WAN Routers
Product Guide

"Link-Up For Less"
## Product Line Summary

### Low-Cost WAN Routers

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<th>Ethernet Ports</th>
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<td>2603</td>
<td>Low-Cost Single Port T1/E1 Access Router</td>
<td>1 private</td>
<td>One T1/E1</td>
<td>8</td>
</tr>
<tr>
<td>2620</td>
<td>Low-Cost Dual-Port T1/E1 Access Router</td>
<td>4 private</td>
<td>Two T1/E1</td>
<td>9</td>
</tr>
<tr>
<td>2701/1</td>
<td>Low-Cost Single E1 Access Bridge</td>
<td>1 private</td>
<td>One E1</td>
<td>10</td>
</tr>
<tr>
<td>2720/1</td>
<td>Low-Cost Single T1 Access Bridge</td>
<td>1 private</td>
<td>One T1</td>
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### Serial Routers

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<th>Model</th>
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<th>Private Access</th>
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<tr>
<td>2635</td>
<td>WAN Router V.35</td>
<td>1 private</td>
<td>V.35</td>
</tr>
<tr>
<td>2621</td>
<td>WAN Router X.21</td>
<td>1 private</td>
<td>X.21</td>
</tr>
<tr>
<td>2135</td>
<td>V.35 Micro Bridge</td>
<td>1 private</td>
<td>V.35</td>
</tr>
<tr>
<td>2121</td>
<td>X.21 Micro Bridge</td>
<td>1 private</td>
<td>X.21</td>
</tr>
<tr>
<td>2124</td>
<td>V.24/RS-232 Micro Bridge</td>
<td>1 private</td>
<td>V.24/RS-232</td>
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### Managed VPN Routers

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Public Access</th>
<th>Private Access</th>
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<tbody>
<tr>
<td>2802</td>
<td>SOHO-Secure VPN Router Appliance</td>
<td>1 private, 1 public</td>
<td>1 public Ethernet</td>
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<tr>
<td>2805</td>
<td>Enterprise-Secure VPN Router Appliance</td>
<td>4 private, 1 public</td>
<td>1 public Ethernet</td>
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<td>2803</td>
<td>Integrated VPN WAN Access Device T1/E1</td>
<td>2</td>
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<td>2835</td>
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<td>1 private, 1 public</td>
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<td>SOHO-Secure VPN Router Appliance</td>
<td>2</td>
<td>2,4,8,12 or 16 T1/E1</td>
<td></td>
</tr>
<tr>
<td>2805</td>
<td>Enterprise-Secure VPN Router Appliance</td>
<td>2</td>
<td>2,4,8,12 or 16 T1/E1</td>
<td></td>
</tr>
<tr>
<td>2835</td>
<td>Integrated VPN WAN Access Device V.35</td>
<td>1</td>
<td>2,4,8,12 or 16 T1/E1</td>
<td></td>
</tr>
<tr>
<td>2821</td>
<td>Integrated VPN WAN Access Device X.21</td>
<td>1</td>
<td>2,4,8,12 or 16 T1/E1</td>
<td></td>
</tr>
<tr>
<td>2688</td>
<td>Multi-Port T1/E1 Edge Router</td>
<td>Up to 11</td>
<td>Up to 128 T1/E1 Ports</td>
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</table>

### Key Features
- **Lowest Cost Internet Access Router in the Market**
- **Integrated WAN interfaces**
- **Full Featured IP Router**
- **DoS Detection/Protection, Intrusion detection, blacklisting with automated configurable actions, packet filtering firewall, access list.**
- **Transparent LAN Bridging**
- **Standard PPP Bridge Control Protocol**
- **Auto Learning and Aging Supports 4096 MAC Address**

### Routing & Protocols
- **RIP V1 and V2, Frame Relay, Inverse ARP, PPP with BCP or IPCP, PPPoE**
- **NAT/NAPT, DHCP server and relay, DNS relay, SNTP client, PPPoE**
- **PPP/BGP**
- **PPP/BCP**
- **--**

### IP Connectivity Features
- **--**
- **--**
- **--**

### GoS
- **--**

### Form Factor
- **Desktop**
- **Micro Unit**

### Feature Set
- **Basic Internet Access/Delivery Feature Set**
- **PPP Bridging Feature Set**
- **--**

### VPN/Security
- **--**
- **--**
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#### VPN Ethernet Switch
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### Product Highlights

#### Basic T1/E1 Routers
- Single and dual port T1/E1
- Intrusion Detection and ACL/Filtering
- Full Frame Relay & PPP Support
- Advanced IP features include NAT, DHCP, DNS relay

#### Sync-Serial Routers
- X.21 and V.35 interfaces
- Basic Firewall Functionality
- Advanced IP feature set
- Simple SNMP/HTTP management interface

#### QoS VPN Routers
- IPSec with DES/3DES/AES
- ACLs and active Packet Filtering
- Active traffic classification, scheduling & prioritization
- Service login feature set (PPPoE/NAT/DHCP)
- T1/E1, Ethernet and Sync-Serial Interfaces

#### Edge Routers
- Modular interfaces support up to 208 T1/E1s
- Tunneling protocols supported for port wholesaling
- VPN (PPTP & L2TP) for secure networking

### Desktop & 19" Rack Mount Modular
- Secure, QoS, VPN Feature Set
- RIP V1 and V2, Frame Relay, PPP, PPPoE
- NAT/NAPT, DHCP server and client, PPPoE, VLAN, p/Q
- ToS and DiffServ labeling; Active QoS with traffic scheduling and classification. Weighted fair queuing and shaping of traffic classes with configurable burst tolerance; DownStreamQoS™ with dynamic restriction of inbound TCP traffic; IKE; IPSec encryption of voice (VoVPN)

### WAN Router V.35
- ToS and DiffServ labeling; Active QoS with traffic scheduling and classification. Weighted fair queuing and shaping of traffic classes with configurable burst tolerance; Random Early Discard (RED) for uplink ports. Eight priority queues dedicated for the classification of VLAN traffic.

### WAN Router X.21
- ToS and DiffServ labeling; Active QoS with traffic scheduling and classification. Weighted fair queuing and shaping of traffic classes with configurable burst tolerance; Random Early Discard (RED) for uplink ports. Eight priority queues dedicated for the classification of VLAN traffic.

### V.35 Micro Bridge
- IPSec Tunneling
- DES/3DES/AES Encryption
- Firewall and Intrusion Detection
- Built-In Router

### X.21 Micro Bridge
- IPSec BGP and other advanced Routing Features
- mE1 and STML1 Connectivity
- Voice and Data Quality QoS with 8 levels of prioritization
## WAN Routers

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<td>Inexpensive T1/E1 Internet access with basic routing support</td>
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<td>Legacy Network Integration</td>
<td>Convert serial interfaces to Ethernet Add VPN security to serial interfaces</td>
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<td>Multimedia IP Demarc</td>
<td>Create a service handoff point with advanced per flow QoS, support for per flow strong encryption of voice, video and data, and advanced service delivery such as IP Centrex and IP multicast video</td>
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### Low Cost Network Access

#### T1/E1 Router

The Model 2603 T1/E1 Router provides basic IP access across T1/E1 lines.

This is our lowest cost T1/E1 router providing basic “Ethernet to T1/E1 converter” functionality. So if you need a low cost WAN router for basic internet access, or IP monitoring of a remote site this series of products are right for you.
**Legacy Network Integration**
Serial (V.35/X.21) to Ethernet Conversion

- Extend life of serial routers
- Update the functionality of serial network equipment
- Connect to serial NTUs

**Integrated TDM & IP Data**
T1/E1 Drop & Insert

- Integrate T1/E1 voice and IP data over one circuit
- Reuse spare DS0s for sub T1/E1 data

**Secure Managed Service**
Internet Access with Enterprise VPN Service Overlay

The Model 2621/2635 WAN Router provides basic IP access across any TDM WAN network by providing standard X.21 and V.35 WAN interfaces. These units are low cost WAN routers which provide "Ethernet to X.21 or V.35 converter" functionality. If you need to add a second Ethernet port to an existing modular router or provide IP access for existing leased-line based networks the 2621 and 2635 are right for you.

The Model 2620 is a multi-port T1/E1 WAN Router that supports TDM drop and insert between both T1/E1 ports and the on-board IP Ethernet Ports. With full routing functionality, the 2620 allows users to leverage existing legacy networks to add IP applications. If you have an existing leased line or a TDM network carrying legacy TDM data and you want to add some IP connectivity between locations the Model 2620 is right for you.

The Model 2800 Series is a line of IPSec/VPN Enterprise Routers with strong encryption and a variety of integrated WAN interface options.

If you are a Carrier or Service Provider delivering a managed IP VPN service across WAN circuits, the 2803 series is right for you. Boasting QoS, IPSec/VPN Tunneling as well as DES/3DES and AES encryption, plus Firewall and IKE security, the 2800 series is ideal for your banking, government, and other security-minded customers.
Secure VLAN Services

Encrypted VLAN Flows

- Multiple PPPoE on different VLANs
- VLAN re-tagging for LAN to WAN
- Encrypted voice and data for privacy and security

The 2800 Series is a line of Access Routers with integrated WAN access ports and supporting a wide range of Enterprise Class features including PPPoE and VLAN tagging and re-tagging.

If you are an Enterprise Integrator seeking to support multiple devices and applications in branch office or retail establishments, the 2800 series provides the flexibility you need to support these applications. Providing multiple Ethernet ports the 2800 series is able to support multiple virtual LANs across a single WAN circuit. Supporting multiple PPPoE authentications, the 2800 series is ideal for retail environments.

Enterprise VPNs

Internet Access with Enterprise VPN Service Overlay

- ACL Firewall
- Encrypted voice & data
- PPPoE for subscriber login
- Streams-based QoS to manage service quality

The 2800 series is a line of Enterprise Class Internet Routers supporting a full suite of IP Routing and VPN network functionality.

If you are building a secure multi-branch enterprise network, using an existing broadband access network, the 2800 is right for you. Boasting ACL access control, QoS, IPsec/VPN Tunneling as well as DES/3DES and AES encryption, plus Firewall and IKE security, the 2800 series is the most secure way to build enterprise VPNs.
Secure Triple-Play Router

Secure Voice, Video, & Data

- Firewall with ACLs
- Encrypted voice & data for data integrity
- SNTP time stamping of logged events
- IP multicast/IGMP for redundant video capture

The 2800 series is a line of Routers supporting a full suite of Bandwidth Management and QoS features required for integrated Voice/Data and Video applications.

If you are integrating and aggregating voice, data, and video over IP links, the 2800 series is right for you. Supporting IP multi-cast IGMP video streams as well as encrypted voice, data, and video, the 2800 series is ideal for creating an integrated security network.

Multimedia IP Demarc

Manage, Monitor, and Manipulate IP Service Flows

- IP service delivery point
- Per flow SLAs/QoS
- Per flow encrypted strong VPN
- Per flow marking/tagging
- Back-to-back user agent with QoS equipment

The 2800 series is a line of IP Demarc Routers

If you are a Carrier using the new IP access network as your “last mile access” to customers and you need a service level demarcation point to terminate your services, the 2800 series is right for you. By establishing differential Quality of Service metrics for voice, data and video services the 2800 series allows the Carrier to manage and control IP service flows across IP networks to the customer premise. With the ability to encrypt and decrypt as well as perform tagging and prioritization of any IP flow (voice/data/video) and provide management data, the 2800 series is an idea IP Demarc for Next Generation Carriers and Service Providers.
Low-cost T1/E1 WAN Access Router

IPLink Model 2603

This WAN Gateway Router is a complete all-in-one network access device which easily connects your IP/LAN to any T1/E1 network interface with routed or bridged connections.

The Models 2603 Gateway Router is the ideal solution for connecting any small to medium-sized enterprise or remote office to an IP/Internet network using standard telco and WAN interfaces.

Combining ease-of-use with a full suite of LAN/WAN routing features, the IPLink routers provide selectable bridging or routing functionality along with advanced IP features such as NAT/NAPT, Firewall, and DHCP. A complete set of configurable FR/PPP/IP WAN protocols allow a wide range of choices when connecting branches via common WAN services. The IPLink Routers boast easy installation offering Console/VT-100, Telnet, and HTTP/SNMP management options.

The IPLink 2603 come with an auto-sensing full-duplex 10/100Base-T Ethernet port, cross-over switch, and internal power supply. The Model 2603 is equipped with an integrated T1/E1 CSU/DSU for connection to full and fractional T1/E1 services.

Patton’s new series of high-speed routers offer the versatility and reliability demanded for business-class applications at the most affordable price.

Why use our IPLink Router?

Patton’s IPLink 2603 Gateway router delivers all the advanced features for secure, reliable, and high speed Internet data connections. It combines ease-of-use with powerful data routing to make shared Internet connectivity simple and easy.

With NAT support, the IPLink router offers convenient and economical operation by using a single IP address while the integrated DHCP server automates IP address assignment for connected LAN computers. Security is standard with built-in firewall and violation alerting features that protect the network from would-be intruders.

Patton stands behind our products—we are the only company in the industry offering free configuration support, free technical services, and a minimum one-year warranty on all our products.

ORDERING INFORMATION

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<th>Description</th>
<th>Power Supply</th>
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<td>2603/K/E10</td>
<td>T1/E1 (RJ-45) Router with 48 VDC PS</td>
<td>120–220 VAC/48 VDC</td>
</tr>
<tr>
<td>2603/K/E20</td>
<td>T1/E1 (BNC) Router with no PS</td>
<td>120–220 VAC/48 VDC</td>
</tr>
<tr>
<td>2603/K/E30</td>
<td>E1 (RJ-45/BNC) Router with external 120–220 VAC PS</td>
<td>120–220 VAC/48 VDC</td>
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<tr>
<td>2603/K/E40</td>
<td>E1 (RJ-45/BNC) Router with internal 120–220 VAC PS</td>
<td>120–220 VAC/48 VDC</td>
</tr>
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FEATURES & BENEFITS

- **T1/E1 WAN interface** in industry-standard connectors
- **PPPoE and Frame Relay** — Versatile WAN options enable deployment into any network. Use routed IP or bridged Ethernet for transparent networking. Bridge passes VLAN tagged frames (no VLAN tagging within the 2603).
- **NAT/NAPT, Firewall, DHCP** — Powerful routing features make shared Internet connectivity simple and secure.
- **10/100 Ethernet with MDI-X** — Easily connect to any computer or LAN — the built-in communication crossover switch eliminates messy configuration cables.
- **WWW/SNMP Manageable** — Built-in VT-100 console port makes setup a snap, and you can use the embedded HTTP/SNMP agent to manage an IPLink router from anywhere in the world.

SPECIFICATIONS

WAN Interface: T1/E1 (RJ-45)

Ethernet Connection: Single-port 10/100Base-T switch, auto-sensing, full/half-duplex operation, built-in MDI-X Management: Ethernet, Internet, Telnet, Embedded WEB/HTTP/SMTP Logging events: POST/HTTP, FTP, Telnet, TELNET/PPP/HTTPC Protocol: IPv4, TCP (RFC 793), UDP (RFC 768), ICMP (RFC 792), ARP (RFC 826), IGMP (RFC 2236) • IP Router with RIP (RFC 1050), RIPv2 (RFC 2453), Integrated DHCP Server (RFC 2131) • Selectable IP leases and MAC/IP pairings • DHCP relay agent (RFC 1733) • ARP (RFC 826) • BGP (RFC 1771) • RIPv2 (RFC 2453) • IGMP v1 and v2 • Ethernet Bridging • NAPT/IP with integrated application support, MultNet with 1:1 mapping, Many/Lazy mapping, MAC Port/ID redirection and mapping

Security: DoS Detection/protection, Intrusion detection, Logging of session, appliance support, and from LAN/WAN • Support for 255 rules in 32 filter sets • 16 individual connection profiles • Access list determining up to 5 hosts/networks which are allowed to access management system

WWW/IP/HTTP/TELNET Indicators: 12 LEDs: Power, Link, Loss, Loop, Back-Up WAN signals • Link, TX, RX LAN signals

Power Supply: Internal universal 85-264 VAC input or 48 VDC input

Compliance: FCC Part 15A, CE Mark, ETSI, FCC Class A, EMI, and ESD

Environment: Temp.: 32–122°F (0–50°C) • Humidity: 5–90%, non-condensing

Dimensions: 7.3 x 6.6 x 1.62 inch (185 x 168 x 41 mm)
**Integrated TDM & IP Routers**

**IPLink 2620**

Link up effortlessly with the Patton Model 2620 Dual-Port T1/E1 IPLink Router combines two T1/E1 and four 10/100 Ethernet ports to deliver drop and insert and multi-link WAN bandwidth to the most demanding access applications.

A complete set of configurable FR/PPP/IP WAN protocols allow a wide range of choices when connecting equipment via common WAN services. By supporting the latest version of PPP/BGP, the IPLink transparently negotiates the passing of VLAN traffic. Deployments can also take advantage of the Model 2620’s full implementation of Frame Relay to support Frame Relay VPN deployments over switched carrier networks.

The Model 2620 boasts easy installation offering Console/VT-100, Telnet, and HTTP/SNMP management options. All IPLink Routers come with a four port autosensing full-duplex 10/100Base-T Ethernet switch, the choice of internal or external power supply and one or two T1/E1 WAN ports with built in CSU/DSU.

Patton’s series of high-speed access routers offer the versatility and reliability demanded for business-class applications at the most affordable price.

**Ordering Information**

- **IPLink 2620/TT/UI:** T1 Router, D&I with Quad 10/100 Ethernet, internal 90–260 VAC PS
- **IPLink 2620/KK/UI:** E1 Router, D&I port, Quad 10/100 Ethernet, internal 90–260 VAC PS
- **IPLink 2620/TT/48:** T1 Router, D&I with Quad 10/100 Ethernet, internal 36–72 VDC PS
- **IPLink 2620/KK/48:** E1 Router, D&I port, Quad 10/100 Ethernet, internal 36–72 VDC PS
- **IPLink 2620/TT/48:** T1 Router, D&I with Quad 10/100 Ethernet, internal 36–72 VDC PS

**Features & Benefits**

- **Dual T1/E1 with Drop & Insert** — Easily take any DS0 from one T1/E1 port and switch it to the other.
- **Four 10/100 Ethernet** — Easily bridge the gap between the LAN and WAN.
- **2 T1/E1 WAN Ports** — Terminate Frame Relay or PPP encapsulated IP traffic on channelized software-configurable interfaces.
- **Enhanced IP Services** — DNS relay, NAT/NAPT, DHCP server and relay, make it easy to offer any service.
- **Firewall with Standard DoS & Filtering** — Built-in IP address and IP port filtering, intrusion detection and blacklisting capabilities make firewall services a snap.

**Specifications**

- **WAN ports:** Two software configurable ports, E1 6–7200/0 with HDB3 and AMI encoding support, T1 ANSI T1.403 & AT&T TR54016 with AMI encoding/E4 framing or ESF encoding/E4 framing
- **Ethernet Ports:** Four port 10/100Base-T (RJ-45 connector) • auto-negotiating • half or full duplex operation with built-in MDI-X Management: HTTP/SNMP, Telnet Ethernet, RS-232 Console Port, SYLOGIX Client, Software upgrade via TFTP, SNMP
- **Protocols:** IP (RFC 741), TCP (RFC 793), UDP (RFC 768), ICMP (RFC 950), ARP (RFC 826) • IP Router with RIP (RFC 1058) and RIPv2 (RFC 2453), integrated DHCP relay agent (RFC 2131) with selectable IP leases and MAC/IP pairings • DHCP relay agent (RFC 2131/RFC 1542) with 8 address pools • DNS Relay, IGMP v1 and v2, Ethernet Bridging • NAT/NAPT with integrated application support, Multihit with 1:1 mapping
- **Power:** Internal universal 90–260 VAC input or 48 VDC input.
- **Environment:** Temp.: 0–50°C (32–122 °F) • Humidity: 5–90% non-condensing
- **Dimensions:** 7.3 x 6.6 x 1.62 in. (186 x 168 x 41 mm)

**Typical Internet Application**

With Dual T1/E1 ports, the IPLink Model 2620 maximizes the use of the up-link network and minimizes the cost of deploying the service by implementing Drop & Insert of DS0 channels between the T1/E1 ports. The remaining bandwidth can then be used to provide other value added IP access services or even LAN extension over any of the four 10/100 Ethernet ports. For bandwidth hungry applications, traffic from both T1/E1 ports can be bonded together using multi-link PPP.

![Typical Internet Application Diagram](Image)

**Visit us online**

[www.patton.com](http://www.patton.com)
Compact Ethernet-over-E1 WAN Bridge
NetLink 2701/I EtherRocket & 2701RC Rack Card

These devices, available in low-cost standalone or rack-mountable versions, terminate G.703/G.704 NTU with on-board transparent Ethernet Bridge extend branch-office LAN segments over E1/FE1 simply and affordably.

At headquarters, RRP builds on the bridging capabilities of a router to extend their serial or WAN ports across town or across the country. In order for the central routed network to connect to a remote branch Ethernet network, the serial or WAN interface of the router needs to be configured as a PPP IP half-bridge. In this configuration the Ethernet-over-E1 Bridge sends bridge packets (BPDUs) to the router’s WAN interface. The router will then look at the layer-3 information and will forward these packets based on its IP address. The router’s port, connected through the E1 network and Ethernet-over-E1 Bridge, appears as a virtual interface at the branch office network.

The Model 2701/I Ethernet-over-E1 Bridge supports G.704 framing, and AMI and HDB3 line coding. Data rates, framing, and coding options are programmed by DIP switches or from a VT-100 terminal with menu-driven software. A full range of system and diagnostic features make setup simple and quick.

Patton Electronics introduces a new way of interconnecting remote branches to a Main Office LAN using the Model 2701/I Ethernet-over-E1 Bridge. Called “Remote Router Porting” (RRP), it offers network managers and integrators a simple and economical way for LAN-to-LAN deployments.

At the branch office, RRP replaces the traditional router and CSU/DSU solution with Patton’s Patton’s Ethernet-over-E1 Bridge, which includes integrated E1 and 10Base-T transparent bridging. This unit allows for high-speed PPP data connections across the Wide Area Network at selectable data rates of nx65/64kbps up to 2.048 Mbps, and also connects directly to the 10Base-T branch office LAN at 10Mbps. The 2701/I transparently forwards Ethernet packets to a headquarters LAN based on their destination MAC address.

ORDERING INFORMATION
2701/148: G.703 NTU, with Ethernet interface; 48 VDC power supply (PS)
2701/108: G.703 NTU, with Ethernet interface; 120–220 VAC PS
2701RC/A/E: E1/FE1 Card, V.35 interface
2701RC/C/E: E1/FE1, 10Base-T RJ-45 interface
2701RC/D/E: E1/FE1 Card, X.21 interface
2701RC/D/V: E1/FE1 Card, X.21 interface

SPECIFICATIONS
2701/I
Line Rate: 2 Mbps with nx64 kbps timeslot selection
Network Connector: RJ-45 and Dual Coaxial
DTE Interface: 10Base-T Ethernet
Line Coding: AMI or HDB3
Line Framing: G.703 (unframed) or G.704/G.704/732 (framed)
Clocking: Internal or Receive Recover
DTE Rates: 10 Mbps (10Base-T)
Indicators: E1 Link Status, N, D, RD, L, L3, L2, L1, L0, L, L
Line Coding: 1500Vrms
Compliance: CE Mark, G.703, G.704, G.723, G.632, CTR-12 and CTR-13
Environment: Temp. 32–122°F (0–50°C) • Humidity: 5 to 90% non-condensing
Dimensions: 5.00 in. x 4.160 in. x 1.51H in. (12.70 cm x 10.60 cm x 3.84 cm)
Weight: 2.225 lbs (1.02 Kg)

2701RC
Data Rate: Smooth Clock 2.048 Mbps
Network Connector: RJ-45C (all versions); Dual Coaxial (X.21 & Ethernet)
DTE Interface: EIA-530, X.21/V.35, X.21/V.35, X.21/V.35, or 10Base-T/LAN
Line Coding: AMI or HDB3
Line Framing: G.703 (unframed) or G.704/G.704/732 (framed)
Clocking: Internal, External or Receive Recover
DTE Rates: nx64kbps (EIA-530, X.21/V.35, X.21/V.35, or 10Base-T/LAN)
Indicators: Link Status, N, D, RD, L, L3, L2, L1, L0, L, L1, L
Line Coding: 1500Vrms
Compliance: CE Mark, G.703, G.704, G.723, G.632, CTR-12 and CTR-13
Environment: Temp. 32–122°F (0–50°C) • Humidity: 5 to 90% non-condensing
Dimensions: 5.00 in. x 4.160 in. x 1.51H in. (12.70 cm x 10.60 cm x 3.84 cm)
Weight: 2.225 lbs (1.02 Kg)
Ethernet-Over-T1 WAN Bridge

NetLink 2720/I EtherRocket & 2710RC Rack Card

These devices, available in low-cost standalone or rack-mountable versions, terminate G.703/G.704 NTU with on-board transparent Ethernet Bridge extend branch-office LAN segments over E1/FIE simply and affordably.

Patton Electronics introduces a novel way of interconnecting remote branches to a Main Office LAN using the Model 2720/I Ethernet-over-T1 Bridge. Called “Remote Router Porting” (RRP), it offers network managers and integrators a simple and economical way for LAN-to-LAN deployments over TDM networks, matching current industry broadband termination practices. By bridging instead of routing, the network is vastly simplified in complexity and can take advantage of provider supplied MPLS/VPLS switched networks as well as modern VLAN switched Ethernet for basic branch office connectivity.

The NetLink Model 2720 Series T1/FT1 CSU/DSU provides high speed WAN connectivity in a compact (1.50H x 4.17W x 5.84D inches) full feature standalone package. The Netlink 2720 is an excellent choice for terminating leased lines carry IP data, Internet access, and LAN-to-LAN IP/PPP based services. When terminating a T1- dedicated digital circuit, the NetLink 2720 supports nx56/nx64 kbps T1 framing. It bridges a 10Base-T Ethernet interface to a PPP/BCP encapsulated WAN T1 circuit.

The Netlink 2720 supports D4/ESF framing options and AMI/B8ZS/B7ZS line coding. Data rates, framing, and coding options are programmed by DIP switches or from a VT-100 terminal with menu-driven software. A full range of system and diagnostic features make setup simple and easy. The model 2720/I (10 Base-T Ethernet Bridge) is particularly suited for LAN-to-LAN connection without the need for routers! MAC forwarding and PPP/BCP built-in bridging provides seamless connection over the T1 link.

**FEATURES & BENEFITS**

- Terminates T1/FT1 Circuits over a 4-Wire RJ-48C interface
- 10BaseT Ethernet Bridge
- PPP (Point to Point Protocol, RFC 1661) with Bridge Control Protocol (RFC 1638)
- Nx56/nx64 kbps rates up to 1.536 Mbps
- Unstructured rates at 1.544 Mbps
- D4 or ESF Framing Modes
- Supports AMI or B8ZS/B7ZS Line Coding
- Configuration via Software Control Port or Internal DIP Switches
- Six Easy-to-Read LED Indicators Monitor Data & Diagnostics
- Internal or network clocking
- Made in USA

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>WAN Speed</th>
<th>1.544 Mbps</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAN Connection</td>
<td>RJ-4IC</td>
</tr>
<tr>
<td>Nominal Impedance</td>
<td>10 Ohms</td>
</tr>
<tr>
<td>DTE Interface</td>
<td>EIA-530, V.35, Ethernet</td>
</tr>
<tr>
<td>Line Coding</td>
<td>AMI/B8ZS</td>
</tr>
<tr>
<td>Line Framing</td>
<td>D4/ESF/Unframed</td>
</tr>
<tr>
<td>Clock Options</td>
<td>Internal, or network</td>
</tr>
<tr>
<td>Diagnostics</td>
<td>Responds to CO-initiated D4 loop-up and loop-down codes, ESF line loop and payload loop FDL messages, and Universal Loopback de-activate messages</td>
</tr>
<tr>
<td>Transmit LBO</td>
<td>Selectable - 0, 7.5, 15, or 22.5 dB, plus DSX-1</td>
</tr>
<tr>
<td>Standards</td>
<td>AT&amp;T TR62411, TR64016, and ANSI T1.403</td>
</tr>
<tr>
<td>Dimensions</td>
<td>0.78H x 2.1W x 3.5D in (2.0H x 5.3W x 8.9D cm)</td>
</tr>
<tr>
<td>Test Modes</td>
<td>Initiates and responds to V.54 and CSU remote loops; local loop Pattern Generator/Detector: User selectable 511, 2047, or QRSS</td>
</tr>
<tr>
<td>Power</td>
<td>Universal Input (100–240VAC), or -48VDC</td>
</tr>
</tbody>
</table>

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>2720/48C</th>
<th>T1/FT1 with Ethernet Interface; 48VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2720/120C</td>
<td>T1/FT1 with Ethernet Interface; 120–220VAC</td>
</tr>
<tr>
<td>2710/R1C</td>
<td>T1 Card, 10Base-T Interface</td>
</tr>
</tbody>
</table>

visit us online
www.patton.com
The Models 2621 and 2635 Gateway Routers are the ideal solution for connecting any small to medium-sized enterprise or remote office to an IP/Internet network using standard telco and WAN interfaces. Combining ease-of-use with a full suite of LAN/WAN routing features, the IPLink routers provide selectable bridging or routing functionality along with advanced IP features such as NAT/NAPT, Firewall, and DHCP. A complete set of configurable FR/PPP/IP WAN protocols allow a wide range of choices when connecting branches via common WAN services. The IPLink Routers boast easy installation offering Console/VT-100, Telnet, and HTTP/SNMP management options.

All IPLink routers come with an auto-sensing full-duplex 10/100Base-T Ethernet port, cross-over switch, and internal power supply. The Model 2621 has an X.21 interface, and the Model 2635 comes with a V.35 interface.

**IPLink 2621 & 2635**

These WAN Gateway Routers are complete all-in-one network access devices that easily connect your IP/LAN to any X.21 or V.35 network interface with routed or bridged connections. Patton’s new series of high-speed routers offer the versatility and reliability demanded for business-class applications at the most affordable price.

**Why use our IPLink Routers?**

IPLink Gateway routers deliver all the advanced features for secure, reliable, and high speed Internet data connections. They combine ease-of-use with powerful data routing to make shared Internet connectivity simple and easy.

With NAT support, the IPLink routers offer convenient and economical operation by using a single IP address while the integrated DHCP server automates IP address assignment for connected LAN computers. Security is standard with built-in firewall and violation alerting features that protect the network from would-be intruders.

Available with such standard WAN sync-serial interfaces as V.35 and X.21, the IPLink series gives you the right interface needed for your WAN service. Patton stands behind our products-we are the only company in the industry offering free configuration support, free technical services, and a minimum one-year warranty on all our products.

**FEATURES & BENEFITS**

- **V.35 or X.21 WAN interfaces** — Get the WAN interface you need in industry-standard connectors
- **PPP and Frame Relay** — Versatile WAN options enable deployment into any network. Use routed IP or Bridged Ethernet for transparent networking. Bridge passes VLAN tagged frames (no VLAN tagging within the 2635/2621)
- **NAT/NAPT, Firewall, DHCP** — Powerful routing features make shared Internet connectivity simple and secure.
- **10/100 Ethernet with MDI-X** — Easily connect to any computer or LAN—the built-in communication crossover switch eliminates messy configuration cables.
- **WWW/SNMP Manageable** — Built-in VT-100 console port makes setup a snap, and you can use the embedded HTTP/SNMP agent to manage the IPLink routers from anywhere in the world.

**SPECIFICATIONS**

- **WAN Interface**: 2635/V.35 (60W/15W) • 2635/X.21 (60W/15W)
- **Ethernet Connection**: Single-port 10/100Base-T switch • auto-sensing • full/half-duplex operation • built-in MDI-X
- **Management**: EA-561 RJ-45 RS-232, VT-100 CLI, TELNET, Embedded WEB/HTTP/SNMP Logging: POST, POST server, Line/DSL, PPP/PPPCh kets
- **Protocols**: IP (RFC 791), TCP (RFC 768), UDP (RFC 700), ICMP (RFC 680), ARP (RFC 826), BCP (RFC 1638) • IP/FR/PPP/IP WAN protocols allow a wide range of choices when connecting branches via common WAN services.
- **Application diagram**

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Power Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>2635/48</td>
<td>X.21 Router; External 48-VDC Power Supply (PS)</td>
<td>Internal universal 90-260 VAC</td>
</tr>
<tr>
<td>2621/E</td>
<td>X.21 WAN Router; No PS</td>
<td>120–220 VAC input.</td>
</tr>
<tr>
<td>2621/E3</td>
<td>X.21 Router; External 120–220 VAC PS</td>
<td>48 VDC input.</td>
</tr>
<tr>
<td>2621/2S</td>
<td>X.21 Router, Internal 120–220 VAC PS</td>
<td>120–220 VAC input.</td>
</tr>
</tbody>
</table>

**Dimensions**

(7.3 x 6.6 x 1.62 inch)

(185 x 168 x 41 mm)
Ethernet MicroBridges (X.21, RS-232, RS-530, & V.35)
Models 2121, 2124, 2130, 2135, & 2135C
Patton’s MicroBridge products are the cost-effective solution for expanding your LAN—without using a router!

The Patton Ethernet MicroBridge provides a cost-effective solution for connecting multiple local or remote network segments. The Patton MicroBridges feature a wide variety of serial interfaces to make your WAN connections easy. All models are equipped with an 802.3 10Base-T Ethernet RJ-45 jack, which allows a direct connection to your network equipment.

The Ethernet MicroBridge works on the MAC-layer addresses and operates independent of higher layer protocols. This functionality enables Patton Ethernet Microbridges to pass higher-layer broadcast, multicast, unicast, and data frames over the WAN with minimal to no configuration by the end-user. The MicroBridges are PPP ready supporting standards based layer-2 protocol interfacing. The MicroBridges are fully compatible with each other as well as Patton’s full line of bridging products. Using PPP, the MicroBridges have the flexibility to be used in conjunction with all other third-party PPP compliant equipment.

Whether you are looking to add additional LANs, increase the efficiency of your WAN connection, or extending your router’s interface, Patton’s Ethernet MicroBridge is the most simple and cost-effective solution around!

**Features & Benefits**

- **PPP Bridging Control Protocol (RFC 1638)** with auto detection for compatibility with existing Patton Bridge Products and standard third-party equipment
- **Transparent LAN bridging** enables the MicroBridge to pass such higher layer protocols
- **Industry standard, shielded RJ-45** 10Base-T connection
- **802.3 Ethernet supported by transparent LAN bridging**
- **1 Mbyte RAM; 128 kbyte FLASH**
- **Automatic learning and aging** with support for up to 4,096 MAC addresses
- **Nine LEDs monitor power, LAN link, and DTE interface signals**
- **Variety of WAN interfaces available** (X.21, RS-232, RS-530, and V.35)

**Ordering Information**

- **2121/DM-X/UI:** Ethernet MicroBridge, X.21 DTE with DB-15 Male, Serial Cable, 100–240 VAC
- **2121/DM-X/48:** Ethernet MicroBridge, X.21 DTE with DB-15 Male, Serial Cable, -48 VDC
- **2124/AM-X/UI:** Ethernet MicroBridge, V.24 DTE with DB-25 Male, Serial Cable, 100–240 VAC
- **2124/AM-X/48:** Ethernet MicroBridge, V.24 DTE with DB-25 Male, Serial Cable, -48 VDC
- **2130/BM-X/UI:** Ethernet MicroBridge, EIA-530 DTE with DB-25 Male, Serial Cable, 100–240 VAC
- **2130/BM-X/48:** Ethernet MicroBridge, EIA-530 DTE with DB-25 Male, Serial Cable, -48 VDC
- **2135C/CM-X/UI:** Ethernet MicroBridge, V.35 DTE with M/34 Male, Serial Cable, 100–40 VAC
- **2135C/CM-X/48:** Ethernet MicroBridge, V.35 DTE with M/34 Male, Serial Cable, -48 VDC
- **2135/CM/UI:** Ethernet MicroBridge, V.35 DTE with M/34 Male (No Serial Cable), 100–240 VAC
- **2135/CM/48:** Ethernet MicroBridge, V.35 DTE with M/34 Male (No Serial Cable), -48 VDC

**Notes:**

- X = "L" 6-foot (182.88cm) Serial Cable or "S" 6-inch (15.24cm) Serial Cable. Example: 2121/DM-X/UI Ethernet MicroBridge, X.21 DTE w/DB-15 Male, 6" (15.24cm) Serial Cable, UI

**Specifications**

- **DTE Interface:** X.21, V.35, RS-232, or RS-530
- **Network Interface:** IEEE 802.3 10Base-T (RJ-45)
- **Transmission:** Synchronous up to 10 Mbps
- **Protocol:** PPP (RFC 1661) with Bridging Control Protocol (RFC 1638)
- **Memory:** 1MB RAM, 128KB FLASH memory
- **MAC Address Table Size:** 4096 entries
- **MAC Address Aging:** MAC addresses deleted after eight minutes inactivity
- **LEDs LAN Side:** (1) yellow, general status; (1) green, link integrity
- **LEDs DTE Side:** TDI, RXD and Power, (green); DTR, DCD, CTS and CLK, (yellow)
- **Power Supply Input:** 100–240 VAC, 50–60 Hz, 0.4A; or optional - 48 VDC
- **Power:** 100–240 VDC, 50–60 Hz, 0.4A; or optional - 48 VDC
- **Power:** (3) yellow, (1) green, link integrity
- **Temperature:** 32–122°F (0–50°C)
- **Altitude:** 0–15,000 ft (0–4,572 m)
- **Humidity:** Up to 95% RH, non-condensing
- **Dimensions:** 5.5 L x 2.1 W x 0.78 H in (8.8 L x 5.3 W x 2.0 H cm)
- **Weight:** 0.32 lbs (0.14 kg)

Patton’s Ethernet MicroBridge Series are compliant with the RFC 1661 standard for PPP half-bridging, so you can connect our bridge to a router (instead of another bridge) which saves you money!

visit us online www.patton.com
**Ethernet Managed VPN WAN Router**

**IPLink™ 2802 & 2805**

IPLink Managed VPN Routers promote business/dual use of broadband access networks by applying VPN encryption AND QoS/CoS traffic management to traffic flows.

The IPLink Managed VPN Routers are a family of next-generation appliances that address both the security and the traffic prioritization needs of enterprises. VPN routers enable the secure communication of remote offices, home offices, and mobile users across insecure IP networks such as the Internet. IPLink VPN Routers take it one step further and integrate quality of service (QoS) to optimize business traffic flows, allowing dual use (business and leisure) of broadband connections without impacting the quality of business communications.

IPLink VPN Routers implement a comprehensive security environment. It all starts with IPSec. By supporting ESP as well as AH, IPLink VPN Routers provide data integrity, authentication, anti-replay and data confidentiality to any traffic flow. DES, 3DES, and AES provide standard encryption up to 256 bits. Firewall capabilities of the IPLink VPN Routers include Access Control Lists (ACLs), IP address and port filtering, and protection against Denial of Service (DoS) attacks. Likewise, PPPoE protocols include support for PAP and CHAP authentication.

QoS features include ToS/DiffServ marking and the configuration of eight service class tags per IEEE 802.1p/Q. With traffic scheduling and shaping, create dedicated bandwidth guarantees, configurable burst tolerance, and policing to include excess traffic discard. IP fragmentation is configurable to help minimize jitter in traffic flows.

Advanced IP features include RIPv1 & RIPv2 routing and static route configuration. Static and dynamic NAT, NAPT, DNS resolver and relay, dynamic DNS, and DHCP server further add to the capabilities of the IPLink VPN Router. All IPLink VPN routers can be managed via a web browser (HTTP), command line interface (Telnet), or an SNMP management platform.

**FEATURES & BENEFITS**

VPN Tunnels — Standard IPSec with AH and ESP ensures maximum protection when traversing unsecured networks.

Strong Encryption — DES, 3DES, and AES offer standards based encryption algorithms from 56 to 256 bits.

QoS/CoS Profiles — Configurable burst tolerance, bandwidth guarantees plus reduce per flow traffic jitter as required by the application.

Configurable Security Profiles — Built-in IP address and IP port filtering, ACLs and DoS attack detection creates a comprehensive security environment.

Enhanced IP Services — DNS resolver and relay, NAT/NAPT, dynamic DNS, and DHCP server, eases integration.

10/100 Ethernet — Dual 10/100 Ethernet and 5 port Ethernet switch.

SNMP/HTTP Management — Easily manage the IPLink VPN Routers via a simple web browser interface.

**ORDERING INFORMATION**

2802/EUI: IPLink VPN Router; Dual Ethernet Port; External 110–220 VAC power

2802/EUI: IPLink VPN Router; Dual Ethernet Port; Internal 110–220 VAC power

2805/EUI: IPLink VPN Router; 5 Port Ethernet; External 110–220 VAC power

**SPECIFICATIONS**

**WAN Ethernet Ports:**

- 2802 & 2805—10/100Base-T (RJ-45 connector), auto-negotiating: half/full duplex operation with automatic MDI/MDI-X

- LAN Ethernet Ports:
  - 2802—10/100Base-T (RJ-45 connector), auto-negotiating: half/full duplex operation with automatic MDI/MDI-X
  - 2805—4 port 10/100Base-T switch (RJ-45 connector), auto-negotiating: half/full duplex operation with automatic MDI/MDI-X

**Management:** CLI via Telnet; TFTP for software upgrades and configuration uploads; SNMPv1; HTTP/web browser

Protocols: IP (RFC 741), TCP (RFC 730), UDP (RFC 768), ICMP & IGRP, Rediect (RFC 782), ARP (RFC 826), RIP (RFC 1918), RIPv2 (RFC 2453), programable static routes.

Integrated DHCP Server (RFC 2131), DNS Relay (RFC 1684), HTTP 80.1p VLAN tagging, NAT/NAPT (RFC 1631/2131), ISMIPv2

Security: IPSec including AH and ESP, DES, 3DES, and AES encryption. Access Control Lists (ACLs), IP port and address filtering both by source and destination. DoS Detection. Password protected system management with a username/password for console and virtual terminal, IKE

**Power Supplies:** External universal 0–280 VAC input or 48 VDC input. (Optional internal universal 0–280 VAC input.)

**Compliance:** CE Mark; Safety: UL60950-1, CSA 22.2 9950-1, UL60950-1, CSA 22.2 9950-1, US NRTL Listed; EMC Emissions: FCC Part 15 Class A; EN55022 Class A; EMC Immunity: EN55024

**Environment:** Temp.: 0–40°C (32–104°F); Humidity: 5–80% non-condensing

**Dimensions:** 7.3W x 1.6H x 6.1D in. (18.5W x 4.1H x 15.6D cm)

**Weight:** 30.5 oz./500g (models with external power); 24.4 oz./400g (models with external power; no power supply)

IPLink VPN Routers are next-generation security appliances that address the needs of business users by integrating QoS into a one-box solution. By including QoS, broadband connections can be put to dual-use without impacting the quality of business data flows.
T1/E1 Managed VPN WAN Router

IPLink 2803

Multimedia enable any Access TDM network.

The IPLink Managed T1/E1 VPN Router with integrated WAN port is a multimedia router with built-in NTU that manages, monitors and manipulates IP traffic flows to create a service quality control point for IP traffic going over TDM networks. The Model 2803 addresses both the security and the network prioritization needs of enterprises and service providers alike through its support for strong encryption of all traffic flows as well as key multimedia features such as prioritization of voice, video and data traffic, IP multicast and IGMP, and embedded VoIP gateway.

VPN routers enable the secure communication of remote offices, home offices, and mobile users across insecure IP networks such as the Internet. IPLink VPN Routers take it one step further and integrate quality of service (QoS) to optimize business traffic flows plus include a NTU to eliminate the need for external converters. IPLink VPN Routers implement a comprehensive security environment and encrypt all flows including VoIP and video flows.

It all starts with IPSec. By supporting ESP as well as AH, IPLink VPN Routers provide data integrity, authentication, antireplay and data confidentiality to any traffic flow. DES, 3DES, and AES provide standard encryption up to 256 bits. Firewall capabilities of the IPLink VPN Routers include Access Control Lists (ACLs), IP address and port filtering, and protection against Denial of Service (DoS) attacks. Likewise, PPP/IPsec protocols include support for PAP and CHAP authentication.

QoS features include ToS/DiffServ marking and the configuration of eight service class tags per IEEE 802.1p/Q. With traffic scheduling and shaping, create dedicated bandwidth guarantees, configurable burst tolerance, and policing to include excess traffic discard. IP, PPP, and Frame Relay fragmentation is configurable to help minimize jitter in traffic flows.

Advanced IP features include IGMP and IP multicast support as well as RIPv1 & RIPv2 routing and static route configuration. Static and dynamic NAT, NAPT, DNS resolver and relay, dynamic DNS, and DHCP server further add to the capabilities of the IPLink VPN Router. Frame Relay support is included standard. All IPLink VPN routers can be managed via a web browser (HTTP), command line interface (Telnet or Console), or an SNMP management platform. IKE is included for ease of key management.

FEATURES & BENEFITS

- Strong encryption of traffic including VoIP & video flows
- IP multicast and IGMP support
- True multimedia QoS with traffic class prioritization
- VoIP SIP proxy with built-in NAT, DHCP relay and DynDNS
- Embedded T1/E1 NTU with loopback and alarms
- VLAN per IEEE 802.1Q including priority queuing

ORDERING INFORMATION

2803/K/48: IPLink VPN ROUTER, 2-Port Ethernet, 1-port T1/E1 with RJ & BNC, 48 VDC
2803/K/EUI: IPLink VPN ROUTER, 2-Port Ethernet, 1-port T1/E1 with RJ & BNC, External 110–220 VAC
2803/K/EU: IPLink VPN ROUTER, 2-Port Ethernet, 1-port T1/E1 with RJ & BNC, Internal 110–220 VAC
2803/T/48: IPLink VPN ROUTER, 2-Port Ethernet, 1-port T1/E1 RJ only, 48 VDC
2803/T/EUI: IPLink VPN ROUTER, 2-Port Ethernet, 1-port T1/E1 RJ only, External 110–220 VAC
2803/T/EU: IPLink VPN ROUTER, 2-Port Ethernet, 1-port T1/E1 RJ only, Internal 110–220 VAC

SPECIFICATIONS

WAN ports: 2803: One T1/E1, E1—G.703/G.704 with VB3S and ANSI encoding, E1—G.703/G.704 with HDB3 and ANSI encoding, T1—ANSI T1.403 & AT&T T1S-4015 with ANSI coding/84 framing or B8ZS coding/ESF framing, RJ-48 connector and/or dual BNC available. 2803: U-35 DTE or DB-25F Connector 2871: X.21 DTE or DB-25F Connector 2871: X.21 DTE or DB-25F Connector 2821: X.21 DTE or DB-25F Connector Ethernet ports: two 10/100Base-T ports (RJ-45 connector), auto-negotiating; half or full duplex operation with built-in MDI-X Management: CLI via Telnet Ethernet or RS-232 Console Port (EIA-232); FTP for Software upgrade and configuration upload; SNMPv1: HTTP/web browser Protocols: IP (RFC 741), TCP (RFC 733), UDP (RFC 768), ICMP, ICMPv6, RIPv1 & RIPv2

Security: IPSec including AH and ESP, SSL, 3DES, and AES encryption. Access Control Lists (ACLs): IP port and address filtering both by source and destination. DoS Detection. Password protected system management with a username/password for console and virtual terminal, RJE Power: External universal 90–260 VAC input or 48 VDC input. (Optional internal universal 90–260 VAC input) Compliance: CE Mark; Safety: UL60950-1, CSA 22.2-60950-1, IEC/EN60950-1; Universal AC units are US NRTL Listed; EMC Emissions: FCC Part 15 Class A; EN60950-1 Class A; EMC Immunity: C60524

Environment: Temp.: -10° to 40°C (32°–104°F) • Humidity: 5–80% non-condensing

Dimensions: 7.29 x 1.6 x 6.10 in. (18.5 cm x 4.1 cm x 15.6 cm)

Weight: 30.5 oz./900g (models with internal power); 24.4 oz./700g (models with external power; no power supply)
**Sync. Serial Managed VPN WAN Router**

IPLink™ 2821 & 2835

IPLink Managed VPN Routers with integrated WAN ports optimize and secure information flows applying encryption and QoS/CoS traffic management.

The IPLink Managed VPN Routers with integrated serial ports are a family of next generation appliances that address both the security and the traffic prioritization needs of enterprises. VPN routers enable the secure communication of remote offices, home offices, and mobile users across insecure IP networks such as the Internet. IPLink VPN Routers take it one step further and integrate quality of service (QoS) to optimize business traffic flows plus include a serial port to eliminate the need for external converters.

IPLink VPN Routers implement a comprehensive security environment. It all starts with IPSec. By supporting ESP as well as AH, IPLink VPN Routers provide data integrity, authentication, anti-replay and data confidentiality to any traffic flow. DES, 3DES, and AES provide standard encryption up to 256 bits. Firewall capabilities of the IPLink VPN Routers include Access Control Lists (ACLs), IP address and port filtering, and protection against Denial of Service (DoS) attacks. Likewise, PPP/IPP oE protocols include support for PAP and CHAP authentication.

QoS features include ToS/DiffServ marking and the configuration of eight service class tags per IEEE 802.1p/Q. With traffic scheduling and shaping, create dedicated bandwidth guarantees, configurable burst tolerance, and policing to include excess traffic discard. IP, PPP, and Frame Relay fragmentation is configurable to help minimize jitter in traffic flows.

Advanced IP features include RIPv1 & RIPv2 routing and static route configuration. Static and dynamic NAT, NAPT, DNS resolver and relay, dynamic DNS, and DHCP server further add to the capabilities of the IPLink VPN Router. Frame Relay support is included standard. All IPLink VPN routers can be managed via a web browser (HTTP), command line interface (Telnet or Console), or an SNMP management platform.

The features and benefits include:

- **Strong Encryption** — DES, 3DES, and AES offer standards required by the application.
- **QoS/CoS Profiles** — Configurable burst tolerance, bandwidth guarantees plus reduce per flow traffic jitter as required by the application.
- **Configurable Security Profiles** — Built-in IP address and IP port filtering, ACLs and DoS attack detection creates a comprehensive security environment.
- **Enhanced IP Services** — DNS resolver and relay, NAT/NAPT, dynamic DNS, and DHCP server, eases integration.
- **SNMP/HTTP Management** — Easily manage the IPLink VPN Routers via a simple web browser interface.

### ORDERING INFORMATION

- **2821/UI: IPLink VPN ROUTER, 2 Port ETH, 1 port T1/E1**
  - with DB15 connector, 48 VDC
  - External 110–220 VAC
  - Internal 110–220 VAC

- **2821/K/48: IPLink VPN ROUTER, 2 Port ETH, 1 port V.35 with M34 connector, 48 VDC**

- **2835/UI: IPLink VPN ROUTER, 2 Port ETH, 1 port V.35 with M34 connector, 48 VDC**

- **2835/EUI: IPLink VPN ROUTER, 2 Port ETH, 1 port X.21 with DB-15F connector, Internal 110–220 VAC**

- **2835/K/48: IPLink VPN ROUTER, 2 Port ETH, 1 port V.35 with M34 connector, 48 VDC**

- **2835/EUI: IPLink VPN ROUTER, 2 Port ETH, 1 port V.35 with M34 connector, External 110–220 VAC**

- **2835/K/48: IPLink VPN ROUTER, 2 Port ETH, 1 port V.35 with M34 connector, External 110–220 VAC**

- **2835/K/48: IPLink VPN ROUTER, 2 Port ETH, 1 port V.35 with M34 connector, External 110–220 VAC**

### SPECIFICATIONS

**WAN ports:**
- 2821/UI: V.35 DTE on DB-25F connector • X.21 DTE or DCE on DB-15F connector
- 2821/EUI: V.35 DTE on DB-15F connector • X.21 DTE on DB-15F connector
- 2835/UI: 2 Port ETH, 1 port T1/E1
- 2835/EUI: 2 Port ETH, 1 port V.35 with M34 connector
- 2835/48: 2 Port ETH, 1 port V.35 with M34 connector
- 2835/K/48: 2 Port ETH, 1 port X.21 with DB-15F connector, Internal 110–220 VAC

**Protocols:**
- IP (RFC 741), TCP (RFC 730), UDP (RFC 768), ICMP & ICMPv6
- RIPv1 & RIPv2
- GRE (RFC 1786), ESP (RFC 2082), ARP (RFC 828), IP
- NAT/NAPT (RFC 793), UDP (RFC 768), DHCP

**Security:**
- IPSEC including AH and ESP, DES, 3DES, and AES encryption
- Access Control Lists (ACLs), IP port protection
- port filtering, ACLs and DoS attack detection
- Configurable burst tolerance, bandwidth guarantees plus reduce per flow traffic jitter as required by the application
- Enhanced IP Services — DNS resolver and relay, NAT/NAPT, dynamic DNS, and DHCP server, eases integration
- SNMP/HTTP Management — Easily manage the IPLink VPN Routers via a simple web browser interface

### ORDERING INFORMATION

- **2821/UI: IPLink VPN ROUTER, 2 Port ETH, 1 port T1/E1**
  - with DB15 connector, 48 VDC
  - External 110–220 VAC
  - Internal 110–220 VAC

- **2821/K/48: IPLink VPN ROUTER, 2 Port ETH, 1 port X.21 with DB15 connector, External 110–220 VAC**

- **2835/UI: IPLink VPN ROUTER, 2 Port ETH, 1 port V.35 with M34 connector, 48 VDC**

- **2835/EUI: IPLink VPN ROUTER, 2 Port ETH, 1 port V.35 with M34 connector, External 110–220 VAC**

- **2835/K/48: IPLink VPN ROUTER, 2 Port ETH, 1 port V.35 with M34 connector, 48 VDC**

- **2835/EUI: IPLink VPN ROUTER, 2 Port ETH, 1 port V.35 with M34 connector, External 110–220 VAC**

- **2835/K/48: IPLink VPN ROUTER, 2 Port ETH, 1 port V.35 with M34 connector, External 110–220 VAC**

### SPECIFICATIONS

- **WAN ports:** 2821/UI: V.35 DTE on DB-25F connector • X.21 DTE or DCE on DB-15F connector
- 2821/EUI: V.35 DTE on DB-15F connector • X.21 DTE on DB-15F connector
- 2835/UI: 2 Port ETH, 1 port T1/E1
- 2835/EUI: 2 Port ETH, 1 port V.35 with M34 connector
- 2835/48: 2 Port ETH, 1 port V.35 with M34 connector
- 2835/K/48: 2 Port ETH, 1 port X.21 with DB-15F connector, Internal 110–220 VAC

- **Tests:**
- 2821/UI: V.35 DTE on DB-25F connector • X.21 DTE or DCE on DB-15F connector
- 2821/EUI: V.35 DTE on DB-15F connector • X.21 DTE on DB-15F connector
- 2835/UI: 2 Port ETH, 1 port T1/E1
- 2835/EUI: 2 Port ETH, 1 port V.35 with M34 connector
- 2835/48: 2 Port ETH, 1 port V.35 with M34 connector
- 2835/K/48: 2 Port ETH, 1 port X.21 with DB-15F connector, Internal 110–220 VAC

- **Power supplies:**
- External 110–220 VAC
- Internal 110–220 VAC

- **Dimensions:**
- 2821/UI: (18.5H x 4.1W x 15.5D cm)
- 2821/EUI: (18.5H x 4.1W x 15.5D cm)
- 2835/UI: 7.3W x 1.6H x 6.1D in.
- 2835/EUI: 7.3W x 1.6H x 6.1D in.

- **Emc Immunity:** EN55024 Part 15 Class A; EN55022 Class A; FCC Part 15 Class A
- **Environment:** Temp.: 0–40°C (32–104°F); Humidity: 5–80% non-condensing

- **Weight:**
- 30.5 oz./500g (models with EUI)
- 24.4 oz./400g (models with 48 VDC input)
- 28.5 oz./500g (models with M34 connectors)

- **Ordering information:**
- **2821/UI: IPLink VPN ROUTER, 2 Port ETH, 1 port T1/E1**
  - with DB15 connector, 48 VDC
- **2835/UI: IPLink VPN ROUTER, 2 Port ETH, 1 port V.35 with M34 connector, 48 VDC**

- **Application diagram**

IPLink VPN Routers are next generation security appliances that address the needs of business users by integrating QoS and WAN interfaces into a one-box solution. Service Providers can take advantage of the built-in QoS to provide both VPN services as well as managed bandwidth services using IPLink VPN Routers.

**Visit us online**

www.patton.com
**Multi-Port T1/E1 Routers**

**NetLink™ 2688**

This Multi-Port Access Router combines multiple T1/E1 lines with a feature-rich IP router to address the demanding deployment needs of service and enterprise organizations.

The Model 2688 access router is optimized to process Frame Relay and PPP encapsulated IP traffic from multiple channelized T1/E1 interfaces. The Model 2688 is available in 4, 8, 12 and 16 T1/E1 port configurations with dual 10/100Base-T Ethernet ports. Take advantage of multi-link PPP to grow a link from single to multiple DS0s, all the way to multi-T1/E1 links for the most bandwidth hungry applications and services.

Leverage RADIUS features of the Model 2688 to provide dynamic service authentication to any subscriber. With RADIUS, existing subscriber profiles do not need to change and integration with existing billing systems can be maintained when migrating the user from dial-up to dedicated access. Easily tailor and manage the level of service to the needs of the subscriber with traffic shaping and policing. Filter by IP address, IP port, or by physical port in ingress or egress directions. The extensive filtering capabilities of the Model 2688 turn the router into a capable edge firewall. NAT is also supported for masquerading applications or for simple address translation. Customize security for each end user or use a standard configuration for all. Use built-in traffic filtering features of the Model 2688 and SSH to secure your management connection.

VPN applications, including access service wholesaling, can be easily deployed with L2TP, IP-within-IP (RFC 2003), or GRE providing standards-based tunneling of IP traffic and easy interconnection with existing VPN networks. Use RIP or OSPF to route traffic between any WAN or LAN port.

**SPECFICATIONS**

- **WAN ports:** 4, 8, 12, or 16 software configurable ports; E1–G.703/G.704 with HDB3 and AMI encoding support.
- **T1–ANSI T1.403 & AT&T TR54016 with AMI coding/ESF framing.**
- **AMI coding/D4 framing or B8ZS coding with HDB3 and AMI encoding support.**
- **Frame Relay and PPP encapsulated IP traffic from multiple configurations.**
- **Up to 16 T1/E1 WAN Ports—Terminate Frame Relay or PPP encapsulated IP traffic on channelized software-configurable interfaces.**
- **Dynamic service authentication to any subscriber.**
- **Traffic shaping and policing.**
- **Filtering capabilities to turn the router into a capable edge firewall.**
- **NAT support for masquerading applications or for simple address translation.**
- **RADIUS support for masquerading applications or for simple address translation.**
- **Extended filtering capabilities to secure your management connection.**
- **VPN applications, including access service wholesaling, can be easily deployed with L2TP, IP-within-IP (RFC 2003), or GRE providing standards-based tunneling of IP traffic and easy interconnection with existing VPN networks.**
- **Use RIP or OSPF to route traffic between any WAN or LAN port.**

**FEATURES & BENEFITS**

- **Dual 10/100 Ethernet—** Easily bridge the gap between the LAN and WAN with differentiated service offerings.
- **Up to 16 T1/E1 WAN Ports—** Terminate Frame Relay or PPP encapsulated IP traffic on channelized software-configurable interfaces.
- **Dynamic service authentication to any subscriber.**
- **Traffic shaping and policing.**
- **Filtering capabilities to turn the router into a capable edge firewall.**
- **NAT support for masquerading applications or for simple address translation.**
- **Extended filtering capabilities to secure your management connection.**
- **VPN applications, including access service wholesaling, can be easily deployed with L2TP, IP-within-IP (RFC 2003), or GRE providing standards-based tunneling of IP traffic and easy interconnection with existing VPN networks.**
- **Use RIP or OSPF to route traffic between any WAN or LAN port.**

**ORDERING INFORMATION**

- **2688/4E/RUI:** Dual Ethernet port router with 4 T1/E1 ports; Redundant 110–220 VAC power
- **2688/8E/RUI:** Dual Ethernet port router with 8 T1/E1 ports; Redundant 110–220 VAC power
- **2688/12E/RUI:** Dual Ethernet port router with 12 T1/E1 ports; Redundant 110–220 VAC power
- **2688/16E/RUI:** Dual Ethernet port router with 16 T1/E1 ports; Redundant 110–220 VAC power
- **2688/4E/R48:** Dual Ethernet port router with 4 T1/E1 ports; Redundant 48 VDC power
- **2688/8E/R48:** Dual Ethernet port router with 8 T1/E1 ports; Redundant 48 VDC power
- **2688/12E/R48:** Dual Ethernet port router with 12 T1/E1 ports; Redundant 48 VDC power
- **2688/16E/R48:** Dual Ethernet port router with 16 T1/E1 ports; Redundant 48 VDC power

**Dimensions:** 48.25 W x 32.00 D x 4.44 H cm (19.00 W x 12.60 D x 1.75 H in.) – 1U

**Environment:** Temp.: 0–40°C (32–104°F)

**Humidity:** 5–90% non-condensing
**ForeFront™ 6400 Series**

Patton’s ForeFront Edge/Access Router line delivers carrier grade IP networking and WAN based Ethernet VLAN aggregation in a modular, rugged and reliable platform.

The ForeFront 6400 Edge/Access Router Series redefines carrier grade networking with the unparalleled redundancy and upgradeability needed to establish service commitments, foster business nimbleness and optimize capital investment. Flexible, rugged and easily upgradeable, it is a platform for current and future networking needs including next-generation narrowband, broadband, and multimedia requirements.

ForeFront Routers are well equipped to meet the most demanding needs of organizations. Advanced QoS/CoS mechanisms reliably guarantee bandwidth, set burst tolerances for traffic flows, and reduce jitter via forced fragmentation of layer 2 flows. A RADIUS accounting and authentication client facilitates centrally configured user and group profiles as well as the maintenance of billing information. IGMP support fosters efficiency in the handling of multimedia multicast traffic. NAT/NPAT and IP filtering creates a basic firewall capability.

Ethernet VLANs conforming to 802.1p/Q standards can be created, transparently tunneling traffic over third-party networks. ForeFront Routers offer a robust, reliable solution complete with power distribution, thermal management, and a redundant high-speed backplane. Each unit has integrated cooling and boasts 1+1 or N+1 redundancy with AC or DC power supplies and redundant power feeds. Hot-swappable components provide high availability while the router’s multi-processor design avoids single points of failure. The ForeFront Routers are available in 4, 8 and 17 slot configurations.

**FEATURES & BENEFITS**

- **Carrier Grade** — Integrated cooling, redundant backplane, hot-swappable components, redundant power.
- **Drop & Insert** — Take any TDM channel from any port and perform a Drop & Insert to any other port
- **VLAN** — Use VLAN tags to switch Ethernet traffic and isolate user traffic
- **VPN** — Easily set up L2TP tunnels to facilitate traffic routing for port wholesaling opportunities.
- **Firewall** — Built-in IP address and port filtering, makes firewall services a snap
- **Subscriber Management** — Leverage the power of RADIUS to set and manage subscriber profiles.

**SPECIFICATIONS**

- **Routing:** RIPv1 (RFC 1058), RIPv2 (RFC 2453), OSPFv2 (RFC 1226), IS-IS (RFC 2664), NAT (RFC 1332), CHAP (RFC 1334 & 1994)
- **Ethernet Ports:** Three 10/100BaseT (RJ-45 connector); auto-negotiating; half or full duplex operation
- **Front Panel Indicators:** LEDs for power, CPU, system, Ethernet, External clock, and test mode
- **Management Service:** HTTP, SSH, Telnet, SNMP, RADIUS
- **VPN Services:** L2TP (RFC 2661), PPTP (RFC 2637), L2F (RFC 2680), L2CAP (RFC 2686 & 2687), Accounting (RFC 2666 & 2667)
- **Alarm Reporting:** Configurable alarms; remote SNMP traps; Front Panel LEDs
- **Compliance:** CE Mark, UL1950, FCC Part 15, FCC Part 68, Canada, VCCI (C-14), US Anti-Jam, C-Tick, A Grade

**ORDERING INFORMATION**

- **6423/32E/R48:** One 2U-high 4-slot chassis per 16 T1/E1 ports, and router card with 3 10/100 Ethernet ports
- **6423/32E/RUI:** One 2U-high 4-slot chassis per 16 T1/E1 ports, and router card with 3 10/100 Ethernet ports
- **6443/32E/RUI:** One 4U-high 8-slot chassis per 32 T1/E1 ports, and router card with 3 10/100 Ethernet ports
- **6443/16E/RUI:** One 4U-high 8-slot chassis per 16 T1/E1 ports, and router card with 3 10/100 Ethernet ports
- **6443/16E/R48:** One 4U-high 8-slot chassis per 16 T1/E1 ports, and router card with 3 10/100 Ethernet ports

**SALES:** +1 301-975-1000

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**E-MAIL:** sales@patton.com

**WEB:** www.patton.com
Multi-Port VPN Ethernet Switch with PoE

Model 2560

Full function, manageable 8-port Ethernet switch offering industry standard Power Over Ethernet (802.3af) on all ports.

Operating as a full function and fully manageable Ethernet switch, the Patton 2560 provides PoE auto-detection for connected 10/100 devices and a GigE uplink. Web, Telnet, console and SNMP interfaces provide easy local and remote management and monitoring of the switch. The 2560 is an excellent choice when upgrading or adding additional Ethernet capacity.

When coupled with an under desk UPS battery system, this Ethernet switch enables continuous operation of VoIP phones and gateways within a building without the large expense of a full AC power UPS system. Power consumption monitoring and control to efficiently manage or troubleshoot power consumption and/or failures.

Features & Benefits

- Full Function 10/100 Layer 2 Switch with PoE
- Extend Ethernet Where Power Cannot Go
- Centralized Source of Back up Power for all your devices
- Auto-detects PoE and Non-PoE Devices
- Auto-detects required voltage of PoE enabled device or PoE splitter

082.3af standard works with any PoE 802.3af compliant device

Ordering Information

2560/24/EUI: IpLink 24-Port PoE Switch
2560/8/EUI: IpLink 8-Port PoE Switch

Specifications

- Interfaces: 24 RJ-45 ports, 10/100Base-TX • RS-232 DB-9 female connector for switch management • RS-232 DB-9 male connector for UPS management
- Ethernet: IEEE802.3 10BASE-T • IEEE802.3u 100BASE-TX • IEEE802.3z 1000BASE-T • 802.3ad Port Trunking • IEEE802.3i Flow control • IEEE802.3x Flow control
- Expansion modules: 24 RJ-45 ports, RJ-45 connector pin assignment: Pin 1,2 for operating pin, 3,6 for VCC-
- Power over Ethernet: Full-duplex/two-line • Auto-detect PoE and Non-PoE Devices • Centralized Source of Backup Power for all your devices • Extend Ethernet Where Power Cannot Go
- Full Function 10/100 Layer 2 Switch with PoE

Security Camera

VoIP PoE Device

UPS

IP Network

VoIP Fax

VoIP Phone

VoIP Gateway

Wireless Access Point

Fast Delivery From Your AUTHORIZED DISTRIBUTOR!