

PA PATTON **Electronics Co.**

Network Access and Connectivity Since 1984

Catalog #19
DATACOMDIRECT

Phone: 301-975-1000

Fax: 301-869-9293

DATACOM *Direct* Catalog

Email: sales@patton.com

Web: <http://www.patton.com>



Networking and Access Solutions

Hot New

New RAS Products Quad-T1/E1 RAS—up to 120 V.90 Ports

DSPs support up to 120 simultaneous analog modem or digital ISDN calls

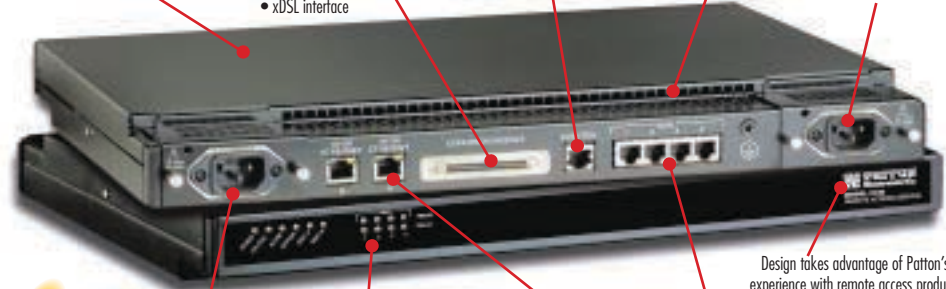
Optional expansion port supports:

- 10/100-Mbps or Gigabit Ethernet
- 8/16 serial ports
- T3/DS3 interface
- xDSL interface

Control port for configuring and monitoring

Convection cooled
NO FANS NEEDED

Redundant 90 to 260 VAC or 48 VDC power supply options



SEE PAGE
N2

Redundant load-sharing power supply

Front-panel indicators show system status at a glance—**STANDARD**

Full-duplex 10/100-Mbps Ethernet

Four T1/E1/PRI access ports answer up to 120 V.90 or ISDN calls; also supports FR/PPP/HDLC network uplink

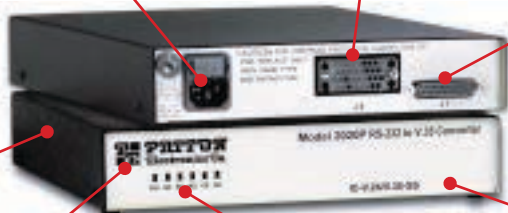
New Converters Powered RS-232 to V.35 Converter

Switchable 120/230-VAC internal power supply

V.35 interface can be configured for DCE or DTE operation

RS-232/V.24 interface can be configured for DCE or DTE operation

SEE PAGE
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Sturdy metal enclosure

Manufactured in the USA by Patton Electronics

LED indicators display power, data, and flow control status

Formerly Clear To Send Electronics' Model ICV.24/V.35-SS

New Multiplexers 64-Kbps TDM and Statistical Multiplexers

Composite RS-232 interface supports speeds up to 64 Kbps

Sturdy metal enclosure can be placed on a desktop or mounted in a rack

Supports 8-channels of either async. or sync. data at speeds up to 19.2 Kbps

Switchable 115/230 VAC power input

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RS-232 port provides remote supervisory capability

LED indicators for link, data, and flow control status

Formerly Clear To Send Electronics' Model 2031 Turbo

Monitor, configure, and control the multiplexer via the LCD and push-buttons or RS-232 supervisory port

PATTON ELECTRONICS COMPANY

Sales: (301) 975-1000

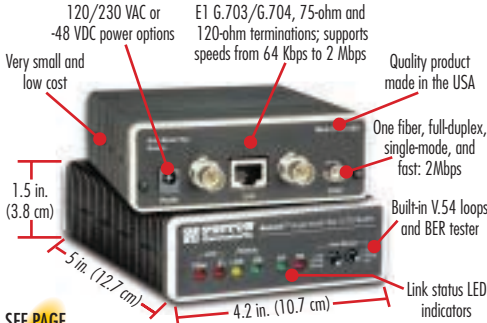
Fax: (301) 869-9293

E-Mail: sales@patton.com

Products

New Network Access

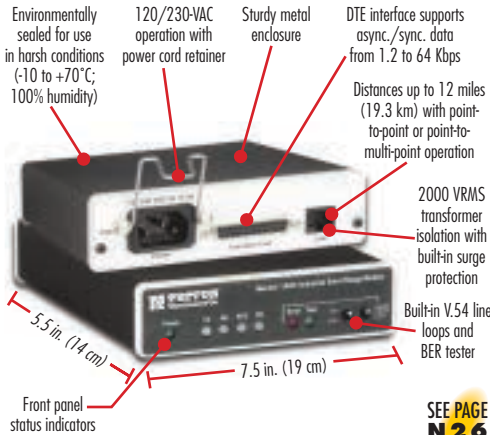
2-Mbps Single-Mode Fiber Modem



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New Line Drivers

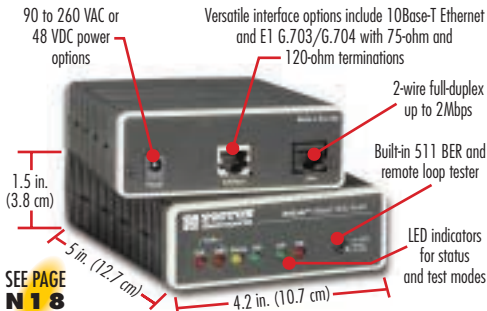
Industrial-Grade Short-Range Modem



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New DSL Modems

HDSL Modem



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Check out www.patton.com

Features **N48**

Specifications are subject to change without notice. Some new products may not be available when this catalog is published, so please call for availability.

FEATURES & BENEFITS

- ✓ Quad T1/E1/PRI WAN ports
- ✓ Up to 120 simultaneous V.90 or ISDN SyncPPP connections
- ✓ Dual 10/100 Ethernet ports
- ✓ Integrated IP Router
- ✓ SNMP/HTTP management
- ✓ Expansion port for sync. serial, async. serial, iDSL connections, 48 modems/ISDN
- ✓ 1U high 19 in. stackable chassis
- ✓ AC and DC power options
- ✓ Dual-redundant hot-swappable load-sharing power supplies

High-Density Low-Cost Remote Access Server

Model 3120

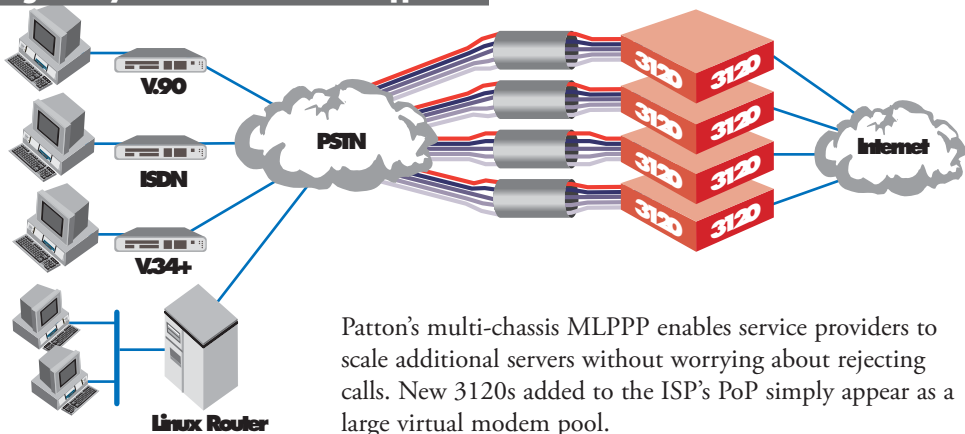
This new flexible platform delivers enhanced remote access services

The 3120 supports up to 120 digital ISDN or analog (V.90, K56Flex, V.34+, etc.) modem connections in a single 1U-high (1.75 in./4.45 cm) rack-mount chassis. It is the highest density, lowest profile remote access server available anywhere. With its dual-redundant hot-swappable power supplies, the 3120 RAS protects against single-point power failures. It has two 10/100-Mbps Ethernet ports for load sharing and traffic balancing.

For maximum flexibility, the 3120 has a slot for an optional expansion module. ISPs can add asynchronous ports for terminal servers or dedicated DSL modem ports for increasing revenue. The 3120 is a one-of-a-kind Network Access Unit.



High-Density Point-of-Presence Modems Application



A Removable dual-redundant power Standard—Supports two AC, two DC, or a mix of AC and DC power supply modules

B Dual 10/100 Ethernet Ports—Flexible integration options for your high-performance network

C PMC expansion card—Network expansion options enable the 3120 to offer new revenue opportunities

D SNMP/HTTP management—Embedded HTTP server provides complete configuration and control using your web browser

E Quad T1/E1 ports for 120 RAS or uplink services—Terminate any combination of 120 modems/ISDN connections, or expand into remote locations and use the 3120 as a complete PoP solution

Ask the experts...



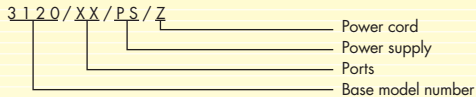
I'm Scott, Patton's product manager for RAS and IAD products. I've put together this collection of resources for companies interested in RAS technology. There is much more information available on-line at ras.patton.com. If you don't find the answers you need, call me at extension 166.

Resources Available By Request
 Televisa Case Study Article
 Hotel Remote Access Applications White Paper
 User Operations Manual
 RAS FAQ
 RAS Brochure
 "I love my RAS..." White Paper

On-Line Resources
 Build Yourself an ISP White Paper
 RAS Product Overview
 RAS Key Selling Points
 RAS Sales Overview
 T1/E1/PRI Tutorial
 Introductions to: TCP/IP, PPP/SLIP, and RADIUS White Papers

ORDERING INFORMATION

Ordering key:



2960/48/UI/z	Dual T1/PRI, 48-port RAS	\$14,995.00
2960/60/UI/z	Dual E1/PRI, 60-port RAS	\$18,750.00
3120/48/UI/z	Dual T1/PRI, 48-port, expandable RAS	\$18,750.00
3120/60/UI/z	Dual E1/PRI, 60-port, expandable RAS	\$23,500.00
3120/96/UI/z	Quad T1/PRI, 96-port, expandable RAS	\$29,995.00
3120/120/UI/z	Quad E1/PRI, 120-port, expandable RAS	\$39,995.00
3120/PMC-MDM48	48-modem expansion module	\$11,995.00
3120/PMC-MDM60	60-modem expansion module	\$16,995.00
3120/PMC-AS16	16-port async. serial expansion module	\$ 2,400.00
PMC Modules	Optional PMC Modules.	Call for price
3120/PS-UI	90–260 VAC universal input power supply	\$995.00
3120/PS-48	36–72 VDC input power supply	\$995.00

SPECIFICATIONS

LAN:Dual auto-sensing 10/100 full-duplex Ethernet ports
LANProtocols:TCP/IP suite with integrated IP router, RIP, RIPv2, OSPF, RADIUS, TELNET, RLogin, TCP Raw, HTTP, SNMP
WAN:Quad T1/E1/PRI RJ48C ports
WANProtocols:Async.and Sync. PPP, MLPPP, Multi-chassis MLPPP, SLIP, Frame Relay [RFC-1490]
Signalling:Robbed-bit, R1, R2, Q.921/Q.931
Modems:Upto 120 V.90, K56Flex, V.34+, or ISDN B-channel digital calls (additional ports via PMC expansion modules)
Software:Upgradeable via FTP, free updates from www.patton.com
Power:Dual-redundant, load-sharing, requires less than 40 Watts of power
AC:90 to 264 VAC
DC:36 to 72 VDC
Temp.:0 to +40°C (0 to 104°F)
Humidity:5 to 95%, non-condensing
Dimensions:1.75H(1U) x 17W x 10.0D in. (4.44H x 43W x 025.4D cm), convection-cooled, NEBS Level 3

FEATURES & BENEFITS

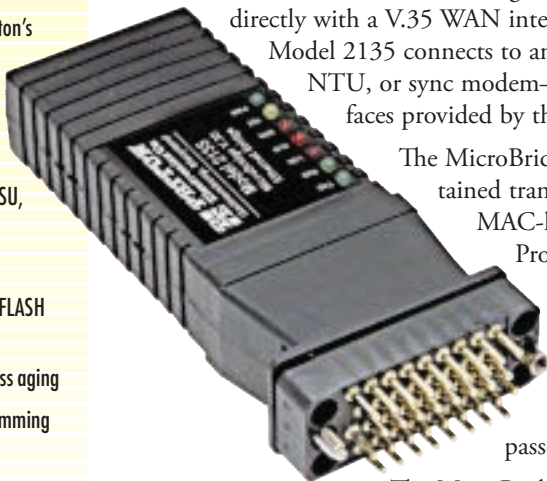
- ✓ Economical bridging using existing WAN connections
- ✓ Transparent to high-layer protocols
- ✓ Supports RFC 1661 and RFC 1662 PPP Bridging Protocols
- ✓ Compatible with all of Patton's Ethernet bridge products
- ✓ Integral V.35 male DTE
- ✓ 10Base-T LAN connection for direct connection to a multiplexer, T1/E1 CSU/DSU, and E1/NTU
- ✓ 4096 MAC address table
- ✓ 1-Mbyte RAM; 128-kbyte FLASH memory
- ✓ Automatic LAN MAC address aging
- ✓ Self-learning—no programming required

MicroBridge V.35

Model 2135

The Model 2135 transparently bridges Ethernet LANs using existing synchronous connections

Easily connect Ethernet LANs across the WAN using the Patton Model 2135 MicroBridge. By interfacing directly with a V.35 WAN interface, the Model 2135 connects to any CSU/DSU, NTU, or sync modem—including interfaces provided by the phone company.



The MicroBridge is a self-contained transparent Ethernet MAC-layer bridge.

Protocol independent operation enables higher-layer broadcast, multi-cast, and data frames to be passed to the far-end.

The MicroBridge allows you to use that extra port on a multiplexer or to connect to a DDS/T1/E1/NTU/xDSL modem for economical LAN extension without limitations.

The 2135 is also PPP-ready, supporting standards-based layer 2 protocol interfacing. Through the use of the PPP Bridging Control Protocol, the MicroBridge can be used with third-party equipment to extend serial router interfaces while

SPECIFICATIONS

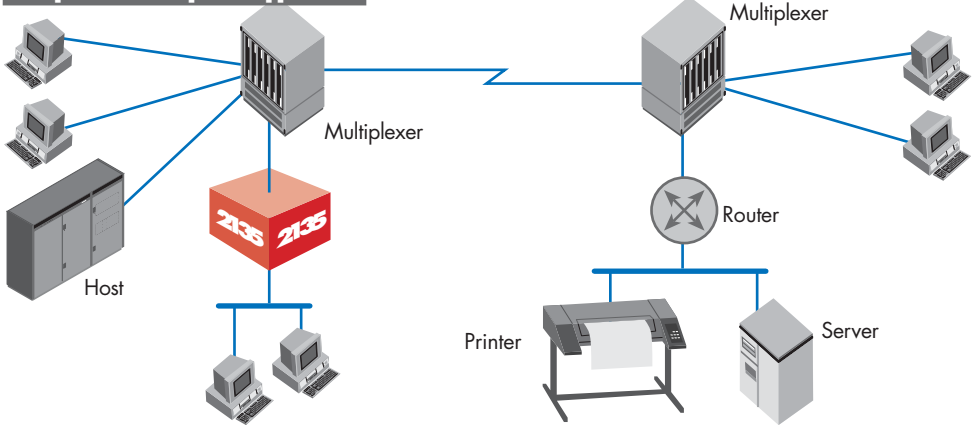
- Transmission:** Synchronous, V.35, male DTE
- Clocking:** T1 and RC taken from DCE, data rate up to 10 Mbps
- Protocol:** HDLC based
- Ethernet:** 802.3 10Base-T, with built-in RJ-45
- MACTable:** 4096 entries with automatic aging after 8 minutes
- Memory:** 1 Mbyte RAM; 128 kbyte FLASH
- Latency:** 1 frame
- PowerSource:** 5VDC at 500 mA supplied via external power transformer
- Dimensions:** 0.81H x 2.1W x 5.0D in.
(2.1H x 5.3W x 12.7D cm)

Need Help?

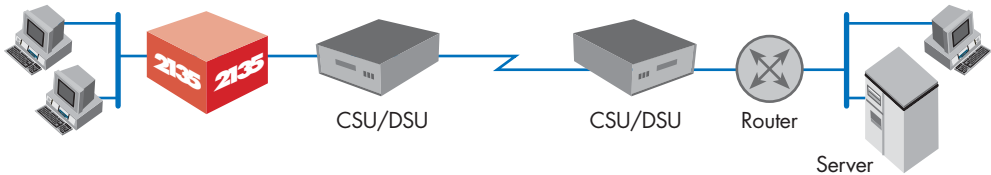


I'm Tong, one of Patton's Sales Coordinators. Call me when you want to purchase Patton products or if you have questions about our products. You can also send e-mail to sales@patton.com

Multiplexer to Multiplexer Application



CSU/DSU to CSU/DSU Application



providing a common Ethernet interface to the customer.

The Model 2135 is completely compatible with all of Patton's Ethernet bridge products including the IM/1 and IM1/4I hub modules.

Service providers use PPP half-bridging to connect customer networks without the need for an extra router! The serial interface

to the remote bridge functions as a virtual Ethernet interface, effectively extending the router's serial port connection to the remote network. An Ethernet interface then connects directly to a local switch. All routing is done in the service providers' equipment, thus saving on equipment, configuration, and maintenance costs.

For CSU/DSUs or xDSL
Products with Integrated Bridging
SEE PAGE **A2**

ORDERING INFORMATION

2135/CM

MicroBridge Ethernet Bridge, V.35,
male, DTE **\$695.00**

Some new products may not be available when this catalog is published, so please call for availability.

FEATURES & BENEFITS

- ✓ Dual software-selectable T1/E1 ports
- ✓ Integrated CSU/DSU
- ✓ 10Base-T Ethernet port
- ✓ Integrated IP routing
- ✓ RIP/RIPv2 routing protocol support
- ✓ Route between the Ethernet LAN and any frame relay link
- ✓ Create data VPN's via dual frame-relay ports
- ✓ Integrated HTTP management system
- ✓ SNMP MIB-II support
- ✓ Software upgradeable via FTP downloads

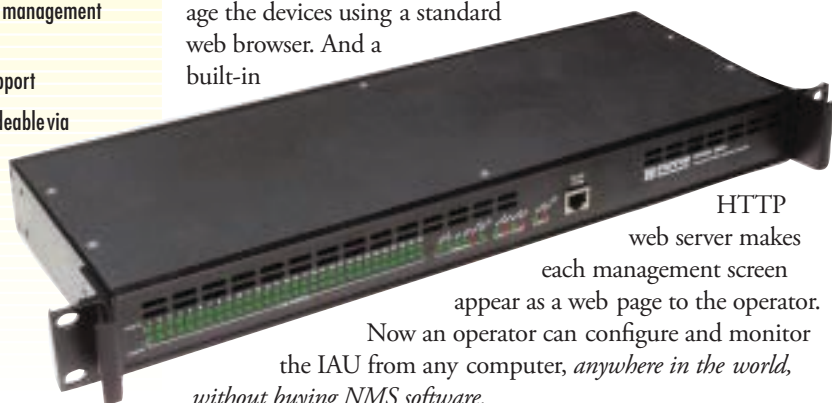
Dual-Port T1/E1 CSU/DSU with IP Routing and Frame Relay

Model 2780 Integrated Access Unit

This unit provides low-cost dual T1/E1 network termination with integrated IP routing and FR forwarding.

The 2780 IAU can be used in private or public networks. It has two built-in CSU/DSUs, which can be configured for T1 or E1 operation. A 10Base-T Ethernet port and IP/frame relay software provides routing services for LAN-to-LAN or branch office applications.

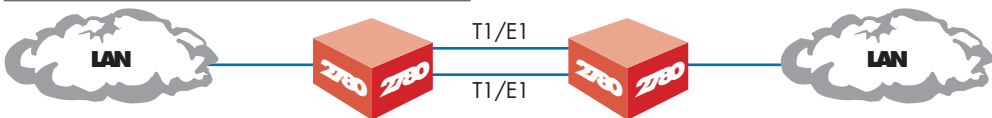
The 2780 IAU's web browser interface enables the user to manage the devices using a standard web browser. And a built-in



HTTP web server makes each management screen appear as a web page to the operator.

Now an operator can configure and monitor the IAU from any computer, *anywhere in the world, without buying NMS software.*

Dual-CSU/DSU 4.0-Mbps LAN-to-LAN Application



ORDERING INFORMATION

2780 Dual T1/E1 CSU/DSU with frame relay/IP routing **\$1,995.00**

Call for additional technical resources...

White Paper—"Multi-Service Access-Bundling Telecommunication Services"
White Paper—"Integrated Access Devices—A Market to Be Reckoned With"
Product Comparisons—"A Roundup of Integrated Access Devices"

SPECIFICATIONS

Protocols: Framereelay with LMI, ANSIB, ANSIB-D support, and 32 DLCI's per WAN port. TCP/IP suite with routing and forwarding and support for RIP/RIPv2.

WANports: Dual RJ-48C connections supporting software-controlled T1 or E1 nx64.

LANport: 802.3 Ethernet with 10Base-T (RJ-45) or AUI (DB-15F) connectors.

Frontpanel: Indicator LEDs provide T1/E1 DSO, T1/E1 Line Errors, Ethernet, and IAU status information.

Management: HTTP, SNMP, Telnet, RS232

Temperature range: 32 to 122°F (0 to 50°C)

Dimensions: 1.75Hx 17W x 8D in. (4.45H x 43.18W x 20.32D cm)

Powersource: 90-260 VAC via IEC-320 connector.

T1/FT1 High-Density, Low-Cost CSU/DSU Rack Card

Model 2710RC T1/FT1 CSU/DSU

New T1/Fractional T1 CSU/DSU rack cards connect to a space-saving, SNMP-manageable platform.

The NetLink-T1 Model 2710RC Series are T1/FT1 CSU/DSUs that provide high-speed WAN connectivity in a rack card package. Patton's 2U (8.9-cm) redundant AC/DC rack chassis accepts up to 16 rack cards, saving valuable space in central site locations.

Netlink 2710RC is an excellent choice for terminating leased lines, Frame Relay backbones, Internet access, and LAN-to-LAN services. When terminating a T1-dedicated digital circuit, the NetLink 2710RC supports n x 56 kbps and n x 64 kbps framing for T1 and V.35, X.21, RS-530, or 10Base-T Ethernet interfaces.

The Netlink 2710RC 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. The Netlink 2710RC also supports SNMP management from a NetLink Model 1001MC SNMP/HTTP rack card. A full range of system and diagnostic features make setup simple and easy.



FEATURES & BENEFITS

- ✓ Terminates T1/FT1 circuits over a 4-wire RJ-48C interface
- ✓ Connects to standard CPE serial interfaces
- ✓ Common framed n x 56/64 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
- ✓ Software or DIP switch configurable
- ✓ Internal, external, or receive recover clocking
- ✓ Also functions as a high-speed point-to-point modem
- ✓ Made in USA

SPECIFICATIONS

- WAN Speed:** 1.544 Mbps
- WAN Connection:** RJ48C
- Nominal Impedance:** 100 Ohms
- DTE Interface:** EIA-530, V.35, X.21, Ethernet
- Line Coding:** AMI/B8ZS
- Line Framing:** D4/ESF/Unframed
- Clock Options:** Internal, external, or network
- Diagnostics:** 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
- Transmit LBO:** Selectable—0, 7.5, 15, or 22.5 dB, plus DSX-1
- Standards:** AT&T TR62411, TR54016, and ANSI T1.403
- Dimensions:** 0.78H x 2.1W x 3.5D in. (2.0H x 5.3W x 8.9D cm)
- Test Modes:** Initiates and responds to V.54 and CSU remote loops; local loop
- Pattern Generator/Deflector:** User-selectable 511, 2047, or GRSS

T1 Termination Application



ORDERING INFORMATION

2710RC/B/B	Powered T1/FT1 CSU/DSU Card; EIA-530 Interface	\$650.00
2710RC/A/I	Powered T1/FT1 CSU/DSU Card; V.35 Interface	\$650.00
2710RC/D/V	Powered T1/FT1 CSU/DSU Card; X.21 Interface	\$650.00
2710RC/IA	Powered T1/FT1 CSU/DSU Card; 10Base-T Interface	\$750.00

FEATURES & BENEFITS

- ✓ Use 120-ohm twisted-pair wiring with unbalanced coaxial equipment.
- ✓ Uses 1.6/5.6 coaxial connectors.
- ✓ No more buying expensive and space-hungry hardware for patching and distributing G.703 connections.
- ✓ Low-cost model supports rates of 2 Mbps (faster versions are available for rates up to 155 Mbps).
- ✓ Low insertion loss, fully meets ITU-T (CTR12) G.703 standards.
- ✓ Standard twisted-pair terminations.
- ✓ Enclosed in flame retardant housings.
- ✓ Baluns are 100% tested for reliability and durability.
- ✓ Baluns come in a variety of connectors and packaging. Customized versions available upon request.

1.6/5.6-Plug G.703 Baluns

Model 465

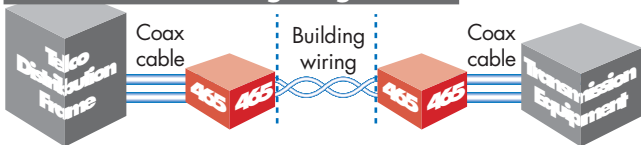
These new G.703 baluns are used with 1.6/5.6 coaxial connectors and provide connection for TX and RX connections on a single twisted-pair wire.

Baluns are miniature adapters for connecting mixed cable types or devices with mis-matched interfaces. They enable carrier and large-enterprise customers to standardize on twisted-pair wiring, even though some equipment may have unique E1 terminations.

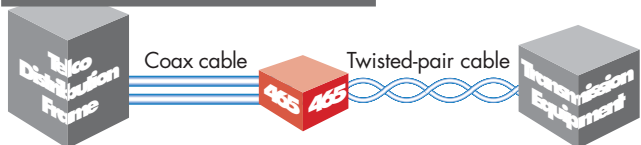
The Model 465 has the 1.6/5.6 coax connectors used extensively in telephone exchange sites. The balun has two interfaces, so both the TX and RX coax signals can be carried over a single length of twisted-pair cabling (which is much less costly than any kind of coaxial cable).



Coax to Twisted-Pair Building Wiring Conversion



Coax to Twisted-Pair Cable Conversion



SPECIFICATIONS

Transmission line: ITU-T CTR12 (G.703)
Data rates: 2.048 Mbps (models available for rates up to 155 Mbps, call for details)
Link-to-data isolation: 500 volts AC/DC
Temperature range: 32° to 122°F (0° to 50°C)
Dimensions: 0.8H x 1.7W x 2.7D in. (2.0H x 4.3W x 6.9D cm)

ORDERING INFORMATION

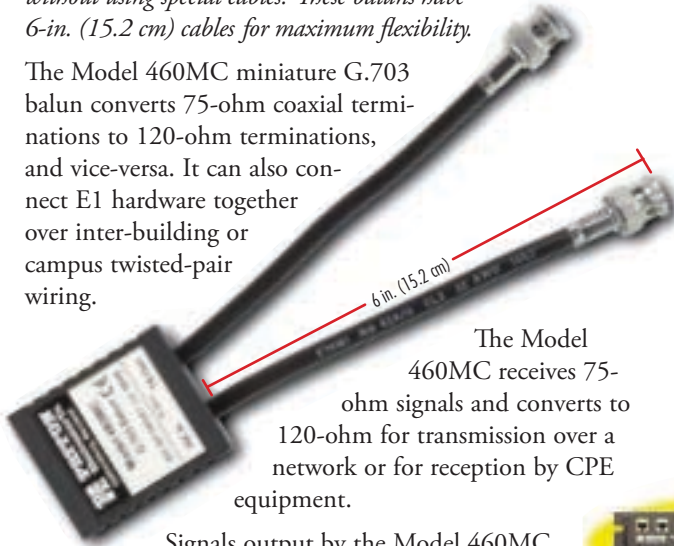
465M	G.703 balun; 120□ UTP (RJ-45F) to 75□ dual-coax male 1.6/5.6 plugs	\$75.00
465MC	G.703 Balun with 120□ UTP (RJ-45F) to 75□ dual-BNC cables	\$85.00
465F	G.703 balun; 120□ UTP (RJ-45F) to 75□ dual-coax female 1.6/5.6 plugs	\$75.00
465RC/16.F	16-channel rack-mount G.703 Balun 120□ UTP (RJ-45F) to 75□ dual-coax with female 1.6/5.6 plugs	\$1,100.00
465RC/F	Single-channel rack-mount Balun for E2 (8Mbps) 120□ UTP (RJ-45F) to 75□ dual-coax with female 1.6/5.6 plugs	\$75.00

G.703 Baluns With Built-in Cables

Model 460MC

Now you can connect our balun directly to 75-ohm connectors without using special cables. These baluns have 6-in. (15.2 cm) cables for maximum flexibility.

The Model 460MC miniature G.703 balun converts 75-ohm coaxial terminations to 120-ohm terminations, and vice-versa. It can also connect E1 hardware together over inter-building or campus twisted-pair wiring.



The Model 460MC receives 75-ohm signals and converts to 120-ohm for transmission over a network or for reception by CPE equipment.

Signals output by the Model 460MC are scaled to match the pulse shape requirements specified in the ITU-T CTR12 G.703 standard.

FEATURES & BENEFITS

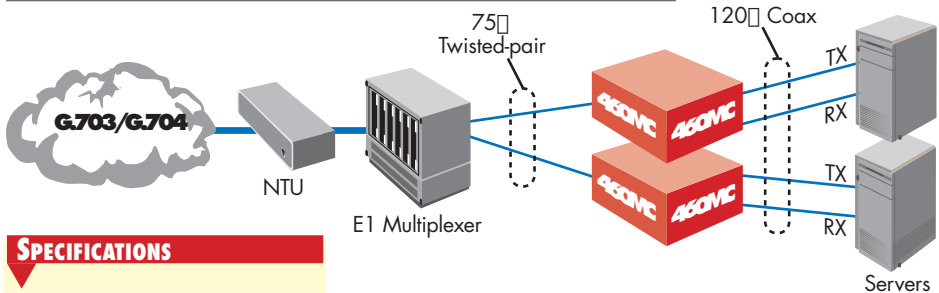
- ✓ Solves G.703 termination mismatches
- ✓ Includes short cables that connect directly to equipment
- ✓ Enables G.703 equipment to use RJ-11 wall plates and operate over standard building wiring
- ✓ Low insertion loss, fully meets ITU-T (CTR12) G.703 standards
- ✓ Very small size
- ✓ Customized versions available upon request
- ✓ Enclosed in flame retardant housings.
- ✓ Baluns are 100% tested for reliability and durability.

RACK MOUNT AVAILABLE



SEE PAGE C11

75-ohm Coaxial to 120-ohm Twisted-Pair Cable Conversion Application



SPECIFICATIONS

- Transmission line:** ITU-T CTR12 G.703
- Data rate:** 2.048 Mbps (models available for rates up to 155 Mbps, call for details)
- Link-to-data isolation:** 500 volts AC/DC
- Temperature range:** 32° to 122°F (0° to 50°C)
- Dimensions:** 0.8H x 1.7W x 2.7D in. (2.0H x 4.3W x 6.9D cm)

ORDERING INFORMATION

460MC

G.703 balun; 120-ohm UTP (RJ-45F) to 75-ohm dual-BNC cables

\$85.00

FEATURES & BENEFITS

- ✓ Terminates E1/fractional E1 service
- ✓ Available in low-cost standalone or rack-mountable versions
- ✓ n x 64 kbps data rates to 2 Mbps
- ✓ X.21, V.35, EIA-530 and Ethernet bridge options
- ✓ Switch-selectable AMI or HDB3 line encoding options
- ✓ Switch-selectable DTE/DCE modes for X.21 version
- ✓ 75-ohm dual coax and 120-ohm twisted-pair G.703 connections
- ✓ Local and remote loopback diagnostics
- ✓ Internal, external and G.703 network timing
- ✓ CE and BABT approvals
- ✓ 90–260 VAC & 48-VDC power options
- ✓ Rack cards fit into Model 1001 access rack system
- ✓ Conforms to ONP requirements CTR 12 and CTR 13 for connection to international Telecom networks



G.703/G.704 Network Termination Unit (NTU)

Models 2701 & 2701RC

These devices, available in low-cost standalone or rack-mountable versions, terminate G.703/G.704 lines and provide E1/fractional E1.

Today's customers require low-cost network solutions that deliver high speed connections to the Internet and Corporate Intranets while supporting videoconferencing and many other wide-area services. The NetLink Models 2701 and 2701RC E1/Fractional E1 NTUs satisfy those needs.



The NTUs terminate G.703/G.704 services for all n x 64 kbps rates and connect to the customer's router, FRAD, CODEC, and switches with a V.35, X.21, EIA-530, or 10Base-T Ethernet interface.

SPECIFICATIONS

DataRate: Smooth Clock 2.048 Mbps

Network Connector: RJ-48C (all versions); Dual Coaxial (X.21 and Ethernet)

DTE Interface: EIA-530, X.21/V.11, V.35, or 10Base-T Ethernet

Line Coding: AMI or HDB3

Line Framing: G.703 (unframed) or G.704/G.732 (framed)

Clocking: Internal, External or Receive Recover

DTE Rates: n x 64 kbps (EIA-530, X.21/V.11, V.35); 10Mbps (10Base-T)

Indicators: E1 Link Status, TD, RD, Loss of Sync, Error, Test Mode, Ethernet Status (on 10Base-T Version)

Diagnostics: Local/Remote Loop, 511

Line Isolations: 1500 VRMS

Compliance: CEMark, G.703, G.704,

G.723, G.832, CTR-12 and CTR-13

Temperature: 32° to 122°F (0° to 50°C)

Rel. Humidity: 5 to 90% non-condensing

Dimensions: 5.84L x 4.16W x 1.51H in (14.84L x 10.6W x 3.84H cm)

Weight: 2.225 lbs (1.02 Kg)

E1 Network Termination on X.21 or V.35 for Data



The Model 2701/D (X.21 version) provides DTE/DCE functionality in the same stand-alone or rack-mount package. This added versatility supports operation in X.21 DTE applications (see above) where an NTU is needed to terminate G.703/G.704 and provide X.21/V.11 data to a multiplexer.

Ask the experts...



I'm Karen, one of Patton's Technical Support Engineers. Patton has put together this resource listing for companies interested in this technology. If you don't find the answers you need at www.patton.com, please call me. You can also send e-mail to support@patton.com.

Resources Available By Request

G.703/704 Powerpoint E1 Course Materials
G.703/704 E1 Technology Overview White Paper
G.703/704 E1 Media White Paper

On-Line Resources

G.703 Products Brochure
Product Data Sheets
User Manuals

LAN-to-LAN Over E1 Without a Router



The Model 2701/I is a 10Base-T bridge that operates over G.703/G.704 lines. It uses MAC learning and forwarding to provide seamless LAN-to-LAN connectivity. As a result, corporate enterprises can connect their servers to a pair of Model 2701s and automatically forward data packets that are meant for the remote network. Local packets are filtered and passed only to the local LAN.

ORDERING INFORMATION

2701/B/UI	Stand alone NTU; EIA-530 (DB25F) interface; 90-260 VAC supply \$795.00	2701/I/48	Stand alone NTU; 10Base-T (RJ-45F) interface; -48 VDC supply \$895.00
2701/C/UI	Stand alone NTU; V.35 (M/34F) interface; 90-260 VAC supply \$795.00	2701RC/A/I	Rack card NTU; RJ-45 line and V.35 (M/34F) DTE interfaces \$795.00
2701/D/UI	Stand alone NTU; X.21 (DB15F) interface; 90-260 VAC supply \$795.00	2701RC/B/B	Rack card NTU; RJ-45 line and RS530 (DB25F) DTE interfaces \$795.00
2701/I/UI	Stand alone NTU; 10Base-T (RJ-45F) interface; 90-260 VAC supply \$895.00	2701RC/D/D	Rack card NTU; dual BNC line and X.21 (DB15F) DTE interfaces \$795.00
2701/C/48	Stand alone NTU; V.35 (M/34F) interface; -48 VDC supply \$795.00	2701RC/D/V	Rack card NTU; RJ-45 line and X.21 (DB15F) DTE interfaces \$795.00
2701/D/48	Stand alone NTU; X.21 (DB15F) interface; -48 VDC supply \$795.00	2701RC/I/A	Rack card NTU; RJ-45 line and Ethernet/10Base-T (RJ-45F) DTE interfaces \$895.00

FEATURES & BENEFITS

- ✓ Built-in loopback and BER tester
- ✓ Operation is transparent to data
- ✓ TXD, RXD, TXC, RXC, ETXC, RTS, CTS, DTR, DSR, DCD signals are supported on the V.35 interface, and R, T, S, C, and I signals are supported on the X.21 interface
- ✓ G.703 (co-directional) on analog side
- ✓ Internal power supply with 110/220-VAC selector switch
- ✓ Sturdy aluminum enclosure

64K G.703 to V.35/X.21 Converter and Extender

Model 2072 64K G.703 Converter

Connect a V.35 or X.21 device to a 64-Kbps G.703 co-directional device located as much as 1,968 feet (600 meters) away.

The Model 2702 is a bi-directional device that operates at speeds of 48, 56, or 64 kbps. It has a V.35 port that is selectable for DCE or DTE operation and an X21 port that is DTE only.



V.35 or X.21 to G.703 Co-directional Interface and Rate Conversion Application



SPECIFICATIONS

- Capacity:** One channel V.35 or X.21 to a single G.703 channel
- Data coding:** Synchronous
- Data rates:** 48, 56, and 64 kbps
- Electrical interface:** V.35 or X.21 & G.703
- V.35 physical interface:** V.35 on a female M-34 connector
- X.21 physical interface:** X.21 on a female DB-15 connector
- Power source:** 100-120/200-240 VAC, 50/60 Hz, 0.25/0.16A, switch selectable
- Op. temp.:** 32 to 122 °F (0 to 50 °C)
- Rel. humidity:** 5 to 90% non-condensing
- Dimensions:** 1.75Hx 8.90W x 10.00D in. (4.44H x 22.60W x 25.40D cm)
- Weight:** 2.225 lbs (1.02 Kg)

This enables V.35 or X.21 terminals or modems to interface to G.703 backbones.

A secondary async channel is available when 48- or 56-kbps mode is selected. At those rates, the extra bandwidth can also be used to pass a control signal.

The G.703 network can be located up to 1,640 feet (500 meters) from the Model 2072. The X.21 or V.35 device can be up to 328 feet (100 meters) away from the Model 2072. The unit includes an M-34 female connector for the V.35 interface and a DB-15F connector for the X.21 interface.

ORDERING INFORMATION

2072

Powered G.703 to V.35 or X.21 DCE/DTE Interface Converter

\$995.00

Telco Data Taps for T1, E1 or DDS

Models 3/11 & 3/45 Telco Data Taps

Monitor DDS, T1, and E1 circuits without interfering with normal circuit operation.

Most T1, E1, and DDS circuit wiring inside customer premises uses unshielded twisted-pair (UTP) cable that is terminated with RJ-48 connectors.

To verify correct operation of these circuits, it is often necessary to make a passive tap into the circuit at a location in the wiring where there is no monitor port available.

The Model 3/11 and Model 3/45 Data Taps can be used to quickly insert a passive tap into UTP wiring using RJ-11 or RJ-48 connectors.

Once the Model 3 is inserted in-line in the UTP wiring, a test instrument may be attached to the box's tap connector and



FEATURES & BENEFITS

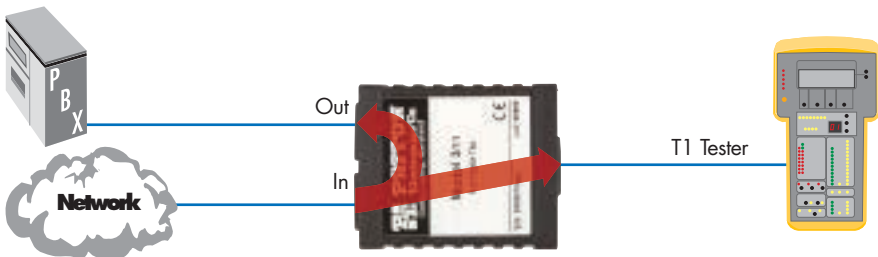
- ✓ A great way to tap into and monitor DDS, T1, E1 or other WAN circuits.
- ✓ All 6 or 8 pins are wired straight through to all 3 connectors
- ✓ Terminating resistors prevent the tap device from interfering with normal circuit operation.

monitor communication on either of the two pair used for T1, E1, or DDS circuits.

The tap connections are made through 470-ohm resistors to minimize the possibility that a wiring fault at the tap will cause failure of the main line being monitored. All four pair in a typical UTP cable are tapped to allow use of the same box for different pair combinations.

The Model 3 contains no active components, making it very reliable for use in continuous operation communication circuits.

Typical Testing/Monitoring Application



ORDERING INFORMATION

3/11	Data tap with 3 RJ-11 connectors	\$43.00
3/45	Data tap with 3 RJ-45 connectors	\$43.00

SPECIFICATIONS

Connectors: Three RJ-11 6-wire, or three RJ-48S 8-wire modular connectors.
Terminating resistors: 470 Ohms
Dimensions: 2.25H x 1.69W x 0.75D in. (5.72H x 4.29W x 1.91D cm)

FEATURES & BENEFITS

- ✓ **Model 1193**—Single-mode transmission (1310 nm) up to 31 miles (50 km) on one fiber
- ✓ **Model 1186**—Multi-mode transmission (850 nm) up to 1.6 miles (2.5 km) on one fiber
- ✓ 2 Mbps G.703 (E1) operation
- ✓ ITU-T CTR 12 (G.703) compliant
- ✓ FC and SC single-mode fiber connector options
- ✓ ST or SMA multi-mode fiber connector options
- ✓ AMI and HDB3 line encoding options
- ✓ 120-ohm (RJ-48) and 75-ohm (dual-coax) G.703 connectors
- ✓ Local and remote loopback diagnostics
- ✓ 511 and 511/EBER tests
- ✓ Internal, external (G.703), and receive recover clocking
- ✓ Rack cards fit into Model 1001 access rack system
- ✓ CE marked



Single-Mode and Multi-Mode Fiber Modems for G.703 Extension

Models 1193 & 1186

Use these low-cost fiber modems to connect equipment on a G.703 network that are located as much as 50 km (31 miles) apart.

Typically, customers who want to deliver data at 2-Mbps rates between their remotely located equipment have had to rely upon lease-line services provided by a PTT or Telco. Using the Models 1193 and 1186, however, customers can extend the G.703 signals on their high speed multiplexers or cellular base stations using single or multi-mode fiber.

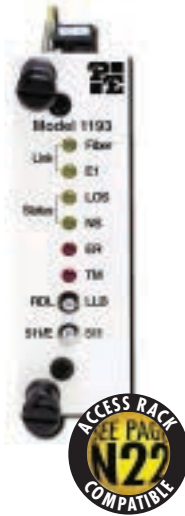


The NetLink Model 1193 Single-Mode and Model 1186 Multi-Mode fiber modems are low-cost alternatives to leasing G.703 service when connecting remote locations. A pair of NetLink 1193s deliver 2.048 Mbps clear channel data across a single strand of single-mode fiber at distances up to up to 50 km (31 miles)! *That's five times farther than distances available over xDSL.* For limited-distance applications up to 2.5 km (1.6 miles), Patton offers its economical multi-mode fiber alternative—the NetLink 1186—which also requires only one fiber.

The 1193/1186 provide 120-ohm (RJ-48) and 75-ohm (dual-coax) options for connecting the G.703 interface of a CSU/DSU, multiplexer, or base station. The modem sends AMI- or HDB3-encoded data over single- or multi-mode fiber to the remote NetLink 1193 or 1186.

Fiber interface options are SC or FC for the Model 1193, and ST or SMA for the Model 1186.

The Model 1193 and Model 1186 are also available as rack cards for use in Patton's NetLink 1001 2U rack chassis. The NetLink 1001 rack system provides dual-redundant AC and/or DC power options and includes all the features of the standalone units.



ORDERING INFORMATION

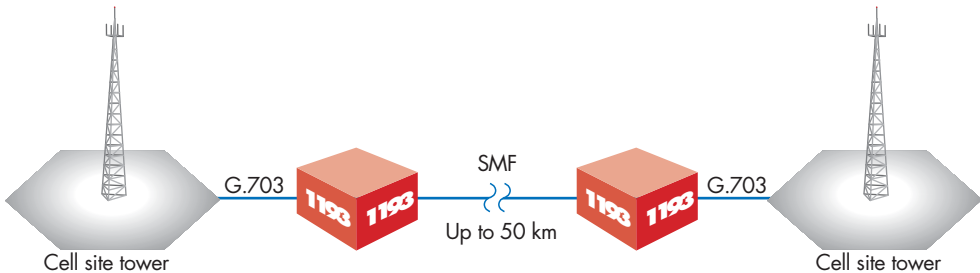
1193/FC/UI	Single-Mode FC; G.703 dual-BNC and RJ-45	\$1,495.00
1193/SC/UI	Single-Mode SC; G.703 dual-BNC and RJ-45	\$1,495.00
1193RC/FC/xx	Single-Mode FC rack card; G.703 dual-BNC and RJ-45	\$1,495.00
1193RC/SC/xx	Single-Mode SC rack card; G.703 dual-BNC and RJ-45	\$1,095.00
1186/ST/UI	Multi-Mode ST; G.703 dual-BNC and RJ-45	\$1,095.00
1186/SMA/UI	Multi-Mode SMA; G.703 dual-BNC and RJ-45	\$1,095.00
1186RC/ST/xx	Multi-Mode ST rack card; G.703 dual-BNC and RJ-45	\$1,095.00
1186RC/SMA/xx	Multi-Mode SMA rack card; G.703 dual-BNC and RJ-45	\$1,095.00

*Power supply options (xx): UI = Universal interface

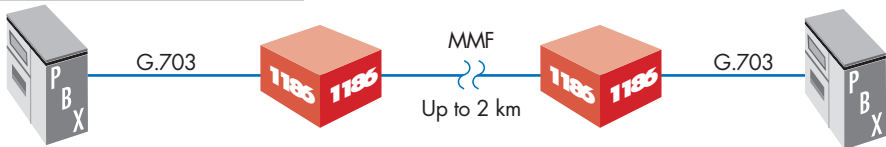
90-260 VAC; 120 = 120 VAC; 230 = 230 VAC; 48 = -48 VDC

Some new products may not be available when this catalog is published, so please call for availability.

Single-Mode Fiber (SMF) Application



Multi-Mode Fiber (MMF) Application



SPECIFICATIONS

Data rate: 2.048 Mbps

G.703 interface: RJ-48C (120-ohm) and dual-BNC (75-ohm)

Fiber interface: FC or SC (1193); ST or SMA (1186)

Line coding: AMI or HDB3

Line framing: G.703 (unframed)

Clocking: Internal, external or receive recover

Optical transmitter: 1310nm (1193); 850nm (1186)

Link budget: 15dB(9 micron) for 1310nm; 7.5dB (62.5) for 850nm

Coupled power: 0 to -10 dBm (1193); -0 dBm (1186)

Diagnostics: Local/remote loop, 511 and 511 with intentional errors

Compliance: CE Mark, G.703, CTR 12

Temperature: 32° to 122°F (0° to 50°C)

Power options: 120/240 VAC universal interface or -48 VDC

FEATURES & BENEFITS

- ✓ Supports multiple line rates from 144 kbps to 1.152 Mbps
- ✓ DTE speeds from 64 kbps to 1.152 Mbps in increments of 64 kbps
- ✓ Standards-based support (CE Mark)
- ✓ Available with internal 90–260 VAC or -48 VDC power supplies
- ✓ Built-in loopback functionality
- ✓ A variety of modular interfaces

1.152-Mbps HDSL Modem

Model 1094A

This modem uses HDSL (high bit-rate digital subscriber line) 2B1Q technology to provide high speed two-wire connectivity for service providers and enterprise users.

Supporting line rates from 144 kbps to 1.168 Mbps, the NetLink 1094A provides “megabyte” speeds for leased lines, LAN-to-LAN interconnections, and WAN access networks located up to 4.6 miles (7.3 km) apart.



The 1094A standalone version supports DTE speeds from 64 kbps to 1.152 Mbps in 64-kbps increments. It includes

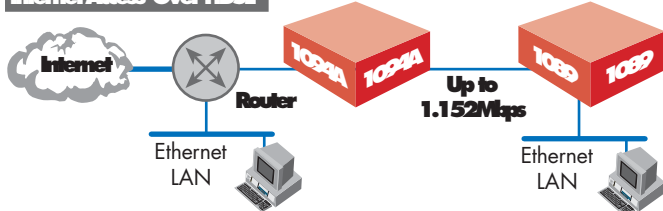
built-in loopback diagnostics, in-band SNMP/HTTP remote management capabilities, and accessible (DIP) configuration switches.

As a symmetric modem, the NetLink 1094A HDSL modem uses 2B1Q modulation to provide the same data rates in both directions over a single pair of regular telephone lines. Featuring replaceable DCE-DTE interface modules, the NetLink HDSL modem can support a wide range of applications, including Ethernet LAN bridging, G.703/G.704 line

Transmission Distances

Line Rate (kbps)	DTE Rates	26 AWG (0.4mm)			24 AWG (0.5mm)		
		feet	miles	km	feet	miles	km
144	64, 128	20700	3.9	6.2	24500	4.6	7.3
272	192, 256	17400	3.3	5.2	24200	4.5	7.2
400	320, 384	15100	2.9	4.6	22600	4.2	6.7
528	448, 512	14900	2.8	4.4	21000	3.9	6.2
784	576, 640, 704, 768	13500	2.6	4.2	18000	3.4	5.4
1040	832, 896, 960, 1024	11900	2.3	3.6	15500	2.9	4.6
1168	1088–1152	11000	2.1	3.3	15200	2.8	4.4

Internet Access Over HDSL



extension/termination and V.24/RS-232, V.35, RS-422/530, and X.21 interfaces.

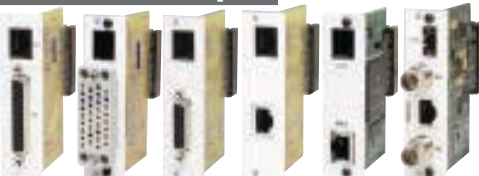
The Model 1094A is *fully* compatible with Patton's low-cost Model 1089 standalone modem (see page N18).

A high density 2U-high rack card version of the NetLink HDSL modem (the 1094ARC) is also available. Now service providers can cut

costs and setup time by installing a rack-mounted Model 1094ARC at the central site while bundling a Model 1094A with DSL service at the customer's premises. Convenient remote management capability enables engineers to quickly install or upgrade remote units. The 1094ARC and 1094A can be managed via SNMP/HTTP using Patton's 1001MC SNMP agent card!



Central Site Interface Options



V.24 (RS-232 or RS-530 (DB-25F))	V.35 (M/34F)	X.21 (DB-15F)	G.703 120□ (RJ-45F)	10Base-T (RJ-45F)	G.703 120□ (RJ-45F) G.703 75□ (Dual-BNCs)
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SPECIFICATIONS

Transmission: Synchronous, full-duplex, over one unconditioned twisted-pair (2 wires)
Line encoding: 2B1Q
DTE interfaces: See QuikConnect modules at upper right
Distances & line rates: See transmission distances table (far left)

Local Management: Configurable from DIP switches or via Model 1001MC card
Remote Management: SNMP configuration and management for local and remote modems via Model 1001MC Proxy Agent rack card; built-in HTTP server on Model 1001MC supports management via the Internet

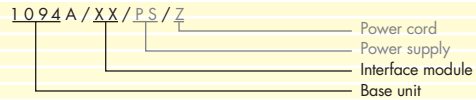
Diagnostics: V.54 loops (LB, RDL); V.52 compliant BER pattern generator and detector (511/511E)
Clocking: Internal, external, or receive recovered (network) clock
Power: 90-260VAC, 50/60 Hz universal input; 48 VDC (10 Watts) optional

ORDERING INFORMATION

Base Units

1094A/xx/UI/z 1.1Mbps HDSL; 90-264VAC	\$1,045.00
1094A/xx/48 1.1Mbps HDSL; -48VDC	\$1,045.00

Ordering combinations of standalone units and QuikConnect modules? Use the following key.



Interface Modules

IM1/A V.24/RS232 serial port; DB-25F	\$100.00
IM1/B RS-422/530 serial port; DB-25F	\$100.00
IM1/C V.35 serial port; M/34F	\$100.00
IM1/D X.21 serial port DTE/DCE; DB-15F	\$100.00
IM1/F Co-directional 64K/G.703 on RJ-45F	\$650.00
IM1/I 10Base-T Ethernet port on RJ-45F	\$580.00
IM1/I4 Four 10Base-T ports each on RJ-45F	\$750.00
IM1/JO FXO interface module; voice/data	\$980.00
IM1/JS FXS interface module; voice/data	\$980.00
IM1/K G.703/G.704 on dual-BNC & RJ-45F	\$650.00

Rack Cards

1094ARC/A/B V.24/V.35, DB-25F/RJ-45	\$1,045.00
1094ARC/A/I V.24/V.35, M/34F/RJ-45	\$1,045.00
1094ARC/B/B RS-530, DB-25F/RJ-45	\$1,045.00
1094ARC/D/V X.21, DB-15F/RJ-45	\$1,045.00
1094ARC/C/O 64/128K, G.703, RJ-45/RJ-45	\$1,045.00
1094ARC/IA 10Base-T Ethernet RJ-45/RJ-45	\$1,045.00
1094ARC/K/K G.703/G.704 dual-BNC & RJ-45/RJ-45	\$1,045.00

FEATURES & BENEFITS

- ✓ High Bit-Rate Digital Subscriber Line Technology
- ✓ 2B1Q modulation
- ✓ DTE rates up to 1.152 Mbps
- ✓ Ethernet, G.703/G.704 X.21, V.35 and EIA-530 interfaces available
- ✓ Fully compatible with the Model 1094A
- ✓ Supports SNMP/HTTP management via a 1001MC SNMP agent rack card
- ✓ Ethernet version supports PPP bridging
- ✓ Universal Power Options, 120 VAC, 230 VAC, and -48 VDC Available
- ✓ CE Marked

1.152-Mbps HDSL Modem Over 2-Wires

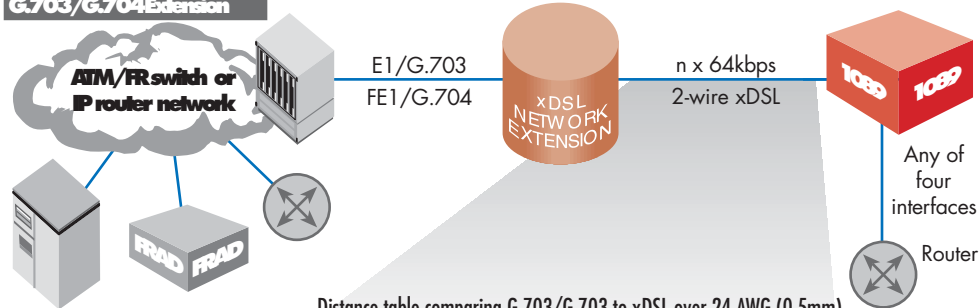
Model 1089

Longer distances for Fractional E1 n x 64 kbps services. Low-cost, fixed interface HDSL Modems extend Ethernet, G.703/G.704, X.21, and V.35 up to 4.6 miles (7.3 km).

The Model 1089 is the next generation of SNMP/HTTP manageable high bit rate digital subscriber line (HDSL) modem. Supporting 2B1Q modulation, the Model 1089 operates at



G.703/G.704 Extension



Distance table comparing G.703/G.704 to xDSL over 24 AWG (0.5mm)

G.703/G.704 Distance				xDSL Distance			
G.704 DTE rates (kbps)	Feet	miles	km	xDSL line rates (kbps)	Feet	miles	km
64, 128	5280	1.0	1.6	144	24500	4.6	7.3
192, 256	5280	1.0	1.6	272	24200	4.5	7.2
320, 364	5280	1.0	1.6	400	22600	4.2	6.7
448, 512	5280	1.0	1.6	528	21000	3.9	6.2
576, 640, 704, 768	5280	1.0	1.6	784	18000	3.4	5.4
832, 896, 960, 1152	5280	1.0	1.6	1152	15500	2.9	4.6

n x 64 kbps rates up to 1.152 Mbps over two wires.

Available in four fixed interface versions (10Base-T Ethernet, G.703/G.704, X.21, and V.35), the Model 1089 operates at ranges up to 4.6 miles (7.3 km) without repeaters. Our Ethernet version, the Model 1089/I, provides 10Base-T bridging and PPP support. This enables customers to extend a router's serial interface and connect to a remote 10Base-T LAN.



The Model 1089 is fully compatible with Patton's popular Model 1094A standalone and 1094ARC rack card. Now service providers can cut costs and setup time by installing a rack-mounted Model 1094ARC at the central site while bundling a Model 1089 with DSL service at the customer's premises.

ORDERING INFORMATION

1089/C/xx*	2B1Q HDSL; V.35, M/34 Female	\$895.00
1089/D/xx*	2B1Q HDSL; X.21, DB-15 Female	\$895.00
1089/I/xx*	2B1Q HDSL; 10Base-T Ethernet, RJ-45	\$1,045.00
1089/K/xx*	2B1Q HDSL G.703/G.704, RJ-48C	\$1,045.00

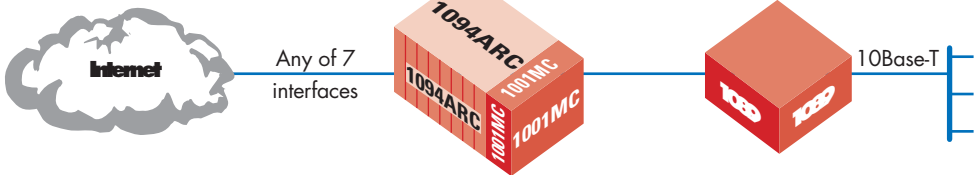
*Power supply options (xx): **UI** = Universal interface
90-260VAC; **120** = 120VAC; **230** = 230VAC; **48** = -48VDC

Rack Cards

1094ARC/A/B	V.24/V.35, DB-25F/RJ-45	\$1,045.00
1094ARC/A/I	V.24/V.35, M/34F/RJ-45	\$1,045.00
1094ARC/B/B	RS-530, DB-25F/RJ-45	\$1,045.00
1094ARC/D/V	X.21, DB-15F/RJ-45	\$1,045.00
1094ARC/C/O	64/128K, G.703, RJ-45/RJ-45	\$1,045.00
1094ARC/IA	10Base-T Ethernet RJ-45/RJ-45	\$1,045.00
1094ARC/K/K	G.703/G.704 dual-BNC & RJ-45/RJ-45	\$1,045.00

The 1094ARC and 1089 can be managed via SNMP/HTTP using Patton's 1001MC SNMP agent card!

From Ethernet to Internet



SPECIFICATIONS

Transmission: Synchronous, full duplex, over one uncond. twisted pair (2 wires)

Line Encoding: 2B1Q

DTE Interface: G.703/G.704, 10Base-T, V.35, or X.21/V.11

DTE Rates: From 64 kbps to 1.152 Mbps

Clockings: Internal, External or Receive Recover

Line Rates: 144, 272, 400, 528, 1048, 1168 kbps

Management: SNMP configuration and management as the remote modem when connected to Model 1094ARC. Management for local and remote modems through the internet via Model 1001MC Proxy Agent Rack Card

Diagnostics: V.54 loops (LLB, RDI); V.52 compliant BER pattern generator and detector (511/511E)

Power: External desk top transformer, 100-240VAC, 50-60 Hz (Universal Input), 10W or -48 VDC

Temperature: 32° to 122°F (0° to 50°C)

Compliance: FCC Part 15, CE Mark

FEATURES & BENEFITS

- ✓ Multi-Rate Symmetric DSL
- ✓ CAP (Carrierless Amplitude and Phase) Modulation
- ✓ Data Rates up to 2.304 Mbps
- ✓ Ethernet, G.703/G.704 X.21, V.35 and EIA-530 Interfaces Available
- ✓ Compatible with Popular Model 1095
- ✓ Multi-Rate Symmetric DSL
- ✓ SNMP/HTTP Manageable via 1001MC SNMP Agent Rack Card
- ✓ NetLink Plug-and-Play for Easy Installations
- ✓ Ethernet Version Supports PPP Bridging
- ✓ Universal Power Options, 120VAC, 230VAC and -48VDC Available
- ✓ Small, Convenient Desktop Unit
- ✓ CE Marked

2.304-Mbps mDSL Modem with Extended Ranges

Model 1088

Introducing low-cost fixed interface versions of Patton's popular NetLink Model 1095 mDSL modems.

Patton's new NetLink Model 1088 provides high-speed two-wire connectivity for Internet, frame relay, Campus and ATM networks. Providing symmetric DSL connectivity at rates up to 2Mbps over just two wires, the Model 1088 connects routers,

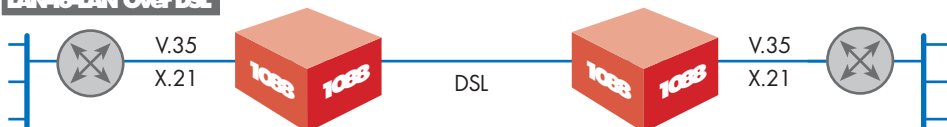


Line Rate (kbps)	DTE Rates	Transmission Distances					
		26 AWG (0.4mm)			24 AWG (0.5mm)		
		feet	miles	km	feet	miles	km
144	64, 128	21400	4.0	6.6	30700	5.8	9.4
272	192, 256	20300	3.8	6.2	30600	5.8	9.4
400	320, 384	18600	3.5	5.7	29100	5.5	9.0
528	448, 512	17400	3.3	5.4	26100	4.9	8.0
784	576, 640, 704, 768	15800	3.0	4.9	22600	4.3	7.0
1040	832, 896, 960, 1024	15500	2.9	4.8	22100	4.2	6.8
1552	1088-1536	13600	2.6	2.4	19200	3.6	5.9
2064	1600-2048	12200	2.3	3.8	17200	3.3	5.3
2320	2112-2304	11500	2.2	3.5	15800	3.0	4.9

switches, or other access devices at distances up to 6.2 miles (10 km).

Available in four fixed-interface versions (10Base-T Ethernet, G.703/G.704, X.21, and V.35), the Model 1088 operates at n x 64 kbps rates up to 2.304 Mbps. Our

LAN-to-LAN Over DSL



Ethernet version, the Model 1088/I, offers 10Base-T bridging with PPP support. This enables customers to extend a router's serial interface and connect to a remote 10Base-T Ethernet LAN. All four versions of the Model 1088 are fully compatible, allowing extended distance conversions between G.703/G.704, X.21, V.35, Ethernet, etc.

The Model 1088 is also compatible with Patton's popular Model 1095 standalone or 1095RC rack card. Now service providers can cut costs and setup time by installing a rack-mounted Model 1095RC at the central site while bundling a Model 1088 with DSL service at the customer premises.

Convenient plug-and-play capability enables NSPs to quickly install or upgrade remote



ORDERING INFORMATION

1088/C/xx*	Rocket mDSL modem; V.35 (M34F) interface; 90-260 VAC power supply	\$995.00
1088/D/xx*	Rocket mDSL modem; X.21 (DB154F) interface; 90-260 VAC power supply	\$995.00
1088/I/xx*	Rocket mDSL modem; Ethernet (RJ-45) interface; 90-260 VAC power supply	\$1,195.00
1088/K/xx*	Rocket mDSL modem; G.703/E1 or n x 64kbps G.704/FE1 (Dual BNC or RJ-45) interface; 90-260 VAC power supply	\$1,195.00

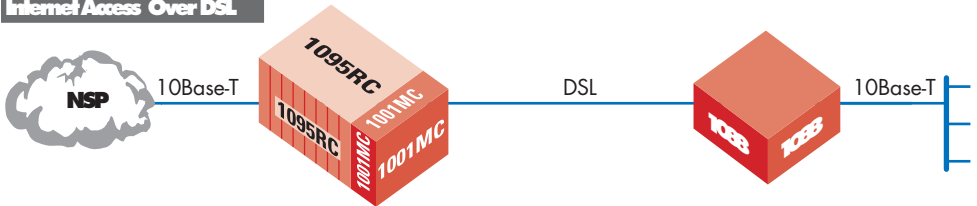
*Power supply options (xx): UI = Universal interface
90-260 VAC; 120 = 120 VAC; 230 = 230 VAC; 48 = -48 VDC

Rack Cards

1095RC/A/B	V.24/V.35, DB-25F/RJ-45	\$1,245.00
1095RC/A/I	V.24/V.35, M/34F/RJ-45	\$1,245.00
1095RC/B/B	RS-530, DB-25F/RJ-45	\$1,245.00
1095RC/D/V	X.21, DB-15F/RJ-45	\$1,245.00
1095RC/C/O	64/128K, G.703, RJ-45/RJ-45	\$1,245.00
1095ARC/IA	10Base-T Ethernet RJ-45/RJ-45	\$1,145.00
1095ARC/K/K	G.703/G.704 dual-BNC & RJ-45/RJ-45	\$1,145.00

units. And both the 1095RC and 1088 can be managed via SNMP/HTTP using Patton's 1001MC SNMP agent card!

Internet Access Over DSL



SPECIFICATIONS

Transmission: Synchronous, full duplex, over one uncond. twisted pair (2 wires)

DTE Interface: G.703/G.704, 10Base-T, V.35, or X.21/V.11

Clock: Internal, External or Receive Recover

DTE Rates: From 64 kbps to 2.3 Mbps in user definable increments

Line Rates: 128, 256, 384, 512, 768, 1024, 1536, 2048, 2304 kbps

Management: SNMP configuration and management as the remote modem when connected to Model 1095RC. Management for local and remote modems through the internet via Model 1001MC Proxy Agent Rack Card

Diagnostics: V.54 loops (LB, RD); V.52 compliant BER pattern generator and detector (511/511E)

Power: External desk top transformer, 100-240VAC, 50-60 Hz (Universal Input), 10W or -48 VDC

Temperature: 32° to 122°F (0° to 50°C)

Compliance: FCC Part 15, CE Mark

FEATURES & BENEFITS

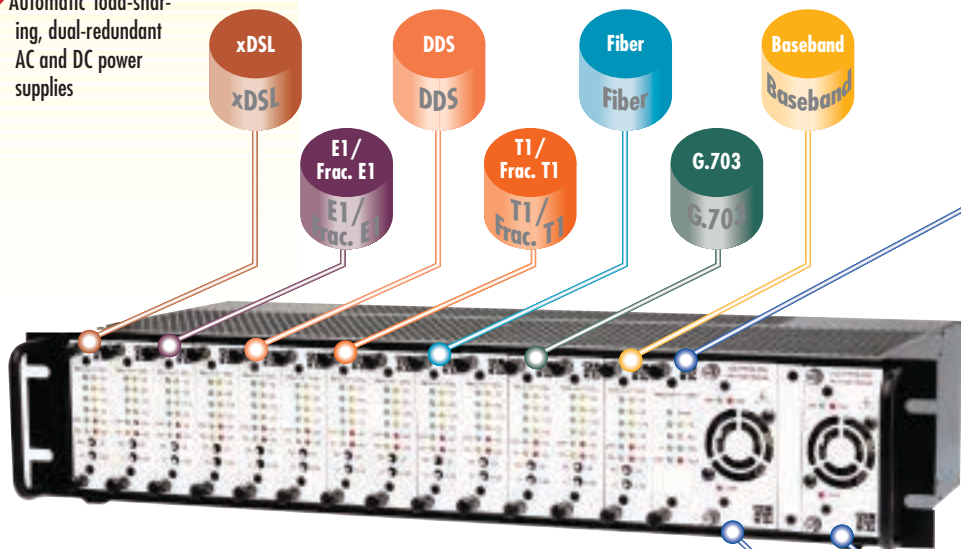
- ✓ High-density rack system supports up to 16 modems in a 2U-high, 19-inch wide rack-mount chassis with integral AC/DC power supply
- ✓ Configurable input/output modules support all serial, voice/fax, Ethernet and G.703 DTE interfaces.
- ✓ The NetLink rack system can expand to 320 modems in a standard 40U-high rack system.
- ✓ Integrated SNMP and HTTP management system
- ✓ Automatic load-sharing, dual-redundant AC and DC power supplies

Access Rack System for Universal Access

Model 1001 Telco Rack System

The Model 1001 high-density rack system supports a variety of last-mile devices in a 2U-high, 19-inch wide rack-mount chassis with redundant AC/DC power supplies.

When users require higher density solutions, a rack system becomes more economical. The NetLink Model 1001 rack system consists of a 2U-high chassis that can be mounted in any standard 19-inch wide telco rack. The Model 1001 chassis supports up to 16 modem modules and a single AC or DC power supply, or dual-redundant AC or DC power supplies.



The rack shown above is a fully-configured NetLink Model 1001 rack system containing 13 modems, a network management module, and two power supply modules that fill the 18 front rack slots. Equipment/network interface modules that fill the rear slots of the rack chassis connect to the front modules through a midplane bus that extends the width of the rack.

Nearly all of the electrical and physical interfaces—from Ethernet to V.35—are available as I/O modules. Dual redundant AC or DC power supplies can be installed in the rack system to help avoid catastrophic failures caused by power fluctuations or outages.

Technology	Modem Rack Card Model	Description	CPE Model (Standalone)	Page	
xDSL	iDSL	1092ARC	64/128kbps; 2/4 wire iDSL modem	1092ARC	A9
	HDSL	1094ARC	128kbps–1Mbps; 2 wire HDSL modem	1094A • ä1089	N12 • N14
	mDSL	1095RC	128kbps–2.3Mbps; 2 wire mDSL modem	1095ä • 1088	A5 • äN16
E1/Frac. E1	2715RC • 2701RC	n x 64kbps up to 2.048Mbps G.703 NTU	2715ä • ä2701	A10 • N2	
E1/G.703	2703RC	2.048Mbps G.703 NTU	2703	A15	
DDS	2520RC	56/64kbps DDS CSU/DSU	2520 • 2510 • 2500	A13	
T1/Frac. T1	2710RC	1.544Mbps/n x 56/64kbps CSU/DSU	2710	A11	
Fiber	SMF	1193RC	Single-mode fiber for G.703 termination	1193	N10
	MMF	1186RC	Multi-mode fiber for G.703 termination	1186	N10
G.703/64kbps	2073RC	64kbps G.703 Co-directional NTU	2073	A16	
Baseband		1092RC	64/128kbps; 2-wire baseband modem	1092	A9
		1065	64kbps; 4-wire industrial modem	1065	N22
		1080ARC	64kbps; 4-wire multi-drop modem	1080A	D13



NetLink management module and network interface module

Network Management via SNMP or HTTP

The NetLink rack system enables users to configure, control, and perform diagnostics via SNMP or HTTP. To manage a rack system, the operator need only install a NetLink Management Module (Model 1001MC), connect a workstation to its Ethernet port, and launch a standard Web browser (i.e., Netscape Navigator or Internet Explorer). Now, any operator can manage any NetLink rack card or standalone modems from a local PC or via the Internet.

Dual-Redundant AC and DC power supplies

The Model 1001 rack system can have one or two 90–264 VAC or -12/-24/-48 VDC power supplies installed in any combination. Each power supply can support a fully-loaded rack configured with any combination of front modem modules and rear I/O cards. If two power supplies are installed, they automatically self-configure for dual-redundant, load-sharing operation. In dual-redundant configuration, each power supply shares 50% of the load.

In the unlikely event of a supply failure, the other supply immediately begins providing 100% of required power; the operator is notified by an audible alarm; an LED flashes on the front panel; and the central site operator is notified via the network management system.



AC power supply and rear power entry module



DC power supply and rear power entry module

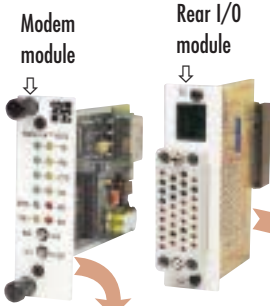
MORE

Access Rack System (continued)

Model 1001 Telco Rack System

Great Modularity & Interface Functionality

The NetLink rack system's midplane bus connects front modem modules and rear I/O modules, delivering the right combination of modem technology and interface support. Physical/electrical interface conversion is also built-in to the system architecture. For example rack cards with G.703/G.704 interfaces will connect to V.35/X.21/EN standalone units.



Technology	Model	Description	Rear Rack I/O Cards
xDSL	1092ARC	iDSL-2W/4W	
	1094ARC	HDSL-2W	
	1095RC	mDSL-2W	
Baseband T1/DDS	1092RC	2W Modem	
	2520RC	DDS	
	2710RC	T1/FT1	
E1/Frac. E1	2073RC	G.703/64kbps	
	2701RC	G.703/G.704	
	2715RC	G.703/G.704	
G.703/ 2Mbps	2703RC	E1/G.703	
Fiber	1193RC	SMF	
	1186RC	MMF	
Industrial Short-range Modems	1065RC	Ruggedized	
	1080ARC	Multi-drop	

Three kinds of Customer Premise Equipment (CPE)

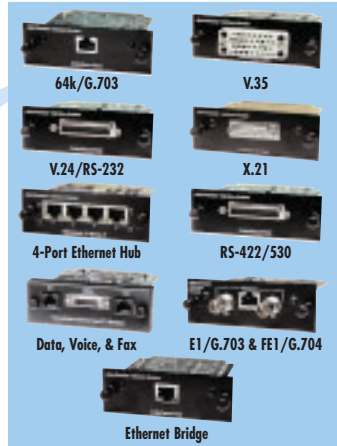
A **Micro-Pak**—Miniaccess devices packed with features



B **Quik-Connect**—Onebase unit supports a wide variety of applications and interfaces



C **Economy (Fixed Interface)**—Just what you need at a low cost



Compatible CPE	Compatible CPE Model	Page
B	1092A	A9
B	1094A • 1089	N12 • N14
B	1095 • 1088	A5 • N16
B	1092	A9
C	2520 • 2510 • 2500	A13
C	2710 • 2711	A11
B	2073	A16
A	2715 • 2701 • 2702	N2 • A10
B	2703	A15
B	2073	N10
A	1193	N10
C	1186	
B	1065	N22
A	1080	D13

ORDERING INFORMATION

1001R16P/48V	16-slot Model 1001 rack; one -48VDC power supply & rear power entry module (RPEM)	\$1,295.00
1001R16P/UIK	16-slot 1001 rack; one 90–260VAC power supply & RPEM with an IEC-320 connector.	\$1,295.00
1001R14P/R48V	14-slot 1001 rack; two -48VDC power supplies operating in a load-sharing, dual-redundant mode.	\$1,695.00
1001R14P/RIK	14-slot 1001 rack; two 90–260VAC power supplies & RPEMs operating in a load-sharing, dual-redundant mode.	\$1,695.00
1001R14P/RUI48K	14-slot 1001 rack; one -48VDC & one 90–260VAC power supply, one AC and one DC RPEM operating in a load-sharing, dual-redundant mode.	\$1,695.00
1001R	16-slot 1001 rack with midplane bus.	\$295.00
1001RPSM-RUI	90-264VAC power supply.	\$995.00
1001RPEM-RAC	Rear power entry module (RPEM) with IEC-320 connector.	\$195.00
1001RPSM-R48V	-48VDC power supply.	\$995.00
1001RPEM-RVDC	Rear power entry module (RPEM) for DC power source.	\$195.00
1001MC	SNMP/HTTP management module (requires one slot).	\$895.00
1001CC	Control module for daisy-chaining additional racks	\$295.00

FEATURES & BENEFITS

- ✓ Environmentally ruggedized sync./async. baseband modem
- ✓ V.14 async. to sync. conversion, standard and extended rates.
- ✓ Character lengths of 8, 9, 10, and 11 bits, start and stop bits included
- ✓ Supports point-to-point or multi-point operation
- ✓ Supports data rates up to 64 kbps synchronous at distances over 12 miles (19.2 km)
- ✓ Supports 4-wire half- or full-duplex operation, or 2-wire half-duplex operation
- ✓ Internal, external or received recovered sync clocking modes
- ✓ Compliant with V.52 BER and V.54 test modes
- ✓ High voltage transformer isolation/surge protection

Industrial Short-Range Modem for Outdoor Use

Model 1065

The model 1065 and 1065RC are environmentally enhanced asynchronous baseband modems. These devices will provide data communications for harsh environments.

The model 1065 and 1065RC are asynchronous baseband modems. The Model 1065 comes housed in a ruggedized chassis and incorporates extended temperature components and protective treatments that make it ideal for use in harsh industrial settings such as railways, refineries and manufacturing operations.



With built-in transformer isolation and surge protection, the 1065 supports data rates to 64 kbps synchronous at distances over 12 miles (19.2 km)

For centralized data centers, users can cluster up to 14 1065RC modem rack cards in the Model 1001 rack chassis. The Model 1001 rack system includes redundant power supply options that protect against power-related failures, providing fault-tolerant operation (see page N22).

Typical applications for the Model 1065 include using it in automatic train control systems where the modems relay data between central control sites and track-side control/monitoring equipment. This application requires equipment that is reliable in all weather conditions, because the electronic interlocking systems must continuously control wayside equipment such as

Line Drivers & Modem Eliminator

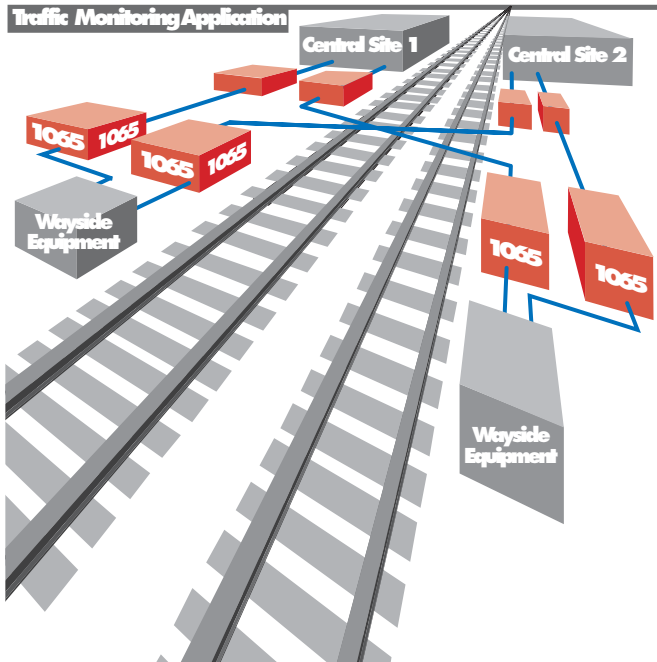


signals, point machines, derailleurs, etc., in such a manner that trains run on-time, and passengers and cargo travel safely to their destinations.

Need Help?



Me llamo Maria, soy una de los coordinadores de ventas internas en Patton. Llame me si usted desea comprar nuestros productos Patton, ó si usted tiene preguntas.



ORDERING INFORMATION

Ruggedized Industrial Baseband Modems

1065/A/120/z	Async/sync, ruggedized, DB25F, RS-232, RJ-45 line, desktop, 120 VAC power	\$845.00
1065/A/230/z	Async/sync, ruggedized, DB25F, RS-232, RJ-45 line, desktop, 230 VAC power	\$845.00
1065RC/A/B	Async/sync, DB25F, RS-232, RJ-45 line, rack card	\$845.00

Extended Environmental Industrial Baseband Modems

1065E/A/120/z	Async/sync, extended environmental, DB25F, RS-232, RJ-45 line, desktop, 120 VAC power	\$845.00
1065E/A/230/z	Async/sync, extended environmental, DB25F, RS-232, RJ-45 line, desktop, 230 VAC power	\$845.00
1065RCE/A/B	Async/sync, extended environmental, DB25F, RS-232, RJ-45 line, rack card	\$845.00

SPECIFICATIONS

Transmission: Sync or Async., 2-wire/half duplex, 4-wire/full- or half-duplex, point-to-point or multi-point operation.

DTE Interface: RS-232/V.24, DB25 female

Line Interface: 2 or 4 wire UTP, 1926 AWG

Data Rates: Switch-selectable 1.2, 1.8, 2.4, 3.6, 4.8, 7.2, 9.6, 14.4, 19.2, 28.8, 38.4, 57.6, 64 Kbps

Clocking: Internal, external, or receive recover

RTS Anti-stream Timer: Switch-selectable for disabled, 12.5 sec, or 50 sec operation.

Carrier: Always-on or controlled by RTS; selectable RTS/CTS delay of no delay, 7, or 53 ms

Diagnostics: V.52 compliant BER pattern (511/511E pattern) generator and detector with error injection mode; V.54-compliant local analog and remote digital loopbacks, activated by front panel switch or RS-232 DTE interface

Isolation: Transformer at 2000 VRMS; Extended models 200Meg. Ohm at 500VDC

Surge protection: Immune to IEC-801-5 Level 2, 1kV

Temp/Humidity:

Standard models: 0 to +70°C with 5-95% relative humidity, non-condensing

Extended models: 10 to +70°C, 100% condensing humidity from -10 to +30°C; Absolute humidity from +30 to +70°C

Dimensions: 5.5W x 7.5D x 1.6H in. (13.9W x 19D x 4H cm)

Power supply: 120/230 VAC switchable; IEC-320 male-shrouded connector

FEATURES & BENEFITS

- ✓ Provides data rates up to 128 kbps
- ✓ Operates multi-point or point-to-point
- ✓ Runs synchronous or asynchronous
- ✓ 2- or 4-wire operation
- ✓ Half-duplex or full-duplex
- ✓ Selectable RTS to CTS delay
- ✓ Anti-streaming timer
- ✓ Can operate as tail circuit modems by using pin 24 external clocking
- ✓ Local bi-lateral digital loop-back
- ✓ Internal power supply, switch selectable for 110- or 220-VAC operation
- ✓ UL, CSA, and FCC Class A approvals

High-Speed Multi-Point Short-Range Modem

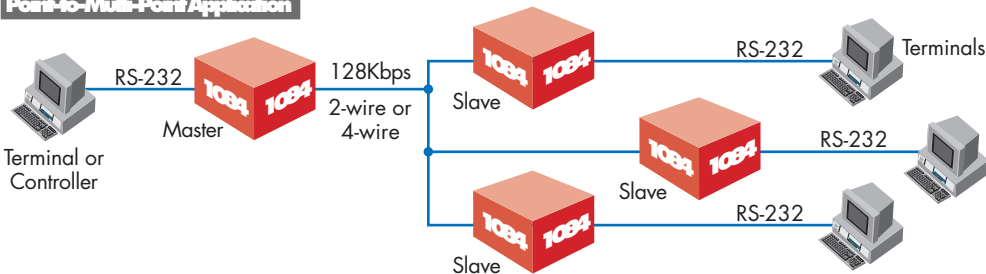
Model 1084

The Model 1084 is a 2-wire/4-wire short-range modem that interconnects sync or async devices, located up to 3 miles (4.8 kilometers) apart, at speeds to 128-kbps.

The Model 1084 is a unique short range-modem because it supports multi-point operation for sync or async devices at high speeds. The user interface is RS-232 on a DB-25F connector. When configured for sync operation, the Model 1084 provides internal or external clocking, and has selectable RTS/CTS delays of 0, 8, or 50 msec.



Point-to-Multi-Point Application



SPECIFICATIONS

- Data Rates:** 1.2 kbps to 128 kbps
- Timing:** Internal—Baudrate generator; External—Pin24
- Channel Interface:** EIA RS-232C (V.24) female connector (DB-25)
- Line Requirement:** Two-or-four-wire private line; unloaded with no bridge taps
- Line Interface:** RJ-45 plug, RS-485 electrical specification
- Power Source:** 100-120/200-240VAC, 50 to 60Hz, 0.16/0.08A switchable
- Op. Temp.:** 32 to 122 °F (0 to 50 °C)
- Rel. Humidity:** 5 to 90% non-condensing
- Dimensions:** 1.75Hx 8.90W x 10.00D in. (4.44H x 22.60W x 25.40D cm)

The unit has a switchable 110- or 220-VAC power supply located on the rear panel. By installing the appropriate power cord for the country of use, the Model 1084 can be used virtually anywhere.

ORDERING INFORMATION

1084	2-/4-Wire Multi-Point Short-Range Modem (LDM-128K)	\$995.00
1084-220	Same as 1084 except pre-configured for 220VAC	\$995.00

Powered V.24 Modem Eliminator

Model 1200P

Connect two DTE devices without using modems.

The Model 1200P modem eliminator (ME) connects sync or async DTE terminal devices by matching clock, control, and data signals without using modems (DCEs). The 1200P extends the possible distance between two DTEs by repeating the signals. Distances up to 50 feet (15 meters) are achievable.



FEATURES & BENEFITS

- ✓ Supports data rates up to 76.8 kbps to both terminals
- ✓ Connect two sync or async DTE terminals without using modems
- ✓ Selectable RTS to CTS delay
- ✓ Rack mounting kit included
- ✓ Internal power supply, switch selectable for 110- or 220-VAC operation
- ✓ UL, CSA, and FCC Class A approvals

For Info on Self-Powered Modem Eliminators, SEE PAGE D16

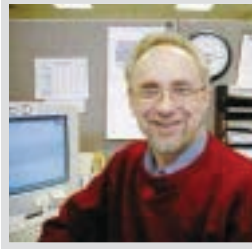
Point-to-Point Application Connecting Two Sync. DTE Devices



SPECIFICATIONS

- Capacity:** Two channel terminals
- Data coding:** Synchronous or asynchronous
- Data interface:** RS232C
- CTS delay:** 0 or 20mS
- Data rates:** 450, 600, 900, 1.2K, 1.8K, 2.4K, 3.6K, 4.8K, 7.2K, 9.6K, 14.4K, 19.2K, 28.8K, 38.4K, 57.6K, and 76.8K
- Physical interface:** Female DB25 connector
- Power source:** 100-120/200-240 VAC, 50 to 60Hz, 0.16/0.08A, switch selectable
- Op. temp.:** 32 to 122 °F (0 to 50 °C)
- Rel. humidity:** Up to 90% non-condensing
- Dimensions:** 1.75H x 8.90W x 10.0D in. (4.44H x 22.60W x 25.40D cm)
- Weight:** 2.25lbs (1.02 Kg)

Ask the experts..



I'm Nathan, Patton's Manager of Technical Services. If you don't find what you need at www.patton.com or in this catalog, or if you have technical questions, please call me at (301) 975-1007. You can also send e-mail to support@patton.com.

ORDERING INFORMATION

- | | | |
|------------------|---|-----------------|
| 1200P | Powered V.24 Sync ME, Two V.24 DTEs to 72 Kbps (ME-V.24-SS) | \$350.00 |
| 1200P-220 | Same as 1200P except pre-configured for 220VAC | \$350.00 |

FEATURES & BENEFITS

Model 2019

- ✓ Data rates to 38.4 kbps
- ✓ DB-25 connector for the RS-232 port, 4-lug terminal block for the current loop port
- ✓ RS-232 port is switch selectable for DTE or DCE
- ✓ Stand-alone unit housed in an aluminum enclosure.
- ✓ External 110- or optional 220-VAC power supply
- ✓ UL and CSA approvals

Model 2017RC

- ✓ Data rates up to 115.2 kbps
- ✓ Two RJ-45 connectors for RS-232 devices and two RJ-45 or RJ-11 connectors for the current loop ports
- ✓ UL and CSA approvals

SPECIFICATIONS

Capacity: Model 2019—One RS-232 and current loop channel; Model 2017RC—Two RS-232 and current loop channels

Data coding: Async full- or half-duplex

Data rates: Model 2019—Up to 38.4 kbps; Model 2017RC—Up to 115.2 kbps

Electrical interface: Model 2019—RS-232 and 20-, 30-, or 60-mA current loop; Model 2017RC—RS-232 and 20-mA current loop

RS-232 physical interfaces: Model

2019—female DB-25 connector; Model 2017RC—Two RJ-45 connectors

Current loop physical interfaces: Model

2019—4-position terminal block; Model 2017RC—Two RJ-45 or RJ-11 connectors

Power source: Model 2019—110- or 220-VAC, 47 to 63 Hz, 5 Watts, external power supply; Model 2017RC—1.4 Watts at 10 VAC, supplied by rack

Powered RS-232 to Current Loop Converters

Models 2019 & 2017RC

Connect RS-232 (V.24) devices to current loop devices.

The Model 2019 and Model 2017RC are async devices that operate bi-directionally in full- or half-duplex modes.

The Model 2019 converts async RS-232 data lines to 2- or 4-wire 20-, 40-, or 60-mA current loop lines. It can be configured for active or passive transmitters and receivers.



The Model 2017RC rack card occupies one slot of the 1000R/16 front-load rack. It has dual independent converters that enable two async DTE RS-232 devices to communicate with two 20-mA current loop devices over two twisted pairs. It can be configured for active or passive transmitters.



SEE PAGE
F1

RS-232 to Current Loop Async Data Conversion Application



ORDERING INFORMATION

2019	Powered current loop to RS-232 with 110-VAC transformer, (CL-V.24)	\$295.00
2019-220	Powered current loop to RS-232 with 220-VAC transformer, (CL-V.24-220)	\$310.00
2017RC/D/P	Dual RS-232 to current loop, rack card, RJ-11	\$195.00
1000R16P/120K	Rack system (see page F1)	\$425.00

Some new products may not be available when this catalog is published, so please call for availability.

Powered Asynchronous to Synchronous Converter

Model 2012

Converts RS-232 asynchronous data to synchronous.

The Model 2012 full-duplex async to sync converter uses elastic buffers to synchronize async data with the sync clocks.

The converter takes async data and synchronizes the data with a clock signal provided by a synchronous modem.



The async data is buffered because the sync clock rate is usually slower than the incoming async data. If the sync clock rate exceeds the async data rate, stop bits are added to the async data stream to compensate.

The units operate as single-sided devices, which enables isochronous (clocked asynchronous) and async devices to communicate through synchronous modems.

FEATURES & BENEFITS

- ✓ Uses a sync modem to transfer async data
- ✓ Modem provides the clock signal
- ✓ Operates at up to 19.2 kbps (including the 3/4 rate)
- ✓ Selectable baud rates from 150 bps to 19.2 kbps and from 112.5 bps to 14.4 kbps
- ✓ Standalone unit housed in an aluminum enclosure.
- ✓ Configurable for 110- or 220-VAC operation
- ✓ UL, CE, and CSA approvals

For Info on Self-Powered Async.-to-Sync. Converters, SEE PAGE **C3**

SPECIFICATIONS

- Capacity:** One sync RS-232 modem and one async RS-232 terminal
- Data format:** Async to sync; Standard 5 to 8 Data Bits
- Data rates:** 150 to 19.2K bps; 112.5 to 14.4 kbps
- Data interface:** EIA RS232
- RS-232 physical interface:** Two female DB-25 connectors
- RTS to CTS delay:** 10 ms (optional)
- Power source:** 100-120/200-240 VAC, 50 to 60Hz, 0.16/0.08A, Switch Selectable
- Op. temp.:** 32 to 122 °F (0 to 50 °C)
- Rel. humidity:** 5 to 90% non-condensing
- Dimensions:** 1.75Hx 8.90W x 10.0D in. (4.44H x 22.60W x 25.40D cm)
- Weight:** 2.25 lbs (1.02 Kg)

RS-232 Sync Modem to Async Terminal Conversion Application



ORDERING INFORMATION

2012	Powered async to sync, (EASI-2C)	\$470.00
2012-220	Same as 2012 except pre-configured for 220VAC	\$470.00

Some new products may not be available when this catalog is published, so please call for availability.

FEATURES & BENEFITS

- ✓ Data rates up to 76.8 kbps
- ✓ One DB-25 (V.24) female connector and one M-34 (V.35) female connector
- ✓ Operation is transparent to data
- ✓ TXD, RXD, TXC, RXC, ETXC, RTS, CTS, DTR, DSR, DCD interface leads are converted between V.24 and V.35
- ✓ Internal power supply that is switch selectable for 110- or 220-VAC operation
- ✓ Sturdy aluminum enclosure
- ✓ UL, CSA, and FCC Class A approvals

Powered RS-232 to V.35 Converter Model 2020P

Connect an RS-232 device to a V.35 device located up to 4,000 feet (1,219 meters) away.

The Model 2020P Interface Converter has a V.24 connector (which can be set for DCE or DTE operation) and a V.35 connector. The 2020P operates bidirectionally at speeds up to 76.8 kbps, which makes it ideal for use with high speed group-band modems.



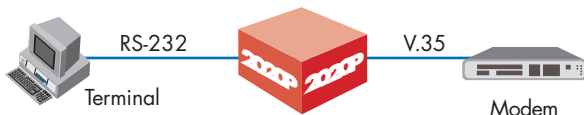
The V.35 device can be located up to 4,000 feet (1,219 meters) away from the 2020P, while the RS-232 device can be as much as 50 feet (15 meters) from the 2020P.

The unit comes equipped with a DB-25 female connector for the RS-232 port and a female M-34 connector for the V.35 port.

SPECIFICATIONS

- Capacity:** One RS-232 channel and one CCITT V.35 or V.11 channel
- Data coding:** Transparent
- Data rates:** Up to 76.8 kbps
- Physical interface: V.24** Female DB-25 connector; Balanced physical interface—Female M-34 connector
- Power source:** 100-120/200-240 VAC, 50/60 Hz, 0.16/0.08A, switch selectable
- Op. temp.:** 32 to 122 °F (0 to 50 °C)
- Rel. humidity:** 5 to 90% non-condensing
- Dimensions:** 1.75H x 8.90W x 10.0D in. (4.44H x 22.60W x 25.40D cm)
- Weight:** 2.25 lbs (1.02 Kg)

RS-232 to CCITT V.35 Interface Conversion



ORDERING INFORMATION

2020P	Powered RS-232 to V.35 Converter (IC-V.24/V.35)	\$395.00
2020P-220	Same as 2020P except pre-configured for 220VAC	\$395.00

Powered RS-232 to X.21 Converter

Model 2021P

Connect an RS-232 device to an X.21 device located up to 4,000 feet (1,219 meters) away.

The Model 2021P Interface Converter/Tail Circuit Buffer has a V.24 connector (which can be set for DCE or DTE operation) and an X.21 connector. The 2021P operates bi-directionally and enables RS-232 terminals or modems to interconnect with X.21 terminals or modems. DSU/CSUs are ideal for this adapter, since it can operate at up to 64 kbps.



The X.21 device can be located up to 4,000 feet (1,219 meters) away from the 2021P, while the RS-232 device can be as much as 50 feet (15 meters) from the 2021P.

The unit comes equipped with a DB-25 female connector for the RS-232 port and a female DB-15 connector for the X.21 port.

RS-232 to CMTT X.21 Interface Conversion



ORDERING INFORMATION

2021P	Powered RS-232 to X.21 Converter (IC-V.24/X.21)	\$495.00
2021P-220	Same as 2021P except pre-configured for 220VAC	\$495.00

FEATURES & BENEFITS

- ✓ Data rates up to 64 kbps
- ✓ One DB-25 (V.24) female connector and one DB-15 (X.21) female connector
- ✓ Operation is transparent to data
- ✓ TXD, RXD, TXC, RXC, ETCX, RTS, CTS, DTR, DSR, DCD interface leads are converted between V.24 and X.21
- ✓ 8-bit ring buffer for modem-to-modem interconnection
- ✓ Internal power supply that is switch selectable for 110- or 220-VAC operation
- ✓ Sturdy aluminum enclosure
- ✓ UL, CSA, and FCC Class A approvals

SPECIFICATIONS

- Capacity:** One RS-232 Channel and One X.21 Channel
- Buffer:** 8-Bit Ring
- Data coding:** Transparent
- Data rates:** Up to 64 kbps
- Physical interface:** V.24-Female DB-25 connector; X.21-Female DB-15 connector
- Power source:** 100-120/200-240 VAC, 50/60 Hz, 0.16/0.08A, switch selectable
- Op. temp.:** 32 to 122 °F (0 to 50 °C)
- Rel. humidity:** 5 to 90% non-condensing
- Dimensions:** 1.75H x 8.90W x 10.0D in. (4.44H x 22.60W x 25.40D cm)
- Weight:** 2.25 lbs (1.02 Kg)

FEATURES & BENEFITS

- ✓ Five CCITT V.35, M/34 female connectors
- ✓ Speed and code transparency to 2.048 Mbps
- ✓ Internal or external clock
- ✓ Master port is selectable for DCE or DTE operation
- ✓ Automatic anti-streaming
- ✓ Front panel LEDs provide channel activity status
- ✓ Operation is transparent to data
- ✓ Receive data can be broadcast or gated

Powered V.35 Modem Sharing Device

Model 3014/V35

Enables up to four synchronous terminal devices (DTE) to share one V.35 modem (DCE) or terminal (DTE) device

With the Model 3014/V35 Modem Sharing Device (MSD), up to four synchronous terminal controllers can share one high speed V.35 DCE/DTE device in a polled environment. Sub-channels contend for the master channel by activating RTS (request to send), or by data transitions.

Terminal access to the Model 3014/V35 can be set up during installation to use one of two modes: sequential scanning (which gives equal access to all channels) or priority scanning (which gives channel 1 the highest priority for access).



- ✓ Individual sub-channel enable/disable switches
- ✓ Selectable RTS/CTS time delay
- ✓ Fully cascadable
- ✓ Sturdy aluminum enclosure
- ✓ Internal power supply that is switch selectable for 110- or 220-VAC operation
- ✓ UL, CSA, and FCC Class A approvals

Clocking is provided externally by the modem connected to the Master port or internally by the baud rate generator. External clock rates can be as high as 2.048 Mbps. Internal clock rates are 48, 56, 64, or 72 kbps.

The Model 3014/V35 incorporates anti-streaming features that prevent network lock-ups by automatically removing defective terminals from service.

Sub-channels can be taken off-line for local servicing through use of the individual front panel switches.

Need Help?



I'm Michelle, one of Patton's Sales Coordinators. Call me when you want to purchase Patton products or if you have questions about our products. You can also send e-mail to sales@patton.com.

ORDERING INFORMATION

3014/V35	Powered V.35 MSD (MD-V.35)	\$995.00
3014/V35-220	Same as 3014/V35 except pre-configured for 220VAC	\$995.00
3014/V24	SEE PAGE N42	\$495.00
3014/V24-220	Same as 3014/V24 except pre-configured for 220VAC	\$495.00
3014/V24/FB	SEE PAGE N44	\$625.00
3014/V24/FB-220	Same as 3014/V24/FB except pre-configured for 220VAC	\$625.00

V.35 Terminal devices sharing one V.35 DTE or DCE Modem in a polled environment

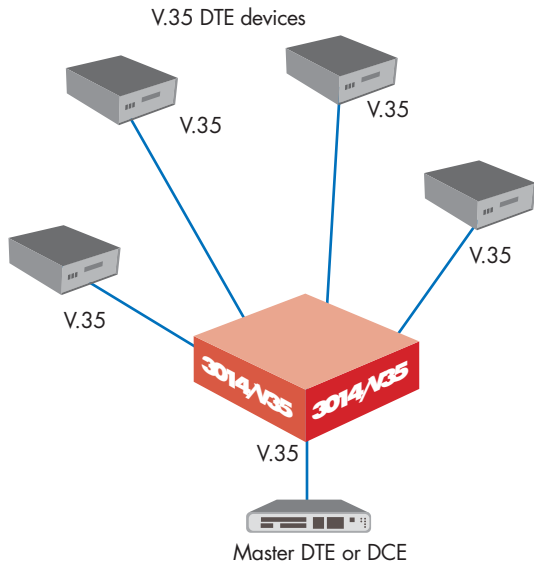
How Does Synchronous Polling Work?

Polled networks typically consist of a master DTE device (sometimes called a front-end controller) and DTE devices that communicate with the master DTE (these can be automated teller machines, point-of-sale terminals, etc).

When the master DTE needs to communicate with a device, it sends the address of that device onto the network. Meanwhile, the DTE devices on the network have been listening (polling) for anything addressed to them. When a DTE device recognizes its address on the network, it acknowledges by sending the request-to-send (RTS) signal to the Model 3014.

The Model 3014 provides a clear-to-send (CTS) signal to the DTE device, which then begins transmitting data to the master DTE.

When the transmission is completed, the DTE device deactivates RTS, and the Model 3014 stops sending CTS.



SPECIFICATIONS

Capacity: One to four V.35 sync/async DTE devices; One V.35 DCE master channel

Data format: Data transparent at all data rates

Data rates: Up to 2.048Mbps

Timing: External: From master port, sub-channel 1 pins U & W routed to master port

Sub-channel interface: CCITT V.35 (M/34) using female V.35 connectors

Modem interface: CCITT V.35 (M/34) using female V.35 connectors

Terminal service modes:

Scanning: Channels are continuously scanned for RTS on a sequential basis

Priority: Channels are continuously scanned for RTS, channel 1 has highest access

Anti-streaming: Automatic, selectable time-out intervals

Power source: 100-120/200-240 VAC, 50/60 Hz, 0.16/0.08A, Switch Selectable
Op. temp.: 32 to 122 °F (0 to 50 °C)

Rel. humidity: 5 to 90% non-condensing
Dimensions: 2.05H x 13.35W x 9.0D in. (5.21H x 33.09W x 22.86D cm)

Weight: 4.5 lbs (2.1 Kg)

FEATURES & BENEFITS

- ✓ V.35 or V.24 composite port interface
- ✓ V.24 sub-channel interface
- ✓ Individually configurable sub-channels up to 19.2 kbps
- ✓ Operation is transparent to data
- ✓ Individual sub-channel local and composite remote loopback capabilities
- ✓ Sturdy rack-mountable aluminum enclosure (Rack mount kit included)
- ✓ Internal linear power supply with a 110-/220-VAC selector switch
- ✓ UL, CSA, and FCC Class A Approvals

Low-Speed Time-Division Multiplexers

Model 3046

Multiplex six V.24 sync or async devices onto a single composite V.35 or V.24.

The Model 3046 6-channel time-division sub-rate multiplexer can interface to a DCE running at 56 or 64 kbps. It supports composite rates at 9.6, 14.4, or 19.2 kbps. It provides 6 sub-rate channels capable of sync or async data transfers from 1.2 kbps to 19.2 kbps.



Optional Controlled Carrier Simulation is done by sending RTS from the local Model 3046 multiplexer across the link and translating it to DCD at the receiving Model 3046.

SPECIFICATIONS

Capacity: Six RS-232 sync/async DTE devices; one V.35 or V.24 DCE master channel

Protocols: Sync or async individually selected on each channel

Composite data rates: 56 or 64 kbps (high speed); 9.6 or 19.2 kbps (low speed) (optional 14.4 kbps)

Sub-channel data rates: 1200 bps up to 19200 bps

Sub-channel interface: EIA RS-232 female connectors (DB-25)

Composite interface: 3046/V35-CCITT V.35 female connector (M/34); 3046/V24-V.24 (DB-25) connector

Max channel aggregate (comp/chan): 64K/57.6K; 56K/52.8K; 19.2K/18.0K; 14.4K/13.2K; 9.6K/8.4K

Powersource: 100-120/200-240 VAC, 50/60 Hz, 0.16/0.08A, switch selectable

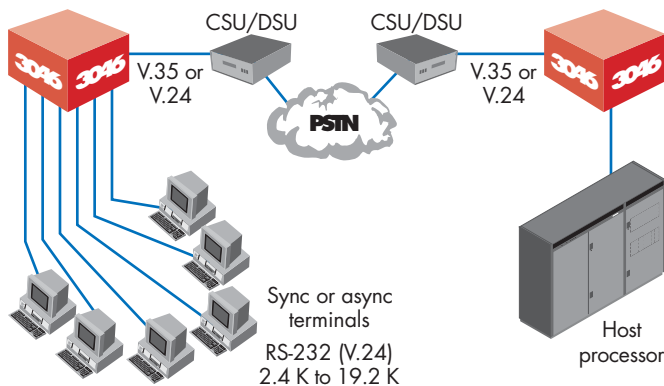
Op. temp.: 32 to 122 °F (0 to 50 °C)

Rel. humidity: 5 to 90% non-condensing

Dimensions: 1.75Hx 17.0W x 11.0D in. (4.44H x 43.18W x 18.93D cm)

Weight: 4.5 lbs (2.1 Kg)

Multiple RS-232 DTE devices sharing one V.35 or V.24 DCE link



ORDERING INFORMATION

3046/V24	Powered V.24 Time-Division Multiplexer (DDS-MUX-V24)	\$995.00
3046/V24-220	Same as 3046/V24 except pre-configured for 220VAC	\$995.00
3046/V35	Powered V.35 TDM (DDS-MUX-V35)	\$1,095.00
3046/V35-220	Same as 3046/V35 except pre-configured for 220VAC	\$1,095.00

Low-Speed Time-Division Multiplexer

Model 3042

Connect two sync terminals, or one async and one sync terminal, to a high speed sync modem.

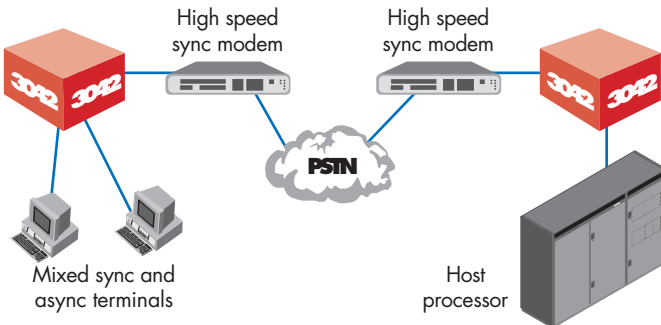
The Model 3042 is a full-duplex, RS-232, two-channel, time-division multiplexer (TDM) with an independent switch-selectable V.14/V.22-compliant async-to-sync interface adapter on sub-channel 1.

The Model 3042 provides two channels that can operate either as two sync channels, or as one sync and one async channel. TDM techniques are used to interleave data from the two channels into a composite channel that operates at twice the rate of the sub-channels.



The composite channel is interfaced with a high speed synchronous modem via a straight-through cable.

RS-232 Two-Channel Multiplexer Application



FEATURES & BENEFITS

- ✓ RS-232 composite port interface and sub-channel interface
- ✓ Provides data rates up to 19.2 kbps at the sub-channels and 38.4 kbps at the composite channel
- ✓ Operation is transparent to data
- ✓ Sturdy aluminum enclosure
- ✓ External wall-mounted power supply
- ✓ UL, CSA, and FCC Class A approvals

SPECIFICATIONS

- Capacity:** Two sync RS-232 terminals or one sync and one async RS-232 terminal multiplexed on one sync RS-232 modem
- Data coding:** Sync or async
- Datarates:** Async-600 to 19,200 bps; Sync-up to 19,200 bps; Composite-38,400 bps
- Data interface:** EIA RS-232C
- Power source:** 110 or 220 VAC, 47 to 63Hz, 5 Watts, external wall-mounted transformer
- Op. temp.:** 32 to 122 °F (0 to 50 °C)
- Rel. humidity:** 5 to 90% non-condensing
- Dimensions:** 2.0H x 8.30W x 6.10D in. (5.08H x 21.08W x 15.49D cm)
- Weight:** 2.25 lbs (1.02 Kg)

ORDERING INFORMATION

3042	Powered V.24 Micro TDM (TDM-V24)	\$395.00
3042-220	Same as 3042 except pre-configured for 220VAC	\$395.00

FEATURES & BENEFITS

- ✓ Model 3028 Turbo—RS-232 interface on all ports
- ✓ Model 3530 Turbo—RS-530 interface on all ports
- ✓ Eight channels synchronous or asynchronous
- ✓ Channel speeds up to 19.2 kbps
- ✓ Link speeds up to 64 kbps
- ✓ Aggregate channel input up to 76.8 kbps
- ✓ Independently configurable channels
- ✓ Configurable from the front panel or from a supervisory terminal
- ✓ Local and remote supervisory capability with password protection
- ✓ Channel and link statistics
- ✓ Internal linear power supply with 115/230-VAC switch

Powered 8-Channel, Async/Sync Statistical Multiplexers

Models 3028 (RS-232) Turbo & 3530 (EIA-530) Turbo

The Model 3028 Turbo and Model 3530 Turbo Statistical Multiplexers enable users to consolidate sync or async data from up to eight terminals or CPU ports onto a single synchronous modem or DSU link.

The 3028 and 3530 multiplexers provide high performance, easy installation and operation. The 3028 Turbo Statistical Multiplexer supports RS-232 only, the 3530 Turbo multiplexer supports RS-530 devices.



Either multiplexer enables you to diagnose problems, check traffic statistics, review channel status and monitor events on the multiplexer and communications line—all from the front panel or a supervisory terminal.

Either multiplexer combines data traffic from up to eight sources into a single high-speed composite link. Channel speeds from 75 bps to 19,200 bps are supported with an automatic channel speed detection (AUTOBAUD) option up to 9,600 bps. There is a 16-kbyte buffer that is shared on-demand by the channels. Each channel is assigned a minimum of 372 bytes of buffer space to prevent lockout. Due to this buffering action, data rates on the channel side of the multiplexer may total several times the actual link rate without data loss. Either multiplexer can handle an aggregate of 76,800 bps in constant full-duplex traffic (with flow control) and a 64,000 bps link without loss of data.

The multiplexers can be monitored and controlled in a variety of ways. An ASCII asynchronous terminal can be attached to the supervisory port or to a data channel that has the superviso-

Need Help?



I'm Karen, one of Patton's Technical Support Engineers. If you don't find what you need at www.patton.com or in this catalog, or if you have technical questions, please call me at (301) 975-1007. You can also send e-mail to support@patton.com.

Multiplexers & Sharing



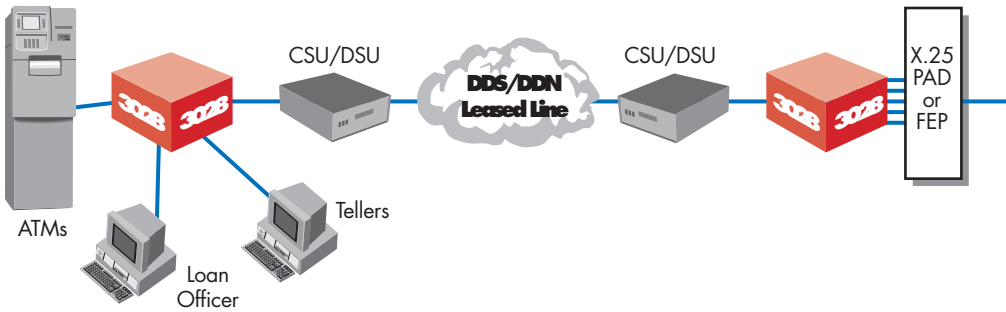
ry access option enabled, or the front panel controls can be used.

As shown in the applications diagrams below, the Model 3028 Turbo and Model 3530 Turbo Statistical Multiplexers can be used to consolidate sync or async data from up to eight devices onto a single synchronous modem or DSU link.

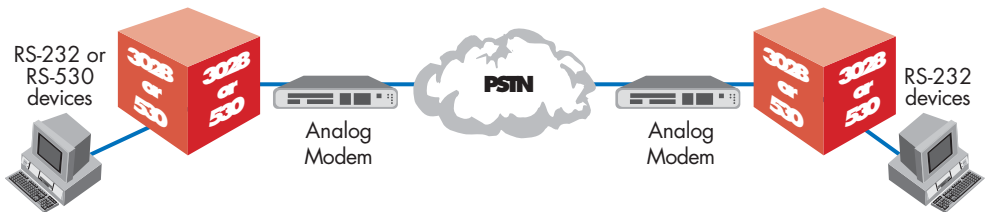
ORDERING INFORMATION

3028 Turbo	Powered statistical multiplexer, RS-232, 8-channel (2031 TURBO) \$1,095.00
3028 Turbo-220	Same as 3028 Turbo except pre-configured for 220VAC \$1,095.00
3530 Turbo	Powered statistical multiplexer, RS-530, 8-channel (2530 TURBO) \$2,500.00
3530 Turbo-220	Same as 3530 Turbo except pre-configured for 220VAC \$2,500.00

3028A Application



3028 or 3530 Application



SPECIFICATIONS

Number of channels: 8
Channels speeds: Up to 19.2 kbps
Link speeds: Up to 64 kbps
Maximum aggregate speed: 76.8 kbps
Interface standards:
 3028 Turbo: EIA RS-232-C, CCITT V.24
 3530 Turbo: EIA RS-530, CCITT V.11
Autobaudrate detection: 150 to 9600 bps
Protocols: SDLC/HDLCor asynchronous

Link protocol: Modified HDLC, X.25 Level 2
EIA signal propagation: RTS=DCD, DTR=DSR, BO=RI, DRSS=CTS
Error control: 16Bit CRC
Link timing:
 Internal: 1.2 to 19.2 kbps
 External: to 64K
Power source: 115/230 VAC, 60/50Hz, 0.16/0.08A, switchable, UL approved

Op. temp.: 32 to 122 °F (0 to 50 °C)
Rel. humidity: 5 to 90% non-condensing
Dimensions: 1.75H x 17.0W x 11.0D in. (4.44H x 43.18W x 18.93D cm)
Weight: 4.5 lbs (2.1 Kg)

FEATURES & BENEFITS

- ✓ Contention via RTS, DCD or data transitions, individually selectable in each sub-channel
- ✓ 64-bit tail circuit buffer (TCBs) included
- ✓ Internal or external clock
- ✓ Dial-up modem support

Digital Sharing Devices

Models 3040, 3060, & 3080

Now up to eight DCE or DTE devices can share one DCE or DTE device in a polled or contention environment.

Model 3040/V35, 3060/V24, 3060/X21, and 3080/V24 Digital Sharing Devices (DSD) enable users to expand their systems without acquiring additional data lines or modems. DSDs act as combined modem and port sharing devices.



- ✓ Operation is transparent to data
- ✓ Fully cascadable
- ✓ Individual sub-channel enable/disable switches
- ✓ Receive data—broadcast or gated
- ✓ Sturdy rack-mountable enclosure (rack mounting kit included)
- ✓ Internal power supply; switch selectable for 110- or 220-VAC
- ✓ UL, CSA, TÜV, and FCC Class A approvals for all models; CE approval for Models 3080/V24 and 3060/X21

With any of these high-speed bi-directional units, up to eight DCE or DTE devices can share one DCE or DTE device in a polled or contention environment. Sub-channels contend for the main channel by activating RTS, DCD, or by detecting data transitions.

Clock signals are provided either by an external modem connected on the master port, or by the internal baud rate generator (which provides rates up to 2,048 kbps). In addition, any sub-channel port can be configured to provide clocking so that if the clock signal provided by the master source fails—or if DCD on sub-channel 1 becomes inactive—the DSD will use the internal clock or a sub-channel clock.

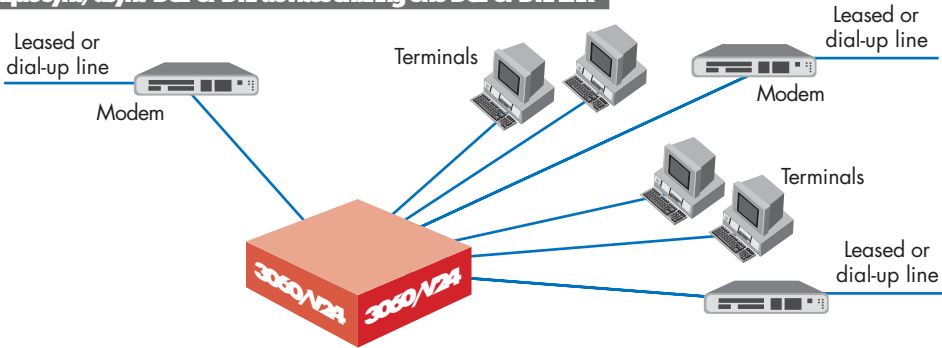
DSDs have anti-streaming features that prevent network lockups by automatically removing a defective sub-channel from service.

Any sub-channel can be temporarily taken off line for servicing by using the front panel enable/disable switches.

Each DSD sub-channel can be configured for DTE or DCE operation. Each channel can be set for Data or Interface Lead contention.

Each DSD comes with an internal power supply that can be set by a switch for 110- or 220-VAC operation.

Multiple sync/async DCE or DTE devices sharing one DCE or DTE link



Ask the experts..



I'm Dick, one of Patton's Technical Support Engineers. If you don't find what you need at www.patton.com or in this catalog, or if you have technical questions, please call me at (301) 975-1007. You can also send e-mail to support@patton.com.

ORDERING INFORMATION

3040/V35	V.35 DSD, 4 ports DTE or DCE to 1 master DTE or DCE (MD-V35/TCB) \$1,195.00
3040/V35-220	Same as 3040/V35 except pre-configured for 220VAC \$1,195.00
3060/V24	V.24 DSD, 6 ports DTE or DCE to 1 master DTE or DCE (MD-V24/TCB) \$895.00
3060/V24-220	Same as 3060/V24 except pre-configured for 220VAC \$895.00
3060/X21	X.21 DSD, 6 ports DTE or DCE to 1 X.21 master DTE or DCE (MD-X21/TCB) \$1,495.00
3060/X21-220	Same as 3060/X21 except pre-configured for 220VAC \$1,495.00
3080/V24	RS-232/423 DSD, 8 ports DTE or DCE to 1 master DTE or DCE (DSD-8) \$1,195.00
3080/V24-220	Same as 3080/V24 except pre-configured for 220VAC \$1,195.00

SPECIFICATIONS

Capacity: Sync/async DTE or DCE devices (6 for the 3060/V.24 and 3060/X.21, 4 for the 3040/V.35, and 8 for the 3080/V.24)

Tail circuit buffering: Uni-directional 8-bit ring buffer

Data format: Data transparent at all data rates

Data rates: 3040/V35—up to 2 Mbps; 3060/V24—up to 76.8 kbps; 3060/X21—up to 2 kbps; 3080/V24—up to 128 kbps

Anti-streaming: Automatic—selectable time-out intervals or disable

Timing: Internal—DIP switch selectable; Normal— from modem; External—clock provided on any sub-channel, with fallback to internal clock or sub-channel

Terminal service modes: Scanning—channels are continuously scanned for RTS/DCD or DATA on a sequential basis; Priority—channels are continuously scanned for RTS/DCD or DATA, channel 1 has highest access priority

Sub-channel and modem interface:

3060/V24—RS-232 using DB-25s;
3040/V35—V.35 using M-34s;
3060/X21—V.11 using DB-25s;
3080/V24—RS-423 using DB-25s

Power source: 100-120/200-240 VAC, 50/60 Hz, 0.16/0.08A, switch selectable
Op. temp.: 32 to 122 °F (0 to 50 °C)
Rel. humidity: 5 to 90% non-condensing
Dimensions: 1.75H x 17.00W x 11.0D in. (4.44H x 43.18W x 18.93D cm)
Weight: 4.5 lbs (2.1 Kg)

FEATURES & BENEFITS

- ✓ Speed/code transparency up to 64 kbps (properly shielded, low capacitance cables must be used for speeds faster than 38.4 kbps)
- ✓ Automatic anti-streaming
- ✓ Operation is transparent to data
- ✓ Individual sub-channel enable/disable switches
- ✓ Selectable RTS/CTS time delay

Powered RS-232 Modem Sharing Devices

Models 3012, 3014, & 3018

Now up to eight sync or async devices can share one modem in a polled or contention environment.

The Models 3012/V24, 3014/V24, and 3018/V24 Modem Sharing Devices (MSDs) enable users to expand their polled or contention networks without acquiring additional data lines or modems. DSDs act as combined modem and port sharing devices.



- ✓ Fully cascable
- ✓ Sturdy metal enclosure (MSD-8C is rack mountable)
- ✓ Internal power supply; switch selectable for 110- or 220-VAC
- ✓ UL, CSA, and FCC Class A approvals

With any of these bi-directional units, up to eight sync or async terminal devices can share one modem in a polled or contention environment. Data arriving at the master port is continually broadcast to all sub-channels. The first sub-channel to activate RTS is automatically given control of the master port. When RTS is deactivated, the MSD enables any other sub-channel to take control of the master port. Sub-channels contend for the main channel by activating RTS, DCD, or by detecting data transitions.

Clock signals are provided by the modem connected to the master port, at data rates from 75 bps to 64 kbps (properly shielded, low capacitance cables must be used for speeds faster than 38.4 kbps) and faster.

MSDs have optional anti-streaming features that prevent network lockups by automatically removing a defective sub-channel from service.

Any sub-channel can be temporarily taken off line for servicing by using the front panel enable/disable switches.

Each MSD comes with an internal power supply that can be set by a switch for 110-to-120 or 200-to-240 VAC operation.

Need Help?

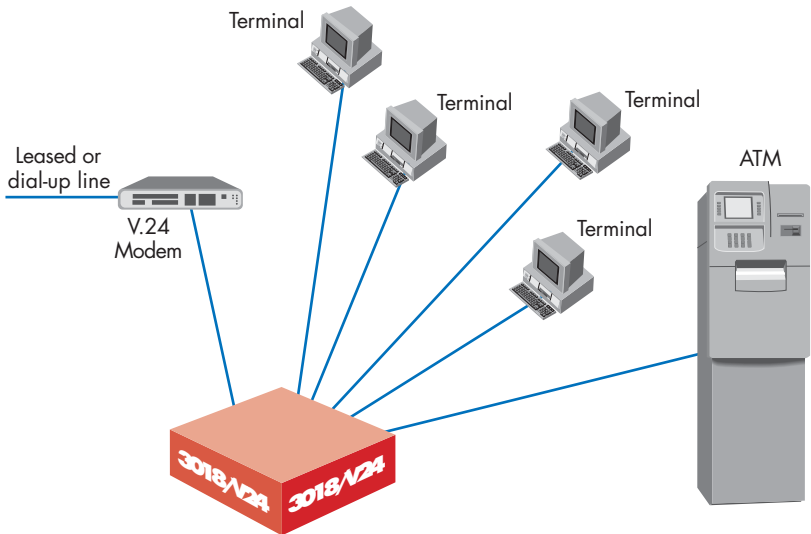


I'm Kathy, Patton's Manager of Sales Coordination. Call me when you want to purchase Patton products or if you have questions about our products. You can also send e-mail to sales@patton.com.

ORDERING INFORMATION

3012/V24	Powered RS-232 MSD, 2 V.24 DCE ports to 1 V.24 master DTE (MSD-2C)	\$450.00
3014/V24	Powered RS-232 MSD, 4 V.24 DCE ports to 1 V.24 master DTE (MSD-4C)	\$495.00
3018/V24	Powered RS-232 MSD, 8 V.24 DCE ports to 1 V.24 master DTE (MSD-8C)	\$695.00

Multiple RS-232 Sync/Async Terminal Devices Sharing One RS-232 Modem Link in a Polled Environment



SPECIFICATIONS

Capacity: One to Eight RS-232 sync/async DTE devices; One RS-232 DCE master channel

Data format: Data is transparent at all data rates

Data rates: Up to 64 kbps (properly shielded, low capacitance cables must be used for speeds faster than 38.4 kbps)

Timing: External—from master port, sub-channel 1 pin 24 routed to master port

Sub-channel interface: RS-232 (V.24) using female DB-25 connectors

Modem interface: RS-232 (V.24) using a female DB-25 connector

Terminal service modes: Scanning—channels are continuously scanned for RTS on a sequential basis; Priority—channels are continuously scanned for RTS, channel 1 has highest access priority

Anti-streaming: Automatic—selectable time-out intervals

Power source: 100-120/200-240 VAC, 50/60 Hz, 0.16/0.08A, switch selectable

Op. temp.: 32 to 122 °F (0 to 50 °C)

Rel. humidity: 5 to 90% non-condensing

Dimensions:

3012/V24: 1.75H x 8.90W x 10.0D in.

(4.44H x 22.60W x 25.40D cm)

3014/V24: 2.05H x 13.35W x 9.0D in.

(5.21H x 33.09W x 22.86D cm)

3018/V24: 1.75H x 17.0W x 11.0D in.

(4.44H x 43.18W x 18.93D cm)

Weight:

3012/V24: 2.25 lbs (1.02 Kg)

3014/V24: 4.5 lbs (2.1 Kg)

3018/V24: 4.5 lbs (2.1 Kg)

FEATURES & BENEFITS

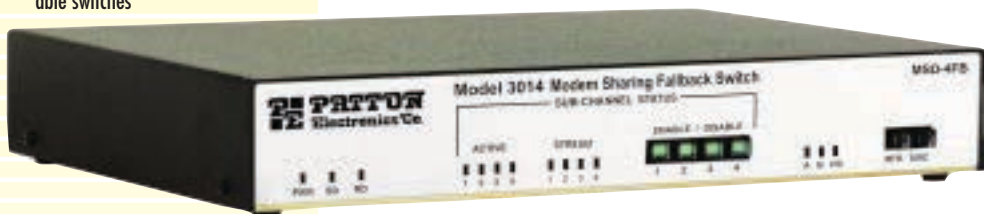
- ✓ Speed/code transparency to 38.4 kbps
- ✓ Automatic anti-streaming
- ✓ Operation is transparent to data
- ✓ Individual sub-channel enable/disable switches
- ✓ Configurable for automatic or manual fallback and restoral
- ✓ Individual sub-channel enable/disable switches

Powered RS-232 Modem Sharing Device with Fallback Switch

Model 3014/V24/FB

Now up to eight sync or async devices can share one of two modems in a polled or contention environment.

The Model 3014/V24/FB is a 4-port RS-232 Modem Sharing Device (MSD) with an integral automatic or manual fallback switch. The MSD enables users to expand their polled or contention networks that have dial backup capability through redundant modems without acquiring additional data lines.



- ✓ Selectable RTS/CTS time delay
- ✓ Fully Cascadable
- ✓ Sturdy metal enclosure
- ✓ Internal power supply; switch selectable for 110- or 220-VAC
- ✓ UL, CSA, and FCC Class A approvals

The Model 3014/V24/F is a bi-directional device that enables up to four sync or async terminal devices one of two modems in a polled or contention environment. Data arriving at the master port of the currently active modem is continually broadcast to all sub-channels. The first sub-channel to activate RTS is automatically given control of the MSD until data transmission is completed and RTS is released.

Clock signals are provided by the currently active modem connected to the master port, at data rates from 75 to 38.4 kbps.

The 3014/V24/F has an optional anti-streaming feature that prevents network lockups by automatically removing a defective sub-channel from service.

Any sub-channel can be temporarily taken off line for servicing by using the front panel enable/disable switches.

DCD or DSR can be used as the controlling lead to initiate fallback, or fallback can be initiated manually from the front panel switches. The 3014/V24/F is fully configurable to meet varying fallback requirements.

Each MSD comes with an internal power supply that can be set by a switch for 110- or 200-VAC operation.

Need Help?

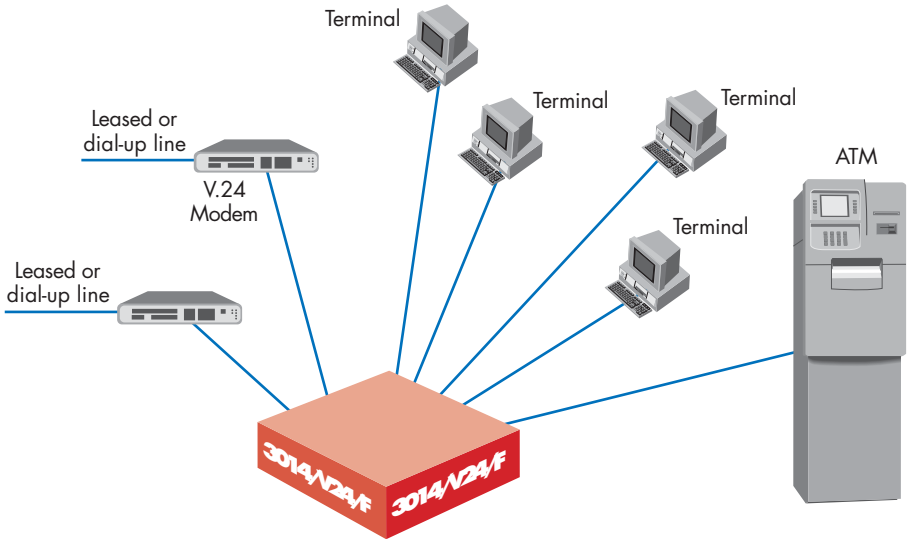


I'm John, one of Patton's Sales Coordinators. Call me when you want to purchase Patton products or if you have questions about our products.

ORDERING INFORMATION

3014/V24/FB	Powered RS-232 MSD, 4 port with integrated auto fall-back (MSD-4FB)	\$625.00
3014/V24/FB-220	Same as 3014/V24/FB except pre-configured for 220VAC	\$625.00

Multiple RS-232 Sync/Async Terminal Devices Sharing One or two RS-232 Modems in a Pooled Environment



SPECIFICATIONS

Capacity: Four RS-232 sync/async DTE devices; One RS-232 DCE master or fall-back channel

Data format: Data transparent at all data rates

Data rates: Up to 38.4 kbps

Timing: External—from master port or sub-channel 1 pin 24 routed to master port

Sub-channel interface: RS232 (V.24) using female DB-25 connectors

Modem interface: RS232 (V.24) using a female DB-25 connector

Terminal service modes: Scanning—channels are continuously scanned for RTS on a sequential basis; Priority—channels are continuously scanned for RTS, channel 1 has highest access priority

Fallback control: DCD or DSR switch selectable, automatic or manual fallback initiate

Anti-streaming: Automatic—selectable time-out intervals or disable

Power source: 100-120/200-240 VAC, 50/60 Hz, 0.16/0.08A, switch selectable

Op. temp.: 32 to 122 °F (0 to 50 °C)

Rel. humidity: 5 to 90% non-condensing
Dimensions: 2.05H x 13.35W x 9.00 in. (5.21H x 33.09W x 22.86 cm)

Weight: 4.5 lbs (2.1 Kg)

FEATURES & BENEFITS

- ✓ Compact, simple, economical tail circuit solution
- ✓ Supports speeds up to 64 kbps
- ✓ Full-duplex and half-duplex operation
- ✓ Two DB-25 female connectors
- ✓ Transparent to data
- ✓ 64-bit centered-ring buffer provides buffering for 32 bits of clock slippage in forward and reverse direction
- ✓ All signal crossover provided by TCB
- ✓ Fully line powered
- ✓ FCC Class A certification

RS-232 Tail Circuit Buffer

Model 3002

Interconnect two modems located near each other

The Model 3002 TCB interconnects two modems located in proximity of each other. Data is buffered and re-clocked to ensure its integrity when the modems are clocked independent of each other.

The TCB enables users to connect a tail circuit to a modem sharing device or to a modem that does not normally accommodate a DCE-type device connecting to it.

Clock phasing differences are compensated for by buffering the data coming from the tail circuit into a 64-bit centered-ring buffer. This provides 32 bits of clock slippage in both the positive and negative directions.

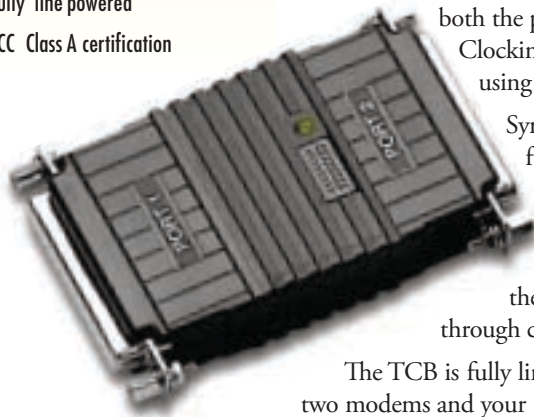
Clocking rates up to 64 kbps are possible while using the TCB.

Sync operation in both half-duplex and full-duplex modes is fully supported.

Carrier detect signaling is used to re-center the ring buffers.

All cabling crossover is done inside the TCB, so you can use standard straight-through cables for all inter-connections.

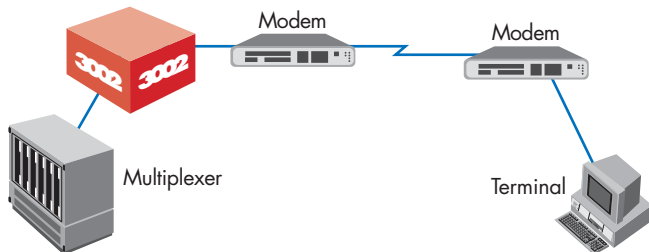
The TCB is fully line powered. Just install it between the two modems and your tail circuit is ready to use.



SPECIFICATIONS

- Capacity:** Two RS-232 sync modems
- Data format:** Data is transparent
- Buffer type:** 64-bit, centered-ring buffer
- Data rates:** Up To 64 kbps
- Timing:** Supplied by the connected modem devices
- Channel interface:** Two RS-232 / DB-25 female connectors (V.24)
- Power source:** Fully line powered
- Oper. Temp:** 32 to 122°F (0 to 50°C)
- Rel. Humidity:** 5 to 90% non-condensing
- Dimensions: 0.55H x 2.1W x 5.6D in.
3.0H x 13.5W x 5.0D cm

Interconnecting Two Modem-Type Devices Application



ORDERING INFORMATION

3002

RS-232 Tail Circuit Buffer

\$295.00

Some new products may not be available when this catalog is published, so please call for availability.

Pocket-Sized Bit Error Rate Tester

Model 55

Use this miniature tester to verify that your async or sync DTE or DCE devices are working properly

The Pocket-Sized Bit Error Rate Tester (BERT) provides field engineers and technicians with a versatile and easily portable modem or terminal testing device.

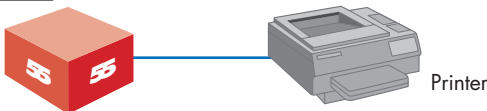
When the BERT is testing a synchronous device, a CCITT 511 pattern is transmitted. The BERT receiver verifies that the returning data is error-free, at which point the LED is lit.

When in async mode, the BERT sends *QUICK BROWN FOX* messages and waits to receive the FOX messages back before illuminating the GOOD DATA LED. Flow control is achieved by using the CTS interface lead if you are testing DCE or the DTR interface lead if you are testing DTE. When the interface lead becomes inactive the BERT stops transmitting data.

All power to operate the Pocket BERT is provided by the unit being tested—*no external power supplies to carry around!* Just drop the Model 55 BERT into your pocket and you are ready to troubleshoot anywhere.



Typical Application



ORDERING INFORMATION

55 Pocket-Sized BER Tester **\$215.00**

Some new products may not be available when this catalog is published, so please call for availability.

FEATURES & BENEFITS

- ✓ Supports data rates up to 64 kbps
- ✓ Runs synchronous or asynchronous
- ✓ RS-232/V.24 interface
- ✓ FOX pattern during async operation; 511 pattern during sync operation
- ✓ CTS/DTR flow control during async operation
- ✓ Can be used as a loop-back plug
- ✓ Provides visual indication of good data
- ✓ Fully line powered

SPECIFICATIONS

Data Rates: Async—2.4K, 4.8K, 9.6K, 19.2K & 38.4K; Sync—2.4K, 4.8K, 9.6K, 19.2K, 38.4K, 56K & 64K

Data Format: Synchronous or Asynchronous

Data Coding: "Quick Brown Fox" in Async; CCITT 511 Pattern in Sync

Timing: Internal baud rate generator when testing a DTE device; External when testing a DCE device

Channel Interface: EIA RS-232 (V.24 female connector (DB-25) for testing a DTE; male connector for testing a DCE

Op. temp.: -32 to 122 °F (0 to 50 °C)

Rel. humidity: 5 to 90% non-condensing

Power source: Fully line powered

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