SmartNode™ Enterprise Session Border Controller & IAD

Broadband Access & FXS/FXO Interfaces | Model 5540

The SmartNode 5540, is a cost effective eSBC with integrated Broadband access and up to 8 FXS/ FXO ports supporting a high level of VoIP and network security. It is capable of doing up to 200 SIP to SIP calls*** whereof max. 4 can be transcoded**. Built-in QoS functionalities and support of G.722 high definition codec ensure excellent VoIP call quality.

`WAN Access
Fiber SFP, G.SHDSL-EFM/ATM, Gigabit Ethernet or VDSL/ADSL WAN interface.

Up to 8 Analog interfaces (FXS/FXO)
2, 4 or 8 analog ports. Either FXS or FXO or a combo configuration. Up to 8 G.722/ G.711 or T.38 calls simultaneously. Leased line 2W/4W optional.

Full Telephony Features
Session Router allows flexible call routing and numbering plan adaptations, CLIP/ CLIR, hold, transfer, and much more.Full SIP-ISDN AOC support.

Outstanding Interoperability
Interoperable for data, voice and T.38 fax with leading, SIP service providers, soft-switch vendors, major IP-PBX systems and various DSLAMs.

Complete Access Routing
Two 10/100/1000 Ethernet ports with auto-MDI-X. Ethernet Layer 2 switching and bridging. Access router with NAT, Policy Based Routing, Stateful Firewall, PPPoE, DHCP, DynDNS.

Easy Management & Provisioning
Web-based management, WEB Wizard, SNMPv3, command line interface, secure, zero-touch provisioning separate config. domain support, TR-069.

Full VoIP protocol support
SIPv2, SIPv2 over TLS, T.38, G.722 HD voice, RTP Security with SRTP, fax and modem bypass, DTMF relay

Why SmartNode?
- *Patton Quality*
- *Swiss Engineered—Made in the USA*
- *Unrivaled Customer Support*
- *FREE Software Upgrades*

The SN5540 is the perfect choice for All-IP applications where legacy, non-replaceable analog equipment has to be integrated into a UCC environment. For pure All-IP networks, the SmartNode acts as a service termination point toward the enterprise with an integrated Broadband access termination for G.SHDSL, VDSL, ADSL or Fiber SFP.

With the separate config domain feature, the SN5540 will be the service demarcation point for SIP Trunk service providers, where the local administrator can be limited to only modify configuration settings facing the LAN IP PBX.
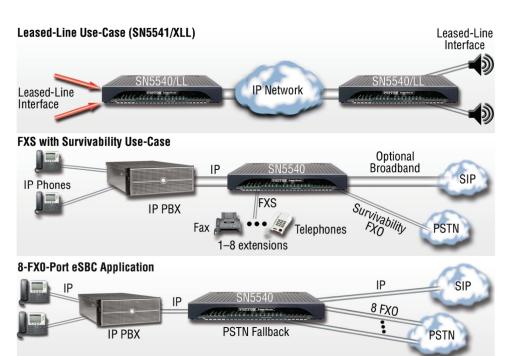
The SN5540 acts as VoIP Gateway, eSBC, Access Router and QoS CPE all in one device.

It can also undertake network assessment and monitoring at the customer premise by using Patton Cloud network monitoring to prevent, reduce and resolve network and voice quality problems.

Network Integration

Thanks to the built-in FXS ports, it resolves technology evolution related problems, either by integrating old, non-replaceable telephones into a UCC environment, or for good old fax devices to be migrated to the next-generation network infrastructure. The built-in FXO ports, available on certain versions, offer failover for calls (mainly emergency calls) that are connected after broadband access fails.

Visit www.patton.com/smartnode for more information.

Leased-Line Use-Case (SN5541/XLL)

FXS with Survivability Use-Case

8-FXO-Port eSBC Application

PATTON®

let's Connect!™

SmartNode™ Model 5540 eSBC/IAD/Leased-Line Extender

Integrated Access Device (IAD)

Enterprise Session Border Controller (eSBC) & Leased-Line Extender

Specifications*

Voice Signaling
SIPv2/SIPv2 over TLS SIP call transfer, redirect • Overlap or en-bloc dialing • DTMF in-band, out-of-band • Configurable tones

Call Routing & Services
Regular expression number matching • Regular expression • number manipulation • Least Cost Routing • Number blocking • Short-Dialing • Digit collection • Distribution-Groups and

Hunt-Groups

Leased-Line Connectivity (SN5541/XLL)
Audio connectivity 2-wire (Up to 4 VoIP lines*) • RJ11 • 4-kHz bandwidth • Impedance 600-ohm • Narrow-band FXS-style hybrid TX/RX

FXS Connectivity
2, 4 or 8 FXS ports, RJ-11/12 • 2-wire Loopstart • EuroPOTS (ETSI EG201188) • Programmable AC impedance, feeding, ring and on-hook voltage • Caller-ID FSK and ITU V.23 /Bell 202 generation • Long Reach FXS—10 km @ 3REN load • Secondary Surge Protection (optional)

FXO Connectivity
2, 4 or 8 FXO ports, RJ11/12 • 2-wire Loopstart • Programmable impedance • Ring detection, tone detection • Caller ID detection (FXS, DTMF) • Disconnect supervision

Voice Processing
G.722 • G.711m/A-law • G.723.1 (6.4 kbps) • G.729, 729a, 729ab (8 kbps) • G.726 (16, 24, 32, 40 Kbps) • G.168-2004 echo cancellation (128 ms) • Up to 8 simultaneous low- or high-bandwidth voice or T.38 fax calls • Up to 200 SIP-to-SIP calls*** • Up to 4 SIP transcoded calls* • Silence suppression and comfort noise • Adaptive and configurable dejitter buffer • Configurable RTP packet length

IP Quality of Service
Patton Cloud network monitoring ** • Voice priority, DownStreamQoS™ • Traffic Management, shaping policing • CBR, VBR-rt/nrt and UBR, IEEE 802.1p, IEEE 802.1Q, 4096 • VLANs (Tag insertion/ deletion), TOS, DiffServ Labeling

Connectivity
Two 10/100/1000Base-T Ethernet ports • USB 2.0 host port Auto-MDIX • DHCP Client • PPPoE Client (multi-session) • IP Multi-Netting, VLAN, Secondary IP • IPv4 and IPv6 dual stack, ICMP • Dynamic and static NAT and NAPT, ACL, Stateful Firewall DNS, DynDNS DHCP Server SNTP Client

Broadband Access
ADSL/VDSL: VDSL 2, G.hs, G.Vectoring, up to profile 30a support • ADSL2, ADSL2+, Annex, A/L/M** or B/J** • IPoA, IPoEoA, PPPoA, PPPoEoA (RFC2364, RFC2516)

G.SHDSL-ATM: 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)

G.SHDSL-EFM: EFM mode compliant to IEEE 802.3 G.998.2 • PPP over Ethernet (RFC2516) • Support of OAM PDU information and functionality (ITU-T Y.1731) • OAMPDU event notification, variable request, variable response, and loopback control

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

Management
Patton Cloud Orchestrated • Customizable WebWizard, Web-based GUI, CLI Telnet and HTTP access • Zero Touch Provisioning • TR-069, TFTP, HTTP, HTTPS configuration up- and download • TR-069, TFTP, HTTP, HTTPS firmware upgrade, Dual Image • SNMPv3 agent - MIB II and private MIB • Separate config domain (LAN side config and WAN side config) • Built-in diagnostic tools • Secure Auto-Provisioning with built in root CA

Power Consumption
External Power: 100–240 VAC (50/60 Hz)

Power Consumption: < 15W

Packaging
Desktop/Wall-mount plastic chassis

Dimensions
Plastic chassis eSBC (w/o xDSL & Leased-Line Extender):
8.2W x 1.3H x 6.5D in. (20.8W x 3.4H x 16.5D cm)
Metal enclosure IAD (with rack mount option):
11W x 1.5H x 6.1D in (28 W x 3.9 H x 15.7 D cm)

Weight
<450g (15.9 oz)/<600g (metal)

Environment
Operating temperature: 32–104°F (0–40°C)

Operating humidity: up to 90%, non-condensing

Compliance
FCC Part 15 Class A (US EMC)
CE per RTTE 99/5/EC (EMC and LVD)

Safety
EN60950
TBR-3 (ISDN BRI/So)

Specifications subject to change without notice | * Depending on model | ** Licensed Feature at additional charge | *** Supports up to 200 SIP-to-SIP calls under ideal conditions. Transcoding, debugging and/or IP Routing reduce processing capacity

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