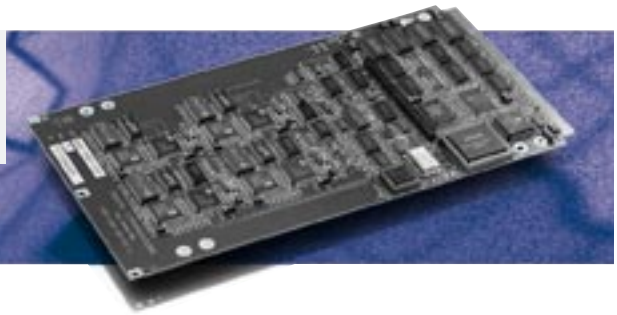
PRODUCT INFORMATION

Ascend

# Series56 Digital Modem Module



The Ascend Series56™ Digital Modem module offers corporations, ISPs and network service providers industry-leading access performance and increased flexibility and extensibility. By incorporating the ITU-T V.90 specification, these modules let subscribers use either V.90- or V.34-compatible modems to download data from a corporate office or the Internet at speeds up to 56 Kbps.

These modules can be integrated into central site MAX™ and MAX TNT™ WAN access switches and are available in 8-, 12- and 16-port modules for the MAX and 48-port modules for the MAX TNT. By installing these V.90- and V.34-compatible Digital Modem modules, service providers can be assured that downstream calls travel to the local loop in pure digital format over an ISDN PRI or trunk-side T1/E1 line.

## Support for wide range of modem modes ensures connectivity

The Series56 Digital Modems offer users dialing in on both analog and cellular lines support for all of the standard modem modes. With this technology, users can achieve a maximum of 56 Kbps on the downstream portion of a call and 31.2 Kbps on the upstream portion. Support for error correction and data compression maximizes data transfer integrity and boosts data throughput.

- Support for data modem modes: V.90, K56flex, V.34bis, V.34, V.FC, V.32bis, V.22bis, V.22 and below
- Support for error correction and data compression: V.42 LAPM and MNP2-4 error correction; V.42bis and MNP 5 data compression
- MNP 10EC for enhanced cellular performance

## Software-upgradable technology protects investment and offers long-term hardware viability

The Series56 modems take advantage of the V.90 high-speed 56 Kbps modem standard and build on the industry-leading MAX and MAX TNT product lines. These V.90- and V.34-compatible modems are fully software upgradable, providing customers with increased modem and network performance as well as on-going compatibility with modem standards.

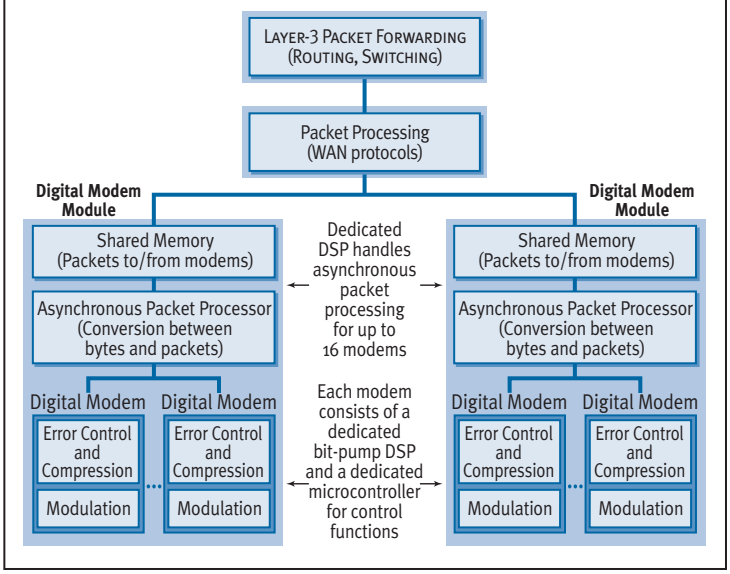
- Modems can be upgraded either locally or remotely using integrated management features
- In-service upgrades can be made without interrupting user operations

## Hierarchical DSP-based architecture delivers high-speed digital connections

Each Series56 Digital Modem module features an enhanced architecture that dedicates a Digital Signal Processor (DSP) to efficiently handle the task of packetizing and aggregating incoming byte streams as well as converting packets to bytes for outgoing traffic. This significantly offloads the central processor of the MAX, allowing it to focus on other tasks like packet forwarding and routing.

- Dedicated DSP for each module for asynchronous packet processing
- Each modem has a dedicated DSP for bit handling and a microcontroller for control functions
- Series56 Digital Modems process the call as purely digital through the carrier's central office

## Series56 Digital Modem Architecture



## Features

| | |
|---|---|
| Data Modem Modes | V.90, K56flex, V.34bis, V.34, V.FC, V.32bis, V.32, V.22bis, V.22A/B, V.23, and V.21; Bell 212A and 103 |
| Internal Error Correction/ Data Compression | V.42 LAPM and MNP 2-4 error correction<br>V.42bis and MNP 5 data compression |
| Cellular | MNP10EC enhanced cellular performance |
| Fax Modem | 14.4 Kbps transfer rate<br>V.33, V.17, V.29, V.27ter and V.21, channel 2<br>Group 3, T.30 protocol and Class 1 and 2 |
| Line Speeds | Up to 56 Kbps |
| Software Upgrade | Via uploadable modem code |
| Multiprotocol Functionality | IP/IPX, PPP, MP, Multilink Protocol Plus (MP+), AppleTalk, BACP |
| Authentication | Ascend Access Control (RADIUS), TACACS, TACACS+ |
| Security | SecureConnect Firewall (for MAX), PAP, CHAP, Callback, CLID, token card |

## Specifications

| | |
|---|---|
| Transfer Rate | 56 Kbps downstream/31.2 Kbps upstream |
| Interfaces Per Card | 8, 12, 16 and 48 |
| Card Dimensions | 5.6 in x 0.8 in x 10.7 in [14.2 cm x 2.3 cm x 27 cm] for MAX 1800, 20xx, 40xx, 6000<br>11 in x 1.6 x 8.75 in long [27.9 cm x 4.1 cm x 22 cm] for MAX TNT |
| Interfaces Per Card | MAX 1800: 8-, 12- or 16-port modules<br>MAX 20xx and 40xx: 12- or 16-port modules<br>MAX 6000: 12- or 16-port modules<br>MAX TNT: 48-port modules |
| Card Weight | ~ 2 lbs [0.9 kg] for MAX 1800, 20xx, 40xx, 6000<br>~ 3 lbs [1.37 kg] for MAX TNT |
| Hot-Swap Capability | Available on MAX TNT |
| Operating Requirements | Temperature: 32 – 104˚F [0 – 40˚C]<br>Relative Humidity: 10 – 90% (non-condensing) |




Ascend's Series56
Digital Modems are
based on V.90 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.

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