

## 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.

*Autoryzowany Przedstawiciel MFJ w Polsce:*

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## 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.

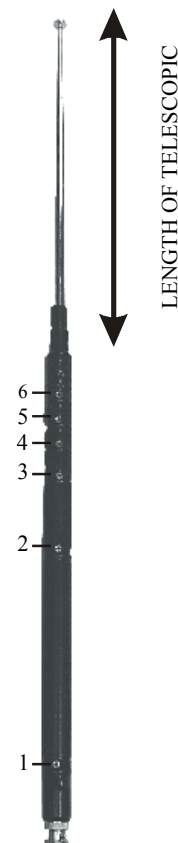
#### LENGTH OF TELESCOPIC

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")



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