

Date	Prepared by	Approved by	Document nos	Revision
19 Nov 2021	Ray Ling	Pavel	MS-12F45-IM-001	0

## **INSTRUCTION MANUAL MS-12F45**

### **TABLE OF CONTENTS:**

#### **1.00 BEAMS & CONNECTORS:**

- 1.10 Plan View Resultant Beam Direction
- 1.20 Plan View Connector Layout
- 1.30 Connector Ports Table

#### **2.00 BEAM PATTERN**

- 2.10 Vertical Beam Pattern (Top & Bottom Row)
- 2.20 Horizontal Beam Pattern (Top Row)
- 2.30 Horizontal Beam Pattern (Bottom Row)

#### **3.00 TRANSPORTATION / INSTALLATION**

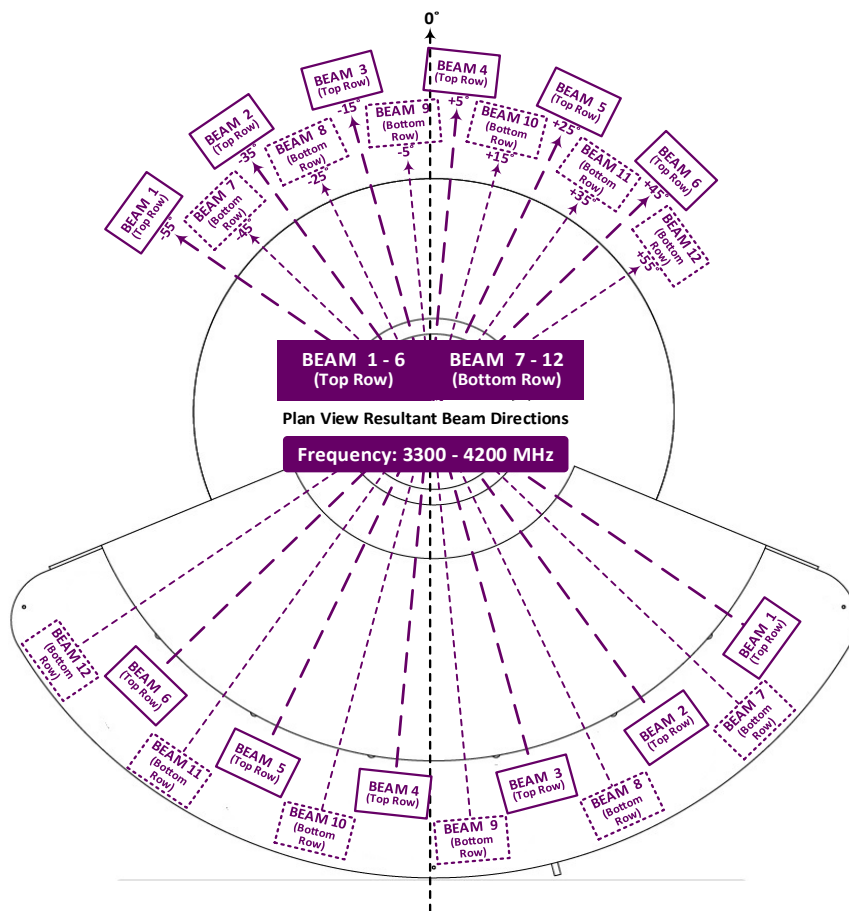
- 3.10 Transportation (From Point to Point)
- 3.20 Bracket Mounting
- 3.30 Installation using a crane
  - 3.31 Lifting the Antenna
- 3.40 Antenna Installation
  - 3.41 Antenna Leveling
  - 3.42 Digital Level Gauge Calibration
  - 3.43 Adjustment Requirement

#### **Revision History:**

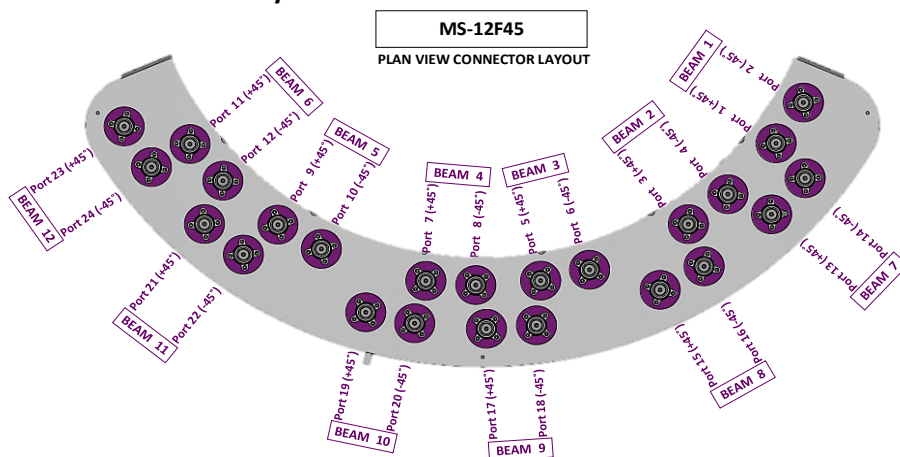
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## 1.00 BEAMS & CONNECTORS:

### 1.10 Plan View Resultant Beam Direction



### 1.20 Plan View Connector Layout



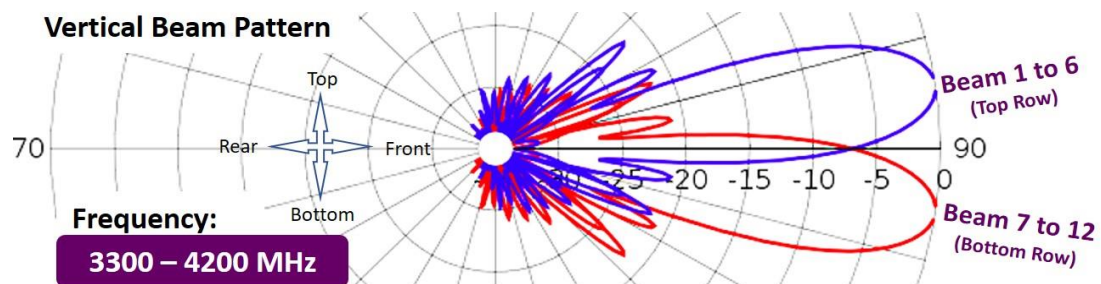
### 1.30 Connector Ports Table

Top Row											
BEAM 6		BEAM 5		BEAM 4		BEAM 3		BEAM 2		BEAM 1	
PORT 11	PORT 12	PORT 9	PORT 10	PORT 7	PORT 8	PORT 5	PORT 6	PORT 3	PORT 4	PORT 1	PORT 2
(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)

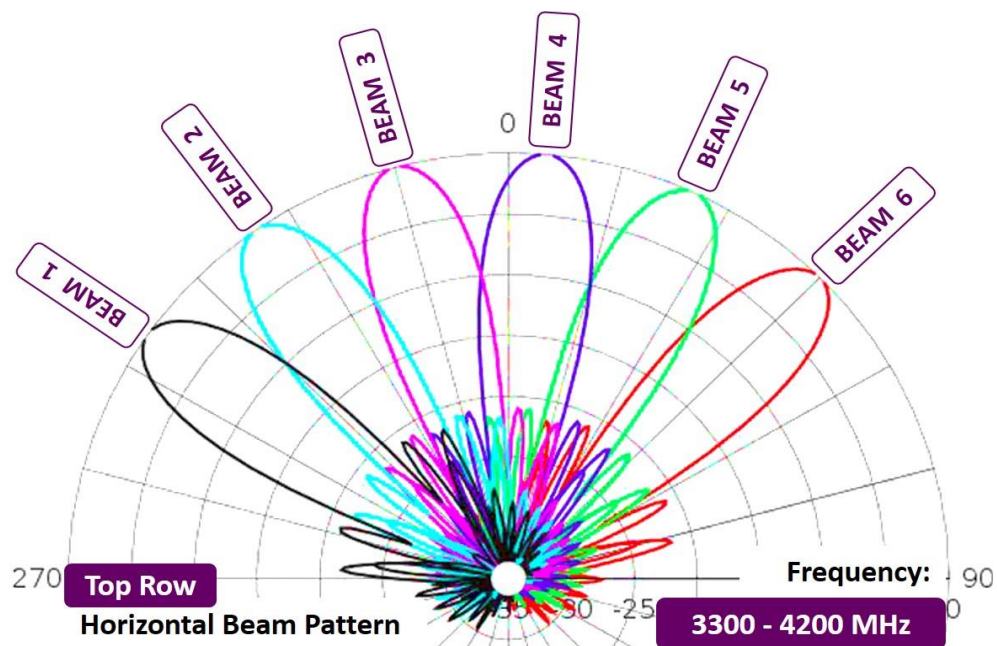
Bottom Row											
BEAM 12		BEAM 11		BEAM 10		BEAM 9		BEAM 8		BEAM 7	
PORT 23	PORT 24	PORT 21	PORT 22	PORT 19	PORT 20	PORT 17	PORT 18	PORT 15	PORT 16	PORT 13	PORT 14
(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)

## 2.00 BEAM PATTERN

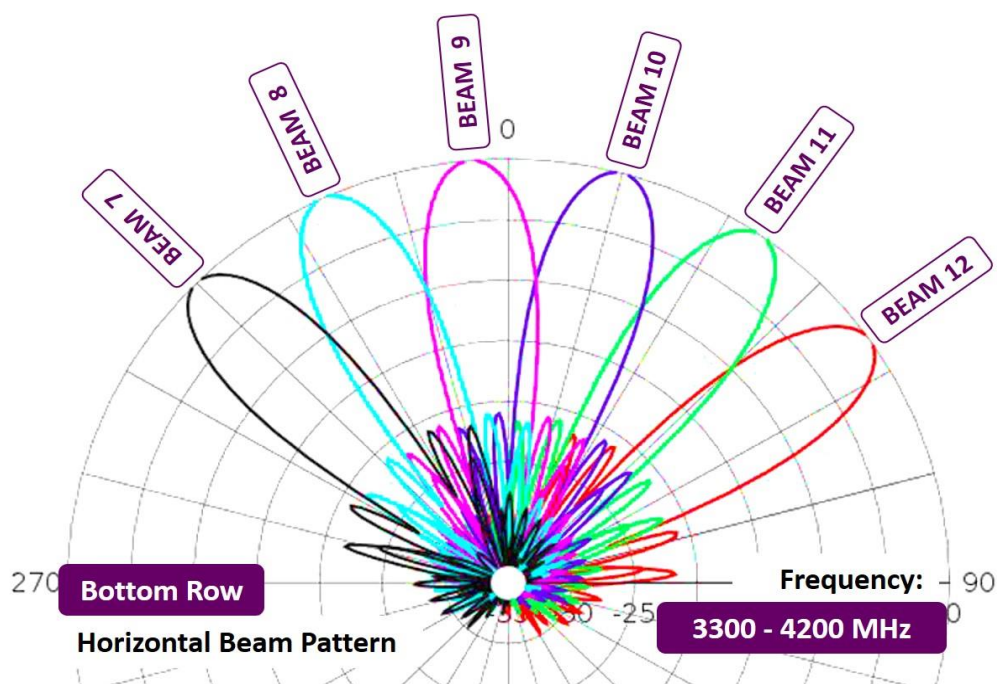
### 2.10 Vertical Beam Pattern (Top & Bottom Row)



### 2.20 Horizontal Beam Pattern (Top Row)



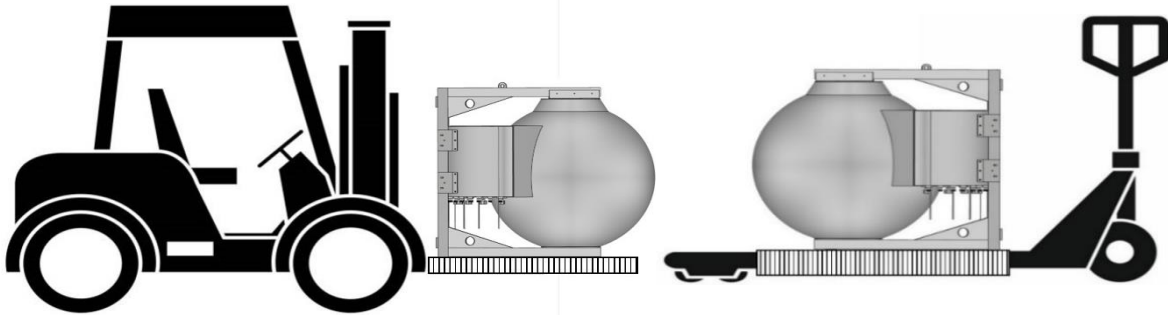
### 2.30 Horizontal Beam Pattern (Bottom Row)



### 3.00 TRANSPORTATION / INSTALLATION

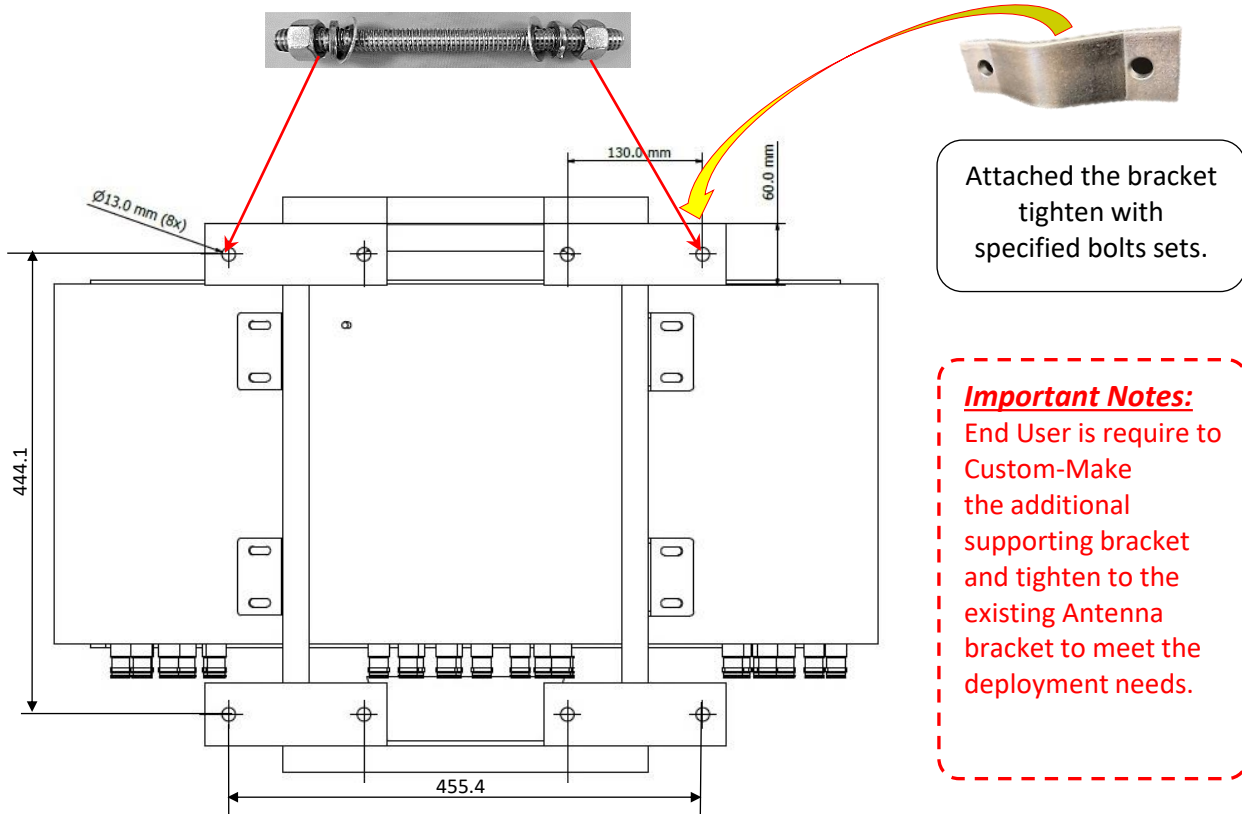
#### 3.10 Transportation (From Point to Point)

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)**



#### 3.20 Bracket Mounting

Item	Lens/Types	Holes Size	Bracket Qty	<u>OPEN</u> end bolt & nuts sets
1	30cm to 120cm	Ø13mm x 8	4	M12 x 15cm=8sets





### 3.30 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 used and only certified personnel should perform the task.

**(Risk Assessment requirement applies for both Up-Lifting and Down-Lifting.)**

### 3.31 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 as pictured below.

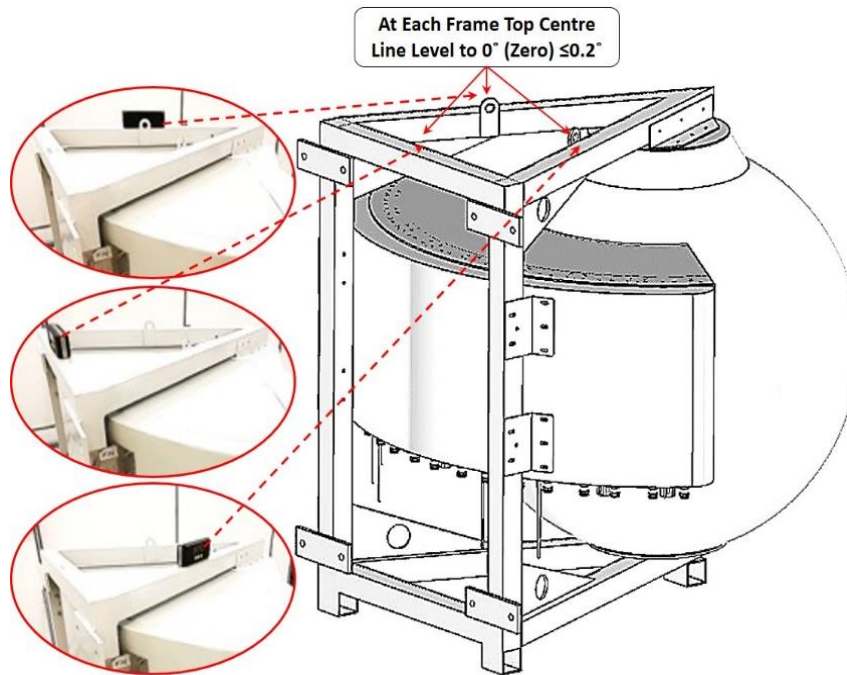


### 3.40 Antenna Installation

With reference to **Item 3.2 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.

### 3.41 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)**

### 3.42 Digital Level Gauge Calibration



### 3.43 Adjustment Requirement



**ANTENNA LEVELING ACCEPTED**



**REQUIRE ADJUSTMENT**