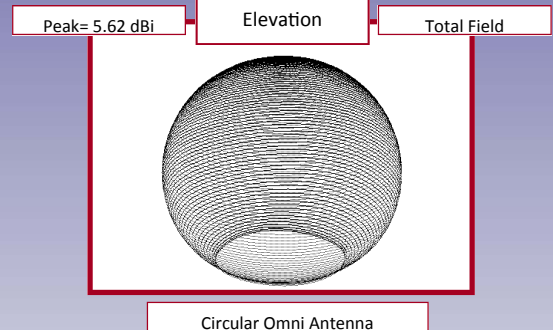
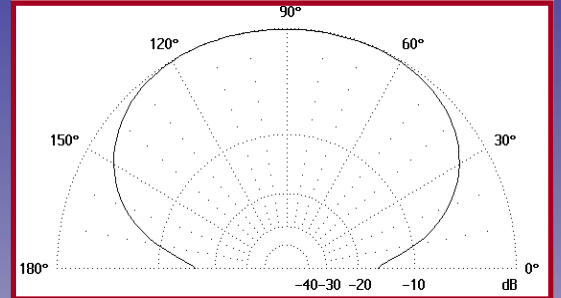
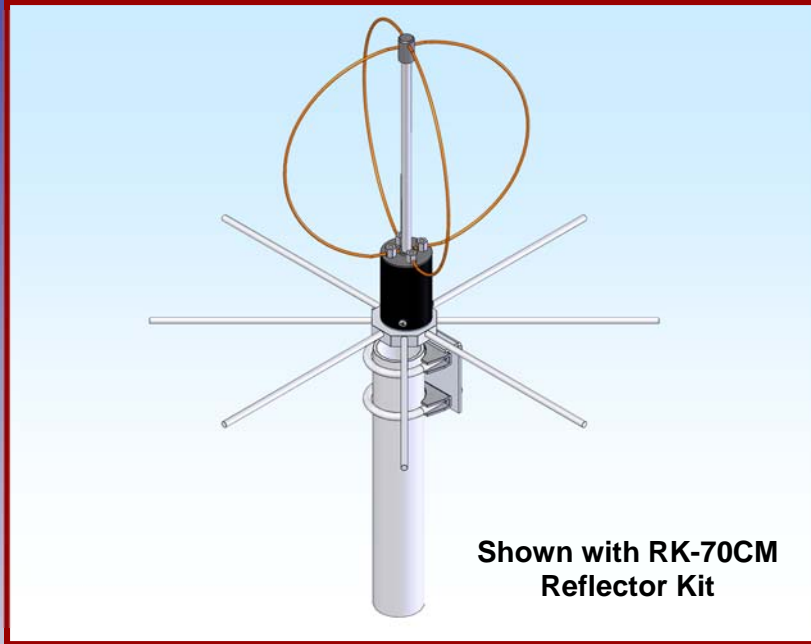




M2 Antenna Systems, Inc. Model No: EB-432/RK70CM Eggbeater Satellite Antenna



SPECIFICATIONS:

ModelEB-432/RK70CM
 Frequency Range.....400 To 470 MHz
 Gain, Overhead 90.....5.5 dBi Typical
 Impedance50 OHMS
 VSWR.....< 2.0:1
 VSWR.....1.5:1 @ 420– 450 MHz
 Pattern.....Omni Directional
 PolarityRH Circular Overhead
 PolarityHorizontal @ Horizon

Power Handling500W Max
 Mounting.....1-1/2" to 2" Nom.
 Connector....."N" Female
 Size.....13.5" H x 9.5" W
 Wind Survival / Wind Area.....100 MPH / .07 Sq. Ft.
 Weight / Ship Wt.....2 Lbs. / 3 Lbs.

FEATURES:

The EB-432 **EGGBEATER** offers exciting new performance characteristics for both fixed and mobile operations. The **EGGBEATER** produces smooth Omni directional HORIZONTAL polarity at the horizon. Above the horizon, the pattern transforms to RIGHT HAND CIRCULAR, making it a natural for OSCAR satellite use. By spacing the **EGGBEATER** 1/8 wave above a metal surface or the RK-70CM for base installations, the **circular** lobe increases by 6 dB, producing a hemispherical pattern. No rotation or steering is required. For terrestrial mobile, base, net control, contest or field day operation, increasing the distance above ground or over a metallic surface improves the horizontal radiation by up to 6 dB. This produces instantaneous communications in all directions. Hams with little room or budget for larger antennas will experience a new standard of performance with the EB-432/RK70CM.

EB-432/RK70CM ASSEMBLY MANUAL

Caution: The copperweld steel loop elements are packed in a tightly wrapped condition. Use extreme care while unpacking the loops. Work in a clear area and be sure no one is standing near during unpacking.

Tool Required: 3/32" and 5/32 Allen wrench (provided) and 1/2 & 9/16 end wrench or socket.

1. To facilitate shipping, the loops are bent slightly in the middle. Straighten these, and any other bends, so the elements form round circles. Locate the rod and thread the loop elements through the crossed holes in the tip to their midpoints.

NOTE: be sure the loop elements are not shorted together at the crossover point; the pattern will be distorted.

2. Align the elements carefully with the terminals at the top of the balun case. Install the set-screws with the 3/32" Allen wrench, and insert the ends of the loop wires into the appropriate terminals. Insert wires until ends butt against the Delrin collar at the base of the fiberglass rod. Tighten the 3/32" set-screws. This completes assembly. A common mobile mounting 3/8-24 thread in bottom of balun case is used for mounting the EB-432.

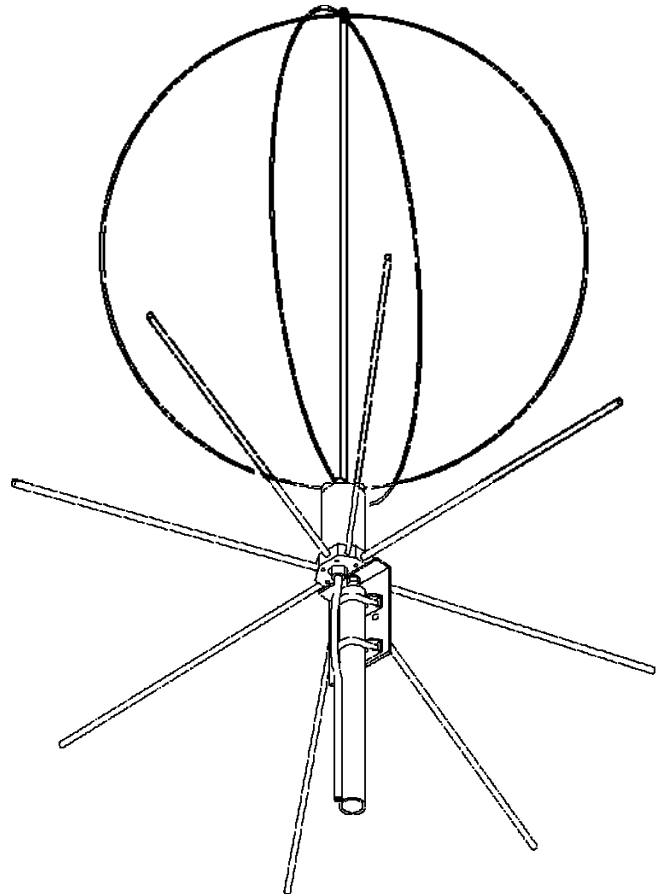
MOBILE INSTALLATION:

For best **TERRESTRIAL** results in a horizontally polarized mobile installation, the Eggbeater should be at least two feet above the top of the vehicle, preferably higher. To prevent damage to the antenna or mount, a heavy duty spring should be installed 4" to 26" below the threaded insert on the balun case. Another mast section can be added below the spring if additional height is desired. To enhance the overhead circular pattern for **SATELLITE** communications, mount the EB-432 loops at 1/8 wave (3.5") above the roof, basically at roof level or attached directly to a mag-mount.

FIXED LOCATION INSTALLATION:

For best **TERRESTRIAL** results, no reflector is required. Mount the EB-432 as high as possible and preferably on the top of a mast.

For mostly **SATELLITE** communications use, add the RK-70cm Reflector as shown. Alternately, mount the EB-432 directly on a metal plane of mesh or solid metal 15" square or larger. Mounting this way will reduce your terrestrial performance by about 6 dB but improve your satellite signal by about the same amount. The Eggbeater produces an omnidirectional, horizontally polarized pattern, so no particular orientation is necessary.



EB-432 WITH RK-70CM REFLECTOR

EB-432/RK70CM PART LAYOUT

GENERAL INFORMATION

Feedline should be good quality 50 ohm coax cable. Times LMR-400 and Belden 9913F are excellent low-loss foam types and RG-8X is also good for short run as in a mobile setup. Connect the male "N" to the Balun case connector and, if a mast is used, secure the cable to the mast with tape or nylon ties, beginning 4-6 inches below the connector and repeating every 12" down the mast. Be sure to leave a little slack where the cable passes the spring.

For best performance, 80 watts, or more, are recommended particularly for mobile operation. Contacts with base stations over 100 miles away are common and communications are possible for over 350 miles when the terrain permits propagation. The Eggbeater will handle a Kilowatt in base station applications.

Any distortion or bends in the loops incurred during mobile use can and should be straightened out as soon as practical. AS WITH ANY ANTENNA FED WITH RF ENERGY, AVOID CONTACT OR CLOSE PROXIMITY WHILE TRANSMITTING.

SATELLITE APPLICATIONS:

1. The Eggbeater is very effective as a omnidirectional satellite antenna because it produces Right-Hand Circular polarization off the top. When mounted 1/8 wave above an auto roof or M²'s **RK-70CM Radial Reflector Kit** for base installations, the signal level off the top lobe increases by as much as 6 dB. No rotation or steering is necessary. Circularity is optimized in the 420-450 MHz region but is still effective from 400 to 470 MHz.

2. Base station, contest and field day operations with the Eggbeater allows rapid fire communication with all horizontally polarized stations, in all directions. Its also great for nets and emergency stations requiring instant communications in all directions. The Eggbeater is not designed to replace a good directional antenna, but where space, time, or budget are strong factors, it will prove a valuable addition to any station.

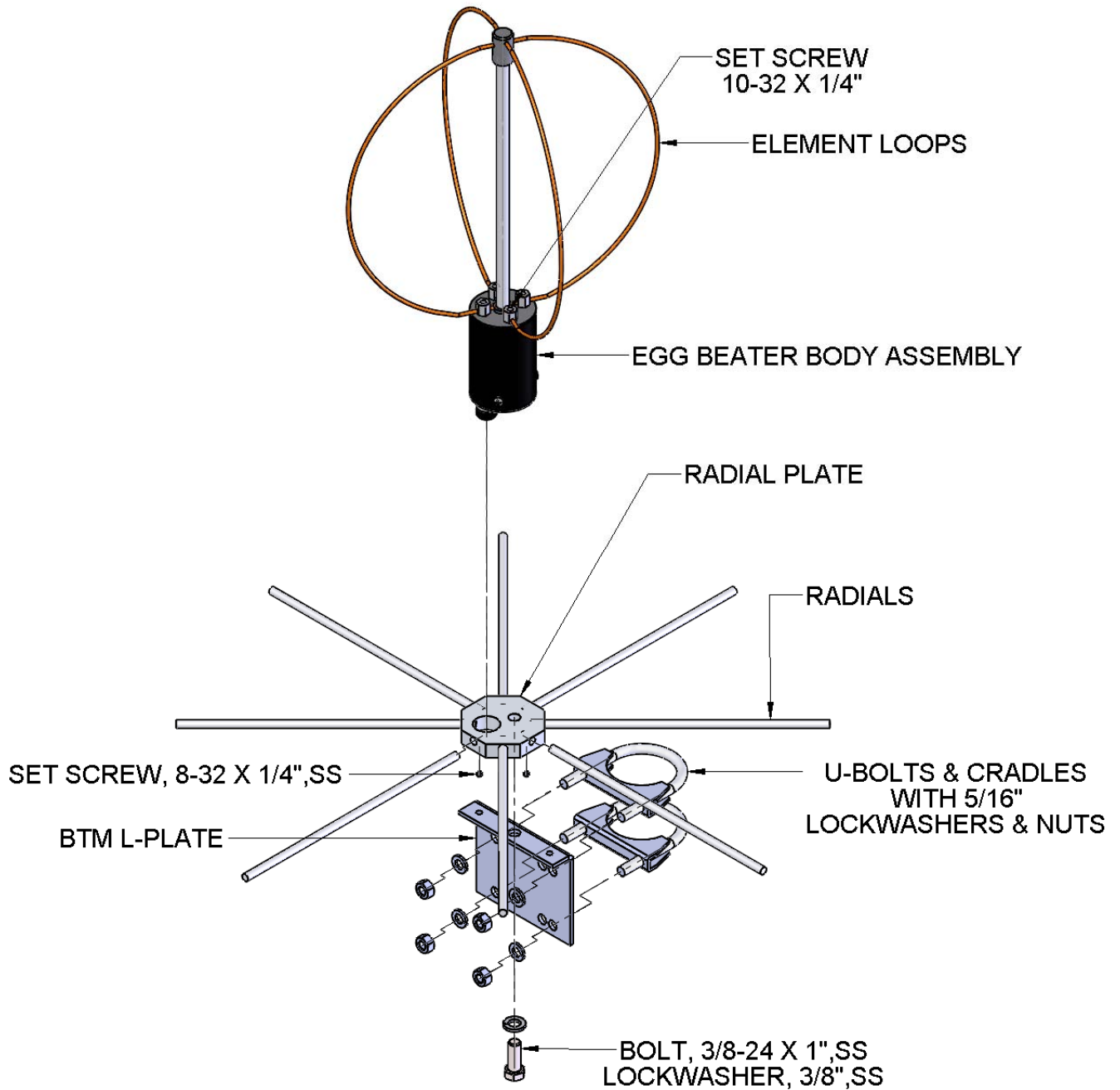
3. Experimenters: Try combining the Eggbeater with other vertical antennas. The fiberglass spacer mast is not required for operation except to insulate the crossover points. It could be replaced with a metallic element to act as a vertical radiator on 70 centimeters or any other frequency, or simply be used as a support for a vertical above the Eggbeater. It may be possible to combine the Eggbeater with an HF mobile antenna so that optimum performance of both would be preserved.

As you can see from the APPLICATIONS, the EGGBEATER is a versatile antenna.....let your imagination run free! Write and tell us what you have done with your Eggbeater.

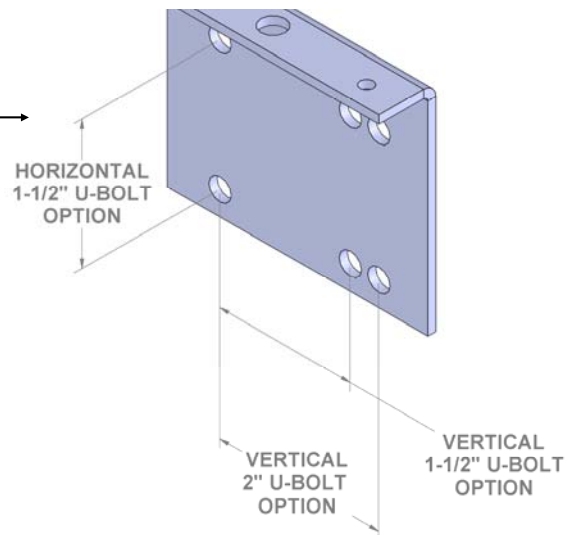
Note: #10 Copperweld (steel copper-clad wire) is used in the loops for maximum efficiency. The steel is exposed at the ends and may show signs of rust in various environments. This effect is cosmetic only but can be reduced by coating the ends of the wire with epoxy, RTV, Penetrox or equivalent after assembly.

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EB-432/RK70CM ASSEMBLY MANUAL



NOTE:
OTHER MOUNTING OPTIONS



EB-432/RK70CM PARTS & HARDWARE

DESCRIPTION	QTY
EB-432 BODY ASSEMBLY	1
LOOP ELEMENTS, #10 COPPERWELD, 29-1/8"	2
SET SCREW, 10-32 X 1/4", SS	4
3/32" ALLEN WRENCH	1
ASSEMBLY MANUAL	1

RK-70CM REFLECTOR KIT:

REFLECTOR PLATE, 1/2" X 2-1/2" (M23AEB0010)	1
RADIAL RODS, 1/4" X 9"	8
U-BOLT, 2"	2
U-BOLT, 1-1/2"	2
BOOM TO MAST L-PLATE, 4" X 4", (M2APT0063)	1

HARDWARE:

BOLT, 3/8-24 X 1", SS	1
LOCKWASHER, 3/8", SS	1
NUT, 5/16-18, SS	4
LOCKWASHER, 5/16", SS	4
SET SCREW, 8-32 X 1/4", SS	8
5/64" ALLEN WRENCH	1

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