ADTRAN

NetVanta 340 Series Hardware Installation Guide

1200422L1   NetVanta 340 Unit

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Conventions

NOTE	*Notes provide additional useful information.*

CAUTION	*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 telephone 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 the 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. Do not dispose of batteries in a fire. They may explode. Check with local codes for special disposal instructions.

5. The socket-outlet shall be installed near the equipment and shall be easily accessible.

CAUTION *This equipment incorporates double pole/neutral fusing. If the neutral fuse opens and the line fuse does not open, voltage could still be present in the unit.*

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-Required Information

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 registered interface has a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. 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 effect 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. This equipment is designed to connect 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 leased line facilities:

Part Number	Registration Number	Service Type	REN/SOC	FIC	USOC
1200422L1	US: HDCDL01A1200422L1	ADSL	0.1A/9.0F	02LS2	RJ-11C

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 B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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 communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.*

 61200422L1-34A

Industry Canada Compliance Information

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.

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).

Canadian Emissions Requirements

This digital apparatus does not exceed the Class B 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.

Warranty and Customer Service

ADTRAN will repair and return 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 *Service/Support* and then 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://support.adtran.com

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

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1.   INTRODUCTION TO THE NETVANTA SOLUTION

The NetVanta 340 is an ATM router designed for cost-effective branch office connectivity over frame relay or point-to-point (PPP) networks. This product is designed for small- to medium-sized business customers. This unit comes equipped with a 10/100BaseT Ethernet LAN interface and an ADSL network interface.

Features and Specifications

The following table highlights the major features of the NetVanta 340.

Table 1. Features and Specifications

Protocol Support	Layer 2 protocol: ATM
	Routed protocol: IP
	Learning bridge functionality
	Static routes
	RIP v1/v2
	802.1d bridging with spanning tree
	LLC-SNAP and VC-MUX (null) encapsulation over AAL5
10/100BaseT	RJ-48C
ADSL Interface	RJ-11
	ITU G.992.1 (G.dmt) Annex A, ITU G.992.2 (G.lite), ITU G.992.3 (G.dmt.bis), ITU G.992.4 (G.lite.bis), ITU G.992.5 (Adsl 2+)
	ANSI T1.413 Issue 2
	Extended reach (ER-ADSL)
	Dynamic rate adaptation
	Bit swapping
	Dying gasp
ATM Specific Support	AAL5 support for at least 16 PVCs
	RFC 2364 support -- PPP over AAL5 (LLC and VC muxing)
	RFC 2684 support -- Multi-protocol over ATM
	PPPoE Relay and PPPoE Client (RFC 2516)
	I.610 F4/F5 OAM loopback support
	Full support of ATM WAN statistics
Firewall	Stateful Inspection Firewall
	Cyber assault protection
	Denial of Service (DoS) protection
DHCP/DNS Support	DHCP Client, DHCP Server, DNS Proxy

Table 1. Features and Specifications *(Continued)*

Management	Familiar Command Line Interface (CLI)
	Web configuration interface (HTTP, HTTPS)
	Telnet
	SNMP
	SYSLOG logging
	RADIUS authentication
	Secure Shell (SSH) management
	Policy statistics
Routing Protocol	OSPF, RIP, BGP, and Static
Routed Protocol	IP
	Bridging (other protocols)
PPP	LCP, IPCP, BCP
	Disaster recovery
WAN Protocol	ATM
Quality of Service (QoS)	Priority and Weighted Fair Queuing (WFQ)
	DiffServ packet marking and recognition
Optional Virtual Private Network (VPN)	IPSec Mode: Tunnel
	Encryption: DES, 3DES, and AES
	Diffie Hellman Group Support: Group 1 - MODP 768; Group 2 - MODP 1024
	Has Algorithms: MD5-HMAC, SHA1-HMAC
	Authentication mechanisms: XAUTH, digital certificates,preshared keys
	Key management: IKE (ISAKMP/Oakley)
	IKE modes: Main, Aggressive
Environmental	Operating temperature: 0° to 40°C; humidity 8% to 100%, noncondensing
	Storage/Transport temperature: -20° to 85°C; humidity 5% to 100%
Physical	Dimensions: 7.5 inches W x 1.75 inches H x 5.375 inches D
	Weight: 0.8 lb
	Power: 120 VAC, 60 Hz, 65 mA, double insulated
Agency Approvals	FCC Part 15, Class B; ACTA/FCC Part 68, UL 60950
	Industry Canada CS-03, CNA/CSA C.22.2, No. 60950

This hardware installation guide describes the NetVanta 340, details basic functionality, gives installation instructions, and lists unit specifications. For more information on router configuration for a specific application, refer to the quick configuration documents provided on the ADTRAN website at www.adtran.com. For details on the command line interface, refer to the *AOS Command Reference Guide*, also on the website.

Unpack and Inspect the System

Each NetVanta 340 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).
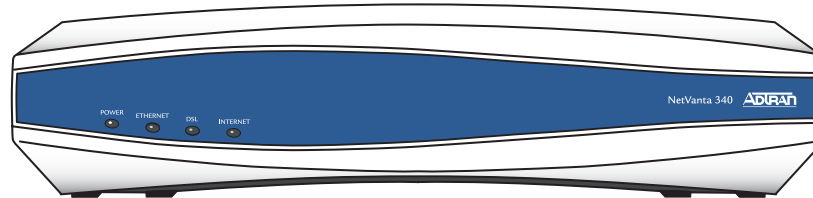
Contents of ADTRAN Shipments

Shipments of the NetVanta 340 include the following items:

- NetVanta 340 Base Unit
- NetVanta 340 *Quick Start Guide*
- NetVanta 340 power cable (black)
- NetVanta 340 phone cable (silver)
- NetVanta 340 Ethernet cable (yellow)

2.   PHYSICAL DESCRIPTION

Reviewing the Base Unit Front Panel Design

Figure 1 shows the NetVanta 340 front panel.

Figure 1. NetVanta 340 Front Panel Layout

Front Panel LEDs

Table 2 describes the front panel LEDs.

Table 2. NetVanta 340 LEDs

For this LED…	This activity…	Indicates that…
Power	Green (flashing)	Unit is powering up. On power-up the **Power** LED flashes rapidly for five seconds, during which time the user may escape to boot mode.
	Green (solid)	Power is on and self-test passed.
	Red (solid)	Power is on, but the self-test failed or the boot mode (if applicable) code could not be booted.
Ethernet	Green (flashing)	LAN activity is present (traffic in either direction).
	Green (solid)	Powered device is connected to the Ethernet port (i.e., link integrity).
	Off	There is no LAN activity on the Ethernet port (or modem is powered off).
DSL	Off	Modem power is off.
	Green (flashing)	Attempting DSL sync.
	Green (solid)	DSL link is up and everything is operational.
	Red (solid)	DSL connection failure.
Internet	Off	Modem power is off, modem is in bridged mode, or ADSL connection is not present.
	Green (flashing)	IP connected and IP traffic is passing through the device (in either direction).
	Green (solid)	IP connected (the device has a WAN IP address from IPCP or DHCP and DSL connection is up) and no traffic is detected. If the IP or PPPoE session is dropped, the light remains green if an ADSL connection is still present. Light turns red when it attempts to reconnect and DHCP or PPPoE fails.
	Red (solid)	Modem attempted to become IP connected and failed (no DHCP response, no PPPoE response, PPPoE authentication failed, no IP address from IPCP, etc.).

Reviewing the Rear Panel Design

Figure 2 shows the NetVanta 340 rear panel. The Activity and Link LEDs, which are present on all NetVanta Ethernet ports, are pointed out.
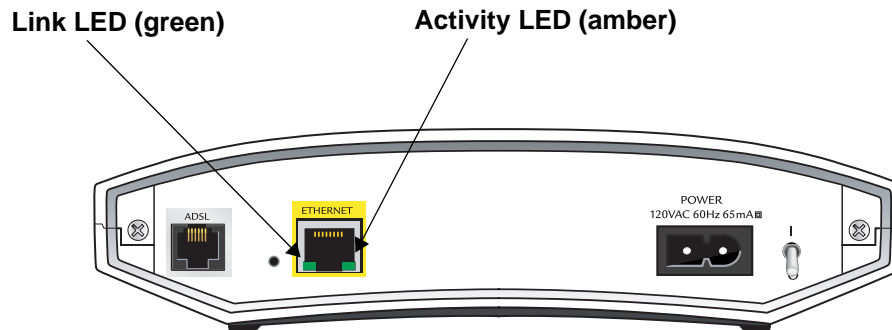

Figure 2. NetVanta 340 Rear Panel Layout

Rear Panel Interfaces and LEDs

ADSL Interface

The **ADSL** port is an RJ-11 connector. See Table A-1 on page 27 for the ADSL port pinout. The ADSL port provides the following:

- ITU G.992.1 (G.dmt) Annex A
- ITU G.992.2 (G.lite)
- ITU G.992.3 (G.dmt.bis)
- ITU G.992.4 (G.lite.bis)
- ITU G.992.5 (Adsl2+)
- ANSI T1.413 Issue 2
- Extended Reach (ER-ADSL)
- Dynamic Rate Adaptation
- Bit Swapping
- Dying Gasp

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 unit has a good connection to the LAN. See Table A-2 on page 27 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
- Auto MDI/MDIX

3.   UNIT INSTALLATION

The instructions and guidelines provided in this section cover hardware installation topics such as wall mounting and supplying power to the unit.
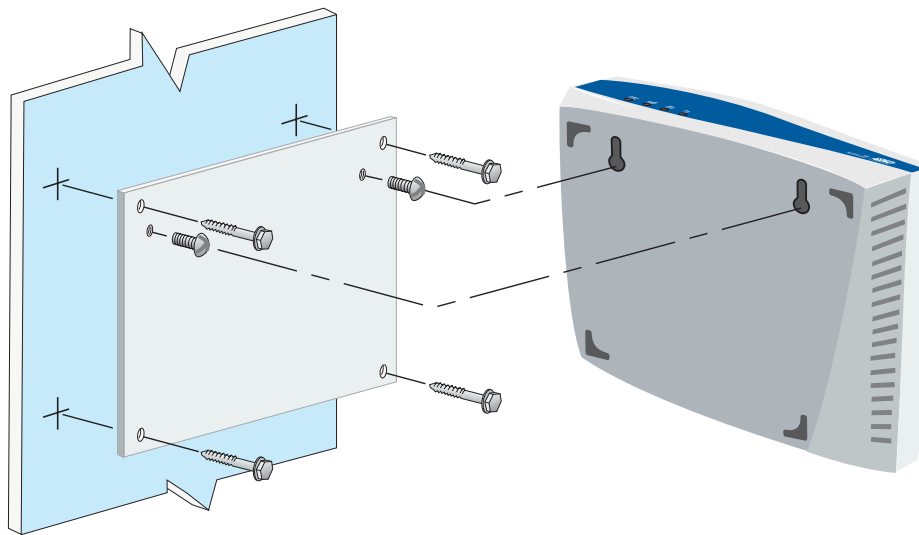
> **NOTE**   *To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.*

Mounting Options

The NetVanta 340 may be installed in a wallmount or tabletop configuration. The following section provides step-by-step instructions for wall mounting.

Wall Mounting

	Instructions for Wall Mounting	
Step	**Action**	
1	Decide on a location for the NetVanta 340. 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 3: • Screws should be spaced horizontally, approximately 5 inches apart. Find exact positioning by using the location of the two eyed insets on the bottom of the NetVanta 340 as a guide. • Screws should be horizontally level with each other. • Leave approximately 1/4 inch 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 340 chassis securely onto the screws.	
5	Proceed to the steps given in *Getting Started* on page 24.	

Figure 3. Wall Mounting the NetVanta 340

Getting Started

> **WARNING**
>
> *The 10/100BaseT Ethernet interface **MUST NOT** be metallically connected to interfaces which connect to the Outside Plant or its wiring. This interface is designed for use as an intrabuilding interface only. The addition of primary protectors is not sufficient protection in order to connect this interface metallically to OSP wiring.*

Connect to the NetVanta 340

1. Connect the NetVanta 340 ETHERNET interface to the PC using the appropriate Ethernet cable.

2. Supply power to the PC and the NetVanta 340 and begin the operating system boot up process. During boot up, the PC obtains an IP address from the NetVanta 340 DHCP server. By default, both the DHCP and HTTP servers are enabled. The default IP address is 10.10.10.1.

3. Open your internet browser and enter 10.10.10.1. in the URL field. The NetVanta 340 login window appears.

4. Enter the default username (admin) and password (adtran), and click the OK button.

> **NOTE**
>
> *For security purposes, you should set up an **admin** password immediately. Use the **Passwords** page of the Web GUI to change this password.*

5. By default, the NetVanta 340 comes with an ADSL and an ATM (Asynchronous Transfer Mode) port already configured and enabled. The service provider should provide a PVC (VPI / VCI) number which will be used to configure the ATM PVC.

Configure the ATM PVC

1. Click on the **Getting Started** link under the **System** menu. This will bring up a side bar page.

2. Click on **Step 1 - Configure the Public Interface** at the top of the side bar page to open the ATM PVC page.

3. Fill in the PVC number and select an **Interface Mode**. This is usually PPP or PPPoE; however, if **IP routing** is chosen, you will need to enter an IP address.

4. Click **Apply**. If PPP or PPPoE is selected as the **Interface Mode**, you will be taken to the PPP page after clicking **Apply**. Here you will need to select the type of authentication needed, authentication passwords, and the **Address Type**. In most cases you will want the **Address Type** to be **Negotiated**. Click **Apply** when all the information is complete.

Factory Default Switch

- If pressed during bootup, the default switch will cause the unit to stay in bootstrap mode. Since the unit has no serial port, Telnet has been built into the boot code. The default IP address is 10.10.10.1.

NOTE	*The default switch must be pressed WHILE the power light is flashing green. Do not press the default switch BEFORE the power light is flashing green, as this will cause boot to be missed.*

- If pressed and held for 5 seconds after boot, the **ETHERNET** interface will default to 10.10.10.1, and all access policies will be removed from that interface.
- If pressed for 30 seconds, a default configuration will overwrite your existing configuration and reboot the unit.

CAUTION	*Maximum recommended ambient operating temperature is 50°C.*

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

APPENDIX A. CONNECTOR PIN DEFINITIONS

The following tables provide the pin assignments for the NetVanta 340.

Table A-1. ADSL Connector Pinouts

Pin	Name	Description
1-2	—	Unused
3	T	ADSL Tip
4	R	ADSL Ring
5-6	—	Unused

Table A-2. 10/100BaseT Ethernet Port Pinouts

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

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Numerics