

# NetPerformer™ SDM 9220 - SDM 9230

## Integrated Access Routers

- Delivers the services you need, wherever you need.
- Alleviates bandwidth constraints and maximizes quality of service and reliability.
- Supports multiple services.
- Lowers capital expenditures and operating costs.



INDUSTRIAL AND GOVERNMENT INSTITUTIONS DEMAND SECURE AND RELIABLE NETWORKS TO ENSURE BOTH EMPLOYEE AND PUBLIC SAFETY. GEOGRAPHICALLY DISPERSED OFFICES THAT ARE VERY OFTEN LOCATED IN REMOTE, RUGGED AREAS AMPLIFY THE IMPORTANCE OF A PRIVATE WAN THAT FLAWLESSLY SUPPORTS MISSION-CRITICAL COMMUNICATIONS SERVICES WHILE MAXIMIZING AVAILABLE BANDWIDTH.

SDM 9220 and 9230 Integrated Access Routers maximize network performance and provide superior convergence capabilities to ensure efficient and secure transport of multiple communications services.

Memotec's field-proven optimization techniques for voice, data and video communications, optimize any application transmitted through a private network.

With a range of interfaces to connect automation and metering equipment, NetPerformer enables deployment over copper, fiber, microwave, and satellite access infrastructure.

### MULTI-PROTOCOL SUPPORT

NetPerformer's leading compression technology, as well as its multiplexing and prioritization capabilities, make it the product of

choice for converged voice & data applications over satellite networks. Its ability to support legacy protocols and IP data makes it ideal for Government, Military, Oil & Gas, Industrial and Multiservice VSAT applications.

### ENHANCED SATELLITE ACCESS CAPABILITIES

NetPerformer can be deployed with SCPC, TDMA, and IP broadband

satellite technologies along with SkyPerformer®, our satellite optimization solution. Carriers can operate a hybrid satellite/terrestrial topology over a single platform, reducing costs and minimizing complexity.

### AWARD-WINNING COMPRESSION TECHNOLOGY

Memotec's PowerCell® provides high-compression voice & data transport over any WAN infrastructure. PowerCell QoS is combined with IP Precedence TOS bit and 802.1p/q support to provide end-to-end QoS.

Users can define up to eight classes of service with 16 different levels of prioritization to ensure that mission-critical applications always receive sufficient bandwidth.

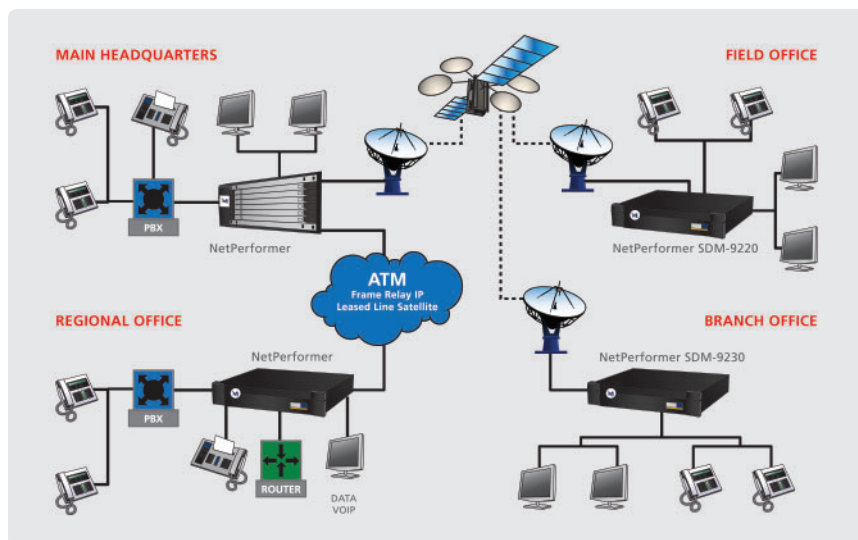
### EXPERIENCE THE POWER OF NETWORK CONVERGENCE

Memotec's solution allows for maximum network performance in low-bandwidth environments. Supporting both analog and digital BRI/PRI telephony channels, as well as multiple T1/E1 data interfaces and serial data ports, NetPerformer is the solution to reduce network infrastructure costs and simplify WAN connections. It uses a unique technology to packetize and converge voice, data & video traffic onto a single network, and then further compresses it to minimize bandwidth requirements and reduce operating budget. All without sacrificing Quality of Service (QoS) for both voice & data applications!

With up to 3 expansion slots, NetPerformer protects your investment, ensuring network scalability that matches your expansion requirements.

### NETWORK MANAGEMENT AND REPORTING

ACTView® 3000, an advanced NMS platform, enables the user to virtually manage any other platform from a single network station, avoiding redundancies in network management and the costs associated with multiple platforms.



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### CAPACITY

<b>Telephony channels</b>	Up to 8 FXS (1 REN max. per port), FXO or E&M or 8 ISDN BRI digital channels per unit	Up to 12 FXS (1 REN max. per port), FXO or E&M, 12 BRI or 120 T1/E1CAS/PRI digital channels per unit
<b>Data channels</b>	Up to 3 serial data ports, or 1 serial and 4 T1 or E1 data interfaces (up to 124 logical ports)	Up to 3 serial data ports, or 1 serial and 6 T1 or E1 data interfaces (up to 124 logical ports)

### LINK PORT

<b>SPEED</b>	- Without compression: Up to 8 Mbps RX and 2 Mbps TX using serial port on base unit, 2 Mbps for next two optional serial ports - With data compression: Up to 2.048 Mbps	- Without compression: Up to 8 Mbps using serial port on base unit, 2 Mbps for next two optional serial ports - With data compression: Up to 4.096 Mbps
<b>ATM (optional license required)</b>	- Not Available	- T1/E1 full or fractional, PowerCell over AAL5 UBR using up to 32 PVCs, RFC1483 Multiprotocol Encapsulation over AAL5, RFC2364 PPP over AAL5, FRF.8 Service Interworking, AAL0 transparent over PowerCell/IP

### PHYSICAL

<b>System Details</b>	- Auto-sensing power 100-240 VAC, 50/60 Hz, 65 watts maximum - -48 VDC - 1 serial port (user or link), DTE or DCE, HD26F connector, compatible with RS-232/V.24, V.35, X.21/V.11, RS-449/V.36, RS-530, internal/external clocking - 2X 10/100BaseT Ethernet (RJ45 connectors) - 1 DSP connector per unit - 2 expansion slots	- Auto-sensing power 100-240 VAC, 50/60 Hz, 65 watts maximum - -48 VDC - 1 serial port (user or link), DTE or DCE, HD26F connector, compatible with RS-232/V.24, V.35, X.21/V.11, RS-449/V.36, RS-530, internal/external clocking - 2X 10/100BaseT Ethernet (RJ45 connectors) - 1 DSP connector per unit - 3 expansion slots
<b>Chassis</b>	Stand alone base unit. 19" Rack mount	Stand alone base unit. 19" Rack mount
<b>Dimensions (H x W x D)</b>	89 x 427 x 310mm	89 x 427 x 310mm
<b>Weight</b>	4.5 kg	4.5 kg

### ENVIRONMENTAL

<b>Operating Temperature</b>	0° to 45° C	0° to 45° C
<b>Storage Temperature</b>	-20° to 65° C	-20° to 65° C
<b>Relative Humidity</b>	10% to 90%, non-condensing	10% to 90%, non-condensing

### SOFTWARE OPTION

	SkyPerformer & TCP/IP Acceleration	SkyPerformer, TCP/IP Acceleration and ATM
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### OPTIONAL INTERFACES/MODULES

<b>Analog telephony</b>	- 2 and 4-port FXS and FXO modules with on-board DSP (software controllable impedance, RJ11 connector) - 4-port E&M module with on-board DSP (2 or 4 wire, types I, II, or V, 600 ohms, RJ48 connectors) - 4 wire Push to Talk (PTT) option available	
<b>Digital</b>	- Single & Dual port T1/E1 (software configurable, RJ48 connectors, adapter cable required for BNC E1-75, NT/TE) - Dual port BRI S/T (1/2B+1D, 1/2B+0D, phantom power, NT/TE, RJ48 connectors)	
<b>Data</b>	- 2-port universal serial WAN interface (user or link), DTE or DCE, HD26F connector, interface compatible with RS-232/V.24, V.35, 21/V.11, RS-449/V.36, RS530, internal/external clocking	
<b>DSP (Internal):</b>	DSP modules supporting up to 8 BRI voice channels	- DSP modules supporting 5 to 30 voice channels - High Density DSP modules supporting 60 to 120 voice channels

### NETWORK

- Network Topology: Mesh, hierarchical, star, point-to-point, satellite point-to-point/multipoint (SkyPerformer option)
- 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
- QoS: 8 classes of service, 16 priority weights, association to 802.1p and DiffServ TOS bits

### DATA

- Sync: PPP, BDLC, HDLC, SDLC, X.25, X.25 over Frame Relay annex F/G
- Legacy Sync: COP, BSC, VIP, IBM/RJE, Uniscope, Poll/Select, Siemens Nixdorf, JCA, Zengin
- Frame Relay: RFC-1490, UNI-DTE, UNI-DCE
- Asynchronous: ENQ/ACK, XON/XOFF, transparent

### TELEPHONY

- Voice compression algorithms [5 channels per DSP]: ACELP-CN (8K/6K), LDCD (16K), G.711, G.723.1, G.726, G.729 and G.729a
- FAX Relay: Group 3 FAX over PowerCell. Super G3 configurable to pass through or fallback to G3. Group 4 FAX and other non-voice bearer ISDN channel at 64K

- Modem Relay: V.32bis demodulation up to 14.4Kbps, STU-III secure phones over PowerCell, modem pass through (G.711) for other modems
- Network signaling: Any-to-any switching, using PowerCell including end-to-end QSIG/ISDN
- Analog telephony channels:
  - FXS - loop and ground start, forward disconnect, caller ID and local billing tone generation
  - FXO - loop start, forward disconnect and caller ID detection
  - E&M - immediate and wink start, custom
- Pulse, DTMF and MF tone dialing
- Voice traffic routing with alternates destinations and digits manipulation using local mapping tables, locally switched TDM calls (hairpin)

### LAN

- 2x 10/100BaseT ports, two IP address per port
- Ethernet interfaces: Ethernet II and IEEE 802.2, 802.3, SNAP
- Standards: IP RIP V1/V2 or Static, OSPF, NAT, IP Multicast IGMP V1/V2 PIM-DM, BootP/DHCP relay, DHCP client, IPX RIP and SAP, LLC2, 802.1p/q prioritization and VLAN, 802.1D Spanning Tree Protocol (STP), MAC Layer
- Filter criteria: Based on protocol, address [source, destination or SAP], TOS bit/diffServ or custom filtering

### DIGITAL TELEPHONY

- ISDN and QSIG T1/E1 PRI and BRI signaling: EuroISDN/ETSI, National and Japan
- T1 signaling: robbed bit signaling, CCS transparent, SS7 transport with idle filtering and spoofing
- E1 signaling: CAS, CCS transparent, SS7 transport with idle filtering
- Digital CAS Signaling types: Immediate, Wink, FXO, FXS, FXO ground, FXS ground, E1/R2 (compelled, semi-compelled, DTMF), PLAR, custom (9230 only)
- Mu-law or A-law coding

### COMPLIANCE AND AGENCY APPROVAL

Complies with or has obtained Regulatory Agency approval at least the following standards:

- EMC - Emission FCC Part 15, Class B EN 55022:1998 + A1 + A2, AS/NZS CISPR22
- EMC - Immunity EN 55024:1998 + A1 + A2
- Safety IEC 60950-1, EN 60950-1, UL 60950-1, CSA C22-2 N°60950-1, AS/NZS 60950
- Telecom - Digital FCC Part 68 + TIA-968-A, IC CS-03 Issue 9 - Part 2 and Part 6, AS/ACIF S016, AS/ACIF S038, TBR 1 + TBR 2, TBR 3, TBR4, TBR 12 + TBR 13
- Telecom - Analog FCC Part 68 + TIA-968-A, IC CS-03 Issue 8 - Part 1, AS/ACIF S002, TBR 15 + TBR 17, TBR 21