



105 Bonnie Drive  
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## PRODUCT INFORMATION BULLETIN

### OMNI DIRECTIONAL BASE ANTENNA

900MHz

**MODEL 49-3101 / S8960B**

#### DESCRIPTION

This omni-directional base antenna is designed to receive RF signals from any direction. Used with our 900MHz Air-Eagle RF Systems, this antenna will ensure reliable communications from multiple locations.

#### WARNING

**THIS ANTENNA IS AN ELECTRICAL CONDUCTOR. CONTACT WITH POWER LINES CAN RESULT IN DEATH OR SERIOUS INJURY. DO NOT INSTALL THIS ANTENNA WHERE THERE IS ANY POSSIBILITY OF CONTACT WITH OR HIGH VOLTAGE ARC-OVER FROM POWER CABLES OR SERVICE DROPS TO BUILDINGS. THE ANTENNA, SUPPORTING MAST AND/OR TOWER MUST NOT BE CLOSE TO ANY POWER LINES DURING INSTALLATION, REMOVAL OR IN THE EVENT PART OF THE SYSTEM SHOULD ACCIDENTALLY FALL. FOLLOW THE GUIDELINES FOR ANTENNA INSTALLATION RECOMMENDED BY THE U.S. CONSUMER PRODUCT SAFETY COMMISSION AND LISTED IN THE ENCLOSED PAMPHLETS.**

#### INSTALLATION

1. Mount the antenna in a convenient location, **at least 3 feet from other antennas or physical obstructions.** For maximum performance ensure that the antenna mast does not extend above the metal mounting area of the antenna.  
**IMPORTANT** – The antenna mast used to mount the antenna **MUST** be *earth grounded* by a grounding rod kit or the antenna mast must be metal and set in the ground at least 18" inches – Failure to do so may result in static electricity build-up that will damage your receiver.
2. Find the shortest, most direct route to run the coax cable from the antenna to the transmitter or receiver.
3. Connect the N-male connector from the coax cable to the N-female connector on the base antenna.
4. Connect the TNC-male connector on the coax cable to the TNC-female connector on the transmitter or receiver being installed.
5. **Wrap supplied vinyl mastic tape around all outdoor coax connections to prevent water entry. This step is extremely important to ensure reliable communications in all weather conditions.**



#### SPECIFICATIONS

|                    |                 |
|--------------------|-----------------|
| Frequency, MHz     | 902-928MHz      |
| Gain dBd           | Unity           |
| VSWR (NOMINAL)     | 1.5:1           |
| Bandwidth          | 64              |
| Connector (Female) | N               |
| Mast Diameter      | 1.25" to 2"     |
| Height             | 17 1/2"         |
| Enclosure Material | Gray Fiberglass |
| Weight             | .56 lbs         |

#### ORDERING INFORMATION

| Coaxial Cable                                                                                                                                                                                                                                                      |             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>IMPORTANT</b> – When specifying coaxial cable lengths, predetermine the shortest possible distance from the antenna to the transmitter/receiver. This will provide maximum RF output from the TX/RX to the antenna, as well as keep antenna costs to a minimum. |             |
| 5' Flex 3/16" Coax w/connectors                                                                                                                                                                                                                                    | 49-4000-5   |
| 15' Flex 3/16" Coax w/connectors                                                                                                                                                                                                                                   | 49-4000-15  |
| 25' Flex 3/16" Coax w/connectors                                                                                                                                                                                                                                   | 49-4000-25  |
| 40' Flex 3/16" Coax w/connectors                                                                                                                                                                                                                                   | 49-4000-40  |
| 60' Flex 3/16" Coax w/connectors                                                                                                                                                                                                                                   | 49-4000-60  |
| 80' Flex 3/16" Coax w/connectors                                                                                                                                                                                                                                   | 49-4000-80  |
| 100' Flex 3/16" Coax w/connectors                                                                                                                                                                                                                                  | 49-4000-100 |
| Miscellaneous                                                                                                                                                                                                                                                      |             |
| Vinyl Mastic Sealing Tape, 4" Pcs.                                                                                                                                                                                                                                 | 99-HDW-0061 |
| TNC "T" Adapter (For dual antenna applications)                                                                                                                                                                                                                    | 49-5001     |



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### Mounting:

The mounting brackets provided with the antenna will accommodate a 1.25 to 2 inch (3.2 to 5.1 cm) mast as shown in the figure. A 1.5" (3.8 cm) OD or larger tubing mast should be used. If multiple antennas are mounted on the same mast, it is important to place this antenna at least 39 inches (1 m) from the others to keep interaction to a minimum. Attach the aluminum mounting brackets to the base of the omni antenna.

To do this, slide the two mounting clamps (228) on from the top of the antenna. Both clamps should slide over the aluminum base sleeve of the antenna. Place one clamp next to the rivets in the base and the other one near the top of the aluminum base tube. Hand tighten the mounting brackets in place using the screws (214), lock washers (84) and nuts (85). Attach the danger label (326) to the antenna base. Attach the antenna to the mast using the 2.5 inch (6.35 cm) U-bolts (404), lock washers (119), and nuts (118). **Make sure that the mast does not protrude above the metal base tube of the omni antenna.**

After the antenna is properly aligned, tighten all the nuts.

| KEY | P/N              | DISPLAY                                                                             | DESC             | SIZE                            | QTY |
|-----|------------------|-------------------------------------------------------------------------------------|------------------|---------------------------------|-----|
| 326 | 290326           |  | DANGER LABEL     |                                 | 1   |
| 84  | 010084           |  | SS LOCK WASHER   | 1/4" (.6 cm)                    | 2   |
| 85  | 010085           |  | SS HEX NUT       | 1/4" (.6 cm)                    | 2   |
| 118 | 010118           |  | SS HEX NUT       | 5/16" (.8 cm)                   | 4   |
| 119 | 010119           |  | SS LOCK WASHER   | 5/16" (.8 cm)                   | 4   |
| 214 | 010214           |  | SS MACHINE SCREW | 1/4-20 x 3/4" (1.9 cm)          | 2   |
| 228 | 323228           |  | MOUNTING BRACKET |                                 | 2   |
| 404 | 010404           |  | SS U-BOLT        | 2-7/16" x 3-1/4" (6.2 x 8.2 cm) | 2   |
| AT  | S8063B<br>S8963B |                                                                                     | OMNI ANTENNA     | 35" (89 cm)                     | 1   |

### Connector Attachment:

This antenna has a pigtail feed with a female N-connector which provides great flexibility during installation. Dress the pigtail down the mast and connect it to the feedline. Weatherproof the connectors and attach the pigtail and the feedline to the mast as shown using cable ties or tape to prevent movement.

### Other considerations:

At these frequencies the loss in transmission lines is quite high, typically 1 dB for every 8-10 feet of moderate coax cable. Therefore, you should use a low loss and short feedline.

