# SmartNode™ 4990
## T1/E1/PRI VoIP Integrated Access Device

IP-enable legacy PBX systems with one Enterprise-class SmartNode 4990 VoIP Integrated Access Device. Supporting up to 120 concurrent VoIP calls, the SN4990 with built-in G.SHDSL, ADSL, fiber, or X.21 enables broadband providers to connect existing PBX systems with advanced IP telephony services and the PSTN.

### 15 to 120 VoIP calls
with up to four T1/E1/PRI ports and dual Gigabit Ethernet ports.

### WAN Access
4-wire, 11.4-Mbps G.SHDSL.bis; 24-Mbps ADSL; 100-Mbps fiber; or serial 2-Mbpx X.21 WAN interface.

### VoIP Transcoding Option
Up to 60 channels for WAN bandwidth optimization.

### Proven Interoperability
SIP interop with major IP PBX, Softswitch and VoIP Service Providers. Over 100,000 SmartNode deployments worldwide. ISDN/PSTN compliance in nearly every country.

### QoS and Security
Deliver secure, toll-quality voice communications with Patton's DownStreamQoS™ with adaptive traffic management and shaping—plus secure voice-over-VPN with AES/DES strong encryption.

### Transparent Telephony Features
Complex number manipulation and mapping for seamless integration with existing infrastructures, CLIP, CLIR, hold, transfer and much more.

### High Precision Clock
Delivers DECT PBX interoperability with reliable fax performance.

### Flexible Mounting Options
The device can be placed on a desktop or installed in a 19-inch rack using the optional rack ear kit (INS-KIT-RACKEARS-11/19).

### SmartNode™ Awards
- *2012 Internet Telephony Product of the Year: SmartNode™ 4670*
- *2011 Internet Telephony Product of the Year: SmartNode™ 5400/2GS*
- *2010 Internet Telephony Product of the Year: SmartNode™ 5400*

**The SmartNode™ 4990** VoIP Integrated Access Device offers Broadband Providers a single box CPE solution with built-in G.SHDSL, ADSL, fiber, or X.21 broadband access allowing Enterprises to IP-enable their legacy PBX systems. The single box CPE solution allows Broadband Providers to reduce their hardware costs, simplify their network architecture and streamline their service and deployment. Evolving from Patton's award winning SmartNode 4960 Series, the next generation SmartNode 4990 Series comes now with IPv6 upgradeable hardware.

**Like every SmartNode™**, the SN4990 supports every industry-standard CODEC to deliver toll-quality voice on every call. The Unified Communications Agent™ (UCA) provides any-to-any multi-path switching (simultaneous SIP, H.323, ISDN, and POTS calls with routing and conversion between TDM/PSTN and IP/Ethernet networks—plus T.38 and SuperG3 FAX). VoIP-over-VPN with voice encryption provides secure voice and data via IPsec with AES/DES strong encryption and automated keying via Internet Key Exchange (IKE). In addition, advanced call-router functionality includes least-cost call routing with flexible dialed-number plan support.
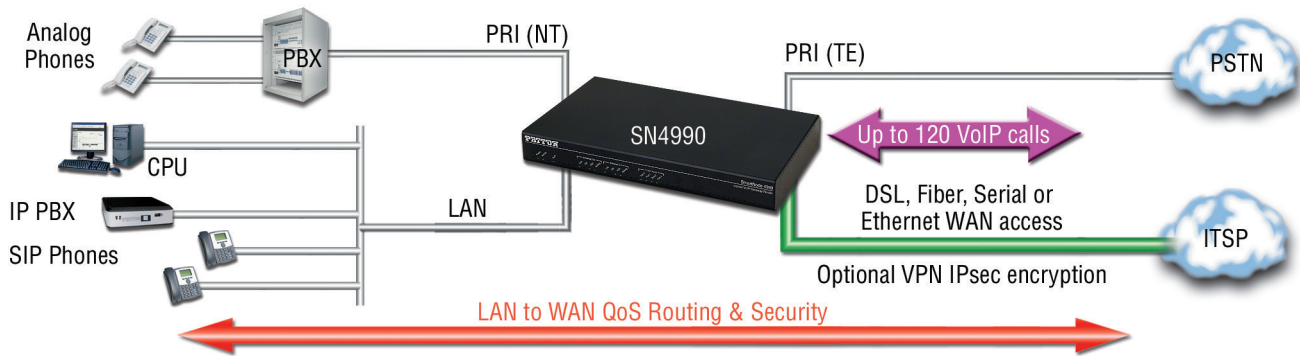
**The SmartNode survivability suite** combines PSTN fallback, SIP Registrar and IP-link redundancy to ensure business continuity in case the IP network fails. Patton's DownStreamQoS™ delivers the advantage of clear, uninterrupted voice-and-data communication. Furthermore, SmartNode's unique high-precision clock delivers first-line IP telephony service in demanding ISDN and DECT environments with reliable FAX and modem performance. In addition, SmartNode delivers a smooth transition to VoIP with strong number portability support accepting incoming calls from the PSTN throughout the VoIP service provider's number porting process. Session border router capabilities include optional transcoding for up to 64 channels. Reduce WAN-access bandwidth requirements by converting high-bandwidth G.711 calls on your LAN into lower-bandwidth G.723 calls for WAN transport.

**Providing** one to four T1/E1/PRI and two 10/100/1000 Ethernet interfaces with G.SHDSL, ADSL, fiber, or X.21 broadband access in a single box, the SN4990 delivers secure, prioritized unified communications.

Visit www.patton.com/smartnode for more information about the SmartNode 4990.



**SmartNode™ 4990**
T1/E1/PRI VoIP Integrated Access Device



*Let's Connect!™*

Analog Phones — PBX — PRI (NT) — SN4990 — PRI (TE) — PSTN

CPU

IP PBX

SIP Phones

LAN

Up to 120 VoIP calls

DSL, Fiber, Serial or Ethernet WAN access — ITSP

Optional VPN IPsec encryption

LAN to WAN QoS Routing & Security

## Specifications*

### PSTN
Up to four T1/E1/PRI ports (NE/TE) • Signaling support (ISDN DSS-1, NI-2, Q.SIG, CAS Robbed bit loop and ground start, E&M, immediate, wink, double wink) • ISDN AOC/ECT • ISDN speech, audio & data (Fax Gr 4, UDI 64, RDI64) • ISDN supplementary services • CAS protocols: RBS (Loop start, ground start, E&M wink, intermediate, double-wink) and R2/MFC-R2 (Q.400–Q.490 and Configurable country profiles), fallback-relay on 4 port versions

### VoIP
SIPv2 (SIP Info, Update, PRACK, Privacy, Refer), B2BUA, Optional SIP Registrar and Transcoding, H.323v4 (H.235, Early H.245, H.245 tunneling, fast-connect)

### Broadband Access
**G.SHDSL**: 4-wire G.SHDSL ITU-T G991.2, Annex A, B, F, G • Up to 11.4

Mbps • PPPoE • PPPoA, IPoA, 8PVCs, each UBR, CBR or VBR-rt selectable • I.610 OAM F4/F5 support • G.994.1 (G.hs)

**X.21**: Serial X.21

**ADSL:** ADSL2+ ITU-T G.992.5, Annex A, M, B • Up to 24 Mbps • PPPoE • PPPoA • IPoA • 8 PVCs, each UBR, CBR or VBR-rt selectable • I.610 OAM F4/F5 support • G.994.1 (G.hs)

**Fiber:** SFP slot for fiber WAN uplink • 100Base-T and GigE support • Up to 8 VLANs • PPPoE

### Voice Processing
Codec G.711 a-law/mu-law, G.723, G.729ab, G.726, G727, T.38 fax relay (9.6 k, 14.4 k) • G.711 transparent fax and bypass • 128 ms echo cancellation

### Call Routing and Services
Regular expression call routing and manipulation • number blocking •

short-dialing • digit collection, distribution and hunt groups

### Data Interfaces
Dual 10/100/1000 TX Ethernet Ports • Autosensing • Auto-MDI • Full-duplex

### IP Routing
IP access router • DHCP Client & Server • RIPv2 • BGP • VRRP • Packet fragmentation • Firewall • NAT/NAPT RFC 1631 • Access Control Lists • DMZ port • IPsec VPN (Option)

### IP Quality of Service
Voice priority • DownStreamQoS™ • traffic management, shaping policing • IEEE 802.1p, TOS, DiffServ labeling • IEEE 802.1Q, VLAN tag insertion/deletion 4,096

### Management
Web/HTTP, CLI with local console & remote Telnet access • HTTP/TFTP configuration & firmware loading • SNMP

MIB II and product MIB • SYSLOG • Secure autoprovisioning for both firmware & unit/subscriber configuration • Built-in diagnostic tools (trace, debug, call generator)

### Power & Packaging
Desktop metal chassis

**Dimensions**: 30.1W x 4.5H x 18.1D cm (11.9W x 1.8H x 7.1D in.)

**Weight**: < 30 oz (850g)

**Internal Power**: 100–240 VAC (50/60 Hz)

**Power Consumption** < 15W

### Operating Environment
**Operating temperature**: 32 to 104° F (0 to 40°C)

**Operating humidity**: up to 90%, non condensing

### Compliance
EMC: EN55022 and EN5502 • Safety: EN 60950 • CE • FCC Part 15 Class A; Part 68; CS-03

*\* Specifications subject to change without notice.*

## Ordering Info

**SmartNode T1/E1/PRI VoIP IAD: Hi-Capacity, 2x GigEthernet, High-Precision Clock, External UI power, IPv6 ready**

**SN4991/1E15V[*]/EUI**: 1 E1/T1, 15 VoIP channels (upgradeable to 30)

**SN4991/1E24V[*]/EUI**: 1 E1/T1, 24 VoIP channels (upgradeable to 30)

**SN4991/1E30V[*]/EUI**: 1 E1/T1, 30 VoIP channels, non-upgradeable

**SN4991...with Fallback Relay\***

**SN4991/4E15VR[*]/EUI**: 4 E1/T1, 15 VoIP channels (upgradeable to 60)

**SN4991/4E24VR[*]/EUI**: 4 E1/T1, 24 VoIP channels (upgradeable to 60)

**SN4991/4E30VR[*]/EUI**: 4 E1/T1, 30 VoIP channels (upgradeable to 60)

**SN4991/4E48VR[*]/EUI**: 4 E1/T1, 48 VoIP channels (upgradeable to 60)

**SN4991/4E60VR[*]/EUI**: 4 E1/T1, 60 VoIP channels, non-upgradeable

**SN4991/4E96VR[*]/EUI**: 4 E1/T1, 96 VoIP channels (upgradeable to 120)

**SN4991/4E120VR[*]/EUI**: 4 E1/T1, 120 VoIP channels, non-upgradeable

**SN4991/4E30V120R[*]/EUI**: 4 T1/E1/PRI, fallback-relays, 30 VoIP channels (upgradeable to 120)

**Note:** For complete ordering list, contact sales@patton.com

### Options & Accessories
**SNSW-49V1**: 1 channel Voice Upgrade Key for SN4990 VoIP IADs. Software expansion for additional voice channels.

**SNSW-VPN2**: Software option for IPsec VPN, including DES/3DES and AES encryption, IKE and Voice-Over-VPN

**SNSW-QSIG2**: Support for ISDN Q.SIG.

**INS-KIT-RACKEARS-11/19**: 19-inch Rack Ear Kit

\*    Fallback relay between ports E1/T1 0/0 and 0/1 of all 4-port models

[\*] For **X.21** option, add **D** in SKU (ex: SN4991/40E30VR**D**/EUI)

For **G.SHDSL** option, add **2GS** in SKU (ex: SN4990/4E30V**2GS**/EUI)

For **Fiber** option, add **F** in SKU (ex: SN4991/1E15V**F**/EUI)

For **ADSL** option, add **A** in SKU (ex: SN4991/1E30V**A**/EUI)

**Note:** ADSL option is only available for 15 and 30-channel models.