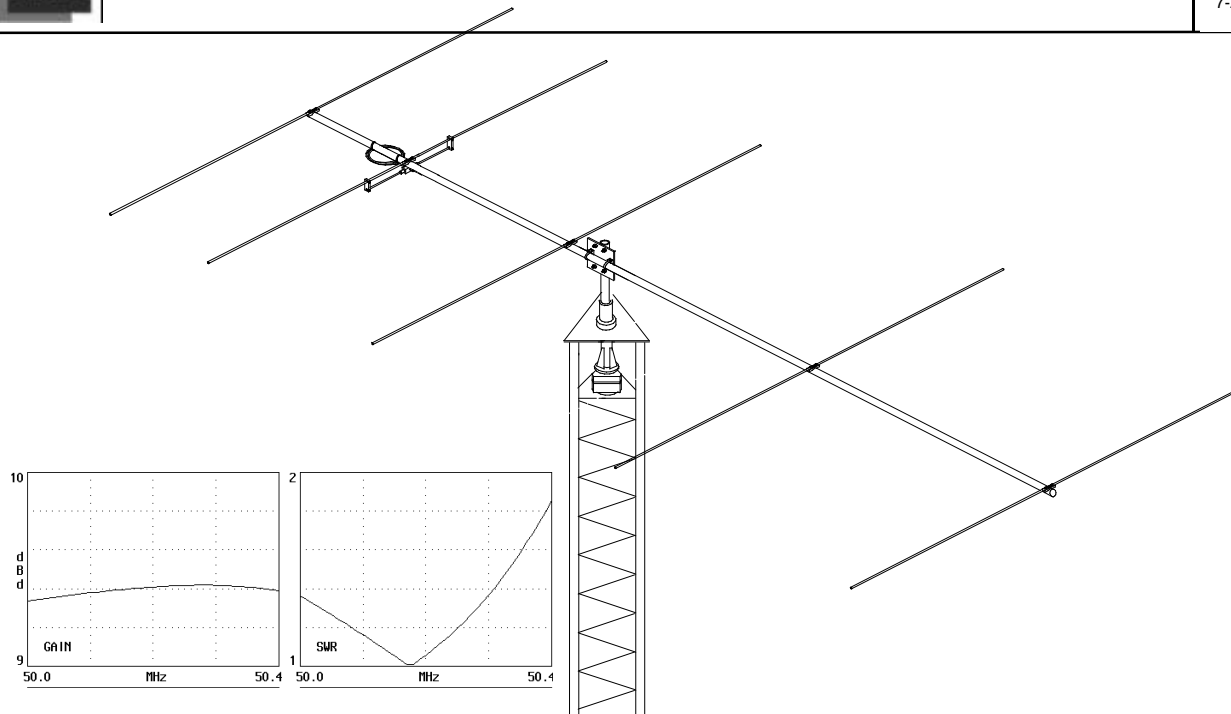




# 6M5X 6 Meter Yagi

5-4-99  
Rev  
7-24-03



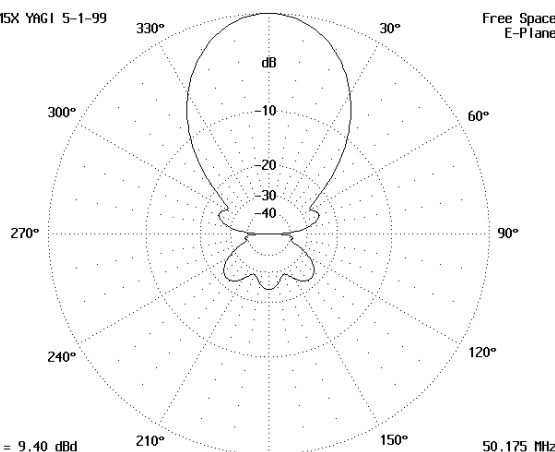
## SPECIFICATIONS

Model .....6M5X  
 Frequency.....50-50.5 + FM dims.  
 Gain .....9.4 dBd  
 Front to back.....21 dB typ.  
 Beamwidth .....E=42° / H=52°  
 VSWR.....1.1 @ 50.175 MHz  
 Power Handling .....1.5 kW  
 Match Type.....'T' Match  
 Balun.....4:1 Coaxial  
 Turning radius.....11 ft.  
 Recommended Stacking .....15-21'.High 19-23'. Wide  
 Feed Impedance / Conn.....50 Ohms / "SO-239  
 Lightning Protection.....All Elements Grounded  
 Boom length / Dia .....18' / 1-1/2" Dia  
 Element Type .....3/8" tube  
 Mast Size.....1-1/2 to 2" nom.  
 Wind area / Survival .....2.2 sq. ft. / 100 MPH  
 Weight / Ship wt.....9 lbs. / 11lbs.

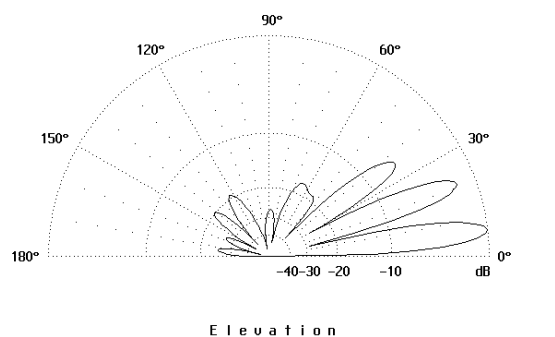
## FEATURES

The 6M5X is the latest computer optimized version of our popular 6M5. The 6M5X is two feet longer but front to back and gain are noticeably improved. We just made a good thing better maintaining low wind load and great performance for its size. It will compliment the rest of your antenna system and not overload your tower. Quick and easy to assemble, it is also great for mountain topping, grid expeditions and DXpeditions. The 6M5X features the same machined aluminum element mounting blocks, and sealed "T" match block, that all M<sup>2</sup>'s use. The 6M5X is perfect for the Ham trying 6 meters for the first time or the seasoned vet who may stack them for lower angle of radiation or even some EME use. A tuning chart is included in the manual for the FM band. An upgrade kit is offered for older 6M5's.

M2 6M5X YAGI 5-1-99 Free Space E-Plane



M2 6M5X YAGI 5-1-99 40.0' High





# 6M5X Assembly Manual

rev 913-02

TOOLS REQUIRED: Screwdriver, 11/32 wrench, socket or nut driver, a 7/16" wrench and 1/2" wrench and socket, tape measure.

1. Layout the boom sections as shown on Dimension Sheet and assemble using (6) 8-32 x 1-3/4" screws, locknuts. Tighten the nuts securely.
2. Use the Dimension Sheet as reference for installing the ELEMENT HALVES on to the ELEMENT MOUNTING BLOCKS. For each element insert a 1/4 x 10" Element Support Rod from the drilled end. Secure the rod / element assemblies to the element mounting blocks with (10) 8-32 x 1" screws and locknuts. Install screws from bottom of blocks.
3. Mount the longest element (REFLECTOR) to the hole at the rear end of the boom using a 8-32 x 2" screw and locknut. Tighten securely.
4. Mount the DRIVEN ELEMENT next, threading the 8-32 x 2" screw into the 'T' MATCH BLOCK held to the underside of the boom. Orient the match block with the "N" feed connector pointed to the front. Mount the remaining DIRECTOR ELEMENTS. Carefully note lengths on Dimension Sheet:.
5. Thread the gold SEAL NUTS all the way onto the two small connectors on the 'T' match block **with the black neoprene side out**. Then connect the balun connectors and tighten them **GENTLY** with a 7/16" end wrench. Now run the seal nuts up against the face of the balun connectors and tighten them about 1/2 turn with a 1/2" end wrench. Secure coiled balun to boom with two nylon ties. The balun does not need to be coiled. It can be unrolled and fastened to the boom to the front or rear.
6. Install two 8-32 x 1/4" Set screws into each SHORTING BAR. Then slide a SHORTING BAR onto each DRIVEN ELEMENT HALF and position per the DIMENSION SHEET. Align rods and element halves parallel and tighten the set screws with the 5/64" Allen wrench provided.
7. Install the feedline or a short section long enough to reach the boom center and on down the mast and on past the the top of the tower. If the short section is used then the main feedline can be attached at the time of installation on the tower. Tightening the Male 'N' connector carefully, and route the cable forward on the boom, securing it with the cable ties provided. Stop about 24" in front of the first director.
8. Mount the BOOM TO MAST PLATE perpendicular to elements at or near the physical balance point of the antenna. Secure with the 1-1/2" U-bolts, 5/16" stainless steel lockwashers and nuts. Do not over-tighten as severe boom distortion and subsequent weakening can occur. 2" U-bolts are supplied for attaching the plate to your mast.
9. When the antenna is installed in position on the mast, the main feedline can be connected and sealed at that time. **REMEMBER** to support the feedline at the antenna boom and on the mast. Leave an adequate feedline loop for rotation around the tower. When stacking this antenna with other HF models, maintain a minimum 5' of separation; more if practical. Mount horizontally polarized VHF and UHF antennas at least 40" above or below this antenna to minimize interaction.
10. **INSTALLATION AND STACKING INFORMATION**
  - A. A mast or cross boom that supports the antenna **in the element plane** must be non conductive (fiberglass, etc). The feed line must also always exit the antenna at 90 degrees or perpendicular to the elements for at least 60 inches.
  - B. To protect your investment in this high performance antenna, always use high quality coax and

connectors. Old, corroded, or poor quality materials are common sources of **serious** performance losses and annoying intermittence.

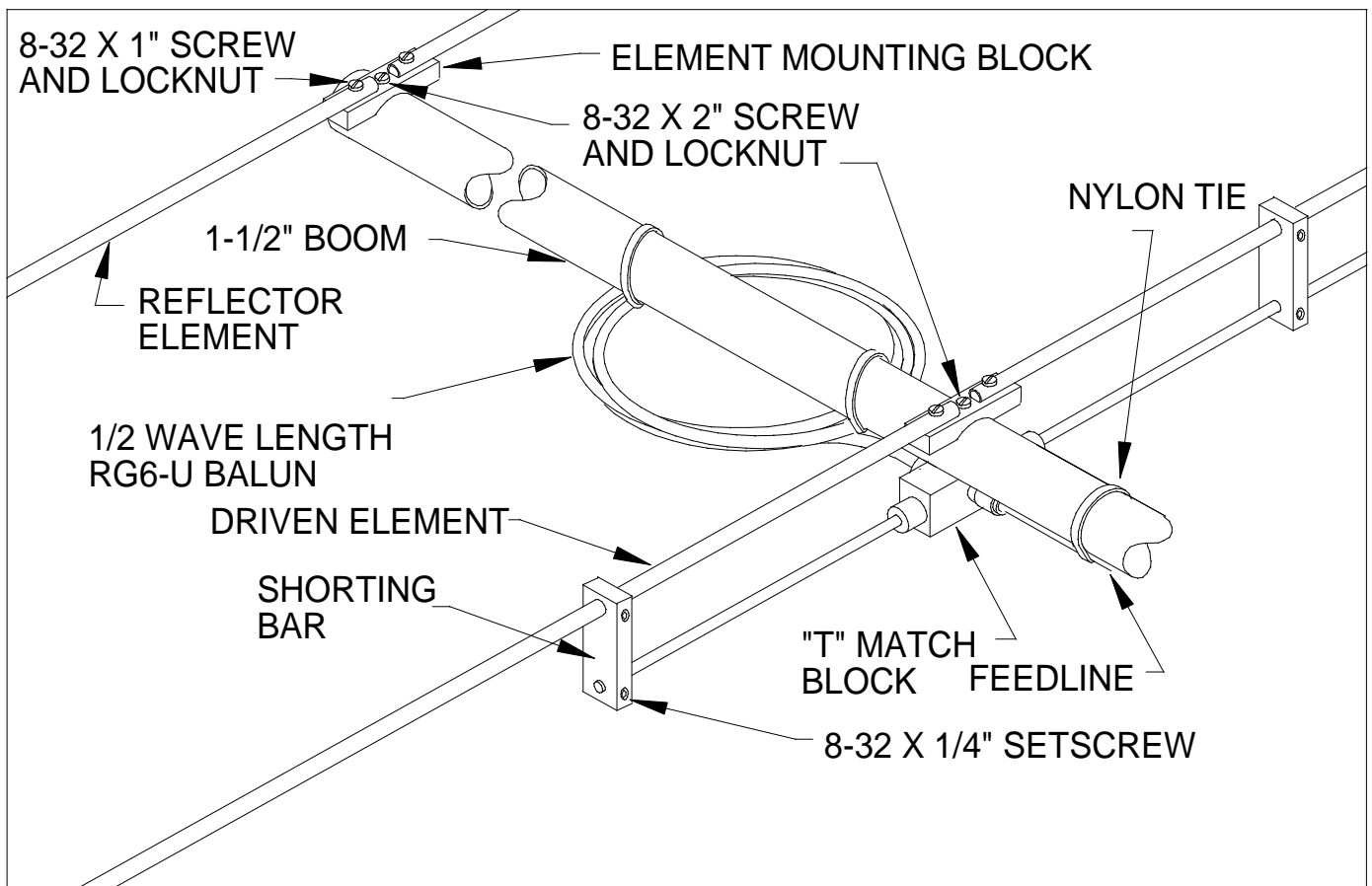
**C.** If possible, test the antenna, connectors and feedline BEFORE installing to your mast or tower. Set antenna on a tall ladder or temporary mast. Check for continuity and match across the bandwidth. It should be similar to rated specifications.

**D. STACKING REMINDERS:**

1. All driven element blocks MUST be oriented to the same side of boom.
2. All boom-to-mast plates MUST be mounted at the same point on the boom.
3. Feed / phasing lines MUST be of equal electrical length or multiples of 1 wavelength in order to maintain equal phasing in the array. Improper phasing can severely deteriorate performance.

If you are unsure about stacking multiple antennas, please call **M<sup>2</sup>** and let us help you DO IT

## TYPICAL HARDWARE ARRANGEMENT



RIGHT

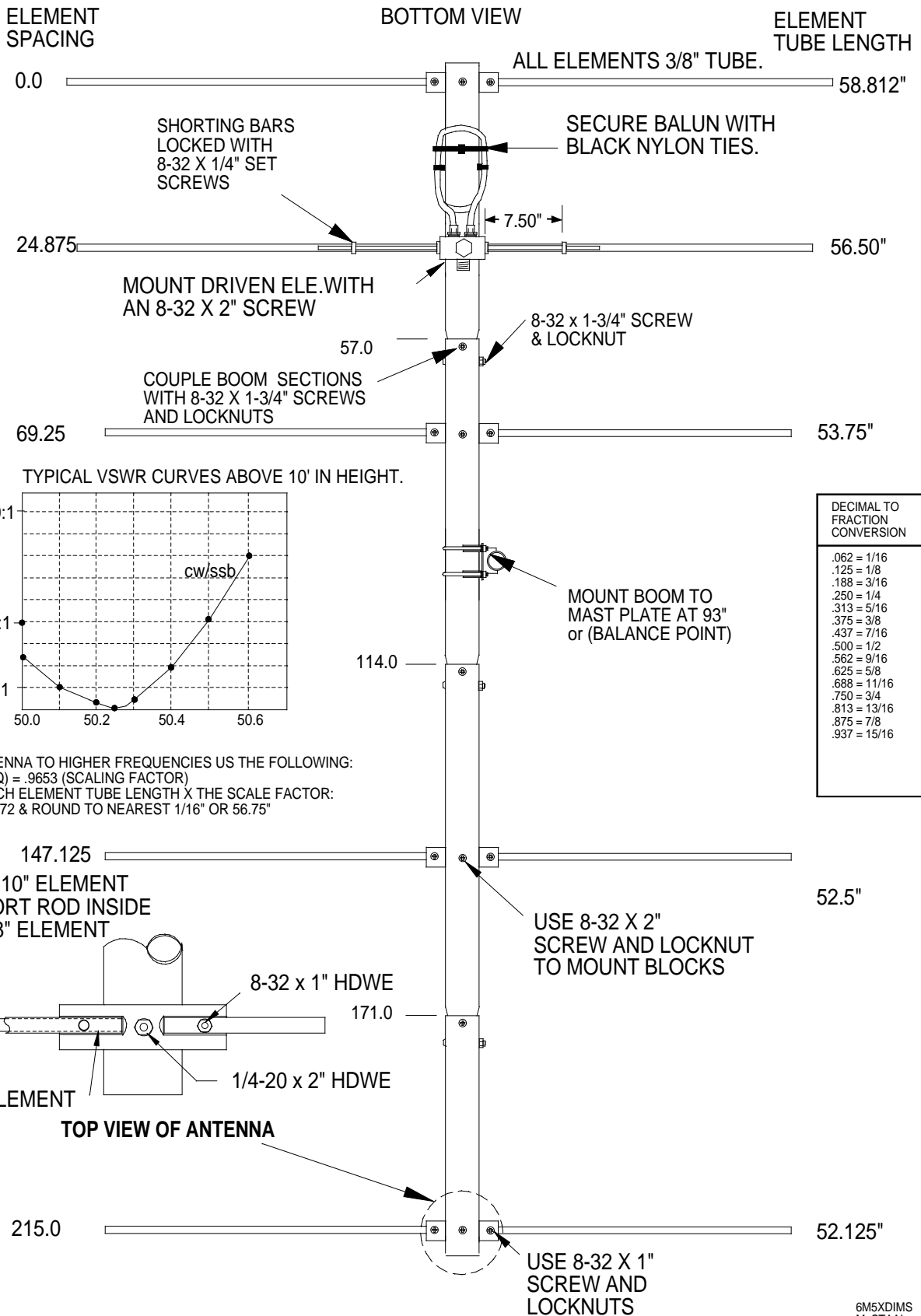
THIS COMPLETES THE ANTENNA ASSEMBLY.

Carefully manufactured by:  
**M<sup>2</sup> Antenna Systems Inc.**

4402 N. Selland Ave.  
Fresno, CA 93722

(559) 432-8873 Fax: 432-3059 www.m2inc.com Email: sales@m2inc.com

# 6M5X DIMENSIONS



TO SCALE THE ANTENNA TO HIGHER FREQUENCIES USE THE FOLLOWING:  
 $50.2/52.0$  (NEW FREQ) =  $.9653$  (SCALING FACTOR)  
 THEN MULTIPLY EACH ELEMENT TUBE LENGTH X THE SCALE FACTOR:  
 $58.812 \times .9653 = 56.772$  & ROUND TO NEAREST 1/16" OR 56.75"

# 6M5X PARTS LIST

5-4-99  
REV 9-13-02

DESCRIPTION	QTY.
Boom Section #1 1-1/2 x .058 x 60" S.O.E. Alum. ....	1
Boom Section #2 1-1/2 x .058 x 60" S.O.E. Alum. ....	1
Boom Section #3 1-1/2 x .058 x 60" S.O.E. Alum. ....	1
Boom Section #4 1-1/2 x .058 x 45" Alum.....	1
Element halves, 3/8" x see dims. ....	10
Element Support Rod, 1/4 x 10" .....	10
Driven `T' Match Assembly with SO-239 conn. (N optional) .....	1
Balun, 4:1, 1/2 wave, RG-6U .....	1
Boom Plate 4 x 6 x 3/16 Alum.....	1
U-Bolt 2" .....	2
U-Bolt 1 1/2" .....	2
Assembly Instructions .....	1

## HARDWARE BAG

Shorting Bars 3/4 x 1/4 x 2-7/8" machined alum. ....	2
Element Mounting Blocks 3/4 x 3/8 x 3" alum. ....	5
Screw 8-32 X 2" panhead ss.....	5
Screw 8-32 x 1 3/4" panhead ss .....	6
Screw 8-32 x 1" panhead ss .....	10
Locknut 8-32 ss .....	25
Nuts 5/16-18 ss.....	8
Lockwashers 5/16 Split Ring.....	8
Cable Ties 8" Black.....	4
Screw Internal Hex Set 8-32 x 1/4 ss.....	4
Allen Wrench 5/64" .....	1
Nut Seals .....	2

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