

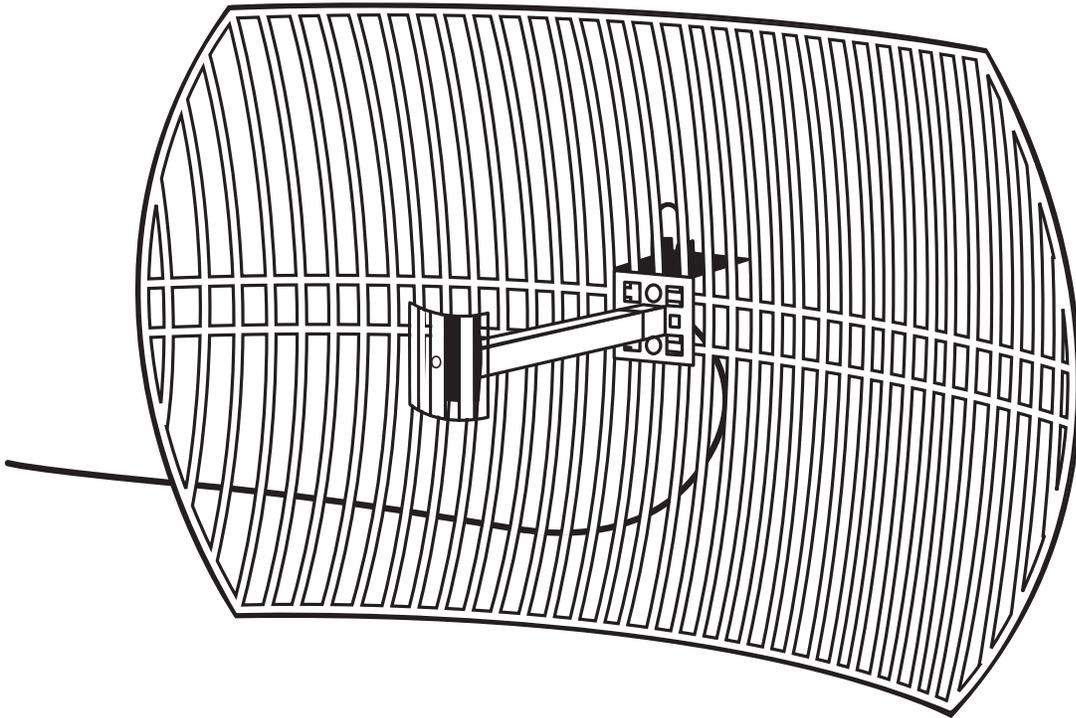


BLACK BOX[®]
NETWORK SERVICES



JUNE 2000
LW013

24-dBi Directional Antenna



**CUSTOMER
SUPPORT
INFORMATION**

Order **toll-free** in the U.S.: Call **877-877-BBOX** (outside U.S. call **724-746-5500**)
FREE technical support 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
Mailing address: **Black Box Corporation**, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

TRADEMARKS USED IN THIS MANUAL

Any trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.

1. Specifications

Antenna:

Reflector—Cast magnesium

Gain—24 dBi

Frequency—2150 to 2700 MHz

Impedance—50 ohms

VSWR—1.4:1 maximum

Polarization—Vertical or horizontal

Connector—N-type

Rejection—26 dB minimum

Front/Back Ratio—31 dB minimum

Dispersion—6°H/10°V

General:

Size—24"H x 36"W x 15"D (61 x 91.4 x 38.1 cm)

Weight—4.9 lb. (2.2 kg)

Cable:

Type—LMR 400

Impedance—50 ohms

Attenuation—6.8 dB/100 ft. @ 2.5 GHz or 2500 MHz

Length—2 ft. (0.6 m) with 50-ft. (15.2-m) extension

Connector—N-type, copper SMA

2. Introduction

2.1 Description

This high-gain directional antenna is used with Black Box Pro Series Wireless Ethernet adapters. Use it with the LW0055A, LW0056A, LW0057A, LW0058A, or LW0059A for outdoor applications in which higher gain and larger distances between sites are required. It has a narrow beamwidth of 6°, which increases the sensitivity to alignment inaccuracy, but decreases the fading caused by multipath propagation.

You can mount the antenna on a mast with a tripod base, or fasten it with guy wires. 50 feet (15.2 m) of low-loss cable and mounting hardware is included to attach the antenna to a mast of 1 to 2 inches (2.5 to 5.1 cm).

2.2 What the Package Includes

Check to make sure you've received the following items. If anything is missing or damaged, please contact Black Box at 724-746-5500.

2.2.1 PACKED IN FEED BOX

- (1) Feed assembly
- (1) Sub-reflector
- (1) #6 x ½" stainless screw
- (2) Stainless ¼ x 20" hex nuts
- (2) Stainless lock washers
- (2) Stainless carriage bolts

2.2.2 PACKED IN REFLECTOR BOX

- (2) Reflector halves
- (2) Stainless U-bolts
- (2) Mast clamps
- (1) Mounting "L" shaped bracket
- (4) Keps nuts
- (4) #8-32 machine screws
- (6) Stainless lock washers
- (2) Stainless carriage bolts
- (1) Stainless flat plate washer

3. Assembly

Figure 3-1 shows the antenna in position for horizontal polarity. **Figure 3-2** shows it in position for vertical polarity.

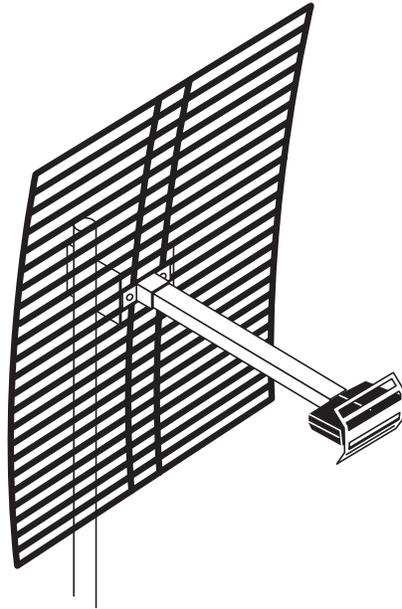


Figure 3-1. Horizontal Polarity.

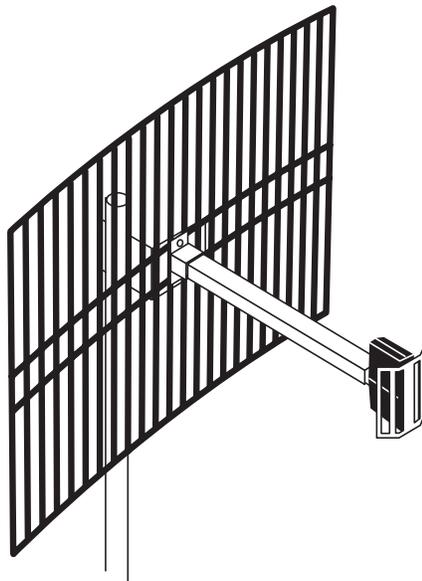


Figure 3-2. Vertical Polarity.

NOTE

Loosely tighten all hardware until the antenna is completely assembled and then tighten securely.

1. To assemble the two halves, insert the (4) #8-32 machine screws through the front. Secure with the keps nuts on the back (see **Figure 3-3**).

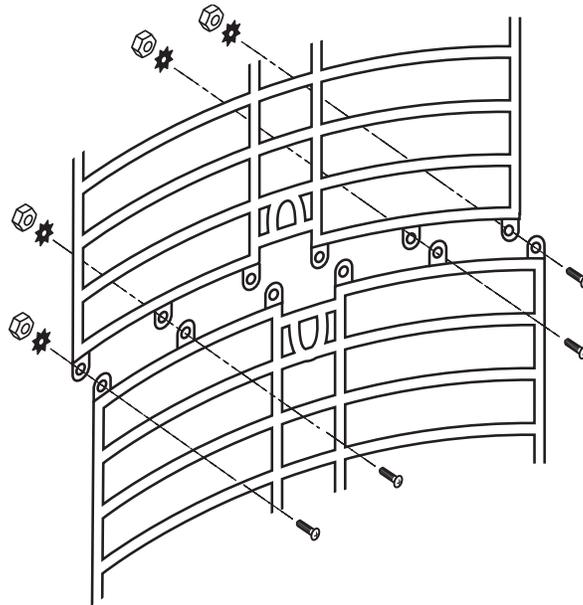


Figure 3-3. Securing the Antenna with the Keps Nuts.

2. Place the sub-reflector on the front of the feed and secure it with the #6 x 1/2" stainless screw. See **Figure 3-4**.

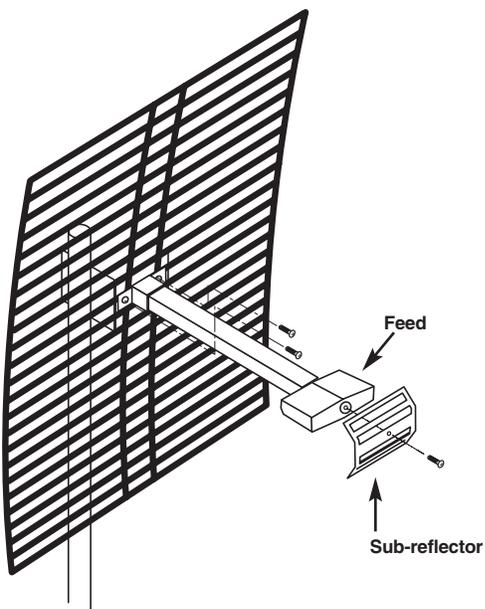


Figure 3-4. Securing the Sub-Reflector on the Front of the Feed.

24-DBI DIRECTIONAL ANTENNA

For Horizontal Polarity:

Refer to **Figure 3-1** for proper feed alignment.

For Vertical Polarity:

Refer to **Figure 3-2** for proper feed alignment.

3. Determine the polarity of the antenna. (See **Figures 3-1** and **3-2**.)
4. Place the “L” bracket on the back of the antenna. Insert two carriage bolts from the front (see **Figure 3-4**) to attach. Secure on the back with the lock washers and nuts (see **Figure 3-5**).

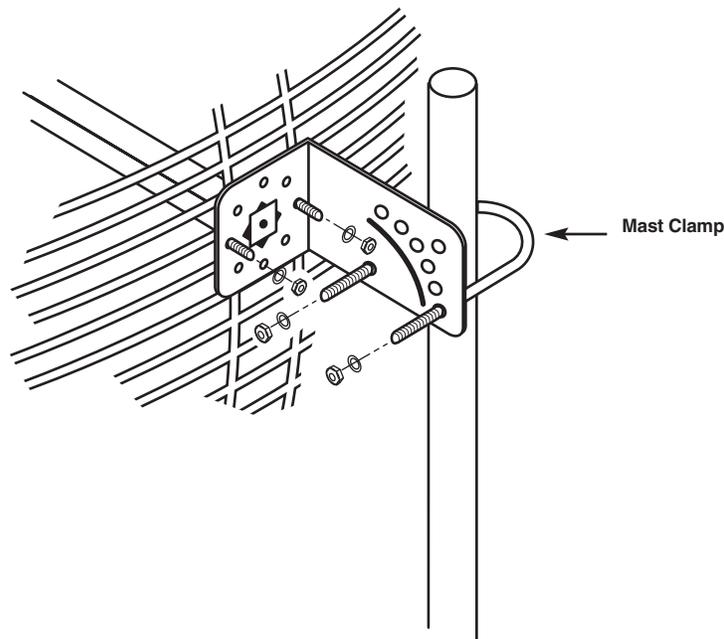


Figure 3-5. Attaching the “L” Bracket.

5. Re-check the dipole feed assembly for the proper polarity (see **Figures 3-1** and **3-2**).
6. Attach the feed on the front with two carriage bolts. Secure on the back with the lock washers and nuts (see **Figure 3-4**),
7. Place the two mast clamps on the two U-bolts (see **Figure 3-6**). Fasten the U-bolts on the “L” bracket with the four lock washers and nuts (see **Figure 3-5**).

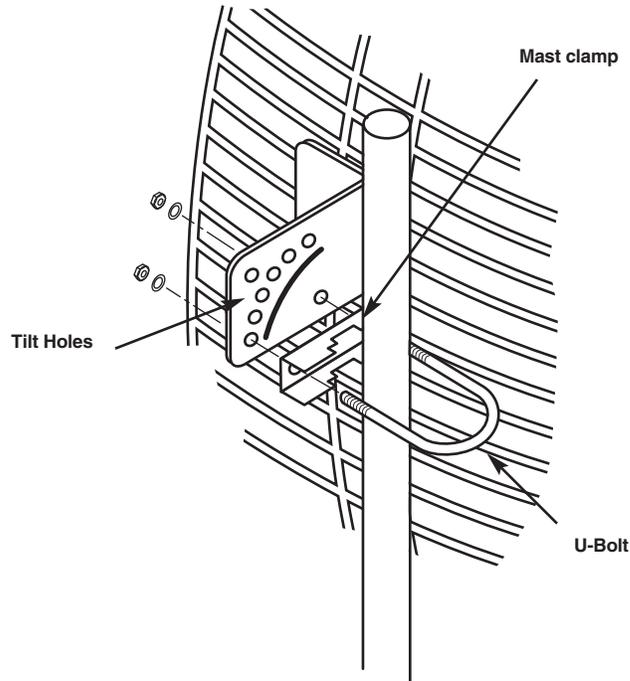


Figure 3-6. Placing the Mast Clamps on the U-Bolts.

NOTE

By eliminating one mast clamp and U-bolt, the optional fixed tilt holes provide elevation in 10-degree increments. We do not recommend this under high wind conditions.

- 8. Use the flat plate washer on the adjustable tilt slot to secure the antenna to the required elevation.

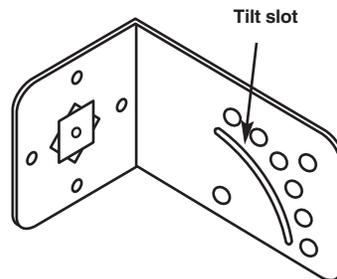


Figure 3-7. Tilt Slot.



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