



## Medium Power Circularly Polarized FM Antennas

- Superior design flexibility with a high input power rating
- Durable construction
- Broad bandwidth to minimize VSWR related signal problems
- Special pattern optimization available

Broadcast Electronics' model BEMP antennas offer the same quality construction and design as the BESP antennas. These medium power antennas are designed for years of reliable, trouble-free service.

### RADIATING ELEMENT

All BEMP radiating elements are constructed of tubular brass with an outside diameter of 1 $\frac{3}{4}$  inches. The feedpoint is internally mounted and pressurized to prevent corrosion.

### AVAILABLE MODELS

The BEMP is available in two versions. The "E" version is an end fed model that is mounted on 1 $\frac{5}{8}$ " 50 ohm rigid line. The "C" version is center fed using 3 $\frac{1}{8}$ " 50 ohm rigid line. The end fed models feature a conservatively rated power input capability of 9 kW. The center fed models have a power input capability of 12 kW with the 3 $\frac{1}{8}$ " inch input feed. Each BEMP antenna comes with a 6 foot input transformer. The antenna feed point is 6 feet below the bottom bay for end fed models and approximately 6 feet below the center for center fed models. The input is a stan-

dard 1 $\frac{5}{8}$ " EIA female flange for end fed models and a 3 $\frac{1}{8}$ " EIA female flange for center fed models.

### RADIATION PATTERN

Antenna pattern measurement and optimization is available upon request at additional cost.

### BANDWIDTH

BEMP antennas feature a typical VSWR of 1.1:1 or less,  $\pm 200$  kHz with field trimming. VSWR at the input (without trimming) is 1.2:1 when the antenna is pole mounted on the top of a tower. In side mounting applications, the VSWR is typically 1.5:1 without field trimming.

### CIRCULARITY

When a BEMP antenna is mounted on a 14" diameter steel pole, the horizontally polarized radiation pattern is omnidirectional and circularity is typically  $\pm 2$  dB. When the antenna is side mounted, the resulting pattern will be affected by the surrounding structures.



# BEMP FM Antennas

## DE-ICING

In applications where accumulation of radial ice does not exceed 1/2" thickness, antenna de-icers and radomes are usually not required. Under these conditions the VSWR is typically does not rise above 1.5:1, assuming a normal VSWR of 1.1:1. In heavier icing environments, optional BEMP radomes and electrical de-icers are recommended.

## CONSTRUCTION

All BEMP antennas employ brass tubular construction in the radiating element and support stem. As a result, they can tolerate a variety of weather extremes including wind velocities of up to 150 miles per hour.

Each antenna is completely assembled and pre-tuned to the desired frequency prior to shipment. A pressure test is also performed to check for leakage.

Stainless steel mounting brackets are supplied for uniform cross section towers having face dimensions of 4 feet or less. Optional brackets are also available for mounting the antenna on tapered towers.

## BEMP Options:

- DC shorting stubs for enhanced lightning protection
- Radomes or electrical de-icers
- Special mounting brackets
- Pattern measurement and optimization

Model	Stock No.	Power Gain <sup>1</sup>		Type Feed	Female 50 Ohm Input	Power <sup>2</sup> Input	Calc. Weight (LBS)	Calc. <sup>3</sup> Wind Load (LBS)
		Power	dB					
BEMP-1E	809-1401-010	0.4611	-3.3623	END	1 5/8"	9 kW	57	102
BEMP-2E	809-1402-010	0.9971	-0.0128	END	1 5/8"	9 kW	114	212
BEMP-2C	809-1402-040	0.9971	-0.0128	CENTER	3 1/8"	12 kW	152	302
BEMP-3E	809-1403-010	1.5588	1.9278	END	1 5/8"	9 kW	170	323
BEMP-3C	809-1403-050	1.5588	1.9278	CENTER	3 1/8"	12 kW	207	412
BEMP-4E	809-1404-010	2.1322	3.2903	END	1 5/8"	9 kW	227	433
BEMP-4C	809-1404-040	2.1322	3.2903	CENTER	3 1/8"	12 kW	260	509
BEMP-5E	809-1405-010	2.7154	4.3384	END	1 5/8"	9 kW	283	543
BEMP-5C	809-1405-050	2.7154	4.3384	OFF CENTER	3 1/8"	12 kW	317	620
BEMP-6E	809-1406-010	3.3028	5.1888	END	1 5/8"	9 kW	340	654
BEMP-6C	809-1406-040	3.3028	5.1888	CENTER	3 1/8"	12 kW	373	730
BEMP-7E	809-1407-010	3.8935	5.9034	END	1 5/8"	9 kW	396	764
BEMP-7C	809-1407-050	3.8935	5.9034	OFF CENTER	3 1/8"	12 kW	430	840
BEMP-8E	809-1408-010	4.4872	6.5197	END	1 5/8"	9 kW	453	874
BEMP-8C	809-1408-040	4.4872	6.5197	CENTER	3 1/8"	12 kW	486	950
BEMP-9C	809-1409-050	5.0826	7.0608	OFF CENTER	3 1/8"	12 kW	543	1060
BEMP-10C	809-1410-040	5.6800	7.5435	CENTER	3 1/8"	12 kW	599	1171
BEMP-11C	809-1411-050	6.2783	7.9785	OFF CENTER	3 1/8"	12 kW	656	1281
BEMP-12C	809-1412-040	6.8781	8.3747	CENTER	3 1/8"	12 kW	712	1391

FOOTNOTES: 1. Horizontal and vertical power gain and dB gain are the same. 2. Power input capability up to 2,000 ft. above mean sea level. Derating required above 2,000 ft. 3. Wind load based on 112 mph wind velocity (50/30 psf) and the wind blowing normal to the side of the antenna. Weight and wind load calculations include brackets, interbay line and the transformer section. Calculations based on the frequency of 95 MHz.



4100 N. 24th ST., P.O. BOX 3606, QUINCY, IL 62305-3606 U.S.A., TELEX: 250142, CABLE: BROADCAST, PHONE (217) 224-9600