

Xcellon-Multis[®] CXP 100/40/10GE Load Modules

Introducing the Evolution of Xcellon HSE Testing

Evolve Your Higher Speed Ethernet Testing

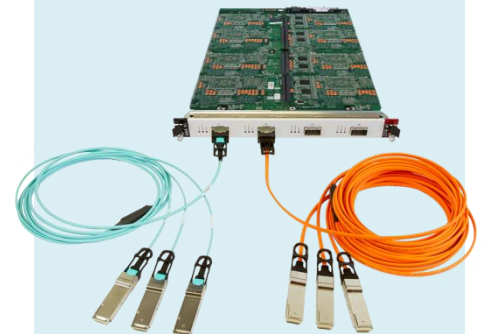


As bandwidth requirements press the limits of networking devices, equipment manufacturers must keep pace by introducing even higher density, 100/40/10GE switches and routers. Xcellon-Multis is Ixia's next-generation architecture and test solution to satisfy high-density test needs. As service providers and large enterprises implement this same high-density network equipment in their own networks and data centers, they must also test and verify performance and functionality prior to deployment.

Ixia's Xcellon-Multis load module family comprises the industry's highest density 10G, 40G, and 100G higher speed Ethernet (HSE) test equipment, providing more flexible test coverage and 4x100GE, 12x40GE, or multi-rate 100GE/40GE/10GE, all in a single-slot load module. The Xcellon-Multis family of cards employs innovative fan-out technology, a new paradigm in Ethernet testing, to allow a higher speed port to fan-out to several ports of a lower speed. This ultra-dense load module brings a higher return on investment by reducing overall costs associated with product licensing, space, power, and cooling.

Key Benefits

- Do more with less:
 - less cabling, power, cooling, total cost of ownership, rack space, licensing
 - more ports, bandwidth, flexibility, capability, horsepower
- Cost effective: reduces total cost of ownership with more ports in a single chassis; 40x100GE, 120x40GE, or 320x10GE ports with fan-out-enabled technology
- Usability: a common and broad feature set across multiple speeds
- Future-proof: Grows with your needs by enabling testing of 100GE, 40GE, and 10GE - now from a single load module



**Xcellon-Multis 100/40/10GE
load module with 3x40GE fan-
out cables**

Key Features

- Highest density CXP test modules in the industry
 - Xcellon-Multis CXP offers three CXP-based load modules or bundles in a single chassis slot
 - XM100GE4CXP: 4-port module for 100GE, 12x10GE, and 32x10GE, using fan-out technology
 - XM40GE12QSFP+FAN: 12x40GE, 12x10GE, and 32x10GE, using fan-out technology bundled with 4 each, 3-meter CXP-to-QSFP multimode fiber Active Optical Cables
 - XM100GE4CXP+FAN: Multi-rate 4x100GE, 12x40GE, 12x10GE, and 32x10GE, using fan-out technology
 - With 10GE fan-out enabled, Xcellon-Multis QSFP can support up to 320-ports of 10GE in the XG12, XGS12-SD, or XGFS12-HS rackmount chassis
 - XM10GE-FAN-OUT: 10GE fan-out option for a new module purchase
 - UPG-XM10GE-FAN-OUT: 10GE fan-out field-upgrade option for existing load modules
- Fan-out technology
 - Provides high-density interfaces over multiple speeds; 100GE, 40GE, and 10GE
 - Increases interface flexibility by allowing 100GE, 40GE, and 10GE in mixed speed tests
 - Facilitates a wide range of interoperability testing
- Multi-personality
 - Multi-speed 100/40/10GE support, all-in-one high-density load module
 - Support for multiple interface types: CXP, QSFP, SFP+ (LC), and MT fiber cable interfaces
 - Facilitates a wide range of 100GE, 40GE, and 10GE interoperability testing
- Layers 2-7 coverage
 - Supports mid-range-to-high-scale protocol testing for L2/3 routing/switching and data center test cases with the IxNetwork application
 - All CXP modules support L4-7 protocols with the IxLoad application: HTTP, SSL, FTP, TFTP, SMTP POP3, and IMAP
- Same feature set across all speeds
 - Exact data plane features are provided for 100/40/10GE testing
 - Exact same L2/3 protocol coverage for 100/40/10GE testing
- The highest ROI of any test and measurement load module
 - High density
 - Versatility – multiple speeds, multiple interfaces
 - Balanced performance and scale
 - Greater test case coverage
 - Industry-standard fan-out technology

Xcellon-Multis CXP Load Module Specifications

Model Name	XM100GE4CXP (100GE/10GE)	XM100GE4CXP+FAN (100/40/10GE)	XM40GE12QSFP+FAN (40/10GE)
Part number	944-1100	944-1101	947-5052 Bundle
Hardware Load Module Specifications			
Slot / number of ports	1-slot / 4x100GE ports 10GE fan-out; <ul style="list-style-type: none"> 1-slot / 12x10GE (3x10GE/port) 1-slot / 32x10GE (8x10GE/port) 	1-slot / 4x100GE and 12x40GE ports 10GE fan-out; <ul style="list-style-type: none"> 1-slot / 12x10GE (3x10GE/port) 1-slot / 32x10GE (8x10GE/port) 	1-slot / 12x40GE CXP ports using CXP-to-QSFP 3x40GE active optical fan-out cables 10GE fan-out; <ul style="list-style-type: none"> 1-slot / 12x10GE (3x10GE/port) 1-slot / 32x10GE (8x10GE/port)
Physical interfaces	<ul style="list-style-type: none"> CXP (native) 10GE: LC connector (fiber) 	<ul style="list-style-type: none"> CXP 4x100GE (native) QSFP 12x40GE (fan-out) 10GE: LC connector (fiber) 	<ul style="list-style-type: none"> QSFP 12x40GE (fan-out) 10GE: LC connector (fiber)
Chassis Capacity: Maximum Number of Cards and Ports per Chassis Model			
XGS12-SD chassis ⁱ (940-0011)	10 cards: <ul style="list-style-type: none"> 40-ports of 100GE 10GE fan-out: <ul style="list-style-type: none"> 120-ports of 10GE (3x10GE mode) 320-ports of 10GE (8x10GE mode) 	10 cards: <ul style="list-style-type: none"> 40-ports of 100GE 120-ports of 40GE (3x40GE fan-out mode) 10GE fan-out: <ul style="list-style-type: none"> 120-ports of 10GE (3x10GE mode) 320-ports of 10GE (8x10GE mode) 	10 cards: <ul style="list-style-type: none"> 120-ports of 40GE (3x40GE fan-out mode) 10GE fan-out: <ul style="list-style-type: none"> 120-ports of 10GE (3x10GE mode) 320-ports of 10GE (8x10GE mode)
XGS12-HS chassis ⁱ (940-0006)	10 cards: <ul style="list-style-type: none"> 40-ports of 100GE 10GE fan-out: <ul style="list-style-type: none"> 120-ports of 10GE (3x10GE mode) 320-ports of 10GE (8x10GE mode) 	10 cards: <ul style="list-style-type: none"> 40-ports of 100GE 120-ports of 40GE (3x40GE mode) 10GE fan-out: <ul style="list-style-type: none"> 120-ports of 10GE (3x10GE mode) 320-ports of 10GE (8x10GE mode) 	10 cards: <ul style="list-style-type: none"> 120-ports of 40GE (3x40GE fan-out mode) 10GE fan-out: <ul style="list-style-type: none"> 120-ports of 10GE (3x10GE mode) 320-ports of 10GE (8x10GE mode)

Model Name	XM100GE4CXP (100GE/10GE)	XM100GE4CXP+FAN (100/40/10GE)	XM40GE12QSFP+FAN (40/10GE)
XG12 Chassis ⁱ (940-0005)	<p>10 cards:</p> <ul style="list-style-type: none"> • 40-ports of 100GE <p>10GE fan-out:</p> <ul style="list-style-type: none"> • 120-ports of 10GE (3x10GE mode) • 320-ports of 10GE (8x10GE mode) 	<p>10 cards:</p> <ul style="list-style-type: none"> • 40-ports of 100GE • 120-ports of 40GE (3x40GE mode) <p>10GE fan-out:</p> <ul style="list-style-type: none"> • 120-ports of 10GE (3x10GE mode) • 320-ports of 10GE (8x10GE mode) 	<p>10 cards:</p> <ul style="list-style-type: none"> • 120-ports of 40GE (3x40GE fan-out mode) <p>10GE fan-out:</p> <ul style="list-style-type: none"> • 120-ports of 10GE (3x10GE mode) • 320-ports of 10GE (8x10GE mode)
XGS2-SD chassis (940-0010)	<p>2 cards:</p> <ul style="list-style-type: none"> • 4-ports of 100GE <p>10GE fan-out:</p> <ul style="list-style-type: none"> • 24-ports of 10GE (3x10GE mode) • 64-ports of 10GE (8x10GE mode) 	<p>2 cards:</p> <ul style="list-style-type: none"> • 8-ports of 100GE • 24-ports of 40GE <p>10GE fan-out:</p> <ul style="list-style-type: none"> • 24-ports of 10GE (3x10GE mode) • 64-ports of 10GE (8x10GE mode) 	<p>2 cards:</p> <ul style="list-style-type: none"> • 24-ports of 40GE <p>10GE fan-out:</p> <ul style="list-style-type: none"> • 24-ports of 10GE (3x10GE mode) • 64-ports of 10GE (8x10GE mode)
XGS2-HS chassis (940-0012)	<p>2 cards:</p> <ul style="list-style-type: none"> • 4-ports of 100GE <p>10GE fan-out:</p> <ul style="list-style-type: none"> • 24-ports of 10GE (3x10GE mode) • 64-ports of 10GE (8x10GE mode) 	<p>2 cards:</p> <ul style="list-style-type: none"> • 8-ports of 100GE • 24-ports of 40GE <p>10GE fan-out:</p> <ul style="list-style-type: none"> • 24-ports of 10GE (3x10GE mode) • 64-ports of 10GE (8x10GE mode) 	<p>2 cards:</p> <ul style="list-style-type: none"> • 24-ports of 40GE <p>10GE fan-out:</p> <ul style="list-style-type: none"> • 24-ports of 10GE (3x10GE mode) • 64-ports of 10GE (8x10GE mode)
XM2 Chassis ⁱⁱ (941-0003)	<p>1 card:</p> <ul style="list-style-type: none"> • 4-ports of 100GE <p>10GE fan-out:</p> <ul style="list-style-type: none"> • 12-ports of 10GE (3x10GE mode) • 32-ports of 10GE (8x10GE mode) 	<p>1 card:</p> <ul style="list-style-type: none"> • 4-ports of 100GE • 12-ports of 40GE (3x40GE mode) <p>10GE fan-out:</p> <ul style="list-style-type: none"> • 12-ports of 10GE (3x10GE mode) • 32-ports of 10GE (8x10GE mode) 	<p>1 card:</p> <ul style="list-style-type: none"> • 12-ports of 40GE (3x40GE mode) <p>10GE fan-out:</p> <ul style="list-style-type: none"> • 12-ports of 10GE (3x10GE mode) • 32-ports of 10GE (8x10GE mode)

Model Name	XM100GE4CXP (100GE/10GE)	XM100GE4CXP+FAN (100/40/10GE)	XM40GE12QSFP+FAN (40/10GE)
CPU and memory	Multicore processors with 4GB of memory per processor		
IEEE802.3ba-2010 interface protocols	100GBASE-SR10 (802.3ba-2010)	<ul style="list-style-type: none"> 100GBASE-SR10 (802.3ba-2010) 40GBASE-SR4 (802.3ba-2010) 10GBASE-SR (802.3ae-2002) 	<ul style="list-style-type: none"> 40GBASE-SR4 (802.3ba-2010) 10GBASE-SR (802.3ae-2002)
Transceiver support	Pluggable CXP, 12-lane, MMF for 100GE operation ⁱⁱⁱ	<ul style="list-style-type: none"> Pluggable CXP, 12-lane, MMF for 100GE operation^{iv} QSFP+ MSA 	QSFP MSA via CXP-to-QSFP 3x40GE active optical fan-out cable
Operating temperature range	<ul style="list-style-type: none"> 41°F to 95°F (5°C to 35°C), ambient air 0% to 85%, non-condensing 		
Load module dimensions	<ul style="list-style-type: none"> 16.1" (L) x 1.3" (W) x 12.0" (H) 409mm (L) x 33mm (W) x 305mm (H) 		
Load module weights	<ul style="list-style-type: none"> Module only: 13.0 lbs. (5.90 kg) Shipping: 16.8 lbs. (7.62 kg) 		
Transmit Feature Specifications			
Transmit Engine	Wire-speed packet generation with timestamps, sequence numbers, data integrity signature, and packet group signatures		
Max. Streams per Port	<ul style="list-style-type: none"> 100GE: 128 10GE: 12x10 mode: 32 (3x10GE fan-out/port) 10GE: 32x10 mode: 16 (8x10GE fan-out/port) 	<ul style="list-style-type: none"> 100GE: 128 40GE: 32 (3x40GE fan-out/port) 10GE: 12x10 mode: 32 (3x10GE fan-out/port) 10GE: 32x10 mode: 16 (8x10GE fan-out/port) 	<ul style="list-style-type: none"> 40GE: 32 (3x40GE fan-out/port) 10GE: 12x10 mode: 32 (3x10GE fan-out/port) 10GE: 32x10 mode: 16 (8x10GE fan-out/port)
Max. Streams per Port in Data Center Ethernet	<ul style="list-style-type: none"> 100GE: 128 10GE: 12x10 mode: 32 (3x10GE fan-out/port) 10GE: 32x10 mode: 16 (8x10GE fan-out/port) 	<ul style="list-style-type: none"> 100GE: 128 40GE: 32 (3x40GE fan-out/port) 10GE: 12x10 mode: 32 (3x10GE fan-out/port) 10GE: 32x10 mode: 16 (8x10GE fan-out/port) 	<ul style="list-style-type: none"> 40GE: 32 (3x40GE fan-out/port) 10GE: 12x10 mode: 32 (3x10GE fan-out/port) 10GE: 32x10 mode: 16 (8x10GE fan-out/port)
Stream Controls	Rate and frame size change on the fly, sequential and advanced stream scheduler		

Model Name	XM100GE4CXP (100GE/10GE)	XM100GE4CXP+FAN (100/40/10GE)	XM40GE12QSFP+FAN (40/10GE)
Minimum Frame Size	100GE/10GE: <ul style="list-style-type: none"> 60 bytes (line rate) 49 bytes (< line rate) 	100GE/40GE/10GE: <ul style="list-style-type: none"> 60 bytes (line rate) 49 bytes (< line rate) 	40GE/10GE: <ul style="list-style-type: none"> 64 bytes (line rate) 49 bytes (< line rate)
Maximum Frame Size	14,000 bytes		
Maximum Frame 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.)	4 million / UDF 10GE: <ul style="list-style-type: none"> 1 million / UDF (3x10GE mode) 512K / UDF (8x10GE mode) 	100GE: 4 million / UDF 40GE: 1 million / UDF 10GE: <ul style="list-style-type: none"> 1 million / UDF (3x10GE mode) 512K / UDF (8x10GE mode) 	40GE: 1 million / UDF 10GE: <ul style="list-style-type: none"> 1 million / UDF (3x10GE mode) 512K / UDF (8x10GE mode)
Sequence (max.)	256K / UDF 10GE: <ul style="list-style-type: none"> 128K / UDF (3x10GE mode) 64K / UDF (8x10GE mode) 	100GE: 256K / UDF 40GE: 64K / UDF 10GE: <ul style="list-style-type: none"> 128K / UDF (3x10GE mode) 64K / UDF (8x10GE mode) 	40GE: 64K / UDF 10GE: <ul style="list-style-type: none"> 128K / UDF (3x10GE mode) 64K / UDF (8x10GE mode)
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, IGMP/GRE/TCP/UDP, L2TP, GTP		

Model Name	XM100GE4CXP (100GE/10GE)	XM100GE4CXP+FAN (100/40/10GE)	XM40GE12QSFP+FAN (40/10GE)
Link Fault Signaling	Reports, no fault, remote fault, and local fault port statistics		
Latency Measurement Resolution	<ul style="list-style-type: none"> • 100GE: 2.5 nanoseconds • 10GE: 2.5 nanoseconds 	<ul style="list-style-type: none"> • 100GE: 2.5 nanoseconds • 40GE: 2.5 nanoseconds • 10GE: 2.5 nanoseconds 	<ul style="list-style-type: none"> • 40GE: 2.5 nanoseconds • 10GE: 2.5 nanoseconds
Intrinsic Latency Compensation	Removes inherent latency error from 100GE, 40GE and 10GE port electronics		
Transmit line clock adjustment	Ability to adjust the parts per million line frequency over a range of -100 ppm to +100 ppm per resource group		
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	100GE: 512K 10GE: <ul style="list-style-type: none"> • 128K (3x10GE mode) • 64K (8x10GE mode) 	100GE: 512K 40GE: 128K 10GE: <ul style="list-style-type: none"> • 128K (3x10GE mode) • 64K (8x10GE mode) 	40GE: 128K 10GE: <ul style="list-style-type: none"> • 128K (3x10GE mode) • 64K (8x10GE mode)
Minimum Frame Size	<ul style="list-style-type: none"> • 64 bytes at line rate • ≥ 49 bytes not a 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 per Port or Resource Group	100GE: 2GB <ul style="list-style-type: none"> • 3x10GE mode: 2GB per 1 user-selected link of the 3x10GE fan-out link resource group • 8x10GE: 256MB/port for all links in the fan-out of the resource group 	100GE: 2GB 40GE: 2GB per 1, user-selected link of the 3x40GE fan-out link resource group <ul style="list-style-type: none"> • 3x10GE mode: 2GB per 1 user-selected link of the 3x10GE fan-out link resource group • 8x10GE: 256MB/port for all links in the fan-out of the resource group 	40GE: 2GB per 1, user-selected link of the 3x40GE fan-out link resource group <ul style="list-style-type: none"> • 3x10GE mode: 2GB per 1 user-selected link of the 3x10GE fan-out link resource group • 8x10GE: 256MB/port for all links in the fan-out of the resource group

Model Name	XM100GE4CXP (100GE/10GE)	XM100GE4CXP+FAN (100/40/10GE)	XM40GE12QSFP+FAN (40/10GE)
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		
PCS Lanes Port Rx Statistics	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		
Latency / Jitter Measurements	Cut-through, store & forward, forwarding delay, up to 16 time bins latency/jitter, MEF jitter, and inter-arrival time		
Layer 2-7 Protocol Support			
L2/3 Routing, Bridging, and Timing	<ul style="list-style-type: none"> ● Routing: RIP, RIPng, OSPFv2/v3, ISISv4/v6, EIGRP, EIGRPv6, BGP/BGP+ ● MPLS: RSVP-TE, RSVP-TE P2MP, LDP, mLDP, BGP RFC 3107, MPLS-TP, MPLS OAM ● MPLS VPN: L2VPN PW, L3VPN/6VPE, 6PE, VPLS-LDP, VPLS-BGP, VPLS-BGP AD and LDP FEC 129, Inter-AS VPN Option A, B, and C, Seamless MPLS, Carrier Supporting Carrier (CsC), GRE mVPN, NG mVPN (mLDP and RSVP-TE P2MP), EVPN/PBB-EVPN ● High-Availability: BFD, Graceful Restart, MPLS Ping/TraceRoute, LSP BFD, VCCV BFD, Real-time dynamic label swap for convergence time measurement up to millisecond accuracy ● IP Multicast: IGMPv1/v2/v3, MLDv1/v2, PIM-SM/SSM, PIM-BSR, multicast VPN ● Switching: STP/RSTP, MSTP, PVST+/RPVST+, LACP, LLDP, Protocols over LACP Bundle ● Carrier Ethernet: Link OAM, CFM, Service OAM, PBT/PBB-TE, SyncE, PTP (1588v2), E-LMI 		
Data Center Ethernet	Priority Class-Based Flow Control (IEEE802.1Qbb), FCoE/ FIP, LLDP/DCBX, VNTAG/MIC, OpenFlow, FabricPath, TRILL, SPBM, VEPA, VXLAN		
Broadband Access	<ul style="list-style-type: none"> ● Broadband: ANCP, PPPoX, DHCPv4 client/server, DHCPv6 client/server, L2TPv2, Radius Attributes for L2TP, Dual-Stack PPPoX, AMT ● Authentication: 802.1x, WebAuth, Cisco NAC 		

Model Name	XM100GE4CXP (100GE/10GE)	XM100GE4CXP+FAN (100/40/10GE)	XM40GE12QSFP+FAN (40/10GE)
8x10GE fan out protocol support: • 8x10GE for CXP load modules	<ul style="list-style-type: none"> • L2/3 routing, bridging, and timing <ul style="list-style-type: none"> ○ Routing: RIP, RIPng, OSPFv2/v3, ISISv4/v6, EIGRP, EIGRPv6, BGP/BGP+ ○ MPLS: RSVP-TE, RSVP-TE P2MP, LDP, mLDP ○ MPLS VPN: L3VPN/6VPE, 6PE, VPLS-LDP, VPLS-BGP, VPLS-BGP AD and LDP FEC 129, NG mVPN (mLDP and RSVP-TE P2MP), PWE3 ○ High-Availability: BFD ○ IP Multicast: IGMPv1/v2/v3, MLDv1/v2, PIM-SM/SSM, multicast VPN ○ Switching: STP/RSTP, MSTP, PVST/PVST+/RPVST+ ○ Carrier Ethernet: Link OAM, CFM/ Y.1731, PBB-TE, SyncE, PTP (1588v2), E-LMI • Data Center Ethernet <ul style="list-style-type: none"> ○ FCoE, DCBX, VNTAG/VIC, OpenFlow, FabricPath, TRILL, SPBM, VEPA, VXLAN, DHCPv4 over VXLAN over IPv4, DHCPv6 over VXLAN over IPv4, IPv4 over VXLAN over IPv4, IPv6 over VXLAN over IPv4, IGMP over VXLAN over IPv4, MLD over VXLAN over IPv4 • Broadband <ul style="list-style-type: none"> ○ DHCPv4 client/server, DHCPv6 client/server 		
Layer 4-7 application traffic testing support	HTTP, SSL, FTP/TFTP, email (SMTP, POP3, IMAP), IPv4, IPv6, VLAN, ER		

Application Support

Xcellon-Multis CXP Load Modules

- **IxExplorer:** Layer 1-3 wire-speed traffic generation and analysis.
- **IxNetwork:** Provides 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.
- **IxLoad:** A scalable solution for testing converged multiplay services, application delivery platforms, and security devices and systems. IxLoad emulates data, voice, and video subscribers and associated protocols to ensure quality of experience (QoE).
- **Tcl API:** Custom user script development for layer 1-7 testing.

Ordering Information

Load modules

944-1100

Xcellon-Multis XM100GE4CXP 100-Gigabit Ethernet, single rate load module, 1-slot with 4-ports of native CXP multimode fiber interfaces with L2-7 support. The load module is compatible with the XGS12-SD 12-slot, standard performance rack mount chassis bundle (940-0011), XGS12-HS 12-slot, high-speed performance rackmount chassis bundle (940-0006), XG12 12-slot, rackmount chassis (940-0005), XGS2-SD 2-slot, 3RU standard performance chassis bundle (940-0010), XGS2-HS 2-slot, 3RU high-speed performance chassis bundle (940-0012) and the XM2 desktop chassis (941-0003). REQUIRES one or more per port of the following: CXP 100GE pluggable, multimode optical transceiver (948-0030) and MTP-MTP 24-fiber, multimode point-to-point 100GE cable, 3-meter (942-0035), or point-to-point, multimode CXP 100GE Active Optical Cable (AOC), 3-meter [942-0052]. All media listed are available from Ixia.



944-1101

Xcellon-Multis XM100GE4CXP+FAN 100/40-Gigabit Ethernet, multiple rate load module, 1-slot with 4-ports of native 100GE CXP multimode interfaces and up to 12-ports of 40GE via fan-out cables with L2-7 support. The load module is compatible with the XGS12-SD 12-slot, standard performance rack mount chassis bundle (940-0011), XGS12-HS 12-slot, high-speed performance rackmount chassis bundle (940-0006), XG12 12-slot, rackmount chassis (940-0005), XGS2-SD 2-slot, 3RU standard performance chassis bundle (940-0010), XGS2-HS 2-slot, 3RU high-speed performance chassis bundle (940-0012) and the XM2 desktop chassis (941-0003). REQUIRES one or more per port of the following 100GE media: CXP 100GE pluggable, multimode optical transceiver (948-0030) and MTP-MTP 24-fiber, multimode point-to-point 100GE cable, 3-meter (942-0035), or point-to-point, multimode CXP 100GE Active Optical Cable (AOC), 3-meter [942-0052]. Also requires one or more per port of the following 40GE media: CXP-to-3x40GE QSFP Active Optical Cable (AOC) for 3x40GE fan-out, 3-meter [942-0054], or 5-meter [942-0055], or MTP-to-MTP passive fiber for 3x40GE fan-out, 3-meter (942-0060), 5-meter (942-0061); these cables may be used with QSFP 40GBASE-SR4 transceivers (948-0031). All media listed are available from Ixia.



Load module and Optics/Cable Bundles

947-5050

Bundle, XM100GE4CXP 100GE only, 4-port CXP load module and CXP-to-CXP point-to-point AOCs for 100GE operation. Bundle includes Qty 1 each XM100GE4CXP (944-1100) 100GE load module, and Qty 4 each CXP-to-CXP 100GE Active Optical Cable (AOC), multimode fiber (MMF) 850nm cables, 3-meter length (942-0052).



Active optical cables included

947-5051

Bundle XM100GE4CXP+FAN 100/40GE, 4-port CXP load module with point-to-point and 3x40GE QSFP+ MT-MT fan-out cables for 100GE and 40GE operation. Bundle includes Qty 1 each XM100GE4CXP+FAN (944-1101) 100/40GE load module, Qty 4 each CXP optical transceivers, MMF (948-0030), Qty 4 each, MT-MT point-to-point multimode fiber (MMF) 850nm cables (942-0035), 3-meter length, and Qty 4 each MT-MT 3x40GE fan-out cables, multimode fiber (MMF) 850nm cables, 3-meter length (942-0060).



Transceivers & MT-MT point-to-point and fan-out cables included

947-5052

Bundle Xcellon-Multis XM40GE12QSFP+FAN 40-Gigabit Ethernet, load module, 1-slot (944-1102) with 12-ports of 40GE via multimode fan-out AOC cables, with L2-7 support. A quantity of 4 each, 3-meter, multimode CXP-to-3x40GE QSFP fan-out cables (942-0054) are supplied with the load module. The load module is compatible with the XGS12-SD 12-slot, standard performance rack mount chassis bundle (940-0011), XGS12-HS 12-slot, high-speed performance rackmount chassis bundle (940-0006), XG12 12-slot, rackmount chassis (940-0005), XGS2-SD 2-slot, 3RU standard performance chassis bundle (940-0010), XGS2-HS 2-slot, 3RU high-speed performance chassis bundle (940-0012) and the XM2 desktop chassis (941-0003).



CXP-to-3x40GE QSFP fan-out active optical cables included

10GE fan-out Options**905-1000**

XM10GE-FAN-OUT 10GE factory installed fan-out option for Xcellon-Multis load modules. This enables 10GE fan-out capability on the following Xcellon-Multis load modules: XM100GE4CXP+FAN 100/40GE (944-1101), XM100GE4CXP 100GE (944-1100), XM40GE12QSFP+FAN 40GE (947-5052), XM10/40GE12QSFP+FAN (944-1105) and XM10/40GE6QSFP+FAN (944-1109). Note: This option is REQUIRED ON NEW PURCHASES of Xcellon-Multis load modules with native CXP and/or QSFP+ physical interfaces.

905-1001

UPG-XM10GE-FAN-OUT 10GE FIELD UPGRADE fan-out option for Xcellon-Multis load modules. This enables 10GE fan-out capability on the following Xcellon-Multis load modules: XM100GE4CXP+FAN 100/40GE (944-1101), XM100GE4CXP 100GE (944-1100), XM40GE12QSFP+FAN 40GE (947-5052), XM10/40GE12QSFP+FAN (944-1105) and XM10/40GE6QSFP+FAN (944-1109). Note: This option is REQUIRED ON FIELD UPGRADE PURCHASES of the 10GE fan-out capability for Xcellon-Multis load modules with native CXP and/or QSFP+ physical interfaces.

Transceivers and Cables**CXP Transceiver****948-0030**

CXP 100GE pluggable, optical transceiver with MPO receptacle for multimode fiber (MMF) 850nm operation. Compatible with Xcellon-Multis (944-1100) XM100GE4CXP CXP 100GE only, and XM100GE4CXP+FAN 100/40GE (944-1101) load modules. This optical transceiver may also be used with Xcellon-Lava AP40/100GE2P Accelerated Performance (944-1067), Xcellon-Lava 40/100GE2RP Reduced Performance (944-1068), and Xcellon-Lava AP40/100GE2P-NG FUSION load modules when used with the CFP-to-CXP Interface adapter module (948-0027).

Fiber Optic Cables (point-to-point and fan-out)

942-0052

CXP-to-CXP 100GE Active Optical Cable (AOC), multimode fiber (MMF) 850nm, point-to-point cable, 3-meter length for use with Xcellon-Multis (944-1100) XM100GE4CXP CXP 100GE only, and XM100GE4CXP+FAN 100/40GE (944-1101) load modules. This cable may be used with Xcellon-Lava AP40/100GE2P Accelerated Performance (944-1067), Xcellon-Lava 40/100GE2RP Reduced Performance (944-1068), and Xcellon-Lava AP40/100GE2P-NG FUSION load modules when used with the CFP-to-CXP Interface adapter module (948-0027).



942-0054

CXP-to-3x40GE QSFP Active Optical Cable (AOC), multimode fiber fan-out 850nm, 3-meter length for use with Xcellon-Multis XM100GE4CXP+FAN 100/40GE (944-1101) and XM40GE12QSFP+FAN 40GE (947-5052) load modules.



942-0055

CXP-to-3x40GE QSFP Active Optical Cable (AOC), multimode fiber fan-out 850nm, 5-meter length for use with Xcellon-Multis XM100GE4CXP+FAN 100/40GE (944-1101) and XM40GE12QSFP+FAN 40GE (947-5052) load modules.



942-0060

3x40GE passive fiber fan-out cable, MT-to-MT, F-F, key-Up, multimode fiber 850nm, 3-meter length. **REQUIRES** 1 each CXP 100GE pluggable optical transceiver (948-0030). This combination is compatible with Xcellon-Multis XM100GE4CXP+FAN 100/40GE (944-1101) and XM40GE12QSFP+FAN 40GE load modules.



942-0061

3x40GE passive fiber fan-out cable, MT-to-MT, F-F, key-Up, multimode fiber 850nm, 5-meter length. **REQUIRES** 1 each CXP 100GE pluggable optical transceiver (948-0030). This combination is compatible with Xcellon-Multis XM100GE4CXP+FAN 100/40GE (944-1101) and XM40GE12QSFP+FAN 40GE load modules.

**942-0062**

MT-to-3x10GE LC fan-out, MMF, 3-meter cable, **REQUIRES** one or more CXP 100GE pluggable, optical transceiver with MPO receptacle for multimode fiber (MMF) 850nm operation (948-0030). This cable supports the 3x10GE fan-out on the Xcellon-Multis CXP load modules: Xcellon-Multis XM100GE4CXP 100-Gigabit Ethernet (944-1100), XM100GE4CXP+FAN 100/40-Gigabit Ethernet, multiple rate (944-1101) and XM40GE12QSFP+FAN 40-Gigabit Ethernet bundle (947-5052). The 3x10GE fan-out option on CXP Xcellon-Multis load modules requires one 905-1000 XM10GE-FAN-OUT option for a new load module or the 905-1001 for a 10GE fan-out upgrade purchase for an existing load module. For a 10GE fan-out upgrade purchase please provide the serial number of the desired load module.

942-0063

MT-to-3x10GE LC fan-out, MMF, 5-meter cable, **REQUIRES** one or more CXP 100GE pluggable, optical transceiver with MPO receptacle for multimode fiber (MMF) 850nm operation (948-0030). This cable supports the 3x10GE fan-out on the Xcellon-Multis CXP load modules: Xcellon-Multis XM100GE4CXP 100-Gigabit Ethernet (944-1100), XM100GE4CXP+FAN 100/40-Gigabit Ethernet, multiple rate (944-1101) and XM40GE12QSFP+FAN 40-Gigabit Ethernet bundle (947-5052). The 3x10GE fan-out option on CXP Xcellon-Multis load modules requires one 905-1000 XM10GE-FAN-OUT option for a new load module or the 905-1001 for a 10GE fan-out upgrade purchase for an existing load module. For a 10GE fan-out upgrade purchase please provide the serial number of the desired load module.

942-0064

MT-to-8x10GE LC fan-out, MMF, 3-meter cable, **REQUIRES** one or more CXP 100GE pluggable, optical transceiver with MPO receptacle for multimode fiber (MMF) 850nm operation (948-0030). This cable supports the 8x10GE fan-out on the Xcellon-Multis CXP load modules: Xcellon-Multis XM100GE4CXP 100-Gigabit Ethernet (944-1100), XM100GE4CXP+FAN 100/40-Gigabit Ethernet, multiple rate (944-1101) and XM40GE12QSFP+FAN 40-Gigabit Ethernet bundle (947-5052). The 8x10GE fan-out option on CXP Xcellon-Multis load modules requires one 905-1000 XM10GE-FAN-OUT option for a new load module or the 905-1001 for a 10GE fan-out upgrade purchase for an existing load module. For a 10GE fan-out upgrade purchase please provide the serial number of the desired load module.



942-0065

MT-to-8x10GE LC fan-out, MMF, 5-meter cable, REQUIRES one or more CXP 100GE pluggable, optical transceiver with MPO receptacle for multimode fiber (MMF) 850nm operation (948-0030). This cable supports the 8x10GE fan-out on the Xcellon-Multis CXP load modules: Xcellon-Multis XM100GE4CXP 100-Gigabit Ethernet (944-1100), XM100GE4CXP+FAN 100/40-Gigabit Ethernet, multiple rate (944-1101) and XM40GE12QSFP+FAN 40-Gigabit Ethernet bundle (947-5052). The 8x10GE fan-out option on CXP Xcellon-Multis load modules requires one 905-1000 XM10GE-FAN-OUT option for a new load module or the 905-1001 for a 10GE fan-out upgrade purchase for an existing load module. For a 10GE fan-out upgrade purchase please provide the serial number of the desired load module.



ⁱ The Xcellon-Multis load modules may not be placed into slots 1 and 12 of the XGS12-HS, XGS12-SD, and XG12 chassis. Please consult your factory sales representative for further information.

ⁱⁱ Slot 1 (the lower slot) of the XM2 chassis provides optimal cooling for an Xcellon-Multis load module.

ⁱⁱⁱ Supplement to Infiniband Architecture Specification, Volume 2, Release 1.2.1., Annex A6: "120 Gb/s 12x Small Form-factor Pluggable (CXP) – Interface Specification for Cables, Active Cables, & Transceivers", September 2009