

# Adit 3402 Series High-Bandwidth Multi-Service Router

Release 1.0

## Multi-service Access Router



## Routing, Inspection, and Protection at Wire-Speeds through Scalable T1 or Ethernet Interfaces

Adit® 3402 High-Bandwidth Multi-Service Routers are a new breed of access routers that delivers converged voice and secure IP access to the enterprise at a disruptive price and unmatched performance. The Adit 3402 delivers speed, security, and scalability for secure Internet access, web hosting, private IP services, LAN-to-LAN connectivity, storage, and telephony applications—all in a single platform. The Adit 3000 series integrates and consolidates the features of a high-performance router, stateful firewall, T1 CSU/DSU, and integrated access device into a single element at an unmatched price/performance ratio without sacrificing speed or security. Its scalability on WAN and LAN interfaces make it an ideal device for Small- to Medium-sized Business (SMB) locations with expanding throughput needs. A comprehensive feature set, including integrated security, allows a single device to protect corporate network assets. The latest IP network processor technology enables a rich and easily expandable feature set that supports high-performance real-world applications for enterprises and service providers alike. One Adit 3402 will grow with a business' needs through three different performance classes of traditional routers to 100 Kpps, even at small packet sizes with firewall and packet inspection features activated.

### Carrier-Class Services

Designed to deliver carrier-class features and unparalleled performance at the enterprise, the Adit 3402 scales beyond the typical one T1 WAN port to a maximum of four ports without adding hardware. T1 ports can be bonded together to form a single logical circuit with an aggregate bandwidth of up to 6 Mbps. Optionally, the second Ethernet port can be utilized for metro Ethernet WAN service with bandwidth scaling to 100 Mbps delivering wire-speed routing performance. The Adit 3402 scalability does not increase the complexity of the system. All T1 and 10/100Base-T interfaces are included in the rugged package. Additional interfaces and enhanced features are activated through software keys, eliminating difficult hardware and software upgrades. The interfaces are not fixed function, so the second Ethernet port can serve not only as a WAN port, but also as a second LAN segment utilized for Voice over IP (VoIP) segment or as a Demilitarized Zone (DMZ). Best of all, no site visits are required to increase performance or manage the system, reducing cost, personnel, and support to maintain the network.

### IP Security Without Sacrificing Performance

Integrated stateful firewall keeps the network and LAN segments secure from intrusions and attacks while allowing authorized access to network resources. Included in the base router package are Network Address Translation/Network Address Port Translation (NAT/NAPT), stateful packet inspection, flow classification, Application Layer Gateway (ALG), and Intrusion Detection System (IDS). Rules are combined with Access Control Lists (ACL) to protect traffic flowing in and out of the network. Future software releases will expand these capabilities as new applications layer gateways are created and attacks are discovered. The Adit 3402 maintains wire-speed throughput with low latency even with small packets while stateful packet inspection and dynamic flow classification features are enabled.

### Designed for IP Network Management

The Adit 3402 router's management capability enhances its carrier-grade performance. Whether managed locally through the serial craft port or remotely via telnet, standardized interfaces make configuration and maintenance easy. Network management systems can remotely provision and alarm monitor the Adit 3402 via SNMP or technicians can manager and monitor through a standard Command Line Interface (CLI). The router can be automatically configured and upgraded remotely via TFTP.

The Adit 3402 leverages Carrier Access' experience in delivering and supporting over three million carrier-grade business access lines, Internet connections, and VoIP connections as well as its carrier-class interoperability alliances. The router comes with our standard five-year warranty on hardware and comprehensive maintenance packages. Adit 3402 expands the range of service applications and revenue opportunities with the quality and support that have made Carrier Access the standard for enterprises and major service providers.



## What makes the Adit 3402 different?

- Comprehensive wire-speed routing, stateful firewall, flow-classification, mini-DCS, CSU/DSU and 8 to 24 voice lines in a single platform with price disruptive performance and features
- High performance IP routing under the most difficult conditions with streaming video, voice, stateful firewall, and intrusion detection running simultaneously
- Scalable WAN bandwidth from 1.5 to 100 Mbps for offices with growing bandwidth needs
- Units are preconfigured with all necessary accessories and upgraded remotely through software
- Improved bandwidth utilization over traditional router technology with packet processing performance that does not degrade
- Second Ethernet port for a DMZ or a separate LAN segment to protect corporate networks from intrusion and down-time while allowing public access for e-commerce applications
- Stateful firewall with NAT/NAPT, flow classification, application layer gateway, and denial of service attack filtering
- Carrier-grade design, features and performance at an affordable price

## Adit 3402 Base Platforms:

- Adit 3402 (P/N 03-00001): Secure access router capable of supporting 4 T1 interfaces (1 active), 2 10/100Base-T ports (1 active), and 1 local management port with integrated firewall and AC power
- Adit 3402-DC (P/N 03-00007): Secure access router capable of supporting 4 T1 interfaces (1 active), 2 10/100Base-T ports (1 active), and 1 local management port with integrated firewall and DC power
- Adit 3402-4 T1 (P/N 03-00008): Secure access router capable of supporting 4 T1 interfaces (all active), 2 10/100Base-T ports (1 active), and 1 local management port with integrated firewall and AC power

## Hardware Upgrades (Available in configured platforms or for field installation):

- Adit 3400 8-Port FXS (P/N 740-0224): 8 line FXS voice module for the Adit 3400. Maximum of 3 per Adit 3402

## Software Features (Available in configured platforms or for field installation):

- T1/E1 Upgrade (P/N 752-0002): Feature key to enable one T1 or E1 WAN interface on Adit 3400 only. A maximum of three keys may be applied per system for a total of 4 T1/E1 interfaces
- Fast Ethernet LAN Port 2 Upgrade (P/N 752-0004): Feature key to enable the second Ethernet port on Adit 3400

## Accessories

- Adit 3000 Battery Backup Unit (P/N 730-0132): Wall-mount battery backup unit to provide a minimum of 4 hours battery backup
- Adit 3000 Rack Mount Kit (P/N 710-0177): Rack mount kit for one Adit 3000 in a 19-inch or 23-inch unequal flange bay (2 RU high)
- Adit 3000 Professional Maintenance (P/N 720-0086): 1 year of 8-hour, 5-day, priority queuing telephone support, advance hardware replacement, 8-hour e-mail response during working hours and 12 during other periods, web based training, notifications of software updates, and free maintenance software releases
- Adit 3000 Executive Maintenance (P/N 720-0087): 1 year of 24-hour, 7-day, priority queuing telephone support, advance hardware replacement, 2-hour e-mail response during working hours and 12 hours during other periods, web based training, notifications of software updates, and free maintenance and upgrade software releases



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### Product Ordering Information

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# Technical Specifications for the Adit 3402 Series High-Bandwidth Multi-Service Router

## Requirements:

- Adit 3402 Platform
- Hardware Upgrades
  - Adit 3400 8-Port FXS (max. 3 modules/system)
    - Software Features
  - T1/E1 Upgrade: Enables one T1 interface (max. 3 keys/system) (E1 future)
  - Fast Ethernet LAN Port 2 Upgrade: Enables 2nd Ethernet interface (max. 1 key/system)
    - Included Accessories
  - System software
  - AC power converter (AC models only)
  - DC power cable (DC models only)
  - Wall mount bracket

## Interfaces:

- 2 10/100 Ethernet (RJ-45 connector) ports
  - 2nd port is software enabled
- 4 T1 (RJ-48C connector) ports
  - 2nd-4th ports are software enabled
  - Framing for T1: SF (D4) or ESF
  - Line Code for T1: B8ZS or AMI
  - Internal or line timed with dual sources
  - T1 Loop Codes and BERT Testing
- 8, 16, 24 FXS ports (RJ-21 connector)
  - FXS signaling: Loop Start, Loop Start Reverse Battery, Ground Start, Ground Start Reverse Battery, Ground Start Wink, Ground Start Wink Reverse Battery
  - Terminating impedances: 19 selectable impedances
  - DC loop range: 1000 feet, 26 AWG
  - ERL:  $\geq 19$  dB
  - SRL:  $\geq 11$  dB
  - Maximum ringers: 5 REN per line, FCC Class B ringers
  - Ringing Voltage:  $\geq 50$  Vrms @ 20 Hz
  - Modem support: full compatibility with V.90 modems
- RS-232 console port (DB-9 connector)
- Battery status/general alarm interface

## Network Standards:

- ANSI/TIA T1.403
- ANSI/TIA T1.413 i2
- ITU G.703, G.704, G.712
- TIA/EIA-464
- Telcordia™ GR-57-CORE

## Voice Processing and Mediation:

- Voice CODEC support for G.711a/ $\mu$ -law
- Call progress tone and cadence generation via provisioned tone files

## Voice Signaling:

- FXS loop/ground start
- DTMF signaling
- Call progress tone generation
- CLASS<sup>SM</sup> support
- Distinctive ringing support
- Multiple line appearance

## Routing and Policy Management:

- IPv4
- RIP v1, v2
- Static routes
- PPP
  - VJ Compression
- DHCP Server/Client/Relay

- DNS Relay and Resolver
- BootP Relay
- PAP, CHAP, & RADIUS authentication
- Ping, Trace Route
- IPCP, BCP
- Multi-Protocol Encapsulation

## Router Performance:

- Wire-speed on T1 and 100Base-T interfaces ( $\geq 100$  Kpps)  
(Actual router performance depends on features enabled)

## Firewall Features:

- Stateful Firewall
- NAT/NAPT, NAT Bypass, NAT Pin-Holes
- L1-L4 Flow Classification
- Application Layer Gateway
- Intrusion Detection
- Denial of Service Filtering

## Management:

- Status indicators
- SNMP v1, v2 (via 10/100 Base-T or in-band network)
- Standard MIB
- Command Line Interface, Telnet, FTP, TFTP
- Syslog

## Power:

- AC Input Voltage: 120/240 VAC @ 60/50 Hz
- DC Input Voltage: -48 VDC, 1 Amp
- Internal solid-state (fuseless) protection

## Regulatory Approvals & Certifications:

- USA
  - UL60950
  - FCC Part 15, Class A
  - FCC Part 68
  - Interbuilding-Network T1
  - Intrabuilding-premises FXS
  - ICSA Compliant (Certification in Process)
- Canada
  - CSA C22.2 No. 60950-00
  - ICES-003 Class A digital devices
  - CS-03
  - Interbuilding-Network T1
  - Intrabuilding-premises FXS

## Physical:

- Wall mount brackets (included)
- Rack mount option: 19- or 23-inch rack
- Dimensions:
  - 1.75 in (H) x 8.25 in (W) x 12 in (D)
  - 4.4 cm (H) x 21 cm (W) x 30.5 cm (D)
- Weight: 6.25 lb (2.83 kg)

## Environment:

- Operating temperature range: 32 °F to 104 °F (0 °C to 40 °C)
- Storage temperature range: -40 °F to 158 °F (-40 °C to 70 °C)
- Maximum operating altitude: 10,000 ft (3,048 m)
- Maximum non-operating altitude: 40,000 ft (12,192 m)
- Relative humidity (non-condensing) range: 0% to 95%



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