Xgig® 6 Gb/s SAS/ SATA Analyzer

The Viavi Solutions leading Xgig® Analyzer is the most powerful monitoring and analysis system available for SAS and SATA applications, offering complete visibility into traffic flows with advanced trace and analysis capabilities. This multi-purpose, multi-protocol tool is designed to help users overcome high-speed serial design challenges and accelerate development of today's Storage Area Networks (SAN) and storage subsystems. Line rates supported include 1.5, 3.0, and 6.0 Gb/s for both SAS and SATA.

The Viavi Xgig SAS/SATA Analyzer is a versatile, state-of-art solution for monitoring and analyzing live traffic employing a chassis-and-blade hardware architecture. This release of the Analyzer supports the Viavi 6 Gb/s 4-Wide blade with dual mini-SAS 4x receptacles, allowing bidirectional analysis of single and wide-port (up to 4-wide) SAS links. Double-width blades occupy two slots in a 4-slot Xgig chassis[1] and provide 2 GB RAM per port, with a total of 16 GB for the entire blade (8 ports x 2 GB).

Comprehensive Protocol Support

In order to assist users in designing leading edge equipment, the Xgig Analyzer provides full line rate monitoring and analysis for SAS-2 at 6 Gb/s, as well as transparently supports all protocol changes introduced, including new multiplexing and Out-of-Band signaling capabilities. The Xgig Analyzer's SAS-2 multiplexing features include triggering and filtering on all logical links, viewing of separate Logical Link 0 and Logical Link 1, and Xgig Expert analysis of multiplexed traces. The Analyzer also shows SAS/SATA Out-of-Band (OOB) sequences – low-speed analog signaling patterns used to both reset and set up link properties – graphically so users can quickly identify OOB-based errors. By capturing the timing of every Data Burst and D.C. Idle on both sides of OOB negotiations, as well as automatically detecting OOB signaling patterns (COMWAKE, COMRESET, COMINIT, and COMSAS, each denoted using a different color), users are able to verify that both the host and device under test are performing OOB signaling as expected.

Key Features

- Protocol-aware analysis at 1.5, 3.0, and 6 Gb/s for both SAS and SATA
- Full network visibility with 100% capture at line rates
- Deep 2 GB trace memory buffer per port, up to 16 GB per blade, for capture of multiple traces
- Analyzes SAS-2 multiplexed traces
- Tests SAS-2 features running both at-speed and at lower clock rates
- Supports Passive "Analog Passthrough" to minimize the analyzer's effect on signal integrity and Active "Digital Passthrough" Signal Retiming for use with extended cable lengths

Benefits

- Eases troubleshooting with the industry's most powerful trace capabilities and advanced monitoring and analysis tools
- Accelerates development through patented search and filtering capabilities, including DWORD searches within frames
- Speeds identification of impairments using advanced Traffic Summary View and graphical display of Out-of-Band sequences
- Provides the ability to analyze large port counts with time-sync groups up to 64 ports
- Automates troubleshooting with advanced scripting and capture capabilities
- Eliminates cabling complexity using native Mini-SAS 4x Connector Interfaces

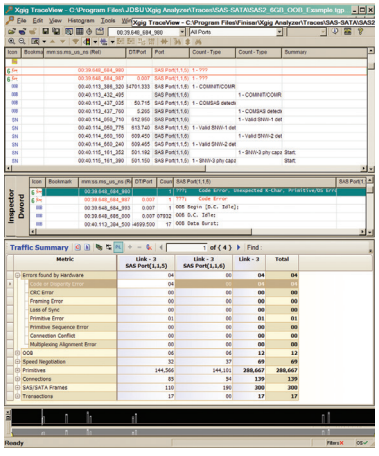
Non-Intrusive Monitoring

Different applications have different signaling sensitivities. For minimal signal impact, the Xgig Analyzer offers an Analog Passthrough mode which provides a truly passive, high-impedance, low-latency network connection. The Analyzer passes every monitored bit through exactly as received, enabling users to see the same signal as the device under test sees. While this capability has always been part of Xgig Analyzers, Viavi has refined and improved the Xgig 6 Gb/s SAS/SATA Analyzer to address the specific characteristics of these protocols at high speeds.

For extended cable lengths, Xgig provides a Digital Passthrough mode to help maintain signal integrity. By decoding the incoming bits and clock and then actively retiming signals as they are encoded for retransmission, longer cable lengths are possible than with Analog Passthrough.

Multi-Function Support

With Xgig's multi-function capability, users can leverage a single blade to perform several functions for dramatic capital expense savings. In addition to capturing and analyzing traffic, SAS/SATA blades support traffic Jammer and Generation capabilities, accessible by toggling software switches2. Multi-function capabilities are managed using simple-to-use Xgig Maestro GUI software to inject (jam) errors into live traffic as well as generate arbitrary SAS (SSP, SMP, and STP) and SATA protocol traffic at full line rate with three levels of control. In this way, users can perform comprehensive testing and analysis to expose, identify, locate, and resolve network impairments.



Xgig TraceView with new Trace Summary View (TSV)

Enhanced Analysis Capabilities

The Xgig Analyzer offers a wide array of analysis capabilities, including:

- Industry's most powerful trace capabilities
- Patented search and filtering functionality
- Multi-protocol support
- Largest trace buffers
- Memory segmentation to allow multiple trace captures
- Xgig Expert, providing automatic analysis of more than 1800 metrics and 1200 analysis functions across protocols.

New 6 Gb/s SAS/SATA capabilities include:

- Traffic Summary View supporting OOB signaling, primitives, error event types, frames, connections, and transaction event types, as well as navigation between each counter and associated events in the trace
- Analysis of multiplexed traces
- Triggering and filtering across all logical ports
- Protocol-aware decoding of all new SAS-2 primitives and zoning commands

Advanced Automation

Many design tests and troubleshooting procedures involve complicated and repetitive processes. With both GUI and API options available, users can define scripts from simple commands to complex regression test libraries, enabling automation of Xgig's extensive capabilities.

Synchronization and Sharing

With the ability to cascade up to four Xgig chassis, users can form synch groups bringing together up to 64 time-synchronized SAS/SATA ports. Alternatively, using Xgig's port leasing model, the same set of hardware can be reconfigured to allow up to 32 individual simultaneous users to leverage a single test setup.

Part Numbers	
Xgig-Z46ASa	Double-wide Wide-port (4xlink) 6 Gb/s
SAS/SATA Analyzer	Analyzer Complete Solution (16 GB memory)

1 Wide-blades are not compatible with either 1 or 2-blade Xgig chassis.

2 Additional functions and options are available through purchase of a function key, talk to your Viavi Sales Representative

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