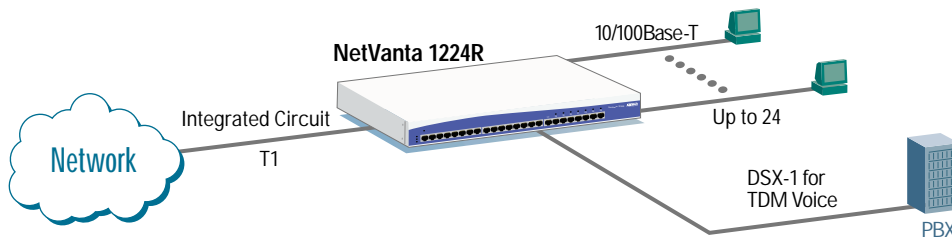


# Integrated Communications Brief

Combine Internet Access and Voice



**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.

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.

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.

## Solution Features

- Combines Ethernet switch, IP router, DSU/CSU firewall, and optional VPN
- Converged LAN/WAN architecture
- Lower total cost of ownership
- Efficient bandwidth usage
- Space-savings, equipment consolidation
- Simplified network administration



# NetVanta 1224R and 1224STR

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

### 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)

- 56/64k
- T1/FT1
- T1/FT1 with DSX-1
- E1/FE1
- E1/FE1 with G.703
- Serial (V.35, X.21/V.11)

##### DIM (Dial Backup Interface Modules)

- Analog Modem
- ISDN BRI 'U' and 'ST'

##### Console Port

- DB-9

#### Switching Performance

- Non-blocking
- 5.1 Mpps (1224STR)
- 8,000 MAC Addresses
- 16-MB memory shared by all ports

#### Maximum Forwarding Bandwidth

- 4.8 Gbps (1224R), 6.8 Gbps (1224STR)

#### Maximum Forwarding Rate

- (based on 64-byte packets)
- 3.6 Mpps (1224R)

#### Routing Performance

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

#### Status LEDs

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

#### Port Statistics

- Number of TX/RX Frames
- Number of Collisions
- Number 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)
- NAT (Many:1)
- Application Level Gateways (ALGs)

#### Link Aggregation

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

#### Class of Service (Switching – Layer 2)

- Enforces 802.1p priorities
- 802.1p aware/mark
- Four 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
- Frame Relay Fragmentation (FRF.12)

#### 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

- 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

## Management Methods

- Telnet CLI
- SSL GUI
- SSH CLI
- SNMP V2
- HTTP GUI
- N-Form®

## Management Security

- Multi-level access control
- Port security
- RADIUS AAA

## Diagnostics

- Port Mirroring
- Ping
- Traceroute

## Environment

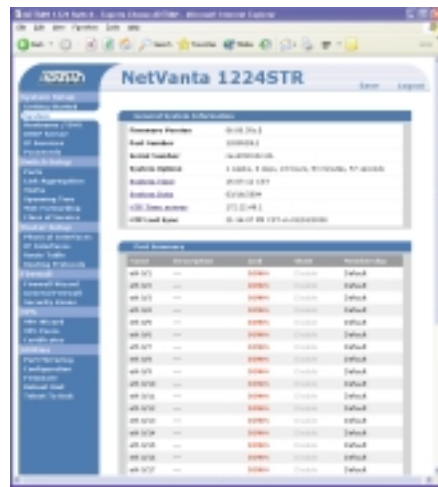
- **Operating Temperature:** 0° to 50 °C (32° to 122 °F)
- **Storage Temperature:** -20° to 70 °C (-4° to 158 °F)
- **Relative Humidity:** Up to 95%, non-condensing

## Physical

- **Chassis:** 1U, 19" rackmountable metal enclosure
- **Dimensions:** 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
- CE Mark
- FCC Part 68
- C-tick
- UL 1950/CSA



## Ordering Information

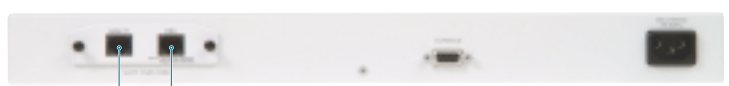
Equipment	Part #
<b>NetVanta 1000 Series Chassis</b>	
NetVanta 1224R	4200510L1
NetVanta 1224R w/VPN	4200510L2
NetVanta 1224STR	4200520L1
NetVanta 1224STR w/VPN	4200520L2
<b>NetVanta 1224R Product Bundles</b>	
NetVanta 1224R w/56k NIM	4200511L1
NetVanta 1224R w/T1 NIM	4200512L1
NetVanta 1224R w/T1+DSX 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
<b>NetVanta 1224STR Product Bundles</b>	
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	4200526L1
<b>NetVanta 1000 Series SFP Modules</b>	
NetVanta 1000Base-SX SFP (LC Connectors)	1200480L1
NetVanta 1000Base-LX SFP (LC Connectors)	1200481L1
<b>NetVanta 1000 Network Interface Modules (NIMs)</b>	
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
<b>NetVanta 1000 Dial Backup Interface Modules (DIMs)</b>	
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

