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## Test & Measurement

- sales
- rentals
- calibration
- repair
- disposal

## Complimentary Reference Material

This PDF has been made available as a complimentary service for you to assist in evaluating this model for your testing requirements.

TMG offers a wide range of test equipment solutions, from renting short to long term, buying refurbished and purchasing new. Financing options, such as Financial Rental, and Leasing are also available on application.

TMG will assist if you are unsure whether this model will suit your requirements.

Call TMG if you need to organise repair and/or calibrate your unit.

If you click on the “Click-to-Call” logo below, you can call us for FREE!

TMG Corporate Website

TMG Products Website



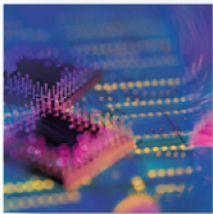
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# WAN SmartMetrics™ SmartCards WN-3441A/WN-3442A/WN-3445A

## Product Overview

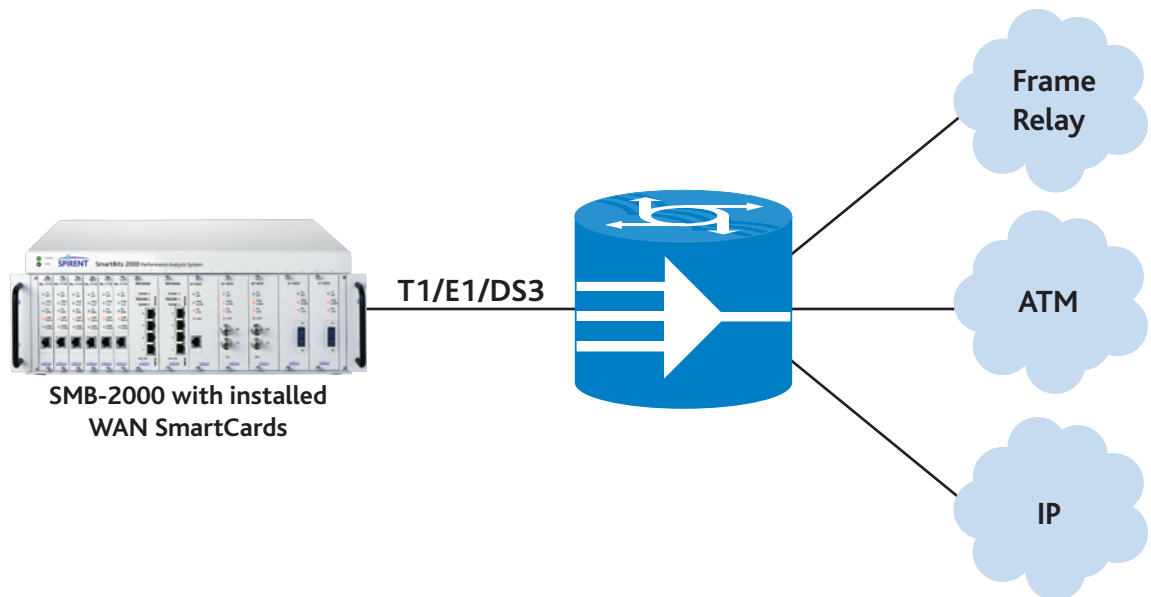
The SmartBits® WN-3441A, -3442A, and -3445A SmartCards are network performance analysis tools that perform frame-level testing at up to full wire rate for WAN and broadband access devices, LAN routers, and switches.

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

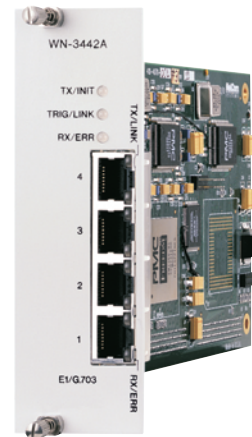
WAN E1, Frame Relay/PPP, 4-port, SmartMetrics SmartCard

### 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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