



F-SELECTRONICS USA
 FAIL-SAFE PRODUCTS, FAIL-SAFE SUPPORT

RANGEMAX 1/4 WAVE PROFESSIONAL GRADE ANTENNA



FAIL-SAFE CONTENTS:

- 5- FREQUENCY BARS
- 1- VERTICAL RADIAL
- 1- CABLE HOUSING
- 3- HORIZONTAL RADIALS (6 PCS)
- 2- U-BOLTS

OPTIONAL ACCESSORIES:

- 25' AMATEUR GRADE BROADCAST CABLE
- 10-100' LOW LOSS CUST.BROADCAST CABLE

OPTIONAL UPGRADES:

- RANGEMAX 2.0 5/8 WAVE GRD PLANE ANTENNA
- RANGEBOOSTER 2.0 1/4 WAVE GRD PLANE ANTENNA

Frequency Range:	84.5 to 110.5 MHz
Gain:	3.5 dBi
VSWR:	≤1.5
Antenna Connector:	SO239Female
Output Impedance:	50 Ω
Wattage Potential	≥100 Watts
Transmission Signal:	FM Stereo

IMPORTANT: READ BEFORE INSTALLATION

Site Selection

Select a safe site to install the antenna.

The distance between any power lines and the installation site should be at least one and one-half times the height of the antenna and mast assembly. Make the distance even greater, if at all possible. Since all overhead power lines look somewhat alike, consider them all dangerous and stay well away from them. If you have power lines in the area, call your local electric utility for assistance.

Antenna Mounting

1. NEVER work alone; always have someone near who can summon help.
2. Certain clothing may provide a degree of safety, but don't depend on it for your life (rubber boots or shoes, industrial gloves and a long sleeve shirt or jacket).
3. Check weather conditions. Be sure that it hasn't rained recently and that the lawn is not wet or muddy. Make sure that rain or thunderstorms are not predicted for the day you decide to install the antenna.
4. The wind can blow the antenna into a nearby power line. DO NOT install or remove antennas in moderate or heavy winds.
5. If you need to use a ladder, make sure it is mad of non-conductive (non-metallic) material. (This is a safety rule that you should follow whenever you're working with electrical equipment.)
6. If possible, have someone present who has been trained in electric shock first aid.

Rooftop Installations

DO NOT assume that just because you're on a roof, you are isolated from ground. You may still be electrocuted or fall off the roof.

Emergency Aid For Shock

It is advisable to work with several other people when installing or removing an antenna. One person should stand aside to direct the effort and watch for signs of trouble. If someone does receive a shock, DO NOT touch the victim while his body is still in contact with the electricity. Instead, pry or pull him away from the source of electricity with a length of dry wood, rope, a blanket, or another non-metallic object. If breathing has stopped, use mouth-to-mouth resuscitation until a doctor or ambulance arrives and relieves you. If the heart has stopped, closed-chest cardiac massage must be done simultaneously. The ambulance should be informed when called that an electric shock has occurred; it can bring proper equipment such as an intensive care or cardiac care mobile unit equipped with a heart defibrillator and carrying trained personnel.

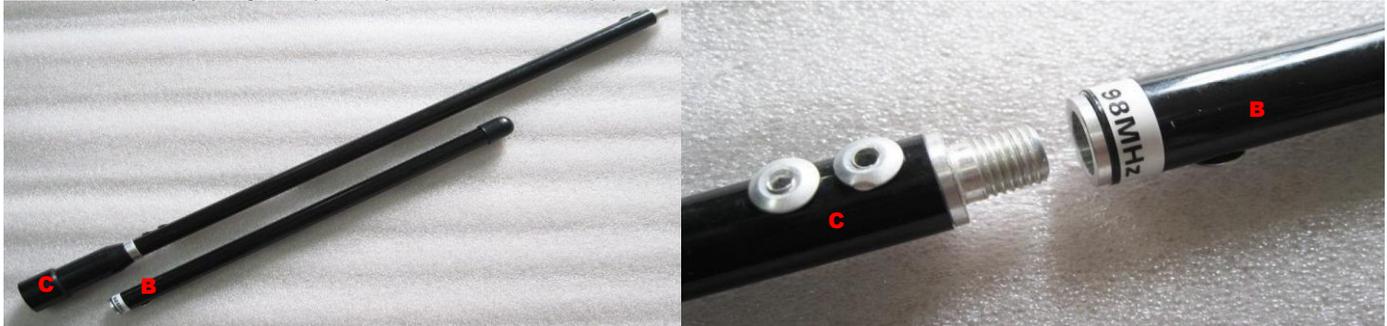
Instructions

1. Select ideal unused frequency for radio transmission (visit www.radiocator.com for best unused frequencies within USA).
2. Choose frequency bar (B1 – B5) that is closest to frequency selected in step 1.

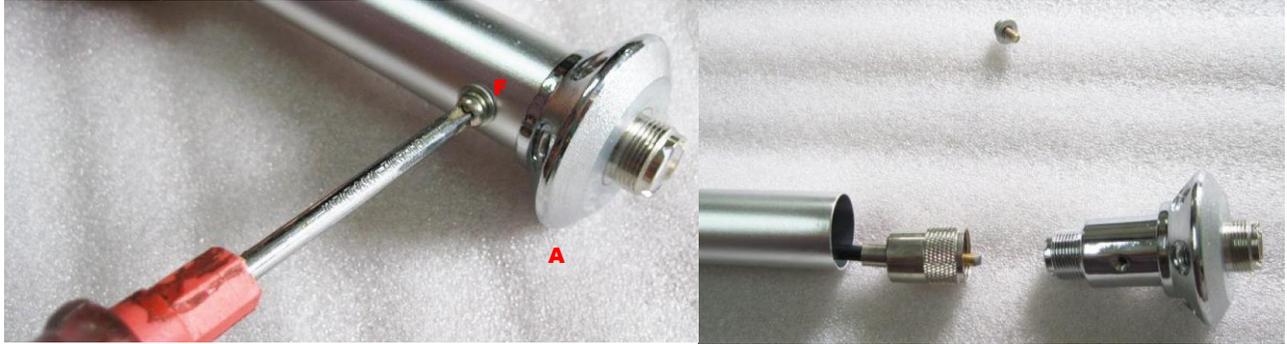


Each frequency bar has a frequency range ± 2.5 MHz.

3. Connect Frequency Bar (B1-B5) to Vertical Radial (C).



4. Remove Screw from Antenna to Cable Housing (F), disassemble the two pieces, run the Broadcast Cable (A) through the Housing (F), and connect to the UHF Female Connector.
5. Reassemble two pieces of Antenna to Cable Housing (F) and reconnect screw that was removed in Step 4.



6. Connect Antenna to Cable Housing (F) and Vertical Radial (C).
7. Assemble Three Horizontal Radials (D) and then connect to Antenna to Cable Housing (F)



8. Mount Assembled Antenna to Cable Housing (F) to Mast using U-Bolts and Mounting Plate (G)



9. Hoist Mast up and make sure plumb at 90° angle. Ensure antenna is at least 3 feet from ground and above all surrounding obstructions such as roof tops, trees, hills, walls, etc.
10. Run Broadcast Cable (A) and connect to transmitter.
11. Power up transmitter and test results.

CAUTION: ELECTROCUTION HAZARD

For questions and troubleshooting contact us at 260-255-6622.

A brief introduction to the rules of the FCC and your FM Transmitter

It is the policy of FS Electronics, that knowing and observing the lawful use of all transmitters is a first responsibility of our end users. We do not endorse any unlawful use of any of our transmitters, and we try to give you as much common sense help about normal and lawful use as we can. Further, it is the policy of FS Electronics to cooperate with all applicable federal regulations in the design and marketing of our electronic devices. Finally, we urge all of our overseas customers to observe the regulations of their own national telecommunications authorities. In all instances, compliance with FCC rules in the operation of what the FCC terms an "intentional radiator" is always the responsibility of the user of such an "intentional radiator".

FS Electronics only offers this information to make the user aware of the full impact a transmitter can have. In no way should this brief discussion be construed as a definition of the FCC rules, it is the users obligation to obtain a copy of the rules and operate legally according to them. ***FS Electronics makes no representation as to the following discussion being legally correct - it is simply offered as an introduction to the responsibilities that a user must realize.*** To order your copy of the FCC rules part 15, call the US Government, Superintendent of Documents, at 202-512-1800, or fax at 202-512-2250. To order the correct document, ask for "CFR Title 17: Parts 1 to 199." The cost is \$24.00. Master Card and Visa are accepted.

The present edition of Part 15 of the FCC rules provides detailed guidance on ALL aspects of using a low-power transmitter. The main points to consider are; to remain within the field strength limitations, that you may not cause any interference whatsoever to licensed broadcast services, and that you must be willing to put up with any interference that you may experience. Remember, the FCC doesn't need to be bothered by policing a privilege given to unlicensed operators. If the rules are flagrantly violated, they might just revoke the privilege altogether!

If you become further fascinated with the service rendered by low-power broadcasting, other FCC regulations explain how to apply for a license or other authorization which may permit you to upgrade your equipment to accomplish any objective which the FCC sees to be in the public interest and not interfering with other authorized uses of the radio spectrum.

Lawful use suggestions:

- Follow instructions.
- Use the stock antenna supplied within the case.
- Do not modify your transmitter in any way.
- Check your intended operating frequency very carefully, to ensure you will not cause interference to reception of licensed broadcasting. (<http://www.radio-locator.com>)
- If you receive ANY complaint about your transmissions interfering with broadcast reception, stop or change your operation IMMEDIATELY.
- If you are contacted by the FCC regarding use of this device, cooperate fully and promptly.
- Do your own homework and research to understand and comply with present and future FCC rulings concerning devices of this kind. Do not rely only upon this short discussion.
- Do not use made-up "station call signs" to identify your transmissions. Only the FCC has the authority to issue such call signs. Use some other way to identify your transmitting activity, such as "This is Stereo 90.5, Seabreeze School Student Music Radio," and so forth.
- Identify the location and purpose of your transmissions from time to time. This is common courtesy toward other persons who may hear your signal. The FCC is toughest about clandestine transmission which cost time and money to track down.
- Do not assume that the mere fact that you purchased this transmitter gives you any specific right to use it for any purpose beyond generating a low-level RF signal which is barely detectable beyond the perimeter of your personal dwelling space.

Finally, the FCC Rules call for the posting of printed notices on devices intended for non-licensed operation under Part 15 Rules. You will find such notices written up for the front or back of the instruction manual for nearly any computer or video accessory that you have seen in recent months. Consult the Part 15 Rules for the exact wording of such notices. Following is a text for such a notice which responds to FCC rule making intentions:

NOTICE:

The individual users of this device assume responsibility for lawful uses conforming to FCC Part 15 Rules. Operation is subject to the following two conditions:

- 1. This device may not cause harmful interference, and**
- 2. This device must accept any interference received, including interference that may cause undesired operation.**

Final comment:

A well-informed person will see today's FCC Rules to be evolving and progressively less restrictive. Even though today's technology is far more complex than what was possible at the time of the Communications Act of 1934, the FCC rules are becoming more relaxed, giving radio experimenters more and more opportunities to explore many frequency bands, using many communications modes, with no need for a formal license of any kind. A thorough study of Part 15 of the FCC Rules, which is completely beyond the purpose of this brief discussion, will show you many legal uses of radio transmitting devices which do not require licensing, either amateur or commercial. To provide more personal and club radio learning opportunities, and to cut down on administrative costs, today's FCC permits far more non-licensed activity than at any time in previous history. On the other hand, today's FCC enforcement actions get bigger fines and real prison terms for scofflaws! From CB radio to easy entry-level Amateur Radio with long-term licensing, to numerous unlicensed Part 15 operations, the FCC is beginning to look out for the interest and good plans and intentions of private citizens and school-community groups as never before in radio communications history.