



NetPerformer 9500

### ▶ Central Site Solution

The SDM-9500 is a high-capacity, high-performance voice and data integrated access device for the central site. It packetizes and compresses voice, fax and modem traffic and transports it along with LAN, SNA or serial data over a Frame Relay or IP network to remote sites, saving cost on intra-enterprise voice communications.



# NetPerformer 9500

## Central Site Multi-Service Integrated Access

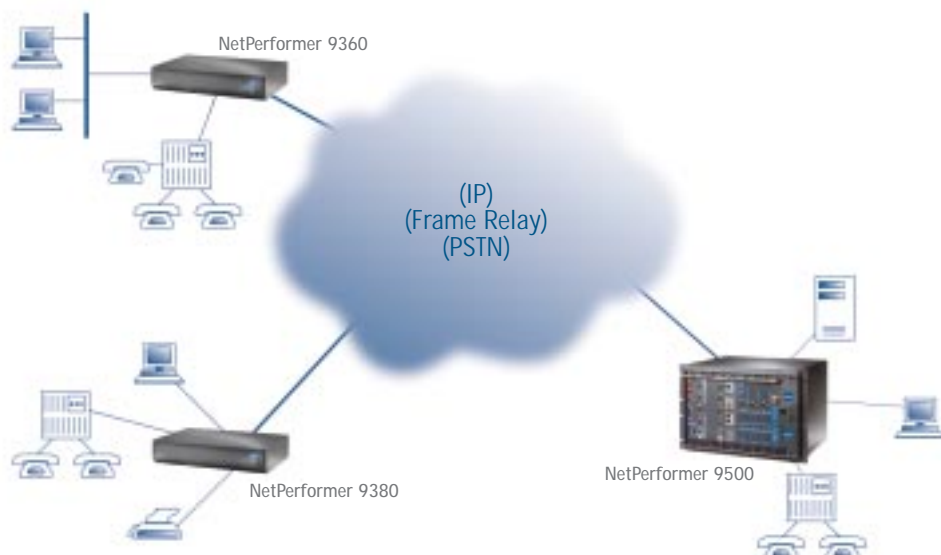
ACT Networks' SDM-9500 multi-service integrated access device is a modular voice and data solution for the corporate central site, and the highest capacity member of the NetPerformer family – a suite of products that has been optimized for the needs of complex, distributed enterprise networks. Typically these networks include a wide variety of data and telephony requirements, with various sites needing differing amounts of functionality, density and performance.

The SDM-9500 chassis can be populated with serial, LAN, and analog and digital telephony ports for aggregation and redistribution of all types of traffic. By packetizing and compressing voice traffic, then delivering it with data over a Frame Relay or IP network, the SDM-9500 allows companies to save money on their monthly telephony service. PVC bundling and switching also saves money on monthly service fees, by eliminating the need for a fully-meshed PVC architecture.

The SDM-9500 unit can support up to 240 digital voice channels along with Ethernet and serial ports. PBX connections are made via T1 or E1 connectors, and the serial ports support SNA serial data or Frame Relay connectors. Analog voice ports are supported, with up to 64 E&M (Types I, II and V), 32 FXS or 32 FXO interfaces per chassis. Fractional T1 and E1 WAN channelized connections are also supported.

All voice and data entering the unit is prioritized by protocol, then combined for transport over a single frame relay connection over private or public networks. This functionality is provided by PowerCell – ACT Networks' award-winning, cell-based prioritization technology.

The SDM-9500 is upgradable to future ATM interfaces.



## Features & Benefits

**Integrated voice and data** – in a modular, high-capacity format, makes the SDM-9500 an ideal solution for the needs of the regional or central site in a converged network. The SDM-9500, in conjunction with the rest of the NetPerformer product line, allows each individual site to be configured with just the right combination of services, performance and scalability, avoiding unnecessary cost.

**Any-to-any voice switching** – integrates the disparate phone systems of individual sites. This eliminates the need for consistency among sites, saving cost and increasing flexibility.

**Support for modem and fax** – enables the SDM-9500 to integrate and support all of the telephony needs of today's distributed network, reducing costs. Furthermore, the SDM-9500's serial port density and key aggregation features, unmatched by competitors, reduce line costs, PVC requirements and equipment expenditures.

**Digital voice support** – with 240-channel capacity and support for key signaling methodologies, the SDM-9500 connects to the world's most popular PBX units.

**Very high system capacity** – with support for 240 digital or 64 analog voice channels, the SDM-9500 can address the needs of even the largest sites in today's enterprise network.

**The SDM-9500 supports PowerCell** – ACT's award-winning voice and data integration and prioritization technology. PowerCell enables the entire network to operate at optimal performance for all supported traffic types.

**SNMP-compliant MIBs and graphical management** – through ACTview 2000, including integration with Hewlett Packard's OpenView for Windows95/NT, let the SDM-9500 be managed using today's most popular and universal network management paradigms.

**Adherence to standards** – lets the SDM-9500 seamlessly integrate with any public network, and ensures compatibility with leading frame relay switches.



# NetPerformer 9500

## Specifications

### System Details

Modular chassis: 8 slots for voice/data modules, one slot for bus expansion card to additional chassis (4 maximum in a single daisy-chain)  
Power: autosensing 100-240 VAC, 50/60 Hz, -48 VDC. Optional redundant power supply  
Network Topology: public and private Frame Relay, mesh, hierarchical, star, and point-to-point

### Expansion Options

Integrated voice and data module:  
• SDM-9585: 3 serial ports, one 10BaseT, 4 expansion slots  
Expansion options:  
• IM-T1: T1 interface module for PBX or WAN connection (RJ48 connector)  
• IM-E1-75: E1 interface module for PBX or WAN connection (75 ohm) (BNC connector)  
• IM-E1-120: E1 interface module for PBX or WAN connection (120 ohm) (RJ48 connector)  
• IM-EM-2- or 4-wire: 4-port E&M module (type I, II, or IV)  
• IM-FXS: 2-port FXS module (loop start with battery reversal detection)  
• IM-FXO: 2-port FXO module (loop start with battery reversal detection)  
• SIMM-1: 1-DSP voice processing module, supporting 3-5 voice channels, depending on algorithm  
• SIMM-3: 3-DSP voice processing module, supporting 9-15 voice channels, depending on algorithm  
• SIMM-6: 6-DSP voice processing module, supporting 18-30 voice channels, depending on algorithm  
• Up to 4 SIMMs per unit

High-performance data module:  
• SDM-9580: 3 serial ports, one 10BaseT

Standard data modules:  
• SDM-9530: 4 serial ports, configurable as user or link  
• SDM-9530E: 3 serial ports (user or link), 1 Ethernet  
• SDM-9530TR: 4 serial ports (user or link), 1 Token Ring

Serial connectors  
• DB-25 female  
• Interface types: DTE or DCE, RS-232, V.35, X.21, RS-449, RS-530  
• Internal/external clocking

LAN connectors  
• Ethernet connectors: 15-pin AUI (10Base5), RJ45 (10BaseT)  
• Token Ring connectors: DB-9 female connector (STP), RJ45 (UTP)  
• SDM-9530 Turbo Option for all data expansion modules

Analog voice modules  
• SDM-9502VF Voice Expansion Module: 2 channels voice/fax card  
• SDM-9504VF Voice Expansion Module: 4 channels voice/fax card  
Connectors: RJ45 for E&M, RJ11 for FSX/FXO

### Network Connections

Circuits: leased, switched or Frame Relay  
Link port protocols:  
• Synchronous full duplex HDLC, Frame Relay RFC-1490, user-UNI, network-UNI, PowerCell  
Link port maximum speed without compression: 2.048Mbps  
Link port maximum speed with compression: 512Kbps  
Frame Relay:  
• Local management interface: LMI, ANSI T1.617/annex D, ITU-T Q.933/annex A, CLLM or disabled  
• PVCs: 96 per node  
Automatic node discovery and rerouting with least cost metric routing  
Automatic load balancing, bandwidth on demand (over leased line), dial back-up, time-of-day connect  
Dialing protocols: V.25bis, X.21, AT and control leads

### Telephony Features

Voice compression algorithms: G.729 (8Kbps), G.729a (8Kbps), G.711 (64Kbps), ACELP-CN (8Kbps with dynamic fallback to 6Kbps)  
Digital telephony channels: up to 240  
• T1: B8ZS/B7ZS/AMI line coding, Mu-law or A-law coding, D4/ESF framing, robbed bit signaling, 100-ohm impedance  
• E1 signaling: CAS, R2, transparent channel 16  
• E1 line coding: HDB3  
Analog telephony channels: up to 64 E&M, 32 FXS or FXO  
E&M support: 2- or 4-wire (types I, II, and V)  
• FXS support: loop start  
• FXO support: loop start  
Group III FAX: 2.4, 4.8, 7.2, 9.6, 12.0, 14.4Kbps  
Voice/fax line impedance: 600, 900 ohms and complex

### LAN Support

Ethernet:  
• Up to 8 ports per chassis  
• Ethernet interfaces: Ethernet II and IEEE 802.2, 802.3, SNAP  
Token Ring:  
• Up to 8 ports per chassis  
• Token Ring interfaces: IEEE 802.5, 4/16Mbps  
Protocol support:  
• Standards: IP RIP v2 or static, BootP/DHCP relay, OSPF, IPX RIP and SAP, source routing, source routing transparent  
• 802.1D Spanning Tree Protocol (STP), MAC layer, transparent bridging  
• Filter criteria: based on protocol, address (source, destination or SAP) or custom filtering

### Data Features (Non-LAN)

Maximum speed: 2.048Mbps  
Protocols:  
• SNA: SDLC, LLC2 or Frame Relay RFC-1490 (BAN, BNN), maximum of 64 PUs per data module, (types 1, 2.0, 2.1, 4/5), local SDLC and LLC2 spoofing, SDLC/LLC2 conversion

- Legacy Sync: BDLC, HDLC, SDLC, X.25, X.25 over Frame Relay (annex F/G), COP, BSC, DDCMP, VIP, ALC, IBM/RJE, Uniscope, Poll/Select, Siemens Nixdorf, JCA, Zengin
- Frame Relay: RFC-1490, UNI-DTE, UNI-DCE
- Asynchronous: ENQ/ACK, XON/XOFF, transparent, CTS/DTR
- 8 classes of service, 16 priority weights

### Physical Characteristics

Height: 12.5" (31.8 cm)  
Width: 17.5" (44.5 cm)  
Depth: 12.3" (31.1 cm)  
Typical weight 23 lbs. (10.4 kg)  
Typical shipping weight: 26 lbs. (11.8 kg)

### Environmental Tolerances

Operating Temperature: 0° to 45° Celsius  
Relative Humidity: 10% to 90%, non-condensing

### Emissions and Immunity

EN 55022: 1995  
EN 50082-1: 1992  
EN 60555-2 / -3 : 1987  
AS/NZS 3548  
CE Mark: EC Directive 89/336/EEC, 'Electromagnetic Compatibility Directive'  
Safety Compliance  
UL 1950  
CSA C22.2 No. 950  
ACA TS 001 - 1996  
EN 60950 : 1992 / A1 : 1993 / A2 : 1993 / A3 : 1995 CE Mark: EC Directive 73/23/EEC, 'Low Voltage Directive'

### Network Compliance

I-CTR 2  
TS 002  
TS 003  
FCC Part 68  
IC CS03  
CE Mark: EC Directive 98/13/EEC, 'Telecommunications Terminal Equipment Directive'

### CE Marking

EC Directive 93/465/EEC, 'CE Marking Directive'

### Network Management

SNMP management via ACTview 2000 Network Management System for HP OpenView  
Menu driven async console port (VT-100) via DB-9 male connector, autosensing DTE/DCE  
Remote Telnet access to command port  
FTP upload and download of software and configuration  
Traps, traces and extended statistics  
Username /Password Security Control, Administrative Filtering