

095022-000 Revision M, May 2016

**Broadband Antennas**

DB404 Series

**GENERAL INFORMATION**

The DB404 series is a heavy duty, light weight antenna for use where an omni-directional or an elliptical radiation pattern is desired.

**OPTIONAL RADIATION PATTERN**

DB404 series antennas are designed to allow the antenna to be configured to meet changing coverage requirements. When the dipole element pairs are spaced at 90° to each other, an omni-directional or circular pattern is achieved. When both sets of dipoles are in line (collinear), the antenna exhibits a directional characteristic, offering an elliptical pattern. See Figures 1 and 2. Figure 3 shows gain variation for omni and elliptical antennas.

By loosening the banding clamps that hold the dipole elements against the mast and the tape securing the antenna harness to the mast, the top elements can be rotated around the mast as shown in Figure 1 to easily change the pattern shaping. Clamps must be securely tightened and the antenna harness re-taped to the mast (covering the tape that secures the cabling harness to the mast with an aluminum backed tape such as Scotch #425) when adjustments are complete.

**GENERAL MOUNTING INFORMATION**

These antennas can be mounted on the top of a tower or to a wooden pole. For best operation, it is recommended that the bottom dipole be above the tower. Side mounting of the antenna requires the use of a DB5007 side mount kit. Radiation patterns obtained with the antennas side mounted on a 18" tower are shown in Figure 4.

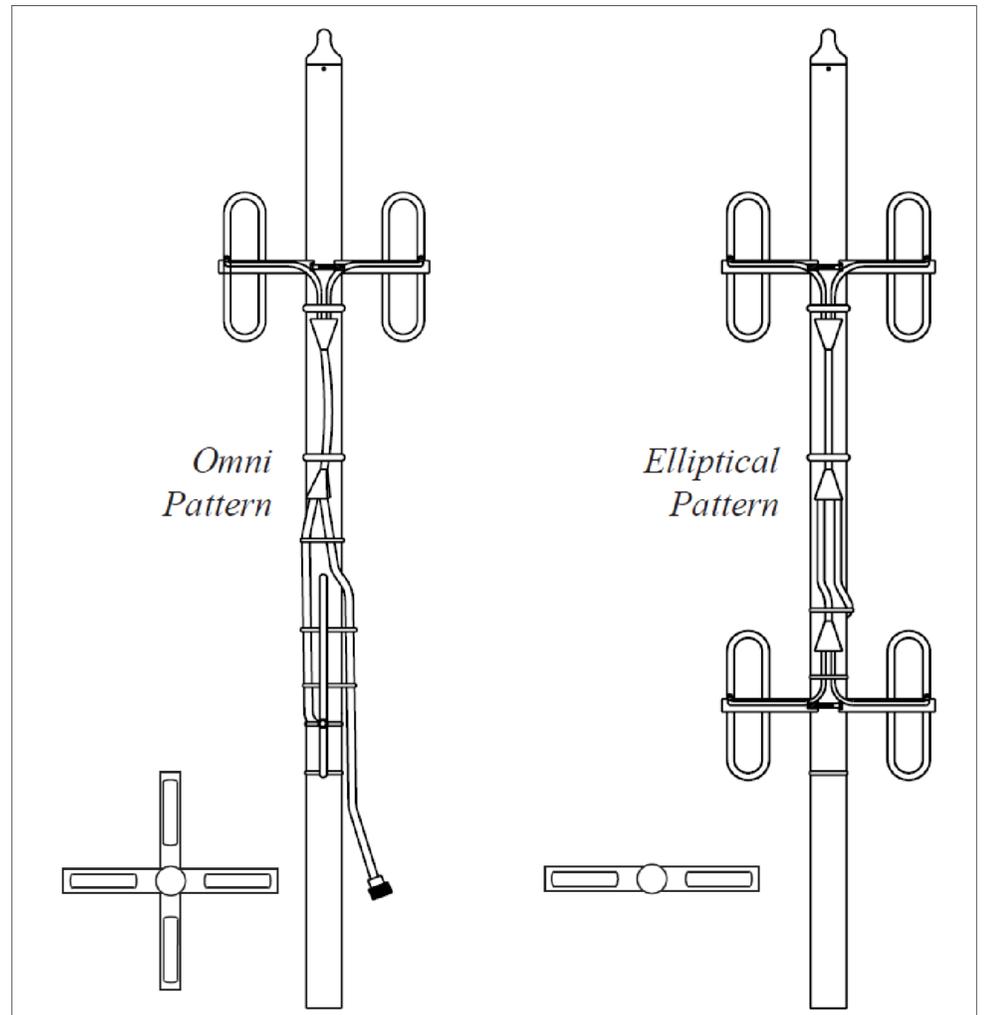


Figure 1. Dipole Arrangement For Pattern Performance.

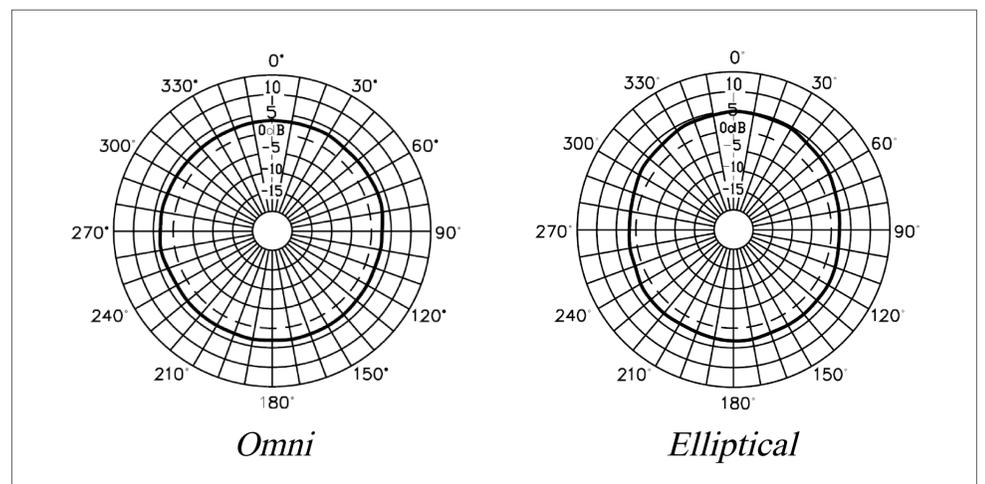


Figure 2. Azimuth Pattern with Respect to Half Wave Dipole.

**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.

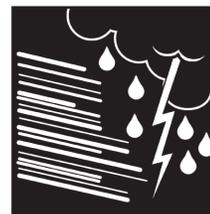
CommScope disclaims any liability or responsibility for the results of improper or unsafe installation practices.

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.

(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.

(Continued from page 1)

## INSTALLATION INSTRUCTIONS

1. Remove the antenna from the shipping box and ensure that all parts are on hand and that there is no physical damage.
2. Inspect the antenna feed assembly output connector to determine that it mates with the end of your station transmission line. Do not remove any connector or cable from the antenna feed assembly; these are all a part of your antenna.
3. Verify that the frequency to which the antenna has been tuned is the frequency on which your radio system is to operate.
4. Attach the furnished DB365 mounting clamps to the bottom of the antenna mast at the designated locations. Mount the antenna on the tower with the bottom dipole above the tower.
5. A check of the antenna VSWR as measured at the antenna is recommended at this point. Note this measurement carefully and record it for future reference.
6. After checking the VSWR at the antenna, connect the station transmission line to the antenna. (Make the connection snug but do not apply heavy force from pliers.) To avoid moisture problems, carefully wrap VAPOR-WRAP® (Part # 11317 or 11316) around the connection, working the compound into all cracks and smoothing it over the outer jackets of the transmission line. Failure to tape and waterproof the cable connection will result in improper operation of your antenna. Properly secure the feeder cable and antenna transmission line to the tower in the best position to avoid physical damage.

7. After the antenna and transmission line installation is complete, a careful visual check should be made to ensure that:
  - All mechanical connections have been securely made.
  - The antenna is mounted on the proper leg of the tower with sufficient physical clearance.
  - All connections have been carefully wrapped with VAPOR-WRAP to prevent moisture problems.

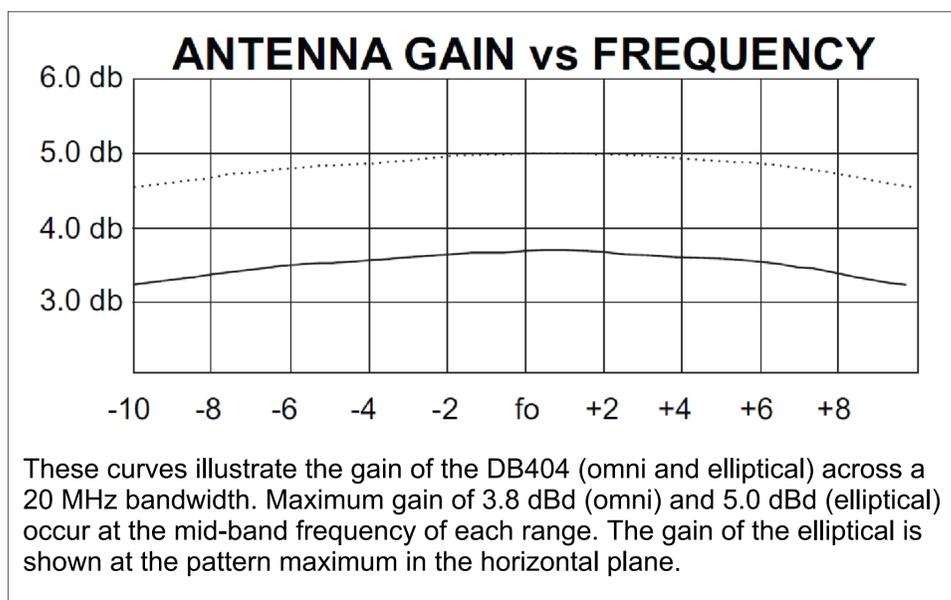


Figure 3. Antenna Gain Curves.

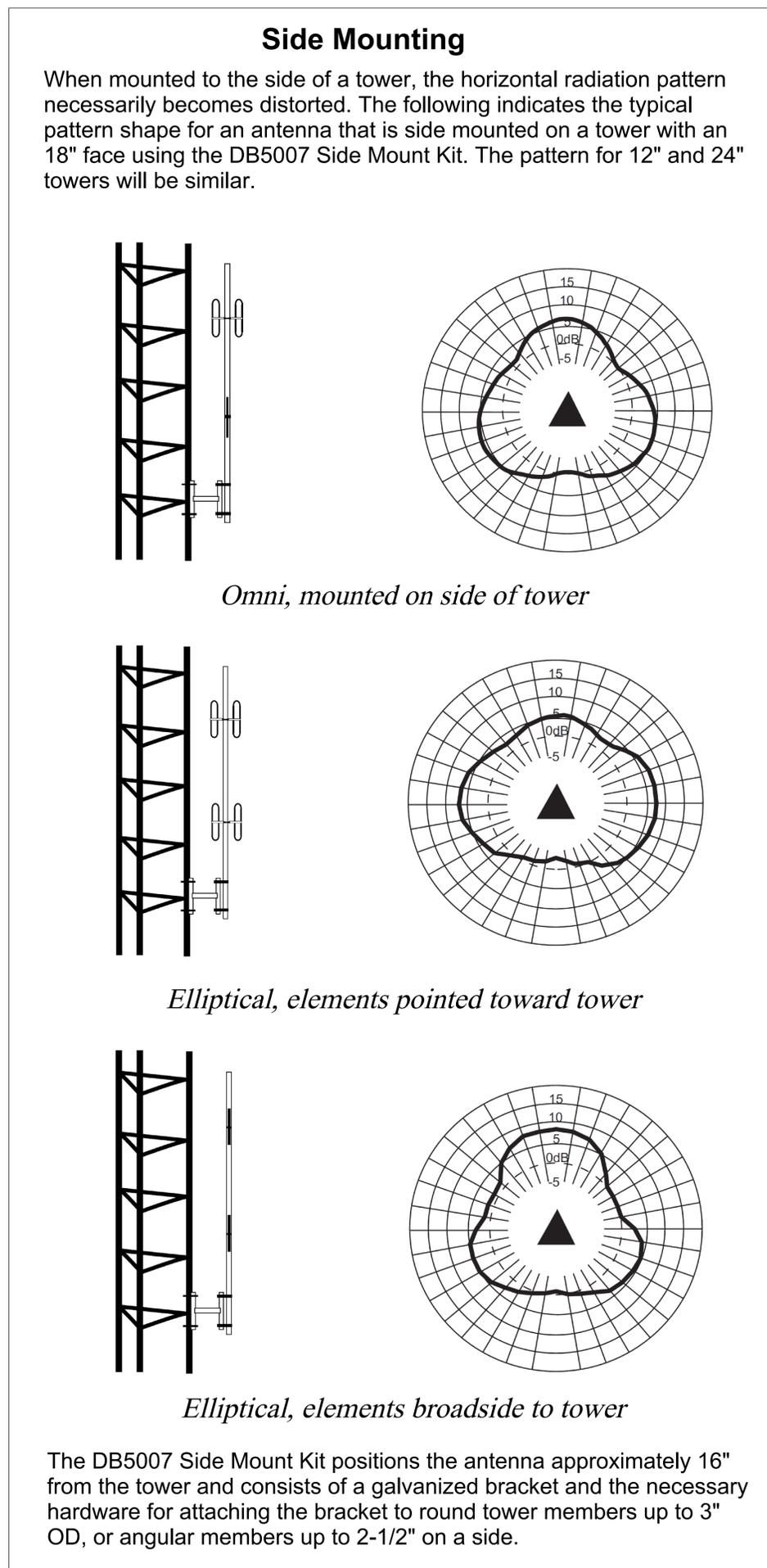


Figure 4. Typical Pattern Shape When Side Mounting.