

# 8300 Series IAD

Broadband Access Solutions

## HIGHLIGHTS

- Supports emerging VoIP specifications (SIP, MGCP) 's' versions only
- Seamless voice and high-speed data integration over SDSL
- Supports symmetrical data rates from 144 Kbps to 2.3 Mbps and multiple customer premises interfaces including POTS, 10/100BaseT Ethernet
- 4-, 8-, 16-, or 24-Port POTS interface with Loop Start or Ground Start
- Universal Serial Interface (USI) (16- and 24-Port models only)
- Toll-quality voice
- Dynamic bandwidth allocation and prioritization for voice and data traffic
- DHCP and NAT to support IP address management
- Firewall support: IP filtering
- 10/100 Ethernet LAN interface
- Compatible with WAN Network Transports including ATM and Frame Relay
- Dynamic and Static IP Routing and Bridging Capabilities
- Provides remotely managed migration path to VoIP



The 8300 Series IAD family is leading the way in providing a highly interoperable, cost-effective bundled voice and data service solution. Verilink's IADs are uniquely designed for interoperability and are compatible today with the industry-leading DSLAM manufacturers. With the 8300 Series IAD family, small and medium-sized enterprises can now cost effectively take advantage of the advanced communications technologies previously available only to larger organizations.

The 8300 Series consists of access products provided in two versions; a base version supporting VoATM only and an "s" version that supports VoATM and VoIP in one device. Both the base and "s" versions are available in models equipped with 4, 8, 16, or 24 derived voice lines and a 10/100 BaseT interface for high-speed data connections. Additionally the 8300 Series delivers robust features such as routing, bridging, NAT and DHCP all in one unit. This allows service providers to provide peak performance at an affordable price.

Using the existing copper infrastructure, Verilink's 8300 IADs provide voice services and high-speed Internet or corporate network connectivity over

SDSL lines. The IADs prioritize voice packets and dynamically allocate bandwidth between voice and data services. This ensures that end-users continue to experience the audio quality they have come to expect while maintaining access to high-speed data connections.

Local telephone service through the 8300 Series IAD family is identical in quality and features to those available through the conventional circuit-switch voice network. Subscribers will continue to experience the voice quality they have come to expect, along with Centrex and CLASS features including Caller ID and Call Waiting. Also, Verilink's IADs have been extensively tested to ensure support of existing modems and telephones including key systems, fax machines, and analog telephones.

The 8300 Series IAD family is designed for simple installation and easy remote network management. Through Telnet, SNMP, and TFTP, Verilink's IADs can be remotely monitored, provisioned, tested, and upgraded without the cost of an on-site visit.



## PART NUMBER AND DESCRIPTION

2200-70451-001 8304 NA  
 2200-70451-122 8304 Europe  
 2200-70451-102 8304 UK  
 2200-70454-001 8304s NA  
 2200-70454-122 8304s Europe  
 2200-70454-102 8304s UK  
 2200-70456-001 8308 NA  
 2200-70456-122 8308 Europe  
 2200-70456-102 8308 UK  
 2200-70458-001 8308s NA  
 2200-70458-122 8308s Europe  
 2200-70458-102 8308s UK  
 2200-70465-001 8316s NA  
 2200-70465-122 8316s Europe  
 2200-70465-102 8316s UK  
 2200-70467-001 8324s NA  
 2200-70467-122 8324s Europe  
 2200-70467-102 8324s UK

## VOICE FEATURES

## Analog

Voice Ports: 4 or 8 POTS ports (RJ-11); 16 or 24 POTS ports FXS (RJ-21X)

Failover: Analog input fail 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: 48 V typical

Ring Voltage: Balanced 65 V 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 for VoIP Units: G.711 (64 kbps PCM), G.726

(32 kbps) (ADPCM), G.729a (8 kbps CS-ACELP) "s" Version

Encoding: A-law,  $\mu$ -law

Echo Cancellation: G.168 compliant (single reflector)

Protocol Support: CopperCom, ELCP (af-vmoa=0145),

Jetstream, LES (af-vmoa-0145), MGCP, SIP (s-version only)

DID/DOD Support

Fax Support: V.17, V.29 support

Modem Support: V.34, V.90 support

Calling Features: Caller ID, flash hook, distinctive ring, stutter dial tone, call forwarding, call waiting

## 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

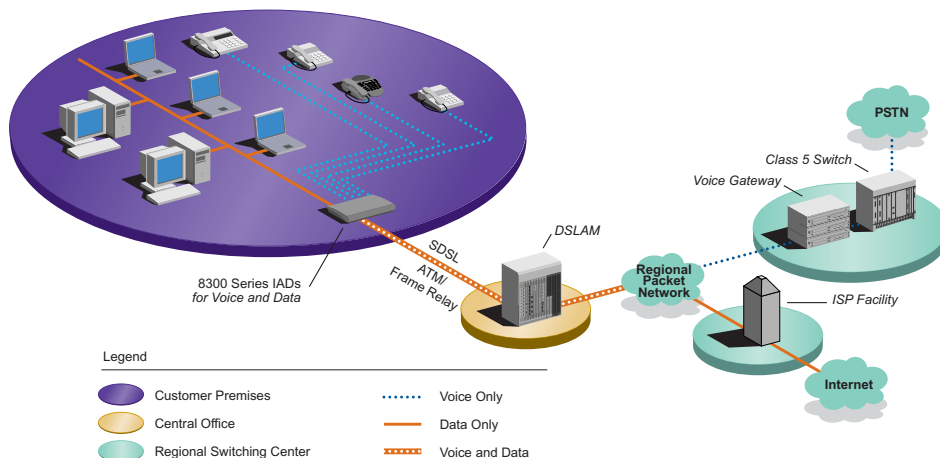
DHCP: Server, Client (RFC 2131), Relay Agent (RFC 1542)

PPP: PpOA, PpOE, PAP, CHAP, IPCP (RFC 1332) HCLC Support

Management: SNMP via IP or EOC, MIB1, MIB2

(RFC 1213), Enterprise MIB, LES MIB

Configuration: Console, Telnet (local, remote)



## WAN FEATURES

## Interface

WAN: SDSL (2B1Q) (RJ-11)

Standards: ITU-T G.992.2, G.992.1

Transport: ATM and Frame Relay

Protocols: Point-to-Point (PPP)

## ATM

Adaption Layers: AAL2 (voice), AAL5 (data), AAL5 (for layer 3 voice)

Encapsulation: RFC 1483 multiprotocol encapsulation over ATM;

RFC 2364 (PPP over ATM); ITU 366.2 (AAL2)

AAL2 Profiles: ATM: 9, 10, 11 and ITU: 1; "s" versions also support ATM Profiles 7, 8, 12, and ITU 2

Voice: Single AAL2 PVC

Data: Up to 8 AAL5 PVCs

Security: Software configurable payload scrambling

Voice QoS: CBR; VBR-rt (16- and 24-Port model only)

Data QoS: CBR, UBR

Cell Delay Variation Buffer: Configurable 0-30 ms

OAM Cell Handling: F4/F5 segment and end-to-end loopbacks

## Frame Relay

Encapsulation: RFC 1490 multiprotocol encapsulation

Voice: Single PVC

Data: 8 Data Link Identifiers (DLCI)

Data Link Format: Q.922

Data Link Control: FRF.12 support, adjustable jitter buffer

Framing: HDLC support

## VOICE GATEWAYS SUPPORTED

DSLAMs Supported: ATM: Lucent, Nortel, Nokia

Frame: AccessLan, CopperMountain, Paradyne

Voice Gateways Supported: CopperCom, JetStream,

TdSoft, Broadsoft, MetaSwitch, Cirpack, NuERA

Tollbridge, General Bandwidth, Accelerated

AAL2/LES and ELCP and any af-vmoa-0145 compliant gateway

SoftSwitches: NCS, LCS, MGCP 1.0, (RFC 2705.bis), SIP, "s" versions only

## CONFIGURATION AND MANAGEMENT

10/100 Ethernet (Management or IP Gateway)

Connection: 8-pin modular

Network Protocol: TCP/IP based networks

Data Rate: 10/100 Mbps

Compatibility: 10/100Base-T

Supervisory Port Connection: DB-9 female

Data Rates: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps (default: 19.2 kbps)

Upgrades

Trivial File Transfer Protocol (TFTP) server and client for software upgrades and configuration

Software download via gateway (wherever supported)

Telnet (local and remote)

Management: SNMP 1.0, SNMP 3.0, Telnet, Console

## 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)

## ENVIRONMENTAL

Power Supply: 4- or 8-Port: External 90-240 VAC, 50-60 HZ;

16- or 24-Port: Internal 90-240 VAC, 50-60 HZ

Power: 8-Port: 20 watt nominal, 50 watt max; 4-Port: 15-watt nominal, 30-watt max operating; 16-, or 24-Port: 40 watt nominal, 76/110 watt max

Operating Temp: 0° C-40° C

Storage Temp: -10° C-70° C

Operating Humidity: 5%-90% non-condensing

Safety: UL 1950, CSA C22.2 No. 950-95, EN

60950:2000, IEC 60950:1999

EMC FCC Part 15 Class A, EN55022, EN55024,

EN61000-3-2, EN61000-3-3

Telco: FCC Part 68

LEDs: POWER, LAN LINK, LAN ACT, WAN LINK, VOICE

Dimensions: 4- or 8-Port models: 11.8" x 8.3" x 1.8";

Weight: 1.8 lbs.; 16- or 24-Port Models: 17.5" x 10.25" x 1.75";

Weight: 4.75 lbs.

Mounting: Desktop or wall mount

## WARRANTY AND SUPPORT

Five-year warranty

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