



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 - Ø10 x 72mm when fully straight

Connector: Hinged SMA(M)

Top quality housing

Dimensions: 72*Ø10mm

RoHS & Reach Compliant



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Ireland & USA
ISO 9001:2015
Certified



Taiwan
ISO 9001:2015
Certified



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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

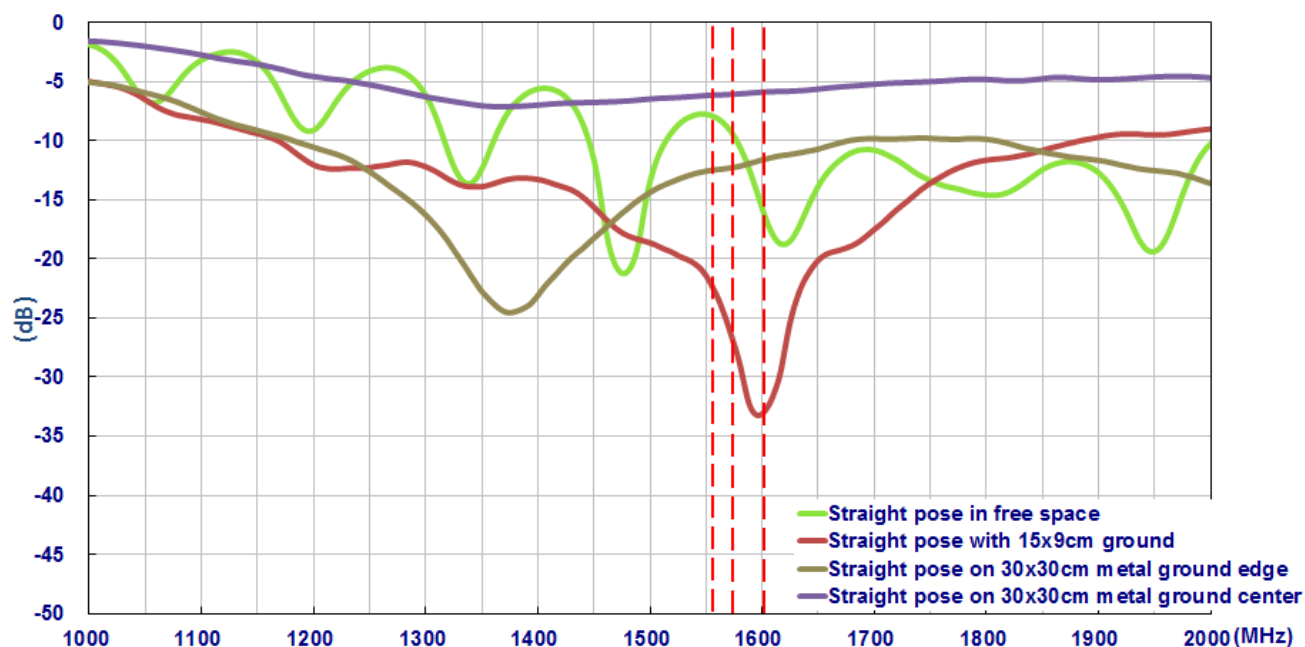
Antenna length	72mm
Antenna Diameter	10mm
Casing	POM
Connector	SMA(M)
Weight	6g
Recommended Torque for Mounting	0.9N·m
Max Torque for Mounting	1.176N·m

Environmental

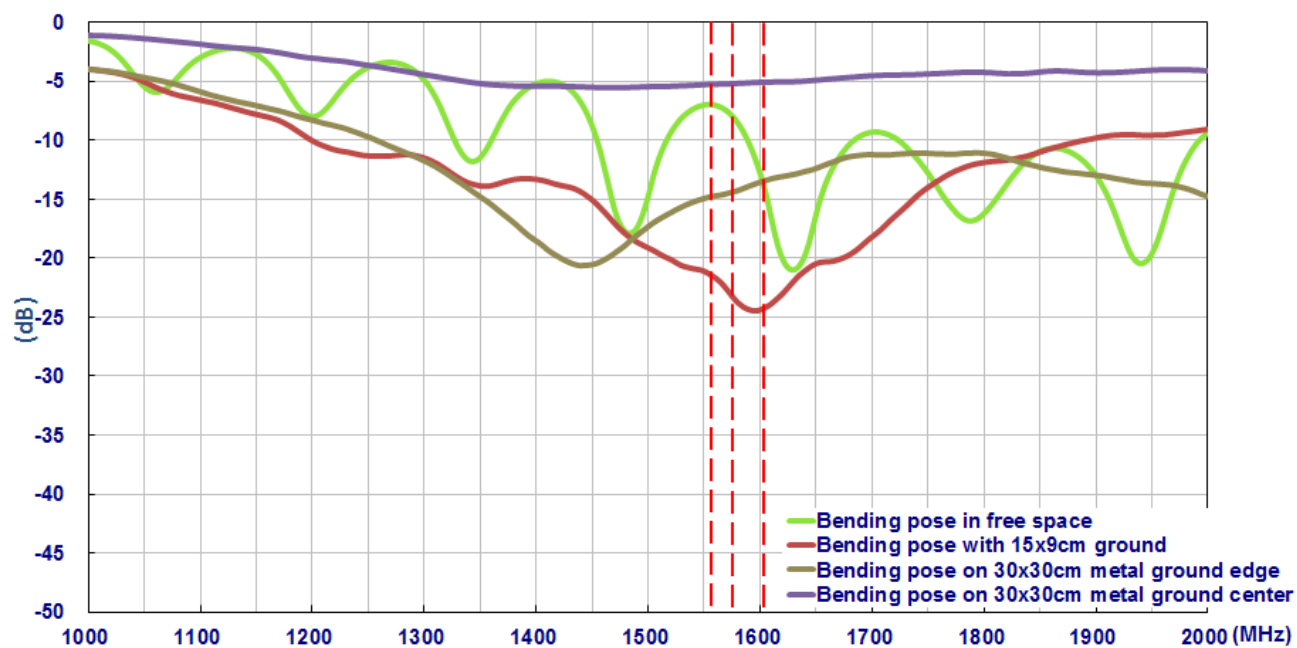
Operation Temperature	-40°C ~ + 85°C
Storage Temperature	-40°C ~ + 85°C
Humidity	Non-condensing 65°C 95% RH

3. Antenna Characteristics

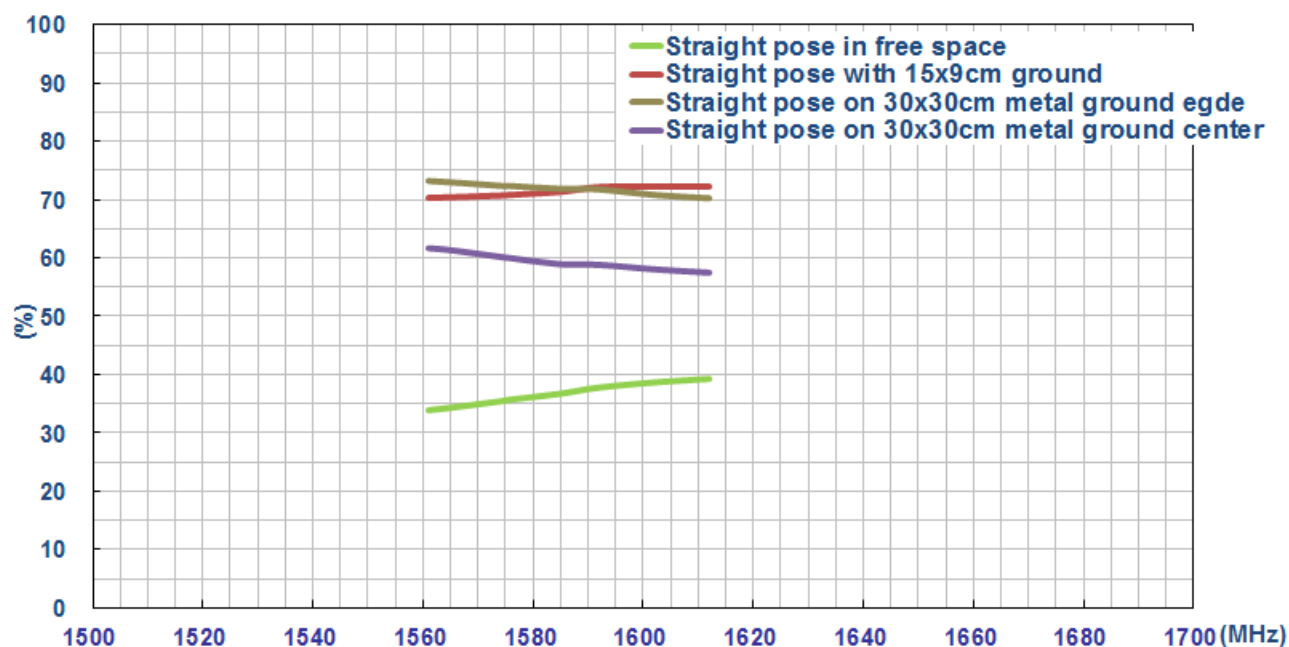
3.1 Return Loss – Straight Position



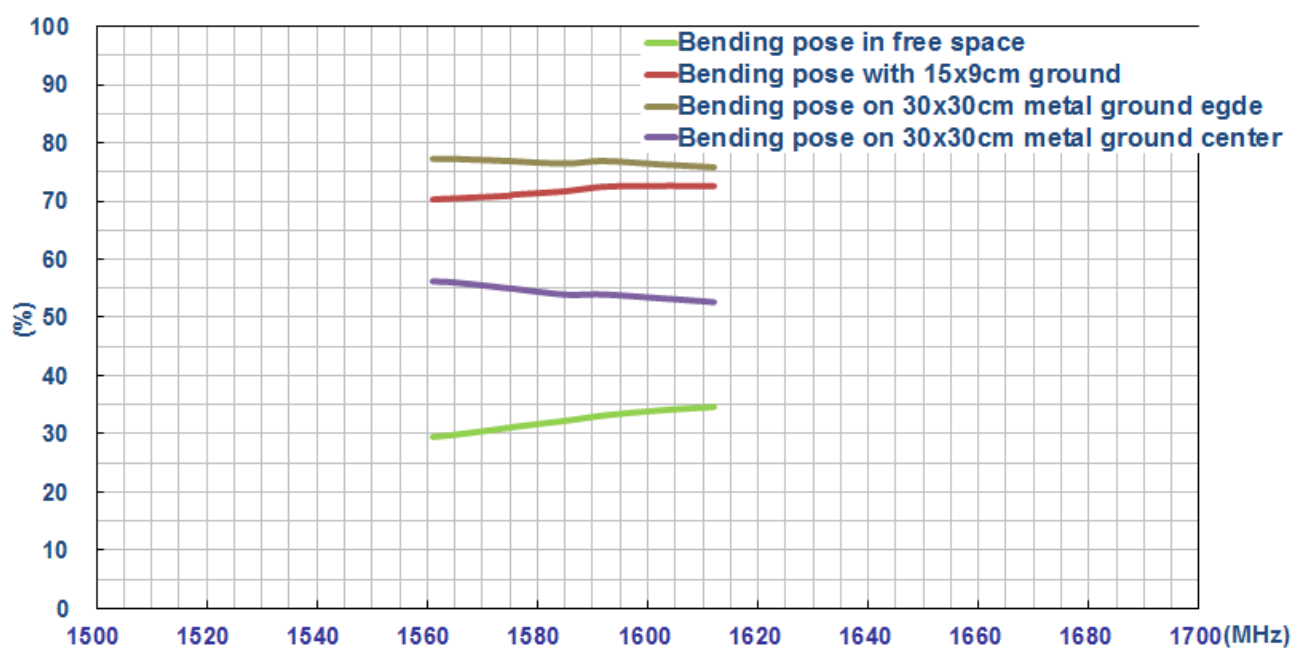
3.2 Return Loss – Bent 90° Position



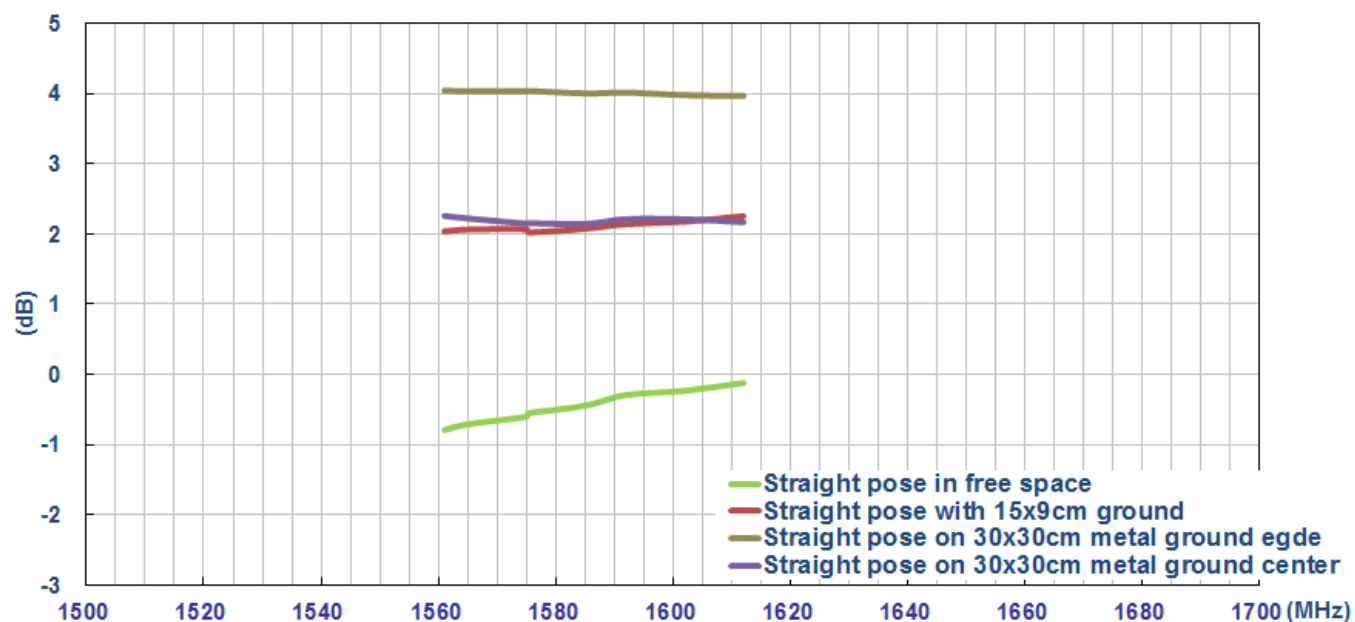
3.3 Efficiency – Straight Position



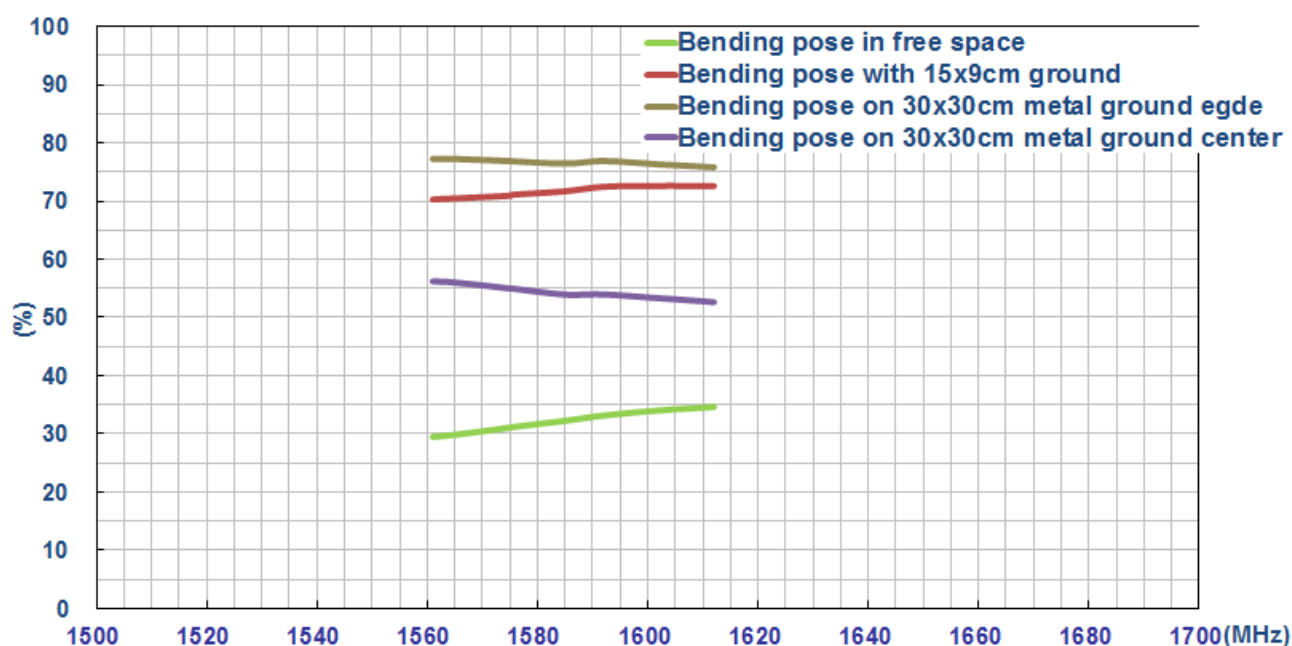
3.4 Efficiency – Bent 90° Position



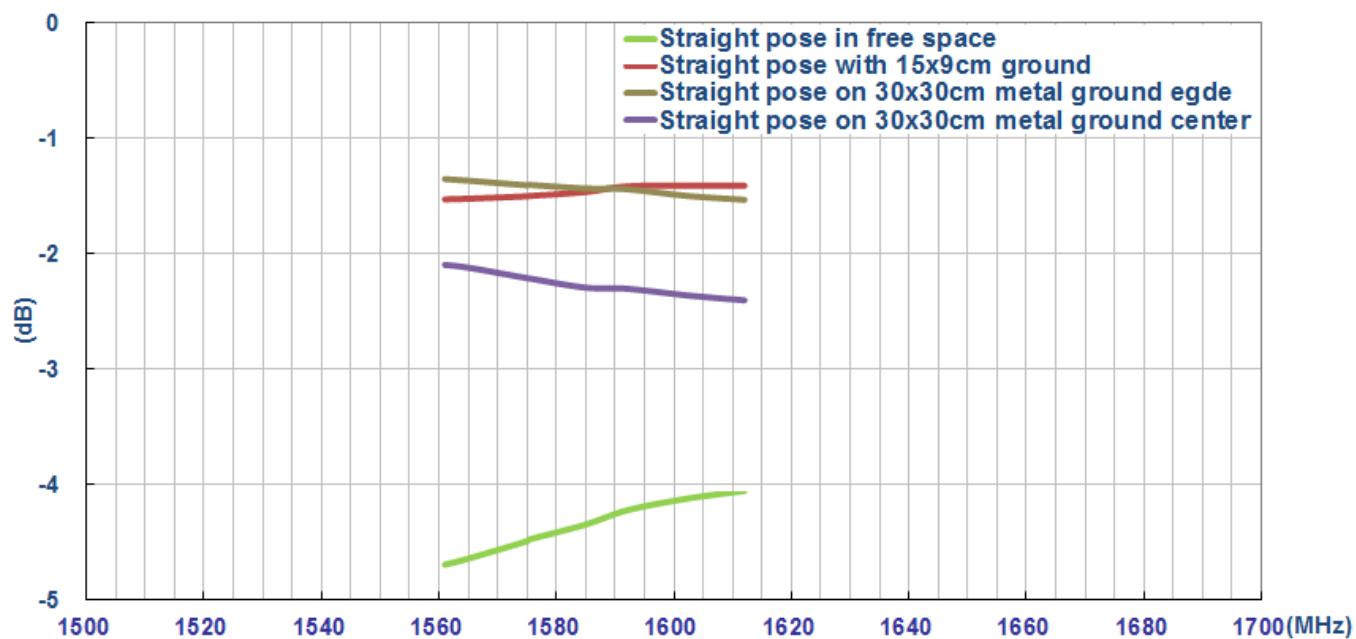
3.5 Peak Gain – Straight Position



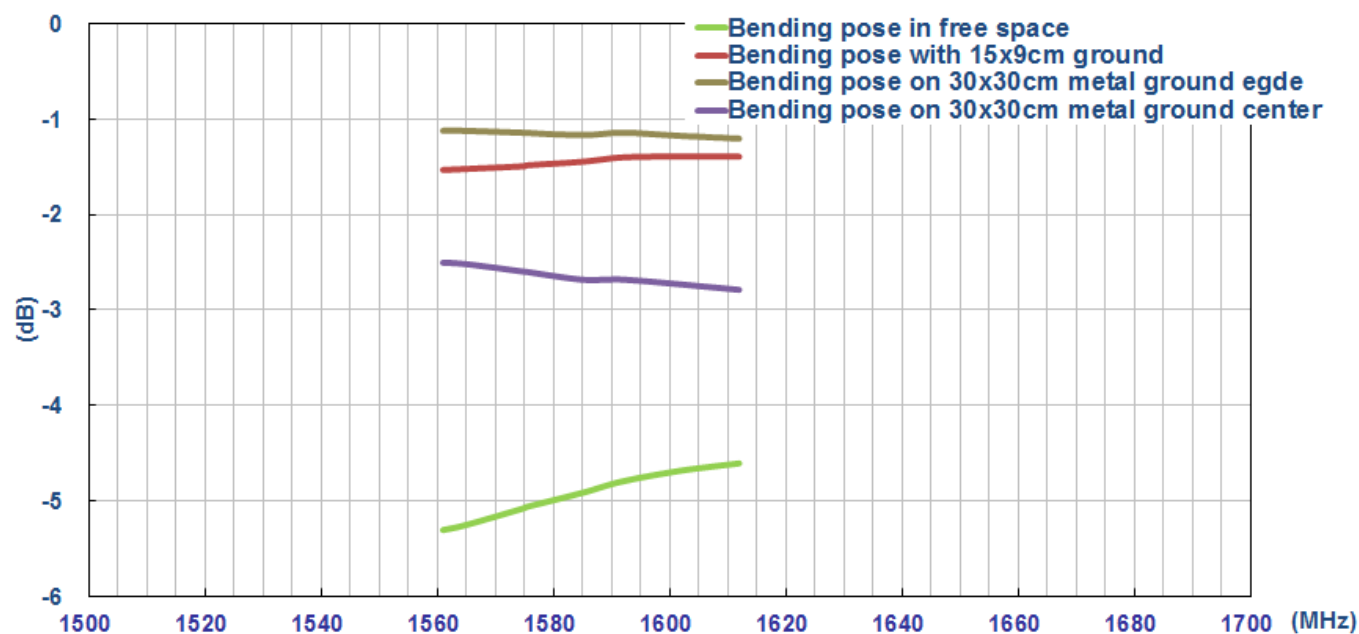
3.6 Peak Gain – Bent 90° Position



3.7 Average Gain – Straight Position

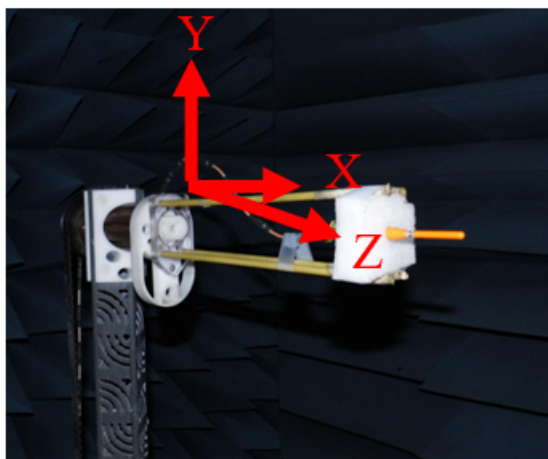


3.8 Average Gain – Bent 90° Position

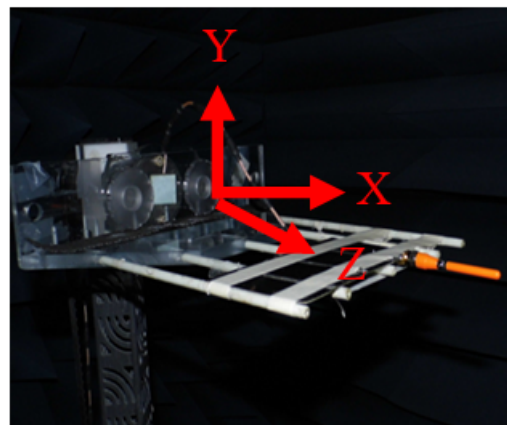


4. Radiation Patterns

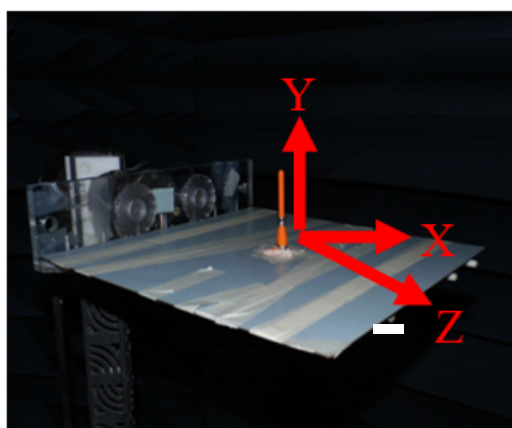
4.1 Test Setup – Straight



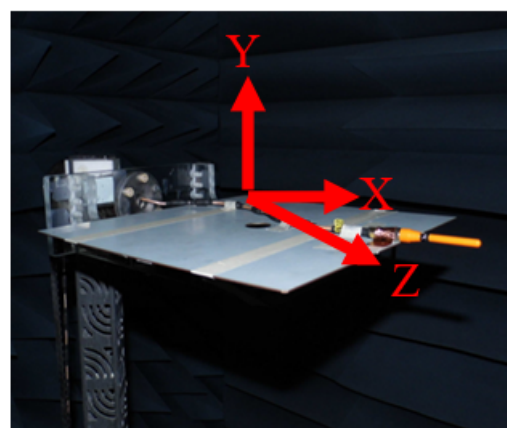
Free space



15x9cm ground plane

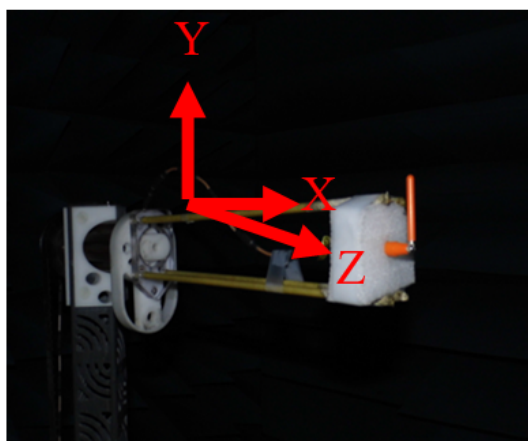


30x30cm metal ground center

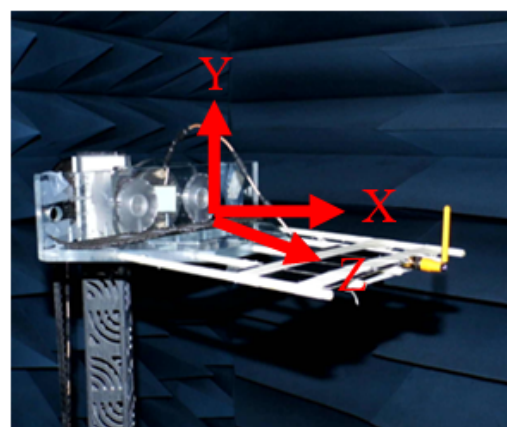


30x30cm metal ground edge

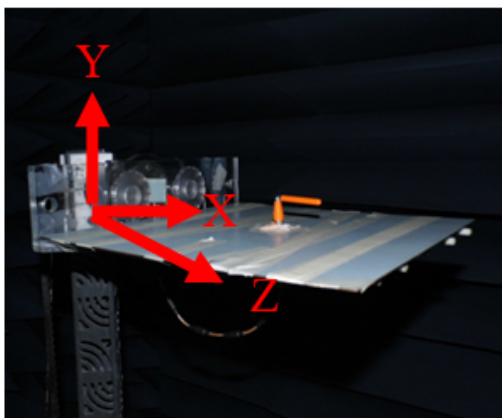
4.2 Test Setup – Bent (90°)



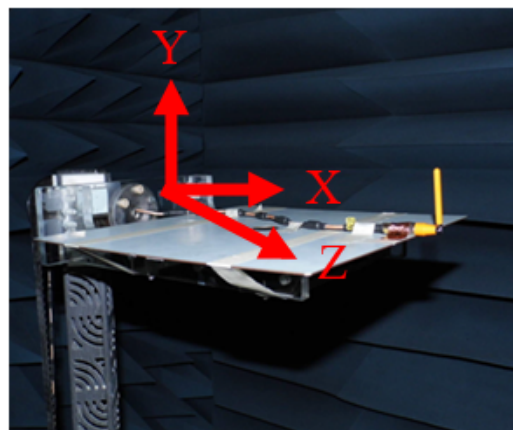
Free space



15x9cm ground plane



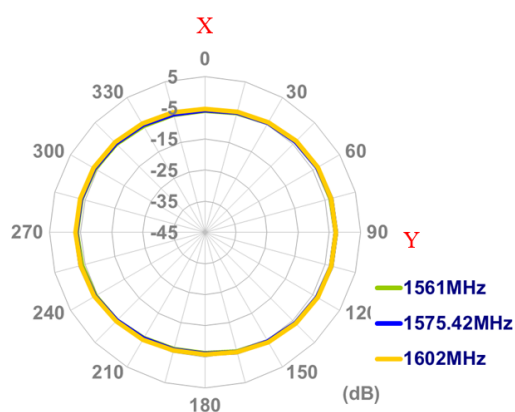
30x30cm metal ground center



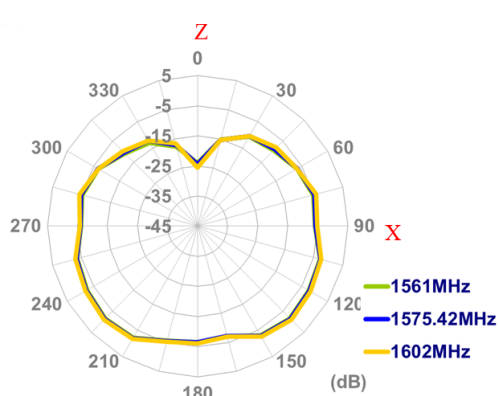
30x30cm metal ground edge

4.3 Straight Free Space - 2D Radiation Patterns

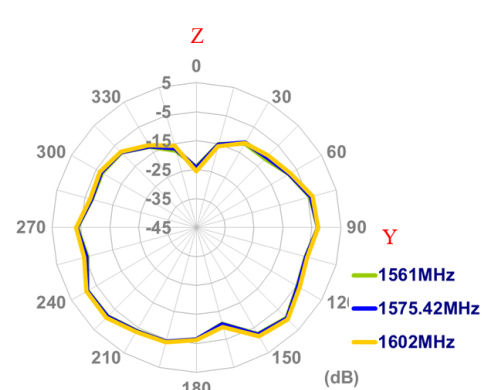
XY Plane



XZ Plane

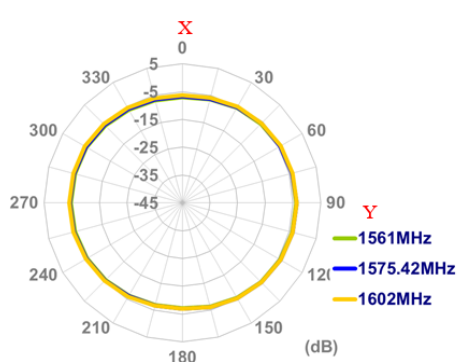


YZ Plane

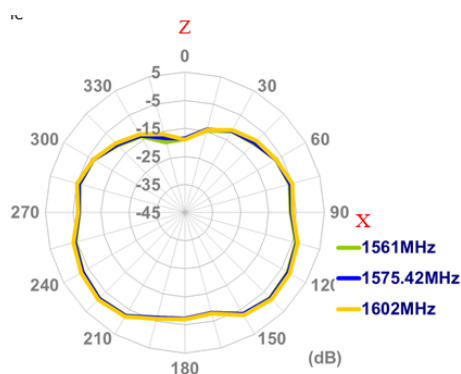


4.4 Bent 90° Free Space - 2D Radiation Patterns

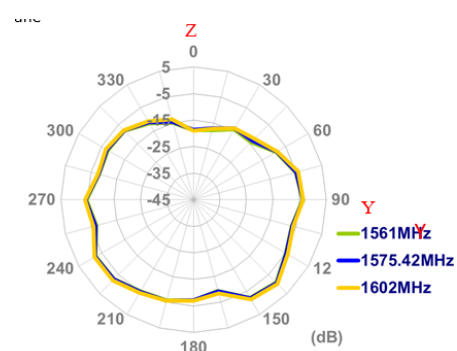
XY Plane



XZ Plane

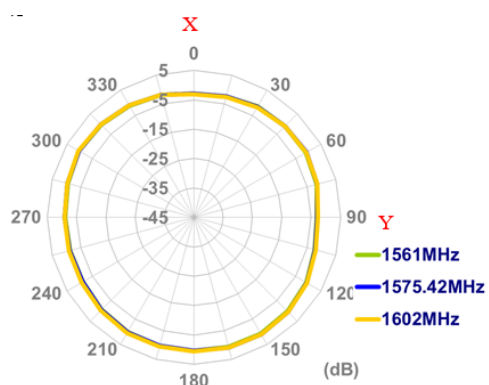


YZ Plane

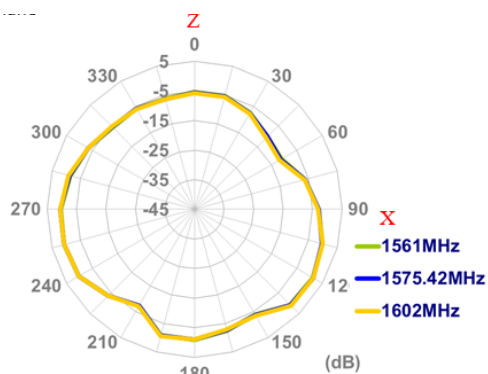


4.5 Straight 15*9cm Center Ground Plane - 2D Radiation Patterns

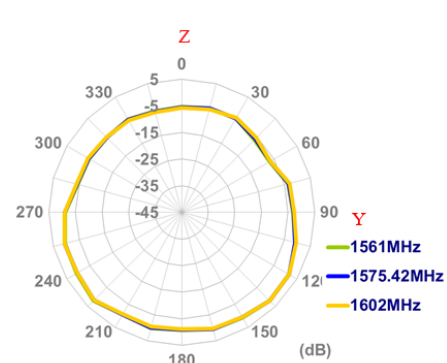
XY Plane



XZ Plane

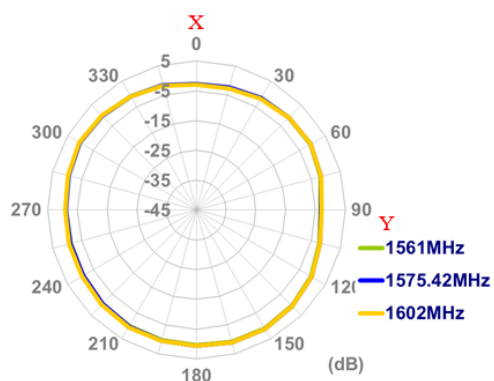


YZ Plane

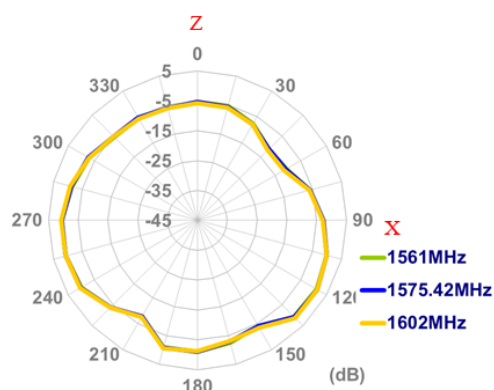


4.6 Bent 90° 15*9cm Center Ground Plane - 2D Radiation Patterns

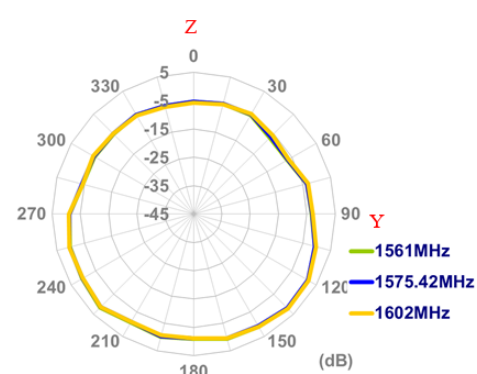
XY Plane



XZ Plane

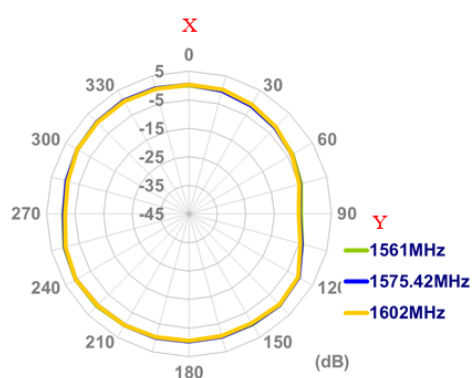


YZ Plane

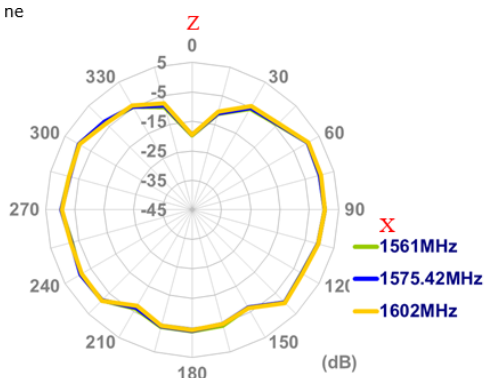


4.7 Straight 30*30cm Edge Ground Plane - 2D Radiation Patterns

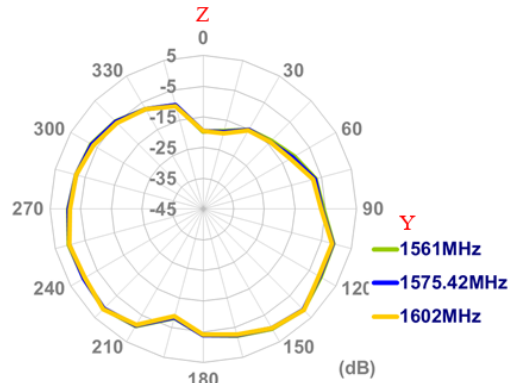
XY Plane



XZ Plane

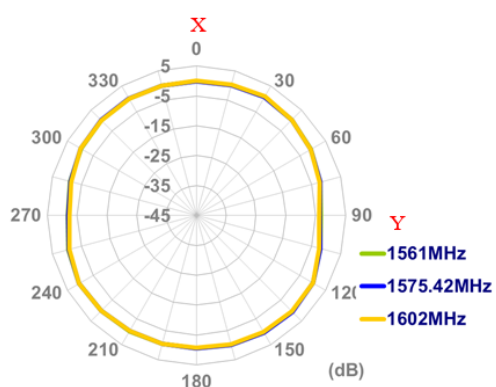


YZ Plane

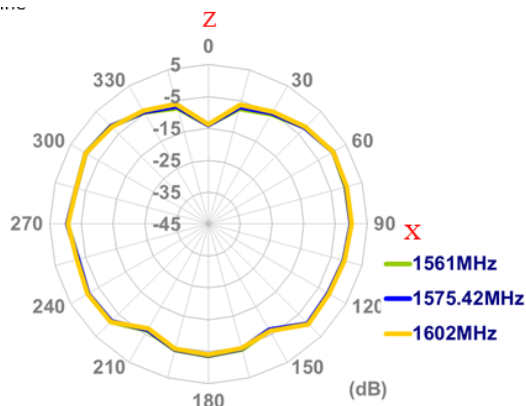


4.8 Bent 90° 30*30cm Edge Ground Plane - 2D Radiation Patterns

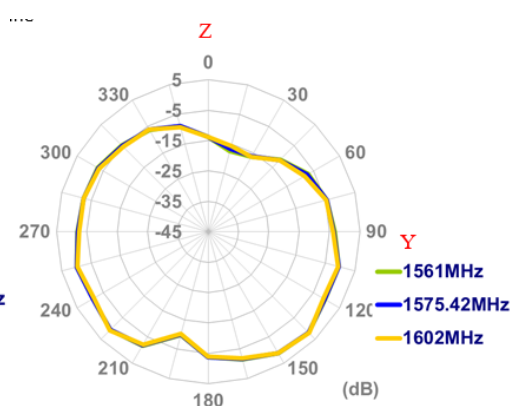
XY Plane



XZ Plane

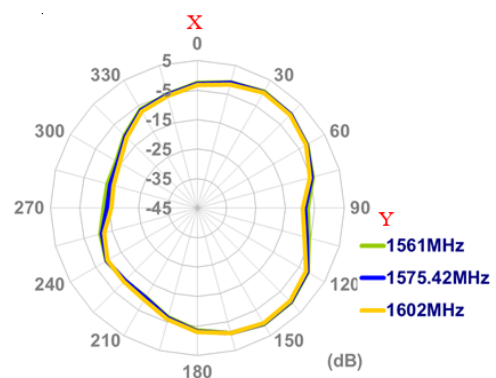


YZ Plane

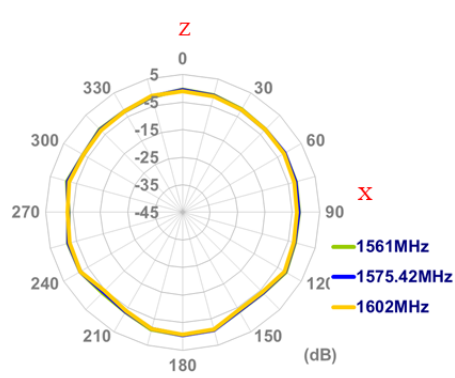


4.9 Straight 30*30cm Center Ground Plane - 2D Radiation Patterns

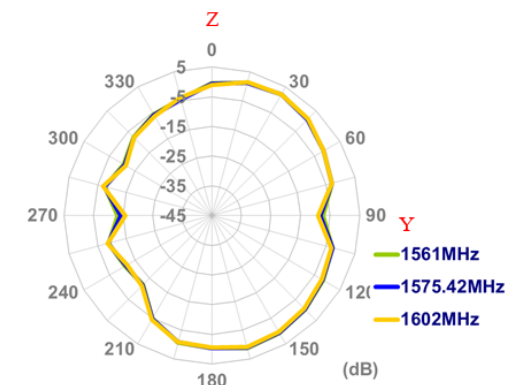
XY Plane



XZ Plane

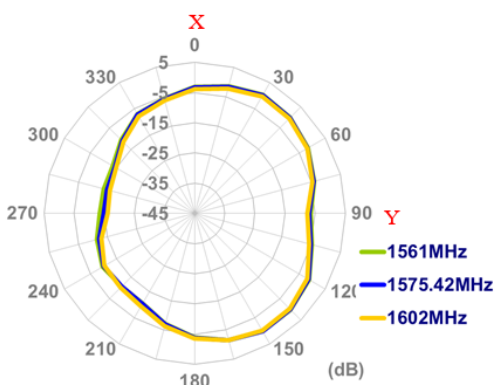


YZ Plane

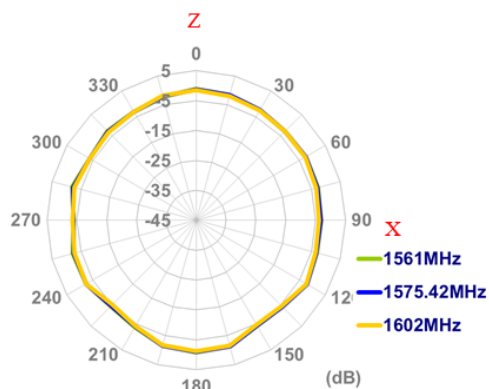


4.10 Bent 90° 30*30cm Center Ground Plane - 2D Radiation Patterns

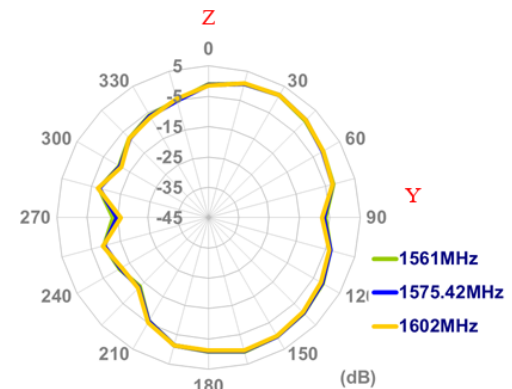
XY Plane



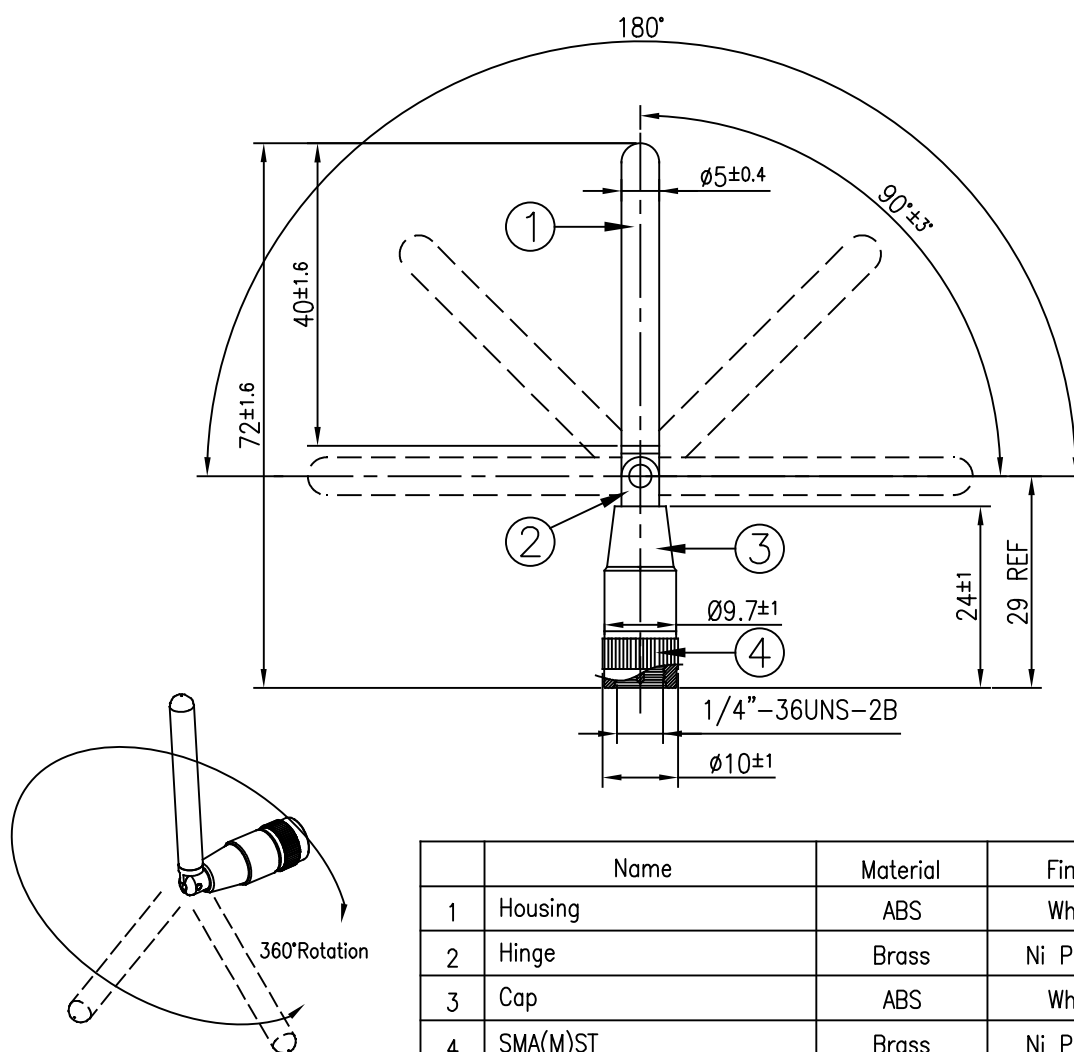
XZ Plane



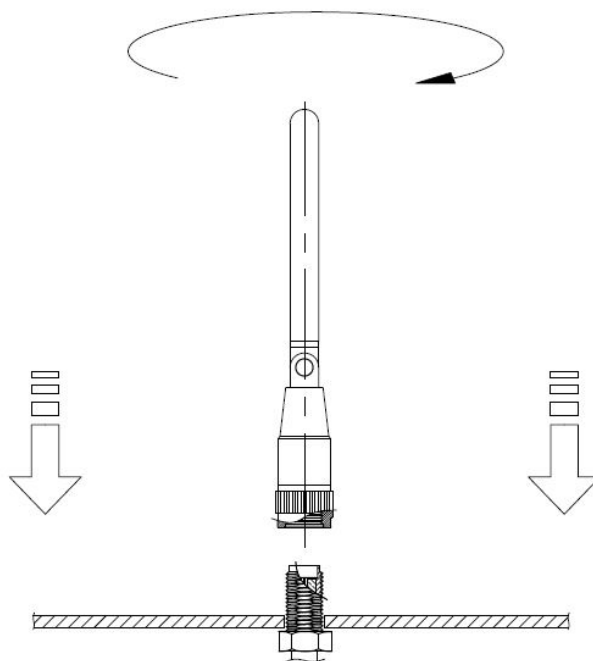
YZ Plane



5. Mechanical Drawing (Units: mm)



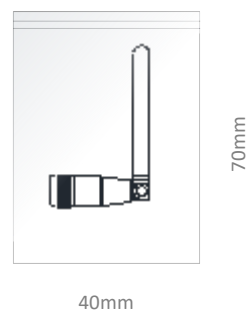
6. Installation



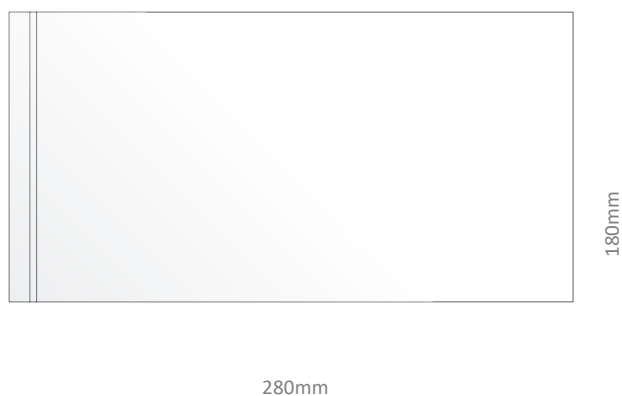
Recommended torque for mounting is 0.9 N·m
Maximum torque for mounting is 1.176 N·m

7. Packaging

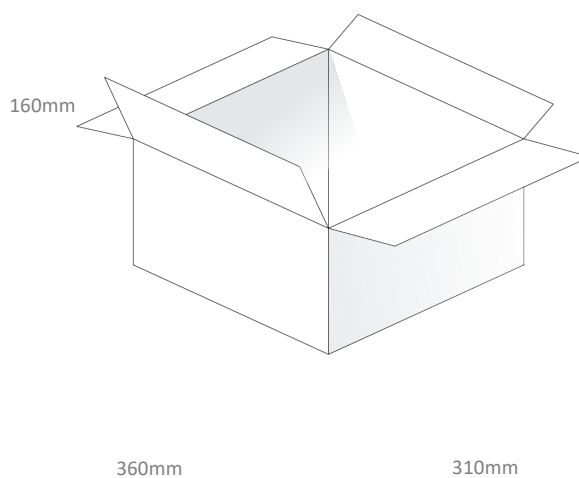
1pc TS.07.0113W per PE Bag
Bag Dimension: 70*40mm
Weight: 8.5g



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: B – Update	
Date:	2026-13-26
Notes:	Updated Drawing based on EC00042
Author:	David Connolly

Previous Revisions

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

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