

## WARRANTY

GENERAL WARRANTY. PCTEL, Inc. ("PCTEL") warrants that the PCTEL products furnished herewith (the "Products") shall be free from defects in material and workmanship for a period of two (2) years from the date of shipment by PCTEL under normal use and operation; provided, however, that MPRC and MPRD parabolic reflector antennas and Bluewave series antennas are similarly warranted for five (5) years from the date of shipment by PCTEL.

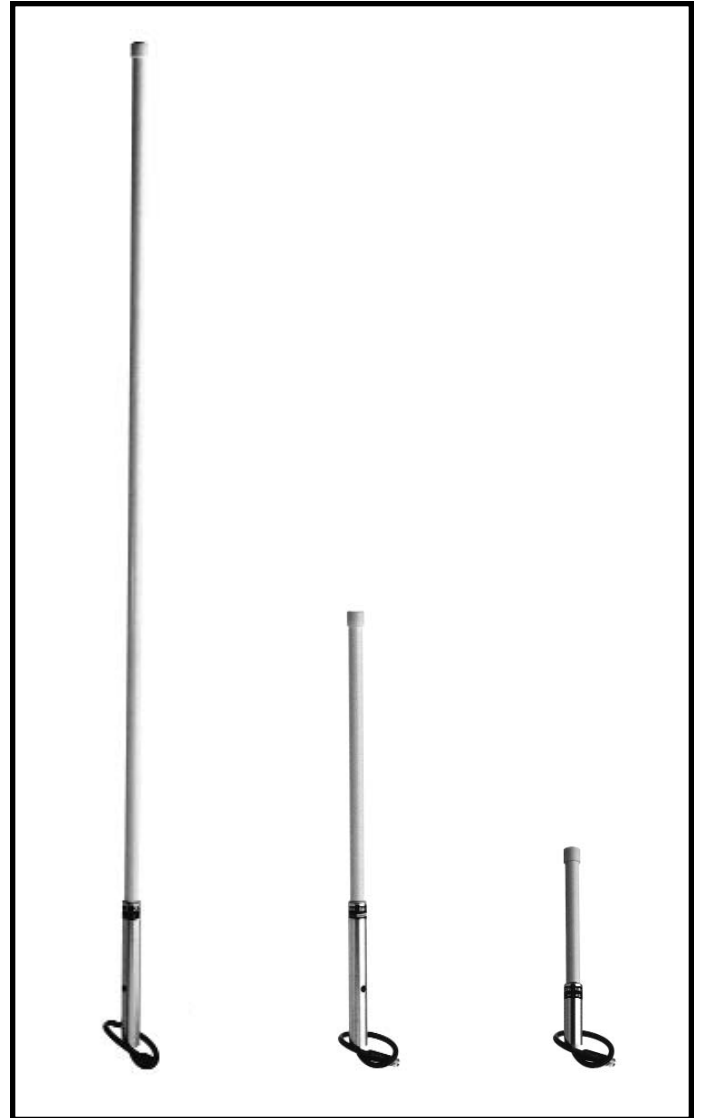
PCTEL's sole and exclusive obligation under the foregoing warranty shall be, at its option, to repair or replace any defective Product that fails during the warranty period. The expense of removal and reinstallation of any item is not included in this warranty. THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTIES ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE WITH RESPECT TO THE PRODUCTS. Repair or replacement in the manner provided herein shall be the sole and exclusive remedy of the buyer for breach of warranty and shall constitute fulfillment of all liabilities of PCTEL with respect to the quality and performance of the Product.

EXCEPTIONS. PCTEL DOES NOT WARRANT THAT THE OPERATION OF THE PRODUCTS IS ERROR-FREE OR THAT OPERATION WILL BE UNINTERRUPTED. IN NO EVENT SHALL PCTEL BE LIABLE FOR: (i) ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES TO THE BUYER OR ANY THIRD PARTY ARISING OUT OF THESE TERMS AND CONDITIONS OR ANY DEFECTIVE PRODUCT WHETHER THE DEFECT IS WARRANTED AGAINST OR NOT, WHETHER THE CLAIM IS BASED UPON CONTRACT, TORT, STRICT LIABILITY OR OTHERWISE, (ii) ANY AMOUNT EXCEEDING THE PURCHASE PRICE OF THE PRODUCT, (iii) SYSTEM PERFORMANCE, INCLUDING COVERAGE; (iv) THE BUYER'S SELECTION OF PRODUCTS FOR THE BUYER'S APPLICATION; AND/OR (iv) FAILURE OF PRODUCTS TO MEET GOVERNMENT OR REGULATORY REQUIREMENTS. The foregoing general warranty shall apply only if: (a) the Product has been properly installed and used at all times in accordance, and in all material respects, with the applicable Product documentation; (b) no modification, alteration or addition has been made to the Product by persons other than PCTEL or PCTEL's authorized representatives or otherwise approved by PCTEL in writing; and (c) the Product has not been subjected to misuse, neglect or unusual physical, electrical or electromagnetic stress, or some other type of accident.

WARRANTY PROCEDURES: In the event of a warranty claim, the buyer must contact PCTEL to arrange for Product return. No Product will be accepted for replacement or repair without first obtaining a Return Material Authorization (RMA) number from PCTEL Customer Service by telephone: 630.372.6800 or by email to [antenna.techsupport@pctel.com](mailto:antenna.techsupport@pctel.com). PCTEL reserves the right to inspect all defective Products. Product returned without an RMA number will not be processed and will be returned to the buyer freight collect. The warranty period of any repaired or replaced Product shall not extend beyond its original term.

Equipment to be repaired or replaced under warranty is to be returned, freight prepaid, to the following address with the assigned RMA number displayed on the box:

PCTEL, Inc.  
Attention: RMA Coordinator  
471 Brighton Drive  
Bloomingdale, Illinois 60108 U.S.A.



## MFB SERIES INSTALLATION INSTRUCTIONS

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Part #: MIS-MFB-3 REV B  
Printed in the U.S.A.

## MFB VHF 3dB SERIES SPECIAL TUNING INSTRUCTIONS

To optimize your VHF 3dB gain base station antenna, we have designed a special top rod tuning section. This high quality stainless steel whip has been factory tuned for the lowest frequency in your ordering band. **For example:** The MFB1503 will be factory tuned to 150 MHz.

### DO NOT LOSE YOUR FACTORY TUNED TOP ROD!

If you do, you will need to trim your own rod starting at about 27" for 144 MHz using a thru line watt meter to check for lowest VSWR.

To "fine tune" the antenna to your exact operating frequency, follow these simple steps:

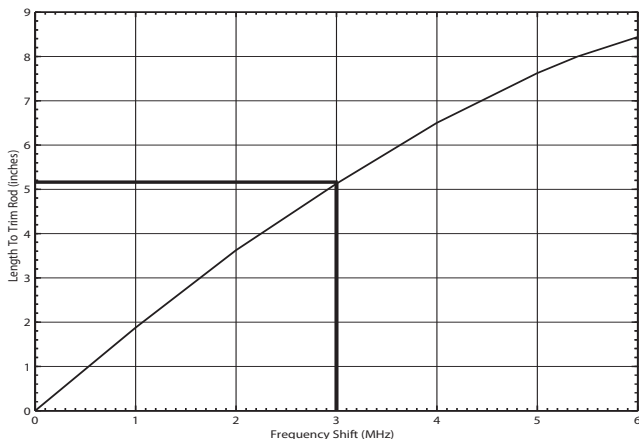
1. Noting that the operational bandwidth of the antenna is about 5 MHz at 2.0:1 VSWR, choose your desired frequency. You may either tune the antenna to your exact frequency or tune it to the center of two or more frequency bands.
2. Using the cutting chart provided, trim the top rod (about one inch per 1/2 MHz). This may be done with side cutters or with a grinding wheel. If possible, check tuning with a watt meter and the antenna mounted in as similar a place to its actual location as possible.
3. Tighten the rod securely with the two set screws provided before mounting the antenna.

### For Example

*If you have ordered an MFB1503 (150-156 MHz) antenna and you wish to tune its center frequency to 153 MHz, trim the top rod by approximately 5-1/8", according to the chart below. Check with a watt meter for greater accuracy.*

**Remember, always make the first cut a little long to avoid over-cutting the rod.** Cutting the rod too long or short will move the antenna outside of its desired frequency range resulting in a high VSWR (above 1.5:1) and degraded gain performance.

### MFB VHF 3dB SERIES



#### Example:

The dark line indicates that to tune an MFB1503 to 153 MHz (3 MHz shift), you must trim 5-1/8" from the total rod length.

MFB VHF SERIES		
PART NUMBER	FREQUENCY RANGE	FACTORY TUNED FREQUENCY
<b>3 dB GAIN</b>		
MFB1443	144-150 MHz	144 MHz
MFB1503	150-156 MHz	150 MHz
MFB1563	156-162 MHz	156 MHz
MFB1623	162-168 MHz	162 MHz
MFB1683	168-174 MHz	168 MHz
MFB2203	220-225 MHz	220 MHz

**Note:** The MFB UHF, 800 MHz and 900 MHz antennas do not require any tuning.

### MOUNTING HINTS

1. Always mount your base station antenna as high and clear of surrounding objects as possible.
2. Use extreme caution when working near telephone and electrical power lines. Always mount antennas at least twice the length of the antenna away from power lines.
3. Always insulate your connectors with tape, silicone or other weather proof materials for long life and trouble free operation.
4. When side mounting to a tower, make sure that your antenna is at least 24" from tower legs or other antennas.
5. Some antennas are equipped with drain holes, either on the side of the aluminum sleeve or on the bottom bushing, next to the connector. When mounting, be careful not to seal the hole, as this will prevent water from escaping.