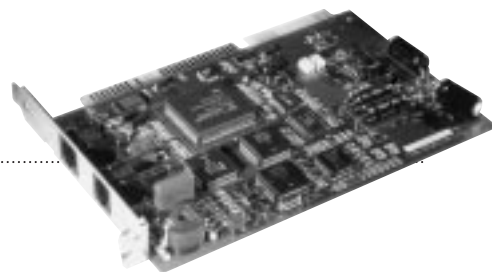


Ascend

NetWarp™ Terminal Adapter Family

ISDN Internet and Telecommuter Access Solutions for
PC users and NT Servers



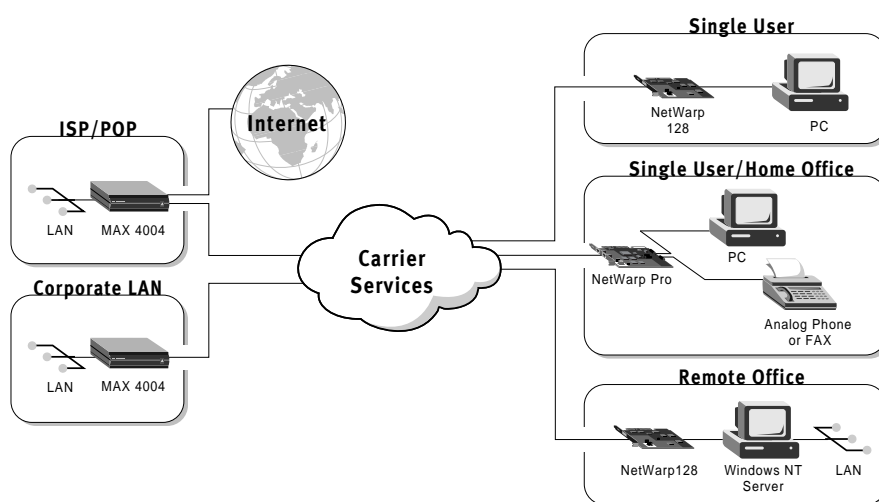
Entry-Level ISDN Remote Access Solutions

- | | |
|------------------------------------|--|
| NetWarp 128
Data Only | High-performance, Plug-and-Play, internal PC ISA terminal adapter for single-user ISDN access. ISDN diagnostics and Microsoft Internet Explorer included. |
| NetWarp Pro
1 Phone Port | High-performance, Plug-and-Play, internal PC ISA terminal adapter for PC ISDN access with a single analog port for a phone, fax or modem. ISDN diagnostics and Microsoft Internet Explorer included. |

An S/T version is also available with the same functionality as the NetWarp 128. However, in North America you will specify the NetWarp 128 and NetWarp Pro 95% of the time.

Applications

- Small Office/Home Office (SOHO) Internet access
- Telecommuter to Corporate LAN Access
- Use NT Server's IP Routing Capability for Remote Network Access



Selling Points

- **Easy to install**—Be up and running in minutes with ISDN auto-switch and line speed; Windows 95 Plug-and-Play compatibility.
- **Most complete solution**—Integrated NT1, bundled Internet access software (supporting Windows 3.1x, 95 and NT) and ISDN cable included.
- **Highest performance**—Industry-leading throughput via Ascend's internal ISA bus/network interface design eliminates traditional serial port bottlenecks. Microsoft/Stac 4:1 data compression boosts performance up to 512 Kbps.
- **Easy to upgrade**—Downloadable software upgrades directly to the PC for simple and quick feature enhancements.
- **Analog phone/fax/modem support**—Maximizes utilization of a single ISDN line; one optional phone port rings up to three devices for home office needs.



NetWarp Key Features

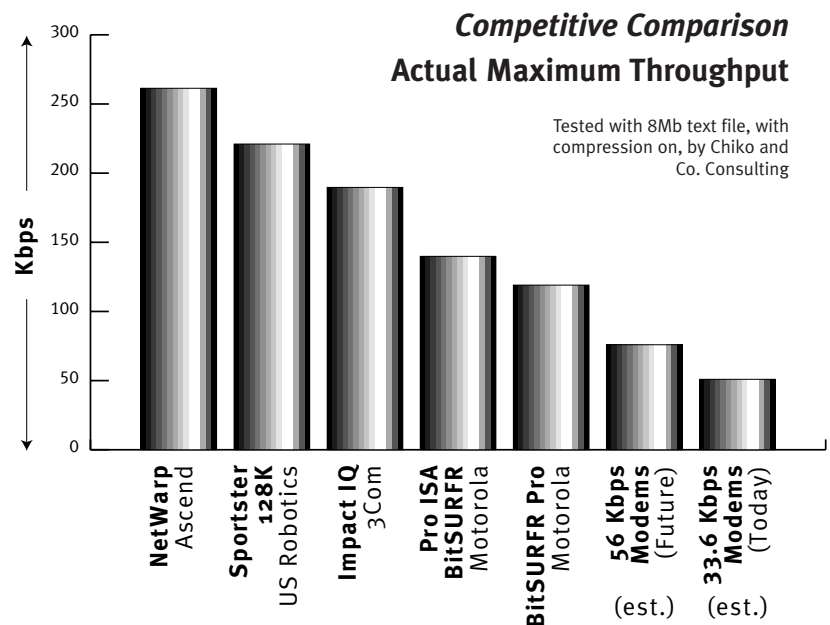
- Standard U interface with built-in NT-1 (S/T model available)
- Auto-detection of SPID, switch protocol and circuit speed
- Synchronous PPP and Multilink PPP (MP) for maximum throughput
- Industry Standard Microsoft/Stac data compression boosts throughput up to 512 Kbps
- Single analog port with full ring generation for a phone, fax machine or modem (NetWarp Pro)

NetWarp Bundled Software

- Microsoft Internet Explorer for Windows 95, 3.1x, and NT 3.51 and 4.0
- NetManage Web Kit Version 4.6 includes browser and TCP/IP stack for Windows 3.1x
- Bundled NDIS WAN Miniport Driver for Windows 95 and NT for support of Microsoft Dial-up Networking and RAS
- ISDN Diagnostics program to quickly identify ISDN line problems when they occur
- Windows-based configurator allows quick and easy configuration by novice users

Meeting the Need for Speed: Network Interface Card vs. COM Port Design

The NetWarp card uses a Network Interface design, processing data directly to the ISA bus, not using a serial port interface like many terminal adapters. ISDN modems that interface to the computer using a serial (COM) port experience two significant limitations. First, external modems connecting to serial ports usually pass through 16550 UART chips, which are limited to 115 Kbps. Second, a "COM Port" ISDN modem must perform a protocol conversion from a synchronous to an asynchronous ISDN interface. These two obstacles limit the data transfer rate of external COM Port ISDN modems to approximately 80 Kbps. Given a clear channel, NetWarp delivers in excess of 122 Kbps of actual throughput.



Competition: External Terminal Adapters

	Ascend NetWarp 128	Ascend NetWarp Pro	Motorola BitSURFR Pro	3Com Impact IQ
Price (MSRP)	\$229	\$349	\$495	\$499
Key Features				
Throughput (Kbps)*	261.36	261.36	119.04	189.68
# Analog Ports	None	1	2	1
Auto Circuit Speed Detection	Yes	Yes	No	No
Auto Switch Detection	Yes	Yes	No	Yes
Full Ring Capability for Phone/Fax	N/A	Yes	Yes	Yes
Win 95 Plug-and-Play Support	Yes	Yes	No	Yes
Windows 3.1x Support	Yes	Yes	Yes	Yes
Windows NT 3.51/4.0 Support	Yes	Yes	No	Yes
Free Diagnostic Software	Yes	Yes	Yes	Yes

Competition: Internal Terminal Adapters

	Ascend NetWarp 128	Ascend NetWarp Pro	Motorola BitSURFR Pro ISA	Cardinal IDC100i	Diamond/Supra NetCommander	US Robotics Sportster 128K
Price (MSRP)	\$229	\$349	\$495	\$199	\$249	\$299
Key Features						
Throughput (Kbps)*	261.36	261.36	139.84	NA	261.04	221.04
# Analog Ports	None	1	2	None	1	1
Auto Circuit Speed Detection	Yes	Yes	No	No	No	No
Auto Switch Detection	Yes	Yes	No	No	No	No
Auto SPID	Yes	Yes	No	No	No	No
Full Ring Capability for Phone/Fax	N/A	Yes	Yes	N/A	Yes	extra \$95
Win 95 Plug-and-Play Support	Yes	Yes	No	Yes	Yes	Yes
Windows 3.1x Support	Yes	Yes	Yes	Yes	No	Yes
Windows NT 3.51/4.0 Support	Yes	Yes	No	No	NT 4.0 only	Yes
Free Diagnostic Software	Yes	Yes	Yes	Limited	No	Yes

*Throughput with Microsoft compression turned on in Dial-up networking and a sample 8Mb file transfer done with Microsoft's built-in FTP application. Cardinal does not support Microsoft dial-up networking and is incompatible with Microsoft's Windows 95 built-in FTP application.

Selling Against the Competition

Motorola BitSURFR

- **Approximately 50% lower throughput than NetWarp** due to the serial port interface. NetWarp uses a direct connect network interface design which saves users valuable connect time.
- **BitSURFR Pro has a 42% higher list price** than NetWarp Pro.
- **No automatic SPID, circuit speed or switch type detection.** NetWarp's automatic SPID/switch/circuit speed detection simplifies installation and configuration.
- **No data only version** for applications that do not require analog phone ports (IDSL, NT server, videoconferencing). Ascend provides a choice of NetWarp 128 or NetWarp Pro with an analog port.

Motorola BitSURFR Pro ISA

- **Approximately 50% lower throughput than NetWarp** due to serial port interface. NetWarp's direct connect network interface design saves users valuable connect time.
- **BitSURFR Pro ISA has a 42% higher list price** than NetWarp Pro.
- **No automatic SPID, circuit speed or switch type detection.** NetWarp's automatic SPID/switch/circuit speed detection simplifies installation and configuration.
- **Doesn't support Windows NT configurations.** NetWarp supports Windows 3.1x, 95 and NT.
- **No data only version** for applications that do not require analog phone ports (IDSL, NT server, videoconferencing). Ascend provides a choice of NetWarp 128 or NetWarp Pro with an analog port.

3Com Impact IQ

- **Approximately 50% lower throughput** with compression turned off than NetWarp due to serial port interface limitations. NetWarp's network interface design saves users valuable connect time.
- **118% higher price than NetWarp 128**, 43% higher than NetWarp Pro.
- **3Com requires a high-speed serial port card to get the advertised 230 Kbps throughput.** NetWarp provides up to 512 Kbps throughput without additional costs or equipment.
- **Impact IQ can only perform CHAP authentication on a single B-channel**, thereby limiting CHAP calls to a single B-channel. NetWarp Pro supports CHAP on two B-channels, allowing full 128 Kbps CHAP authenticated calls for maximum security and throughput.
- **No data only version** for applications that do not require analog phone ports (IDSL, NT server, videoconferencing). Ascend provides a choice of NetWarp 128 or NetWarp Pro with an analog port.

Diamond Supra NetCommander ISDN

- **Doesn't support Windows 3.1x configurations.** NetWarp supports Windows 3.1x, 95 and NT.
- **No automatic SPID, circuit speed or switch type detection.** NetWarp's automatic SPID/switch/circuit speed detection simplifies installation and configuration.
- **No S interface.** NetWarp has S/T option.
- **No data only version** for applications that do not require analog phone ports (IDSL, NT server, videoconferencing). Ascend provides a choice of NetWarp 128 or NetWarp Pro with an analog port.

Selling Against the Competition *(continued)*

US Robotics Sportster ISDN 128K

- **Lacks integrated phone ring generator.** An external ring generator costs \$95. NetWarp Pro supports an integrated ring generator for up to three phones.
- **No automatic SPID, circuit speed or switch type detection.** NetWarp's automatic SPID/switch/circuit speed detection simplifies installation and configuration.
- **Must check configuration jumpers on board for proper functionality.** NetWarp's jumperless design minimizes user configuration time requirements and hassles.
- **No data only version** for applications that do not require analog phone ports (ISDL, NT server, video-conferencing). Ascend provides a choice of NetWarp 128 or NetWarp Pro with an analog port.
- **Version 5.1 driver takes 30 seconds to make connection.** NetWarp requires only 5 seconds.
- **Version 5.1 driver does not pre-empt incoming call to drop second B channel.** NetWarp does.
- **Version 5.1 driver will not allow incoming data calls.** NetWarp does.

Entry and Mid-Range Remote Networking Solutions

List Price	NetWarp 128	NetWarp Pro	Pipeline 25-Px	Pipeline 25-Fx	Pipeline 50	Pipeline 75
Functionality						
Bridging	Yes, w/Windows NT	Yes, w/Windows NT	No	Yes	Yes	Yes
IP Routing	Yes, w/Windows NT	Yes, w/Windows NT	Yes	No	Yes	Yes
IPX Routing	Yes, w/Windows NT	Yes, w/Windows NT	No	No	Yes	Yes
POTS	No	1 RJ-11	2 RJ-11	2 RJ-11	No	2 RJ-11
Number of users	1	1	1	up to 4	Unlimited	Unlimited
SNMP	Yes, w/Windows NT	Yes, w/Windows NT	No	No	Yes	Yes
Data Compression	Microsoft/Stac	Microsoft/Stac	No	No	Yes	Yes
Secure Access Firewall	No	No	No	No	Optional \$500	Optional \$500
Market Position	Low-Cost High-Performance Terminal Adapter	Low-Cost High-Performance Terminal Adapter	Low-Cost Personal Dynamic IP Router	Low-Cost Multiprotocol Bridge	Best-Selling ISDN Router Worldwide	Best Corporate Telecommuter Bridge/Router

Part Numbers

			MSRP
N128-UI	NetWarp 128	NetWarp 128 ISDN internal PC ISA Terminal Adapter with U interface, NT1 included.	\$229
N128-UP-ISA	NetWarp Pro	NetWarp 128 ISDN internal PC ISA Terminal Adapter with U interface, NT1 and single analog phone jack.	\$349
N128-SI	NetWarp 128	NetWarp 128 ISDN internal PC ISA Terminal Adapter with S/T interface.	\$169

For pricing, availability and information on Ascend's demo program, please call your distribution partner.



Remote Networking
Solutions That Work.™

Ascend Communications, Inc.
One Ascend Plaza
1701 Harbor Bay Parkway
Alameda, CA 94502, USA
TEL: 510.769.6001

FAX: 510.747.2300
E-mail: info@ascend.com
Toll Free: 800.621.9578
FAX Server: 415.688.4343
Web Page: http://www.ascend.com

© 1997 Ascend Communications, Inc. 07-33
All brands and products are trademarks
of their respective holders. All rights reserved.