

## SmartMetrics™ Modules

# LAN-3300A/LAN-3310A

### Product Overview

SmartBits® LAN-3300A and LAN-3310A are SmartMetrics Ethernet modules used to test the performance and interoperability of networking devices. With these modules, you can quickly measure all of the key metrics, including true load capacity, latency, and IP frame sequencing.

The copper-based LAN-3300A supports rates of 10, 100 and 1000 Mbps. The GBIC-based LAN-3310A supports 1000 Mbps (1 Gbps) over single and multi-mode fiber. Each module is capable of simulating the millions of clients and servers required to fully test network systems. The modules yield per-flow metrics for millions of IP flows used to assess the quality of service provided by Diffserv, MPLS, IP QoS, and VLAN enabled devices. Each module is capable of full wire-rate traffic and analysis and complies with the 10Base-Tx/100Base-TX IEEE specification in 10/100 Mbps mode and the IEEE 802.3z draft specification in Gigabit mode. Use the LAN-3300A and LAN-3310A with other modules to test high-speed internetworking between 10/100/1000 Mbps Ethernet, and either 10/100/1000 Mbps Ethernet, ATM, Frame Relay, or Packet over SONET (POS) devices.

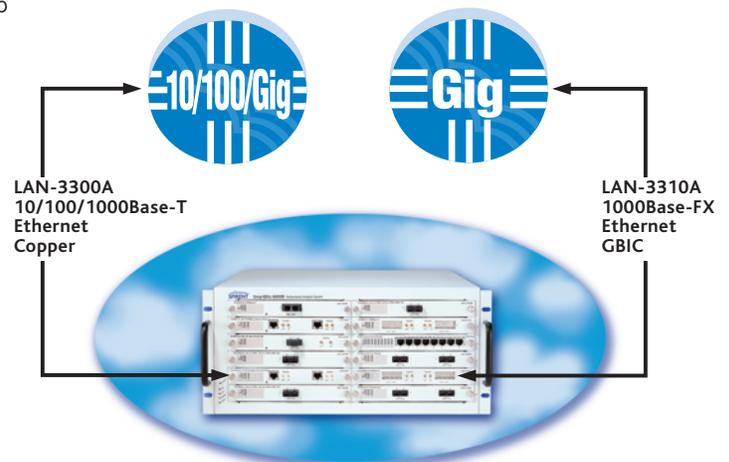
### Primary Applications

- Evaluate key performance parameters of 10/100/1000 Mbps networking devices, such as switches and routers, under typical or extreme traffic load conditions.
- Qualify 10/100/1000 Mbps networking devices during development, quality assurance, and final regression testing.
- Perform stress and negative testing by injecting errored traffic.
- Perform comparative analysis of 10/100/1000 Mbps networking devices and re-qualify after firmware upgrades.

### Key Features

- Stream-based, wire-rate traffic generation (up to 1,448,095 frames per second) and analysis.
- Supports autonegotiation.

- Supports frame sizes of 40 to 16,384 bytes.
- Ports are completely independent in operation.
- Generates up to 512 independent IP streams (peer-to-peer) and analyzes up to 64K streams.
- Instruments millions of flows per stream, thereby stressing a router by having it perform a different routing decision for each and every frame.
- Each frame may be set to a fixed frame size or may be set to generate random frame sizes using a uniform distribution.
- Virtually unlimited address space coverage with varying, multiple address fields.
- Allows mask-based address skipping for easier test setup.
- Generates and accepts 802.1q VLAN tagged frames.
- Provides optional MPLS label stack encapsulation.
- Generates and responds to 802.3x flow control commands.
- Supports ping and ARP.
- Provides per-port transmission mode control settings (continuous, single-burst, multi-burst, continuous multi-burst, and echo).
- Arbitrary stream sequencing enables the mixing of various frame rates.
- Unicast, broadcast, and multicast traffic effects may be analyzed.
- 16 MB capture memory enables the logging and exporting of events to external protocol analysis equipment.
- Per-port statistics provide counters for transmitted frames and received frames, bytes, CRC errors, over- and under-sized frames, VLAN frames, and pause frames.
- SmartMetrics testing capabilities include throughput, sequence tracking per stream, latency over time, latency per stream, and latency variation; allows for histogram analysis.
- Additional analysis capabilities include data integrity checking of payload and IP header checksum verification.



LAN-3300A/3310A application

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## Supported Applications

- SmartWindow™
- SmartLib™ Programming Library
- ScriptCenter™
- SmartApplications™
- SmartFlow™
- AST II™

Additional applications will be made available on an ongoing basis.

## Specifications

Feature	LAN-3300A	LAN-3310A
# Ports per Module	2	2
Maximum # Ports per Chassis	4 (SMB-600) 24 (SMB-6000B)	4 (SMB-600) 24 (SMB-6000B)
Connector Type	RJ-45	GBIC
Cabling	Cat5	Fiber
Signal Rate	10/100/1000 Mbps	1000 Mbps

The LAN-3310A modules support the use of a GBIC interface. GBIC is an industry standard interface that allows users to change the physical interface to support either multi-mode or single-mode fiber for Gigabit Ethernet. GBIC converters can be inserted or removed from a host chassis without removing power from the host system. Since the converters are hot-pluggable, they allow system configuration changes simply by plugging in a different type of converter. The following GBIC modules from OPC are supported and can be ordered directly from Spirent Communications:

Part Number	Description
ACC-6002A MM	Gigabit Interface Converter (GBIC) Multi-mode
ACC-6003A SM	Gigabit Interface Converter (GBIC) Single-mode

## Requirements

- LAN-3300A and LAN-3310A modules require one slot in an SMB-600 or SMB-6000B chassis.
- An IBM or compatible Pentium™ PC running Windows 98/2000/NT, with mouse and color monitor.
- For chassis control: RS-232 modem (not null-modem) cable, one Ethernet cable with RJ-45 connectors (use a crossover cable if directly connected from PC to the SmartBits chassis), and a 10 Mbps half-duplex Ethernet controller card (in PC/workstation).

## Related Products

### LAN-3301A/3311A TeraMetrics Modules

These modules support advanced routing solutions, such as TeraRouting Tester and MPLS, which offer route flapping.

Applications include the testing of networks running upper-layer protocols, and the evaluation of routers during development, quality assurance, and final regression testing. In addition, the LAN-3301A/3311A modules support custom and third-party applications via an on-board Pentium processor and Linux operating system. For additional information, refer to the LAN-3301A/3311A data sheet.

## Ordering Information

### LAN-3300A

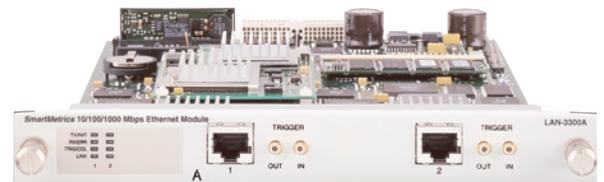
10/100/1000Base-T Ethernet Copper, 2-port, multi-mode, SmartMetrics module

### LAN-3310A

1000Base-FX Ethernet GBIC, 2-port, multi-mode, SmartMetrics module

### SUS-SMB

12-month Software Update Support Service (includes firmware support)



LAN-3300A

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