

# MFJ

## Automatic Antenna Tunner

*Model MFJ-926*

### INSTRUCTION MANUAL



CAUTION: Read All Instructions Before Operating Equipment

# MFJ ENTERPRISES, INC.

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# MFJ-926 Remote Automatic Antenna Tuner

## Introduction

The MFJ-926 Remote Automatic Antenna Tuner is designed to cover all frequencies ranging from 1.8-30 MHz. The multi-signal processing circuit switches inductance and capacitance as needed to match the impedance of the antenna system with your radio. Fast tuning, less than 2 seconds after initial tuning. Two-Hundred memory channels store the minimum SWR value to make tuning fast.

## Specification

Working Frequency: 1.8 – 30 MHz  
Input Impedence: 50 Ohm  
Max. Input Power: 200 Watts PEP  
Min. Input Power: 10 Watts  
Power Supply: 13.8V +/-10%  
Current Drain: <0.8A  
Auto Tuning Time: Approx. 2 sec. (first time tuning)  
Memory Channels: 200  
Weight: 4 lbs  
Usable Wire Length: 6-30 MHz > 2.4 meters  
1.8-30Mhz > 8.0 meters

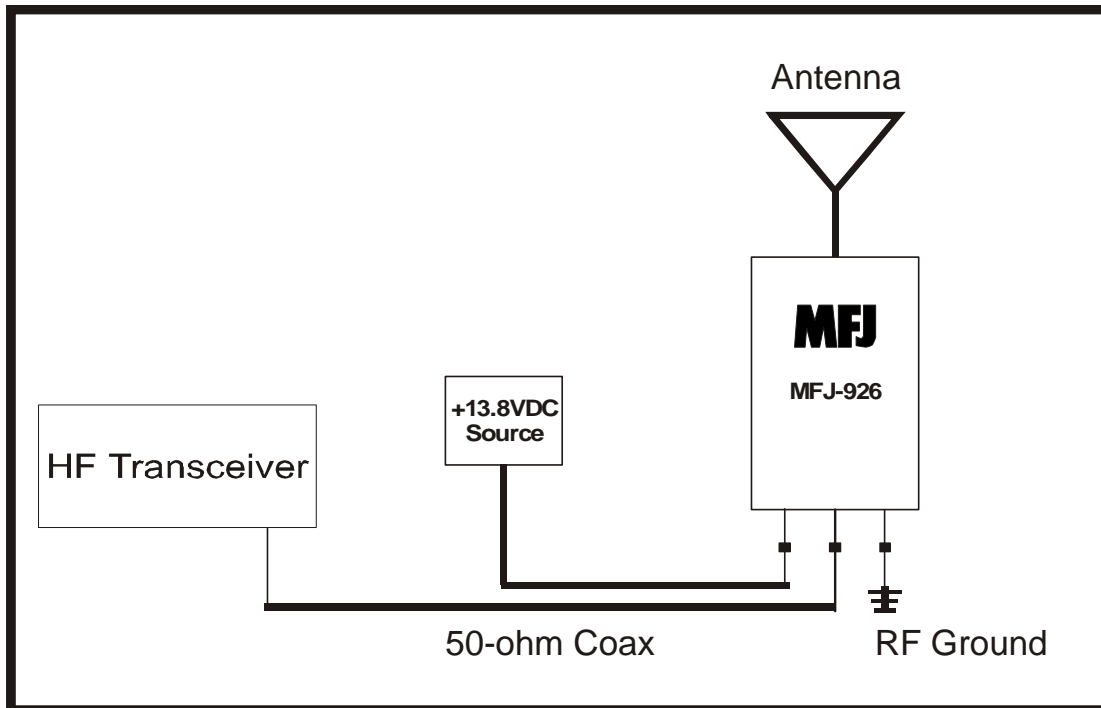


Figure 1. Installation Block Diagram

**WARNING**

- **Never operate the tuner with its cover removed. Contact with the components inside the tuner while transmitting will result in painful RF burns.**
- **Locate the tuner so that the top antenna terminals are *not accessible* during operation. The antenna connection will have high voltage while transmitting.**
- **Disconnect the tuner and radio from an antenna before lightning storms. DO NOT ATTEMPT THIS DURING A STORM**
- **Never exceed tuner specifications.**
- **Do not transmit with a high SWR for extended periods of time. Check all connections if this occurs.**

**Installations**

The MFJ-926 can be installed for mobile or base station operation. For mobile operation the antenna terminal should be connected to a suitable antenna. The ground should be connected to the body/frame of the vehicle with a short heavy gauge wire or strap. Keep this connection to a minimum. Base station installations may vary but all installations must have a suitable ground and a wire/antenna of suitable length depending on the operating frequency.

**Connections**

1. Connect the supplied power cable to a 13.8VDC source. The RED wire should be connected to the positive (+) terminal of the source while the BLUE should be connected to the negative (-) terminal. Check the polarity of the cable with a voltmeter before connecting the auto-tuner. The 13.8VDC source must be capable of delivering a minimum of 1 amp of current continuously. If the voltage is too low the tuner will not power on.
2. Connect your transceiver to the SO-239 connector on the antenna tuner using a good quality 50 ohm coaxial cable. The coax should be kept to a minimum length.
3. Connect a wire antenna / mobile whip to the antenna terminal on the top of the tuner. The antenna must be a suitable length for proper tuning. Lower frequencies will require longer antennas while higher frequencies require shorter lengths. If the antenna wire is too short the tuner will not match the impedance of the antenna to the transmitter.
4. Connect a suitable ground to the ground point on the bottom of the tuner. Read the section below on ground systems.

**Ground System and Counterpoise**

The MFJ-926 must be connected to a good electrical ground. A good ground can prevent accidental shocks, interference to other electronics and keep RF out of your shack. Use a heavy gauge wire or metal strap to connect to a large as possible metal object. In addition to a good ground, a counterpoise wire must be installed at a quarter wave length of the operating frequency.

**Caution:**

1. To insure the proper tuning, the antenna must have enough length (See Antenna Length Section below).
2. Do not install a balun, it will cause a tuning problem. Calculation of undesirable antenna length:

Length of half wave =  $300 / \text{operating frequency (MHz)} \times \frac{1}{2}$ .

Please avoid using the antenna length close to that of a half wave or multiple of a half wave in length.

### **WARNING**

- **Never place your antenna in a location where it may come into contact with POWER LINES. SERIOUS INJURY or DEATH may result if the antenna were to make contact with power lines.**
- **Locate the tuner and antenna in a manner that is *not accessible* during operation. The antenna will have high voltage while transmitting.**

### **CAUTION**

**For operator safety, a good outside earth ground or water pipe ground should always be installed and connected to the ground terminal of the MFJ-926. Make certain the safety ground also connects to the transmitter and other station accessories. A wing-nut post marked GROUND is provided for ground and counterpoise wire connections.**

## **ANTENNA LENGTH**

The MFJ-926 Remote Automatic Antenna Tuner will match an antenna of suitable length to any transmitter. Lower frequencies require longer antennas while higher frequencies require shorter lengths. The MFJ-926 does have a limited amount of inductance and capacitance and will only match antennas within its limits. The antenna may be too long if the tuner does not find a match. Simple testing methods can be used to determine how to adjust your antenna.

## **OPERATION**

After verifying each of the connections to the tuner, choose your desired frequency and switch the transmit mode as desired. Press the PTT key, the MFJ-926 will automatically tune. You will hear some “click click” noisy, it means the auto tuner is tuning.

When you go back to the frequency which is tuned before, MFJ-926 will pick up the existing L/C combination from memory setting and match the system.

To reset the tuner, just simply disconnect the power from the MFJ-926.

## **TECHNICAL ASSISTANCE**

If you have any problems with this unit, check the appropriate section of this instruction manual. If this does not reference your problem, you may contact *MFJ Technical Service* at 662-323-0549 or the *MFJ Factory* at 662-323-5869. Please have your unit, this manual, and anything else associated with this unit available on your station so the technician can properly answer your questions.

Other ways to contact MFJ are by facsimile at 662-323-6551, by email at [techinfo@mfjenterprises.com](mailto:techinfo@mfjenterprises.com), or by mail at:

MFJ ENTERPRISES, INC.  
300 Industrial Park Road  
Starkville, MS 39759

When writing MFJ, please send a complete description of your problem, an explanation of exactly how you are using your unit, and a complete description of your station.



## FULL 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 provided the product is returned postage prepaid to MFJ Enterprises, Inc. with a personal check, cashiers check, or money order for **\$10.00** covering postage and handling.
3. MFJ Enterprises, Inc. will supply replacement parts free of charge for any MFJ product under warranty upon request. A dated proof of purchase and a **\$8.00** personal check, cashiers check, or money order must be provided to cover postage and handling.
4. This warranty is **NOT** void for owners who attempt to repair defective units. Technical consultation is available by calling (662) 323-5869.
5. This warranty does not apply to kits sold by or manufactured by MFJ Enterprises, Inc.
6. 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 un-repaired.
7. Under no circumstances is MFJ Enterprises, Inc. liable for consequential damages to person or property by the use of any MFJ products.
8. **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.
9. This warranty is given in lieu of any other warranty expressed or implied.
10. 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.
11. All MFJ products to be serviced in-warranty or out-of-warranty should be addressed to **MFJ Enterprises, Inc., 300 Industrial Park Rd, 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 and a telephone number.
12. This warranty gives you specific rights, and you may also have other rights, which vary from state to state.



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MFJ-926 Manual  
Version 1A  
Printed In U.S.A.