

# Adit 600

## Dual T1 ATM Controller Card

Part Number: 740-0051



## ATM-based converged voice, data and Internet access for the Adit 600 Customer Service Terminal

The Adit™ 600 with Dual T1 ATM Controller offers a scalable, extremely cost-effective, compact solution for delivering a wide range of broadband converged services from ATM access network infrastructures. The ATM Controller provides service interworking and adaptation between customer service interfaces and an ATM network.

The Dual T1 ATM Controller Card includes a built-in 512 timeslot (DS0) 1/0 cross connect matrix to provide full non-blocking connectivity between any of the six Adit 600 service card slots. Two T1 ports with integrated CSUs are included on the controller to facilitate quick service establishment. The ATM Controller includes a built-in Inverse Multiplexing over ATM (IMA) capability permitting up to eight T1 access lines to support over 12 Mb/s of broadband access. ATM traffic management policies ensure voice and circuit emulation service availability while optimizing idle bandwidth for data services.

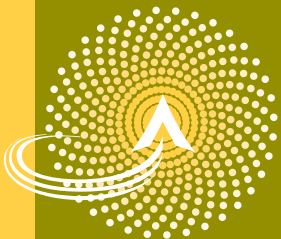
Service adaptation includes ATM Adaptation Layer 1 (AAL1) for circuit emulation services (CES), AAL2 for bandwidth efficient transport of packet-based voice services and AAL5 for packet-based data services. Constant Bit Rate (CBR), Variable Bit Rate-real time (VBR-rt), Variable Bit Rate-non real time (VBR-nrt) and Unspecified Bit Rate (UBR) ATM traffic classes are fully supported.

Service cards provide the physical, electrical, and logical connections for either customer service demarcations or network access. Customer interface types include Routed Ethernet, FXS, FXO/DPT, V.35, ISDN BRI, T1, DSL, and Voice Over IP. Any service card may be used in any available slot in any combination. This capability allows the Adit 600 to uniquely scale across all service types and bandwidth needs for business service delivery. Changing to TDM network access is available simply by turning off ATM functions on the controller or replacing it with a cost effective Adit 600 TDM Controller Card.

In addition to controlling the network access technology, the Adit Controller Card configures and manages the Adit Customer Service Terminal (CST). Management capabilities facilitate service deployments in minutes via front panel DIP switches, indicators, and remote management software. Remote capabilities include an SNMP agent for use with the Adit Pilot Element Management System (EMS) and a command line interface, which is accessible via Telnet and a local RS-232 craft port.

### Features At-A-Glance:

- Cost-effective broadband ATM access up to 12 Mb/s
- Integrated 512 DS0 digital cross connect for service grooming and restoration
- Any service connection or network access line in any slot
- Includes integration of Dual T1 CSU/DSU functionality and SNMP management
- Remote SNMP or Telnet provisioning, monitoring, and testing of services and network
- Solid-state fuseless protection for Central Office NEBS and customer premises FCC and safety requirements
- Supports Voice Over IP Media Gateway Router Card for implementing softswitch services at business locations



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# Technical Specifications

## ■ Network T1 Interface:

- Selectable single or dual T1 ports operating at 1.544 Mbps +/- 50 bps
- Expansion to 18 T1s in chassis using Quad T1 Cards
- SF (D4) and ESF line types
- AMI or B8ZS coding
- Short or long-haul line levels
- Integrated CSU function
- RJ-48C connectors on rear panel of chassis
- Solid-state (fuseless) overvoltage & overcurrent T1 line protection meets Telecordia GR-1089 intrabuilding lightning/power cross limits

## ■ Clocking:

- Loop-timed from either T1 or system clock bus
- Revertive clock switching provides automatic backup to secondary clock source should the primary one fail
- Supports clock recovery from any T1, DSL or ISDN BRI card installed in the platform
- Operates as a stratum 4E node as defined by GR-1244-CORE and AT&T TR62411

## ■ Management:

- **Local:**  
Simple set up using front panel DIP switches for channel bank applications
- **Remote:**
  - RS-232 craft port interface drives up to 50 ft. cable and provides Command Line Interface via ASCII terminal or PC with terminal emulation software, modem using XMODEM or PPP sessions
  - 10/100BaseT Ethernet port
  - Inband management virtual connection (VC) with routed 1483 encapsulation
  - Command Line Interface/Telnet over TCP/IP connections
  - SNMP agent for use with Adit Pilot EMS
  - Integrated TFTP server for remote download of controller software upgrades
  - Command Line Interface offers three levels of password-controlled security

## ■ Testing:

- Standard T1 line and payload loop backs
- T1.231 Performance History
- F4 and F5 OAM Cells

## ■ Alarms:

- One major, one minor alarm output
- One alarm input
- Alarm contacts accessible from external alarm connector
- All alarms are logged in an event log
- Loss of AC power triggers minor alarm

## ■ Network Standards:

- AT&T PUB 54017
- TR 62411
- ANSI T1.403, T1.203, T1.231
- AT&T PUB 54016

## ■ Product Includes:

- Built in non-blocking 512 DS0 Digital Cross-connect System (DCS)
- ATM
  - CBR, VBR-rt, VBR-nrt, UBR
  - UNI 4.0, ILMI 4.0
  - PVC, SVC
  - 8 x DS1 IMA/UNI processing capacity
  - 128 VCs
  - Per VC queuing and egress traffic shaping
  - ATM Forum and ITU compliant Circuit Emulation Service up to 128 DS0s
  - ISDN BRI transport in 3 DS0 mode
- AAL2 voice trunking with Channel Associated Signaling
  - Up to 52 compressed or 80 uncompressed voice channels
  - G.711 and 32 kb/s G.726 voice encoding
  - G.165 echo cancellation
  - Fax and modem detection up-speed support
  - Less than 10 msec total system delay
  - ATM FORUM 113 and Loop Emulation Service compliant
- Frame Relay/ATM Interworking
  - FRF.5 and FRF.8
  - N x 56 and N x 64 kb/s frame access via T1 or V.35
  - 6.144 Mb/s of V.35 frame access
  - Frame Relay LMI: T1.617 Annex D, Q.933 Annex A
- Front panel LED indicators for T1 status, Major and Minor alarms, remote/local management mode, and Alarm Cutoff (ACO) status
- Any service card, any slot architecture
- Configurations automatically stored in non-volatile memory
- SNMP V.1, supporting MIB objects:
  - RFC 2011 (IP MIB)
  - RFC 2233 (Interface Group MIB)
  - RFC 2494 (DS0 MIB)
  - RFC 1213 (MIB II)
  - RFC 1317 (V.35 MIB)
  - RFC 1406/2495 (DS1/E1 MIB)
  - ATM Forum CES MIB
  - ILMI 4.0 MIB
  - RFC 1604 (Frame MIB)
  - ATM Forum IMA MIB
  - RFC 2515 (AToM MIB)
  - ATM Forum LES MIB
  - Carrier Access MIB Extension

## ■ Regulatory Approvals:

- FCC Part 68, CS-03 listed for connection to PSTN
- FCC Part 15, Class A Radiated Emissions Control
- NRTL safety listed: UL 1950, CSA
- National Electrical Code 1996 safety requirements
- NEBS Level 3 certified

## ■ Physical:

- Dimensions: 3 1/2 " H x 3/4 " W x 11 7/8 " D
- Weight: 1 lb.

## ■ Environment:

- Operating temperature range: 32° to 104°F (0°C to 40°C)
- Storage temperature range: -40° to +158°F (-40°C to 70°C)
- Cooling method is by free air convection and requires long axis of unit to be mounted horizontally
- Maximum operating altitude: 10,000 feet
- Relative humidity (non-condensing) range: 0 to 95%



5395 Pearl Parkway  
Boulder, Colorado 80301

Phone: 303-442-5455  
800-495-5455

Fax: 303-218-5680

[www.carrieraccess.com](http://www.carrieraccess.com)

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