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# IXIA 1600 Chassis




# IXIA 1600 Traffic Generator/Analyzer

**The IXIA 1600™ delivers the most comprehensive high performance multiport traffic generator/analyzer available for testing multilayer Packet Over SONET, Gigabit, and 10/100Mbps Ethernet switches, routers, and networks.**

**The IXIA 1600 16 slot, rack mountable version offers the highest port density available with support of up to 32 Packet Over SONET ports, 32 Gigabit Ethernet ports, or 64 10/100Mbps Ethernet ports to test the most complex multilayer switches, routers, and Internet backbones. The IXIA 1600 chassis' highly scalable architecture supports daisy-chaining of up to 256 chassis that can be synchronized to within 10 nanoseconds. Thus, even the most complex systems can be tested thoroughly and cost-effectively.**

## Features:

- Multiport/Multilayer Traffic Generator and Performance Analyzer
- Highest density of multilayer ports available in a single chassis
- 256 traffic streams per port (over 4 billion packets per traffic stream)
- 32,000 traffic flows per port
- Support for Packet Over SONET, Gigabit, and 10/100 Ethernet
- Per port wire line rate transmit and receive
- Simultaneous testing of multilayer protocols
- Built-in PC, running Windows 95™ used for configuration
- Windows Explorer-like interface for configuration, data capture, and real-time analysis
- Multi-user login with remote access
- Tcl/Tk support
- Daisy chaining of up to 256 chassis to within 10 nanoseconds synchronization
- Multilayer protocol packet generation and decode support
- Synchronously test over 8,000 ports of Packet Over SONET and Gigabit Ethernet
- Synchronously test over 16,000 ports of 10/100 Ethernet

## Benefits:

- No need to buy specially configured PC for configuration, data capture, and real-time analysis
- Save time and costs by providing software-only upgrades for future enhancements
- Quick access to thousands of ports to test high ports density switches, routers, and Internet backbones.
- Multiple users can log in and own a set of ports spanning over a single or multiple chassis, maximizing testing resources
- Benchmark switch performance to pre-determined throughput and latency
- Identify the maximum network threshold with load and non-load conditions utilizing a variety of custom test packages
- Reduce testing time by providing easy-to-use graphical user interface

## IXIA 1600 Chassis

The IXIA 1600 chassis houses up to 16 Load Modules of any type – OC-3c/OC-12c/OC-48c Packet Over SONET, Gigabit Ethernet, 10/100Mbps Ethernet or a combination.

Load Modules are installed in the front of the chassis, while the back houses the system controller interface, including, mouse, keyboard, video, 10/100 Ethernet for remote access, and daisy-chain in/out ports for multiple chassis synchronization.

## Applications

The IXIA 1600 is an essential tool for Engineering teams who are developing and troubleshooting Packet Over SONET and Ethernet procucts. The IXIA 1600 is also a critical product for certification departments tasked with validation of specification and performance testing in the lab. It can also be used for production testing and quality assurance during the manufacturing process, and even has application within customer service departments as a troubleshooting resource. Furthermore, managers of Internet Service Providers (ISPs) and large corporate networks can use the IXIA 1600 to simulate network changes and additions, and asses their impact prior to making a permanent change.

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## Highly Manageable

Front panel displays give immediate indication of link state, transmission or reception of packets, and error conditions. Ixia's powerful IxExplorer™ MS-Windows-based software provides easy configuration, control and status. The IXIA 1600 offers an optional suite of test scripts written in the industry-standard scripting language Tcl. These scripts implement the popular Benchmark Working Group (BMWG) performance tests specified in RFC 2544 and RFC 2285. Other optional Tcl test scripts include Ixia's IP Multicast Test, Quality of Service Test (QoS), Advanced Tcl Script Suite (ATSS), Multiport Advanced Test Suite (MATS), Cable Modem Automated Test Suite (CMATS).

## IxExplorer Software

The IXIA 1600 chassis is managed and controlled with the IxExplorer Windows-based software. The IxExplorer Networks Resources Window is a client-server application that can be run directly on the IXIA 1600 with a keyboard, mouse, and monitor, or on any Windows95/98/NT™ platform over a TCP/IP network. It uses the Microsoft Windows Explorer paradigm for easy access to test tools. The IxExplorer configures and controls traffic generation, monitors statistics, views, and decodes captured packets. The scalable user interface can be used across multiple chassis concurrently for seamless operation of large configurations.

## IxExplorer Packet Generation

With Packet Streams tools, the user can configure each port to transmit any packet condition, whether valid packets, undersized (as low as 12 bytes), oversized (up to 65,536 bytes), or error packets (alignment, dribble bit, bad CRC or no CRC). Each port can have up to 256 different streams, or 32,000 flows, and each stream is capable of generating millions of unique packets. Users can easily configure packets with incrementing, decrementing, or random MAC and IP addresses for simultaneously testing Layer 2 and Layer 3 Ethernet switches. The entire packet contents are user-defined and can generate IP addresses with real-time checksum calculation for effective testing of sophisticated IP switches, supporting millions of -IP addresses.

## Protocol Editors

Protocol editors are available for IP, UDP, IPX, TCP, ARP and others. Each port can generate ARP, Ping, RIP, and other user-defined packets at a user-specified frequency. In addition, each port can be assigned a MAC and an IP address, and can then respond to ARP and Ping.

## IXIA 1600 Specifications

*General*

Fully integrated PC with LAN 10/100 NIC

*Physical*

| | |
|---|---|
| Load Module Slots | 16 |
| Size | 17.5"w x 9.6"h x 20.4"d (44.5cm x 24cm x 52cm) |
| Weight (empty) | 25.5lbs. (11.6kg) |
| Avg. Shipping Wt. | 29lbs. (13.2 kg) |

*Environmental*

| | |
|---|---|
| Temperature | |
| *Operating:* | 50°F to 104°F, (10°C to 40°C) |
| *Storage:* | 50°F to 122°F, (10°C to 50°C) |
| Humidity | |
| *Operating:* | 0% to 85%, non-condensing |
| *Storage:* | 0% to 85%, non-condensing |
| Vibration: | 0 to 500Hz |
| *Front Panel Switches* | On/Off momentary power push button |
| *Back Panel Switches* | On/Off rocker switch |
| *Front Panel Indicators* | Power, Standby, Master, Slave |
| *Back Panel Connectors* | |
| Power: | Male receptacle |
| Mouse: | PS/2 6-pin DIN |
| Keyboard: | PS/2 6-pin DIN |
| Monitor: | HD-DB15 Super VGA |
| Printer: | Female DB25 parallel port |
| Ethernet: | RJ45 10/100Mbps |
| Serial: | 2 male DB9 ports |

## Load Modules Available

| | Data Rate | Connector | Capture Buffer | Ports |
|---|---|---|---|---|
| **LM100TX** | 10/100 Mbps | RJ-45 | 2MB | 4 |
| **LM100FX** | 100 Mbps | MT-RJ | 2MB | 4 |
| **LM100MII** | 10/100 Mbps | 40 pin Amplimite | 2MB | 2 |
| **LM100RMII** | 10/100 Mbps | 68 pin Amplimite | 2MB | 4 |
| **LM1000LX** | Gigabit | SC Singlemode fiber | 4MB | 2 |
| **LM1000SX** | Gigabit | SC Multimode fiber | 4MB | 2 |
| **LM100TX3** | 10/100 Mbps | RJ-45 | 2MB | 4 |
| **LM1000SX3** | Gigabit | SC Multimode fiber | 4MB | 2 |
| **LM1000LX3** | Gigabit | SC Singlemode fiber | 4MB | 2 |
| **LM1000GBIC** | Gigabit | GBIC – Transceiver Module | 4MB | 2 |
| **LM1000T** | Gigabit | 1000-BaseT RJ-45 | 4MB | 2 |
| **LMOC12c** | 155/622 Mbps | SC Multimode fiber | 16MB | 2 |
| **LMOC12cSM** | 155/622 Mbps | SC Singlemode fiber | 16MB | 2 |
| **LMOC48c** | 2.488 Gbps | SC Singlemode fiber | 256MB | 1 |

*Contact Ixia Communications for information about the Ixia family of products.*

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