

## CTDI Products

### Features

- Seamless integration of toll-quality voice and high-speed data over T1/E1 or xDSL
- Compatible with WAN transports including ATM and Frame Relay
- Supports VoIP specifications (SIP, MGCP)
- Broad interoperability with leading VoIP Network Elements: softswitches, application and media servers, gateways, etc.
- 4, 8, 12, 16, or 24 Port POTS models with Loop Start or Ground Start
- Universal Serial Interface (USI) (12, 16 and 24 Port models only)
- Dynamic and Static IP Routing and Bridging capabilities
- DHCP and NAT to support IP address management
- Firewall support - IP filtering
- Dynamic bandwidth allocation and prioritization for voice and data traffic
- Management capabilities including Telnet, SNMP and TFTP
- Meets or exceeds current channel bank functionality (groom voice and bond remaining data)
- Provides remotely managed migration path to VoIP

## Verilink 8000 Series VoIP/VoDSL IAD

### Extend the Power of Convergence Across Your Networks

The Verilink 8000 series enables carriers to deliver high quality voice and data services to small and medium-sized businesses over any access technology (T1/E1 or xDSL). Among the industry's leaders offering a software configurable device for TDM, ATM and IP transports, the Verilink 8000 series equips service providers with a future proof solution and a solid migration path to VoIP.



### Award Winning Technology

CTDI's award-winning Verilink 8000 series of integrated access devices (IADs) provide the ideal access platform for service providers who need to deploy a standardized service delivery platform across their entire service base. The Verilink 8000 Series includes:

- 8100 Series ADSL
- 8200 Series T1/E1
- 8300 Series SDSL
- 8500 Series SHDSL

### Flexible and Scalable

The Verilink 8000 series is available in various configurations and models including 4, 8, 12, 16, and 24 POTS ports and a full range of integrated features including toll quality voice and high-speed Internet access via one box. The award winning series of integrated access devices (IADs) creates an ideal access platform for service providers who need to deploy a standardized service delivery platform across their entire service base. The base model supports VoATM-only and the "S" model supports VoATM and VoIP. The series is equipped with an Ethernet interface capable of dynamic and static IP routing and bridging.

The Verilink 8000 series is particularly valuable to a carrier's subscribers because the integrated firewall and router eliminate the need to purchase additional hardware. With Dynamic Host Control Protocol (DHCP) and Network Address Translation (NAT), the Verilink 8000 series automatically generates unique addresses for different workstations. This allows subscribers to ensure the heightened security of hidden internal addresses without purchasing additional costly IP addresses. Additionally, remote diagnostics, provisioning, and easy upgrades are critical benefits to service providers since they dramatically simplify the deployment process and eliminate the need for costly truck rolls.

### Interoperability

The Verilink 8000 series is unique, offering the industry's broadest interoperability with DSLAMs and voice gateways, as well as continuously undergoing testing and certification processes with leading partners such as Alcatel Lucent, BroadSoft, Fujitsu, MetaSwitch, NEC, Nortel, Siemens, Sylanro, and others.

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## Verilink 8000 Series Technical Specifications

### Voice Specifications

#### Analog

- Voice Ports: 4 or 8 POTS ports (RJ-11)
- 12, 16, or 24 POTS ports FXS (RJ-21X)
- Failover: Analog input fails over to Line 1 (RJ-11)
- Signaling: Loop start, ground start
- Dialing: DTMF (tone), Pulse
- Ring Source: Internal
- Impedance: 600, 900, Complex (country specific)
- REN: 5 REN per port, 16 REN total
- Loop Current: 20, 24 mA typical (country specific)
- Idle State Voltage: 48V typical
- Ring Voltage: Balanced 65V rms  $\pm 5\%$  at 5 REN load
- Ring Frequency: 20, 25, 50 Hz (country specific)
- Gain/System Loss: Programmable, +3 to -9 dB

#### Digital

- Compression: G.711 (64 kbps PCM), G.726 (32 kbps ADPCM) G.729a
- (8 kbps) "S" version only
- Encoding: A-law,  $\mu$ -law
- Echo Cancellation: G.168 compliant (single reflector)
- Fax Support: G3, G4, and analog V.17, V.29
- Modem Support: V.34, V.90

### WAN Features - DSL

#### Interface

- WAN: SHDSL-TCPAM, SDSL (RJ-11)
- Standards: ITU-T G.991.2
- Standards: ANSI T1.413 Issue 2; ITU-T G.992.2, G.992.1
- WAN: SDSL (2B1Q) (RJ-11)
- Standards: ITU-T G.992.2, G.992.1
- Transport: ATM
- Protocol: Point-to-Point (PPP)

### WAN Features T1/E1

#### T1 Interface

- Interface: RJ-48
- Line Interface: Balanced
- Line Rate: 1.544 Mbps

#### E1

- Network Interface: RJ-48
- Rate: 2.048 Mbps ( $\pm 50$  bps) unframed
- Line Framing: CAS, CCS, or 2 Mbits unframed

### ATM Features

- Adaption Layers: AAL2 (voice), AAL5 (data)
- Encapsulation: RFC 1483 multiprotocol encapsulation over ATM;
- RFC 2364 (PPP over ATM); ITU 366.1, ITU 366.2 (AAL2)
- AAL2 Profiles: ATM: 9, 10, 11 and ITU: 1; "S" versions also
- ATM Profiles 7,8, 12 and ITU 2
- Data: Up to 8 AAL5 PVCs

### Data Features

- LAN Interface: 10/100Base-T (RJ-45)
- Bridging: IEEE 802.1d including spanning tree
- Routing: Default, Static, RIP1 (RFC 1058), RIP2 (RFC 2453),
- ICMP for IP Packet Processing
- DHCP: Server, Client (RFC 2131), Relay Agent (RFC 1542)
- PPP: PPOA, PPOE, PAP, CHAP, IPCP (RFC 1332) HCLC support

### Supervisory Port

- Connection: DB-9 female
- Data Rates: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps (default: 19.2 kbps)

### Security Features

- Firewall: IP filtering (in and out)
- NAT: RFC 1631, Port translation, exported services, multi-NAT (up to 8 public IP addresses)
- Security: Multilevel password protection
- Other: Radius client support (RFC 2865)

### Management

- SNMP via IP or EOC, MIB1, MIB2 (RFC 1213), Enterprise MIB, LES MIB
- Configuration: Console, Telnet (local, remote)

### Warranty and Support

- One (1) year warranty

