

# INSTALLATION INSTRUCTIONS

## EMFLX-M10014 (144-174 MHz)

### 3 dB VHF ROOF MOUNT ANTENNA

Congratulations on your selection of another quality antenna product from E/M Wave.  
E/M Wave is committed to continually provide the greatest antenna VALUE for your wireless applications.

#### 1. Parts (Figure 1):

- Verify all parts are included with the Antenna as shown in Figure 1.
- Antenna Whip w/Vinyl Protective Cap
  - e/m-Flex™ Poly Spring Assembly
  - NMO Base Coil Adapter
  - O-Ring

#### 2. Tools:

- Tool for cutting stainless steel whip
- Hex Wrench (3/32")
- Note:** Special tools are not required to install the antenna. The antenna is intended to be installed using a firm hand torque until the sealing O-ring is completely compressed against the installation surface.

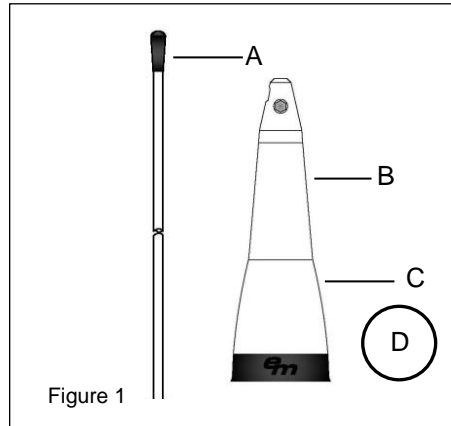


Figure 1

#### 3. Pre-Installation (Figure 2):

- The EMFLX-M10014 is designed for installation to a standard NMO mount.
- Ensure O-ring is properly seated within O-ring groove as shown in Figure 2.
- Important:** Verify proper operational frequency is stamped on the base of the coil as shown in Figure 2.
- Remove vinyl protective cap from end of Whip. Read and follow all Whip Cutting Instructions supplied for this model.

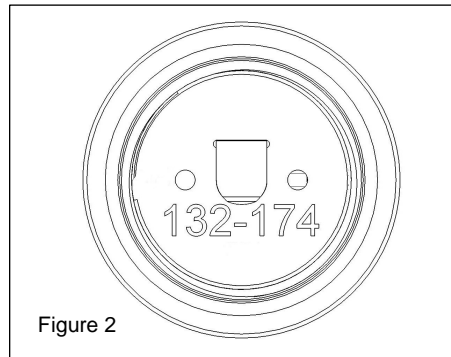


Figure 2

#### 4. Tuning and Installation (Figure 3):

- Verify contact spring is completely extended. If necessary, adjust by pulling the contact outward. (Figure 3).
- Thread NMO Base Coil Adapter onto the vehicle NMO mount. Tighten by hand until O-Ring is completely seated.
- Thread Spring onto NMO Base Coil Adapter. Firmly torque by hand.
- Refer to EMFLX-M10014 whip cutting instructions. Cut whip to length according to desired frequency of operation.
- Verify VSWR. Apply firm torque to whip adapter set screws (2 ea.).

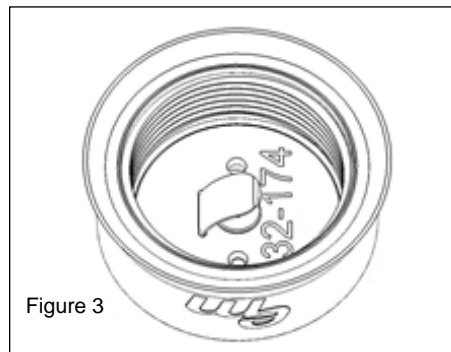


Figure 3

#### WHIP CUTTING INSTRUCTIONS FOR TUNING EMFLX-M10014 (144-174 MHz)

**PLEASE CAREFULLY READ ALL INSTRUCTIONS BEFORE CUTTING THE WHIP.**

##### 1. **IMPORTANT: Before Cutting.**

It is recommended to cut whip longer than the required dimension to verify actual performance. Then trim the whip in 1/16" (1.5mm) increments to fine tune the desired VSWR response.

FREQUENCY (MHz)	TUNED WHIP LENGTH "W"	
	(inches)	(mm)
144	44-11/16	1135
147	43-1/4	1098
150	41-3/4	1060
153	40-7/16	1027
156	39-1/16	993
159	37-11/16	957
162	36-7/16	925
165	35-1/16	890
168	33-15/16	862
171	32-13/16	834
174	31-3/4	806

Table 1

**CUTTING NOTE:** The whip can be cut using a grinding wheel or shearing tool designed for this purpose.

- NOTE:** The tuned length "W" is determined by measuring the distance between the top of the whip adapter and the top of the whip. **See Figure 4.** Cut length dimension will be approximately 1" (25mm) longer than Tuned Length "W".
- Identify the desired center frequency of operation in the left column of Table 1. Imperial and Metric units are given for convenience.
- TUNING NOTE:** For frequencies not listed in Table 1, interpolation of Tuned Length "W" is permitted. When interpolating intermediate frequencies, the antenna frequency response increases by approximately 1 MHz for:
  - each 7/16" (11mm) increment of cut length between 144-164 MHz.
  - each 3/8" (10mm) increment of cut length between 164-174 MHz.
- Cut the whip as required to establish the specified Tuned Length "W" as shown in Figure 4.
- Verify VSWR. Secure set screws (2 ea.).

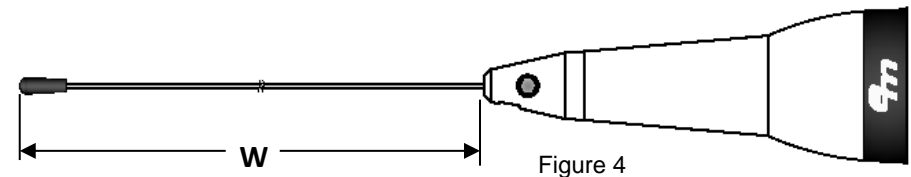


Figure 4

**[ Note: Add 1" (25mm) to Tuned Length "W" when cutting whip. ]**