NETVANTA 3000 SERIES ROUTERS
Hardware Installation Guide

1202860L1	**NetVanta 3200 Unit**
1200870L1	**NetVanta 3205 Unit (AC Version)**
1200980L1	**NetVanta 3205 Unit (DC Version)**
1200880L1	**NetVanta 3305 Unit**
1200861L1	**NetVanta 56K/64K Network Interface Module**
1200862L1	**NetVanta T1/FT1 Network Interface Module**
1200863L1	**NetVanta T1/FT1+DSX-1 Network Interface Module**
1200866L1	**NetVanta Serial Network Interface Module**
1200867L1	**NetVanta SHDSL Network Interface Module**
1200864L1	**NetVanta Analog Modem Dial Backup Interface Module**
1200865L1	**NetVanta ISDN BRI Dial Backup Interface Module**
1200868L1	**NetVanta E1/FE1 Network Interface Module**
1200878L1	**NetVanta E1/FE1 w/ G.703 DROP**
1202368L1	**NetVanta 3305 Accelerator Card**

61200860L1-34C
July 2003

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To the Holder of this Manual

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In no event will ADTRAN be liable for any special, incidental, or consequential damages or for commercial losses even if ADTRAN has been advised thereof as a result of issue of this publication.

901 Explorer Boulevard
P.O. Box 140000
Huntsville, AL 35814-4000
Phone: (256) 963-8000
www.adtran.com

Conventions

Notes provide additional useful information.

Cautions signify information that could prevent service interruption.

WARNING

Warnings provide information that could prevent damage to the equipment or endangerment to human life.

Safety Instructions

When using your communications equipment, please follow these basic safety precautions to reduce the risk of fire, electrical shock, or personal injury:

1. Do not use this product near water such as a bathtub, wash bowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.
2. Avoid using a telephone (other than a cordless-type) during an electrical storm. There is a remote risk of shock from lightning.
3. Do not use a telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord, power supply, and/or batteries indicated in the manual.
5. Do not dispose of batteries in a fire. They may explode. Check with local codes for special disposal instructions.

Save These Important Safety Instructions

WARNING

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC regulations require that the following information be provided in this manual:

1. This equipment complies with Part 68 of FCC rules and requirements adopted by ACTA. Each of the Network Interface Modules and the Dial Backup Interface Modules has a label showing the FCC registration number and ringer equivalence number (REN). If requested, provide this information to the telephone company.
2. If this equipment causes harm to the telephone network, the telephone company may temporarily discontinue service. If possible, advance notification is given; otherwise, notification is given as soon as possible. The telephone company will advise the customer of the right to file a complaint with the FCC.
3. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of this equipment. Advance notification and the opportunity to maintain uninterrupted service are given.
4. If experiencing difficulty with this equipment, please contact ADTRAN for repair and warranty information. The telephone company may require this equipment to be disconnected from the network until the problem is corrected or it is certain the equipment is not malfunctioning.
5. This unit contains no user-serviceable parts.
6. An FCC compliant telephone cord with a modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using an FCC compatible modular jack, which is compliant with Part 68 and requirements adopted by ACTA.
7. The following information may be required when applying to the local telephone company for a dial-up line for the analog modem:

Part Number	Registration Number	Service Type	REN/SOC	FIC	USOC
1200861L1	US:HDCDENAN1200861L1	56 Kbps Digital Interface 64 Kbps Digital Interface	6.0F	04DU5-56 04DU5-64	RJ-48S
1200862L1	US: HDCDENAN1200863L1	1.544 Mbps - SF 1.544 Mbps - SF and B8ZS	6.0N	04DU9-BN 04DU9-DN	RJ-48C
1200863L1		1.544 Mbps - ESF 1.544 Mbps - ESF and B8ZS		04DU9-1KN 04DU9-1SN	
1200864L1	US: HDCM504A1200864L1	Analog Loop Start	0.4A/9.0F	02LS2	RJ-11C
1200865L1	US: HDCDENAN1200865L1	Basic Rate ISDN	6.0F	021S5	RJ-49C

8. The REN is useful in determining the quantity of devices you may connect to your telephone line and still have all of those devices ring when your number is called. In most areas, the sum of the RENs of all devices should not exceed five. To be certain of the number of devices you may connect to your line as determined by the REN, call your telephone company to determine the maximum REN for your calling area.
9. This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs. Contact your state public utility commission or corporation commission for information.

FCC Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio frequencies. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canadian Emissions Requirements

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled “Digital Apparatus,” ICES-003 of the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioelectriques applicables aux appareils numériques de Class A prescrites dans la norme sur le materiel brouilleur: “Appareils Numériques,” NMB-003 edictee par le ministre des Communications.

Electromagnetic Compatibility (EMC) Table

NetVanta Module P/N and Name	NetVanta 3200 (1202860L1)	NetVanta 3205 AC: 1200870L1 / DC: 1200980L1	NetVanta 3305 (1200880L1)
1200861L1 56K/64K NIM	FCC Part 15, Class A EN55022 Class A	FCC Part 15, Class A EN55022 Class A	FCC Part 15, Class A EN55022 Class A
1200862L1 T1/FT1 NIM	FCC Part 15, Class B EN55022 Class B	FCC Part 15, Class A EN55022 Class A	FCC Part 15, Class A EN55022 Class A
1200863L1 T1/FT1+DSX-1 NIM	FCC Part 15, Class B EN55022 Class B	FCC Part 15, Class A EN55022 Class A	FCC Part 15, Class A EN55022 Class A
1200866L1 Serial NIM	FCC Part 15, Class B EN55022 Class B EN55024 EN61000-3-2 EN61000-3-3	FCC Part 15, Class A EN55022 Class A EN55024 EN61000-3-2 EN61000-3-3	FCC Part 15, Class A EN55022 Class A EN55024 EN61000-3-2 EN61000-3-3
1200867L1 SHDSL NIM	FCC Part 15, Class B EN55022 Class B EN55024 EN61000-3-2 EN61000-3-3	FCC Part 15, Class A EN55022 Class A EN55024 EN61000-3-2 EN61000-3-3	FCC Part 15, Class A EN55022 Class A EN55024 EN61000-3-2 EN61000-3-3
1200864L1 Analog Modem DBU	FCC Part 15, Class B EN55022 Class B	FCC Part 15, Class A EN55022 Class A	FCC Part 15, Class A EN55022 Class A
1200865L1 ISDN BRI DBU	FCC Part 15, Class B EN55022 Class B	FCC Part 15, Class A EN55022 Class A	FCC Part 15, Class A EN55022 Class A
1200868L1 E1/FE1 NIM	FCC Part 15, Class B EN55022 Class B EN55024 EN61000-3-2 EN61000-3-3	FCC Part 15, Class A EN55022 Class A EN55024 EN61000-3-2 EN61000-3-3	FCC Part 15, Class A EN55022 Class A EN55024 EN61000-3-2 EN61000-3-3
1200878L1 E1/FE1 w/ G.703 Drop	FCC Part 15, Class B EN55022 Class B EN55024 EN61000-3-2 EN61000-3-3	FCC Part 15, Class A EN55022 Class A EN55024 EN61000-3-2 EN61000-3-3	FCC Part 15, Class A EN55022 Class A EN55024 EN61000-3-2 EN61000-3-3
1202368L1 3305 Encryption Card	N/A	N/A	FCC Part 15, Class A EN55022 Class A EN55024 EN61000-3-2 EN61000-3-3

Industry Canada Compliance Information

Notice: The Industry Canada label applied to the product (identified by the Industry Canada logo or the “IC:” in front of the certification/registration number) signifies that the Industry Canada technical specifications were met.

Notice: The Ringer Equivalence Number (REN) for this terminal equipment is supplied in the documentation or on the product labeling/markings. The REN assigned to each terminal device indicates the maximum number of terminals that can be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices should not exceed five (5).

Affidavit Requirements for Connection to Digital Services

- An affidavit is required to be given to the telephone company whenever digital terminal equipment without encoded analog content and billing protection is used to transmit digital signals containing encoded analog content which are intended for eventual conversion into voiceband analog signals and transmitted on the network.
- The affidavit shall affirm that either no encoded analog content or billing information is being transmitted or that the output of the device meets Part 68 encoded analog content or billing protection specifications.
- End user/customer will be responsible for filing an affidavit with the local exchange carrier when connecting unprotected customer premise equipment (CPE) to 1.544 Mbps or subrate digital services.

- Until such time as subrate digital terminal equipment is registered for voice applications, the affidavit requirement for subrate services is waived.

Affidavit for Connection Of Customer Premises Equipment to 1.544 Mbps And/or Subrate Digital Services

For the work to be performed in the certified territory of _____(telco name)

State of _____

County of _____

I, _____ (name), _____(business address),

_____ (telephone number) being duly sworn, state:

I have responsibility for the operation and maintenance of the terminal equipment to be connected to 1.544 Mbps and/or _____ subrate digital services. The terminal equipment to be connected complies with Part 68 of the FCC rules except for the encoded analog content and billing protection specifications. With respect to encoded analog content and billing protection:

( ) I attest that all operations associated with the establishment, maintenance, and adjustment of the digital CPE with respect to analog content and encoded billing protection information continuously complies with Part 68 of the FCC Rules and Regulations.

( ) The digital CPE does not transmit digital signals containing encoded analog content or billing information which is intended to be decoded within the telecommunications network.

( ) The encoded analog content and billing protection is factory set and is not under the control of the customer.

I attest that the operator(s)/maintainer(s) of the digital CPE responsible for the establishment, maintenance, and adjustment of the encoded analog content and billing information has (have) been trained to perform these functions by successfully having completed one of the following (check appropriate blocks):

( ) A training course provided by the manufacturer/grantee of the equipment used to encode analog signals; or

( ) A training course provided by the customer or authorized representative, using training materials and instructions provided by the manufacturer/grantee of the equipment used to encode analog signals; or

( ) An independent training course (e.g., trade school or technical institution) recognized by the manufacturer/grantee of the equipment used to encode analog signals; or

( ) In lieu of the preceding training requirements, the operator(s)/maintainer(s) is (are) under the control of a supervisor trained in accordance with _____ (circle one) above.

I agree to provide _____ (telco's name) with proper documentation to demonstrate compliance with the information as provided in the preceding paragraph, if so requested.

_____Signature

_____Title

_____ Date

Transcribed and sworn to before me

This _____ day of _____, _____

_____
Notary Public

My commission expires:

_____

Warranty and Customer Service

ADTRAN will replace or repair this product within the warranty period if it does not meet its published specifications or fails while in service. Warranty information can be found at: http://support.adtran.com (Click on *Warranty and Repair Information*, under *Support*.)

Product Registration

Registering your product helps ensure complete customer satisfaction. Please take time to register your products on line at http://support.adtran.com. Click on *Product Registration* under *Support.*

Product Support Information

A return material authorization (RMA) is required prior to returning equipment to ADTRAN. For service, RMA requests, training, or more information, use the following contact information:.

Repair and Return

If you determine that a repair is needed, please contact our Customer and Product Service (CaPS) department to have an RMA number issued. CaPS should also be contacted to obtain information regarding equipment currently in house or possible fees associated with repair.

CaPS Department (256) 963-8722

Identify the RMA number clearly on the package (below address), and return to the following address:

ADTRAN Customer and Product Service
901 Explorer Blvd. (East Tower)
Huntsville, Alabama 35806

RMA # _____

Pre-Sales Inquiries and Applications Support

Your reseller should serve as the first point of contact for support. If additional pre-sales support is needed, the ADTRAN Support web site provides a variety of support services such as a searchable knowledge base, latest product documentation, application briefs, case studies, and a link to submit a question to an Applications Engineer. All of this, and more, is available at:

http://support.adtran.com

When needed, further pre-sales assistance is available by calling our Applications Engineering Department.

Applications Engineering (800) 615-1176

Post-Sale Support

Your reseller should serve as the first point of contact for support. If additional support is needed, the ADTRAN Support web site provides a variety of support services such as a searchable knowledge base, updated firmware releases, latest product documentation, service request ticket generation and trouble-shooting tools. All of this, and more, is available at:

http://support.adtran.com

When needed, further post-sales assistance is available by calling our Technical Support Center. Please have your unit serial number available when you call.

Technical Support	(888) 4ADTRAN
International Technical Support	1-256-963-8716

Installation and Maintenance Support

The ADTRAN Custom Extended Services (ACES) program offers multiple types and levels of installation and maintenance services which allow you to choose the kind of assistance you need. This support is available at:

http://www.adtran.com/aces

For questions, call the ACES Help Desk.

ACES Help Desk (888) 874-ACES (2237)

Training

The Enterprise Network (EN) Technical Training Department offers training on our most popular products. These courses include overviews on product features and functions while covering applications of ADTRAN's product lines. ADTRAN provides a variety of training options, including customized training and courses taught at our facilities or at your site. For more information about training, please contact your Territory Manager or the Enterprise Training Coordinator.

Training Phone	(800) 615-1176, ext. 7500
Training Fax	(256) 963-6700
Training Email	training@adtran.com

HARDWARE INSTALLATION GUIDE

Contents

FIGURES

TABLES

1. INTRODUCTION TO THE NETVANTA SOLUTION

The NetVanta 3000 Series is a line of modular access routers designed for cost-effective branch office connectivity over frame relay or point-to-point (PPP) networks. These modular platforms offer a complete solution for access routing and WAN connectivity in a single, compact package.

The Netvanta 3000 Series includes the NetVanta 3200, NetVanta 3205 (AC or DC powered), and NetVanta 3305. These main base units support a variety of interchangeable network interface modules (NIMs) and dial backup interface modules (DIMs).

All three base units provide the same features, perform the same functions, and use the same interface modules. The main differences in the base units include the following:

- Type of enclosure: NetVanta 3200 is a stand-alone unit in a plastic housing, while NetVanta 3205 and NetVanta 3305 are housed in 1U high, rack-mountable metal enclosures.
- Number of card slots: NetVanta 3200 and NetVanta 3205 have one option card (module) slot, while NetVanta 3305 has two.
- Number of Ethernet ports: NetVanta 3200 and NetVanta 3205 have one Ethernet port, while NetVanta 3305 has two.

The NIMs are plug-in modules that offer a variety of WAN connectivity. These modules provide 56K/64K (DDS), SHDSL, T1/FT1, T1/FT1 with DSX-1, E1/FE1, E1/FE1 with G.703 Drop, and Serial (V.35/X.21) interfaces. An analog modem or ISDN BRI (U Interface) DIM plugs on to the NIM, providing added dial backup capability. The DIMs plug on to the NIM modules, and the NIMs slide into the rear of the base unit. Refer to *Installing Dial Backup and Network Interface Modules* on page 41 for more details. In addition, the optional VPN Accelerator Card plugs into a 32-bit PCI slot in the NetVanta 3305 and following products to provide encryption/decryption and security acceleration services for the host processor.

Features and Specifications

The NetVanta 3000 Series Routers have the following features:

- Modular network interface: 56K/64K, SHDSL, T1/FT1, T1/FT1+DSX-1, E1/FE1, E1/FE1+G.703 Drop, or Serial Interface
- Optional VPN Accelerator Card plugs into a 32-bit PCI slot in the NetVanta 3305 and following products to provide encryption/decryption and security acceleration services
- Integrated 10/100BaseT Ethernet port (RJ-48C)
- WAN Protocol: Frame Relay or PPP
- Integrated IP router with bridging
- IP encapsulation over Frame Relay (RFC 1490)
- Command Line Interface (CLI)
- SNMP management
- N-Formant web-based management
- Integrated EIA-232 DCE configuration port (DB-9)
- Optional dial backup (ISDN BRI or analog modem)
- Front panel LEDs

- NetVanta 3200: 9.3”W x 2.1”H x 6.1”D
- NetVanta 3205 and NetVanta 3305: 17.25” x 1.26”H x 7.75”D
- AC power requirements: 6 W max, 60mA (regardless of configuration)
- DC power requirements: 6 W max; +21 to +28.3 VDC (+24 VDC nominal); -40.5 to -64 VDC (-48 VDC nominal)

This hardware installation guide describes the NetVanta 3000 Series units, details basic functionality, gives installation instructions, and lists unit specifications. For more information on router configuration for a specific application, refer to the quick start documents provided on your *ADTRAN OS System Documentation CD*. For details on the command line interface, refer to the *Command Reference Guide* also on the CD.

In this document, the term “NetVanta 3000 Series Routers” means the NetVanta 3200, NetVanta 3205, and NetVanta 3305. If a statement only applies to one particular router, the text refers to the router individually.

Unpack and Inspect the System

Each NetVanta 3000 Series Routers unit is shipped in its own cardboard shipping carton. Open each carton carefully and avoid deep penetration into the carton with sharp objects.

After unpacking the unit, inspect it for possible shipping damage. If the equipment has been damaged in transit, immediately file a claim with the carrier and contact ADTRAN Customer Service (see *Warranty and Customer Service* on page 8).

Contents of ADTRAN Shipments

NetVanta 3200

Shipments of the NetVanta 3200 include the following items:

- NetVanta 3200 Base Unit
- *ADTRAN OS System Documentation CD*
- Warranty Card
- AC Power Supply

NetVanta 3205 (AC version) and NetVanta 3305

Shipments of the NetVanta 3205 (AC) and NetVanta 3305 include the following items:

- NetVanta 3205 (AC version) or NetVanta 3305 base unit with attached mounting ears/screws
- *ADTRAN OS System Documentation CD*
- Warranty Card
- Detachable AC power cord

NetVanta 3205 (DC version)
Shipments of the NetVanta 3205 (DC) include the following items:

- NetVanta 3205 (DC version) base unit with attached mounting ears
- *ADTRAN OS System Documentation CD*
- Warranty Card

NetVanta 56K/64K NIM
Shipments of the 56K/64K NIM include the following items:

- 56K/64K Network Interface Module
- Quick Start Guide
- 6-foot RJ-45 to RJ-45 cable (ADTRAN P/N 3127004)

NetVanta T1/FT1 NIM (1200862L1)
Shipments of the T1/FT1 NIM include the following items:

- T1/FT1 Network Interface Module
- Quick Start Guide
- 15-foot RJ-45 to RJ-45 cable (ADTRAN P/N 3125M008@A)

NetVanta T1/FT1+ DSX-1 NIM (1200863L1)
Shipments of the T1/FT1 + DSX-1 NIM include the following items:

- T1/FT1 + DSX-1 Network Interface Module
- Quick Start Guide
- 15-foot RJ-45 to RJ-45 cable (ADTRAN P/N 3125M008@A)

NetVanta E1/FE1 NIM (1200868L1)
Shipments of the E1/FE1 NIM include the following items:

- E1/FE1 Network Interface Module
- Quick Start Guide
- 15-foot RJ-45 to RJ-45 cable (ADTRAN P/N 3125M008@A)

NetVanta E1/FE1+ G.703 NIM (1200878L1)
Shipments of the E1/FE1+ G.703 NIM include the following items:

- E1/FE1+ G.703 Network Interface Module
- Quick Start Guide
- *15-foot RJ-45 to RJ-45 cable (ADTRAN P/N 3125M008@A)*

NetVanta Serial NIM (1200866L1)
Shipments of the Serial NIM include the following items:

- Serial Network Interface Module
- Quick Start Guide

NetVanta Analog Modem DIM (1200864L1)
Shipments of the Analog Modem DIM include the following items:

- Analog Modem Dial Backup Interface Module
- Quick Start Guide
- RJ-45 to RJ-11 cable (ADTRAN P/N 3125M007@A)

NetVanta ISDN BRI DIM (1200865L1)
Shipments of the ISDN BRI DIM include the following items:

- ISDN BRI Dial Backup Interface Module
- Quick Start Guide
- RJ-45 to RJ-11 cable (ADTRAN P/N 3125M007@A)

NetVanta VPN Accelerator Card (1202368L1)
Shipments of the VPN Accelerator Card include the following items:

- VPN Accelerator Card
- Quick Start Guide

WARNING *Option modules are intended to be serviced by qualified service personnel only.*

NOTE *System bundles are shipped with a base unit, a network interface module, and other appropriate contents based on the system-level solution ordered.*

2. PRODUCT OVERVIEW

Reviewing the Base Unit Front Panel Designs

Figure 1 shows the NetVanta 3200 front panel.

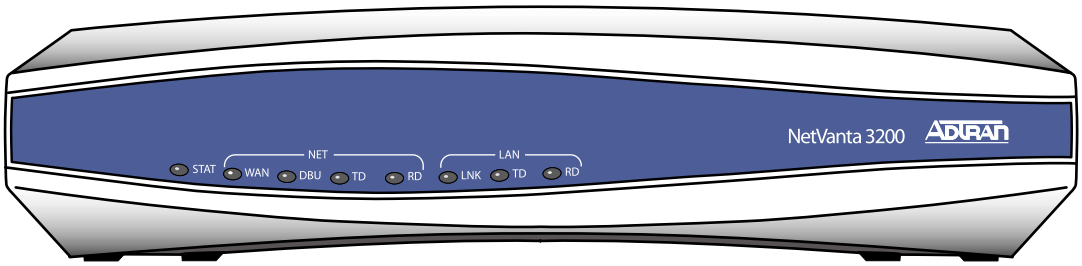

Figure 1. NetVanta 3200 Front Panel Layout

Figure 2 shows the NetVanta 3205 front panel.

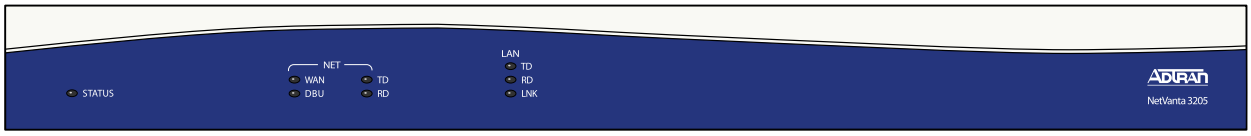

Figure 2. NetVanta 3205 Front Panel Layout

Figure 3 shows the NetVanta 3305 front panel.

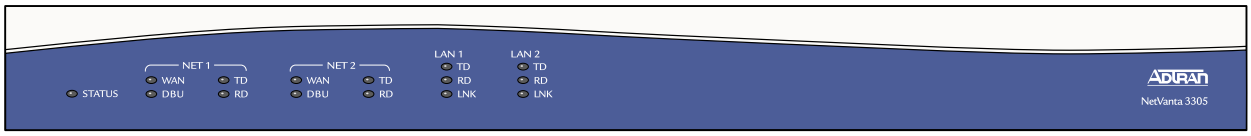

Figure 3. NetVanta 3305 Front Panel Layout

Front Panel LEDs

Table 1 describes the front panel LEDs.

Table 1. NetVanta 3000 Series Routers LEDs

For these LEDs…	This activity…	Indicates that…
STATUS	Green (blinking)	The unit is powering up. On power-up the **STAT** LED blinks rapidly for five seconds, during which time the user may escape to boot mode from the console port.
	Green (solid)	The power is on and self-test passed.
	Red (solid)	The power is on, but the self-test failed or the boot mode (if applicable) code could not be booted.
WAN	Off	No NIM is installed or interface is administratively down.
	Green (solid)	The link is up and everything is okay.
	Red (solid)	An alarm condition is occurring on the WAN interface, or there is a self-test failure.
	Yellow (solid)	The unit is in test.
DBU	Off	No DIM is installed.
	Green (solid)	The DIM is ready. For the ISDN BRI DIM, green solid indicates that the negotiation with the switch is complete.
	Green (blinking)	The unit is in dial backup.
	Red (solid)	An alarm condition is occurring on the DBU interface, or there is a self-test failure.
	Yellow (solid)	The unit is in test.
NET TD/RD	Green (blinking)	There is activity on the WAN or DBU port.
	Off	There is no activity on the WAN or DBU port.
LAN TD/RD	Green (blinking)	There is activity on the Ethernet port.
	Off	There is no activity on the Ethernet port.
LNK	Green (solid)	The 10BaseT Ethernet link is up.
	Yellow (solid)	The 100BaseT Ethernet link is up.

Reviewing the Base Unit Rear Panel Designs

Figure 4 through Figure 7 show the rear panels for the NetVanta 3000 Series Routers. Each chassis is shown with the T1/FT1+DSX-1 NIM installed. The Activity and Link LEDs, which are present on all NetVanta Ethernet ports, are pointed out in Figure 4.

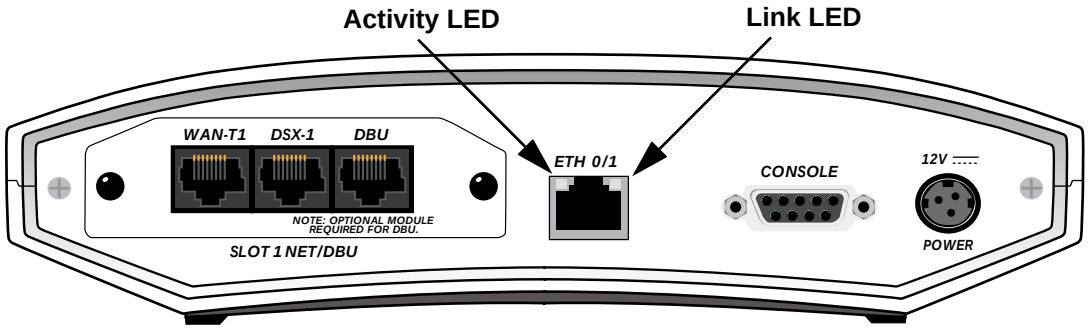

Figure 4. NetVanta 3200 Rear Panel Layout

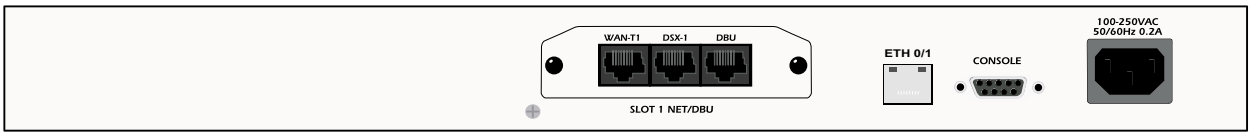

Figure 5. NetVanta 3205 (AC version) Rear Panel Layout

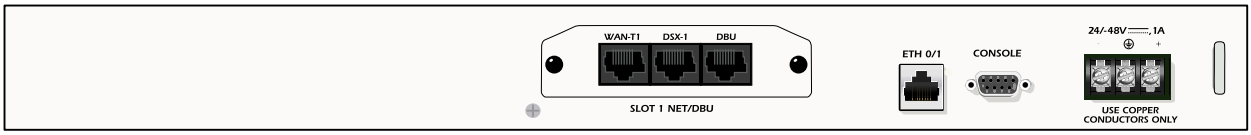

Figure 6. NetVanta 3205 (DC version) Rear Panel Layout

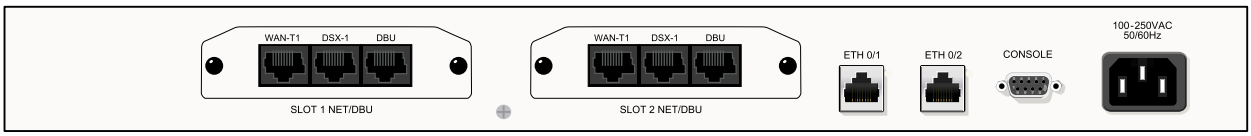

Figure 7. NetVanta 3305 Rear Panel Layout

Rear Panel Interfaces and LEDs

10/100BaseT Ethernet Interface and Activity LEDs

The Ethernet port is an RJ-48C connector with LEDs. The yellow activity LED flashes when data traffic is being sent or received on the Ethernet port. The green link LED is on when the router has a good connection to the LAN. See Table A on page 47 for the Ethernet port pinout. The Ethernet port provides the following:

- 10BaseT or 100BaseT with a single connector
- Auto-negotiation
- CSMA/CD
- IEEE 802.3 compatibility

Console Interface

The **CONSOLE** interface is an EIA-232 serial port (DCE) which provides for local management and configuration (via a DB-9 female connector). Table B on page 47 shows the **CONSOLE** port pinouts, with the exception of the NetVanta 3200 (p/n 61202860L1) which is shown in Table C on page 48.

NOTE *Connection directly to an external modem requires a cross-over cable.*

NET/DBU Card Slot

The **Slot x NET/DBU** card slot supports various NIM plug-in cards. These card options are described in *Option Modules* on page 21.

Power Supply

Power supplies are shipped with final destinations in mind. For example, the domestic routers are shipped with a wall mount supply and the international routers are shipped with a universal input lump-in-line supply with the appropriate cables. All of the 1U products have universal supplies and are shipped with the appropriate cable. Please refer to *Supplying Power to the Unit* on page 40 for connection details.

3. OPTION MODULES

The NetVanta 3000 Series offers several option modules designed to meet a variety of networking requirements. The option modules are of two types: plug-in Network Interface Modules (NIMs) and plug-on Dial Backup Interface Modules (DIMs).

NIMs are cards which plug directly into the option module slot (labeled **SLOT *x* NET/DBU**), located on the rear of the base unit. These cards provide the following types of interfaces:

- *NetVanta 56K/64K NIM (P/N 1200861L1)* on page 22
- *NetVanta T1/FT1 NIM (P/N 1200862L1)* on page 23
- *NetVanta T1/FT1+DSX-1 NIM (P/N 1200863L1)* on page 25
- *NetVanta Serial NIM (P/N 1200866L1)* on page 27
- *NetVanta SHDSL NIM (P/N 1200867L1)* on page 29
- *NetVanta E1/FE1 NIM (P/N 1200868L1)* on page 30
- *NetVanta E1/FE1 with G.703 Drop NIM (P/N 1200878L1)* on page 31

DIMs are plug-*on* cards which plug directly on to the NIM prior to installation into the base unit. A DIM must be plugged on to a NIM in order for the **DBU** port on the NIM to be active. NetVanta 3000 Series Routers support two DIMs:

- *NetVanta Analog Modem DIM (P/N 1200864L1)* on page 33
- *NetVanta ISDN BRI DIM (P/N 1200865L1)* on page 34

This section describes each module, providing individual card specifications and features. Refer to *Pin Assignments* on page 47 for pinout information. *Installing Dial Backup and Network Interface Modules* on page 41 provides information on card installation.

Network Interface Modules

NetVanta 56K/64K NIM (P/N 1200861L1)

The 56K/64K NIM (shown in Figure 8) provides a WAN interface for the NetVanta 3000 Series Routers. This module provides a single 56K or 64K DDS network interface. Refer to Table E on page 49 for the WAN-DDS connector pinout, and Table L on page 51 for the DBU connector pinout. An optional DIM is required for dial backup applications.

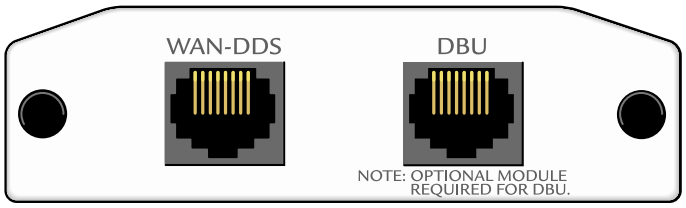

Figure 8. NetVanta 56K/64K NIM

Features and Specifications

Operating Modes

- Dedicated DDS (leased line)

DDS Interface

- RJ-48C
- 4-wire, full duplex
- -45 dB receiver sensitivity all rates
- Data Rates: 56K, 64K, and Auto

Clock Source

- Network
- Internal

Diagnostics

- CSU and DSU Loopbacks

Relevant Requirements/Standards

- EMC - see *Electromagnetic Compatibility (EMC) Table* on page 5.
- ACTA/FCC Part 68
- Industry Canada CS03
- UL and CUL
- AT&T TR 62310

Environmental

- Operating Temperature: 0 to 50 ºC
- Storage Temperature: -40 to 85 ºC
- Relative Humidity: Up to 95% non-condensing

Physical

- Dimensions: 4.25" x 2.75"

NetVanta T1/FT1 NIM (P/N 1200862L1)

The T1/FT1 NIM (shown in Figure 9) provides a T1 WAN interface for the NetVanta 3000 Series Routers. This provides a full T1 or fractional T1 network interface. Refer to Table F on page 49 for the WAN-T1 connector pinout, and Table L on page 51 for the DBU connector pinout. An optional DIM is required for dial backup applications.

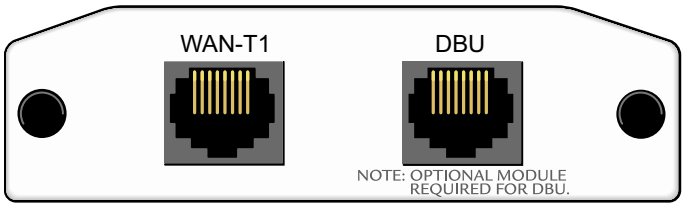

Figure 9. NetVanta T1/FT1 NIM

Features and Specifications

Operating Modes

- T1/FT1 Frame Relay
- T1/FT1 PPP

T1/FT1 Interface

- Line Rate: 1.544 Mbps +/- 75 bps
- Line Code: AMI or B8ZS
- Framing: D4 (SF) or ESF
- FT1 Line Rate: DS0 Channelized (multiples of 56/64 kbps)
- Input Signal: 0 to -36 dB (DS-1)
- Line Build-Out: 0, 7.5, 15, 22.5 dB
- Connector: RJ-48C
- DS0 Assignment: Programmable

Clock Source

- Network
- Internal

Diagnostics

- Test pattern generation and detection: QRSS and 511
- Network loopbacks (local and remote); responds to both INBAND and FDL loop codes
- Alarm generation and detection
- Network and user sets of performance data (15 minute and 24 hour)

Relevant Requirements/Standards

- EMC - see *Electromagnetic Compatibility (EMC) Table* on page 5.
- ACTA/FCC Part 68
- Industry Canada CS03
- UL and CUL
- T1 Interface: Pub 62411
- ESF Format Interface: TR. 194
- ESF Performance Monitoring: TR. 54016 and T1.403

Environmental

- Operating Temperature: 0 to 50 ºC
- Storage Temperature: -40 to 85 ºC
- Relative Humidity: Up to 95% noncondensing

Physical

- Dimensions: 4.25" x 2.75"

NetVanta T1/FT1+DSX-1 NIM (P/N 1200863L1)

The T1/FT1 + DSX-1 NIM (shown in Figure 10) provides a T1 WAN interface for the NetVanta 3000 Series Routers. The T1/FT1 + DSX-1 NIM provides a full T1 or fractional T1 network interface and a DSX-1 interface. Refer to Table F on page 49 for the WAN-T1 connector pinout, Table H on page 50 for the DSX-1 connector pinout, and Table L on page 51 for the DBU connector pinout. An optional DIM is required for dial backup applications.

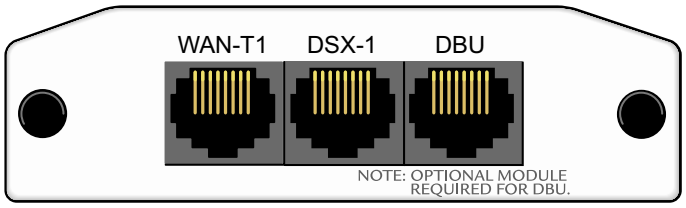

Figure 10. NetVanta T1/FT1+DSX-1 NIM

Features and Specifications

Operating Modes

- T1/FT1 Frame Relay
- T1/FT1 PPP

T1/FT1 Interface

- Line Rate: 1.544 Mbps +/- 75 bps
- Line Code: AMI or B8ZS
- Framing: D4 (SF) or ESF
- FT1 Line Rate: DS0 Channelized (multiples of 56/64 kbps)
- Input Signal: 0 to -36 dB (DS-1)
- Line Build-Out: 0, 7.5, 15, 22.5 dB
- Connector: RJ-48C
- DS0 Assignment: Programmable

DSX-1 Interface

- Line Interface: DSX-1 per ANSI T1.102
- DSX Receiver Input Range: -10 dBdsx to +6 dBdsx
- Line Rate: 1.544 Mbps
- Capacity: 1 to 24 DS0s
- Line Codes: AMI, B8ZS
- Framing: D4 (SF) or ESF
- Line Length: 0 to 655 feet and -7.5 dB
- Connector: RJ-48C
- DSX-1 Interface to PBX

Clock Source

- Network
- Internal
- DSX-1

Diagnostics

- Test pattern generation and detection: QRSS and 511
- Network loopbacks (local and remote); responds to both INBAND and FDL loop codes (T1 interface only)
- Alarm generation and detection
- Network and user sets of performance data (15 minute and 24 hour)

Relevant Requirements/Standards

- EMC - see *Electromagnetic Compatibility (EMC) Table* on page 5.
- ACTA/FCC Part 68
- Industry Canada CS03
- UL and CUL
- T1 Interface: Pub 62411
- ESF Format Interface: TR. 194
- ESF Performance Monitoring: TR. 54016 and T1.403

Environmental

- Operating Temperature: 0 to 50 ºC
- Storage Temperature: -40 to 85 ºC
- Relative Humidity: Up to 95% noncondensing

Physical

- Dimensions: 4.25" x 2.75"

NetVanta Serial NIM (P/N 1200866L1)

The NetVanta Serial NIM (shown in Figure 11) is user-configurable to be either a V.35 or X.21 (V.11) interface. This module supports rates up to a maximum of 10 Mbps. An additional V.35 (ADTRAN P/N 1200873L1) or X.21 (ADTRAN P/N 1200874L1) cable is required (see *Caution*, below). Refer to Table K on page 51 for the **SERIAL** connector pinout, and Table L on page 51 for the DBU connector pinout. An optional DIM is required for dial backup applications.

CAUTION

Cable length for the Serial NIM should not exceed 25 feet.

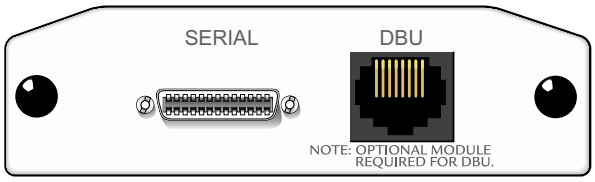

Figure 11. NetVanta Serial NIM

Features and Specifications

Operating Mode

- DTE only

Serial Interface

- Provides V.35 or X.21 (V.11) electrical interface
- CTS, DCD, DSR, TM options are **IGNORE** or **CONNECT**
- DTR, RTS options are **NORMAL** or **FORCED ON**
- 0 to 2.048 Mbps
- 26-pin smart serial (DTE) connector

Clock Source

- Network
- Internal

Relevant Requirements/Standards

- EMC - see *Electromagnetic Compatibility (EMC) Table* on page 5.
- EN60950
- UL and CUL
- ISO 4903 (X.21)
- CCITT V.35 Synchronous (V.35)1

Environmental

- Operating Temperature: 0 to 50 ºC
- Storage Temperature: -40 to 85 ºC
- Relative Humidity: Up to 95% noncondensing

Physical

- Dimensions: 4.25" x 2.75"

NetVanta SHDSL NIM (P/N 1200867L1)

The NetVanta SHDSL NIM (shown in Figure 12) provides a WAN SHDSL interface for the NetVanta. Refer to Table J on page 50 for the SHDSL connector pinout. The DBU connector on this module is reserved for future enhancements.

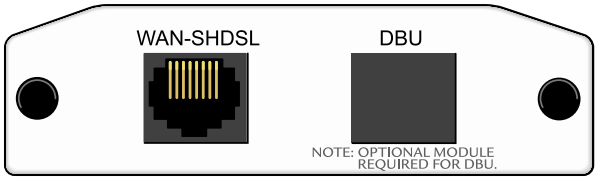

Figure 12. NetVanta SHDSL NIM

Features and Specifications

Operating Mode

- Line termination (CO)
- Network termination (CPE)

SHDSL Interface

- RJ-45
- Data rate: 200 to 2312 kbps in 64k increments

Clock Source

- Network (in CPE operating mode)
- Internal (in CO operating mode)

Relevant Requirements/Standards

- ITU-T G.991.2 SHDSL
- EN60950
- ACA TS001
- ACIF S043
- ASNZS 3260

Environmental

- Operating Temperature: 0 to 50 ºC
- Storage Temperature: -40 to 85 ºC
- Relative Humidity: Up to 95% noncondensing

Physical

- Dimensions: 4.25" x 2.75"

NetVanta E1/FE1 NIM (P/N 1200868L1)

The NetVanta E1 module (see Figure 13) provides a WAN/E1 interface for the NetVanta 3000 Series Routers meeting the requirements of ITU-T G.703/G.704. The module provides a single 2.048 Mbps network interface. Refer to Table G on page 49 for the pinouts.

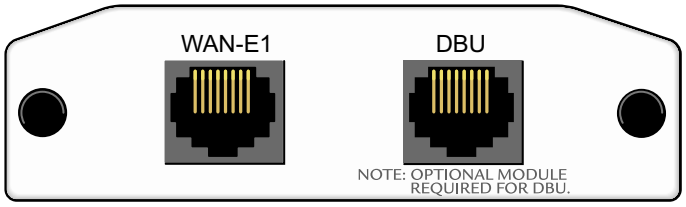

Figure 13. NetVanta E1/FE1 NIM

Features and Specifications

Operating Modes

- E1/FE1

WAN Interface

- Connector: RJ-48C
- Line Rate: 2.048 Mbps +/- 50 PPM
- Line Code: AMI or HDB3
- Framing: FAS with optional CRC-4
- FE1 Line Rate: Channelized Timeslot (in multiples of 64 kbps)
- Timeslot Assignment: Programmable
- Receiver Sensitivity: -30 dB

Clock Source

- Network
- Internal

Diagnostics

- Network loopbacks
- Network performance data (15-minute and 24-hour)
- Test pattern generation and detection: QRSS, 511
- Alarm generation and detection

Relevant Requirements/Standards

- ACIF S016
- ACA TS001
- ETSI TBR 12 / TBR 13
- EMC - see *Electromagnetic Compatibility (EMC) Table* on page 5.
- ITU G.703, ITU-T G.704 (CRC-4), ITU-T G.823, ITU-T G.797

Environmental

- Operating temperature: 0 °C to 50 °C

Physical

- Dimensions: 4.25” x 2.75”

NetVanta E1/FE1 with G.703 Drop NIM (P/N 1200878L1)

The NetVanta E1/FE1 with G.703 Drop module (see Figure 14) provides a single WAN/E1 interface (2.043 Mbps) with user-selectable TS0 assignment and a G.703 drop port which may be used to drop and insert traffic to an E1 PBX. Refer to Table I on page 50 for the pinouts.

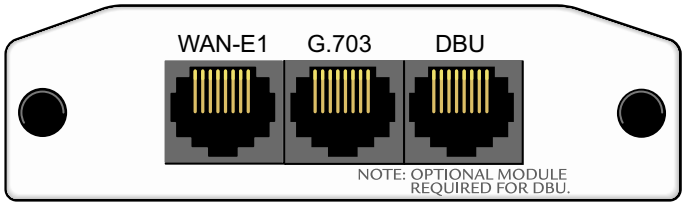

Figure 14. NetVanta E1/FE1 with G.703 Drop NIM

Features and Specifications

Operating Modes

- E1/FE1

WAN Interface

- Connector: RJ-48C
- Line Rate: 2.048 Mbps +/- 50 PPM
- Line Code: AMI or HDB3
- Framing: FAS with optional CRC-4
- FE1 Line Rate: Channelized Timeslot (in multiples of 64 kbps)
- Timeslot Assignment: Programmable
- Receiver Sensitivity: -30 dB

G.703 Interface

- Connector: RJ-48C
- Line Rate: 2.048 Mbps
- Line Code: AMI or HDB3
- Framing: FAS with optional CRC-4
- Capacity: 1 to 31 timeslots
- Receiver Sensitivity: -30 dB

Clock Source

- Network, Internal, Through

Diagnostics

- Network loopbacks
- Network performance data (15-minute and 24-hour)
- Test pattern generation and detection: QRSS, 511
- Alarm generation and detection through SNMP

Relevant Requirements/Standards

- ACIF S016
- ACA TS001
- ETSI TBR 12 / TBR 13
- EMC - see *Electromagnetic Compatibility (EMC) Table* on page 5.
- ITU G.703, ITU-T G.704 (CRC-4), ITU-T G.823, ITU-T G.797

Environmental

- Operating temperature: 0 °C to 50 °C

Physical

- Dimensions: 4.25” x 2.75”

Dial Backup Interface Modules

NetVanta Analog Modem DIM (P/N 1200864L1)

The Analog Modem DIM provides a modem with data rates up to 33.6 kbps for the NetVanta 3000 Series Routers. This DIM is a plug-on card that connects to the NIM. For installation instructions, see *Installing Dial Backup and Network Interface Modules* on page 41.

Features and Specifications

Features

- ITU V.90 compliant
- Async

Relevant Requirements/Standards

- EMC - see *Electromagnetic Compatibility (EMC) Table* on page 5.
- ACTA/FCC Part 68
- Industry Canada CS03
- UL and CUL

Environmental

- Operating Temperature: 0 to 50 ºC
- Storage Temperature: -40 to 85 ºC
- Relative Humidity: Up to 95% noncondensing

Physical

- Dimensions: 3.75" x 2.5"

NetVanta ISDN BRI DIM (P/N 1200865L1)

The NetVanta ISDN BRI DIM provides dial backup access to the public switched telephone network (PSTN) via Basic Rate ISDN for the NetVanta 3000 Series Routers. This DIM is a plug-on module that connects to the NIM.

Features and Specifications

Features

- Clear Channel and BONDING Mode 1 call protocols
- Network support for 64 kbps (1B channel) or 128 kbps (2B channels)
- D channel switch compatibility with AT&T 5ESS, Northern Telecom DMS-100, and National ISDN-1
- V.54 network loopback support

Relevant Requirements/Standards

- EMC - see *Electromagnetic Compatibility (EMC) Table* on page 5.
- ACTA/FCC Part 68
- Industry Canada CS03
- UL and CUL

Environmental

- Operating Temperature: 0 to 50 °C
- Storage Temperature: -40 to 85 °C
- Relative Humidity: Up to 95% non-condensing

Physical

- Dimensions: 3.75" x 2.5”

4. UNIT INSTALLATION

The instructions and guidelines provided in this section cover hardware installation topics such as wallmounting/rackmounting the unit and installing option cards. These instructions are presented as follows:

For information on router configuration for a specific application, refer to the quick start documents provided on your *ADTRAN OS System Documentation CD*. For details on the command line interface, refer to the *Command Reference Guide* (also included on your CD).

WARNING *To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.*

Electronic modules can be damaged by static electrical discharge. Before handling modules, wear an antistatic discharge wrist strap to prevent damage to electrical components. Place modules in antistatic packing material when transporting or storing. When working on modules, always place them on an approved antistatic mat that is electrically grounded.

Tools Required

The customer-provided tools required for the hardware installation of the NetVanta 3000 Series Routers are:

- Ethernet cable
- Network cable (module-dependent)
- DSX-1 cable (T1/FT1 + DSX-1 module only)
- DBU cable (dial backup functions require an optional DIM)
- Phillips-head screwdriver (rackmounting applications only)

To access the command line interface (CLI) of the NetVanta 3000 Series Routers, you will also need a VT100 terminal or PC with terminal emulation software and a console port cable. Instructions on how to access the CLI are given in the Command Reference Guide (provided on the ADTRAN OS System Documentation CD).

Mounting Options

> *If you have purchased the VPN Accelerator Card, install it first (see Installing the NetVanta VPN Accelerator Card (1202368L1) on page 43).*

The NetVanta 3200 may be installed in a wallmount or tabletop configuration. The NetVanta 3205 and NetVanta 3305 may be installed in a tabletop, wallmount, or 19-inch rackmount configuration.The following sections provide step-by-step instructions for rackmounting and wallmounting.

Rackmounting NetVanta 3000 Series Routers

The NetVanta 3205 and NetVanta 3305 are 1U high, rack-mountable units which can be installed into 19-inch equipment racks. Follow these steps to mount the NetVanta 3000 Series Routers into a rack:

Instructions for Rackmounting NetVanta	
Step	**Action**
1.	Position the NetVanta 3000 Series Routers in a stationary equipment rack. This unit takes up 1 RU of space. To allow proper grounding, scrape the paint from the rack around the mounting holes where the NetVanta 3000 Series Routers will be positioned.
2.	Have someone else hold the unit in position as you install two mounting bolts through the unit's brackets and into the equipment rack using a #2 Phillip's screwdriver.
3.	Proceed to the steps given in *Supplying Power to the Unit* on page 40.

> *Be careful not to upset the stability of the equipment mounting rack when installing this product.*

Wallmounting NetVanta 3000 Series Routers

NetVanta 3200

Instructions for Wallmounting NetVanta 3200	
Step	**Action**
1.	Decide on a location for the NetVanta 3200. Keep in mind that the unit needs to be mounted at or below eye-level so that the LEDs are viewable.
2.	Prepare the mounting surface by attaching a board (typically plywood, 3/ 4" to 1" thick) to a wall stud. *Important! Mounting to a stud ensures stability. Using sheetrock anchors may not provide sufficient long-term stability.*
3.	Install two #8 PAN headscrews (1 1/ 2" or greater in length) wood screws into the mounted board, following these guidelines and referring to Figure 15: • Screws should be spaced horizontally, approximately 5” apart. Find exact positioning by using the location of the two eyed insets on the bottom of the NetVanta 3200 as a guide. • Screws should be horizontally level with each other. • Leave approximately 1/4” of the screws protruding from the board to allow the heads of the screws to slide into place in the unit’s keyed insets.
4.	Slide the keyed insets on the bottom of the NetVanta 3200 chassis securely onto the screws.
5.	Proceed to the steps given in *Supplying Power to the Unit* on page 40.

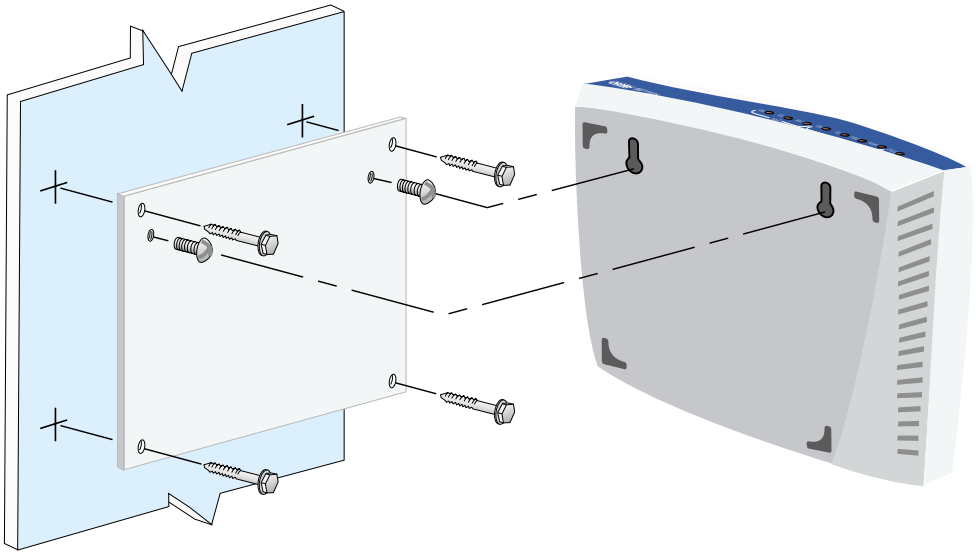

Figure 15. Wallmounting the NetVanta 3200

NetVanta 3205 and NetVanta 3305

Instructions for Wallmounting NetVanta 3205/NetVanta 3305	
Step	**Action**
1.	Remove the mounting ears. Rotate them 90º so that the portion of the bracket with the mounting holes is flush with the bottom of the chassis, and reattach them to the chassis (see Figure 16).
2.	Decide on a location for the NetVanta 3205/NetVanta 3305. Keep in mind that the unit needs to be mounted at or below eye-level so that the LEDs are viewable. *Important! Mount the chassis with LEDs facing to the side as shown in Figure 17 on page 39 (not facing up or down) .*
3.	Prepare the mounting surface by attaching a board (typically plywood, 3/ 4" to 1" thick) to a wall stud. *Important! Mounting to a stud ensures stability. Using sheetrock anchors may not provide sufficient long-term stability.*
4.	Have someone else hold the unit in position as you install two 3/ 32" to 1/ 8" (1 1/ 2" or greater in length) wood screws through the unit's brackets and into the mounted board. See Figure 17 on page 39.
5.	Proceed to the steps given in *Supplying Power to the Unit* on page 40.

CAUTION

To avoid damaging unit, use only the screws included in shipment when attaching mounting ears to the chassis.

Figure 16. Repositioning the Mounting Bracket

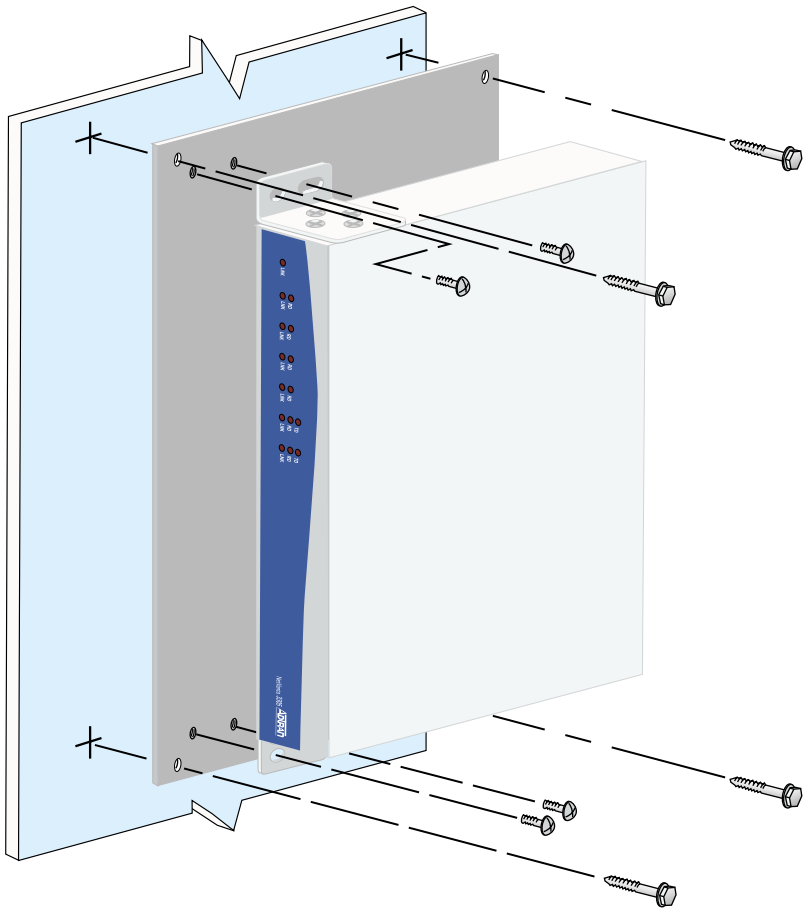

Figure 17. Wallmounting the NetVanta 3205/NetVanta 3305

Supplying Power to the Unit

As shipped, each NetVanta 3000 Series Router is set to factory default conditions. After installing the base unit and any option modules, the NetVanta 3000 Series Router is ready for power-up. To power-up the unit, ensure that the unit is properly connected to an appropriate power source (as outlined in the sections which follow).

NetVanta 3200

The AC-powered NetVanta 3200 comes equipped an appropriate power supply for connecting to domestic and international power receptacles.

NetVanta 3205 (AC) and NetVanta 3305

The AC-powered NetVanta 3205 and NetVanta 3305 come equipped with an auto-sensing 100-240 VAC, 50-60 Hz power supply for connecting to a properly grounded power receptacle. A grounded, three-plug detachable cable is included with the shipment.

NetVanta 3205 (DC)

The DC-powered NetVanta 3205 connects to a centralized DC power source via the three-position terminal block on the rear of the chassis (see Figure 6 on page 19). Power and ground connections require copper conductors and ring lugs.

Instructions for Connecting DC Power Source to the NetVanta 3205	
Step	**Action**
For +24 VDC operation:	
1.	Connect the negative terminal to ground.
2.	Connect the positive terminal to the 24 VDC power source.
For -48 VDC operation:	
1.	Connect the positive terminal to ground.
2.	Connect the negative terminal to the -48 VDC power source.

- Power to the NetVanta 3205 DC System must be from a reliably grounded +24 or -48 VDC source which is electrically isolated from the AC source.
- Use only copper conductors when making power connections.
- Install unit in accordance with Article 400 and 364.8 of the NEC NFPA 70.
- The branch circuit overcurrent protection shall be a fuse or circuit breaker rated minimum 60 VDC, maximum 10A.
- A readily accessible disconnect device, that is suitably approved and rated, shall be incorporated in the field wiring.
- Maximum recommended ambient operating temperature is 50 °C

Installing Dial Backup and Network Interface Modules

The DIMs plug on to the NIMs. The NIMs are then installed in the rear panel option module slot. The following tables list the installation steps. Also see Figure 19 on page 42.

CAUTION

Always remove power from the unit prior to removing or installing a module.

CAUTION

Improper installation may result in damage to the modules.

Instructions for Installing the DIMs	
Step	**Action**
1.	Remove power from the unit.
2.	If the NIM is already in the NetVanta chassis, release the pins at both edges of the NIM faceplate and slide the module out of the chassis.
3.	Carefully align the P1 connector on the NIM with the J1 connector on the DIM. *Using only fingertip pressure* so that neither circuit board bends or flexes, ensure that the connectors are firmly seated. Secure the DIM to the NIM using the screws and standoff posts supplied. See Figure 18.
4.	Slide the NIM with the DIM attached into the NetVanta chassis, continuing with the normal NIM installation (see *Instructions for Installing the NIMs* on page 42).

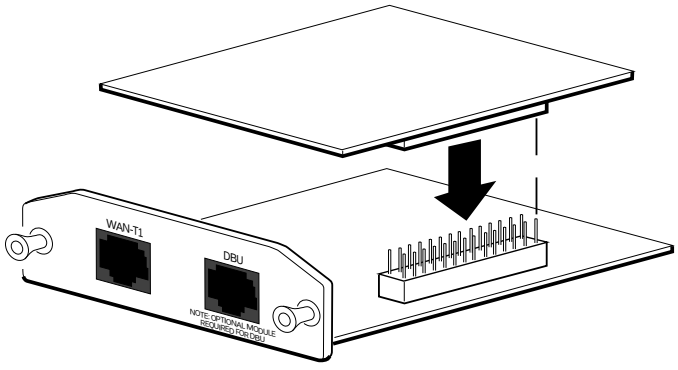

Figure 18. Installing DIMs

Instructions for Installing the NIMs	
Step	**Action**
1.	Remove power from the unit.
2.	Slide the option module into the option slot until the module is firmly seated against the front of the chassis.
3.	Secure the pins at both edges of the module.
4.	Connect the cables to the associated device(s).
5.	Restore power to the unit.

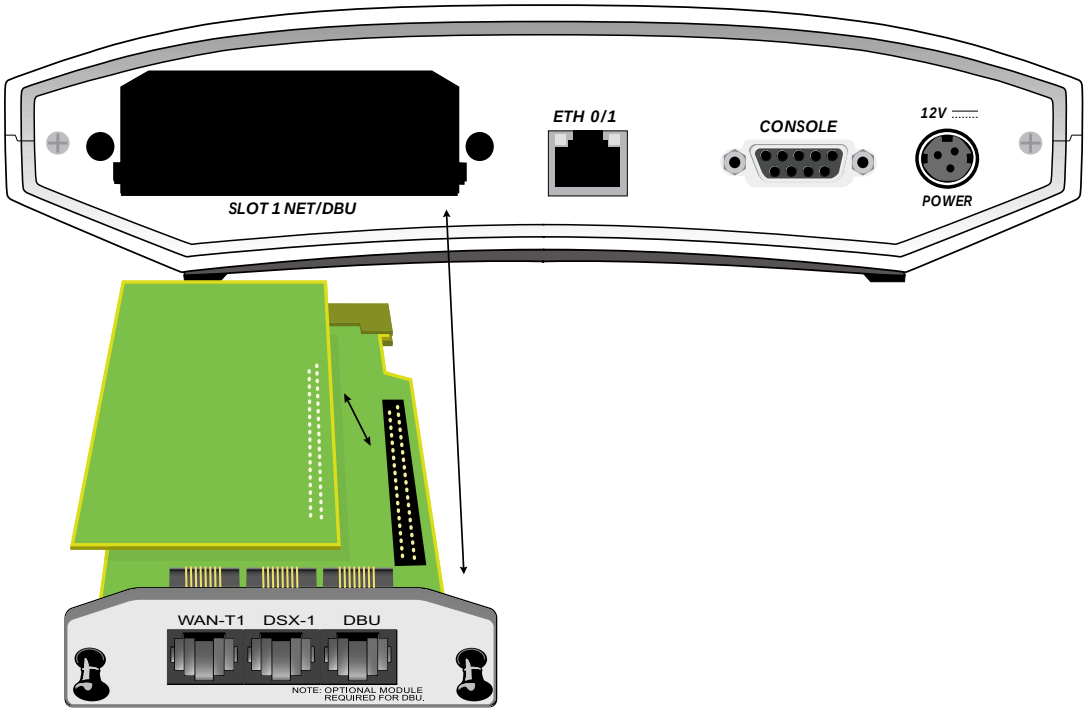

Figure 19. NIM and DIM Installation

Your NetVanta 3000 Series Router is now ready to be configured and connected to the network. For more information on configuration for a specific application, refer to the quick start documents provided on your *ADTRAN OS System Documentation CD*. For details on the command line interface, refer to the *Command Reference Guide* (also included on your CD).

Installing the NetVanta VPN Accelerator Card (1202368L1)

The optional VPN Accelerator Card plugs into a 32-bit PCI slot and is designed to be used in the NetVanta 3305 and following products to provide encryption/decryption and security acceleration services for the host processor. The card is a 1-U high PC card with gold fingers to interface to a 3.3V keyed PCI connector. It provides the following security services to the host processor: DES, Triple-DES, AES, SHA-1, MD5, and Random Number Generation. Performance metrics include 528 Mbps – DES, 176 Mbps – 3DES, and 422 Mbps – AES. The card is powered from the +3.3V rail of the PCI Bus, and the power consumption of the card will not exceed 2 Watts.

Instructions for Installing the VPN Accelerator Card	
Step	**Action**
1.	Remove power from the unit.
2.	Remove the nine screws and, if necessary, two mounting brackets (see Figure 20).
3.	Using a 3/16” hex driver, remove the two jack screws located on either side of the DB-9 port.
4.	Carefully lift and remove the unit’s cover to expose the circuit board.
5.	Gently slide the accelerator card into the PC card slot as shown. The card is keyed to fit into the slot only one way. To avoid damaging the card pins, do not use excessive force.
6.	Replace the unit cover, screws, and mounting brackets.
7.	Restore power to the unit.

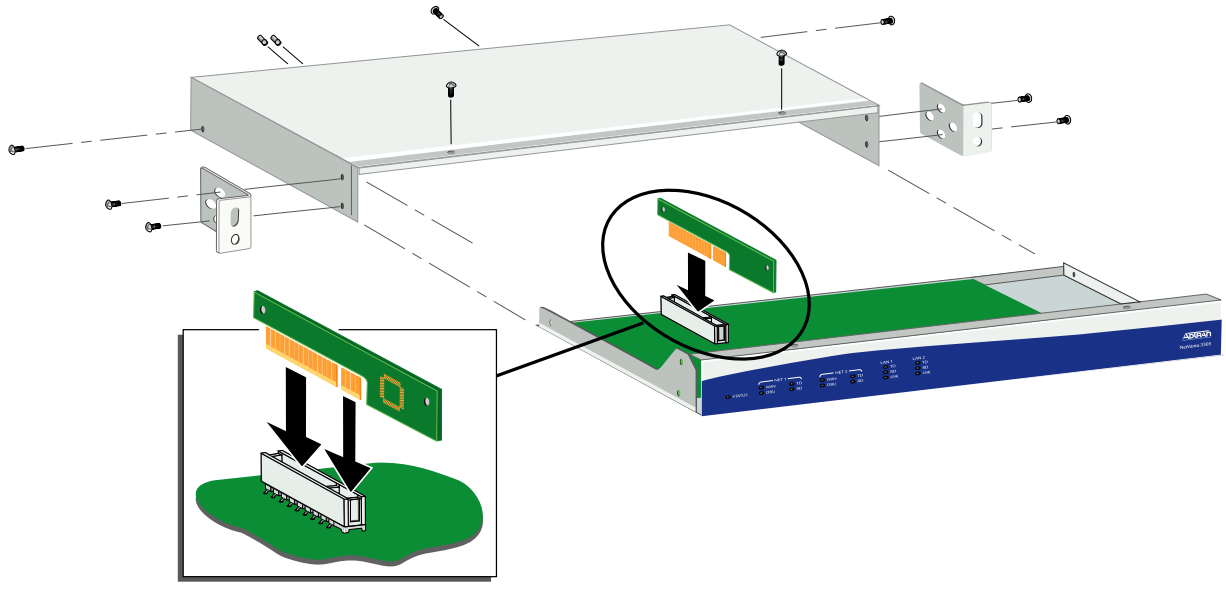

Figure 20. VPN Card Installation

APPENDIX A. PIN ASSIGNMENTS

The following tables provide the pin assignments for the base units, network interface modules (NIMs), and dial backup interface modules (DIMs).

Base Unit Pinouts

Table A. 10/100BaseT Ethernet Port Pinouts

Pin	Name	Description
1	TX1	Transmit Positive
2	TX2	Transmit Negative
3	RX1	Receive Positive
4,5	—	UNUSED
6	RX2	Receive Negative
7,8	—	UNUSED

Table B. Console Port (DCE) Pinouts

Pin	Name	Description
1	DCD	Data Carrier Detect (output)
2	RD	Receive Data (output)
3	TD	Transmit Data (input)
4	DTR	Data Terminal Ready (input)
5	SG	Signal Ground
6	DSR	Data Set Ready (output)
7	RTS	Request to Send (input)
8	CTS	Clear to Send (output)
9	RI	Ring Indicate (output)

Table C. Console Port (DCE) Pinout for NetVanta 3200 (p/n 1202860L1)

Pin	Name	Description
1	DCD	Data Carrier Detect (output)
2	RD	Receive Data (output)
3	TD	Transmit Data (input)
4	DTR	Data Terminal Ready (input)
5	SG	Signal Ground
6	DSR	Data Set Ready **Tied to pin 1** (output)
7	—	Not connected
8	CTS	Clear to Send **Tied to pin 1** (output)
9	—	Not connected

NOTE *Connection directly to an external modem requires a cross-over cable.*

Table D. DC Power Supply Connection (NetVanta 3205 DC Version Only)

Pin	Name	+24 VDC Source	-48 VDC Source
1	+	+24 VDC	Ground (GND)
2	-	Ground (GND)	-48VDC

NIM Pinouts

WAN Connectors

Table E. WAN-DDS Connector Pinouts

Pin	Name	Description
1	R1	Transmit data to the network–RING 1
2	T1	Transmit data to the network–TIP 1
3-6	—	UNUSED
7	T	Receive data from the network–TIP
8	R	Receive data from the network–RING

Table F. WAN-T1 Connector Pinouts

Pin	Name	Description
1	R1	Receive data from the network–RING 1
2	T1	Receive data from the network–TIP 1
3	—	UNUSED
4	R	Transmit data toward the network–RING
5	T	Transmit data toward the network–TIP
6-8	—	UNUSED

Table G. WAN-E1 Connector Pinouts

Pin	Name	Description
1	R1	Receive data from the network
2	T1	Receive data from the network
3	—	UNUSED
4	R	Transmit data toward the network
5	T	Transmit data toward the network
6-8	—	UNUSED

Table H. DSX-1 Connector Pinouts

Pin	Name	Description
1	R	Transmit data toward the DTE–RING
2	T	Transmit data toward the DTE–TIP
3	—	UNUSED
4	R1	Receive data from the DTE–RING 1
5	T1	Receive data from the DTE–TIP 1
6-8	—	UNUSED

Table I. G.703 Connector Pinouts

Pin	Name	Description
1	R	Transmit data toward the DTE
2	T	Transmit data toward the DTE
3	—	UNUSED
4	R1	Receive data from the DTE
5	T1	Receive data from the DTE
6-8	—	UNUSED

Table J. WAN-SHDSL Connector Pinouts

Pin	Name	Description
1-3	—	UNUSED
4	T	Transmit data toward the network–TIP
5	R	Transmit data toward the network–RING
6-8	—	UNUSED

Table K. Serial NIM Connector Pinouts

Pin	Name	Pin	Name
1	TD_A	14	TD_B
2	ETC_A	15	ETC_B
3	TCLK_A	16	TCLK_B
4	RCLK_A	17	RCLK_B
5	RD_A	18	RD_B
6	DCD_A	19	UNUSED
7	DTR_A	20	UNUSED
8	RTS_A	21	UNUSED
9	RTS_B (V.11 only)	22	UNUSED
10	CTS_B (V.11 only)	23	UNUSED
11	CTS_A	24	UNUSED
12	DSR_A	25	UNUSED
13	TM_A	26	GROUND

DBU Connectors

Table L. DBU Connector Pinouts

Pin	Name	Description
1-3	—	UNUSED
4	T	Network–TIP
5	R	Network–RING
6-8	—	UNUSED

Table M. E1 DBU Connector Pinouts

Pin	Name	Description
1,2	—	UNUSED
3	R1	Network–RING1
4	R	Network–RING
5	T	Network–TIP
6	T1	Network–TIP1
7,8	—	UNUSED

An optional DIM is required for dial backup applications.

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