



# User Guide for the Alpha Loop Jr+ Antenna

Manufactured by:  
Alpha Antenna  
1.888.482.3249

Website: <http://AlphaAntenna.com>

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## Introduction

Thank you for purchasing the Alpha Loop Jr+ Antenna. We hope that you will enjoy using this product, as we continue to receive written testimonials from Amateur Radio Operators (Hams) who are surprised by the antenna's ability to make many long distance contacts, using low power.

The Alpha Loop Jr+ antenna offers coverage for the 40, 30, 20, 17, 15, 12, & 10 meter bands. A SWR meter or Antenna Analyzer is needed when tuning magnetic loop antennas, and this is especially true with the Alpha Loop Jr+, as tuning is sensitive.

Finally, if you require assistance assembling or using this product, please do not hesitate to call us at 1-888-482-3249 or send email to: [support@alphaantenna.com](mailto:support@alphaantenna.com)

## Product Overview

The Alpha Loop Jr+ Antenna is designed to operate on the 10, 12, 15, 17, 20, 30, and 40 Meter amateur radio bands. The power rating is 25 Watts PEP SSB at 25% Duty Cycle (12 Watts CW at 50% Duty Cycle & 6 Watts Digital at 100% Duty Cycle)

We put safety first and insert a nylon shaft between the knob and the Variable Air Capacitor, which is a design that minimizes the chance of RF burns from occurring. Hand capacitance on this loop is significant, however, there is a technique called 'Reverse Tuning' documented below that can help with this.

## Additional Product Details

- Antenna Weight: 16 ounces
- Antenna Configuration: Circular Loop
- Frequency Coverage: 7 MHz to 29.7 MHz
- Maximum Power Rating: 25 Watts PEP SSB



## Safety Tips

*When installing or operating this antenna or any other antenna/tower, 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 Alpha Loop Jr+ 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 below. **THEY MAY SAVE YOUR LIFE!**

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 and metal guy wires 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 – **THAT'S YOU!**
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 **IMMEDIATELY.**

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## Antenna Diagram

The major components of the antenna, and their relative positions, are depicted in Figure 1.



Figure 1



## Antenna Parts List

The following parts are included with this antenna. Please contact our support line if you discover that parts are missing or damaged.

Item	Description	Qty.	Comment
1	Outer Loop	1	
2	Inner Loop	1	
2	Grey Alpha Match box	1	

## Antenna Assembly Instructions

Please follow the steps listed below to assure proper operation of this antenna and deploy as described.

Step	Assembly Operation
1	Inspect each item for any damage.
2	Identify and count all parts, comparing them to the Antenna Parts List.
3	Determine where you will physically sit the antenna.
4	Attach the Outer Loop Element to the grey Alpha Match box by attaching (screw) the PL-259 connectors on the Outer Loop into the SO-239 connectors on the Alpha Match.
5	Setup the Alpha Match on a flat stable surface.
6	Attach the Inner Loop using the included Velcro to the approximate center of the Outer Loop Element
7	Now it is time to connect the antenna with your feedline to your radio. Attach your feedline to the antenna and then connect the other end to your antenna analyzer, which can then be subsequently connected to your radio after tuning.

## Antenna Operation

The Alpha Loop Jr+ antenna has a built in tuning knob on the Alpha Match. It is with this black knob that you tune the antenna to the lowest SWR of 2:1 or less 10-40 meters. NOTE – It is easier to match and learn to tune the loop on 40 meters. The following technique has proven to be the easiest method for tuning the Alpha Loop Jr+ in nearly all scenarios:

- 1) After attaching your coax to your radio, turn the tick mark on the Black Knob to relatively close proximity for the frequency range marked on the Alpha Match.
  - a. The capacitor can turn past 360 degrees without damaging any component.

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- 2) Now connect and power on your antenna analyzer and set your analyzer to the frequency you would like to operate.
- 3) Fine tune the Alpha Match with the black knob till the SWR meter on your analyzer is as low as possible.

## OPTIONAL REVERSE TUNING (Offset frequency while tuning for hand capacitance)

- a. While tuning with the analyzer and to off-set the effect of hand capacitance, which is significant, a technique called reverse tuning can be used. To reverse tune a magnetic loop, tune for minimum SWR while touching the Black Knob on the Alpha Match, say 1.9:1; and then when you remove your hand you might see 4.3:1 for example; then all you have to do is tune for 4.3:1 while your hand is on the knob to achieve an SWR of 1.9:1 when you remove your hand.

## OPTIONAL FINE TUNING (Change frequency of the analyzer to find the lowest SWR)

- a. Continue to use your antenna analyzer, and while watching the SWR meter on your analyzer, move the tuning knob on the analyzer till minimum SWR is attained. It is at the frequency where minimum SWR is shown on the analyzer that you can operate on at a minimum SWR.

## Antenna Calibration (Optional)

Sometimes calibration might be needed because of changes in physical operating environments or coax used. The black knob on your Alpha Loop Jr+ antenna can be calibrated by loosening the set screw on the side of the black knob. The white indicator may then be repositioned if desired. For example, the white indicator can be positioned to point to the left for 10 meters and right for 40 meters or any other position desired.

**NOTE – High voltages are present when transmitting, no matter how much or little power is applied. Do not touch any part of the Alpha Loop Jr+ except the black knob while transmitting.**



## Support Contacts

Email: [support@alphaantenna.com](mailto:support@alphaantenna.com) - Phone: 1-888-482-3249

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