Offering industry-leading highest port density, scalability, and lowest operating costs, the SmartNode 10300 is a multi-unit, carrier-grade VoIP gateway solution that is 100% redundant. Ideal for service providers looking to drive convergence between TDM and IP networks, while maintaining the maximum in reliability.

16 to 1024 x T1/E1/J1, 1 to 48 DS3, or 1 to 16 OC3/STM-1
Highest system density in the market means the lowest cost per port; up to 66% rack and space cost savings

512 to 32,768 VoIP channels (field upgradable)
Simple field upgrade by 16 T1/E1 and 512
VoIP channels or 1 DS3 and 672 VoIP channels or 1 STM-1 and 2,016 VoIP channels.

Increased system up-time
N + 1 reliability, SS7 link redundancy, field-upgradable components

Low operating expense (up to 80% cost savings) significantly improves ROI
Low power consumption (150 W for the SN10300 at full capacity)

Connect with confidence to diverse VoIP endpoints and IP fax
Extensive media handling support for wireline, wireless and fax codecs

S
ervice providers are adding VoIP capabilities to their networks, whether to reduce costs when interconnecting with other carriers, to cost-effectively build out their network footprints, or simply to transport voice traffic across their IP backbones. This can be best accomplished using a SmartNode 10300 Series media gateway, that enables the delivery of VoIP services by bridging voice traffic between the public switched telephone network (PSTN)—based on time-division multiplexing (TDM)—and IP networks such as the Internet. Whether sitting at the network core or at the edge, SmartNode media gateways enable service providers to introduce VoIP into their networks while maintaining the quality and the reliability of traditional TDM networks.

In parallel with the TDM and IP signaling protocols mentioned above, SN10300 devices also support the H.248 media gateway control protocol, which enables any H.248-compliant third-party softswitch to control a media gateway. While the softswitch manages call control interactions, the SN10300 handles the same device. The ability to provide both switching and conversion across multiple TDM and IP signaling protocols at once is paramount to enabling the operational flexibility and cost savings that drive service providers to expand their carrier relationships and converge their networks.

TDM interfaces
Service providers, whether providing local, long-distance or international voice services, are interconnected with a multitude of other providers using T1/E1/J1, DS3 or STM-1 links. It is critical for service providers to be able to rapidly establish new interconnections without having to always deploy new devices. SmartNode 10300 Series media gateways therefore offer flexibility and can be configured to support T1/E1/J1, DS-3 or STM-1 interfaces.

Signaling and control protocols
Just as flexibility in the selection and deployment of TDM links is a key requirement for service providers, the need to support multiple signaling protocols across various carrier partners is just as important. Each SN10300 media gateway provides support for the concurrent use of ISDN, SS7/C7, CAS (R2), SIP, and SIGTRAN signaling in the...
transmission of call media as well as any required transcoding.

**Media handling**

Service providers will use one or more codecs on their VoIP networks according to their desire to save bandwidth, to provide a certain level of voice quality, or simply to interoperate with other VoIP devices or providers. The ability to support multiple different concurrent codecs and to allocate them in real time based on traffic is the key to delivering true network convergence.

SmartNode 10300 gateways feature extensive support for various wireline, mobile and IP telephony audio formats, delivering seamless transcoding in real-time. The media gateways ship with support for G.711, G723.1, G.726, and G.729ab right out of the box, with no additional license fee required. They also offer optional support for mobile and IP vocoders such as AMR, AMR-WB (G.722.2), GSMFR/ GSM-EFR, EVRC/QCELP, G.728, G.729eg, and iLBC. SN10300 gateways offer independent dynamic codec selection per channel. This means that it is possible to assign different vocoders to different channels, on a channel-by-channel basis. The devices can then run all of these codecs concurrently and do so with no impact on system performance. SN10300 gateways also provide unparalleled support for Internet-based fax, also known as Fax over IP or Fax relay, using the T.38 protocol, which is used to carry fax communications over an IP network. (They also support the T.30 protocol for fax over the PSTN.)

**System density**

SN10300 gateways feature the industry’s highest system density in a 2U form factor. Beside the capital savings achieved by purchasing less units of equipment, system density also provides operational cost savings in the form of reduced co-location fees as well as lower power and cooling costs.

**Energy efficiency**

For many, if not most, service providers, the payoff from reducing energy use can be particularly impressive; typically, for every watt of power required to operate a device, another watt is required to cool it. The SN10300 media gateways can play a major role in reducing energy costs, with an average two-thirds less power consumption than competing products of similar capacity.

**Provisioning and maintenance**

For network convergence efforts to contribute positively to revenue and profitability, service providers must maintain their reputation for uptime and availability during the introduction, operation, and maintenance of new services. The SN10300 offers an operations, administration, maintenance, provisioning (OAM&P) solution. OAM&P enables the service provider to perform the initial setup of the SN10300 media gateway and any subsequent maintenance operations. These range from the simple, such as the collection of statistics and alarms, to the more complex, such as system configuration changes, the addition of new hardware or software components, and the application of software patches or software upgrades.

Visit [www.patton.com](http://www.patton.com) to view our huge selection of unified communications, network connectivity, and other products.
In the Carrier market, the SmartNode has become a preferred advanced CPE and the SmartNode 10300 expands the portfolio with a high traffic CPE.

In addition, the SmartNode 10300 expands our reach onto the Carrier as the Media Gateway is a key component for applications at the Carrier operational level as well as in connecting advanced value-added services.
Specifications*

**Capacity & voice processing**

**PSTN interfaces**
- 16 to 1024 T1/E1 per cluster or
- 1 to 48 DS3 per cluster or
- 1 to 16 OC3/STM1 with APS per cluster
- Framing independently configurable per port
- 2 BITS interfaces on DS3/OC3/STM-1 units

**VoIP interfaces**
- Up to 32 Ethernet ports 100/1000Base-T per cluster (2 per telecom unit)
- RJ45 connectors on rear of unit
- Up to 256 different IP addresses per cluster (16 per telecom unit)
- Ethernet port bonding & 802.1q VLAN support

**Vocoding**
- 512 to 32,768 VoIP channels with universal codecs per cluster
- Universal codecs: G.711, G.722, G.726, G.729ab, T.38 V.17, clear mode (RFC 4040)
- Other codecs: G.722, G.722.2 (AMR-WB), G.726, G.729eg, iLBC, AMR, EVC, GSM FFR/EFR, G.723.1, T.38 V.34

**Fault tolerant software**
- Adaptive & programmable jitter buffer (20 ms)
- Voice Activity Detection (VAD)
- 128 ms echo tail on all channels simultaneously
- G.168 echo cancellation
- ISDN variants: NI-2, 4ESS, 5ESS, DMS-100, DMS-110, DMS-112, DMS-114
- Q.931 ISDN PRI (user and network side)
- Up to 512 M2UA / M2PA links
- M2PA, M2UA, M3UA (IPSP, ASP, SG), IUA
- SS7
- Up to 512 MTP2 links (56, 64, n x 56/64 kbps) or 32 x HSL
- Multiple redundant MTP2 links
- Up to 64 originating point codes and 256 linksets
- Up to 512 destination point codes
- ISUP variants: ITU-T 92, ITU-T 97, ANSI 88, ANSI 92, ANSI Q.931, 767, Telercordia Q.931, ETSI v.3, China, Singapore, UK, SP, RU, Ukraine, Japan, China, Korea, Germany, Hungary (ETSI ES 201 671 v.2.1.1)

**Operation & Administration**

**Provisioning**
- Non-service affecting configuration changes
- Offline configuration validation
- Multiple configuration files archive
- Northbound API (RESTful) for automated provisioning

**Troubleshooting**
- Live call trace with protocol information and ladder diagrams
- Live test call with media playback and recording
- Protocol signaling capture into pcap files
- Media call recording (scriptable for calling and called numbers)

**Maintenance**
- Replaceable fan filters on telecom units

**Regulatory compliance**

**Safety**
- CAN.CSA.C22.2
- EN 60950-1:2005
- EN 60950-1:2006

**Environmental**
- Operating temperature: 0 to +70 °C, 95% rel. hum. non-condensing
- Storage temperature: -10 to +85 °C, 95% rel. hum. non-condensing
- Designed to meet NCB Level 3
- RoHS compliant

**SN10300A/CTRL specification**
- IBM 5406 System x3250 Express Model
- Xeon E3-1231 v3 3.4GHz 1600MHz 4C processor
- 8MB cache, 16 GB memory
- 40 GB RAID 1 SSD

**Electrical Characteristics**
- Power Input: -90 to 260 VAC, 47 to 63 Hz, -40 to -60 VDC
- Redundant power supplies (for each component)
- From 616 to 3210W power consumption per cluster (depending on configuration)

Ordering Info

Obtain ordering info for this product by using the QR code at right or by contacting:
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