

INTRODUCTION

Thank you for purchasing the MFJ-921 Dual Band VHF Antenna Tuner. The MFJ-921 covers a frequency range from 144 MHz to 220 MHz. It will handle up to 300 watts PEP of output power. It is designed to match a wide range of impedances for coax fed antennas. The built-in SWR/Watt meter is usable for both the 144 MHz and 220 MHz bands.

INSTALLATION

1. Connect your coax line fed from the antenna to the coax connector on the MFJ-921 marked ANTENNA.
2. Connect a short coax line from the coax connector on the MFJ-921 marked **TRANSMITTER** to the antenna connector of your transceiver.
3. Connect a ground wire from the GROUND wing-nut of the MFJ-921 to the transceiver ground or earth ground of your station.

OPERATION

SWR/ WATT METER

1. SWR Measurement:
 - a. Set the Push button switch to SET position (IN).
 - b. Transmit a continuous carrier and set the **SWR/POWER** control for a full-scale meter deflection.
 - c. Set the push button switch to SWR position (OUT) and read the SWR on the SWR scale of the meter.
2. Power Measurement (144 MHz):
 - a. Set the push button switch to SET position (IN).
 - b. For 30 watts range - - rotate the **SWR/POWER** control to the 30 mark and read the power level on the 30 watt scale.
 - c. For 300 watts range - - rotate the **SWR/POWER** control to the 300 mark and read the power level on the 300 scale.

Note: The **SWR/POWER** control on the MFJ-921 is factory calibrated for the 30 watt range. Do not reset the knob on this control. However, due to component tolerance when precision reading is desired, the 300 watt range can be recalibrated as follows.

- a. Set the push button switch to SET position (IN).
- b. Rotate the **SWR/POWER** control to the 30 mark and read the power level on the 30 watt scale.
- c. Rotate the **SWR/POWER** control counter-clockwise until the power level reading on the 300 watts scale is the same as it is on the 30 watts scale in Step b above.
- d. Mark the control setting for the recalibrated 300 watt range.

3. Power Measurement (220 MHz):

Power measurement on the 220 MHz operation is the same as in the 144 MHz operation as in Step 2. However, instead of using the 30 and 300 marks, use the mark to the left of the 30 for 30 watt range and to the left of the 300 for the 300 watt range

ANTENNA OPERATION

The **ANTENNA** and **TRANSMITTER** controls on the MFJ-921 present a minimum capacitance at "0" and a maximum capacitance at "10".

After properly installing the MFJ-921, use the tuner to tune for minimum SWR as described below:

1. Set both the **TRANSMITTER** and **ANTENNA** controls to "0".
2. Apply enough transmitter power to have an adequate indication on your SWR/ WATT meter. Do not apply full power while tuning for minimum SWR.
3. While transmitting, alternately adjust the **TRANSMITTER** control and the **ANTENNA** control for minimum SWR. Since the **TRANSMITTER** and **ANTENNA** controls interact, the two controls can best be adjusted by turning the **TRANSMITTER** control at a small increment at a time and then rotating the **ANTENNA** control for the minimum SWR. Repeat this process until the minimum SWR is achieved.
4. After minimum SWR is achieved, full output power, up to 300 watts PEP, may be applied to the MFJ-921.

