Patton's SmartNode Solution
Telephony-over-IP Management Voice Intranet

POP #10

POP #1 – FXO Ports to Switch

Analog Voice Switch

SmartNode 4520

PATTON SmartNode 4528 VoIP Gateway Router
ToIP Integrated Access Device

FXO Ports to Switch

to Subscribers

Private IP WAN

SmartNode 2300

12 FXS Ports to Analog Phones

NOC #1

NOC #2
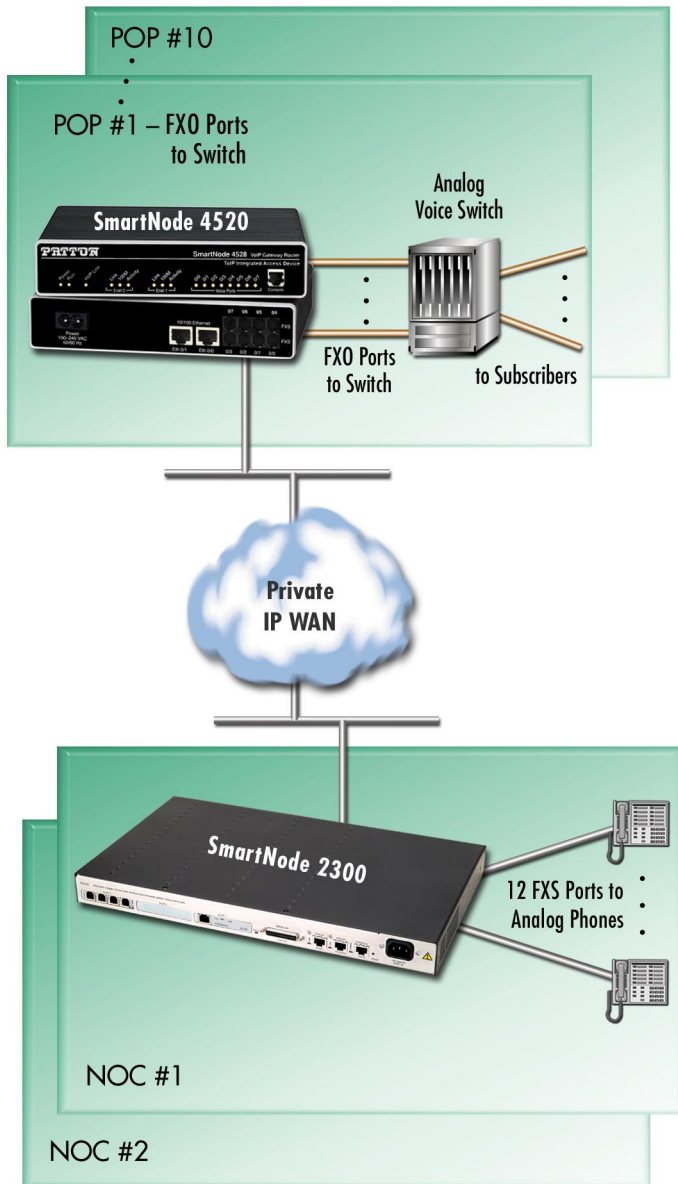
SmartNode™ VoIP Solution Slashes Operating Expenses for "Triple-Play" Competitive Carrier

Patton's Converged Voice & Data Solution Simplifies Service Provider's Management Network and Eliminates Recurring Private line Costs

Why pay for these expensive phone lines

month after month? That's the question a certain senior network manager asked himself as he read his electronic copy of Patton Network News. The issue described how any enterprise could use Patton's SmartNode™ Telephony-over-IP™ solutions to route voice circuits through any IP network.

Survival of the Frugal. As a Competitive Local Exchange Carrier (CLEC), this provider offers "triple-play" services—voice, video and Internet access—to their subscribers in ten U.S. markets. CLECs compete against intimidating Incumbent Local Exchange Carriers (ILECs), monolithic corporations formerly known as the "Ma Bells". In such a business climate, managing network costs intelligently is critical to continued growth, and cutting monthly operating costs can be synonymous with survival.

Big is Bad. In the fiercely competitive carrier market, you've got to be lean and mean. But this provider's management network was big and expensive. Separate voice and data infrastructures linked dual Network Operations Centers (NOCs) with ten customer Points of Presence (PoPs). An under-utilized IP WAN provided remote management and alarms to network engineering staff, while a parallel multiplexed TDM network connected voice switches for testing and troubleshooting. Needless to say, the network manager wanted a more efficient solution.

Cost Conundrum. The TDM voice segment of this carrier's test network required private Foreign Exchange circuits, accompanied by recurring tolls for monthly service. The voice circuits were leased from the incumbent local carrier—their competitor. As he read about SmartNode™ solutions the network manager wondered if SmartNodes could help him combine his voice and data networks to reduce operating expenses.

Key Solution Benefits

✔ **Eliminate Monthly Line Charges**
   Reduced Operating Expenses Through Resource Consolidation

✔ **Consolidate Voice & Data into a Single Network**
   Simplified Network Management, Deployment, and Maintenance

✔ **Efficient Resource Utilization**
   Leverage Latent Capacity in Your IP Network

SmartNode™ – VoIP That Works!

✔ **Independence & Control**
   Avoid Leased Lines – Define Your Own Voice Network

✔ **Flexible Configuration, Routing & Numbering Plans**
   Define Dialed Digits & Dial-tone Source to Suit Your Network

✔ **Full Project Life-Cycle Support**
   Get Patton's "World's Best" Tech Support... FREE

Cover Me. The network manager wanted a solutions vendor he could count on for support through all phases of the project life-cycle, from planning, configuration and deployment to troubleshooting and operation. Having purchased Patton Remote Access Servers (RAS) in years past, he knew from experience that Patton's Technical Services team had him covered. So the network manager called Dan Blatt, his regional Patton sales representative.

Devilish Detail. As he considered migrating to Voice-over-IP, the network manager had another question. His private voice network had to deliver dial-tone from each of his 10 PoP sites to both NOC locations. Would SmartNode be sufficiently flexible? When he learned that SmartNode's powerful SessionRouter software can accommodate any call-routing requirement, any connectivity scheme, and any dialed-numbering plan—including hot-line and reverse hot-line functions—his concerns were put to rest.

Deployment. After Technical Services tested a model of the carrier's system in Patton's lab, the carrier implemented their SmartNode solution. In each NOC, 12 standard analog phones plug into 12 FXS ports on a SmartNode 2300. Each phone is labeled with the name of the remote POP to which it connects. In each POP, up to 6 FXO interfaces on a SmartNode 4520 plug into the switch providing voice services to their subscribers. By picking up the desired handset, NOC managers can get toll-free local dial-tone from any of the 10 remote PoPs for monitoring, testing, and troubleshooting. In addition, the manager can make local calls to customers, vendors, or any phone number in the PoP's local calling area—all toll free.

Convergence. SmartNode's Telephony-over-IP solution enabled the competitive carrier to eliminate an expensive multiplexer network with its monthly tolls by consolidating voice and data networks into a single infra-

structure. As an added benefit, the converged network is more efficient, exploiting previously unused capacity in the carrier's private IP WAN.

The Numbers

Before

Monthly Private Line Charges	**$6,000**
11 Private lines, each averaging $545 per month	
Annual Expenses for Private Lines	**$72,000**

After

Monthly Private Line Charges	**$0**
Private telephony circuits routed through IP WAN	
One-Time Project Expense	
Capital Equipment	**$14,000**
Miscellaneous	**$1,000**
Total First-Year Expenses	**$15,000**
Monthly Savings	**$6,000**
Project Payback	**2.5 Months**

SmartNode IP Telephony Products

SmartNode 4110/4520 Series
Analog FXS/FXO VoIP/ToIP Access Gateways & Gateway Routers

SmartNode 2300/2400 Series
Modular VoIP/ToIP Access Gateways & Gateway Routers

SmartNode 1200/1400 Series
Digital BRI VoIP/ToIP Media Gateways

About Patton

Patton Electronics Company is a US manufacturer and marketer of data communications products, including VoIP/ToIP Gateways & Routers, Remote Access Products (V.92, V.90, K56Flex, V.34+, and ISDN dial-in), Last Mile/Local Loop Access Products (T1, E1, and xDSL modems, DACS, NTUs and CSU/DSUs), Multi-Service Access Products (Voice, Intranet, Extranet, and Frame Relay access), and Connectivity Products (interface converters, short range modems, multiplexers, and data line surge protectors). Patton Electronics is an ISO 9001 certified and BABT approved manufacturer. Patton products are CE marked.

PATTON Electronics Co.

Extending, Converting & Converging

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