NetVanta

6250

High Performance IP Business Gateway

VoIP	**eSBC** Ready	VQM

Benefits

- **ADTRAN's highest performing IP Business Gateway for delivering business services**
- **Seamless voice and data integration over VoIP-based network architectures**
- **Includes five routed Ethernet interfaces**
- **Up to 24 analog POTS interfaces**
- **Perfect for multi-T1 through higher bandwidth Ethernet services**
- **VQM for advance troubleshooting**
- **QoS ensures priority for voice traffic**
- **Packet Capture (PCAP) for easy troubleshooting**
- **Designed to support both legacy and SIP PBX connectivity**
- **Compatible with industry-leading softswitches and call agents**
- **Dynamic bandwidth allocation affords more efficient utilization**
- **Standardized voice compression requires less bandwidth per voice call**
- **Integral full-featured business class IP router for data support and Internet access**
- **Supports 802.1q Virtual LAN (VLAN) Trunking**
- **NAT for IP address concealment**
- **Optional battery backup**
- **Industry-leading, five-year warranty (North America)**
- **Dual AC/DC power supply**
- **Supports transcoding and DTMF interworking (30 calls)**
- **Full featured SBC for robust network security and voice interoperability**

Overview

The NetVanta® 6250 IP Business Gateways are designed for carrier Ethernet and Voice over IP (VoIP) networks delivering high speed services to the customer premises. These products feature all of the same robust routing and voice features of the market leading Total Access® 900e IP Business Gateways, along with a host of new features and functions that enable cost effective, reliable IP service delivery. These devices use the ADTRAN® Operating System (AOS) to simplify management and administration. Multiple models offer flexibility for various applications from PRI delivery and trunking services to Hosted IP PBX offerings.

The NetVanta 6250 is designed for legacy T1 access as well as emerging Ethernet delivery. User interfaces include:

- Five routed Ethernet ports (one Gigabit/SFP and four Fast Ethernet) for WAN/LAN connectivity, and access to the NetVanta 6250's router
- One USB interface for wireless backup or local storage
- Four T1 ports for network connectivity or legacy PBX connection
- Up to 24 FXS analog voice ports, up to nine FXO

This solution can be coupled with a NetVanta Power over Ethernet (PoE) switch to provide connectivity to a variety of network devices and personal computers, as well as to power IP phones and Wireless Access Points (WAPs).

VoIP Gateway

The NetVanta 6250 Series utilizes SIP or MGCP for VoIP applications, providing interoperability with industry-leading softswitches, feature servers, and gateways. Acting as a gateway, these devices convert IP signaling from the carrier into traditional TDM analog and digital voice services. This functionality allows the NetVanta 6250 to deliver voice services to both IP phones and traditional telephony equipment simultaneously. For customers implementing

a hosted PBX or IP Centrex service, the NetVanta 6250 is ideal for providing customers additional analog ports necessary to support their remaining analog phones, fax machines, or modems. The NetVanta 6250 supports many popular calling features such as caller ID, call hold, forward, transfer, and call waiting. Voice Activity Detection (VAD) and silence suppression are supported and the flexible design allows the NetVanta 6250 to deliver high quality voice service assurance.

Enterprise Session Border Control (eSBC)

The NetVanta 6250 also can provide eSBC functionality delivering a truly converged application platform at the customer premises. This feature is becoming mandatory in today's service deployment to normalize, secure and troubleshoot the SIP to SIP communication between a carrier network and the customer's SIP compliant equipment. The strength of the NetVanta 6250 in your VoIP service deployment is its ability to grow as your services expand.

Local and Remote Survivability

In addition, the NetVanta 6250 can act as a registrar and Back-to-Back User Agent (B2BUA) or as a SIP-transparent proxy to facilitate remote survivability and Network Address Translation (NAT) traversal. In the event of a service interruption on the wide area network or if the carrier's call agent were to become unavailable, calls may continue locally at the customer premises between IP-based or analog phones. In addition, local call survivability to the PSTN is provided via the optional FXO, or over one of the T1/PRI interfaces.

NETVANTA 6250

Superior Call Quality

Inherent Quality of Service (QoS) methods ensure appropriate classification and prioritization of VoIP traffic. These methods include low latency, weighted fair queuing, class-based weighted fair queuing, Voice Quality Monitoring (VQM) captures Mean Opinion Score (MOS), jitter, delay, and packet loss statistics necessary to troubleshoot VoIP calls over your network to help ensure superior call quality. The AOS packet capture feature is used with network monitoring to effectively capture data packets as they traverse the network. As data packets pass through an interface on which the packet capture feature is enabled, a packet-capture monitors the traffic and captures the header and payload of specified packets as they pass through. The captured packets are then exported and stored in either flash memory or CompactFlash® storage, and can then be reviewed to determine the cause of network problems, identify security threats, and to maintain efficient data transmission over the network.

Security/Routing

The NetVanta 6250 uses the AOS to provide a stateful inspection firewall; NAT; DHCP server/client; and feature-rich, standards-based, IP routing functionality including BGP, OSPF, and RIP routing protocols.

Management

The NetVanta 6250 can be remotely managed by ADTRAN n-Command® MSP, offering the ability to discover devices, make mass configuration changes or firmware upgrades, backup/restore configuration, and generate inventory reports for asset management. ADTRAN's n-Command MSP also offers VoIP VQM and reporting, SIP ladder diagram, as well as an industry leading, easy-to-use, Graphical User Interface (GUI).

Reliability

NetVanta 6250 products are housed in a rugged metal enclosure; available in wallmount, rackmount, and desktop mountings; and offer a battery backup system for up to eight hours of uninterrupted service upon a customer-site power outage. NetVanta 6250 is backed by an industry-leading, five-year warranty and ADTRAN's world-class technical support.

Features	Benefits
Designed for Feature Rich, Higher Bandwidth Applications	• The NetVanta 6250 features the performance demanded in today's communications networks, with up to 175 Mbps throughput. • Resources within the platform support up to 3 PRI's of simultaneous voice traffic. • Support for 200 simultaneous calls using SBC Feature Pack • Perfect for any type of business service offering with: full functioning router, analog and IP services support, enabling migration path from legacy offerings to newer SIP services
Multiple Connectivity Options	• The NetVanta 6250 is one of the most flexible platforms for deploying services for next generation networking with built-in interfaces for fiber and gigabit Ethernet, while maintaining the necessary failover functionality of analog interfaces. • ADTRAN's experience in this market allows us to provide platforms such as the NetVanta 6250 with optimal configurations depending on how you are utilizing our technology. • Includes a built-in USB slot for future 3G/4G backup connectivity and storage.
Service Reliability	• Built by the market leader for in IP Business Gateways with carrier-class quality. • Battery backup ensures a power failure doesn't equal communications failure.
Session Border Control	• Say goodbye to expensive, multi-appliance deployments for business connectivity demanding session border control functionality. • Field upgrade any NetVanta 6250 with Session Border Control functionality, providing a future proof solution in your network. • Deploy services quickly with ADTRAN's help on SIP interoperability to industry-leading IP PBX's platforms. • Know that your network, and your customer's network well secured.
Superior Call Quality	• Ensure VoIP traffic prioritization with Quality of Service • Meet proper service level agreements (SLAs) with Voice Quality Monitoring • Simplify troubleshooting with Packet Capture

Product Specifications

Physical Interfaces

Ethernet
- Single Gigabit Ethernet (10/100/1000Base-T)
  - Copper or Fiber SFP
- Four Fast Ethernet (10/100Base-T) ■ RJ-45
- Supports 802.1q VLAN trunking

T1
- Four T1/FT1 (Auto sensing) ■ RJ-48C

USB
- Single USB 2.0 Interface

Digital Voice
- RJ-48C ■ T1 CAS support
- PRI ■ Feature Group D
- **Signaling Methods**
  - E&M Wink ■ E&M Immediate

Analog Voice
- 8, 16, and 24 FXS POTS via 50-pin Amphenol
- 68.5 Vrms with 20VDC Offset Maximum Ring Voltage
- Sinusoidal Ringer Waveform
- 48 V, Nominal On-hook Battery Voltage
- 30 mA, Nominal Loop Current
- **FXS 2-wire Impedances**
  - $600\Omega\Omega$ ■ 900Ω
  - 600Ω +2.16µF ■ 900Ω +2.16µF
- **FXO 2-wire Impedances (Lifeline FXO)**
  - $600\Omega\Omega$ ■ 900Ω
  - 600Ω +2.16µF ■ 900Ω +2.16µF
- **Signaling Methods**
  - Loop Start
- **FXO 2-wire Impedances (Standard FXOs)**
  - $600\Omega\Omega$ ■ 900Ω
  - 600Ω +2.16µF ■ 900Ω +2.16µF
- Integral FXO (900e Series)
- **Signaling Methods**
  - Loop Start ■ Ground Start
- **FXO 2-wire Impedances**
  - $600\Omega\Omega$+2.16µF ■ $900\Omega\Omega$+2.16µF
  - Rs 220 ohms, Rp 820 ohms, Cp 115nF
  - Rs 270 ohms, Rp 750 ohms, Cp 150nF
  - Rs 270 ohms, Rp 750 ohms, Cp 150nF, Zin 600r
  - Rs 320 ohms, Rp 1,050 ohms, Cp 230nF
  - Rs 350 ohms, Rp 1,000 ohms, Cp 210nF, Zin 600r
  - Rs 370 ohms, Rp 620 ohms, Cp 310nF
  - Rs 800 ohms, Rp 100 ohms, Cp 50nF
- **Signaling Methods**
  - Loop Start ■ Ground Start ■ DPT

Craft
- DB-9

Processor and Memory
- **RAM:** 512 Mb RAM ■ **Flash:** 256 Mb Flash

VoIP Protocol
- SIP ■ MGCP (FXS Interfaces Only)

Packet-based Voice Resources
- **CODECs**
  - G.711-64k PCM ■ G.729a-8k CS-ACELP
- G.168 Echo Cancellation
- Up to 64ms Echo-tail Length
- Supports up to 60 Channels
- Supports up to 60 T.38 Sessions
- Supports 30 transcoding calls

Media Stream
- RTP/UDP/IP (RFC 3550) ■ SDP (RFC 2327)
- RTP Payload for DTMF Digits (RFC 2833)
- Supports Port-to-port Hairpin Call
- Supports 30 DTMF interworking calls

NAT Traversal and Remote Survivability
- B2BUA ■ SIP Registrar for IP Phones
- SIP Transparent Proxy with Survivability

Tone Services
- Local DTMF Detection
- Local Tone Generation
  - Dialtone ■ Busy
  - Call Waiting ■ Alternate Call Waiting
  - Receiver Off Hook
- Ringing
  - Distinctive Ring

Calling Feature Support
(Varies with feature server/gateway)
- Caller ID
  - Name and Number (MDMF, SDMF)
  - Call Waiting Caller ID
- Voice Mail
  - Stutter dialtone
  - Visual Message Waiting Indicator (VMWI)
- Call Hold
- Call Forward
  - Busy Line ■ No Answer
- Call Transfer
  - Blind, Attended
- Call Waiting ■ Distinctive Ring
- Do Not Disturb ■ Three-way Calling
- Call Return ■ Speed Dial
- 3-way Conferencing (3WC)

Firewall
- Stateful Inspection Firewall
- Denial of Service (DOS) Protection
- Access Control Lists ■ Packet Filtering
- Application Level Gateways

NAT
- Basic NAT (1:1) and NAPT (Many:1)

Product Specifications

QoS
- Low Latency and WFQ
- Hierarchical QoS
- DiffServ packet marking and recognition
- Frame Relay Fragmentation
- Traffic Monitoring (NetFlow 9)
- Traffic Shaping
- Load Balancing

VQM
- MOS prediction
- Jitter, Delay and Packet Loss
- Past and Active Calls
- Supports PCAP

VPN
- **IPSec Tunnel Mode:** 500 Tunnels
- **Encryption:** DES, 3DES, and AES
- **Authentication Mechanisms:** XAUTH, Digital certificates, Pre-Shared Keys, and Secure ID

Protocols
- BGP
- OSPF
- PPP
- GRE
- IPv4
- IPv6
- Multilink Frame Relay
- RIP (v1 and v2)
- Multilink PPP
- HDLC
- IGMP V2
- PAP and CHAP
- Frame Relay
- Multi-VRF

Routed Protocols
- IP

DHCP
- Client
- Relay
- Server

Mangagement and Utilities
- Familiar CLI
- Web-based GUI
- n-Command support
- SNMP v2 and v3

- SYSLOG logging
- Telnet, Craft/Console Port, SSH, Ping, Trace route, NTP
- TCL Scripting

Firmware Upgrade
- FTP
- X-Modem
- TFTP
- HTTP

Environment
- **Operating Temperature:** 32° to 122 °F (0° to 50 °C)
- **Storage Temperature:** -40° to 158 °F (-40° to 70 °C)
- **Relative Humidity:** Up to 95%, Non-condensing
- **Maximum Altitude:** 10,000 Feet

Physical and Power
Chassis
- Wallmount
- 1U Rackmount
- Desktop Metal Enclosure

Dimensions
- 1.72 in. x 17.2 in. x 10.5 in. (H x W x D)

Weight
- 7 lbs.

Power
- 120 VAC, 60 Hz, 110W
- -48 VDC
- **Battery Backup:** Optional eight-hour system
- LEDs
  - Voice
  - Status
  - Gig 1
  - USB
  - T1 1 - 4
  - Ethernet 1 - 4

Agency Approvals
- FCC Part 15, Class A
- FCC Part 68
- Industry Canada CS03
- ETL and Canadian ETL (C-ETL)

Battery Backup Options
- Rackmount or Wallmount

Warranty
- Five Years (North America)

Ordering Information

Hardware Options	Part No.
NetVanta 6250 8 FXS	4700252F1
NetVanta 6250 8 FXS with 5 SESSION SBC	4700252F2#5
NetVanta 6250 8 FXS with 25 SESSION SBC	4700252F2#25
NetVanta 6250 8 FXS with 100 SESSION SBC	4700252F2#100
NetVanta 6250 8 FXS with 200 SESSION SBC	4700252F2#200
NetVanta 6250 16 FXS	4700254F1
NetVanta 6250 16 FXS with Lifeline FXO	4700254F2
NetVanta 6250 24 FXS	4700256F1
NetVanta 6250 24 FXS with Lifeline FXO	4700256F2
NetVanta 6250 16 FXS + 9 FXO (1 Lifeline)	4700256F3
Battery Backup Systems	
NetVanta 6250 Eight-hour, Wallmount/Rackmount	1175044L1
NetVanta 6250 Eight-hour, Wallmount	1175044L2
Software Upgrade Options	
IPBG SBC Upgrade, 5 Call	1962SBCF5
IPBG SBC Upgrade, 10 Call	1962SBC10
IPBG SBC Upgrade, 25 Call	1962SBC25
IPBG SBC Upgrade, 50 Call	1962SBCF50
IPBG SBC Upgrade, 100 Call	1962SBCF100
IPBG SBC Upgrade, 200 Call	1962SBCF200