

Date	Prepared by	Approved by	Document nos	Revision
24 Sep 2021	Ray Ling	Patrick Yeo	MS-4H60IM-001	2

INSTRUCTION MANUAL MS-4H60

(Non- RET Version)

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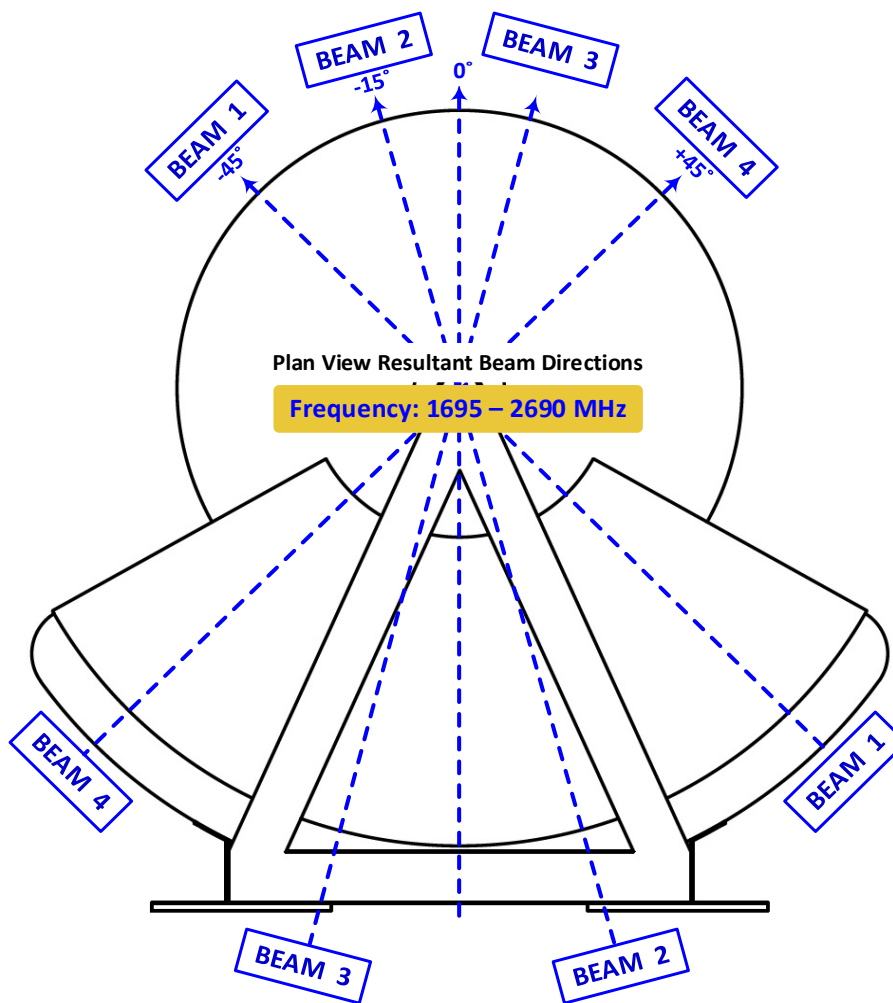
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Revision History:

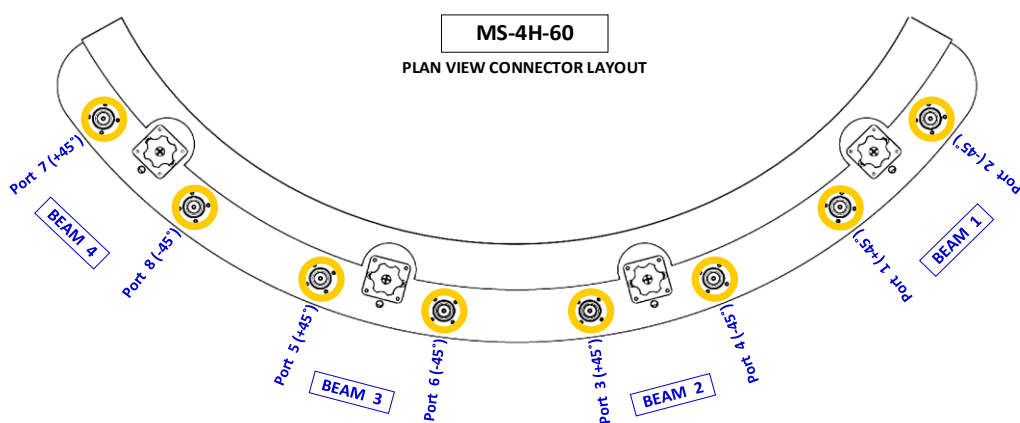
Date	Description	Revised by	Revision nos.
15-Dec-20	Revised instruction manual for Non-RET version.	Ray Ling	1
24-Sep-21	General revision and update	Ray Ling	2

1.00 BEAMS & CONNECTORS:

1.10 Plan View Resultant Beam Direction



1.20 Plan View Connector Layout

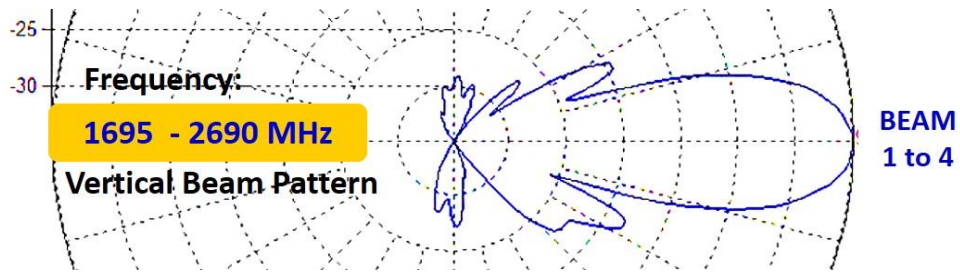


1.30 Connector Ports Table

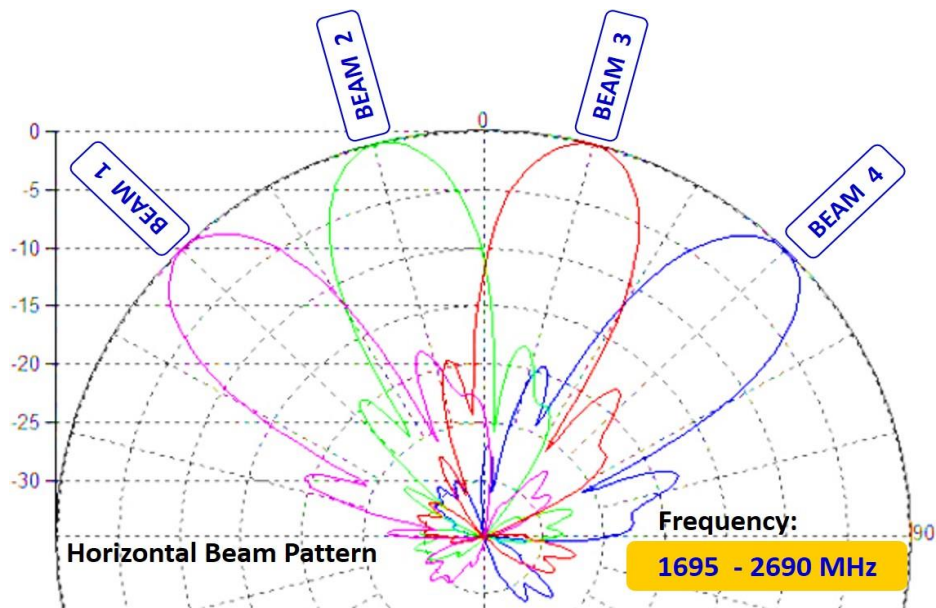
BEAM 4		BEAM 3		BEAM 2		BEAM 1	
Port 7 (+45°)	Port 8 (-45°)	Port 5 (+45°)	Port 6 (-45°)	Port 3 (+45°)	Port 4 (-45°)	Port 1 (+45°)	Port 2 (-45°)

2.00 PATTERN DIAGRAM

2.10 Vertical Beam Pattern

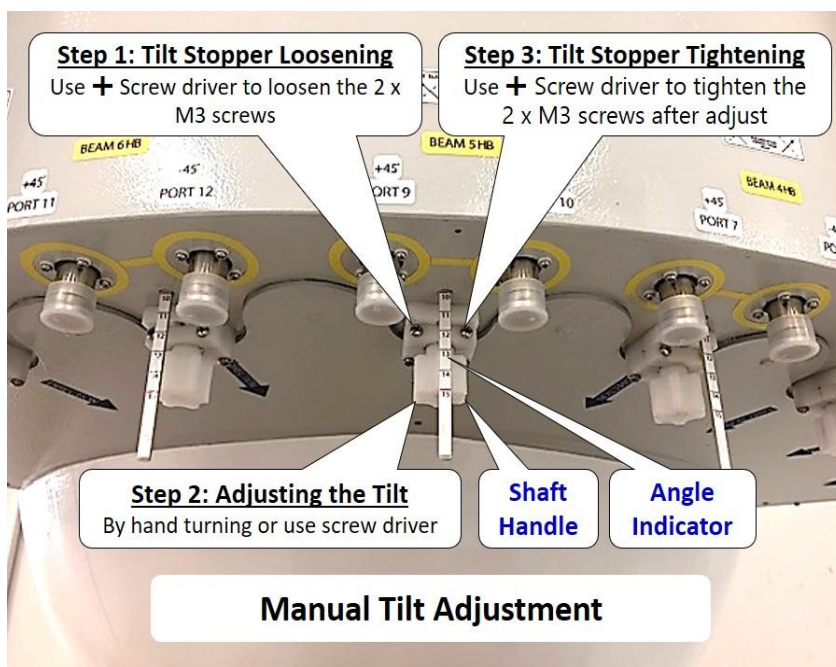


2.20 Horizontal Beam Pattern



3.00 MANUAL TILT ADJUSTMENT

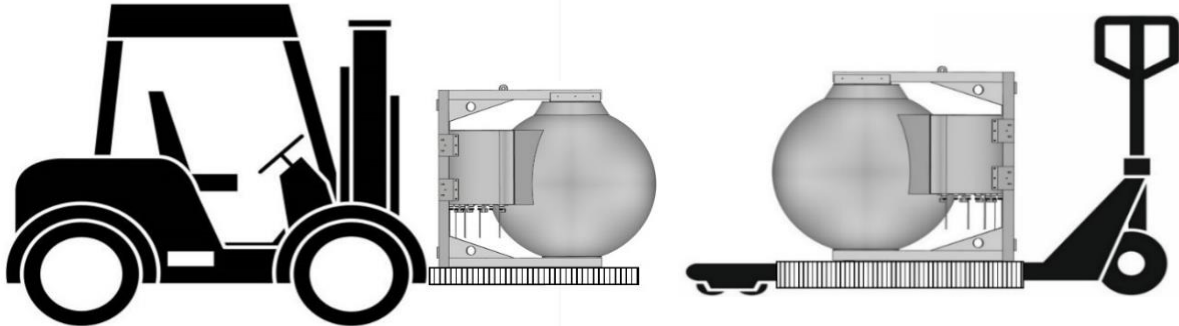
Step 1: Tilt Stopper Loosening. Step 2: Adjusting the Tilt. Step 3: Tilt Stopper Tightening.



5.00 TRANSPORTATION / INSTALLATION

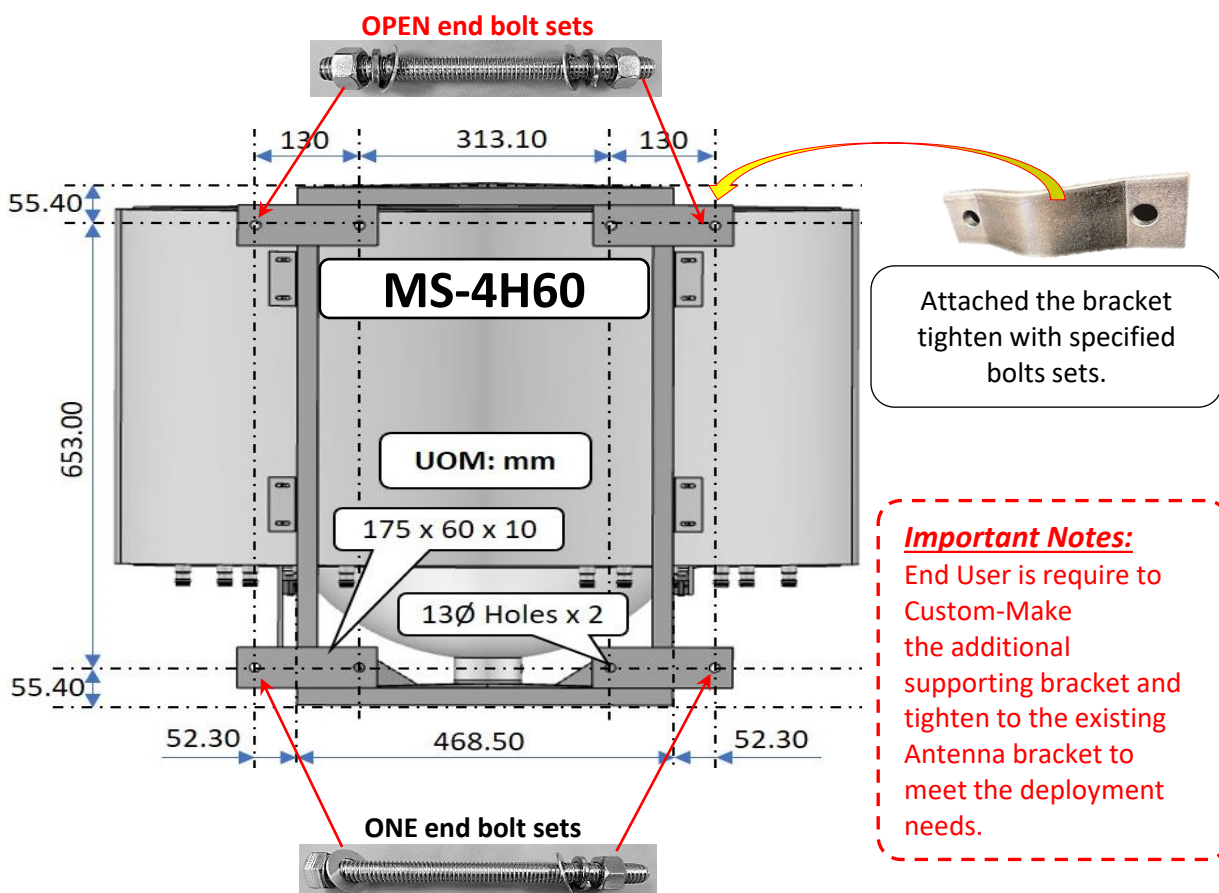
5.10 Transportation (From Point to Point)

Strictly comply to the Local authority and regulatory on Workplace Safety and Health Control and Measure when moving and transportation of large or heavy equipment, appropriate material handling machine should be use. **(Risk Assessment apply for Forklift or Pallet Truck Lifting)**



5.20 Bracket Mounting

Item	Lens/Types	Holes Size	Bracket Qty	For direct behine backshell OPEN end bolt & nuts sets	One end bolt & nuts sets
1	30cm to 120cm	Ø13mm x 8	4	M12 x 15cm=4sets	M12 x 15cm=4sets



5.30 Installation using a crane

Strictly comply to the Local authority and regulatory on Workplace Safety and Health Control and Measure when performing lifting of large or heavy equipment, appropriate material handling machine should be use and only certified personal should perform the task. **(Risk Assessment require to apply for both Up-Lifting and Down-Lifting.)**

5.31 Lifting the Antenna

The antenna has 2 hook points installed on the top frame (located slightly behind the center of the sphere). These hooks are designed at the center of gravity point of the antenna. A cable, rope can be securely fastened to the hooks and the antenna can be lifted using a crane or forklift as pictured below.

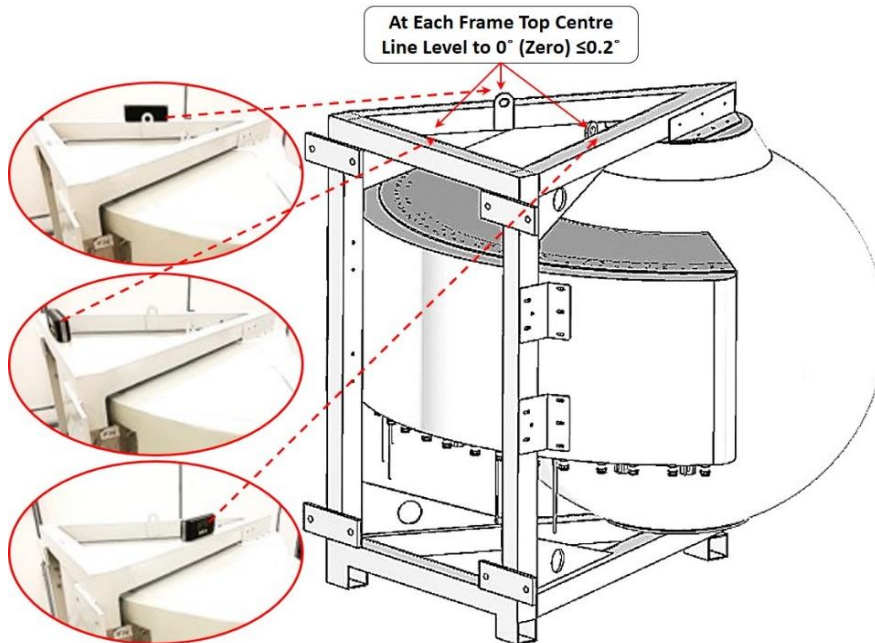


4.40 Antenna Installation

With reference to **Item 5.2 Bracket Mounting Procedure**, End user is required to Custom-Make the additional supporting bracket and tighten it to the existing Antenna bracket to meet the deployment needs.

4.41 Antenna Leveling

After the Antenna is mounted to the bracket, it is required to be adjusted to 0° (Zero Degree) with $\leq 0.2^\circ$ on 3 sides of the frame top level. (Rear, Right & Left=As shown in picture)



ANTENNA LEVELING ADJUSTMENT (AFTER INSTALLATION)

4.42 Digital Level Gauge Calibration

DIGITAL LEVEL GAUGE



4.43 Adjustment Requirement



ANTENNA LEVELING ACCEPTED



REQUIRE ADJUSTMENT