



TAOGLAS®



Datasheet

Comet

Part No:

Black - MA584.A.003

White - MA584.W.003

Description

4-in-1 4x2.4-8GHz Wi-Fi/5G MIMO Permanent Mount Puck Antenna with 300mm 1.37 Cable and SMA(M) Connectors

Features:

Permanent Mount Puck Antenna
4* Wi-Fi MIMO Antennas Covering 2.4/5.8/7.125 GHz
IP67 Waterproof Enclosure
Dims: 101 x 101 x 20 mm
Cables: 300mm of 1.37 Micro Coaxial Black Cable
Connectors: SMA(M)
RoHS & Reach Compliant

1.	Introduction	3
2.	Specification	4
3.	Mechanical Drawing	5
4.	Installation Recommendation	6
5.	Packaging	8
6.	Antenna Characteristics	9
7.	Radiation Patterns	13

	Changelog	28
--	------------------	-----------

Taoglas makes no warranties based on the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Taoglas reserves all rights to this document and the information contained herein. Reproduction, use or disclosure to third parties without express permission is strictly prohibited.

Ireland & USA
ISO 9001:2015
Certified



Taiwan
ISO 9001:2015
Certified



1. Introduction



The Taoglas Comet MA584 is a low profile, puck style, screw mount antenna. The MA584 contains **4 Wi-Fi antennas** supporting multi-band coverage across **2.4GHz, 5.8GHz, and 7.125GHz**. Through innovative antenna engineering techniques, it delivers consistent gain and high efficiency across these bands performance that is typically difficult to achieve in smaller style antennas.

This robust design ensures dependable connectivity where other low-profile antennas fail, making the Comet series particularly well-suited for fleet and transport telematics, public safety, gateways, and other mission-critical applications that demand both a discreet form factor and reliable operation on metallic or equipment surfaces.

Typical Applications Include:

- Gateways, Routers & Industrial Networks
- Digital Signage and Point of Sale Terminals
- First Responder and Emergency Services

The Comet has been designed to be permanent mount/screw mount. This allows it to be utilized and installed in applications where a strong and secure mechanical attachment is required, ensuring reliable performance even in high-vibration or harsh environments. The four Wi-Fi connections utilize 300mm of 1.37 Micro Coax Black cable with SMA(M) connectors as standard. Customized cable and connector versions are also available upon request. Contact your regional Taoglas customer support team for further information.

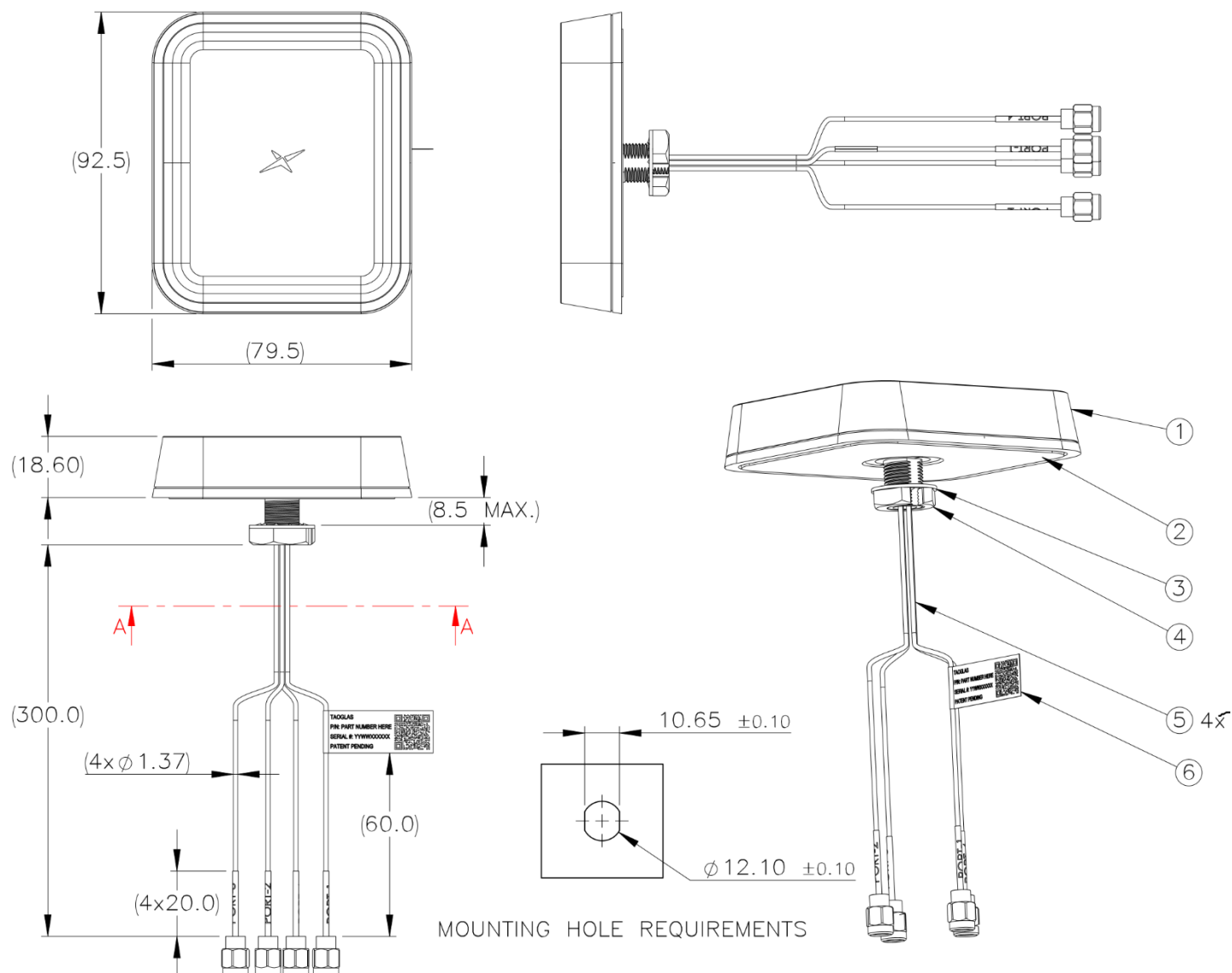
2. Specification

Electrical									
Band	Frequency (MHz)	Measurement	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
Wi-Fi - 2GHz	2400-2500	Wi-Fi 1	50.3	-2.98	3.28	50 Ω	Linear	Omni directional	10W
		Wi-Fi 2	47.8	-3.21	3.71				
		Wi-Fi 3	49.8	-3.03	2.74				
		Wi-Fi 4	49.9	-3.02	5.23				
Wi-Fi - 5GHz	5150-5850	Wi-Fi 1	55.0	-2.60	3.88				
		Wi-Fi 2	53.7	-2.70	2.88				
		Wi-Fi 3	51.5	-2.88	2.40				
		Wi-Fi 4	50.5	-2.96	3.39				
Wi-Fi - 6GHz	5925-7125	Wi-Fi 1	55.4	-2.56	5.04				
		Wi-Fi 2	51.5	-2.88	2.96				
		Wi-Fi 3	52.8	-2.78	3.31				
		Wi-Fi 4	50.5	-2.97	3.20				

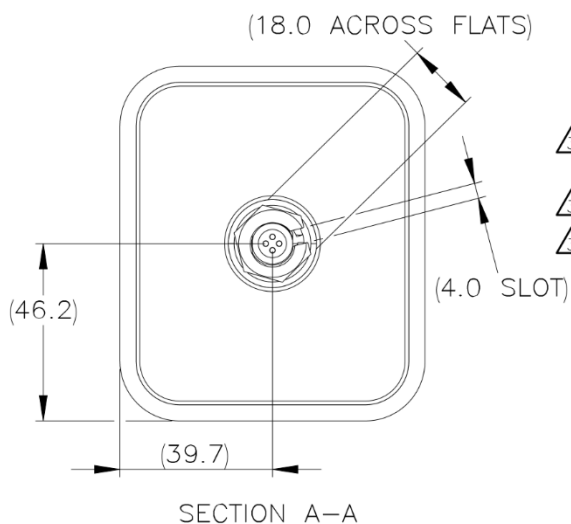
Mechanical	
Dimensions	101 x 101 x 20 mm
Weight	102g
Material	ASA
Connector	SMA (M)
Cable	300mm of 1.37 Micro Coaxial Black Cable
Thead Diameter	M12

Environmental	
Waterproof Rating	IP67
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Relative Humidity	Non-condensing 65°C 95% RH
RoHS & REACH Compliant	Yes

3. Mechanical Drawing



ITEM NO.	DESCRIPTION	QTY.	COLOR
1	Antenna	1	RAL 9011-P Graphite Black, Logo Pantone 877C Metallic Silver
2	Foam Gasket with Two Sided PSA	1	Black
3	M12 Internal Tooth Washer	1	N/A
4	Hex Nut, M12 x 1P x 5mm, 4.0mm Slot	1	N/A
5	360MM, 1.37MM Black, SMA(M), 1.5-2.3-4.5, PORT-2	1	Cable Black, Heat Shrink Black With White Text
6	QR Label	1	White



4. Installation Recommendation

Installation Instructions

Comet MA58x Series

Low Profile Permanent Mount Combination Antenna



A Introduction

The **Taoglas Comet MA58x Series** is a low-profile, puck-style, screw-mount antenna that integrates two high-performance 5G/4G MIMO cellular elements and one GNSS element. Covering all worldwide cellular frequencies from 600 MHz to 6 GHz, along with GPS, GLONASS, and BeiDou bands, it achieves stable gain and efficiency that are typically difficult to realize in such a compact 101 × 101 × 20 mm form factor.



Electrical Safety

The Comet can contains an active GPS/GNSS antenna.

Rated voltage: 1.8-5.5VDC Rated current: 10mA maximum

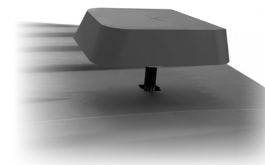
The supply to this device must be provided with overcurrent protection of 1A maximum.

Power consumption @ 1.8-5.5V ; 10 mA

B Mounting & Location

Secured via a Ø12mm diameter threaded mounting stud, The Comet is recommended to be fitted by drilling a Ø13mm hole will need to be drilled in the roof or enclosure surface.

When mounting on a vehicle roof panel ensure to mount on a flat surface, and measure for a central position. Care should be taken to mount the Comet antenna as far as possible from other roof-mounted features such as the aircon unit, light bar etc.



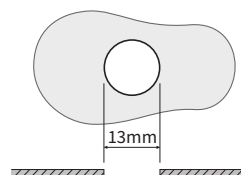
Sealing

In order to ensure that the installation is properly sealed against the mounting surface care must be taken regarding curvature of the mounting panel. It is highly recommended to install the antenna on a clean, flat and level surface. After installation the compression of the foam gasket and adhesive against the mounting panel should be checked and a small bead of neutral cure silicone sealant can be applied around the periphery of the enclosure if required.

C Surface Preparation

When preparing to drill the hole, mask the area around the hole position to protect the surface. If an existing OEM antenna mounting hole is not present, drill a pilot hole and increase the hole size to Ø12mm (0.472"). Ensure the drill bit does not contact the headliner. Then deburr and clean the area around the hole carefully removing all waste.

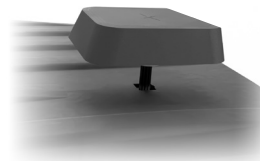
Remove paint and primer from under panel surface to ensure adequate earth contact by washer and nut. Apply petroleum jelly or paint around cut edge of the hole to prevent corrosion



www.taoglas.com

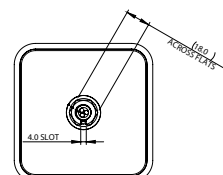
D Adhesive Foam Gasket

On the underside of the antenna there is a 3M adhesive foam gasket. Peel away the 3M adhesive protection and feed the cables through the hole. Position the antenna over the hole and press down onto the panel with pressure. This adhesion will ensure the antenna is securely mounted and will also allow for extremely minimal curvature on the roof of a vehicle.



E Securing the Mount

A split nut is used to easily fit onto the thread through the cables. The nut is attached from the underside of the panel, it should easily twist onto the thread and then secured in place with a final tighten with a spanner. After tightening, double check the antenna to make sure that it is properly secured.



F Cable Routing and Connection

The cables supplied are RG-174 and TGC-1.5DS for all feeds. The heatshrink will denote which cable is which for ease of installation. Connect each individual connector to the correct port of the router, if any cable is unused please fit a 50Ω terminator to the individual connection.



G Notices



Caution

To comply with FCC RF Exposure requirements in section 1.1310 of the FCC Rules, antennas used with this device must be installed to provide a separation distance of at least 20 cm from all persons to satisfy RF exposure compliance.



Warning

Do not operate the equipment in an explosive atmosphere.



European Waste Electronic Equipment Directive 2012/19/EU

Please ensure that your old Waste Electricals and Electronics are recycled do not throw them away into standard waste.



Hazardous Substances Directive (RoHS) 2011/65/EU / 2015/863/EU Directive 2014/53/EU Radio Equipment Directive (RED)

View CE Certificate online:

www.taoglas.com/assets/ce/CE-Declaration-of-Conformity-RoHS-RED-Patriot-Series.pdf

Harmonised Standards and References:

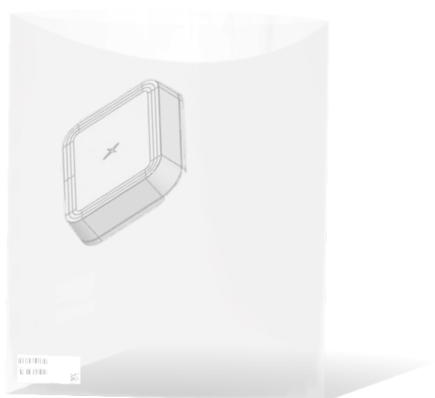
EN 301 489-1 (V2.2.3): ElectroMagnetic Compatibility (EMC) standard for radio equipment and services;
Part 1: Common technical requirements. Referencing CENELEC EN 55032 Class B.

Waiver: This document represents information compiled by Taoglas to the best of our current knowledge. This is not intended to be used as a representation or warranty of fitness of the products described for any particular purpose. This document details guidelines for general information purposes only. When planning installations, always seek specialist advice and ensure that the products are always installed by a properly qualified installer in accordance with applicable regional laws and regulations.

All copyrights, trademarks and any other intellectual property rights related are owned by Taoglas Group Holdings Limited.

www.taoglas.com

5. Packaging



- ✓ 1 PCS / PE bag
- ✓ PE bag (mm): 160x300 (Ref)
- ✓ SPQ Label
- ✓ Weight (g): 102 $\pm$ 3%



- ✓ 60 PCS / Carton
- ✓ Carton(mm): 370x370x300
- ✓ Carton Label
- ✓ Weight (kg): 6.92 $\pm$ 3%

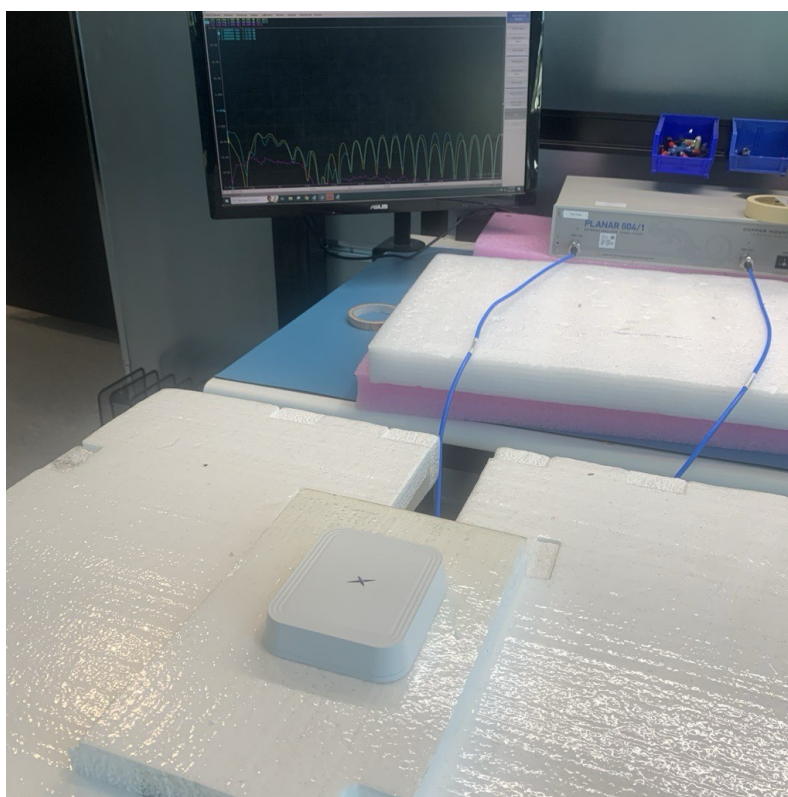
6. Antenna Characteristics

6.1 Test Setup

AUT

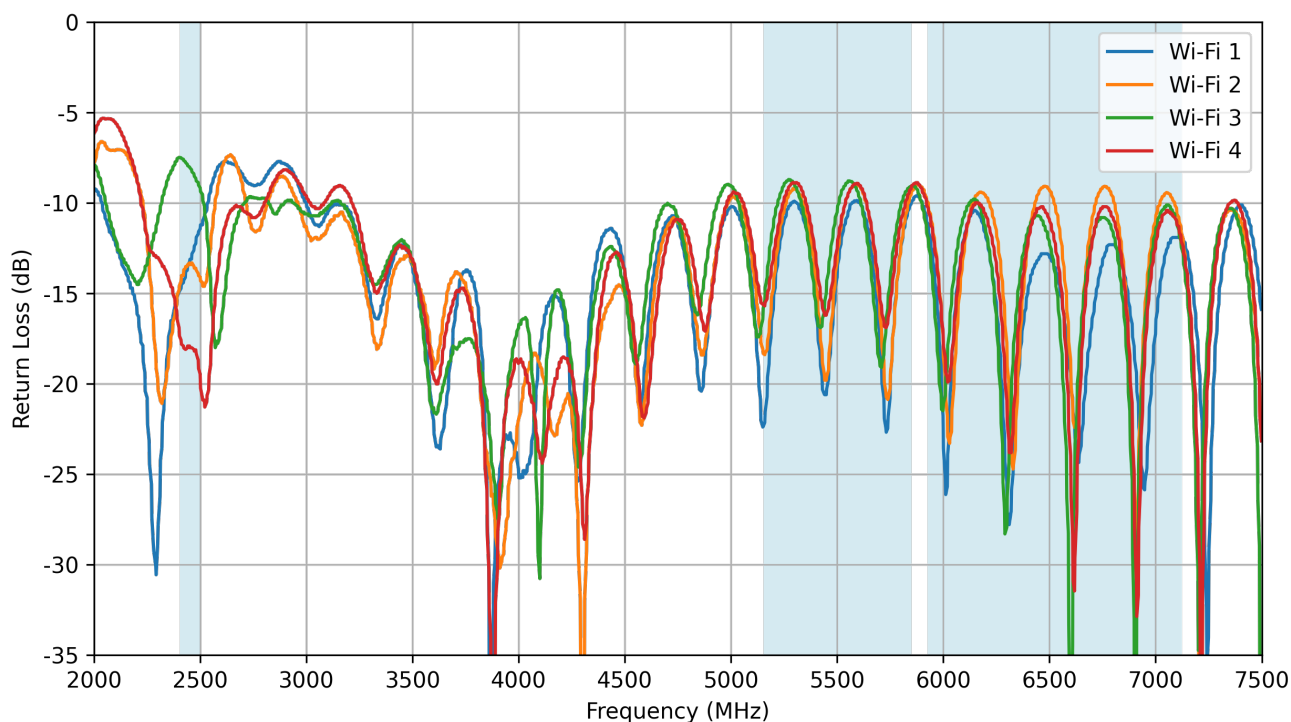


Vector Network Analyzer

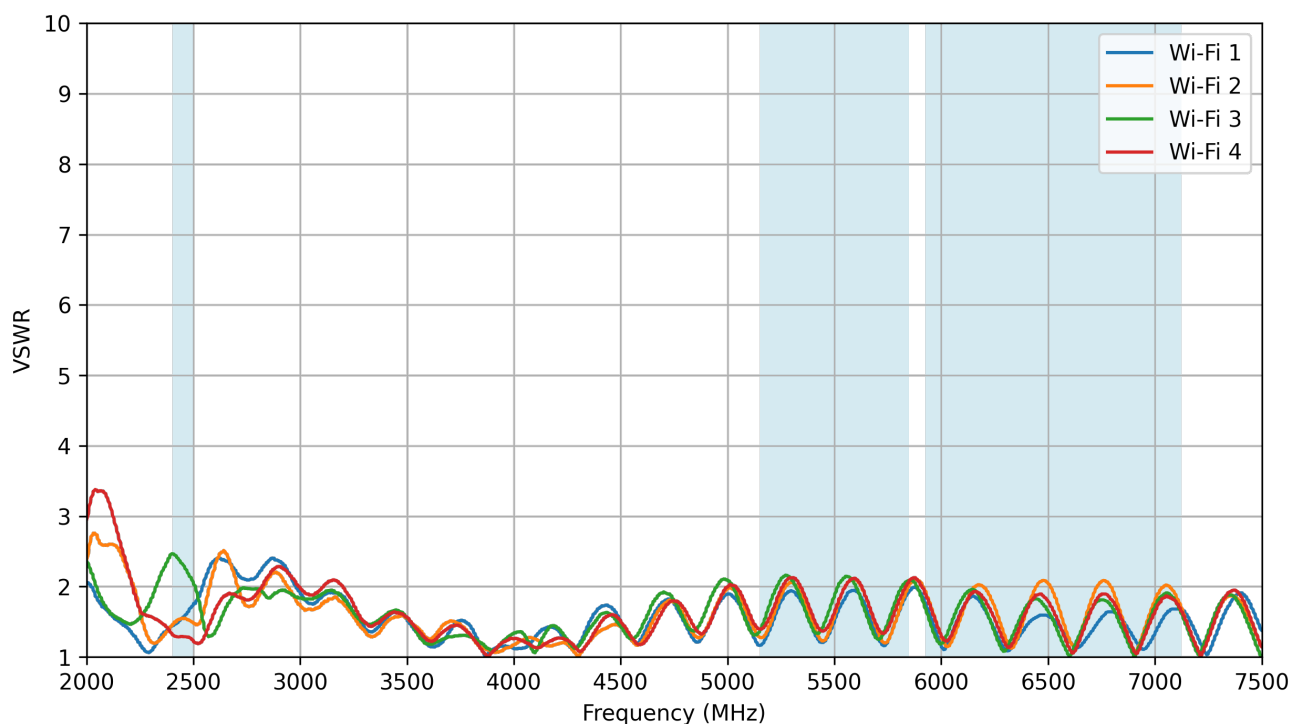


VNA Set-up in Free Space

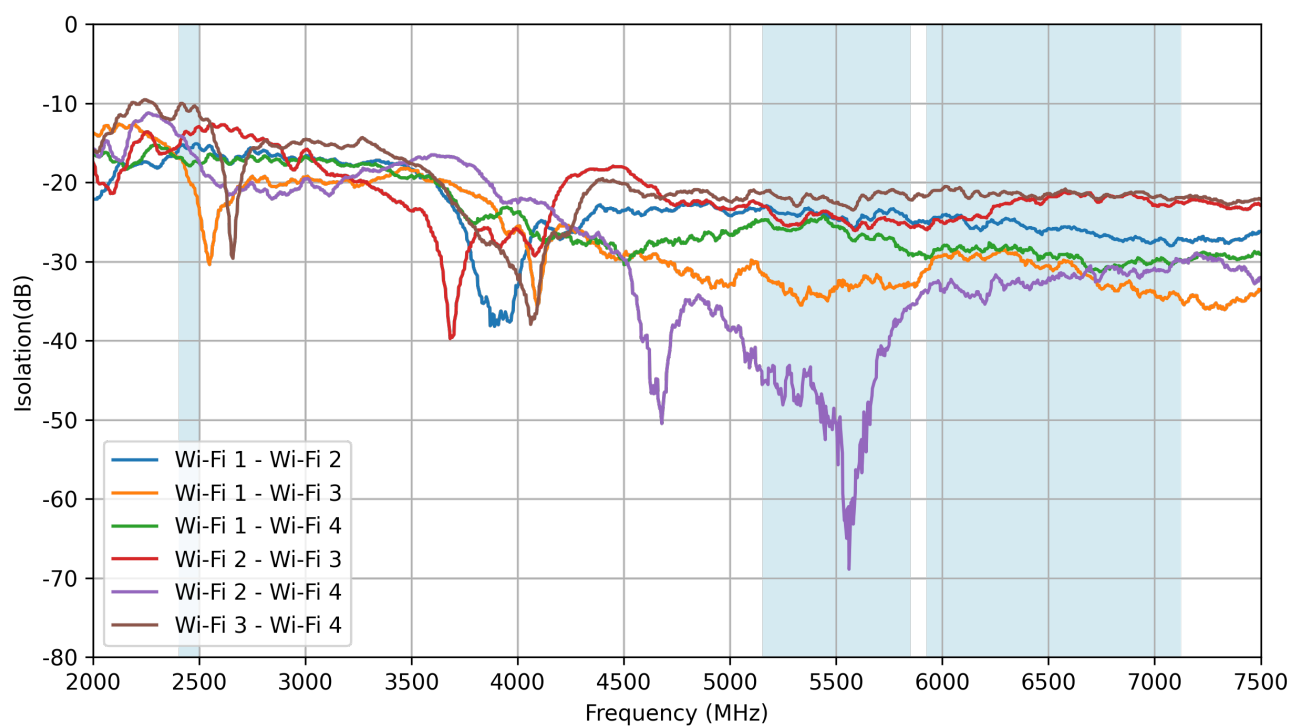
6.2 Return Loss



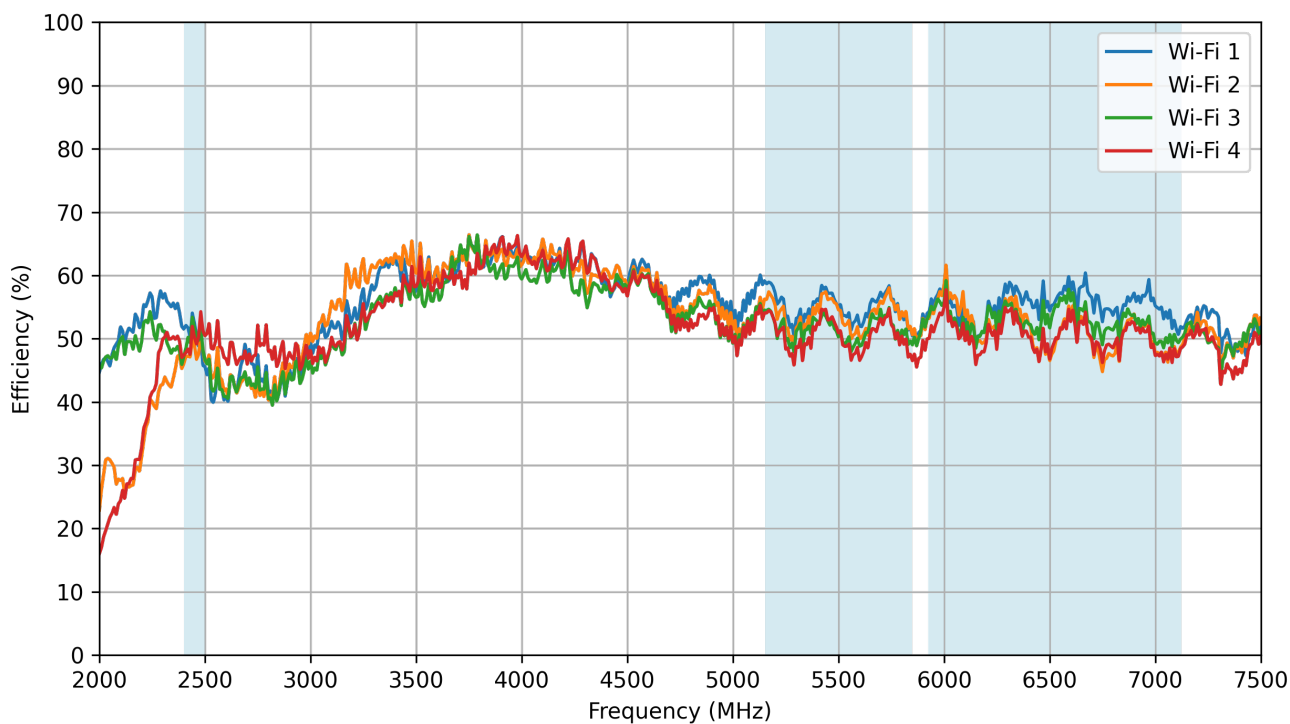
6.3 VSWR



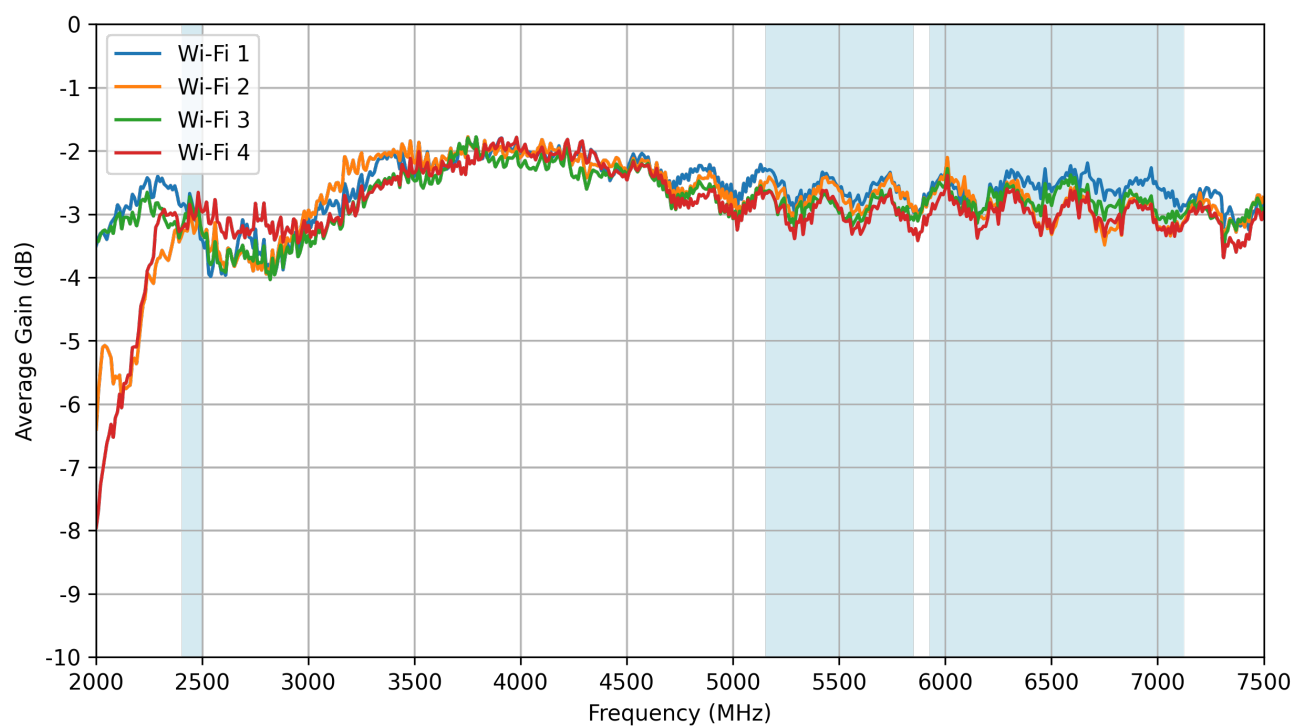
6.4 Isolation



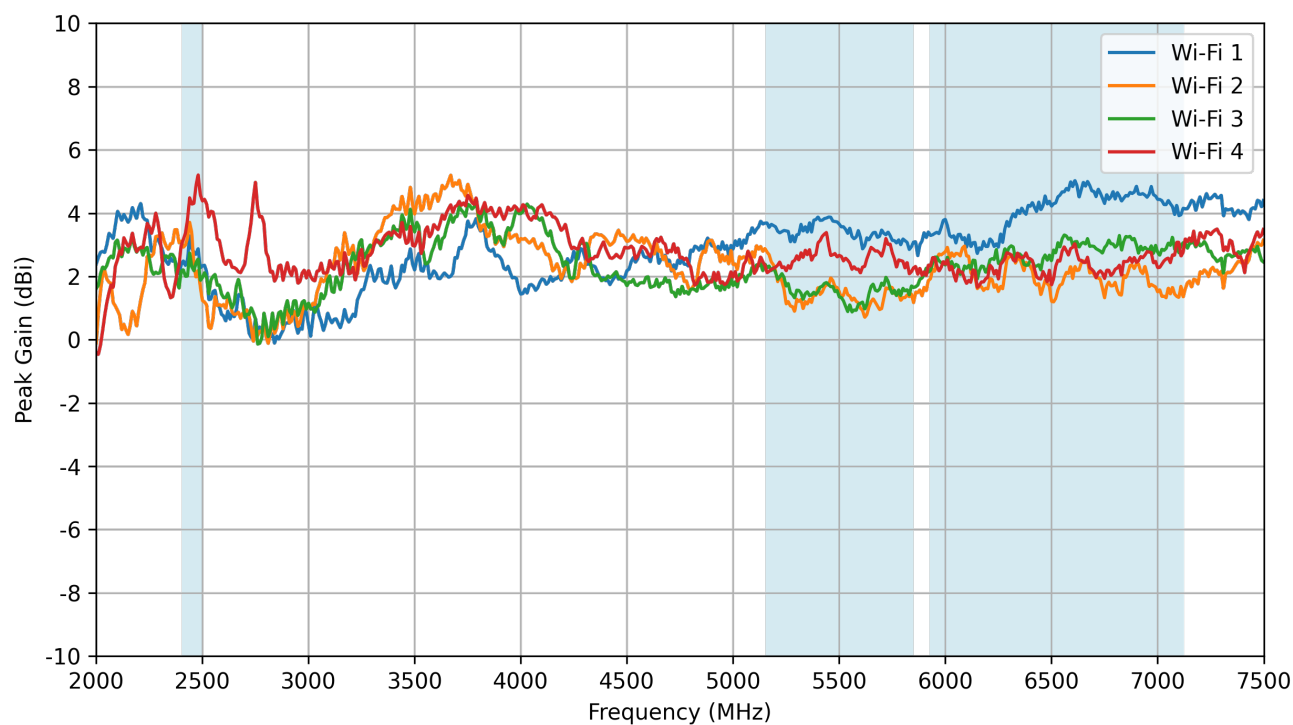
6.5 Efficiency



6.6 Average Gain

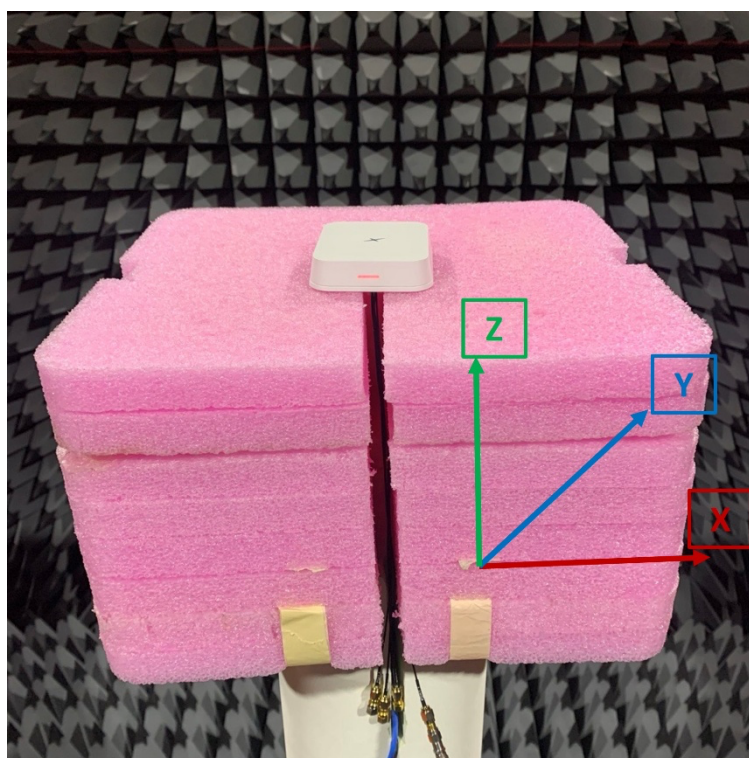
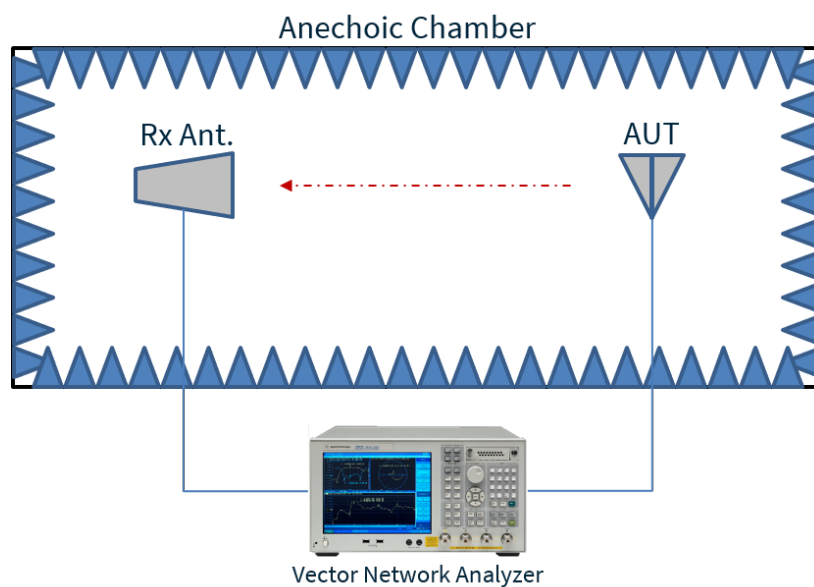


6.7 Peak Gain



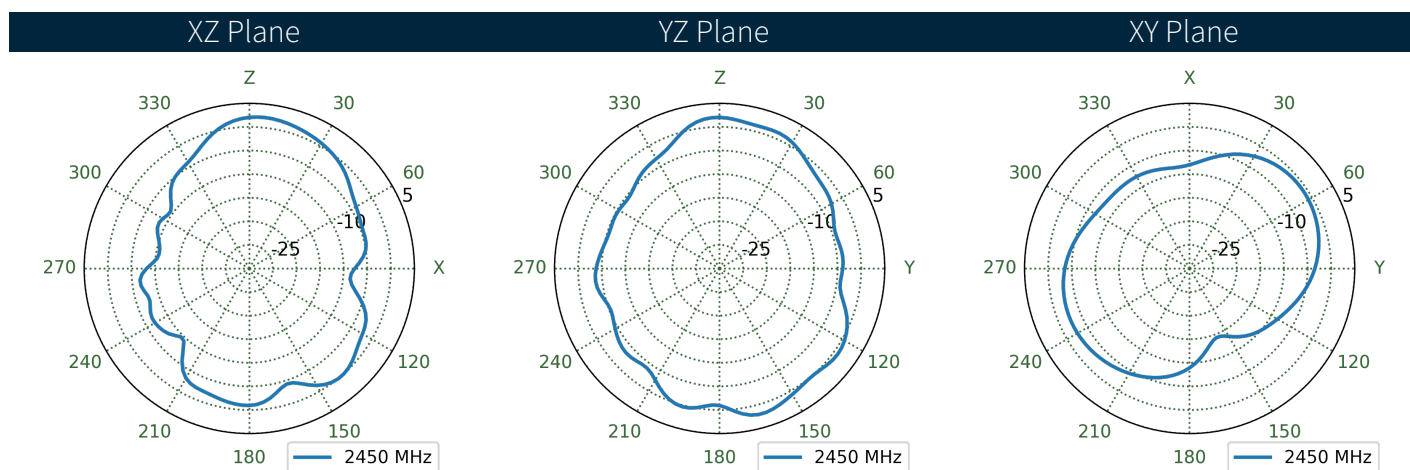
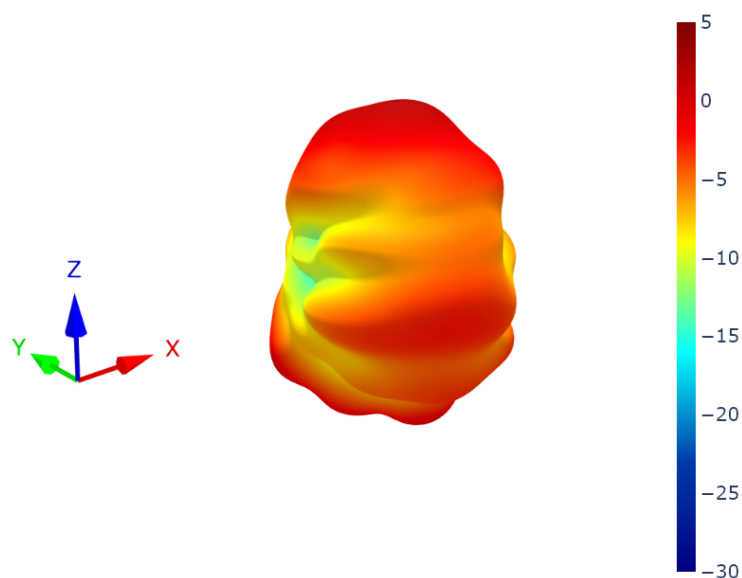
7. Radiation Patterns

7.1 Test Setup

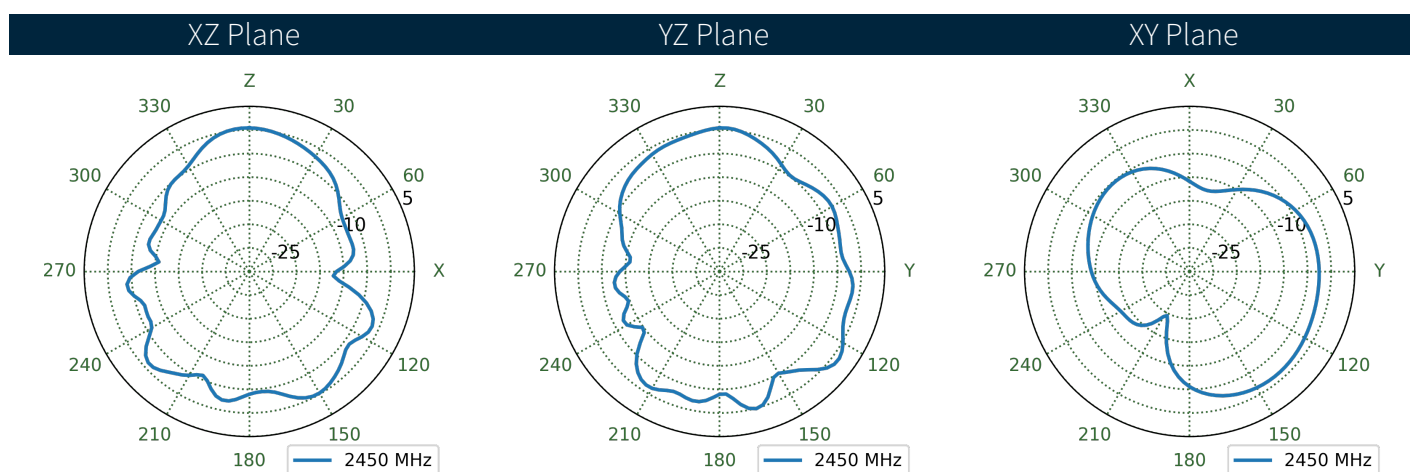
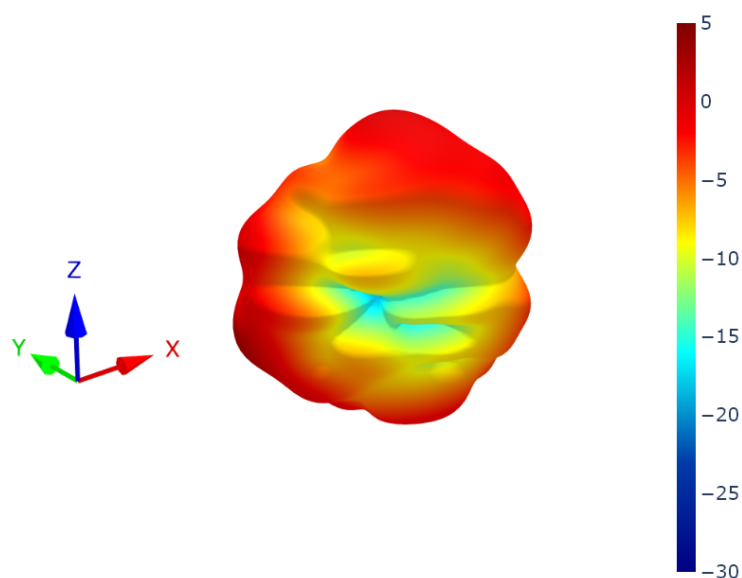


Chamber Set-up in Free Space

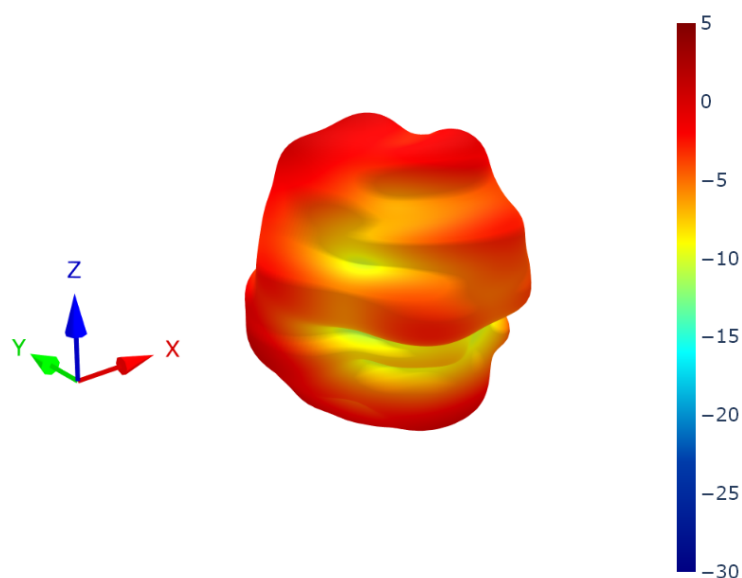
7.2 Wi-Fi 1 Patterns at 2450 MHz



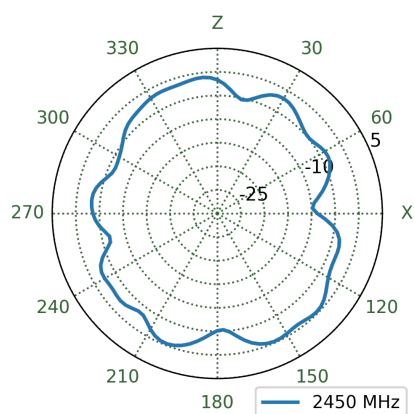
7.3 Wi-Fi 2 Patterns at 2450 MHz



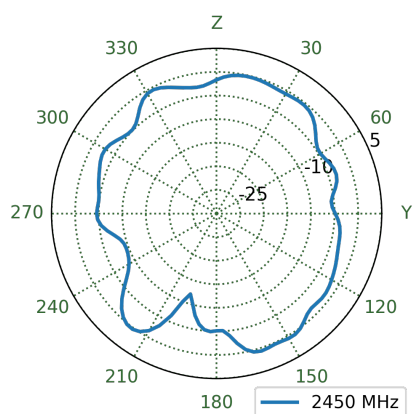
7.4 Wi-Fi 3 Patterns at 2450 MHz



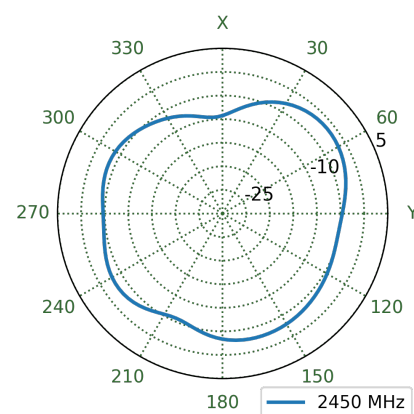
XZ Plane



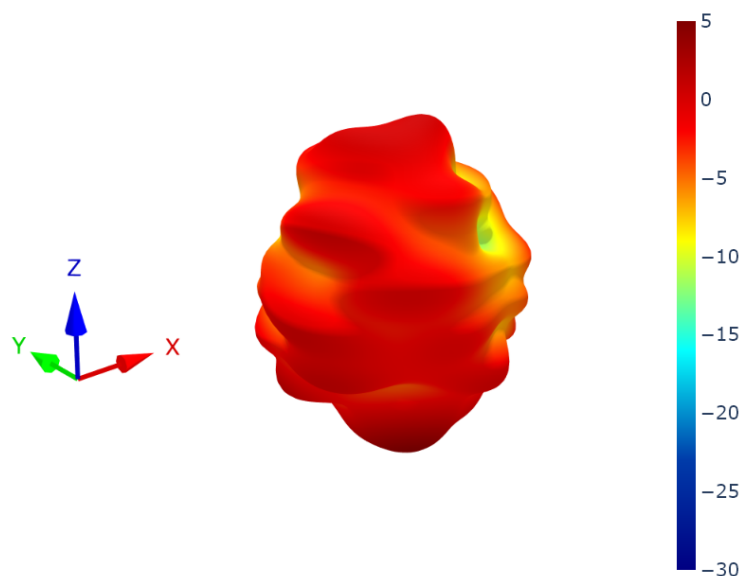
YZ Plane



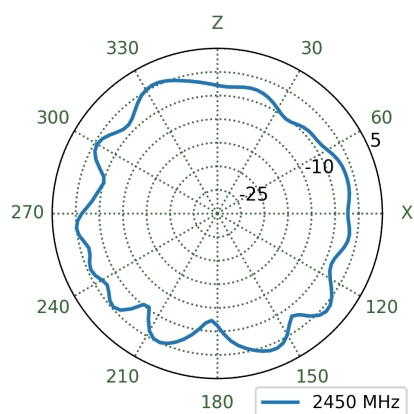
XY Plane



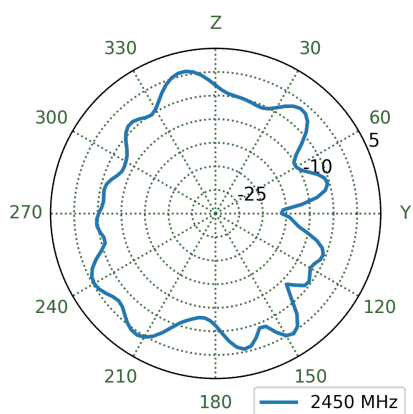
7.5 Wi-Fi 4 Patterns at 2450 MHz



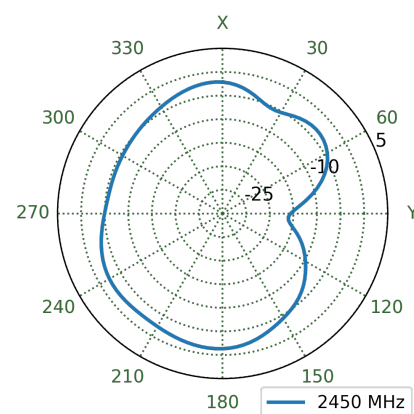
XZ Plane



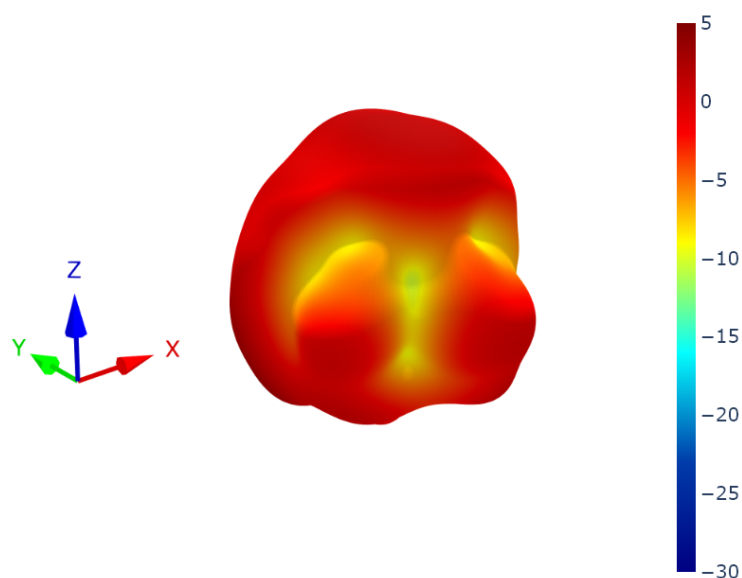
YZ Plane



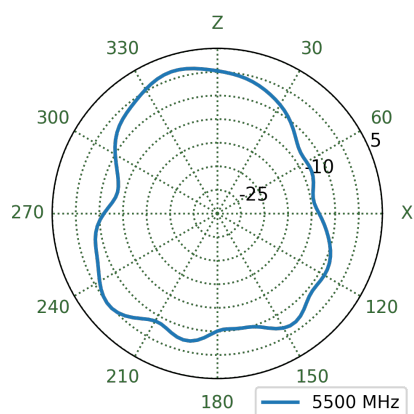
XY Plane



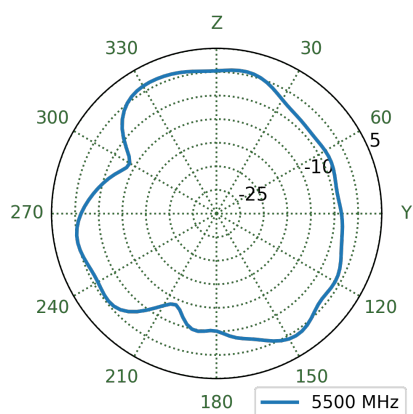
7.6 Wi-Fi 1 Patterns at 5500 MHz



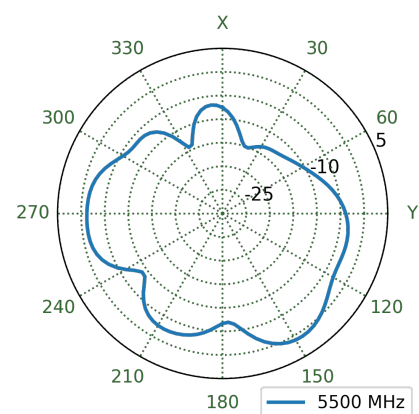
XZ Plane



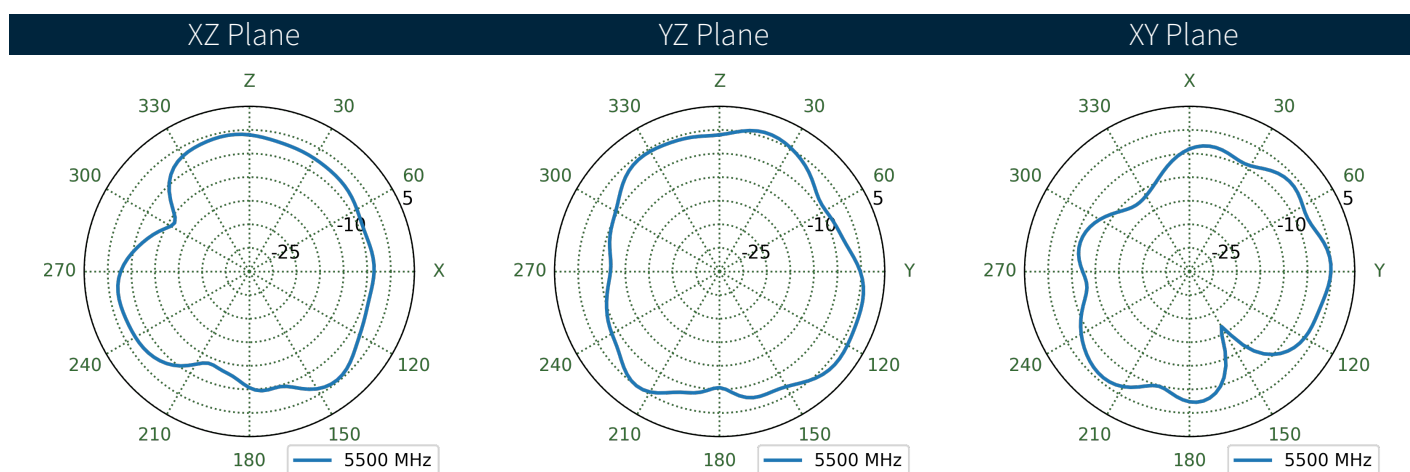
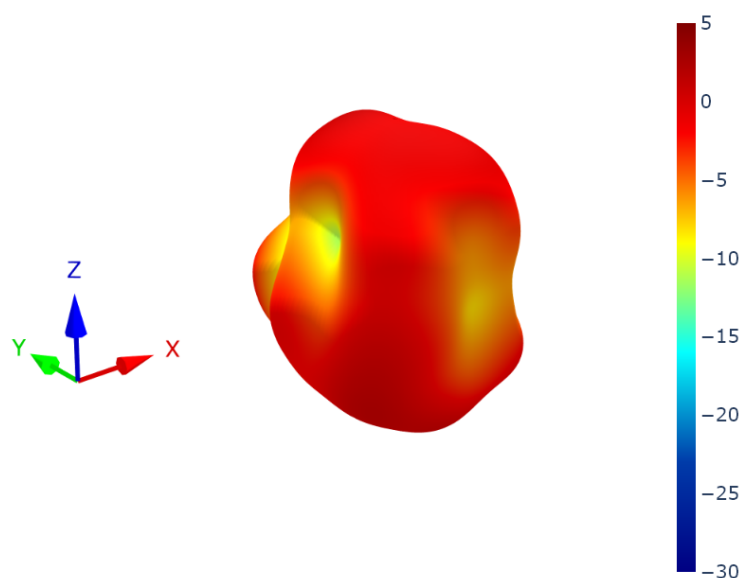
YZ Plane



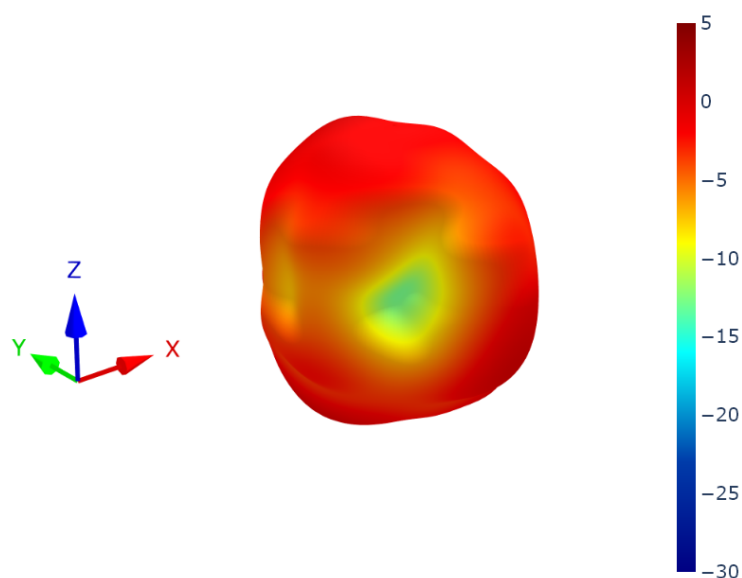
XY Plane



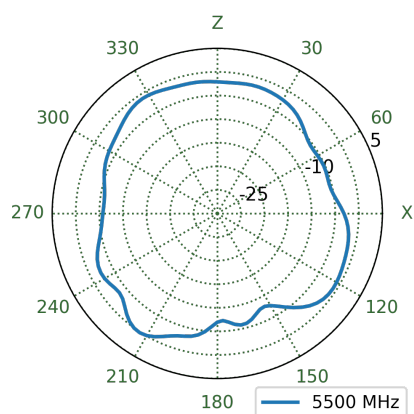
7.7 Wi-Fi 2 Patterns at 5500 MHz



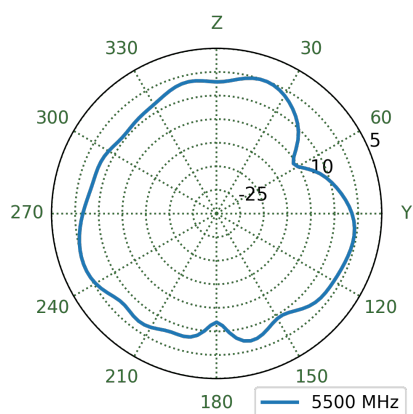
7.8 Wi-Fi 3 Patterns at 5500 MHz



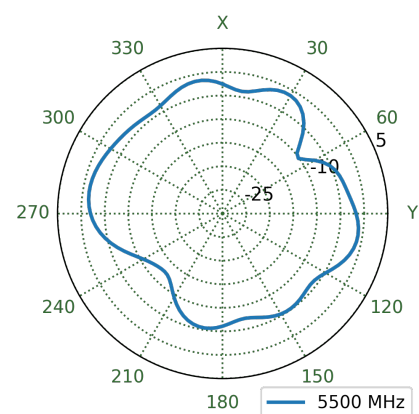
XZ Plane



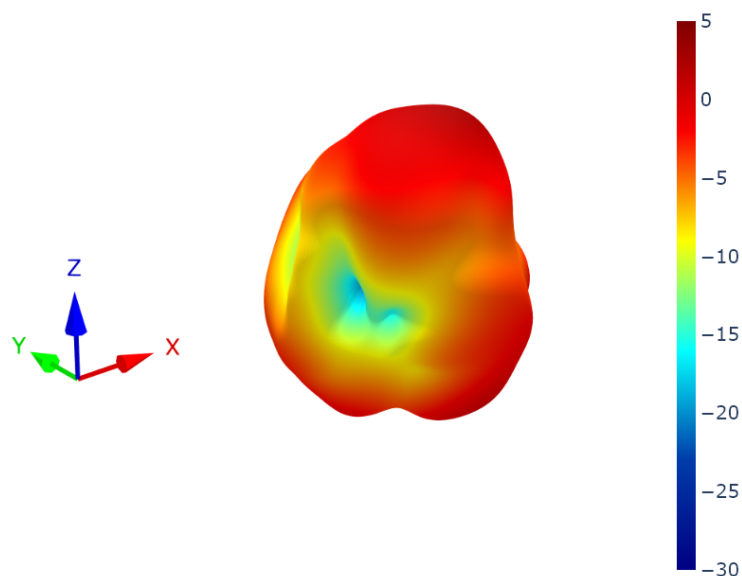
YZ Plane



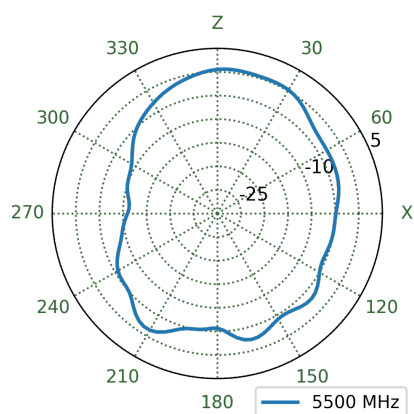
XY Plane



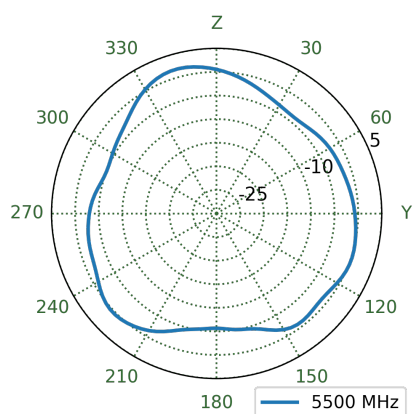
7.9 Wi-Fi 4 Patterns at 5500 MHz



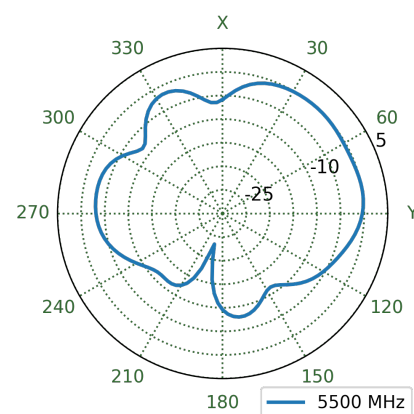
XZ Plane



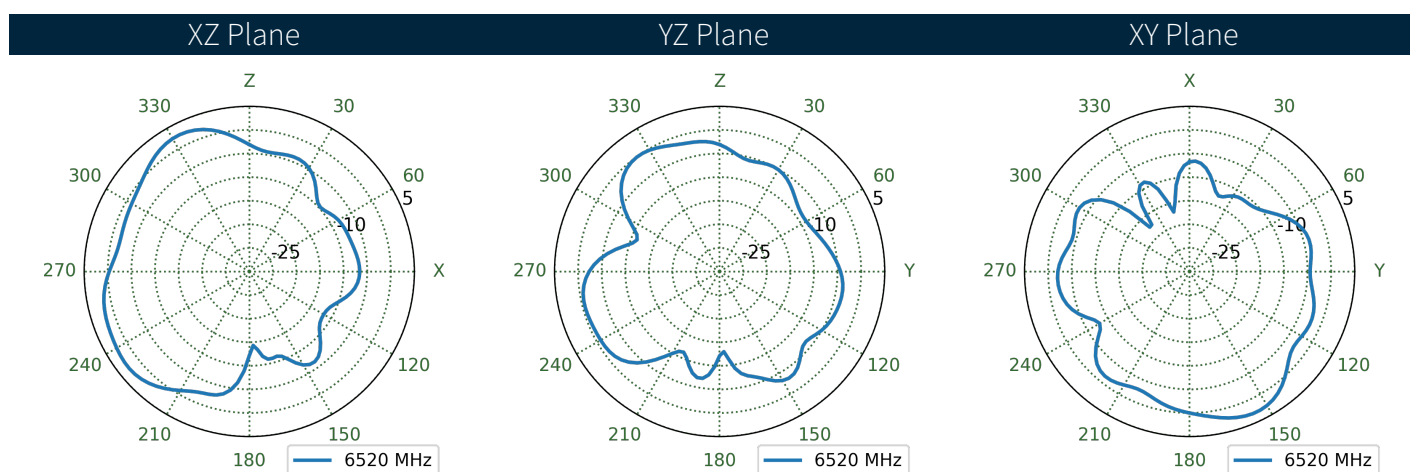
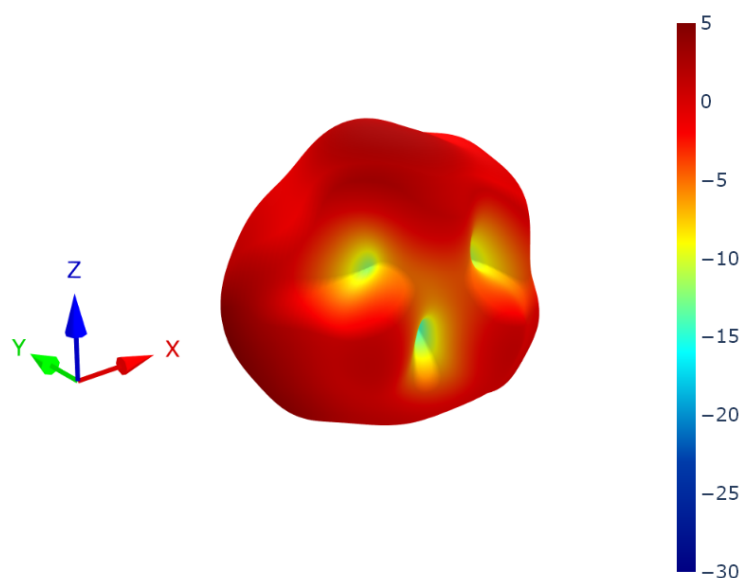
YZ Plane



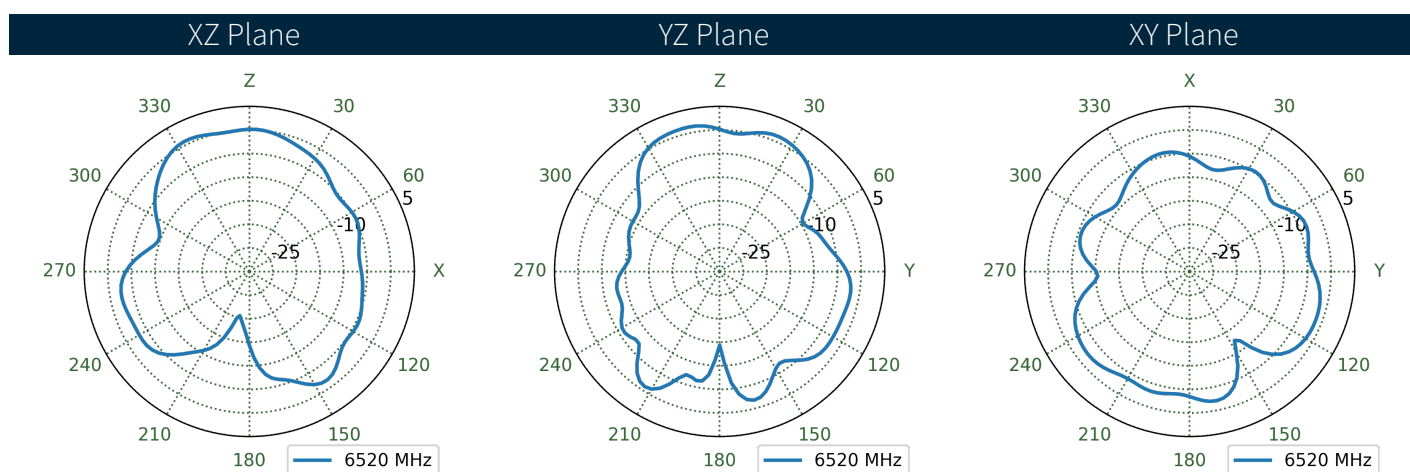
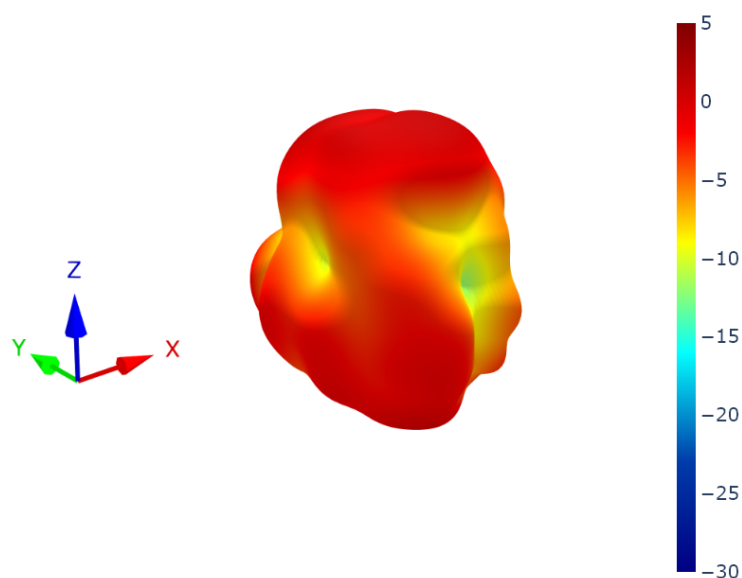
XY Plane



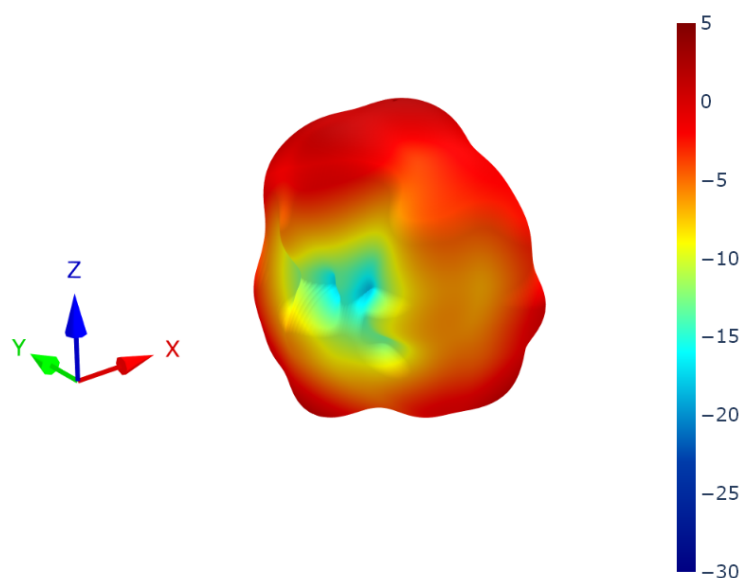
7.10 Wi-Fi 1 Patterns at 6525 MHz



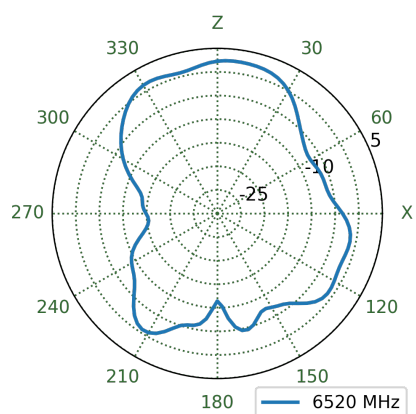
7.11 Wi-Fi 2 Patterns at 6525 MHz



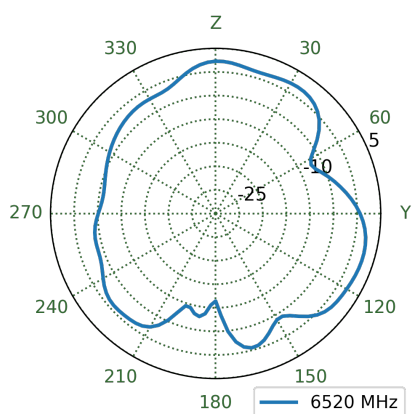
7.12 Wi-Fi 3 Patterns at 6525 MHz



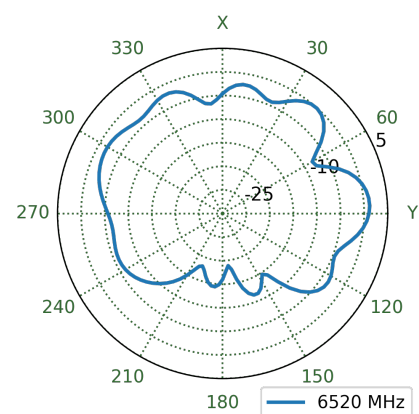
XZ Plane



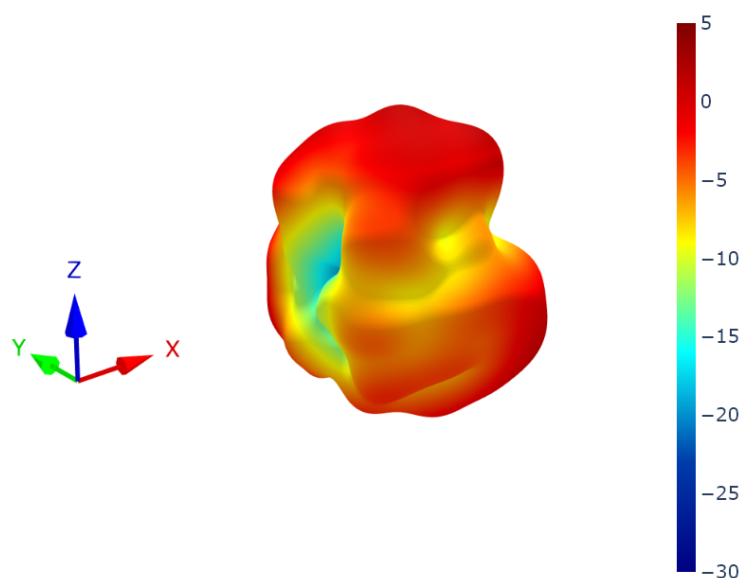
YZ Plane



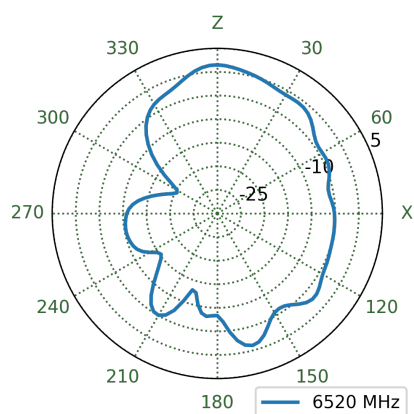
XY Plane



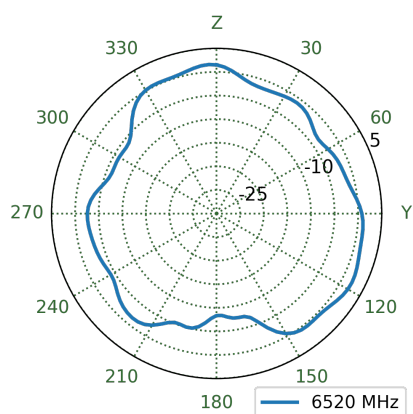
7.13 Wi-Fi 4 Patterns at 6525 MHz



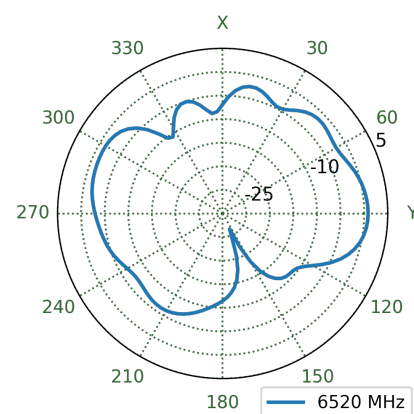
XZ Plane



YZ Plane



XY Plane



Changelog for the datasheet

SPE-25-8-191 - MA584.A.003_MA584.W.003

Revision: A (Initial Release)

Date:	2025-07-09
Notes:	Initial Datasheet Release
Author:	Cesar Sousa

Previous Revisions



www.taoglas.com

