

MATSING[®]

LENS TECHNOLOGY ENABLED



MS-MBA-4.2-H2-L2

Multi-Beam Dual Band Spherical Lens Antenna:
4 independent high-frequency (1695-2690MHz)
cross-polarized beams and 2 independent
low-frequency (698-960MHz) cross-polarized
beams with 2X2 MIMO support. Each beam has
independent tilt adjust, for high frequency 0°-20°
and for low frequency 0°-40°

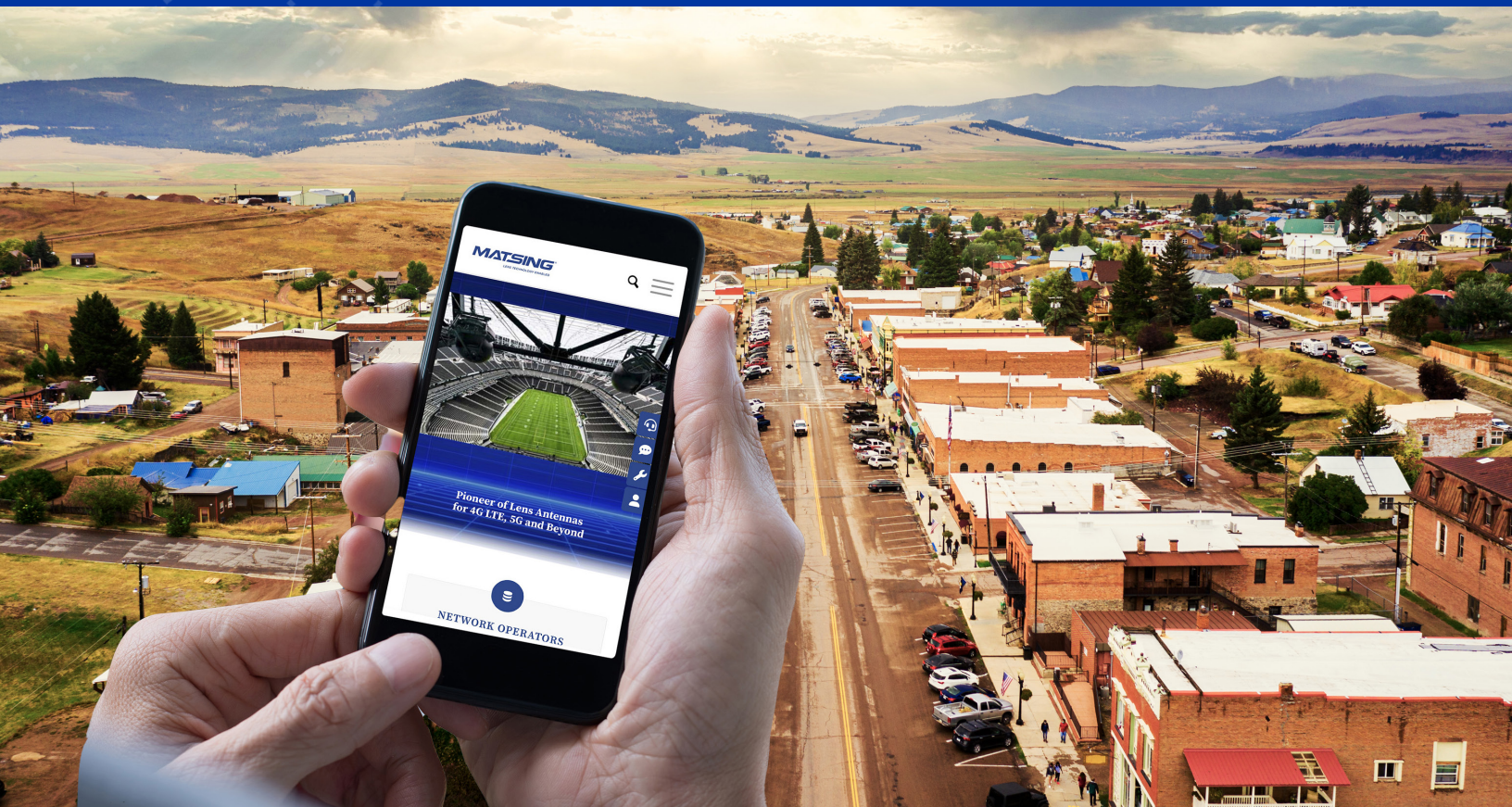


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MS-MBA-4.2-H2-L2

Ideal Coverage and Capacity Solution for Suburban, Rural & Fixed Wireless Access (FWA) Networks

Better Signal Quality

High Gain, Narrow Vertical Beamwidth

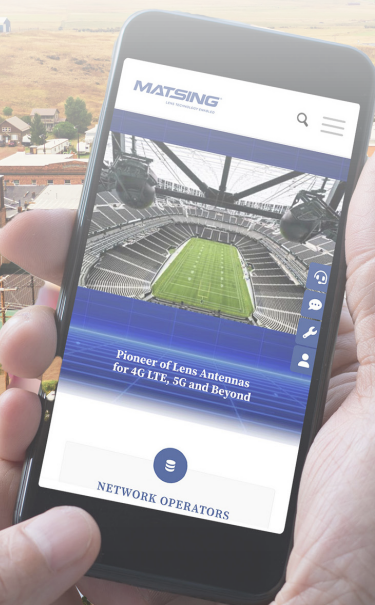
Improved Capacity & Data Throughput

High SINR, Reduced Sidelobes & Backlobes



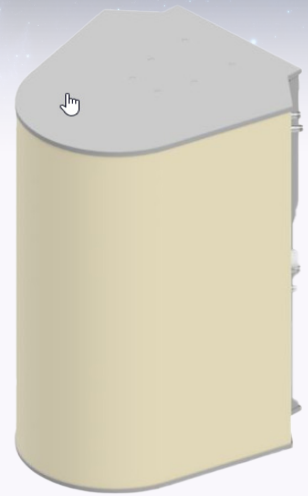
Rapid & Cost Effective Scalability

Quick Deployment, Minimal Infrastructure



MS-MBA-4.2-H2-L2

Multi-Beam Dual Band Spherical Lens Antenna: 4 independent high frequency (1695-2690MHz) cross-polarized beams and 2 independent low-frequency (698-960MHz) cross-polarized beams with 2X2 MIMO support. Each beam has independent tilt adjust, for high frequency 0°-20° and for low frequency 0°-40°.

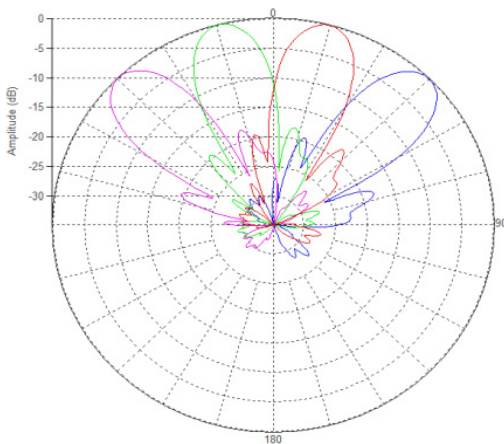


Improved Design Oers;

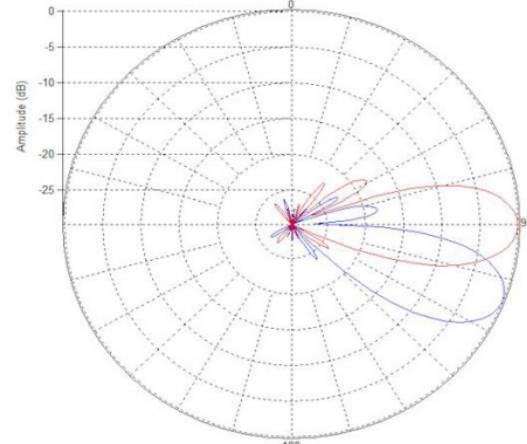
1. Superior Pattern Performance
2. Individual RET Capability per Beam

PATTERN RESULTS:

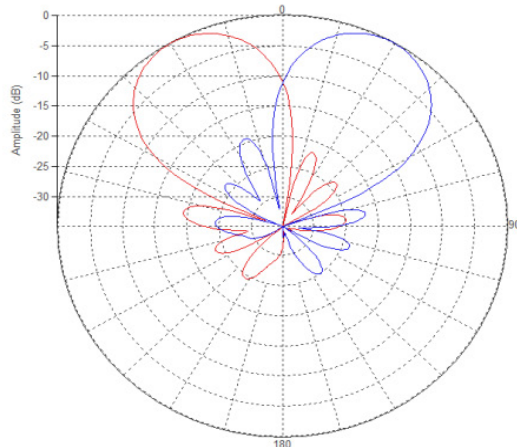
High-band Horizontal Pattern (1.92GHz)



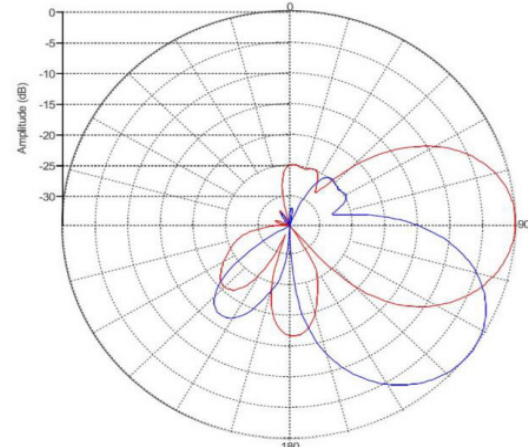
High-band Vertical Pattern (1.92GHz) at tilt 0° and 20°



Low-band Horizontal Pattern (0.8GHz)



Low-band Vertical Pattern (0.8GHz) at tilt 0° and 40°



TECHNICAL SPECIFICATIONS

Frequency	698-960 MHz	1695-2690 MHz
Gain	13dBi	19dBi
VSWR	<1.5:1	<1.5:1
Polarization	Dual Slant $\pm 45^\circ$	Dual Slant $\pm 45^\circ$
Horizontal Coverage	120°	120°
Horizontal Beamwidth (10 dB) level	74°	34°
Horizontal Beamwidth (3 dB) level	42°	19°
Vertical Beamwidth (10dB level)	74°	34°
Vertical Beamwidth (3dB level)	42°	19°
Beam Cross-over	10dB typical	10dB typical
Total Number of Beams	2	4
First Sidelobe Level	<-15dB	<-16dB
Front to Back Ratio	>28dB	>28dB
Isolation Port to Port - Polarization	>28dB	>28dB
Isolation Port to Port - Beam	>26dB	>28dB
Power Rating	200W per port	250W per port
Intermodulation	<-153dBc	<-153dBc
Impedance	50 ohm	50 ohm
Connector Quantity and Type	4 x 4.3-10 female	8 x 4.3-10 female

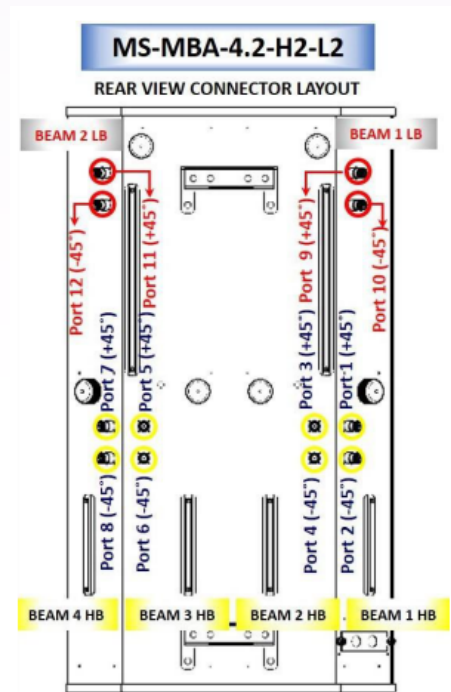
MECHANICAL DATA

Dimensions (H x W x D)	109.7 X 61.7 X 72.3 cm 43.2 X 24.3 X 28.5 inch
Antenna Weight	35.2kg 77.7lbs
Radome Material	Fiber Glass
Mounting	Adjustable Clamps Compatible pipe diameter: 6.1 – 11.4 cm 2.4 – 4.5 inch

ENVIRONMENTAL RATINGS

Humidity	95% RH @ +30°C
Temperature	-40°C to +70°C
Wind load @ 150 km/hr	Frontal: 473 N / 106.3 lbf Lateral: 736 N / 165.5 lbf Rear: 679 N / 152.7 lbf

CONNECTOR LAYOUT:



Instruction Manual

1.0 BEAMS & CONNECTORS:

- 1.10** Plan View Resultant Beam Layout
- 1.20** Connector Port Table
- 1.30** Connector Detail
- 1.40** Connector Layout

2.0 PATTERN DIAGRAM

- 2.10** High Band
- 2.11** MS-MBA-4.2-H2-L2 (Frequency: 1695 - 2690MHz)
- 2.12** MS-MBA-4.2-H2-T2 (Frequency: 1695 - 2690MHz)
- 2.20** Low Band:
- 2.21** MS-MBA-4.2-H2-L2 (Frequency: 698 - 960 MHz)
- 2.22** MS-MBA-4.2-H2-T2 (Frequency: 617 - 896 MHz)

3.0 MANUAL TILT ADJUSTMENT

4.0 BRACKET, BOLT & NUTS REQUIREMENT

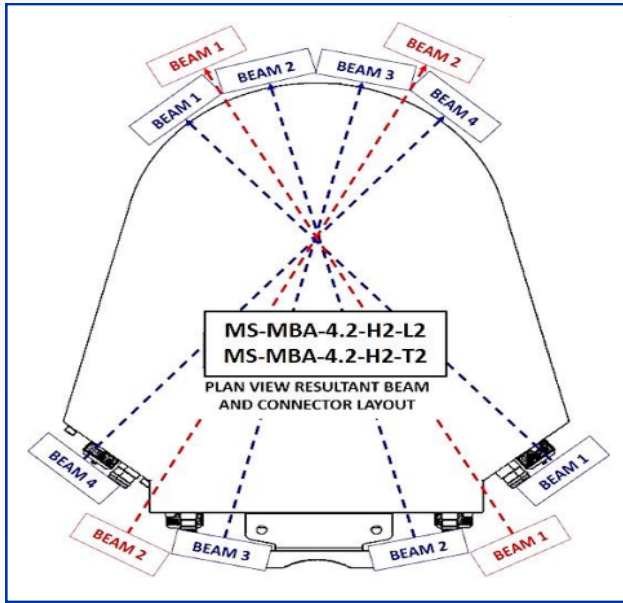
- 4.10** Bolts & Nuts Requirements
- 4.20** Bracket
- 4.30** Installation Sample (MBA Model's mostly identical installation)

5.0 BRACKET, BOLT & NUTS REQUIREMENT

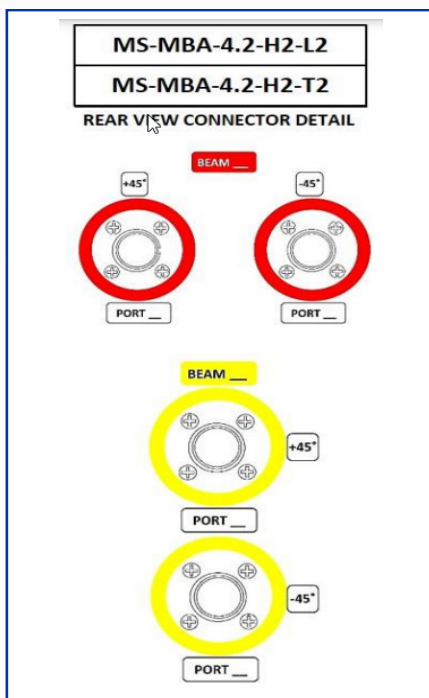
- 5.10** Adjustable Spanner
- 5.20** M12 Spanner

1.0 BEAMS AND CONNECTORS

1.10 Plan View Resultant Beam Layout



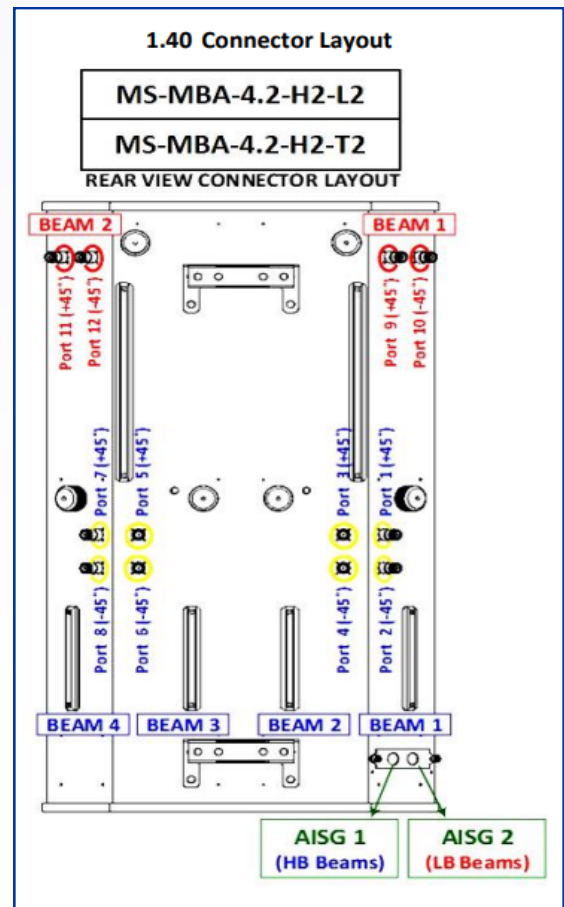
1.30 Connector Detail



1.20 Connector Port Table

Connector Ports Table			
LOW BAND			
BEAM 2		BEAM 1	
Port 11 (+45°)	Port 12 (-45°)	Port 9 (+45°)	Port 10 (-45°)
HIGH BAND			
BEAM 4	BEAM 3	BEAM 2	BEAM 1
Port 7 (+45°)	Port 5 (+45°)	Port 3 (+45°)	Port 1 (+45°)
Port 8 (-45°)	Port 6 (-45°)	Port 4 (-45°)	Port 2 (-45°)

1.40 Connector Layout

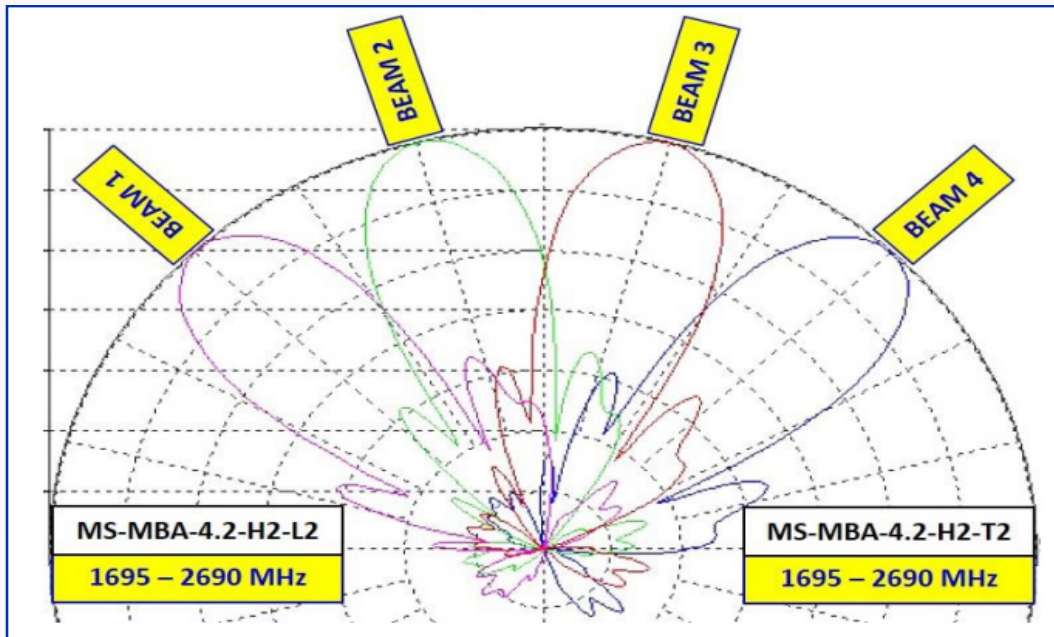


2.0 PATTERN DIAGRAM

2.10 High Band

2.11 MS-MBA-4.2-H2-L2 (Frequency: 1695 - 2690MHz)

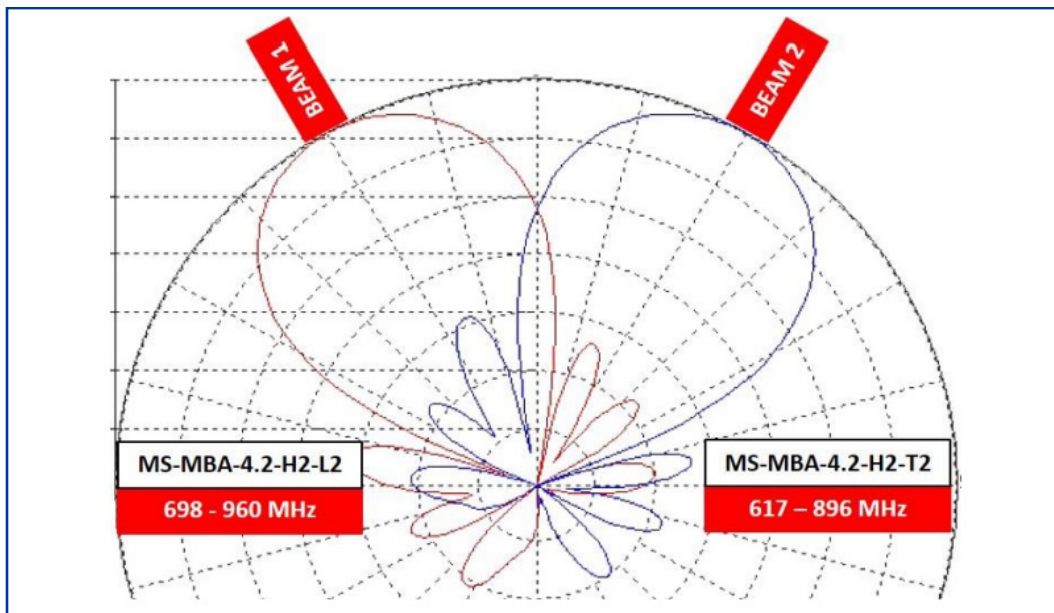
2.12 MS-MBA-4.2-H2-T2 (Frequency: 1695 - 2690MHz)



2.20 Low Band

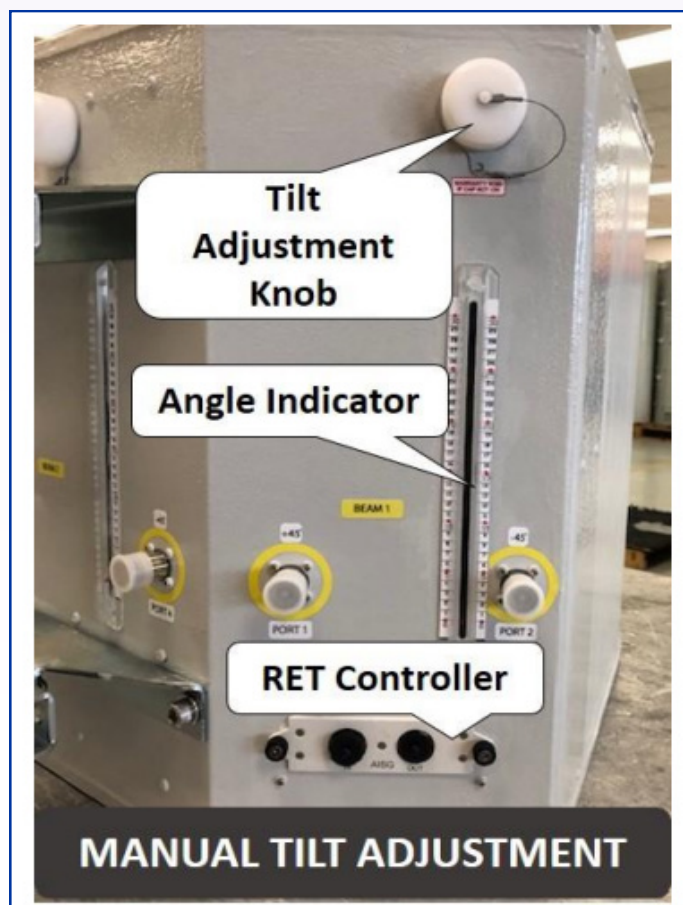
2.21 MS-MBA-4.2-H2-L2 (Frequency: 698 - 960 MHz)

2.22 MS-MBA-4.2-H2-T2 (Frequency: 617 - 896 MHz)



3.0 MANUAL TILT ADJUSTMENT

1	The MBA antenna come in RET mode as default, but if needed can also be manually adjusted. To do so, please unscrew the waterproof cap behind the element whose tilt is to be adjusted.
2	By Default the knob is on engaged mode, pull out the handle for manual tilt adjustment, turn the handle to change the tilt
3	When done, push the handle back in, screw the waterproof cap back to the position.



4.0 BRACKET INSTALLATION

4.10 Bolts and Nuts Requirments

MBA-2, MBA-8, MBA-3-H4, MBA-4-H4

MBA-3.2-H4-L4, MBA-2-L2, 6SH-LAA

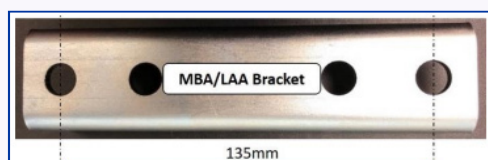
MBA-4.2-H2-L2/T2

Bracket	Bolts		Nuts	
Qty	Size	Qty	Size	Qty
2	M12 x 60mm	4	M12	8

4.11 Bolts and Nuts



4.12 Bracket

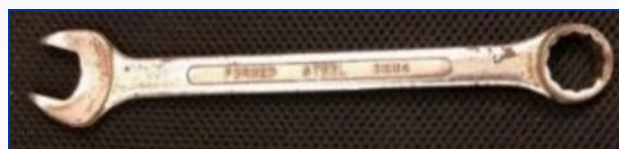


4.20 Tool Requirments

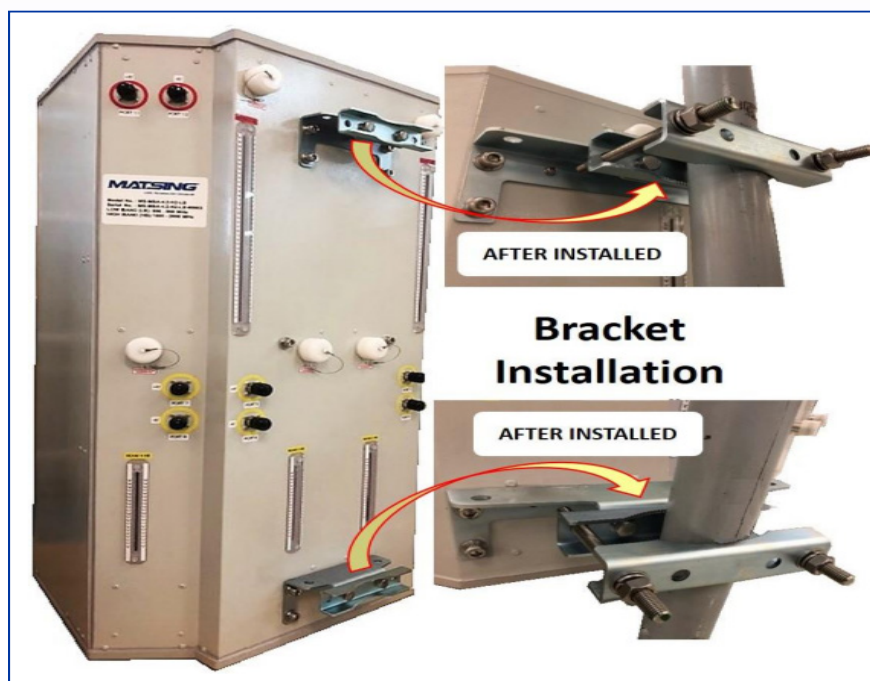
4.21 Adjustable Spanner



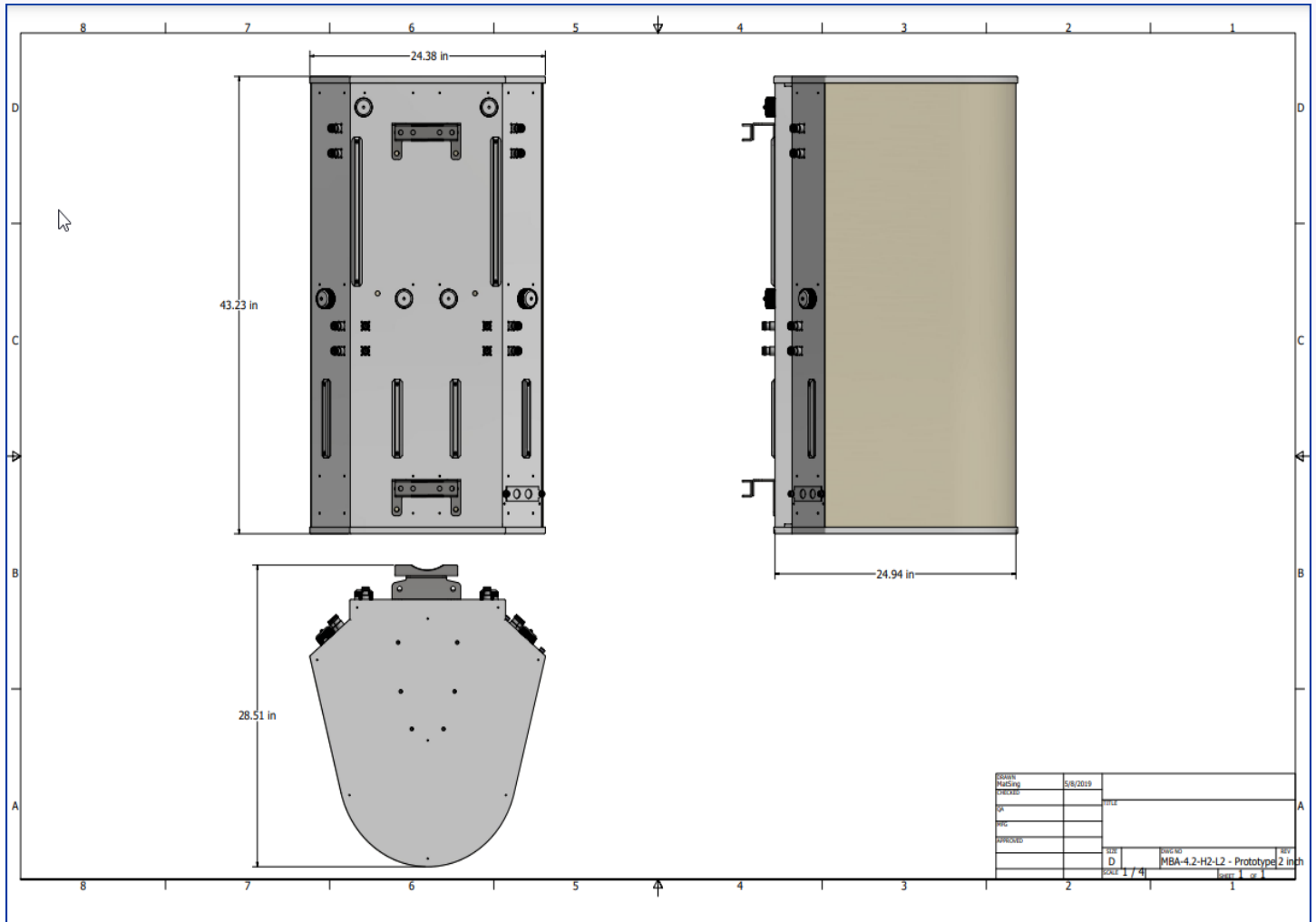
4.22 M12 Spanner



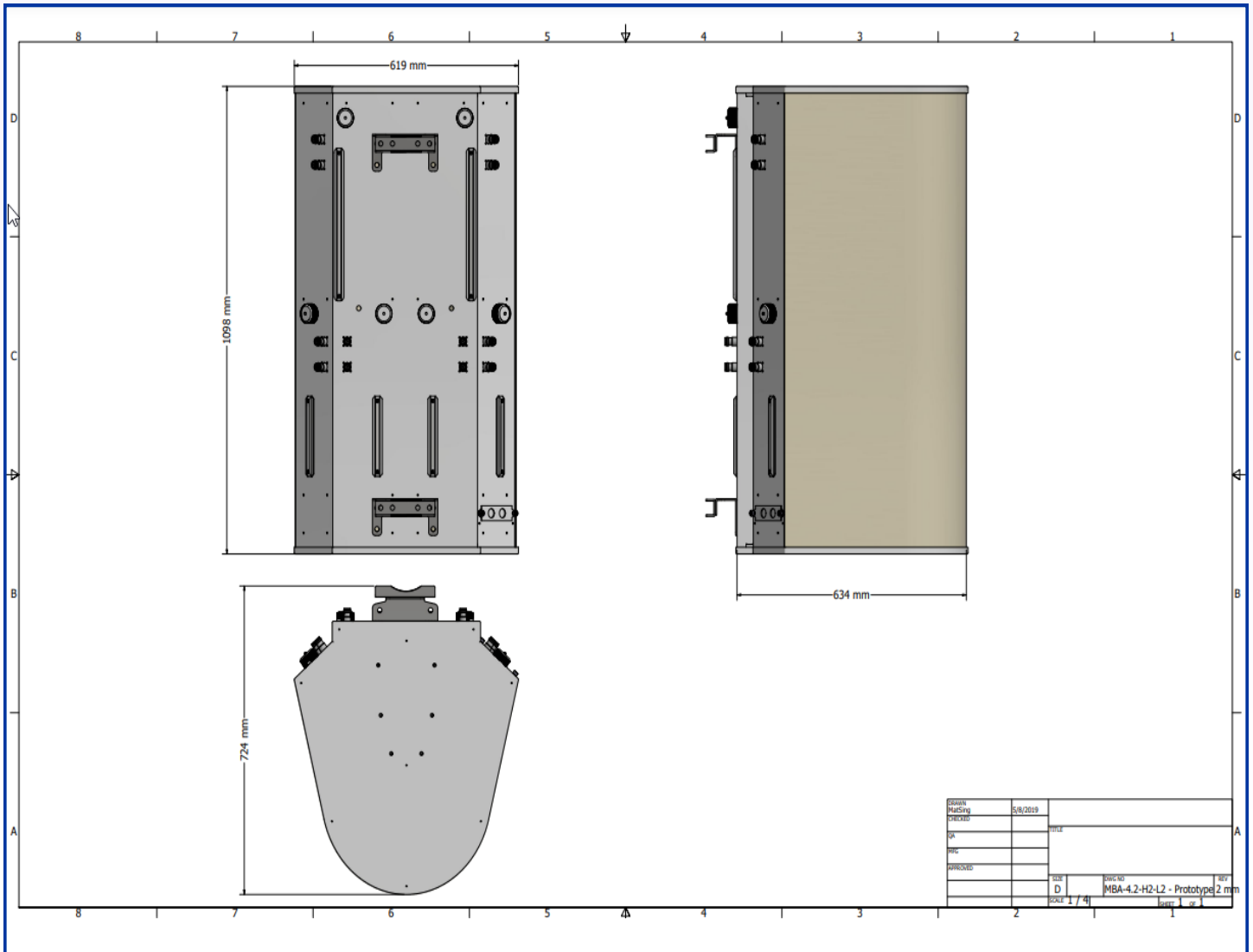
4.30 Bracket Spacing and Installation Sample



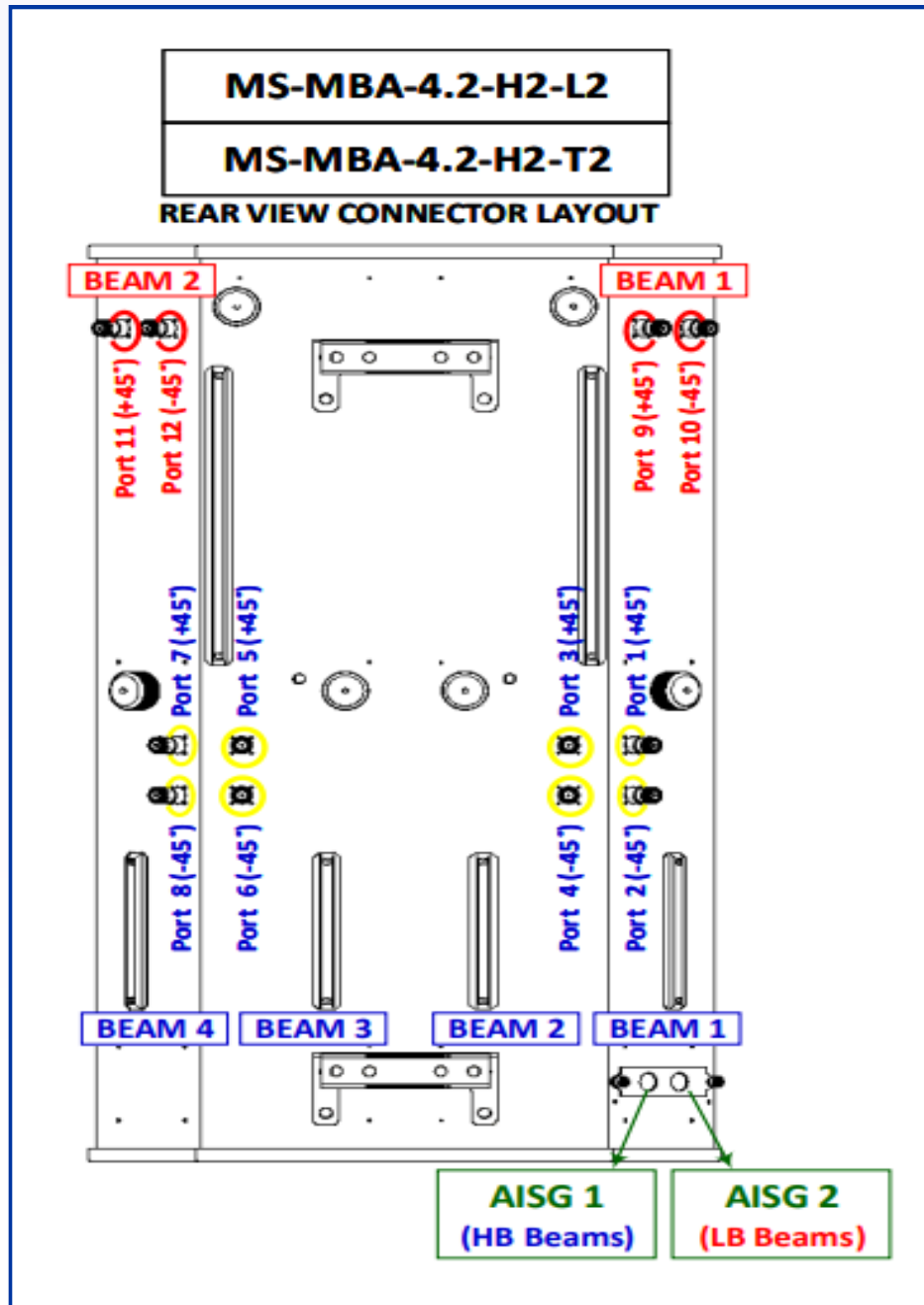
Mechanical Drawings (inches)



Mechanical Drawings (millimeters)

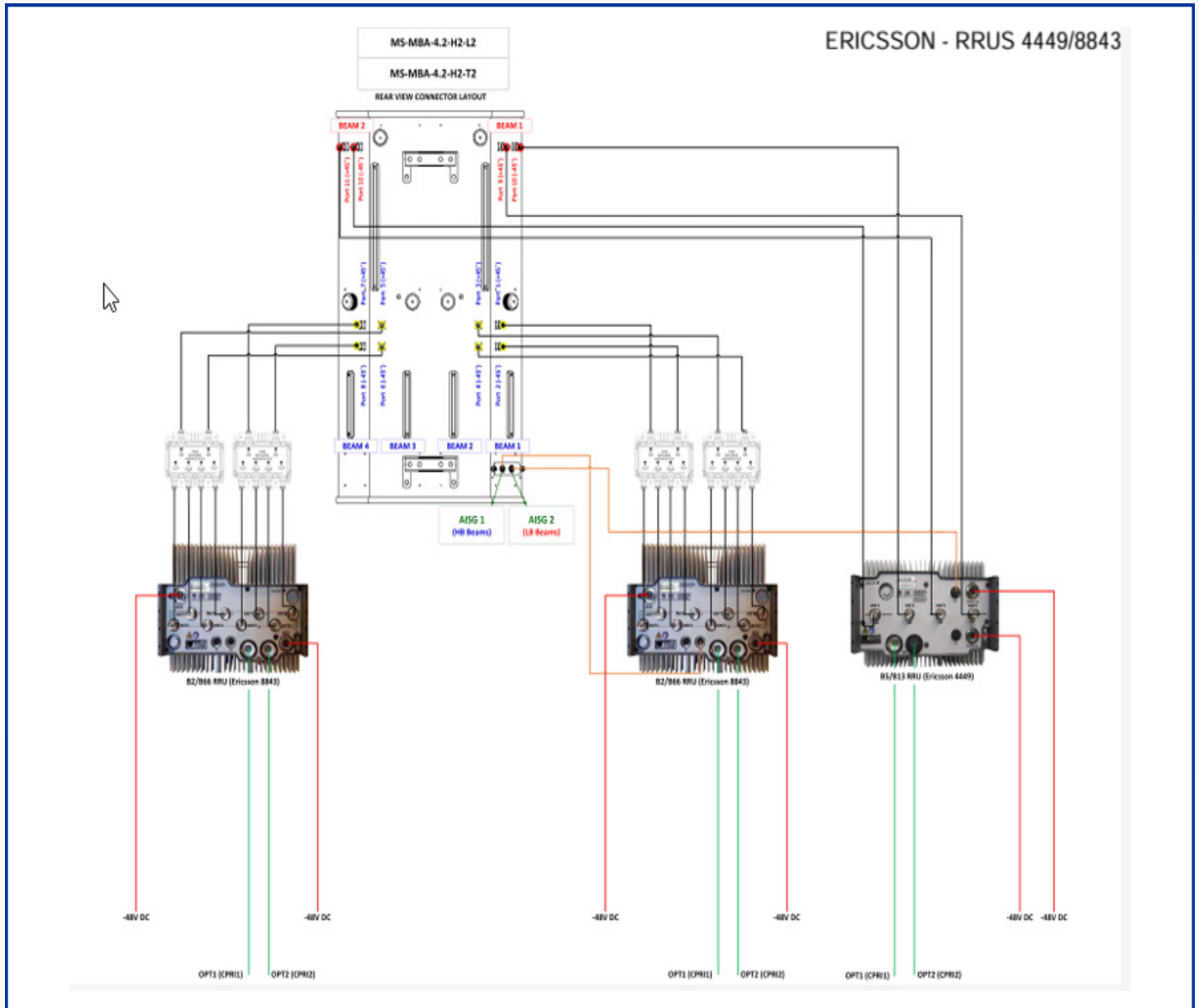


Connector Layout

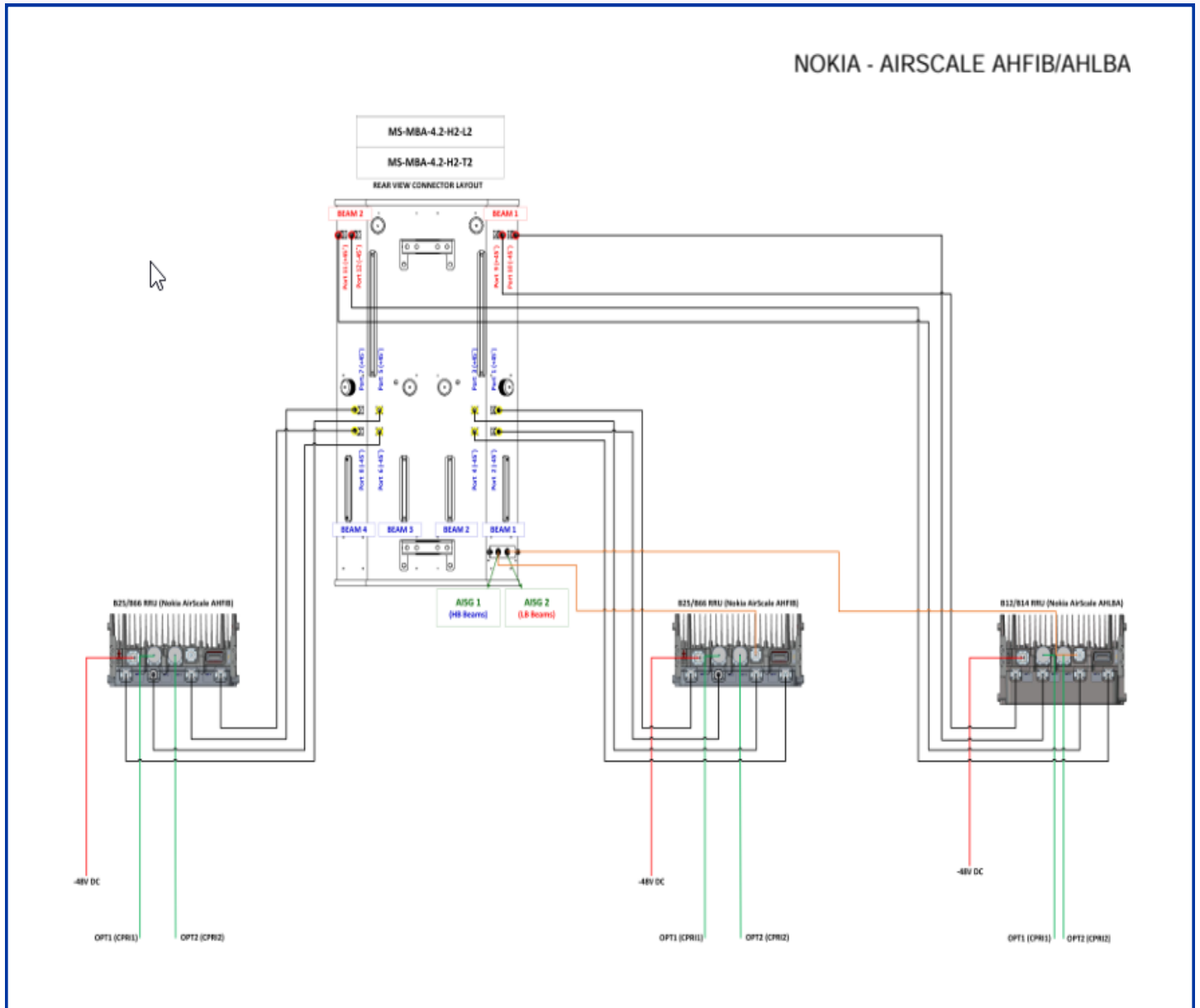


Plumbing Diagram

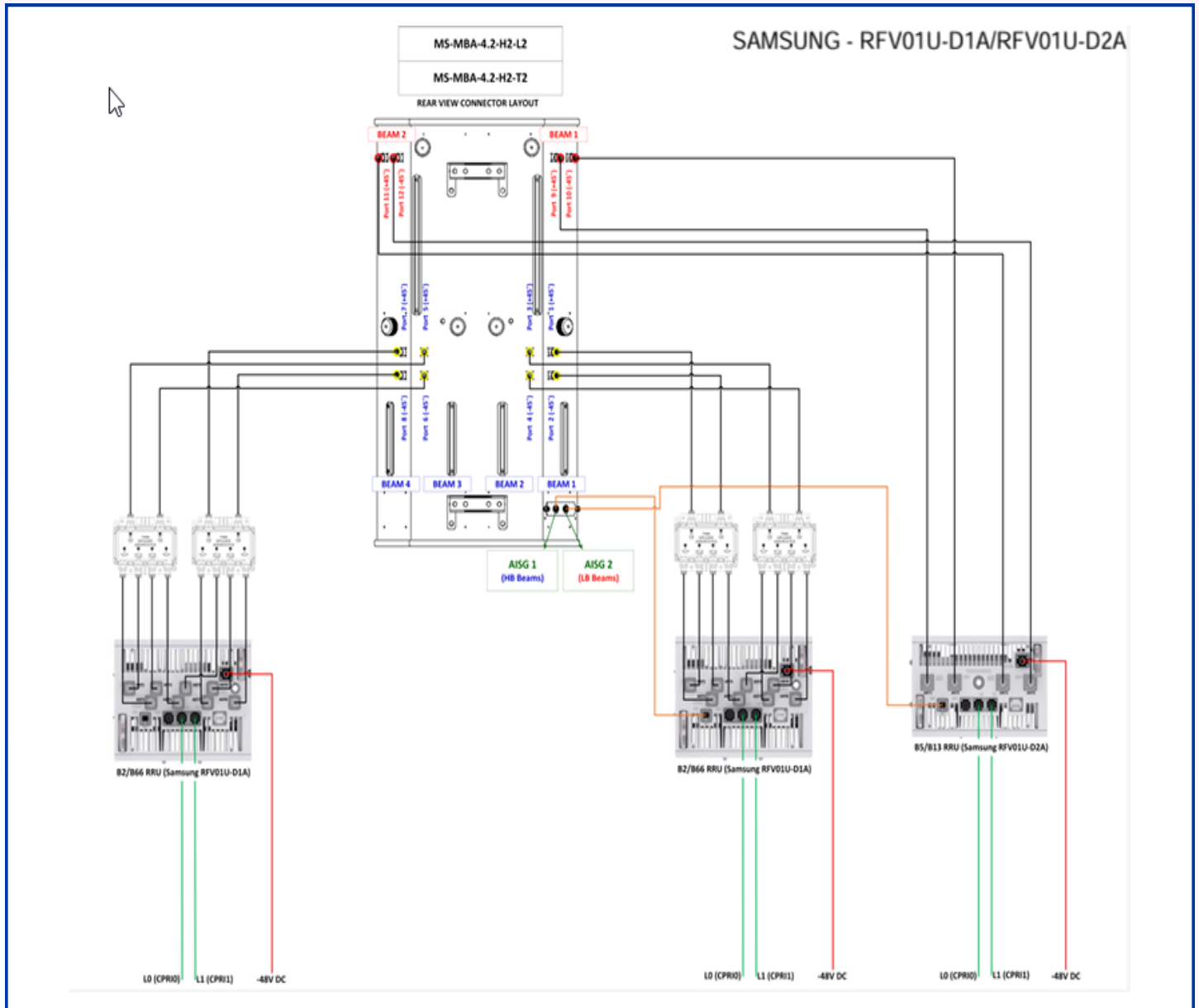
ERICSSON - RRUS 4449/8843



NOKIA - AIRSCALE AHFIB/AHLBA



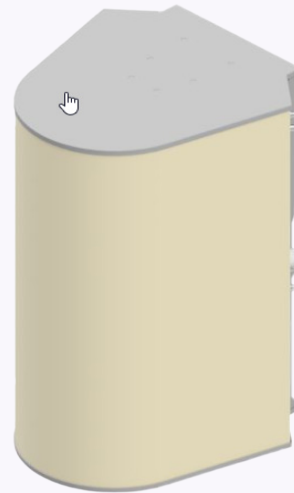
SAMSUNG - RFV01U-D1A/RFV01U-D2A



Wind Loading

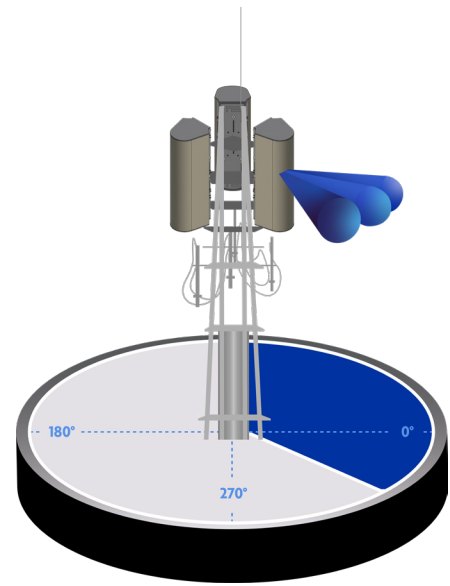
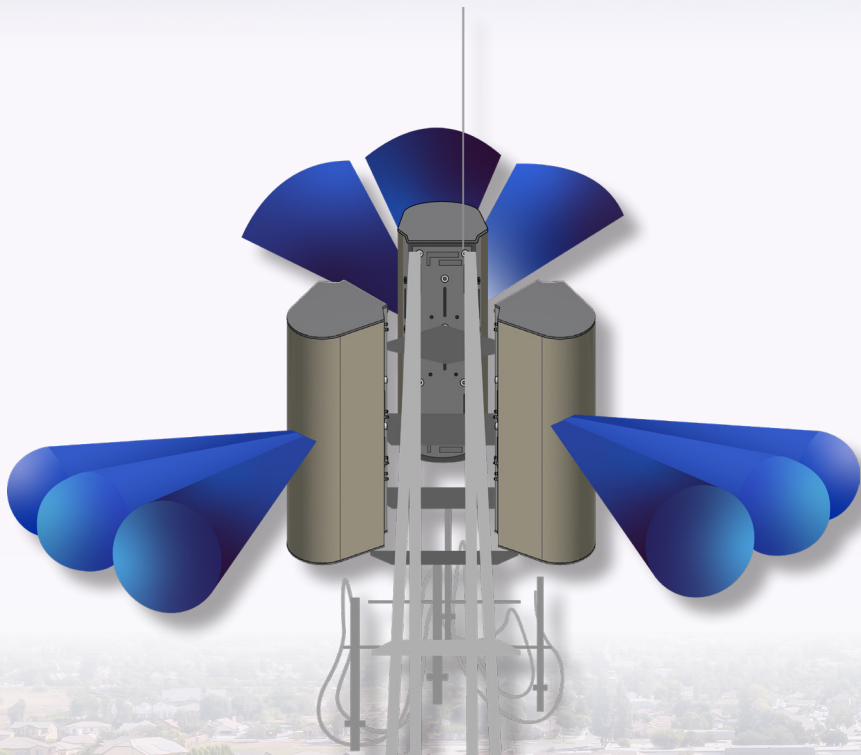
ANTENNA MS-MBA-4.2-H2-L2

Antenna Model Number
MS-MBA-4.2-H2-L2
Velocity [km/h]
150
Dimensions: [mm]
Length: 1100

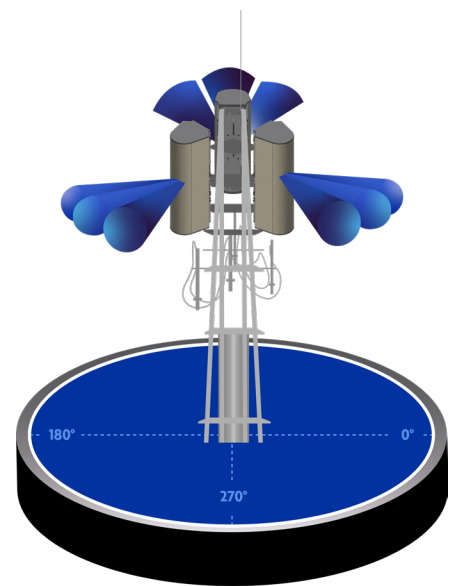


RESULTS

	Frontal	Lateral	Rear
Profile Drag Coefficient	1.1	1.65	1.58
Antenna Correction Coefficient	0.6	0.6	0.6
Antenna Drag Coefficient	0.66	0.99	0.95
Wind Load [N/lbf]	473 / 106.3	736 / 165.5	679 / 152.7
EPA [Wind Receiving area] (m ² /ft ²)	0.45 / 4.79	0.69 / 7.46	0.64 / 6.88



One antenna will
cover 120 degrees



Three antennas will
cover 360 degrees

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