

# WAN SmartMetrics™ SmartCards

## WN-3441A/WN-3442A/WN-3445A

### Product Overview

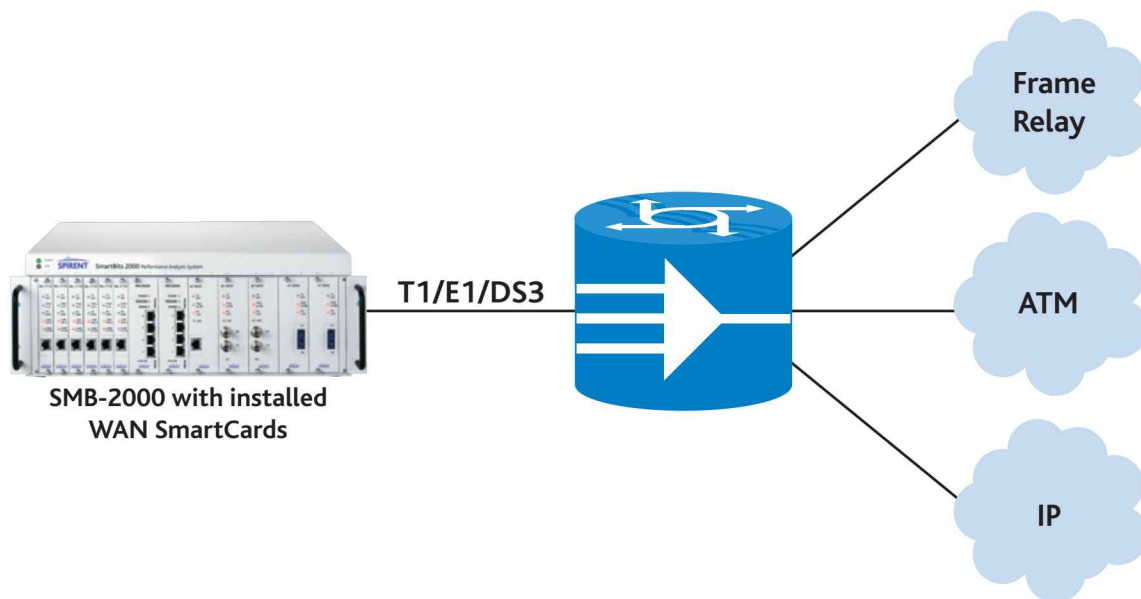
The SmartBits® WN-3441A, -3442A, and -3445A SmartCards are network performance analysis tools that perform frame-level testing at up to full wire rate for WAN and broadband access devices, LAN routers, and switches.

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

The SmartWindow™ and SmartFlow™ applications 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 cards.

### Key Features

- Supports T1/E1/DS3 interfaces.
- Channelized to NxDSOs up to full T1/E1/DS3 rates.
- Supports IGMP V2 protocol.
- Provides clear channel DS3 support. Maximum rates may vary depending on frame size and the number of channels configured.
- Provides full line-rate traffic generation and analysis.
- Supports layer 2 and layer 3 testing.
- Supports Frame Relay and PPP protocols.
- Supports RFC 1490 for IP encapsulation over Frame Relay and RFC 1662 for IP encapsulation over PPP.
- Supports Frame Relay LMI, Annex A, or Annex D link management protocols.
- Supports up to 1,023 Frame Relay PVCs per card.
- Supports PAP and CHAP authentication, and Microsoft CHAP.
- Supports one LMI or PPP session per channel.
- Supports up to 2,048 IP, UDP, or custom streams per card.
- Supports up to 64K flows per stream.
- The following SmartBits SmartMetrics™ tests are supported between the WN-34xx and other SmartMetrics cards:
  - Sequence Tracking
  - Latency per Stream
  - Latency over Time
  - Raw Tags
  - Sequence plus Latency



WN-3441A/3442A/3445A applications

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## Interface Specifications

### 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. For Layer 3 latency tests, the WN-34xx inter-operates with other WN-34xx SmartCards and with most other SmartCards by using the transmit time signature field. This test provides 2-byte time resolution with granularity of 100 nanoseconds.

### Additional Layer 3 Test Functionality

These Layer 3 test types are offered: Sequence Tracking plus Latency, Latency Over Time, Latency Distribution, and Raw Packet Tags.

## Supported Applications

- SmartWindow
- SmartLib Programming Library
- ScriptCenter
- SmartFlow

## Requirements

- The WN-3441A, WN-3442A, and WN-3445A each require two slots in an SMB-200/2000 chassis.
- An IBM or compatible Pentium™ PC running Windows 98/2000/NT, with mouse and color monitor.

Feature	WN-3441A	WN-3442A	WN-3445A
Ports per Card	4	4	1
Maximum Cards per SMB-2000	10	10	10
Maximum Line Speed	T1 (1.544 Mbps)	E1 (2.048 Mbps)	DS3 (44.736 Mbps)
Maximum Channels per Port	24	31	672
Loopback	Remote	Remote	Remote
Buildout	0-110 ft 110-220 220-440 440-660	120 Ohm or 75 Ohm external unbalanced (require Balun for impedance)	N/A
Network Connection	RJ-48C	RJ-48C for 120-Ohm balanced; dual 75-Ohm BNC connector (via external Balun)	Dual 75-Ohm BNC connector
Line Framing	Super Frame (SF/D\$) or Extended Super Frame (ESF)	Frame Alignment Signaling (FAS) and CRC4 Multi-frame Alignment	C-bit or M13
Line Encoding	B8ZS or AMI	HDB3 or AMI	B3ZS
Transmit Clock	Internal or loop-timed	Internal or loop-timed	Internal or loop-timed

## Ordering Information

### WN-3441A

WAN T1, Frame Relay/PPP, 4-port, SmartMetrics SmartCard

### WN-3442A

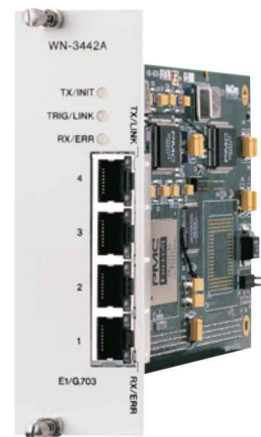
WAN E1, Frame Relay/PPP, 4-port, SmartMetrics SmartCard

### WN-3445A

WAN DS3, Frame Relay/PPP, 1-port, SmartMetrics SmartCard

### SUS-SMB 1

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



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