Broadband DSL Access

Cellworx™ Family

ADC Telecommunications DSL/ATM access and transport solutions for your bandwidth-intensive networks.

HDSL for Business

For business communications, high bit-rate digital subscriber line (HDSL) technology is emerging as the choice for business applications such as access to the Internet, LAN connectivity, videoconferencing, and intranets.

HDSL's transmission scheme enables data to be sent over a single twisted-pair copper wire at speeds up to 768 kbps in both directions, making it an ideal technology for applications that require greater symmetrical data transmission.

Internet applications that require communications symmetry, such as access to Web servers, high-volume e-mail and electronic commerce, can take advantage of HDSL. An HDSL connection provides a fast, economical and full-time connection without the problems of dialing, connecting, authenticating and maintaining the connection.

Typical LAN connectivity is achieved via dial-up connections, Frame Relay networks or dedicated private lines. HDSL, with symmetrical communications, provides dedicated and higher-speed access with more bandwidth for branch offices and remote users. The digital communications of HDSL provides high-quality, error-free transmission between geographically separated sites.

HDSL delivers high-speed communications at a lower cost in both campus and wide-area networks. Over a WAN, HDSL can be used to connect LANs. Coupled with DSL multiplexer devices, these connections can be transported over a carrier's Frame Relay or ATM backbone, completely bypassing the congested voice switched network.

## Cost-effective Internet Access

ADC Telecommunications DSL/ATM product line supports end-to-end equipment solutions, from the central office to the subscriber premises. Cellworx™ family of DSL/ATM products, is targeted at supporting the needs of business communications need over the service provider network. Cellworx products provide high-speed network access and transmission of multi-service and voice, video and data traffic for remote networking and the network infrastructure.

Today, Cellworx addresses HDSL/ATM Internet access for both the business subscriber and the service provider with products that include the SAT-300 (Subscriber Access Terminal HDSL Router), the RAC (Remote Access Concentrator), and the AAC-3™ ATM Access Concentrator (see page 54 for detailed information on the AAC-3).

The combination of the SAT-300 and RAC product families, with the modular AAC-3, enables carriers and corporate network managers to cost-effectively interconnect and interwork a wide variety of services and protocols to support most business applications.

The Cellworx™ family of products is a joint development between two ADC divisions — ADC Kentrox and ADC Network Services Division. ADC Telecommunications products and systems interconnect and transport voice, data and video signals within a single building or campus as well as among multiple sites worldwide. The ADC Network Services Division holds a preeminent position in the HDSL market, with over 50,000 circuits in service around the globe.

DSL Access Products
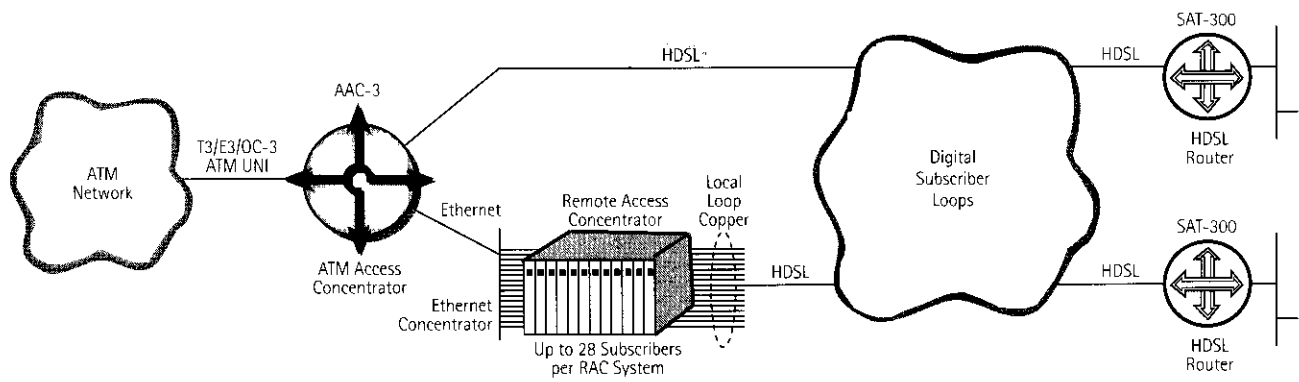
Cellworx™ SAT-300™
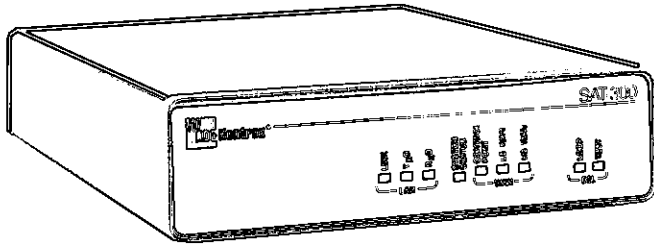
- **Economical remote LAN and high-speed Internet access over existing copper infrastructure**
- **384 or 768 kbps HDSL WAN access for high-speed applications**
- **Concurrent IP/IPX dynamic routing and bridging**
- **Unique MAC Address Translation for flexible, secure access**
- **10Base-T network interface for central office and CPE network connections**
- **Easy configuration and management with menu-based interface**

The SAT-300 (Subscriber Access Terminal) HDSL access router is designed for the remote office where Ethernet connections over the wide area network are required. The router can operate in either a point-to-point configuration or interface to a RAC system at the point of presence.

With concurrent routing and bridging, the SAT-300 provides a cost-effective solution for access to the Internet and the corporate LAN. It is easy to configure and manage, featuring a menu-based user interface as well as an embedded SNMP agent and enterprise MIBs. The unique MAC Address Translation feature provides flexible, secure access for bridged connections to the WAN.

For routed environments, the SAT-300 supports Network Address Translation (NAT). NAT allows ISPs or service providers to minimize the number of assigned IP addresses to a remote site. This permits the remote site's LAN to keep its existing addressing scheme.

Specifications & Ordering Guide
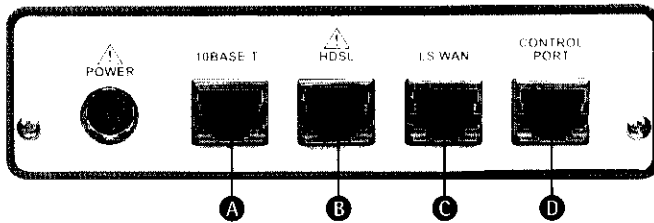
BACK PANEL & CABLE GUIDE

Ⓐ To LAN

95007077*	RJ45 Plug to RJ45 Plug, Cat. 3 UTP, 7 feet
95007078*	RJ45 Plug to RJ45 Plug, Crossover, Cat. 3 UTP, 7 feet

Ⓑ To Network

95007076*	RJ11 Plug to RJ11 Plug, 7 feet

Ⓒ To Modem

95007077	EIA (RJ45 Plug) Flat Modular Cable, 7 feet
78892	DB25P to EIA-561 (RJ45 Socket) Adapter

Ⓓ To Control Terminal

93014241*	EIA-561 (RJ45 Plug) Flat Modular Cable, Plug to Plug, 14 feet
78892	DB25P to EIA-561 (RJ45 Socket) Adapter
78909*	DE9S to EIA-561 (RJ45 Socket) Adapter

*Included with unit.
P = Plug (male); S = Socket (female).

ORDERING INFORMATION

DESCRIPTION	MODEL NO.
SAT-300 HDSL Access Router	76960

2-year warranty

SPECIFICATIONS

Power

AC	100-240V (47-60Hz) 5W nom.

Physical

5.57"W x 1.52"H x 7"L
14.1cm W x 3.9cm H x 17.8cm L

LAN Port

10Base-T

HDSL WAN Port

HDSL Loop Rate	768 or 384 kbps duplex transmission
HDSL Line Code	2B1Q (two binary, one quaternary)
HDSL Loop Characteristics	Non-loaded copper pair; repeaterless transmission up to 12,000 feet at 768 kbps or 18,000 feet at 384 kbps

LS WAN Port

RS-232 (DTE)	Async to 115 kbps

Ⓢ Ⓔ Ⓤ ▌✦▌ Industry Canada

DSL Access Products

Cellworx™ Remote Access Concentrator (RAC)
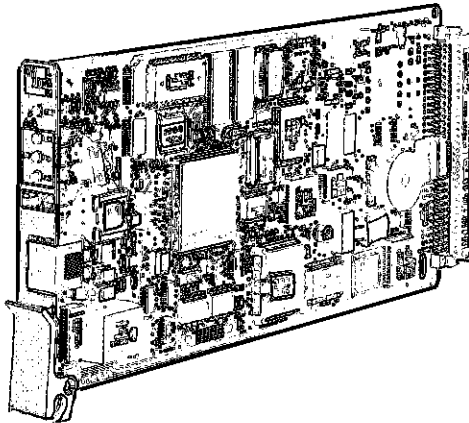
- Affordable remote LAN and high-speed Internet access over existing copper infrastructure
- Direct connection to the ISP's Internet backbone
- 10Base-T network interface provides connection to LAN switch or router
- Connect up to 28 Internet subscribers from a single chassis
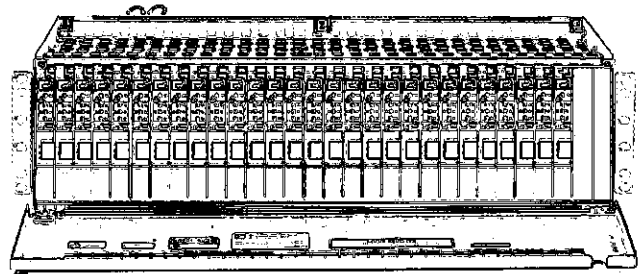
The Remote Access Concentrator (RAC) is a modular system that terminates customer traffic at the central office or point-of-presence (POP) site. The systems supports up to 28 individual HDSL subscriber lines in a compact rack, making it an ideal solution for high-density, multiple systems applications. Other features include front-panel plug-in LAN modules, superior cable management for high-density deployments, and a convection cooling system, alleviating the need for fans. And because the system requires no additional common equipment, first-time installation costs are extremely attractive when compared to other solutions.

The modular RAC chassis mounts in a standard relay rack within the central office/central exchange and transports HDSL traffic to the CO's Ethernet network or the local backbone. With a 10Base-T Ethernet interface, the LAN module provides connectivity to a LAN switch or router. The RAC is fully NEBS compliant and fits into a central office 12" deep footprint.

Specifications & Ordering Guide

SPECIFICATIONS

Power	
	-48 VDC A and B
Environment	
Temperature	0° to 50° C
Physical	
Module	1.4"W x 5.6"H x 6"D
	3.6cm x 14.2cm x 15.2cm
19" chassis	19"W x 6"H x 12"D
23" chassis	23"W x 6"H x 12"D
LAN Port	
	10Base-T
HDSL WAN Port	
HDSL Loop Rate	768 or 384 kbps duplex transmission
HDSL Line Code	2B1Q (two binary, one quaternary)
HDSL Loop Characteristics	Non-loaded copper pair; repeaterless transmission up to 12,000 feet at 768 kbps or 18,000 feet at 384 kbps

ORDERING INFORMATION

DESCRIPTION	MODEL NO.
Cellworx RAC 23" Chassis	SPX-FRMLAN1A1
Cellworx RAC 19" Chassis	SPX-FRMLAN2A1
Cellworx LAN Module	SPX-HLXLANA1
Optional Components	
48 VDC Redundant Power Supply, 5 amps	77090
EIA-561 (RJ45 Plug) Flat Modular Cable, Plug-to-Plug, 14 feet	93014241
DB25P to EIA-561 (RJ45 Socket) Adapter	78892
DB9S to EIA-561 (RJ45 Socket) Adapter	78909

The Reputation behind the Name

With ADC Kentrox, you can be sure you're getting the best in performance, reliability and product safety. We've earned a reputation for superior quality, reliability, service and support.

AROUND THE CLOCK
1 - 800 - 733 - 5511
CUSTOMER SERVICE

ADC Kentrox–Your Strategic Partner

At ADC Kentrox, customer support begins before we design the product. Since 1967 we have been known for giving you the quality and personal service you need, whenever you need it.

First, we listen to you to understand your requirements. Then we design products to meet those needs. We conduct evaluation and reliability studies on each product before it's released to manufacturing.

Our focus on manufacturing quality is evidenced in our ISO 9001 certification – the most stringent and comprehensive rating under the ISO standards. And all future products and new releases of current products will be verified to the Year 2000 Conformance Criteria. Before we ship products, all are approved and certified by carriers for conformance to industry standards and interoperability with the public network.

At ADC Kentrox, we emphasize reliable, prompt and flexible service and support. Our goal is to provide the best customer service and technical support in the industry – the ultimate support!

Customer Service

It is our goal to provide the 'best of class' customer service and technical support in the industry.

As a customer you will have a specific service representative who will assist you. If that person is unavailable, a designated back-up representative is prepared to help with your questions. For information on products, pricing, or delivery dates, just call your customer service representative.

Applications Support

If you have specific application or network configuration questions, don't hesitate to call our Applications Support group. They can help you with your network planning and implementation and decide which ADC Kentrox network access solution best fits your individual needs.

Technical Support

Our technical support staff is fully trained to answer a broad range of questions relating to not only our newest products, but any ADC Kentrox product you're likely to have installed. They are available for emergencies 24 hours a day, 7 days a week.

These technical specialists will help you troubleshoot your problem and they'll work with other vendors and your carrier, when appropriate, to help solve your technical problems.

Warranty Service and Systems Level Agreements

ADC Kentrox products are warranted to be free of defects in material and workmanship, when given proper installation and maintenance. All our 56k, T1 and E1 DSUs and CSUs carry a 5-year warranty. A 2-year warranty covers all other ADC Kentrox network access products.

In addition to our world-class telephone support, we have expanded your options to include system-level Support Agreements designed for our AAC-3 ATM Access Concentrator or the MagnumPlus Broadband Access Multiplexer. Our extended support offerings include:

Shared Service Agreement. With the Shared Service Agreement, you will be able to utilize your own resources, while relying on the expertise of ADC Kentrox Technical Support Engineers. You'll get cost-effective support that includes call escalation, complex problem diagnosis and repair services. (limited availability, call the factory for details)

On-site Support Agreement. This agreement is our most comprehensive support program available, with extended-hour access and same day or next-day on-site service. (limited availability, call the factory for details)

To obtain additional information on our on-line support, our systems-level installation program, return and repair policies, and selecting the best warranty agreement for your needs, call our Customer Service team.

www.kentrox.com

For More Information

Product Training

ADC Kentrox offers a variety of training courses on our broadband access products. Available at our Portland, Oregon headquarters or at the customer site, these courses combine informative lectures and demonstrations with hands-on applications. Participants will learn how to install, configure, and troubleshoot products using live equipment. Combined with our in-house technical support, these courses are a smart way to avoid costly problems down the line. Visit our Web site, www.kentrox.com, for class schedules and registration information.

For detailed information and specifications on any of the products listed in this catalog, please complete the form on page 71 and fax or mail it today. Or simply call **1-800-232-5879**.

	PHONE	WEB/E-MAIL
Customer Service	1-800-733-5511 (503) 643-1681	info@kentrox.com
Literature Hotline	1-800-232-5879	www.kentrox.com
Pre-sales Support	1-800-733-5511 (503) 643-1681	info@kentrox.com
Technical Support	1-800-733-5511	support@kentrox.com
Training	1-800-733-5511 (x6322)	training@kentrox.com
Contracts Administration	1-800-733-5511 (503) 643-1681	

End-to-End Network Solutions from ADC

As people seek more effective ways to convey and use information, they are demanding better, faster and more diversified services from both public and private communication networks. To better serve these end users, ADC Telecommunications and its subsidiaries are working in collaboration with customers to change the way information is managed and transmitted. With expertise in fiber optics, video, local area network (LAN), broadband DSL and cellular technologies, ADC provides comprehensive end-to-end networking solutions for telecommunications, cable television, cellular and enterprise networks.

From the central office, through the outside plant and to the customer premises, ADC Telecommunications and its subsidiaries are continuously developing innovative new products that will enable all types of services — from POTS to video, data and even simultaneous data/voice/video transmission — to be delivered over a single integrated network.

ADC Telecommunications

NASDAQ: ADCT

BUSINESS BROADBAND GROUP	RESIDENTIAL BROADBAND GROUP	BROADBAND CONNECTIVITY GROUP	SYSTEMS INTEGRATION GROUP	WIRELESS SYSTEMS GROUP
ADC Kentrox *Network Access*	**ADC Broadband Communications** *Analog, Digital Video Fiber Transport Residential Broadband Transport*	**ADC Telecommunications Copper** *Copper Connectivity Products*	**ADC Systems Integration** *Global End-to-End System Integrator*	**ADC Metrica** *Network Management Database*
ADC Telecommunications Network Services *HiCap, SONET & ATM Transmission*	**ADC ITS Corporation** *Wireless Broadband Transport*	**ADC Solitra** *Wireless Base Station Subsystems*	**ADC DaTel** *Systems Integration Services*	**ADC Mobile Systems** *Mobile Base Stations & RF Distribution Systems*
		ADC Telecommunications Fiber *Fiber Connectivity Products*	**ADC Apex** *Systems Integration Software*	**ADC Wireless Microsystems** *Linear Power Amplifiers & RF Subsystems*
		ADC AOFR *Fiber Optic Couplers and Splitters*		

Regulatory Mark Legend

(UL)	Underwriters Laboratory and a Nationally Recognized Testing Laboratory *U.S. product safety*
Industry Canada	Industry Canada
(SA)	Canadian Standard Association
BZT	Bundeszamt fur Zulassungin inder Telekommunication *Telecom Approvals Agency, German Notified Body*
TÜV	Product Safety Approvals Agency, German and European Standards *EN*
☎	British Approval Board for the Telecommunication *UK Notified Body*
CE	Community European *Conformance with European direction*
EN	European Standard
(ETL)	A Nationally Recognized Testing Laboratory *U.S. product safety*
(FC)	Federal Communications Commission
EMV	Pruf und Zertifierrungsinstitut *Germany*
NEBS	Bellcore Recommended Tests for Carrier Central Office
△	Austel Australian Telecommunications Authority