### 2020 Edition

# QUALITY HONESTY INTEGRITY

# ANTENNAS

4 G - LTE Telemetry LMR - Public Safety Portables Custom Design



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# OUR MISSION

**E/M Wave, Inc.** is committed to helping 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."

<sup>e</sup> /m-Flex <sup>™</sup>	n			VH	F Rod	oftop /	Mour	nt Antenna
- I - I								
						M1000	)4 series	132-174 MHz
		• O-ring seals	•					
		Durable Xen dress off inst install and re	tallation, whi			•		
		Black molde	d poly spring	g with black	chrome fin	ish whip add	apter	
		EMFLX-M10004	EMFLX- M10004-GPI	EM-M10004	EM- M10004-GPI	EM-M10004-LS	EM-M10004- GPi-LS	
	Frequency Band			132-174	MHz			EM-M10004
	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	1977 -
	Gain	3 dB	2 dBi	3 dB	2 dBi	3 dB	2 dBi	EM-M10004-LS
	Powering Rating			150	N			
	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, Blac	k Chrome			
	Spring Material	Black molde black chrome			ss steel, chrome	-	_	
	Base Material		Xenoy	/™ with TPV o	ver mold grip r	ing		EM-M10004-GPI
	Mounting App			NMO m	ount			

EMFLX-M10004

EMFLX-M10014

EMFLX-M10004-GPI

# e/m-Flex<sup>™</sup>

### M10014 series 144-174 MHz

• O-ring seals for waterproof construction • Durable Xenoy<sup>™</sup> base with TPV over mold dust seal to professionally dress off installation, while providing a grip ring to ease antenna install and removal • Black molded poly spring with black chrome finish whip adapter EM-M10014-EMFLX-M10014 EMFLX-M10014-GPI EM-M10014 EM-M10014-GPI EM-M10014-LS **GPI-LS** 144-174 MHz Frequency Band EM-M10014 <1.2:1 at <1.5:1 at <1.2:1 at <1.5:1 at <1.2:1 at <1.5:1 at VSWR center freq center freq center freq center freq center freq center freq 3 dB 2 dBi EM-M10014-LS 3 dB 2 dBi 2 dBi 3 dB 150 W **Powering Rating Ground Plane** YES YES YES \_ \_ \_ Independent 45 3/4 in. Overall Length (max) @144 MHz 49 3/8 in. 45 3/4 in. 49 3/8 in. 45 3/4 in. 46 in. (1.17 m) (1.16 m) (1.25 m) (1.16 m) (1.25 m) (1.16 m) 17-7 SS, Black Chrome Whip Material Black molded poly with Stainless steel. Spring Material black chrome finish adapter black chrome Xenoy™ with TPV over mold grip ring **Base Material** EM-M10014-GPI NMO mount Mounting App

EMFLX-M10014-GPI

Gain

EM-M10014-GPI-LS

EM-M10004-GPI-LS



# **VHF** Rooftop Mount Antenna

### EMFLX-M10008-WB 144-174 MHz Wide Band

No Tuning Required

- VHF Wide Band, fixed length, quarter-wave, *No Tuning Required*
- O-ring seals for waterproof construction
- Durable Xenoy<sup>™</sup> base with TPV over mold dust seal
- Black molded poly spring with black chrome finish whip adapter







# **VHF/UHF** Rooftop Mount Antenna

### M10001 series 108-520 MHz Quarterwave

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EMFLX-M10008-WB

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EMFLX-M10001 Xenoy™ is a trademark of SABIC

•	O-ring	seals	for	water	proof	construction
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- Broad Band, Field Tunable
- Durable Xenoy<sup>™</sup> base with TPV over mold dust seal to professionally dress off installation, while providing a grip ring to ease antenna install and removal

	EMFLX-M10001	EM-M10001	EM-M10001-LS
Frequency Band		108-520 MHz	
VSWR	(50 MHz	Bandwidth @150 MH Bandwidth @450 MH z @450 MHz)	
Gain		2 dBi	
Powering Rating		150W	
Overall Length	@150	8 MHz: 29 in. (73 0 MHz: 19¾ in. (50. 0 MHz: 7¾ in. (19	2mm)
Whip Material	1	7-7 SS, Black chrom	е
Spring Material	Black molded poly with black chrome finish adapter	17-7 Stainless steel, black chrome	-
Base Material	Xenoy™	with TPV over mold	grip ring
Mounting App		NMO Mount	
	•		



EM-M10001



# <sup>e</sup>/m-Flex<sup>™</sup>

# **UHF** Rooftop Mount Antenna

### M10003 series 420-470 / 470-520\* / 380-520 MHz

- 420-470 MHz and 380-520 MHz (GPI model)
- O-ring seals for waterproof construction
- Durable Xenoy<sup>™</sup> base with TPV over mold dust seal to professionally dress off installation, while providing 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	EM-M10003	Å
VSWR	<1.5:1	<1.2:1 across operational bandwidth	<1.5:1	<1.2:1 across operational bandwidth	<2:1	<2.2:1		EM-M10
Gain	3 dB	2 dBi	3 dB	2 dBi	3 dB	2 dBi		
Powering Rating			150 \	N				
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, Blac	k Chrome				
Spring Material		Black molded poly with     Stainless steel,       black chrome finish adapter     black chrome					90	Í
Base Material		Xenoy	/™ with TPV o	ver mold grip ri	ng		EM-M10003-G	PI A
Mounting App			NMO m	ount				
	*EMELV M40042	anna ana aifia ationa		002 aveaut 170	500 MU-			

EMFLX-M10003 EMFLX-M10003-GPI EMFLX-M10013\*



\*EMFLX-M10013 same specifications as EMFLX-M10003 except 470 - 520 MHz

### M10007 series 420-470 / 440-480 MHz

- 420-470 MHz and 440-480 MHz (GPI model)
- One-piece 17-7 SS Open Coil Whip for Reliability and Performance
- O-ring seals for waterproof construction
- Durable Xenoy<sup>™</sup> base with TPV over mold dust seal to professionally dress off installation, while providing a grip ring to ease antenna install and removal

	EMFLX-M10007	EMFLX- M10007-GPI	EM-M10007	EM- M10007-GPI	EM-M10007-LS	
requency Band Tunable Range)	420-470 MHz	440-480 MHz (no tuning required)	420-470 MHz	440-480 MHz (no tuning required)	445-470 MHz	
/SWR	<1.5:1	<2:1	<1.5:1	<2:1	<1.5:1	
Gain	5 dB	5 dBi	5 dB	5 dBi	5 dB	
Powering Rating	150 W					
Ground Plane Independent	-	YES	_	YES	_	
Overall Length max)	38 3/8 in. (975 mm)	31 1/4 in. (794 mm)	38 3/8 in. (975 mm)	31 1/4 in. (794 mm)	38 3/8 in. (975 mm)	
Vhip Material		17-7	7 SS, Black Chro	ome		
pring Material		Black molded poly with black chrome finish adapter		17-7 Stainless steel, black chrome		
ase Material	Xenoy™ with TPV over mold grip ring					
lounting App			NMO Mount			
	-					



EM-M10003-GPI-LS

# 700/800/900 MHz

	EM-M11005	EM-M11003	EM-M11008	EM-M11004	EM-M11014		
Frequency Band	746-960 MHz	763-869 MHz	806-894 MHz	890-960 MHz	806-894 MHz		
VSWR	<1.5:1	<2:1	<2:1	<2:1	<2:1		
Gain	2 dBi	5 dBi	5 dBi	5 dBi	6 dBi		
Powering Rating	100 W						
Overall Length	4 1/4 in. (108 mm) 14 1/2 in. (368 mm)		14 1/2 in. (356 mm)	12 1/2 in. (318 mm)	22 1/4 in. (565 mm)		
Whip Material	17-7 Stainless Steel, Black Chrome						
Base Material	Xenoy™ with TPV over mold grip ring						
Mounting App		NM	O mount (sold separat	ely)			



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

- 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
- Open Coil Whip Affords Higher Power Handling Capability (excluding EM-M 11005)
- Brass BETA's Increase Operational Bandwidth up to 15%
- Durable Xenoy<sup>™</sup> Base with TPV Over Mold Grip Eases Antenna Install and Removal

EM-M11005 746-960 MHz

EM-M11003 763-869 MHz

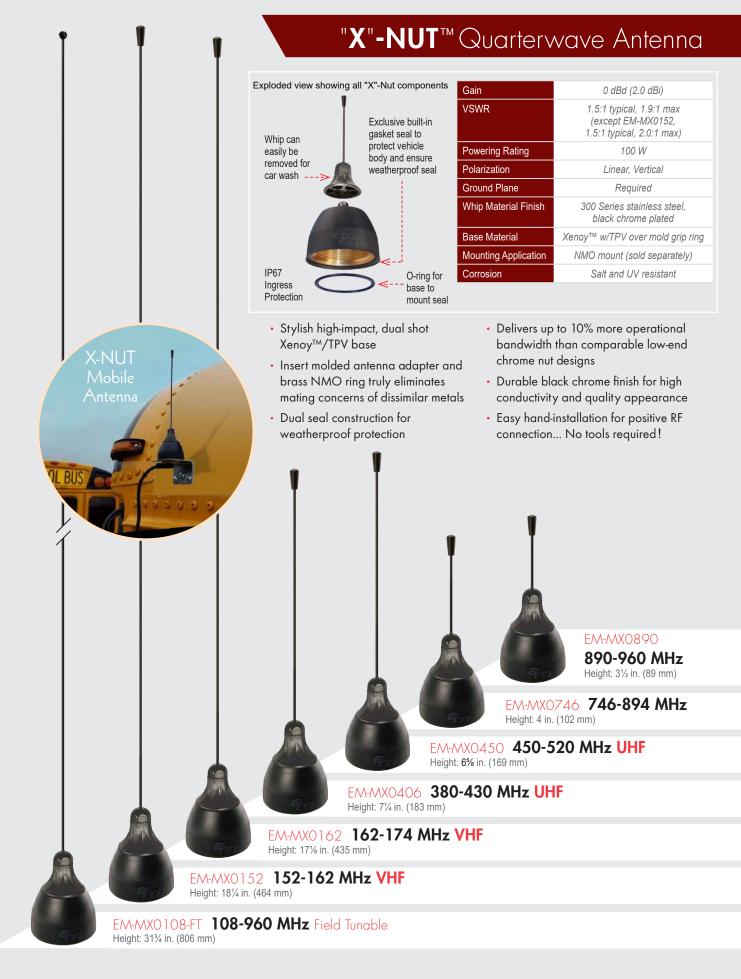
EM-M11008 806-894 MHz

EM-M11004 890-960 MHz

EM-M11014 902-928 MHz

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# Multi-Band Mobile Antenna

### LMR and LTE-Poly Pro Flexible Antennas

EM-M20007 698-960 MHz/1710-2700 MHz EM-M22001 for UHF/700-900 MHz NMO Apps



EM-M20007 Patent No. US 9,520,640

EM-M22001

- 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 typica	al, 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			
Powering Rating	100 W	150 W			
Ground Plane	Required				
Mechanical Specification	ons				
Heigth	3.63 in. (92mm)	4.95 in. (125.8 mm)			
Diameter	1.6 in. (-	40mm)			
Radiator Material	Brass / black chrome plating	Stainless Steel & brass w/black chrome			
Radome Material	Elastomeric Polymer, proprietary	Xenoy™			
Mounting Application	NMO mount type	(sold separately)			

# **Multi-Band Duplexer**

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



EM-MBD41000-NJ

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- 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

Frequency Band (VHF)	100-180 MHz
Frequency Band (UHF-870)	380-870 MHz
VSWR (All Ports)	≤1.3:1
Isolation (VHF↔UHF-870)	≥50 dB
Insertion Loss	≤0.2 dB (100-180 MHz) ≤0.3 dB (380-520 MHz) ≤0.5 dB (746-870 MHz)
Power Rating	150W (100-180 MHz) 100W (380-520 MHz) 75W (746-870 MHz)
Dimensions	3.27 x 2.1 x 1.1 in. (83 x 53 x 28 mm)
Connector	Type N, female
Mounting	Interior only, #8 PHMS



# **Duplexed Antenna Kits**

- Complete Dual-Band and Tri-Band expandable coverage for all LMR/Public Safety Bands operating in VHF 108-174 MHz, UHF 380-520 MHz and 746-870 MHz
- Optimal in-band performance with precision 50 ohm impedance, low insertion loss and field tunable VHF frequency selectivity
- Scalable to meet system performance requirements for all bands:
  - Frequency, field tune antennas including our most popular EM-Flex and X-Nut models
  - VSWR & Bandwidth
  - Gain
- Accommodates user/installer preference for 1/4 wave, 1/2 wave, Dual Element Collinear and GPI antennas without compromising required system gain

### 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 (no substitutions):	Qty		Qty
Duplexer (VHF/UHF-870 MHz)	1	RG-58/U NMO Cable	1
N Male Connectors	3	EM-MX0108-FT Antennas	2
Low Loss 195 NMO Cable	1	RG-58/U Feed Cable	1

### Tri Band EM-MBD41005



108-174 MHz / 450-520 MHz / 746-870 MHz

 Complete Tri-Band coverage for all LMR/Public Safety Bands operating in VHF108-174 MHz, UHF 450-520 MHz and 746-870 MHz

Kit Includes (no substitutions):	Qty		Qty
Duplexer (VHF/UHF-870 MHz)	1	EM-M11001-058 RG-58/U NMO Cable	1
N Male Connectors	3	EMFLX-M10001 Field Tune Antenna	1
EM-M11001-195 LL195 NMO Cable	1	RG-58/U Feed Cable	1
EM-M22001 (UHF/700-900 MHz)	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 (no substitutions):	Qty		Qty
Duplexer (VHF/UHF-870 MHz)	1	EM-MG11006-SP Mount NMO/GPS	1
N Male Connectors	3	EM-MX0108-FT Antennas	2
Low Loss 195 NMO Cable	1	RG-58/U Feed Cable	1

### Tri Band w/GPS EM-MBD41004



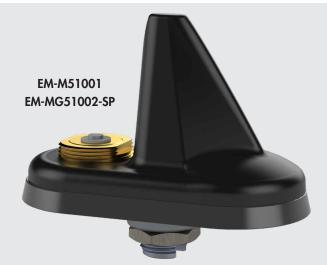
- 108-174 MHz /450-520 MHz /746-870 MHz /+GPS
- Complete Tri-Band coverage for all LMR/Public Safety Bands operating in VHF108-174 MHz, UHF 450-520 MHz and 746-870 MHz including GPS

Kit Includes (no substitutions):	Qty		Qty
Duplexer (VHF/UHF-870 MHz)	1	EM-MG11006-SP Mount NMO/GPS	1
N Male Connectors	3	EMFLX-M10001 Field Tune Antenna	1
EM-M11001-195 LL195 NMO Cable	1	RG-58/U Feed Cable	1
EM-M22001 (UHF/700-900 MHz)	1		





### Shark Fin Combination: NMO + WiFi or NMO + WiFi Antenna + GPS/GLNSS Antennas



- UV stabilized, black, 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 water resistant installation (IP66)
- Premium double shielded Low Loss 195 cable
- FAKRA RF interconnections for reliable, vibration resistant performance
- Standard 3/4 in. hole mount
- Reduced surface area mounting minimizes ingress resistance

### EM-MG51002-SP GPS/GLNSS LNA and Filter

GPS Electrical Specific	GPS Electrical Specifications		
Frequency Band	1575 –1610 MHz		
Input/Output VSWR	2.0:1 max		
Gain	28 dB typical		
Noise Figure (dB)	1.5 typical, 2.0 max		
Oper. Voltage (Vdc) Current Drain (ldc)	2.7-5.5 V 6.0 - 16.0 mA max		
Filter Type	SAW		
Attenuation	28 dB min (DC - 1522.5 MHz) 30 dB min (1662.5-3000 MHz)		
Power Handling	10 W (Input)		
Passive Antenna Eleme	ent		
Center Frequency	1592.5 MHz		
Bandwidth	35 MHz		
Antenna VSWR	2:1 max		
Polarization	RHCP		
Cable/Connector	RG-174/U 17 ft (5.1 m) / SMA Plug		

### EM-M51001 and EM-MG51002-SP

NMO Mount Electrical Specifications		Mechanical Specifications	
Frequency Band	30–1000 MHz	Dimensions	Height: 2.76 in (70.2 mm)
VSWR <sup>1</sup>	<1.5:1 Typical		Width: 2.2 in (55.9 mm) Length: 4.5 in (114.3 mm)
Impedance	50Ω	Mounting	Bulkhead, ¾ in Thru-Hole
Cable Insertion Loss	2 dB, max	Application	
Power Rating 100 W, max		Ant. Cable NMO	RG-58/U; 12 in (0.3 m)
WiFi Antenna Electrical Specifications		(FAKRA)	
Frequency Band	2.4-2.5 GHz, 5.2-5.9 GHz	Ant. Cable WiFi (FAKRA)	RG-316/U 12 in (0.3 m)
Antenna VSWR	2:1 max	Jumper Cables Cable, WiFi	FAKRA to QMA* LL195 Type: 16 ft (4.9 m)
Impedance	50Ω	Cable, NMO	RG-58/U; 16 ft (4.9 m)
Power Rating	15 W, max		-
Gain	5 dBi @ 2.4-2.5 GHz, 7 dBi @ 5.2-5.9 GHz		
Polarization	Vertical		

1. Antenna / Frequency Dependent

\*Alternate connector options available. Specifications subject to change without notification.



# Combination Mounts/GPS/GLNSS Antenna



### 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

Low-Profile, Rugged, Compact Design
Precision timing for fixed point networks

Asset location and tracking

### **GPS/GLNSS** Antenna



EM-AG13007-NJ EM-AG13007-SP-174 EM-AG13007-NP



Rated IPX7

	EM-AG13007-SP-174	EM-AG13007-NJ	EM-AG13007-NP
Frequency Band		1575-1610 MHz	
VSWR <2.5:1			
Gain	30 ± 3 dB	30 ± 3 dB	34 ± 3 dB
Noise Figure		1.5 dB	
Cable Type	RG-174	N/A	N/A
Connector	SMA (m)	N Jack (f)	N male plug
Mounting Application	Bulkhead, 5/8	3 in. thru-hole	N-female bulkhead
ESD Protection		15kV	

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### NMO/GPS/GLNSS Combination Mount

- Low-Profile aesthetics for reduced visibility
- UV Stabilized, High Impact Xenoy™ 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 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 (ldc)	6.0 -20.0 mA	5.0 - 20.0 mA max	
Filter Type	SA	\W	
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	10W		
Connector	SMA Plug		
Cable	RG174		
Passive Antenna Elemer	nt		
Center Freq Band	1575.42 MHz	1592.5 MHz	
Antenna VSWR	1.5:1 max	2.:1 max	
Gain	3 dBic	4 dBic	
Polarization	plarization RHCP		
Common NMO Mount Sp	pecifications		
Frequency Band	30 – 10	00 MHz	
VSWR	1.5:1	typical	
Powering Rating	150 W max		
Overall Length	4.5 in. (114.3mm)		
Mounting Application	Bulkhead, ¾ in. thru-hole		
Connector	Sold separately		
Cable	RG58/U (standard) or Low Loss 195 type (suffix -195)		

# **Mobile/Fixed Station Antenna**

### Mobile/Fixed Station Antenna

### ISM Band 902-928 MHz



- 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

Mobile/Fixed Station Antenna

 Silicone compression pad provides maximum weatherproof seal against the bulkhead

	EM-A11015 EM-A11016	EM-A11015-SP EM-A11016-SP	
Frequency	902-92	28 MHz	
VSWR	1.5:1,	, max	
Gain	3 0	dBi	
Power Rating	10	W	
Polarization	Linear,	vertical	
E-Plane	55°, n	ominal	
H-Plane	Omnidir	rectional	
Mechanical Specif	Mechanical Specifications		
Height	3 in. (76.2 mm)		
Diameter	1.67 in. (42.4 mm)		
Radiator	PCB		
Housing Material	Xenoy <sup>™</sup> /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	Sold separately	
Connector	N Jack (female)	SMA Plug	



• O-ring seal for reliable waterproof construction and installation

	EM-A20003-SP EM-A20004-SP	EM-A40001 EM-A40002	
Freq Band (1)	2 dBi Gain @ 698-960 MHz	2 dBi Gain @ 746-960 MHz	
Freq Band (2)	2 dBi Gain @ 1	710-2200 MHz	
Freq 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		
Mechanical Specif	anical Specifications		
Height	3 in. (76.2 mm)		
Diameter	1.67 in. (•	42.4 mm)	
Radiator	PC	СВ	
Housing Material	Xenoy™/ 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	Sold separately	
Connector	SMA Plug	N Jack (female)	

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# **Base & Fixed Station Antenna**

	EM-B40004-NJ	EM-B42001-NJ	
Frequency Band	698-2700 MHz	698-6000 MHz	
VSWR	698-760 MHz <1.8:1 typ, 2:1 max		
	760-960 MHz <1.5:1 typ, 1.6:1 max	760-3700 MHz <1.5:1 typ, 1.6:1 max	
	1710-2700 MHz <1.3:1 typ, 1.5:1 max	3700-6000 MHz 2:1 max	
Gain: 698-960 MHz 1710-2100 MHz 2100-2700 MHz 3500-3700 MHz 5200-5900 MHz	2 dBi 3 dBi 5 dBi	2 dBi 3 dBi 3.5 dB 2.5 dBi 3 dBi	
E-Plane HPBW	80°, typical		
H-Plane HPBW	BW Omnidirectional		
Polarization	cation Vertical		
Power Handling	50 W		
PIM Rating (2x43dBm)	<-150 dBc (B40005 & B42002 only)		
Mechanical Specifications			
Height, as mounted	ight, as mounted 4.5 in (114.3 mm)		
Width Dia.	8 in (20	03 mm)	
Mounting Hole Dia.	0.7 in (	18 mm)	
Mounting Surface	1.375 in (35 mm	) max thickness	
Weight (installed)	0.75 lb (0.34 kg)		
Mounting App / Type	Direct ceiling mount, thru-Hole		
Mounting Bracket Kit	EMBKT-IDAS40004 (optional)		
Connector Type	N Type, Jack		
Cable Type, Length	RG-141 Teflon Ty	be, 10 in (254mm) Ground plane not required	

### Fiberglass Base Station Antenna

### EM-BFG11905-NJ EM-BFG11905-NP 900 MHz

- High input power handling
- All brass/silver plated feed and radiator structure
- High strength filament wound fiberglass radome (White)
- Includes hardware for 1½ inch offset pipe mast mounting

	EM-BFG11905-NJ	EM-BFG11905-NP	
Frequency Band	902-928 MHz		
VSWR	<2	):1	
Gain	5 c	lBi	
Power Rating	100 W 20 W		
Polarization	Vertical		
Horizontal HPBW	3W Omnidirectional		
Connector Type N Jack		N Plug	
Height	20.7 in (525 mm)	20.78 in (528 mm)	
Width (dia.)         1.2 in (31 mm)         0.8		0.8 in (20 mm)	

# Multi/Wide Band iDAS Indoor Ceiling MountAntenna698-2700 MHz / 698-6000 MHz

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



EMBKT-IDAS40004

 Twist-Lock mounting bracket for fixed surface mount applications



LTE

 EM-B40004-NJ
 EM-B42001-NJ

 EM-B40005-NJ < PIM Rated > EM-B42002-NJ

### Fiberglass Base Station Antenna

### EM-BFG40006-NJ 698-960/1710-2500 MHz, 2dBi 4G/LTE

- 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 1½ inch offset pipe mast mounting

Frequency Band	698-960/ 1710-2500 MHz
VSWR	<1.8:1 typ, 2:1 max
Gain	2 dBi / 3 dBi
Power Rating	100 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)

EM-BFG40006-NJ

EM-BFG11905-NJ

EM-BFG11905-NP

# **Base & Fixed Station Antenna**

• High selectivity dual filter

RF architecture eliminates high power RFI operating

within multi-located base

station environment

Impact resistant ASA

Rugged die-cast

aluminum base

compatible

Integrated Bulkhead, TNC Jack
IP67 Rated
3/4 in. NPT and 1"-14 marine mount

UV resistant/cool gray

for reduced visibility

radome

### GPS/GLNSS (L1) Timing Antenna 1574.4-1610 MHz



EM-BGT13005-TJ



EM-BGT13006-TJ (includes mast mount kit)

Frequency Band	1574.4-1610 MHz
VSWR	<2.0:1
Gain	32 ± 3 dB at 5 V
Noise Figure	3.1 dB typ, 3.5 dB max
Oper. Voltage, Vdc	2.7 - 5.5 V
Current Drain, Idc	7-13 mA ty, 15 mA max @5V, high temp
Rejection Out of Band	Up to 70 dB
DC Injection	Coaxial feed cable center conductor
Mechanical Speci	ifications
Height	4.88 in. (124 mm)
Width	3.25 in. (83 mm)
Connector	TNC Jack
Mounting App	Pole/mast mount

### **Ground Plane Kit**

### EMBKT-BSA800

- For 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 2½ in. mast diameter
- 8 in. high x 10.83 in. wide

NMO Antenna Sold Separately Mounting Mast not included

### Yagi Fixed Station Antenna



	EM-B11410 7 Element	EM-B11809 6 Element	EM-B11909 6 Element
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	
Powering Rating	150 W	125 W	
Dimensions	35.4 x 12.9 x 1.65 in. (900 x 328 x 42mm)	24x 7.52x 1.65 in. (610x 191x 42mm)	
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



# Mounts, Brackets & Cable Assemblies

### Base Station Conversion Adapter 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
- Mate with EMBKT-016SS to convert mobile ground plane
- independent antennas for base station, fixed point applications

### NMO 3/4" Hole Mount Assembly

### EM-M11001 NMO to N Type Jack



- Low profile
- Ease of installation: Designed for a one-man installation from above
- All brass components with silver plated contact
- Heavy-duty mounting claw for reliable contact and ground connections
- For RG-58/U and 195 cable types



Overall Length 1.54 in. (39mm)

### EM-MTR11001 Thick Panel Up to /2 in. (12.7mm) thickness

- Self-adjusting NMO locking nut eliminates guesswork and decreases installation time
- All brass and stainless steel components for maximum reliability and corrosion resistance
- Non-rotational heavy-duty centering washer ensures perfect hole alignment while optimizing non-slip clamping pressure

	Standard Low Profile		Thick Panel Series	
Attached Cable Models	EM-M11001 -058	EM-M11001 -195	EM-MTR11001 -058	EM-MTR11001 -195
Frequency Band	30-1000 MHz			
VSWR	1.5:1 typical		<1.3:1 typical	
Powering Rating	100 W @1000 MHz		150 W for VHF 100 W for 700-1000 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) available			
Connector	Sold separately			
Mounting Material	Brass		Brass and stainless steel with bright nickel finish	

### Mounting Brackets for Mirror and Mast Installations



### **Magnet Mount**

### **EM-MAG-058 Magnet Mount** Magnet Mount Base with NMO mount EM-MAG-058 EM-MAG-195

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 App	NMO mount		
Connector	Sold Separately		
Cable	RG-58/U 17 ft (5.1 m)	LL 195 type 17 ft (5.1 m)	

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

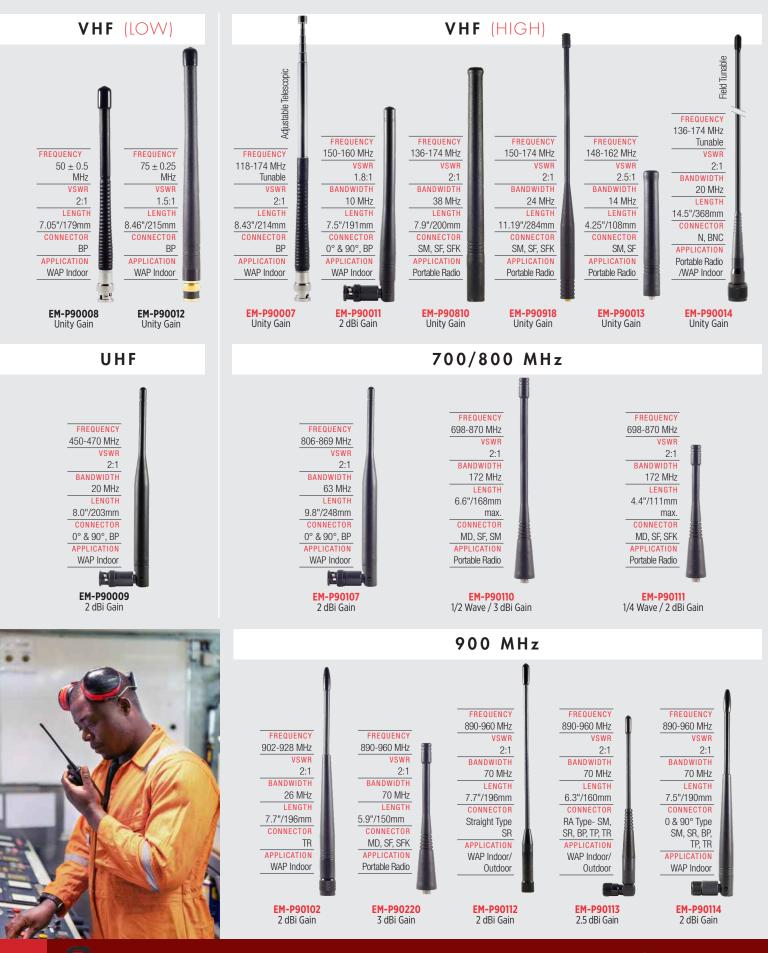
- All black, low-profile, 3 in dia.
- Magnetic Base: Heavy-duty 14ga Steel
- Surface Protection: Optional rubber boot



	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 App	NMO mount			
Connector	Sold Separately			
Cable	RG-58/U 17 ft (5.1 m)	LL 195 type 17 ft (5.1 m)		



# **Portable Antennas**



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# **Portable Antennas**



# **Replacement Parts**

### **Replacement Bases**



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### LIMITED WARRANTY STATEMENT E/M WAVE INCORPORATED

**WARRANTY:** Seller warrants for a period of two years from date of invoice that (a) all of its products will be free from defects in material and workmanship; (b) products furnished will conform to buyer's express written specifications to the extent accepted and agreed to by the Seller. Liability under these warranties is limited solely to the repair or, at Seller's option, replacement of or credit for any products found to be nonconforming or defective under normal use and service provided, however, that Buyer shall have given written notice to Seller describing in detail all alleged defects or nonconformity and such notice shall have been received by Seller within the applicable warranty period. These warranties shall not apply to products, which have been repaired or altered by persons other than Seller, or to defects that have been caused by misuse or abuse after delivery.



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# What Sets Us Apart from the Competition?



# Mobile & Fixed Station Antennas

*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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