

FEATURES & BENEFITS

- Record, upload and display up to 6 Gb/s SAS and SATA traffic in seconds using either Gigabit Ethernet or PCI Express management interface
- Eye-Opener front-end, Tunable RX/TX signalling, and accurate 2 ns timestamp resolution
- Available with up to 2 bidirectional ports and up to 18 GBs of trace buffer

ADVANTAGES

- Lightweight and compact design for ultra-portability
- Upload and display traces using USB 3.0, Gigabit Ethernet (> 70 MB/s) or PCI Express x4 (550 MB/s)
- Pre-Indexed Trace for faster searching and display
- Tunable RX/TX signalling
- Cascade two units for time and event based synchronization; data capture of 4 ports simultaneously
- Unique Status LEDs per port

With key features found in few other SAS/SATA analyzers the Micro is a portable, lightweight unit that supports up to 18 GBs of capture buffer, hardware accelerated gigabit ethernet, pre-indexed and compressed trace data and multiple analysis processors.



It is a 2 port 6 Gb/s analyzer that is also compatible with slower speeds and protocols. A 1 port model, licensed upgradable to 2 ports, is also available. SATA data rates of 1.5, 3.0 and 6 Gb/s are supported as are SAS data rates up to 6 Gb/s. Please also refer to the data sheets for the Pro II and Micro II versions of this analyzer. These newest models support data rates up to 12 Gb/s, 4 port configurations and trace buffer sizes up to 72 GBs.

It is portable weighing under 3 lbs or roughly the same as a lightweight notebook computer; but it has the power and capabilities of lab-sized analyzers that are much larger. The analyzer features easy to use triggering, pre/post-filtering, textual search and sequence search, and many different displays of the captured traffic.

The BusXpert provides a variety of powerful traffic displays (some examples are shown below -- see figures 1 and 2), with some optimized for different protocol layers, some optimized for time relationships, some correlate directly with the SAS/SATA specifications, and some provide just the user data. All of the views are exportable via CSV and XML. Additionally, some can be exported to HTML. Bookmarks make it easy to label and discuss specific events in the trace.

Time	T2	I1
0.003.403.504		
0.003.403.508		
0.003.411.684	DONE (NORMAL) BC1E1E1E	
0.003.411.688		
0.003.411.748		
0.003.411.752	CLOSE (NORMAL) [3]	
0.003.411.756		
0.003.411.864		
0.003.411.868		
0.006.614.000		ADDRESS OPEN SSP; 6 Gbps
0.006.614.004		
0.006.614.444		
0.006.614.448		

Figure 1: Protocol View

5	4	3	2	1	0
PROTOCOL 1 (SSP)			ADDRESS FRAME TYPE 1 (OPEN)		
FEATURES (additional features)			CONNECTION RATE A (6 Gbps)		
INITIATOR CONNECTION TAG 0003					
DESTINATION SAS ADDRESS 500000000000100 (XEROX 100)					
SOURCE SAS ADDRESS 500000000000FF00 (XEROX FF00)					

Figure 2: Detail View

BusXpert Micro SAS/SATA Analyzer

The *PROTOCOL* view shows the precise timing relationship of each D-Word in the trace. It is useful for tracking the handshaking between products under test. The *FRAME DETAILS* view shows each frame in the format used by the SAS or SATA specification.

The *SPREADSHEET* view provides extensive decoding of frames, primitives, and Out-of-Band events, and sorts them to show the order they occurred in. The displayed columns are chosen from an extensive list of fields and events.

The *HISTOGRAM* view displays logic signal transitions as an event in time. The *CAPTURE CONTROL* view allows the user to set up the analyzer for trace capture. The analyzer may be stopped in one of three ways: manual stop, buffer full, and by a trigger. Frames may actually be scattered all over the trace (in time), but the *TRANSACTION* view collects all the frames involved in a command and groups them together. Transactions can be expanded or collapsed, and the "Expand All"/"Collapse All" buttons on the main toolbar work in this view too (they only change the active view).

The *FILTER* view allows users to select items to be filtered from the trace. Filtered items are not part of the trace data and are not recoverable. Filtering is used to decrease unwanted items in the trace buffer allowing longer trace times to be taken. Items that are to be included in the

trace are checked. Additional items can be added to the filter list through the "Options" menu.

The *TRIGGER* view is where the user defines and builds the stop trigger. The trigger watches for a certain event (or sequence of events) and then causes the analyzer to stop after the fills according to the settings in the capture control view.

Serialtek makes available the Analyzer in a variety of different configurations to meet varying corporate requirements for buffer size, protocols and budget. All BusXpert analyzers also come with a 3 year Hardware warranty, free product support, and no software maintenance fees for the life of the analyzer. And we provide no obligation, no cost evaluation units.

Our tools are designed to accurately capture, decode and analyze high-speed storage and communication traffic. Our solutions help engineers verify, locate and resolve issues with their product designs. This shortens development and testing cycles, improves product quality and reduces time to market. Contact us to schedule a demo and find out more.

Specifications

Number of Ports	1 Port	2 Port
Data Rates Supported	Up to 6 Gb/s	
Protocols Supported	SATA	SAS/SATA
Trace Buffer	Min: 2.25 GB/s; Max: 18 GBs	
Front Panel Connectors	SATA, Trigger In, Trigger Out	
Front Panel Controls	Power ON/Off, Manual Trigger	
Front Panel Status LEDs	Speed, OOB, Link, Frame, 10b Error, Command, Error Status	
Rear Panel Connectors	Power, Ethernet, PCI Express, Cascade	
Communication Interfaces	GigaBit Ethernet, PCI Express	
Dimensions	6 inches (width) x 9 inches (depth) x 1.75 inches (height) / 15.2 cms x 22.9 cms x 4.4 cms	
Weight	3 lbs; 1.4 kgs	
Power	19V-4.7A (External Switching Power Adapter provided by SerialTek)	
Environmental	Operating: 40 Degrees C Max Ambient Temperature	



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