

## **INTRODUCTION**

Thank you for purchasing the MFJ portable antenna. Your new portable antenna uses base loaded telescopic whips, and is specifically designed for the Yaesu FT-817 radio. For lower frequencies more inductance is needed to establish resonance, for the higher bands, progressively less inductance is needed. On the MFJ-1899T model this is conveniently achieved by providing a series of tap positions. Also, making small adjustments to the telescopic section fine-tunes both models. Though the FT-817 has a VSWR meter, this adjustment is easy to carry out. However, do not touch the antenna while transmitting. To generate carrier you will need to temporarily switch to AM or FM. You could of course whistle into the mic on SSB, but whatever method you use, please check to see if the channel is clear and that you are not going to cause interference to your fellow hams.

## **HOW TO GET THE BEST FROM YOUR ANTENNA**

With fixed HF vertical antennas the efficiency is greatly improved when using some form of ground plane. VHF and UHF handheld radios and their associated whips work well allowing you to wander around the countryside, or down the street, enjoying ham radio communications. However, stop and think how this antenna actually works. Consider a simple quarter wave vertical on a 2m VHF handheld. Like any quarter wave vertical it needs a ground plane, in this case around 19" in length. This is easily provided by the copper on the radio's circuit board and aided by the operator's hand capacity. Therefore, when operating VHF or UHF, do not consider the missing quarter wave "counterpoise". There is enough stray capacity and inductance to take care of this.

However, on HF it is completely different. There is no way that the radio can offer a sufficient ground plane for an HF vertical antenna to work. In fact, you can easily prove the point for yourself. Attach a resonant antenna, then switch to the appropriate band and listen to a signal. Then, grasp the radio firmly with both hands and hear how the signal rises. Place the radio on a metal surface such as an office filing cabinet and hear the same effect. This shows the importance of a ground plane.

It is crucial to provide the missing quarter wave ground plane in order to achieve efficient operation. (Think of the FT-817 as the center of a dipole, the whip as one half of the dipole and the quarter wave wire as the other half) To provide the missing length of wire, you need to attach a length of flex to the earth terminal on the FT-817 and run it along the ground or throw it out a window. Length is not absolutely critical but you should aim for the lengths mentioned on the next page. For the low frequency bands, you could save yourself some length by adding an inductor in the wire, but you will have to experiment with values and lengths. To improve signals even more, carry a short copper stake to go into the ground and attach this to your radio and the ground plane. The gauge of the flex is not important and it does not matter whether you use bare copper or plastic covered flex.

The FT-817 is so much more than just a fun radio and with your new antenna, it offers the ultimate in portability. To get the best out of the transceiver, adherence to the above information is very important. You will then find yourself having as many DX QSOs as you desire.

# PORTABLE TELESCOPICS FOR YAESU FT-817

## MFJ-1806T through MFJ1880T

Length of telescopic is bottom end of each band, with ground plane wire fixed to earth connection of radio.

### LENGTH OF GROUND PLANE WIRE

2m, 70cm, and dual band antennas do not need a ground wire.

|           |          |           |            |
|-----------|----------|-----------|------------|
| MFJ-1806T | 6m.....  | 109.22cm  | (3' -7")   |
| MFJ-1810T | 10m..... | 195.58cm  | (6' -5")   |
| MFJ-1812T | 12m..... | 220.98cm  | (7' -3")   |
| MFJ-1815T | 15m..... | 261.62cm  | (8' -7")   |
| MFJ-1817T | 17m..... | 304.8cm   | (10' -0")  |
| MFJ-1820T | 20m..... | 391.16cm  | (12' -10") |
| MFJ-1830T | 30m..... | 548.64cm  | (18' -0")  |
| MFJ-1840T | 40m..... | 784.86cm  | (25' -9")  |
| MFJ-1880T | 80m..... | 1569.72cm | (51' -6")  |

Ground plane lengths given for lowest frequency in each band. Longer lengths of wire are needed the lower the band.



## MFJ- 1899T

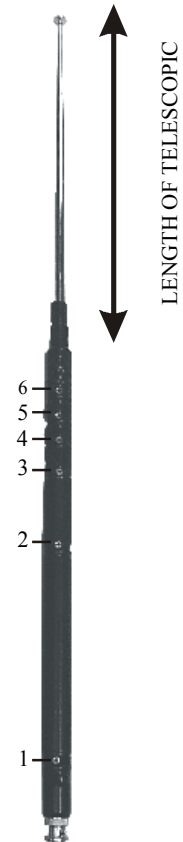
Lengths of telescopics are for lowest frequency in band and with ground plane wire connected to radio. The best length for the ground plane wire is less than 1/4 wave.  $180 \div \text{freq (in MHz)} = \text{length in feet}$ . The telescopic can be adjusted for best VSWR.

### LENGTH OF TELESCOPIC

|     |                            |                  |       |
|-----|----------------------------|------------------|-------|
| 80m | (no jumper lead connected) | approx. 121.92cm | (48") |
| 40m | No.1 connected to No.2     | approx. 121.92cm | (48") |
| 30m | No.1 connected to No.2     | approx. 45.72cm  | (18") |
| 20m | No.1 connected to No.3     | approx. 121.92cm | (48") |
| 17m | No.1 connected to No.3     | approx. 76.2cm   | (30") |
| 15m | No.1 connected to No.4     | approx. 121.92cm | (48") |
| 12m | No.1 connected to No.4     | approx. 93.98cm  | (37") |
| 10m | No.1 connected to No.5     | approx. 121.92cm | (48") |
| 6m  | No.1 connected to No.6     | approx. 101.6cm  | (40") |
| 4m  | No.1 connected to No.6     | approx. 55.88cm  | (22") |

**Note:** With No.1 connected to No.6, the antenna will also make a reasonable 5/8 wave on 2m and air band.

Telescopic length on 2m approx. 114.3cm (45")  
 Telescopic length of Air band approx. 127cm (50")



## LIMITED 12-MONTH WARRANTY

MFJ Enterprises, Inc. warrants to the original owner of this product, if manufactured by MFJ Enterprises, Inc. and purchased from an authorized dealer or directly from MFJ Enterprises, Inc. to be free from defects in material and workmanship for a period of 12 months from date of purchase provided the following terms of this warranty are satisfied.

1. The purchaser must retain the dated proof-of-purchase (bill of sale, canceled check, credit card or money order receipt, etc.) describing the product to establish the validity of the warranty claim and submit the original or machine reproduction of such proof of purchase to MFJ Enterprises, Inc. at the time of warranty service. MFJ Enterprises, Inc. shall have the discretion to deny warranty without dated proof-of-purchase. Any evidence of alteration, erasure, or forgery shall be cause to void any and all warranty terms immediately.
2. MFJ Enterprises, Inc. agrees to repair or replace at MFJ's option without charge to the original owner any defective product under warrantee provided the product is returned postage prepaid to MFJ Enterprises, Inc. with a personal check, cashiers check, or money order for **\$7.00** covering postage and handling.
3. This warranty is **NOT** void for owners who attempt to repair defective units. Technical consultation is available by calling the Service Department at 662-323-0549 or the MFJ Factory at 662-323-5869.
4. This warranty does not apply to kits sold by or manufactured by MFJ Enterprises, Inc.
5. Wired and tested PC board products are covered by this warranty provided **only the wired and tested PC board product is returned**. Wired and tested PC boards installed in the owner's cabinet or connected to switches, jacks, or cables, etc. sent to MFJ Enterprises, Inc. will be returned at the owner's expense unrepaired.
6. Under no circumstances is MFJ Enterprises, Inc. liable for consequential damages to person or property by the use of any MFJ products.
7. **Out-of-Warranty Service:** MFJ Enterprises, Inc. will repair any out-of-warranty product provided the unit is shipped prepaid. All repaired units will be shipped COD to the owner. Repair charges will be added to the COD fee unless other arrangements are made.
8. This warranty is given in lieu of any other warranty expressed or implied.
9. MFJ Enterprises, Inc. reserves the right to make changes or improvements in design or manufacture without incurring any obligation to install such changes upon any of the products previously manufactured.
10. All MFJ products to be serviced in-warranty or out-of-warranty should be addressed to:  
**MFJ Enterprises, Inc.,  
300 Industrial Park Road  
Starkville, Mississippi 39759 USA**  
and must be accompanied by a letter describing the problem in detail along with a copy of your dated proof-of-purchase.
11. This warranty gives you specific rights, and you may also have other rights which vary from state to state.