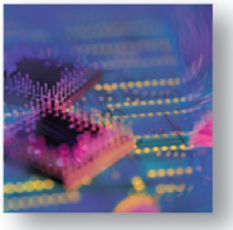


WAN SmartCards
WN-3405/WN-3415/WN-3420A

Product Overview

You are about to deploy your Frame Relay network; you are just completing your new Frame Relay to ATM switch design; and your Remote Access Server (RAS) needs to be upgraded to a high-speed PPP WAN network. How will you tell if your Frame Relay or PPP link to the WAN actually performs as you would expect?

The solution is the SmartBits® WN-3405, WN-3415, and WN-3420A WAN SmartCards. The WN-34xx SmartCards are network performance analysis tools that performs frame-level testing at full wire-rate for Frame Relay and PPP access devices, routers, and switches. Each card provides a single-port interface for generating and monitoring data network traffic over WAN links.

You can use your WN-34xx SmartCards with other SmartBits SmartCards/modules to test high-performance internetworking between Frame Relay/PPP devices and LAN, ATM, or other Frame Relay/PPP devices, via Layer 2 and Layer 3 tests.

The SmartWindow™ and SmartApplications™ GUIs that support the WN-34xx make it easy for you to perform throughput, packet loss, latency, back-to-back, and sequence tracking tests on systems ranging from a single device under test (DUT) to a full-blown internetwork. All tests supported by the WN-34xx are also available via the SmartLib™ API, allowing for integration with existing C, C++, or Tcl application sets. ScriptCenter™ offers both GUI and scripting options for setting up tests using the WN-34xx modules.

WN-34xx SmartCards are Designed . . .

- To perform comparative analysis of WAN switches and access devices.
- To evaluate key performance parameters of WAN devices under typical or extreme traffic load conditions.
- To re-qualify WAN switches and access devices after firmware upgrades.

Key Features

- A variety of interface ports are supported:
  - WN-3405: V.35 at up to 6 Mbps full-duplex or 8 Mbps half-duplex line rate.
  - WN-3415: RJ-48 at up to T1 (1.544 Mbps) line rate in 64 Kbps increments.
  - WN-3420A: RJ-48 at up to E1 (2.048 Mbps) line rate in 64 Kbps increments.
- Performance and interoperability testing for data networks and network devices over multiple WAN lines.
- Frame relay testing at full wire speed, supporting up to 128 PVCs per port.
- Support for LMI, Annex A, and Annex D Link Management Protocols.
- PPP call setup and teardown (RFC 1662), including PAP and CHAP authentication.
- HDLC and custom layer 2 header support through byte-wide VFD overwrite.
- Up to 128 (256 when using SmartLib) individual IP, UDP, or custom traffic streams per card.
- Protocol support for IP over Frame Relay (RFC 1490) or IP over PPP.

Test Functionality

Frame Relay Link Support

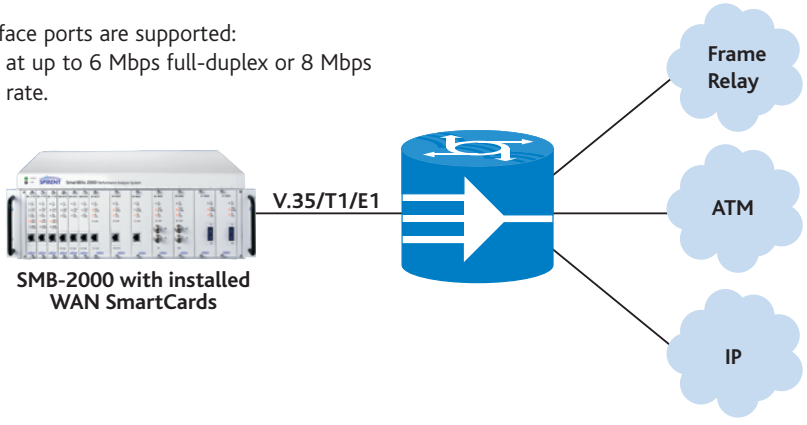
The WN-34xx SmartCards include a flexible Q.922 2-byte header format with RFC 1490 encapsulation support.

PPP Support

The WN-34xx SmartCards support a single PPP session (RFC 1662), including optional PAP or CHAP authentication. Up to 128 (256 when using SmartLib) individual IP and/or UDP traffic streams may be carried across the PPP link.

Latency Measurements

The WN-34xx can perform layer 2 latency measurements using the trigger mechanism. This test may be run between the WN-34xx and all SmartBits SmartCards/modules. For Layer 3 latency tests, the WN-34xx inter-operates with other WN-34xx cards, and with the ML-5710 and ML-7710 SmartCards by using the transmit time signature field. This test provides 2-byte time resolution with granularity of 100 nanoseconds.



WN-3405/3415/3420A applications

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SPIRENT Communications

Additional Layer 3 Test Functionality

The following tests are provided via SmartWindow:

- Sequence Tracking Plus Latency
- Latency Over Time
- Raw Packet Tag Information

Supported Applications

- SmartWindow
- SmartLib Programming Library
- ScriptCenter
- SmartApplications

Interface Specifications

Feature	WN-3405	WN-3415	WN-3420
Line Rate	8.192 Mbps (6.144 Mbps in full-duplex mode)	T1 as per G.703 (1.544 Mbps)	E1 as per G.703 (2.048 Mbps)
Signaling and Channelization	One channel– supported at rates of up to 8.192 Mbps.	Single full or fractional channel is supported, containing up to 24 timeslots of 64 Kbps each.	Interface utilizes Common Channel Signaling (CCS). Single full or fractional channel is supported, containing up to 31 time-slots of 64 Kbps each. TS0 used for signaling.
Loop-back	None	Local and remote	Local and remote
Buildout	N/A	100 Ohm balanced	120 Ohm balanced or 75 Ohm unbalanced (requires external Balun for impedance matching).
Network Connection	V.35, Winchester type	RJ-48C	RJ-48C for 120 Ohm balanced; two BNC type connectors for 75 Ohm unbalanced (via external Balun).
Line Framing	N/A	Super Frame (SF) or Extended Super Frame (ESF)	Frame Alignment Signaling (FAS) and CRC4 Multi-frame Alignment
Line Encoding Transmit Clock	NRZ or NRZI Internal or External	B8ZS or AMI Internal or loop-timed	AMI or HDB3 Internal or loop-timed

Requirements

- The WN-3405, WN-3415, and WN-3420A each require one slot in an SMB-200/2000 chassis.
- An IBM or compatible Pentium™ PC running Windows 98/2000/NT, with mouse and color monitor.

Ordering Information

WN-3405

WAN 6 Mbps/8 Mbps, V. 35, 1-port, SmartMetrics SmartCard

WN-3415

WAN T1, 1-port, SmartMetrics SmartCard

WN-3420A

WAN E1, 1-port, SmartMetrics SmartCard

SUS-SMB

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

WN-3415

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