MFJ-1622 Window Mount Antenna

Introduction

The MFJ-1622 Antenna was designed to provide portable or permanent HF communications on 40 through 10 meters and VHF on 6 and 2 meters. The universal mount design allows the user to install the antenna in many ways. The mount will easily attach to window frames, balconies, and railings. The MFJ-1622 works well indoors mounted to a desk or table as well.

The antenna consists of a collapsible whip, loading coil assembly, universal mount, counterpoise wire, and choke. The operating frequency is adjusted by moving the tap on the coil. The counterpoise wire length is adjusted for minimum SWR. The MFJ-1622 Antenna will allow the operator to get on the air from locations where antenna size is limited.

Choosing a Mounting Position

WARNING:	**ALWAYS ATTACH THE SAFETY ROPE TO A STABLE SUPPORT BEFORE ATTEMPTING TO ATTACH THE UNIVERSAL MOUNT TO A WINDOW FRAME OR RAIL. INJURY AND DAMAGE COULD OCCUR IF THE ANTENNA WERE TO FALL.**

The design of the antenna allows it to be installed in many ways. It can be easily attached to a window frame, window box or balcony railing. A Wooden fence is another common mounting location.

The best performance will be obtained by placing the antenna outside, however the antenna may be used indoors if necessary. The base plate may be attached to a table, book shelf, or other suitable support. The counterpoise is simply placed on the floor. Some installations may require the use of a C-clamp or vice-grips to secure the base plate. **Always remember to keep the antenna away from metal objects and out of reach to prevent injury**.

WARNING:	**SERIOUS RF BURNS AND INJURY CAN OCCUR IF CONTACT IS MADE WITH THE ANTENNA.**

Parts List

[ ] Antenna Whip
[ ] Loading Coil Assembly
[ ] 50 feet of RG58 Coax
[ ] 35 feet of counterpoise wire
[ ] Mounting Bracket/Base Plate
[ ] Spacer
[ ] 2 feet of Safety Rope
[ ] _" x 3 _" bolts
[ ] _" – 24 split lock washer

Tools Needed

[ ] #1 Flat Head Screwdriver
[ ] #2 Flat Head Screwdriver
[ ] Measuring Tape
[ ] 12mm or equivalent wrench

[ ] 3 Plastic wire ties

Assembly

[ ] 1. Remove all Parts from the packing material. Check to see that all are present using the list on page 1.

[ ] 2. Place the _"- 24 split lock washer onto the threaded end of the whip.

[ ] 3. Screw the antenna into the coupling nut (shown in Figure 1) located on top of the coil assembly.

[ ] 4. Secure the antenna into the coupling nut using a 12mm wrench.

[ ] 5. Uncoil the coax cable to its full length.

[ ] 6. Measure 30 feet from the antenna end of the coax and mark this point with a piece of tape.

[ ] 7. Begin 18 inches from the antenna winding the coax in a circle, 8-10 inches in diameter, using the 30 feet measured in the previous step.

[ ] 8. Use the three black wire ties supplied to tie the choke coils together. Space the ties out evenly around the circle. Figure 1 shows a picture of the finished choke.

[ ] 9. Insert the _" x 3 _" bolts into the threaded holes on the base plate approximately one inch as shown in Figure 1.

[ ] 10. Place the spacer plate onto the bolts as indicated in Figure 1.

[ ] 11. Push one end of the safety rope through the rope hole as indicated in Figure 1. Tie a knot on both ends of the rope to secure it.

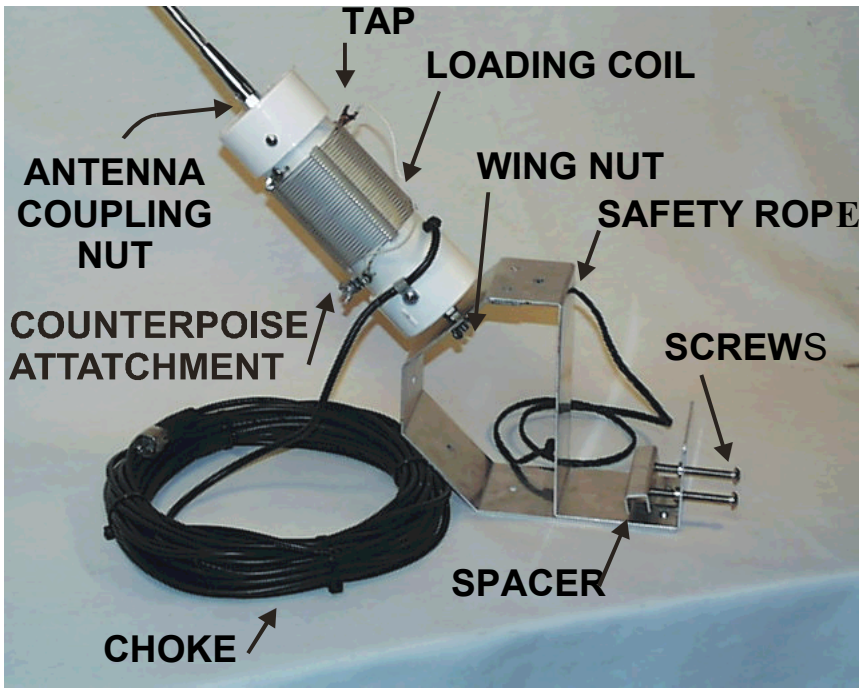

Figure 1

Installation

IMPORTANT: **WHILE INSTALLING THE ANTENNA TO A WINDOW OR BALCONY CONNECT THE SAFETY ROPE OF THE BASE PLATE TO A SUPPORT.**

[ ] 1. Choose a location to mount the antenna.

WARNING: **NEVER MOUNT THE ANTENNA IN A LOCATION CLOSE TO POWER LINES. SERIOUS INJURY OR DEATH MAY OCCUR.**

[ ] 2. Connect the safety rope to a good support.

[ ] 3. Attach the mounting bracket in position by placing the bracket over or around the surface of the support.

NOTE: THE ANTENNA SHOULD BE ORIENTED AWAY FROM WINDOWS AND OTHER OBJECTS THAT ARE WITHIN CLOSE RANGE IF POSSIBLE.

[ ] 4. Tighten the screws on the rear of the base plate against the surface of the support. The screws should be tightened in equal increments to keep the force on the spacer plate proportioned.

[ ] 5. Decide which mount hole will be used on the mounting bracket according to your situation. There are five holes available. Figure 1 indicates the possible hole positions.

[ ] 6. Extend the antenna whip to its full length

[ ] 7. Remove the wing nut and lock washer from the bottom of the coil assembly.

[ ] 8. Place the coil bolt through the mounting bracket hole.

[ ] 9. Secure the antenna to the mount by replacing the lock washer and wing nut on the bolt and tightening them firmly.

[ ] 10. Loosen the wing nut and flat washers on the Counterpoise Attachment.

[ ] 11. Insert the end of the counterpoise wire which has the insulation removed between the two flat washers.

[ ] 12. Tighten the wing nut to secure the counterpoise.

Frequency and SWR Adjustment

The antenna is tuned to the operating frequency by adjusting the tap on the loading coil and the length of the counterpoise wire. The excess counterpoise wire should be wrapped in a small coil 3-4 inches in diameter. The SWR is checked using a transmitter and SWR meter but will be much easier using an analyzer such as the MFJ-259/269 SWR Analyzer. Initial tuning will require some time. A permanent marker can be used to place marks on the coil to reduce the amount of time required for future tuning.

Before tuning check the following:

- ❑ Coax Connections
- ❑ Counterpoise Connections and Length
- ❑ Whip Connection and Length
- ❑ The tap is only touching one coil turn

[ ] 1. Begin by placing the tap on turn 0 (Figure 2) which will short the entire coil. The tap should only be in contact with one coil at a time.

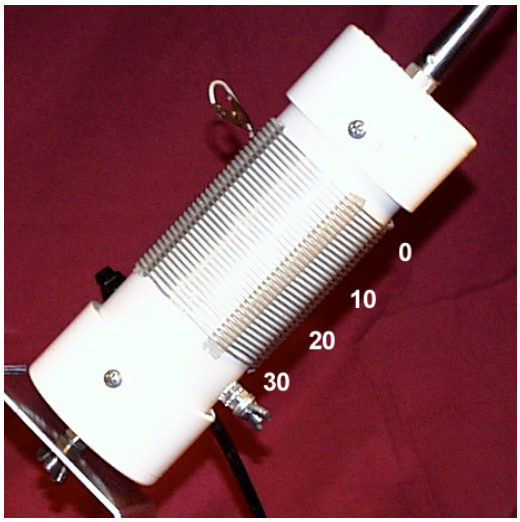

Figure 2

[ ] 2. The counterpoise wire should be less than 1/4 wavelength of the desired frequency [468 / frequency (MHz)]. This length may need to be increased or decreased according to height above ground level.

[ ] 3. With the tap on turn 0 and the counterpoise just under 8 feet, the resonance point should be approximately 30 MHz. If this is not true lower the tap on the coil to lower the frequency or shorten the whip to raise the frequency. Table 1 gives approximate tap points for each of the HF bands with the counterpoise at ground level.

[ ] 4. Each installation may require different lengths of counterpoise wire and tap positions. The greatest factor in determining the counterpoise length will be the height above ground level. The higher the installation, the closer the counterpoise length will need to be to a _ wavelength = 468 / frequency (MHz).

[ ] 5. Operation on the 6 and 2 meter bands requires that the top section of the whip be retracted completely. This may vary with some installations. The counterpoise length should be less than 5 feet.

Table 1
Counterpoise Length at Ground Level

MHz	Coil #	Counterpoise Length (Ft)
144.0	0	5’
50.1	0	5’
28.00	1.75	7’ 9”
24.89	1.5	8’ 5”
21.00	5.5	10’ 6”
18.068	5	11’
14.00	9	18’
10.1	14	19’ 5”
7.00	25	33’

Technical Assistance

If you have any problem with this unit first check the appropriate section of this manual. If the manual does not reference your problem or your problem is not solved by reading the manual, you may call *MFJ Technical Service* at **662-323-0549** or the *MFJ Factory* at **662-323-5869**. You will be best helped if you have your unit, manual and all information on your station handy so you can answer any questions the technicians may ask.

You can also send questions by mail to MFJ Enterprises, Inc., 300 Industrial Park Road, Starkville, MS 39759; by Facsimile (FAX) to 662-323-6551; or by email to techinfo@mfjenterprises.com. Send a complete description of your problem, an explanation of exactly how you are using your unit, and a complete description of your station.