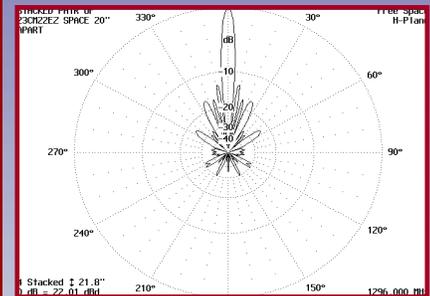
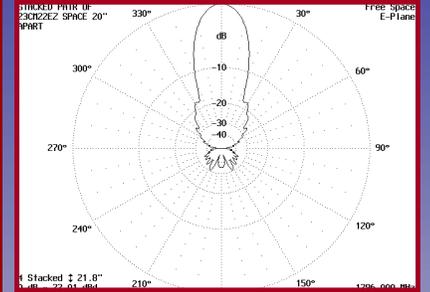
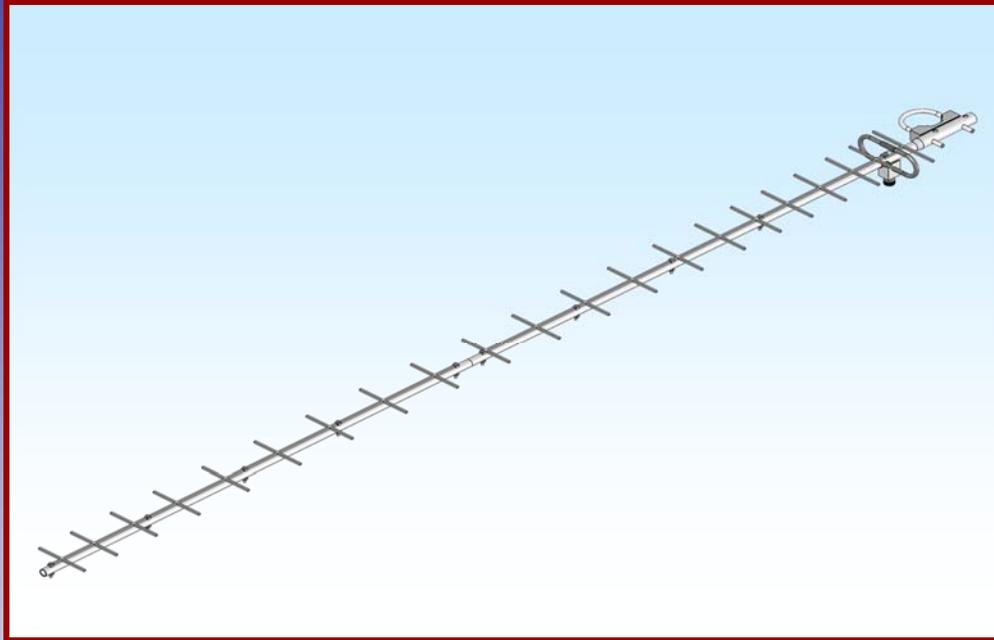




# M2 Antenna Systems, Inc. Model No: 23CM22EZA



## SPECIFICATIONS:

Model .....	23CM22EZA	Power Handling .....	600 Watts
Frequency Range.....	1250 To 1300 MHz	Boom Length / Dia.....	70" / 0.50"
*Gain .....	18.2dbi 1290-1300 MHz	Maximum Element Length.....	4.5"
Front to back .....	28 dB Typical	Turning Radius: .....	68"
Beamwidth .....	E=24° H=24°	Stacking Distance.....	23" High & 23" Wide
Feed type .....	Folded Dipole	Mast Size.....	1-1/4" to 2" Nom.
Feed Impedance. ....	50 Ohms Unbalanced	Wind area / Survival .....	0.3 Sq. Ft. / 100 MPH
Maximum VSWR.....	1:1 Typical	Weight / Ship Wt.....	2 Lbs. / 3.5 Lbs.
Input Connector.....	"N" Female		

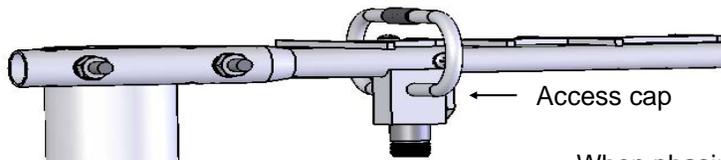
**\*Subtract 2.14 from dBi for dBd**

## FEATURES:

The 23CM22EZA is a true product of the computer age. The recently updated element design is stamped out holding spacing and element lengths to .003" tolerance. The original fiberglass boom has been replaced with 1/2" dia. aluminum. The metal boom shortens the elements for peak gain at 1296. Each antenna performs as perfectly as the next and the gain tops any other antenna of comparable boom length. With excellent directivity and a very clean pattern, it is perfect for high gain stacked arrays. Applications are long haul tropo, EME, ATV, Repeater, base station and OSCAR operations. The 'EZ' is handy for 'hill-topping' and portable uses because of its modest size, weight, simple construction and rear mounting.

Structurally, the 23CM22EZA elements are fabricated in just TWO sets, eliminating ALL measurement and assembly errors. The Broad band folded dipole driven element design is unique, with a balun and matching inside the folded dipole itself. External connections are limited to a single O-ring sealed "N" feed. Internal connections are sealed in a machined and aluminum brazed housing. When other designs are deteriorating from environmental factors, the '23CM22EZA will still be as good as new and performing to 'spec'!

# 23CM22EZA ASSEMBLY MANUAL



## COMPLEX PHASING TECHNIQUES EXPLAINED

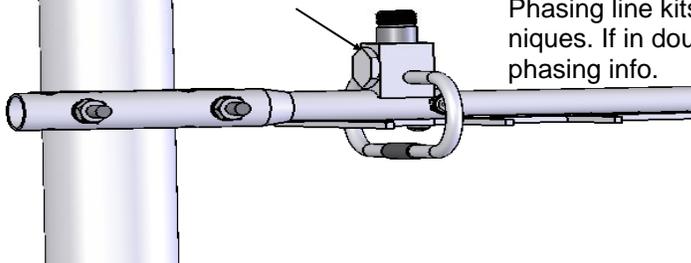
When phasing antenna arrays, there are some standard rules, such as: "all antennas need to mount identically not mirror image" and "phasing lines need to be ALL EVEN or ALL ODD halfwave multiples". These are good basic rules. There are situations however, where reduced phasing line length and routing simplicity can be important but it may require different antenna mounting parameters.

In the case of the 23CM22EZA, rear mounting reduces phasing line length and mounting mirror image makes it even better. Mounting mirror image normally puts the two antennas 180 degrees out of phase because one driven element is rotated by 180 degrees with respect to the other. We give you two mounting holes that allows you to swap ends of the driven element and there by taking the 180 phase shift back out of the phasing system.

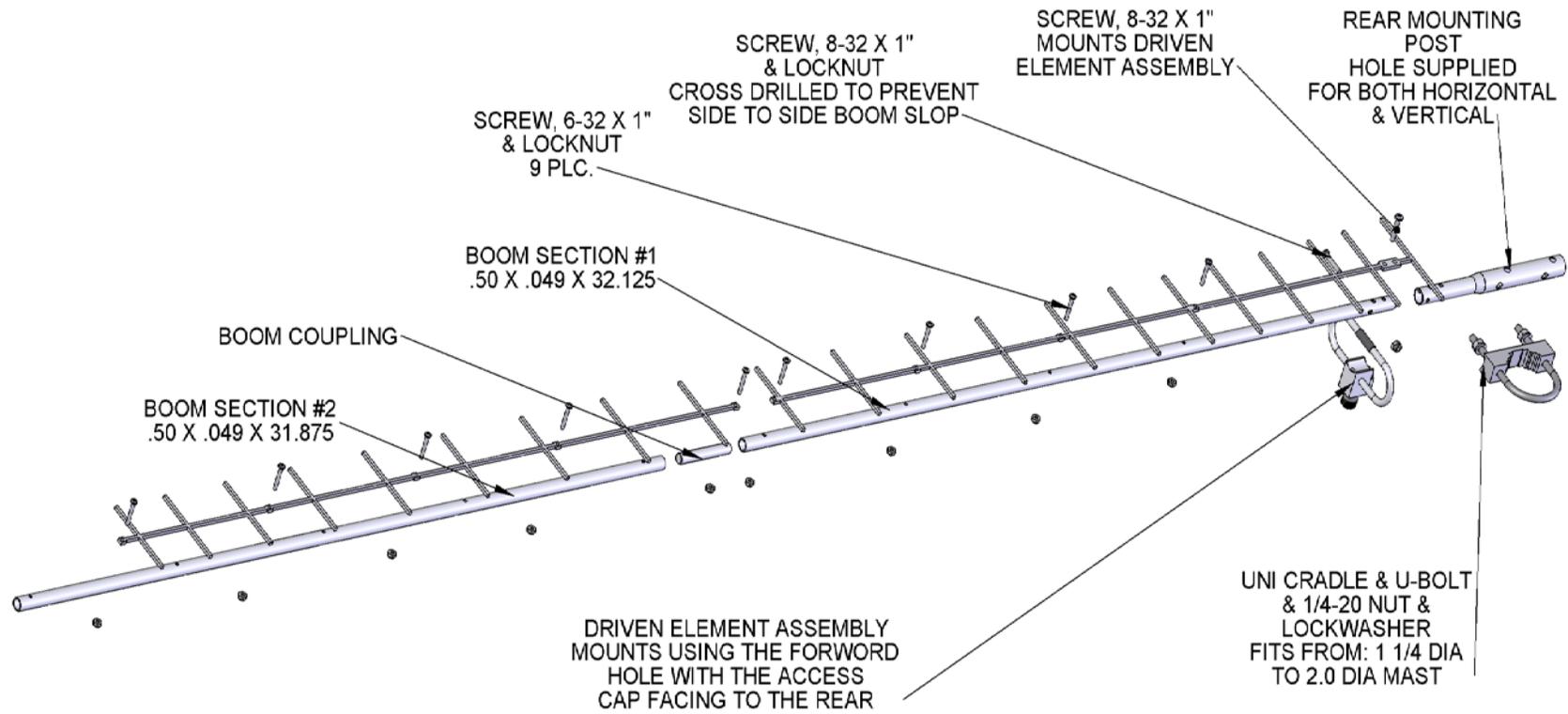
To be sure your array ends up all "in phase" do the following:

1. Lay all the driven elements side by side with the connectors pointing away from you and the Access caps up.
2. With a permanent marking felt pen, make a band of black on the RIGHT end of each driven element.
3. Mount the driven elements on the antennas so all the black bands end up on the RIGHT side of the array. And the access caps are as shown.
4. Be sure they are now all the same distance from the rear element. This is what the second hole is for.
5. Keep all the phasing lines equal length between pairs of antennas. That is it. You are now in phase.

Access cap



Phasing line kits available for most popular stacking techniques. If in doubt, do it right and call M2 for stacking and phasing info.



23CM22EZA ASSEMBLY DETAIL

# 23CM22EZA PARTS & HARDWARE

DESCRIPTION	QTY
BOOM SECTION #1, 1/2 X 32.125" .....	1
BOOM SECTION #2, 1/2 X 31.875" .....	1
ELEMENT SET #1, REAR.....	1
ELEMENT SET #2, FRONT .....	1
DRIVEN ELEMENT ASSY.....	1
REAR MOUNTING POST, 3/4 X .049 X 7.00 SOE .....	1
ASSEMBLY MANUAL .....	1

HARDWARE BAG .....	QTY
BOOM COUPLING .....	1
UNI-CRADLE,.....	1
U-BOLT, 2 SS" (HINDLEY).....	1
NUT, 1/4-20, SS .....	2
LOCKWASHER, 1/4", SS .....	2
SCREW, 8-32 X 1" .....	2
LOCKNUT, 8-32 .....	1
LOCKWASHER, 8-32, SS .....	1
SCREW, 6-32 X 1" .....	9
LOCKNUT, 6-32, SS .....	9

## **M<sup>2</sup> ANTENNA SYSTEMS, INC.**

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