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Find the *Spirent / NetCom SX-7410* at our website: *Click HERE*

100Base-TX Ethernet SmartCard for SmartBits™

The SX-7410 is a SmartBits™ compatible SmartCard, providing a single port interface for generating and monitoring both 100 Mbps and 10 Mbps Ethernet traffic in half and full duplex modes. The SX-7410 SmartCard provides a single RJ-45 twisted pair physical interface. SmartCard operation complies with the 100BASE-TX IEEE in the 100 Mbps mode and 10BASE-T IEEE specifications in the 10 Mbps mode.

The SX-7410 supports IEEE 100 BaseX auto-negotiation, and flow control. Support is provided for VLAN tagged fields and 1522 byte packets aligned with IEEE 802.1p, 802.1Q and 802.3ac draft documents. Data capture is provided for up to 128,000 bytes of packet data.

The SX-7410 also offers collision generation and Variable Field Data segments that can execute a cycle of MAC addresses. Interfaces other than the 100Base-TX require the use of the SX-7210 SmartCard which offers an MII interface capable of coupling to TX, FX, T-4 interfaces via transceivers.

Technical Information

Transmit Functions

Data Rates

User selectable: 10 Mbps or 100 Mbps.

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.

Multiburst Mode: Up to 16 million repetitive bursts with a user-adjustable gap (400 ns resolution in 10Mbps, 40 ns resolution in 100Mbps; interval up to 1.6 seconds) between each burst.

Continuous Multiburst Mode: Runs multiburst mode continuously.

Echo Mode: Transmits a single packet upon detection of a specified trigger pattern in the data of a received packet.

Background Packet Data Fill Pattern

The default pattern is all zeros. The user may configure a custom background fill or choose from: incrementing byte, decrementing byte, incrementing word, decrementing word, random data, etc.

Variable Field Data

Insertion of 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; Recycle Count; Random. The offset range is 0 to 8190 bytes.

VFD3: User specified 2048 Byte buffer to create a custom VFD sequence varying from packet to packet with the following selections: On/Off; Offset; Number of Packets; VFD3 Length.

Multiple Transmit Streams

Multiple streams of transmitted data can be configured to represent various traffic scenarios. The main data stream may be interspersed with a secondary data stream.

Error Insertion

Transmission error selection: CRC Errors; Alignment Errors,

Packet Length

Packet lengths from 1 to 8191 bytes fixed, or random varying from 64 to 1514 Bytes.

VLAN Support

Virtual LAN (VLAN support). Draft standard IEEE 802.1p, 802.1q and 802.3ac support for 4 byte Tag fields are supported for VLAN tag, Priority, CFI bit and VID fields. Token Ring over Ethernet support of the CFI bit is deferred.

Receive Functions

Triggers

Two independent triggers from 1 to 6 bytes each. Trigger offset can be adjusted from the last preamble byte to the last byte of CRC in 1-byte increments. Trigger counter can be set to:

Trigger 1, Trigger 2, 1 or 2, 1 and 2.

Counters

The counters hold a maximum of 4 billion counts before cycling. All counters may be set to display either rates, events, or both.

Transmit Packet Counter: Packets successfully transmitted.

Receive Packet counter: Valid packets received.

Collision Counter: Collisions.

CRC Error Counter: Valid frame length packets with bad CRC or misalignment.

Oversize Packet Counter: Packets with size greater than 1518 (1522 if VLAN tag switch enabled) bytes including CRC.

Fragment/Undersize Counter: Undersized packets and fragments received with size less than 64 bytes including CRC.

Bytes Received Counter: Received byte.

Trigger Counter: The number of received triggers.

Latency

Hardware time stamps provide for Latency timing (the time interval between the transmission of a packet from one SX-7410 SmartCard to its reception at another).

Data Capture

A buffer of up to 128,000 bytes is provided for data capture of up to 2000 packets

Requirements

486 PC computer with 8 Mb RAM with mouse and color monitor running Windowsâ 3.1 or Windowsâ 95.

SMB-1000/ET-1000 Firmware Version 6.01 or higher. SmartWindow Version 6.23 or higher. Smart Application version 1.7 or higher Programming Library version 2.73 or higher.

Software Support

SmartWindow

A Windowsâ graphic user interface used to implement all functions of SmartCards as well as control and set up SmartBits tests. SmartWindow includes convenient methods to set up multiple ports, to monitor the status of and view data gathered by all active SmartCards. Requires a 486 PC computer with 8 MB RAM with mouse and color monitor running Windowsâ 3.1 or Windowsâ 95.

Programming Library

The Programming Library supports the development of customized test programs using Visual Basic, C, or C++. Two versions available: one for PC based applications (under DOS or Windowsâ), another version for the UNIX environment.

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