TAOGLAS



Datasheet

Part No:
TS.07.0113W

Description:

White Hinged TS.07 GPS/GLONASS/GALILEO/BeiDou Monopole Passive Antenna

Features:

Covers Bands between 1561-1610 MHz

Extremely Compact - ∅10 x 72mm when fully straight

Connector: Hinged SMA(M)

Top quality housing

Dimensions: 72*Ø10mm

RoHS & Reach Compliant

CE

1.	Introduction	3
2.	Specifications	4
3.	Antenna Characteristics	6
4.	Radiation Patterns	10
5.	Mechanical Drawing	14
6.	Installation	15
7.	Packaging	16
	Changelog	17

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1. Introduction



The compact TS.07, with hinged rotatable SMA connector, is an impressively high efficiency monopole antenna, providing coverage among GPS, GLONASS, GALILEO, and BeiDou frequencies.

With its navigation system frequency range, plus compact design, TS.07 can fit and function perfectly with vehicle tracking devices, telematics devices, and other remote monitoring systems.

This 72mm long monopole antenna performs efficiently from 1561 MHz to 1610 MHz, covering GPS, GLONASS, GALILEO, and BeiDou frequencies. When connected to the device ground-plane, the TS.07 is capable of achieving more than 70% efficiency.

The TS.07, as all monopole antennas, works best when connected directly to the ground-plane of the device main-board or the device's metal enclosure. As with all passive antennas, using a coax with more than ~1.5 dB of loss will result in reduced receiver sensitivity. Taoglas recommends connecting the TS.07 directly to the device ground-plane for best performance.

The robust brass hinge enables the TS.07 to be oriented in all directions, providing user to maximize performance with minimum effort.

The TS.07 is also available in orange color – TS.07.0113. For further information please contact your regional Taoglas customer support team.

2. Specifications

Free Space Electrical

Band	Frequency (MHz)	Setup	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Return Loss (dB)	Impedance	Max Power Input	Polarization	Radiation Pattern
BEIDOU	1561	Straight	33.89	-4.70	-0.79	< -7	50Ω	10W	Linear	Omnidirectional
		90° Bent	29.48	-5.31	-0.82					
GPS/GALILEO	1575.42	Straight	35.65	-4.48	-0.55					
		90° Bent	31.17	-5.06	-0.59					
GLONASS	1602	Straight	38.66	-4.13	-0.23					
		90° Bent	34.02	-4.68	-0.16					

15x9cm Ground Plane Centre Electrical

Band	Frequency (MHz)	Setup	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Return Loss (dB)	Impedance	Max Power Input	Polarization	Radiation Pattern
BEIDOU	1561	Straight	70.29	-1.53	1.99	< -10	50Ω	10W	Linear	Omnidirectional
		90° Bent	70.29	-1.53	1.99					
GPS/GALILEO	1575.42	Straight	70.78	-1.50	1.94					
		90° Bent	70.78	-1.50	1.94					
GLONASS	1602	Straight	72.23	-1.41	1.96					
		90° Bent	72.23	-1.41	1.94					

30x30cm Ground Plane Edge Electrical

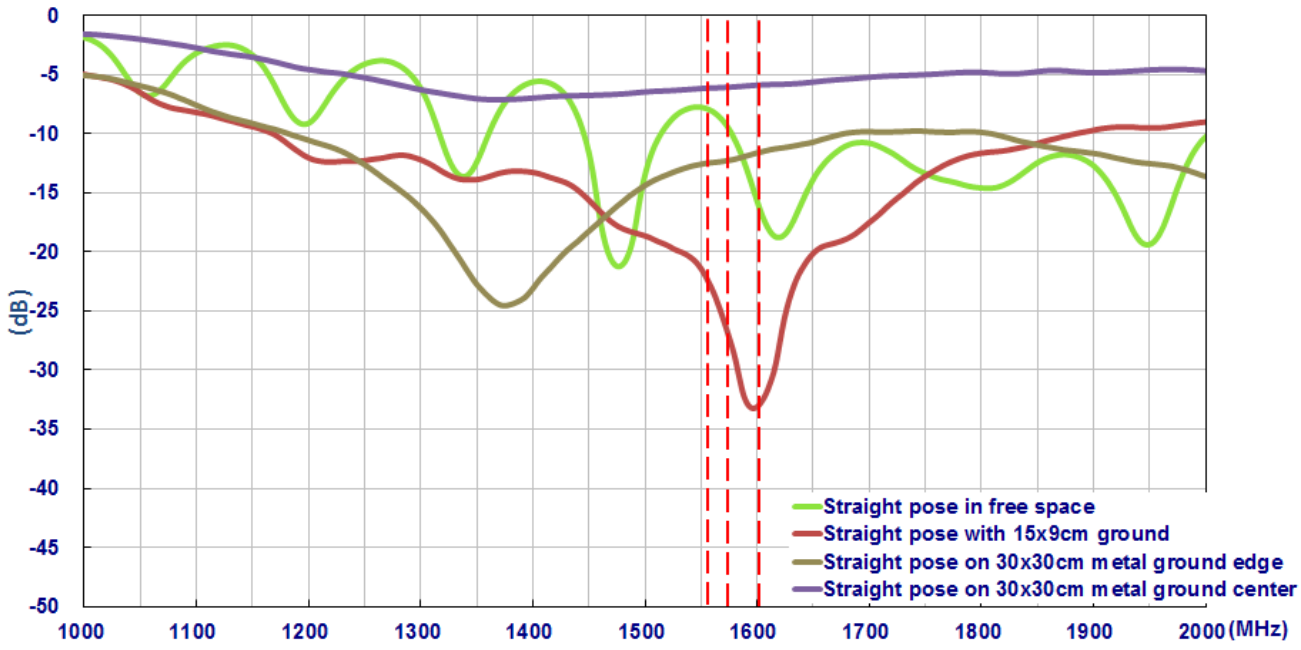
Band	Frequency (MHz)	Setup	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Return Loss (dB)	Impedance	Max Power Input	Polarization	Radiation Pattern
BEIDOU	1561	Straight	73.20	-1.35	4.05	< -10	50Ω	10W	Linear	Omnidirectional
		90° Bent	77.26	-1.12	4.32					
GPS/GALILEO	1575.42	Straight	72.35	-1.41	4.04					
		90° Bent	76.86	-1.14	4.37					
GLONASS	1602	Straight	70.81	-1.50	3.98					
		90° Bent	76.32	-1.17	4.31					

30x30cm Ground Plane Center Electrical										
Band	Frequency (MHz)	Setup	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Return Loss (dB)	Impedance	Max Power Input	Polarization	Radiation Pattern
BEIDOU	1561	Straight	61.66	-2.10	2.26	< -4	50Ω	10W	Linear	Omnidirectional
		90° Bent	56.19	-2.50	2.04					
GPS/GALILEO	1575.42	Straight	60.02	-2.22	2.15					
		90° Bent	54.96	-2.60	1.91					
GLONASS	1602	Straight	58.05	-2.36	2.21					
		90° Bent	53.33	-2.73	1.79					

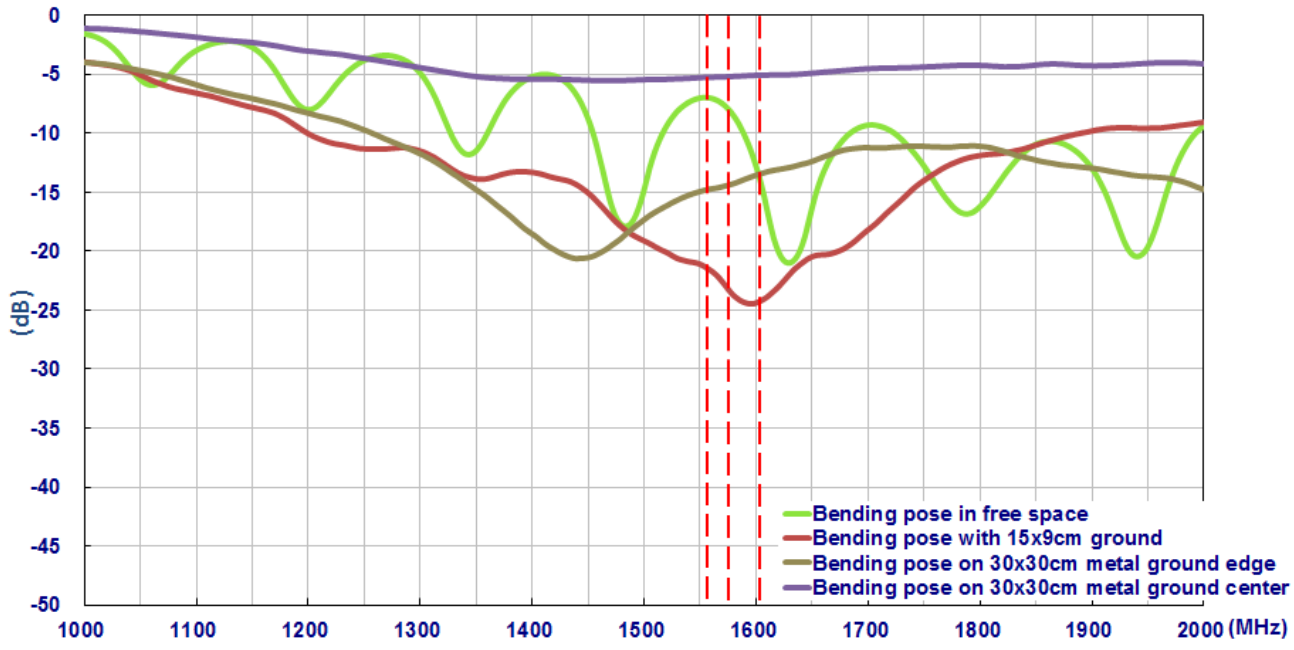
Mechanical	
Antenna length	72mm
Antenna Diameter	10mm
Casing	POM
Connector	SMA(M)
Weight	6g
Recommended Torque for Mounting	0.9N·m
Max Torque for Mounting	1.176N·m
Environmental	
Operation Temperature	-40°C ~ + 85°C
Storage Temperature	-40°C ~ + 85°C
Humidity	Non-condensing 65°C 95% RH

3. Antenna Characteristics

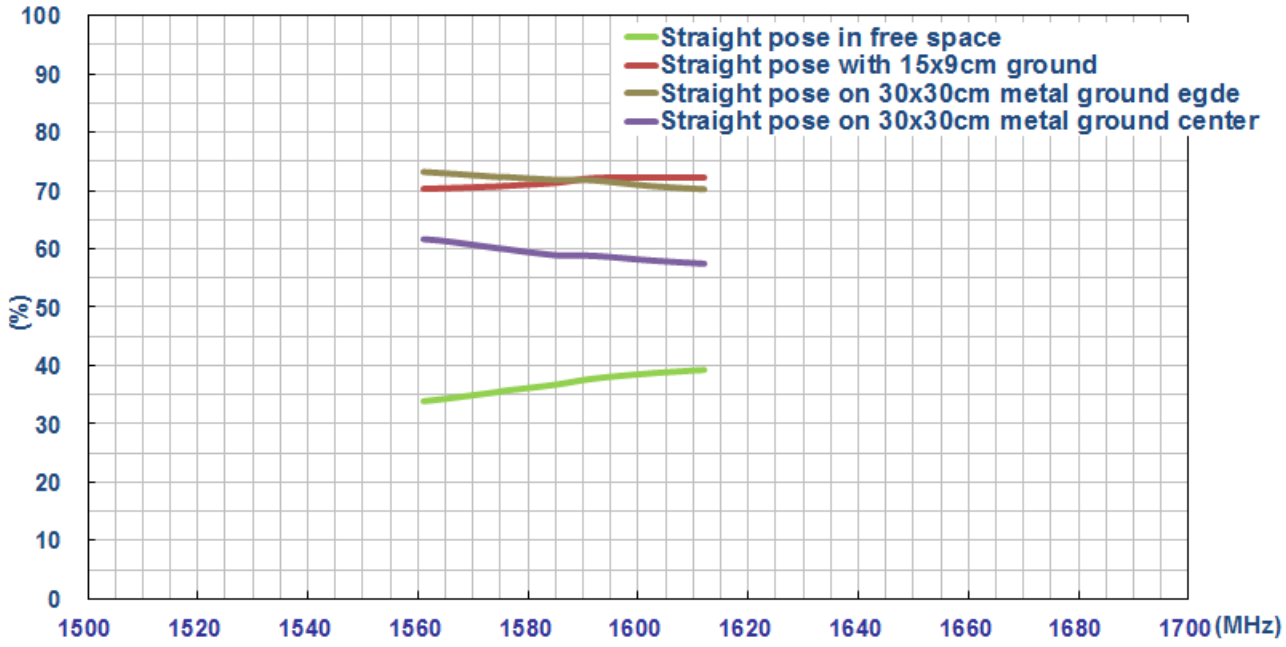
3.1 Return Loss – Straight Position



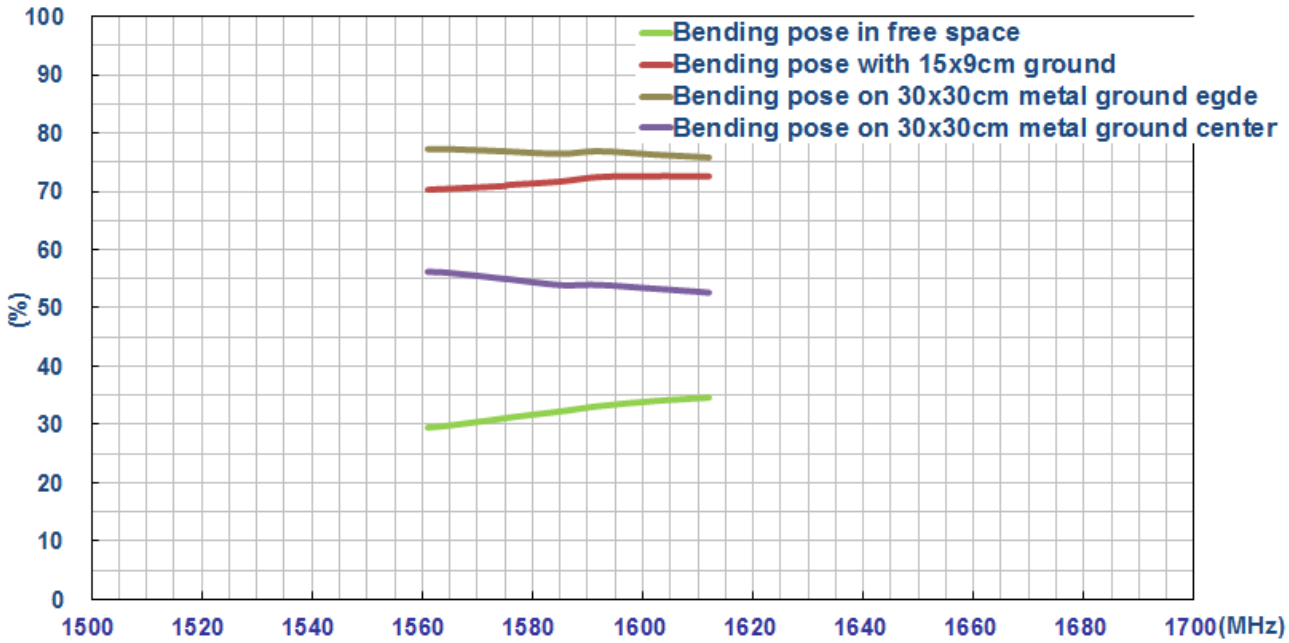
3.2 Return Loss – Bent 90° Position



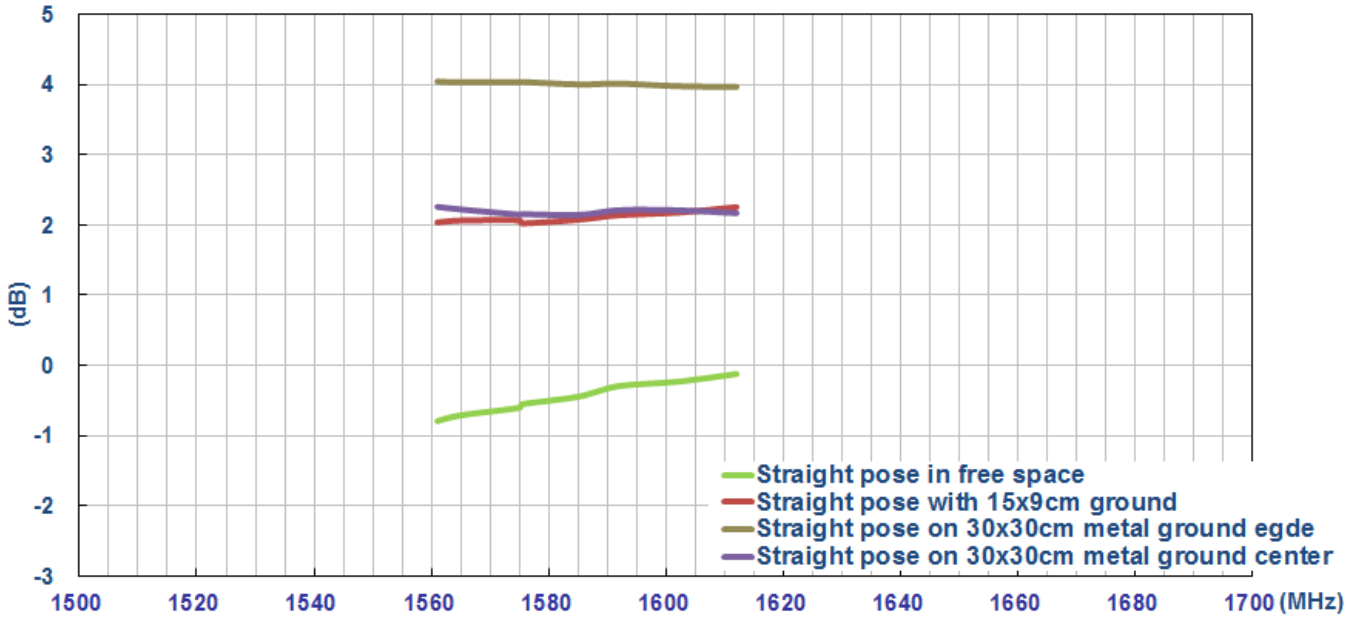
3.3 Efficiency – Straight Position



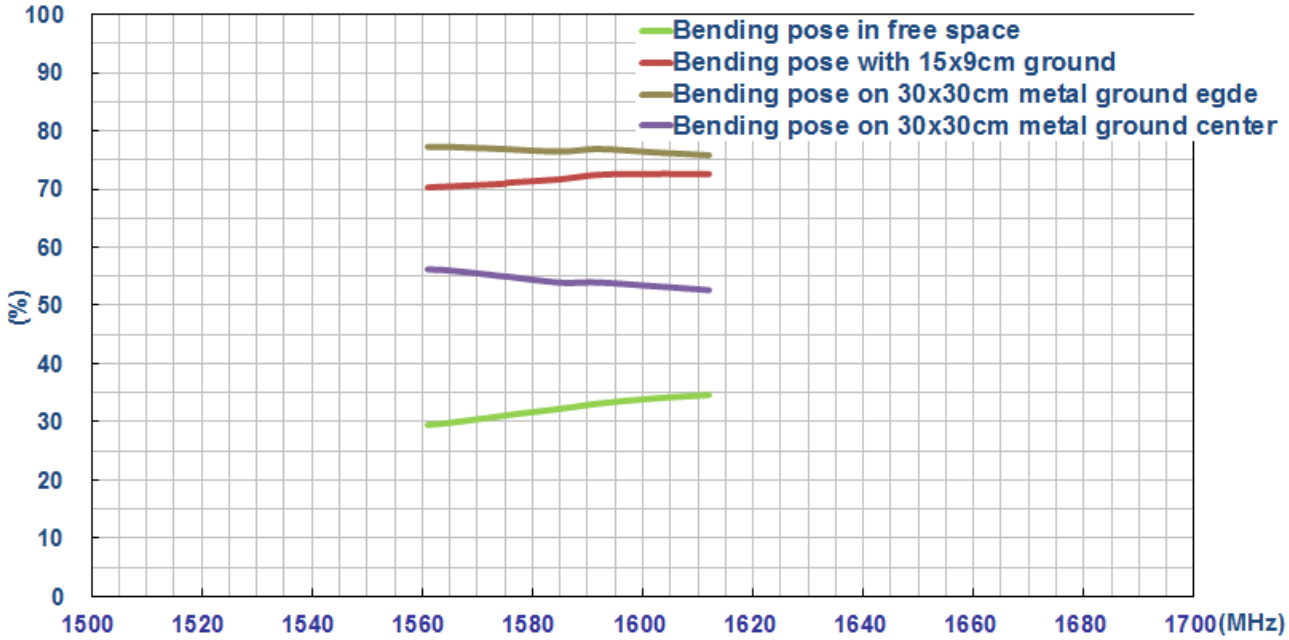
3.4 Efficiency – Bent 90° Position



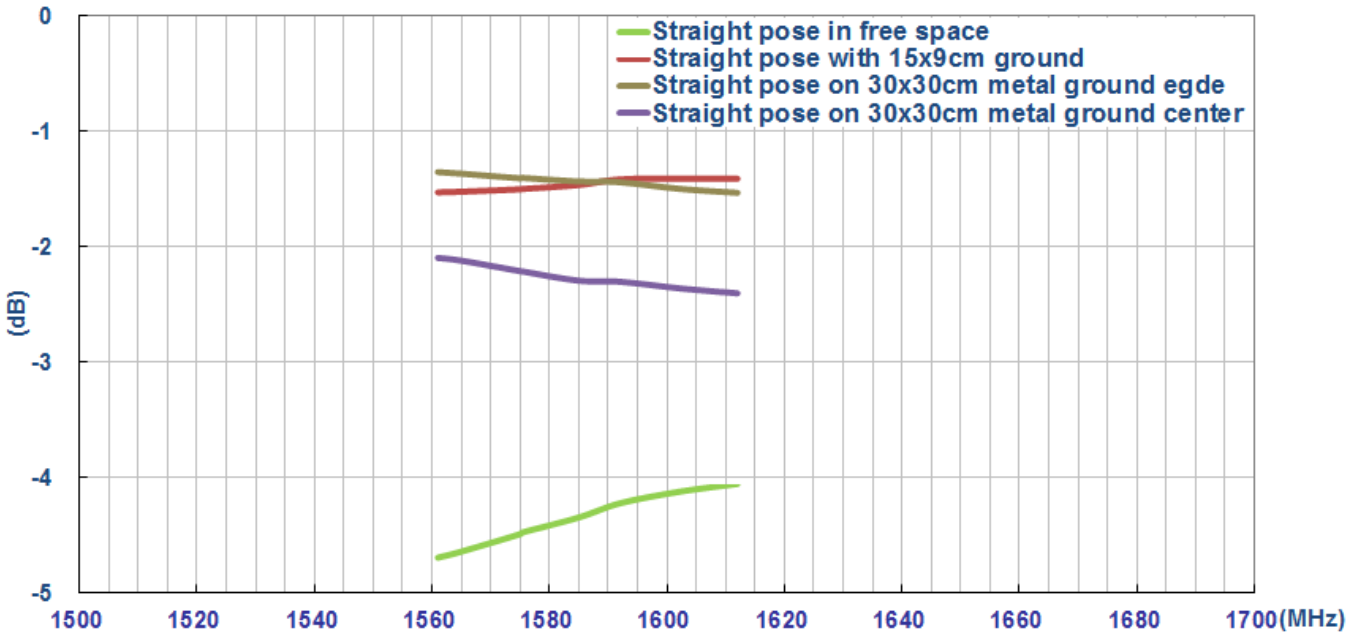
3.5 Peak Gain – Straight Position



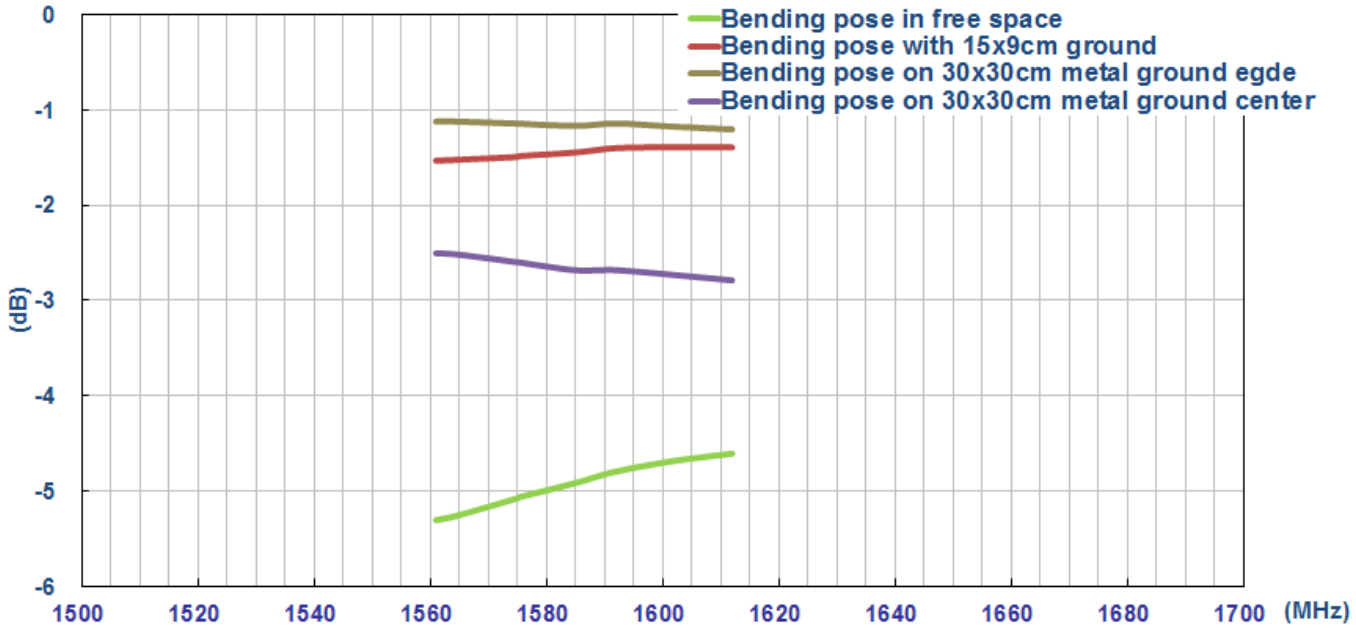
3.6 Peak Gain – Bent 90° Position



3.7 Average Gain – Straight Position

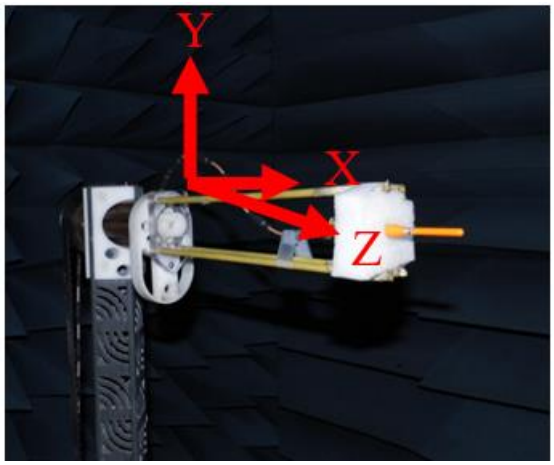


3.8 Average Gain – Bent 90° Position

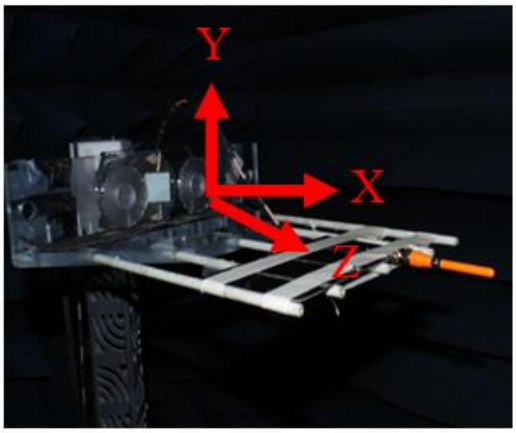


4. Radiation Patterns

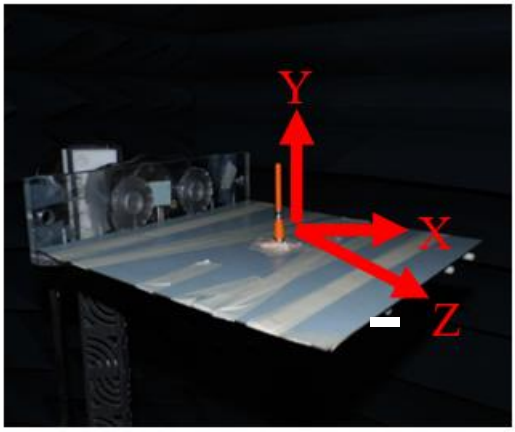
4.1 Test Setup – Straight



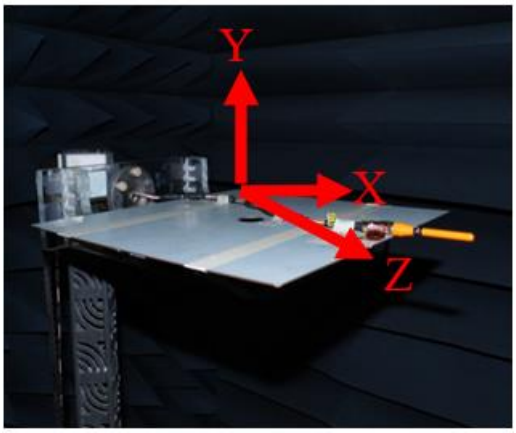
Free space



15x9cm ground plane

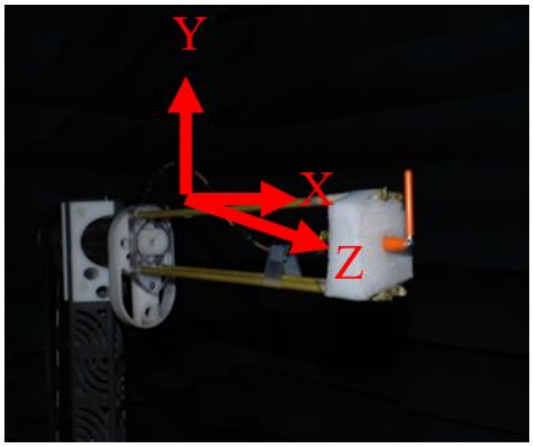


30x30cm metal ground center

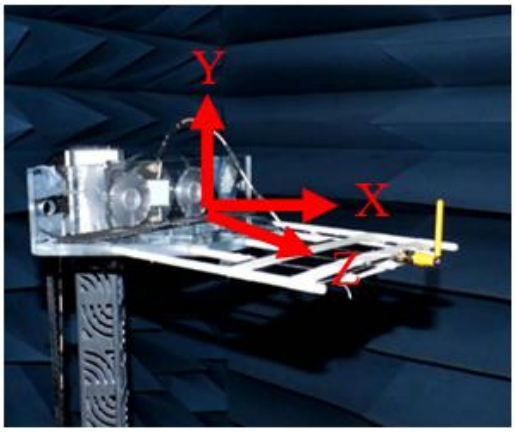


30x30cm metal ground edge

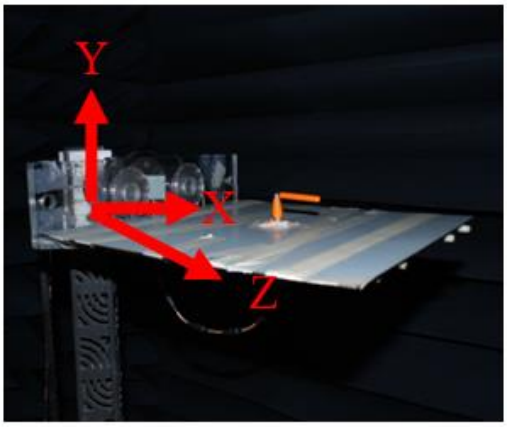
4.2 Test Setup – Bent (90°)



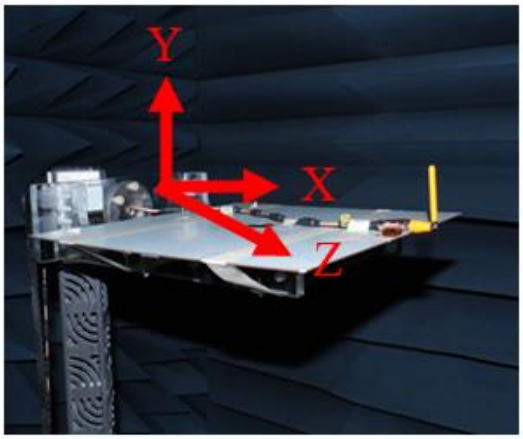
Free space



15x9cm ground plane



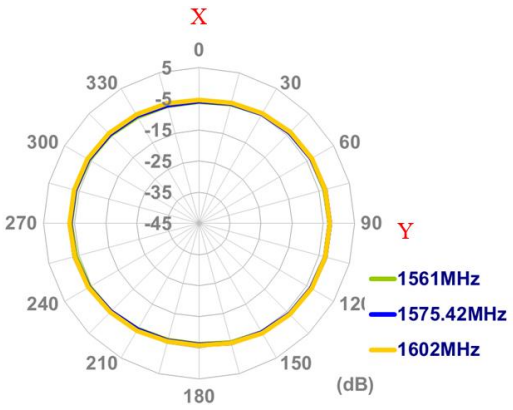
30x30cm metal ground center

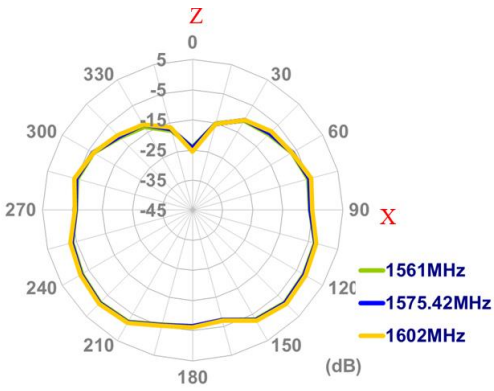


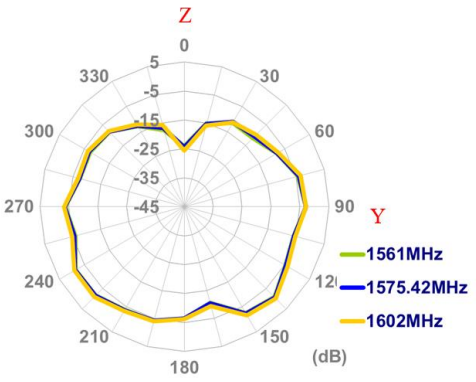
30x30cm metal ground edge

4.3 Straight Free Space - 2D Radiation Patterns

XY Plane	XZ Plane	YZ Plane

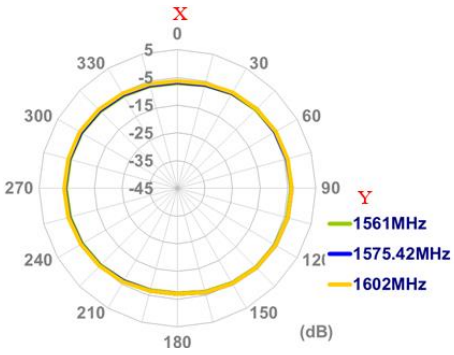


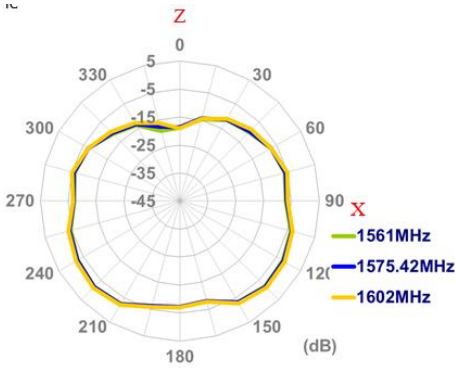


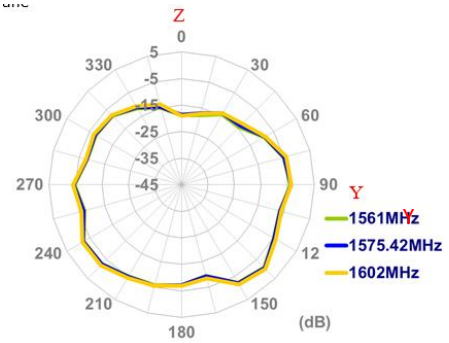


4.4 Bent 90° Free Space - 2D Radiation Patterns

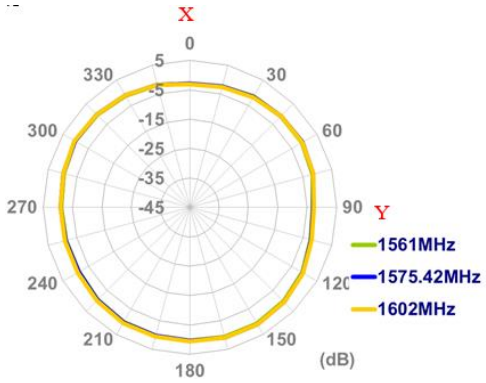
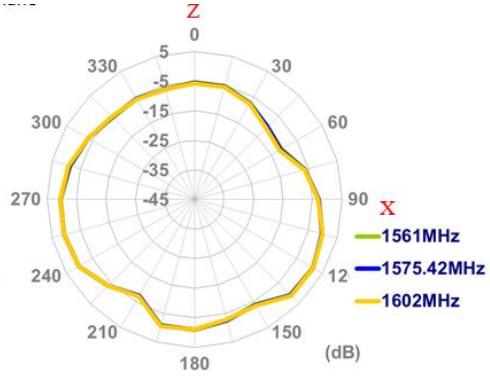
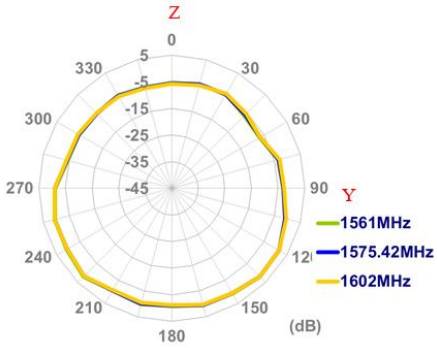
XY Plane	XZ Plane	YZ Plane



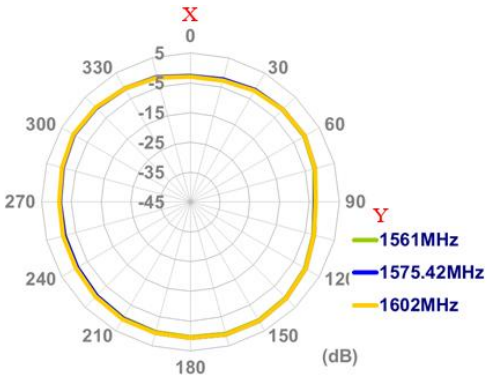
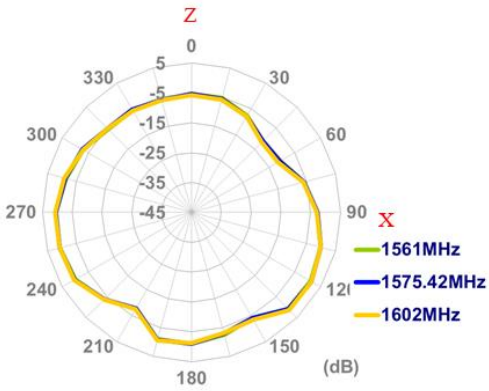
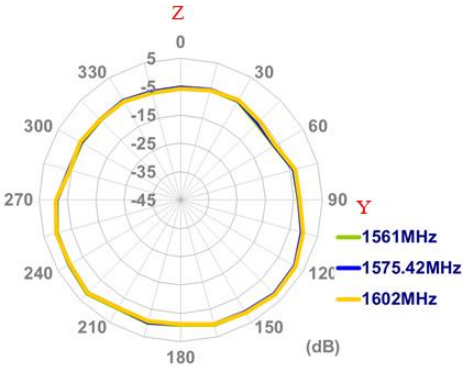




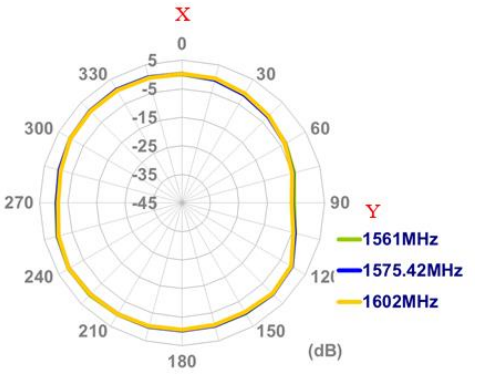
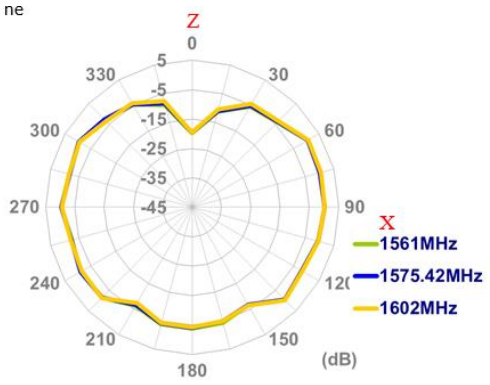
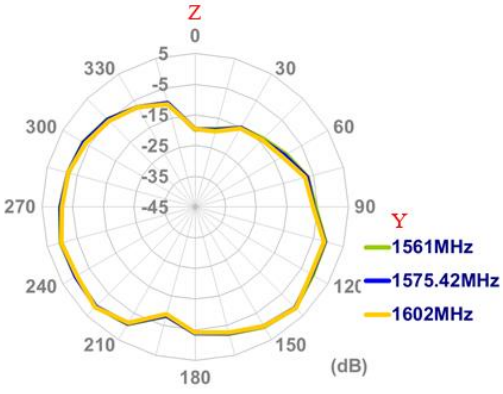
4.5 Straight 15*9cm Center Ground Plane - 2D Radiation Patterns

XY Plane	XZ Plane	YZ Plane
		

4.6 Bent 90° 15*9cm Center Ground Plane - 2D Radiation Patterns

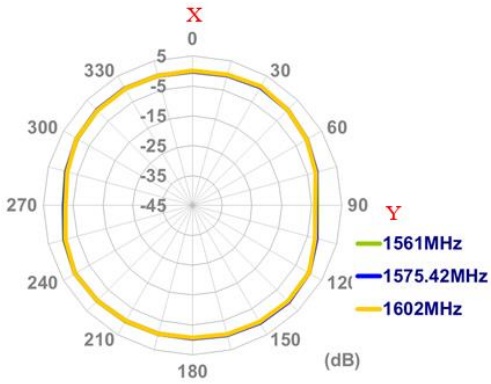
XY Plane	XZ Plane	YZ Plane
		

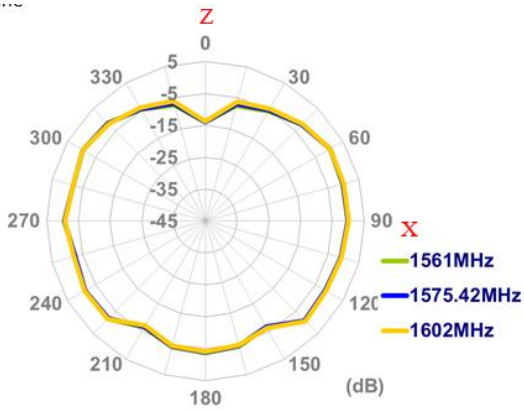
4.7 Straight 30*30cm Edge Ground Plane - 2D Radiation Patterns

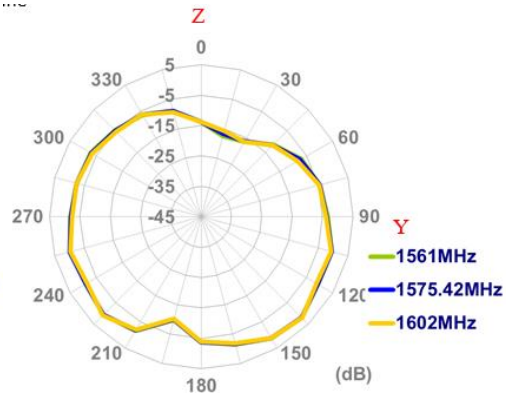
XY Plane	XZ Plane	YZ Plane
		

4.8 Bent 90° 30*30cm Edge Ground Plane - 2D Radiation Patterns

XY Plane	XZ Plane	YZ Plane

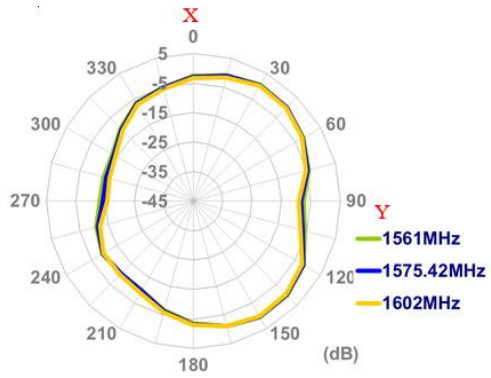


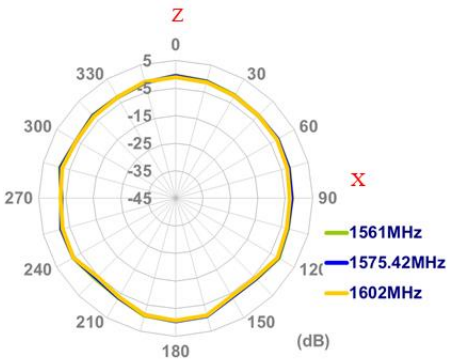


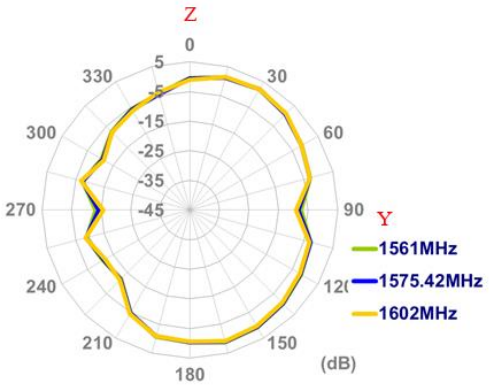


4.9 Straight 30*30cm Center Ground Plane - 2D Radiation Patterns

XY Plane	XZ Plane	YZ Plane

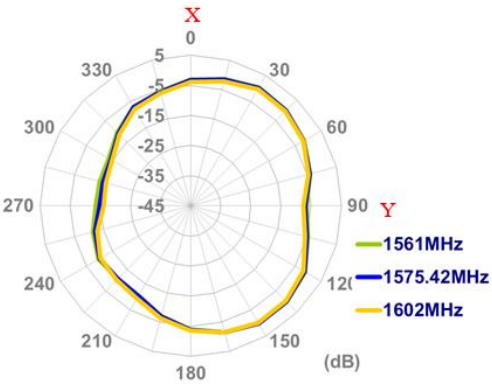


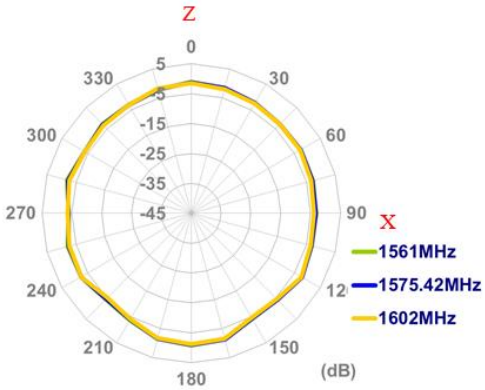


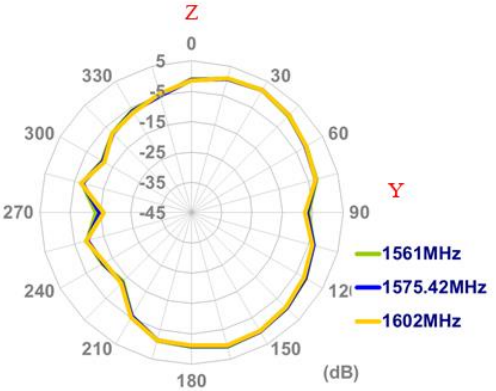


4.10 Bent 90° 30*30cm Center Ground Plane - 2D Radiation Patterns

XY Plane	XZ Plane	YZ Plane



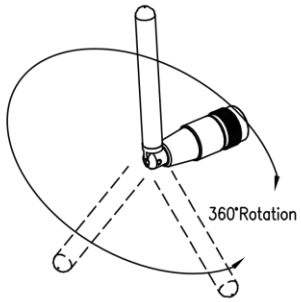


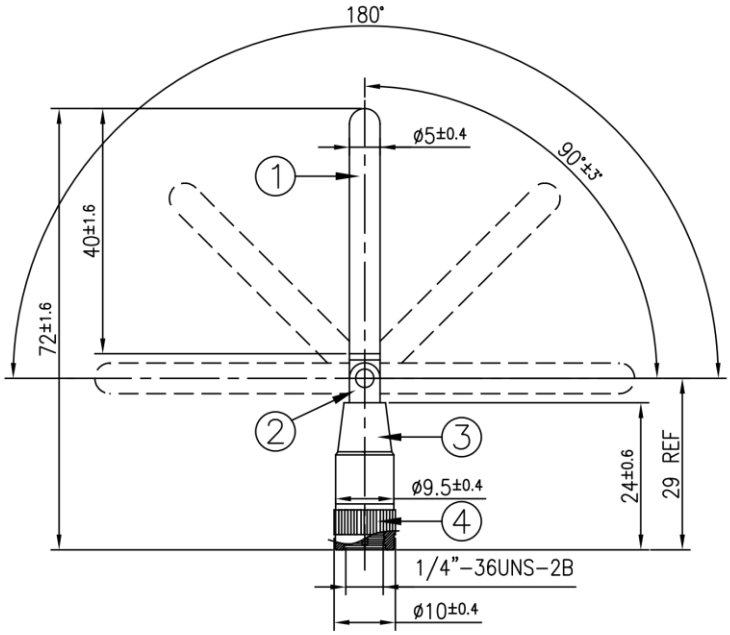


5. Mechanical Drawing (Units: mm)

ISO NO.: EDW.001440
STATE: Release
NOTES:
1. All Material Must Be RoHS Compliant.

REV.	DESCRIPTION	ENG.	APPROVED	DATE
001	Initial Design	Aron Yan	Aaron	2024/01/23





	Name	Material	Finish	QTY
1	Housing	POM	White	1
2	Hinge	Brass	Ni Plated	1
3	Cap	POM	White	1
4	SMA(M)ST	Brass	Ni Plated	1

APPROVED BY:	Chozen
CHECK BY:	Aaron
DRAWN BY:	Aron Yan
DATE:	2024/01/23
UNLESS OTHERWISE SPECFIED TOLERANCES ON:	XX.±0.5 X.±0.3 .X±0.2 .XX±0.1 .XXX±0.05
THIRD ANGLE PROJECTION	

TAOGLAS. TW Design Centre

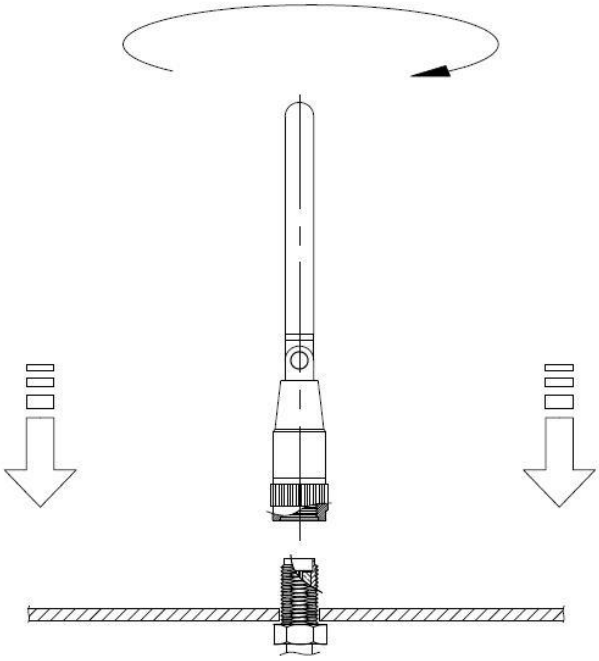
This drawing and its inherent design concepts are property of Taoglas. Not to be copied or given to third parties without the written consent of Taoglas.

TITLE : White GPS/GLONASS/GALILEO/BeiDou Antenna Hinged SMA Male

PART NO. : TS.07.0113W

UNIT:	SCALE:	PAGES:	REV.
mm	1:1	1/1	D01

6. Installation



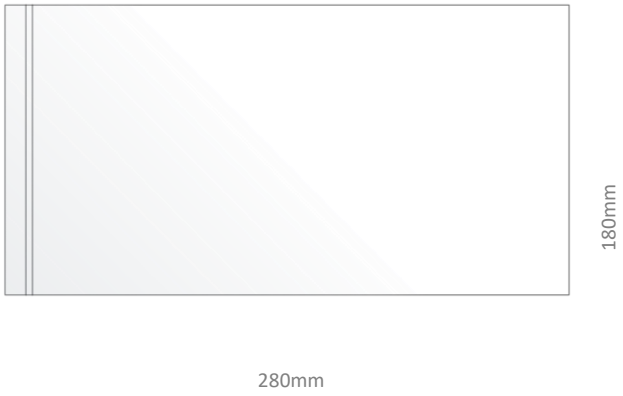
Recommended torque for mounting is 0.9 N-m
Maximum torque for mounting is 1.176 N.m

7. Packaging

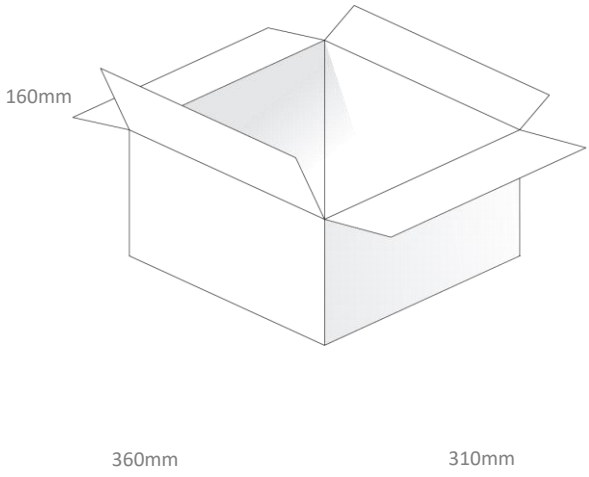
1pc TS.07.0113W per PE Bag
Bag Dimension: 70*40mm
Weight: 8.5g



100pcs TS.07.0113W per Large PE Bag
Bag Dimensions: 180*280mm
Weight: 100g



1500pcs TS.07.0113W per Carton
Dimensions: 360*310*160mm
Weight: 2.5Kg



Changelog for the datasheet

SPE-24-8-065 – TS.07.0113W

Revision: A (Original First Release)	
Date:	2024-03-27
Notes:	
Author:	Cesar Sousa

Previous Revisions

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