

43508 Safecom Antenna Installation Instructions

1.0 Introduction

The antenna you have purchased has been designed to give you the best possible performance for a variety of installation environments. The 43508 is an omnidirectional antenna used for transmission of RF signals in the 160 to 174 MHz (VHF) frequency range.

2.0 Specifications

Frequency Range:	160 - 174 MHz (VHF)
Pattern of Radiated Signal:	Omnidirectional
VSWR:	Less than 1.5 to 1
Power Rating:	200 watts
Gain Factor:	2 dBi/0dBd. 4.5dBi with a ground plane.
Antenna Rod:	17-7 ph Quadplated stainless steel, 30½ inches (77.5 cm) long
Cable:	17.5 feet (5.3 m) RG58A/U Coaxial Cable. BNC connector included.

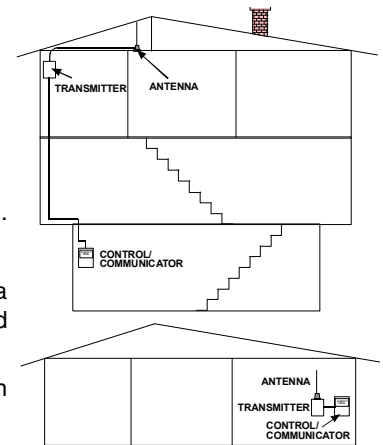
3.0 Antenna Placement Do's and Dont's

Do:

- Mount antenna at the highest point possible indoors.
- Place antenna on or near the wall towards receiving site.
- Mount antenna vertically.
- The antenna must be mounted away from the transceiver to avoid self interference.

Don't:

- Mount in areas where metallic objects stand between the transmitter antenna and receiver antenna (i.e. large water pipes, aluminum siding, aluminum backed insulation, air ducts, wire mesh construction material etc).
- Use "twist-on" RF connectors. Crimp style connectors may be used only when crimped with correct tools.

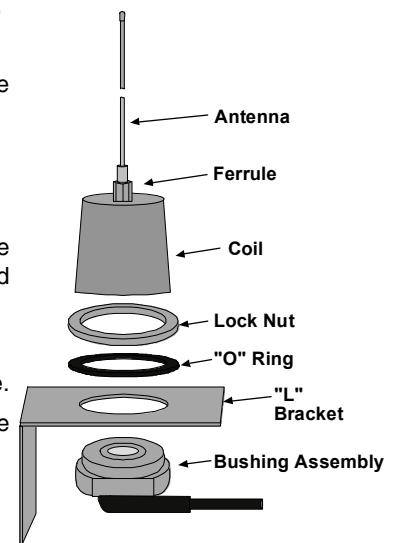


4.0 Mounting Requirements

1. A higher mounting location will provide a more reliable communication link.
2. A metal mounting surface will produce better antenna performance.
3. The antenna must be installed away from the radio transceiver using the supplied "L" bracket.

5.0 Antenna Installation

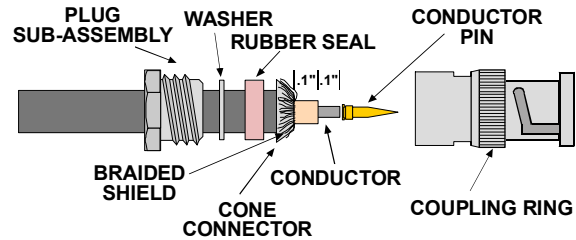
1. Mount the antenna on the "L" bracket as shown.
2. Remove the locking nut and "O" ring from the bushing assembly and feed the bushing assembly up through the bottom of the mounting hole with the threaded portion above the hole.
3. Insert the "O" ring into the groove on the bottom of the lock nut.
4. Seat the bushing assembly squarely against the inside of the mounting surface.
5. With the "O" ring pointing downward toward the mounting surface, thread the lock nut onto the bushing assembly.
6. Holding the lock nut upwards, finger tighten.



7. Check to ensure that the lock nut, "O" ring and bushing assembly are properly seated against the "L" bracket.
8. Use a wrench or long nosed pliers to hold the bushing assembly secure while tightening the lock nut. Do not over tighten.
9. Thread the coil onto the lock nut.
10. Thread the ferrule onto the coil.
11. Secure the antenna onto the ferrule by tightening the set screw using the Allen wrench.

6.0 BNC Connector Assembly

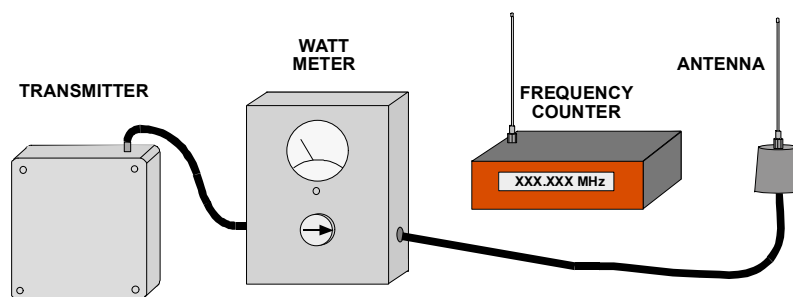
1. Cut the end of the coaxial cable even. Remove 0.2" (5 mm) of the vinyl jacket. Slide the plug subassembly, washer, rubber seal and cone connector on to the cable.
2. Fan the braided shield slightly and fold it back over the cone connector.
3. Bare 0.1" (2.5 mm) of the center conductor. Attach the conductor pin and fill the solder hole with solder. Be sure the conductor is hot enough to prevent a cold solder joint.
4. Push the coupling ring over the conductor pin until the pin protrudes through the coupling ring as far as possible.
5. Screw the plug subassembly into the coupling ring.
6. Test for electrical shorts:
 - a. Connect the positive (+) lead of a volt/ohm meter to the BNC connector pin.
 - b. Connect the negative (-) lead to the coupling ring.
 - c. Set the volt/ohm meter to ohms. If the BNC connector is not shorted, the meter will read infinite ohms. If the meter shows less than infinity, check to see that none of the braided shield is touching the center conductor.



7.0 Testing

The antenna is properly installed when the reflected power measured on a Watt meter is 0.2 watts or less. Reflected power greater than 0.2 watts indicates either an incorrect mounting technique, a faulty cable, incorrect rod length or proximity to a large metal surface. Use an in-line watt meter to measure the forward power and compare the measurement of the reflected power. A 10:1 ratio or better is optimum.

If the reflected power is greater than 0.2 watts, check all connectors, cable and the antenna location. A volt/ohm meter can be used to check for shorts between the inner conductor and the shield.



This antenna is an electrical conductor. Contact with a power line can result in death or serious injury. Do not install this antenna where there is any possibility of contact with high voltage arc-over from power or cable service drops to buildings. Consult the National Electrical Code (NFPA-70) for further details.