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Datasheet

IP67 Wi-Fi® 2.4/5.8/7.125GHz Terminal Antenna

Part No:
GW.52.A153

Description

IP67 Wi-Fi® 2.4/5.8/7.125GHz Long Dipole Antenna RP-SMA(M) Hinged

Features:

- 2.4/5.8/7.1GHz Band Operation
- Wi-Fi® 6/7 Compatible
- Waterproof for Outdoor Use - IP67 Rating
- 5 dBi Gain
- High Efficiency
- Hinged RP-SMA (M) Connector
- Height: 203mm
- Diameter: 13mm
- RoHS & Reach Compliant

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1. Introduction



At just 203mm in height and 13mm in diameter, the robust IP67 PC+PBT enclosure can be mounted indoor or outdoor straight or at right angle to the device with its hinged RP-SMA(M) connector. It is ideal for applications such as Bluetooth®, BLE, ZigBee®, Wi-Fi® 6 & 7 and Wireless LAN. The GW.52, designed for superior performance and reliability, has an omnidirectional radiation pattern and extremely high efficiency and gain on all Wi-Fi® bands.

Typical applications include:

- Smart Home - Gateways/Routers - Connected Agriculture

The GW.52 has optimized Peak gain making it a cost-effective, high-performing choice for any indoor or outdoor application. Many module manufacturers specify peak gain limits for any antennas that are to be connected to that module. Those peak gain limits are based on free-space conditions. In practice, the peak gain of an antenna tested in free-space can degrade by at least 1 or 2dBi when installed. So ideally you should go for a slightly higher peak gain antenna than mentioned on the module specification to compensate for this effect.

This great product has an SMA (M) connector as standard and is an ideal solution for any device requiring reliable performance in a slim form factor. The innovative hinge design not only provides flexibility when mounting the antenna, but its weatherproof, IP67 rating, means it be used in outdoor locations where potential water ingress would prevent other terminal mount antennas from being used.

For further information, or support to test and integrate this product please contact your regional Taoglas customer support team.

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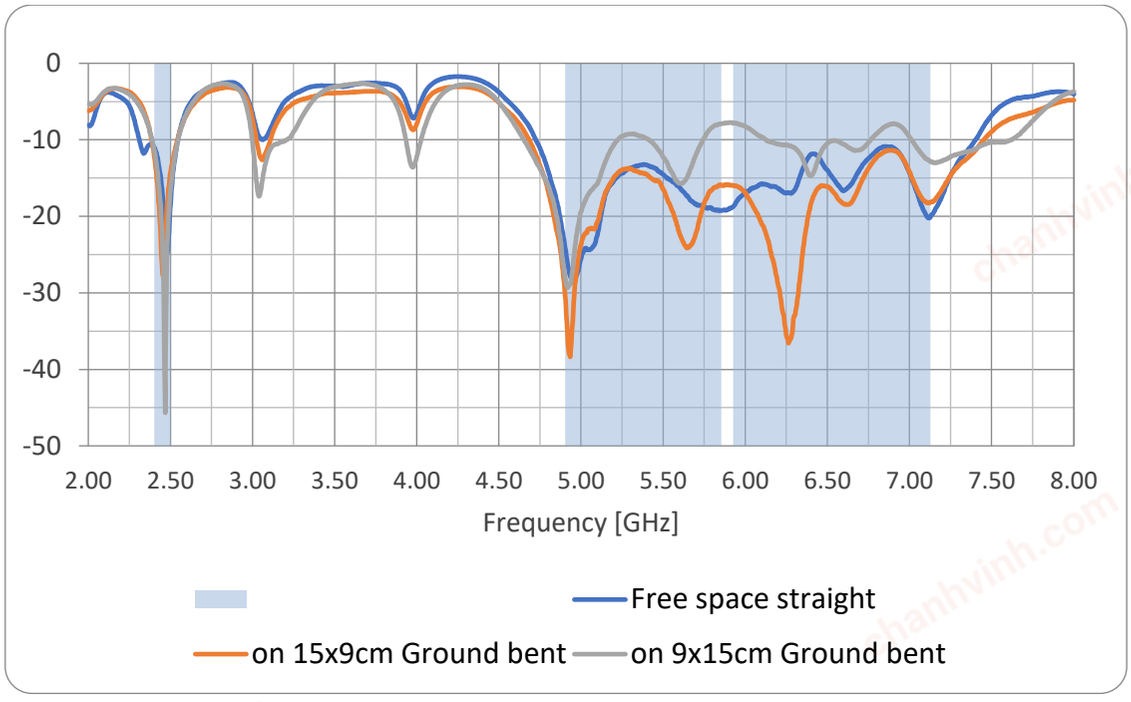
2. Specification

Electrical			
Frequency (MHz)	**2400~2500**	**4900~5850**	**5925~7125**
Efficiency (%)			
Free space	47.8	88	81.8
15X9cm Ground plane	74.1	70.4	65.4
9X15cm Ground plane	74.4	67.2	57.8
Average Gain (dB)			
Free space	-3.21	-0.56	-0.90
15X9cm Ground plane	-1.30	-1.52	-1.80
9X15cm Ground plane	-1.29	-1.73	-2.28
Peak Gain (dBi)			
Free space	2.93	4.53	5.53
15X9cm Ground plane	5.16	3.83	4.10
9X15cm Ground plane	5.44	4.69	3.58
Impedance	50Ω		
Polarization	Linear		
Radiation Pattern	Omni		
Mechanical			
Height	203 ±3.3 mm		
Planner Dimension	Ø13 mm x 203		
Casing	PC+PBT		
Connector	RP-SMA(M)		
Environmental			
Temperature Range	-40°C to 85°C		
Humidity	Non-condensing 65°C 95% RH		

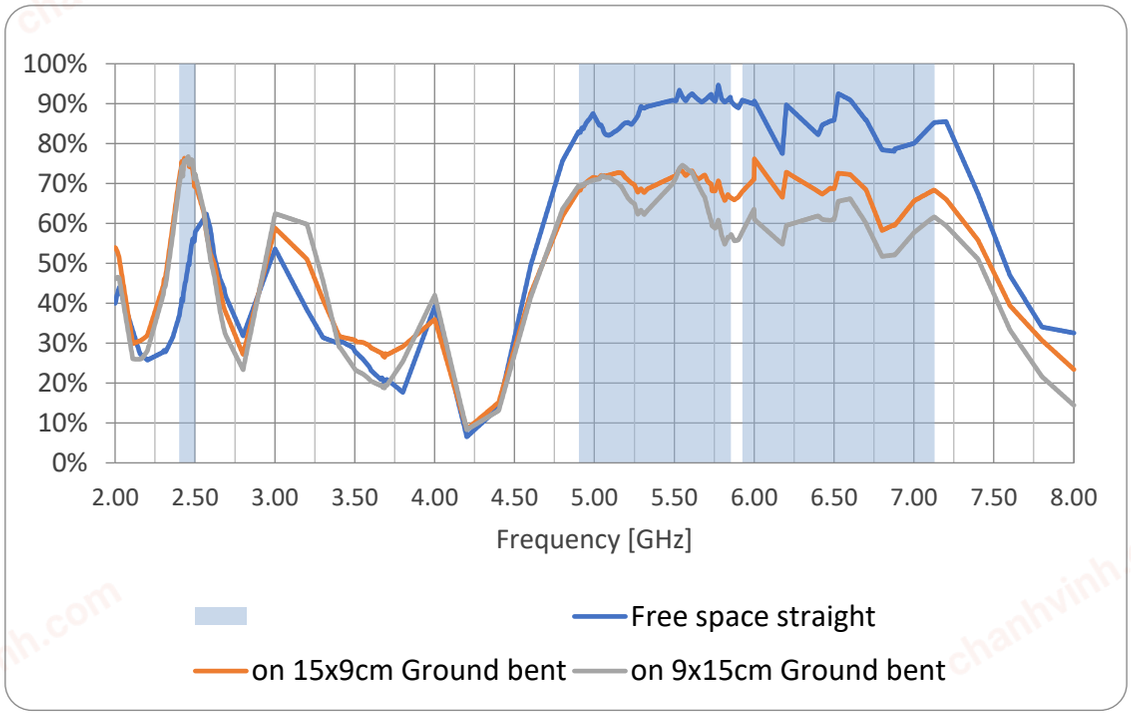
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3. Antenna Characteristics

3.1 Return Loss

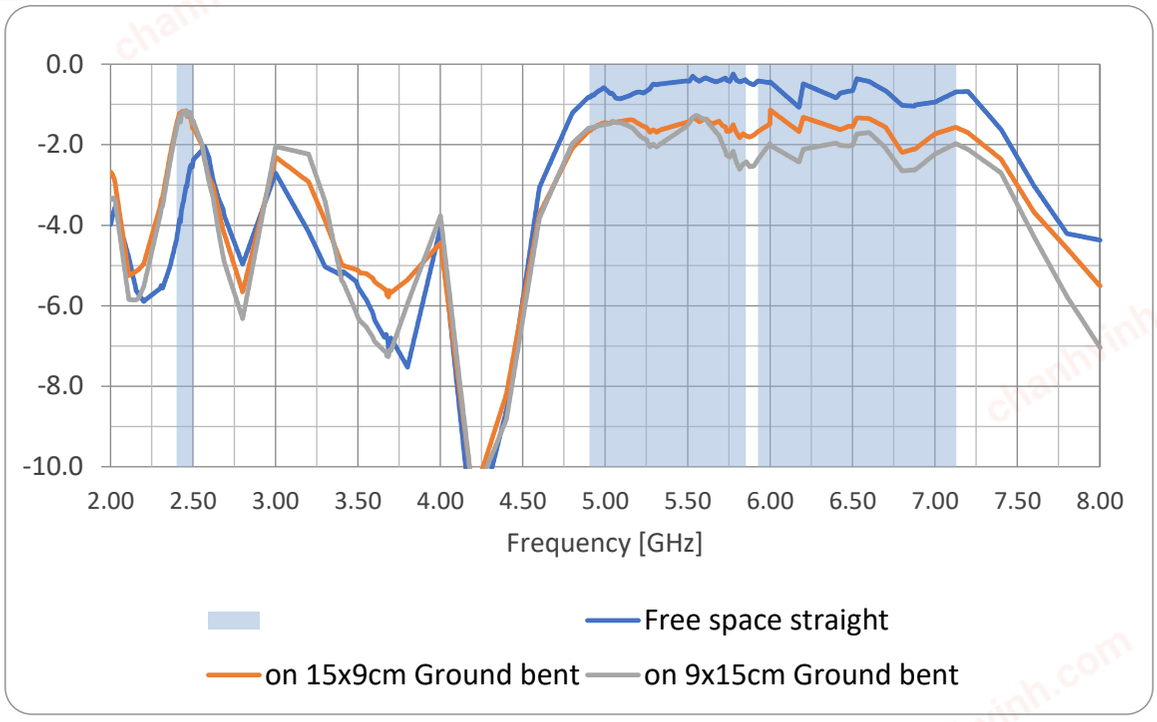


3.2 Efficiency

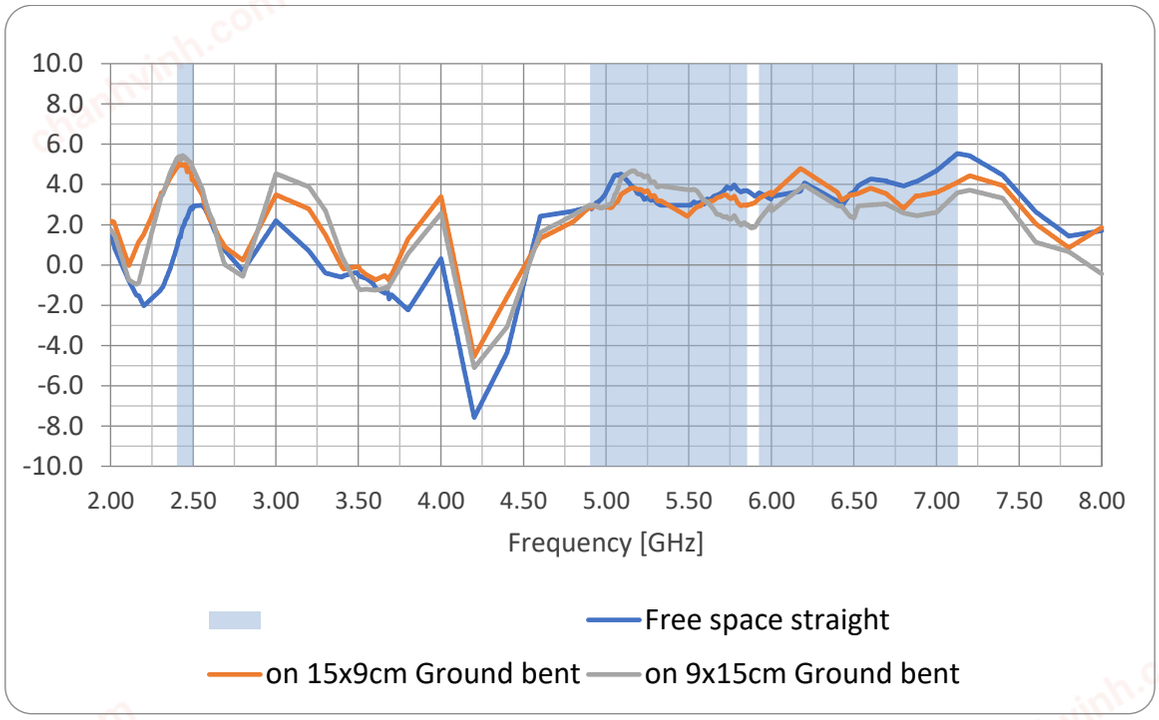


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3.3 Average Gain



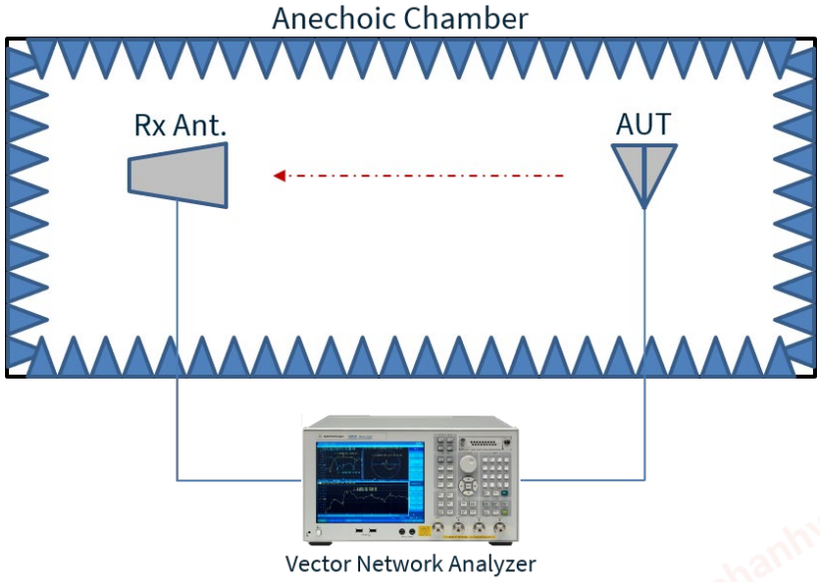
3.4 Peak Gain

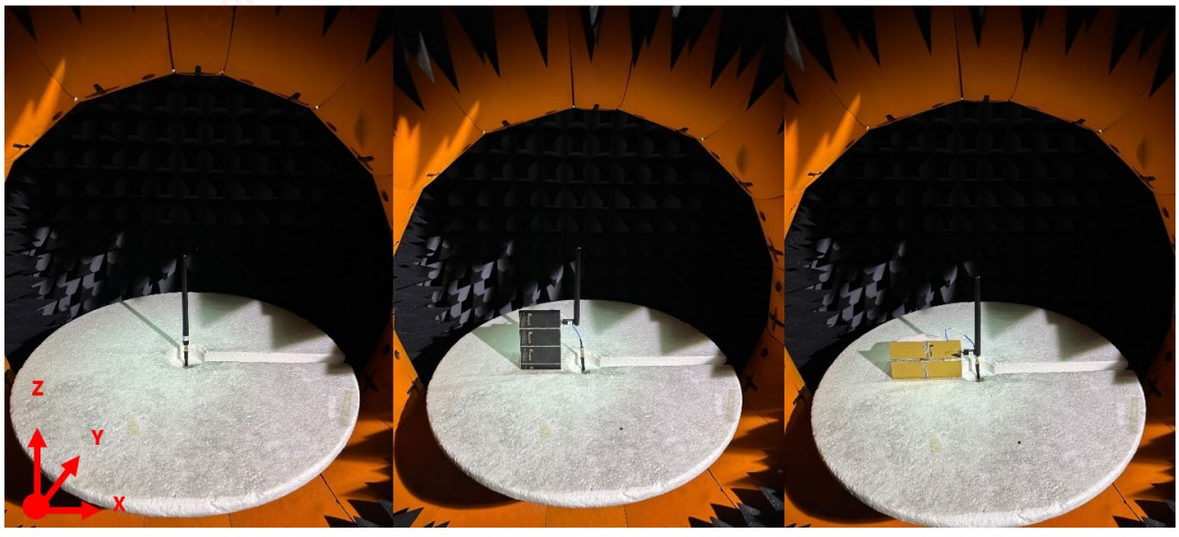


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4. Radiation Patterns

4.1 Test Setup

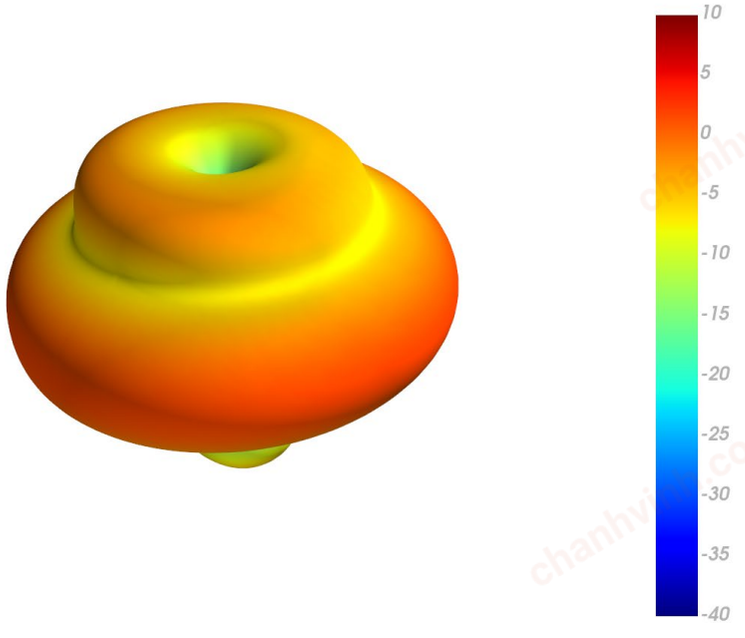


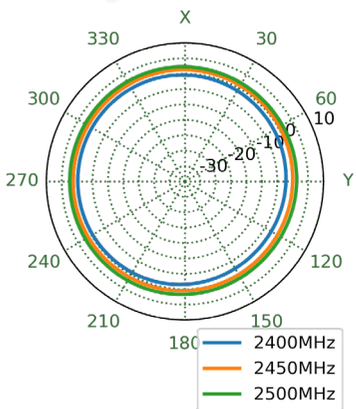
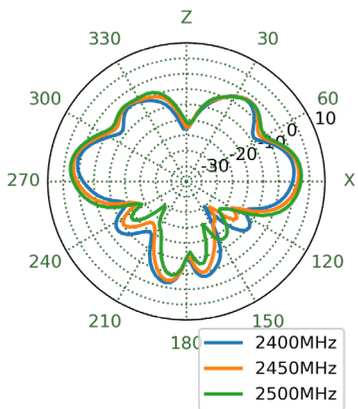
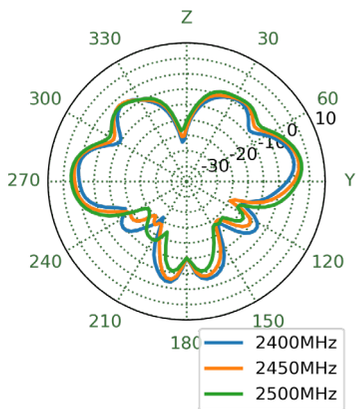


Free space | On 15x9cm Ground | On 9x15cm Ground

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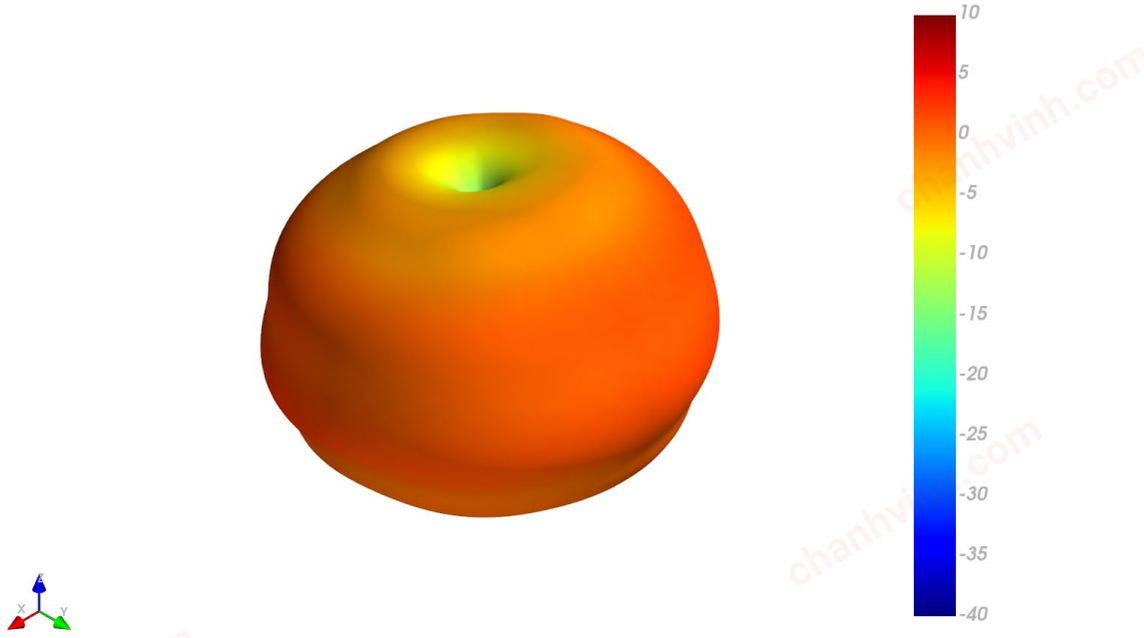
4.2 Free space 3D and 2D Radiation Patterns at 2450 MHz



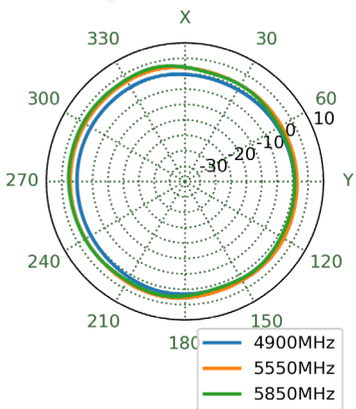
XY Plane	XZ Plane	YZ Plane
		

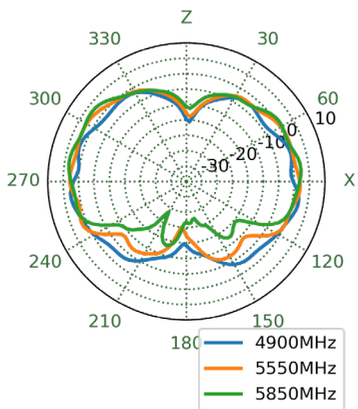
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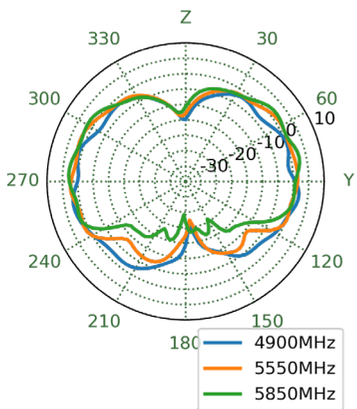
4.3 Free space 3D and 2D Radiation Patterns at 5550 MHz



XY Plane	XZ Plane	YZ Plane

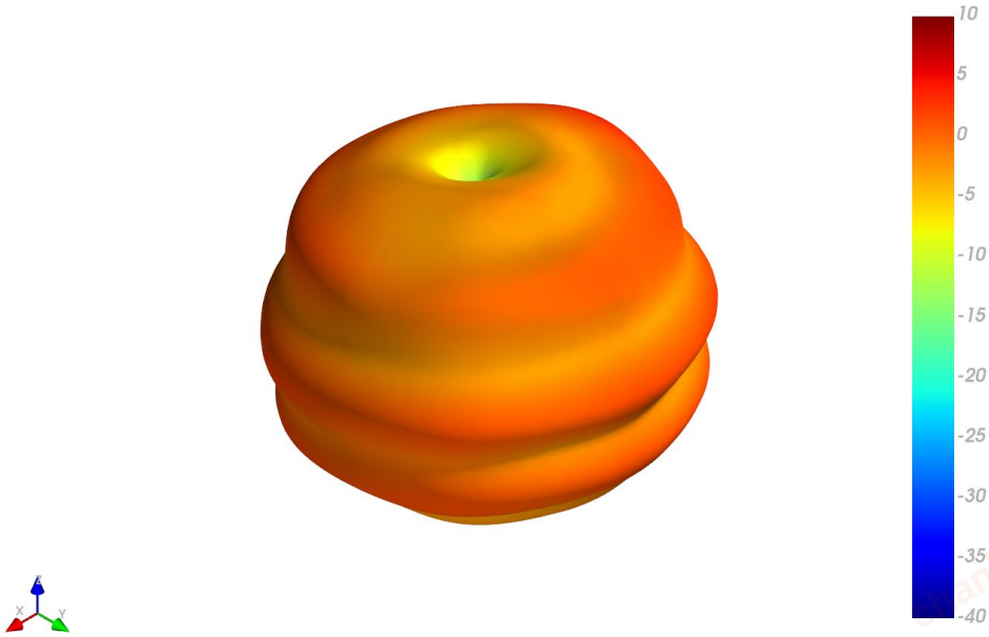


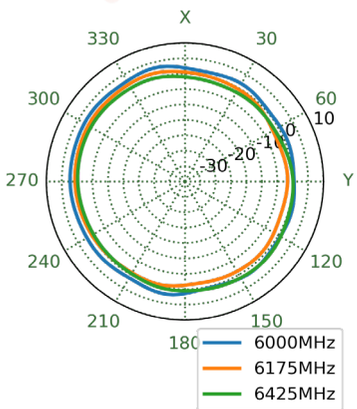
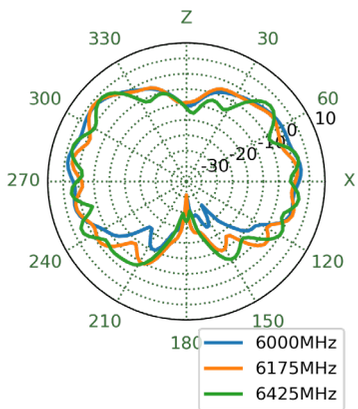
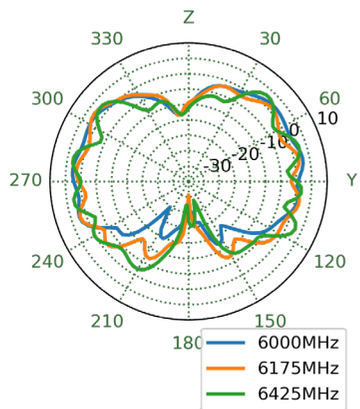




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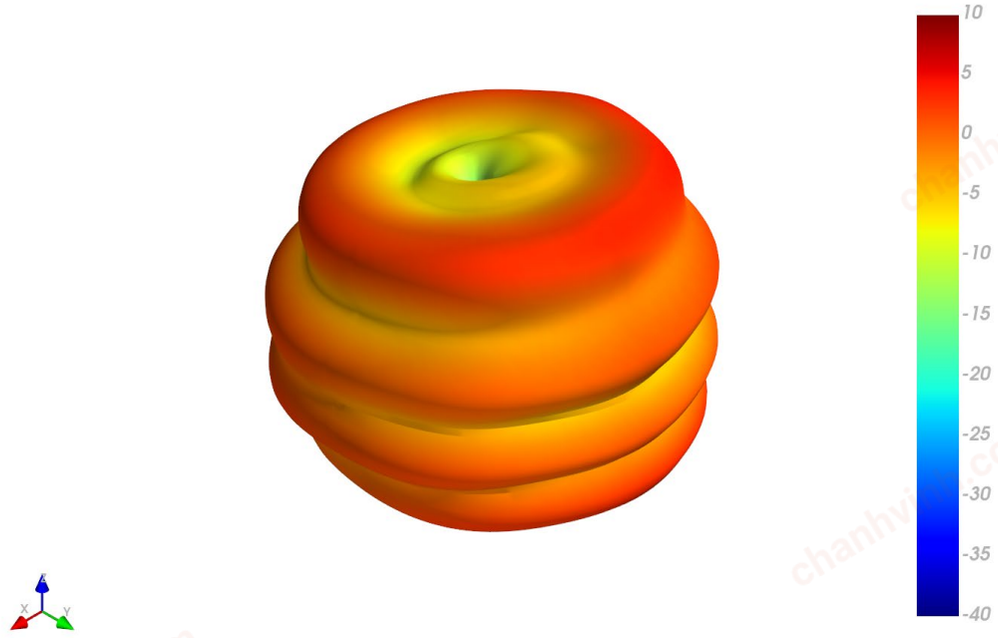
4.4 Free space 3D and 2D Radiation Patterns at 6175 MHz



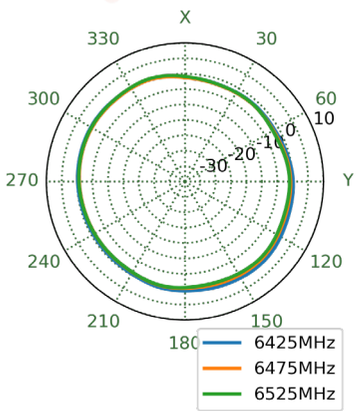
YX Plane	XZ Plane	YZ Plane
		

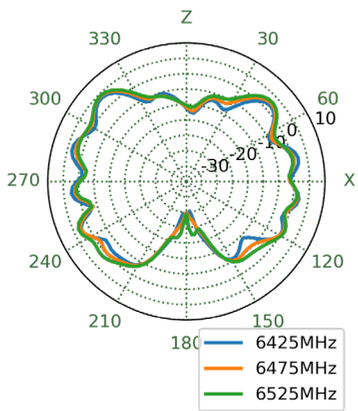
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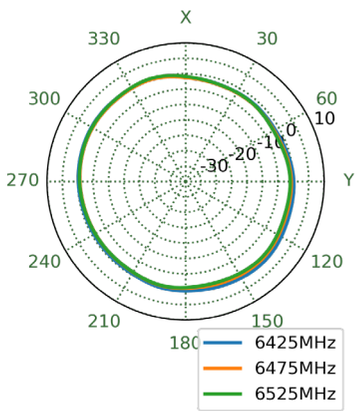
4.5 Free space 3D and 2D Radiation Patterns at 6475 MHz



XY Plane	XZ Plane	YZ Plane

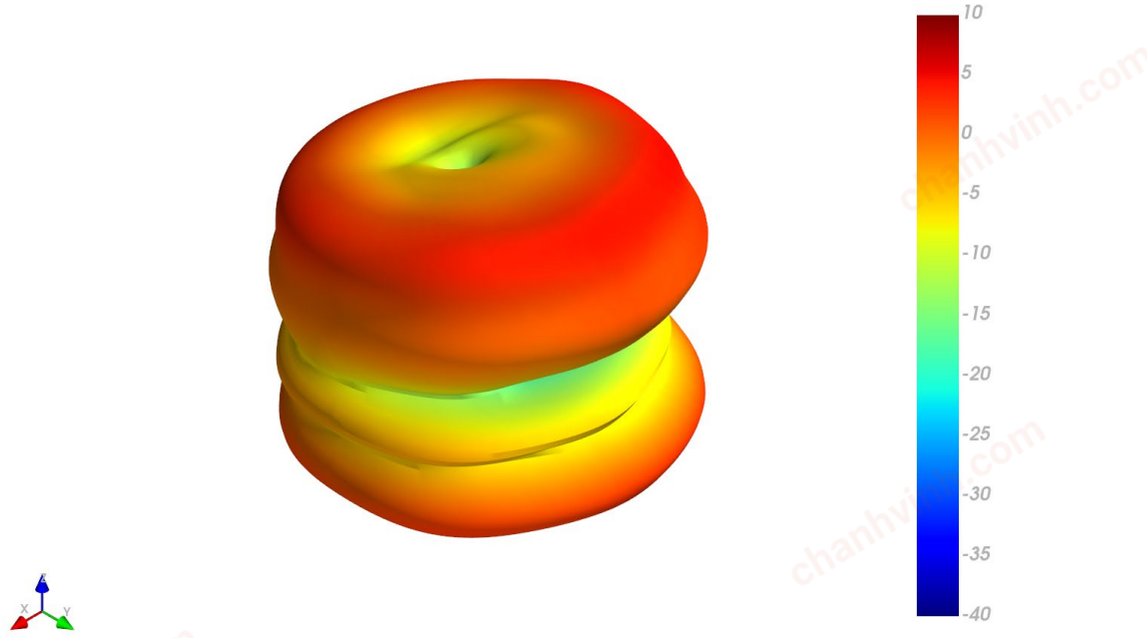


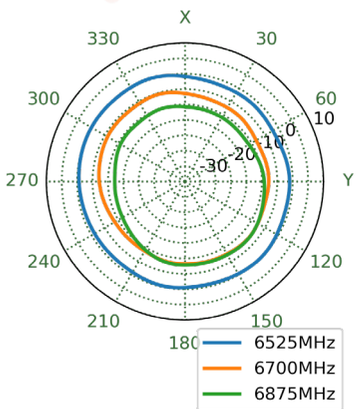
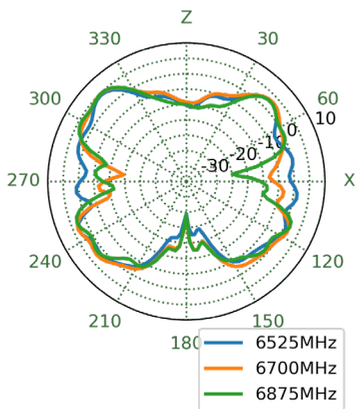
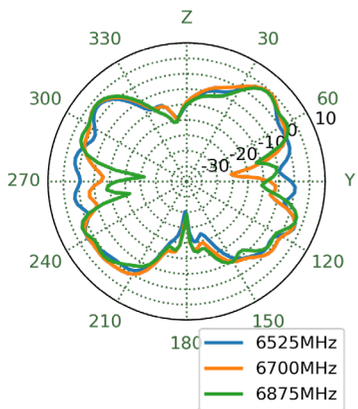




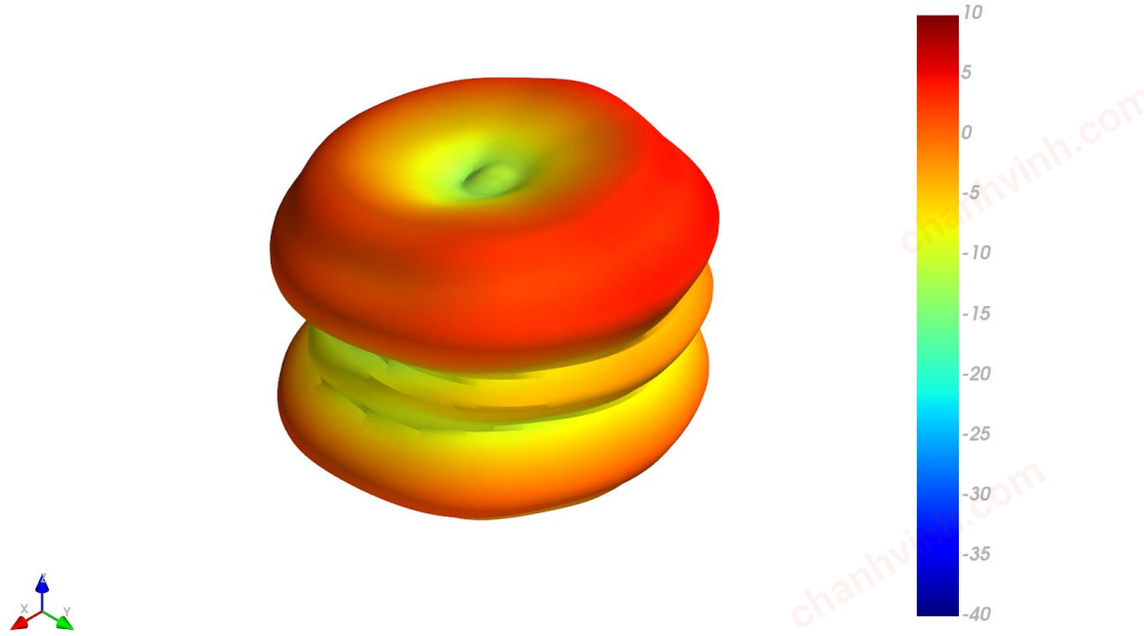
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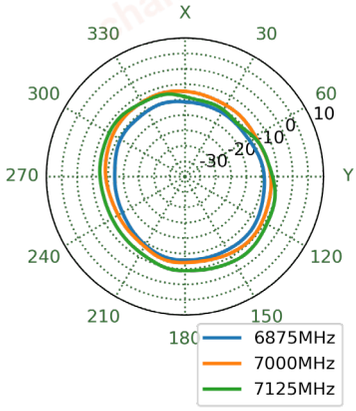
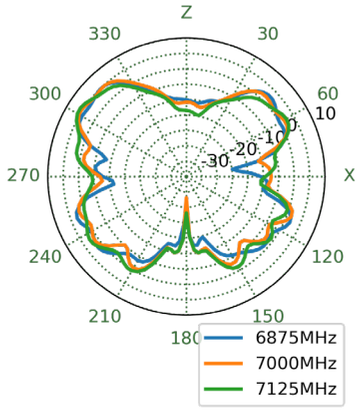
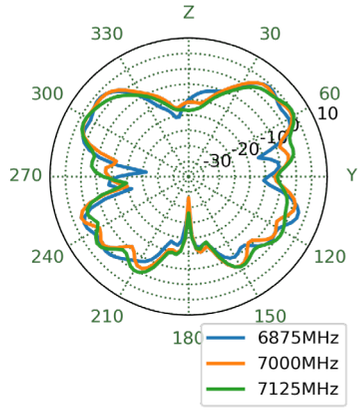
4.6 Free space 3D and 2D Radiation Patterns at 6700 MHz



XY Plane	XZ Plane	YZ Plane
		

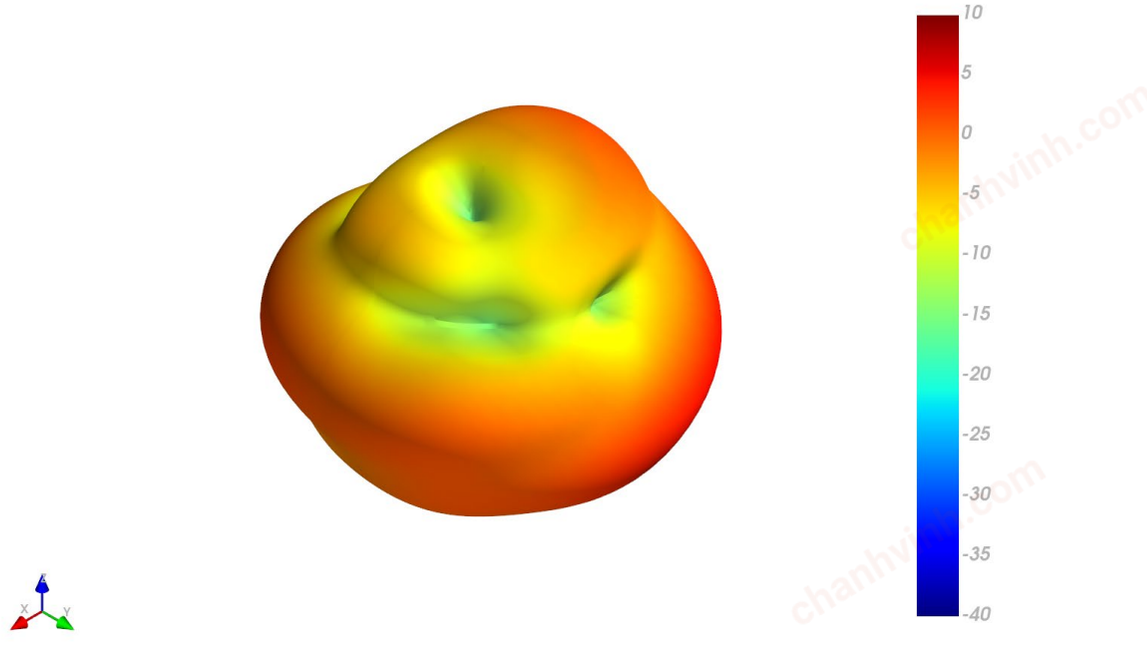
4.7 Free space 3D and 2D Radiation Patterns at 7000 MHz



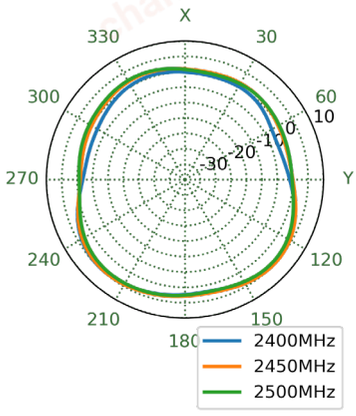
XY Plane	XZ Plane	YZ Plane
		

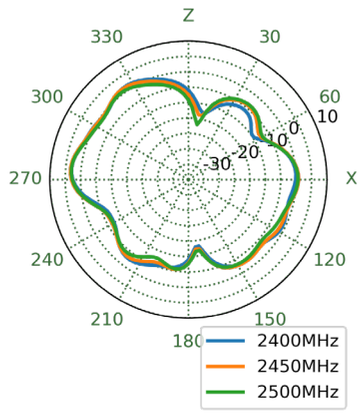
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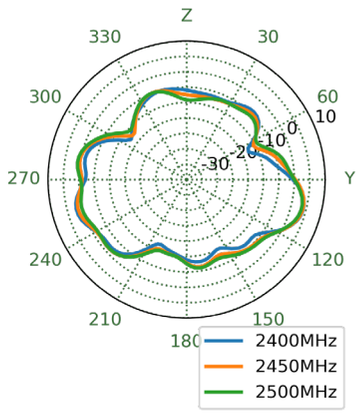
4.8 15x9cm Ground 3D and 2D Radiation Patterns at 2450 MHz



XY Plane	XZ Plane	YZ Plane

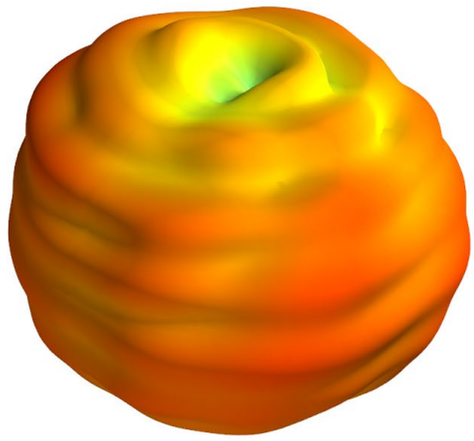






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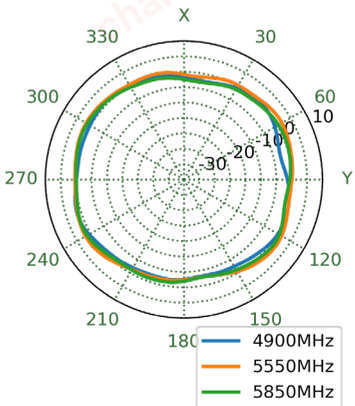
4.9 15x9cm Ground 3D and 2D Radiation Patterns at 5550 MHz

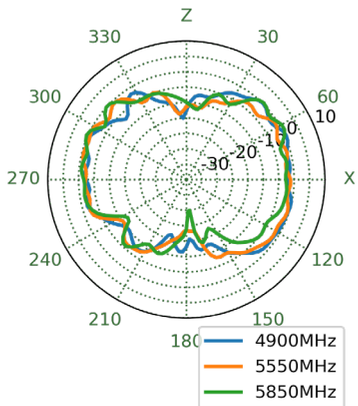


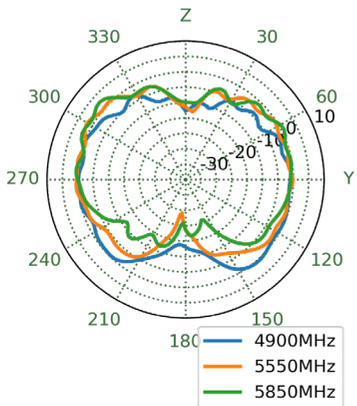




XY Plane	XZ Plane	YZ Plane

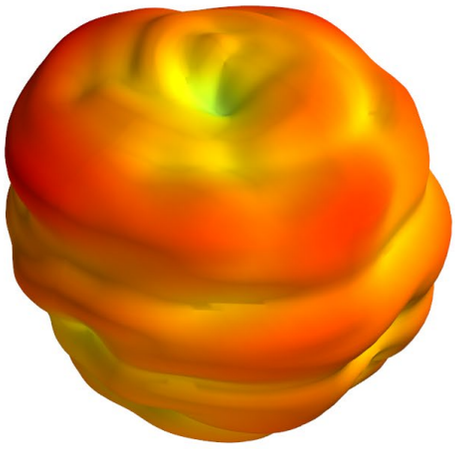






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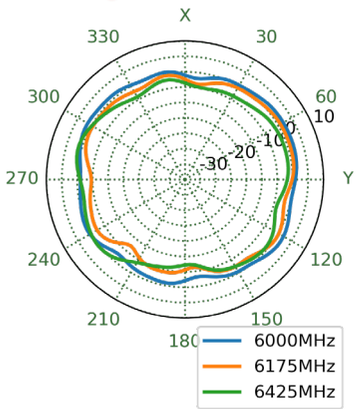
4.10 15x9cm Ground 3D and 2D Radiation Patterns at 6175 MHz

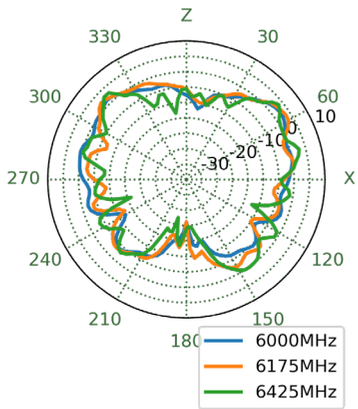


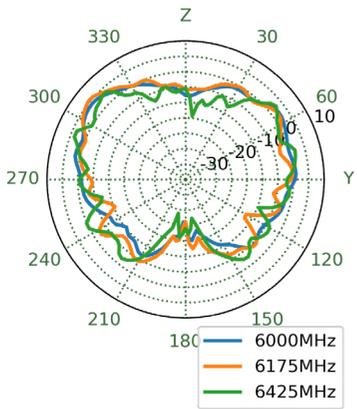




XY Plane	XZ Plane	YZ Plane

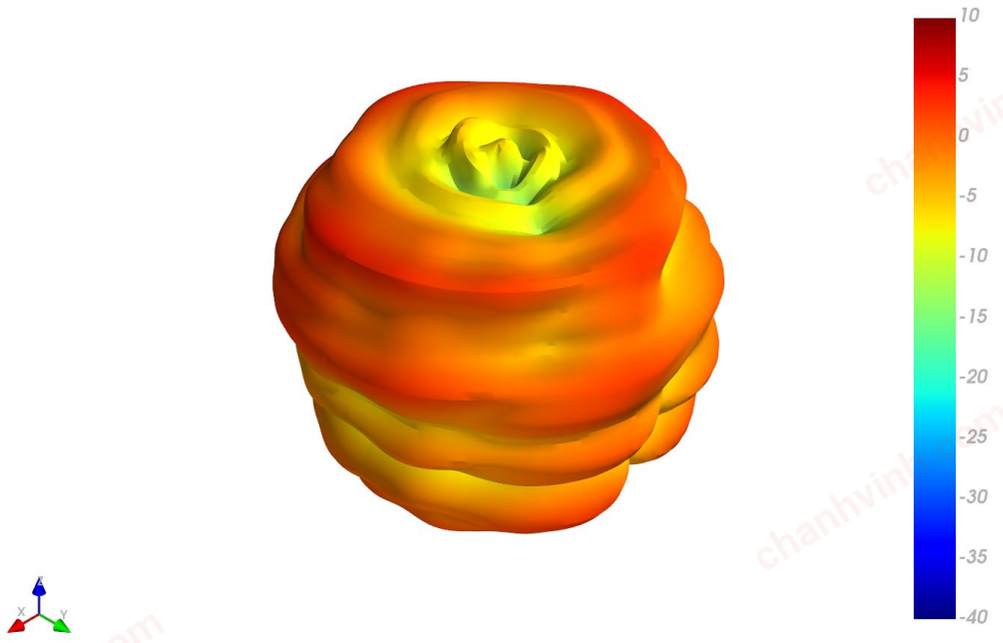


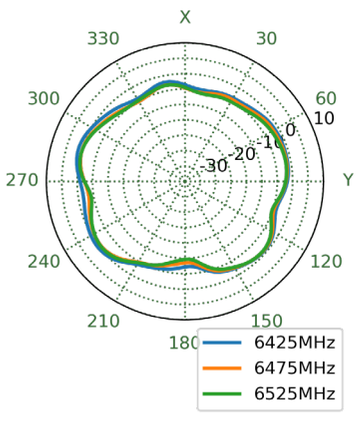
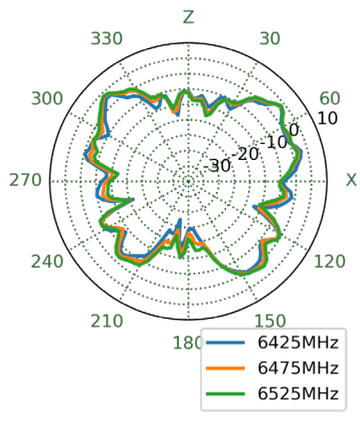
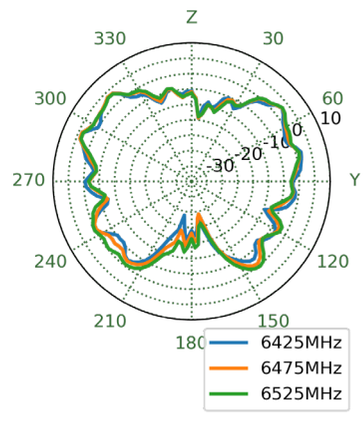




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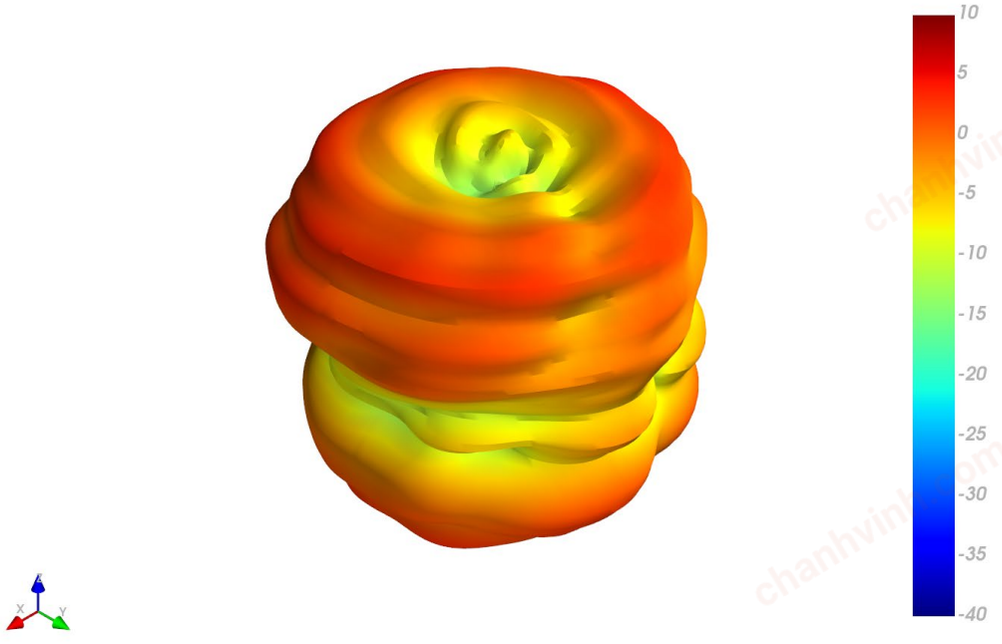
4.11 15x9cm Ground 3D and 2D Radiation Patterns at 6475 MHz



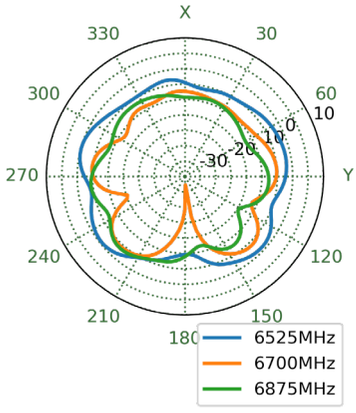
XY Plane	XZ Plane	YZ Plane
		

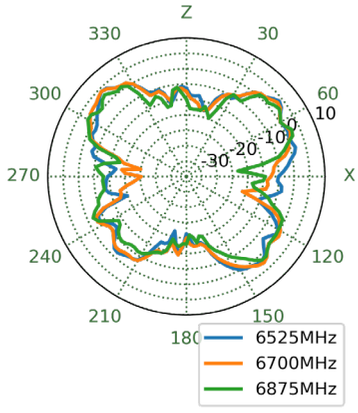
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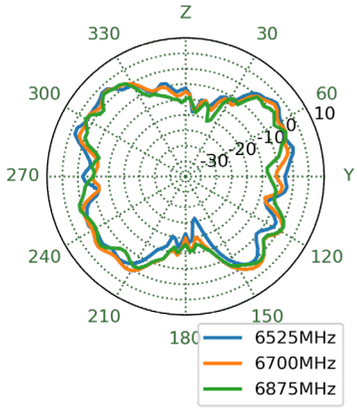
4.12 15x9cm Ground 3D and 2D Radiation Patterns at 6700 MHz



XY Plane	XZ Plane	YZ Plane

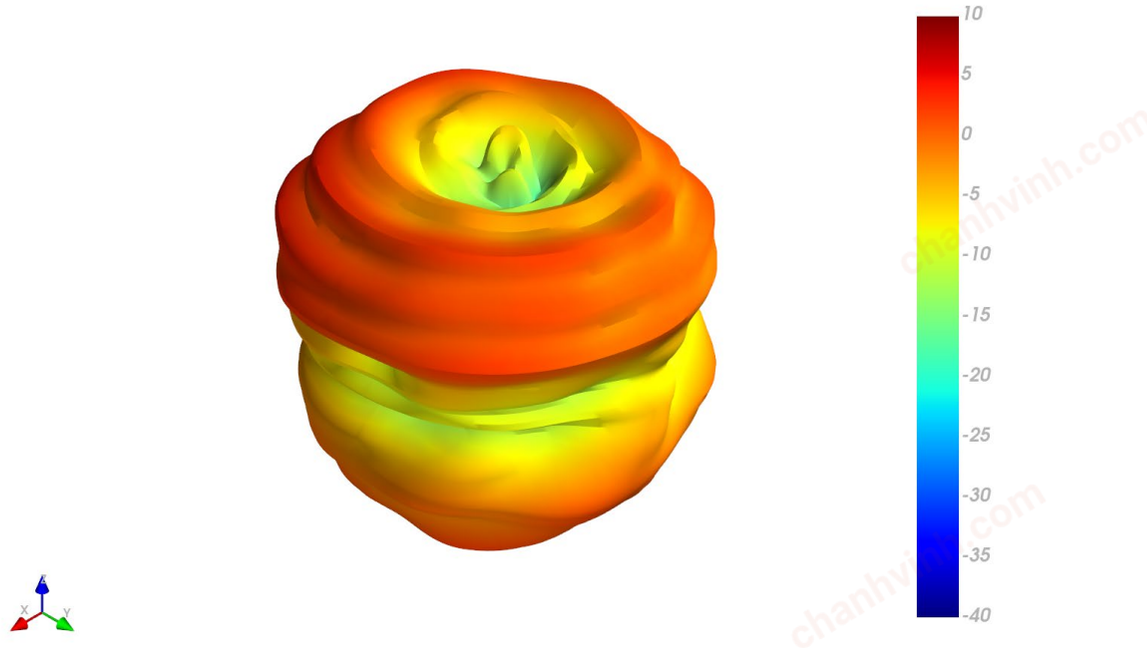


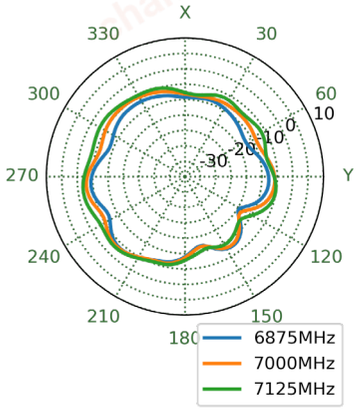
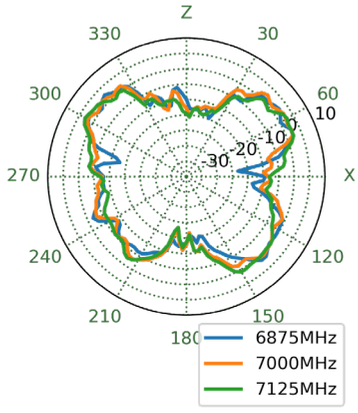
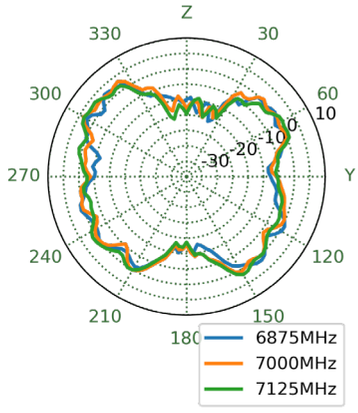




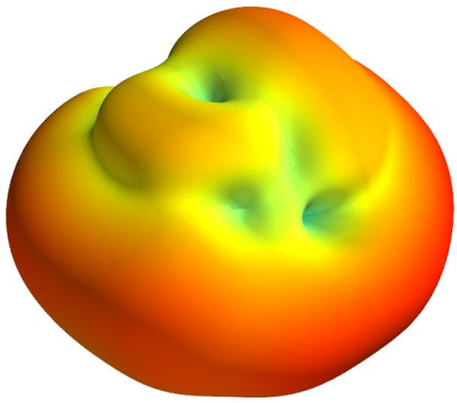
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4.13 15x9cm Ground 3D and 2D Radiation Patterns at 7000 MHz



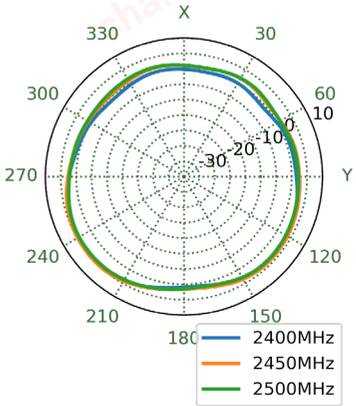
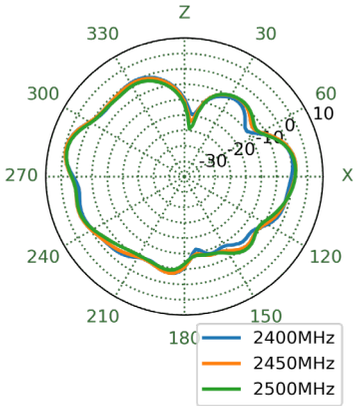
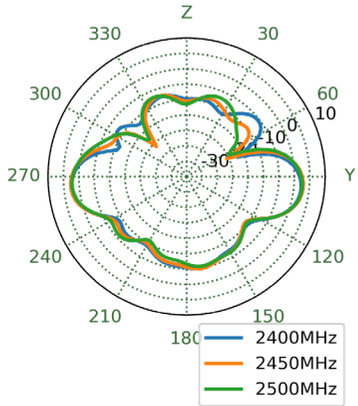
XY Plane	XZ Plane	YZ Plane
		

4.14 9x15cm Ground 3D and 2D Radiation Patterns at 2450 MHz



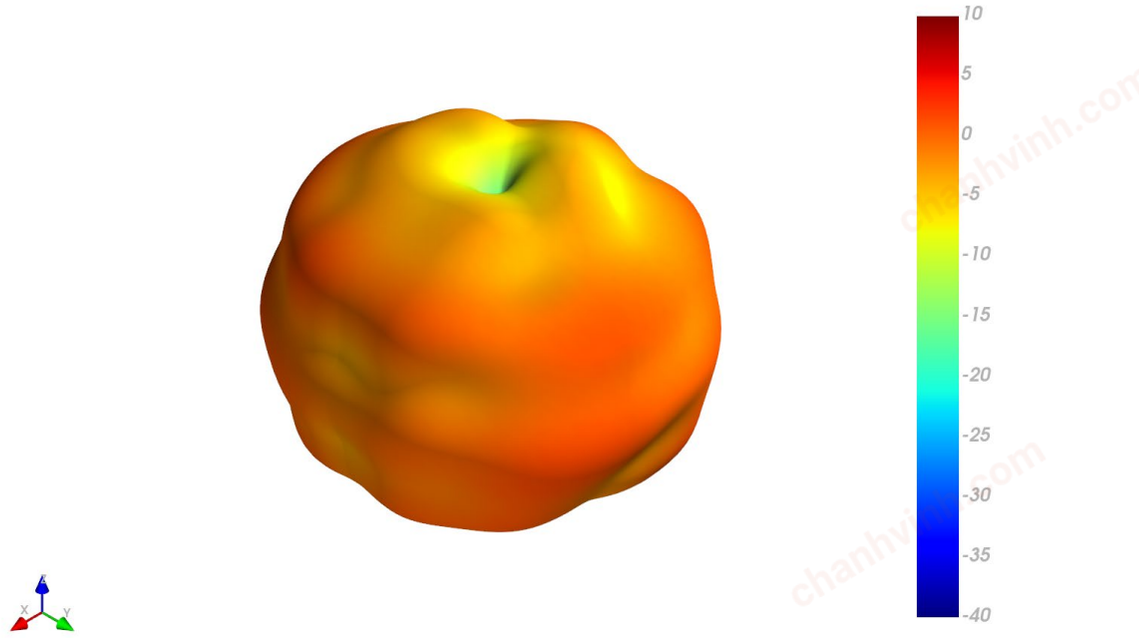




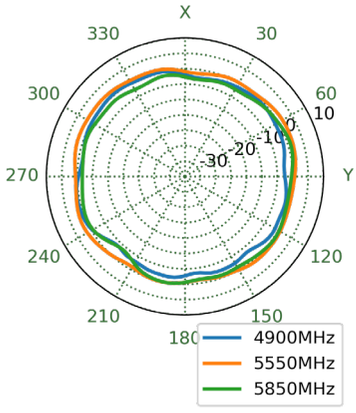
XY Plane	XZ Plane	YZ Plane
		

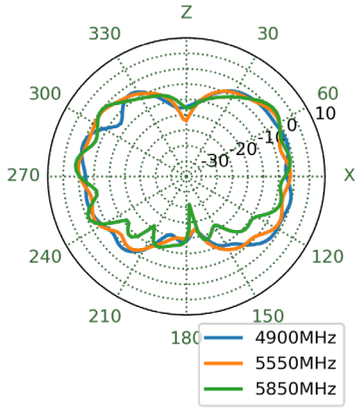
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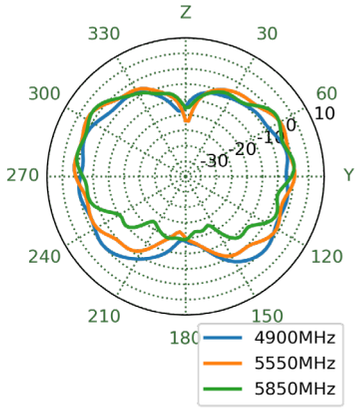
4.15 9x15cm Ground 3D and 2D Radiation Patterns at 5500 MHz



XY Plane	XZ Plane	YZ Plane

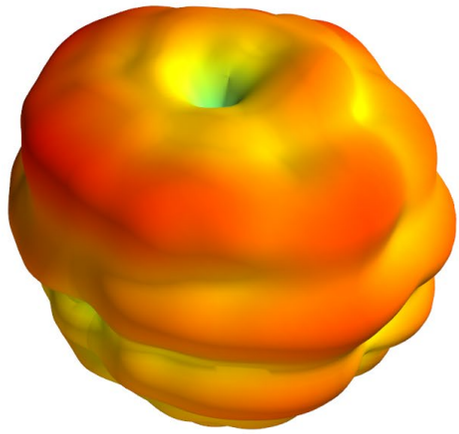






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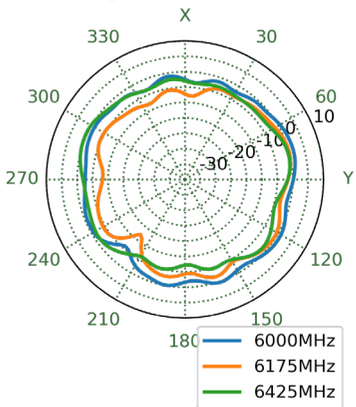
4.16 9x15cm Ground 3D and 2D Radiation Patterns at 6175 MHz

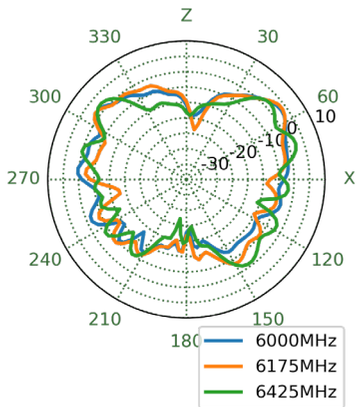


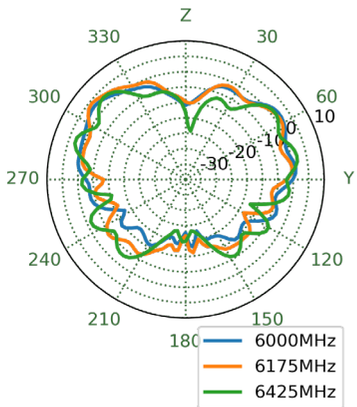




XY Plane	XZ Plane	YZ Plane

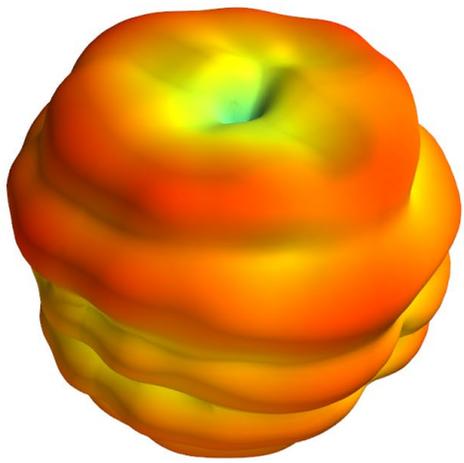






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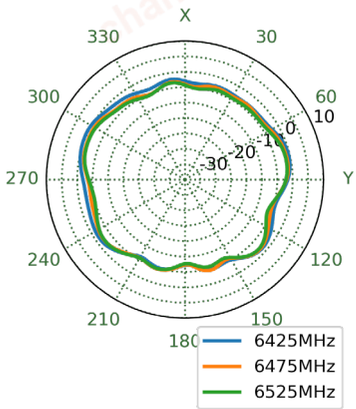
4.17 9x15cm Ground 3D and 2D Radiation Patterns at 6475 MHz

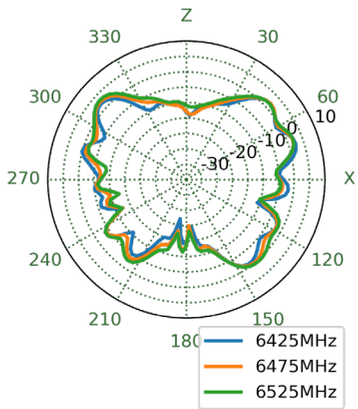


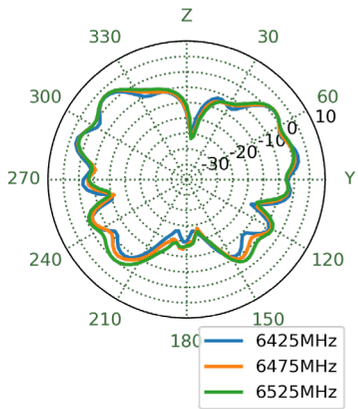




XY Plane	XZ Plane	YZ Plane

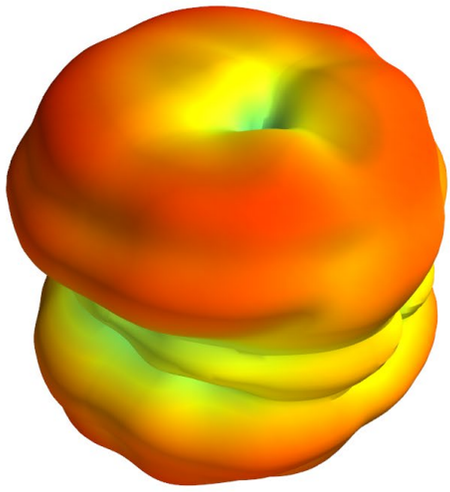






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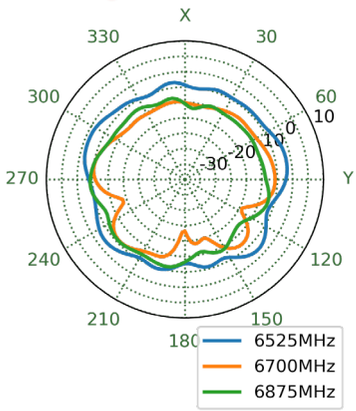
4.18 9x15cm Ground 3D and 2D Radiation Patterns at 6700 MHz

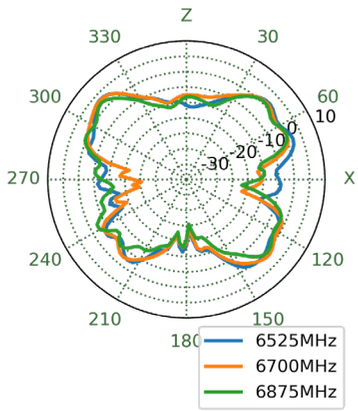


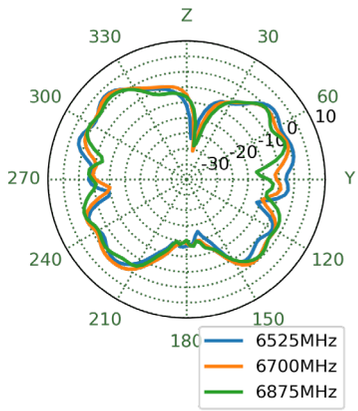




XY Plane	XZ Plane	YZ Plane

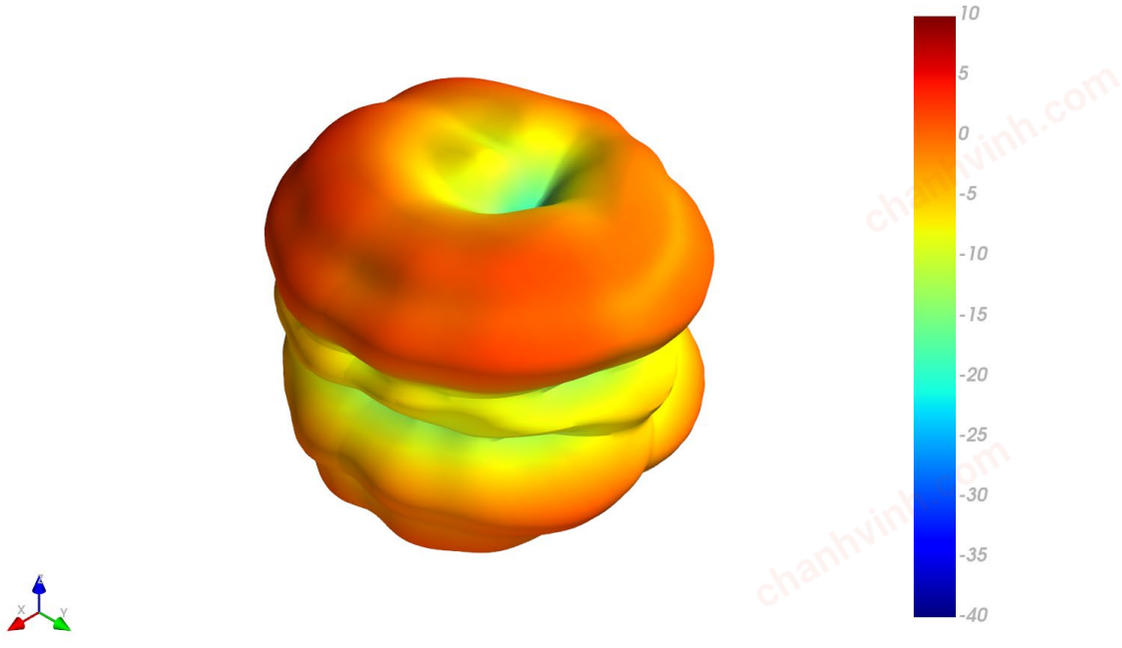




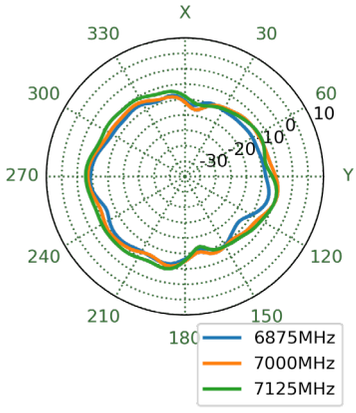


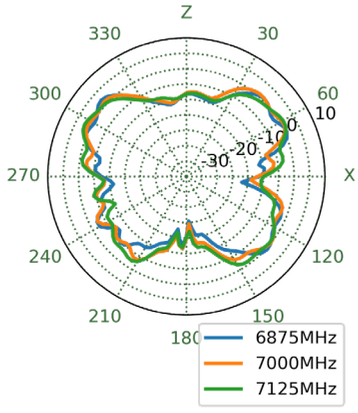
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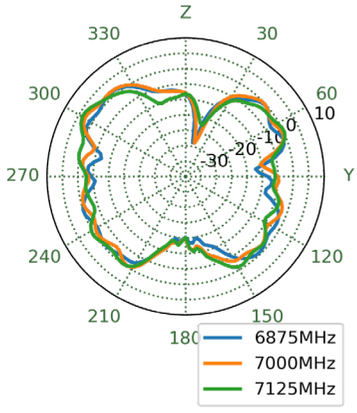
4.19 9x15cm Ground 3D and 2D Radiation Patterns at 7000 MHz



XY Plane	XZ Plane	YZ Plane



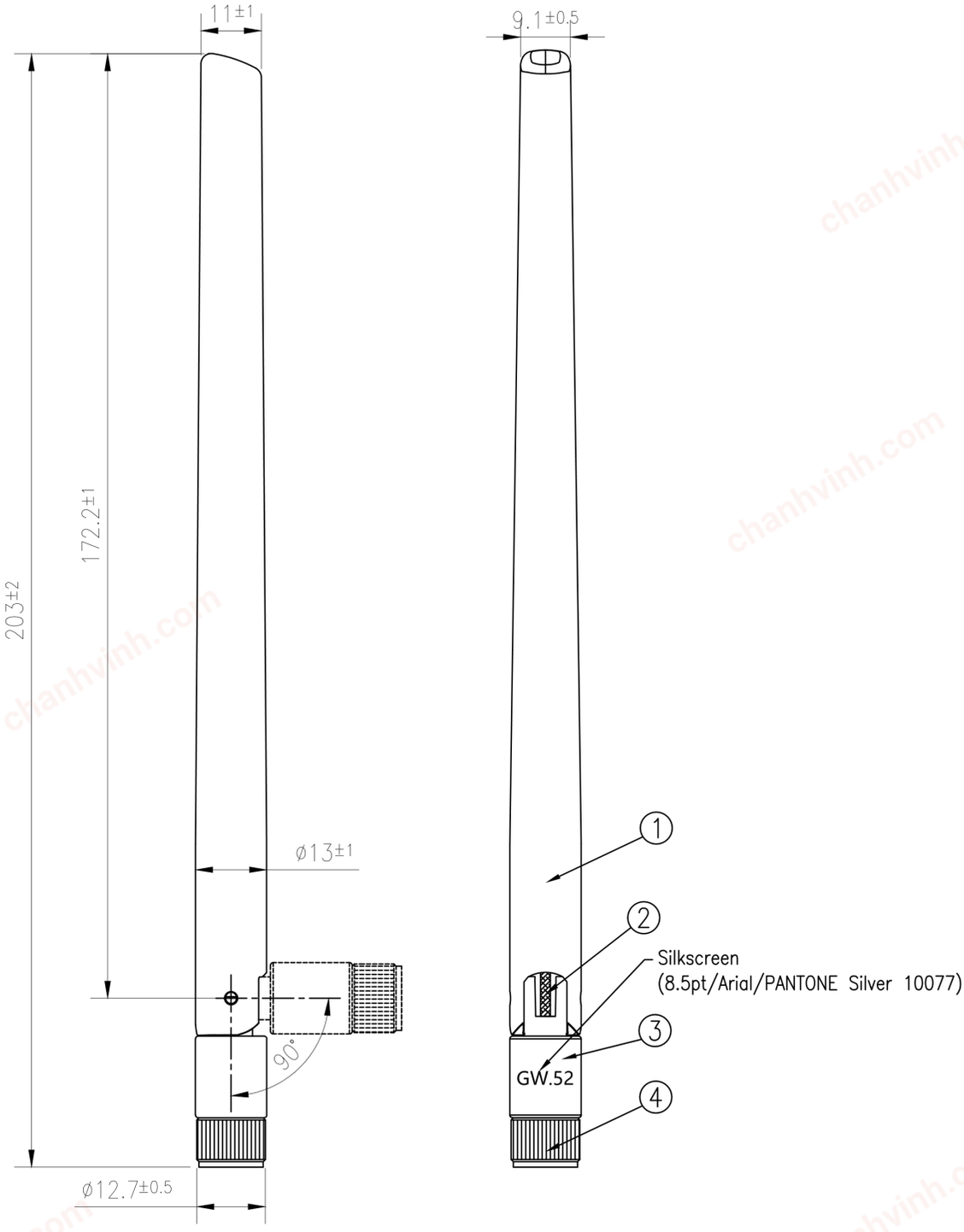




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5. Mechanical Drawing

ISO NO.: EDW-23-8-0897
STATE: RELEASE
NOTES: 1. All material must be RoHS compliant.



	Name	Material	Finish	QTY
1	Radome	PC+PBT	Black	1
2	RG178 coaxial cable	FEP	Brown	1
3	Lower Holder	PC+PBT	Black	1
4	RP-SMA(M)	PC+PBT	Black	1

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6. Packaging

TBD

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Changelog for the datasheet

SPE-23-8-272 – GW.52.A153

Revision: A (Original First Release)	
Date:	2023-09-26
Notes:	Initial Release
Author:	Cesar Sousa

Previous Revisions

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