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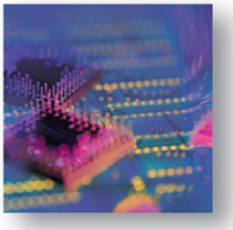
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GX-1405B, GX-1405Bs, SX-7210, SX-7410B
10/100/1000 Mbps Ethernet SmartCards

Product Overview

The Fast Ethernet SmartCards are designed to generate, monitor, and capture 10/100 Mbps or Gigabit Ethernet traffic. Applications include 10/100 Mbps and 1000 Mbps Ethernet backbone testing, conformance, and interoperability testing.

The GX-1405B/1405Bs SmartCard provides a single port for generating, monitoring, and capturing Gigabit Ethernet traffic in full duplex mode. The physical interface is 850 nanometer multi-mode fiber. The GX-1405B/1405Bs SmartCard operation follows the IEEE 802.3z specification. The card can be used to test Gigabit Ethernet backbones, as well as to perform conformance and interoperability testing. Upstream traffic and throughput testing can be performed by using the GX-1405B/1405Bs in combination with, for example, ten SX-7410B 100 Mbps SmartCards. Upstream traffic and throughput testing can be performed in configurations with other SmartCards.

The SX-7210 and SX-7410B Fast Ethernet full/half duplex SmartCards support IEEE 100Base-X autonegotiation and flow control. SX-7210/SX-7410B SmartCards support VLAN tagged fields and 1522 byte packets per IEEE 802.1p, 802.1q, and 802.3ac draft documents. Data capture is provided for up to 128,000 bytes of packet data. Interfaces other than the 100Base-TX require the use of the SX-7210 SmartCard, which contains an external MII transceiver.

Key Features

- All cards transmit and receive at or beyond wire speed.
- Generates, monitors, and captures data.
- High port density for generating heavy and realistic loads.
- Generates good and errored traffic.
- Generates oversized and undersized frames.

Transmit Functions

Transmit Modes

- Continuous Mode: Constant stream of packets at user-selected Interpacket Gap.
- Single Burst Mode: Up to 16 million packets in a single burst with user-selected Interpacket Gap.
- Multi-burst Mode: Up to 65,536 repetitive bursts with a user-adjustable delay (maximum 1.6 seconds) between each burst.
- Continuous Multi-burst Mode: Runs multi-burst mode continuously.
- Echo Mode: Sends one packet when a trigger occurs.

Background Packet Data Fill Pattern

The user may configure a custom background fill or choose from: incrementing and decrementing byte, incrementing and decrementing word, random data, all zeros, all ones, and other patterns.

Variable Field Data

Insert up to three varying data fields in the transmitted packet.

- VFD1 and VFD2: May be up to 6 bytes in length specified by the following selections: On/Off; Value; Static; Increment; Decrement; Cycle Count; Random. Offset range is 0 to 2,048 bytes.
- VFD3: User-specified 2,048 byte buffer to create a sequence of packets with different protocol headers varying from packet to packet with the following selections: On/Off, Offset, Number of Packets, and VFD3 Length.

Alternate Transmit Stream

An alternate stream of transmitted data can be configured to represent various traffic scenarios. The main data stream may be interspersed with a secondary data stream. This can be used to generate a controlled percentage of errored traffic, management frames, or pause frames.

Receive Functions

Triggers

Two independent triggers from 1 to 6 bytes each. Trigger offset can be adjusted from byte 0 to the last byte of the CRC in 1-byte increments. Triggers are used to count specific packets. The trigger counter can be set to Trigger 1, Trigger 2, Triggers 1 or 2, or Triggers 1 and 2.

Counters

All counters may be set to display rates and events. The following counters are shown:

- Packets successfully transmitted.
- Valid packets received.
- Valid frame length packets with bad CRC.
- Packets with size greater than 1,518 bytes, including CRC.
- Undersized packets and fragments received with size less than 64 negotiation bytes, including CRC.
- Received bytes OR only bytes received in valid packets (user selectable).
- The number of packets received with trigger pattern.

Latency

Latency can be measured from one SmartCard. You can also measure from Ethernet-to-Token Ring, Token Ring-to-Ethernet, and Ethernet-to-ATM.

Flow Control

Generation of and response to Pause commands for flow control of traffic transmission and testing.

Packet Capture

Each SmartCard can capture between 86 and 2,048 legal-sized packets depending on frame length, and can also capture oversize and undersize frames. Display is in hex or decimal format.

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SPIRENT
Communications

Start-up Functions

Autonegotiation

The GX-1405B/1405Bs supports the standard start-up protocol negotiation.

Supported Applications

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

Requirements

- A SmartBits® SMB-200 or SMB-2000 chassis equipped with SmartCards appropriate for the test. (The GX-1405B/1405Bs requires two slots.)
- An IBM or compatible Pentium™ PC running Windows 98/NT/2000, with mouse and color monitor.

Ordering Information

GX-1405B

1000Base-SX Ethernet, 1-port, multi-mode, 850nm SmartCard

GX-1405Bs

1000Base-LX Ethernet, 1-port, single mode, 1310nm SmartCard

SX-7210

10/100Base-TX Ethernet, MII, 1-port SmartCard

SX-7410B

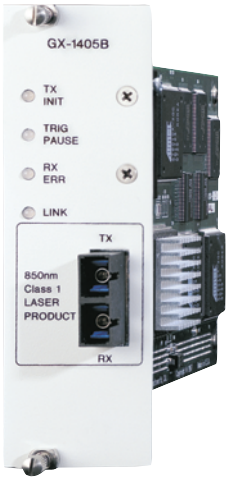
10/100Base-TX Ethernet, 1-port SmartCard

SUS-SMB

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

Feature	SmartCard			
	GX-1405B	GX-1405Bs	SX-7210	SX-7410B
Interface	850 nm multi-mode	1300 nm single mode	MII	RJ-45
Speed	1 Gbps	1 Gbps	10/100 Mbps	10/100 Mbps
Duplex Mode	Full only	Full only	Full/Half	Full/Half
Packet Length	1 byte to 2KB+	1 byte to 2 KB+	1 byte to 8 KB	1 byte to 8 KB
CRC Errors	Yes	Yes	Yes	Yes
Alignment, Dribble, Undersize, Oversize, Symbol Errors	-	-	Yes	Yes
Adjustable Preamble Length	Yes	Yes	Yes	Yes
Minimum Transmit Interpacket Gap	64 ns	64 ns	1	40 ns
IPG Adjustment Resolution	32 ns	32 ns	40 ns	40 ns
Alternate Streams	2	2	40 ns	1
VLAN Tagging	Yes	Yes	Yes	Yes
Max Frame Size	2,048	2,048	8,191	8,191
Collision Control*	N/A	N/A	Yes	Yes
Flow Control	Yes	Yes	Yes	Yes
Traffic Receive Rate	Beyond wire speed	Beyond wire speed	Beyond wire speed	Beyond wire speed
Traffic Transmit Rate	Beyond wire speed	Beyond wire speed	Beyond wire speed	Beyond wire speed
Slots Required	2	2	1	1

* Only works in half duplex mode; not applicable to full duplex.



GX-1405B

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