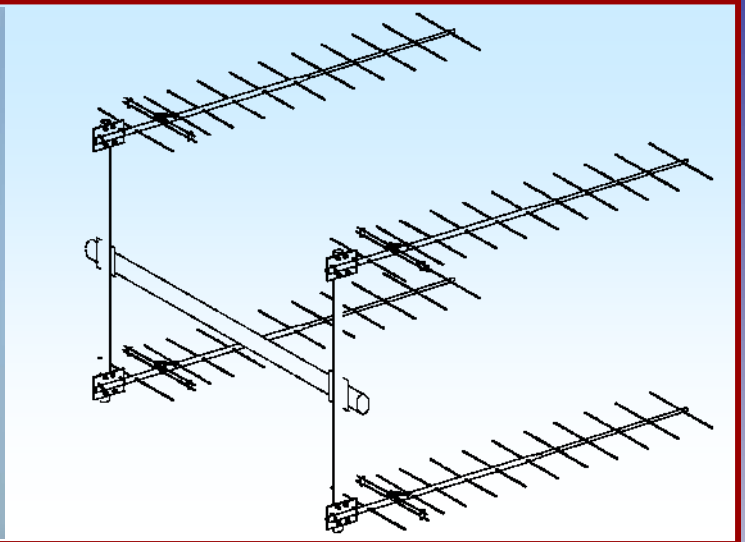




M2 Antenna Systems, Inc. Model No: 432-12EME



SPECIFICATIONS: (SINGLE ANTENNA):

Model	432-12EME
Frequency Range	430 To 436 MHz
*Gain	16.4 dBi
Front to back	23 dB Typical
Beamwidth	E=26° H=29°
Feed Impedance	50 Ohms Unbalanced
Maximum VSWR	1.2:1 Typical
Input Connector	"N" Female

Power Handling	1 kW
Boom Length / Dia	116" / 1" To 3/4" Tip
Maximum Element Length	13.5"
Turning Radius:	83'
Stacking Distance	54" High & 56" Wide
Mast Size	2" Nom.
Wind area / Survival	0.65 Sq. Ft. / 100 MPH
Weight / Ship Wt	2.5 Lbs. / 4 Lbs.

SPECIFICATIONS: (ARRAY OF 4 ANTENNAS):

Model	432-12EMEX4
Frequency Range	432 To 436 MHz
*Gain	22.44 dBi
Front to back	23 dB Typical
Beamwidth	E=13° H=15°
Feed Impedance	50 Ohms Unbalanced
Maximum VSWR	2.0:1 Typical
Input Connector	"N" Female

Power Handling	3 kW
Boom Length / Dia	116' / 1" To 3/4" Tip
Maximum Element Length	13.5"
Turning Radius:	83"
Stacking Distance	54" High & 56" Wide
Mast Size	2" Nom.
Wind area / Survival	2.6 Sq. Ft. / 100 MPH

***Subtract 2.14 from dBi for dBd**

FEATURES:

This is the latest addition to the high performance M² family of weak signal antennas. As the name implies, the 432-12EME has been specifically designed as a potent yet compact **EME** (Moon bounce) array. It is ideal for home and trips (DXpeditions). Its light weight and rear mount capabilities keep phasing lines short and mounting simple. When used only for terrestrial and stacked 4 high the azimuth beamwidth is still 26 degrees, but the gain is over 20 dBd! EME CW or JT65B, you'll be amazed!

POLARITY DIVERSITY is possible by adding 4 more in the opposite polarity to a slightly extended "H" frame. Note also that it covers the satellite band! What a nice extra.

Construction is classic M² for long term electrical and mechanical integrity. Elements are 3/16" 6061-T6 rod, mounted through the boom on UV stabilized insulators and locked in place with stainless steel shaft retainers. The driven element module is CNC machined and all connectors O-ring sealed. Internal connections are encapsulated in a space-age silicone gel. Balun connectors are triple-sealed to the coax. Our "H" frame used for the above specs is 2" x .125 x 60" cross boom and 2" x .065 x 60" risers. Ask about special configurations for your special project. And don't forget we make the MT1000 elevation rotator. It easily handles 4X2M9SSB **AND** 4X or 8X 432-12EME's. WHAT A KILLER SYSTEM!

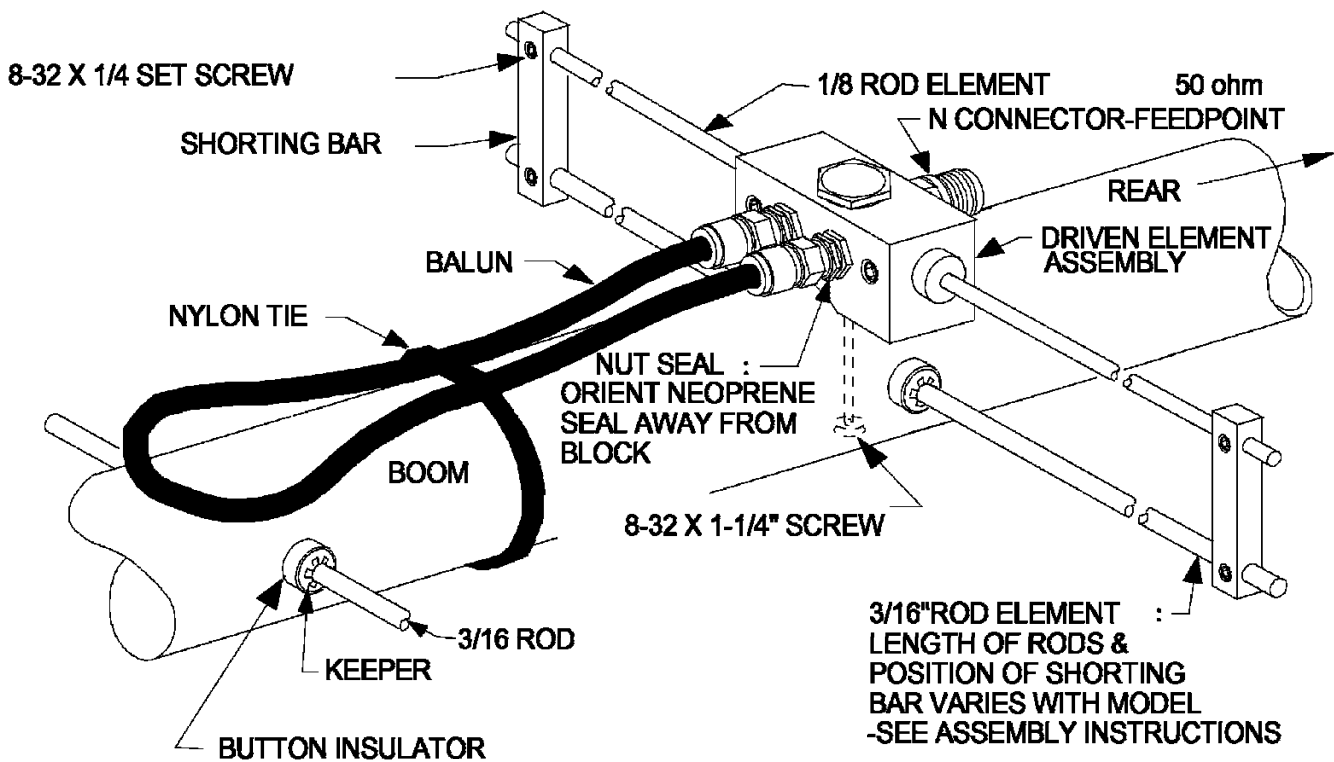
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10/16/17
Rev.01

432-12EME ASSEMBLY MANUAL

1. Start by laying out the boom sections using the DIMENSION sheet as a guide. Use 8-32 X 1-1/4 screws and locknuts to join sections. Sections may be swaged to fit each other.
2. Lay out the elements by length and position as shown the DIMENSION sheet. Start with the reflector (longest) element and push on a black button insulator to about 1/2" from center. Push the element through the holes 1/2" from the rear of the boom and install the second button, snugging it up into boom. DO NOT BOTHER WITH ACCURATELY CENTERING the element at this time and DO NOT INSTALL the stainless steel internal locking "KEEPERS" yet. This is easier to do after all the elements are installed in the boom.
3. Install the 3/16" rod DRIVEN ELEMENT as you did the reflector. Then continue with the installation of the DIRECTORS. **Note that the Director Elements do not consistently diminish in length from rear to front, so pay close attention to length and position.**
4. Now begin centering the elements. Use a tape measure to EQUALIZE the amount the element sticking out on each side of the boom. Once you have all the elements centered, sight down the element tips from the rear comparing each side. Look for any obvious discrepancies and correct if found.



5. Begin installing the stainless "keepers." Use thumb and index finger to hold a keeper over end of the 3/8 x 3" push tube (keeper dished into tube). Hold the element firmly and start the keeper onto the rod by applying pressure with the push tube. Push the keeper until up tight against the button insulator (Locking pliers, **lightly** clamped up against opposite button insulator will help maintain center reference and keep you from pushing the first keeper too far). Repeat for the opposite side. Continue installing keepers until all elements are locked in place.

432-12EME ASSEMBLY MANUAL

6. Mount the DRIVEN ELEMENT BLOCK to the boom using a single 8-32 X 1-1/4" screw and lockwasher. Orient the block with feed connector facing to center and balun connectors facing to rear. Block orientation may be reversed if you wish feedline to exit from rear of boom.
7. Before installing the balun, thread a 3/8" SEAL NUT all the way onto each connector, with the black Neoprene face of the nuts facing out. Attach balun and tighten the connectors **gently** using a 7/16" end wrench. Once the connectors are tight, back the Seal Nuts out and finger-tighten firmly up against the face of the connectors (or tighten **gently** with 1/2" end wrench). A lot of torque is unnecessary. Form the balun close to the boom and secure to boom with a nylon cable tie. Tie should be snug but not crushing or kinking the coax.
8. Install the 8-32 x 1/4" set screws (internal Allen head - tool supplied) into the SHORTING BARS. Slide the bars onto the 3/16" rod driven element tips and 1/8" Driven Element Block Rods. Position the Shorting Bars as specified on the Dimension Sheet: the distance given is between the outer edge of the Driven Element Block and the inner edge of the Shorting Bar. Align the bars and rods with each other and tighten the setscrews.
9. The boom to mast plate is mounted at the rear stub of the boom. 1" U-bolts and the stainless nuts and lock washers provided. DO NOT OVER TIGHTEN. 2" U-bolts are provided for mounting the antenna to your mast or 'H' frame. The feed line routes back and onto the mast.

10. MOUNTING AND STACKING INFORMATION

Keeping metallic masts, crossbooms and the feed coax out of the element plane will help maintain good VSWR and pattern. Since this is a rear mount antenna the rear structure material is not an issue regardless of chosen polarity. If you choose to tie multiple antennas together near the middle or front of the boom, any metallic structure or feed line must be perpendicular to the plane of the elements.

Stacking? Call **M²** and let us help you DO IT RIGHT

THIS COMPLETES THE ANTENNA ASSEMBLY.

CAREFULLY MANUFACTURED BY:

M² ANTENNA SYSTEMS, INC.

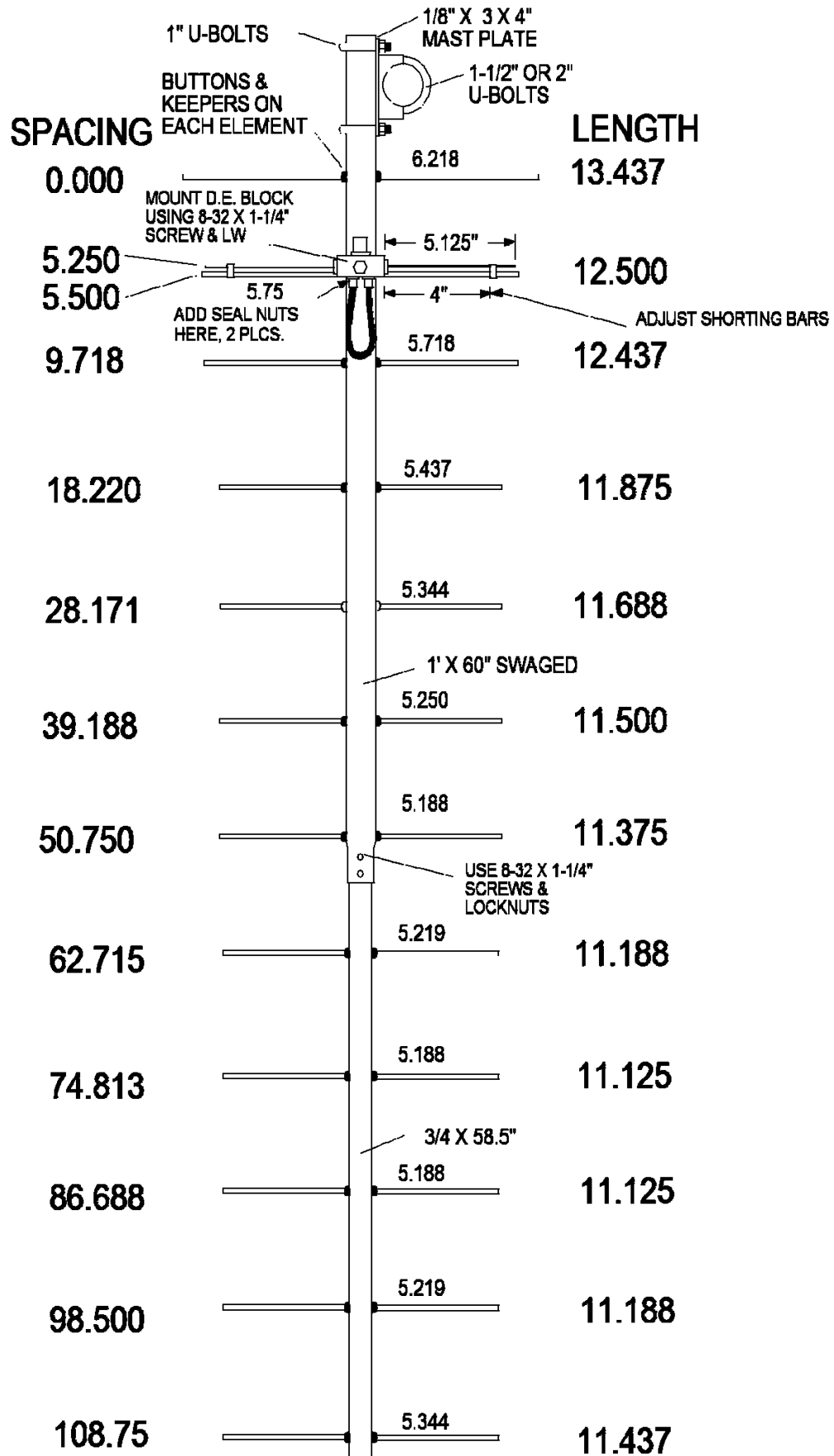
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WEB SITE: www.m2inc.com Email: sales@m2inc.com

432-12EME DIMENSION SHEET



432-12EME PARTS & HARDWARE

DESCRIPTION	QTY
BOOM SECTION, 1 X .058 X 60" SOE	1
BOOM SECTION, 3/4 X .049 X 58-1/2".....	1
ELEMENTS, 3/16 ROD x Dimension Sheet	12
DRIVEN ELEMENT BLOCK.....	1
BALUN, RG-6 1/2 WAVE	1
BOOM-TO-MAST PLATE, 3" X 4"	1
U-BOLT AND CRADLE, 2"	2
U-BOLT AND CRADLE, 1"	2
ASSEMBLY MANUAL	1

IN HARDWARE BAG:

SHORTING BAR	2
BUTTON INSULATORS.....	24
KEEPER, SS.....	24
NUT, 5/16-18 SS.....	4
LOCKWASHER, 5/16 SS	4
NUT, 1/4-20 SS	4
LOCKWASHERS, 1/4 SS.....	4
SETSCREW, 8-32 X 1/4, SS.....	4
SCREW, 8-32 X 1-1/4 SS.....	3
LOCKNUT, 8-32 SS	2
LOCKWASHER, #8 SS	1
CABLE TIE, NYLON	3
ALLEN HEAD WRENCH, 5/64"	1
PUSH TUBE, 3/8 X 3"	1

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