

Date	Prepared by	Approved by	Document nos	Revision
9 Nov 2023	Ray Ling	Pavel	MS-126-180-IM-001	8

INSTRUCTION MANUAL MS-12.6DB180

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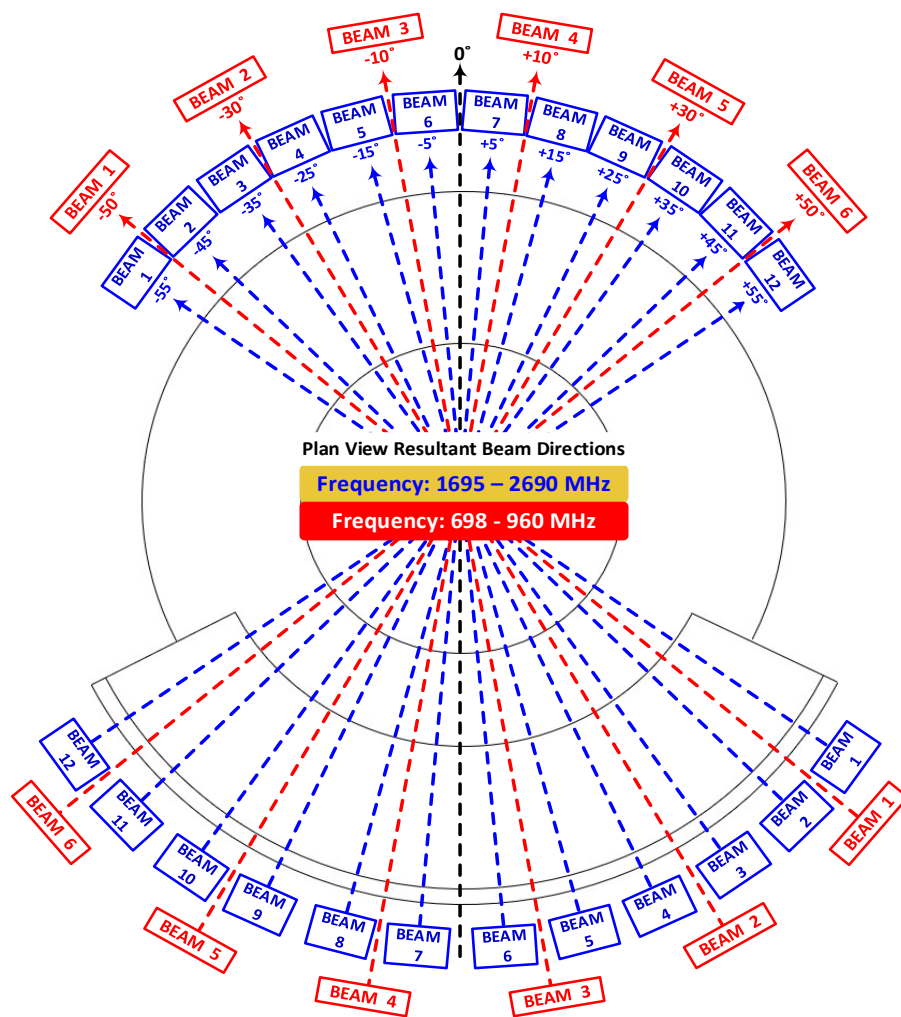
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Revision History:

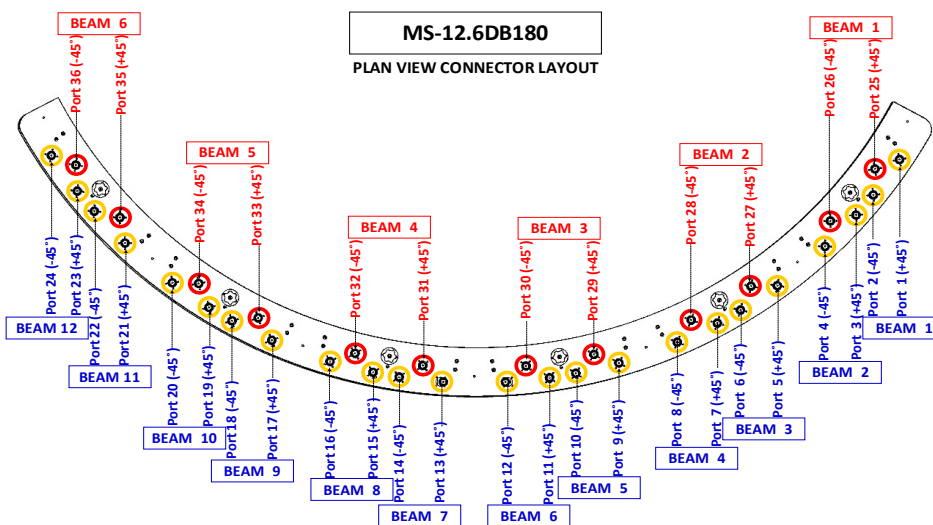
Date	Description	Revised by	Rev no
20-May-20	General Update to Include Model T	Ray Ling	1
30-Jun-21	Include Open-End bolt/nut sets for bracket mounting	Ray Ling	2
20-Sep-21	General update	Ray Ling	3
30-Jan-23	Revised Bracket Bolt & Nuts Information	Ray Ling	4
19-May-23	Separate T Band & L Band Manual & General Update	Ray Ling	5
20-Jul-23	Include RET Controller Display	Ray Ling	6
01-Aug-23	Revised RET Controller Display	Ray Ling	7
09-Nov-23	Add RET AISG Cable Installation Caution Point	Ray Ling	8

1.00 BEAMS & CONNECTORS:

1.10 Plan View Resultant Beam Direction



1.12 Plan View Connector Layout

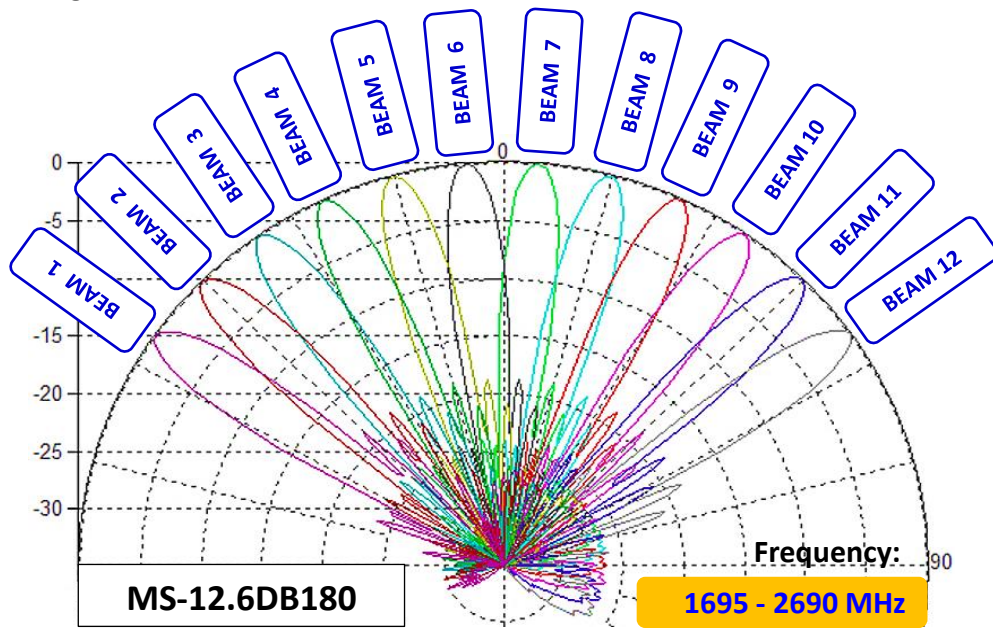


1.30 Port Table

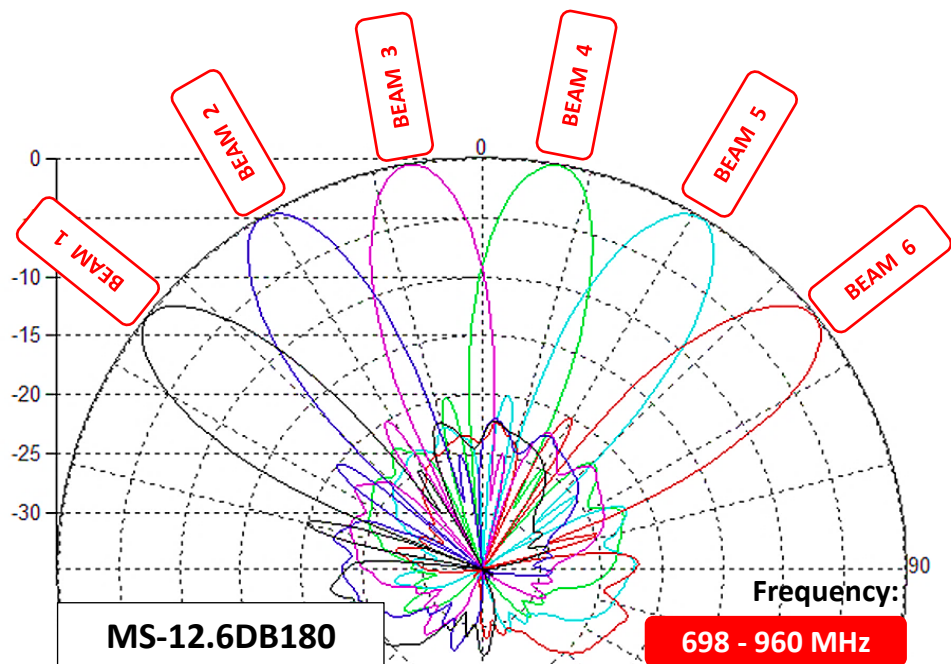
BEAM 1			BEAM 2			BEAM 3			BEAM 4			BEAM 5			BEAM 6		
PORT 25			PORT 27			PORT 29			PORT 31			PORT 33			PORT 35		
(+45°)			(+45°)			(+45°)			(+45°)			(+45°)			(+45°)		
BEAM 1			BEAM 3			BEAM 5			BEAM 7			BEAM 9			BEAM 11		
PORT 2			PORT 6			PORT 10			PORT 14			PORT 18			PORT 22		
1			3			5			7			9			11		
PORT 3			PORT 7			PORT 11			PORT 15			PORT 19			PORT 23		
2			4			6			8			10			12		
PORT 4			PORT 8			PORT 12			PORT 16			PORT 20			PORT 24		
(-45°)			(-45°)			(-45°)			(-45°)			(-45°)			(-45°)		
BEAM 1			BEAM 3			BEAM 5			BEAM 7			BEAM 9			BEAM 11		
PORT 1			PORT 5			PORT 9			PORT 13			PORT 17			PORT 21		
(+45°)			(+45°)			(+45°)			(+45°)			(+45°)			(+45°)		
BEAM 1			BEAM 3			BEAM 5			BEAM 7			BEAM 9			BEAM 11		
PORT 1			PORT 5			PORT 9			PORT 13			PORT 17			PORT 21		
(-45°)			(-45°)			(-45°)			(-45°)			(-45°)			(-45°)		

2.00 PATTERN DIAGRAM

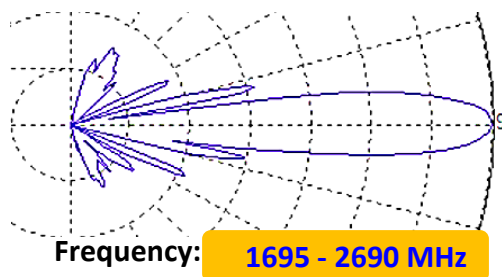
2.10 High-Band Horizontal Beam Pattern



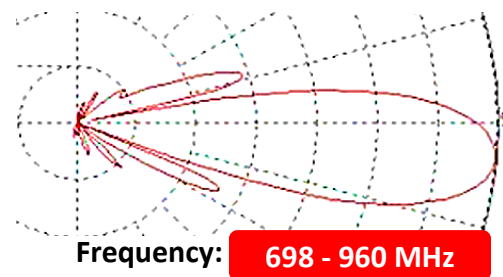
2.20 Low-Band Horizontal Beam Pattern



2.30 High-Band Vertical Beam Pattern



2.40 Low-Band Vertical Beam Pattern



3.00 MANUAL TILT ADJUSTMENT

Step 1:
Tilt Stopper Loosening

Step 2:
Adjusting the Tilt

Step 3:
Tilt Stopper Tightening

Step 1: Tilt Stopper Loosening
Use + Screw driver to loosen the 2 x M3 screws

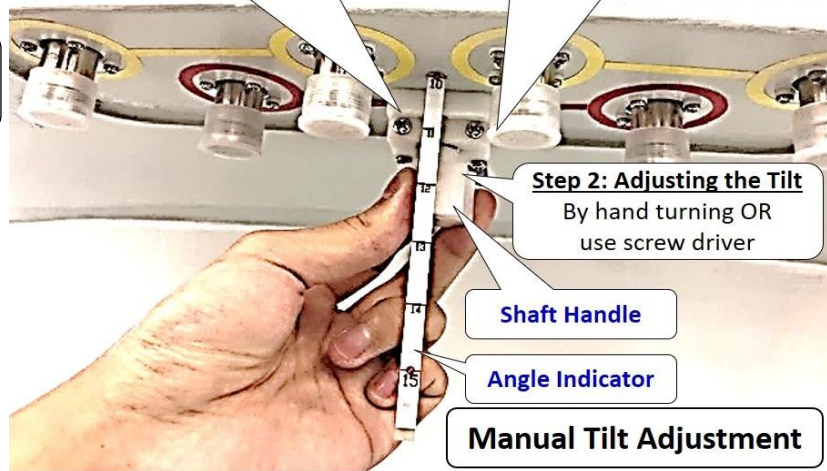
Step 3: Tilt Stopper Tightening
Use + Screw driver to tighten the 2 x M3 screws after adjust

Step 2: Adjusting the Tilt
By hand turning OR use screw driver

Shaft Handle

Angle Indicator

Manual Tilt Adjustment



4.00 "S" RET ACTUATOR INSTALLATIONS/REPLACEMENT PROCESS (Optional)

4.10 "S" RET Actuator Materials & Tools

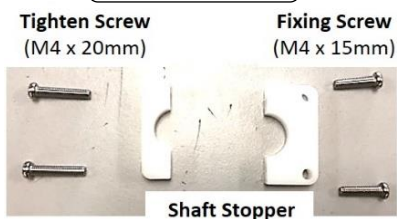
RET Attachment Interface Kits



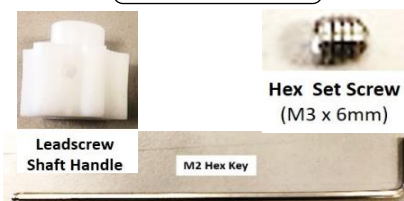
RET Attachment Interface (Sub-Assy)



Shaft Stopper



Shaft Handle



RET Actuator

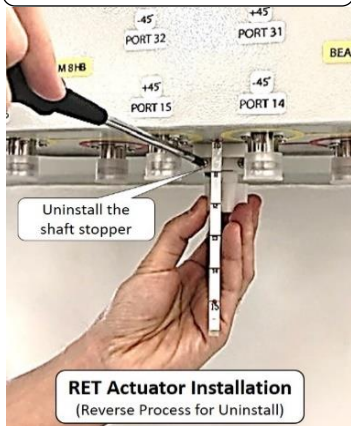


RET AISG Cable



4.20 Installation / Replacement Process (Reverse Process for Uninstallation)

Step 1: Uninstall the shaft stopper



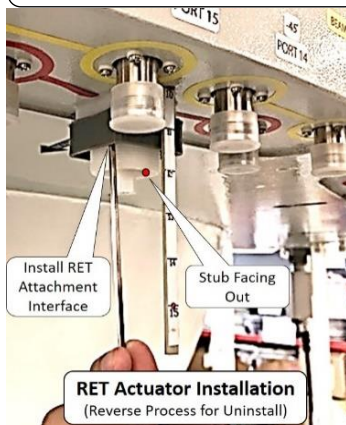
Step 2: Uninstall the shaft Handle



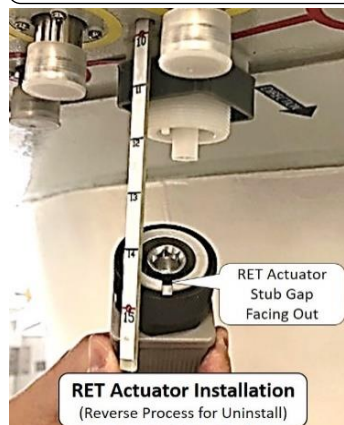
Step 3: Install the Hex adaptor and screw it on



Step 4: Install the RET attachment interface



Step 5: RET Actuator stub gap facing out



Step 6: RET Tighten to attachment interface



Step 7: Screw and tighten RET cable



ADVICE:

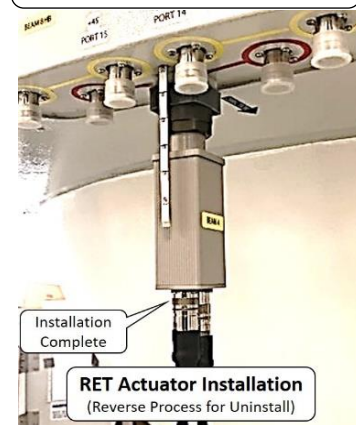
**** Replace the AISG cable if is faulty.**
**** Same caution apply**



Step 7 CAUTION

1. Do not apply any rotation force to the cable
2. Carefully align same direction to the keyway before insertion.
3. Insert direct (not angular) until well fully seated before turning.
4. Once both thread is fit can start slowly turning.
5. Tighten the AISG connector by hand only.
6. If use torque wrench do not exceed 1.1 Nm (0.8 ft if) torque.

Step 8: RET Actuator installation complete.



Repeat the same process for other actuator installation.

5.00 RET Controller Display

5.10 RET Discover and Active

ALD List

NO	HDLC	Vendor	Serial Number	Product Number	H/W Version	S/W Version	3GPP	Device	AISG	Connect	Link
1	1	MS	126DB180-000561B1	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
2	2	MS	126DB180-000561B2	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
3	3	MS	126DB180-000561B3	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
4	4	MS	126DB180-000561B4	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
5	5	MS	126DB180-000561B5	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
6	6	MS	126DB180-000561B6	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link

Model/Serial no./Beam No.

5.20 Beam 1-6 Operations Display

RET Tilt Window											
RET ID : MS126DB180-000561B1											
RET Status and Control											
Antenna Information List											
NO	Sector ID		Ant Model	Ant Serial		Current Tilt	Status				
1/1	Beam 1		MS-12.6DB180	MS12.6DB180000561		10.0	Normal				

RET Tilt Window											
RET ID : MS126DB180-000561B2											
RET Status and Control											
Antenna Information List											
NO	Sector ID		Ant Model	Ant Serial		Current Tilt	Status				
1/1	Beam 2		MS-12.6DB180	MS12.6DB180000561		10.0	Normal				

RET Tilt Window											
RET ID : MS126DB180-000561B3											
RET Status and Control											
Antenna Information List											
NO	Sector ID		Ant Model	Ant Serial		Current Tilt	Status				
1/1	Beam 3		MS-12.6DB180	MS12.6DB180000561		10.0	Normal				

RET Tilt Window											
RET ID : MS126DB180-000561B4											
RET Status and Control											
Antenna Information List											
NO	Sector ID		Ant Model	Ant Serial		Current Tilt	Status				
1/1	Beam 4		MS-12.6DB180	MS12.6DB180000561		10.0	Normal				

RET Tilt Window											
RET ID : MS126DB180-000561B5											
RET Status and Control											
Antenna Information List											
NO	Sector ID		Ant Model	Ant Serial		Current Tilt	Status				
1/1	Beam 5		MS-12.6DB180	MS12.6DB180000561		10.0	Normal				

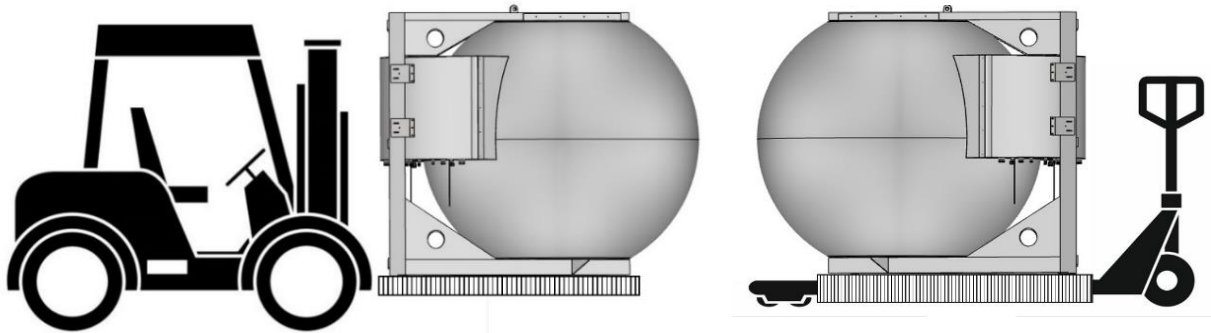
RET Tilt Window											
RET ID : MS126DB180-000561B6											
RET Status and Control											
Antenna Information List											
NO	Sector ID		Ant Model	Ant Serial		Current Tilt	Status				
1/1	Beam 6		MS-12.6DB180	MS12.6DB180000561		10.0	Normal				

6.00 TRANSPORTATION / INSTALLATION

6.10 Transportation (From Point to Point)

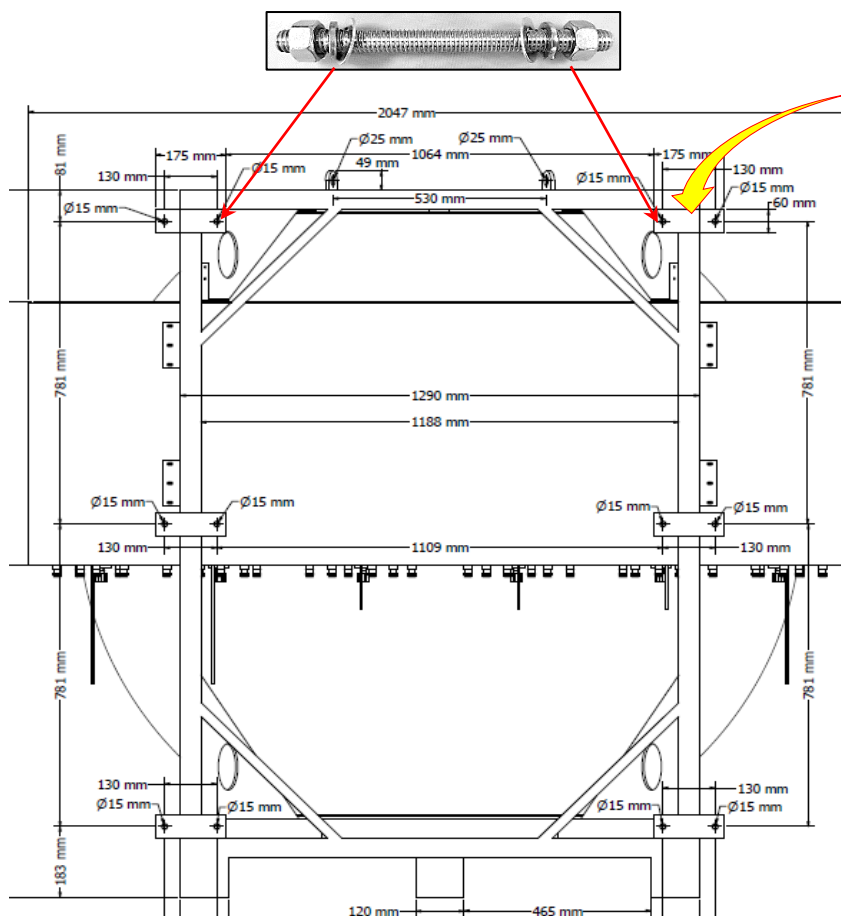
Strictly comply to the Local authority and regulatory on Workplace Safety and Health Control and Measure when moving and transportation of large or heavy equipment, appropriate material handling machine should be use.

(Risk Assessment apply for Forklift or Pallet Truck Lifting)



6.20 Bracket Mounting

Item	Lens Size	Holes Size	Bracket Qty	Bolt & Nuts Sets
1	180cm	Ø15mm x 12	6	M14 x 20cm = 12 Sets



Attached the bracket tighten with specified

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.

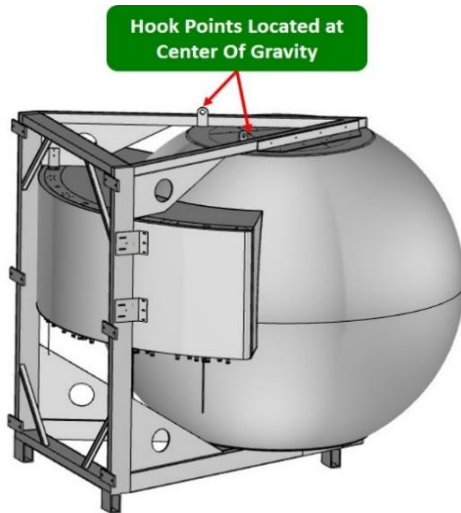
6.30 Installation using a crane

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.)

6.31 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.

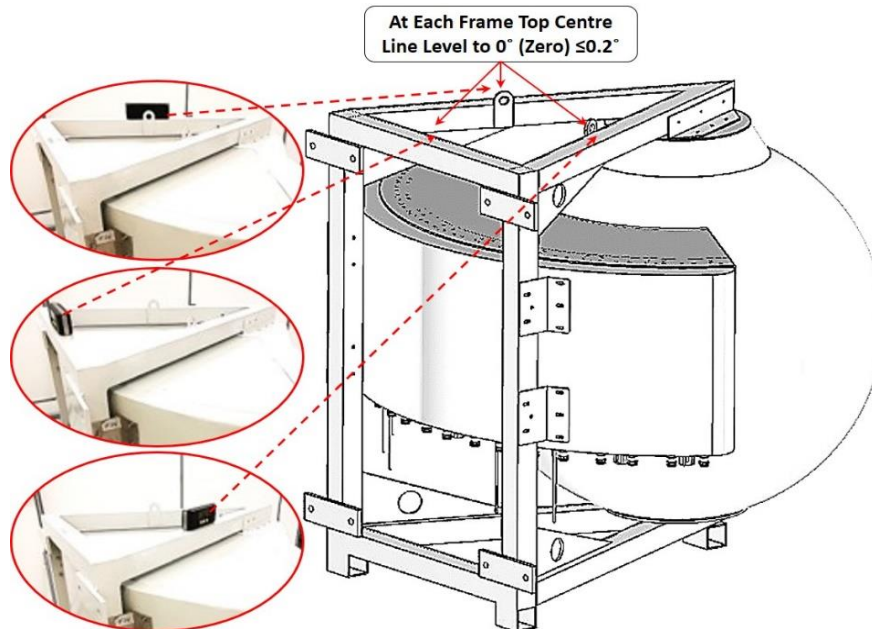


6.40 Antenna Installation

With reference to "**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.

6.41 Antenna Levelling

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)

6.42 Digital Level Gauge Calibration



6.43 Adjustment Requirement

