

# XM2 Portable Chassis

Ixia test systems deliver the industry's most comprehensive solutions for the performance, functional, and conformance testing of networks and networked applications. The 2-slot XM2 portable chassis provides a high-density, highly-flexible platform on which an Ixia test system can be built. Operating in conjunction with the Ixia family of test applications, the XM2 provides the foundation for a complete portable, flexible test environment.

A wide array of interface modules are available for the XM2. The chassis supports up to 32 Gigabit Ethernet ports, 16 - 10 Gigabit Ethernet ports, 1 - 40 Gigabit Ethernet port, 1 - 100 Gigabit Ethernet port, 1 dual-speed 40/100 Gigabit Ethernet port, four packet over SONET (POS) ports, or 4 asynchronous transfer mode (ATM) ports. These modules provide the network interfaces and distributed processing resources needed for executing a broad range of data, signaling, voice, video, and application testing for layers 2-7.

The XM2 chassis support an integrated test controller that manages all system and testing resources. Resource ownership at a per-port level, coupled with hot-swappable interface modules, ensures a highly flexible and multi-user testing environment. A load module form factor adapter assures backward compatibility with existing Ixia standard form factor interface modules and provides seamless migration from and integration with existing Ixia test system installations.



*XM2 Chassis*

## Specifications

<b>Slots<sup>1</sup></b>	2
<b>Size</b>	Size: 14"w (19.0"w including rack ears ) x 4.5"h x 19.25"d (35.6cm x 11.4cm x 48.9cm) with built-in carrying handle.
<b>Weight</b>	25 lbs. (11.3 kg) 30 lb (13.61 kg) average shipping weight
<b>Power</b>	1 circuits of 20A@110VAC 1 circuits of 10A@220VAC 60/50 Hz
<b>Timing Source</b>	Internal or synchronized with another Ixia chassis, or external with the AFD1 for a GPS time sources, or the AFD2 for BITS and IRIG-B time format input with additional 1PPS input.
<b>Operating System</b>	Windows XP Professional
<b>Management Card</b>	Internal – not field replaceable CPU - Intel Pentium Mobile, 2.0 GHz with 2 GB main memory Hard drive - 250 GB SATA DVD/CD drive
<b>Load Modules</b>	<p><b>XM Form Factor (XMFF) load modules:</b></p> <p>Acceleron™ High Performance Application Test product line:</p> <ul style="list-style-type: none"> <li>• ACCELERON-XP-01, Application High Performance Load Module, 1-10G or 12-Port Dual-PHY (RJ45 and SFP) 10/100/1000 Mbps</li> <li>• ACCELERON-NP-01, Application Network Processor Load Module, 1-10G or 12-Port Dual-PHY (RJ45 and SFP) 10/100/1000 Mbps</li> </ul>

<sup>1</sup> Some high density / high performance load modules may require more power and cooling reducing the number of useable slots. The number of useable slots will be determined by the combination of load modules being used in the chassis.

IxYukon NP High Density 10GbE Application Test product line:

- IXYUKON-NP8-01, 10 Gigabit Application Network Processor Load Module, 8-Port LAN/WAN, SFP+ interface
- IXYUKON-NP4-01, 10 Gigabit Application Network Processor Load Module, 4-Port LAN/WAN, SFP+ interface
- IXYUKON-NP2-01, 10 Gigabit Application Network Processor Load Module, 2-Port LAN/WAN, SFP+ interface

Application and Stream Load Module:

- ASM1000XMV12X-01, Application and Stream Load Module, 1-10G or 12-Port Dual-PHY (RJ45 and SFP) 10/100/1000 Mbps

Higher Speed Ethernet product line:

- HSE40GETSP1-01, 40-Gigabit Ethernet Load Module, 1-port, 2-slots, with CFP MSA interface
- HSE100GETSP1-01, 100- Gigabit Ethernet Load Module, 1-port, 2-slots, CFP MSA interface
- HSE40/100GETSP1-01 Dual-Speed, 1-port, 2-slots, with CFP MSA interface

IxYukon High Density 10 Gigabit Ethernet product line:

- LSM10GXM4/8-port full performance, XFP interface
- LSM10GXMR2/4/8 port reduced performance, XFP interface
- LSM10GXM2/4/8XP-port full performance, XFP interface
- LSM10GXM2S/4S/8S-port full performance, SFP+ interface
- LSM10GXM2S/4S/8S-port reduced performance, SFP+ interface
- LSM10GXM2GBT/4GBT/8GBT-port full performance, 10GBASE-T interface

- LSM10GXM2GBT/4GBT/8GBT-port reduced performance, 10GBASE-T interface

10 Gigabit Ethernet product line:

- LSM10GXM3-port, full performance, XFP interface
- LSM10GXMR3-port, reduced performance, XFP interface

High Density Gigabit Ethernet product line:

- LSM1000XMV4/8/12/16-port, full performance, dual-phy SFP fiber and 10/100/1000Mbps RJ45 copper
- LSM1000XMVR4/8/12/16-port, reduced performance, dual-phy SFP fiber and 10/100/1000Mbps RJ45 copper

**Standard Form Factor (SFF) load modules with SFF Adapter Module for XM2 chassis:**

Gigabit Ethernet TXS Family:

- LM1000STX(S)xxx, LM1000TX(S)xxx, LM1000SFP(S)xxx
- 10/100 Ethernet TXS family: LM100TX(S)xxx

10 Gigabit Ethernet LSM family:

- LSM10G1-01, 10 Gigabit Ethernet Load Module, 1-Port, Full L2-7 support, requires interface adapter module
- LSM10GL1-01, 10 Gigabit Ethernet Load Module, 1-Port, supports L2-3 stream generation only, no L4-7 application support, requires interface adapter module
- Interface adapter modules for XENPAK, X2, CX4, 10GBASE-T and SFP+ interfaces for LSM10G1-01 and LSM10GL1-01

Application and Encryption Test product line:

- CPM (Content Processing Module): CPM1000T8
- AFM (Auxiliary Function Module): AFM1000SP-01
- ALM (Application Load Module): ALM1000T8

	<ul style="list-style-type: none"> <li>• ELM (Encryption Load Module): ELM1000ST2</li> </ul> <p>10-Gigabit UNIPHY and MacSec products:</p> <ul style="list-style-type: none"> <li>• 10G MSM (OC-192c POS, 10 Gigabit Ethernet LAN/WAN): MSM10G1xxx</li> <li>• LSM10GMS1-01, 10 Gigabit Ethernet Load Module, 1-Port, LAN/WAN, Full performance and supports 802.1ae Media Access Control Security (MacSec) L2 security, including GCM/AES128</li> </ul> <p>Packet over SONET and ATM products:</p> <ul style="list-style-type: none"> <li>• MSM2.5G1-01, OC48 Load Module, 1-Port 2.5G Multi Service Module supporting OC48c, Supports POS, Full L2-7 support</li> <li>• LM622MR, OC3/OC12 ATM/POS, Load Module, 2-port ATM/Packet over SONET (POS); Full L2-7 Support. Supports 622 and 155 Mbps data rates</li> <li>• LM622MR-512, OC3/OC12 ATM/POS, Load Module, 2-port ATM/Packet over SONET (POS), Full L2-7 Support. Supports 622 and 155 Mbps data rates, 512MB Port CPU memory</li> <li>• OC3OC12PHY, OC3/OC12 ATM/POS Adapter, Dual-SC optical connector, Single-port OC-3/OC-12 PHY 1310nm Multimode; For the LM622MR or LM622MR-512) load modules</li> </ul> <p>Power over Ethernet</p> <p>PoE (Power over Ethernet): PLM1000T4-PD (20W), LSM1000POE4-02 (30W)</p>
<b>Temperature<sup>2</sup></b>	<p>Operating: 41° F to 104° F (5° C to 40° C) Storage: 41° F to 122° F (5° C to 50° C)</p>
<b>Humidity</b>	<p>Operating: 0% to 85%, non-condensing Storage: 0% to 85%, non-condensing</p>

<sup>2</sup> Some high density / high performance load modules may require a lower operating temperature. If this is the case, the operating temperature will be specified in the load module datasheet.

<b>Connectors</b>	Video: 15 pin connector Keyboard: PS/2 6 pin DIN Mouse: PS/2 6 pin DIN USB: 3 x Male Dual Type A (1 Out Front and 2 Out Back) Management: 10/100/1000 Ethernet RJ45 Sync In: RJ11 Sync Out: RJ11 Serial: DB9
<b>Switches and Indicators</b>	Power, Standby, Master, External Clock LCD with chassis status information 2 paired LEDs next to each slot position indicating slot power and card ownership
<b>Fans</b>	Four non-field replaceable fans

## Features

- Common platform: a single portable solution for executing a wide array of data, signaling, routing, voice, video, and application testing from Layer 2 through 7
- Hot swappable modules: interface cards can be actively swapped in and out of the test bed without disrupting ongoing tests
- Extensive interface support: 10/100/1000 Ethernet, 10 Gigabit Ethernet, Higher Speed Ethernet 40 Gbps, 100Gbps, and Dual-Speed 40/100 Gbps, OC-3c/12c ATM, OC-3c/12c/48c/192c Packet over SONET (POS), Power over Ethernet (PoE)
- Integrated PC controller running Windows XP Pro for management and control of port configuration and statistics
- High performance: high-speed backplane and system controller to support the high bandwidth requirements of medium scale application tests
- Daisy-chaining of up to 256 Ixia chassis in a single test (X16, XL10, XM12, XM12 High Performance, XM2, IXIA 1600T, IXIA 400T) with high synchronization accuracy

- Powerful automation facilities using the Tcl scripting language with easy integration into automated lab environments
- Modular sub-components: power supplies, and hard drive

### **Benefits**

- Very high Gigabit and 10 Gigabit Ethernet port density in 3U portable chassis, reducing space requirements and simplifying management
- Wide variety of network interfaces available enables flexible, multi-functional deployment
- High performance architecture speeds test initialization and execution times
- Multi-user environment leverages test equipment investment across multiple tests and users simultaneously
- Port-level user ownership maximizes testing resources across multiple users
- Integrated PC controller eliminates need to buy a separate, specially configured workstation
- Integrated software packaging/installation for both chassis and interface modules reduces management overhead and simplifies upgrades
- Remote management allows easy access to chassis resources via a network
- Pre-built automated test packages provide for the simple execution of scalable benchmarking metric tests
- Hot-swappable interface modules allow continual test execution in a multi-user environment without interruption
- Modular sub-components enable simplified and quicker upgrades and replacements
- Backward compatibility of hardware and software with existing Ixia test systems allows easy transition from or integration with existing installations

### **Targeted Users**

- Engineering and quality assurance (QA) groups developing and testing high density Ethernet products
- Engineering and QA groups developing and testing layer 2-7 devices
- Manufacturing groups executing production quality and repetitive testing
- Customer support departments troubleshooting customer issues
- Internet service providers (ISPs), carriers, and large enterprises executing product qualification/acceptance testing or pre-deployment hot staging
- Certification and interoperability labs providing third party equipment test and validation

## Industry-Leading Performance

The architecture of the XM2 chassis is designed for superior test application performance. Reduced test initialization and execution times compared with existing test systems ensures optimized use of test equipment investment.

Ixia's test systems are built on a proven, scalable architecture that integrates a RISC CPU running Linux and network protocol stacks on every test port. This distributed Linux processing environment enables application traffic testing of content-aware devices, together with line-rate stateless traffic generation and analysis on each Ixia test port.

## High Scalability

The XM2 test system is designed to operate in high scalability test environments. The XM2 chassis supports up to 32 Gigabit Ethernet ports and up to 16 10 Gigabit Ethernet ports in a portable 3U high system. Multiple XM2 and other Ixia chassis can be daisy-chained together to extend a single test environment to thousands of ports. The XM2 works in conjunction with Ixia's family of applications to control and execute testing across large scale test beds.

## Application Support

The XM2 high performance chassis supports a wide array of Ixia test applications, including:

- IxLoad for performance testing content-aware devices (e.g., load balancers, web servers, video servers) running protocols such as HTTP, FTP, SMTP, SIP, MPEG2 video, etc.
- IxVoice is a comprehensive hardware and software test framework that provides unified VoIP and PSTN test solutions for the telecom/network equipment
- IxNetwork for control and data plane performance testing of routers and switches with complex protocol support including BGP, OSPF, IS-IS, MPLS, IP multicast and Spanning Tree, including IPv4 and IPv6 variations and many more protocols ...
- IxAutomate for executing automated, wizard-based data and control plane protocol tests with sophisticated results analysis for RFC-based benchmark performance switch tests
- IxExplorer for granular, highly flexible data plane testing and analysis
- IxAuthenticate enables comprehensive testing of network switch authentication functions by emulating large numbers of supplicants/users and provides data plane performance metrics, including throughput and latency.
- IxChariot for emulation of networked applications to determine end-to-end response times



- IxVPN for performance testing secure IPsec VPN gateways
- IxAccess for performance testing broadband access devices with comprehensive performance and scalability analysis of edge aggregation devices.
- IxANVL for protocol conformance testing.
- IxAdmin is designed to conveniently centralize asset management. IxAdmin offers lab managers the ability to control software upgrades, license installation and manage Ixia software applications and hardware devices on the test network.
- IxSan provides test capability for stateful, real-world, large-scale emulation of fibre channel protocol (FCP) targets and initiators over Ethernet and FcoE.
- IxDefend a security and robustness testing platform for the analysis of networked devices
- IxGreen allows NEMs and service providers to measure a device's energy consumption at various load conditions utilizing real-world, layer 2 through 7 application traffic profiles.

### **Highly Serviceable**

The XM2 is highly serviceable. Load modules may be replaced while the chassis is powered on – all other load modules continue to run unaffected. The system hard drive is mounted on a replaceable tray. An interchangeable, modular power supply is also replaceable. Repairs and replacements are possible in a matter of minutes and without the need to return the chassis to the factory.

### **Investment Protection**

The XM2 portable chassis delivers increased performance for test applications while at the same time maintaining compatibility with existing Ixia test systems. Ixia standard form factor load modules are supported in the XM2 chassis via a load module adapter that supports hot swap and improved system performance. Test applications, configurations, and automation scripts are compatible, allowing easy migration of existing test beds to the new system without loss of capital investment.

### **Product Ordering Information**

#### **941-0003**

OPTIXIAXM2-02 2-slot XM form factor chassis, including integrated PC controller, power supplies, IxOS operating system, and IxExplorer client application.

**944-0007**

Standard Form Factor load module adapter module for the XM12 High Performance, XM12 and XM2 chassis.

**942-0006**

Carry case for 941-0003 (OPTIXIAXM2) chassis; Includes retractable handle, reinforced padded corners, and wheels

**942-0023**

AFD2, Auxiliary Function Device, IRIG-B standalone timing unit for any Ixia chassis, RoHS compliant; Includes two 15 ft. cables, 6 ft. USB cable, 6 ft. serial cable, 6 ft. chassis sync cable and power supply; Configure by USB or serial cable; requires cable to be connected to BITS or other timing source

**942-0002**

AFD1, Auxiliary Function Device, GPS standalone unit for any Ixia chassis. Includes antenna, USB cable, serial cable, chassis sync cable and power supply. Configure by USB or serial cable, requires antenna to be installed with line-of-sight to the GPS satellites

**942-0003**

GPS Antenna, Installation Kit. Includes TNC Bullet antenna, 75 ft. cable. Operates with 942-0002 (AFD1)

**942-0004**

GPS Cable Option. Includes in-line COAX TNC Amplifier, 200 ft. cable. Operates with 942-0002 (AFD1)

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