



NetVanta® 1224R and 1224STR

Managed Layer 2 Ethernet Switches with Integral IP Router, Modular WAN Interface, Firewall and Optional VPN

Solution Benefits

- Converged LAN/WAN architecture
- Lower total cost of ownership
- Efficient bandwidth usage
- Space-savings, equipment consolidation
- Simplified network administration

Product Features

- Non-blocking Ethernet switching
- Full-featured IP router for Frame Relay or PPP networks
- 56/64k, T1/FT1, T1/FT1+DSX-1, E1/FE1, E1/FE1 + G.703, or Serial Network Interface
- Stateful Inspection Firewall and optional VPN
- Gigabit 1000Base-T/SFP port for uplink/stacking
- 802.1Q VLANs, VLAN trunking
- Optional DSX-1 port for PBX connectivity
- User-friendly Web GUI and familiar CLI
- 802.1p Class of Service (CoS), Weighted Round Robin and Priority queuing
- Quality of Service (QoS) with Layer 3 DiffServ marking (on WAN), Weighted Fair and Priority queuing
- Optional dial backup functionality
- Free firmware updates

All-in-One Network Access Solution

The NetVanta 1000 Series of managed Ethernet switches is a full-featured product line designed for use in enterprise networks seeking a cost-effective solution for converged LAN/WAN access. The NetVanta 1224R and 1224STR use the ADTRAN Operating System (OS) to provide an all-in-one network access solution by combining a 24-port managed Layer 2 Ethernet switch, a full-featured IP access router (with modular WAN interface), a stateful inspection firewall, and optional VPN functionality, all in a single 1U platform. This is ideal for enterprise businesses of all sizes that need to provide branch office or multi-site networks for LAN segmentation and WAN connectivity applications.

Non-blocking Layer 2 switching functionality includes support for 802.1Q Virtual LANs (VLANs), 802.1D and 802.1w Spanning/Rapid Spanning Tree, Link Aggregation, advanced management, and Quality of Service (QoS) functionality. Both products provide 24-port Ethernet and Fast Ethernet switching. A 1000Base-T/SFP Gigabit port is also included on the NetVanta 1224STR for uplink and stacking requirements. An integral IP router provides cost-effective Internet access, corporate Frame Relay or point-to-point connectivity using industry-standard routing protocols such as OSPF and RIP.

A single WAN access slot in the back of the NetVanta chassis supports a variety of Network Interface Modules (NIMs) including 56/64k, T1/FT1, T1/FT1 with DSX-1, E1/FE1, E1/FE1 with G.703, or a serial interface. For dial backup, optional Dial Backup Modules (DIMs) are available to support business continuity and disaster recovery for critical networks. Analog or ISDN BRI DIMs prevent downtime by dialing around a failed circuit to any PPP compliant device.

The ADTRAN OS offers a standard Command Line Interface (CLI) that mimics

the widely deployed, industry *de facto* standard. Also, an intuitive web-based GUI provides step-by-step configuration wizards, management capability and the ability to upload firmware.

Other port-based switching features include Broadcast Storm Control, Link Aggregation, and Port Mirroring. The NetVanta 1224R and 1224STR also support QoS to ensure network managers have the ability to prioritize mission critical traffic and control network congestion. The NetVanta 1224R and 1224STR support 802.1p Layer 2 Class of Service for per-port tagging of traffic as well as enforcement of tagged traffic received from other sources. Four egress queues (per port) are available for assigning traffic priorities using Weighted Round Robin or Priority queuing.

Layer 3 DiffServ, Weighted Fair Queuing, and Priority queuing provide priority for IP packets routed over the WAN. These products also offer a variety of data security features including multilevel user passwords, Secure Shell (SSH) and Secure Socket Layer (SSL) for encrypted user login, and Access Authentication and Authorization (AAA) for authentication with a RADIUS server. A stateful inspection firewall comes standard and optional VPN functionality is available to support up to 500 VPN tunnels. DES/3DES and AES encryption and IPSec tunneling provide interoperability with a wide variety of security devices.

ADTRAN®, the leader in network access solutions, offers proven and dependable equipment that will increase network performance while lowering costs. The NetVanta 1000 Series is no exception. These products use industry-standard protocols for interoperability in multi-vendor networks, and are backed by an industry-leading product warranty, free firmware updates, and world-class toll-free technical support.





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Product Specifications

Network Interfaces

- 24 Fast Ethernet Ports
 - 10/100 Base-T – Auto-Duplex
 - Auto-Rate – Auto-MDI/MDI-X
- Gigabit Ethernet Port (1224STR)
 - Built in 10/100/1000Base-T for copper connectivity
 - SFP slot for optical connectivity
 - Auto-Duplex
 - Auto-Rate
 - Auto-MDI/MDI-X
- NIM (Network Interface Modules)
 - T1/FT1 – T1/FT1 with DSX-1 – E1/FE1
 - E1/FE1 with G.703 Drop – Serial (V.35, X.21/V.11)
- DIM (Dial Backup Interface Modules)
 - Analog Modem – ISDN BRI
- Console Port
 - DB-9

Switching Performance

- Non-blocking
- Maximum Forwarding Bandwidth
 - 4.8 Gbps (1224R) – 6.8 Gbps (1224STR)
- Maximum Forwarding Rate (based on 64-byte packets)
 - 3.6 Mpps (1224R) – 5.1 Mpps (1224STR)
- 8,000 MAC Addresses
- 16-MB memory shared by all ports

Routing Performance

- 133 MHz Motorola MPC 866
- 32 MB RAM
- 16 MB RAM
- 30,000 PPS

Status LEDs:

- Power
- WAN
 - Link – Activity – Alarm – Test
- DBU
 - Link – In DBU – Alarm – Test
- Ethernet Port Status
 - Link – Activity

Port Statistics

- # of TX/RX Frames
- # of Collisions
- # of Errors

Spanning Tree Support

- 802.1D Spanning Tree
- 802.1w Rapid Spanning Tree

Routing Protocols

- OSPF
- RIP V2
- RIP V1
- Static

Frame Relay

- Point-to-Point
- RFC 1490 Encapsulation (Multiprotocol Over Frame Relay)
- LMI Types:
 - LMI – CCITT (Annex A) – ANSI (Annex D) – Static

WAN Protocol

- Frame Relay
- PPP

Firewall

- Stateful Inspection Firewall
- Denial of Service (DoS) Protection
- Cyber Assault Protection
- Access Control Lists

Network Address Translation

- Basic NAT (1:1)
- NATP (Many:1)
- Application Level Gateways (ALGs)

Link Aggregation

- 802.3ad Link Aggregation
- Support for 6 trunk groups
- Trunk groups consist of up to 8 access ports

Class of Service (Switching – Layer 2)

- Enforces 802.1p priorities
- 802.1p aware/mark
- 4 output queues per egress port
- Weighted Round Robin or Priority queuing

Quality of Service (Routing – Layer 3)

- Weighted Fair Queuing (WFQ)
- Priority queuing
- DiffServ aware/mark
- FRF.12 Fragmentation

Optional VPN

- IPSec Mode: Tunnel
- Encryption (128/256 bit)
 - DES – 3DES – AES
- Tunnels
 - 500
- Diffie Hellman Group Support
 - Group 1: MODP 768 – Group 2: MODP 1024
- Hash Algorithms
 - MD5-HMAC – SHA1-HMAC
- Authentication Mechanisms
 - XAUTH – Digital Certificates
 - Preshared Keys – Secure ID
- Key Management
 - IKE (ISAKMP/Oakley)
- IKE Modes
 - Main – Aggressive



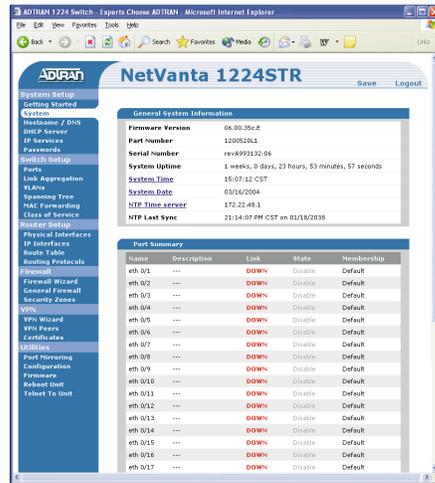


VLAN Support

- Port based VLANs
- 802.1Q tagged trunked VLANs
- Support for up to 255 active VLANs
- Inter-VLAN routing

Management

- Management Methods
 - Telnet CLI
 - SSH CLI
 - HTTP GUI
 - N-Form®
- Management Security
 - Multi-level access control
 - Port security
 - RADIUS AAA
- SNMP (Simple Network Time Protocol)
- Email Alerts (SMTP)
- SYSLOG
- Access control policies
- TFTP firmware update
- Dual firmware images stored in unit
- DHCP Server, Client, Relay
- Domain Name Server (DNS)
- Config script download



Diagnostics

- Port Mirroring
- Ping
- Traceroute

Environment

- Operating Temperature: 0° to 50 °C (32° to 122 °F)
- Storage Temperature: -20° to 70 °C (-4° to 158 °F)
- Relative Humidity: Up to 95%, non-condensing

Physical

- Chassis: 1U, 19" rackmountable metal enclosure
- Dimensions: 4.4cm H, 44cm W, 20.5cm D
1.7" H, 17.2" W, 7.8" D
- Weight: 7 lbs.
- AC Power: 100–250 VAC, 50/60 Hz
- Power Dissipation: 25 Watts (85 BTUs/hour)

Agency Approvals

- FCC Part 15 Class A
- FCC Part 68
- UL 1950/CSA
- CE Mark
- C-tick



Ordering Information

Equipment	Part #
NetVanta 1000 Series Chassis	
NetVanta 1224R	4200510L1
NetVanta 1224STR	4200520L1
NetVanta 1224R Product Bundles	
NetVanta 1224R w/56k NIM	4200511L1
NetVanta 1224R w/T1 NIM	4200512L1
NetVanta 1224R w/T1+DSX NIM	4200513L1
NetVanta 1224R w/Serial NIM	4200516L1
NetVanta 1224R VPN w/56k NIM	4200511L2
NetVanta 1224R VPN w/T1 NIM	4200512L2
NetVanta 1224R VPN w/T1+DSX NIM	4200513L2
NetVanta 1224R VPN w/Serial NIM	4200516L2
NetVanta 1224STR Product Bundles	
NetVanta 1224STR w/56k NIM	4200521L1
NetVanta 1224STR w/T1 NIM	4200522L1
NetVanta 1224STR w/T1+DSX NIM	4200523L1
NetVanta 1224STR w/Serial NIM	4200526L1
NetVanta 1224STR VPN w/56k NIM	4200521L2
NetVanta 1224STR VPN w/T1 NIM	4200522L2
NetVanta 1224STR VPN w/T1+DSX NIM	4200523L2
NetVanta 1224STR VPN w/Serial NIM	4200526L2
NetVanta 1000 Series SFP Modules	
NetVanta 1000Base-SX SFP (LC Connectors)	1200480L1
NetVanta 1000Base-LX SFP (LC Connectors)	1200481L1
NetVanta 1000 Network Interface Modules (NIMs)	
E1/FE1 NIM	1200868L1
E1/FE1 with G.703 NIM	1200878L1
Serial NIM	1200866L1
X.35 Serial Interface Cable	1200873L1
X.21 Serial Interface Cable	1200874L1
T1/FT1 NIM	1200862L1
T1/FT1 with DSX-1 NIM	1200863L1
56/64k NIM	1200861L1
NetVanta 1000 Dial Backup Interface Modules (DIMs)	
Analog Modem DIM	1200864L1
ISDN BRI-U DIM	1200865L1
ISDN BRI-S/T DIM	1200875L1



NetVanta 1224STR



NetVanta 1224R



WAN Interface (using NIM) DBU Interface (using DIM)

NetVanta 1224R and 1224STR Backplane



ADTRAN, Inc.

Attn: Enterprise Networks
901 Explorer Boulevard
Huntsville, AL 35806

P.O. Box 140000
Huntsville, AL 35814-4000

256 963-8000 voice
256 963-8699 fax
256 963-8200 fax back

General Information

800 9ADTRAN
info@adtran.com
www.adtran.com

Pre-Sales

Technical Support

800 615-1176 toll-free
application.engineer@adtran.com
www.adtran.com/support

Where to Buy

877 280-8416 toll-free
channel.sales@adtran.com
www.adtran.com/where2buy

Post-Sales

Technical Support

888 423-8726
support@adtran.com
www.adtran.com/support

**ACES Installation &
Maintenance Service**

888 874-ACES
aces@adtran.com
www.adtran.com/support

International Inquiries

256 963 8000 voice
256 963-6300 fax
international@adtran.com
www.adtran.com/international

**For the regional office
nearest you, visit:**

www.adtran.com/where2buy



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