

NOVUS™ & NOVUS-R QSFP28 HIGH—DENSITY 100/25GE LOAD MODULE

EVOLVE YOUR HIGH-SPEED MULTI-RATE ETHERNET TESTING

HIGH-DENSITY 100/25GE QSFP28 WITH MULTI-RATE ETHERNET CAPABILITY IS HERE TO STAY!

Bandwidth requirements for enterprises, cloud service providers, and global data centers are growing rapidly, surpassing the bandwidth that today's 10GbE and 40GbE interface speeds can provide. Cloud service providers and Hyper-scale data centers are deploying high-density 100GbE and 25GbE networking infrastructure solutions to meet these demands. 50GbE is also on the near horizon.

Network equipment manufacturers (NEMs) are rapidly increasing port densities and delivering highly flexible multi-rate switch/router ports to capture market share. These products are designed to support 100/50/40/25/10GE on a single port. The new requirements to remain competitive involve previously unheard levels of complexity.

To capitalize on today's innovation, NEMs need native QSFP28 test and measurement systems to deliver higher-density 100GbE products with multi-rate Ethernet speed capabilities. As data centers, cloud service providers, and large enterprises implement this same high-density network equipment in their own networks, they too need the same type of test solution to verify performance and functionality prior to deployment.

Novus and Novus-R are Ixia's next-generation architecture and test solutions that satisfy the test needs of both high-density, multi-rate switch/router makers and the organizations implementing the network equipment. Supporting eight native QSFP28 100GbE ports and up to 32-ports for 25GbE per load module, Novus and Novus-R enable interoperability and functional testing and routing protocol emulation, as well as high-port count performance testing.

As complex multi-rate test requirements have emerged for testing 100GbE and 25GbE on the same physical port, Novus' native QSFP28 100GbE interfaces with 25GE speed and fan-out cable support provides a more efficient and flexible set of 100/25GbE test use cases.

HIGHLIGHTS

- Enable affordable, high-density, native QSFP28 100/25GbE testing
- Validate 100GbE and 25GbE over copper, multimode and single-mode fiber media
- Leverage excellent interoperability, functional, and performance test platform for the new 100GBASE-SR4, 100GBASE-CR4, 25GBASE-CR, 25GBASE-SR, with auto-negotiation, FEC, and link training
- Generate broad range of traffic and analysis with full L2/3 protocol coverage



**Novus and Novus-R
native QSFP28 8-ports,
100/25 GbE, 1-slot load module**

Novus QSFP28 load modules are available in two different models:

NOVUS100GE8Q28+FAN: A full-featured model that is an 8-port, native QSFP28 100GbE and 25GBE load module designed for enterprise and data center switch and router testing.

NOVUS-R100GE8Q28+FAN: A reduced feature model that is an 8-port, native QSFP28 100GbE and 25GBE load module designed for high-density switch testing. Novus-R scales down the L2/3 feature set and increases affordability to make the build-out of high-port-count 100GE test beds achievable at a lower cost.

Both Novus and Novus-R provide these key features:

- Multi-vendor interoperability of 100GbE and 25GbE testing between different speeds that run over these QSFP28 optics and media: Pluggable optical transceivers, Active Optical Cables (AOC), and 100GBASE-CR4 passive copper Direct Attach Cable (DAC) media:
 - Multimode 100GBASE-SR4 and single-mode 100GBASE-LR4
 - Multimode 25GBASE-SR and copper 25GBASE-CR
- Mid-range L2/3 protocol emulation to validate performance and scalability of L2/3 routing/switching and data center test cases using the Ixia's IxNetwork application
- 100Gb/s and 25Gb/s line-rate hardware packet capture and decode tools to detect and de-bug data transmission errors
- An excellent test platform for full line rate 100Gb/s to evaluate the new 100GbE ASIC designs, FPGAs, and hardware switch fabrics that use the new 4x25Gb/s electrical interface
- Supports benchmarking of the data plane and protocol emulation performance and scale of ultra-high-density 100/25GbE-capable network equipment using industry-standard RFC benchmark tests in large test beds with hundreds of 100GbE and/or 25GbE ports in a single test:
- 25GbE speed support (requires purchase of the 25GbE load module speed option):
 - Support for independent 25GE physical fan-out cable configurations including 1x25GE, 2x25GE, and 4x25GE support on fiber and copper media
 - Up to 4x25GE links per port over single point-to-point 100GbE cable media (MT-MT, AOC, or DAC media)
- Support for advanced features such as: Ethernet Forward Error Correction, auto-negotiation, and link training on 100GbE and 25GbE
- Application support including: IxExplorer, IxNetwork, and the related Tcl and automation APIs

SPECIFICATIONS

PRODUCT DESCRIPTION	NOVUS100GE8Q28+FAN 100/25GE	NOVUS-R100GE8Q28+FAN 100/25GE
Part Number	944-1140	944-1147
Hardware Load Module Specifications		
Slot / Number of Ports	1-slot with 8x100GbE native QSFP28 ports and up to 32x25GbE ports via fan-out media	
Physical Interfaces	8-ports of Native QSFP28	
Supported Port Speeds	<ul style="list-style-type: none"> • 100GbE/port: 100GbE-capable fiber and passive copper cable media • 4x25GbE/port: 25GbE-capable fiber and passive copper point-point and fan-out cable media 	
CPU and Memory	Multicore processor with 2GB of CPU memory per port	
IEEE Interface Protocols for 100GE and 25GE	<ul style="list-style-type: none"> • IEEE 802.3 100GBASE-R • IEEE 802.3bj • IEEE 802.3bm • IEEE P802.3by (draft specification 3.2) 	
25G/50G Consortium specification	25GE speed support only: Compatible with version 1.5	
Advanced Layer 1 support	<ul style="list-style-type: none"> • 100GE: <ul style="list-style-type: none"> ○ Auto-negotiation (AN), Clause 73 for passive copper DAC ○ Link training for 100GE copper cable media, Clause 73 ○ Ethernet Forward Error Correction RS-FEC, Clause 91 ○ FEC statistics: RS-FEC Corrected and Uncorrected Codeword Counts ○ Ability to independently turn ON or OFF AN with Link training, or FEC, or to allow IEEE defaults to automatically manage the interoperability • 25GE: <ul style="list-style-type: none"> ○ Auto-negotiation (AN), Clause 73 for passive copper DAC ○ Link Training (LT) for 25GE copper DAC media (Clause 93, 110); note: Clause 72 link training patterns are not supported 	

PRODUCT DESCRIPTION	NOVUS100GE8Q28+FAN 100/25GE	NOVUS-R100GE8Q28+FAN 100/25GE
	<ul style="list-style-type: none"> ○ Ethernet Forward Error Correction: BASE-R, Clause 74 ○ FEC statistics: FEC Corrected and Uncorrected Codeword Counts ○ Ability to independently turn ON or OFF AN with Link training, or FEC, or to allow IEEE defaults to automatically manage the interoperability ○ Independent fan-out ports with physical fan-out media for up to 4x25GE per QSFP28 port 	
Transceiver Support	<ul style="list-style-type: none"> ● 100GBASE-SR4 and 4x25GBASE-SR QSFP28 for multimode fiber <ul style="list-style-type: none"> ○ Pluggable transceiver ○ 25GbE speed support requires a point-to-point or a fan-out cable ● 100GBASE-LR4 QSFP28 for single-mode fiber <ul style="list-style-type: none"> ○ Pluggable transceiver 	
Cable Media	<ul style="list-style-type: none"> ● 100GBASE-SR4 multimode fiber Active Optical Cable (AOC) and MT-MT 12-fiber point-to-point cables for QSFP28 ● 100GBASE-CR4, passive, copper Direct Attached Cable (DAC) up to 5 meters in length; note: requires RS-FEC to be enabled ● 25GBASE-SR multimode fiber Optical Cable (AOC) and MT-MT 12-fiber point-to-point cable for QSFP28, 3 meter length is available ● 25GBASE-SR multimode fiber MT-to-4xLC fan-out cable for QSFP28, 3 meter and 5 meter lengths are available ● 25GBASE-CR passive, copper Direct Attached Cable (DAC) point-point, up to 5 meters in length; note: requires BASE-R FEC Clause 74 to be enabled ● 25GBASE-CR passive, copper Direct Attached Cable (DAC) QSFP28-to-4xSFP28 fan-out media, up to 5 meters in length; note: requires BASE-R FEC Clause 74 to be enabled 	
Load Module Dimensions	<ul style="list-style-type: none"> ● 17.3" (L) x 1.3" (W) x 12.0" (H) ● 440mm (L) x 33mm (W) x 305mm (H) 	
Load Module Weights	<ul style="list-style-type: none"> ● Module only: 11.8 lbs. (5.35 kg) ● Shipping: 18.6 lbs. (8.44 kg) 	

PRODUCT DESCRIPTION	NOVUS100GE8Q28+FAN 100/25GE	NOVUS-R100GE8Q28+FAN 100/25GE
Temperature	<ul style="list-style-type: none"> Operating: 41°F to 95°F (5°C to 35°C) Storage: 41°F to 122°F (5°C to 50°C) 	
Humidity	<ul style="list-style-type: none"> Operating: 0% to 85%, non-condensing Storage: 0% to 85%, non-condensing 	
Chassis Capacity: Maximum Number of Cards and Ports per Chassis Model		
XGS12-SD Chassis (940-0011)	12 load modules: <ul style="list-style-type: none"> Rackmount chassis 96-ports of 100GbE 256-ports of 25GbE 	
XGS12-HS Chassis (940-0006)ⁱ	12 load modules: <ul style="list-style-type: none"> Rackmount chassis 96-ports of 100GbE 256-ports of 25GbE 	
XGS2-SD Chassis (940-0010)	2 load modules: <ul style="list-style-type: none"> Desktop chassis 16-ports of 100GbE 64-ports of 25GbE 	
XGS2-HS Chassis (940-0012)	2 load modules: <ul style="list-style-type: none"> Desktop chassis 16-ports of 100GbE 64-ports of 25GbE 	
Transmit Feature Specifications		
Transmit Engine	Wire-speed packet generation with timestamps, sequence numbers, data integrity signature, and packet group signatures	
Max. Streams per Port	100GbE: 32 25GbE: 16	

PRODUCT DESCRIPTION	NOVUS100GE8Q28+FAN 100/25GE	NOVUS-R100GE8Q28+FAN 100/25GE
Max. Streams per Port in Data Center Ethernet	100GbE: 32 25GbE: 16	
Stream Controls	Rate and frame size change on the fly, sequential and advanced stream scheduler	
Minimum Frame Size	100GbE and 25GbE: <ul style="list-style-type: none"> • 60 bytes at full line rate • 49 bytes at less than full line rate 	
Maximum Frame Size	14,000 bytes	
Maximum Fame Size in Data Center Ethernet	9,216 bytes	
Priority Flow Control	<ul style="list-style-type: none"> • 8 line-rate-capable queues with each supporting up to 2,500-byte frame lengths • 1 queue supporting up to 9,216-byte frame lengths 	
Frame Length Controls	Fixed, increment by user-defined step, weighted pairs, uniform, repeatable random, IMIX, and Quad Gaussian	
User Defined Fields (UDF):	Fixed, increment or decrement by user-defined step, sequence, value list, and random configurations; up to ten, 32-bit-wide UDFs are available	
Value Lists (Max.)	100GbE and 25GbE: 1M / UDF	100GbE and 25GbE: 32K / UDF
Sequence (Max.)	100GbE: 8K/UDF 25GbE: 2K/UDF	
Error Generation	Generate good CRC or force bad CRC, undersize and oversize standard Ethernet frame lengths, and bad checksum	
Hardware Checksum Generation	Checksum generation and verification for IPv4, IP over IP, ICMP/GRE/TCP/UDP, L2TP, GTP	
Link Fault Signaling	Reports, no fault, remote fault, and local fault port statistics; generate local and remote faults with controls for the number of faults and order of faults, plus the ability to select the option to have the transmit port ignore link faults from a remote link partner	

PRODUCT DESCRIPTION	NOVUS100GE8Q28+FAN 100/25GE	NOVUS-R100GE8Q28+FAN 100/25GE
Latency Measurement Resolution	100GbE and 25GbE: 2.5 nanoseconds	
Intrinsic Latency Compensation	Removes inherent latency error from the 100GbE port electronics	
Transmit Line Clock Adjustment	Ability to adjust the parts-per-million line frequency over a range of -100 ppm to +100 ppm across all 100GbE and 25GbE ports on the load module.	
Receive Feature Specifications		
Receive Engine	Wire-speed packet filtering, capturing, real-time latency, and inter-arrival time for each packet group, with data integrity, sequence and advanced sequence checking capability	
Trackable Receive Flows per Port	100GbE: <ul style="list-style-type: none"> • 32K limited statistics mode • 4K full statistics mode 25GbE: <ul style="list-style-type: none"> • 8K limited statistics mode • 2K full statistics mode 	
Minimum Frame Size	100GbE and 25GbE: <ul style="list-style-type: none"> • 60 bytes at full line rate • 64 bytes at full line rate into the capture buffer • 49 bytes at less than full line rate 	
Filters (User-Defined Statistics, UDS)	2 SA/DA pattern matchers, 2x16-byte user-definable patterns with offsets capability for start of: frame, IP, or protocol; up to 6 UDS counters are available	
Hardware Capture Buffer	100GbE & 25GbE: There are two 512MB hardware capture buffers on the card; user can select which port and/or resource group each capture buffer may be assigned for capture purposes. For the 25GbE ports, only one capture buffer may be assigned to a single Resource Group (i.e. 4x25GbE mode).	100GbE & 25GbE: There are two 1MB hardware capture buffers on the card; user can select which port and/or resource group each capture buffer may be assigned for capture purposes. For the 25GbE ports, only one capture buffer may be assigned to a single Resource Group (i.e. 4x25GbE mode).

PRODUCT DESCRIPTION	NOVUS100GE8Q28+FAN 100/25GE	NOVUS-R100GE8Q28+FAN 100/25GE
Statistics and Rates	Link state, line speed, frames sent, valid frames received, bytes sent/received, fragments, undersize, oversize, CRC errors, VLAN tagged frames, 6 user-defined stats, capture trigger (UDS 3), capture filter (UDS 4), 8 QoS counters, data integrity frames, data integrity errors, sequence and advanced sequence checking frames, sequence checking errors, ARP, and PING requests and replies, FEC statistics: RS-FEC Corrected and Uncorrected Codeword Counts	
Latency / Jitter Measurements	Cut-through, store & forward, forwarding delay, up to 16 time bins latency/jitter, MEF jitter, and inter-arrival time	
Receive-side PCS Lanes Port Statistics Counters	PCS Sync Errors, Illegal Codes, Remote Faults, Local Faults, Illegal Ordered Set, Illegal Idle, Illegal SOF, Out Of Order SOF, Out Of Order EOF, Out Of Order Data, Out Of Order Ordered Set	
100GE Physical Coding Sublayer (PCS) Receive-Side Statistics and Indicators	IEEE 802.3ba-compliant PCS transmit and receive side test capabilities include: Per PCS lane, receive lanes statistics - PCS Sync Header and Lane Marker Lock, Lane Marker mapping, Relative lane deskew up to 104 microseconds for 100GE, Sync Header and PCS Lane Marker Error counters, indicators for Loss of Synch Header and Lane Marker, and BIP8 errors	
Layer 2-3 Protocol Support		
Routing and Switching	BGP-4, BGP+, OSPFv2/v3, ISISv4/v6, EIGRP, EIGRPv6, RIP, RIPng, BFD, IGMPv1/v2/v3, MLDv1/v2, PIM-SM/SSM, PIM-BSR, STP/RSTP, MSTP, PVST+/RPVST+, Link Aggregation (LACP), LLDP	Only supported with Novus-R upgrade option (905-1013)
Software Defined Network	VXLAN, EVPN VXLAN, OpenFlow, ISIS Segment Routing, OSPF Segment Routing, BGP Segment Routing, BGP Link State (BGP-LS), PCEP, OVSDB	Only supported with Novus-R upgrade option (905-1013)

PRODUCT DESCRIPTION	NOVUS100GE8Q28+FAN 100/25GE	NOVUS-R100GE8Q28+FAN 100/25GE
MPLS	RSVP-TE, RSVP-TE P2MP, LDP/LDPv6, mLDP, PWE, VPLS-LDP, VPLS-BGP, BGP auto-discovery with LDP FEC 129 support, L3 MPLS VPN/6VPE, 6PE, BGP RT-Constraint, BGP Labeled unicast, L3 Inter-AS VPN Options (A, B, C), MPLS-TP, MPLS OAM, Multicast VPN (GRE, mLDP, RSVP-TE P2MP), EVPN, PBB-EVPN	Only supported with Novus-R upgrade option (905-1013)
Broadband and Authentication	PPPoX, DHCPv4, DHCPv6, L2TPv2, Radius attributes for L2TP, ANCP, IPv6 Autoconfiguration (SLAAC), IGMPv1/v2/v3, MLDv1/v2, 802.1x	IPv4/IPv4, DHCP, PPPoE, L2TP, IGMP, MLD, 802.1x
Industrial Ethernet	Link OAM IEEE 802.3ah, CFM IEEE 802.1ag, Service OAM ITUT-Y.1731, PBT/PBB-TE, Sync-E ESMC, PTP IEEE 1588 with G.8265.1 Telecom Profile, ELMI	Only supported with Novus-R upgrade option (905-1013)
Data Center Ethernet	FCoE/FIP, Priority Flow Control IEEE 802.1Qbb (PFC), LLDP/DCBX, TRILL, TRILL OAM, SPBM, Cisco FabricPath, VEPA	

APPLICATION SUPPORT

NOVUS100GE8Q28+FAN (100/25GE)
<ul style="list-style-type: none"> • IxExplorer: Layer 2-3 wire-speed traffic generation and analysis with HSE PCS Lanes Rx-side testing. Note: Not all Ixia loads modules support Layer 1 BERT and/or the complete set of PCS Lanes test capabilities. • IxNetwork: Wire-rate traffic generation with service modeling that builds realistic, dynamically controllable data-plane traffic. IxNetwork offers the industry's best test solution for functional and performance testing by using comprehensive emulation for routing, switching, MPLS, IP multicast, broadband, authentication, Carrier Ethernet, and data center Ethernet protocols. • Tcl API: Custom user script development for Layer 1-3 testing.

ORDERING INFORMATION

LOAD MODULE

944-1140

NOVUS100GE8Q28+FAN, 8-port, QSFP28 100GE load module, 1-slot with 8-ports with the native QSFP28 physical interface, L2-3 support. Compatible with the XGS12-SD rack mount chassis (940-0011), XGS12-HS rack mount chassis (940-0006), and XGS2-SD 2-slot standard performance chassis (940-0010), and 2-slot high performance chassis XGS2-HS chassis (940-0012).



944-1147

NOVUS-R100GE8Q28+FAN, 8-port, QSFP28 100GE reduced load module, 1-slot with 8-ports with the native QSFP28 physical interface, L2-3 support. Compatible with the XGS12-SD rack mount chassis (940-0011), XGS12-HS rack mount chassis (940-0006), and XGS2-SD 2-slot standard performance chassis (940-0010), and 2-slot high performance chassis XGS2-HS chassis (940-0012).



25GE SPEED OPTIONS

905-1007

NOVUS 25GE FAN-OUT OPTION for a factory installed 25GE fan-out option for new purchases of the NOVUS100GE8Q28+FAN (944-1140), or the NOVUS-R100GEQSFP28+FAN (944-1147), 8-port, QSFP28 100GE load modules. Note: This option is REQUIRED ON NEW PURCHASES to enable the 25GE speed on the NOVUS100GE8Q28+FAN, or the NOVUS-R100GEQSFP28+FAN 8-port, QSFP28 100GE load modules.

905-1008

NOVUS 25GE FAN-OUT-UPG FIELD UPGRADE Option purchase of the 25GE fan-out option for the NOVUS100GE8Q28+FAN (944-1140), or the NOVUS-R100GE8Q28+FAN (944-1147) QSFP28 8x100GE load modules. Note: This option is REQUIRED ON FIELD UPGRADE PURCHASES to enable the 25GE speed on the NOVUS100GE8Q28+FAN, or the NOVUS-R100GE8Q28+FAN 8-port, QSFP28 100GE load modules. Note: For the 25GE upgrade purchase please provide the serial number of the desired load module to install the option on at the time of order placement.

905-1013

NOVUS-R-UPG FIELD UPGRADE for the Novus-R QSFP28 8x100GE reduced load module (944-1147) to enhance the data plane feature set and to add full support for all IxNetwork L23 protocol emulations equal to that of the full featured Novus QSFP28 8x100GE load module (944-1140). Note: For the Novus-R upgrade purchase please provide the serial number of the desired load module to install the upgrade on at the time of order placement.

CABLES & TRANSCEIVERS**QSFP28-SR4-XCVR**

QSFP28 100GBASE-SR4 100GE pluggable optical transceiver, MMF (multimode), 850nm, 100m reach. Compatible with the Xcellon-Multis XM100GE4QSFP28+ENH 100-Gigabit Ethernet, Enhanced load module (944-1117) and the NOVUS100GE8Q28+FAN, 8-port, QSFP28 100GE load module (944-1140). Note1: This transceiver supports both 25GE speed (XM-4x25GE 905-1004 and UPG-XM-4x25GE 905-1005), and the 50GE speed (XM-1x50GE 905-1009 and UPG-XM-1x50GE) capability options on the Multis XM100GE4QSFP28+ENH load module. Note2: This transceiver supports the 25GE speed (NOVUS 25GE FAN-OUT Option 905-1007, and the NOVUS 25GE FAN-OUT-UPG FIELD UPGRADE Option 905-1008) on the NOVUS100GE8Q28+FAN load module.

QSFP28-LR4-XCVR

QSFP28 100GBASE-LR4 100GE pluggable optical transceiver, SMF (single mode fiber), 1310nm, 10km reach. Compatible with the Xcellon-Multis XM100GE4QSFP28+ENH 100-Gigabit Ethernet, Enhanced load module (944-1117) and NOVUS100GE8Q28+FAN, 8-port, QSFP28 100GE load module (944-1140).

942-0067

MT-to-4x10GE LC fan-out, MMF, 3-meter cable for 10GE and 25GE fan-out. For 4x10GE fan-out per port it REQUIRES a QSFP 40GBASE-SR4, pluggable, transceiver, 850nm, MMF (948-0031). This cable and transceiver are compatible with the following load modules: Xcellon-Multis XM10/40GE12QSFP+FAN 40-Gigabit Ethernet QSFP load module (944-1105), and the Xcellon-Multis XM10/40GE6QSFP+FAN 40-Gigabit Ethernet QSFP load module (944-1109). For 4x25GE fan-out it REQUIRES a 100GBASE-SR4 QSFP28 100GBASE-SR4 100GE pluggable transceiver, 850nm, MMF (QSFP28-SR4-XCVR). This cable and transceiver are compatible with the following load modules: NOVUS100GE8Q28+FAN, 8-port, QSFP28 100GE load module (944-1140), and the Xcellon-Multis XM100GE4QSFP28+ENH 100GE QSFP28, 4-port enhanced load module (944-1117).



942-0068

MT-to-4x10GE LC fan-out, MMF, 5-meter cable for 10GE and 25GE fan-out. For 4x10GE fan-out per port it REQUIRES a QSFP 40GBASE-SR4, pluggable, transceiver, 850nm, MMF (948-0031). This cable and transceiver are compatible with the following load modules: Xcellon-Multis XM10/40GE12QSFP+FAN 40-Gigabit Ethernet QSFP load module (944-1105), and the Xcellon-Multis XM10/40GE6QSFP+FAN 40-Gigabit Ethernet QSFP load module (944-1109). For 4x25GE fan-out it REQUIRES a 100GBASE-SR4 QSFP28 100GBASE-SR4 100GE pluggable transceiver, 850nm, MMF (QSFP28-SR4-XCVR). This cable and transceiver are compatible with the following load modules: NOVUS100GE8Q28+FAN, 8-port, QSFP28 100GE load module (944-1140), and the Xcellon-Multis XM100GE4QSFP28+ENH 100GE QSFP28, 4-port enhanced load module (944-1117). The cable may also be used with the NTO 5200 and 7300 series Net Tool Optimizer network packet brokers.



942-0088

QSFP28 passive, copper, Direct Attach Cable (DAC), 3-meter length for Xcellon-Multis XM100GE4QSFP28+ENH 100GE load module (944-1117) and the NOVUS100GE8Q28+FAN, 8-port, QSFP28 100GE load module (944-1140).

942-0092

QSFP28 Active Optical Cable (AOC), multimode fiber, 850nm, 3-meter length. Compatible with the Xcellon-Lava CFP-to-QSFP28 interface adapter (948-0029), Xcellon-Multis XM100GE4QSFP28+ENH 100-Gigabit Ethernet, Enhanced load module (944-1117) and the NOVUS100GE8Q28+FAN, 8-port, QSFP28 100GE load module (944-1140).

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ⁱ With the initial release of XGS12-HS chassis operating systems and for certain combinations of Ixia load module configurations there may be instances where only 2 or 3 Novus or Novus-R 8x100GE QSFP28 load modules may be supported in a chassis along with a full chassis of different types of Ixia cards. If there are concerns, please consult the version 8.03EA software applications release notes, and/or contact Ixia Support.