



# User Guide

For

Alpha Antenna – Coaxial Loop

Civilian Military Systems

Manufactured by:  
Alpha Antenna  
1.888.482.3249

Website: <http://AlphaAntenna.com>

Available from the:  
[AmateurRadioStore.com](http://AmateurRadioStore.com)

Website: <https://amateurradiostore.com>

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## Introduction

Thank you for purchasing the Alpha Coaxial Loop 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 relatively low power.

The Alpha Coaxial Loop is a magnetic loop antenna that is easy to tune, has acceptable bandwidths, and offers coverage for 40, 30, 20, 17, 15, 12, & 10 meter bands. The antenna is only 3 feet 1 inches in diameter and has a built-in tuner at the base of the antenna. This antenna is so efficient that it can be used from a porch or balcony with only a 2-3db reduction in performance. It can also be used indoors, where the structure will impact how much reduction in performance is realized (typically 3-5db on a wood structure, 5-8db on rebar reinforced concrete structures, and 8-12db in steel buildings).

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 Coaxial Loop Antenna is designed to operate continuously from 10 through 40 meters, which including the 10, 12, 15, 17, 20, 30, and 40 Meter amateur radio bands. It will accept up to 30 Watts (PEP) of transmitter power on SSB. Using the antenna's built-in tuner, your radio's transmission line SWR can be continuously tuned to a match of less than 1.9:1 on any frequency from the 10 Meter through the 40 Meter band.

When manufacturing this antenna, we use only brass bolts and nuts at the connection points that feed the antenna, as well as silver plated shield and gold plated pin connectors at the feed point of the antenna. We then place the Alpha Match inside a High Voltage UL-Rated housing.

### Additional Product Details

- Antenna Weight: 1.5 pounds
- Tripod Weight: 1 pound
- Duffle bag Weight: .6 pounds
- Antenna Configuration: Circular Loop
- Frequency Coverage: 7 MHz to 29.700 MHz
- Maximum Power Rating: 30 Watts PEP SSB
- SWR Indicator Tube: Built-in tube lights up, indicating an SWR of less than 2:1
- Height to top of Alpha Coaxial Loop Antenna system: 3 feet



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## **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 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 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 Parts List**

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

<b>Item</b>	<b>Description</b>	<b>Qty.</b>	<b>Comment</b>
1	Tripod	1	
2	Alpha Coaxial Loop element and Feed-line loop	1	Feed-line loop is to be attached to larger Coaxial element
3	Alpha Match	1	
4	Alpha Coaxial Loop Clamp	1	Sets upon the top of the tripod
5	Alpha Match Mount	1	Is on tripod's leg
6	Duffle bag	1	

## Antenna Assembly Instructions

Please follow the steps listed below to assure proper operation and deployment.

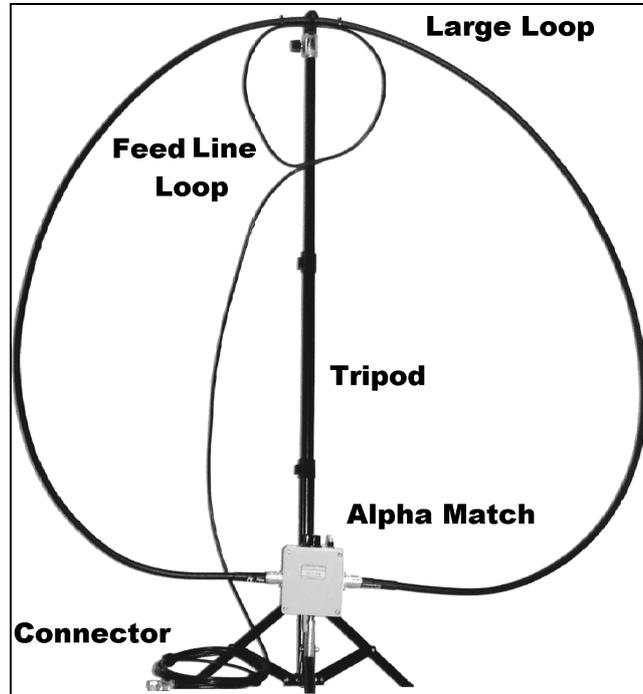
Step	Assembly
1	<p><b>Locate the <u>Tripod</u>:</b></p> <p>a) Extend the tripod sections and take note of the tripod leg with a silver mount on it. This will be what supports the Alpha Match box at the bottom of the Large Loop.</p> <p>b) Position the tripod in a stable location where the antenna is 24 inches or farther from other objects such as lamps, poles, wires, power lines, ladders, people, etc.</p>
2	<p><b>Locate the <u>Alpha Match</u> box:</b></p> <p>a) Screw the base of the antenna's Alpha Match box to the silver mount on the tripod leg so that the Alpha Antenna sticker with product number is facing outward. Adjustment can be made to the direction the Alpha Match faces by removing the faceplate on the Alpha Match, and then moving the bolt direction with wrenches.</p>
3	<p><b>Locate the <u>Large Loop</u> coaxial element:</b></p> <p>a) Undo Velcro strap and straighten the Alpha Coaxial Loop Element to form an approximate circle that is slightly larger than 3 feet in diameter. Take note of the approximate center for this run of coax and position the Velcro strap at that center point. This is where the smaller Feed Line Loop will be attached using Velcro or Zip ties.</p> <p>b) Using the top clamp on the tripod, secure the Large Alpha Coaxial Loop Element, so that the PL-259 ends are at the base of the tripod near the Alpha Match box.</p> <p>c) Attach the PL-259 connectors at ends of the larger Coaxial Loop Element now at the base near Alpha Match box to the SO-239 connectors on the Alpha Match box.</p>
4	<p><b>Locate the smaller <u>Feed Line Loop</u>:</b></p> <p>a) Undo the Velcro strap and straighten your Feed Line that is part of the smaller loop</p> <p>b) Attach the Loop portion of the Alpha Feed Line (with the supplied zip ties and/or Velcro strap) to the top "center" of the Large Alpha Coaxial Loop Element near the Alpha Coaxial Loop Clamp.</p>
5	<p><b>Locate the <u>Connector on the feed line</u>:</b></p> <p>a) Connect/remove (per your rig) the supplied PL259 adapter from the BNC connector, located at the end of Feed Line</p> <p>b) Attach the feed line connector to your rig.</p>

**Non-Tripod deployment** – The Alpha Loop can also be deployed upon an optional Jaw Mount with the 'Freestanding Loop Deployment Kit'. This is convenient for when you choose not to deploy the system with a tripod. See the diagrams on the next page for deployment upon a 1) Tripod or 2) the optional 'Freestanding Loop Deployment Kit'.

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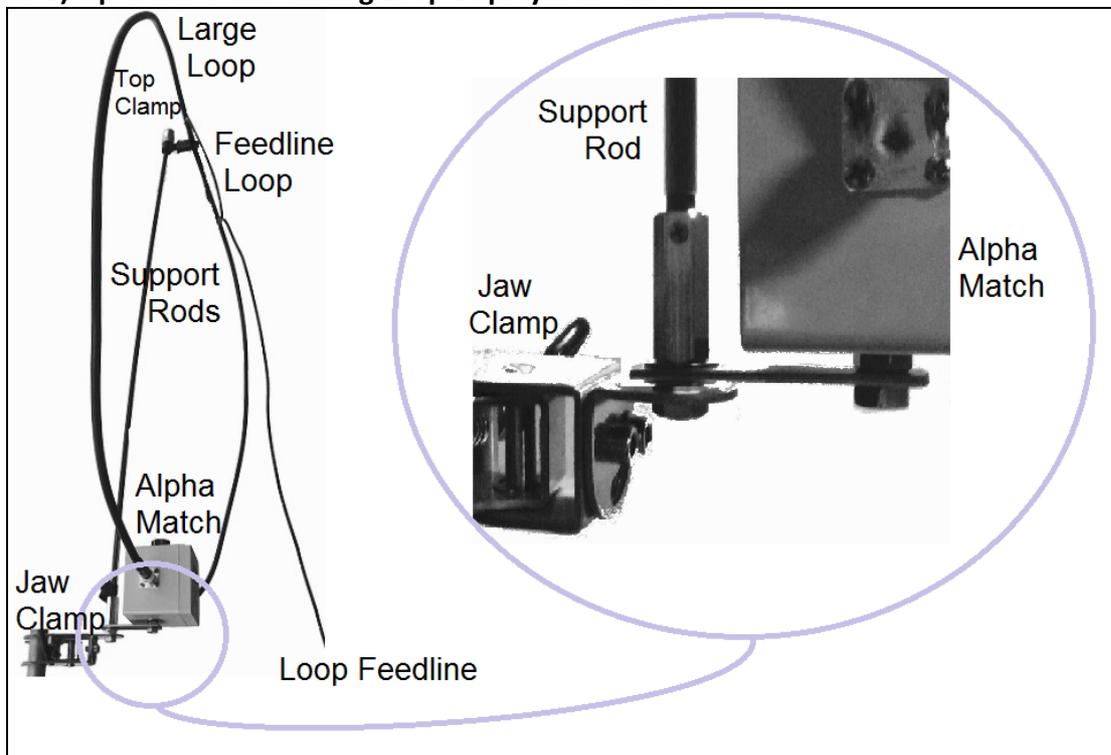
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## Antenna Deployment



1) Tripod

Or 2) Optional 'Freestanding Loop Deployment Kit'.



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## **Antenna Operation**

The Alpha Coaxial Loop antenna has a built in tuning knob, which is black, on the Alpha Match. It is with this knob that you tune the antenna to the lowest SWR of less than 1.9:1 on any frequency from the 10 Meter through the 40 Meter band. The following technique has proven to be the easiest method for tuning the Alpha Coaxial Loop in nearly all scenarios:

- 1) After attaching your coax (per Step 5 above), turn your radio on and to the frequency you would like to operate, then adjust the volume so you can hear it while standing at the antenna.
- 2) Turn the black knob on the Alpha Match till you hear the loudest noise level coming from the speaker on the antenna. You may now select either or both steps 3 & 4 in your tuning of the antenna. We recommend using both when you first start using the antenna.
- 3) Set the meter on your transmitter to show SWR upon transmit. You may also use an external SWR Meter/Analyzer. If using an analyzer, simply tune for the lowest SWR using the black knob on the Alpha Match. Otherwise, return to the radio and adjust the power to a level greater than 5 watts, and then set your rig into transmit mode. While watching the SWR meter, tune for the lowest SWR.
- 4) You may now use the SWR Indicator Tube on the Alpha Match to ensure your SWR is less than 2:1. To enable the SWR Indicator Tube, you will need to place your rig in FM Mode or other Continuous Carrier mode. Please note that we have tweaked the lighting of your SWR Indicator Tube to be very sensitive to an SWR of less than 2:1. At 2:1 the bulb will barely glow, and as you tune for a lesser SWR the bulb will become brighter.
- 5) As soon as you see the bulb glow, your SWR will be 1.9:1 or less.

Hint – It is easier to learn how to tune the Coaxial Alpha Loop on 10 meters, as the bulb more readily lights on higher bands.

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

## **Support Contacts**

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

Email: [support@alphaantenna.com](mailto:support@alphaantenna.com)

Phone: 1-888-482-3249

WEB: [www.alphaantenna.com](http://www.alphaantenna.com)