Adit 3104 Series IP Business Gateway

Release 1.0

Routing, Switching, Inspection, Protection and VoIP at Wire-Speed

Adit® 3104 IP Business Gateways are a new breed of access routers delivering converged IP access to the enterprise at disruptive price and unmatched performance. The Adit 3104 delivers scalability, security, and high-performance for secure Internet and IP access, LAN-to-LAN connectivity over private and public networks, secure mobile worker access, and hosted voice over IP (VoIP) service applications—all in a single platform. The Adit 3104 integrates and consolidates the features of a high-performance router, stateful firewall, VoIP gateway and T1 CSU/DSU into a single element at an unmatched price/performance ratio without sacrificing speed. The comprehensive feature set, including integrated security, allows a single device to protect corporate network assets while providing reliable public access to enterprise users. Built on the latest network processor technology, the system enables a rich and easily expandable feature set that supports high-performance real-world applications for enterprises and service providers. The Adit 3104 will support existing phone systems and LANs or grow with a business' needs through the migration to VoIP in the enterprise.

Carrier-Grade IP Gateway in an Enterprise Device
Designed to deliver carrier-class features and unparalleled performance at the edge of the enterprise, the Adit 3104 has T1 or Fast Ethernet WAN ports and a 4-port Fast Ethernet switch that deliver wire-speed routing performance. The integrated 4-port Ethernet switch can be used to segment VoIP and data traffic on the LAN. Up to twenty-four voice lines will be delivered over IP access with the integrated gateway functionality. The base package supports a Demilitarized Zone (DMZ) to create a secure area for external network access enabling hosting of web sites and e-commerce applications while protecting the corporate LAN.

The Adit 3104's scalability does not increase the complexity of the system. All T1 and 10/100Base-T interfaces are included in its rugged package. Interfaces and enhanced features are activated through software keys eliminating difficult hardware and software upgrades. The router is VoIP aware and the unit is equipped with a VoIP gateway. 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 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 (NAT/NAPT), stateful packet inspection, flow classification, Application Layer Gateway (ALG), and intrusion detection. Rules are combined with access control lists to protect traffic flowing in and out of the network. Future software releases will expand these capabilities as new applications are created and attacks are discovered. The Adit 3104 maintains wire-speed throughput with low latency for small packets with the security features enabled. Multiple locations and mobile users can securely connect through the Internet utilizing the VPN capability of the gateway. IPSec support and Microsoft VPN client compatibility insures that remote users have secure access to authorized resources.

Designed for Enterprise Network Management
The Adit 3104's management capability enhances its carrier-grade performance. Whether managed locally through the serial craft port, remotely via telnet, or a web interface, standardized interfaces make configuration and maintenance easy. Remote provisioning is simplified through an easy-to-use web interface. Remote alarms from the Adit 3104 are reported via SNMP, e-mail alerts, or through a web interface via a browser. The router can also be automatically configured and upgraded remotely via TFTP.

The Adit 3104 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 a standard five-year warranty on hardware and comprehensive maintenance packages. Adit 3104 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.

CarrierAccess™

What makes the Adit 3104 different?

- Comprehensive wire-speed routing, stateful firewall, VPN, VoIP line gateway, CSU/DSU and integrated network access in a single platform with price disruptive performance and features

- High performance IP routing under the most difficult conditions with streaming video, firewall, VPN security, and VoIP call processing 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 as firewall filtering and NAT are enabled

- Integrated Ethernet switch with a DMZ option for separate LAN segments to protect corporate networks from intrusion and down-time while allowing public access for e-commerce applications

- Integrated VPN solution that does not require and additional hardware co-processor

- 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 3104 Base Platforms:

- Adit 3104 (P/N 04-00001): Secure Access Router capable of supporting 1 T1 or 10/100Base-T WAN interface, 4-port Ethernet switch, and 1 local management port with integrated stateful firewall and AC power

- Adit 3104-VPN (P/N 04-00002): Secure Access Router capable of supporting 1 T1 or 10/100Base-T WAN interface, 4-port Ethernet switch, and 1 local management port with IPSec virtual private networking, integrated stateful firewall, and AC power

- Adit 3104-8 FXS (P/N 04-00004): Secure IP gateway system with 8 FXS ports for VoIP gateway, 1 T1 or 1 Ethernet WAN interfaces, 4 port Ethernet switch, 1 local management port, AC power

- Adit 3104-16 FXS (P/N 04-00005): Secure IP gateway system with 16 FXS ports for VoIP gateway, 1 T1 or 1 Ethernet WAN interfaces, 4 port Ethernet switch, 1 local management port, AC power

- Adit 3104-24 FXS (P/N 04-00006): Secure IP gateway system with 24 FXS ports for VoIP gateway, 1 T1 or 1 Ethernet WAN interfaces, 4 port Ethernet switch, 1 local management port, AC power

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

- Adit 3100 8-Port FXS (P/N 740-0234): 8 line FXS voice module for the Adit 3100 supporting G.711. VoIP applications require software feature key

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

- VPN Upgrade Key (P/N 752-0004): Feature key to enable IPSec VPN features on Adit 3100

- SIP Line Gateway Key: (P/N 752-0008): Feature key to enable a SIP line side gateway on Adit 3100

- MGCP Line Gateway Key: (P/N 752-0009): Feature key to enable a MGCP line side gateway on Adit 3100

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

Requirements:
- Adit 3104 Platform
- Hardware Upgrades
  - VPN Upgrade Key: Enables virtual private networking (max. 1 key/system)
  - SIP Line Side Gateway Key: Enables SIP signaling conversion for analog lines (max. 1 key/system)
  - MGCP Line Side Gateway Key: Enables MGCP signaling conversion for analog lines (max. 1 key per system)
- Included Accessories
  - System software
  - AC power converter (AC models only)
  - DC power cable (DC models only)
  - Wall mount bracket

Interfaces:
- 1 T1 WAN port (RJ-48C connector)
  - 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
- 1 10/100Base-T WAN port (RJ-45 connector)
- 4 10/100Base-T switched LAN ports (RJ-45 connector)
- 8, 16, 24 FXS ports (RJ-21 connector)
  - FXS signaling: Loop Start
  - Terminating impedances: 19 selectable impedances
  - Maximum ringers: 5 REN, FCC Class B ringers
  - Ringing Voltage: ≥55 Vrms @ 20 Hz
  - Modem support: full compatibility with V.90 modems
- RS-232 console port (DB-9 connector)

Network Standards:
- ANSI/TIA T1.403
- ANSI/TIA T1.413 i2
- ANSI/TIA T1.231
- ITU G.703, G.704, G.712
- TIA/EIA-464
- Telcordia™ GR-57-CORE

Voice Signaling:
- FXS loop start
- DTMF signaling
- Call progress tone generation
- CLASS℠ support
- Distinctive ringing support
- Multiple line appearance

Voice Processing and Mediation:
- Voice CODEC support for G.711µ-law
- G.168 echo cancellation
- SIP call control
- RTP/RTCP
- Call progress tone and cadence generation via provisioned tone files
- 10-80 ms voice frame
- Max. 150 ms jitter buffer
- Gain control
- Fax over IP including T.38

Routing and Policy Management:
- IPv4
- Static routes
- RIP v1, v2
- PPP, PPPoE
  - ACF, VJ Compression
- Spanning Tree Protocol (802.1d)
- DHCP Server/Client/Relay
- DNS Relay and Resolver
- BootP Relay
- PAP & CHAP authentication
- Ping
- IPCP, BCP
- Multi-Protocol Encapsulation

Router Performance:
- Wire-speed on Ethernet to T1 interface (Actual router performance depends on features enabled)

Quality of Service
- ToS marking & interpretation per IETF Std. 5

VLAN
- WAN to LAN transparent bridging
- VLAN (IEEE 802.1P & Q)
- VLAN tagging & pass-through

Firewall Features:
- Stateful Firewall
- NAT/NAPT, NAT Bypass, NAT Pin-Holes
- L1-L4 Flow Classification
- Application Layer Gateways including VoIP
- Denial of Service Filtering
- Intrusion Detection

Virtual Private Networking Features:
- IPSec per RFC 2401, 2412, 2393
- L2TP client
- PPTP client/server
- IKE manual, automatic
- Encryption: DES, 3DES, AES
- Authentication: MD5, SHA-1

Management:
- Status indicators
- SNMP v1, v2c (via 10/100Base-T or in-band network)
- Standard MIB
- Command Line Interface, Telnet, FTP, TFTP
- CLI over secure telnet
- Web-based interface over SSL
- 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
  - ICSA Compliant (Certification in Process)
- Canada
  - ICES-003 Class A digital devices
  - CSA C22.2 No. 60950-00
  - CS-03
  - Interbuilding-Network T1

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%

CarrierAccess™

Product Ordering Information

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