DATA SHEET

A400GE-QDD 400GE Layer 1 BERT and KP4 FEC Multiport Test System

Spend Less Time Finding Problems and More Time Solving Them.

Challenge: Finding Problems Faster and Earlier in the 400GE Development Cycle

400 Gigabit Ethernet (GE) technologies based on the 56Gb electrical lane signaling rates have exponentially increased the level of complexity for the development of stable port electronics in all networking devices. Now, the challenge has become characterizing and quantifying the actual bit error ratio (BER) and forward error correction (FEC) performance of silicon devices, application-specific integrated circuits (ASICs), fiber and copper interconnects, optical transceivers, and the port electronics of switches and routers. Identifying 400GE, 200GE, 100GE, and 50GE BER and FEC problems quickly is critical as answers are complex and time-consuming to solve.

Solution: A Simplified, Affordable BERT and FEC Test System

Ixia's A400GE-QDD test system makes the challenge of qualifying BER on 400GE electronics easier and affordable. Whether validating chips, optical transceivers, or port electronics, the A400GE-QDD is a dedicated BERT and FEC test system with 56Gb electrical lane signaling per port that gives you the ability to find a problem in minutes, not hours. It shows a system-level view of the BER performance of all the lanes, all at once, in real time.

Highlights

- Validate the BER performance of high-port-count devices with 4-ports of the A400GE-QDD 400GE BERT Layer 1 capabilities with Ixia's KiOS multi-port application
- Find problems faster with KiOS browser-based single page application (SPA), system-view of all the BERT and FEC statistics of all the lanes with 1x400GE, 2x200GE, 4x100GE, and 8x50GE speed support
- Evaluate new optical transceiver and copper cable interconnect BER performance in minutes, not hours
- Easily perform long-duration and stress tests using Ixia's KP4 FEC symbol bit error distribution analysis—excellent for catching bursty and thermal errors that occur over time
- Simplify connection of A400GE-QDD to Keysight's M8040A BERT analyzer and your development boards using our optional host and module compliance boards, cables, and adapter bundles
- Leverage field-proven technology that is an extension of our two generations of 400GE QSFP-DD test systems

A400GE-QDD 400GE 4-port BERT Layer 1 Chassis System

KEYSIGHT TECHNOLOGIES

The A400GE-QDD is a compact BERT and FEC symbol error correction performance benchtop test system. It may be installed on a rackmount as desired. The chassis is provided with the Layer 1 BERT 400GE test software, KiOS. The KiOS single-page application (SPA) uses the Google® Chrome® browser implementation and makes set up so easy and fast, you can start testing within minutes. An optional RS-544 (KP4) FEC symbol error correction test capability is available that simplifies FEC lanes testing, just as easily as Layer 1 BERT. Ixia's FEC codeword bit-error density distribution analysis (the FEC tail) shows the symbol error performance and other advanced measurements when it comes time to perform long-duration and stress tests; it cannot be made any easier. This provides your development teams test capabilities to quickly pinpoint problems and to validate and qualify excellent BER and symbol error correction performance.

A400GE-QDD chassis are available in two models:

- 2-port, 400GE Layer-1 BERT QSFP-DD test system (941-0080)
- 4-port, 400GE Layer-1 BERT QSFP-DD test system (941-0081)

Pay as You Grow—2-port and 4-port Models, All Field Upgradeable

A400GE-QDD upgrades extend the reuse of the chassis system and improves your ROI. The ability to upgrade A400GE-QDD to have it grow with your test needs is quick and easy. You can field-upgrade any A400GE-QDD 2-port model to a full 4-port model. You can also field-upgrade any 2- or 4-port model to add RS-544 FEC (KP4) test capability.

The A400GE-QDD can be upgraded in the field to support interconnection and synchronization with Keysight's M8040A high-performance BERT analyzer. The combined system is a symbol striped FEC-aware physical layer BER tester. It is a solution for 400GE characterization and compliance test to perform physical layer channel stress and impairment of a channel. Additionally, optical receiver stress testing (ORST) may be performed.

Module and Host Compliance electrical breakout boards, cables, and adapter bundles make it easy to connect the A400GE-QDD chassis to development systems to test chips, optical transceivers, and direct attach copper (DAC) cables.

Mix and match whatever upgrades you require, whenever you need them. You are no longer stuck with a dedicated piece of hardware with no hope of extending its capabilities. With A400GE-QDD, you have the critical return on investment (ROI) for today's and tomorrow's test needs.

Key Features

- The A400GE-QDD is an excellent test platform for 400GE communications devices and hardware ports that use the 8x56Gb electrical interface with PAM4 encoding that is IEEE 802.3bs and IEEE 802.3cd compliant
- Ethernet speed support for: 1x400GE, 2x200GE, 4x100GE, and 8x50GE for BER and FEC symbol error correction performance measurements
- A SPA, highly intuitive, fast, and efficient web-browser-driven UI supported by Google Chrome makes BER and FEC testing truly fast and simple
- The Layer 1 BERT capability is extended over previous generations of Ixia 400GE hardware with the ability to send PRBSQ patterns and it generates per-lane BER measurements and an array of additional statistics

- PRBS pattern generation includes PRBS31Q, PRBS-23Q, PRBS-20Q, PRBS-15Q, PRBS-13Q, PRBS-11Q, PRBS-9Q, PRBS-7Q, and SSPRQ50
- Hardware Clock IN and Clock OUT interface to receive a clock in from an external device, or to output the clock from the A400GE-QDD chassis
- +/- 100 PPM line frequency adjustment that is applied to all enabled ports across the A400GE-QDD chassis system
- Support for optical transceiver and copper cable interconnects
- Host QSFP-DD provides default and user-selectable Tx host equalization controls with user adjustable custom settings for all lanes, or on any individual lane
- Common management interface specification (CMIS) support for v3.0 and v4.0, user selectable, or use the version auto-detection feature; CMIS is for optical transceivers and copper cables
- Option for RS-544 (KP4) FEC test capability
    - 400GE FEC symbol error distribution analysis with a comprehensive set of FEC corrected and uncorrected count and rate statistics including BER statistics for FEC analysis
    - Extensive per-port and per-lane statistics
    - Advanced measurements such as pre-FEC BER and frame loss ratio (FLR)
- The 2-port model (941-0080) may be upgraded with a purchasable field upgrade to a 4-port model (941-0081) at any time
- Both the 2-port and 4-port models can be upgraded in the field to support interconnection and synchronization with Keysight's M8040A High Performance BERT analyzer; the combined system is a symbol striped FEC-aware physical layer BER tester; please see the ordering information section of this datasheet

Single-Page Application User Interface

The new KiOS, Ixia's latest innovation in the user interface experience, is a SPA and is supported by the Google Chrome web browser. This makes the UI fast, and responsive. The setup of the BERT and FEC tests and the presentation of the test results is quick and easy. Within a few mouse clicks, a test is set up and in seconds, the results are only 1 or 2 mouse clicks away.

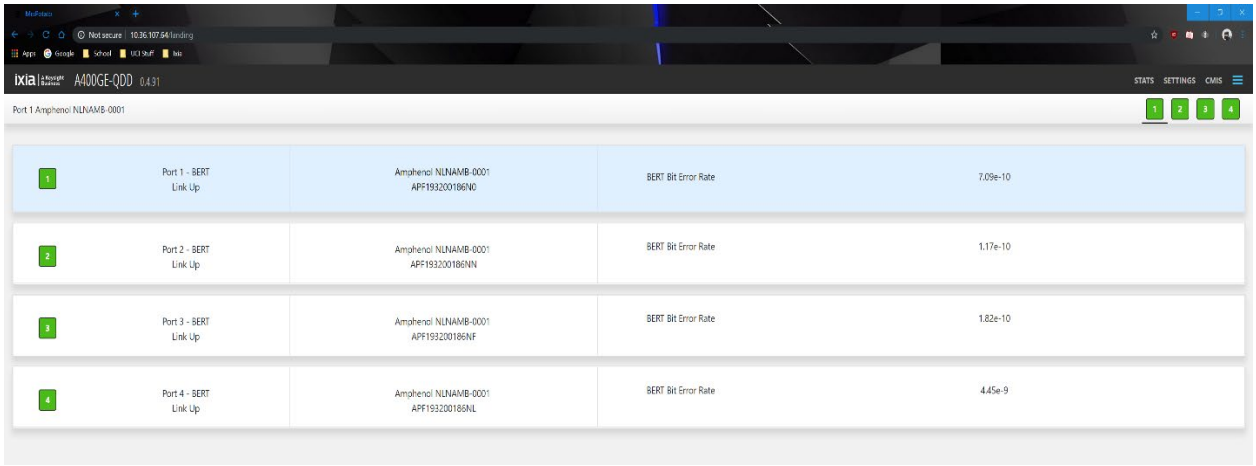
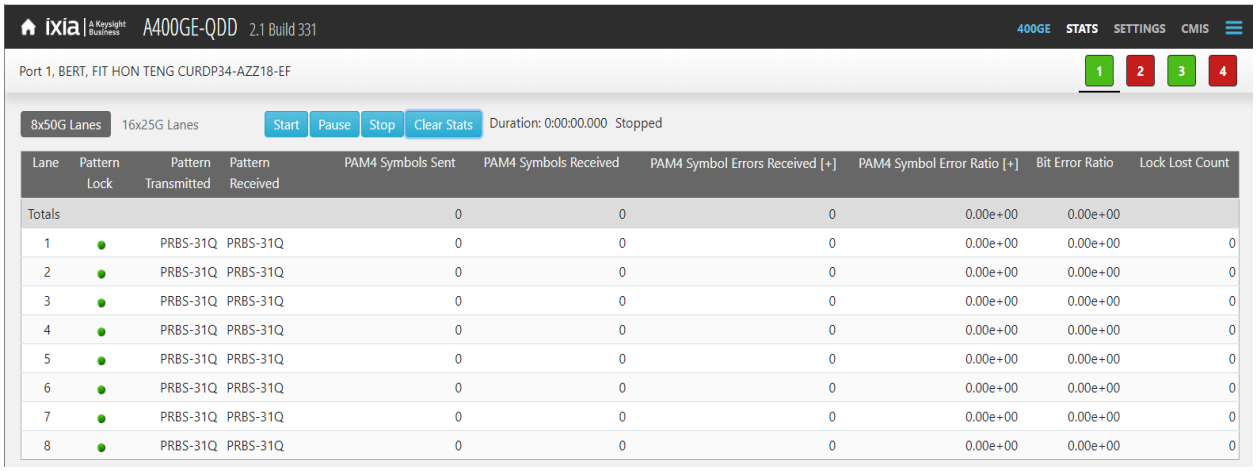


Figure 1. KiOS main page – Overall port configurations, port/link status, and test mode set up. One-click zooms into any of the ports of interest.

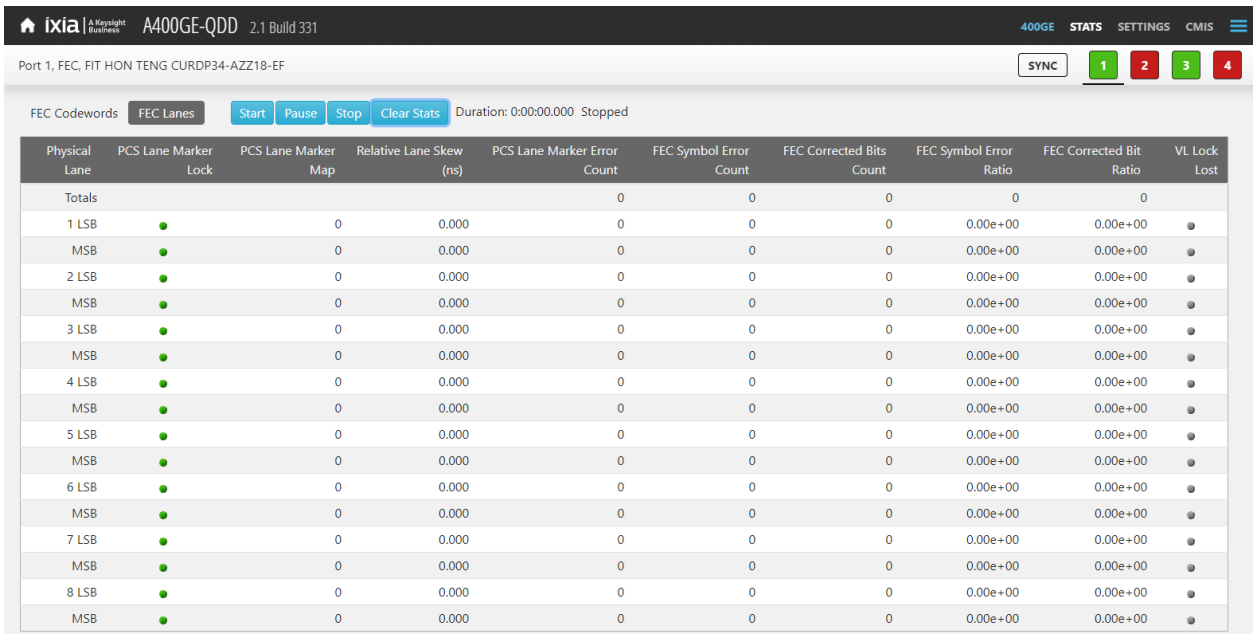
With KiOS, moving from test setup to a port or QSFP-DD host configuration, CMIS, and statistical interfaces is effortless.

Seeing instant test results on one port or across multiple ports is simple. Using Chrome's tiling feature, open multiple windows simultaneously to display different views of the test or configuration as desired.



Lane	Pattern Lock	Pattern Transmitted	Pattern Received	PAM4 Symbols Sent	PAM4 Symbols Received	PAM4 Symbol Errors Received [+]	PAM4 Symbol Error Ratio [+]	Bit Error Ratio	Lock Lost Count
Totals				0	0	0	0.00e+00	0.00e+00	
1	●	PRBS-31Q	PRBS-31Q	0	0	0	0.00e+00	0.00e+00	0
2	●	PRBS-31Q	PRBS-31Q	0	0	0	0.00e+00	0.00e+00	0
3	●	PRBS-31Q	PRBS-31Q	0	0	0	0.00e+00	0.00e+00	0
4	●	PRBS-31Q	PRBS-31Q	0	0	0	0.00e+00	0.00e+00	0
5	●	PRBS-31Q	PRBS-31Q	0	0	0	0.00e+00	0.00e+00	0
6	●	PRBS-31Q	PRBS-31Q	0	0	0	0.00e+00	0.00e+00	0
7	●	PRBS-31Q	PRBS-31Q	0	0	0	0.00e+00	0.00e+00	0
8	●	PRBS-31Q	PRBS-31Q	0	0	0	0.00e+00	0.00e+00	0

Figure 2. BERT Stats page – All 8x50G lanes, PRBSQ Tx/Rx configuration, pattern lock status, BER statistics. Includes real-time start/stop/clear controls. Ports 1 and 3 have a passive copper DAC installed.



Physical Lane	PCS Lane Marker Lock	PCS Lane Marker Map	Relative Lane Skew (ns)	PCS Lane Marker Error Count	FEC Symbol Error Count	FEC Corrected Bits Count	FEC Symbol Error Ratio	FEC Corrected Bit Ratio	VL Lock Lost
Totals				0	0	0	0	0	
1 LSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
MSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
2 LSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
MSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
3 LSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
MSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
4 LSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
MSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
5 LSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
MSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
6 LSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
MSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
7 LSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
MSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
8 LSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●
MSB	●	0	0.000	0	0	0	0.00e+00	0.00e+00	●

Figure 3. FEC Lanes Rx Stats page – All FEC lanes with PCS Lane Marker lock status, and BER statistics. Includes real-time start/stop/clear controls. Ports 1 and 3 have a passive copper DAC installed.

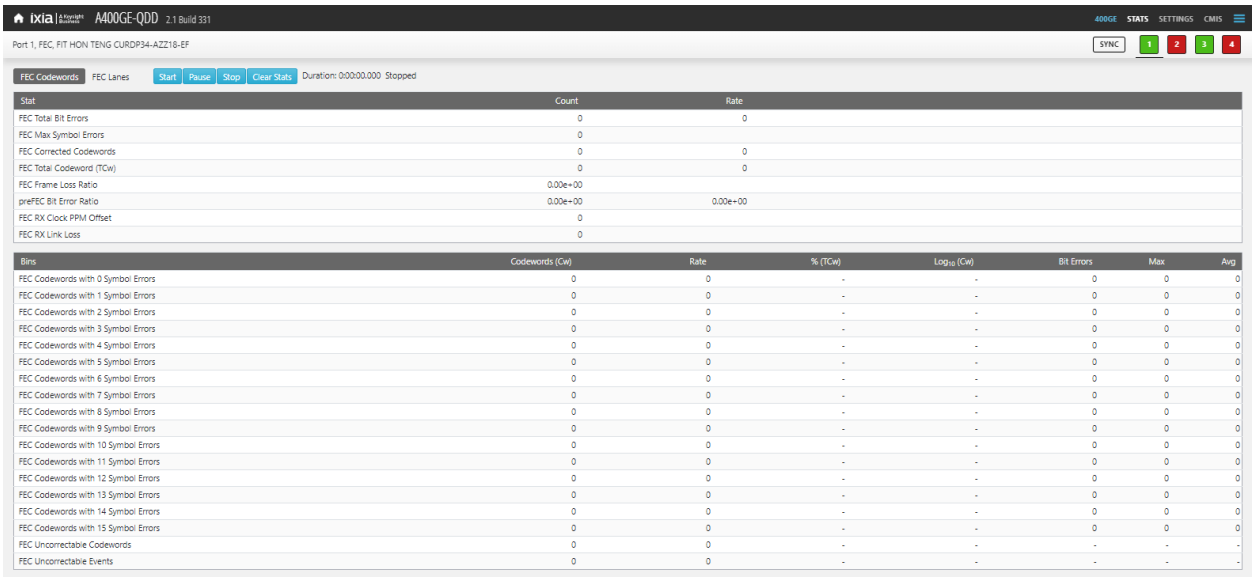


Figure 4. FEC Codeword Stats page – FEC port stats with advance measurements such as Pre-FEC BER, Frame Loss Ratio. Lower half are the FEC codeword bit-error distribution analysis. Excellent tool for stress and long duration tests. Includes real-time start/stop/clear controls. Ports 1 and 3 have a passive copper DAC installed.

Specifications

Product Description	A400GE-QDD 2-port	A400GE-QDD 4-port
Chassis Physical & Electrical Specifications		
Part Numbers	941-0080	941-0081
Physical Interfaces	Native QSFP-DD MSA form factor compatible physical ports	
Chassis Configurations	2-port chassis system, desktop or rackmount, 2 RU	4-port chassis system, desktop or rackmount, 2 RU
Chassis Connector Systems	• Power ON/OFF button • 1 LED per port • Clock IN / OUT: 2 SMA female connectors • Trigger IN / OUT: 2 SMA female connectors • 4 USB: (2) USB 2.0 (2) USB 3.0 compatible ports • 1 RJ45: 1000/100/10Mbps Ethernet management port • 1 Display Port, supports a maximum resolution of 4096 x 2304 @60Hz	
Chassis Clock IN – Electrical Specifications	• Frequency: 166.015625 MHz +/- 100 PPM • 50 ohm termination • Minimum = 0.5 Vpk-pk = 0.18 Vrms (sine) • Maximum = 3.0 Vpk-pk = 1.06 Vrms (sine)	

Product Description	A400GE-QDD 2-port	A400GE-QDD 4-port
Chassis Clock OUT – Electrical Specifications	• Frequency: 166.015625 MHz +/- 100 PPM • HCSL, 50 ohm • VOH > 0.55 V, VOL < 0.15 V, Swing > 0.55 V	
Hardware Trigger IN / OUT – Electrical Specifications	• Trigger In: 50 ohm termination; Minimum = -1.0 V, Maximum = +4.0 V, Swing > 0.2 V • Trigger Out: HCSL, 50 ohm; VOH > 0.55 V, VOL < 0.15 V, Swing > 0.55 V	
Chassis System Electrical Power	• Operates on 100-240VAC, 50/60Hz: ◦ 8 Amps on 100-125VAC ◦ 4 Amps on single phase, 200-240VAC • A400GE-QDD chassis is shipped with (1 each) 100-125VAC North American power cord. Options for international shipments are selected at the time of order placement.	
Chassis System Dimensions	• 11.14” (L) x 17.4” (W) x 3.65” (H) • 283mm (L) x 442mm (W) x 92.65mm (H)	
Chassis System Weights	• Hardware only: 21.75 lbs. (9.87 kg) • Shipping: 30.49 lbs. (13.83 kg) • Includes rackmount slides, cable support bracket, power cord, accessories and packaging	
Temperature (Ambient Air)	• Operating: 41°F to 95°F (5°C to 35°C) • Storage: 41°F to 122°F (5°C to 50°C)	
Humidity (Ambient Air)	• Operating: 0% to 80%, non-condensing • Storage: 0% to 80%, non-condensing	
Regulatory Compliance Specifications	IEC 60950-1, UL 60950-1, CSA C22.2 No.60950-1, IEC 62368-1, UL 62368-1, CSA 62368-1, CE (LVD, EMC, RoHS), EN/IEC 55032, EN/IEC 55024, CFR 47, FCC Part 15B, ICES-003, AS/NZ CISPR 32/24, KN32/35	
Chassis System Specifications		
Chassis System	• Layer 1 BERT test and measurement capability included • Includes KiOS operating software • Web browser user interface support via Google Chrome • Rackmount ears for 19” rackmount included • May be used on a benchtop with user-installed feet • Cable support bracket	
Supported Port Speed Modes	• 1x400GE • 2x200GE break-out • 4x100GE break-out • 8x50GE break-out	

<table>
<tr><th>Product Description</th><th>A400GE-QDD
2-port</th><th>A400GE-QDD
4-port</th></tr>
<tr><td></td><td colspan="2">• All ports must be run at the same speed
• Compatible with QSFP-DD form factor optical transceivers and copper DACs</td></tr>
<tr><td>IEEE Interface Protocols for 400GE</td><td colspan="2">• IEEE 802.3bs 200GE & 400GE, 400GBASE-R
• IEEE 802.3cd 50 Gb/s, 100 Gb/s, and 200 Gb/s Ethernet</td></tr>
<tr><td>Optical Transceiver Support</td><td colspan="2">Support for all QSFP-DD MSA compliant optical transceivers up to Power Class 7 with 14 watts of power consumption such as: 400GBASE-DR4, 400GBASE-FR4, 400GBASE-LR8 and 400GBASE-SR8, plus other optical transceiver types (e.g., QSFP56), and AOCs. Please consult the factory for specific transceiver support information. See Optical Transceivers under the Ordering Information section of this data sheet.
<table>
<tr><th rowspan="2">Module Power Class</th><th rowspan="2">Ambient Temperature</th><th colspan="3">Module Case Temperature Range</th></tr>
<tr><th>Standard</th><th>Extended</th><th>Industrial</th></tr>
<tr><td>6 or below</td><td>5 °C to 35 °C</td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>7 or below</td><td>5 °C to 35 °C</td><td></td><td>✓</td><td>✓</td></tr>
<tr><td>7 or below</td><td>5 °C to 25 °C</td><td>✓</td><td>✓</td><td>✓</td></tr>
</table>
QSFP-DD MSA case temperature ranges:
• Standard 0 °C to 70 °C
• Extended -5 °C to 85 °C
• Industrial -40 °C to 85 °C</td></tr>
<tr><td>Copper Cable Support</td><td colspan="2">400GBASE-CR8, passive, copper Direct Attached Cable (DAC) up to 3 meters in length. Please consult the factory for longer lengths and information on Active Copper Cable (ACC). See Copper Cables under the Ordering Information section of this datasheet.</td></tr>
<tr><td>Common Management Interface Specification (CMIS)</td><td colspan="2">• v3.0 and v4.0, auto-detected or user selectable
• May be used with copper and optical interconnects</td></tr>
<tr><th colspan="3">Chassis Feature Specifications</th></tr>
<tr><td>Layer 1 BERT</td><td colspan="2">400GE native ports:
• Layer 1 unframed, BERT Tx and Rx capability, 26.5625 GBaud
• PRBS pattern support: PRBS31Q, PRBS-23Q, PRBS-20Q, PRBS-15Q, PRBS-13Q, PRBS-11Q, PRBS-9Q, PRBS-7Q
• SSPRQ50 is supported on the Tx-side only
• User selectable, per lane PRBSQ pattern assignment</td></tr>
</table>

Product Description	A400GE-QDD 2-port	A400GE-QDD 4-port
	• Tx and Rx pattern inversion support • Auto detect of Rx pattern, or discreet detection of selected pattern	
Layer 1 BERT Statistics	• General controls: Start, Stop, and Clear • Display: 8x50G lanes or 16x25G lanes • Per lane indicators: Pattern Lock, PRBSQ Pattern transmitted, PRBSQ Pattern Received • Per lane BERT statistics: ◦ PAM4 Symbols Sent ◦ PAM4 Symbols Received ◦ PAM4 Symbol Errors Received ◦ Mismatched 00's ◦ Mismatched 01's ◦ Mismatched 11's ◦ Mismatched 10's ◦ PAM4 Symbol Error Ratio ◦ Lost Lock Count ◦ Bit Error Ratio (BER) ◦ Symbol Error Ratio (SER) in 8x50G lane display mode only ◦ Transmit duration time	
Host QSFP-DD Signal Controls	Provides default and user-selectable pre-emphasis controls for the following: • Ixia-derived default Tx tap settings are provided for electrical and optical media • Tx Host SerDes controls and ranges: o Drive amplitude (233mV to 991mV) o Pre-Cursor (0 dB to -8.7 dB) o Pre-Cursor 2 (0 dB to -2.7 dB) o Post-cursor (0 dB to -8.4 dB) • User adjustable, custom settings for: All lanes, any group of lanes, or on an individual lane • The Rx side has an auto-adaptive CTLE (Continuous Time Linear Equalization) and does not require manual tap settings	
Transmit Line Clock Adjustment	Ability to adjust the line frequency over a range of +/- 100 PPM that is applied to all enabled ports across the A400GE-QDD chassis system.	
Transmit/Receive Loopback	Internal loopback may be set per port	

Product Description	A400GE-QDD 2-port	A400GE-QDD 4-port
Forward Error Correction (FEC) Option - Feature Specifications		
FEC Support	Reed-Solomon RS-FEC (544, 514), (KP4 FEC) • 400GE FEC codewords with scrambled idles • 100GE FEC codewords with scrambled idles	
FEC Lanes Rx Statistics	• General controls: Start, Stop, and Clear • Transmit duration time • Display: 0-8 lanes each with MSB and LSB lane display • Per lane indicators: PCS lane marker lock, PCS lane marker map, Virtual lane lock lost • Per lane PCS and FEC statistics: ◦ Relative Lane Skew (ns) ◦ PCS Lane Marker Error Count ◦ FEC Symbol Error Count ◦ FEC Corrected Bits Count ◦ FEC Symbol Error Ratio ◦ FEC Corrected Bit Ratio	
FEC Codeword Statistics	• General controls: Start, Stop, and Clear statistics • Transmit duration time • FEC port statistics with count and rate: ◦ FEC Total Bit Errors ◦ FEC Max Symbol Errors ◦ FEC Corrected Codewords ◦ FEC Total Codewords ◦ FEC Frame Loss Ratio ◦ Pre-FEC Bit Error Rate ◦ FEC Rx Clock PPM Offset ◦ FEC Rx Link Loss • FEC symbol bit error distribution analysis statistics: ◦ Tracks the distribution of the number of bit errors in FEC codewords. Symbol bit errors are binned, from 0-15 errored bits in a FEC symbol with a resolution of 1-bit error, to show a comprehensive distribution analysis of the symbol bit error distribution • Each bit error bin (0 through 15-bit errors per codeword) provides these statistics: ◦ Total Codewords with 0 symbol errors ◦ Total Codewords with 1-15 symbol errors' count ◦ Codeword symbol error rate ◦ Percentage of Total Codewords per symbol error bin ◦ Log 10 number of Total Codewords per symbol error bin ◦ Bit error count per symbol error bin ◦ Maximum number of bit errors per symbol error bin	

Product Description	A400GE-QDD 2-port	A400GE-QDD 4-port
	◦ Average symbol bit error count • FEC Uncorrectable Codeword: – greater than 15 symbol bit errors in a codeword ◦ Total Uncorrectable Codeword count ◦ Uncorrectable Codeword error rate ◦ Percentage of Total Uncorrectable Codewords ◦ Log 10 number of Total Uncorrectable Codewords ◦ Bi error count for Uncorrectable Codewords ◦ Maximum number of bit errors in Uncorrectable Codewords ◦ Average number of Uncorrectable Codewords	
Speed Support with the FEC Option Enabled	• 400GE • 200GE (presented as 2x200GE per port for all ports on the chassis) • 100GE (presented as 4x100GE per port for all ports on the chassis) 50GE (presented as 8x50GE per port for all ports on the chassis)	
Synchronization to Keysight M4080A High-Performance Layer 1 BERT Analyzer Option		
Synch to M8040A Layer 1 BERT Analyzer	• Allows the A400GE-QDD chassis to be interconnected and synchronized to the Keysight M8040A High Performance Layer 1 BERT Analyzer. ◦ The combined system is a symbol striped FEC aware physical layer Bit Error Rate Tester ◦ 400GE characterization and compliance test to perform physical layer channel stress and impairment of a channel ◦ The effect of different types of jitter on the FEC tail can be analyzed ◦ Optical Receiver Stress Testing (ORST) ◦ Use the A400GE-QDD Host and Module Compliance board options for optical transceiver, copper cable, and chip development system test	
A400GE-QDD Port Host and Module Compliance Options		
QSFP-DD Host & Module Compliance options	• Compliance Board Options are available for the following configurations ◦ Transmit only (Tx) Host Compliance Board with 16 total channels and attached 6” co-axial cable with 2.92mm female connectors ◦ Receive only (Rx) Host Compliance Board with 16 total channels and attached 6” co-axial cable with 2.92mm female connectors ◦ Module Compliance Board with Transmit (Tx) Host Compliance Board with 16 total channels and attached 6” co-axial cable with 2.92mm female connectors and 16 each 3.5mm Coaxial adapters, M-M ◦ Module Compliance Board with Transmit (Tx) and Receive (Rx) Host Compliance Boards with 32 total channels and attached 6” co-axial cable with 2.92mm female connectors and 32 each 3.5mm Coaxial adapters, M-M See QSFP-DD Host and Compliance Options under the Ordering Information section of this datasheet.	

Application Support

A400GE-QDD
• **Browser Support:** The A400GE-QDD chassis and features are supported only on the Google Chrome cross-platform browser. It is recommended to upgrade to the latest version for the browser. Other browsers such as Firefox, Safari, Internet Explorer, and Microsoft Edge may function at a sub-optimal experience. • **KiOS**: Operating system software for the A400GE-QDD Layer 1 BERT test 400GE wire-rate signal generation and measurement analysis with optional support for Forward Error Correction measurement, and synchronization with the Keysight M8040A High Performance BERT analyzer for physical layer applications. • **REST API:** support for accessing and gathering measurement BERT and FEC statistics

Ordering Information

A400GE-QDD Chassis Systems

941-0080

Ixia, A400GE-QDD, 2-port, 400GE/200GE/100GE/50GE Layer 1 BERT QSFP-QDD test system, fixed chassis that includes the latest version of the KiOS software. The 4x100GE speed mode requires KiOS version 2.1 software. The 2x200GE and the 8x50GE speed modes requires 2.2 KiOS version 2.2 software. FEC measurement capability and synchronization to the Keysight M8040 BERT Analyzer are optional.

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941-0081

Ixia, A400GE-QDD, 4-port, 400GE/200GE/100GE/50GE Layer 1 BERT QSFP-QDD test system, fixed chassis that includes the latest version of the KiOS software. The 4x100GE speed mode requires KiOS version 2.1 software. The 2x200GE and the 8x50GE speed modes requires 2.2 KiOS version 2.2 software. FEC measurement capability and synchronization to the Keysight M8040 BERT Analyzer are optional.

A400GE-QDD Chassis Port Field Upgrade

905-1050

Ixia, 2-port A400GE-QDD Option, FIELD UPGRADE, adds 2-ports to the A400GE-QDD 400GE Layer 1 BERT test system (941-0080) for a total of 4 ports. REQUIRES at the time of order placement the identification of the serial number of the specific A400GE-QDD unit where this option is to be installed

A400GE-QDD Chassis FEC Options

905-1051

Ixia, A400GE-QDD, Option, KP4 FEC add-on test option, FACTORY INSTALLED for the A400GE-QDD 400GE Layer 1 BERT test systems (941-0080, 941-0081). This option is applied to all ports on the A400GE-DD fixed chassis L1 BERT test system.

905-1052

Ixia, A400GE-QDD, Option, KP4 FEC add-on option, FIELD UPGRADE for the A400GE-QDD 400GE Layer 1 BERT test systems (941-0080, 941-0081). REQUIRES at the time of order placement the identification of the serial number of the specific A400GE-QDD unit where this option is to be installed. This option is applied to all ports on the A400GE-QDD fixed chassis L1 BERT test system.

Chassis Options Synchronizd to M8040A BERT Analyzer

905-1053

Ixia, A400GE-QDD, Option, Synchronize to Keysight M8040A option, FACTORY INSTALLED for the A400GE-QDD 400GE Layer 1 BERT test systems (941-0080, 941-0081). This option is applied to a single M8040A high performance BERT unit to allow it to connect to a single A400GE-QDD test system.

905-1054

Ixia, A400GE-QDD, Option, Synchronize to Keysight M8040A option, FIELD UPGRADE for the A400GE-QDD 400GE Layer 1 BERT test systems (941-0080, 941-0081). REQUIRES at the time of order placement the identification of the serial number of the specific A400GE-QDD unit where this option is to be installed. This option is applied to a single M8040A high performance BERT unit to allow it to connect to a single A400GE-QDD test system.

Copper Cables

QSFP-DD-1M-CBL

QSFP-DD-to-QSFP-DD 400GE 400GBASE-R passive copper, Direct Attach Cable (DAC), point-to-point cable, 1-meter length.

QSFP-DD-2M-CBL

QSFP-DD-to-QSFP-DD 400GE 400GBASE-R passive copper, Direct Attach Cable (DAC), point-to-point cable, 2-meter length.

QSFP-DD-2-5M-CBL

QSFP-DD-to-QSFP-DD 400GE 400GBASE-R passive copper, Direct Attach Cable (DAC), point-to-point cable, 2.5-meter length.

Optical Transceivers

QSFP-DD-DR4-XCVR

IXIA, QSFP-DD 400GE 400GBASE-DR4 pluggable optical transceiver, SMF (single mode), 1310nm, 500m reach (948-0050). This optical transceiver is compatible with all K400 QSFP-DD and AresONE QSFP-DD fixed chassis systems.

QSFP-DD-FR4-XCVR

IXIA, QSFP-DD 400GE 400GBASE-FR4 pluggable optical transceiver, SMF (single mode), 1310nm, 2km reach (948-0052). This optical transceiver is compatible with all K400 QSFP-DD and AresONE QSFP-DD fixed chassis systems.

QSFP-DD-LR8-XCVR

IXIA, QSFP-DD 400GE 400GBASE-LR8 pluggable optical transceiver, SMF (single mode), 1310nm, 10km reach (948-0053). This optical transceiver is compatible with all K400 QSFP-DD and AresONE QSFP-DD fixed chassis systems.

QSFP-DD-SR8-XCVR

IXIA, QSFP-DD 400GE 400GBASE-SR8 pluggable optical transceiver, MMF (multimode), 850nm, 100m reach (948-0051). This optical transceiver is compatible with all K400 QSFP-DD and AresONE QSFP-DD fixed chassis systems.

QSFP-DD Host and Module Compliance Options

942-0130

Ixia, QSFP-DD 400GE Host Compliance Board (HCB) RX test adapter and cables: 16 each, attached, high performance phase aligned 6" Coaxial Cables with Female 2.92 connectors. The HCB RX adapter is compatible with the A400GE-QDD, 2-port, 400GE Layer 1 BERT QSFP-DD (941-0080), and the A400GE-QDD, 4-port, 400GE Layer 1 BERT QSFP-DD (941-0081) test systems.

942-0131

Ixia, QSFP-DD 400GE Host Compliance Board (HCB) RX test adapter and cables: 16 each, attached, high performance phase aligned 6" Coaxial Cables with Female 2.92 connectors. The HCB RX adapter is compatible with the A400GE-QDD, 2-port, 400GE Layer 1 BERT QSFP-DD (941-0080), and the A400GE-QDD, 4-port, 400GE Layer 1 BERT QSFP-DD (941-0081) test systems.

947-5090

Ixia, QSFP-DD 400GE Module Compliance Board (MCB) and TX Host Compliance Board (HCB) test adapter, cables and connectors: 16 each, attached, high performance phase aligned 6" Coaxial Cables with Female 2.92 connectors, with 16 each, 3.5mm Coaxial adapters, M-M. The MCB and HCB TX Adapter are compatible with the A400GE-QDD, 2-port, 400GE Layer 1 BERT QSFP-DD (941-0080), and the A400GE-QDD, 4-port, 400GE Layer 1 BERT QSFP-DD (941-0081) test systems.

947-5091

Ixia, QSFP-DD 400GE Module Compliance Board (MCB), TX and RX Host Compliance Board (HCB) test adapters, cables and connectors: 16 each per adapter, attached, high performance phase aligned 6" Coaxial Cables with Female 2.92 connectors, with 32 each, 3.5mm Coaxial adapters, M-M. The MCB, HCB TX and HCB RX adapters are compatible with the A400GE-QDD, 2-port, 400GE Layer 1 BERT QSFP-DD (941-0080), and the A400GE-QDD, 4-port, 400GE Layer 1 BERT QSFP-DD (941-0081) test systems.

947-5092

Ixia, QSFP-DD 400GE Module Compliance Board (MCB) and TX Host Compliance Board (HCB) test adapter, cables and connectors: 16 each, attached, high performance phase aligned 6" Coaxial Cables with Female 2.92 connectors, with 16 each, 3.5mm Coaxial adapters, M-M Keysight 1.85mm 15cm Remote-head output cable, Keysight 2.4mm female to APC-3.5mm male adapter, and the Keysight SMA Cable Assembly with 4 each cables. The MCB and HCB TX Adapter are compatible with the A400GE-QDD, 2-port, 400GE Layer 1 BERT QSFP-DD (941-0080), A400GE-QDD, 4-port, 400GE Layer 1 BERT QSFP-DD (941-0081) test systems, and the M8040A 64Gbaud high performance BERT Analyzer.

947-5093

Ixia, QSFP-DD 400GE Module Compliance Board (MCB) and TX and RX Host Compliance Board (HCB) test adapters, cables and connectors: 16 each per adapter, attached, high performance phase aligned 6" Coaxial Cables with Female 2.92 connectors, with 32 each, 3.5mm Coaxial adapters, M-M Keysight 1.85mm 15cm Remote-head output cable, Keysight 2.4mm female to APC-3.5mm male adapter, and the Keysight SMA Cable Assembly with 4 each cables. The MCB and HCB TX and HCB RX Adapters are compatible with the A400GE-QDD, 2-port, 400GE Layer 1 BERT QSFP-DD (941-0080), A400GE-QDD, 4-port, 400GE Layer 1 BERT QSFP-DD (941-0081) test systems, and the M8040A 64Gbaud high performance BERT Analyzer.

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