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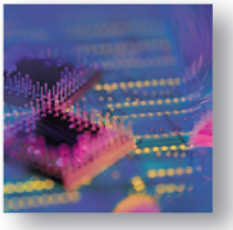
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AT-9015/9020/9025/9034B/9045B/9155C/9155Cs/9622/9622s

ATM SmartCards

Product Overview

The ATM series of SmartBits® compatible SmartCards is used to generate and monitor ATM network traffic. Applications include testing ATM-to-LAN internetworking devices, very high performance ATM backbones, xDSL devices, and LAN-to-ATM, edge devices. The capabilities of the ATM SmartCards include frame-level testing at full-duplex, full wire-rate testing of edge devices and switches, switch testing at full-cell rate, and high-rate signaling testing for edge devices.

Key Features

- Measures peak call rate and setup latencies for SVCs in SmartSignaling™.
- Generates frames on up to 2,048, PVCs and SVCs (AT-9034B, AT-9045B, AT-9155C[s], and AT-9622[s]).
- Supports PPP testing with up to 2,048 PPP sessions (AT-9034B, AT-9045B, AT-9155C[s], and AT-9622[s]).
- Supports LANE testing with up to 64 LECs.
- Supports up to 800 calls per second per port in SmartSignaling, for a total of 32,000 calls per second utilizing a test suite of 40 ATM ports (AT-9034B, AT-9045B, AT-9155C[s], and AT-9622[s]).
- Supports up to 8.38 million VCCs per port for a total of 335.54 million VCCs in a 40-port ATM test suite.
- Provides end-to-end performance analysis for xDSL networks.
- Provides protocol support for ILMI, UNI 3.x, LAN Emulation Client 1.0, and LLC/SNAP per RFC 1483; Classical IP per RFC 1577; and PPP per RFCs 1661 and 2364.

Frame Generation Test Functions

- Fully-definable AAL5 frame payload for transmission on VCCs. User payload content includes LANE, LLC/SNAP, Classical IP, PPP, null encapsulation, and custom formats.
- Standard traffic contract parameters are user-definable per VCC based on a selected traffic class:
  - Constant Bit Rate (CBR): PCR, CDVT
  - Unspecified Bit Rate (UBR): PCR
- Supports frame latency measurements with 100 ns time stamp resolution. Fully compatible with legacy LAN SmartCards.

SmartSignaling Test Functionallity

The ATM SmartCards are all supported by the SmartBits SmartSignaling application. SmartSignaling supports UNI 3.0/3.1/4.0 signaling and performance benchmarking.

Signal Simulation

Supports up to 8,388,606 simultaneous switched virtual connections (SVCs) per port (the maximum allowed by the ATM Forum UNI specification), for a total of 335,544,240 SVCs with a test suite of 40 ATM ports. Supports setup patterns for simulating high performance network applications.

Performance Benchmarking

The system measures peak call setup and teardown rate, peak call setup rate, call setup latency, and call handling capacity. The test supports call setup rates of 800 calls per second per port; for a total of 32,000 calls per second utilizing a 40-port ATM test suite.

ATM Frame-level Testing

Frame-level functional testing is supported for Ethernet LAN-to-ATM, ATM-to-Ethernet LAN, and ATM-to-ATM:

- Automatic VCC setup; frame-level protocol definition per stream; concurrent streams.
- Generation of single/multiple cell size frames at full line rate.
- Encapsulation modes:
  - LAN Emulation Client 1.0
  - RFC 1483 (LLC/SNAP, VC Mux Routed)
  - RFC 1577 (Classical IP over ATM)
  - RFC 2364 (PPP over AAL5), (AT-9034B, AT-9045B, AT-9155C[s], and AT-9622[s])
  - Null Encapsulation: Generation of user-definable frames (such as 40-byte IP) in single cell/multiple cells.

Statistics Functionality

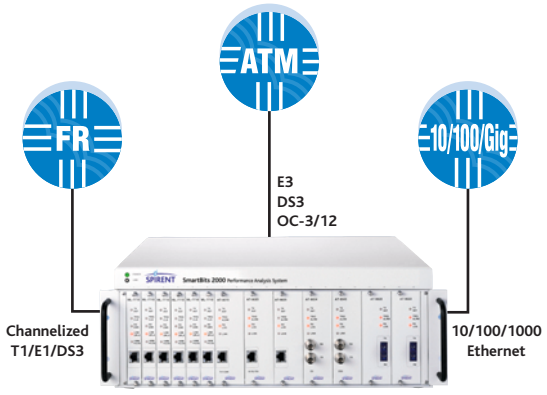
Each counter holds a maximum of 4.29 million counts. All counters can display rates and events. The following counters are available.

Physical Layer Statistics

Physical layer alarms and statistics are available. Line, section, and path error counters are displayed. Alarm status information is gathered and reported to the user interface.

ATM Layer Statistics

- Transmit and receive cells (payload)
- Corrected and uncorrected HEC errored cells
- Receive errors and symbol errors (AT-9025 only)



ATM SmartCard applications

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SPIRENT Communications

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Maximum Per Port Specifications

Card	Description	VCCs (PVC/SVC)	SmartSignaling		Interface
			VCCs	CPS*	
AT-9015	DS1 1.544 Mbps	256	8,388,606	512	RJ-45
AT-9020	E1 2.048 Mbps	256	8,388,606	512	RJ-45
AT-9025	25 Mbps	256	8,388,606	512	RJ-45
AT-9034B	E3 34 Mbps	256	8,388,606	512	BNC
AT-9045B	DS3 45 Mbps	2,048	8,388,606	800	BNC
AT-9155C	OC-3c/STM-1 155 Mbps	2,048	8,388,606	800	SC multi-mode fiber 1300 nm
AT-9155Cs	OC-3c/STM-1 155 Mbps	2,048	8,388,606	800	SC single-mode fiber 1300 nm
AT-9622	OC-12c/STM-4 622 Mbps	2,048	8,388,606	800	SC multi-mode fiber 1300 nm
AT-9622s	OC-12c/STM-4 622 Mbps	2,048	8,388,606	800	SC single-mode fiber 1300 nm

* calls per second

AAL5 Layer Statistics

- AAL5 transmit and receive payload cells (except AT-9034B, AT-9045B, AT-9155C[s], & AT-9622[s])
- AAL5 transmit and receive frames
- Receive 32-Bit CRC errored frames and receive length errored frames (AT-9034B, AT-9045B, AT-9155C[s], & AT-9622[s])

VCC Connection Statistics

Counter statistics are kept for all active virtual circuits.

- Transmit and receive frames
- Receive triggers and receive AAL5 trailer 32-Bit CRC errored frames (AT-9034B, AT-9045B, AT-9155C[s] & AT-9622[s])

Triggers and Latency

Latency is measured from frame transmit rates between an AT-9xxx and other SmartCards, with 100 ns resolution. All AT-9xxx cards (except AT-9034B, AT-9045B, AT-9155C[s], and AT-9622[s]) allow one transmit or receive trigger to be defined per card. The AT-9034B, AT-9045B, AT-9155C(s), and AT-9622(s) support one trigger per connection for a maximum of 2,048 triggers per card.

Supported Applications

- SmartWindow™
- SmartLib™ Programming Library
- ScriptCenter™
- SmartApplications™
- SmartSignaling

Requirements

- Two slots in an SMB-200 or SMB-2000 chassis.
- An IBM or compatible Pentium™ PC running Windows 98/2000/NT, with mouse and color monitor.

Ordering Information

AT-9015
ATM DS1, 1-port SmartCard

AT-9020
ATM E1, 1-port SmartCard

AT-9025
ATM 25 Mbps, 1-port SmartCard

AT-9034B
ATM E3, 1-port SmartCard

AT-9045B
ATM DS3, 1-port SmartCard

AT-9155C
ATM OC-3/STM-1, 1-port SmartCard

AT-9155Cs
ATM OC-3/STM-1, 1-port, single mode SmartCard

AT-9622
ATM OC-12/STM-4, 1-port, SmartCard

AT-9622s
ATM OC-12/STM-4, 1-port, single mode SmartCard

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



AT-9622

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