

## Xgig® LXP 6 Gb/s SAS/SATA Development System



Xgig 6Gb/s SAS/SATA LXP Development Platform

### Benefits

- Dual-link all-in-one architecture provides a full-featured development environment at an attractive cost of ownership
- 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 time-synchronized groups up to 16 ports (8 bidirectional links), so the LXP can grow with your organization
- Automates troubleshooting with advanced scripting and capture capabilities to allow users to pinpoint issues faster
- Eliminates cabling complexity using native Mini-SAS 4x Connector Interfaces and supports the JDSU Link Extender (LE) and Configurable Link Extender (CLE)

### Key Features

- Protocol-aware analysis at 1.5, 3.0, and 6.0 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 8 GB per LXP system, for capture of multiple traces
- In addition to Analyzer, the LXP also supports host and target emulation, and error injection (Jammer)
- Analyzes SAS and SATA 6Gb/s 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 Retiming” signal retiming for use with extended cable lengths

The JDSU Xgig® LXP is the most powerful development system available for SAS and SATA applications, offering a complete set of development functions, such as host and target emulation, and error injection (Jammer), in addition to award-winning analysis capabilities. This multi-purpose tool is designed to help users overcome high-speed serial design challenges and accelerate development of today's storage subsystems. Line rates supported include 1.5, 3.0, and 6.0 Gb/s for both SAS and SATA.

The JDSU Xgig LXP SAS/SATA Development System is a versatile, state-of-art solution for creating, monitoring and analyzing live traffic employing an all-in-one system architecture. The system supports dual mini-SAS 4x receptacles, allowing bidirectional operation of single or double SAS/SATA links. The system supports 2 GB RAM per port, with a total of 8 GB for the entire LXP system (4 ports x 2 GB).

### Xgig Analyzer—Comprehensive Protocol Support

In order to assist users in designing leading-edge equipment, the Xgig Analyzer provides full line rate monitoring and analysis for both SAS and SATA at 6 Gb/s, as well as supports all protocol changes introduced, including new multiplexing, power management and Out-of-Band (OOB) 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 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.

### Non-Intrusive Monitoring

Different applications have different signaling sensitivities. For minimal signal impact, the Xgig LXP offers an Analog Passthrough mode which provides a truly passive,

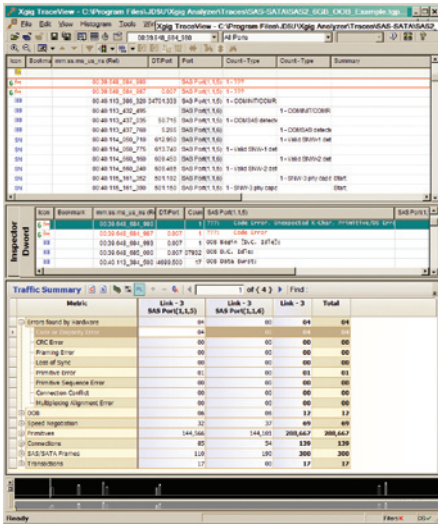


Figure 1: Xgig TraceView with new Trace Summary View (TSV)

## Enhanced LXP Capabilities

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

- Industry’s most powerful trace capabilities
- Patented search and filtering functionality
- Concurrent single or dual user support
- Memory segmentation to allow multiple trace captures
- Xgig Expert, providing automatic analysis of more than 1800 metrics and 1200 SAS/SATA analysis functions.

### 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 within SAS multiplexed traces
- Protocol-aware decoding of all new SAS-2 and SATA Gen-3 6 Gb/s primitives and zoning commands

high-impedance, low-latency network connection. The LXP 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 products, JDSU has refined and improved the Xgig 6 Gb/s SAS/SATA LXP to address the specific characteristics of these protocols at high speeds.

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

## Multi-Function Support

With Xgig LXP multi-function capability, users can leverage two bidirectional ports, either independently or together, to perform several functions for dramatic capital expense savings. In addition to capturing and analyzing traffic, LXP systems support error injection (Jammer), and host and target emulation capabilities, accessible by toggling software switches<sup>1</sup>. 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.

## 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 LXP chassis, users can form sync groups bringing together up to 16 time-synchronized SAS/SATA ports. Alternatively, using Xgig’s port leasing model, the same set of hardware can be reconfigured to allow up to 8 individual simultaneous users to leverage a single test setup.

## Specifications

Physical	Width 11.88 in / 30.2 cm Depth 13.44 in / 34.1 cm Height 2.44 in / 6.2 cm Weight 5.0 lbs / 2.3kg (system weight includes the blade)
Mount	No rack mount
Power Consumption	130W
Fuse Protection	2.5A 250V
Input Voltage Range	90-265 VAC
Input Frequency	50/60 Hz
Inrush Current (Peak)	12.5A Maximum

## Part Numbers

XGIG-C012-6GP-22	LXP System with 2 Analyzers & 2 functions
XGIG-C012-6GP-21	LXP System with 2 Analyzers & 1 function
XGIG-C012-6GP-20	LXP System with 2 Analyzers (4 ports/2 links)
XGIG-C012-6GP-11	LXP System with 1 Analyzer & 1 function
XGIG-C012-6GP-10	LXP System with 1 Analyzer (2 ports/1 link)

<sup>1</sup> Additional functions and options are available through purchase of a function key, talk to your JDSU Sales Representative

## Test & Measurement Regional Sales

<b>NORTH AMERICA</b> TEL: 1 888 746 6484 sales-snt@jdsu.com	<b>ASIA PACIFIC</b> apacsales-snt@jdsu.com	<b>EMEA</b> emeasales-snt@jdsu.com	<b>WEBSITE: <a href="http://www.jdsu.com/snt">www.jdsu.com/snt</a></b>
---	---	---------------------------------------	--