SMARTNODE 1400 SERIES

Allowing the small office/remote office to lower communication costs over any IP link, the SmartNode 1400 Multiport BRI VoIP Media Gateway provides four voice-over connections with QoS for transparent voice, fax, and data calls.
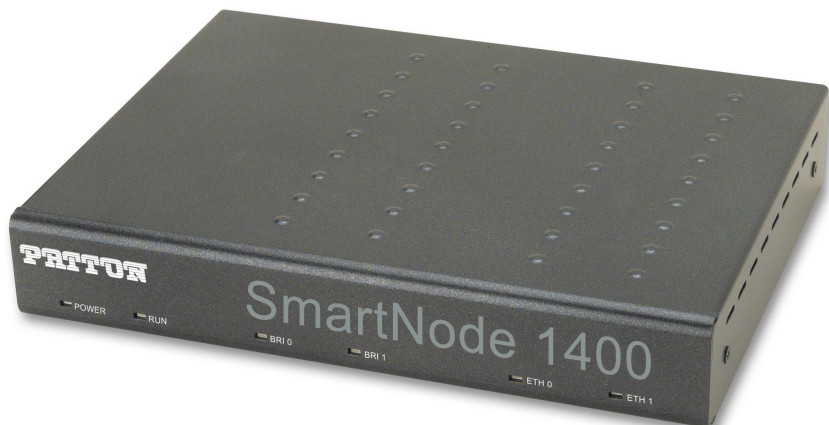
Multiport BRI VoIP Media Gateway

Patton SmartNode 1400

The SmartNode 1400 Multiport BRI VoIP Media Gateway combines voice and data with QoS routing and call switching to provide private voice PBX networking and PBX extension. Supporting four simultaenous calls from the IP network or the PSTN, the SmartNode 1400 allows any small/remote office to use an existing IP network for lower-cost voice and data communications.

Using its patented ISDN-over-IP technology, the SmartNode 1400 will tunnel ISDN/QSIG call control messages, as well as 64-kbps data (UDI/RDI) end-to-end. T.38 FoIP, fax bypass, and modem bypass capabilities ensure that the SmartNode 1400 will seamlessly connect to all voice and data, and PBX networking services. With H.323, SIP, and MGCP gateway support, the SmartNode 1400 offers multiple user-defined G.711 and G.726 voice codecs as well as G.723 and G.729ab for low bandwidth voice. With Patton's ToIP™ call routing technology and selectable NT/TE interfaces, the SmartNode 1400 extends any standard ISDN telephone or PBX-to-PBX with VoIP.

The SmartNode's flexible programming interface combines a real-time Quality-of-Service IP router with advanced network features. With NAT, DHCP, PPPoE, and Access Control Lists/Firewall, the SmartNode 1400 connects your LAN to the WAN without the cost of extra equipment. Using its built-in QoS feature delivers the highest quality of voice every time—*all the time*. For more information, visit us at www.patton.com.

Quad Call Support
Supports four simultaenous calls from either the PSTN or the connected ISDN phone or PBX

Complete End-to-End Call Control
Using ISoIP™and ToIP™ technology, calls are connected with voice, data, and supplmentary services delivered transparently end-to-end.

Transparent ISDN/QSIG Tunneling
Get true trnasparent voice networking between phones or PBX's. ISDN and QSIG messages can use IP instead of expensive and private leased lines.

Dual BRI So (S/T) Ports
Both ports support NT and TE interfaces for connection to any telephone or service provider. Use call routing and access local and remote service with a single phone or terminal.

H.323v3 and H.323+ VoIP
Connect to any SmartNode or VoIP capable device with universal call control signalling. Use advanced features including H.245 Fast Connect, Early Start, Annex M3, ECS support, and RAS.

QoS Router with Dual Ethernet
Connect your LAN to any broadband access network with PPPoE, DHCP, and NAT. Combine VoIP and Internet access to guarantee voice priority and service quality.

Full ToIP™ Support
Enhanced circuit-switched call routing allows user programmable call handling based on hunt groups, caller/called ID, and time of day. Pass local PSTN call-through without packet conversion.
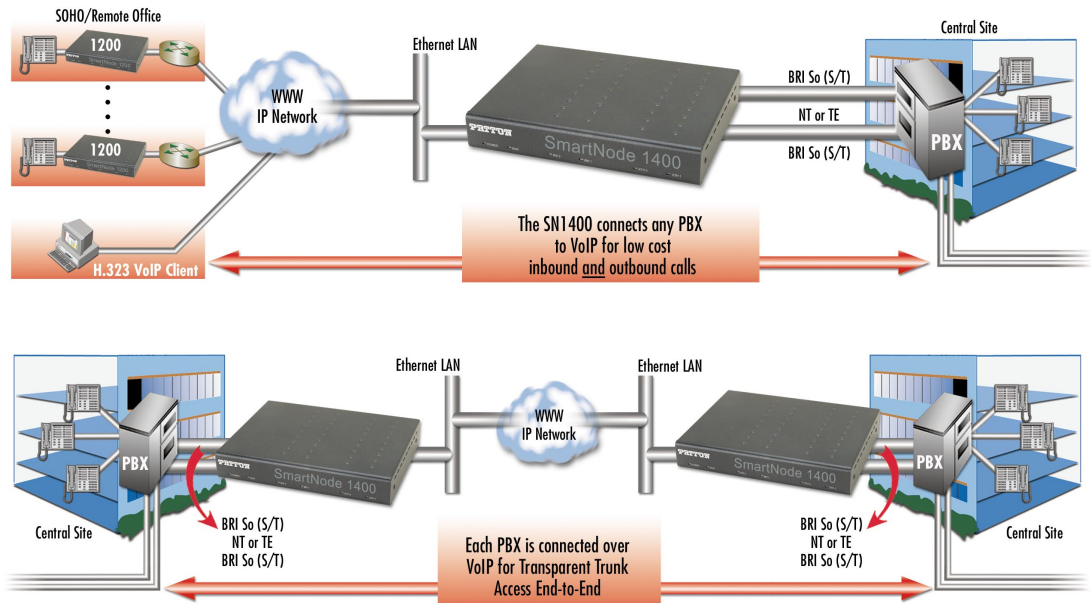
PATTON

✔ Dual Ethernet ports support DSL/Cable/WLL connections with NAT & PPPoE

✔ EIA-232 Console port for configuration

✔ 10 LEDs give status indication at a glance

✔ Internal Universal 100—240VAC power supply

✔ Easy to use CLI, SNMP, and Java application for configuration and managment.

SmartNode 1400

Application—Remote Office Connectivity and Pass-Through

In enterprise networks, the SmartNode integrates ISDN telephony and IP data communications for best use of bandwidth, improved office-to-office communication, and reduced network costs.

Instead of installing a separate PBX in a remote office, the SmartNode is able to provide transparent extension of PBX phones. The extension can be managed centrally and benefit from PBX services such as calling groups, least cost routing, and call forwarding.

The SmartNode also supports transparent ISDN & QSIG tunneling. Now PBXs can be networked over lower-cost IP while still retaining complete functionality to private voice networking.

The SN1400 connects any PBX to VoIP for low cost inbound and outbound calls

Each PBX is connected over VoIP for Transparent Trunk Access End-to-End

Specifications

Voice Connectivity
- 2 ISDN BRI/So (S/T), RJ-45
  - Both ports configurable for TE or NT
  - 4 VoIP sessions
  - Configurable point-to-point, point-to-multi-point and connector pinout
  - Cut-through relay for emergency operation (life line support)

Data Connectivity
- 2 10Base-T Ethernet, RJ-45
- PPPoE

Voice Processing
- 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
- 2 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
- Fax over IP
- T.38 Fax relay (9.6 k, 14.4 k)

- G.711 Fax and Modem Bypass

Voice Signalling
- Euro ISDN EDSS-1 / ETSI BRI/NET3
  - ETS 300 012-1 (ITU-T I.430)
  - ETS 300 402-1 (ITU-T Q.921)
  - ETS 300 403-1/2 (ITU-T Q.931)
  - ETS 300 102-1 (ITU-T Q.931)
- Q-SIG (PSS-1)
  - ECMA-143
  - SIP and MGCP
  - ETSI and ISO/ECMA channel numbering
- H.323v3
  - 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
  - ECS support
- ISDN over IP (ISoIP)
  - H.323 GW and GK compatible
  - H.323 Annex M3
  - ISDN/Q-SIG feature tunnelling
  - ISDN speech, audio and data (Fax Gr 4, UDI 64, RDI 64)
  - ISDN supplementary services*

Voice Routing—Session Router™
- Local switching
- Interface huntgroups

- ISDN broadcast message routing
- 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 Routing
- IPv4 router
- RIPv1, v2 (RFC 1058 and 2453)
- Programmable static routes
- ICMP redirect (RFC 792)
- Packet fragmentation
- DHCP client/server
- Static Firewall
  - NAPT (RFC 1631)
  - NAT/DAT
  - Access control lists

IP Quality of Services
- WFQ/Fixed Rate/Priority Queuing/flow-split scheduler
- Combination of QoS schemes with configurable burst
- DiffServe/ToS set or queue per header bits
- Pocket Policing discards excess traffic
- 802.1p VLAN tagging

- Traffic classification and shaping

Management
- Industry standard CLI with local console (CRJ-45, RS-232) and remote Telnet access
- TFTP configuration down-and upload
- TFTP firmware download
- SNMP v1 agent (MIB II and private MIB)
- Built-in diagnostic tools (trace, debug)
- Java™ Applet
- HPOV Integration with NNM

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

System
- CPU Motorola MPC850 @ 50 MHz
- Memory 16MB SDRAM/4MB Flash
- Power: 100–240 VAC (50/60 Hz)
- Power dissipation 4W

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

Model Information

SN1400/4V/UI BRI VoIP Media Gateway with dual-VoIP channels, router, and internal 100–240 VAC power supply

SNSW-IAF-1 IP Advanced Feature Set (Q-SIG,QoS, IP Classificaiton)
SNSW-LBV4 4 channel license for G.723/G.729