



User Guide

For

Alpha Antenna
5 Element VHF UHF Beam

Manufactured by:
Alpha Antenna

Website: www.AlphaAntenna.com

User Guide Version 2.1

February 13, 2018

α ALPHA ANTENNA®

Introduction

Thank you for your support of the Alpha Antenna line of systems. We hope that you will enjoy using this product, as we continue to receive testimonials on how easy the Alpha Antenna systems are to deploy, how well they work, and how each antenna system that is deployed has made operating experiences positive and enduring.

Product Overview

The Alpha Antenna 5 Element VHF UHF Beam will accept up to 500 Watts (PEP) of transmitter power on SSB and is designed to operate continuously from 126-150MHz plus UHF coverage, including 430-440MHz & 444-495MHz, with SWR between 1.17:1 to 2.5:1.

α ALPHA ANTENNA®

Safety Tips

When installing or operating this antenna, please observe the following safety tips.

NOTE – High voltages are present when transmitting, no matter how much or little power is applied. Do not touch any part of the antenna while transmitting.

WARNING: INSTALLATION OR OPERATION OF THIS PRODUCT NEAR POWER LINES IS DANGEROUS! FOR YOUR SAFETY, FOLLOW THE ENCLOSED INSTALLATION DIRECTIONS. THOUGH THIS ANTENNA IS CONSTRUCTED OF INSULATED WIRE, PROPER CARE MUST BE TAKEN DURING INSTALLATION. INSTALLER ASSUMES ALL LIABILITY FOR PROPERTY AND LIFE SAFETY.

YOU, YOUR ANTENNA, AND SAFETY

Each year, hundreds of people are killed, mutilated, or receive severe and permanent injuries when attempting to install an antenna. In many of these cases, the victim was aware of the danger of electrocution, but did not take adequate steps to avoid the hazard. For your safety, and to help you achieve a good installation, please **READ** and **FOLLOW** the safety precautions.

1. If you are installing an antenna for the first time, please, for your own safety as well as others, seek PROFESSIONAL ASSISTANCE.
2. Select your installation site with safety, as well as performance, in mind. **REMEMBER:** ELECTRIC POWER LINES AND PHONE LINES LOOK ALIKE. FOR YOUR SAFETY, ASSUME THAT ANY OVERHEAD LINES CAN KILL YOU.
3. Call your electric power company. Tell them your plans and ask them to come take a look at your proposed installation. This is a small inconvenience, considering **YOUR LIFE IS AT STAKE.**
4. Plan your installation procedure carefully and completely *before* you begin. Successful raising of a mast or tower is largely a matter of coordination. Each person should be assigned a specific task, and should know what to do and when to do it. One person should be designated as the leader/coordinator of the operation to call out instructions and watch for signs of trouble.
5. When installing your antenna, **REMEMBER: DO NOT USE A METAL LADDER. DO NOT WORK ON A WET OR WINDY DAY. DO DRESS PROPERLY:** shoes with rubber soles and heels, rubber gloves, long sleeved shirt or jacket.
6. If the assembly starts to drop, get away from it and let it fall. Remember, the antenna, mast, cable are all excellent conductors of electrical current. Even the slightest touch of any of these parts to a power line completes an electrical path through the antenna and the installer.
7. If ANY PART of the antenna system should come in contact with a power line, **DON'T TOUCH IT OR TRY TO REMOVE IT YOURSELF. CALL YOUR LOCAL POWER COMPANY.** They will remove it safely. If an accident should occur with the power lines, call for qualified emergency help.

α ALPHA ANTENNA®

Specifications

Beam Antenna Type: Log Periodic (LPDA)

Beam Antenna Elements: 5

Antenna Power Rating: 500 W

Beam Antenna Boom Length: 3 ft. (with Mounting Hardware 3.75 ft.)

Beam Antenna Longest Element: 71.000 in.

Mast Mounting Clamp Minimum: 1.250 in.

Mast Mounting Clamp Maximum: 1.500 in.

VHF Beam Antenna Frequency Coverage <2:1 SWR: 126-150 MHz

VHF Beam Antenna Frequency Coverage 1.17:1 to 2.5:1 SWR: 430-440MHz & 444-495MHz

Feed-point Impedance: 50 ohm

Antenna Feedline Connection Type: Type N, female

Antenna Weight: 7.44 lbs.

Beam Antenna Elements (app): 5

Beam Antenna Gain: 8.5 dBi

Beam Antenna F/B (dB): 15.0 dB

E-Plane 3 dB Beam-width: 60 degrees

H-Plane 3 dB Beam-width: 110 degrees

Bandwidth at <2:1 SWR: Over 24.0 MHz

Frequency Coverage

Maritime, Military, Ham (Amateur), Air Band Coverage

Maritime

All maritime-only bands in the VHF high band covered by this antenna, specifically 153-154MHz.

Military

The primary military-only bands in the VHF high band are 138.00-144.00MHz and 148.00-150.775MHz, all of which are all covered by this antenna.

Ham (Amateur)

The ham-only bands in the VHF high band are fully covered by this antenna from 144-148MHz.

Air Band

All of the air-only bands in the VHF high band are covered by this antenna, specifically 128.8250-136.9750MHz.

Maritime Coverage (MHz)

153-154 Maritime VHF

Military Coverage (MHz)

Air Force

138.000-138.500
138.875-138.925
139.600-140.000
140.375-140.425
141.525-151.925
142.125-142.300
143.425-143.475
143.750-143.925
148.050-148.250
148.450-148.550
149.150-149.325
149.475-149.550
149.925-150.050
150.150-150.350

Navy

138.525-138.850
138.950-138.875
139.475-139.575
140.025-140.350
140.450-141.000
141.950-142.100
142.500-142.850
143.500-143.725
148.275-148.425
148.950-149.125
149.350-149.450
150.075-150.125
150.375-150.400

Army

139.000-139.450
141.025-141.500
142.325-142.475
142.875-143.400
143.950-143.975
148.000-148.025
148.575-148.925
149.575-149.900
150.425-150.775

α ALPHA ANTENNA®

Ham (Amateur) Coverage (MHz)

144-148
420-440

Commercial Aircraft Coverage (MHz)

128.8250-132.0000 Operational Control
132.0250-136.4750 Air Traffic Control
136.5000-136.8750 Domestic VHF
136.9000-136.9750 International and Domestic VHF

ARINC En Route Service

128.9000 Southwest USA
129.4000 Northeast USA / Canada West Coast and Anchorage
129.4500 East Central USA
131.8000 Northwest USA
129.9000 Maritime Net (Northeast Coast USA)
130.7000 Mexico / Caribbean
131.1750 Southeast USA
130.4000 West Central USA
131.9500 Pacific Net (West Coast USA and Hawaii)

Aircraft Communications Addressing and Reporting System (ACARS) - BM, CSQ, AM, Data

129.12500 ACARS 129.125 ACARS
130.02500 ACARS 130.025 ACARS
131.12500 ACARS 131.125 ACARS (High Traffic Areas)
131.55000 ACARS ARINC Base ARINC-Americas Base Frequency
130.45000 ACARS 130.450 ACARS (High Traffic Areas)
136.80000 ACARS 136.8 ACARS
136.75000 ACARS 136.75 ACARS
136.97500 VDL Mode 2 VHF Data Link (VDL) Mode 2
129.52500 ACARS 129.525 ACARS
131.72500 ACARS SITA Base SITA Base Frequency
129.35000 ACARS 129.35 ACARS

Antenna Parts List

The following items are included with the 5 Element VHF UHF Beam antenna system. Please contact our support line if you discover that parts are missing or damaged.

Item	Description	Qty.	Comment
1	Elements	5 sets	Labeled 1 through 5
2	Boom	1	Has integrated N-Connector
3	U-Bolts	2	
4	Built-in Mount	1	

α ALPHA ANTENNA®

Antenna Assembly

Step 1 – Lay-out & compare the parts received to the Antenna Parts List in this manual.

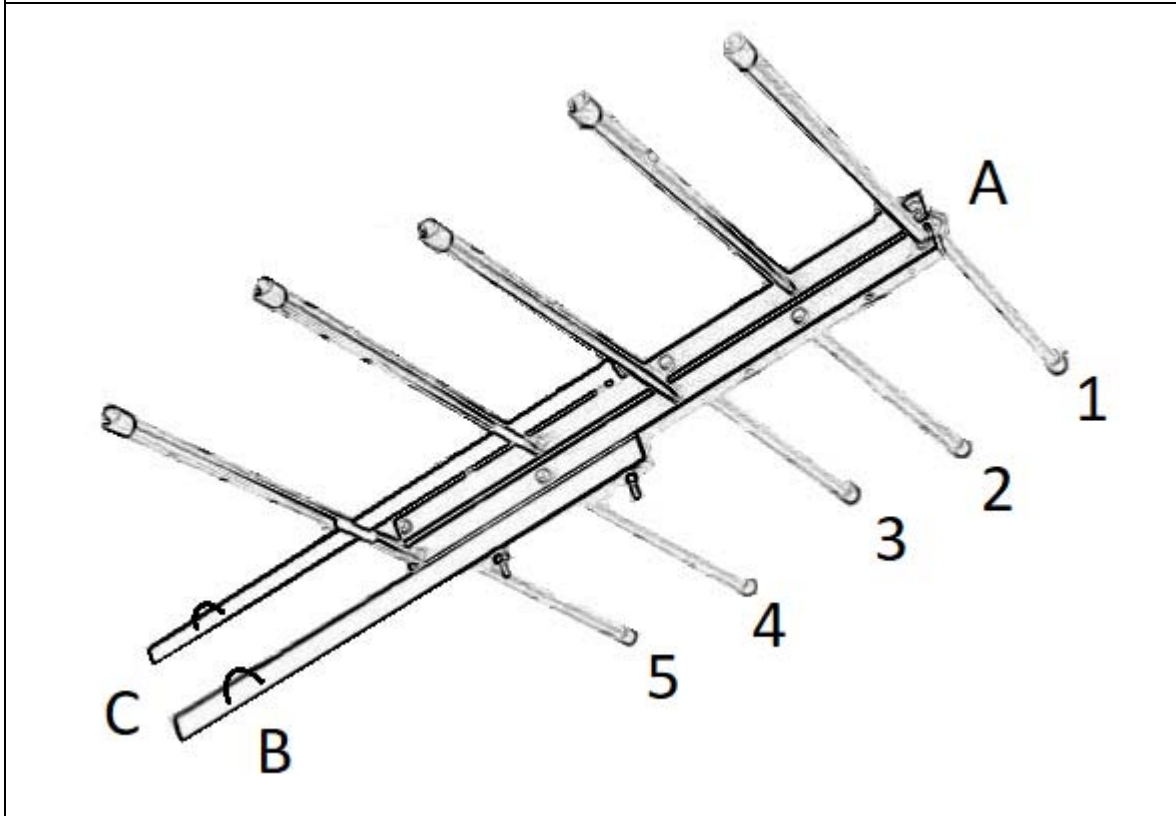
Step 2 – Ensure the U-Bolts are secure on the Mount (C).

Step 3 – Pair the corresponding elements (1, 2, 3, 4, & 5). NOTE - Element 1 is installed on the Boom (A) starting at the end where you connect your coax to the N-Connector.

Step 4 – Screw the first set of elements labelled 1, followed by 2 to 5, onto each bolt on the Boom (A). Then secure each bolt/element using a wrench to tighten each bolt.

Step 5 – Install the assembled 5 Element VHF UHF Beam onto your mast or tower cross-member using the included U-Bolts (B).

Step 6 – Connect your coaxial N-Connector from the antenna to your equipment, and ensure it drapes 18 inches or more below the boom.



Support Contacts

If you have questions about your antenna, please feel free to contact us.

Email: support@AlphaAntenna.com – Phone: 1-888-482-3249 – WEB: www.AlphaAntenna.com