



# Total Access 600 Series



## Carrier-class VoIP, TDM, and VoATM IADs

### Product Features

- Seamless voice and data integration over IP-, TDM-, or ATM-based architectures
- Up to 24 analog POTS interfaces
- Optional DSX-1 for PBX connectivity
- VoIP, TDM, and VoATM support
- Compatible with industry-leading DSLAMs, aggregation routers, gateways, soft switches, and call agents
- Integral full-featured IP router for data support and Internet access
- V.35 Nx56/64 DTE interface
- Dynamic bandwidth allocation
- Software upgradeable from TDM to packetbased architectures
- Rugged metal case
- Optional battery backup
- Industry-leading 10-year North American warranty

Smart  
Solutions  
for a  
Connected  
World.

**ADTRAN**<sup>®</sup>

With millions of small- to medium-sized enterprises existing today, the requirement for carriers to provide cost-effective integrated voice and data solutions is growing at a rapid rate. ADTRAN<sup>®</sup> delivers with the industry-leading Total Access<sup>®</sup> Integrated Access Devices (IADs). The Total Access 600R, 604, 608, 612, 616, and 624 are cost-effective, fixed-port IADs designed to support IP, TDM, or ATM networks. These IADs provide CLECs, ILECs, RBOCs, and ISPs a means to offer combined voice and data traffic over a single network interface terminating at the customer's premises.

The Total Access 604 provides four analog FXS voice interfaces, while the 608 provides eight. The Total Access 612 provides 12 fixed analog voice interfaces, while the Total Access 616 provides 16 fixed analog voice interfaces. The Total Access 624 provides a full 24-port voice capacity for larger voice applications. These analog FXS interfaces support the stringent design and full feature set required by today's carriers. The Total Access 600 Series of IADs provide a built-in IP router, Nx56/64 V.35 port for synchronous data applications, and an optional DSX-1 interface, allowing the customer to combine a broad variety of voice and data services into a single platform. The Total Access 600R provides an integral IP router (and no analog ports) with digital voice connectivity provided via the optional DSX-1 connection.

In applications involving IP network architectures, a Total Access IAD at the customer premises consolidates voice (packet, analog, and digital) and data traffic, and supports IP voice signaling over any Layer 2 protocol. This allows service providers to offer traditional telephony services, while taking advantage of a lower cost IP network architecture. Total Access IADs are also interoperable with leading feature server vendors to support hosted PBX service offerings. Total Access IADs enable traditional analog services (POTS phones, fax machines, and other devices) to

be combined with IP phone support to allow customers to migrate to IP telephony at their own pace.

Built with the carrier in mind, the Total Access 600 Series of IADs are housed in a rugged metal case and provide the flexibility needed for quick turn-up in even the most harsh environments. Wall and desktop mounting options are available for ease of installation. An optional ADTRAN battery backup system is available for added security.

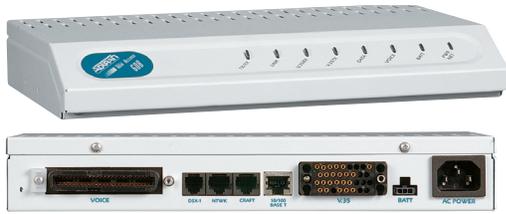
For Telco applications, the T1 loop (end section) from the last regenerator to the NIU must contain no more than 22dB of loss. Additionally, from the NIU to the CPE (e.g., CSU), there must be no more than 5.5 dB of loss. With 7.0dB of loss per 1kft of 24AWG wire, this equates to approximately 3100 feet and 775 feet for the telco end section and NIU to CPE segments, respectively. For a campus environment in a private T1 application, the Total Access 600 Series receiver sensitivity of -36dB allows for a maximum distance of up to 5,000 feet between units. The integral IP router provides a powerful suite of performance and security features. Each Total Access 600 IAD offers multiple PVC configurations for simultaneous access to the corporate network and the ISP. Supporting Network Address Translation (NAT) and packet filtering, Total Access 600 IADs secure the corporate network from unwanted intrusion. All configuration options, testing parameters, and passwords are accessed through an easy-to-use VT100 terminal interface or a TELNET session.

Using local or remote inband management, the service provider can turn features, functions, and access ports on and off. For network access, the Total Access 600 IADs have a single T1, SHDSL, or ADSL2/2+ (604/608) interface. In addition to all of these features, the Total Access 600 IADs are backed by an industry-leading 10-year warranty and ADTRAN's best-in-class technical support.



# Total Access 600 Series

## Carrier-class VoIP, TDM, and VoATM IADs



Total Access 604/608



Total Access 612/616/624

### Network Interface

- Physical Interface: RJ-48C

### T1 (AT&T 54016, ANSI T1.403)

- Line Rate: 1.544 Mbps +/- 75 bps
- Framing: D4 (SF)/ESF
- Line Code: AMI / B8ZS
- Supports V.54 loopbacks

### ADSL2/2+ (ITU G.992.1-5, ANSI T1.413)

- Up to 24 Mbps downstream/Up to 2 Mbps Upstream
- Interoperable with G.992.1 compliant DSLAMs
- Supports Annex M

### SHDSL (ITU G.991.2)

- Line Rate: 192 kbps to 2.3 Mbps
- Rate-adaptive, enhanced spectral compatibility

### ATM Support

- AAL2 (voice), AAL5 (data, voice)
- 9 PVCs (1 voice, 8 data)
- RFC 1483 (multiprotocol over ATM)
- PPPoA (RFC 2364)
- QoS Support: VBR-rt (voice), UBR (data), VBR-nrt (data)
- 1.610 F5 OAM loopback
- G.165/G.168 echo cancellation, 8 ms echo tail
- Idle channel suppression

### Protocol Support

- Jetstream/Paradyne
- LES

### Caller ID Support

- Caller ID Generation (Basic Line Package)
- Enhanced Caller ID Generation (Caller ID with call waiting)

### CODECs supported

- G.711 – 64K PCM (mu-law encoding)
- G.726 – 32K ADPCM (mu-law encoding)

### Frame Relay Support

- Copper Mountain CE fragmentation support
- FRF.5 and FRF.8 support (V.35)

### Voice Features

- FXS: VoIP/TDM/VoATM
- Echo cancellation
- 32k ADPCM
- DSX-1: T1 CAS, PRI (all models except ADSL)
- Priority Queuing of voice traffic

### Call Control

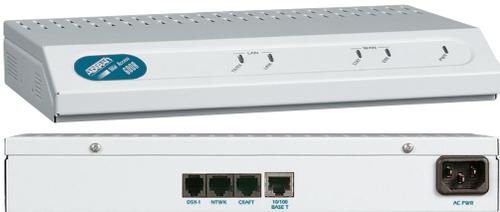
- Media Gateway Control Protocol (MGCP 1.0bis) support (per RFC 3435)
- PacketCable™ Network-Based Call Signaling (NCS 1.0)

### Local Tone Generation

- Dialtone, stutter dialtone
- Busy, reorder
- Confirmation tones, Call waiting, Distinctive call waiting
- Receiver "Off Hook"

### Analog Ports

- 4, 8, 12, 16, or 24 analog FXS ports per TR-57, 50-pin Amp
- Supports popular CLASS™ features
- Modes: FXS Loop Start, Ground Start
- Ringing: balanced, 20 REN output ring voltage 70 Vrms, nominal
- Programmable ring voltage



**Total Access 600R**

### VoIP Features

- MGCP signaling independent of Layer 2 Protocol
  - RTP transport over PPP, Ethernet or ATM/AAL5
- E&M Wink support on the DSX-1 port (per RFC 3064)
- RTP / UDP / IP support (per RFC 3550)
- ATM / AAL2 Bearer (RFC 3180)
- Session Description Protocol (SDP) support (per RFC 2327)
- Support for RFC 2833: "RTP Payload for DTMF Digits, Telephony Tones and Telephony Signals"
- Local DTMF detection
- Ringing
  - Distinctive ring support
  - Ring splash support for "do not disturb" feature
- Far End Tone Generation (Remote Ringback)
- Stutter Dialtone / Visual Message Waiting Indicator (VMWI) support
- Port-to-Port Hairpin call
- DiffServ Code Point marking
  - DSCPs marked per Softswitch instructions or manually configured at IAD
  - Call Control and RTP packets can be configured independent of one another

### Routing Capability

#### Ethernet: 10/100Base-T (RJ-45)

- IEEE 802.3 and 802.11D (MAC Bridging)
- IP Support: TCP, RIP V1, RIP V2, UDP, ICMP, ARP, UDP Relay, SYSLOG
- Layer 2: Frame Relay, PPP (LCP, IPCP, BCP) support, ATM
- DHCP server, DHCP client, DHCP relay
- Copper Mountain Compatible

### Security

- PAP, CHAP, EAP and Radius
- NAT with multi-point to single-point
- PAT with DHCP
- Packet filtering
- Multi user-level password protection

### Management Options

#### Craft Interface

- EIA-232, physical RJ-48C

#### Ethernet 10/100 Base T Port

- SNMP V2 support
- Full, menu driven TELNET access
- Software download via TFTP
- Support for VoDSL gateway management systems and firmware download

#### V.35 DTE Interface

- Data Rate: Nx56 or Nx64 (N=1 to 24)
- Electrical and Mechanical: CCITT V.35, 34-pin
- Frame Relay (FRF.5, FRF.8 capable)

### Interoperable with the following Media Gateway Controllers, Feature Servers & Gateways:

- BroadSoft BroadWorks (Release 10 MP1)
- Cisco AS5300 Series Media Gateway
- Cisco BTS Softswitch
- Cisco MGX 8000 Series
- General Bandwidth G6
- Lucent iMerge
- Metaswitch VP3500
- Nortel CS2K
- Nuera RDT-8
- Telica Plexus 9000
- Sylantro applications switch



**Total Access 604/608  
Battery Backup 1200641L1**



**Total Access 612/616/624  
Rackmount or Wallmount 1175044L1**



**Total Access 612/616/624  
Wallmount 1175044L2**



# Total Access 600 Series

## Carrier-class VoIP, TDM, and VoATM IADs

### Ordering Information

Equipment	Part #
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#### Total Access 600 Series

##### T1 TDM Network Interface Models

Total Access 604, T1 TDM w/DSX-1	4203640L1#TDM 4213640L1#TDM
Total Access 608, T1 TDM w/DSX-1	4203680L1#TDM 4213680L1#TDM
Total Access 612, T1 TDM w/DSX-1	4203612L1#TDM 4213612L1#TDM
Total Access 616, T1 TDM w/DSX-1	4203616L1#TDM 4213616L1#TDM
Total Access 624, T1 TDM w/DSX-1 w/16 FXS and 8 FXO Ports	4203624L1#TDM 4213624L1#TDM 4203624L3#TDM

##### T1 Packet Network Interface Models

Total Access 604, T1 ATM w/DSX-1	4203640L1#ATM 4213640L1#ATM
Total Access 608, T1 ATM w/DSX-1	4203680L1#ATM 4213680L1#ATM
Total Access 612, T1 ATM w/DSX-1	4203612L1#ATM 4213612L1#ATM
Total Access 616, T1 ATM w/DSX-1	4203616L1#ATM 4213616L1#ATM
Total Access 624, T1 ATM w/DSX-1	4203624L1#ATM 4213624L1#ATM

##### ADSL2/2+ Packet Network Interface Models

Total Access 604, ADSL	4204640L4
Total Access 608, ADSL	4204680L4

##### SHDSL Packet Network Interface Models

Total Access 604, SHDSL w/DSX-1	4203640L5 4213640L5
Total Access 608, SHDSL w/DSX-1	4203680L5 4213680L5
Total Access 612, SHDSL w/DSX-1	4203612L5 4213612L5
Total Access 616, SHDSL w/DSX-1	4203616L5 4213616L5
Total Access 624, SHDSL w/DSX-1	4203624L5 4213624L5

##### Total Access 600R Models

T1 TDM w/DSX-1	4203600L1#TDM 4213600L1#TDM
T1 ATM w/DSX-1	4203600L1#ATM 4213600L1#ATM
SHDSL w/DSX-1	4203600L5 4213600L5

##### Battery Backup Systems

8-hour wallmount Total Access 604/608	1200641L1
8-hour rackmount Total Access 612/616/624	1175044L1
8-hour wallmount Total Access 612/616/624	1175044L2



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TL19.1270



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