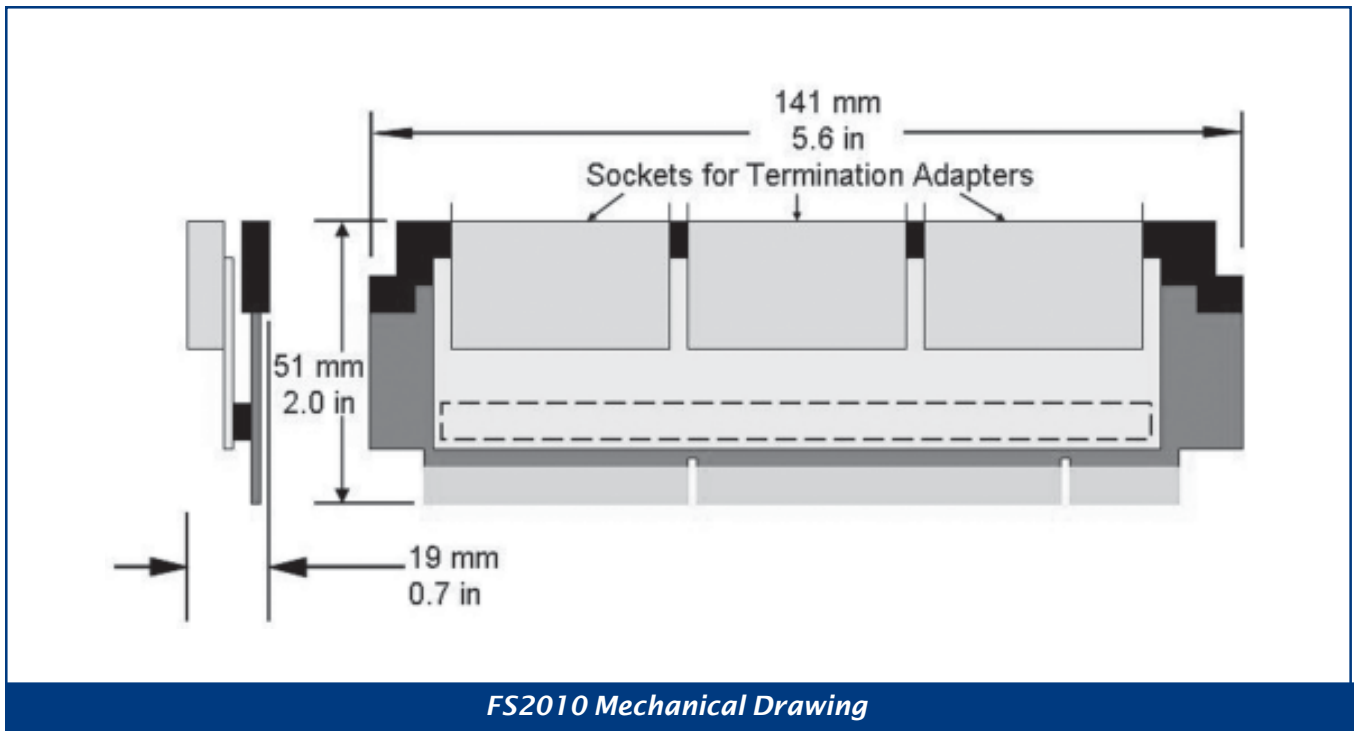
If your PCI-X design is embedded or it does not include a standard PCI/PCI-X connector FuturePlus provides an application note on how to design in test connectors or Agilent Technologies Soft Touch connectorless probing solutions. The application note also provides guidance on

termination adapter selection for specific connection solutions.

The same configuration and protocol decode software that comes with the FS2010 can be purchased separately for embedded or custom applications. Order the FS1111 for use with Agilent 16900-series logic analyzers, or the FS1104 for the Agilent 16700-series systems.



Display of 4 Gsa/s Timing Analysis



FS2010 Mechanical Drawing

## Ordering Information

**FS2010** 64 bit PCI-X Bus Passive Analysis Probe & Extender, 133 MHz - 3.3V (includes hardware and software)

Termination Adapters (2 required for 32 bit, 3 required for 64 bit.)

**Agilent E5378A** - Use with Agilent 90 pin logic analyzer modules.

**Agilent E5385A** - Use with Agilent 40 pin logic analyzer modules.

## Logic Analyzer Requirements

For 32-bit protocol analysis, the FS2010 requires 4 logic analyzer pods with 133 MHz state capability  
For 64-bit protocol analysis, the FS2009 requires 6 logic analyzer pods with 133 MHz state capability

Please note: for the most up-to-date information about Agilent logic analyzer compatibility, please check the FuturePlus Systems website at:  
[http://www.futureplus.com/products/fs2010/fs2010\\_sysreq9.shtml](http://www.futureplus.com/products/fs2010/fs2010_sysreq9.shtml)



More information and application notes are on the FuturePlus Systems website at:  
<http://www.futureplus.com/products/fs2010>

**We offer excellent technical support and quick delivery.**

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