



## **NetVanta 100 Series Hardware Installation Guide**

1700412E1	NetVanta 150
4700412E1	NetVanta 150 with Power Supply
4700412E1#IN	NetVanta 150 with International Power Supply
1700405G1	NetVanta 150 Ceiling Mounting Bracket

## Trademarks

Any brand names and product names included in this manual are trademarks, registered trademarks, or trade names of their respective holders.

## To the Holder of the Manual

The contents of this manual are current as of the date of publication. ADTRAN reserves the right to change the contents without prior notice.

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.

## Software Licensing Agreement

Each ADTRAN product contains a single license for ADTRAN-supplied software. Pursuant to the Licensing Agreement, you may: (a) use the software on the purchased ADTRAN device only and (b) keep a copy of the software for backup purposes. This Agreement covers all software installed on the system, as well as any software available on the ADTRAN website. In addition, certain ADTRAN systems may contain additional conditions for obtaining software upgrades.



*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.*



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

Copyright © 2010 ADTRAN, Inc.  
All Rights Reserved.  
Printed in U.S.A.

## Conventions

**NOTE**

*Notes provide additional useful information.*

**CAUTION**

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

**WARNING**

*Warnings provide information that could prevent injury or endangerment to human life.*

## Safety Instructions

When using your 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. 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.
3. 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. They should only be serviced by qualified service personnel.*



*Additional safety guidelines, such as Waste Electrical And Electronic Equipment (WEEE) are given in the NetVanta Safety and Regulatory Information document on the AOS Documentation CD.*

**Save These Important Safety Instructions**

## **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.

## FCC Compliance Notice: Radio Frequency Notice

NetVanta 150 Wireless Access Point ABG



Tested to Comply with  
FCC Standards  
For Home or Office Use

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

### Placement and Range Guidelines

The maximum indoor range for the NetVanta 150 device is 328 feet (100 m). However, the physical placement of your wireless access point (WAP) can affect the operating range of the unit. When determining the placement of your WAP, consider the following guidelines to avoid significant performance degradation or inability to wirelessly connect to the WAP:

- Place the WAP away from potential sources of interference, such as PCs, large metal surfaces, microwaves, and 2.4 GHz cordless phones.
- Place the WAP in an elevated location, such as a high shelf that is near the center of the wireless coverage area for all mobile devices.

### RF Exposure Warning for North America and Australia

**WARNING**

*To meet FCC and other national safety guidelines for RF exposure, the antennas for this device must be installed with a minimum separation distance of 7.9 inch (20 cm) from any person. The antennas shall not be colocated with any other antenna or radio transmitter.*

## Notification for Devices with Detachable Antennas

The NetVanta 150 has been designed to operate with the antennas listed below, and to have a maximum gain of 2 dB (for the 802.11bg radio) and 3 dB (for the 802.11a radio). Antennas not included in this list or having a gain greater than 2 dB (for the 802.11bg radio) and 3 dB (for the 802.11a radio) are strictly prohibited for use with this device. The required antenna impedance is 50 ohms. To reduce potential radio interference to other users, the antenna type and its gain should be chosen so that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

A current list of acceptable antennas is shown below.

### List of Acceptable Antennas

Model	Manufacturer
C919-51001-A	Wha Yu

### Additional Notes

1. To reduce the potential for harmful interference to co-channel mobile satellite systems, the NetVanta 150 is intended only for indoor use in the 5150 to 5250 MHz band.
2. The maximum antenna gain permitted (for devices in the 5250 to 5350 MHz and 5470 to 5725 MHz bands) should comply with the e.i.r.p. limit. The NetVanta 150 is not configurable for these frequency ranges in the FCC coverage areas.
3. The NetVanta 150 complies with the maximum antenna gain permitted (for devices in the 5725 to 5825 MHz band) for the e.i.r.p. limits specified for point-to-point and nonpoint-to-point operation.
4. High-power radars are allocated as primary users (meaning they have priority) of the 5250 to 5350 MHz and 5650 to 5850 MHz bands and these radars could cause interference to LAN devices.

## Wireless Radio Channel Ranges

The following table lists by country the channels support by the ADTRAN WAPs.

Country	802.11a (5 GHz) Wireless Radios Channels	802.11bg (2.4 GHz) Wireless Radios Channels
Asia	149, 153, 157, 161	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Australia	36, 40, 44, 48, 52, 56, 60, 64, 149, 153, 157, 161, 165	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Canada	36, 40, 44, 48, 52, 56, 60, 64, 149, 153, 157, 161, 165	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Denmark	36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Europe	34, 38, 42, 46	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Finland	36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
France	34, 38, 42, 46	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Germany	36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Ireland	36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Italy	36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Japan	34, 38, 42, 46	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Mexico	36, 40, 44, 48, 149, 153, 157, 161, 165	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Netherlands	36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
New Zealand	36, 40, 44, 48, 52, 56, 60, 64, 149, 153, 157, 161, 165	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Norway	36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Puerto Rico	36, 40, 44, 48, 149, 153, 157, 161, 165	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
South America	802.11a not supported	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Spain	36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Sweden	36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Switzerland	34, 38, 42, 46	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
United Kingdom	36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
United States	36, 40, 44, 48, 149, 153, 157, 161, 165	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

## 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 radioélectriques applicables aux appareils numériques de Class A prescrites dans la norme sur le matériel brouilleur: “Appareils Numériques,” NMB-003 édictée par le ministre des Communications.



**Service and Warranty**

For information on the service and warranty of ADTRAN products, visit the ADTRAN website at <http://www.adtran.com/support>.



# Table of Contents

<b>Introduction</b> .....	<b>17</b>
The NetVanta Solution .....	17
Features and Specifications .....	17
Unpack and Inspect the Unit .....	18
Contents of ADTRAN Shipments .....	18
<b>Physical Description</b> .....	<b>19</b>
Reviewing the Front Panel Design .....	19
Front Panel LEDs .....	19
Reviewing the Rear Panel Design .....	20
Rear Panel Interfaces .....	20
<b>Unit Installation</b> .....	<b>21</b>
Installing the Antennas .....	21
Mounting Options .....	21
Wall Mounting .....	22
Ceiling Mounting .....	23
Getting Started .....	24
Supplying Power to the WAP .....	24
Connecting to the WAP .....	24
Factory Default Switch .....	25
<b>Appendix A. Connector Pin Definitions</b> .....	<b>27</b>
<b>Index</b> .....	<b>29</b>



## List of Figures

Figure 1.	NetVanta 150 Front Panel Layout . . . . .	19
Figure 2.	NetVanta 150 Rear Panel Layout . . . . .	20
Figure 3.	Wall Mounting the NetVanta 150 . . . . .	22
Figure 4.	Ceiling Mounting the NetVanta 150 (Exploded View) . . . . .	23
Figure 5.	Ceiling Mounting the NetVanta 150 (Side View) . . . . .	24



## List of Tables

Table 1.	NetVanta 150 WAP LEDs .....	19
Table A-1.	10/100Base-T Ethernet Port Pinouts .....	27





## 1. INTRODUCTION

This hardware installation guide describes the NetVanta 150, details basic functionality, gives installation instructions, and lists unit specifications. For more information on configuration for a specific application, refer to the quick configuration documents provided on the ADTRAN website at <http://kb.adtran.com>. For details on the command line interface (CLI), refer to the *AOS Command Reference Guide*, also on the website.

### The NetVanta Solution

The NetVanta 150 is a wireless access point (WAP) designed for use in conjunction with an access controller to provide a combined solution for wireless local area networks (WLANs). The NetVanta 150 can provide a secure gateway for wireless clients to connect to the wired network provided by NetVanta switch and router products. This unit offers the following features:

- Power from a Power over Ethernet (PoE) enabled RJ-45 Ethernet connection or from an ADTRAN external 12 VDC converter supply.
- IEEE 802.11a, 802.11b, and 802.11g wireless access support. (It supports concurrent 802.11a and 802.11bg connections.)
- Two integral RP-SMA connectors for connecting standard dual-band antennas.
- Two dual-band antennas (included as standard equipment).
- A single 10/100Base-T Ethernet port for connection to the NetVanta switch/router product.
- Four LEDs to indicate status, WAN/LAN activity, and radio activity information.
- Reset switch for restoring default configuration.

The NetVanta 150 configuration is provided through a wireless fidelity (WiFi) controller-capable NetVanta switch/router on the WAP's local broadcast domain.

### Features and Specifications

The following list highlights the major features of the NetVanta 150 WAP.

- IEEE 802.11a wireless radio
- IEEE 802.11bg wireless radio
- Concurrent 802.11a and 802.11bg connections
- Two rear-panel dual-band RP-SMA detachable antennas
- One 10/100Base-T Ethernet interface
- 802.3af PoE support
- WEP/WPA/WPA2 wireless security
- Four front panel LED indicators
- One rear panel reset switch
- 802.11h support
- 802.11j support
- Draft IEEE 802.11e WMM quality of service (QoS) support
- WMM WiFi certified

- Hardware encryption support for the WiFi protected access (WPA) and IEEE 802.11i security specifications provides Advanced Encryption Standard (AES), Temporal Key Integrity Protocol (TKIP), and Wired Equivalent Privacy (WEP)
- 802.11bg radios configurable in the 2412 to 2462 MHz band in FCC coverage areas (refer to *Wireless Radio Channel Ranges on page 8* for channels supported in FCC coverage areas)
- 802.11a radios configurable in the 5180 to 5220 MHz band for FCC coverage areas (refer to *Wireless Radio Channel Ranges on page 8* for channels supported in FCC coverage areas)
- Dynamic frequency selection/transmit power control (DFS/TPC) for international operation
- Dimensions: 1.8-inch H x 7.5-inch D x 5.4-inch W (45 mm H x 190 mm D x 137 mm W)

**Environmental**

- Operating Temperature: 32°F to 122°F (0°C to 50°C)
- Storage/Transport Temperature: 68°F to 185°F (20°C to 85°C)
- Humidity: Up to 95 percent, noncondensing

**Unpack and Inspect the Unit**

The NetVanta 150 WAP is shipped in its own cardboard shipping carton. Open the carton carefully, and avoid slicing too deeply 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>).

**Contents of ADTRAN Shipments**

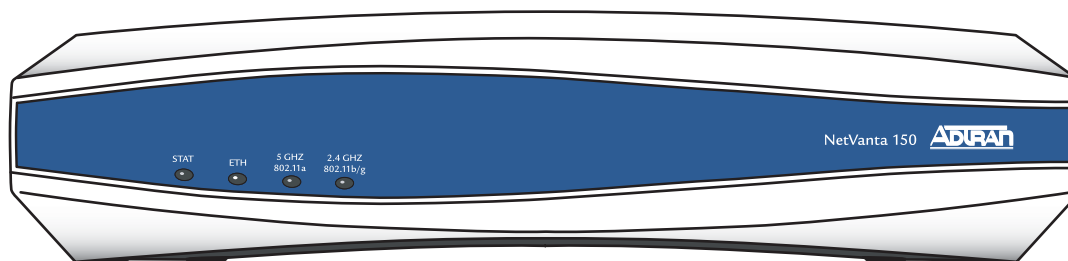
Shipment of the NetVanta 150 WAP includes the following items:

- NetVanta 150 base unit
- Two dual-band antennas
- *NetVanta 150 Wireless Access Point Quick Start Guide*
- Ethernet cable
- Optional power supply

## 2. PHYSICAL DESCRIPTION

### Reviewing the Front Panel Design

*Figure 1* shows the NetVanta 150 front panel.



**Figure 1. NetVanta 150 Front Panel Layout**

#### Front Panel LEDs

The NetVanta 150 WAP has four LED indicators on the front panel: a single bi-color LED for the **STAT** condition and three single color LEDs for the **ETH**, **5 GHz/802.11a**, and **2.4 GHz/802.11bg** conditions. *Table 1* describes these LEDs.

**Table 1. NetVanta 150 WAP LEDs**

LED	Activity	Indication
<b>STAT</b>	Green (flashing)	Unit is powering up. On power up, the <b>STAT</b> LED flashes until the unit is ready for service. The <b>STAT</b> LED also flashes during firmware upgrade.
	Green (solid)	Power is on.
	Red (solid)	An error condition is present on the unit.
<b>ETH</b>	Off	There is no local area network (LAN) activity on the Ethernet port (or unit is powered off).
	Green (flashing)	LAN activity is present (traffic in either direction).
	Green (solid)	Powered device is connected to the Ethernet port (i.e., link integrity).
<b>5 GHz/802.11a</b>	Off	There is no 802.11a wireless activity detected or the radio is disabled.
	Green (flashing)	Data is being transmitted or received via the 802.11a wireless band. Data includes network traffic, as well as user data.
<b>2.4 GHz/802.11b/g</b>	Off	There is no 802.11g or 802.11b wireless activity detected or the radio is disabled.
	Green (flashing)	Data is being transmitted or received via the 802.11bg wireless band. Data includes network traffic, as well as user data.

## Reviewing the Rear Panel Design

Figure 2 shows the NetVanta 150 WAP rear panel. The unit accommodates a 12 VDC power supply.

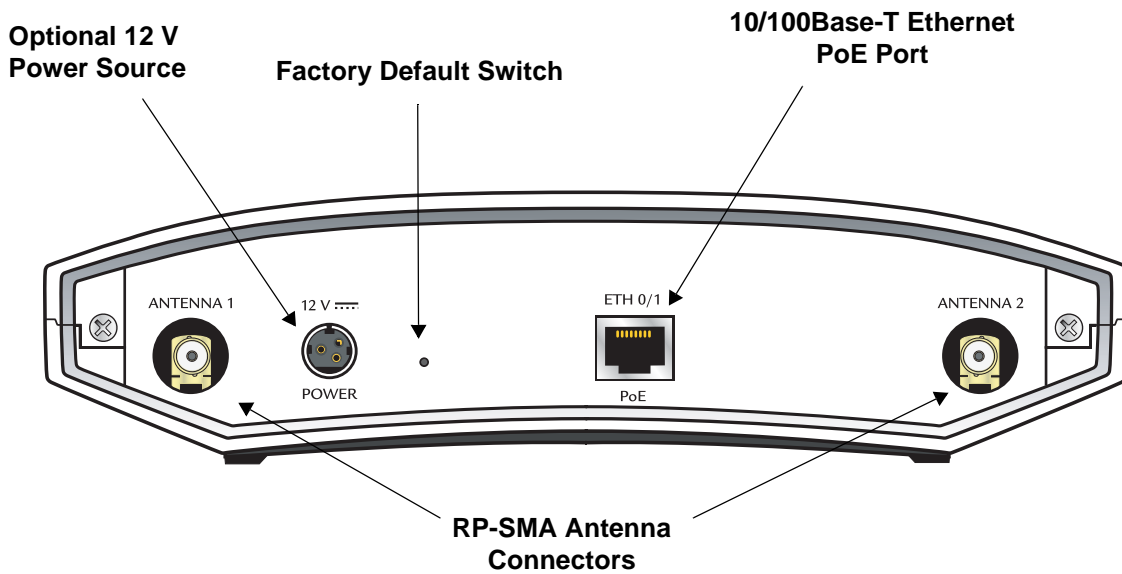


Figure 2. NetVanta 150 Rear Panel Layout

### Rear Panel Interfaces

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

The **ETH 0/1** port on the NetVanta 150 is an RJ-45 connector with PoE capability. See [Table A-1 on page 27](#) for the Ethernet port pinouts. The Ethernet port provides the following:

- 10Base-T or 100Base-T with a single connector
- Autonegotiation
- 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.

#### **WARNING**

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



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

### Installing the Antennas

The NetVanta 150 WAP ships with two dual-band RP-SMA detachable antennas. These should be installed before mounting or operating the unit.

Instructions for Attaching the Antennas	
Step	Action
1	Place either of the two antennas directly onto the antenna port on the rear panel labeled <b>Antenna 1</b> . See <a href="#">Figure 2 on page 20</a> to locate the antenna ports on the rear panel.
2	Twist the antenna onto the threads until it is secure.
3	Repeat Step 2 with the second antenna, attaching it to the <b>Antenna 2</b> port.
4	Once both antennas are secured, the antennas can be flexed at the joint to improve performance.

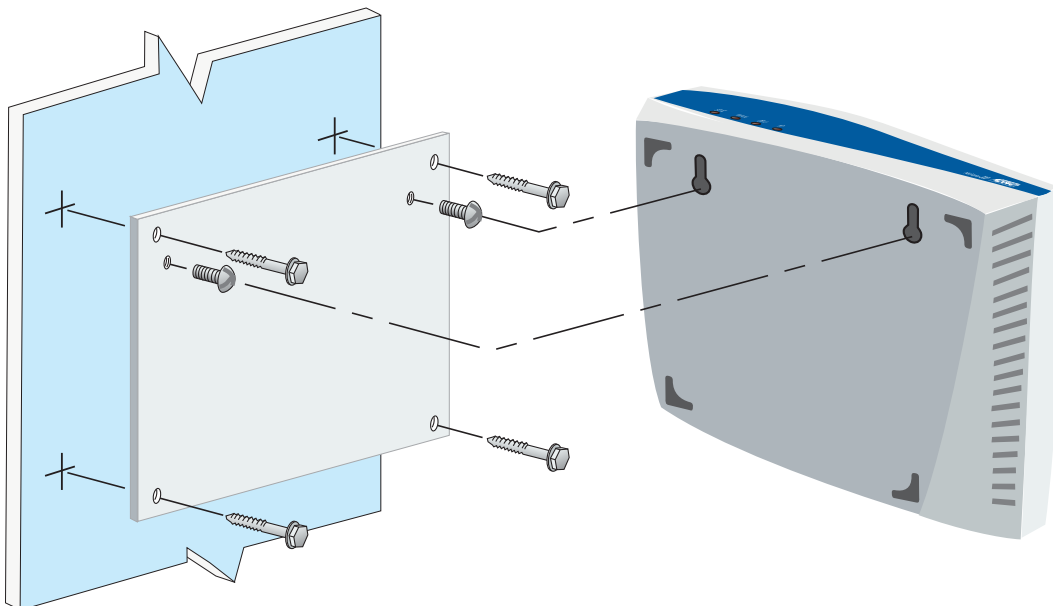
### Mounting Options

The NetVanta 150 WAP can be installed in a tabletop, wall mounted, or ceiling mounted configuration. If the WAP is used in a tabletop configuration, proceed to [Getting Started on page 24](#).

## Wall Mounting

The NetVanta 150 can be safely mounted on the wall by following these steps:

Instructions for Wall Mounting	
Step	Action
1	Install the antennas on the WAP. Refer to <a href="#">Installing the Antennas on page 21</a> .
2	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.
3	Prepare the mounting surface by attaching a board (typically plywood, 3/4-inch to 1-inch thick) to a wall stud. <b>Important! Mounting to a stud ensures stability. Using sheetrock anchors may not provide sufficient long-term stability.</b>
4	Install two #8 PAN-head wood screws (1-inch or greater in length) into the mounted board, following these guidelines and referring to <a href="#">Figure 3</a> : <ul style="list-style-type: none"> <li>• Screws should be spaced horizontally, approximately 4 inches apart.</li> <li>• Screws should be horizontally leveled with each other.</li> <li>• 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.</li> </ul>
5	Slide the keyed insets on the bottom of the unit's chassis securely onto the screws.
6	Proceed to the steps given in <a href="#">Getting Started on page 24</a> .



**Figure 3. Wall Mounting the NetVanta 150**

## Ceiling Mounting

The NetVanta 150 can be safely mounted on the ceiling by following these steps:

Instructions for Ceiling Mounting	
Step	Action
1	Install the antennas on the WAP. Refer to <a href="#">Installing the Antennas on page 21</a> .
2	Using the mounting bracket (P/N 1700405G1) as a template, drill three holes in the ceiling tile large enough for the #8-32 bolts.
3	Attach the mounting bracket to the ceiling tile using the provided #8-32 bolts, washers, and nuts in the order shown in the Exploded View in <a href="#">Figure 4</a> below.
4	Insert the downward extending prongs of the mounting bracket into the keyholes on the bottom of the unit as indicated by the Number 1 in the Side View in <a href="#">Figure 5 on page 24</a> .
5	Slide the unit backwards until the hook on the mounting bracket slides over the unit's plastic casing, and the mounting bracket prongs are locked into the unit's keyholes as indicated by the Number 2 in the Side View in <a href="#">Figure 5 on page 24</a> .
6	Attach all wires to the bracket using a wire tie through the hole located in the back of the hook shown in the Bracket Detail in <a href="#">Figure 5 on page 24</a> .
7	Proceed to the steps given in <a href="#">Getting Started on page 24</a> .

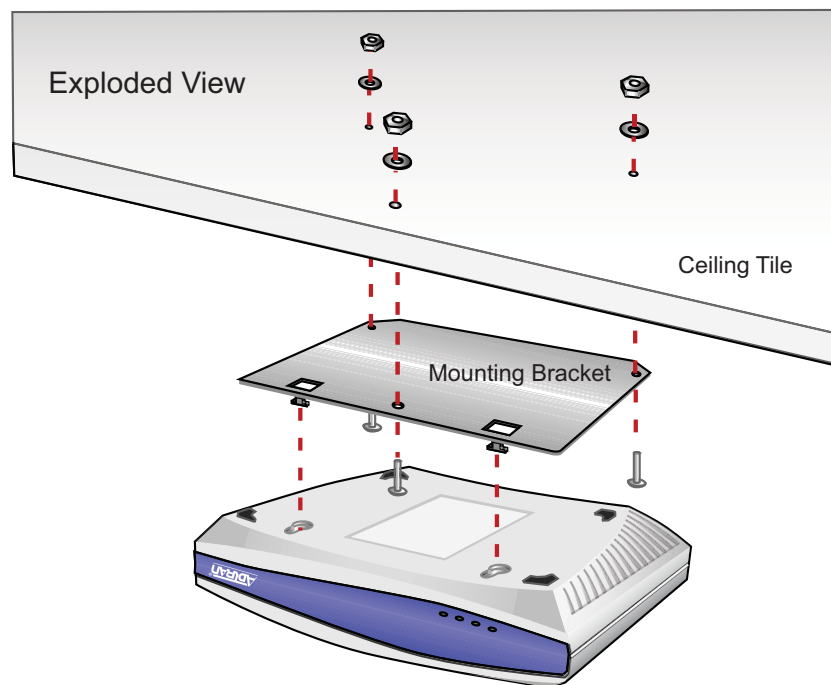


Figure 4. Ceiling Mounting the NetVanta 150 (Exploded View)

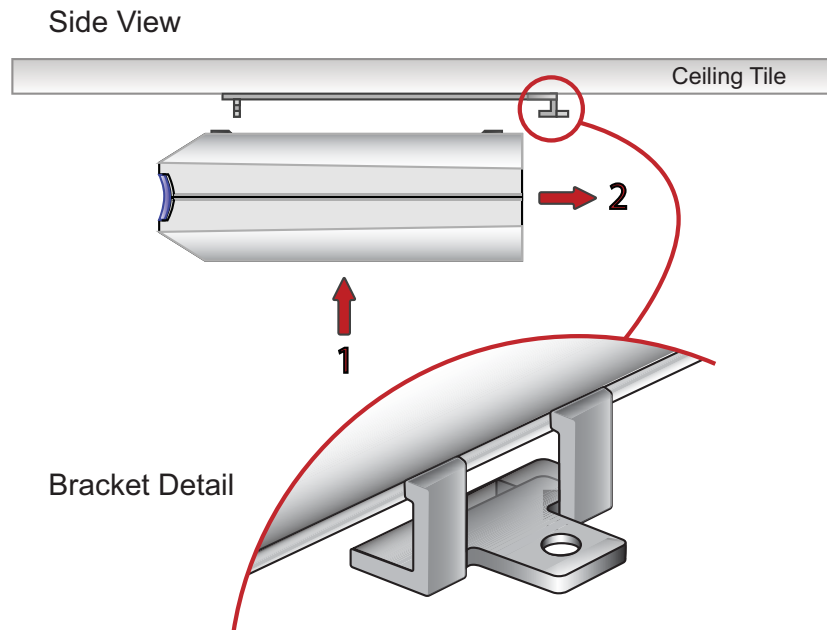


Figure 5. Ceiling Mounting the NetVanta 150 (Side View)

## Getting Started



*The 10/100Base-T Ethernet interface (**ETH 0/1**) **MUST NOT** be metallically connected to interfaces that connect to the outside plant (OSP) or its wiring. This interface is designed for use as an intrabuilding interface only. The addition of primary protectors is not sufficient protection to connect this interface metallically to OSP wiring.*

## Supplying Power to the WAP

The NetVanta 150 WAP can be powered either by connecting the **ETH 0/1** Power over Ethernet (**PoE**) connector to a PoE-capable NetVanta controlling unit or connecting the 12 VDC external power supply to the **POWER** connection. Both of these connectors are on the rear of the unit (see the [Figure 2 on page 20](#)). The external power supply is not automatically shipped with the NetVanta 150 WAP but a domestic (P/N 4700412E1) or international (P/N 4700412E1#IN) bundle containing the appropriate external power supply can be requested from ADTRAN or your reseller.

## Connecting to the WAP

Using the provided Ethernet cable, connect the **ETH 0/1** port on the back of the NetVanta 150 WAP to the Ethernet port of the NetVanta controlling unit or to an Ethernet port on a unit that can be accessed by the controlling unit.



***Factory Default Switch***

- Press the factory default switch once to reboot the unit.
- Press and hold the reset factory default switch for 30 seconds to overwrite the existing configuration with the default configuration and reboot the unit.



## APPENDIX A. CONNECTOR PIN DEFINITIONS

The following table provides the pin assignments for the NetVanta 150.

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

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



# Index

## Numerics

10/100BaseT Ethernet interface 20  
    pinouts 27  
802.11a 17, 19  
802.11b 17  
802.11bg 17, 19  
802.11g 17

## A

antennas 17, 18, 21

## C

ceiling mounting 23  
channel ranges 8  
connecting to unit 24  
contents of shipment 18

## E

Ethernet interface 20  
    LEDs 19  
    pinouts 27

## F

factory default switch 25  
features 17  
front panel 19

## G

getting started 24

## I

installation 21  
interfaces 20

## L

LEDs 19

## M

mounting options 21

## P

physical description 19  
pinouts  
    10/100BaseT 27  
power 24  
power over ethernet 24

## R

radio channels 8  
rear panel 20  
reset switch 25

## S

safety instructions 4  
shipping contents 18  
specifications 17

## U

unpacking and inspecting the unit 18

## W

wall mounting 22  
warranty 9  
WEEE 4  
WEP 17  
WiFi 17  
wireless radio channel ranges 8  
WPA 17  
WPA2 17

