

# Ascend Pipeline 130



You can't predict the  
future of networking.  
But you can protect  
your network investment  
with the Pipeline 130 family  
of remote access routers.

## Remote Access ▾ Internet Access

The Ascend Pipeline® 130 is a family of dedicated and dial-up remote access routers designed for corporate sites with expanding Internet connectivity needs or remote offices connecting to the corporate LAN. The integrated functionality of the Pipeline 130 router provides an easy migration path from ISDN to frame relay or dedicated leased-line services as well as backup for mission-critical applications.

Pipeline 130 routers deliver an unprecedented level of performance that until now has required multiple products from multiple vendors. With the Pipeline 130 you can keep up with today's constantly evolving networking environment while safeguarding your investment.

## Pipeline 130 Built-in Capabilities

- Frame relay
- ISDN
- Dedicated leased lines
- Integrated CSU/DSU
- Optional firewall
- Multiprotocol bridging and routing



# Fully-Integrated Remote Networking Solutions

## Multiprotocol routing and bridging ensures network interoperability

Robust support for standard protocols ensures efficient connectivity and multivendor interoperability.

- Routes TCP/IP and IPX
- Bridges all protocols (BCP standard bridging)
- PPP, frame relay (RFC 1490), Multilink Protocol (MP) and Multilink Protocol Plus™ (MP+)
- Transmit and receive packet filtering

## Supports dial-up and dedicated WAN services for flexible remote networking

Two WAN ports give you the flexibility to connect to a broad range of WAN services. Each Pipeline 130 model comes with a different combination of WAN interfaces.

- Supports two simultaneous connections to different locations
- ISDN Basic Rate Interface (BRI); certified for use in over 20 countries worldwide
- T1 and fractional T1; can be programmed to operate at any multiple of 56 or 64 kbps
- Leased DDS 56 4-wire connection
- Switched 56 4-wire connection
- Integrated NT1 and CSU/DSU; eliminates the additional cost of external units
- Standards-based frame relay
- Remote offices and Internet users can connect to inexpensive frame relay services at speeds ranging from 56 kbps to 1.544 mbps
- RFC 1490 frame relay encapsulation
- Annex D Link Management
- V.35 Interface model available

## Standards-based frame relay

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- RFC 1490 frame relay encapsulation
- Annex D Link Management

## Backup mission-critical applications

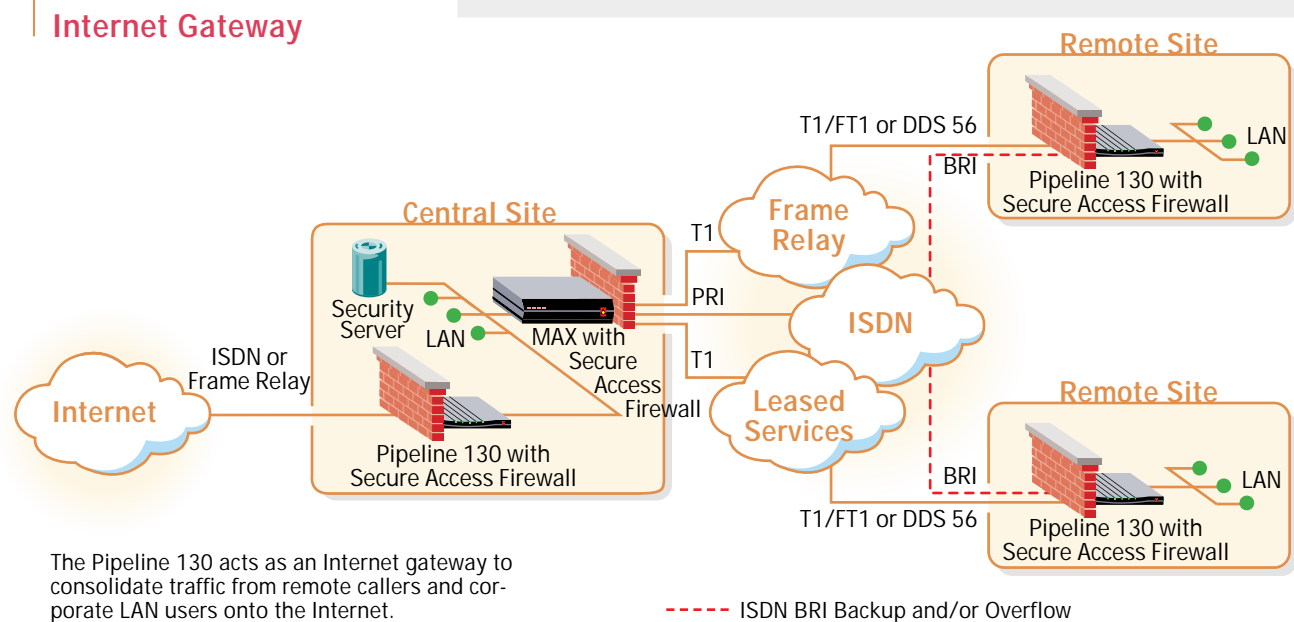
With the Pipeline 130 you guarantee your network's safety even if a primary circuit fails. The Pipeline 130 also provides supplemental bandwidth during times of peak demand.

- Backup for frame relay and dedicated leased lines via ISDN BRI or Switched 56 connections

## Bandwidth on demand maximizes performance and decreases costs

Dial-up connections are automatically established and removed, as required, for transparent client-server computing across the WAN. Inverse multiplexing aggregates multiple channels for greater bandwidth.

- Inverse multiplexing protocols, MP and MP+, use both BRI channels for 128 kbps data rate
- Ascend's Dynamic Bandwidth Allocation™ increases or decreases dial-up bandwidth as required
- Industry-standard STAC compression boosts BRI throughput to 512 kbps



## Ascend Secure Access Firewall

### Comprehensive security for iron-clad remote networking

Support for user authentication makes it easy to manage the security of large-scale remote access applications.

- Authentication profiles with PAP, CHAP and Calling Line ID (CLID)
- Encrypted token card security
- Callback assures connections are made with known users
- Transmit and receive packet filtering
- Telnet password

### Integrated management features provide end-to-end network control

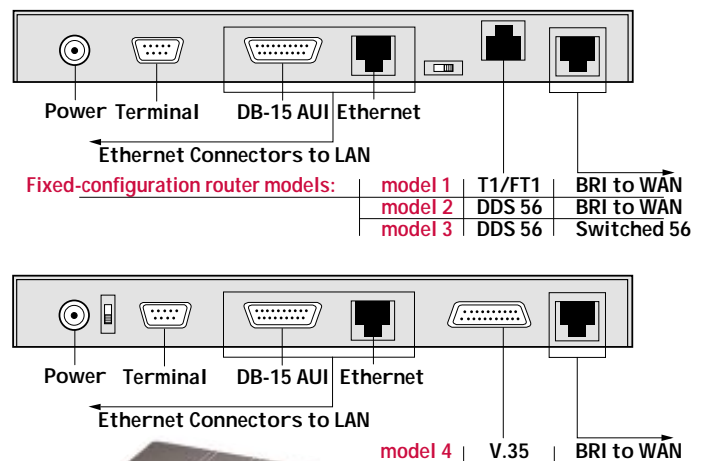
Manage all the functions of the Pipeline 130 through your choice of interfaces, either locally or remotely.

- SNMP MIBs
- Password-protected Telnet remote management
- Local management via VT-100 terminal
- WAN loopbacks
- PPP Link Quality Management (LQM)
- Flash memory for easy software upgrades

Ascend's Secure Access™ Firewall is a software option that uses state-of-the-art firewall technology and delivers a comprehensive, fully integrated security system for corporate networks. It protects your company's information assets at the corporate LAN, remote offices and telecommuters' home offices. The standard security features that are offered on your Ascend remote networking system are integrated with comprehensive security features such as transparency, dynamic firewall, and monitoring and logging.

Secure Access Firewall provides a cost-effective single vendor solution for securing your company's remote network against attacks on sensitive data. See the Secure Access Firewall datasheet for more information.

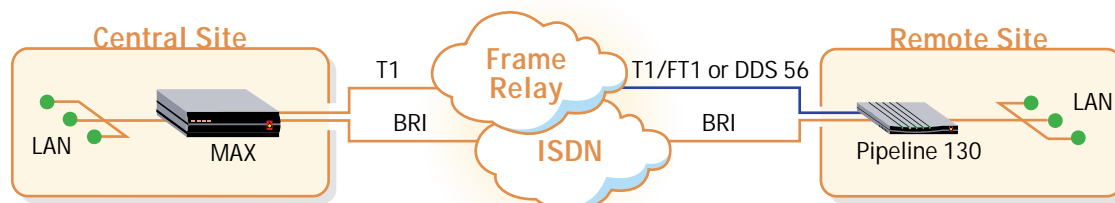
## Pipeline 130 Back Panels



# Pipeline 130



## Migration from Dial-up to Dedicated Network Services



As your network usage and bandwidth requirements grow, migrate from ISDN to frame relay or dedicated leased line services at speeds ranging from 56 kbps to 1.544 mbps.

— Future Growth

## Hardware Specifications

Dimensions	8.63 in x 6.19 in x 1.25 in [22 cm x 15.7 cm x 3.2 cm]
Weight	2.5 lbs [1.13 kg]
LAN Interface	10 mbps Ethernet (AUI, 10Base-T)
WAN Interfaces	BRI U Interface with DDS 56 (model: P130-UBRI-L56) BRI U Interface with T1/FT1 (model: P130-UBRI-FT1) BRI U Interface with V.35 (model: P130-UBRI-V35) BRI S/T Interface with V.35 (model: P130-SBRI-V35) DDS 56 and SW56 Interfaces (model: P130-LS-56-2N)
Software Upgrade	Via built-in flash RAM
Power Requirements	90-130VAC, 0.4A 22-24VAC, 0.2A 47-63Hz
Operating Requirements	Temperature: 32-104°F [0-40°C] Altitude: 0-14,800 feet [0-4,500 meters] Relative Humidity: 5-90% (noncondensing)
Safety Certifications	CSA 950, NTRL/UL 1950 TUV EN 60 950
EMI/RF	FCC Part 68, FCC Part 15

## Software Specifications

Protocols Supported	TCP/IP, IPX routing, BCP standard bridging of all protocols
WAN Protocols Supported	PPP, Multilink PPP (MP), Multilink Protocol Plus (MP+)
Bandwidth Management	Multilink PPP (MP), Multilink Protocol Plus (MP+), TCP header compression, STAC data compression
Security	PAP, CHAP, callback, Telnet Password, token-based security cards, packet filtering
Firewall	Integrated dynamic firewall (optional)
Management	SNMP, Telnet, SYSLOG, Ascend's remote management protocol, serial cable connection (Db9)

## Ascend's Remote Networking Products

### GRF™ Family

GRF products are high-performance IP switches that let network service providers cost-effectively offer network access and backbone services.

### MAX™ Family

The MAX family of high-density, multiprotocol WAN access switches provide access to central sites or the Internet over high-speed access lines such as frame relay over ISDN PRI, channelized T1/E1 and ISDN BRI lines.

### Pipeline® Family

Pipeline products are Ethernet-to-ISDN bridges/routers that connect remote users in small or home offices to backbone networks and/or the Internet.

### Multiband™ Family

Multiband bandwidth on demand controllers are designed for videoconferencing and multimedia applications and let users dial up bandwidth in increments of 56/64 kbps up to 4 mbps.

### NetWarp™ Family

NetWarp products are ISDN terminal adapters that enable PC users to access the Internet or a remote LAN using the full 128 kbps of an ISDN BRI line.

### Secure Access™ Family

Secure Access Firewall is the first offering of Ascend's end-to-end security solution. It integrates dynamic firewall technology with the MAX and most Pipeline products to provide secure remote connections.

## Ascend Communications, Inc.

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Ascend Communications, Inc. (NASDAQ: ASND) develops, manufactures, markets, sells and supports a broad range of high-speed digital wide area network access products. These products use bandwidth on demand to enhance existing corporate networks for applications such as remote LAN access, telecommuting, SOHO and Internet access, and videoconferencing/multimedia access.

Ascend markets the GRF, MAX, Pipeline, Multiband and Secure Access families of products. Ascend products are available in more than 30 countries worldwide.

Dynamic Bandwidth Allocation™, (U.S. Patent No. 5,231,649), Multilink Protocol Plus™, Pipeline®, and Secure Access™ are trademarks of Ascend Communications, Inc. Other trade names mentioned in this publication belong to their respective owners.

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Solutions That Work.™**