# NetVanta 3100 Series
# Fixed Port Routers
# Hardware Installation Guide

| | |
|---|---|
| 1700600L2 | NetVanta 3120 (with DBU) |
| 1700601G2 | NetVanta 3120 (without DBU) |
| 1700610L2 | NetVanta 3130 Annex A (with DBU) |
| 1700611G2 | NetVanta 3130 Annex A (with DBU) |
| 1700612G2 | NetVanta 3130 Annex B (without DBU) |
| 1700340F1 | NetVanta 3140 Desktop |
| 1700341F1 | NetVanta 3140 |
| 1700508F1 | 19-inch Dual Mounting Tray (1700341F1 only) |
| 1700511F1 | 19-inch Rack Mounting Bracket (1700341F1 only) |
| 1700512F1 | Dual Wall Mounting Bracket (1700341F1 only) |

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March 2015

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*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.*

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## Conventions


*Notes provide additional useful information.*


*Cautions signify information that could prevent service interruption or damage to the equipment.*

**WARNING**

*Warnings provide information that could prevent injury 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 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.

If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your qualified service personnel:

1. The power cable, extension cable, or plug is damaged.
2. An object has fallen into the product.
3. The product has been exposed to water.
4. The product has been dropped or damaged.
5. The product does not operate correctly when you follow the operating instructions.


*These units contain no user-serviceable parts.*


*Additional safety guidelines, such as Waste Electrical and Electronic Equipment (WEEE), are given in the document NetVanta Safety and Regulatory Information available at https://supportforums.adtran.com.*

### Save These Important Safety Instructions

  

## FCC-Required Information

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

1. This equipment complies with Part 68 of Federal Communications Commission (FCC) rules and requirements adopted by America's Carriers Telecommunications Association (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 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. 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 |
|---|---|---|---|---|---|
| 1700600L2 | US: HDCMM01A1700600L2 | Analog Loop Start | 0.1A/9.0Y | 02LS2 | RJ-11C |
| 1700610L2 | US: HDCDL01A1700610L2 | ADSL, ADSL2, ADSL2+ Modem | 0.1A | Metallic | RJ-11C |

8. The ringer equivalence number (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.

## Industry Canada Compliance Information

This product meets the applicable Industry Canada technical specifications.

The Ringer Equivalence Number (REN) is an indication of the maximum number of devices allowed to be connected to a telephone interface. The termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices not exceed five.

Le présent matériel est conforme aux specifications techniques applicables d'Industrie Canada.

L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas cinq.

## 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.

## Toll Fraud Liability

Be advised that certain security risks are inherent in the use of any telecommunications or networking equipment, including but not limited to, toll fraud, Denial of Service (DoS) attacks, loss or theft of data, and the unauthorized or illegal use of said equipment. ADTRAN OFFERS NO WARRANTIES, EITHER EXPRESSED OR IMPLIED, REGARDING THE PREVENTION, DETECTION, OR DETERRENCE OF TOLL FRAUD, NETWORKING ATTACKS, OR UNAUTHORIZED, ILLEGAL, OR IMPROPER USE OF ADTRAN EQUIPMENT OR SOFTWARE. THEREFORE, ADTRAN IS NOT LIABLE FOR ANY LOSSES OR DAMAGES RESULTING FROM SUCH FRAUD, ATTACK, OR IMPROPER USE, INCLUDING, BUT NOT LIMITED TO, HUMAN AND DATA PRIVACY, INTELLECTUAL PROPERTY, MATERIAL ASSETS, FINANCIAL RESOURCES, LABOR AND LEGAL COSTS. Ultimately, the responsibility for securing your telecommunication and networking equipment rests with you, and you are encouraged to review documentation regarding available security measures, their configuration and implementation, and to test such features as is necessary for your network.

## Service and Warranty

For information on the service and warranty of ADTRAN products, visit the *Support* section of the ADTRAN website at http://www.adtran.com.

  

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# 1. INTRODUCTION

The NetVanta 3100 Series Fixed Port Routers include the NetVanta 3120 (with dial backup (DBU)), NetVanta 3120 (without DBU), NetVanta 3130 (with DBU), NetVanta 3130 (without DBU), and the two NetVanta 3140 models.

> *In this document, the term NetVanta 3100 means all of the units collectively. If a statement only applies to one particular router, the text refers to the router individually.*

This hardware installation guide lists the NetVanta 3100 Series units' physical characteristics and product specifications, introduces basic functionality, and provides installation instructions.


- *Physical Descriptions on page 14*
- *Unit Installation on page 26*


For additional information on mounting options and suppling power to the unit, refer to the following sections:


- *Mounting Options on page 26*
- *Supplying Power to the Unit on page 34*


For information on switch configuration for a specific application, refer to the configuration guides provided on the ADTRAN Support Community. For details on the command line interface (CLI), refer to the *AOS Command Reference Guide*. All other related documents are also available online at http://supportforums.adtran.com.

# 2. PHYSICAL DESCRIPTIONS

## NetVanta 3120

The NetVanta 3120 is a fixed-port Ethernet router with an integral four-port Ethernet switch. It provides a single auto-sensing 10/100Base-T Ethernet network interface and four auto-sensing 10/100Base-T Ethernet LAN interfaces. This product is ideal for enterprise-level Internet access for secure, high-speed corporate connectivity using broadband access such as DSL or cable. Some models include an integrated analog modem for dial backup and management. IPsec virtual private network (VPN) support is included without further software upgrade. The unit is powered by a 12 VDC power supply (AC to DC power adapter included).

### *NetVanta 3120 Features and Specifications*

The NetVanta 3120 offers the following features:

- Fixed-port Ethernet router with integral 4-port Ethernet switch
- Autosensing 10/100Base-T Ethernet WAN
- Integrated analog modem for dial backup or remote management (1700600L2 only)
- ADTRAN Operating System (AOS) command line interface (CLI)
- User-friendly, web-based graphical user interface (GUI)
- Standards-based eBGP/iBGP, OSPF, RIP, static routing and bridging protocols
- Integral stateful inspection firewall protects against denial of service (DoS) attacks
- Includes IPsec VPN supporting DES/3DES/AES encryption
- Compatible with IPsec VPN-equipped devices
- Quality of service (QoS) with low latency queuing (LLQ), weighted fair queuing (WFQ), class-based weighted fair queuing (CBWFQ), and DiffServ marking
- Built-in alert and logging mechanisms
- Network address translation (NAT/NAPT), 1:1 NAT port translation, and NAT Traversal version 2
- NAT-compliant SIP ALG
- DHCP client, server, and relay
- XAUTH including RADIUS and RSA SecurID
- AAA support using local user database, RADIUS, and TACACS+
- Flash memory supports dual images of AOS
- Remotely configurable and field upgradeable using TFTP or FTP (1700601G2 only)
- Telnet, HTTP, SSH, or SNMP management options
- 1.63-inch H x 9.00-inch W x 6.38-inch D
- DC power (12 VDC, 800 mA, 7.5 W)
- Operating Temperature: 0°C to 50°C
- RoHS compliant (Telecommunications exemption) (1700601G1 only)

  

### NetVanta 3120 Shipping Contents

Each NetVanta 3120 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 (refer to the *Support* page on the ADTRAN website at http://www.adtran.com/support).

Shipments of the NetVanta 3120 include the following items:

- NetVanta 3120 base unit
- Quick start guide
- External 12 VDC power supply
- Two 7-foot CAT 5e cables (P/N 3125111-E)

### NetVanta 3120 Front Panel Design

The NetVanta 3120 front panel is shown below. Front panel LED descriptions are given in *Table 1 on page 24*.


**Figure 1. NetVanta 3120 (with DBU) Front Panel Layout**


**Figure 2. NetVanta 3120 (without DBU) Front Panel Layout**

### *NetVanta 3120 Rear Panel Design*

The NetVanta 3120 rear panel is shown below. *Appendix A on page 37* provides pinouts.

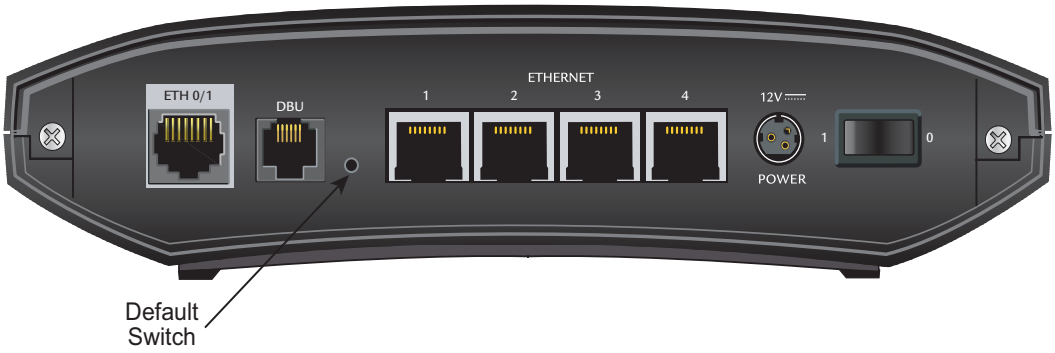


**Figure 3. NetVanta 3120 (with DBU) Rear Panel Layout**

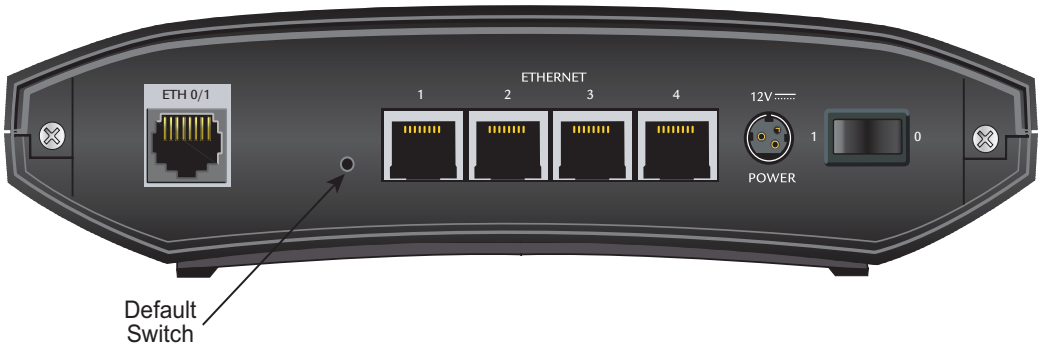


**Figure 4. NetVanta 3120 (without DBU) Rear Panel Layout**

#### NetVanta 3120 Rear Panel Interfaces

##### 10/100Base-T Ethernet Interface

The Ethernet port (**ETH 0/1**) is an RJ-45 connector. See *Table A-1 on page 37* for the Ethernet port pinouts. The Ethernet port provides the following:

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

#### DBU Interface (1700600L2 only)

The NetVanta 3120 has a **DBU** port on the rear panel to provide analog, V.90 dial backup. See *Table A-4 on page 38* for the DBU connector pinouts.

#### Factory Default Switch

The NetVanta 3120 has a factory default switch (labeled in *Figure 3*) on the rear of the unit. If the factory default switch is pressed during bootup, the unit will 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 **STAT** light is flashing green. Do not press the default switch BEFORE the **STAT** light is flashing green, as this will cause boot to be missed.*

If the factory default switch is pressed and held for 5 seconds after boot, the switch ports on the NetVanta 3120 will default to 10.10.10.1 and all access policies will be removed from those interfaces. If the factory default switch is pressed for 30 seconds, a default configuration will overwrite your existing configuration and reboot the unit.

#### 4 Switch Port Interfaces

Ports 1 through 4 are RJ-45 connectors used to access the 10/100Base-T Ethernet switch.

#### Power Connection

The rear panel has a **12V** input for the DC power supply included in the shipment. Refer to *Wall Mounting a Single NetVanta 3140 (P/N 1700341F1) on page 28* for connection details.

## NetVanta 3130

The NetVanta 3130 is a fixed-port ADSL2+ IP access router with an integral four-port Ethernet switch. It provides a single ADSL network interface and four auto-sensing 10/100Base-T Ethernet LAN interfaces. This product is ideal for carrier-bundled service offerings and enterprise-level Internet access for secure, high-speed corporate connectivity. In addition to supporting ADSL (Annex A), and ADSL2, the NetVanta 3130 supports today's most advanced ADSL technology, ADSL2+, for greater reach and higher bandwidth, up to 25 Mbps. Some models include an integrated analog modem for dial backup and management. IPsec VPN support is included without further software upgrade. The unit is powered by a 12 VDC power supply (AC to DC power adapter included).

### *NetVanta 3130 Features and Specifications*

The NetVanta 3130 offers the following features:

- Fixed-port ADSL router with integral 4-port Ethernet switch
- IP access router for ADSL, ADSL2, ADSL2+ networks with line rates up to 25 Mbps
- Supports ATM, PPP over ATM, and PPPoE over ATM
- Integrated analog modem for dial backup or remote management (1700610L2 only)
- ADTRAN Operating System (AOS) command line interface (CLI)
- User-friendly, web-based graphical user interface (GUI)
- Standards-based eBGP/iBGP, OSPF, RIP, static routing and bridging protocols
- Integral stateful inspection firewall protects against denial of service (DoS) attacks
- Includes IPsec VPN supporting DES/3DES/AES encryption
- Compatible with IPsec VPN-equipped devices
- Quality of service (QoS) with low latency queuing (LLQ), weighted fair queuing (WFQ), class-based weighted fair queuing (CBWFQ), and DiffServ marking
- Built-in alert and logging mechanisms
- Network address translation (NAT/NAPT), 1:1 NAT port translation, and NAT Traversal version 2
- NAT-compliant SIP ALG
- DHCP client, server, and relay
- XAUTH including RADIUS and RSA SecurID

  

- AAA support using local user database, RADIUS, and TACACS+
- Flash memory supports multiple images of AOS
- Remotely configurable and field upgradeable using TFTP or FTP (1700611G2 only)
- Telnet, HTTP, SSH, or SNMP management options
- 1.63-inch H x 9.00-inch W x 6.38-inch D
- DC power (12 VDC, 800 mA, 7.5 W)
- Operating Temperature: 0°C to 50°C
- RoHS compliant (Telecommunications exemption) (1700611G2, 1700612G1 only)

### *NetVanta 3130 Shipping Contents*

Each NetVanta 3130 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 (refer to the *Support* page on the ADTRAN website at http://www.adtran.com/support).

Shipments of the NetVanta 3130 include the following items:

- NetVanta 3130 base unit
- Quick start guide
- External 12 VDC power supply
- One 7-foot CAT 5e cable (P/N 3125111-E)
- One 7-foot phone cable

### *NetVanta 3130 Front Panel Design*

The NetVanta 3130 front panel is shown below. Front panel LED descriptions are given in *Table 1 on page 24*.

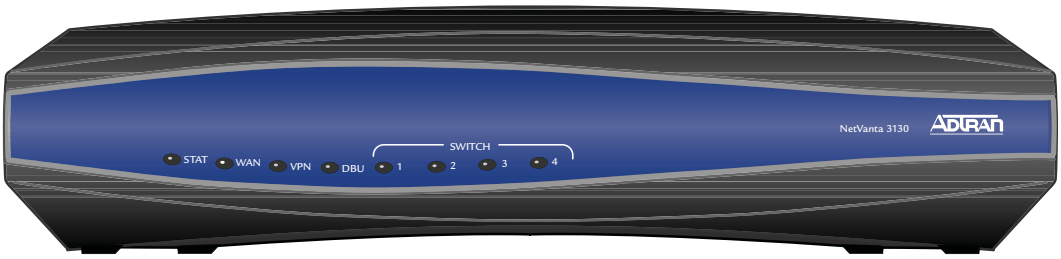


**Figure 5. NetVanta 3130 (with DBU) Front Panel Layout**


**Figure 6. NetVanta 3130 (without DBU) Front Panel Layout**

  

### *NetVanta 3130 Rear Panel Design*

The NetVanta 3130 rear panel is shown below. *Appendix A on page 37* provides pinouts.

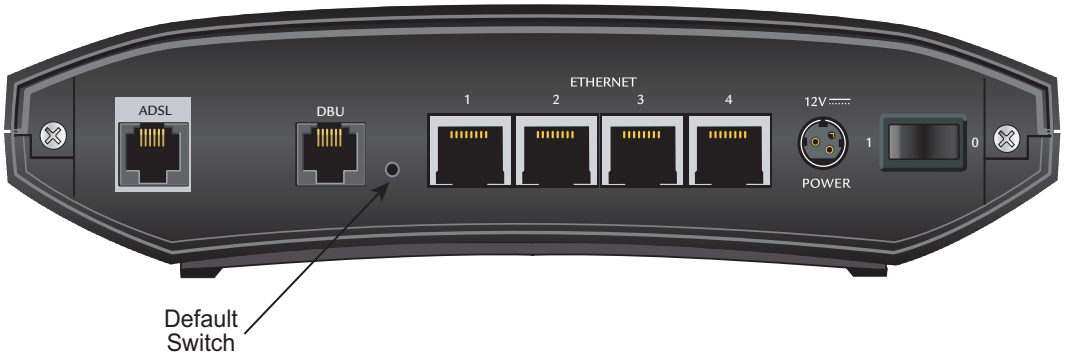


**Figure 7. NetVanta 3130 (with DBU) Rear Panel Layout**

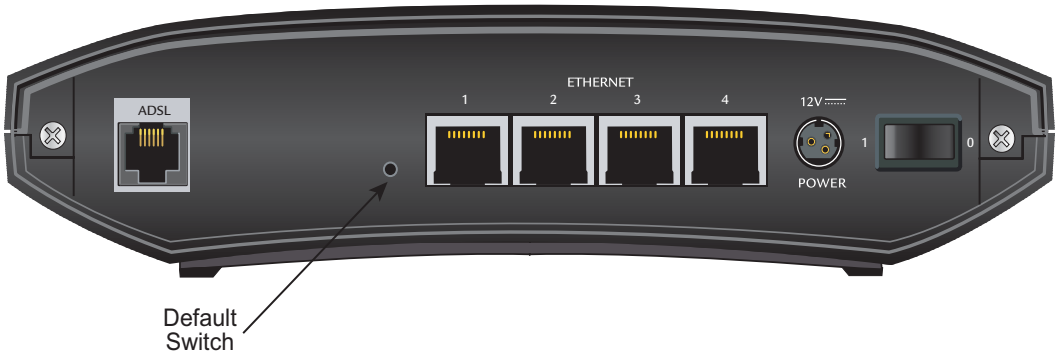


**Figure 8. NetVanta 3130 (without DBU) Rear Panel Layout**

#### NetVanta 3130 Rear Panel Interfaces

##### ADSL Interface

The NetVanta 3130 rear panel has an **ADSL** port to connect directly to ADSL, ADSL2, or ADSL2+ service. See *Table A-5 on page 38* for the ADSL connector pinouts.

##### DBU Interface (1700610L2 only)

The NetVanta 3130 has a **DBU** port on the rear panel to provide analog, V.90 dial backup. See *Table A-4 on page 38* for the DBU connector pinouts.

##### Factory Default Switch

The NetVanta 3130 has a factory default switch (labeled in *Figure 7*) on the rear of the unit. If the factory default switch is pressed during bootup, the unit will 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 **STAT** light is flashing green. Do not press the default switch BEFORE the **STAT** light is flashing green, as this will cause boot to be missed.*

If the factory default switch is pressed and held for 5 seconds after boot, the switch ports on the NetVanta 3130 will default to 10.10.10.1 and all access policies will be removed from those interfaces.

If the factory default switch is pressed for 30 seconds, a default configuration will overwrite your existing configuration and reboot the unit.

#### 4 Switch Port Interfaces

Ports 1 through 4 are RJ-45 connectors used to access the 10/100Base-T Ethernet switch.

#### Power Connection

The rear panel has a **12V** input for the DC power supply included in the shipment. Refer to *Wall Mounting a Single NetVanta 3140 (P/N 1700341F1) on page 28* for connection details.

## NetVanta 3140 Series

The NetVanta 3140 Series is a fixed-port, high-performance Ethernet router solution to support converged access and high-quality voice services. It provides three routed auto-sensing 10/100/1000Base-T Ethernet LAN interfaces. This product is ideal for carrier-bundled service offerings and enterprise-level Internet access for secure, high-speed corporate connectivity. The NetVanta 3140 has the ability to perform 3G/4G backup using a type A USB host connector (future release). IPsec VPN support is included with a further software upgrade.

### *NetVanta 3140 Features and Specifications*

The NetVanta 3140 offers the following features:

- Three routed 10/100/1000Base-T Ethernet ports
- USB port to support 3G or 4G modules (future release)
- Fixed port IP access router for MPLS, Direct Internet Access, Hosted VoIP, and PPPoE networks
- ADTRAN Operating System (AOS) command line interface (CLI)
- User-friendly, web-based graphical user interface (GUI)
- Standards-based eBGP/iBGP, OSPF, RIP, static routing and bridging protocols
- Integral stateful inspection firewall protects against denial of service (DoS) attacks
- 500 IPsec VPN tunnels (software optional) with DES/3DES/AES encryption
- Compatible with IPsec VPN-equipped devices
- Quality of service (QoS) with low latency queuing (LLQ), weighted fair queuing (WFQ), class-based weighted fair queuing (CBWFQ), and DiffServ marking
- Built-in alert and logging mechanisms
- Network address translation (NAT/NAPT), 1:1 NAT port translation, and NAT Traversal version 2
- NAT-compliant SIP ALG
- DHCP client, server, and relay
- XAUTH including RADIUS and RSA SecurID
- AAA support using local user database, RADIUS, and TACACS+
- Flash memory supports multiple images of AOS
- Remotely configurable and field upgradeable using TFTP or FTP
- Telnet, HTTP, SSH, SSL, Syslog, craft/console port, or SNMP management options
- Dimensions 1700340F1: 1.63-inch H x 9.00-inch W x 6.38-inch D
- Dimensions 1700341F1: 1.7-inch H x 8.0-inch W x 11.0-inch D

  

- Mounting 1700340F1: Plastic enclosed desktop version that can also be wall mounted
- Mounting 1700341F1: 1U-high desktop, wallmount, or rackmount metal enclosure (optional rackmount brackets (P/N 1700511F1) sold separately)
- Power 1700340F1: DC power (12 VDC, 1.0 A)
- Power 1700341F1: AC auto-ranging power, 100 to 240 VAC, 50/60 Hz
- Optional AC power supply: 110 to 240 VAC, 50/60 Hz
- Operating Temperature 1700340F1: 0°C to 50°C
- Operating Temperature 1700341F1: 0°C to 50°C
- RoHS compliant

### *NetVanta 3140 Shipping Contents*

Each NetVanta 3140 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 (refer to the *Support* page on the ADTRAN website at http://www.adtran.com/support).

Shipments of the NetVanta 3140 Desktop (P/N 1700340F1) include the following items:

- NetVanta 3140 base unit
- Quick start guide
- External 12 VDC power supply
- One 7-foot CAT 5e cable (P/N 3125111-E)

Shipments of the NetVanta 3140 (P/N 1700341F1) include the following items:

- NetVanta 3140 base unit
- Quick start guide
- One 7-foot CAT 5e cable (P/N 3125111-E)
- All appropriate power cords

### *NetVanta 3140 Desktop Front Panel Design*

The NetVanta 3140 front panel is shown below. Front panel LED descriptions are given in *Table 1 on page 24*.


**Figure 9. NetVanta 3140 Desktop Front Panel Layout**

  

### *NetVanta 3140 Desktop Rear Panel Design*

The NetVanta 3140 rear panel is shown below. *Appendix A on page 37* provides pinouts.


**Figure 10. NetVanta 3140 Desktop Rear Panel Layout**

#### NetVanta 3140 Desktop Rear Panel Interfaces

##### 10/100/1000Base-T Gigabit Ethernet Interfaces

The **GIG 0/1, GIG 0/2**, **GIG 0/1** interfaces provide three fixed RJ-45 connectors. The Ethernet ports provide the following:

- 10Base-Te, 100Base-T, or 1000Base-T via RJ-45
- Auto-negotiation
- CSMA/CD
- IEEE 802.3 compatibility
- Auto MDIX

##### USB Interface (Future Release)

The **USB** interface is a type A USB host connector and is provided for use with 3G/4G modems or flash drives.

##### CONSOLE Interface

The **CONSOLE** interface is an EIA-232 serial port (DCE) that provides local management and configuration (via a DB-9 female connector).

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

##### Power Connection

The rear panel has a **12V** input for the DC power supply included in the shipment. Refer to *Wall Mounting a Single NetVanta 3140 (P/N 1700341F1) on page 28* for connection details.

### *NetVanta 3140 Front Panel Design*

The NetVanta 3140 front panel is shown below. Front panel LED descriptions are given in *Table 2 on page 25*.


**Figure 11. NetVanta 3140 Front Panel Layout**

#### NetVanta 3140 Front Panel Interfaces

##### 10/100/1000Base-T Gigabit Ethernet Interfaces

The **GIG 0/1, GIG 0/2**, **GIG 0/1** interfaces provide three fixed RJ-45 connectors. The Ethernet ports provide the following:

- 10Base-Te, 100Base-T, or 1000Base-T via RJ-45
- Auto-negotiation
- CSMA/CD
- IEEE 802.3 compatibility
- Auto MDIX

##### USB Interface (Future Release)

The **USB** interface is a type A USB host connector and is provided for use with 3G/4G modems or flash drives.

##### CONSOLE Interface

The **CONSOLE** interface is an EIA-232 serial port (DCE) that provides local management and configuration (via a DB-9 female connector).

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

### *NetVanta 3140 Rear Panel Design*

The NetVanta 3140 rear panel is shown below.

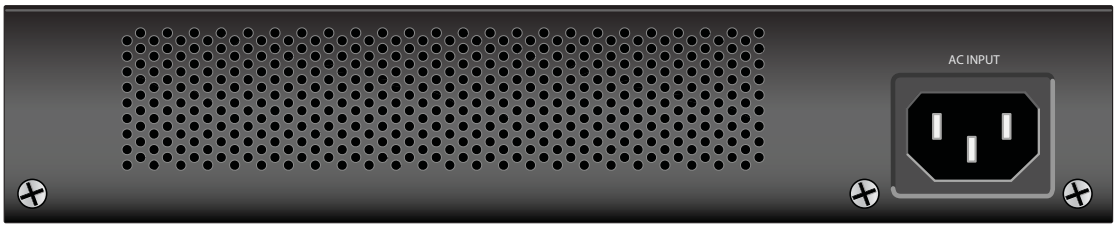


**Figure 12. NetVanta 3140 Rear Panel Layout**

### NetVanta 3140 Panel Interface

#### Power Connection

The rear panel has a connection to an AC auto-ranging power, 100 to 240 VAC, 50/60 Hz, 0.75 A maximum. Refer to *Wall Mounting a Single NetVanta 3140 (P/N 1700341F1) on page 28* for connection details.

## NetVanta 3120/3130 Series Front Panel LEDs

*Table 1 on page 24* describes the NetVanta 3120 Series and NetVanta 3130 Series front panel LEDs. *Table 2 on page 25* describes the NetVanta 3140 front panel LEDs.

**Table 1. NetVanta 3120/3130 Series Front Panel LEDs**

| LED | Color | Indication |
|---|---|---|
| **STAT** | Green (flashing) | The unit is powering up. On power up the **STAT** LED flashes rapidly for five seconds, during which time the user can escape to boot mode. The factory default switch on the back of the unit must be pressed while the **STAT** LED is flashing green to escape to boot mode. Refer to *Factory Default Switch on page 19* for more information. |
| | 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** (NetVanta 3130 only) | Off | The interface is administratively down. |
| | Green (solid) | The link is up and everything is operational. |
| | Green (flashing) | The port has activity. |
| | Red (solid) | An alarm condition is occurring on the WAN interface, or there is a self-test failure. |
| | Amber (solid) | The unit is in test. |
| **DBU** (NetVanta 3120/ 3130 with DBU) | Off | The DBU interface is administratively down. |
| | Green (solid) | The DBU interface is enabled. |
| | Green (flashing) | The unit is in dial backup. |
| | Red (solid) | An alarm condition is occurring on the DBU interface, or there is a self-test failure. |
| | Amber (solid) | The unit is in test. |
| **ETH1** (NetVanta 3120 only) | Off | The port is administratively disabled or does not have link. |
| | Green (solid) | The port is enabled and the link is up. |
| | Amber (flashing) | The port has activity (transmit or receive). |
| **INET** (NetVanta 3120/ 3130 without DBU) | Off | PPP or PPPoE is not connected, IP has no IP address via DHCP, or IP is static. |
| | Green (solid) | PPP or PPPoE is connected or IP has an address via DHCP. |
| | Green (flashing) | WAN interface is attempting to obtain an IP address via DHCP. |
| **SWITCH** (**1** through **4**) | Off | The port is administratively disabled or does not have link. |
| | Green (solid) | The port is enabled and the link is up. |
| | Amber (flashing) | The port has activity (transmit or receive). |
| **VPN** | Off | No encrypted traffic. |
| | On | Encrypted traffic present. |

  

**Table 2. NetVanta 3140 Series Front Panel LEDs**

| | | |
|---|---|---|
| **STAT** | Off | Unit is not receiving power. |
| | Green (flashing) | The unit is powering up. On power-up, the **STAT** LED flashes rapidly for five seconds. |
| | Green (solid) | The power is on and self-test passed. |
| | Red | Power is on, but the self-test failed. |
| | Amber (solid) | The unit is in bootstrap mode. |
| **USB** (Future Release) | Off | Interface is shut down or not connected. |
| | Green (solid) | A supported device is connected. |
| | Amber (flashing) | There is activity on the link. |
| | Red (solid) | An alarm condition is occurring on the USB port, or there is a failure. |
| **LINK (GIG 1 - GIG 3) (1700340F1 only)** | Off | The port is administratively disabled or does not have link. |
| | Green (solid) | The port is enabled and the link is up. |
| **ACT (GIG 1 - GIG 3) (1700340F1 only)** | Off | There is no activity on the link. |
| | Green (flashing) | There is activity on the link. |
| **Port LEDs (GIG 0/1 - GIG 0/3)** | Off | There is no activity on the link. |
| | Green (solid) | The port is enabled and the link is up. |
| | Amber (flashing) | There is activity on the link. |


*On the 1700340F1, the behavior of the **LINK** and **ACT** LEDs (labeled **GIG 1** through **GIG 3**) on the front of the unit corresponds to the behavior of the RJ-45 LEDs (labeled **GIG 0/1** through **GIG 0/3**) located on the rear of the unit.*

# 3. UNIT INSTALLATION

The instructions and guidelines provided in this section cover hardware installation topics, such as tabletop, wall, and rack mounting and powering the units. These instructions are presented as follows:


- *Mounting Options on page 26*
- *Supplying Power to the Unit on page 34*


For information on router configuration for a specific application, refer to the configuration guides provided on the ADTRAN Support Community. For details on the command line interface (CLI), refer to the *AOS Command Reference Guide*. All other related documents are also available online at http://supportforums.adtran.com.

**WARNING**

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

**WARNING**

*Ethernet cables are intended for intrabuilding use only. Connecting an ADTRAN unit directly to Ethernet cables that run outside the building in which the unit is housed will void the user's warranty and could create a fire or shock hazard. To connect an ADTRAN unit to Ethernet cables that run outside the building, ADTRAN's Ethernet Port Protection Device (EPPD) (P/N 1700502G1) must be connected between the unit and the outside plant cable. Use of any Ethernet protector other than ADTRAN's for this purpose will void the user's warranty.*

## Tools Required

The customer-provided tools required for the hardware installation of the NetVanta 3100 Series are:

- Ethernet cable
- Phillips-head screwdriver

## Mounting Options

All of the NetVanta 3100 Series units can be installed in a wallmount or tabletop configuration. The NetVanta 3140 (P/N 1700341F1) can be mounted in a rack alone or with two units side by side using the optional dual mounting tray (P/N 1700508F1).

### *Tabletop Mounting*

For tabletop mounting, place the unit on a level surface within easy reach of an electrical outlet.

**NOTE**

*NetVanta 3140 units have a Kensington lock slot that accepts a lock and cable security device. Consult the manual shipped with your Kensington lock for installation instructions.*

## *Wall Mounting*

### *Wall Mounting NetVanta 3120 Series, 3130 Series, and 3140 Desktop*

The NetVanta 3100 Series, 3130 Series, and the 3140 Desktop units can be wall mounted. By following these instructions exactly, the NetVanta can be safely mounted to the wall.


- *To avoid damaging the unit, use only the screws included in the shipment when attaching mounting ears to the chassis.*
- *When wall mounting the NetVanta, care must be taken not to damage the power cord. Do not attach the power cord to the building surface or run it through walls, ceilings, floors, or openings in the building structure.*
- *The socket-outlet must be installed near the equipment and must be easily accessible.*

| Instructions for Wall Mounting NetVanta 3120 Series/3130 Series/3140 Desktop | |
|---|---|
| **Step** | **Action** |
| 1 | Decide on a location for the unit. 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-inch to 1-inch thick) to a wall stud.<br>**Important! Mounting to a stud ensures stability. Using sheetrock anchors may not provide sufficient long-term stability.** |
| 3 | Install two #8 PAN head screws (1-inch or greater in length) into the mounted board, following these guidelines and referring to *Figure 13*.<br>• Screws should be spaced horizontally, approximately 5 inches apart. Find exact positioning by using the location of the two keyed insets on the bottom of the unit as a guide.<br>• Screws should be horizontally level with each other.<br>• 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 unit's chassis securely onto the screws. |
| 5 | Proceed to the steps given in *Wall Mounting a Single NetVanta 3140 (P/N 1700341F1) on page 28*. |

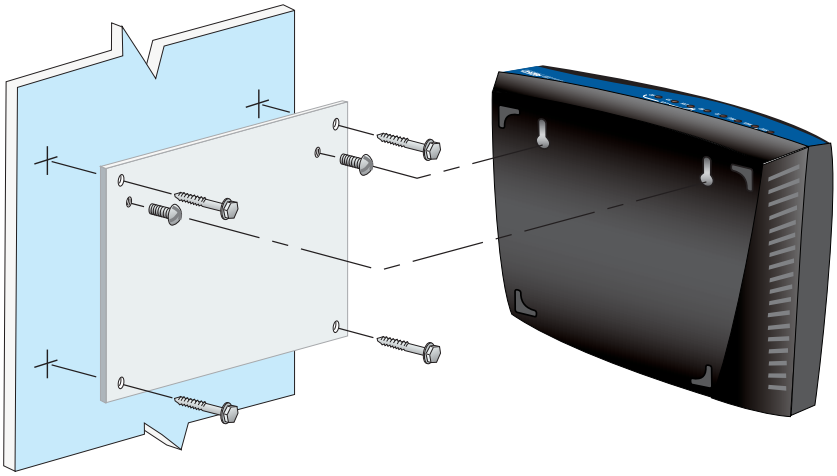

**Figure 13. Wall Mounting the NetVanta 3120 Series/3130 Series/3140 Desktop**

***Wall Mounting a Single NetVanta 3140 (P/N 1700341F1)***

| Instructions for Wall Mounting a Single NetVanta 3140 | |
|---|---|
| **Step** | **Action** |
| 1 | Attach the mounting brackets (P/N 1200884G1) to the chassis using the provided screws (see *Figure 14*). |
| 2 | Decide on a location for the NetVanta. NetVanta 3140 units can be dual wall mounted with the front panel facing up, left, or right. *Figure 14* illustrates the unit mounted with the front panel facing to the left. Keep in mind that the unit needs to be mounted at or above eye level so that the LEDs are viewable. |
| 3 | Prepare the mounting surface by attaching a board (typically plywood, 3/4-inch to 1-inch thick) to a wall stud using #6 to #10 (2.5-inch or greater in length) wood screws.<br>***Important!*** *Mounting to a stud ensures stability. Using sheetrock anchors may not provide sufficient long-term stability.* |
| 4 | Have an assistant hold the unit in position as you install two #6 to #10 wood screws (1 inch or greater in length) through the unit's brackets and into the mounted board. |
| 5 | Proceed to the steps given in *Supplying Power to the Unit on page 34*. |

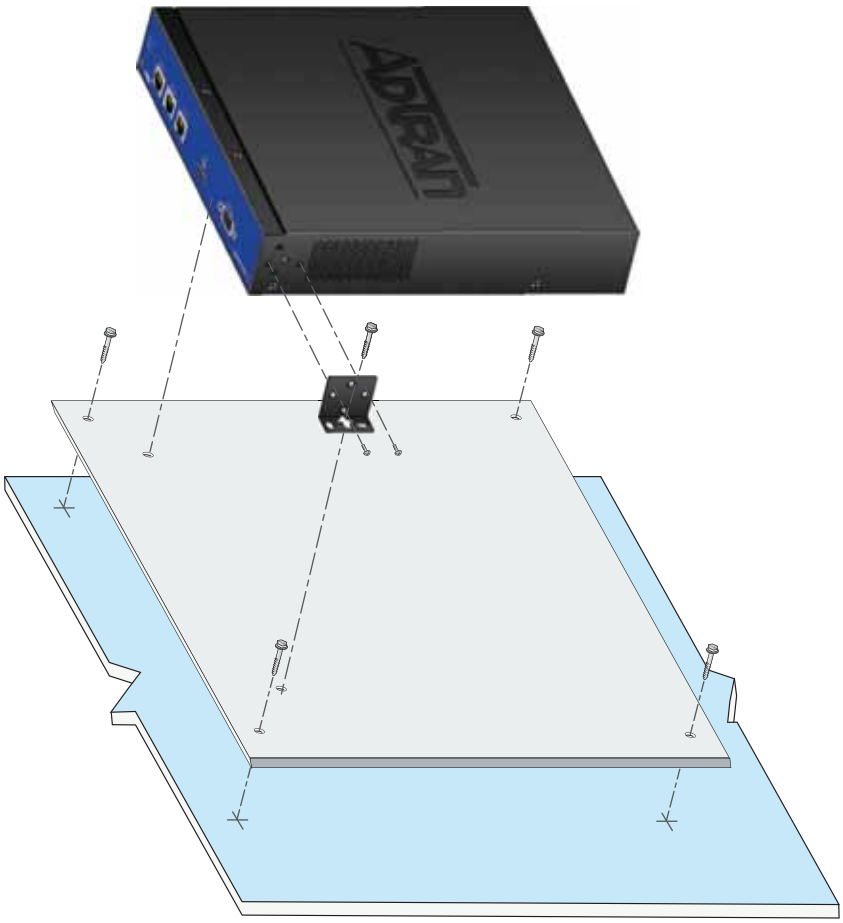


**Figure 14. NetVanta 3140 Single Wallmount Installation**

### *Dual Wall Mounting a NetVanta 3140 (P/N 1700341F1)*

| Instructions for Dual Wall Mounting NetVanta 3140 | |
|---|---|
| **Step** | **Action** |
| 1 | Attach the mounting brackets (P/N 1700512F1) to the two chassis using the provided screws (see *Figure 15*). |
| 2 | Decide on a location for the NetVanta. NetVanta 3140 units can be dual wall mounted with the front panel facing up, left, or right. *Figure 15* illustrates a dual wallmount configuration with the front panel facing to the left. Keep in mind that the unit needs to be mounted at or above eye level so that the LEDs of both units are viewable. |
| 3 | Prepare the mounting surface by attaching a board (typically plywood, 3/4-inch to 1-inch thick) to a wall stud using #6 to #10 (2.5-inch or greater in length) wood screws.<br>***Important!*** *Mounting to a stud ensures stability. Using sheetrock anchors may not provide sufficient long-term stability.* |
| 4 | Have an assistant hold the units in position as you install two #6 to #10 wood screws (1 inch or greater in length) through the unit's brackets and into the mounted board. |
| 5 | Proceed to the steps given in *Supplying Power to the Unit on page 34*. |

CAUTION

*Ensure that the proper mounting orientation is followed for both units being installed in the dual wallmount configuration. Refer to the appropriate hardware installation guide for installation instructions for each unit.*

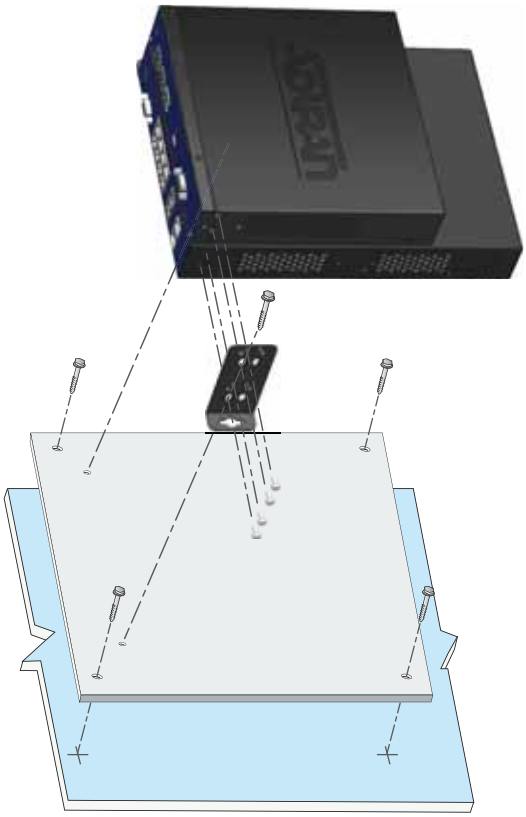

**Figure 15. NetVanta 3140 Dual Wallmount Installation**

### *Rack Mounting the NetVanta 3140 (P/N 1700341F1)*

The NetVanta 3140 is a 1U-high unit that can be mounted into a 19-inch equipment rack using rackmount brackets (P/N 1700511F1) or mounted two units side by side using the optional dual mounting tray (P/N 1700508F1).

The following steps guide you in mounting the NetVanta into a rack.


- *If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature specified by the manufacturer.*
- *Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.*
- *Be careful not to compromise the stability of the equipment mounting rack when installing this product.*
- *Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading the circuit might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.*
- *Reliable grounding of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).*

| Rack Mounting the NetVanta 3140 Using the Rack Mounting Brackets | |
|---|---|
| **Step** | **Action** |
| 1 | Install the rack mounting brackets (1700511F1) on the NetVanta 3140 (see *Figure 16*). To avoid damaging the unit, use only the screws shipped with the mounting brackets when attaching them to the chassis. |
| 2 | To allow proper grounding, scrape the paint from the rack around the mounting holes where the NetVanta will be positioned. |
| 3 | Position the NetVanta in a stationary equipment rack. This unit occupies 1U of space. |
| 4 | Have an assistant hold the unit in position as you install two mounting bolts through the unit's brackets and into the equipment rack using a #2 Phillips-head screwdriver. |
| 5 | Apply power to the unit (refer to *Supplying Power to the Unit on page 34*). |


**Figure 16. NetVanta 3140 Rack Mounting Brackets**

| Rack Mounting the NetVanta 3140 Using the Dual Mounting Tray | |
|---|---|
| **Step** | **Action** |
| 1 | Install the mounting tray (P/N 1700508F1) in a stationary 19-inch equipment rack using the screws provided. |
| 2 | To allow proper grounding, scrape the paint from the rack around the mounting holes where the tray will be positioned. |
| 3 | Position two NetVanta units side by side on the mounting tray lining up the holes in the front of the NetVanta units with the holes in the tabs on the front of the tray (see *Figure 17*). |
| 4 | Insert the provided screws through the tabs into the NetVanta units securing them with a screwdriver. |
| 5 | Apply power to the units (refer to *Supplying Power to the Unit on page 34*). |


**Figure 17. Dual Mounting Tray**

## Supplying Power to the Unit

The NetVanta 3120 Series, NetVanta 3130 Series, and the NetVanta 3140 Desktop units come equipped with a 12 VDC power supply for connecting to the proper power receptacles. The NetVanta 3140 (P/N 1700341F1) comes equipped with either a 100 to 240 VAC auto ranging power supply for connecting to a properly grounded power receptacle. All necessary power cords are shipped with the units.

### *Powering the NetVanta 3120 Series/3130 Series/3140 Desktop*

To power the NetVanta 3120 Series, NetVanta 3130 Series and the NetVanta 3140 Desktop follow these instructions.

| Instructions for Powering the NetVanta 3120 Series/3130 Series/3140 Desktop | |
|---|---|
| **Step** | **Action** |
| 1 | To insert the 12 VDC power connector, pull the outer sheath back from the metal connector, as shown in *Figure 18*. |
| 2 | Insert the connector into the receptacle (labeled **POWER**) on the back of the unit keeping the sheath retracted until the connector is fully inserted into the receptacle. |
| 3 | Release the sheath so that it covers the metal connector. This ensures that the connector will not become disengaged during use. |

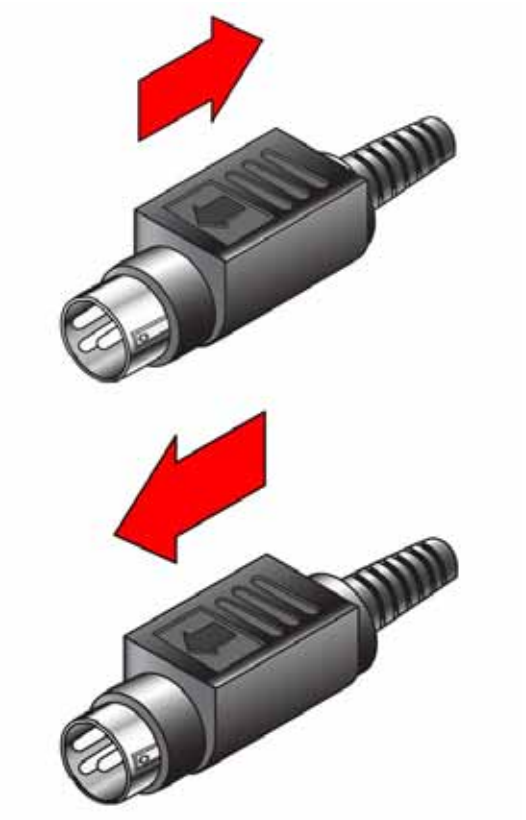

**Figure 18. NetVanta 3100 Series Power Connector**

### *Powering the NetVanta 3140 (P/N 1700341F1)*

All necessary power cords are shipped with the units. To power the NetVanta 3140, insert the appropriate power cord into the back of the unit. Connect the other end of the power cord into a properly grounded AC power source.

Your NetVanta unit is now ready to be configured and connected to the network. For information on configuration for a specific application, refer to the configuration guides provided on the ADTRAN Support Community. For details on the command line interface (CLI), refer to the *AOS Command Reference Guide*. All other related documents are also available online at http://supportforums.adtran.com.

  

# APPENDIX A. CONNECTOR PIN DEFINITIONS

The following tables provide the pin assignments for the NetVanta 3100 Series base units.

## Base Unit Pinouts

**Table A-1. 10/100Base-T Ethernet Port Pinouts**

| Pin | Name | Description |
|---|---|---|
| 1 | TX1 | Transmit Positive (PoE negative rail, switch ports only) |
| 2 | TX2 | Transmit Negative (PoE negative rail, switch ports only) |
| 3 | RX1 | Receive Positive (PoE negative rail, switch ports only) |
| 4, 5 | — | Unused |
| 6 | RX2 | Receive Negative (PoE negative rail, switch ports only) |
| 7, 8 | — | Unused |

**Table A-2. 1000Base-T Gigabit Ethernet Port Pinouts (NetVanta 3140)**

| Pin | Name | Description |
|---|---|---|
| 1 | TRD0+ | Transmit/Receive Positive |
| 2 | TRD0- | Transmit/Receive Negative |
| 3 | TRD1+ | Transmit/Receive Positive |
| 4 | TRD2+ | Transmit/Receive Positive |
| 5 | TRD2- | Transmit/Receive Negative |
| 6 | TRD1- | Transmit/Receive Negative |
| 7 | TRD3+ | Transmit/Receive Positive |
| 8 | TRD3- | Transmit/Receive Negative |

**Table A-3. Console Port Pinouts (NetVanta 3140)**

| Pin | Name | Description |
|---|---|---|
| 1 | DCD | Data Carrier Detect (output) |
| 2 | TXD | Receive Data (output) |
| 3 | RXD | Transmit Data (input) |
| 4 | DTR | Data Terminal Ready (input) |
| 5 | GND | Signal Ground |
| 6 | DSR | Data Set Ready (output) |
| 7 | RTS | Request to Send (input) |
| 8 | CTS | Clear to Send (output) |
| 9 | — | Unused |

**Table A-4. DBU Connector Pinouts**

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

**Table A-5. ADSL Connector Pinouts**

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