

095362-000 Revision G, May 2016

## Yagi Antennas

DB498 and DB499 Series

### GENERAL INFORMATION

The DB498 and DB499 multi-element Yagi antennas (Figure 1) are equipped with heavy duty mounting brackets and can be stacked/phased together for increased gain.

These antennas can be mounted on an angle or round mast, or at the top or on the side of a tower or wooden pole (Figure 2). This unique mounting arrangement permits either vertical or horizontal polarization, as well as rapid azimuth orientation (Figure 3).

When mounting these antennas, make sure the elements clear all guywires or other metal objects by at least 2–3 feet. When mounting a stacked-phase array, such as a dual or quad arrangement, ensure that the arrays are stacked collinearly (or exactly parallel for side-by-side mounting applications).

### PRE-INSTALLATION INSTRUCTIONS

- Examine antenna and hardware to ensure that all parts are enclosed and that there is no physical damage.
- Check to ensure that the antenna feed connector mates with the jumper cable.
- Verify that the frequency range shown on the label for the antenna matches the frequency range of the station equipment.
- Position the antenna with its “up” arrow label pointing upward before installation. This orientation allows the drain holes to be on the bottom of the antenna.

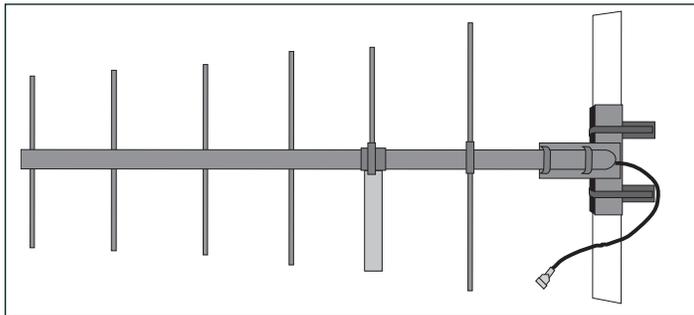


Figure 1. DB498 Yagi Antenna.

### SAFETY NOTICE

The installation, maintenance, or removal of an antenna requires qualified, experienced personnel. CommScope installation instructions are written for such installation personnel. Antenna systems should be inspected once a year by qualified personnel to verify proper installation, maintenance, and condition of equipment.

CommScope disclaims any liability or responsibility for the results of improper or unsafe installation practices.

It is recommended that transmit power be turned off when the field installation is performed. Follow all applicable safety precautions as shown on this page.

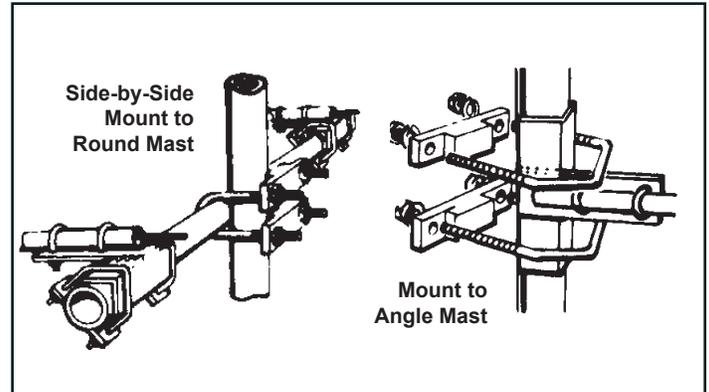


Figure 2 - Mounting to a Mast

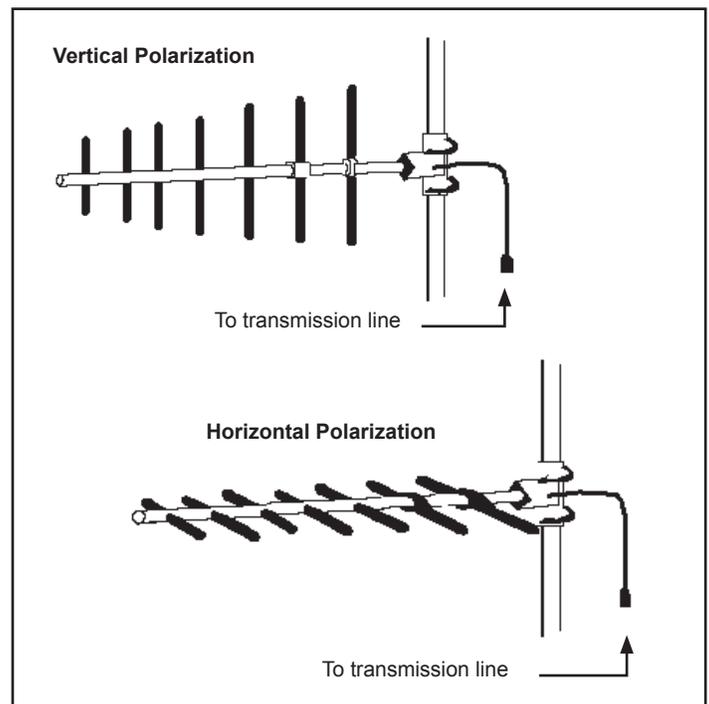


Figure 3. Vertical and Horizontal Polarization (DB499 shown).

(continued on page 2)



Do not install near power lines. Power lines, telephone lines, and guy wires look the same. Assume any wire or line can electrocute you.



Do not install on a wet or windy day or when lightning or thunder is in the area. Do not use metal ladder.



Wear shoes with rubber soles and heels. Wear protective clothing including a long-sleeved shirt and rubber gloves.

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## DUAL ARRAY INSTALLATION

The DB498-2/DB499-2 arrays consist of two DB498/DB499 antennas with a phasing transformer to connect the units together. Antennas mounted collinearly with all elements directly in line down the tower obtain the best performance. In side-by-side mounting, antennas oriented parallel to each other obtain the best performance. Refer to Figure 4 when performing this procedure.

1. From the center of Antenna #1, measure down the tower distance "A" shown in Table 1. This is the mounting location for the center of Antenna #2. (In side-by-side mounting, the two antennas should be separated by distance "A".) Make sure the "UP" arrow on the feed dipole is positioned properly. Refer to Figure 2 for attaching antennas to mast.
2. Connect the two units with the phasing transformer. Make the connection snug, but do not overtighten. The phasing harness transformer will be open for connection to the station transmission line.

Antenna Model No.	Frequency	Distance "A"
DB498/499-A	806 – 866	14"
DB498/499-C	824 – 896	13"
DB498-K	896 – 960	12"
DB499-K	890 – 960	12"

Table 1. Mounting Distance Between Dual or Quad Antennas.

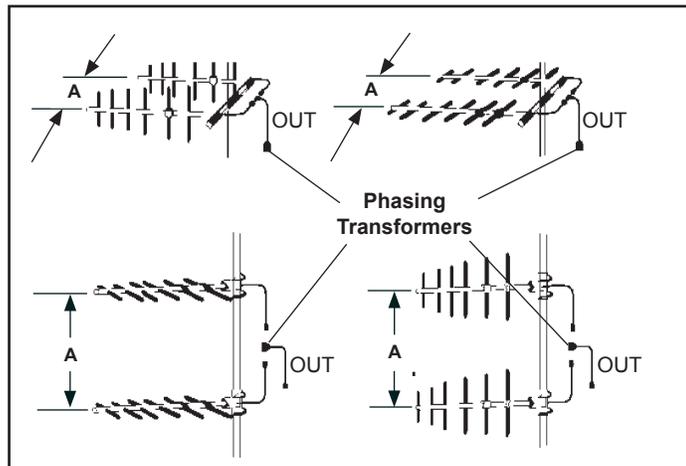


Figure 4. Dual Arrays (DB498 shown).

## QUAD ARRAY INSTALLATION

The DB498-4/DB499-4 arrays consist of four DB498/DB499 antennas with a phasing harness to connect the units together. Refer to Figure 5 when performing this procedure.

1. From the center of Antenna #1, measure down the tower distance "A" shown in Table 1. This is the mounting location for the center of Antenna #2. (In side-by-side mounting, the two antennas should be separated by

distance "A".) Make sure the "UP" arrow on the feed dipole is positioned properly. Refer to Figure 2 for attaching antennas to mast.

2. Measure down the tower distance "A" from the center of Antenna #2 to determine the mounting location for the center of Antenna #3. Mount Antenna #3. Repeat for Antenna #4. Refer to Figure 2 for attaching antennas to mast.
3. Connect the four units together using the phasing harness (Figure 5); be sure to match the color codes.

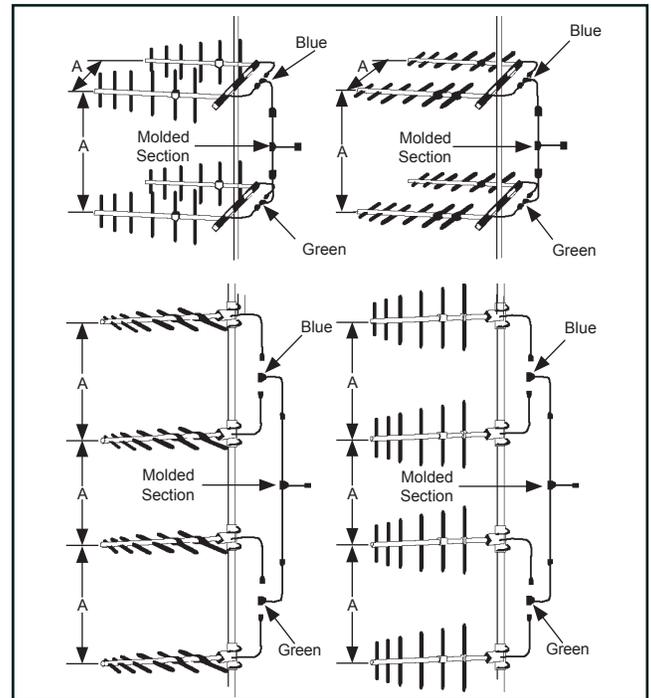


Figure 5. Quad Arrays (DB498 shown).

## POST INSTALLATION INSTRUCTIONS

- Connect the station transmission line (not supplied) to the antenna. Make the connection snug, but do not apply heavy force with pliers.
- Carefully weatherproof all connections, covering all cracks and the outer jacket of the transmission line. Failure to waterproof the connection could result in improper operation of the antenna.
- Secure the transmission line to the tower in the best position to avoid physical damage to the cable.
- After the antenna and transmission line have been installed, a careful visual check should be made to ensure that
  - All mechanical connections have been made and the antenna is mounted with sufficient physical clearance.
  - The "up" arrow is pointing upward and the drainholes are oriented downward.
  - All connections have been carefully wrapped to prevent moisture problems.