

Serial RapidIO Protocol Analysis Probe

For Use With Agilent Logic Analyzers

FuturePlus Systems
Power Tools for Bus Analysis



FS4410 SRIO Protocol Analysis Probe

- Low-cost SRIO protocol analysis
- Full-size and half-size mid-bus probe with soft-touch contacts
- Flying-lead probe offers maximum probing flexibility
- Includes protocol-decode and Transaction Viewer software
- Supports most Agilent 16700- and 16900-series logic analysis modules



FS4410 Serial RapidIO Protocol Analysis Probe

FS4410 Key Features:

- 8b/10b data acquisition at 3.125, 2.5 or 1.25 Gb/s
- X1 lane, X4 lane and X1x4 lane modes (able to select x1 probing on lane 0 or 2)
- Comprehensive error detection
- Detects packet types and checks packet delimiters
- Packet-aware Data Filtering and Logic Analyzer triggering.
- Supports debug of physical, transport and logical layers (messaging, I/O and streaming)
- Probe Manager software runs on a PC for real-time probe control
- Packet Spreading of X1 link data to four-column format
- Extendable to incorporate PCI Express analysis capability

Straightforward, Reliable SRIO Protocol Analysis

The FuturePlus® FS4410 provides a mechanical, electrical and software interface between a SRIO bus and an Agilent logic analysis system. The probe makes quick, reliable connections to the system under test. Internal termination networks minimize the effects of loading and reflections on the target system. Protocol-decode software decodes and displays incoming data on your logic analyzer.



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.

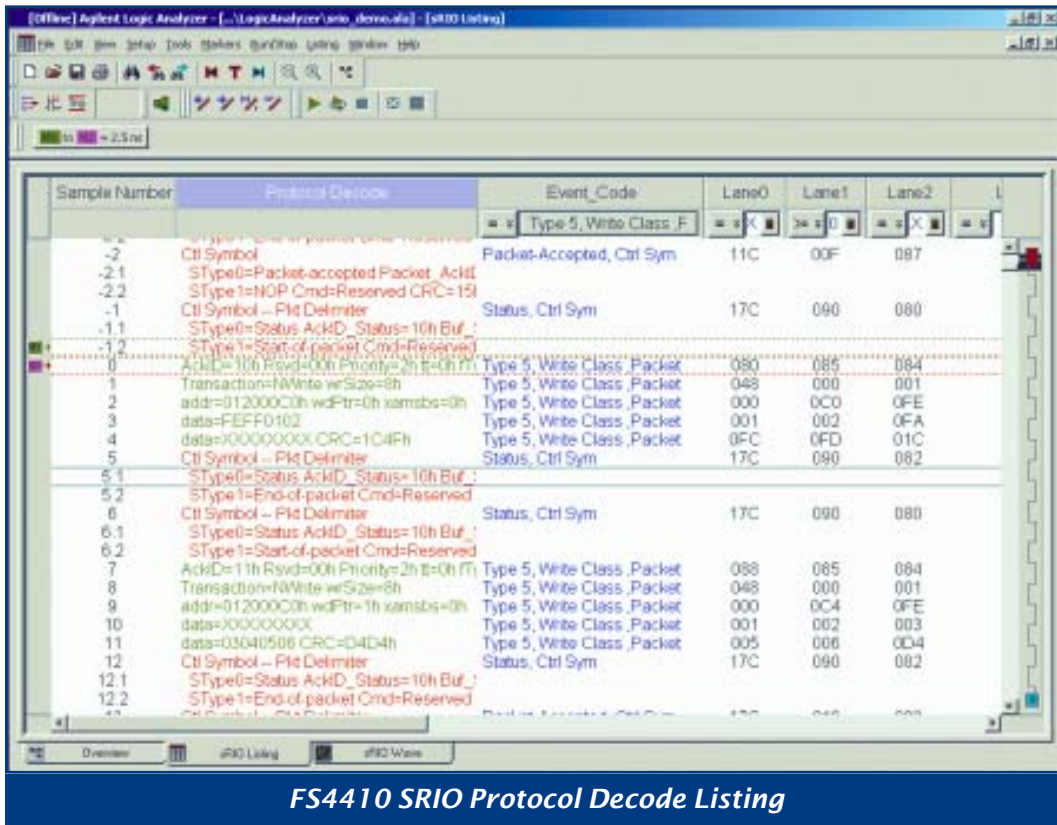
Full-featured, Low-cost SRIO Protocol Analysis

The FS4410 is a low-cost SRIO protocol analysis probe, capable of non-intrusively probing a SRIO bus at a serial data rate of 3.125, 2.5 or 1.25 Gb/s. Equipped with a full-size, half-size mid-bus, or flying-lead probe, it can intercept various combinations of X1 lane, X4 lane and X1x4 lane modes.

Auto-Configuration Software for Quick, Easy Setup

The FS4410 includes configuration files that set up the Agilent logic analyzer labels, symbols and clock assignments necessary for correct capture and decode of your SRIO data.

These files provide rapid setup, and you begin analyzing data in just minutes.



Integral Terminations add Versatility and Save Money

40-pin and 90-pin connectors let you connect to most Agilent logic analyzer modules. Integral termination networks minimize loading and reflections, and eliminate the need for additional termination adapters.

Choose from a Variety of Connection Alternatives

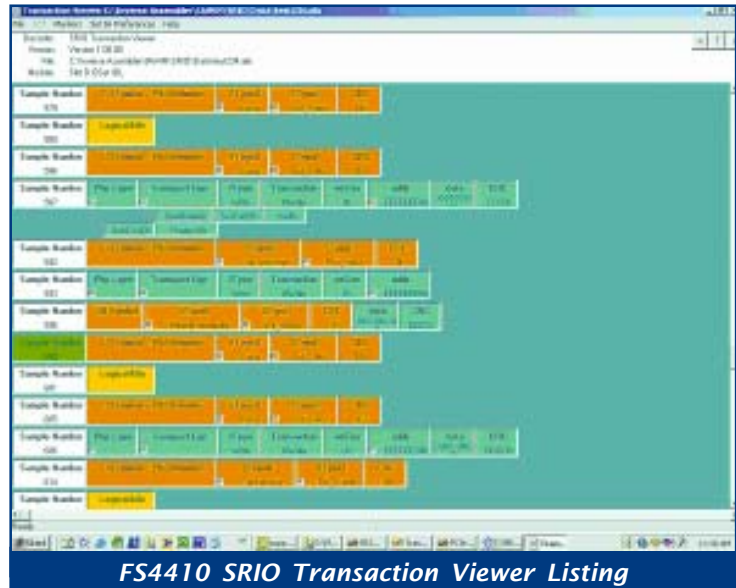
The FS4410 accommodates a variety of low-intrusion connectivity solutions to provide maximum flexibility for a wide range of applications.

Choose from a full- (16-channel) or half-size (eight-channel) mid-bus cable that supports X1 or X4. Or choose compact, passive flying-lead probing for maximum probing flexibility at all supported data rates.

For footprint layout information, please refer to the *SRIO Design Guide*, available free of charge from: www.futureplus.com/download/appnotes/an_srrio_fs4410.pdf

Transaction Viewer: A New Way to Look at Bus Transactions.

The FS4410 Transaction Viewer software runs on your 16900-series logic analyzer or Windows computer to graphically display bus transactions. Start in high-level summary view to quickly scan transactions. Then use the drill-down feature to expose lower-level details of transactions of interest. Markers cross-correlate this display to the traditional logic analyzer state listing.



Technical Details of the FS4410 Serial RapidIO Protocol Analysis Probe

8b/10b Data Acquisition at 3.125, 2.5 or 1.25 Gbps

Reference clock connection provided for SRIO operation where the link transmitter frequency accuracy is outside of 100PPM or if the link transmitter frequency is other than 1.25, 2.5 or 3.125 Gbps. This adds additional flexibility in a testing or emulation environment.

Detects, displays, filters in or out, and allows triggering on the following events:

- Idle Sequence
- Control Symbols with Stype0 and Stype1
- Control Symbols within packets
- **Packet Types:**
 - ✓ Type 0 Pkt
 - ✓ Type 2 Request Class
 - ✓ Type 5 Write Class
 - ✓ Type 6 Screening Class
 - ✓ Type 10 Doorbell
 - ✓ Type 11 Message
 - ✓ Type 13 Response
 - ✓ Type 15 Pkt
 - ✓ Type 1,3,4,7,12,14 Reserved
- Packet Recognizers 1, 2, 3 (Packet Recognizer 3 for triggering only)
- **Control Symbols:**
 - ✓ Pkt Accept
 - ✓ Pkt Retry
 - ✓ Pkt Not Accepted
 - ✓ Status
 - ✓ Link Response
 - ✓ Stype 0
 - ✓ Stype 1
 - ✓ Start of Pkt
 - ✓ Stomp
 - ✓ End of Pkt
 - ✓ Restart from Retry
 - ✓ Link Response
 - ✓ Multicast
 - ✓ NOP

Packet Recognizer Functions

- Used for filtering, triggering or both
- 24 bytes pattern match and bit maskable
- 3 packet recognizers in each direction
- Simple triggering and easier inputs for building more complex triggers

Errors Detected, Displayed, Decoded and Triggered On

- Alignment error (x4 only)
- CRC errors on control symbols
- Framing error
- Unexpected K error
- Packet Ack ID sequence order error
- Link down
- Electrical Idle
- LOS in any lane
- Link Alive
- Signal
- Invalid decode or disparity
- Idle Error.

Other Features

Extendable Functionality: A factory option is available to add PCI Express analysis capability. Switching between the two is accomplished via the Probe Manager Software at power up.

Power Requirement - +5V DC (external supply included)

USB Connector: For probe control from a PC

Preserve Your Equipment Investment: The FS4410 is compatible with most Agilent 16700- and 16900-series logic analyzer modules and configurations.

Mechanical Dimensions: Width: 17 in. (43.2 cm) Depth: 10 in. (25.4 cm) Height: 1 in. (2.54 cm)

Supported Agilent Logic Analyzers

Module	1.25 GHz	2.5 GHz	3.125 GHz
16717 16750 16751 16752	Two Cards	Four Cards (Turbo Mode)	Four Cards (Turbo Mode)
16753 16754 16755 16756	Two Cards	Two Cards	Two Cards
16910	Two Cards	Two Cards	Two Cards (Turbo Mode)
16911	Two Cards	Two Cards	Four Cards (Turbo Mode)
16950	Two Cards	Two Cards	Two Cards

The FS4410 is compatible with the Agilent 16700- and 16900-series logic analysis systems. Equipped with both 40-pin and 90-pin logic analyzer connectors, it is compatible with most 16700- and 16900-series modules that meet other performance requirements.

Connection between the FS4410 and the target system requires one of the adapters listed below.

Note: For the most up-to-date information about logic analyzer compatibility, please check the FuturePlus Systems web site at:
www.futureplus.com/products/fs4410/fs4410/fs4410_sup_analyzers9.html

Ordering Information

FS4410.....Serial RapidIO Analysis Probe

Choose one or more of the following adapter cables

FS1031.....Soft Touch full size, 16- channel mid-bus

FS1032.....Soft Touch 1/2 size, 8-channel mid-bus

FS1036.....Flying Leads, for flexible, passive probing

FuturePlus Systems provides excellent technical support and quick delivery.

Ask about The Bus Analyzer, our free, quarterly newsletter.

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