

# MOBILE & FIXED STATION ANTENNAS



**4G-LTE  
Telemetry  
Custom Design  
LMR-Public Safety  
Hand-held Portable Antennas**

**Land Mobile Radio Edition**

QUALITY

HONESTY

INTEGRITY

# TABLE OF CONTENTS

- VHF NMO Mount Antenna.....3
- VHF/UHF NMO Mount Antenna .....4
- UHF NMO Mount Antenna .....5
- Special Applications .....6
- 700/800 MHz .....7
- 700/800/900 MHz.....8
- "X"-Nut® Quarterwave Antenna.....9
- Combination Mounts/GPS/GLNSS Antenna .....10
- Multi-Band Mobile Antenna .....11
- Multi-Band Duplexed Antenna Solutions.....12
- LTE Combo Antenna Solutions .....12
- Mobile/Fixed Station Antenna.....13
- Base & Fixed Station Antenna.....14-15
- NMO Mounts and Cable Assemblies.....16
- NMO FME/QMA Mounts and Cable Assemblies.....17
- Mounts/Brackets & Cable Assemblies .....18
- Replacement Parts .....19
- Handheld Portable Antenna.....20-21



## OUR MISSION

**E/M Wave, Inc.** is committed to help our customers communicate through innovative RF and wireless solutions, by exceeding your expectations for quality antenna design, performance, and reliability.

**"Finally someone is building a better antenna solution."**

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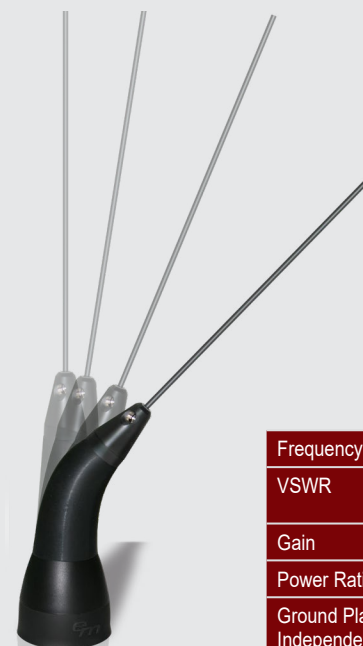
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# VHF NMO Mount Antenna

M10004 series **132-174 MHz**



EMFLX-M10004

e/m-Flex®

- O-ring seals for waterproof construction
- Durable ASA base with TPE overmold dust seal provides professional installation finish including a grip ring to ease antenna install and removal
- Elastomeric Polymer, Proprietary spring with black chrome finish whip adapter

	EMFLX-M10004	EMFLX-M10004-GPI	EM-M10004	EM-M10004-GPI	EM-M10004-LS	EM-M10004-GPI-LS
Frequency Band	132-174 MHz					
VSWR	<1.5:1 at center freq.	<1.2:1 at center freq.	<1.5:1 at center freq.	<1.2:1 at center freq.	<1.5:1 at center freq.	<1.2:1 at center freq.
Gain	3 dB	2 dBi	3 dB	2 dBi	3 dB	2 dBi
Power Rating	150 W					
Ground Plane Independent	-	YES	-	YES	-	YES
Overall Length (max)	55 7/16 in. (1.408 m.)	50 in. (1.17 m.)	55 7/16 in. (1.408 m.)	50 in. (1.17 m.)	55 7/16 in. (1.408 m.)	50 in. (1.17 m.)
Whip Material	17-7 SS, Black Chrome					
Spring Material	Elastomeric Polymer, Proprietary with black chrome finish adapter		Stainless steel, black chrome		-	-
Base Material	ASA with TPE overmold grip ring					
Mounting Application	NMO mount					



EM-M10004



EM-M10004-LS



EM-M10004-GPI



EM-M10004-GPI-LS

M10014 series **144-174 MHz**



EMFLX-M10014

EMFLX-M10014-GPI

- O-ring seals for waterproof construction
- Durable ASA base with TPE overmold dust seal provides professional installation finish including a grip ring to ease antenna install and removal
- Elastomeric Polymer, Proprietary spring with black chrome finish whip adapter

	EMFLX-M10014	EMFLX-M10014-GPI	EM-M10014	EM-M10014-GPI	EM-M10014-GPI-LS
Frequency Band	144-174 MHz				
VSWR	<1.5:1 at center freq.	<1.2:1 at center freq.	<1.5:1 at center freq.	<1.2:1 at center freq.	<1.2:1 at center freq.
Gain	3 dB	2 dBi	3 dB	2 dBi	2 dBi
Power Rating	150 W				
Ground Plane Independent	-	YES	-	YES	YES
Overall Length (max) @144 MHz	46 in. (1.17 m.)	45 3/4 in. (1.16 m.)	49 3/8 in. (1.25 m.)	45 3/4 in. (1.16 m.)	45 3/4 in. (1.16 m.)
Whip Material	17-7 SS, Black Chrome				
Spring Material	Elastomeric Polymer, Proprietary with black chrome finish adapter		Stainless steel, black chrome		-
Base Material	ASA with TPE overmold grip ring				
Mounting Application	NMO mount				



EM-M10014



EM-M10014-GPI



EM-M10014-GPI-LS

# VHF NMO Mount Antenna

EMFLX-M10008-WB 144-174 MHz Wide Band

e/m-Flex®

No Tuning Required



EMFLX-M10008-WB

- O-ring seals for waterproof construction
- Durable ASA base with TPE overmold dust seal
- Elastomeric Polymer, Proprietary spring with black chrome finish whip adapter

Frequency Band	144-174 MHz
VSWR	<1.8:1
Gain	2 dBi
Power Rating	150 W
Overall Length	18-7/8 in. (479.4 mm.)
Whip Material Finish	17-7 SS, Black Chrome
Base Material	ASA w/ TPE overmold grip ring
Mounting Application	NMO mount



# UHF NMO Mount Antenna

M10003 series 420-470 / 380-520 MHz

e/m-Flex®



EMFLX-M10003

- O-ring seals for waterproof construction
- Durable ASA base with TPE overmold dust seal provides professional installation finish including a grip ring to ease antenna install and removal

	EMFLX-M10003	EMFLX-M10003-GPI	EM-M10003	EM-M10003-GPI	EM-M10003-LS	EM-M10003-GPI-LS
Frequency Band (Tunable Range)	420-470 MHz	380-520 MHz	420-470 MHz	380-520 MHz	420-470 MHz	380-520 MHz
VSWR	<1.5:1	<2:1	<1.5:1	<2:1	<2:1	<2:1
Gain	3 dB	2 dBi	3 dB	2 dBi	3 dB	2 dBi
Power Rating	150 W					
Ground Plane Independent	-	YES	-	YES	-	YES
Overall Length (max)	14 3/8 in. (365.1 mm.)	16 1/8 in. (409.6 mm.)	14 3/8 in. (365.1 mm.)	16 1/8 in. (409.6 mm.)	14 3/8 in. (365.1 mm.)	16 1/8 in. (409.6 mm.)
Whip Material	17-7 SS, Black Chrome					
Spring Material	Elastomeric Polymer, Proprietary		Stainless steel, black chrome		-	-
Base Material	ASA with TPE overmold grip ring					
Mounting Application	NMO mount					



EM-M10003  
EM-M10003-GPI



EM-M10003-LS  
EM-M10003-GPI-LS

# VHF/UHF NMO Mount Antenna

M10001 series 108-520 MHz Quarterwave

e/m-Flex®



EMFLX-M10001

- O-ring seals for waterproof construction
- Broad Band, Field Tunable
- Durable ASA base with TPE overmold dust seal provides professional installation finish including a grip ring to ease antenna install and removal

	EMFLX-M10001	EM-M10001	EM-M10001-LS
Frequency Band	108-520 MHz		
VSWR	(15 MHz Bandwidth @150 MHz) <2.0:1 (50 MHz Bandwidth @450 MHz) <1.5:1 (100 MHz @450 MHz) <2.0:1		
Gain	2 dBi		
Power Rating	150 W		
Overall Length	@108 MHz: 29 in. (737 mm.) @150 MHz: 19 3/4 in. (502 mm.) @450 MHz: 7 3/4 in. (197 mm.)		
Whip Material	17-7 SS, Black chrome		
Spring Material	Elastomeric Polymer, Proprietary with black chrome finish adapter	17-7 Stainless steel, black chrome	-
Base Material	ASA with TPE overmold grip ring		
Mounting Application	NMO Mount		



EM-M10001



EM-M10001-LS

e/m-Flex®



EMFLX-M10007  
EMFLX-M10007-GPI

- One-piece 17-7 SS Open Coil Whip for Reliability and Performance
- O-ring seals for waterproof construction
- Durable ASA base with TPE overmold dust seal provides professional installation finish including a grip ring to ease antenna install and removal

	EMFLX-M10007	EMFLX-M10007-GPI	EM-M10007-LS
Frequency Band (Tunable Range)	420-470 MHz	440-480 MHz (no tuning required)	445-470 MHz
VSWR	<1.5:1	<2:1	<1.5:1
Gain	5 dB	5 dBi	5 dB
Power Rating	150 W		
Ground Plane Independent	-	YES	-
Overall Length (max)	38 3/8 in. (975 mm.)	31 1/4 in. (794 mm.)	38 3/8 in. (975 mm.)
Whip Material	17-7 SS, Black Chrome		
Spring Material	Elastomeric Polymer, Proprietary with black chrome finish adapter		-
Base Material	ASA with TPE overmold grip ring		
Mounting Application	NMO Mount		



EM-M10007-LS

## T-Band Mobile Antenna 470-520 MHz

Superior Performance for Public Safety & Commercial Trunking Applications

- Ultra high performance – VSWR <1.5:1 Max
- Durable ASA base with TPE dust seal and grip ring
- Rugged reliability – IP67 Ingress Rated
- e/m-Flex® Polymer Spring – Premium Black Chrome Finish



EMFLX-M10013	
Frequency Band (Tunable Range)	470-520 MHz
VSWR	<1.5:1 @ 20 MHz Bandwidth
Gain	3 dB
Power Rating	150 W
Overall Length (max)	12.9 in. (327 mm.)
Whip Material	17-7 SS, Black Chrome
Spring Material	Elastomeric Polymer, Proprietary
Base Material	ASA with TPE overmold grip ring
Mounting Application	NMO mount

## 460 MHz Center Frequency

No Tuning Required

- NMO Mount, Black Chrome Finish
- Flexible Elastomeric Polymer Spring
- O-ring seals for waterproof construction
- Durable ASA base with TPE overmold
- IP67 Rated

	EMFLX-M10003-460	EMFLX-M10003-GPI-460
Frequency Band (Tunable Range)	460 MHz	460 MHz
VSWR	<1.5:1, 20 MHz Bandwidth <2.0:1, 40 MHz Bandwidth	<1.5:1, 25 MHz Bandwidth <2.0:1, 40 MHz Bandwidth
Gain	3 dB	2 dBi
Power Rating	150 W	
Overall Length (max)	12.2 in. (309 mm.)	10 5/32 in. (258 mm.)
Whip Material	17-7 SS, Black Chrome	
Spring Material	Elastomeric Polymer, Proprietary	
Base Material	ASA with TPE overmold grip ring	
Mounting Application	NMO mount	



EM-M11017	
Frequency Band	698-896 MHz
VSWR	<1.5:1 Typical, <1.6:1 Max
Gain	2 dBi
Power Rating	100 W
Overall Length	3.63 in (92 mm.)
Whip Material	Elastomeric Polymer, Proprietary
Base Material	Brass Black Chrome Plating
Mounting Application	NMO mount

Patent No. US 9,520,640

- Resists Impact and Damage from low hanging obstructions
- Dust and O-ring Seals for Reliable Weatherproof Performance (IP66)
- Industry's Only Low Profile Antenna protected within a rugged flexible housing



EM-M11009	
Frequency Band	746-960 MHz
VSWR	<1.5:1
Gain	2 dBi
Power Rating	100 W
Overall Length	4 in. (102 mm.)
Whip Material	17-7 Stainless Steel, Black Chrome
Base Material	ASA with TPE overmold grip ring
Mounting Application	NMO mount

- Broadband Performance Exceeds 214 MHz
- Low Profile Design for Urban Areas where Gain Antennas May not be Required
- Durable ASA Base with TPE Over Mold Grip Eases Antenna Install and Removal for Car Wash

Public Safety  
LMR/P25/TETRA  
ISM/SCADA/Utilities  
Railroad/Train Control



EM-M11003	
Frequency Band	763-869 MHz
VSWR	<2:1
Gain	5 dBi
Power Rating	100 W
Overall Length	14 1/2 in. (368 mm.)
Whip Material	17-7 Stainless Steel, Black Chrome
Base Material	ASA with TPE overmold grip ring
Mounting Application	NMO mount

- Rugged One-Piece SS Radiator with Limited "Lifetime Warranty"
- Durable and Highly Conductive Black Chrome Finish
- Tightly Wound Phasing Coil Delivers Flexibility while Resisting Low Hanging Obstructions



EM-MX0746	
Frequency Band	746-894 MHz
VSWR	1.5:1 typical, 2.0:1 max
Gain	2.0 dBi
Power Rating	100 W
Overall Length	4 in. (102 mm.)
Polarization	Linear, Vertical
Ground Plane	Required
Mounting Application	NMO mount

- Stylish high-impact, dual shot ASA/TPE base
- Insert molded antenna adapter and brass NMO ring truly eliminates mating concerns of dissimilar metals
- Dual seal construction for weatherproof protection

# 700 / 800 / 900 MHz

	EM-M11009	EM-M11003	EM-M11008	EM-M11010	EM-M11004	EM-M11014
Frequency Band	746-960 MHz	763-869 MHz	806-894 MHz	850-902 MHz	890-960 MHz	902-928 MHz
VSWR	<1.5:1	<2:1	<2:1	1.5:1 typ. 1.6:1 max.	<2:1	<2:1
Gain	2 dBi	5 dBi	5 dBi	5 dBi	5 dBi	6 dBi
Power Rating	100 W					
Overall Length	4 in. (102 mm.)	14 1/2 in. (368 mm.)	14 1/2 in. (356 mm.)	13.7 in. (348 mm.)	12 1/2 in. (318 mm.)	22 1/4 in. (565 mm.)
Whip Material	17-7 Stainless Steel, Black Chrome					
Base Material	ASA with TPE overmold grip ring					
Mounting Application	NMO mount					

**Applications**  
Public Safety/LMR/P25/TETRA  
ISM/SCADA/Utilities, Railroad/Train Control

- Durable and Highly Conductive Black Chrome Finish
- Tightly Wound Phasing Coil Delivers Flexibility while Resisting Low Hanging Obstructions
- Open Coil Whip Affords Higher Power Handling Capability
- Brass BETA's Increase Operational Bandwidth up to 15%
- Durable ASA Base with TPE Overmold Grip Eases Antenna Install and Removal

EM-M11009 746-960 MHz

EM-M11003 763-869 MHz

EM-M11010 850-902 MHz

EM-M11008 806-894 MHz

EM-M11004 890-960 MHz

EM-M11014 902-928 MHz

# "X"-Nut® Quarterwave Antenna

Exploded view showing all "X"-Nut® components



Gain	2.0 dBi
VSWR	1.5:1 typical, 1.9:1 max (except EM-MX0152, 1.5:1 typical, 2.0:1 max)
Power Rating	100 W
Polarization	Linear, Vertical
Ground Plane	Required
Whip Material Finish	300 Series stainless steel black chrome plated
Base Material	ASA/TPE overmold grip ring
Mounting Application	NMO mount
Corrosion	Salt and UV resistant

- Stylish high-impact, dual shot ASA/TPE base
- Insert molded antenna adapter and brass NMO ring truly eliminates mating concerns of dissimilar metals
- Dual seal construction for weatherproof protection

- Delivers up to 10% more operational bandwidth than comparable low-end chrome nut designs
- Durable black chrome finish for high conductivity and quality appearance
- Easy hand-installation for positive RF connection... No tools required!



EM-MX0746 746-894 MHz  
Height: 4 in. (102 mm.)

EM-MX0450 450-520 MHz UHF  
Height: 6 in. (169 mm.)

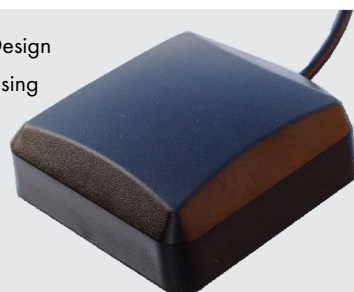
EM-MX0152 152-162 MHz VHF  
Height: 18 1/4 in. (464 mm.)

EM-MX0108-FT 108-960 MHz Field Tunable  
Height: 31 1/4 in. (806 mm.)

## Magnet Mount GPS/GLNSS

Adhesive option available

- Low-Profile, Rugged, Compact Design
- High-Impact Polycarbonate Housing UV Stabilized
- IP67 Rated
- High Rejection SAW Filter
- Low Current Consumption
- High strength magnetic mount
- SMA male plug
- 16.4 ft (5 m) RG-174/U Cable



**EM-MG13004-SP**

## GPS/GLNSS (L1) Timing Antenna

1574.4-1610 MHz



EM-BGT13005-TJ	
Frequency Band	1575.42-1610 MHz
VSWR	<2.0:1
Gain	1575 MHz 30 ± 3 dB 1610 MHz 29 ± 3 dB
Noise Figure	3.5 dB max
Oper. Voltage Vdc	3 - 5.5 V
Current Drain Idc	8+3 mA
Rejection Out of Band	60 dB
DC Injection	Coaxial feed cable center conductor
Mechanical Specifications	
Height	4.9 in. (124.8 mm.)
Width	3.13 in. (80 mm.)
Connector	TNC Jack

- High selectivity dual filter RF architecture eliminates high power RFI operating within multi-located base station environment
- Impact resistant ASA radome
- Rugged die-cast aluminum base
- Integrated Bulkhead, TNC Jack
- IP67 Rated
- 3/4 in. NPT and 1"-14 marine mount compatible
- UV resistant/cool gray for reduced visibility

## NMO/GPS/GLNSS Combination Mount

- Low-Profile aesthetics for reduced visibility
- UV Stabilized, High Impact ASA housing
- Rugged aluminum die cast base for high strength mechanical mounting and reliability
- Silicone Rubber gasket and dual O-ring seals for waterproof, high pressure car wash (IP66) applications



**EM-MG11006-SP (-195)**  
**EM-MG11022-SP (-195)**

	EM-MG11006-SP EM-MG11006-SP-195	EM-MG11022-SP-195
	GPS (L1) LNA	GPS/GLNSS LNA
Frequency Band	1575.42 ± 3 MHz	1575-1615 MHz
VSWR	<2.0:1	
Gain	30 dB Typical at 5 Vdc	28 dB Typical
Noise Figure	2.0 dB max	1.5 typical, 2.0 dB max
Oper. Voltage (Vdc)	3.0 - 5.5 V	2.5 - 5.5 V
Current Drain (Idc)	6.0 - 20.0 mA	5.0 - 20.0 mA max
Filter Type	SAW	
Attenuation	35 dB min (L1+50 MHz) 45 dB min (L1 +100 MHz)	28 dB min (DC-1522.5 MHz) 30 dB min (1662.5-3000 MHz)
Power Handling, Input	10 W	
Connector	SMA Plug	
Cable	RG174	
Passive Antenna Element		
Center Frequency Band	1575.42 MHz	1592.5 MHz
Antenna VSWR	1.5:1 max	2:1 max
Gain	3 dBic	4 dBic
Polarization	RHCP	
Common NMO Mount Specifications		
Frequency Band	30 - 1000 MHz	
VSWR	1.5:1 typical	
Power Rating	150 W max	
Overall Length	4.5 in. (114.3 mm.)	
Mounting Application	Bulkhead, 3/4 in. thru-hole	
Connector	Sold separately	
Cable	RG58/U (standard) or Low Loss 195 type (suffix -195)	

## LMR and LTE-Poly Pro Flexible Antenna

**EM-M20007** 698-960 MHz/1710-2700 MHz  
**EM-M22001** 450-520 MHz/746-960 MHz



EM-M20007      EM-M22001

Patent No. US 9,520,640

- Capacitive Coupled Design Optimizes LTE and UHF Signal Performance while Maintaining Low-Profile Tapered Form Factor
- Flexible Elastomeric Polymer Housing Resists High Speed Impact and Damage from Low Hanging Obstructions
- Dust and O-Ring Seals for Reliable High Pressure Car Wash and Waterproof Performance (IP66)
- Next Generation LTE Model Incorporates Expanded Frequency Range and Reduced Height
- Rugged "All Brass" Construction with Black Chrome Finish and Silver Plated Contact Maximizing Conductivity and System Reliability

	EM-M20007	EM-M22001
Frequency Band	698-960 MHz / 1710-2700 MHz	450-520 MHz / 746-960 MHz
VSWR	1.5:1 typical, 2:1 max	
Gain	2 dBi @ 698-960 MHz 3 dBi @ 1710-2100 MHz 5 dBi @ 2100-2700 MHz	2 dBi @ 450-520 MHz 2 dBi @ 746-960 MHz
Power Rating	100 W	150 W
Ground Plane	Required	



## Tri-Band IP67 Rated Roof Mount Antenna

**EM-M43002**  
150-162/450-490/763-870 MHz



- Stylish High-Impact, Dual Shot ASA/TPE Base Eliminates Ingress
- Insert Molded NMO Brass Base for Superior Performance, Eliminating Dissimilar Metal Corrosion
- High Strength, Impact-Resistant 17-7 Black Chrome SS Spring
- Dual Seal Design Provides IP67 Ingress Protection
- Hand Torque Installation Maintains Reliable RF Connection
- Removable Whip Protects NMO Contacts During Vehicle Wash
- Durable Black Chrome Finish for High Conductivity, Quality, and Covert Appearance



EM-M43002	
Frequency Band	150-162/450-490/763-870 MHz
VSWR	<2:1 (150-162, 450-470, and 763-870 MHz) <2.5:1 (470-490 MHz)
Gain	Utility @ 150-162 MHz 5 dBi @ 450-490 MHz 4 dBi @ 763-870 MHz
Power Rating	100 W
Ground Plane	Required
Mechanical Specifications	
Height	17.7 in. (447 mm.)
Mounting Application	NMO mount

# Multi-Band Duplexed Antenna Solutions

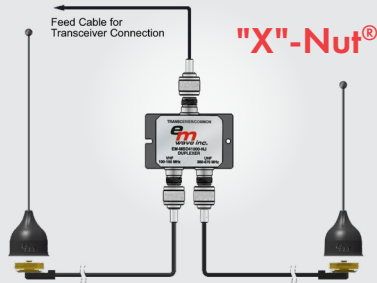
**EM-MBD41000-NJ** 100-180 MHz/380-870 MHz

- N-Jack Connectors
- Low Insertion Loss, All Bands
- High Power Handling
- 50 dB Port-to-Port Isolation
- Full Duplex/Bi-Directional Operation for Signal Combining or Splitting
- Specifically Designed to Augment Multi-Band LMR Applications



## Dual Band

EM-MBD41002

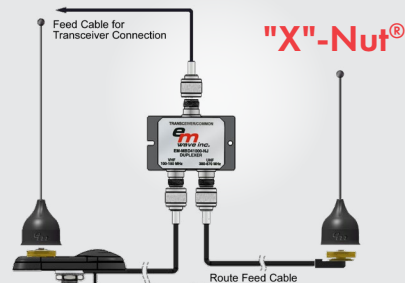


- 108-174 MHz / 380-870 MHz
- Dual Band configuration for all LMR/Public Safety Bands, VHF through 870 MHz

Kit Includes	Qty
Duplexer (VHF/UHF-870 MHz)	1
N Male Connectors	3
Low Loss 195 NMO Cable	1
RG-58/U NMO Cable	1
EM-MX0108-FT Antennas	2
RG-58/U Feed Cable	1

## Dual Band w/GPS

EM-MBD41003

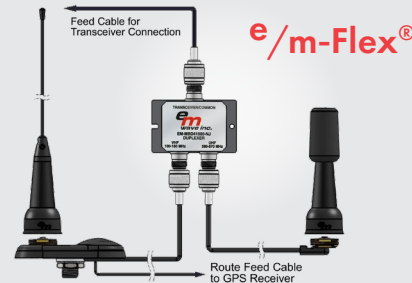


- 108-174 MHz / 380-870 MHz / + GPS
- Dual Band configuration for all LMR/Public Safety Bands, VHF through 870 MHz including GPS

Kit Includes	Qty
Duplexer (VHF/UHF-870 MHz)	1
N Male Connectors	3
Low Loss 195 NMO Cable	1
EM-MG11006-SP Mount NMO/GPS	1
EM-MX0108-FT Antennas	2
RG-58/U Feed Cable	1

## Tri Band w/GPS

EM-MBD41004

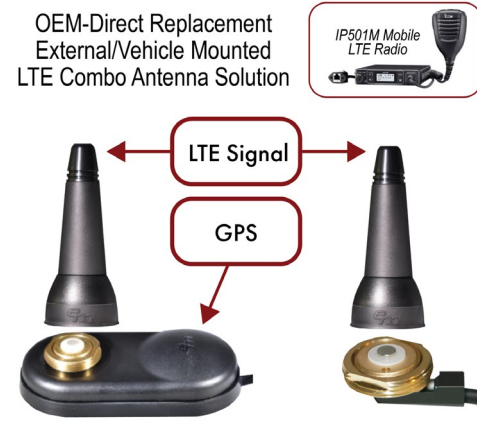


- 108-174 MHz / 450-520 MHz / 746-870 MHz /+GPS
- Complete Tri-Band coverage for all LMR/Public Safety Bands operating in VHF 108-174 MHz, UHF 450-520 MHz and 746-870 MHz including GPS

Kit Includes	Qty
Duplexer (VHF/UHF-870 MHz)	1
N Male Connectors	3
EM-M11001-195 to Low Loss 195 NMO Cable	1
EM-MG11006-SP Mount NMO/GPS	1
EM-M22001 (UHF/700-900 MHz)	1
RG-58/U Feed Cable	1

# LTE Combo Antenna Solution

EM-MGLTE-ICK01-Kit Includes	Description
<b>EM-MG11006-SP-195</b>	NMO/GPS Combo Mount, SMA (GPS) & RP-SMA (LTE) plug connectors
<b>EM-M11001-195</b>	NMO Mount, RP-SMA Connector
<b>EM-M20007</b>	LTE Poly Pro flexible antenna



# Mobile/Fixed Station Antenna

ISM

Mobile/Fixed Station Antenna

ISM Band 902-928 MHz



EM-A11015 Black, EM-A11016 White, EM-A11015-SP Black, EM-A11016-SP White

- Tamper resistant bulkhead mount type
- Low Profile: Minimizes visual impact for interior / exterior fixed point applications
- Rugged dual seal design for exterior mobile and fixed point installations where ultra-reliable waterproof performance is required
- UV stabilized, high impact radome
- Silicone compression pad provides maximum weatherproof seal against the bulkhead

	EM-A11015 EM-A11016	EM-A11015-SP EM-A11016-SP
Frequency	902-928 MHz	
VSWR	1.5:1, max	
Gain	3 dBi	
Power Rating	10 W	
Polarization	Linear, vertical	
E-Plane	55°, nominal	
H-Plane	Omnidirectional	
<b>Mechanical Specifications</b>		
Height	3 in. (76.2 mm.)	
Diameter	1.67 in. (42.4 mm.)	
Radiator	PCB	
Housing Material	ASA	
Mounting Application	5/8 DD x 1/4 in. (6.35 mm.) max, Bulkhead/panel mount	3/8 in. (M-10) Hole, Bulkhead
Cable	2 ft. (610 mm.) Low Loss 100	
Connector	N Jack (female)	SMA Plug

LTE

Mobile/Fixed Station Antenna

Broadband/Multiband

698-960 MHz  
1710-2200 MHz  
2200-2700 MHz



EM-A20003-SP Black, EM-A20004-SP White

- LTE/4G performance
- Surface mount applications
- Aesthetic/tamper resistant design
- Low-profile to minimize visual impact
- UV stabilized, high impact radome

Broadband/Multiband

746-960 MHz  
1710-2200 MHz  
2200-2700 MHz



EM-A40001 Black, EM-A40002 White

- LTE, LMR, Cellular/PCS, UMTS, WiFi, Wimax
- Tamper resistant bulkhead mount type
- Low profile for interior/exterior fixed point applications
- Rugged dual seal design for exterior mobile and fixed point installations where ultra-reliable waterproof performance is required
- O-ring seal for reliable waterproof construction and installation

	EM-A20003-SP EM-A20004-SP	EM-A40001 EM-A40002
Frequency Band (1)	2 dBi Gain @ 698-960 MHz	2 dBi Gain @ 746-960 MHz
Band (2)	2 dBi Gain @ 1710-2200 MHz	
Band (3)	3.5 dBi Gain @ 2200-2700 MHz	
VSWR	<2.2:1 @ 698-710 MHz <2:1 @ 710-960 MHz <2:1 @ 1710-2700 MHz	2:1, max
Power Rating	10 W	
Polarization	Linear, vertical	
E-Plane	50°, nominal	35-50°, nominal
H-Plane	Omnidirectional	
<b>Mechanical Specifications</b>		
Height	3 in. (76.2 mm.)	
Diameter	1.67 in. (42.4 mm.)	
Radiator	PCB	
Housing Material	ASA	
Mounting Application	3/8 in. (M-10) Hole, Bulkhead	5/8 DD x 1/4 in. (6.35 mm.) max, Bulkhead/panel mount
Cable	2 ft. (610 mm.) Low Loss 100	
Connector	SMA Plug	N Jack (female)

# Base & Fixed Station Antenna

## Multi/Wide Band iDAS Indoor Ceiling Mount Antenna

698-6000 MHz

	EM-B40002-NJ
Frequency Band	698-6000 MHz
VSWR	<2:1 698-3500 MHz <2.5:1 3500-6000 MHz
Gain:	698-960 MHz: 2 dBi 1710-2100 MHz: 3 dBi 2100-2700 MHz: 3.5 dBi 3500-3700 MHz: 2.5 dBi 5200-5900 MHz: 3 dBi
H-Plane HPBW	Omnidirectional
Polarization	Vertical
Power Rating	50 W
PIM Rating (2x43dBm)	<-150 dBc

Ground plane not required

- LTE/4G/5G performance
- Surface mount applications
- Aesthetic/tamper resistant design
- Low-profile to minimize visual impact
- UV stabilized housing



EM-B42002-NJ

LTE

PIM Rated



Video



## Fiberglass Base Station Antenna

EM-BFG11905-NJ  
EM-BFG11905-NP  
902-928 MHz

- High input power handling
- All brass/silver plated feed and radiator structure
- High strength filament wound fiberglass radome (White)
- Includes hardware for 1 1/2 inch offset pipe mast mounting

ISM



EM-BFG11905-NJ

EM-BFG11905-NP

EM-BFG40006-NJ 698-960/1710-2500 MHz  
EM-BFG11702-NJ 746-870 MHz

- High efficiency performance all LTE bands 698-2500 MHz
- High input power handling
- All brass/silver plated feed and radiator structure
- High strength filament wound fiberglass radome (White)
- Includes hardware for 1 1/2 inch offset pipe mast mounting

4G/LTE



EM-BFG40006-NJ

EM-BFG11702-NJ

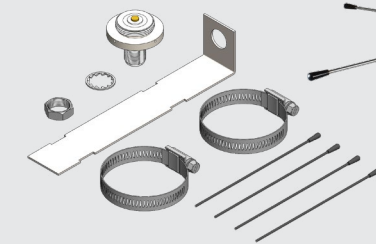
	EM-BFG40006-NJ	EM-BFG11702-NJ
Frequency Band	698-960/ 1710-2500 MHz	746-870 MHz
VSWR	<1.8:1 typ. 2:1 max	<1.5:1
Gain	2 dBi / 3 dBi	2 dBi
Power Rating	150 W	
Polarization	Vertical	
Horizontal HPBW	Omnidirectional	
Vertical HPBW	65 - 72°, typical	
Connector	Type N Jack	
Height	18.1 in. (459 mm.)	
Width (dia.)	1.6 in. (41 mm.)	

# Base & Fixed Station Antenna

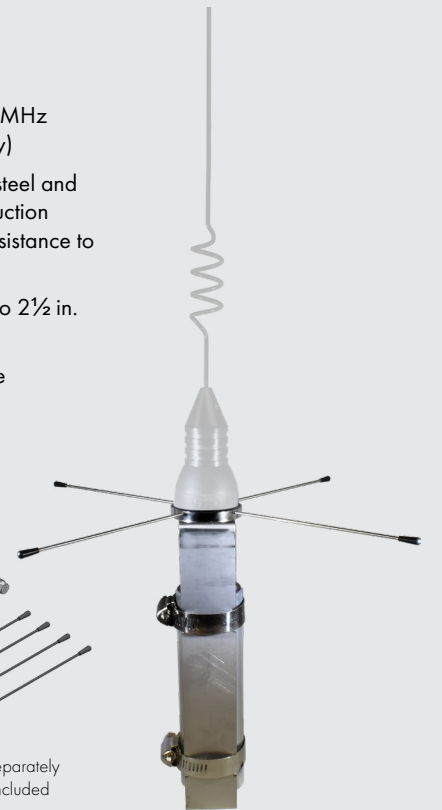
## Ground Plane Kit

EMBKT-BSA100  
EMBKT-BSA800

- For VHF/UHF/800-900 MHz Antennas (sold separately)
- High grade 316 stainless steel and nickel plated brass construction provides durability and resistance to environmental corrosion
- Directly mounts to 1.6 in. to 2 1/2 in. mast diameter
- 8 in. high x 10.83 in. wide



NMO Antenna Sold Separately  
Mounting Mast Not Included

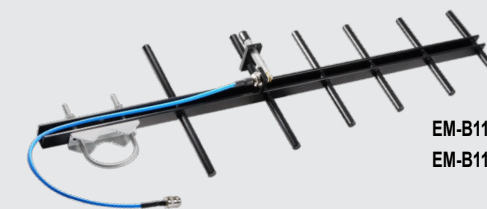


Utilities

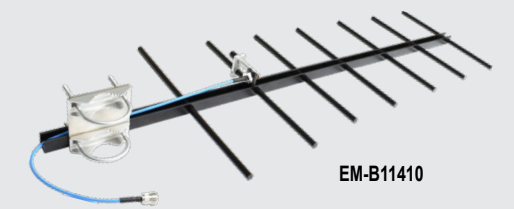
Video



## Yagi Fixed Station Antenna



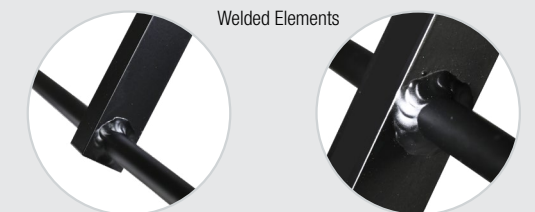
EM-B11809  
EM-B11909 (Non-welded)



EM-B11410

	EM-B11410 7 Element	EM-B11809 6 Element	EM-B11909 Non-welded
Frequency Band	450-470 MHz	760-870 MHz	890-960 MHz
VSWR	<1.6:1, typical, 2:1 max	<1.5:1, typical, 2:1 max	
Gain	10 dBi	9.5 dBi	
Power Rating	150 W	125 W	
Dimensions	35.4 x 12.9 x 1.65 in. (900 x 328 x 42 mm.)	24 x 7.52 x 1.65 in. (610 x 191 x 42 mm.)	
Antenna Material	6000 Series Aluminum / Black powder coat finish		
Mounting Material	Stainless Steel & Steel / Dacron Finish		
Mounting Application	Pole / Mast Mount		
Cable / Connector Type	RG-141 UV & Plenum type cable / N Jack		

- Rugged Aluminum Construction
- UV and Environmentally Resistant Black Powder Coat Finish
- Boom: 3/4" 6063 Aluminum
- Radiators: 3/8" 6061 Aluminum, Solid Rod
- V or H Polarization Mountable
- Mounting Hardware Included
- Integrated Feed Cable, RG-141 Plenum Type



Welded Elements



# NMO Mounts and Cable Assemblies

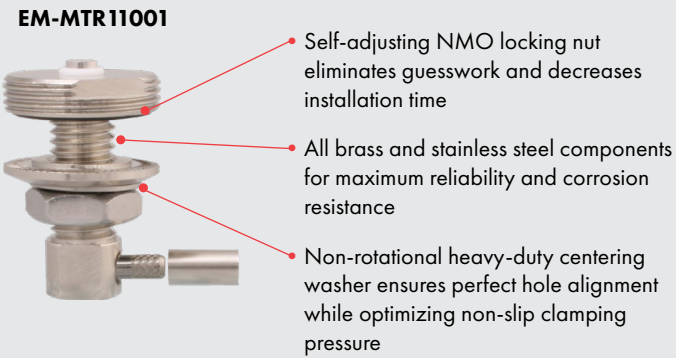
## NMO 3/4" Hole Mount Assembly



Attached Cable Models	Standard Low Profile			
	EM-M11001-058	EM-M11001-195	EM-M11001-058-35	EM-M11001-195-35
Frequency Band	30-1000 MHz			
VSWR	1.5:1 typical			
Power Rating	100 W @ 1000 MHz			
Cable Type	RG-58/U	Low Loss 195	RG-58/U	Low Loss 195
Cable Length	17 ft. (5.1 m.) standard length		35 ft. (10.67 m.)	35 ft. (10.67 m.)
Connector	Sold Separately			
Mounting Material	Brass			

## Thick Panel Style NMO Mount

Up to 1/2 in. (12.7 mm.) Thickness



Attached Cable Models	Thick Panel Series	
	EM-MTR11001-058	EM-MTR11001-195
Frequency Band	30-1000 MHz	
VSWR	<1.3:1 typical	
Power Rating	150 W for VHF 100 W for 700-1000 MHz	
Cable Type	RG-58/U	Low Loss 195
Cable Length	17 ft. (5.1 m.) Standard length	
Connector	Sold separately	
Mounting Material	Brass and stainless steel with bright nickel finish	

## Connectors

All connectors fit RG-58/U & 195 Type Cable



# NMO FME/QMA Mounts & Cable Assemblies

## NMO Mount FME/QMA Cable Assembly



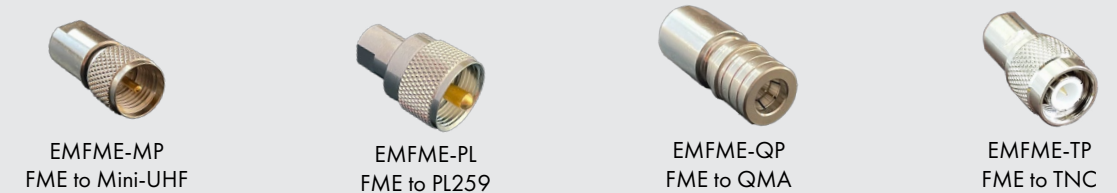
	EM-M11001-FME-058	EM-M11001-FME-195	EM-M11001-QP-058
Frequency Band	30-1000 MHz		
VSWR	1.5:1 typical		
Power Rating	100 W @ 1000 MHz		
Cable Type	RG-58/U	Low Loss 195	RG-58/U
Cable Length	17 ft. (5.1 m.) standard length; 35 ft. (10.67 m.) available		
Connector	FME	FME	QMA
Mounting Material	Brass		

## Thick Mount FME/QMA Cable Assembly



	EM-MTR11001-058	EM-MTR11001-195	EM-MTR11001-FME-058	EM-MTR1101-QP-058
Frequency Band	30-1000 MHz			
VSWR	<1.3:1 typical			
Power Rating	150 W for VHF 100 W for 700-1000 MHz			
Cable Type	RG-58/U	Low Loss 195	RG-58/U	
Cable Length	17 ft. (5.1 m.) standard length			
Connector	Sold separately		FME	QMA
Mounting Material	Brass and stainless steel with bright nickel finish			

## FME Adapter Options



## Mounting Brackets for Mirror/Trunk/Fender and Mast Installations



### Stainless Steel, Right Angle Mount

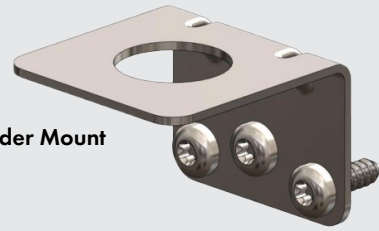
- Accommodates 5/8 or 3/4 inch thru hole mounting for Bulkhead N Type, fixed station antennas
- Mate with EM-BSA001 to convert mobile ground plane independent antennas for base station, fixed point applications

Video



### Designed for Trunk/Fender Mount Application

- 304 SS Bracket
- All Stainless Steel Hardware included
- 3/4" Antenna Mount Clearance Hole
- Applications: Vehicular Antenna Trunk Mount



	EMBKT-016SS	EMBKT-019SS
Bracket Material	Stainless Steel	
Mounting Hole Size	5/8 in.	3/4 in.

	EMBKT-LMR34
Bracket Material	Stainless Steel
Mounting Hole Size	3/4 in.

## 5/8 in. Alternative Mount for GPI Antennas

- Frequency independent operation for all NMO type antennas
- Rugged all brass construction with bright nickel plating
- Integrated NMO sealing surface eliminates ingress potential between antenna and mounting surface or bulkhead
- Integrated bulkhead O-ring seal to protect electrical enclosures
- Mounts up to 11/32 in. thickness
- High power handling

### EM-BSA001 NMO to N Type Jack



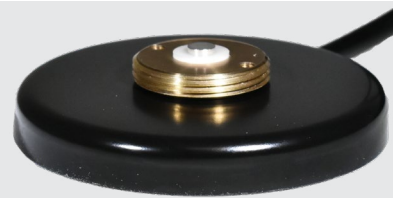
Frequency Band	0 to 3000 MHz
VSWR	<1.2:1
Power Rating	200 W
Overall Length	1.54 in. (39 mm.)



## Magnet Mount

### EM-MAG-058 Magnet Mount

- Magnet Mount Base with NMO mount



	EM-MAG-058	EM-MAG-195	EM-MAG-058-FME
Frequency Band	Up to 1000 MHz		
Magnetic Pull Force Retention	>30 lb. (13.6 kg.), includes protective UHMW PE pad		
Material Finish	High strength 14 ga. steel, black powder coat		
Mounting Application	NMO mount		
Connector	Sold Separately		FME
Cable	RG-58/U 17 ft. (5.1 m.)	LL 195 type 17 ft. (5.1 m.)	RG-58/U 17 ft. (5.1 m.)

### EM-MAG-058-HD Heavy Duty Magnet Mount

- All black, low-profile, 3 in. dia.
- Magnetic Base: Heavy-duty 14 ga. Steel
- Surface Protection: Optional rubber boot

	EM-MAG-058-HD	EM-MAG-195-HD
Frequency Band	Up to 1000 MHz	
Magnetic Pull Force Retention	>50 lb. (22.7 kg.), includes optional rubber boot	
Material Finish	High strength 14 ga. steel, black powder coat	
Mounting Application	NMO mount	
Connector	Sold Separately	
Cable	RG-58/U 17 ft. (5.1 m.)	LL 195 type 17 ft. (5.1 m.)

## Replacement Bases



**EM6A-01RP**  
Replacement base for  
EM-M & EMFLX-M10001  
EM-M11003  
EM-M11004  
EM-M11005  
EM-M11008  
EM-MX All Models



**EM6A-04RP**  
Replacement base for  
EM-M10004  
EMFLX-M10004  
EM-M10014  
EMFLX-M10014

**EM6A-05RP**  
Replacement base for  
EM-M10003  
EMFLX-M10003  
EMFLX-M10007



**EM6A-06RP**  
Replacement base for  
EM-M10003-GPI  
EMFLX-M10003-GPI  
EMFLX-M10007-GPI



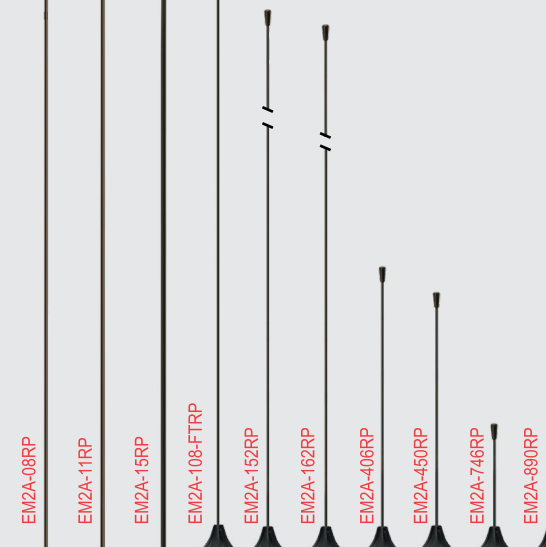
**EM6A-07RP**  
Replacement base for  
EM-M10004-GPI  
EMFLX-M10004-GPI  
EM-M10014-GPI  
EMFLX-M10014-GPI



**EM6A-11RP**  
Replacement base for  
EMFLX-M10008-WB

## Replacement Whips

EM2A-08RP	Whip 30" black chrome for EM-M10001 & EMFLX-M10001
EM2A-11RP	Whip 55" tapered black chrome for EM-M10004, EM-M10004-GPI, EMFLX-M10004, EMFLX-M10004-GPI
EM2A-15RP	Whip 40" tapered open coil, UHF 5 dB gain for EMFLX-M10007
EM2A-16RP	Whip 46" tapered black chrome, for EM-M10014, EM-M10014-GPI, EMFLX-M10014, EMFLX-M10014-GPI
EM2A-17RP	Whip 15" black chrome for EM-M10003, EMFLX-M10003, EM-M10003-GPI & EMFLX-M10003-GPI
EM2A-152RP	Whip assembly "X"-Nut® model EM-MX0152
EM2A-450RP	Whip assembly "X"-Nut® model EM-MX0450
EM2A-746RP	Whip assembly "X"-Nut® model EM-MX0746
EM2A-890RP	Whip assembly "X"-Nut® model EM-MX0890
EM2A-108-FTRP	Whip assembly "X"-Nut® model EM-MX0108-FT



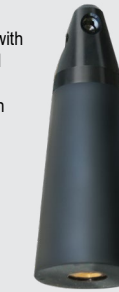
**Base O-Ring**  
EM9-02RP  
(25 pack) fits all EM6A type bases

## Replacement Springs

### EMFLX3A-01RP

Elastomeric Polymer, Proprietary Spring mates with any base using a standard 1/4" - 20 thread and accepts a whip diameter of 0.1 inch (2.5 mm.).

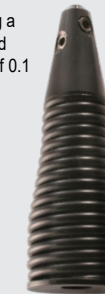
Replacement for  
EMFLX-M10001  
EMFLX-M10003  
EMFLX-M10003-GPI  
EMFLX-M10004  
EMFLX-M10004-GPI  
EMFLX-M10014  
EMFLX-M10014-GPI



### EM3A-01RP

Black Chrome SS Spring mates with any base using a standard 1/4" - 20 thread and accepts a whip diameter of 0.1 inch (2.5 mm.).

Replacement for  
EM-M10001  
EM-M10003  
EM-M10003-GPI  
EM-M10004  
EM-M10004-GPI  
EM-M10014  
EM-M10014-GPI



### EMFLX3A-02RP

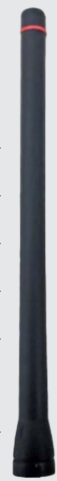
Same as above but accepts a whip diameter of 3.0 mm.  
Replacement for EMFLX-M10007



# Handheld Portable Antenna

## VHF (OEM REPLACEMENT)

**FREQUENCY**  
136-174 MHz  
**GAIN**  
1.8 dBi  
**LENGTH**  
6.4"/165 mm.  
**CONNECTOR**  
MXI  
**APPLICATION**  
ICOM™  
Two-Way  
Radios



**EM-P90019-MXI-136**  
Available in 25 pk

**FREQUENCY**  
146-162 MHz  
162-174 MHz  
**GAIN**  
Unity  
**LENGTH**  
4.25"/108 mm.  
6.4"/165 mm.  
**CONNECTOR**  
SFK  
**APPLICATION**  
Kenwood™  
OEM  
Replacement



**EM-P90021-SFK-146**  
**EM-P90021-SFK-162**  
Available in 25 pk

**FREQUENCY**  
150-174 MHz  
**VSWR**  
2:1  
**GAIN**  
Unity  
**BANDWIDTH**  
24 MHz  
**LENGTH**  
11.19"/284 mm.  
**CONNECTOR**  
SM, SF, SFK



**EM-P900918**  
Available in 25 pk

## UHF

**FREQUENCY**  
450-470 MHz  
**VSWR**  
2:1  
**GAIN**  
2 dBi  
**LENGTH**  
8.0"/203 mm.  
**CONNECTOR**  
0° & 90°, BP  
**APPLICATION**  
WAP Indoor



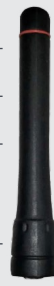
**EM-P90009**

**FREQUENCY**  
380-520 MHz  
**VSWR**  
<2.0:1 Typical  
<2.6:1 Max at  
380 MHz  
**GAIN**  
2.0 dBi  
**LENGTH**  
6.1"/153 mm.  
**CONNECTOR**  
MD, SF, SFK



**EM-P90016**

**FREQUENCY**  
400-470 MHz  
**VSWR**  
<2.0:1  
**GAIN**  
1.8 dBi  
**LENGTH**  
3.4"/86 mm.  
**CONNECTOR**  
MXI  
**APPLICATION**  
ICOM™  
Two-Way  
Radios



**EM-P90018-MXI-400**  
Available in 25 pk

**FREQUENCY**  
400-470 MHz  
**VSWR**  
<2.0:1  
**GAIN**  
1.8 dBi  
**LENGTH**  
3.1"/80 mm.  
**CONNECTOR**  
SFK  
**APPLICATION**  
Kenwood™  
Two-Way  
Radios



**EM-P90017-SFK-400**  
Available in 25 pk

## 700/800 MHz (OEM REPLACEMENT)

**FREQUENCY**  
698-870 MHz  
**VSWR**  
2:1  
**GAIN**  
3 dBi  
**LENGTH**  
6.1"/153 mm.  
max.  
**CONNECTOR**  
MD, SF, SFK  
**APPLICATION**  
Portable Radio



**EM-P90110**

**FREQUENCY**  
698-870 MHz  
**VSWR**  
2:1  
**GAIN**  
2 dBi  
**LENGTH**  
4.4"/111 mm.  
max.  
**CONNECTOR**  
MD, SF, SFK  
**APPLICATION**  
Portable Radio



**EM-P90111**

**FREQUENCY**  
902-928 MHz  
**VSWR**  
2:1  
**GAIN**  
2 dBi  
**LENGTH**  
7.7"/196 mm.  
**CONNECTOR**  
TR  
**APPLICATION**  
WAP Indoor



**EM-P90102**

**FREQUENCY**  
890-960 MHz  
**VSWR**  
2:1  
**GAIN**  
2 dBi  
**LENGTH**  
4.4"/111 mm.  
**CONNECTOR**  
MD, SF, SFK  
**APPLICATION**  
Portable Radio



**EM-P90222**

**FREQUENCY**  
890-960 MHz  
**VSWR**  
<2:1  
**GAIN**  
3 dBi  
**LENGTH**  
6.75"/174 mm.  
**CONNECTOR**  
MD  
**APPLICATION**  
Portable Radio



**EM-P90220**

## Multi-Band (OEM REPLACEMENT)

**FREQUENCY**  
380-520 MHz  
698-870 MHz  
**VSWR**  
2:1  
**GAIN**  
2 dBi  
**BANDWIDTH**  
140 MHz  
172 MHz  
**LENGTH**  
6.1"/153 mm.  
max.  
**CONNECTOR**  
MD, SF, SFK  
**APPLICATION**  
Portable Radio



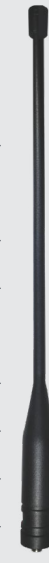
**EM-P91201**

**FREQUENCY**  
136-174 MHz  
450-520 MHz  
762-870 MHz  
**VSWR**  
<2:1 typical; <3:1  
@ band edges  
**GAIN**  
Unity  
**LENGTH**  
10.6"/269 mm.  
**CONNECTOR**  
SF (SMA Jack)  
**APPLICATION**  
Portable Radio



**EM-P92401-SF**

**FREQUENCY**  
136-174 MHz  
1575-1610 MHz  
GPS/GLNSS  
**VSWR**  
2.5:1  
**GAIN**  
Unity (VHF)  
2 dBi (GPS/  
GLNSS)  
**LENGTH**  
10.35"/269 mm.  
**CONNECTOR**  
SF (SMA Jack)  
**APPLICATION**  
Portable Radio



**EM-P92402-SF**

## LTE

**FREQUENCY**  
698-960 MHz  
1710-2700 MHz  
**VSWR**  
2:1  
**GAIN**  
2 dBi / 3 dBi  
**LENGTH**  
7.32"  
186 mm.  
**CONNECTOR**  
0 & 90° Type SM  
**APPLICATION**  
WAP Indoor



**EM-P92202**

## 2.4-2.5 GHz

**FREQUENCY**  
2400-2500 MHz  
**VSWR**  
<2.0:1  
**GAIN**  
5 dBi  
**LENGTH**  
6.7"/170 mm.  
**CONNECTOR**  
0° & 90°, SF  
**APPLICATION**  
WAP Indoor



**EM-P90403**

## Connector Descriptions

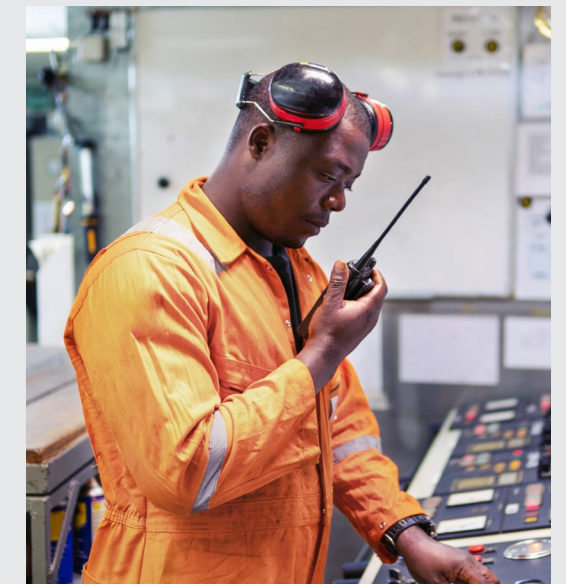
**MXI Connector**  
for ICOM™ Two-way Radios

**MD Connector**  
for Harris™ Series

**SF Connector**  
for Motorola™ APX Series

**SFK Connector**  
for Kenwood™ & EF Johnson Series

**SM Connector**  
for BK™ KNG Series

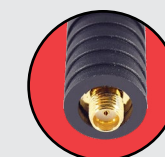


## 700/800 MHz (OEM REPLACEMENT)

## 900 MHz



**MD**  
(M7x1)



**SFK**  
SMA (f) Kenwood™ Type



**SF**  
SMA (f) Motorola™ Type



Straight



Right Angle  
0° & 90°



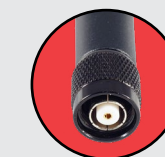
Right Angle  
Fixed (RA)



**SM**  
SMA (m)



**BP**  
BNC (m)



**TR**  
TNC RP Plug

Video





*E/M Wave, Inc.* engineers and markets a growing line of unique mobile and fixed station communications antenna products. Our primary focus is to maximize the *Antenna Value* in every product to meet or exceed customer expectations! We incorporate unique quality features that deliver more *Value* that our customers can understand, experience, and appreciate. These are the attributes that set us apart from the competition. It's a *Quality* effort, and it's the right thing to do!

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