

MATSING[®]

LENS TECHNOLOGY ENABLED

MBA Installation & Alignment General Guide ***(Multi Beam Antenna)***



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Revision History:

18-May-2024

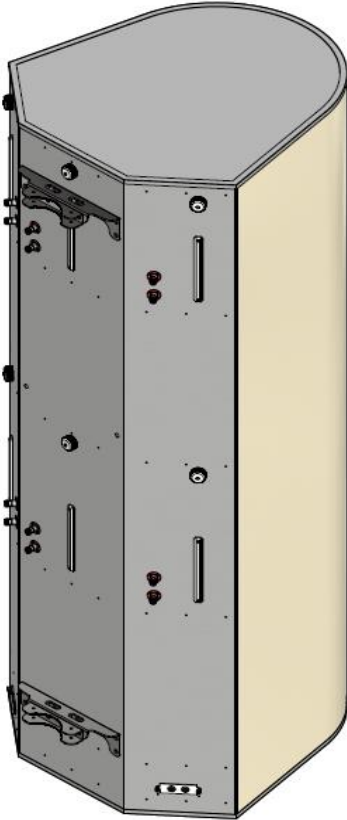
MS MBA Installation & Alignment Guide

Revision 0

1.00 Multi-Band Antenna's (MBA) Product Overview

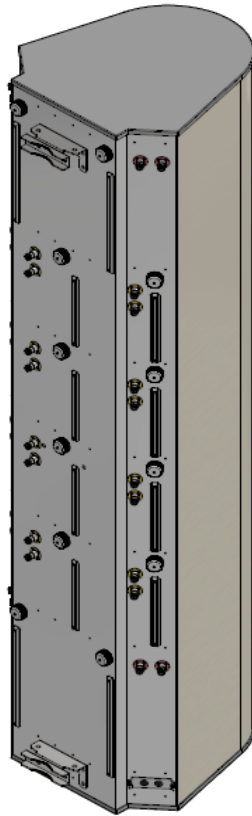
1.10 MBA Height, Width, Depth (in mm), KG

1.11 MS-MBA-3-L4A2



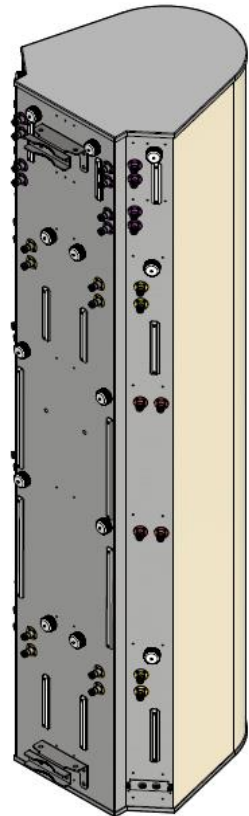
2419*937*1086
(135.42KG)

1.12 MS-MBA-3.2-H8-L4



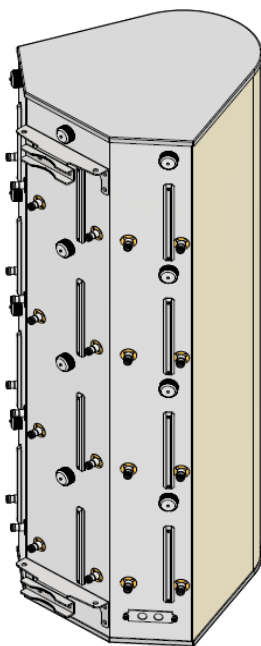
2440*619*726
(77.58KG)

1.13 MS-MBA-4.4.2-C4-H4-L4



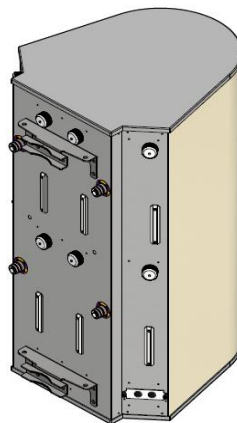
2419*619*723
(71.22KG)

1.14 MS-MBA-3-H8



1640*618*683
(51.18KG)

1.15 MS-MBA-4.4-SH2-SH2-45M



1103*619*723
(36.20KG)


1.16 MS-MBA-3-C4A3



1189*295*371
(17.88KG)

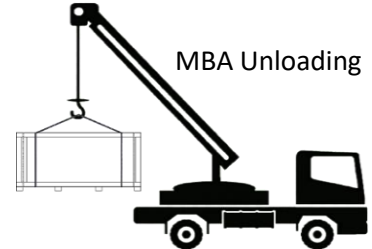
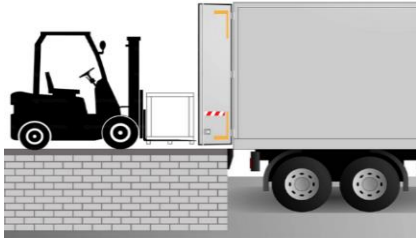
2.00 MBA Unloading, Transportation & Unpacking

2.10 Safety Precaution

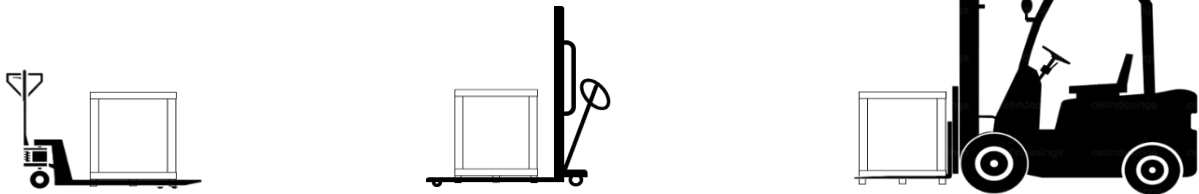
	<p>Strictly comply to the Authority and Regulatory on Workplace Safety and Health Control and Measure when performing Unloading/Loading, Lifting And Transporting of large or heavy equipment, appropriate material handling machinery, equipment's, safety harness and tools should be used and only certified personnel should perform the task.</p>
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2.20 MBA Antenna Wooden Crate Lifting & Handling

2.21 Unloading Using Crane Truck, Manual Hydraulic Jack or Forklift

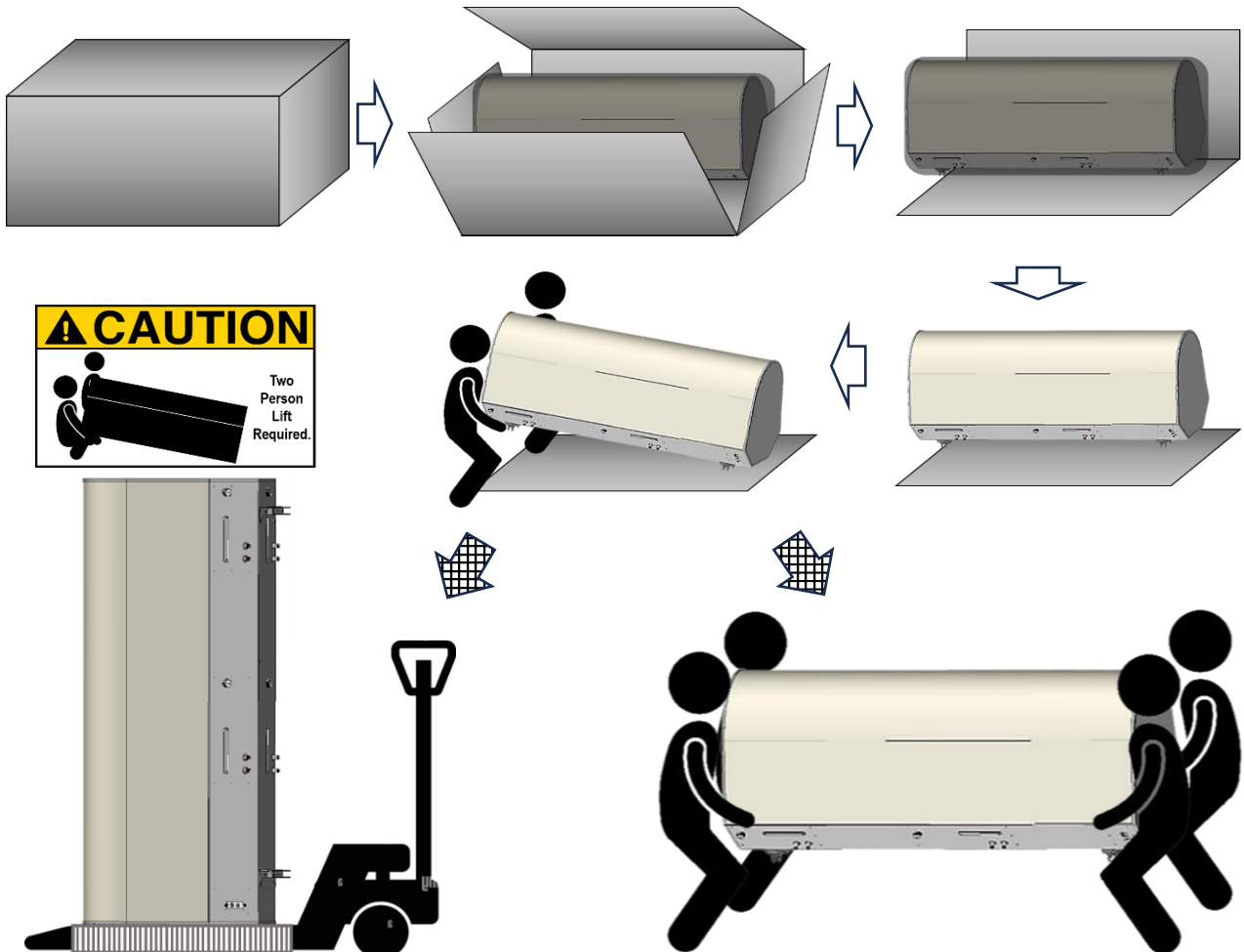


2.22 Point to Point Transporting by Hydraulic Jack or Forklift



2.30 MBA Unpacking & Handling Caution Point

2.31 MBA Antenna Height >1500mm (Example Of MS-MBA-3-L4A2)

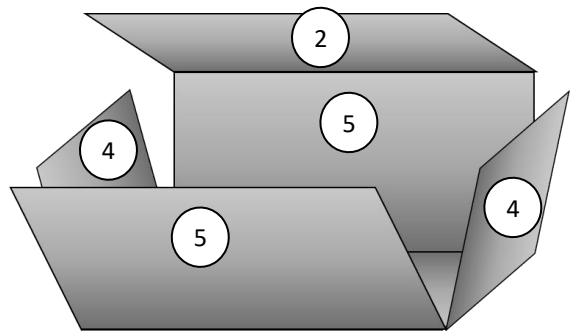
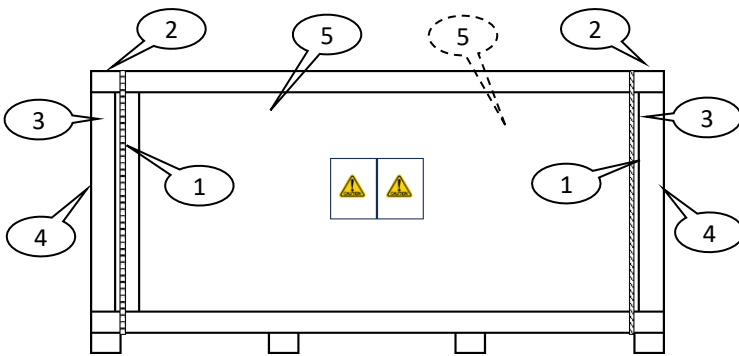


2.32 Wooden Crate Unpacking Tools & Steps (Example of MS-MBA-3-L4A2)

Unpacking Tools

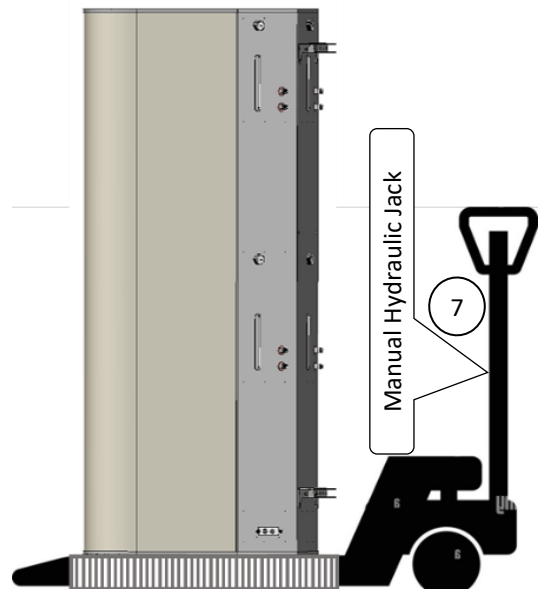


MS-MBA-3-L4A2 Unpacking Step	
Step 1	Use cutter Cut & Remove Plastic Straps
Step 2	Unscrew & Remove Top Panel
Step 3	Unscrew Left & Right Side to Remove Rear Panel
Step 4	Remove Left & Right Side Panel
Step 5	Remove Front & Rear Panel

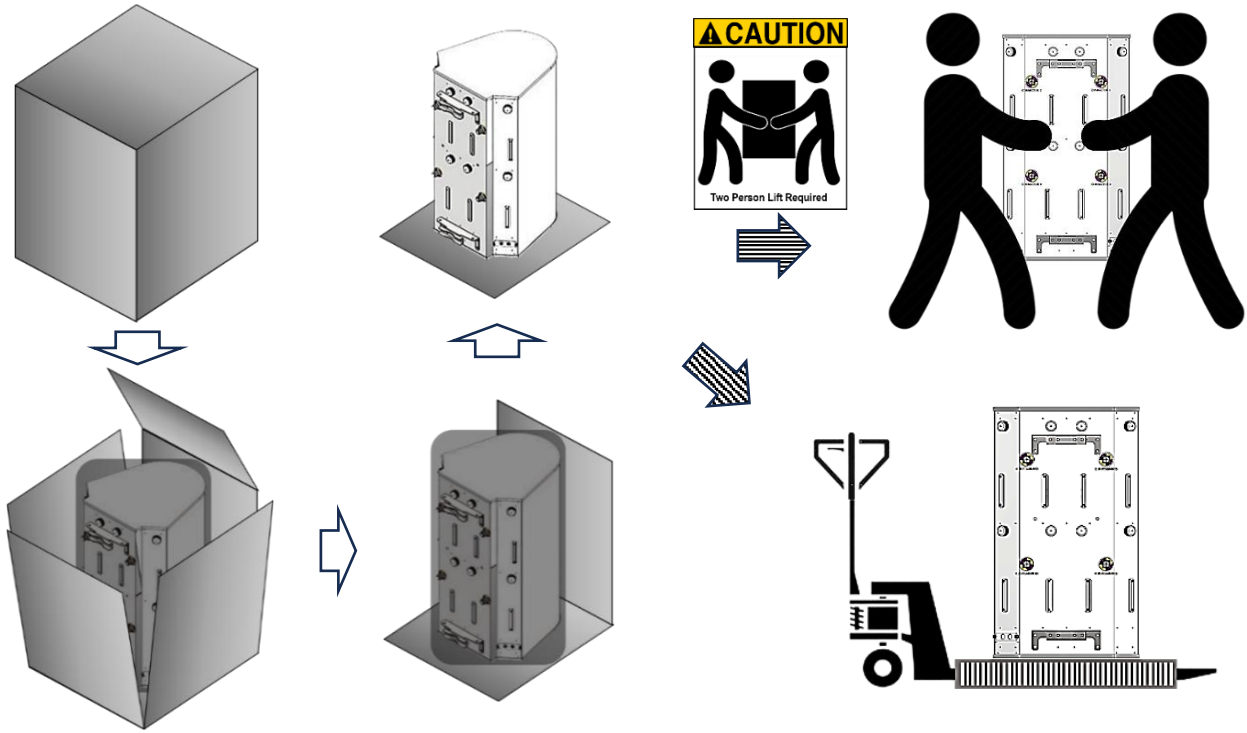


Step 6 Unwrapping Shrink Wrap With 2 Mans Lift-Up Vertically and Place On Pallet

Step 7 Use Manual Hydraulic Jack For Transporting

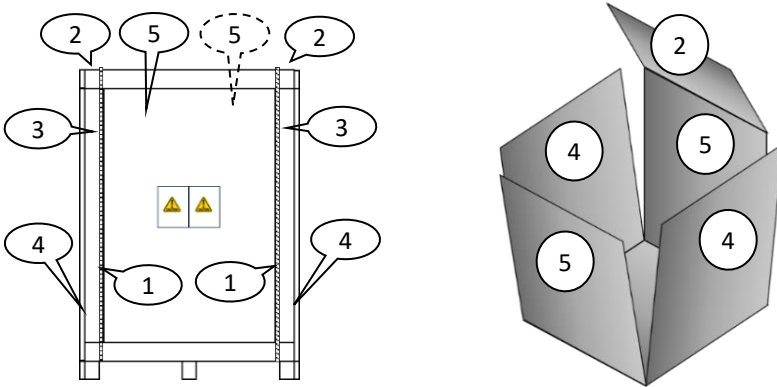


2.33 MBA Antenna Height < =1490mm (Example Of MS-MBA-4.4-SH2-SH2-45M)



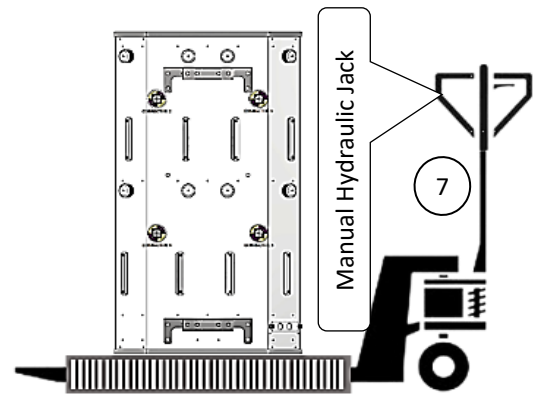
2.34 Wooden Crate Unpacking Tools & Steps (Example of MS-MBA-4.4-SH2-SH2-45M)

MS-MBA-4.4-SH2-SH2-45M Unpacking Step	
Step 1	Use cutter Cut & Remove Plastic Straps
Step 2	Unscrew & Remove Top Panel
Step 3	Unscrew Left & Right Side to Remove Rear Panel
Step 4	Remove Left & Right Side Panel
Step 5	Remove Front & Rear Panel




Step 6 Unwrapping Shrink Wrap With 2 Mans Lift-Up Vertically and Place On Pallet

Step 7 Use Manual Hydraulic Jack For Transporting




3.00 MBA Lifting & Installation

3.10 MBA Lifting Equipment Preparation

	<p>Antenna Installation Location May Varies From Point to Point In Facing Different Terrain And Environments, ONLY Appropriate Material Handling Machine, Lifting Equipment & Working Platform To Be Deploy And With Certified Operator.</p>
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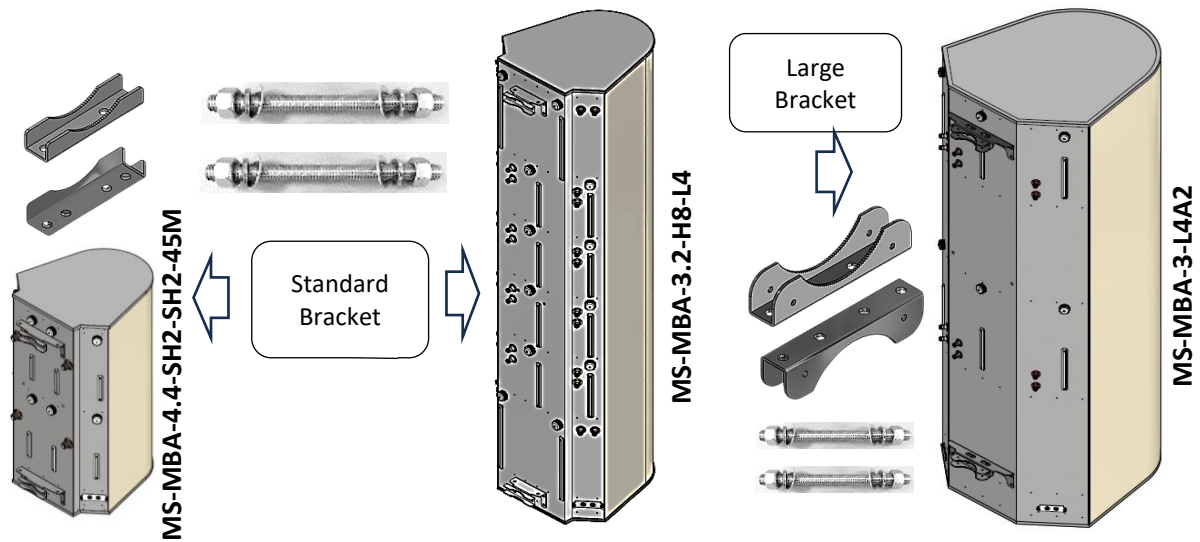
3.20 Lifting Planning & Execution

	<p>Installation & Operations Specialist Shall Plan The Execution Works According to The Workplace Safety And Health Control Measure With the Trained And Certified Staff In Handling Transportation, Lifting, Installation & Levelling of Antenna's</p>
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3.30 MBA Lifting & Installation

3.31 MBA Antenna Mounting Bracket

Size	L x W x H (mm)	Thickness (mm)	Holes Size (mm)	Holes Spacing (mm)	Qty
Large	215 x 40 x 50	4	Ø12.5	185	2
Standard	165 x 40 x 26	4	Ø12.5	135	2



3.32 Additional Supporting Bracket (End User Custom-Make)

Important Notes: End User is require to Custom-Make the additional supporting bracket and tighten to the existing Antenna bracket to meet the deployment needs.

3.33 Lifting Or Hoisting Up the Antenna



3.34 MBA Antenna Installation (Sample Picture Of Antenna Installed On-Site)



3.35 MBA Antenna Levelling Steps (For Horizontal Setting)

Step 1 Digital Gauge Calibration to Zero "0" Level



Target Level is 0° (Zero) $\leq 0.2^\circ$

Step 2 Place Digital Gauge On The Top Cover Center

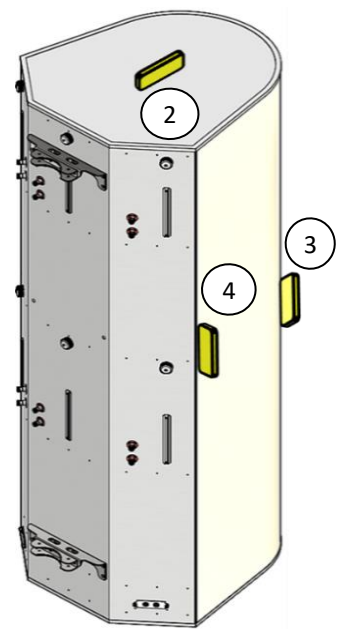
Step 3 Place Digital Gauge Vertically At The Front Radome Center

Step 4 Place Digital Gauge At The Edge Of The Radome Left Side Center

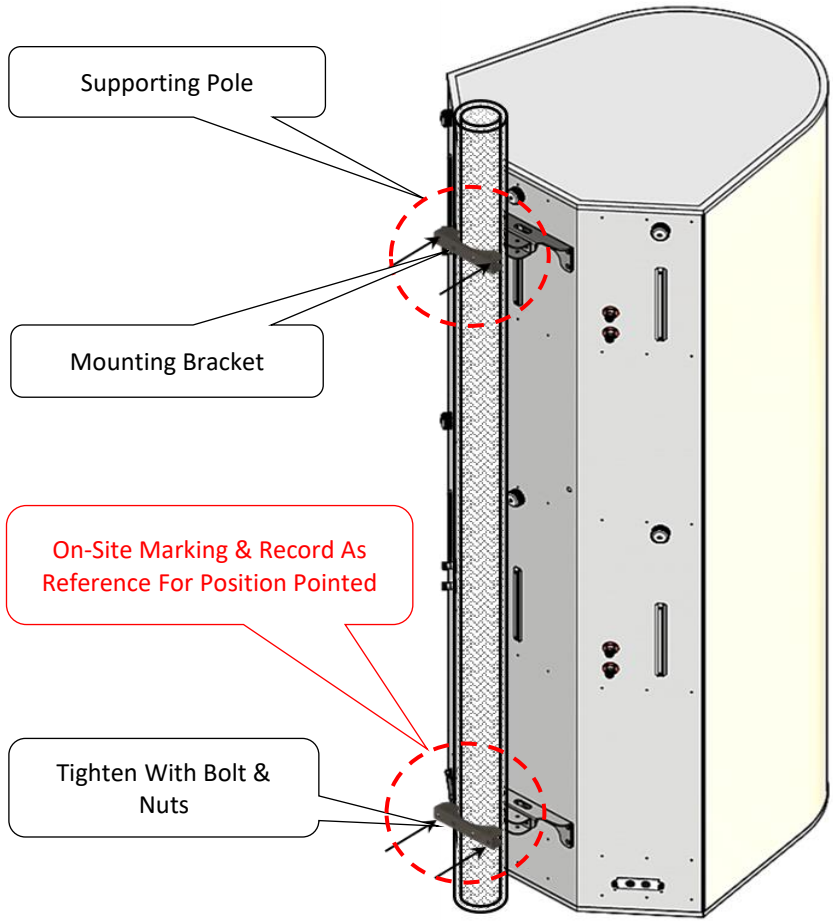
Step 5 Acceptable Range (0° Zero $\leq 0.2^\circ$)



Step 6 If Level Offset Tilt & Adjust According to As Level Display



3.36 Antenna Levelled, Secure & Marking

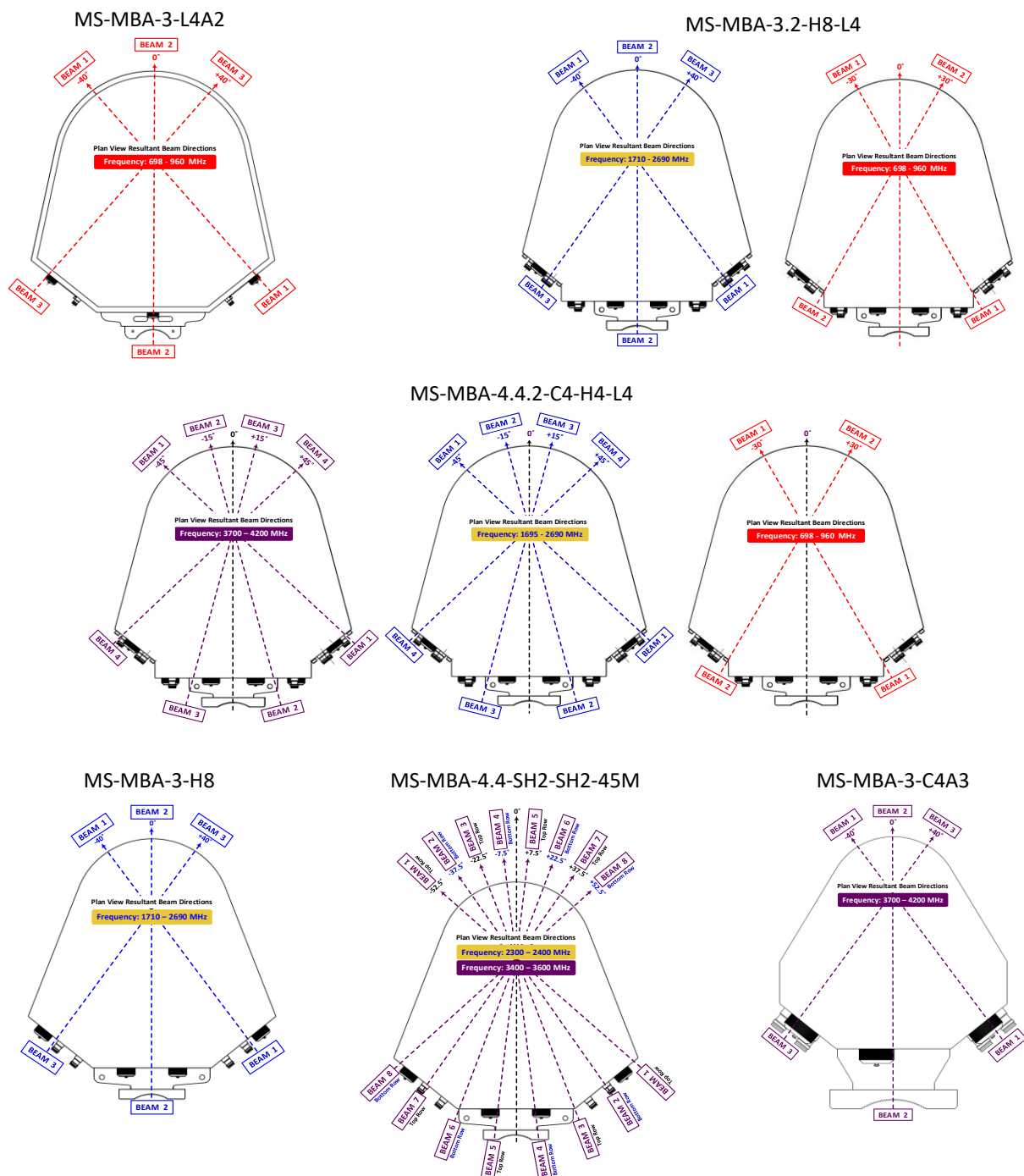


4.00 MBA Product Information

4.10 Example Model


Model	Array	Band	Frequency	Nos of Beams	Beam Direction	Ports/ Beam	Tilt Angle (Elevation)
MS-MBA-3-L4A2	Yes	L	698-960 MHz	3	-40° to +40°	4	15°
MS-MBA-3.2-H8-L4	na	H	1710-2690MHz	3	-40° to +40°	8	30°
		L	698-960 MHz	2	-30° to +30°	4	40°
MS-MBA-4.4.2-C4-H4-L4	na	C	3700-4200MHz	4	-45° to +45°	4	20°
		H	1695-2690MHz	4	-45° to +45°	4	20°
		L	698-960 MHz	2	-30° to +30°	4	40°
MS-MBA-3-H8	na	H	1710-2690 MHz	3	-40° to +40°	8	30°
MS-MBA-4.4-SH2-SH2-45M	na	SH	3400-3600 MHz	4	-52.5° to +52.5°	2	15°
		SH	2300-2400 MHz	4	-52.5° to +52.5°	2	15°
MS-MBA-3-C4A3	Yes	C	3700-4200 MHz	3	-40° to +40°	4	15°

4.20 MBA BEAM'S Direction



5.00 MBA Tilt Adjustment (Elevation)

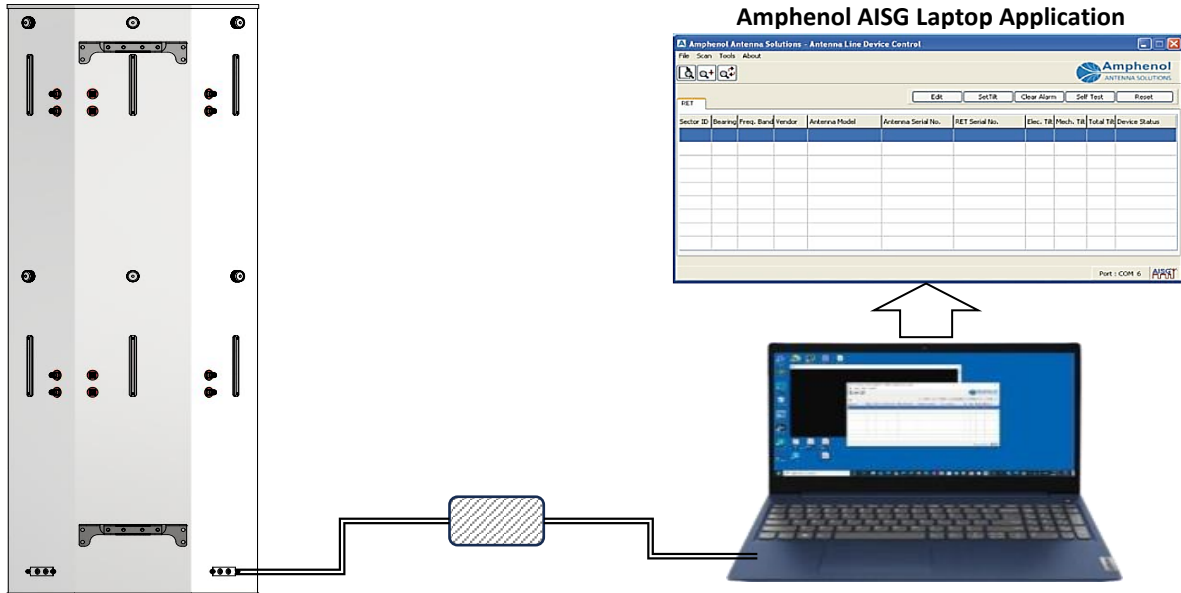
5.10 Planning & Execution




Installation Specialist Have the Option To Pre-Tilt The Antenna Angle Before The Lifting And Installation Of The Antenna. That May Help In Reducing The Work Load & Safety Concern When Performing Adjustment On-Site.

5.20 RET Connection & Operations (Example of MS-MBA-3-L4A2sn: #06)

A standard AISG 2.0 compliant cable (not included) is used to connect the MDCU to the AISG interface control. Once connected, use an AISG 2.0 compliant Control software to perform a Sub Unit SCAN to identify the RET Elements.



5.21 Model & Serial Nos Reference From Label



Antenna s/nos Sticker

Model No. : MS-MBA-3-L4A2
Serial No. : MS-MBA-3-L4A2-00006
Frequency: 698 - 960 MHz

Reminder: If Information Has Been Edited, Remember to Perform "Radio Hard Reset" for Changes to take Place

Add Zero in front if the serial nos is shorter than 6 digits

RET Controller Serial #
MBA3L4A2000006AMM
MBA3L4A2000006BMM
MBA3L4A2000006CMM

RET Controller s/nos Sticker

5.22 Information & Reference

ALD List												
NO	HDLCL	Vendor	Serial Number	Product Number	H/W Version	S/W Version	3GPP	Device	AISG	Connect	Link	
1	1	MS	MBA3L4A2000006AMM	ACS-RMC20	1.00	1.17	6	Multi RET	2	Connect	Link	
2	2	MS	MBA3L4A2000006BMM	ACS-RMC20	1.00	1.17	6	Multi RET	2	Connect	Link	
3	3	MS	MBA3L4A2000006CMM	ACS-RMC00	1.00	1.17	6	Multi RET	2	Connect	Link	

MBA3L4A2000006AMM } Beam 1, ACS-RMC20_IN-1

MBA3L4A2000006BMM } Beam 2, ACS-RMC20_IN-2

MBA3L4A2000006CMM } Beam 3, ACS-RMC00_IN

Model Serial no. (6 Digits)

5.23 Beam Nos & Port Nos Display

RET ID : MSMBA3L4A2000006AMM

Beam 1, ACS-RMC20_IN-1 (Port Assigned)

RET Status and Control						
Antenna Information List						
NO	Sector ID	Ant Model	Ant Serial	Current Tilt	Status	
1/2	LB Beam 1 (Ports 1, 2)	MS-MBA-3-L4A2	MSMBA3L4A20000006	0.0	Normal	
2/2	LB Beam 1 (Ports 3, 4)	MS-MBA-3-L4A2	MSMBA3L4A20000006	0.0	Normal	

RET ID : MSMBA3L4A2000006BMM

Beam 2, ACS-RMC20_IN-2 (Port Assigned)

RET Status and Control						
Antenna Information List						
NO	Sector ID	Ant Model	Ant Serial	Current Tilt	Status	
1/2	LB Beam 2 (Ports 5, 6)	MS-MBA-3-L4A2	MSMBA3L4A20000006	0.0	Normal	
2/2	LB Beam 2 (Ports 7, 8)	MS-MBA-3-L4A2	MSMBA3L4A20000006	0.0	Normal	

RET ID : MSMBA3L4A2000006CMM

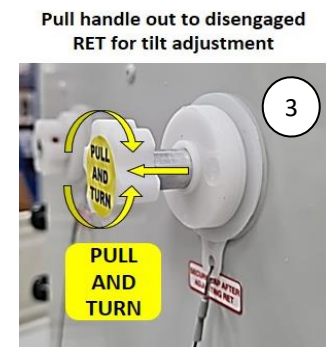
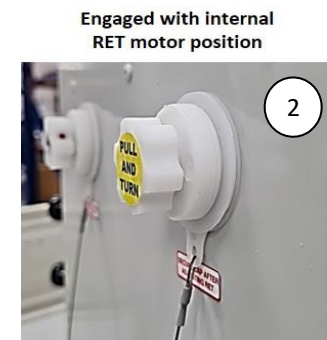
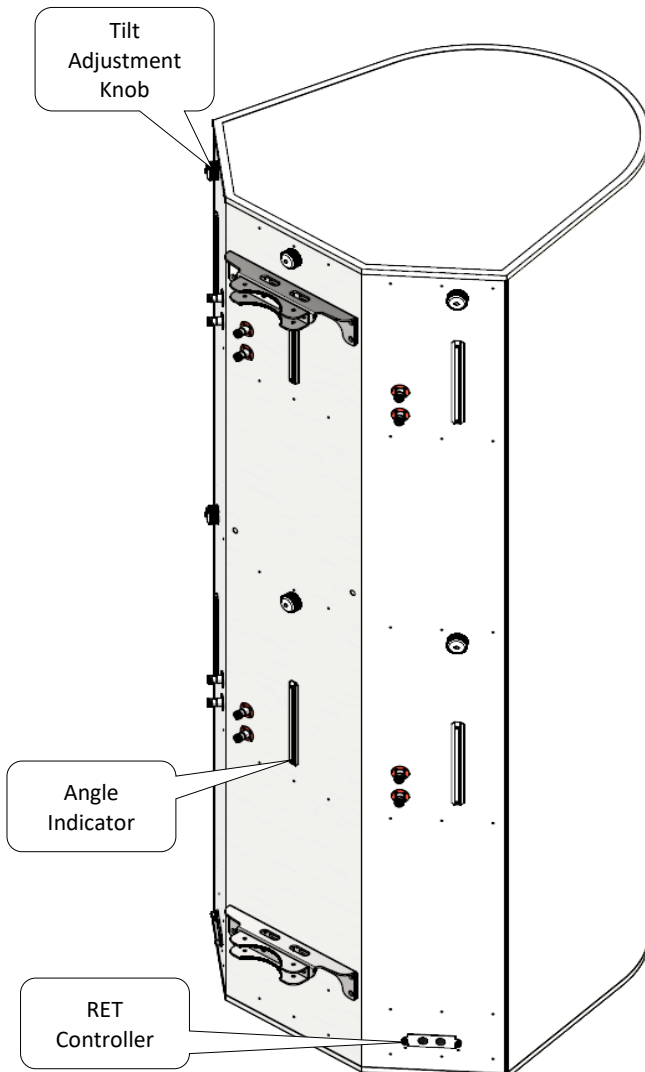
Beam 3, ACS-RMC00_IN (Port Assigned)

RET Status and Control						
Antenna Information List						
NO	Sector ID	Ant Model	Ant Serial	Current Tilt	Status	
1/2	LB Beam 3 (Ports 9, 10)	MS-MBA-3-L4A2	MSMBA3L4A20000006	0.0	Normal	
2/2	LB Beam 3 (Ports 11, 12)	MS-MBA-3-L4A2	MSMBA3L4A20000006	0.0	Normal	

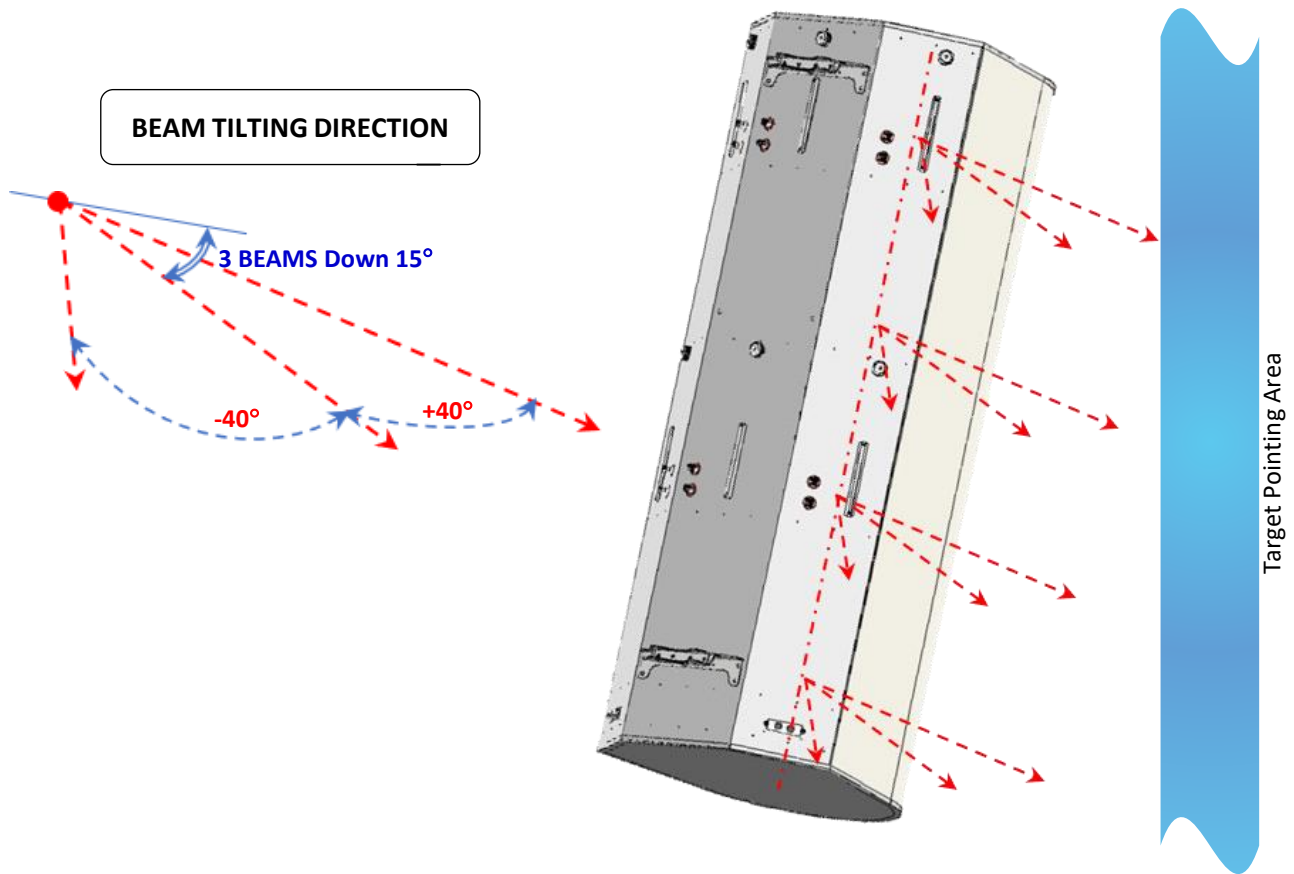
5.30 Manual Tilt Adjustment (Example of MS-MBA-3-L4A2)

MBA Come In RET Mode As Default, If Needed, Also Can Be Manually Adjusted.	
Step 1	Unscrew/Screw the cap for tilt adjustment process

Step 2	Engaged with the internal RET motor position
Step 3	Pull handle out to disengaged RET for tilt adjustment



5.40 MBA Antenna Target Pointing View (Example of MS-MBA-3-L4A2)



5.50 MBA Antenna Position Confirm & Secure With Marking

