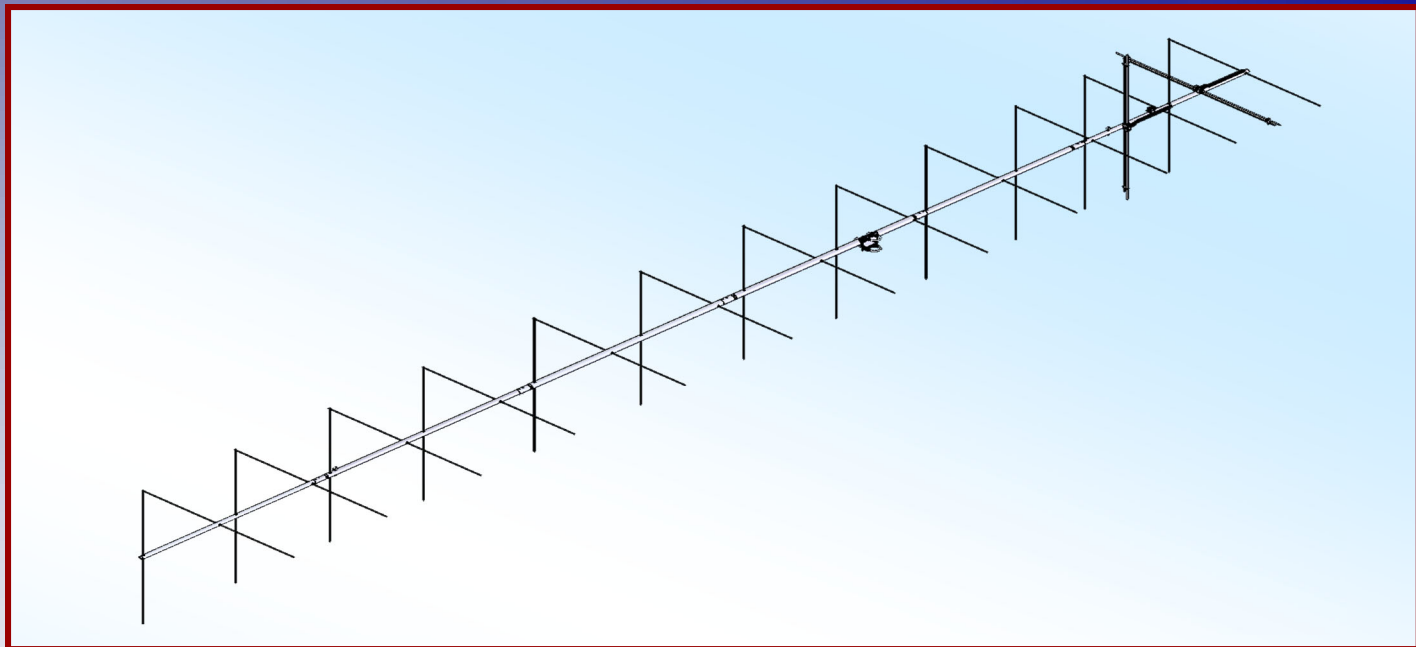




# M2 Antenna Systems, Inc.

## Model No: 260XP28



### SPECIFICATIONS:

Model .....	260XP28	Power Handling.....	1.5 kW
Frequency Range.....	257 To 262 MHz	Boom Length / Dia .....	199.5" / 1 1/4" to 3/4"
Gain.....	19.04 dBi	Maximum Element Length .....	25"
Front to back .....	16 dB Typical	Turning Radius:.....	Call
Feed type .....	T-Match	Stacking Distance .....	Call
Feed Impedance .....	50 Ohms Unbalanced	Mounting .....	1-1/2" to 2"
Maximum VSWR.....	1.5:1 Max	Wind area / Survival.....	1.9 Sq. Ft. / 100 MPH
Input Connector.....	"N" Female	Weight / Ship Wt. ....	35 Lbs. / 45 Lbs.

**\*Subtract 2.14 from dBi for dBd / FS = Free Space**

### FEATURES:

The 260XP28 is a heavy duty, high performance cross polarized antenna with a remarkably clean pattern. The pattern is important in order to match the antenna's noise temperature with modern low noise preamps. This antenna is ideal for specialized satellite communications. The CNC machined driven element module is O-ring sealed and weather tight for low maintenance and long-term peak performance. Internal connected are encapsulated in a space-age silicone gel that seals out moisture and improves power handling. The large 3/8" 6061-T6 rod elements are centered to minimize interaction and maintain good ellipticity. Insulators are UV stabilized and locked in place with stainless keepers. Rugged construction, uncompromising performance.

# 260XP28 ASSEMBLY MANUAL

**TOOLS REQUIRED FOR ASSEMBLY:** Screwdriver, 11/32 nut driver or wrench, 7/16" and 1/2" socket or end wrenches, measuring tape.

1. Assemble the boom using 8-32 x 1-1/4" screws and locknuts to join sections. Sections may be swaged to each other or use 7/8" internal splice sections.

## ASSEMBLING THE HORIZONTAL ELEMENTS

2. Layout the elements by Horizontal length and position as shown on the DIMENSION SHEET. Start with the reflector (longest) element. Balance it on your finger to find rough center and push on a black button insulator to about 1/2" off 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 CENTERING** the element at this time and **DO NOT INSTALL** the stainless steel shaft retainers yet. It is easier to do it after all the horizontal elements are installed in the boom.

3. Install the short 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 is sticking out on each side of the boom within 1/32". Once you have all the elements centered, sight down the element tips from the rear comparing each side. Correct any obvious misalignments.

5. Stainless steel SHAFT RETAINERS lock the elements in place. They should always be used for permanent and long term antenna installations. For portable or temporary use, the button insulators are adequate for holding the elements and the retainers may be left off. To install the stainless steel SHAFT RETAINERS, use thumb and forefinger to hold the retainer over the end of the PUSH TUBE (3/8" x 3" tube, supplied in the kit), internal fingers on retainer dished into tube. **HOLD THE ELEMENT FIRMLY TO PREVENT IT FROM SLIDING OFF CENTER** and press the retainer onto the element end and continue until retainer butts on insulator button. Locking pliers, lightly clamped up against the opposite button insulator will help maintain center reference (if you push the first retainer too far, remove element from boom, push retainer completely off the element and start over). Install another retainer to the opposite side of the element. Continue installing retainers until all elements are secured.



6. Mount the HORIZONTAL DRIVEN ELEMENT BLOCK / ROD ASSEMBLY to the TOP of the boom using a single 8-32 x 1-1/4" screw. Orient the block with the two balun connectors facing to the front.

7. Install the 8-32 x 1/4" set screws (internal Allen head - tool supplied) into the SHORTING BARS. Slide the bars onto the 1/8" Driven Element Block Rods and the 3/16" driven element rod. Position the Shorting Bars as shown on the Dimension Sheet, with the given dimension between the outer face of the driven element block and the inner face of the shorting bar. Align the bars with each other and tighten the set screws.

## ASSEMBLING THE VERTICAL ELEMENTS

8. Repeat steps #2 through #5 to install the Vertical elements, using the Dimension Sheet as your guide to lengths and spacing. Note: The vertical element set is shifted forward on the boom by 1/4 wavelength. This increases isolation between element planes, improving circularity and ease of phasing / matching the two element set.

9. Use good quality coax and "N" connector for your feedline (see installation Tips). Secure feed coax at the rear reflector behind the Junction block. To provide stress relief allow coax to hang in a loop between the rear end of the boom and the reattachment point (at least 12" beyond element tips) on the mast or crossboom. **Do not route feedline to boom to mast plate as exiting antenna here will adversely affect circular field.**

10. The boom to mast plate is normally mounted to the boom near the balance point and centered between two directors. Since the feedline represents significant weight, it is best to have it attached and fastened to the boom with cable ties before final mounting the plate. Use two 1-1/4" U-bolts and the stainless nuts and lock washer provided. **DO NOT OVER TIGHTEN.** 2" U-bolts (and stainless steel nuts / lockwashers) are provided for mounting the antenna to your NON-CONDUCTIVE mast

# 260XP28 DIMENSION SHEET

# 260XP28 ASSEMBLY MANUAL

## INSTALLATION NOTES:

1. The 260XP28 is a cross polarized antenna that creates fields in both H and V planes, or in ALL planes if phased and fed together for circularity. Mounting on a metal (conductive) mast or crossboom can severely affect performance. A 3" mast or crossboom of any NON-CONDUCTIVE material should be used. Fiberglass is the prime choice for its strength and weather resistance. Mount the antenna so that element tips are at least 12" from any conductive material (mast, tower, feedline, etc.)

2. Attach feedlines and fasten to the boom with cable ties. Use good quality coax and "N" connector for your feedlines. To provide stress relief use a nylon tie to secure feed coax near connector on each block. Route feedlines to rear of boom and secure again. Allow coax to hang in a loop between the rear end of the boom and the reattachment point (at least 12" beyond element tips) on the mast or crossboom. ***Do not route feedlines to boom to mast plate as exiting antenna here will adversely affect field.***

THIS COMPLETES THE ANTENNA ASSEMBLY

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# 260XP28 PARTS & HARDWARE

## 260XP28 PARTS LIST

DESCRIPTION	QTY
BOOM SECTION, 1 X .058 X 37.125" STR .....	1
BOOM SECTION, 1-1/4 X .058 X 60" SBE .....	2
BOOM SECTION, 1 X .058 X 60" SOE .....	2
BOOM SECTION, 3/4 X .049 X 52" .....	2
ELEMENTS, 3/8" ROD X Dimension Sheet .....	28
DRIVEN ELEMENT "T" MATCH BLOCK .....	2
BALUN, 1/2 WAVE RG-6U .....	2
BOOM TO MAST PLATE, .188 X 6" X4" .....	1
ASSEMBLY MANUAL .....	1
U-BOLT & CRADLE, 1-1/4" .....	2
U-BOLT & CRADLE, 2" .....	2
ASSEMBLY MANUAL .....	1

### IN HARDWARE BAG:

SHORTING BAR .....	4
BUTTON INSULATORS, 3/8" .....	60
SHAFT RETAINERS, 3/8" SS .....	60
NUT, 5/16-18 SS .....	10
LOCK WASHER, 5/16 SS .....	10
SET SCREW, 8-32 X 1/4" SS .....	8
SCREW, 8-32 X 2" SS .....	4
SCREW, 8-32 X 1-1/2" SS .....	6
SCREW, 8-32 X 1-1/4" SS .....	2
LOCKNUT, 8-32 SS .....	6
CABLE TIE, 14" NYLON .....	4
ALLEN HEAD WRENCH, 5/64 .....	1
NUTSEAL .....	4
PUSH TUBE, 3/8" X 3" .....	1

STR = STRAIGHT TUBE  
SOE = SWAGED ONE END  
SBE = SWAGED BOTH ENDS

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