INSTALLATION INSTRUCTIONS

EMFLX-M10001 (108-520 MHz)
BROAD BAND VHF/UHF QUARTER-WAVE
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.

a. Antenna Whip
b. e/m-Flex™ Poly Spring Assembly
c. NMO Base Adapter
d. O-Ring

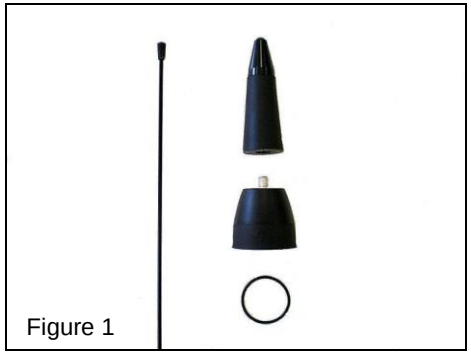
Figure 1

2. Tools:

a. Tool for cutting stainless steel whip
b. Hex Wrench (3/32")
c. **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.

3. Pre-Installation (Figure 2):

a. The EMFLX-M10001 is designed for vehicular groundplane installation with a standard NMO mount.
b. Ensure O-ring is properly seated within O-ring groove as shown in Figure 3.
c. **Note:** Always cut the whip longer than specified chart dimension to verify ground plane effects do not cause whip to resonate higher than desired frequency of operation.

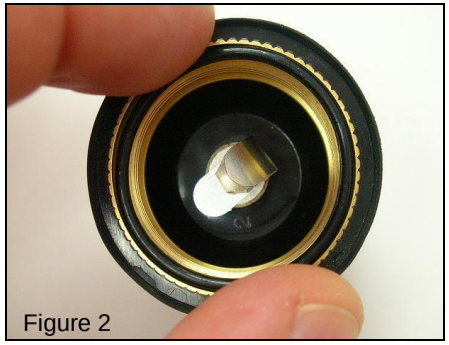
Figure 2

4. Tuning and Installation (Figure 3):

a. Verify contact spring is completely extended. If necessary, adjust by pulling the contact outward.
b. Thread NMO Base Adapter onto the vehicle NMO mount. Tighten by hand until O-Ring is completely seated.
c. Thread Spring onto NMO Base Adapter. Firmly torque by hand.
d. Refer to EMFLX-M10001 whip cutting instructions. Cut whip to length according to desired frequency of operation.
e. Verify VSWR. Apply firm torque to whip adapter set screws (2 ea.).

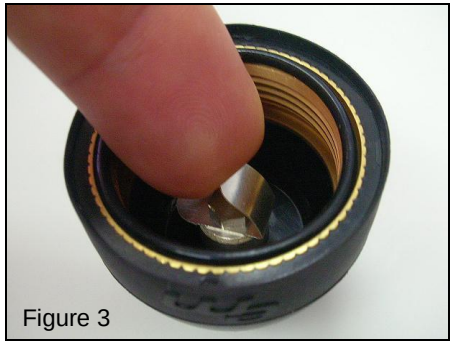
Figure 3

WHIP CUTTING INSTRUCTIONS FOR TUNING EMFLX-M10001

VHF (108-225 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 1/8" (3mm) increments to fine tune the desired VSWR response. The whip can be cut using a grinding wheel or shearing tool designed for this purpose.
2. **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".
3. Identify the desired center frequency of operation in the left column of Table 1. Imperial and Metric units are given for convenience.
4. **Note:** For frequencies not listed in Table 1, interpolation of Tuned Length "W" is permitted. Mounting location and vehicle (ground plane) size will affect actual VSWR performance.
5. Cut the whip length required to establish the specified Tuned Length "W" as shown in Figure 4.
6. Verify VSWR. Secure set screws (2 ea.).

FREQUENCY (MHz)	TUNED WHIP LENGTH "W" (inches)	(mm)
108	25-5/16	642
110	24-1/16	611
115	22-11/16	580
120	21-1/4	540
125	20	508
130	18-3/4	475
135	17-13/16	453
140	16-15/16	430
145	16-1/4	412
150	15-9/16	395
155	15	380
160	14-3/8	365
165	13-15/16	354
170	13-1/2	343
175	13-1/8	332
180	12-5/8	320
185	12-1/4	310
190	11-13/16	300
195	7-11/16	290
200	11	280
205	10-3/4	273
210	10-7/16	265
215	10	254
220	9-3/4	248
225	9-1/2	240

Table 1

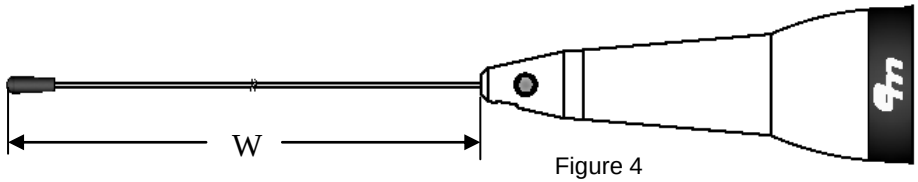

Figure 4

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

WHIP CUTTING INSTRUCTIONS FOR TUNING EMFLX-M10001

UHF (380-520 MHz)

PLEASE CAREFULLY READ ALL INSTRUCTIONS BEFORE CUTTING THE WHIP.

1. **MPORTANT: 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. The whip can be cut using a grinding wheel or shearing tool designed for this purpose.
2. **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".
3. Identify the desired center frequency of operation in the left column of Table 2. Imperial and Metric units are given for convenience.
4. **Note:** For frequencies not listed in Table 1, interpolation of Tuned Length "W" is permitted. Mounting location and vehicle (ground plane) size will affect actual VSWR performance.
5. Cut the whip length required to establish the specified Tuned Length "W" as shown in **Figure 5.**
6. Verify VSWR. Secure set screws (2 ea.).

FREQUENCY	TUNED WHIP LENGTH "W"	
(MHz)	(inches)	(mm)
380	4-3/8	110
385	4-1/4	108
390	4-1/4	107
395	4-1/8	105
400	4-1/8	104
405	4	100
410	3-13/16	96
415	3-3/4	95
420	3-3/4	94
425	3-5/8	91
430	3-1/2	89
435	3-3/8	86
440	3-1/4	83
445	3-1/4	82
450	3-3/16	81
455	3-3/16	80
460	3-1/8	79
465	3-1/8	78
470	3-1/16	77
475	3	76
480	2-15/16	75
485	2-15/16	74
490	2-7/8	73
495	2-13/16	71
500	2-3/4	70
505	2-3/4	69
510	2-11/16	68
515	2-5/8	66
520	2-5/8	65

Table 2

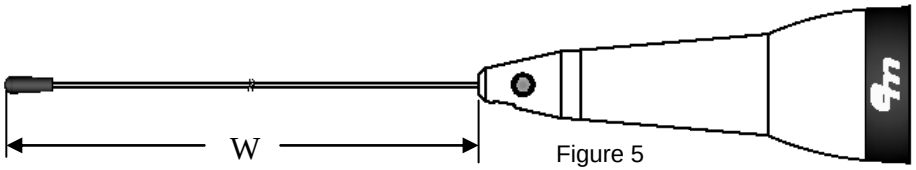

Figure 5

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