

MATSING[®]

LENS TECHNOLOGY ENABLED

MS-MBA-3-H8A2

Low-Band Lens Panel Antenna Delivering
High-Capacity Mobile Connectivity and
Fixed Wireless Access (FWA)



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MS-MBA-3-H8A2

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

Better Signal Quality

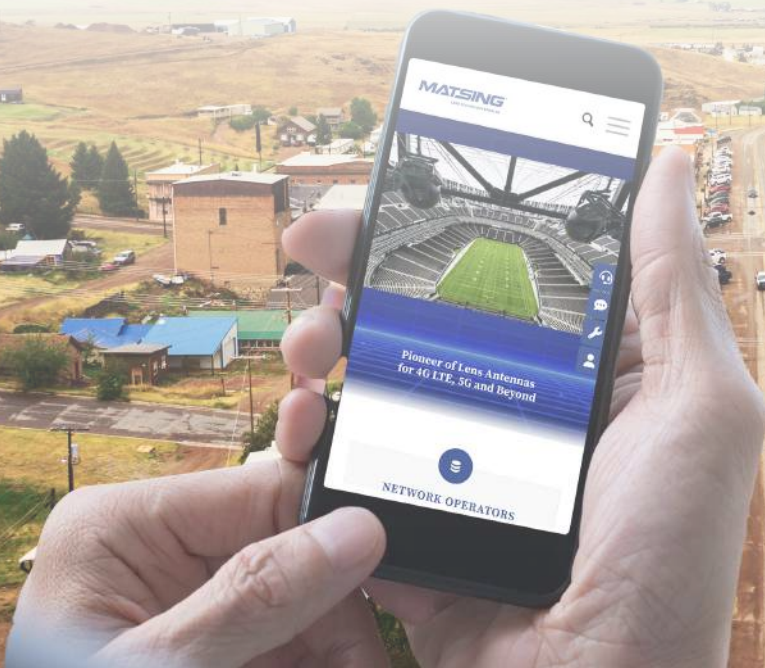
High Gain, Narrow Vertical Beamwidth

Improved Capacity & Data Throughput

High SINR, Reduced Sidelobes & Backlobes

Rapid & Cost Effective Scalability

Quick Deployment, Minimal Infrastructure



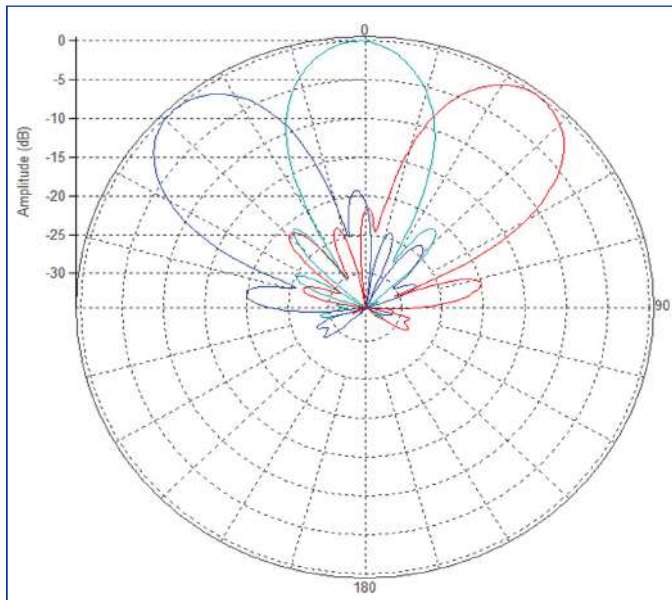
MS-MBA-3-H8A2

Lens Technology Enabled™ Multi-Beam Base-Station Antenna perfect for 6 to 9 sector LTE cell site deployments for best SINR results. Utilizes a patented spherical lens design with 3 isolated highfrequency (1695 – 2690 MHz) dual-polarized beams. Each beam is made of four independent antennas and has 8 ports. There is independent tilt settings per beam 0-15°.

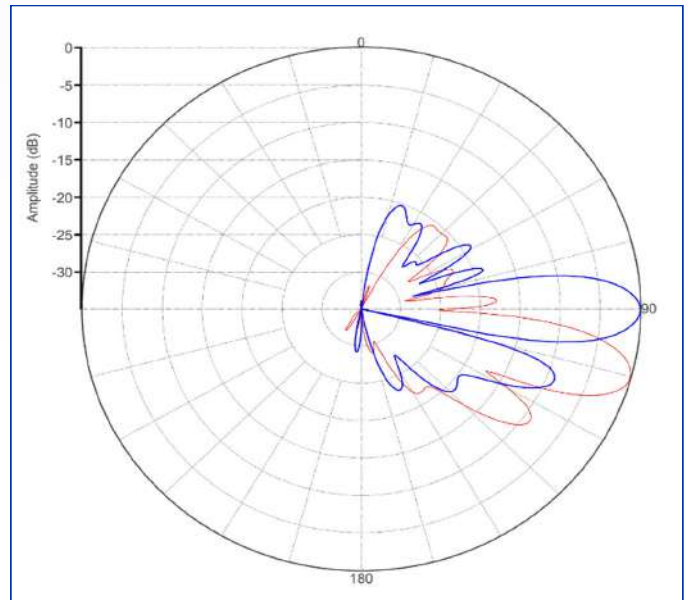


PATTERN RESULTS:

Horizontal Pattern (1.80GHz)



at tilt Vertical Pattern (1.80GHz)



TECHNICAL SPECIFICATIONS

Frequency	1695-2690 MHz
Gain	18.5dBi
VSWR	<1.5:1
Polarization	Dual Slant $\pm 45^\circ$
Horizontal Coverage	120°
Horizontal Beamwidth (10 dB) level	40°
Horizontal Beamwidth (3 dB) level	23°
Vertical Beamwidth (10 dB) level	20°
Vertical Beamwidth (3 dB) level	12°
Beam Cross-over	10dB typical
Total Number of Beams	3
Number of Ports per Beam	8
Number of Ports Total	24
RET Per Beam	0° to 15°
Upper Sidelobe level	<-16dB
Azimuth Sidelobe level	<-16dB
Front to Back Ratio	>28dB
Isolation Port to Port - Polarization	>28dB
Isolation Port to Port - Beam	>26dB
Power Rating	200W per port
Intermodulation	<-153dBc
Impedance	50 Ohm
Connector Quantity and Type	24 x 4.3-10 female

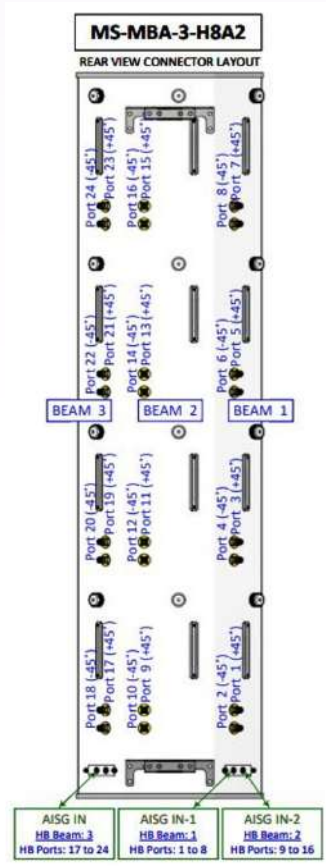
MECHANICAL DATA

Dimensions (H x W x D)	241.8 x 61.7 x 68.3 cm 95.2 x 24.3 x 26.9 inch
Antenna Weight	82.0kg 181.0 lbs
Radome Material	Fiber Glass
Mounting	2 position pipe mount 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	N/lbf Frontal: 1046/235.2 Lateral: 1331/299.2 Rear: 1227/275.9

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 H-Band Horizontal Pattern
- 2.20 H-Band Vertical Pattern

3.0 MANUAL TILT ADJUSTMENT

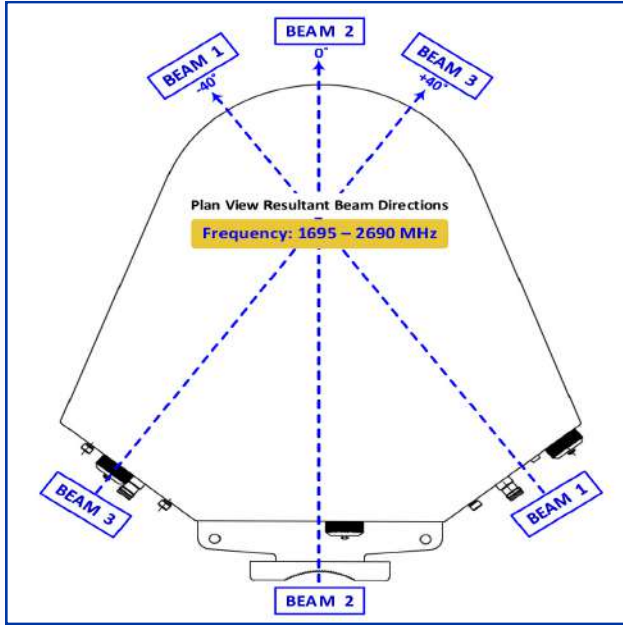
4.0 BRACKET INSTALLATION

- 4.10 Bolts & Nuts Requirements
 - 4.11 Bolts & Nuts
 - 4.12 Bracket
- 4.20 Tools Requirement
 - 4.21 Adjustable Spanner
 - 4.22 M12 Spanner
- 4.30 Bracket Spacing & Installation Sample

1.0 BEAMS AND CONNECTORS

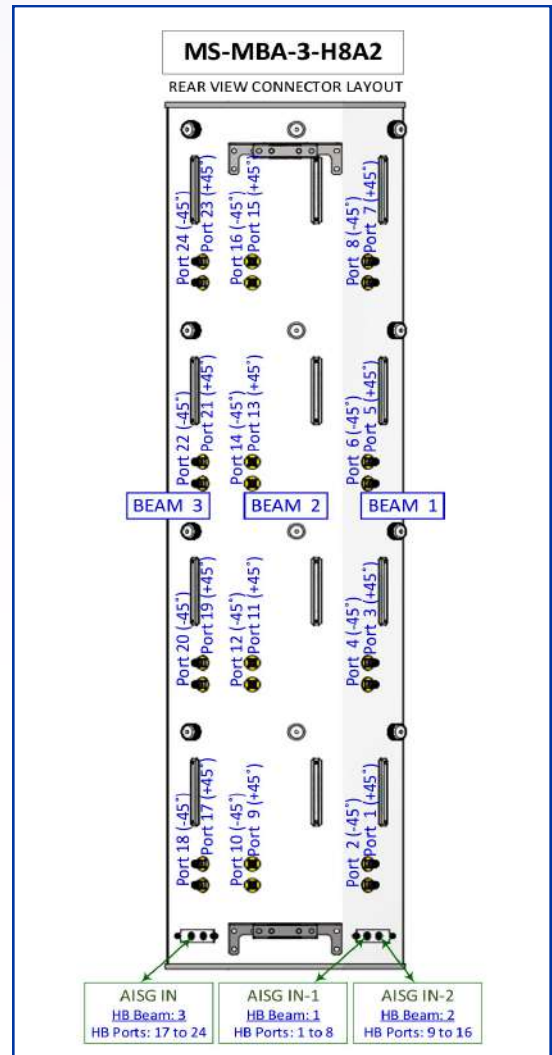
1.20 Connector Port Table

1.10 Plan View Resultant Beam Layout

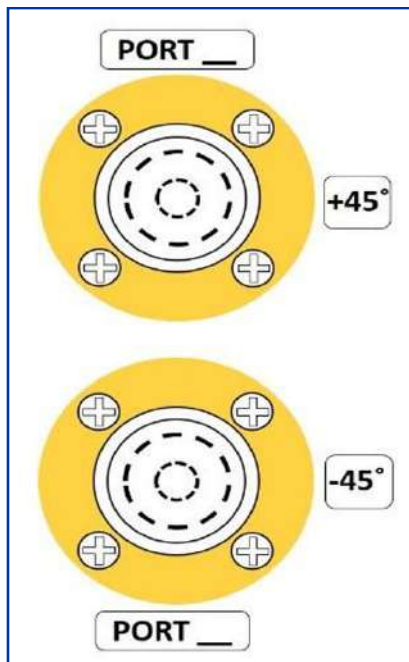


BEAM 3	BEAM 2	BEAM 1
Port 23 (+45°)	Port 15 (+45°)	Port 7 (+45°)
Port 24 (-45°)	Port 16 (-45°)	Port 8 (-45°)
Port 21 (+45°)	Port 13 (+45°)	Port 5 (+45°)
Port 22 (-45°)	Port 14 (-45°)	Port 6 (-45°)
Port 19 (+45°)	Port 11 (+45°)	Port 3 (+45°)
Port 20 (-45°)	Port 12 (-45°)	Port 4 (-45°)
Port 17 (+45°)	Port 9 (+45°)	Port 1 (+45°)
Port 18 (-45°)	Port 10 (-45°)	Port 2 (-45°)

1.40 Connector Layout

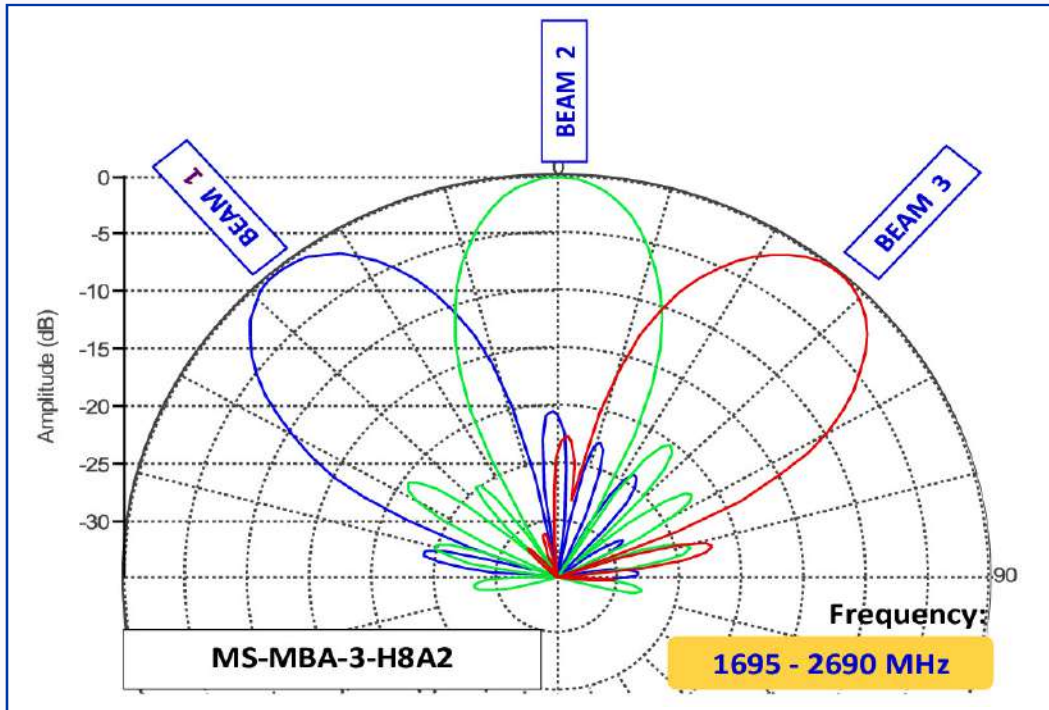


1.30 Connector Detail

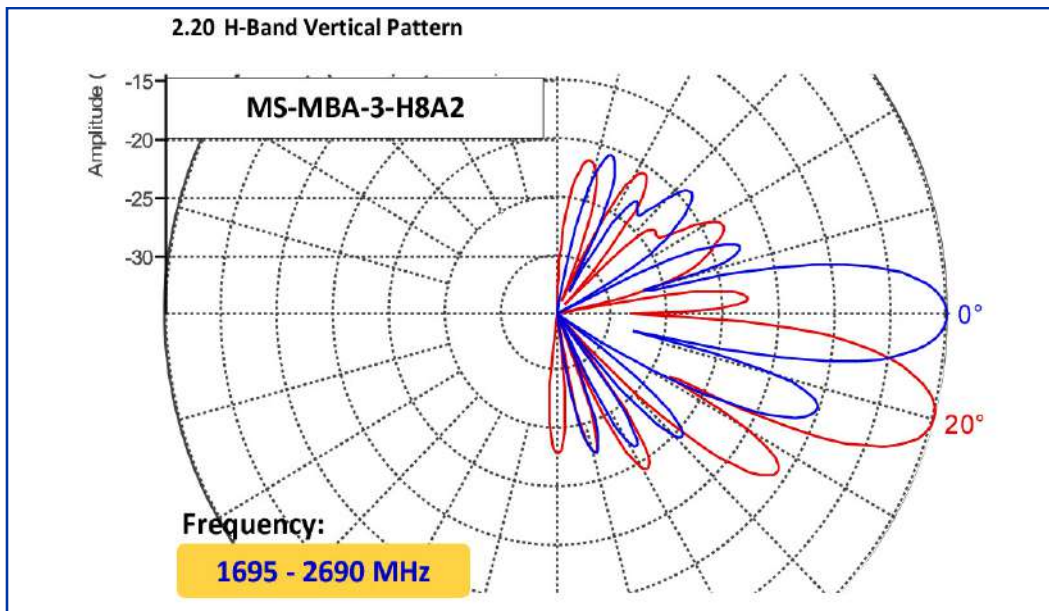


2.0 PATTERN DIAGRAM

2.10 H-Band Horizontal Pattern

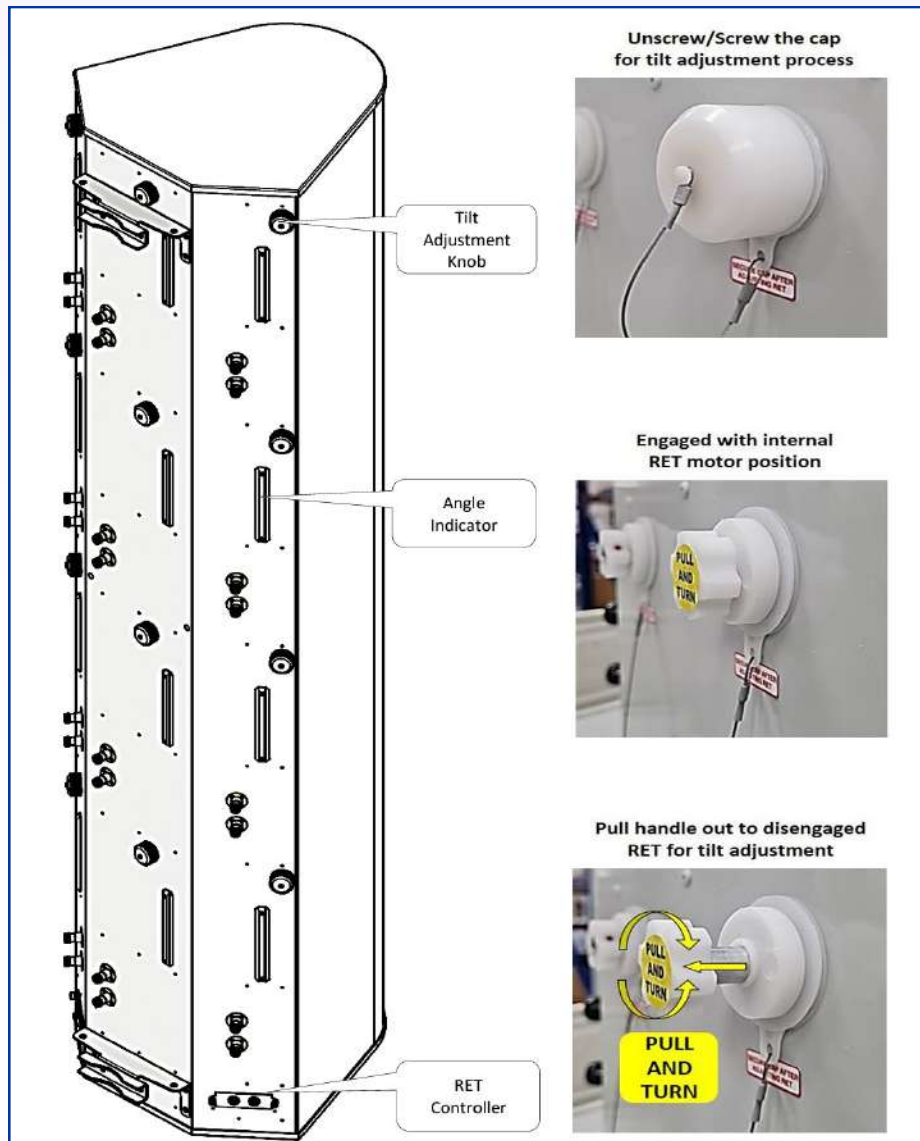


2.20 H-Band Vertical Pattern



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. |

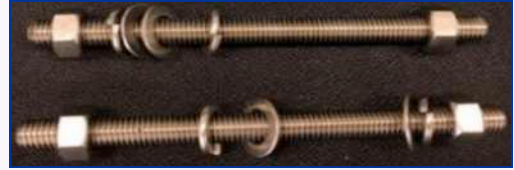


4.0 BRACKET INSTALLATION

4.10 Bolts and Nuts Requirements

Bracket		Bolts		Nuts	
Qty	Size	Qty	Size	Qty	Size
2	M12 x 200mm	4	M12	10	

4.11 Bolts and Nuts



4.12 Bracket



4.20 Tool Requirements

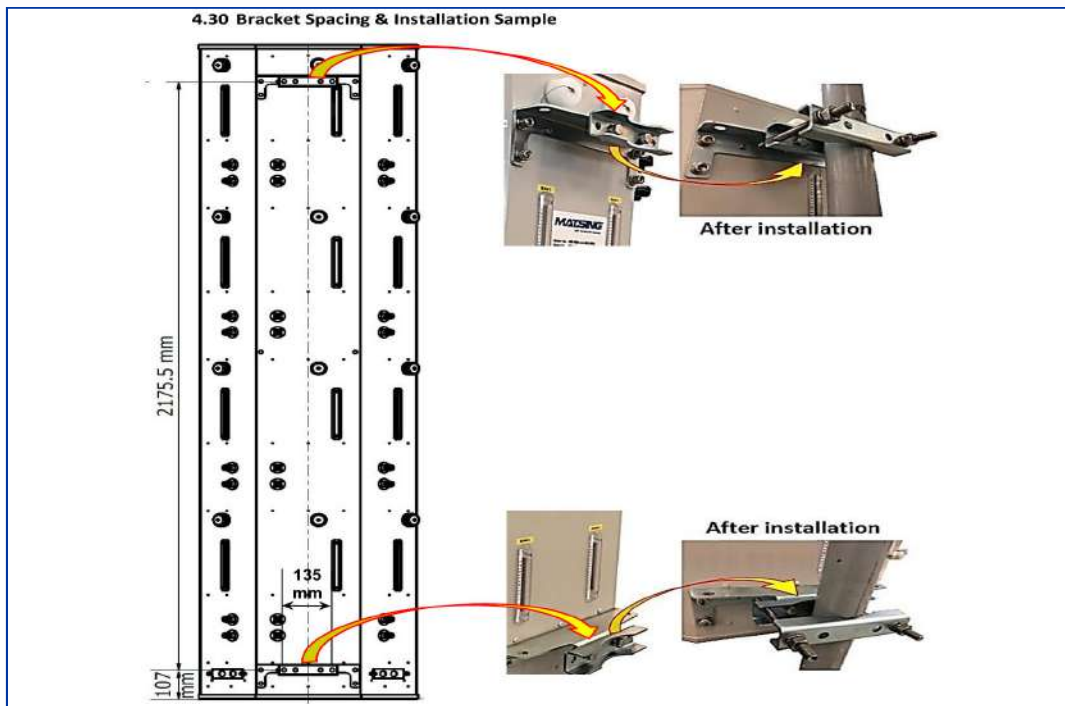
4.21 Adjustable Spanner



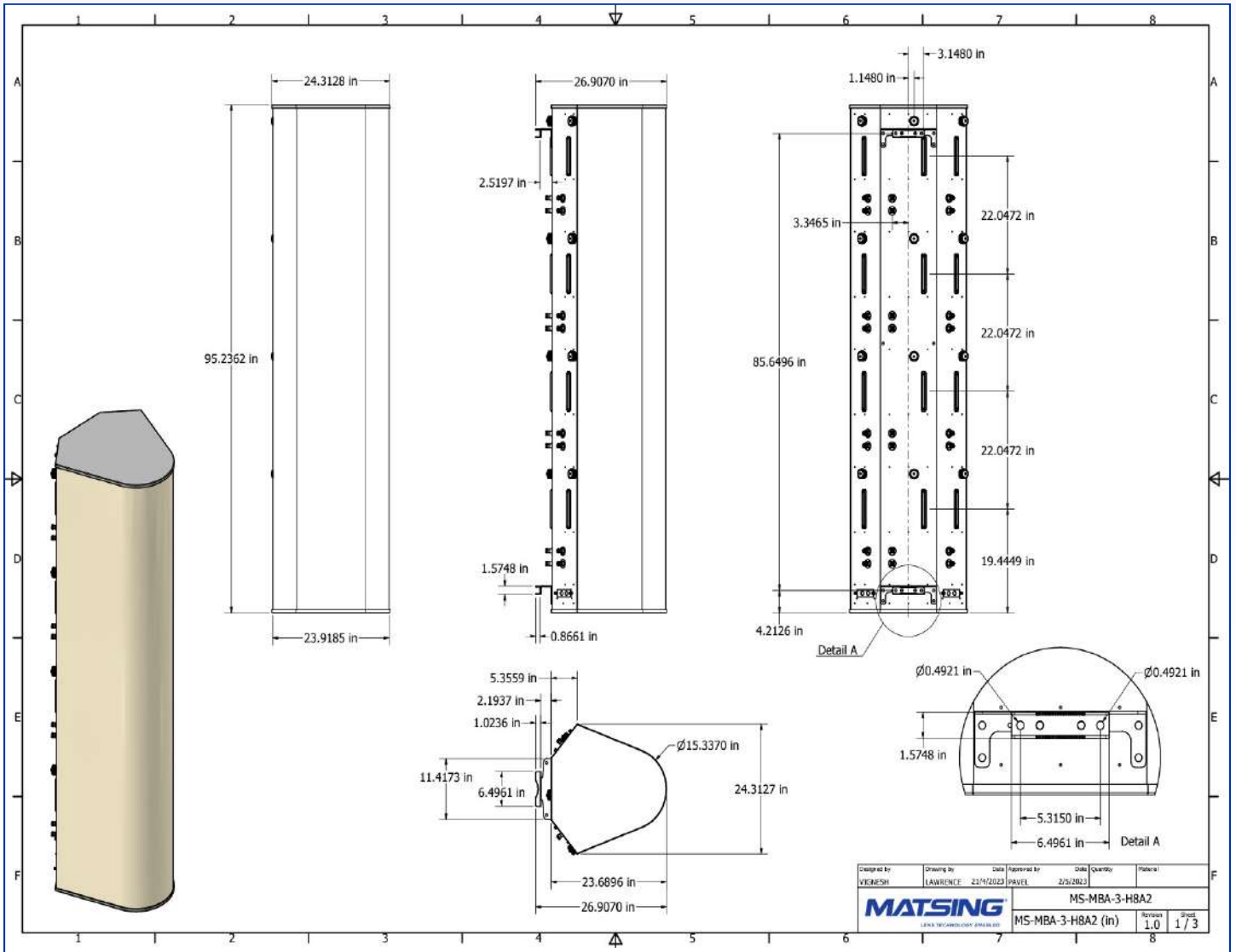
4.22 M12 Spanner



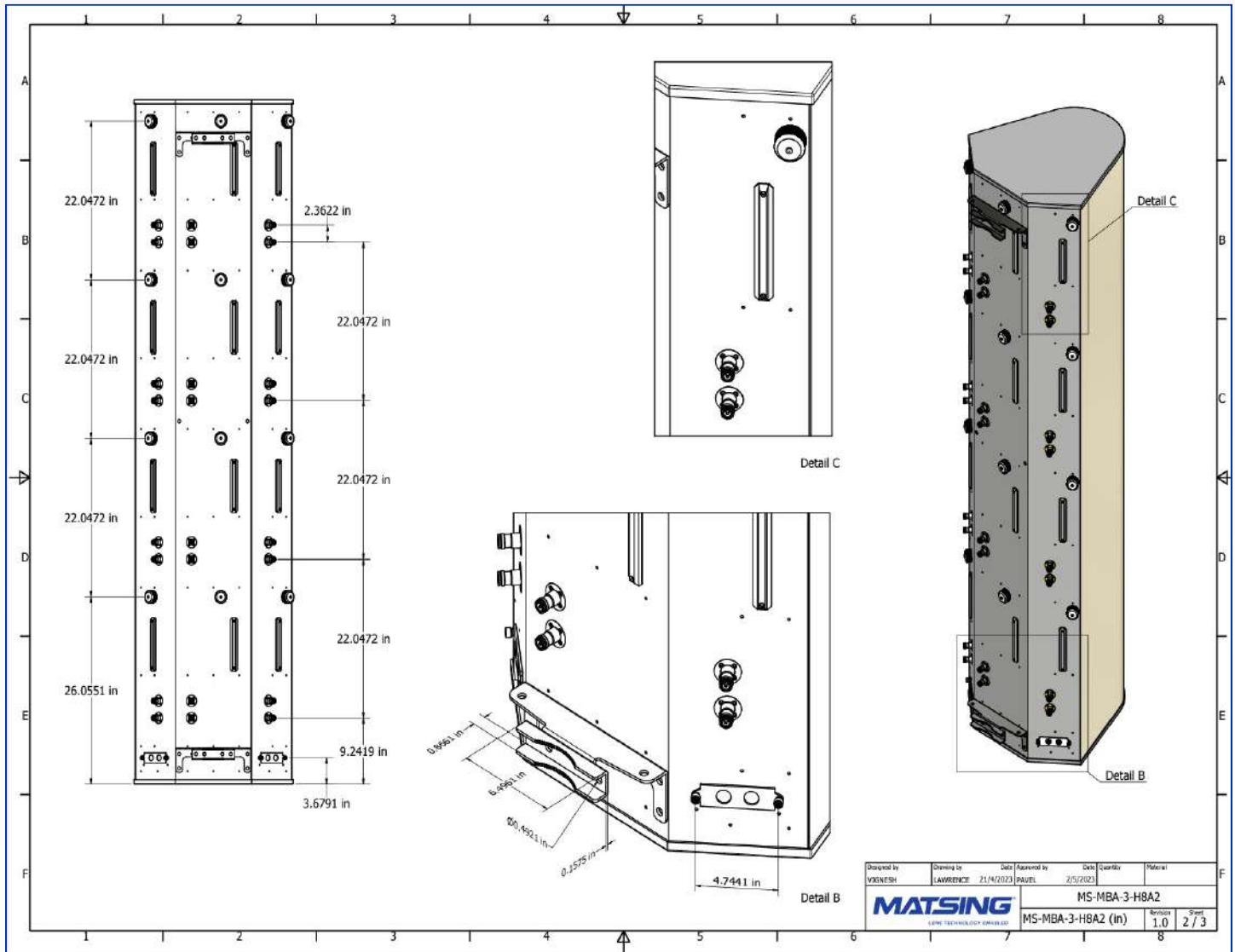
4.30 Bracket Spacing and Installation Sample



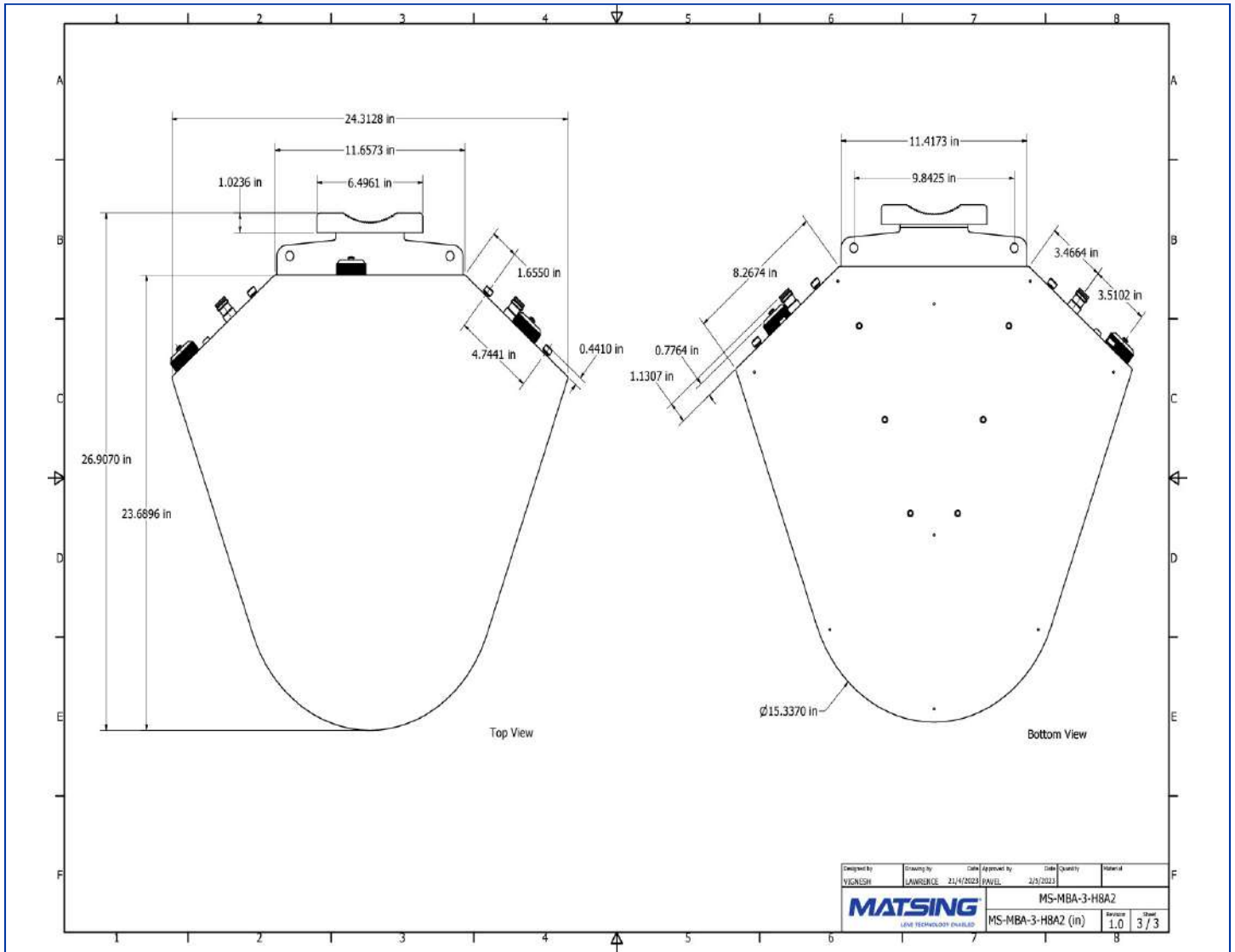
Mechanical Drawings (inches)



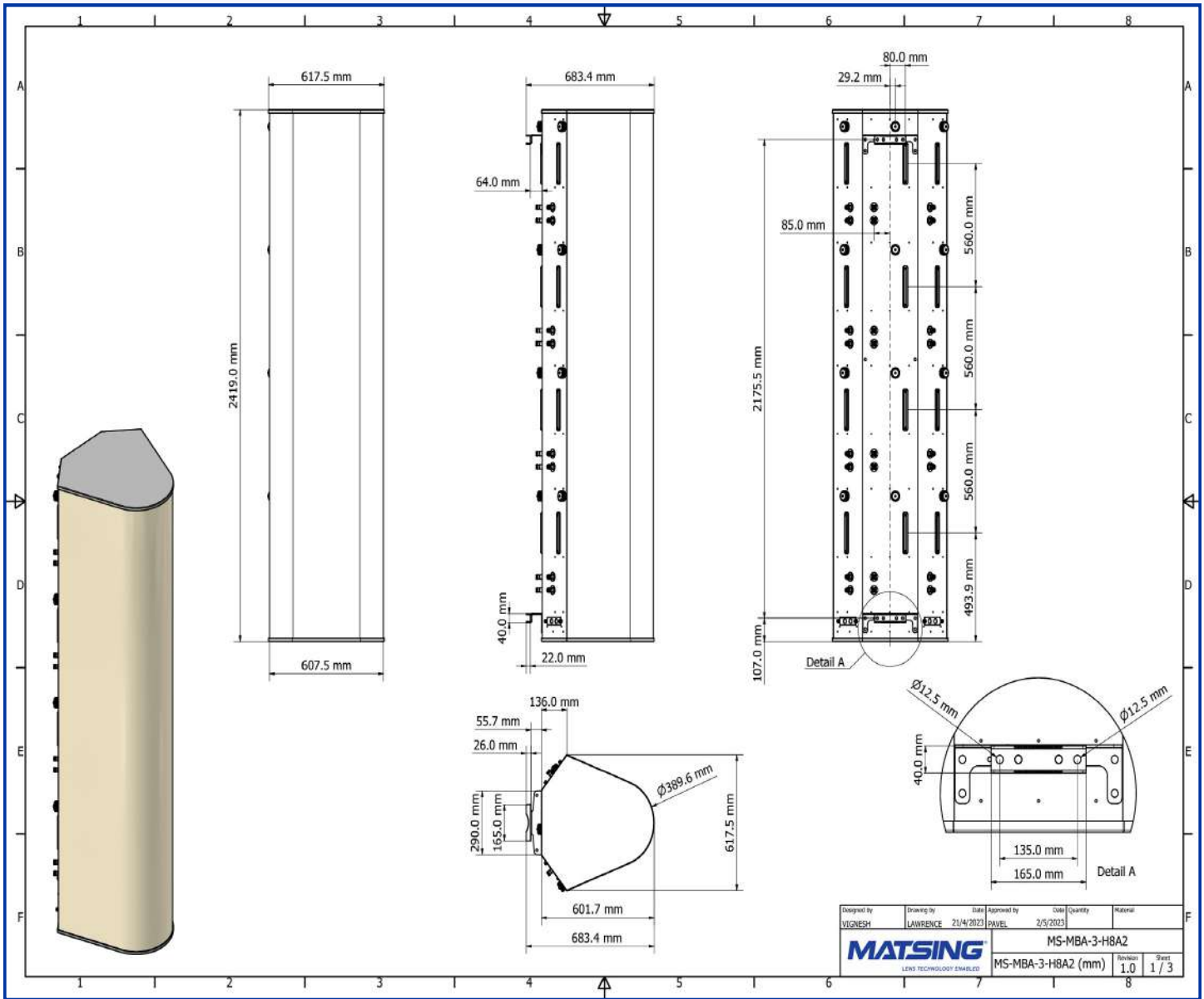
MECHANICAL DRAWINGS (INCHES)



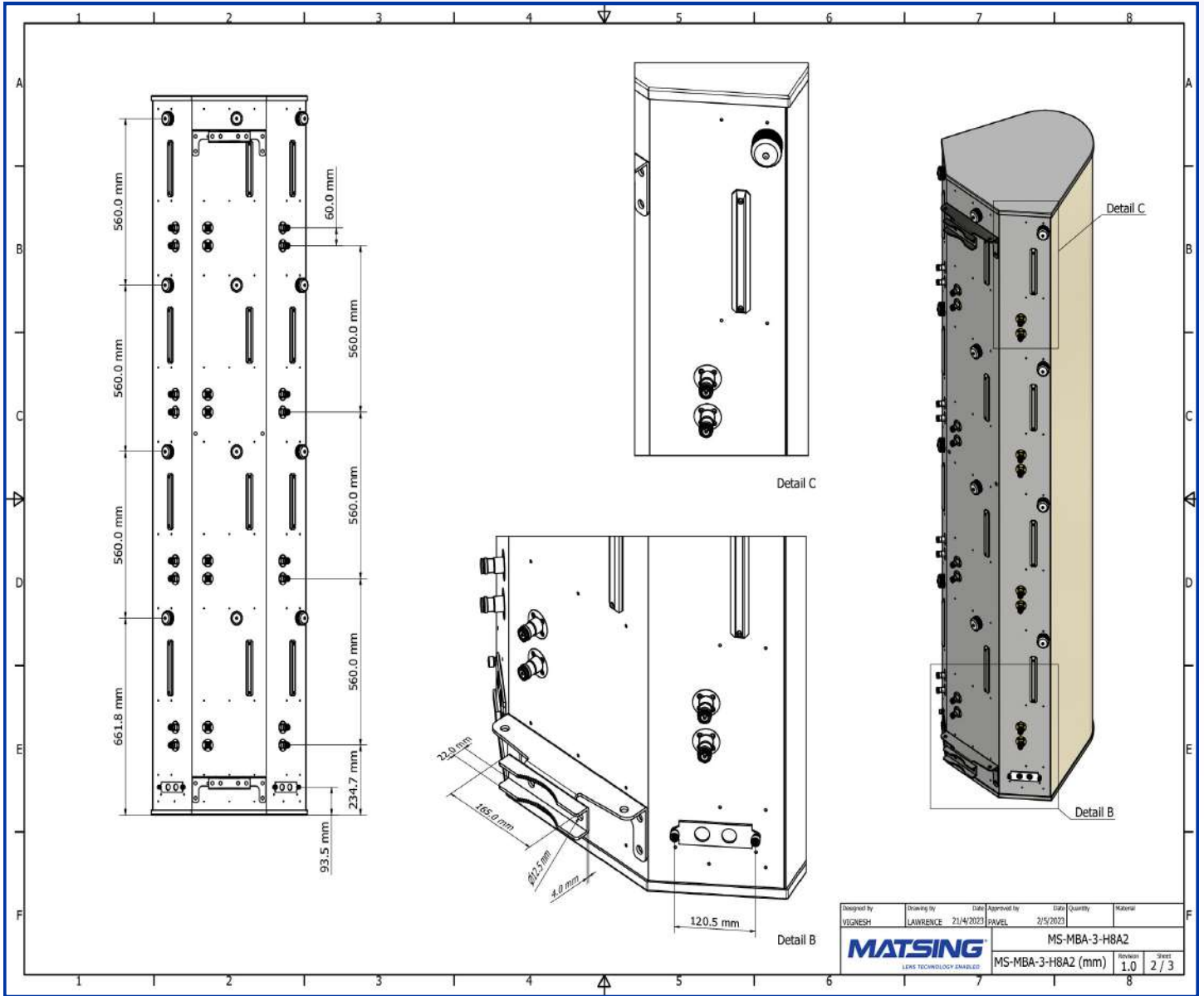
MECHANICAL DRAWINGS (INCHES)



Mechanical Drawings (millimeters)

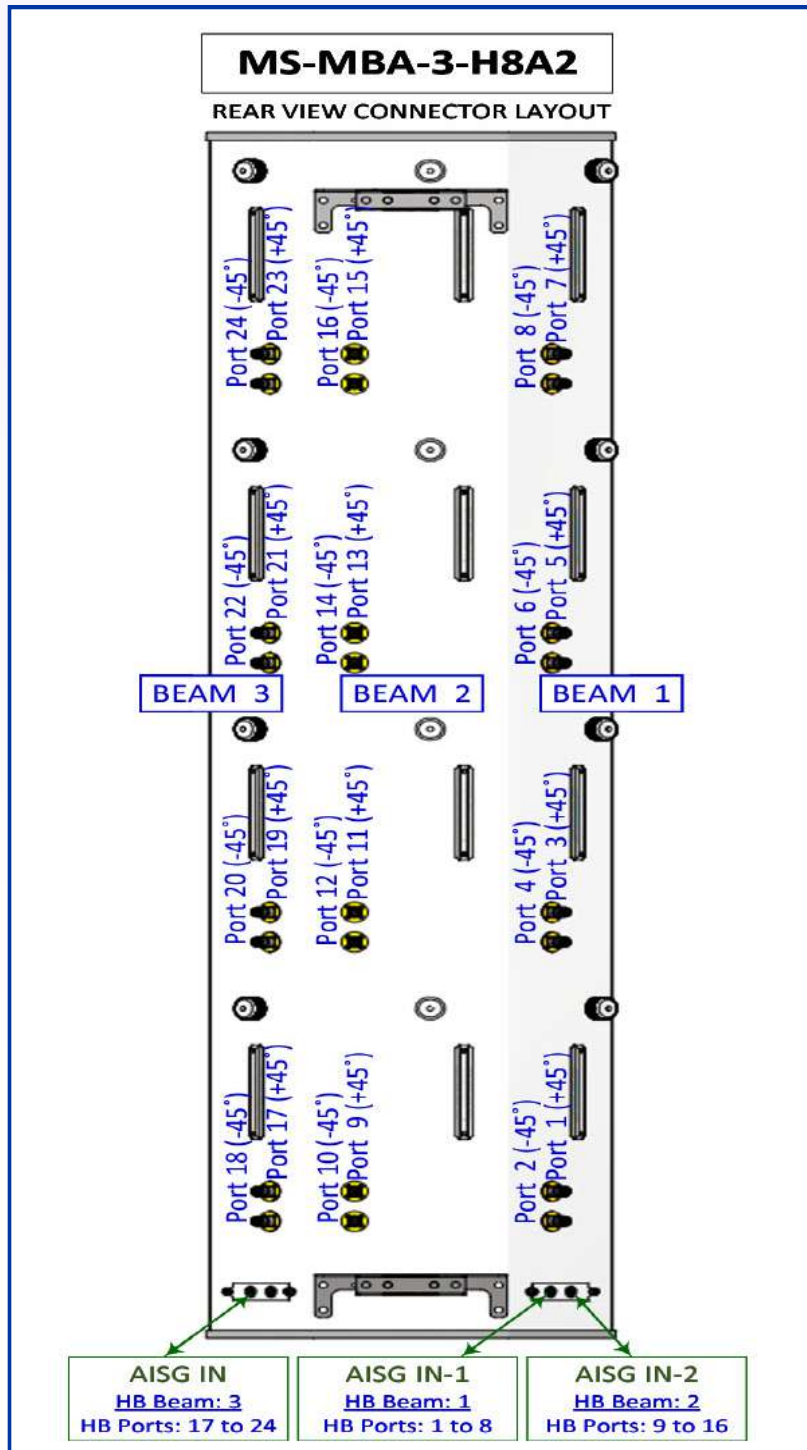


MECHANICAL DRAWINGS (MILIMETERS)



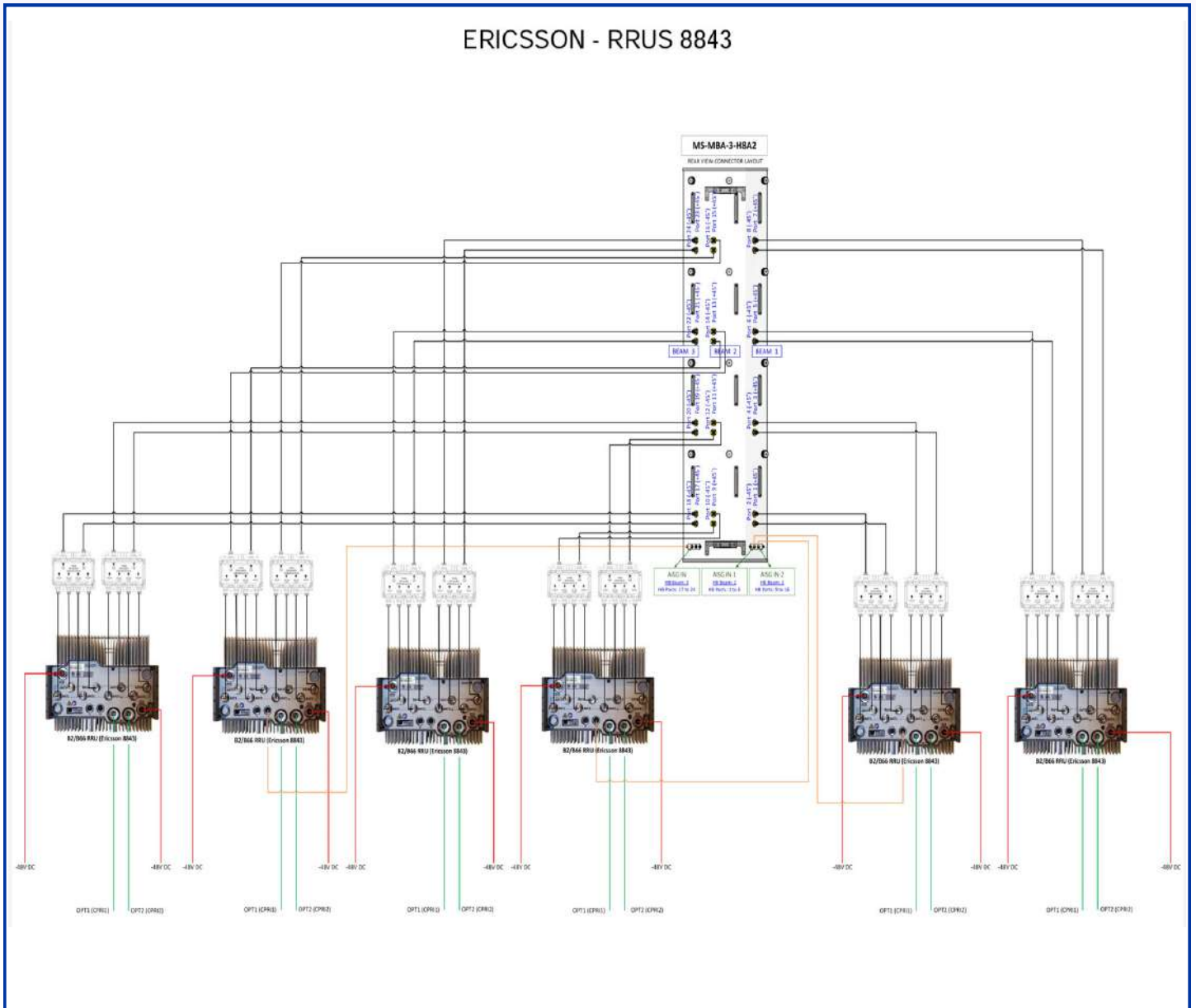
Designed by	Drawing by	Date	Approved by	Date	Quantity	Material
VIGNESH	LAWRENCE	21/4/2023	PAVEL	2/5/2023		
MATSING						MS-MBA-3-H8A2
LENS TECHNOLOGY ENABLED						MS-MBA-3-H8A2 (mm)
						Revision 1.0
						Sheet 2 / 3

Connector Layout



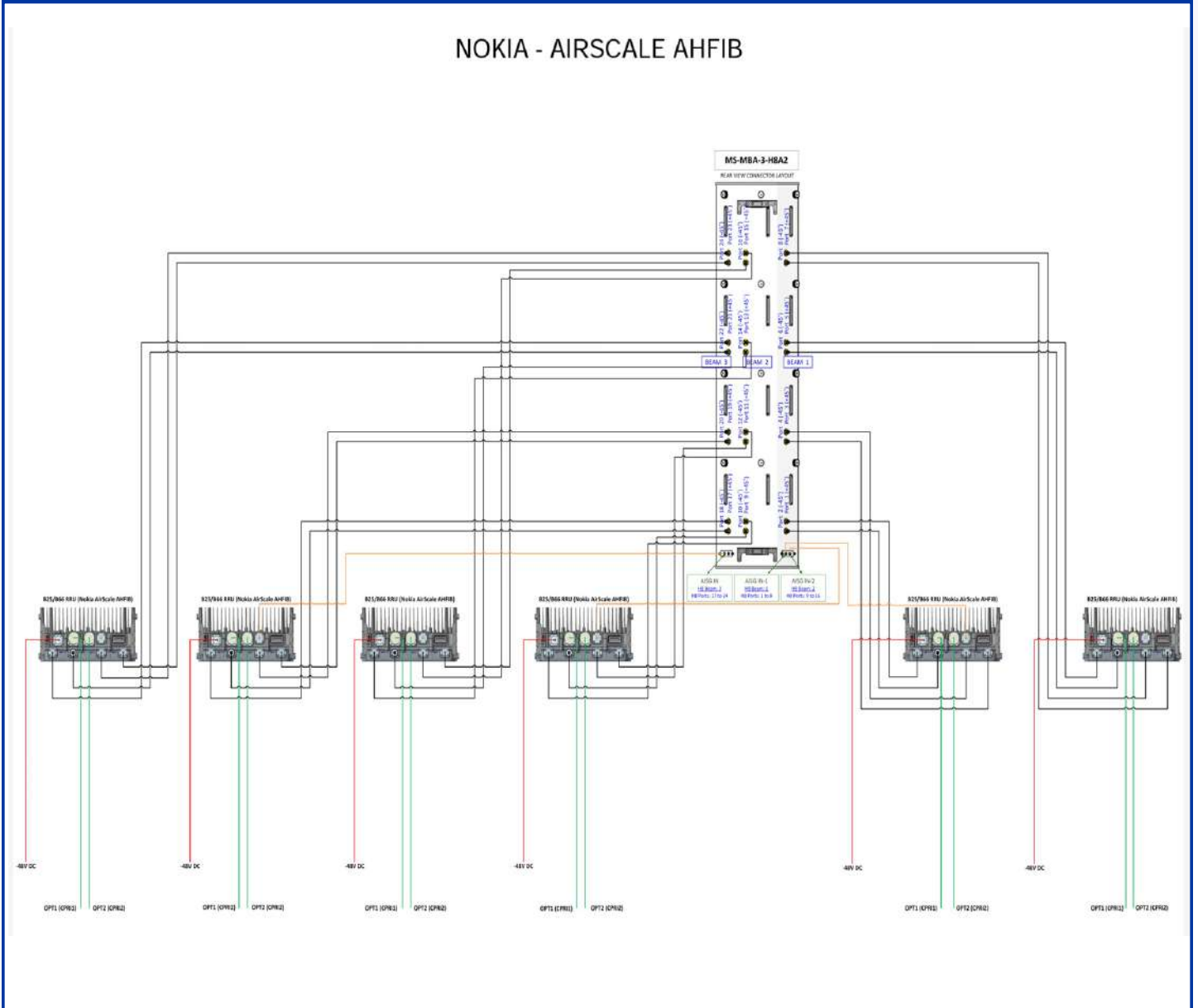
Plumbing Diagrams

ERICSSON - RRUS 8843



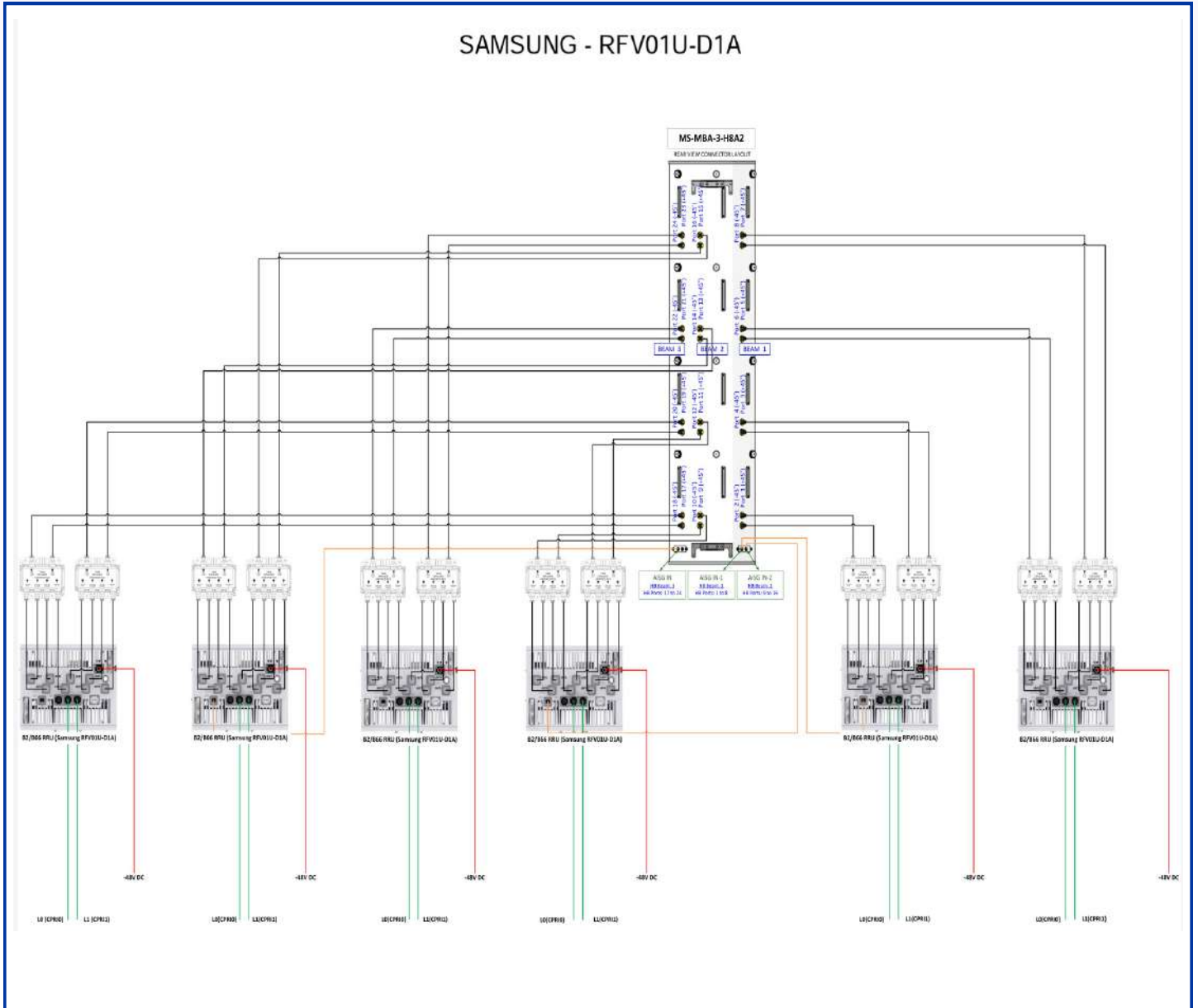
NOKIA - AIRSCALE AHFIB

NOKIA - AIRSCALE AHFIB



SAMSUNG - RFV01U-D1A

SAMSUNG - RFV01U-D1A



Wind Loading

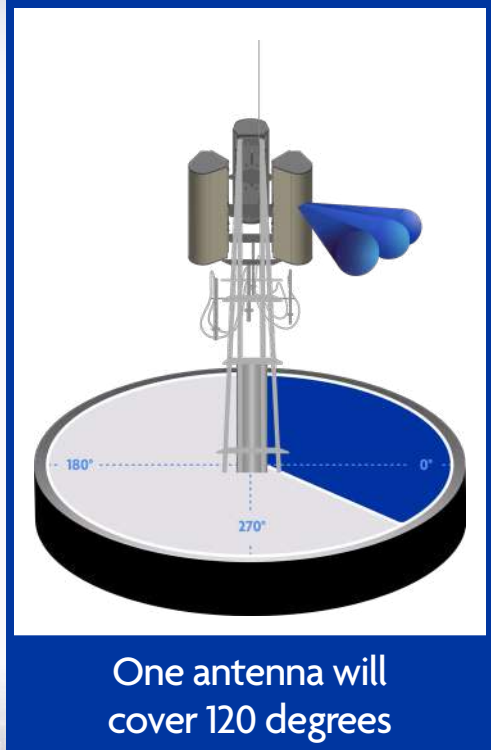
ANTENNA MS-MBA-3-H8A2

Antenna Model Number
MS-MBA-3-H8A2
Velocity [km/h]
150
Dimensions: [mm]
Length: 2418

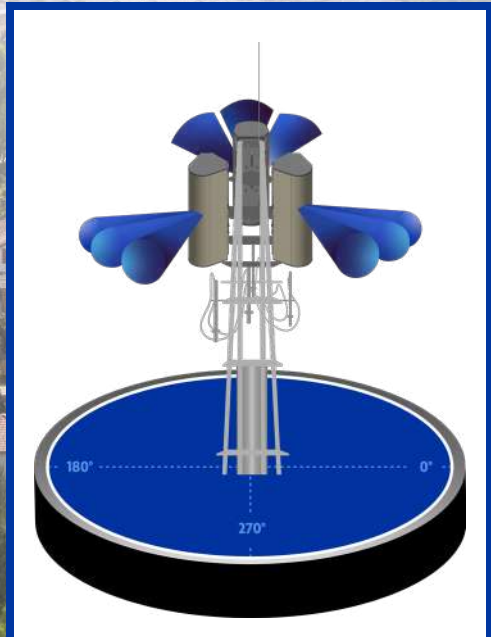


RESULTS

	Frontal	Lateral	Rear
Profile Drag Coefficient	1.0	1.42	1.29
Antenna Correction Coefficient	0.6	0.6	0.6
Antenna Drag Coefficient	0.66	0.85	0.77
Wind Load [N/lbf]	1046 / 235.2	1 331/299.2	1227 / 275.9



One antenna will cover 120 degrees



Three antennas will cover 360 degrees

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