

IXIA 400 Chassis

IXIA 400 Traffic Generator/Analyzer

The IXIA 400™ is a desktop version of Ixia's flagship product, the IXIA 1600™, incorporating its power and functionality in a highly portable configuration. Providing remarkable high-port density for a portable unit, the chassis holds any of Ixia's wide range of Load Modules: Packet Over SONET OC-3c/12c, OC-48c and OC-192c, Gigabit Ethernet, 10/100 Ethernet and USB. The IXIA 400 incorporates a built-in Pentium class PC for local management and control, as well as a 10/100 Ethernet-based NIC card for remote management over TCP/IP networks. The 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
- Portable (4 Load Module slots)
- Multi-user login with remote access
- High port density:
 - 16 10/100Mbps Ethernet ports
 - 8 Gigabit Ethernet ports
 - 8 OC-3c/12c PoS ports
 - 4 OC-48c POS ports
 - 2 OC-192c PoS ports
- 256 traffic streams per port (over 16 million packets per traffic stream)
- Up to 31,744 traffic flows per port
- Real-Time Latency on a packet-by-packet basis
- Real-Time RoundTrip Flow™
- QoS emulation and measurement
- Per port wire-speed transmit and receive
- Simultaneous testing of multilayer protocols
- Built-in PC used for configuration and statistics gathering
- Popular Windows Explorer-like interface for configuration, data capture, and real-time analysis which can be executed from Windows 95/98/NT™
- Tcl/Tk-based ScriptMate GUI executable from Sun Solaris™ and Linux™ workstations
- Support for test automation and custom application development using Ixia's Tcl API
- Daisy-chaining of up to 256 chassis with

10 nanoseconds synchronization

- Multilayer protocol packet generation and decode support

Benefits:

- Maximize your investment by allowing multiple users to share common hardware resources
- 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
- Reduce testing time by providing easy-to-use graphical user interface and automated Tcl scripts

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 95/98/2000/NT™ based software provides easy configuration, control, and status. The IXIA 400 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 Tests, Quality of Service Tests (QoS), Advanced Tcl Script Suite (ATSS), Multiport Advanced Test Suite (MATS), Cable Modem Automated Test Suite (CMATS), and Server Load Balancing Verification Suite (SLBVS). The Tcl/Tk-based ScriptMate application provides a graphical interface to execute the pre-built Tcl test suites.

IxExplorer Software

The IXIA 400 chassis is managed and controlled with the IxExplorer Windows-based software. IxExplorer is a client-server application that can be run directly on the chassis with a keyboard and monitor or on any Windows95/98//2000/NT™ client over a TCP/IP network. The user can operate the IXIA 400 using either the Microsoft Windows Explorer style interface, or a graphical view of the chassis. IxExplorer configures and controls traffic generation, monitors statistics, and views and decodes captured packets. The scalable interface can be used across multiple chassis concurrently for seamless operation of large configurations.

IxExplorer Packet Generation

With Packet Stream generation utilities, the user can configure each port to transmit any packet

IXIA 400 Specifications

condition, whether valid packets, undersized (as low as 12 bytes), oversized (up to 64K bytes), or error packets (alignment, dribble bit, bad CRC or no CRC). Each port can have up to 256 different streams, or up to 31,744 unique 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. Packets with user-defined TCP and UDP source and destination ports can also be generated with real-time TCP and UDP checksum calculation.

IxExplorer Receive Mode

Each port supports protocol analysis through using filters, triggers, and protocol decodes. Furthermore, receive ports can operate in real-time latency mode, calculating and displaying packet-by-packet latency at full wire speed. Ports can also be configured to send and receive TCP packets for TCP session establishment and tear down.

Multilayer Support

The IXIA 400 provides unparalleled multilayer testing capability. Its unique real-time RoundTrip Flow™ functionality enables the emulation of a variety of QoS-centered devices, e.g., web servers, load balancers, or switches. An important benefit of the RTF feature is Ixia's ability to graphically display the data transmit and receipt activity, in real time, through the IxExplorer GUI, providing instantly accessible and clearly interpretable performance characteristics of up to 56,000 flows per port, including, real-time latency (min, max, avg.), bits per second, frame rate, etc. These flows can be characterized as TCP, UDP, and other protocols such as HTTP and FTP, utilizing the TCP/UDP sockets.

Protocol editors are available for IP, UDP, IPX, TCP, ICMP, DHCP, RIP, ARP, ISL, MPLS, VLAN 802.1p&q and OSPF. Each port can generate ARP and Ping requests, and IGMP queries 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 requests, and IGMP Queries.

General

Fully integrated PC with LAN 10/100 NIC

Physical

Load Module Slots 4
 Size 10.25" w x 5.75" h x 16" d
 (26.1cm x 14.6cm x 40.6cm)
 Weight (empty) 10lbs. (4.5kg)
 Avg. Shipping Wt. 16lbs. (7.3 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, Master, External Clock

Back Panel Connectors

Power: Male receptacle
 Mouse & Keyboard: PS/2 6-pin DIN
 Monitor: HD-DB15 Super VGA
 Printer: Female DB25 parallel port
 Ethernet: RJ-45 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 |
| LM100FXSM | 100 Mbps | SC Multimode Fiber | 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 |
| LMOC12cMM | 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 |
| LMOC192c | 9.952 Gbps | SC Singlemode fiber | 32MB | 2 |
| LMUSB1 | 12Mbps | USB | 2MB | 4 |
| LMUSB2 | 10Mbps/12Mbps | RJ-45/USB combo | 2MB/2MB | 4/4 |

Contact Ixia for information about the Ixia family of products.



U.S.A. 1-877-FOR-IXIA
 Fax 1-818-871-1805
 International +1-818-871-1800
www.ixiacom.com