Patton’s SmartNode Telephony-over-IP gateways and routers offer a full range of solutions to address the challenges of integrating PSTN and IP networks and solve the critical migration issues associated with next-generation IP networks. Unique among VoIP solutions, Patton’s SessionRouter™ software offers configurable call-routing policies to support any numbering plan and ease your migration to IP calling.

VoIP
Voice-over-IP
Converting Voice to Packet using industry-standard H.323 and SIP protocols is called VoIP. Making it work in YOUR network is something else.

ToIP
Telephony-over-IP
Incorporating PSTN telephony and data services into a seamless and integrated private or public network, TRANSPARENT to the end-user is what Patton calls Telephony-over-IP™.
The Case for VoIP
The basic argument for VoIP is the clear advantage of a converged and integrated network. The benefits are cost savings and improved efficiency.

The New Way
Converged IP Access
- All services are consolidated to the new lower-cost IP access
- Remote extensions are now integrated with remote PBX with full telephony feature transparency
- Network = Asset

The Old Way
Separate Data & Voice Networks
- Multiple, under-utilized facilities with dedicated services for each application
- Separate phones & circuits for local & remote telephone services
- Network = Liability

Integrated Data & Voice: Network = Asset

This Solutions Guide describes how Patton delivers the VoIP promise to Enterprises and Service-Provider Customers.
- Reduce your network’s underlying cost base and realize a short term return on investment.
- Contain built-in variable network cost increases and improve efficiency.
- Leverage established systems and migrate to next-generation IP-based networks with feature transparency.
- Achieve customer retention and new business development.

Patton’s Telephony-over-IP solutions let you realize the promise of Voice-over-IP by eliminating the problems with deployment. Details on the following page.

Please visit: http://www.patton.com or Email to voip@patton.com
Corporate Headquarters: +1 301 975 1000 • EMEA Headquarters: +41 31 985 2525
The financial benefits of VoIP for residential, enterprise, and service-provider companies has been well known for years now. Many of the reductions in US domestic long-distance rates are the result of carriers adopting VoIP. And, VoIP technology PROMISES reduced costs, increased profits, and greater efficiencies in the networks of enterprises and service providers of ALL shapes and sizes. BUT THIS PROMISE has not yet come true! Problems with deployment and other challenges have hindered mass voice and data integration over a common IP network.

Patton’s unique range of Telephony-over-IP products removes the key barriers and solves the issues preventing mass VoIP deployment.

The financial benefits of VoIP for residential, enterprise, and service-provider companies has been well known for years now. Many of the reductions in US domestic long-distance rates are the result of carriers adopting VoIP. And, VoIP technology PROMISES reduced costs, increased profits, and greater efficiencies in the networks of enterprises and service providers of ALL shapes and sizes. BUT THIS PROMISE has not yet come true! Problems with deployment and other challenges have hindered mass voice and data integration over a common IP network.

Problems with deployment and other challenges have hindered mass voice and data integration over a common IP network.

\section*{Problems with VoIP}

VoIP samples analog voice into blocks of 10–60 ms, wraps them into digital IP packets, sends them over the network, and reassembles the voice stream on the other side. The quality of VoIP depends on the CODEC—compression/decompression—method used, network conditions, and ranges from ISDN toll quality to G.98.11.

\begin{itemize}
  \item \textbf{Supporting numbering plans and dialing procedures}
  \item \textbf{Supporting supplementary services (Caller-ID, Call-Transfer, etc.)}
  \item \textbf{Mastering network delay}
  \item \textbf{Overcoming IP service quality issues}
  \item \textbf{Truly integrating IP and PSTN telephony, migrating existing equipment and operational procedures.}
\end{itemize}

\section*{SIP Solutions}

- SessionRouter™ provides a full suite of PXX and PXX-interoperability features.
- SmartNode SessionRouter™ supports traffic classification, call filtering, and prioritized routing not only for voice but also for multiple data service classes.
- SmartNode SessionRouter™

\section*{VoIP Glossary}

- **G.711**: This standard CODEC converts the analog speech signal to a digital stream using pulse-code modulation (PCM), a logarithmic encoding algorithm. G.711 delivers toll-quality voice using 64 kbps of bandwidth per call. Best choice in high-bandwidth environments.
- **G.723.1**: Developed for multimedia, G.723.1 has emerged as the standard low-bandwidth CODEC today. Using just 5.3 kbps or 6.4 kbps of bandwidth per call, G.723.1 delivers good voice quality at low bandwidth in the presence of network impairments such as low packet loss and transmission errors.
- **G.729**: This standard CODEC offers toll-quality voice at lower bandwidth. Using 8 kbps of bandwidth, G.729 offers excellent processing requirements and tolerates moderate network delay. Delivers high-quality voice in low-bandwidth environments.
- **SIP**: Session Initiation Protocol is the IETF standard call-control protocol between gateways and switches. With SIP, unified services can be easily created which combine telephony and other applications such as email, messaging, and streaming video.
- **H.323**: It is a recommendation from the ITU that sets standards for multimedia communications over IP networks. It also addresses call control, multimedia management, and bandwidth management.
- **ISoIP**: ISDN-Over-IP is a patented feature of the SmartNode products which incorporates ISDN feature tunneling and Q-SIG feature tunneling including ISDN basic, ISDN supplementary, and ISDN connectionless services.
There is no reason to deploy a separate telephone system at each location in an enterprise. Using Telephony-over-IP, remote sites can be supported over the Internet, transparent to the user and with the same features set available to “local” users. Each remote site does not need special IP telephones. At the remote site, voice extensions to the central site can co-exist with local PSTN connectivity.

Executive, as well as part-time or full-time home workers, can access the corporate data network and the PBX from home or the office without any differences. Home workers can make and receive calls from the PBX while working online, transparent to the caller. The home worker can reach all PBX extensions and use all the same PBX call features available to “local” users.

In a variation of the home workers application, the IP call center agent is located at a contractor’s facility or in a home. From the caller’s perspective, the IP extension is transparent and the offsite telephone agent is connected using the existing capabilities of the call center operations, including automated call distribution.

The SmartNode Solution integrates with the HQ’s PBX and provides the following benefits:

- Seamless telephone access while expanding your operation’s reach and range
- Customers see you as one cohesive organization
- Lower operational costs by using existing lines and connections
- Let you realize all the benefits of converged IP and telephony access

Business Case

For small branch offices, it’s expensive to deploy a separate telephone system. It can also be very costly to install and maintain remotely. Usually, the remote PBX does not offer “integrated” connectivity nor the same features and functions available to “local” telephony users. The costs of long-distance calls to support “internal communications” are unnecessary.

The SmartNode Solution integrates with the HQ’s PBX and provides the following benefits:

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Cost Comparison

<table>
<thead>
<tr>
<th>Service Type</th>
<th>QTY</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SmartNode</td>
<td>1</td>
<td>$1,275</td>
</tr>
<tr>
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<td>1</td>
<td>$2,090</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$3,365</td>
</tr>
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</tr>
<tr>
<td>Total</td>
<td></td>
<td>$3,365</td>
</tr>
</tbody>
</table>

Cumulative Cash Savings

- $4,900
- $4,500
- $4,500

Cumulative Cost Savings

- $4,900
- $4,500
- $4,500

Assumptions: 1 year service and deployment; the PBX is a “small business” PBX with voice and Internet connection is present at both sites.

Business Case

The 80/20 rule of long distance: 80% of any company’s telephone bill is generated by 20% of the numbers dialed. This 80% includes calls to:

- Branch Offices
- Key Customers
- Key Vendors

The voice intranet is simply an expansion of IP-related voice services, first deployed in your organization and then expanded to attack the next cost center of your communications network.

The advantages of the voice intranet go way beyond the hard currency savings. For example, providing your customers quick, easy, and free access to your company. But there are real tangible savings as well, including the elimination of most toll and long-distance expenses.

Cost Comparison

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>SmartNode</td>
<td>1</td>
<td>$1,170</td>
</tr>
<tr>
<td>PBX System</td>
<td>1</td>
<td>$1,890</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$3,060</td>
</tr>
</tbody>
</table>

Cumulative Cash Savings

- $4,110
- $2,775
- $4,310

Assumptions: 50 employee office; 35% of total bill is Long Distance and is bypassed with SmartNode; Internet access is available at all sites.

Voice Intranet

Long, growing, and increasingly efficient relationships with your clients and vendors are invaluable assets for your business. Such relationships produce growing revenues and increased profits for everyone involved. Creating your own voice intranet is like putting a virtual-cubicle of your company at your customer and vendor sites. The voice intranet puts you on your customer’s PBX, and vice-versa, and puts your company in the same position as internal personnel. You are only a 3-digit extension away. This approach propagates partnerships throughout organizations while SAVING MONEY. The Internet-based voice-intranet uses Patton’s SmartNodes, saving on both incoming and outgoing calls between the vendor and supplier, effectively creating cost-free trunk lines. This application enhances customer service by enabling personnel to:

- Instantly respond to customer needs
- Close a pending sale through information sharing and end-user/agent collaboration

Generate interest in or close additional sales almost immediately

Patton’s partners are rapidly joining the Patton voice intranet, for details, email sales@patton.com.

Corporate Headquarters: +1 301 975 1000 • EMEA Headquarters: +41 31 985 2525

http://www.patton.com or Email to voip@patton.com
International long-distance calling is still one of the most lucrative opportunities for carriers. The construction of low-cost, IP-based long-distance bypass solutions is one of the fastest growing Competitive Carrier solutions for VoIP. Patton’s SmartNode VoIP Gateways can switch long-distance voice and fax calls onto IP-based networks. This application is particularly well suited for prepaid calling card or corporate telephony contracts. IP voice and fax calls can significantly reduce long-distance costs, particularly if a service provider can generate high volumes of calls to on-network international locations.

Call shops or telephone kiosks are typically partnerships between telephony service providers and independent call shop or kiosk operators, where the wholesaler provides worldwide connectivity and wholesale billing to the operator. Typically, telephony connections to the call shop or kiosk are via the local PSTN using "carrier selection digits" or call-back operations. The call shop or kiosk operator marks up the wholesale rates in order to make a profit. Using VoIP for call shop operations or kiosks provides not only additional margin on telephony traffic, but affords new sources of margin through multi-functional "Internet Cafe + Call Shop" functionality or "Internet + Phone Kiosk" operations.

Cyber-cafes, call shops and Internet/telephony kiosks can generate large revenue and profits, especially in areas with mid to low tele-densities.

Using VoIP you can bypass Local Carrier Access with a low-cost broadband Internet connection. Bypass savings depend on call destination and access cost (an average 20% of bypass savings can be easily achieved). The following Business Case does not contemplate either the nominal incremental cost to provide Internet access or the additional revenues and margins available.

**Business Case**

<table>
<thead>
<tr>
<th>Call Shop Kiosk</th>
<th>2 hours/5 hours</th>
<th>5 hours/5 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invest. Costs</td>
<td>$12,332.33</td>
<td>$7,332.33</td>
</tr>
<tr>
<td>Setup/Initials</td>
<td>$20,000.00</td>
<td>$27,000.00</td>
</tr>
<tr>
<td>Monthly Expenses</td>
<td></td>
<td>$4,163.33</td>
</tr>
<tr>
<td>Monthly Income</td>
<td></td>
<td>$4,163.33</td>
</tr>
<tr>
<td>Net Income</td>
<td></td>
<td>$4,163.33</td>
</tr>
<tr>
<td>Return on Invest.</td>
<td>2.4%</td>
<td>6.4%</td>
</tr>
<tr>
<td>(monthly)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earnings per year</td>
<td>$320,100.00</td>
<td>$311,912.00</td>
</tr>
<tr>
<td>Earnings per month</td>
<td>$41,300.00</td>
<td>$41,300.00</td>
</tr>
<tr>
<td>Assumptions</td>
<td></td>
<td></td>
</tr>
<tr>
<td># Retail call shops</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td># Customer lines per shop</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td># Traffic sessions per shop</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td># Shop IP Access</td>
<td>330</td>
<td></td>
</tr>
<tr>
<td># Shop equipment licenses/month</td>
<td>$300</td>
<td></td>
</tr>
<tr>
<td># SmartNode(s) per shop</td>
<td>$10,000.00</td>
<td></td>
</tr>
<tr>
<td># PBXs per shop</td>
<td></td>
<td></td>
</tr>
<tr>
<td># SmartNode(s) per PBX</td>
<td>$500</td>
<td></td>
</tr>
<tr>
<td># Facilities per shop</td>
<td>$500</td>
<td></td>
</tr>
<tr>
<td># Billing software</td>
<td>$5,000.00</td>
<td></td>
</tr>
<tr>
<td># walls that need LCD</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td># EB and UE (data only) costs per minute</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

**Monthly Earnings**

- ** hinted at a cost-saving opportunity for service providers.**
- ** Cyber-cafes, call shops and Internet/telephony kiosks can generate large revenue and profits, especially in areas with mid to low tele-densities.**
- ** Using VoIP you can bypass Local Carrier Access with a low-cost broadband Internet connection. Bypass savings depend on call destination and access cost (an average 20% of bypass savings can be easily achieved).**

**ITSP International Trunking/Bypass**

**International long-distance calling is still one of the most lucrative opportunities for carriers. The construction of low-cost, IP-based long-distance bypass solutions is one of the fastest growing Competitive Carrier solutions for VoIP. Patton’s SmartNode VoIP Gateways can switch long-distance voice and fax calls onto IP-based networks. This application is particularly well suited for prepaid calling card or corporate telephony contracts. IP voice and fax calls can significantly reduce long-distance costs, particularly if a service provider can generate high volumes of calls to on-network international locations.**

**Global Solutions Group Extension x190 for information on Turnkey VoIP Solutions**

**I'm Benham Malcom, Patton's Director of the Global Solutions Group. We provide a full range of deployment services including engineering, installation, staging, testing and turn-up. We have more than 20 years’ experience in designing, building, and implementing networks worldwide. So if you need help building your next-generation network—whether broadband access networks, multi-service data backbone networks, ISP systems, or VoIP infrastructure networks—please give me a call at (240) 912-1211. You can also send e-mail to sales@www.patton.com**

**Call Shops and Kiosks**

- **Call shops or telephone kiosks are typically partnerships between telephony service providers and independent call shop or kiosk operators, where the wholesaler provides worldwide connectivity and wholesale billing to the operator. Typically, telephony connections to the call shop or kiosk are via the local PSTN using "carrier selection digits" or call-back operations. The call shop or kiosk operator marks up the wholesale rates in order to make a profit. Using VoIP for call shop operations or kiosks provides not only additional margin on telephony traffic, but affords new sources of margin through multi-functional “Internet Cafe + Call Shop” functionality or “Internet + Phone Kiosk” operations.**
The single largest cost factor in providing voice services today is the cost of last-mile access between the end user and the service provider’s central office. Analog loops and digital carrier loops supporting these access networks have traditionally been the most cost-effective solutions, but they require a significant investment in infrastructure. Meanwhile, ISPs and other “wireline” service providers have deployed broadband access networks for providing high-speed access to the Internet or VPN services between business locations. DSL, cable, WiFi, FTTP, IP-PON are all suitable Digital Carrier Loop bypass technologies since VoIP has become a mature technology.

VoIP technology also allows legacy voice services to be transported over these access networks with far lower costs than the current arrangement of separate voice and data access facilities.

By using these new telephony access networks, VoIP ELIMINATES the cost and time delay of providing voice services.

The converged carrier model is coming true as profits are available to existing and emerging broadband service providers. The following case study focuses on a single model (VoIP over DSL with unlimited local and long-distance calling for business or residential customer calling.)

**Business Case**

Patterson’s Sonetube Telephony-over-IP solutions enable broadband service providers to deliver more value over IP and acquire new sources of revenue. SmartNode solutions generate new revenue and increase profitability for the broadband service provider.

- **Gain a competitive advantage by using existing broadband access networks, combined with VoIP, to bypass expensive analog loops and digital carrier loops.**
- **Offer competitive voice services using VoIP for SIGNIFICANT revenue growth, with minimal incremental investments.**
- **Increase ROI by leveraging existing networks to deploy additional competitive next-generation solutions.**
- **Enable service providers to win new business from subscribers by providing converged voice and data applications.**

**Business Case Totals**

For Service Providers offering broadband access, the additional investment in providing VoIP Services has a compelling ROI.

**3G/4G Business Case Totals**

- **Earnings:** $227,031
- **Revenue:** $1,316,159
- **Gross Profit:** $531,600
- **Cost:** $509,000
- **Net Profit:** $6,600

- **Interest:** $13,137
- **Amortization:** $13,137
- **Marketing:** $5,000

**Customer Care Team**

- **Number of people:** $100
- **Cost per call:** $10

**Network Costs**

- **Network Cost:** $100
- **Network Cost per call:** $10

**Customer Care Team**

- **Number of people:** $100
- **Cost per call:** $10

**Other Converged Carrier Applications:**

- VoIP Enterprise Services for interconnecting PBXs and IP-PBXs (see Enterprise Solutions) enables remote branch offices to be part of the same dialing plan as the home office and eliminates the need for separate PBX equipment at the branch office, reducing equipment operations and provisioning cost.
- IP Centrex services enable small and medium sized businesses to eliminate totally the investment in PBX or IP-PBXs.
- Unified Messaging where SmartNode IP Gateways are used to integrate voice mail, email, fax etc.
- Global-Number Portability services would enable VoIP road warriors and tele-workers to gain access to telephony services at any location that provides broadband access.
- IP Conferencing where standard telephones or video phones are denoted as an IP presence for NetMeeting applications.

**Customer Type Assumptions**

The following assumptions capture typical end customers ranging in size from small offices with 5 employees up to multi-location enterprises with 100 employees.

**Customer Type Assumptions**

- **Number of Voice Channels:**
  - 10: $300
  - 20: $300
  - 50: $300
  - 100: $300

- **Monthly Service Fee:**
  - 10: $300
  - 20: $300
  - 50: $300
  - 100: $300

- **Total per month:**
  - 10: $300
  - 20: $300
  - 50: $300
  - 100: $300

**Long Distance Carrier**

- **Long Distance Costs:**
  - $100
  - $50

**DSL Access**

- **Full Service Provider**
  - $200
  - $100

**Business Customer**

- **Business Customer Service:**
  - $200
  - $100

**Full Service Provider**

- **SmartNode 2300**
- **SmartNode 4520**

**Other Converged Carrier Applications:**

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**Please visit:** http://www.patton.com or Email to voip@patton.com

Corporate Headquarters: +1 301 975 1000  •  EMEA Headquarters: +41 31 985 2525
Ethernet now drives a host of industrial applications. Manufacturing process control, security surveillance, and roadside assistance devices all run over Ethernet. Offering pre-existing industrial network components, Ethernet dominates today’s industrial network. Having realized its many advantages, decision-makers in the world of industrial computing have made standard Ethernet their technology of choice.

For other Ethernet solutions, visit www.patton.com.

Ethernet and IP are now the most common and widely used networking protocols. Ethernet/IP cameras simply plug into your existing network infrastructure and give you instant eyes.

Wi-fi 802.11 is Ethernet over the air.

Bar code readers connect to servers via Ethernet.

Security access control and badge readers use Ethernet for communications.

With Patton gateways, voice communications can use Ethernet/IP for voice/telephony access over industrial ethernet networks.

For other Ethernet solutions, visit www.patton.com.

**SmartNode**

Card Reader

Video Camera

SmartNode

Access Server

Use one infrastructure for converged communications

**Assumptions:**

10 drops, 1000 ft (220 m) of cable, labor, drop ceiling, materials, & permits.

**Integrated Voice, Video, Data for Railway Access**

For any industry with multiple remote sites, delivering centralized supervision, control, and information to distant locations can be difficult and costly. Not only must information be gathered and disseminated, but video surveillance and two-way communications are also required.

Such communications systems are critical for ensuring facility safety, often serving as eyes and ears for facility managers.

As an example, consider a railway system with its many stations. Required system services include electronic schedule delivery, video surveillance, paging, and emergency pedestals. Traditionally, each of these functions required its own separate infrastructure, control room, and local support. Today, Patton’s Voice-over-Ethernet™ offers an efficient integrated solution. Leveraging low-cost components for both LAN and WAN segments, Voice-over-Ethernet connects all remote stations to the central management site. The combined system delivers all services over a single low-cost infrastructure.

In the example below, SmartNodes connect to the remote stations via the Ethernet infrastructure. Two Ethernet ports at each station connect to a paging amplifier and a telephone with hot-line capability. For broadcast announcements, servers at the central site deliver the message through a SmartNode to all stations simultaneously. For emergencies at the stations, the remote handset automatically calls the central site for help.

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Patton's IPLink Gateway Routers are complete all-in-one network access devices for connecting any small to medium enterprise or remote office to an IP/Internet network using standard telco and WAN interfaces.

### Ordering Information: Digital Media Gateways

<table>
<thead>
<tr>
<th>Model Number</th>
<th>2 Call, BRI plus Bypass Media Gateway, Internal UI (100–240VAC) Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN1200/2VIL/UI</td>
<td>2 Call, Dual BRI Media Gateway and Dual Bypass Media Gateway, Internal UI (100–240VAC) Power</td>
</tr>
<tr>
<td>SN1400/4VIL/UI</td>
<td>4 Call, Dual BRI Media Gateway and Dual Bypass Media Gateway, Internal UI (100–240VAC) Power</td>
</tr>
<tr>
<td>SN1820/8VIL/UI</td>
<td>8 Call, Quad BRI Media Gateway and Dual Bypass Media Gateway, Internal UI (100–240VAC) Power</td>
</tr>
</tbody>
</table>

### Ordering Information: Digital Gateway Routers

<table>
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<tr>
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<th>2 Call, BRI plus Bypass Media Gateway and Dual Bypass Router, Internal UI (100–240VAC) Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN5155/1S55</td>
<td>2 Call, BRI plus Bypass Media Gateway and Dual Bypass Router, Internal UI (100–240VAC) Power</td>
</tr>
<tr>
<td>SN5170/1S70</td>
<td>2 Call, BRI plus Bypass Media Gateway and Dual Bypass Router, Internal UI (100–240VAC) Power</td>
</tr>
<tr>
<td>SN5192/1S92</td>
<td>2 Call, BRI plus Bypass Media Gateway and Dual Bypass Router, Internal UI (100–240VAC) Power</td>
</tr>
</tbody>
</table>

### Features & Benefits

- **V30, X.21, or T1/E1 WAN Interfaces** - Get the WAN interface you need in industry-standard connectors.
- **ATM, PPP, and Frame Relay** - Variants WAN options enable deployment into any network.
- **NAT/NAPT, Firewall, DHCP** - Powerful routing features make shared Internet connectivity simple and secure.

### Application & graphic

IP Connectivity Features

- Security and User Authentication: Network Access Control (NAC), DHCP, and RADIUS
- Quality of Service: ICMP, UDP, TCP (RFC 793), UDP (RFC 768)
- Protocols for Data Transfer: TCP, IP, DNS, HTTP, FTP, SMTP, Telnet, and more

### Ordering Information

- **IP Connectivity License for SN1200 and SN1400**
- **IP Routing License for SN1200 and SN1400**

### Features & Benefits

- **3G/LTE** - Full call routing based on number and complete number manipulation
- **ATM, PPP, and Frame Relay** - Variants WAN options enable deployment into any network
- **NAT/NAPT, Firewall, DHCP** - Powerful routing features make shared Internet connectivity simple and secure.
- **V.35, X.21, or T1/E1 WAN interfaces** - Get the WAN interface you need in industry-standard connectors.

### PDF data sheets include detailed ordering info

- Software Upgrades
  - **Models 2603, 2621, & 2635**
  - **Models 2605, 2625, & 2635**

- Manual PDF
  - **Models 2603, 2621, & 2635**
  - **Models 2605, 2625, & 2635**

- **Ordering Information**
  - **2603/2605**
  - **2603/2621**
  - **2603/2625**
  - **2603/2635**

### Hardware Specifications

- **WAN Interface**: 2603/2605: 2 x RJ45, 2 x RJ45, 2 x RJ45, 2 x RJ45
- **IP Connectivity**: IP/FR/ADSL/ISDN
- **Management**: Ethernet, Telnet, FTP, HTTP

### Specifications

- **Power Supply**: 2603/2605: 2603/2621: 2603/2625: 2603/2635
- **Operating Temp**: -4°F to 149°F (-20°C to 65°C)
- **Humidity**: 5-90%

### Close-up unit photograph

- **Product description**

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**Headquarters**
- **Branch Office**

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**Features & benefits**

- **V30, X.21, or T1/E1 WAN Interfaces** - Get the WAN interface you need in industry-standard connectors.
- **ATM, PPP, and Frame Relay** - Variants WAN options enable deployment into any network.
- **NAT/NAPT, Firewall, DHCP** - Powerful routing features make shared Internet connectivity simple and secure.

**Overview**

The Models 2003, 2021, and 2035 Gateway Routers are the ideal solution for connecting any small to medium enterprise or remote office to an IP/Internet network using standard telco and WAN interfaces.

Combining ease-of-use with a full suite of UNI/VLAN routing features, the IPLink series gives you the right WAN interface you need in industry-standard connectors. They combine ease-of-use with a full suite of UNI/VLAN routing features, making shared Internet connectivity simple and easy.