

Date	Prepared by	Approved by	Document nos	Revision
15 Mar 2024	Ray Ling	Pavel	MS-126-180-IM-001	9

INSTRUCTION MANUAL MS-12.6DB180

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6.00 TRANSPORTATION / INSTALLATION

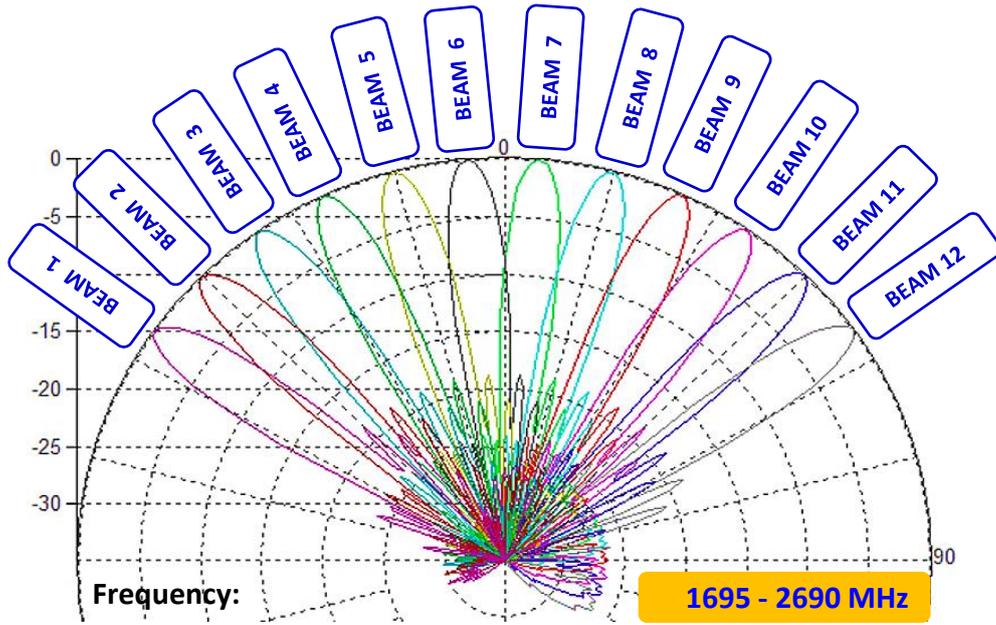
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Revision History:

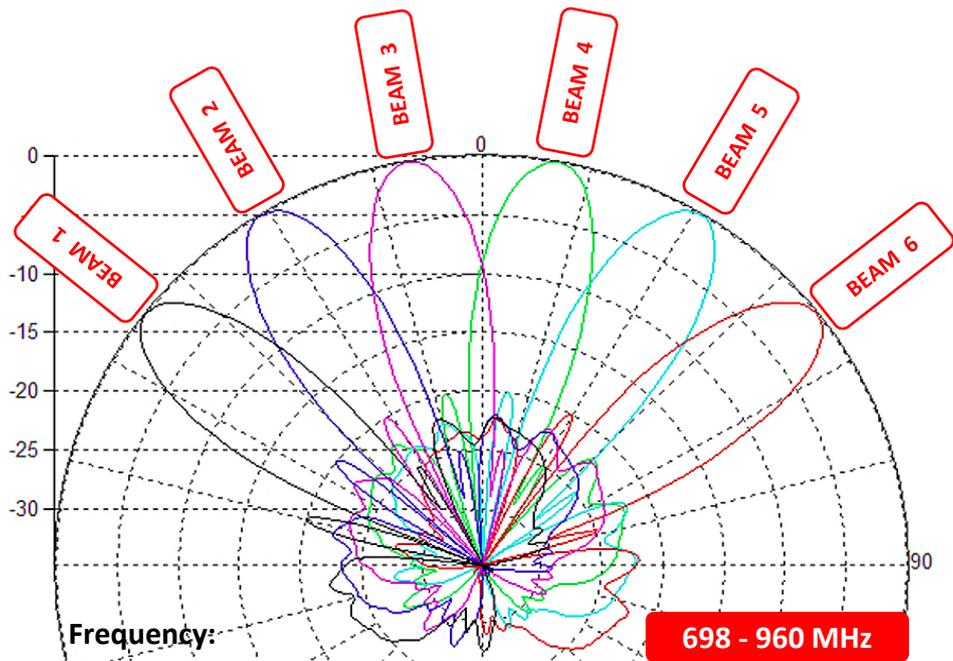
Date	Description	Rev by	Rev nos
20-May-20	General Update to Include Model T	Ray	1
30-Jun-21	Include Open-End bolt/nut sets for bracket mounting	Ray	2
20-Sep-21	General update	Ray	3
30-Jan-23	Revised Bracket Bolt & Nuts Information	Ray	4
19-May-23	Separate T Band & L Band Manual & General Update	Ray	5
20-Jul-23	Include RET Controller Display	Ray	6
01-Aug-23	Revised RET Controller Display	Ray	7
09-Nov-23	Add RET AISG Cable Installation Caution Point	Ray	8
15-Mar-24	Add RET Display Information & Reference	Ray	9

2.00 PATTERN DIAGRAM

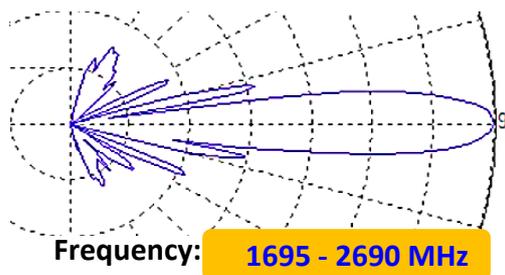
2.10 HB Horizontal Pattern



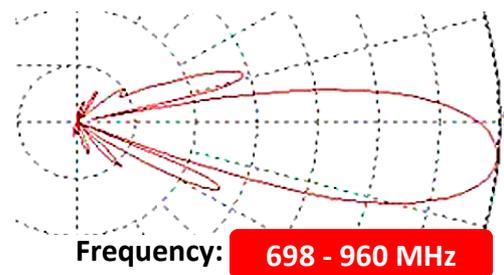
2.20 LB Horizontal Pattern



2.30 HB Vertical Pattern



2.40 LB Vertical Pattern



3.00 MANUAL TILT ADJUSTMENT

Step 1:
Tilt Stopper Loosening

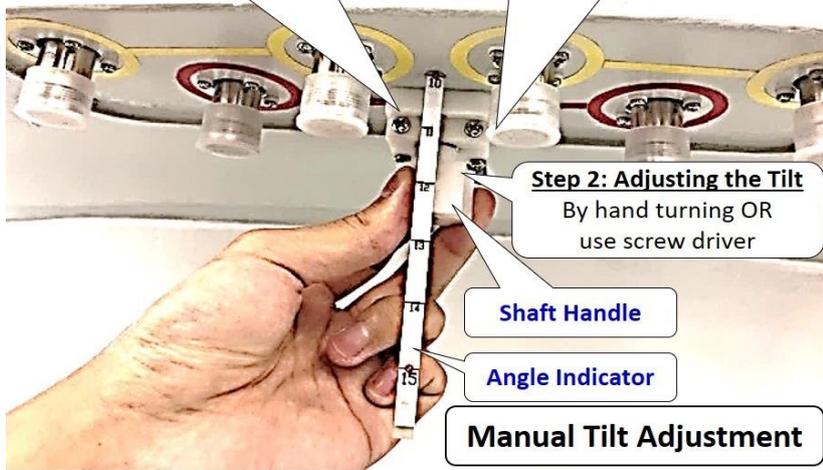
Step 1: Tilt Stopper Loosening
Use + Screw driver to loosen the 2 x M3 screws

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

Step 2:
Adjusting the Tilt

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

Step 3:
Tilt Stopper Tightening



Shaft Handle

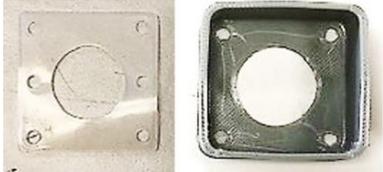
Angle Indicator

Manual Tilt Adjustment

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

4.10 "S" RET Actuator Materials & Tools

RET Attachment Interface Kits



Silicon Gasket

RET Cover

RET Attachment Interface (Sub-Assy)



Hex Screw (M4 x 10mm)



RET Attachment Interface



Hex Adaptor

Screw Driver

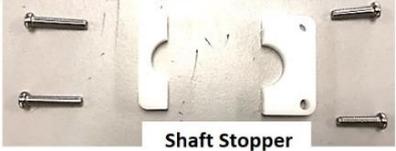
Metal Screw (M3 x 12mm)

Hex Adaptor L=22.5mm Internal 8ømm

Shaft Stopper

Tighten Screw (M4 x 20mm)

Fixing Screw (M4 x 15mm)



Shaft Stopper

Shaft Handle

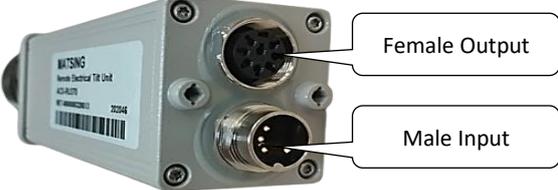


Hex Set Screw (M3 x 6mm)

Leadscrew Shaft Handle

M2 Hex Key

"S" RET Actuator



Female Output

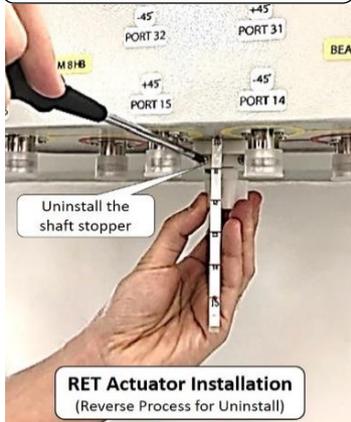
Male Input

RET AISG Looping Cable



4.20 Installation / Replacement Process (Reverse Process for Uninstallation)

Step 1: Uninstall the shaft stopper



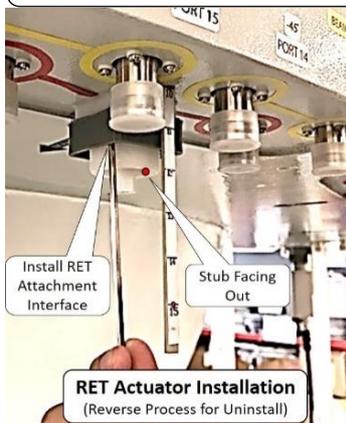
Step 2: Uninstall the shaft Handle



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:

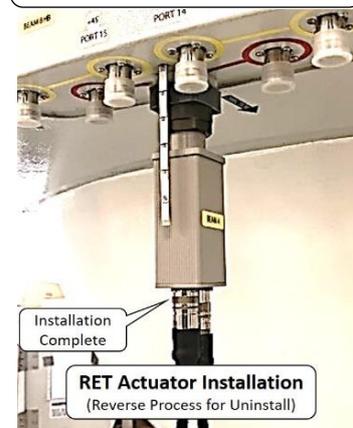
- ** Replace the AISG cable if is faulty.**
- ** Same caution apply**



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.

5.20 Display Information & Reference

(Example of Antenna Unit s/n 561)

ALD List												
NO	HDLCL	Vendo	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	

126DB180-000561B1	Display: Beam 1 (Reference as <u>RET 01</u>)
126DB180-000561B2	Display: Beam 2 (Reference as <u>RET 02</u>)
126DB180-000561B3	Display: Beam 3 (Reference as <u>RET 03</u>)
126DB180-000561B4	Display: Beam 4 (Reference as <u>RET 04</u>)
126DB180-000561B5	Display: Beam 5 (Reference as <u>RET 05</u>)
126DB180-000561B6	Display: Beam 6 (Reference as <u>RET 06</u>)

Model s/no. (6 Digits)

5.30 Model & S/N Reference From Label



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

Add 3 Zero(0) in front if the serial nos If is shorter than 6 digits

5.40 Beam Nos & Port Nos Display

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	

Display: Beam 1 (Refer as RET 01)

RET 01 Info

R1 (HB1,P1,2 HB2, P3,4, LB1, P25, 26)

BEAM 1			
PORT 26 (-45°)		PORT 25 (+45°)	
BEAM 2		BEAM 1	
PORT 4 (-45°)	PORT 3 (+45°)	PORT 2 (-45°)	PORT 1 (+45°)

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	

Display: Beam 2 (Refer as RET 02)

RET 02 Info

R2 (HB3,P5,6 HB4, P7,8, LB2, P27, 28)

BEAM 2			
PORT 28 (-45°)		PORT 27 (+45°)	
BEAM 4		BEAM 3	
PORT 8 (-45°)	PORT 7 (+45°)	PORT 6 (-45°)	PORT 5 (+45°)

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

Display: Beam 3
(Refer as RET 03)

RET 03 Info

R3 (HB5,P9,10 HB6, P11,12, LB3, P29, 30)

BEAM 3			
PORT 30 (-45°)		PORT 29 (+45°)	
BEAM 6		BEAM 5	
PORT 12 (-45°)	PORT 11 (+45°)	PORT 10 (-45°)	PORT 9 (+45°)

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

Display: Beam 4
(Refer as RET 04)

RET 04 Info

R4 (HB7,P13,14 HB8, P15,16, LB4, P31, 32)

BEAM 4			
PORT 32 (-45°)		PORT 31 (+45°)	
BEAM 8		BEAM 7	
PORT 16 (-45°)	PORT 15 (+45°)	PORT 14 (-45°)	PORT 13 (+45°)

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

Display: Beam 5
(Refer as RET 05)

RET 05 Info

R5 (HB9,P17,18 HB10, P19,20, LB5, P33, 34)

BEAM 5			
PORT 34 (-45°)		PORT 33 (+45°)	
BEAM 10		BEAM 9	
PORT 20 (-45°)	PORT 19 (+45°)	PORT 18 (-45°)	PORT 17 (+45°)

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

Display: Beam 6
(Refer as RET 06)

RET 06 Info

R6 (HB11,P21,22 HB12, P23,24, LB6, P35, 36)

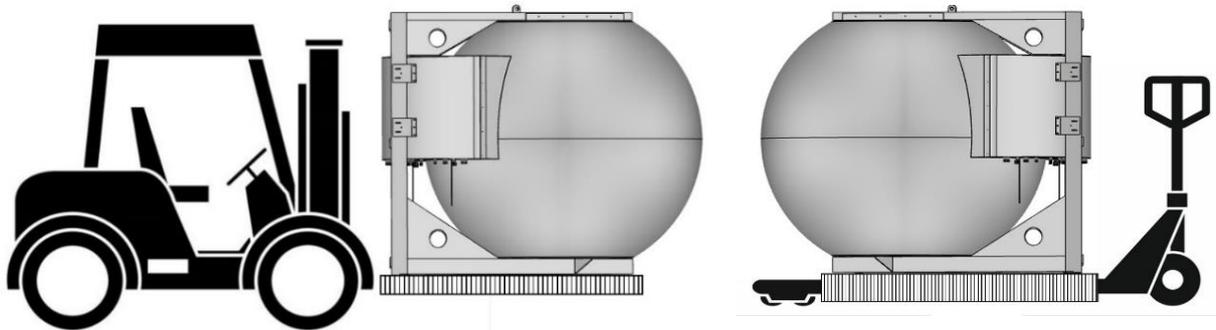
BEAM 6			
PORT 36 (-45°)		PORT 35 (+45°)	
BEAM 12		BEAM 11	
PORT 24 (-45°)	PORT 23 (+45°)	PORT 22 (-45°)	PORT 21 (+45°)

6.00 TRANSPORTATION / INSTALLATION

6.10 Transportation (From Point to Point)

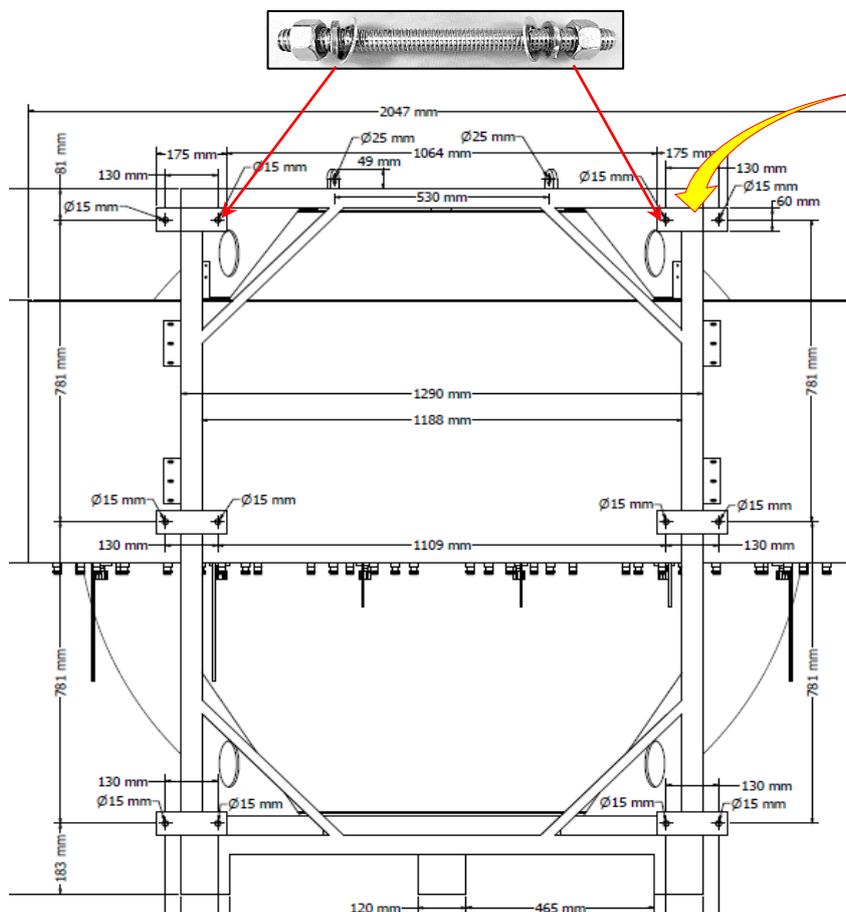
Strictly comply to the Local authority and regulatory on Workplace Safety and Health Control and Measure when moving and transportation of large or heavy equipment, appropriate material handling machine should be use.

(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.

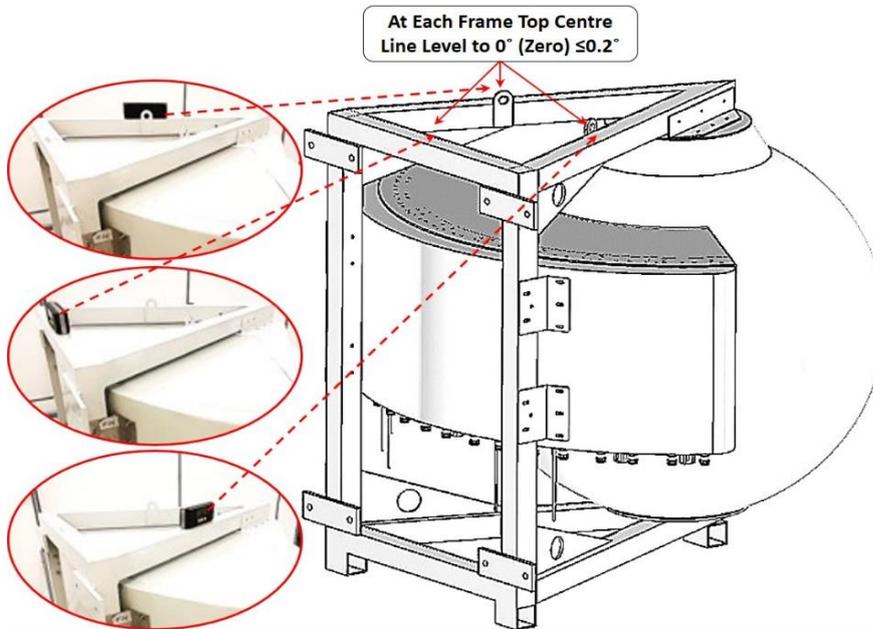


6.40 Antenna Installation

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



ANTENNA LEVELING ACCEPTED



REQUIRE ADJUSTMENT