PRODUCT INFORMATION

Ascend MAX TNT

Only one WAN access solution is powerful enough to handle the explosive growth of your demanding network. Let the MAX TNT take your network capacity to a higher dimension.

Central Site ▾ Point of Presence ▾ Virtual Private Network

The MAX TNT™ revolutionizes the remote networking industry with a powerful multiprotocol WAN access switch that lets network service providers and corporations build high-density networks. This scalable, carrier-class switch manages up to 720 concurrent calls to a central site or MegaPOP™ over a dynamic mix of access lines such as analog, ISDN, T1/E1, DS3 and Frame Relay. It can be configured with up to three shelves that each support 16 expansion modules for Digital Modem, Hybrid Access™ or FrameLine™.

With the modular architecture, users can customize their network infrastructure according to specific application and bandwidth requirements. The MAX family software and industry-standard protocols allow users to integrate the MAX TNT seamlessly into existing network environments. By combining high-performance hardware and software capabilities into a single solution, the MAX TNT maximizes system capacity while reducing infrastructure and operating costs.

ASCEND

MAX TNT Overview

The MAX TNT is a multiprotocol WAN access switch that enables carriers, ISPs, corporations and major network providers to offer a variety of access services such as analog, ISDN, leased T1/E1 and Frame Relay. Because the MAX TNT is the highest-density product in its class, it dramatically reduces rack space requirements while driving down the price per port.

The MAX TNT has a scalable, modular card and backplane architecture that provides intelligent access for applications to global network services. The modular card system lets users design a solution that satisfies the specific application and bandwidth requirements of any customer.

The backplane is comprised of three distinct buses: Cell, TDM and Packet. It supports up to 720 simultaneous digital modem, ISDN or 56/64 Kbps Frame Relay sessions. Additionally, a single MAX TNT shelf can terminate up to 150 leased T1/E1 Frame Relay lines. A shelf supports up to 16 modules and redundant, load-balancing power supplies. A MAX TNT system may be configured with up to three shelves, providing redundancy and fault-tolerance for central office applications.

The system terminates and routes a full channelized DS3 (720 DS0 timeslots) interface on a multiple shelf system.

The base system can be enhanced by adding modules and software options:

- Digital Modem module: support for analog modem users
- Hybrid Access module: support for ISDN, Switched Digital, and Nx56/64K channelized Frame Relay
- FrameLine Module: support for unchannelized T1/E1, Fractional T1/E1 and E1 Frame Relay

Digital Modem module

Each Series56™ Digital Modem module supports V.34 or K56flex-compatible digital modems to provide analog and cellular connections at rates up to 56 Kbps. The 48-port Series56 Digital Modem (DM48) occupies two expansion slots on the MAX TNT. Remote users with a modem and an analog or cellular line can dial into the MAX TNT over channelized T1/E1, ISDN PRI or channelized DS3 access lines.

Hybrid Access module

Hybrid Access provides users with integrated remote networking support for digital sessions via ISDN and Frame Relay. These sessions can be accessed with any network device that works with ISDN or Frame Relay such as Terminal Adapters (TAs), Frame Relay Access Devices (FRADs) and any Pipeline or MAX product. Each module supports up to 192 remote 56/64 Kbps Frame Relay or ISDN sessions, while a single-shelf system can connect up to 720 sessions.

FrameLine module

FrameLine is a new and powerful capability introduced with the MAX TNT. The FrameLine module supports up to 10 T1/E1 Frame Relay user ports and switches them into a backbone network. A single-shelf MAX TNT system supports up to 150 leased T1/E1 user ports. It provides up to 4094 Frame Relay Permanent Virtual Circuits (PVCs) per port and supports both UNI and NNI interfaces.

MAX TNT Applications

Multiservice central site/POP application using FrameLine, Hybrid Access and Digital Modem

A multiservice central site/POP environment requires a flexible solution for offering many types of services to users. The MAX TNT can be configured with FrameLine, Hybrid Access and Digital Modem modules to create a powerful multiservice MegaPOP solution capable of supporting dialed and leased services such as analog, ISDN, Frame Relay or leased T1/E1 in mixed-user environments.

This high-density product supports up to 720 concurrent WAN sessions and high-speed multiple backbone network connections.

Using an Ethernet interface module, the MAX TNT can access the backbone network over high-speed access lines.

For a LAN backbone connection, the MAX TNT uses one or more of the following modules:

- Ethernet 10Base-T
- Ethernet 10Base-T plus 100Base-T

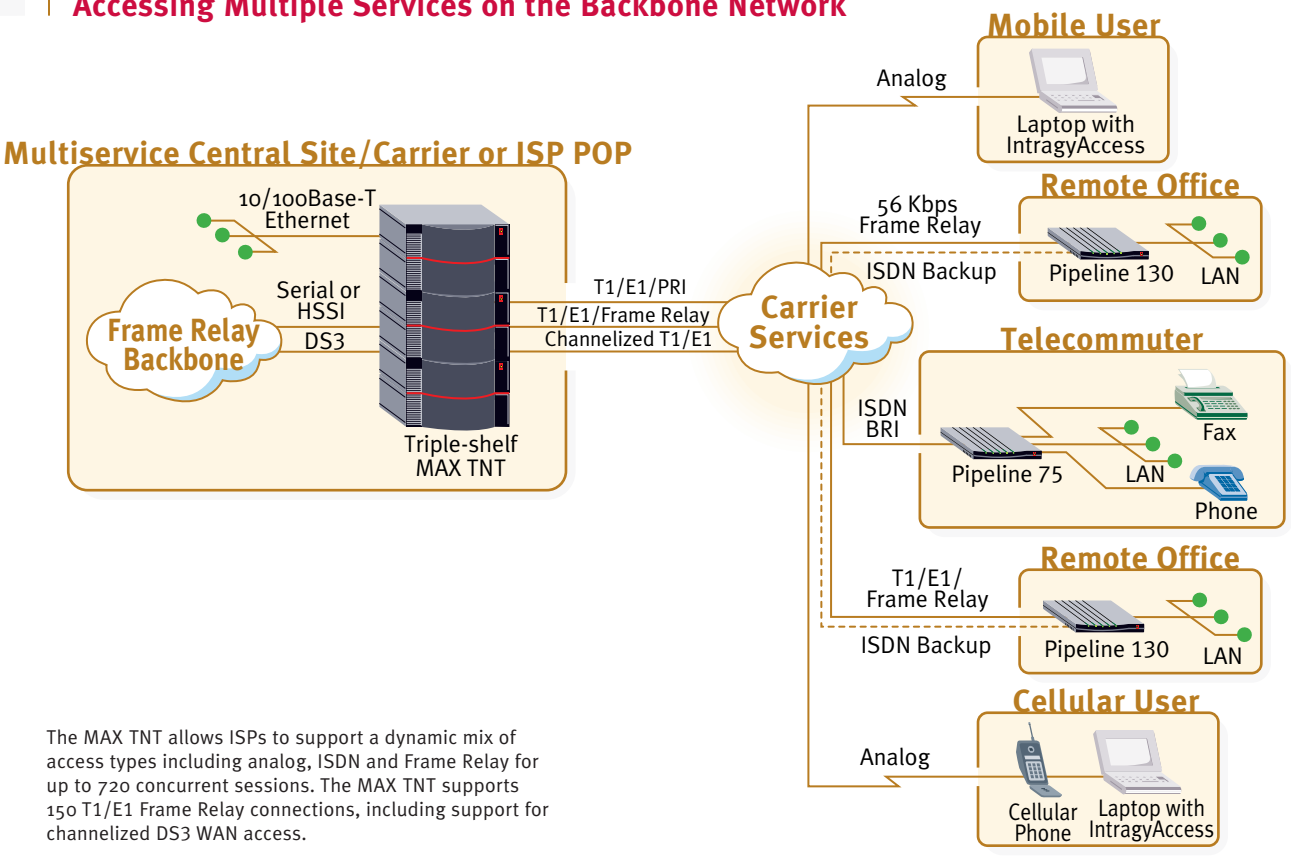
For a Frame Relay backbone, the MAX TNT uses one or more of the following modules:

- Serial
- HSSI
- Unchannelized T1/E1

The MAX TNT creates the MegaPOP by integrating Frame Relay switching and high-density WAN access switching. With the addition of the FrameLine module, the MAX TNT eliminates the need for an external Frame Relay switch. The following modules can be used with the FrameLine, Hybrid Access and Digital Modem modules to support this type of application:

- Channelized T1
- Channelized DS3
- Digital Modem
- Channelized E1

Accessing Multiple Services on the Backbone Network



The MAX TNT allows ISPs to support a dynamic mix of access types including analog, ISDN and Frame Relay for up to 720 concurrent sessions. The MAX TNT supports 150 T1/E1 Frame Relay connections, including support for channelized DS3 WAN access.

MAX TNT Applications

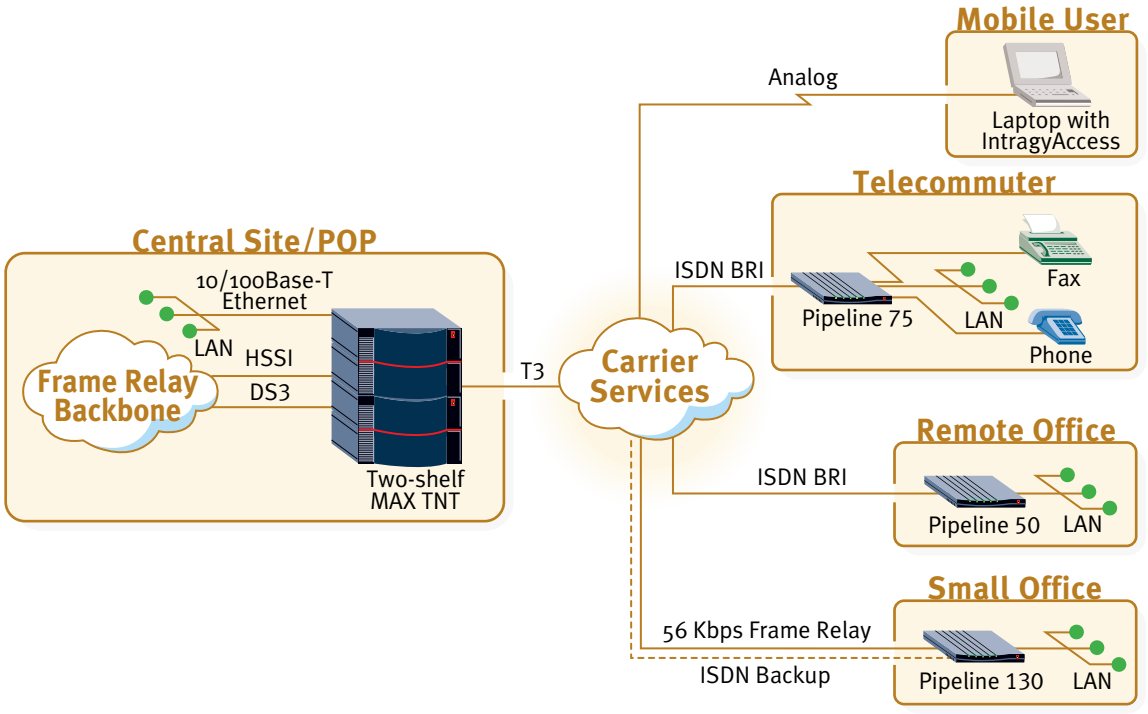
Accessing the central site/POP using Digital Modems and Hybrid Access

Most network service providers have networks that are a combination of analog and digital access applications. Their networks must support mobile users, telecommuters and remote users who dial in over a variety of line types to access the services and resources at a central site or POP.

To support these applications, the MAX TNT can be configured with a combination of the following: Hybrid Access module, Series56 Digital Modem module and one or more of the channelized WAN interfaces, and one or more of the backbone Interface modules.

As a multishelf system, the MAX TNT supports up to 720 concurrent sessions that can be all analog or all ISDN or a dynamic mix of both. Some networks require high-bandwidth applications that use Ethernet 10Base-T/100Base-T. Others use the unchannelized DS3 module, channelized DS3 module or a channelized E1 module. The MAX TNT supports a channelized DS3 or up to 28 channelized T1/E1/ISDN PRI lines.

Central Site/POP Access with Analog and Hybrid Access



The MAX TNT supports a channelized DS3 or 28 channelized T1/E1/ISDN PRI. This allows the MAX TNT to manage up to 720 Frame Relay, ISDN and modem users.

High-density POP application using FrameLine

The MAX TNT offers network service providers a single system solution for providing Frame Relay access to thousands of remote digital users. Through the FrameLine option, the MAX TNT can concurrently support up to 150 T1/E1 Frame Relay connections.

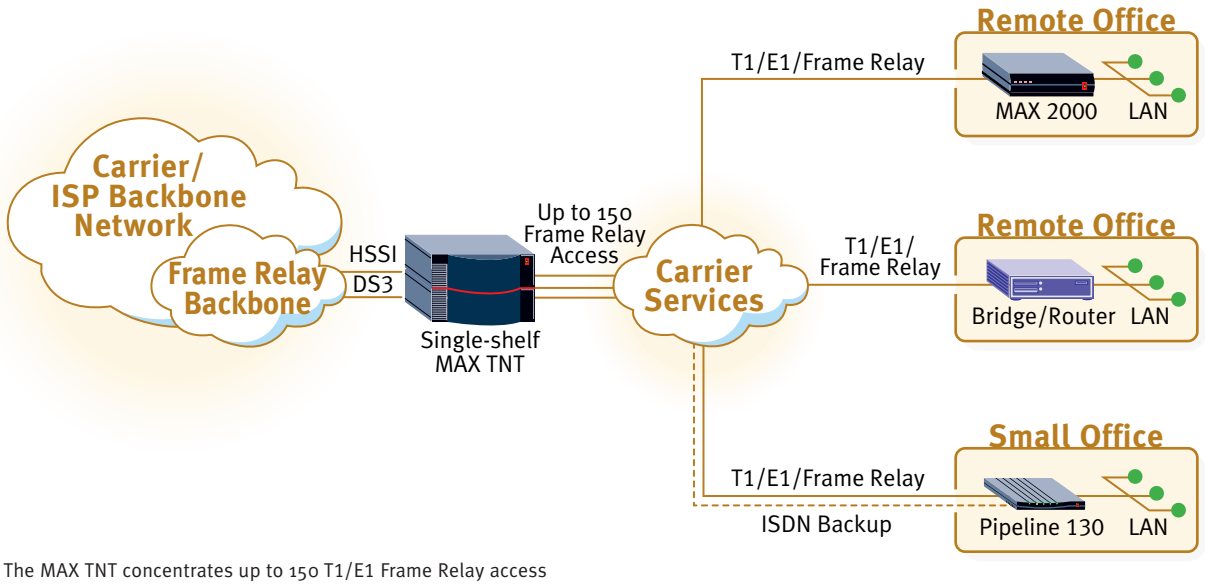
A single-shelf system supports up to 150 ports (1.536 Mbps) with 4094 PVCs per backbone port. The most common backbone network connection involves connecting either an 8 Mbps serial or a 52 Mbps HSSI interface to a Frame Relay switch, IP switch or a router.

Remote users can access the POP using Frame Relay Access Devices (FRADs), Frame Relay routers, the Pipeline 130 and all the MAX™ products.

By configuring the MAX TNT with FrameLine and connecting to a Frame Relay backbone, the MAX TNT eliminates the need for a separate Frame Relay switch in the ISP or carrier POP. The MAX TNT integrates Frame Relay switching and high-density WAN access switching into a single solution.

Digital Modem, Hybrid Access and FrameLine applications are supported by the following types of media: channelized T1 or ISDN PRI, channelized DS3, Ethernet 10Base-T/100Base-T, unchannelized DS3 and a channelized E1.

Backbone Frame Relay Network Access Using FrameLine/T1/E1 Technology



The MAX TNT concentrates up to 150 T1/E1 Frame Relay access lines into a high-speed DS3 network port on the ISP's Frame Relay backbone network. Up to 4094 PVCs per port can be supported.

MAX TNT Applications

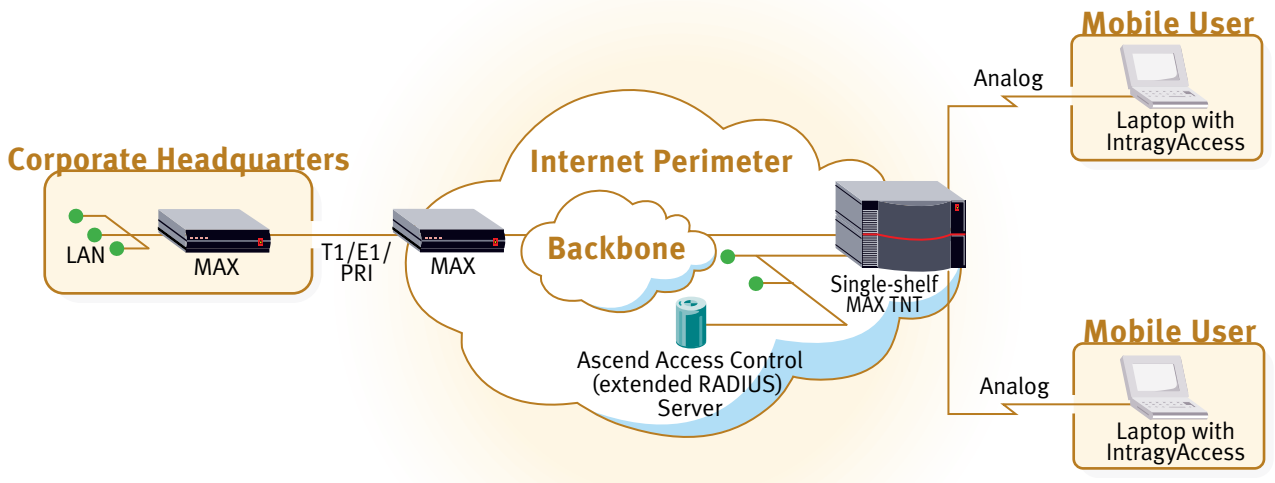
Virtual Private Networking

Companies use the Internet and carrier networks to extend their corporate network to mobile users and telecommuters. Concerns about data security over the public network and the management of these networks presents a major problem for corporations considering this type of environment. Virtual Private Networking (VPN) requires certain next-generation applications that corporations are expecting ISPs, carriers and network providers to support.

Traditionally, remote networks are formed out of many WAN technologies. These technologies vary from leased lines—X.25 and Frame Relay PVCs and X.25 Switched Virtual Circuits—to ISDN PRI and BRI networks. With this combination, a physical network is required for each technology—a setup that is expensive and difficult to manage.

The MAX TNT allows ISPs, carriers and network service providers to offer a secure and private environment over a shared IP network. VPN takes advantage of shared WAN media to deliver cost-effective remote networking, centralized network management and a simplified network design. Through support for Frame Relay Direct, IP Direct, Point to Point Tunneling Protocol (PPTP) and the Ascend Tunnel Management Protocol (ATMP), the MAX TNT can offer a complete VPN solution.

Connecting to a Corporate Backbone Using Virtual Private Networking



Mobile users create a VPN across the public backbone network to make secure connections to corporate resources.

Corporate telecommuting and remote access applications using Series56 Digital Modems and Hybrid Access

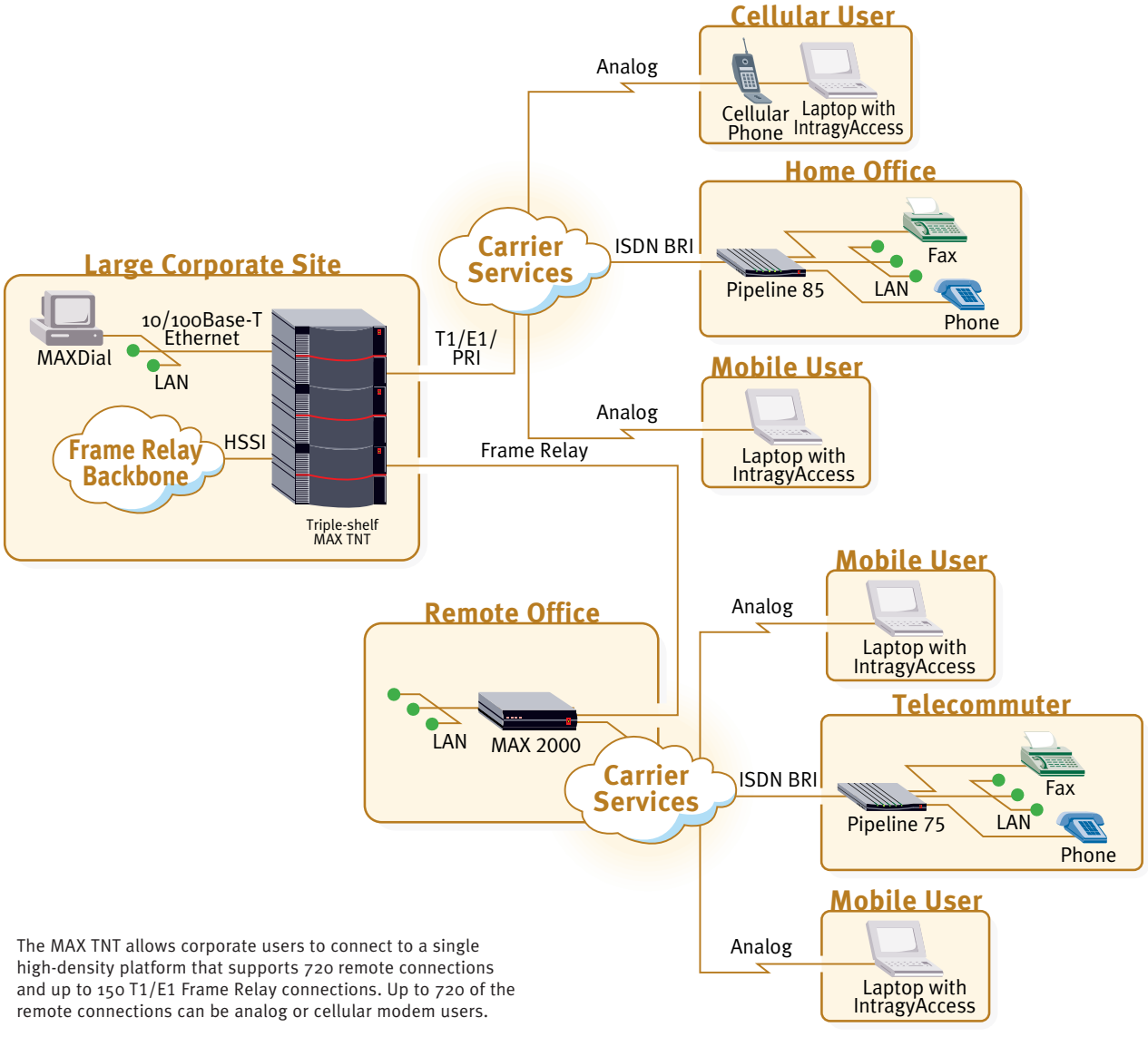
The MAX TNT lets corporations offer high-speed digital access to a central site. In this application, the MAX TNT terminates analog modem, cellular, ISDN and Frame Relay calls from telecommuters and remote offices over integrated E1, T1, PRI or DS3 lines. With the MAX TNT, users become nodes on the network with full access to all resources.

The MAX TNT supports ISDN PRI lines by adding the channelized T1/E1 module and the optional ISDN signaling software.

When configured as a single-shelf system, the MAX TNT supports 720 concurrent sessions with 288 of these sessions as analog modem calls. As the network grows, corporations can add up to three shelves. A three-shelf system manages up to 720 56/64 Kbps Frame Relay, ISDN and modem users. It supports 720 V.34 analog modems, and MNP10 EC and GSM cellular calls at access rates up to 56 Kbps.

For Ethernet environments, the MAX TNT can be configured with either a 10Base-T or 100Base-T Ethernet module.

Corporate Telecommuting and Remote Access with MAXLink and MAXDial



The MAX TNT allows corporate users to connect to a single high-density platform that supports 720 remote connections and up to 150 T1/E1 Frame Relay connections. Up to 720 of the remote connections can be analog or cellular modem users.

MAX TNT Applications

Protecting the Network with Ascend's Security Solution

The MAX TNT offers users an end-to-end security solution through support for industry-standard security features and SecureConnect™ Firewall. Ascend's robust security offering includes PAP, CHAP, MS-CHAP, token card security, Callback, Calling Line ID and more. When combined with SecureConnect Firewall, users have iron-clad security at a central site and at remote offices.

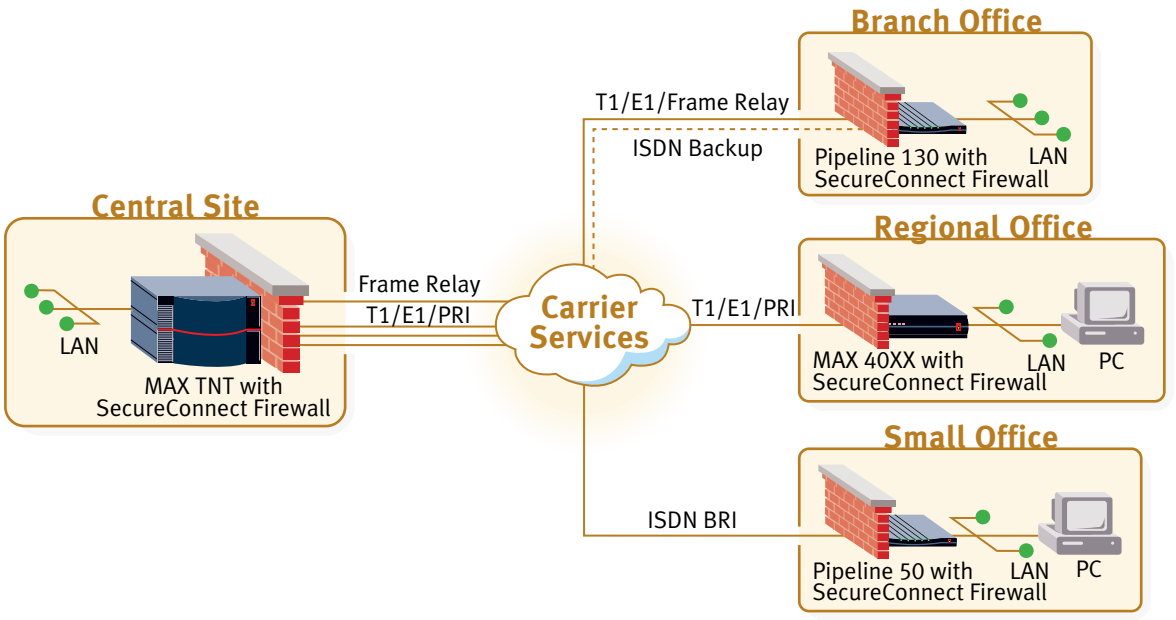
SecureConnect Firewall offers fully-integrated firewall security for remote networking. It uses state-of-the-art dynamic firewall technology to deliver a comprehensive, end-to-end security solution for a corporate LAN, remote office LAN and telecommuter's home office.

SecureConnect Firewall stops intruders at the edge of the network, preventing them from accessing sensitive corporate data. By securing the perimeter of the local network where it meets the Internet, companies can feel more comfortable establishing Intranet applications.

SecureConnect Firewall uses next generation dynamic firewall technology to overcome the limitations of traditional static packet filtering technology. The dynamic firewall opens specific ports for authorized users only when required and closes them at the end of the session. It also keeps all the unused ports closed, preventing hackers from entering the network. SecureConnect Firewall allows network managers to write dynamic rules on the fly and adapt them to changing network traffic conditions. They can modify these rules according to their specifications to accept or reject conditions.

Ascend's SecureConnect Firewall delivers bullet-proof security by restricting applications that are not explicitly permitted. It is the only solution that offers the benefit of integrated firewall and routing capabilities, reducing equipment costs and the cost of ownership.

Securing Remote Locations and the Central Site with Integrated SecureConnect Firewall



The MAX TNT, with integrated SecureConnect Firewall, delivers iron-clad security for connecting to a central site.

Networking Solutions for Network Service Providers and Corporations

Modular architecture ensures scalability and protects investment

Network service providers and carriers can add Digital Modem, Hybrid Access and FrameLine modules to support up to 720 concurrent connections to a central site, carrier or an Internet POP. Expansion modules along with enhanced software capabilities help users build high-density, multiservice network infrastructures as well as Virtual Private Networks (VPNs). By adding the appropriate modules, users can install the MAX TNT into an existing network environment, protecting their investment in hardware and software.

- Digital Modem modules support from 48 (single module) to 288 (single-shelf) concurrent analog sessions; multishelf systems support up to 720 sessions
- Hybrid Access modules can connect up to 720 ISDN or Frame Relay devices
- FrameLine modules terminate up to 150 T1/E1 or FT1 Frame Relay connections

High-speed digital modems enhance call performance and reduce operating costs

Integrated high-speed Series56 Digital Modems provide full access to analog callers that dial into the MAX TNT over digital access lines such as channelized T1/E1, channelized DS3 or PRI. The Series56 Digital Modem module ensures reliability and eliminates high operating costs that are present with analog modem technology. Local users with DeskDial™ software can use the DM48 to dial out and establish a modem connection.

- 48-port Rockwell Series56 (K56flex) Digital Modem module
- Up to 288 modems per shelf
- Up to 720 modems per three-shelf system
- Auto dial and auto answer
- Serial async data
- Tone dial
- Data modem throughput up to 115.2 Kbps
- K56flex, V.34, V.FC, V.32bis, V.32, V.22, V.22bis
- V.21, Bell 212A and Bell 103
- V.42bis data compression
- Fax modem send and receive rates up to 14.4 Kbps (Group 3) with DeskDial software
- V.17, V.29, V.27 ter, and V.21 channel 2
- Remote downloadable modem firmware
- MNP and MNP10-EC error correction for cellular connections

Seamlessly connects remote offices and dial-up users with backbone network services

The MAX TNT provides users with options for connecting into a local or remote backbone network. Users can connect to backbone switches or routers over any of the following transport options:

- Ethernet (AUI, 10Base-T, 100Base-T)
- Frame Relay over V.35 serial port (up to 8 Mbps/port)
- Frame Relay over a HSSI port (up to 52 Mbps/port)
- Unchannelized T1/E1 ports with integral CSU

Bandwidth on demand maximizes performance and decreases costs

Dial-up connections are automatically set up and torn down for transparent client-server computing across the WAN. Dynamic Bandwidth Allocation™ aggregates multiple calls for greater bandwidth and lower costs.

- Dial-on-demand bandwidth based on packet address
- Increase or decrease bandwidth during an active session
- 56 Kbps to 4 Mbps selectable bandwidth per call
- Bandwidth is controlled manually, automatically, or by time-of-day profile
- Supports Multilink PPP (MP), Multilink Protocol Plus™ (MP+)
- Industry-standard STAC hardware compression
- RFC 1144 TCP header compression

Consolidation drives down the cost of ownership

By eliminating the need for separate modem banks, terminal servers, routers and access lines, the MAX TNT saves network equipment and transmission costs. The MAX TNT consolidates a variety of access lines over high-speed digital trunks for up to 720 simultaneous dial-up connections.

- Channelized T1/E1
- Channelized DS3
- ISDN PRI
- Leased T1/E1 or Fractional T1/E1 Frame Relay
- Switched digital and Nx56/64K channelized T1/E1 Frame Relay

Iron-clad Security

Reliable hardware and software design assures system availability

Because downtime is not an option for your network, the MAX TNT is designed for continuous operation. The MAX TNT offers a full-range of management features that enable network managers to administer and maintain system performance without interrupting user operations.

- NEBS Level-3 compliant
- Redundant, hot-swappable, load-balancing power supplies on each shelf
- Hot-swappable modules with external indicator lamps for fault isolation
- Software upgrade via built-in flash RAM, remote downloadable

Multiprotocol routing and terminal server functions ensure network interoperability

The MAX TNT is designed specifically for switching WAN connections and supporting the most widely-used routing protocols for remote access. Robust support for standard protocols ensures efficient connectivity for remote users within corporate Intranets and accessing the Internet.

- RIP, RIP2, OSPF and BGP4 routing protocols
- AppleTalk, TCP/IP and IPX routing protocols
- PPP, SLIP and C-SLIP terminal service
- Telnet, ARA
- Dynamic IP address assignment
- V.120 asynchronous rate adaption
- X.3, X.28, X.29 PAD functionality

Integrated management features provide end-to-end network control

Manage all functions of the MAX TNT through your choice of interface, either locally or remotely, using graphical configuration software.

- SNMP MIBs
- NavisAccess™ network management software for extensive and complete control of all devices, components and services.
- Password protected Telnet remote management
- Local management via VT-100 terminal
- PPP Link Quality Monitoring (LQM)
- Annex D Frame Relay link monitoring
- FLASH memory for easy software download
- ISDN event log and Syslog support
- Command line interface

Comprehensive security for iron-clad remote networking

Support for standard user-authentication systems fits into your current network security architecture. Networked, server-based authentication makes it easy to manage large-scale remote access applications from a central site.

- PAP, CHAP and MS-CHAP
- Ascend Access Control (extended RADIUS), TACACS, TACACS+
- Encrypted token card security
- Callback (digital connections)
- Calling Line ID (CLID)
- Password protected terminal server access
- Transmit and receive packet filtering
- SecureConnect™ Firewall option

Protect corporate resources with Ascend's SecureConnect Firewall

Ascend's SecureConnect Firewall is a software option on the MAX TNT that uses state-of-the-art firewall technology and delivers a comprehensive, fully integrated security solution for corporate networks. SecureConnect Firewall allows carriers and ISPs to offer secure services to their customers. 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.

SecureConnect Firewall provides a cost-effective single vendor solution for securing your company's remote network against attacks on sensitive data. (See the SecureConnect Firewall datasheet or visit our web site for more information).

Enhanced Software Capabilities

The software for the MAX family allows corporations, carriers and service providers to use the scalable MAX architecture to optimize their networks. The MAX software enhances connectivity by providing a single solution for users with Hybrid Access, Frame Relay and ISDN.

Frame Relay software

Optional Frame Relay software integrates incoming Frame Relay traffic from Ascend's Pipeline and other Frame Relay access devices with analog and digital dial-in traffic. A high-speed synchronous V.35 port connects directly to a Frame Relay switch at 8 Mbps. An HSSI (EIA-612/EIA-613) port connects directly to a Frame Relay switch at rates up to 52 Mbps.

- Route to multiple Frame Relay PVCs over single or multiple interfaces
- Supports up to 4096 PVCs with RADIUS authentication software
- Dial-in PPP to Frame Relay gateway function with PVC selected on a per user basis
- RFC 1490 encapsulation
- ANSI Annex D and ITU Annex A management
- PVC switching
- Frame Relay forum UNI and NNI signaling

ISDN software

Optional ISDN signaling software supports incoming ISDN signaling from Ascend's Pipeline and MAX products as well as other ISDN access devices. The ISDN signaling supports ISDN connections for digital services dial-in traffic.

- PRI with integrated CSU (T1/E1)
- PRI to T1 signaling conversion
- D4 to ESF conversion
- D-channel multiplexing
- Frame Relay over ISDN B-channels
- X.25 over ISDN B-channels
- Calling Line Identification (CLID)
- Signaling homologation in over 30 countries worldwide

Virtual Private Networking

The Virtual Private Network (VPN) software option lets users create a logical or virtual network over a single physical network.

VPN is used by ISPs, carriers and large corporations to ensure secure and private networks over a shared IP network. VPN takes advantage of the shared media to deliver lower cost remote networking, single network management and network simplicity.

Users can implement VPNs using one of the four following technologies:

- Frame Relay Direct
- IP Direct
- Ascend Tunnel Management Protocol (ATMP)
- Point to Point Tunneling Protocol (PPTP)

Enterprise Functionality

For multiprotocol environments, Ascend provides users, telecommuters, mobile users and LAN users all of the capabilities needed to make secure connections to and from the network at corporate headquarters.

Network Access with Intragy

IntragyCentral™ provides the MAX TNT users with IPX and AppleTalk protocol support as well as bridging. Multiprotocol call routing lets network administrators extend their network to offer a broad range of applications to their users and leverage existing non-IP network infrastructure. This optimized solution links network users in remote or branch offices to corporate backbones for server access. Users can send e-mail, share data between servers and access remote databases. It also supports IPX spoofing and ARA.

IntragyAccess

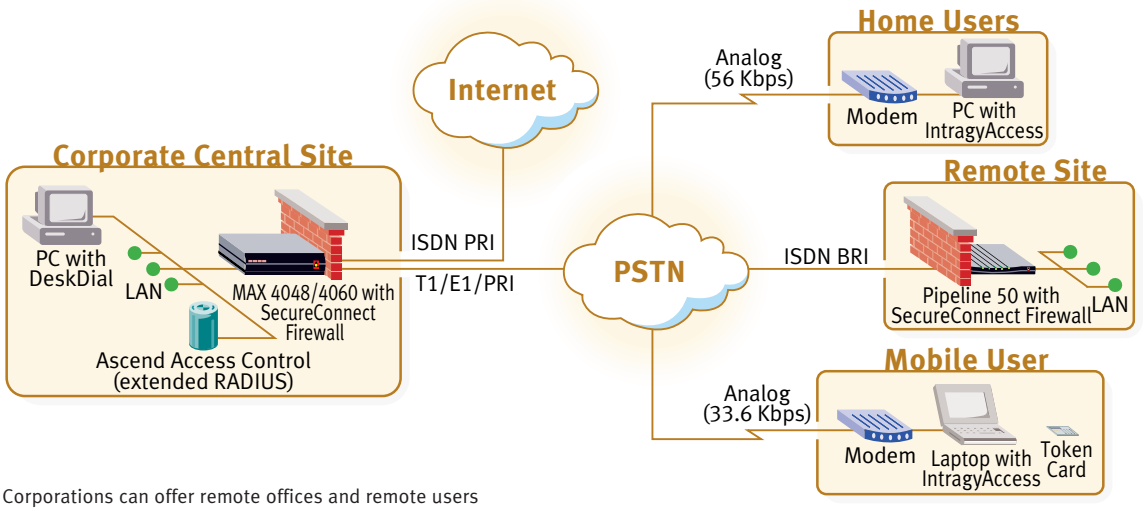
LAN-based users access resources at a central site or the Internet through a MAX WAN access switch. IntragyAccess™ provides a suite of network access tools to give end-users complete network access from all major connection scenarios and for all major enterprise desktop platforms.

The point-and-click operation makes it easy to configure, setup and customize applications according to specific networking requirements. Once connected, remote users become full-fledged nodes on the LAN with access to terminal-based hosts, file servers, printers, the Internet and electronic mail. IntragyAccess provides Windows and Macintosh users with flexible network access from anywhere on the LAN or when they are traveling, telecommuting, or working at a remote site.

DeskDial

Users on the corporate LAN can access the outside world using DeskDial software and the MAX TNT. DeskDial eliminates the need to install a direct line and a desktop modem in every office by providing the same functionality, without the added expense. It lets users dial out or send out faxes via the modem cards in the MAX TNT. DeskDial supports Windows 3.1, Windows 95, NT 4.0 and MAC OS for IP environments and Windows 3.1 and DOS for IPX.

Corporate Remote Access



Corporations can offer remote offices and remote users SecureConnect to the corporate headquarters using the MAX 4048 and 4060 with SecureConnect Firewall.

Modular System Enhancements

The MAX TNT system hardware consists of a single shelf or multiple shelves, a shelf controller and redundant, load-balancing power supplies. This base system is enhanced by adding modules and software options. You can increase system capacity with the following modules:

- Analog Modem module
- Digital Modem module
- Hybrid Access module
- FrameLine module
- WAN Interface modules
- Backbone Interface modules

Analog Modem module

Network service providers and carriers can use Analog Modem modules to support users in areas where digital services are not available. Each 36-port Analog Modem module occupies two expansion slots on the MAX TNT and supports analog connections at speeds up to 33.6 Kbps. A single-shelf MAX TNT can include up to seven modules for 252 remote analog connections.

- 36-port V.34 (33.6 Kbps) Analog Modem expansion module
- Single-shelf system supports up to 252 remote analog connections
- Each module occupies two expansion slots

Digital Modem module

Each Series56 Digital Modem module supports both analog and cellular connections at speeds up to 56 Kbps. It has 48-port Digital Modems (DM48) and occupies two expansion slots on the MAX TNT. Remote users with a modem and an analog or cellular line can dial into the MAX TNT over T1, DS3 or T1/E1/PRI lines.

- 48-port V.34 and K56flex compatible Digital Modem module
- Support for a dynamic mix of access lines (T1/E1, DS3 or PRI)

Hybrid Access module

Users can upgrade to the next-generation digital technologies such as ISDN and Frame Relay using Hybrid Access. It gives users integrated remote networking support for digital sessions via ISDN and Frame Relay. Each module connects up to 192 remote 56/64K Frame Relay or ISDN devices such as Terminal Adapters (TAs) and Frame Relay Access Devices (FRADs). An entire system can connect up to 720 devices.

- Support for ISDN, switched digital and NX56/64K channelized Frame Relay
- Each module connects up to 192 56/64K Frame Relay or ISDN devices
- Support for up to 720 concurrent devices

FrameLine module

The FrameLine module adds a powerful capability to the MAX TNT. It allows the MAX TNT to terminate up to 10 T1/E1 Frame Relay user ports and switch them into a Frame Relay backbone network.

- Supports up to 150 T1/E1 user ports
- Provides up to 4094 Frame Relay PVCs per network port
- Supports both UNI and NNI signaling

WAN Interface modules

WAN Interface modules connect remote access lines from the public network into the MAX TNT. A dynamic mix of interfaces are supported to optimize design for each service and tariff environment. Channelized interfaces allow high-speed multiplexed circuits to deliver many connections over a single interface while unchannelized interfaces are used for full-rate leased line connections. The WAN Interface modules include:

- Eight channelized T1/PRI ports with integrated CSUs
- Eight channelized E1/PRI ports
- One channelized DS3
- Ten unchannelized T1/E1 ports
- One unchannelized DS3

Backbone Interface modules

Other Interface modules deliver high-speed remote connections into switched or routed backbone networks. These modules permit diverse routing, load balancing and redundancy.

LAN interface modules include support for the following:

- Four-port Ethernet 10Base-T module
- Four-port Ethernet 10Base-T and one 100Base-T module

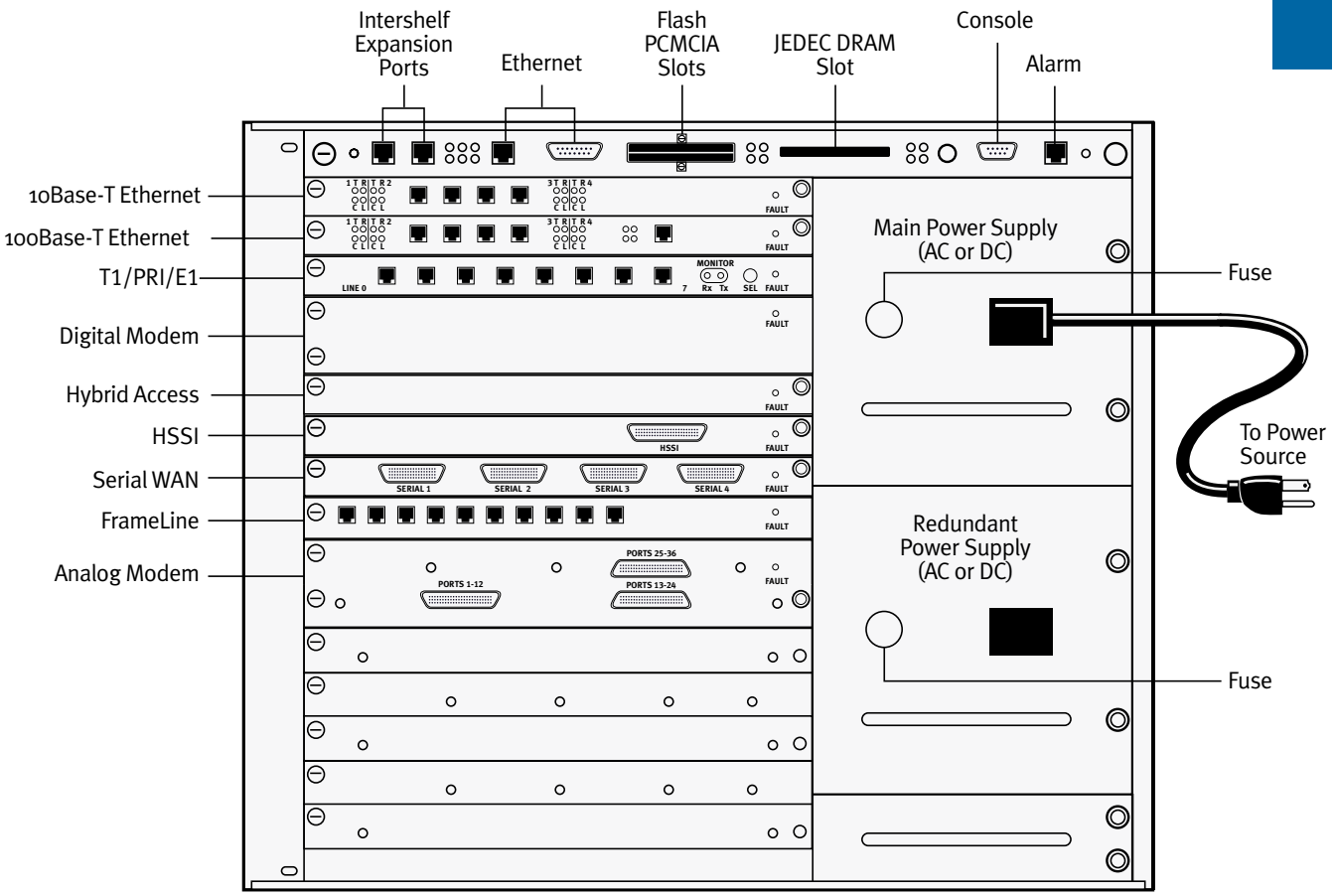
Other interfaces include support for the following:

- Four-port 8 Mbps serial V.35/RS449/X.21 module
- One-port 52 Mbps HSSI module
- One-port unchannelized DS3
- 10-port unchannelized T1/E1
- 36-port V.34 Analog Modem module

System Components

Item	Port Density
Single-shelf system	—
Three-shelf system	—
Redundant power supply	—
Channelized T1 module	8 ports
Unchannelized T1/E1 module	10 ports
DS3 channelized module	1 port
DS3 unchannelized module	1 port
Channelized E1 module	8 ports
Digital Modem module	48 ports
Hybrid Access module	192 channels
10 Mbps Ethernet module	4 ports
100 Mbps Ethernet module with 10 Mbps Ethernet module	1 port plus 4 ports
Serial WAN module	4 ports
HSSI WAN module	1 port
FrameLine module	10 ports
Frame Relay Starter Bundle	10 ports and Frame Relay software option
Analog Modem module	36 ports

MAX TNT Back Panel Options



MAX TNT

Hardware Specifications

Height	14 in x 17.4 in x 11.5 in [35.6 cm x 44.2 cm x 29.2 cm]
Weight	130 lbs, with 720 modems (single power supply) 27.2 lbs empty (no power supplies)
LAN Interface	Ethernet 10Base-T, 100Base-T
WAN Interfaces	DS3, T1/E1, Serial (V.35, RS449, X.21), HSSI, (EIA-612, EIA-613)
Software Upgrade	Via built-in flash RAM, remote downloadable
Power Requirements	800 watts, 47-63 Hz, 90-240 VAC, -40 to -60 VDC
Operating Requirements	Temperature: 32-104°F [0-40°C] Altitude: 0-14,800 feet [0-4500 meters] Relative Humidity: 0-90% (non-condensing)
Safety Certifications	CSA 950, NTRL/UL 1950, TUV EN 60 950
EMI/RF	FCC Part 68, FCC Part 15, E55081-1, EN50082-1, EN55022B

Software Specifications

LAN Protocols Supported	TCP/IP, IPX
Routing Protocols Supported	AppleTalk, RIP, RIP2, OSPF, IGMP multicast forwarding
WAN Protocols Supported	PPP, ARAP, SLIP, C-SLIP, Async PPP, Sync PPP, HDLC, ARA, Async IPX, X.25 PAD, X.25 over B-channel, V.120, D4 framing (T1/E1), G703/732 framing (R1), Frame Relay PVC, Hybrid Access, PPP-FR gateway, FR NNI
Modem	K56flex, V.34, MNP 10-EC, MNP, V.42bis, fax modem send up to 14.4 Kbps
Bandwidth Management	Multilink PPP, Multilink Protocol Plus, TCP header compression, data compression (Ascend/Microsoft/STAC V9), AppleTalk Remote Access, compatible with ARA 1.0, 2.0 and 3.0
Security	SecureConnect Firewall, Ascend Access Control (extended RADIUS), TACACS, TACACS+, Password Authentication Protocol (PAP), Challenge Authentication Protocol (CHAP), token card, Calling Line ID (CLID), packet filtering, SNMP, console management (VT-100), PPP callback, user authentication
Management	NavisAccess network management, console management software (runs on Windows 95 and Windows 3.x) Telnet, NASI, SNMP II, PPP LQM, Frame Relay ITU Annex A, Frame Relay ANSI Annex D
Client Software	IntragyAccess software DeskDial client software

Ascend's MAX TNT is NEBS-certified

Ascend's Series56 Digital Modems are based on K56flex technology.

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Ascend Communications, Inc. develops, manufactures and sells wide area networking solutions for telecommunications carriers, Internet service providers, and corporate customers worldwide. For more information about Ascend and its products, please visit the Ascend Web site at http://www.ascend.com, or e-mail info@ascend.com.

Ascend markets the B-STDX, CBX, GRF, GX, IP, MAX, Multiband, MultiDSL, Navis, Pipeline, SA, SecureConnect and STDX families of products. Ascend products are available in more than 40 countries worldwide.

Specifications are subject to change without notice.

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