NetVanta

8044M

Carrier Ethernet Network Termination
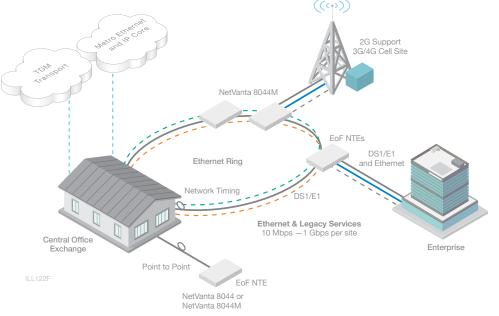
Ethernet · Redundancy · Packet Timing

Benefits

- Unique modular architecture provides service and network flexibility

- Low cost/scalable bandwidth using 64 kbps increments

- Scalable 4G/LTE bandwidth up to 2.5 Gbps of Ethernet service

- Time to market for Universal Service Ubiquity with support for virtually any customer access medium

- A single, common operational model regardless of customer access method

- Transition path to all-packet architecture

- SLA management via Ethernet OAM-based troubleshooting and performance monitoring tool sets

- Resilient access support via Link Protection and Ethernet Ring and Protection Switching (ERPS)

- Hardened for cell-site deployment; both extreme temperature and metallic interface isolation

Overview

ADTRAN® introduces a versatile Ethernet network termination device that brings together the value of several ADTRAN solutions. The core Ethernet access features of this product include a powerful Ethernet processor, four flexible SFP interfaces, and four 10/100/1000 Mbps electrical interfaces. Flexible bandwidth management; Ethernet flow mapping, prioritization and tagging; as well as versatile management options make the NetVanta® 8044M an excellent choice as an Ethernet services termination device.

The eight-port circuit emulation expansion module allows service providers and enterprise customers to leverage ADTRAN's experience in developing and deploying pseudowire networks. This can be used in providing a transition path for DS1/E1 legacy services to all-IP services migration. The NetVanta 8044M allows an operator to recover network clocking at the customer site using only packet transport via a variety of methods. ADTRAN employs both differential clock and adaptive timing distribution over packet methods.

The NetVanta 8044M supports two variations of fiber access topology: Point-to-Point and Ethernet ring to deliver both legacy ATM/TDM and next-generation IP/Ethernet services.

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Product Specifications

Front Panel Interfaces

- Four 10/100/1000 Base-T Ethernet interfaces via RJ-45
- Four Gigabit Ethernet interfaces via SFP cages, angled to reduce overall product depth and improve cable management
- All Ethernet ports may be used for either network WAN or customer-side LAN connections
- 100BaseX SFP also supported to allow Fast Ethernet fiber lease
- Ethernet faceplate ports support either 1 Gbps or 2.5 Gbps ITU-T G.8032 Ethernet Ring Protection Switching (ERPS)
- DB9 local craft port for support of RS-232 interface for local management
- Two expansion access/service module slots (see next sub-sections for options)
- Field replaceable fan module (may be required to support future expansion modules)

Physical Dimensions

- Desk, rack and wall mountable
- Rack mountable solution in 19 inch or 23 inch wide telecom racks
- 1.7 in. x 17.2 in. x 10.7 in. (H x W x D) (44 mm x 437 mm x 273 mm) or 1.7 ln. x 19 in. x 10.7 in. (44 mm x 483 mm x 273 mm)

Power Supply, Power Consumption, Heat Dissipation

- Redundant, Dual A and B fed +/- 24/-48 VDC version (P/N 1174801G1)
- Ground/Earth provided via Post and Lug type connector
- Typical power consumption is 31 W maximum without additional modules nor fan tray installed
- Maximum power consumption is 37 W without additional modules nor fan tray installed

Operations and Maintenance

Environmental Hardening

- **Operating Temperature:** -40°F to 149°F (-40°C to 65°C)
- **Storage Temperature:** -40°F to 185°F (-40°C to 85°C)
- **Relative Humidity:** GR-63-CORE 5% to 95%, non-condensing
- Operating Altitude Range
  - **At 86°F (30°C):** -197 to 13,000 feet (-60 to 4,000 meters)
  - At 104°F (40°C): -197 to 6,000 feet (-60 to 1,800 meters)
- Metallic interface voltage surge protection and isolation

Ethernet Services Support

- Classification of Traffic based on:
  - Per UNI port, CE VLAN ID (C-Tag) and/or CE VLAN P-bits, Source and/or destination MAC address, DSCP fields
- Single stack VLAN and double stack VLANs (Q-in-Q)
  - Manipulation based on 802.1p and DSCP fields
  - STAG TPID provisioning supports 802.1ad and 802.1Q standards
  - Port based service support
- Services Scale and Flexibility
  - MEF 9, 14 compliant EPL, EVPL, ELAN, ETREE
  - 8 Queues, Strict Priority and/or Weighted Fair Schedulers
  - Configurable EtherType and TPID for service flexibility
  - VLAN IDs 0 – 4095; EVC configurable in the range of 2–4094
  - Configurable MTU from 1,500 to 10k Jumbo frame in four byte increments
  - 16k active MAC address; Ability to disable MAC learning (32k support future software)
  - Ingress policers (tr3CM), CIR and EIR settings to 64 kbps granularity, Configurable Burst through EBS, CBS settings
  - Egress shaping per port (per port per queue and per up to 16 VLAN groups in future)

Fault and Performance Management

- IEEE 802.3ah Link OAM
- IEEE 802.1ag Connectivity Fault Management (CFM)
- IETF TWAMP Layer 3 Performance Monitoring (PM) (reflector)
- ITU-T Y.1731 Layer 2 Performance Monitoring (sender and responder PM measurements are accurate to sub millisecond levels)
- Supports customer viewable PM/SLA statistics via Web portal

Security

- TACACS+ Authentication, Authorization
- RADUIS Authentication, Authorization
- SSHv1/v2 and SFTP
- SNMPv2c

Clock Synchronization/Recovery

- ADTRAN Differential and Adaptive timing methods

Facilities Protection

- Ethernet Ring Protection Switching (ERPS) ITU-T G.8032
  - 50 ms failover
  - 1 or 2.5 Gbps unblocked ring capacity
- Link Protection Group

Regulatory Agency Approvals

- FCC Part 15 Class A
- FCC Part 68
- UL 60950, CAN/CSA C22.2 No. 60950
- EN 60950, IEC 60950, AS 3260/ AS NZS60950
- NEBS Level 3
- RoHS 2002/95/EC
- ITU-T K21:2000 Basic

Device Management

- Common operational model (i.e. FCAPS) used for every Ethernet access method
- Local management via DB-9 RS232 or via a 10/100/1000 copper port
- Integrated OMCI management for GPON connectivity compliant with G.984.4 and BBF WT-167
- Telnet via an IP-based connection
  - Inband management on any VLAN from 2 to 4094
- ADTRAN Advanced Operational Environment (AOE) service management system
  - SNMPv2c
  - TL1 or XML (future) gateway
- The unit can be managed by and report to up to 16 different users simultaneously
  - Accounts of existing and new users can be defined/ changed remotely, using a dedicated RADIUS or TACACS+ server
  - The current date and time can be retrieved from a centralized location by synchronizing with an NTP (Network Timing Protocol) server
  - Software upgrades and configuration files can be downloaded/uploaded to/from NTE via SFTP, FTP, X-modem, and Y-modem

Expansion Modules Supported

Along with its robust Ethernet services support this network device can simultaneously support the delivery of up to 16 DS1/E1 services drops to the customer using Circuit Emulation Services Expansion Module (CES EM).

8-port DS1/E1 Circuit Emulation Service Expansion Module

- SAToP per ITU Y.1453, RFC 4553
- 8 W maximum power consumption
- ITU-T K21:2000 basic

DSX-1 Interfaces

  - **Connectors:** 8x RJ-48
  - **Line Rate:** 1.544 Mbps
  - **Line Build Out:** 0 to 655 ft
  - **Line Code:** AMI, B8ZS
  - **Framing:** ESF, D4, Unframed
  - **Compliance:** ITU G.703, G.704

E1 Interfaces

  - Connectors: 8xRJ-48 (120 Balanced)
  - Line Rate: 2.048 Mbps
  - Line Build Out: 0 to 655 feet
  - Line Code: HDB3 or AMI
  - Framing: CAS, CCS, Unframed
  - Compliance: ITU G.703, G.704

- **Jitter Buffer:** Programmable up to 20 ms
- **Automatic Jitter Buffer Adjustment:** Optimizes jitter buffer settings based on observed packet jitter in delivery network

The NetVanta 8044M T1/E1 Circuit Emulation Service Expansion Module can be used to deliver clock sync services via adaptive clock recovery methods as well as delivers legacy TDM or ATM service traffic.

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Ordering Information

Equipment	Part No.
Bundles	
NetVanta 8044M DC Power (with empty expansion module slots with blank panels)	1174801G1
NetVanta 8044M DC Power (with single 8-port DS1/E1 PW Service Module installed)	4174819G1
NetVanta 8044M DC Power (with both 8-port DS1/E1 PW Service Module installed)	4174819G2
Expansion Modules	
8-port DS1/E1 PW Service	1174819G1

Supported Small Form Factor Pluggables (SFPs) for this product may be found at www.adtran.com/sfp

NetVanta 8044M with two expansion module slots to allow a graceful transition path from both TDM/ATM services and copper access to IP/Ethernet services and fiber access.

ADTRAN Certified Supplier

ISO 9001
ISO 14001
TL 9000

TL9000
TL19.1270

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