



**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.

- Antenna Whip
- e/m-Flex™ Poly Spring Assembly
- NMO Base Adapter
- O-Ring

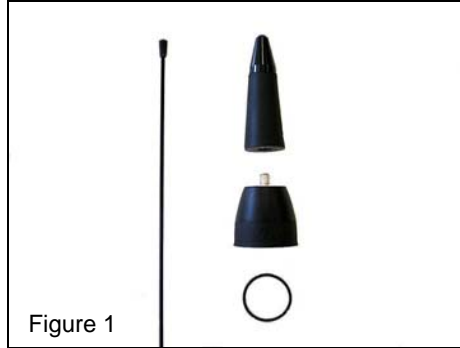


Figure 1

**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.

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

- The EMFLX-M10001 is designed for vehicular groundplane installation with a standard NMO mount.
- Ensure O-ring is properly seated within O-ring groove as shown in Figure 3.
- 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.

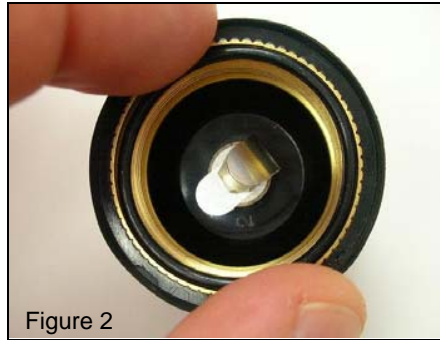


Figure 2

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

- Verify contact spring is completely extended. If necessary, adjust by pulling the contact outward.
- Thread NMO Base Adapter onto the vehicle NMO mount. Tighten by hand until O-Ring is completely seated.
- Thread Spring onto NMO Base Adapter. Firmly torque by hand.
- Refer to EMFLX-M10001 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-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

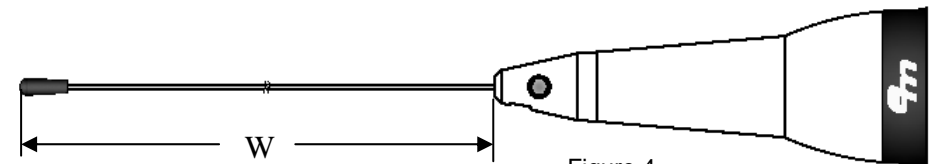


Figure 4

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

**WHIP CUTTING INSTRUCTIONS  
FOR TUNING EMFLX-M10001**

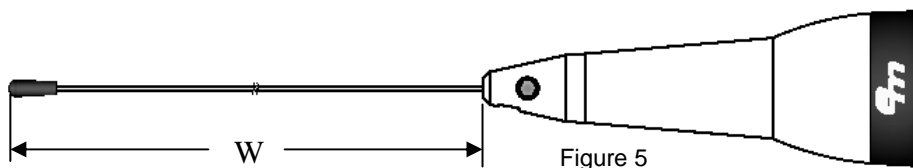
**UHF (380-520 MHz)**

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

- 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. 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 2. Imperial and Metric units are given for convenience.
- 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.
- Cut the whip length required to establish the specified Tuned Length "W" as shown in **Figure 5**.
- Verify VSWR. Secure set screws (2 ea.).

FREQUENCY (MHz)	TUNED WHIP LENGTH "W"	
	(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



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

**E/M Wave Inc.  
LIMITED WARRANTY STATEMENT**

*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.*

Electro-Magwave Incorporated, herein after referred to E/M, warrants, under standard terms and conditions, all products manufactured by it to be free from defects in material and workmanship under normal use and service, for a period of two (2) years from the initial delivery date to the original consumer.

E/M's obligation under this warranty is limited to prompt replacement of any necessary parts or complete product, at its option, without charge, by an authorized retailer or distributor, and does not include installation or reinstallation related charges. The original consumer shall return the parts with prepaid transportation charges to the point of purchase or the manufacturer for complete evaluation of defects.

The warranty period of any replaced item shall not extend beyond the original purchase term.

This warranty does not apply to any part or product which has been modified or altered in any way, nor does it apply to any part or product that fails to perform due to damage, neglect, inappropriate physical or electrical abuse or misuse, misapplication or inappropriate use, improper installation or all other forms of accidental causes.

This warranty is exclusive and in lieu of all other warranties, whether expressed or implied including implied warranties of merchantability and fitness for a specific purpose, and limited to the duration of the two (2) year period stated herein.

**Standard Warranty Conditions:** This warranty shall apply only if, (i) the product has been correctly installed and used at all times in accordance with the intended application as described within the product documentation and (ii) the product has not been subjected to any form of modification, damage, neglect, inappropriate physical or electrical abuse or misuse, misapplication or inappropriate use, improper installation or all other forms of accidental causes.

**Disclaimer:** E/M shall not be liable, for any reason, for damages caused by breach of this warranty or of any other implied warranty. E/M shall not warrant that the operation of the product is 100% inerrant, nor does it guarantee uninterrupted service operation, implied claims of service coverage or other system related performance criteria. E/M shall not be liable for purchased selection, misapplication of product or failure to meet any governmental regulations.

E/M reserves the right to change product materials and specifications without notice.