SMARTNODE 4520 SERIES

The SmartNode 4520 Series VoIP Gateway Routers combine IP routing, VPN/Security, and Quality of Service for up to 8 transparent voice and FAX calls over any IP or PSTN network. Leverage low-cost IP services with packet-voice for complete branch office voice <u>and</u> data connectivity.

FXS/FXO VoIP Media Gateway Router

SmartNode 4520 ToIP Integrated Access Device

Connect with confidence using the SmartNode 4520 VoIP Gateway Router. Integrating a complete enterprise router with a full-featured Voice-over-IP Media Gateway offers the new standard in toll-bypass, remote/branch office connectivity, and enhanced carrier services. Perfect for the Remote office, Branch office, or PBX/Switch extension, the SmartNode 4520 integrates all your voice, FAX, and LAN traffic for seamless and secure networking.

With its FXS analog ports the SN4520 Series supports up to eight simultaneous calls, connects to any legacy telephone or PBX, and provides dial-tone, ringing, and caller-ID. When equipped with FXO ports, the local PSTN can be accessed enabling local calling, enhanced toll-bypass services, and fallback configurations. ClearConnect™ adaptive network monitoring ensures your call always gets connected even if the VoIP link goes down or becomes congested.

With dual 10/100 Ethernet ports, the SN4520 Series provides IP routing with guaranteed Quality of Service. Voice traffic is prioritized while LAN/IP traffic shaping permits efficient access to the Internet and corporate networks. As a complete enterprise router, the SN4520 supports DHCP, NAT, Firewall/ACL, and PPPoE clients. While IPSEC VPN and VLAN tunnel data while DES, 3DES or AES enables secure voice and data over the public network. For more information, visit us at www.patton.com.

Eight FXS, FXO, or FXS/FXO Connections

Up to 8 FXS ports connect to your standard telephone or PBX. 2 or 4 FXO ports allow local PSTN connections. Programmable call routing switches between local or remote connections.

QoS guaranteed Voice and Data

Quality of Service ensures voice traffic gets priority without shutting down your Ethernet LAN.

Firewall, NAT, DHCP, PPPoE

Connected to any broadband or access provider, serve the whole network, and secure your data. User configurable IP services ensure every host is connected to the LAN.

IPSEC VPN, Encryption, & VLAN

Connect your telephone for IP access and secure your voice with optional IPSEC with DES/3DES or AES for encryption. VLAN tagging/stripping allows advanced networking today.

ToIP ClearConnect™ Failover Protection

Link monitoring ensures your call will always go through with automatic PSTN cut-through if the IP link is down or congested. Enhanced circuit-switched call routing allows user programmable and adaptive call handling.

H.323v4 and SIP Signaling

Deploy into any multimedia, interactive, or softswitch network with the leading call and session signaling protocols.

Toll Quality CODECs & T.38 FAX

Use standard G.711 or G.726 CODECs for toll-quality voice or G.723.1 or G.729ab for low-bandwidth applications.

SmartNode 4528

PATTON

✔ Complete enterprise router with IPSEC, PPPoE, DHCP, & NAT.

✔ Quality of Service guarantees clear voice for all connections.

✔ ClearConnect guarantees your CALL every time all the time.

✔ ToIP provides real-time PSTN and VoIP call switching for any pbx, switch, or phone.

Local PSTN + Packet Voice

Using Patton's SmartNode Gateway routers with FXS & FXO ports allows seamless access to both remote packet-voice _and_ local PSTN telephony. Using ToIP call switching, distinctive ring, and Caller-ID a single handset can now access the right service at any time. With Patton's ClearConnect™ fail-over protection your phone call will be completed. Network health monitoring and ToIP switching ensures a clear call even if the IP network is down.
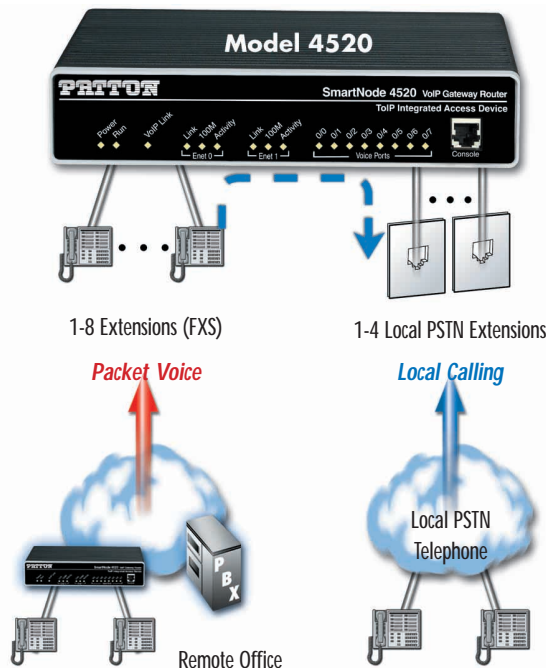
LAN/WAN QoS & Router

As an Enterprise router the SmartNode offers QoS voice, wire-speed traffic shaping, and complete network access. With dual 10/100 Eternet ports, the SmartNode connects your hosts to your LAN with VLAN tagging, DHCP server/client, and Firewall/ACL services. Use PPPoE and IPSEC VPN with DES, 3DES, and AES encryption and bring your Voice and Data to the WAN through a single and secure network connection.
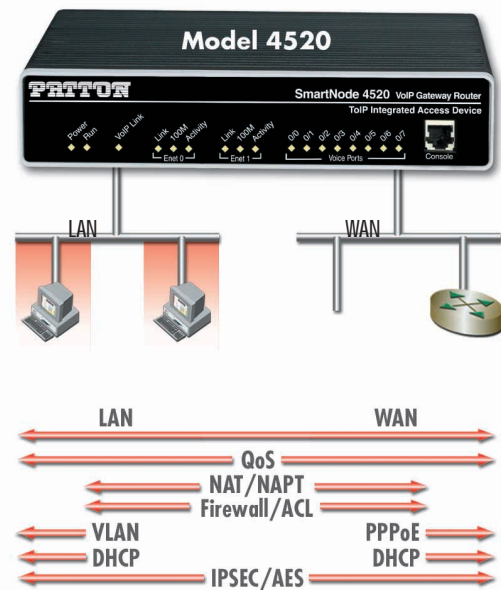
Specifications

Voice Connectivity
- 2-wire Loopstart, RJ-11/12
- Short haul loop 1.1 km @3REN
- EuroPOTS (ETSI EG201 188)
- Programmable AC impedance, feeding, and ring voltage; On-Hook Voltage 29VDC
- Caller-ID Type-1/2 FSK and ITU V.23/Bell 202 generation

Connectivity
- 2 10/100 Full Duplex/Autosensing Ethernet RJ-45

Voice Processing (signalling dependent)
- Voice codes
  - G.711 A-Law/μ-Law (64kbps)
  - G.726 (ADPCM 40, 32, 24, 16 kpbs)
  - G.723.1 (5.3 or 6.3 kbps)
  - G.729ab (8kbps)
  - Transparent pass through
- G.168 echo cancellation
- 8 parallel voice connections
- DTMF detection and generation
- Carrier tone detection and generation
- Silence suppression and comfort noise
- Configurable dejitter buffer

- Configurable tones (dial, ringing, busy)
- Configurable transmit packet length
- RTP/RTCP (RFC 1889)

Fax and Modem Support
- G.711 transparent FAX
- Fax over IP (FoIP)
- T.38 Fax relay (9.6 k, 14.4 k)

Voice Signalling
- H.323v4
  - RAS, H.225, H.245
  - Fast-connect, early H.245
  - Gatekeeper autodiscovery
  - Alias registration
  - Overlap sending
  - Empty capability set (call transfer, hold)
  - H.323v1 call transfer, hold
- ISDN over IP (ISoIP)
  - H.323 GW and GK compatible
  - H.323 Annex M3
  - ISDN/Q-SIG feature tunneling
  - ISDN speech, audio and data (Fax Gr 4, UDI 64, RDI 64)

Voice Routing—Session Router™
- Local switching; Interface huntgroups
- Routing Criteria
  - Interface
  - Calling/called party number
  - Time of day, day of week, date
  - ISDN bearer capability
- Number manipulation functions
  - Replace numbers; Add/remove digits
  - Multiple remote gateways; PLAR

IP Services
- IPv4 router; RIPv1, v2 (RFC 1058 and 2453)
- Programmable static routes
- ICMP redirect (RFC 792); Packet fragmentation
- DiffServe/ToS set or queue per header bits
- Pocket Policing discards excess traffic
- 802.1p VLAN tagging
- IPSEC AH & ESP Modes
- Manual Key; IKE optional
- AES/DES/3DES Encryption

Management
- Industry standard CLI with local console

(CRJ-45, RS-232) and remote Telnet access
- TFTP configuration & firmware loading
- SNMP v1 agent (MIB II and private MIB)
- Built-in diagnostic tools (trace, debug)
- Java™ Applet; HPOV Integration with NNM

Operating Environment
- Operating temperature: 0–40°C
- Operating humidity: 5–80% (non condensing)

System
- CPU Motorola MPC859 @ 50 MHz
- Memory 32MB SDRAM/4MB Flash
- Power: 100–240 VAC (50/60 Hz)
- Power dissipation: 4-12W model dependent

Compliance
- EMC compliance: EN55022 and EN55024
- Safety compliance: EN 50950
- CE compliance
- FCC Part 15 Class A

Specifications, features, and product availability subject to change without notice at any time. Call Factory for availability, details, & application assistance.

Model Information

Model	Description
SN4522/JS/UI	2 Port FXS VoIP Gateway Router, 100-240VAC internal PS.
SN4524/JS/UI	4 Port FXS VoIP Gateway Router, 100-240VAC internal PS.
SN4526/JS/EUI	6 Port FXS VoIP Gateway Router, 100-240VAC external PS.
SN4528/JS/EUI	8 Port FXS VoIP Gateway Router, 100-240VAC external PS.
SN4524/2JS2JO/UI	2 Port FXS, 2 Port FXO VoIP Gateway Router, 100-240VAC internal PS.
SN4528/4JS4JO/EUI	4 Port FXS, 4 Port FXO VoIP Gateway Router, 100-240VAC external PS.