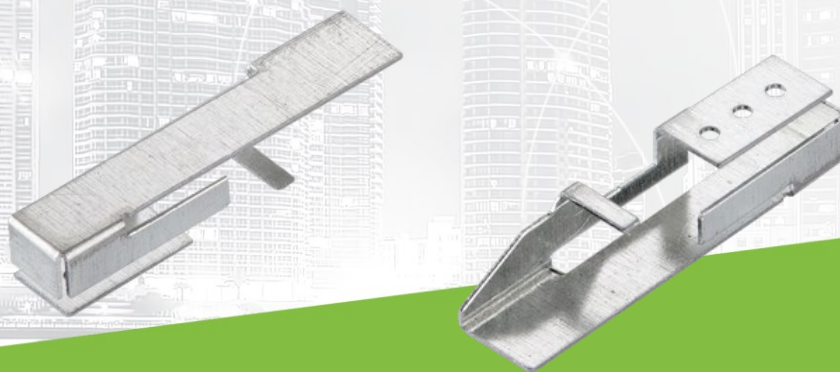




TAOGLAS®



Datasheet

Part No:
MPA.257.A

Description

WiFi Tri-Band 2.4/5.8/7.125GHz SMD Stamp Metal PIFA Antenna

Features:

Wi-Fi Tri Band SMD Stamp Metal PIFA Antenna
Covering: 2.4/5.8-7/125GHz
Dims: 24 x 5.4 x 4.9mm
RoHS & Reach Compliant

1.	Introduction	3
2.	Specification	4
3.	Mechanical Drawing	5
4.	Antenna Characteristics	6
5.	Radiation Patterns	9
	Changelog	13

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.



1. Introduction



The Taoglas MPA.257.A is a stamped metal Wi-Fi antenna for various Bluetooth and Wi-Fi applications. Engineered to cover 2.4, 5.8 and 7.125GHz bands, the antenna is suitable for Wi-Fi 6/7 applications allowing you to future proof your device design. The high-performance antenna, supplied on tape and reel, is designed to be mounted via SMD to the device PCB. The antenna is durable and its robust construction makes it more resistant to physical damage in comparison to other antennas. The metals used in Taoglas' stamped antennas are recyclable, making them a more sustainable choice compared to other materials like plastics or composites.

The lightweight MPA.257.A has a compact form factor of just 24.5 x 4.9 x 5.9mm, making it suitable for modern electronic devices that require a small, efficient antenna design. The MPA.257.A requires a small keep out area of allowing it to be used where other antennas cannot. Many competitor products require large keep out areas and several matching components on much larger ground planes to operate with similar performance.

Typical applications that the MPA.257.A is suitable for include:

- Handheld Wi-Fi devices
- Smart Home and Office Automation
- Entertainment Systems with 4K / 8K Streaming, VR and AR
- Keyless entry systems and Access Control Systems
- Smart Telemedicine and Healthcare
- Industrial Automation and Predictive Maintenance Systems

Taoglas high-performance stamped metal antennas can be specifically tuned to customer-specific device environments, subject to NRE and MOQ. [Contact](#) your regional Taoglas customer support team to request these services or additional support to integrate and test this antenna's performance in your device.

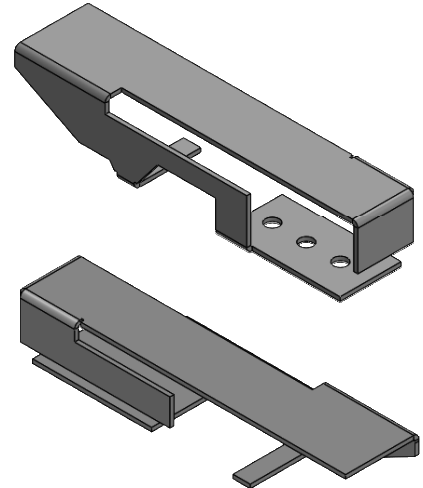
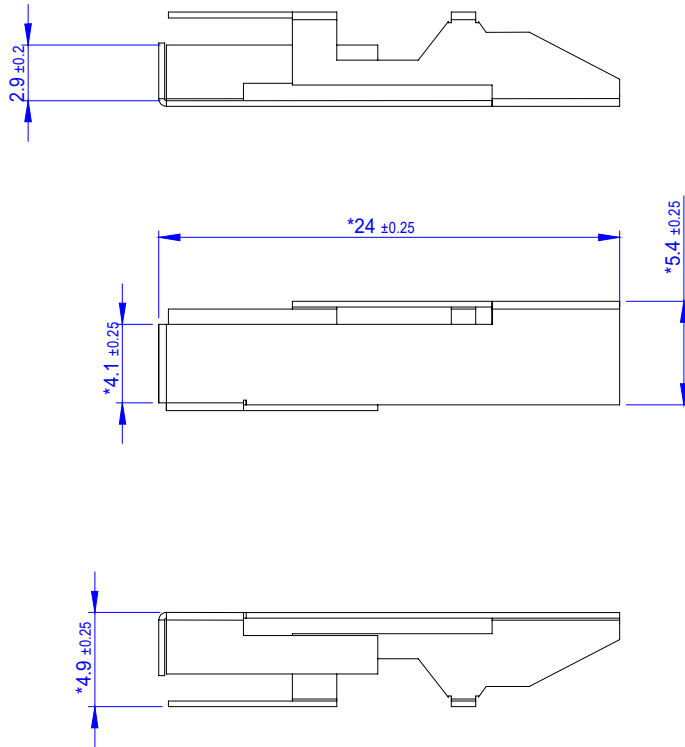
2. Specification

Wi-Fi Electrical								
Band	Frequency (MHz)	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
Wi-Fi - 2GHz	2400-2500	60.1	-2.21	1.50	50 Ω	Linear	Omni	2W
Wi-Fi - 5GHz	5150-5850	65.0	-1.87	3.78				
Wi-Fi - 6GHz	5925-7125	70.6	-1.51	4.41				

Mechanical	
Dimensions	24 x 5.4 x 4.9mm
Antenna Type	SMD
Material	Tin Plated

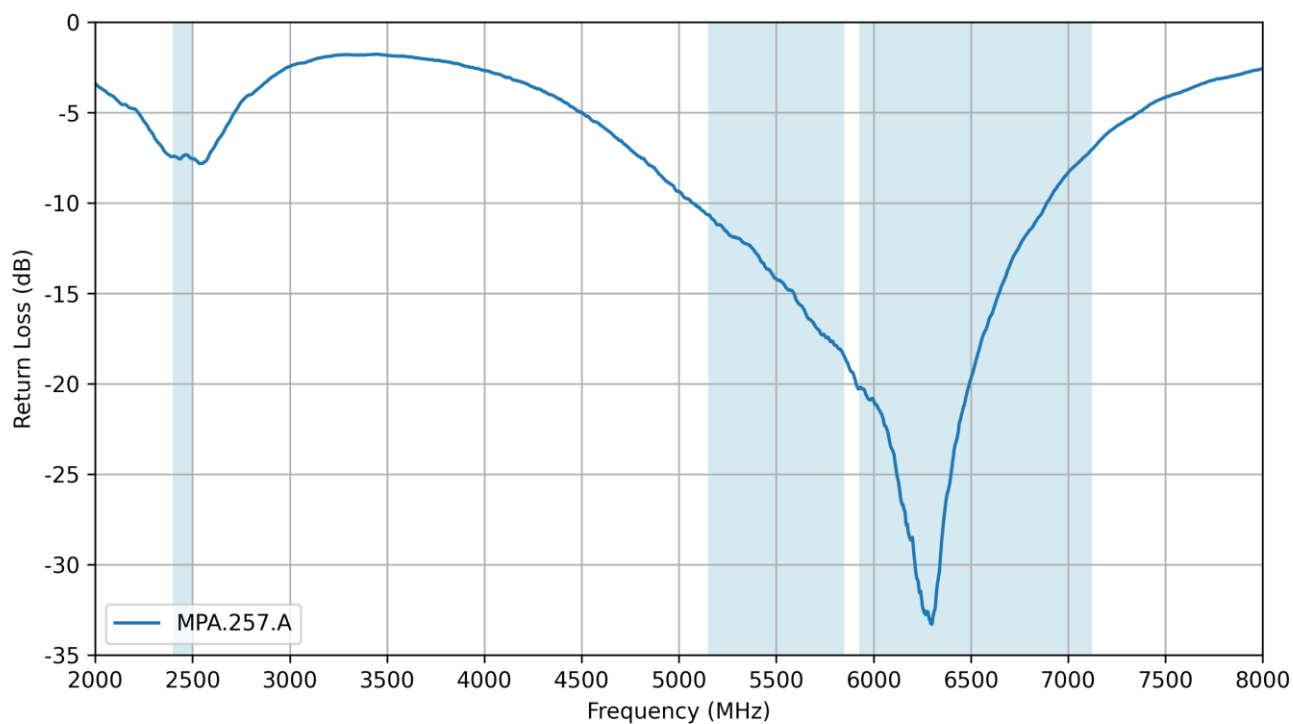
Environmental	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Relative Humidity	Non-condensing 65°C 95% RH

3. Mechanical Drawing

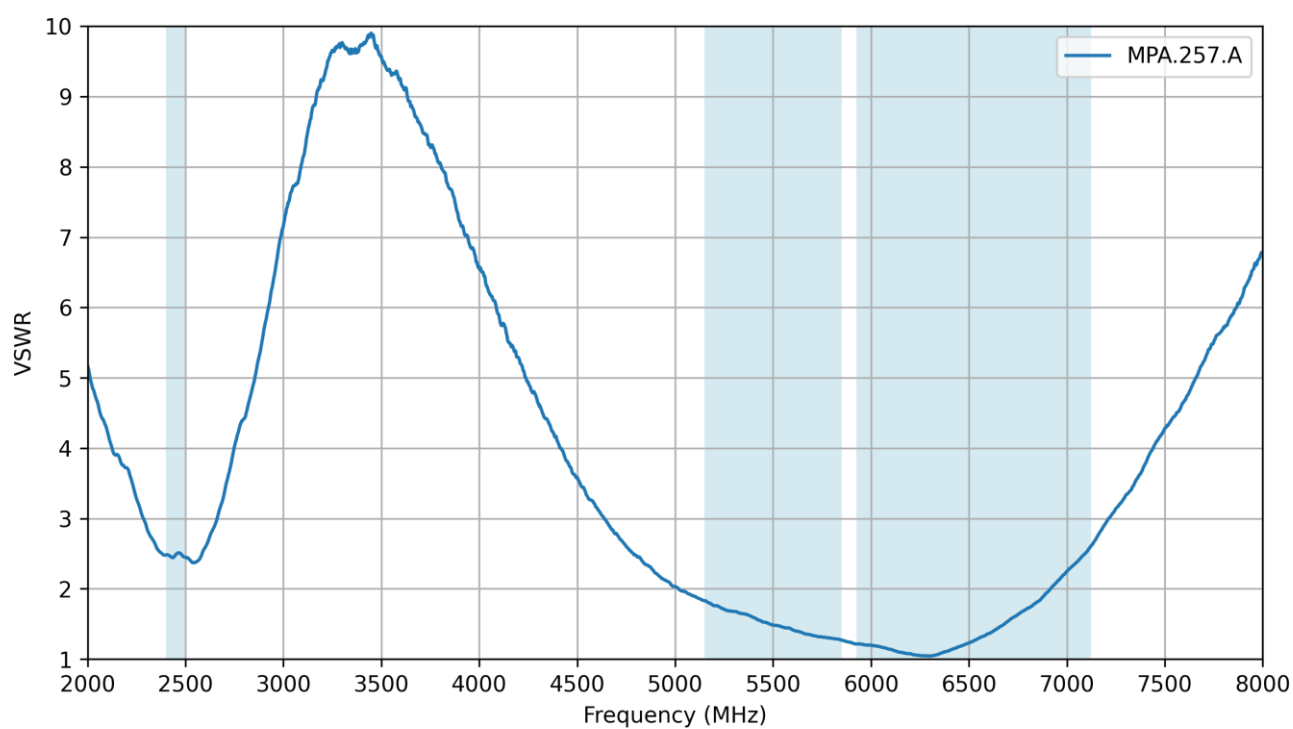


4. Antenna Characteristics

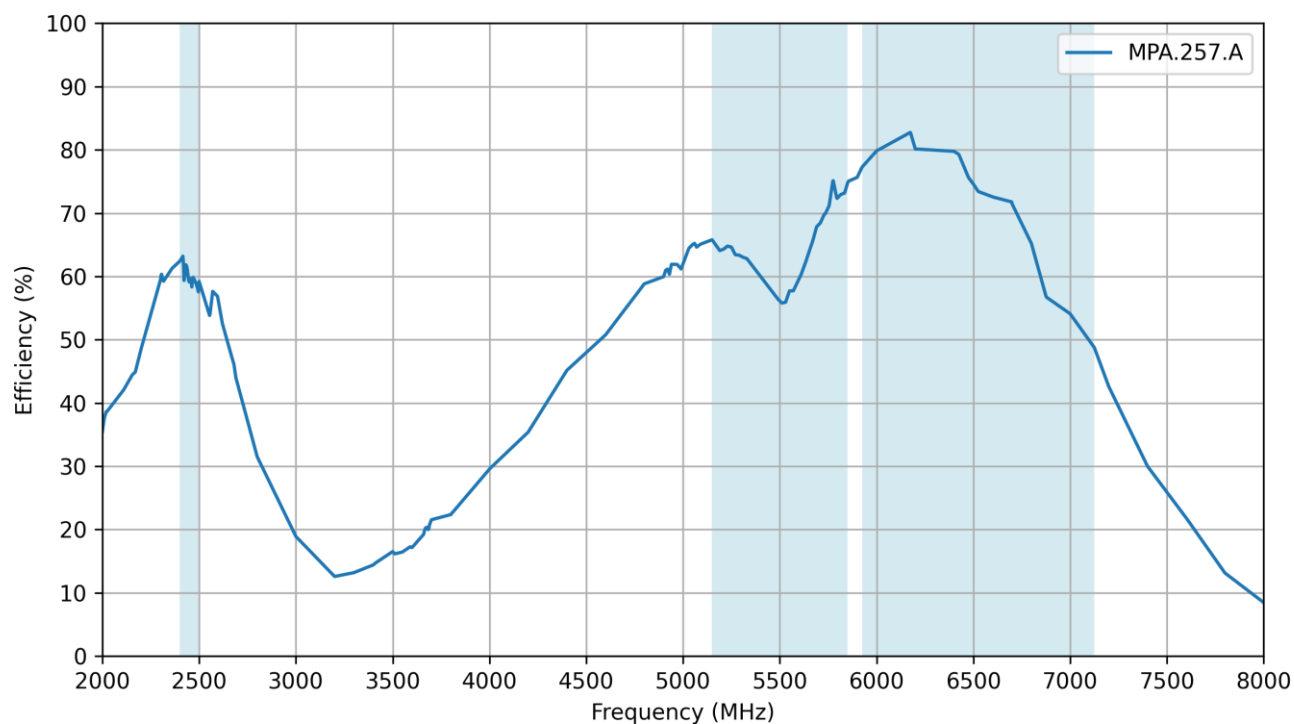
4.1 Return Loss



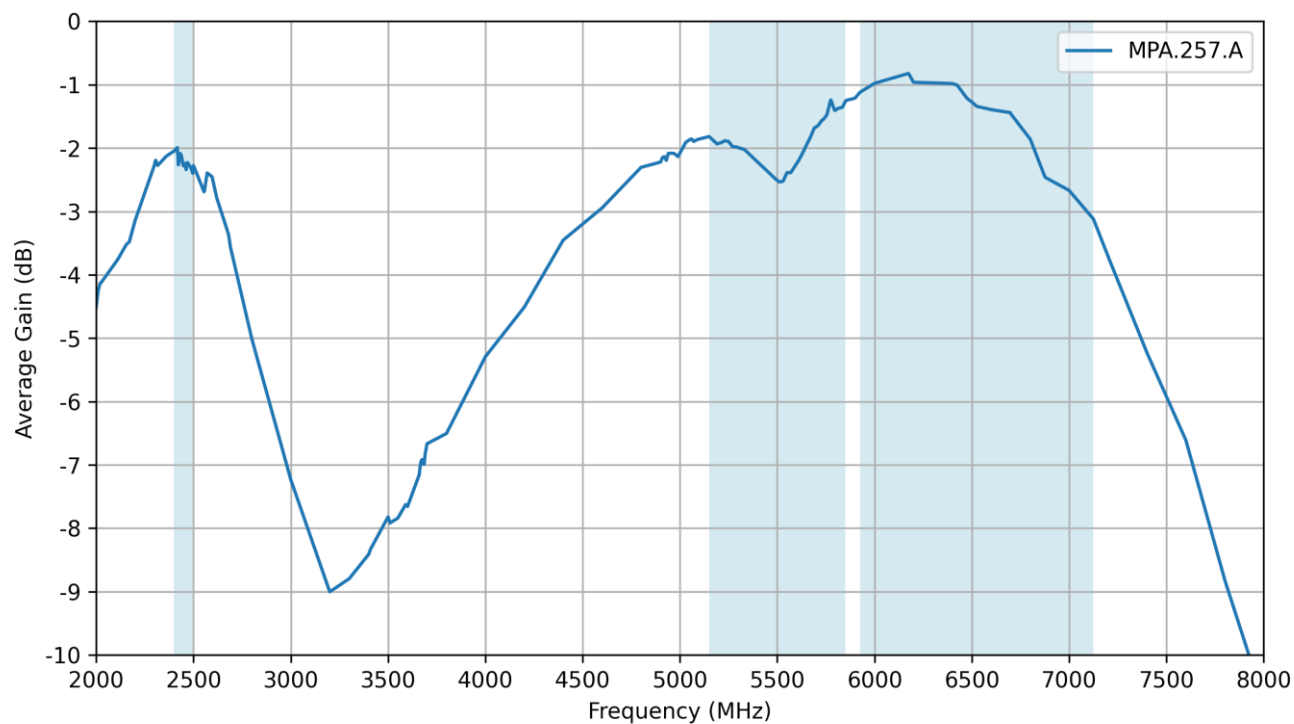
4.2 VSWR



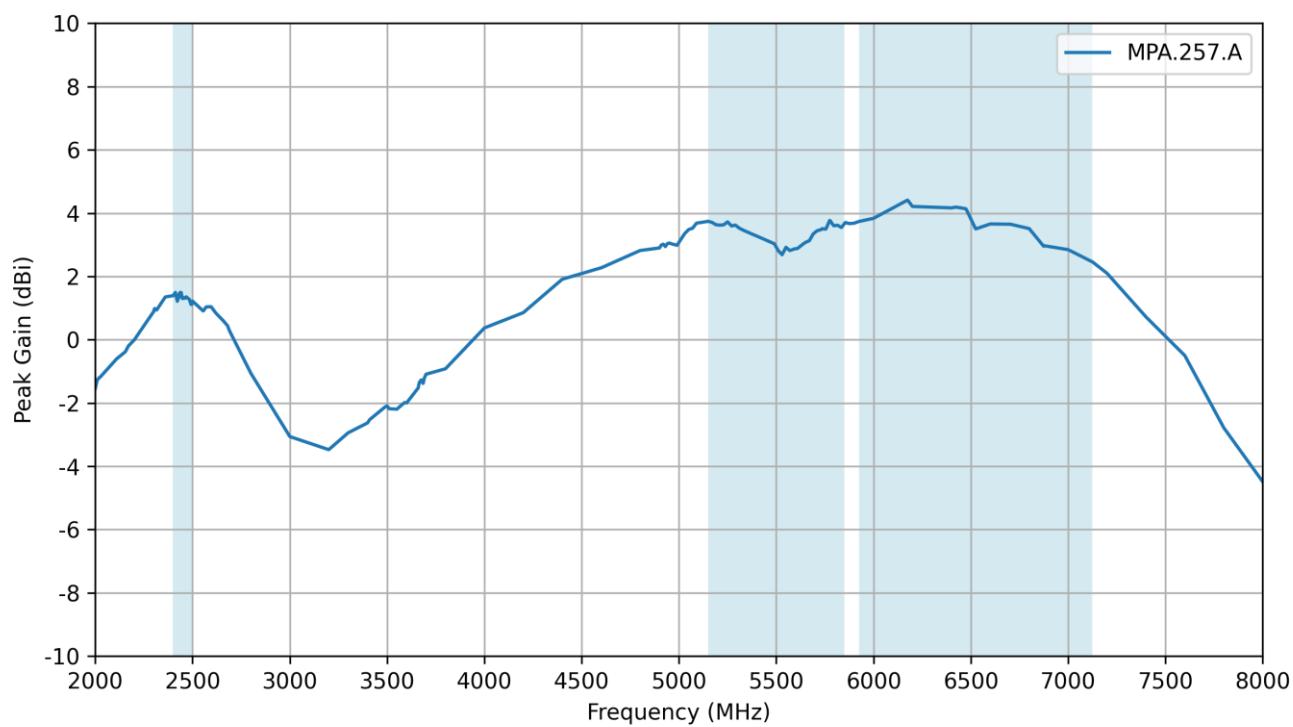
4.3 Efficiency



4.4 Average Gain

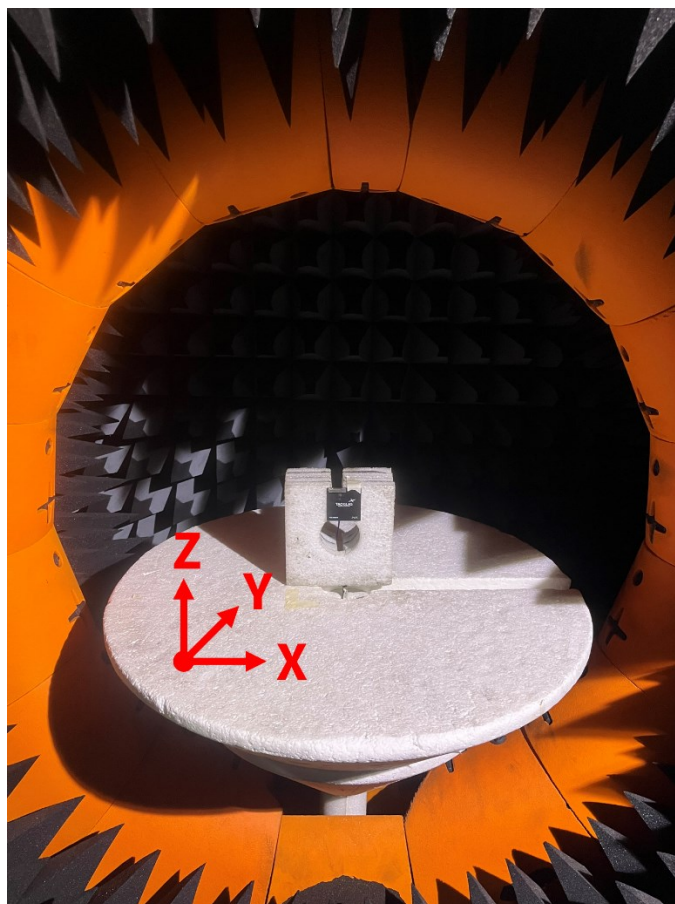
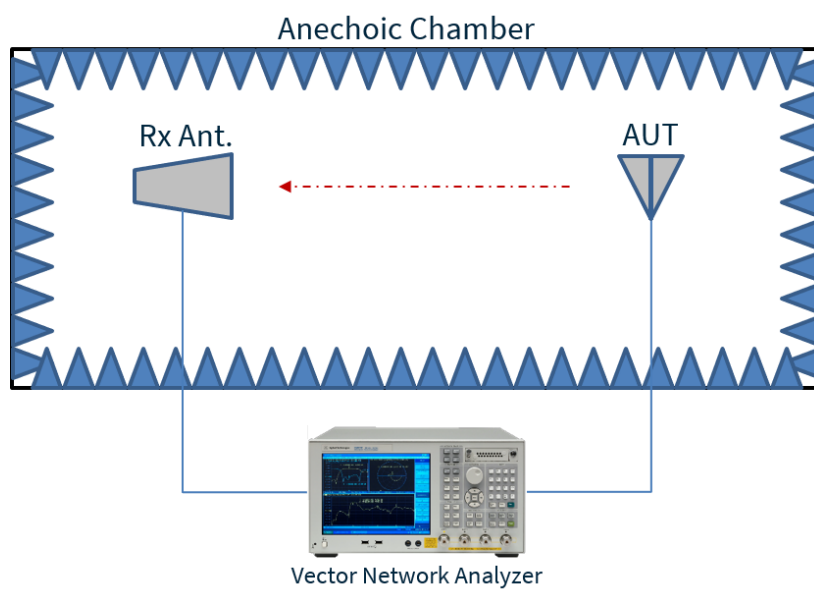


4.5 Peak Gain



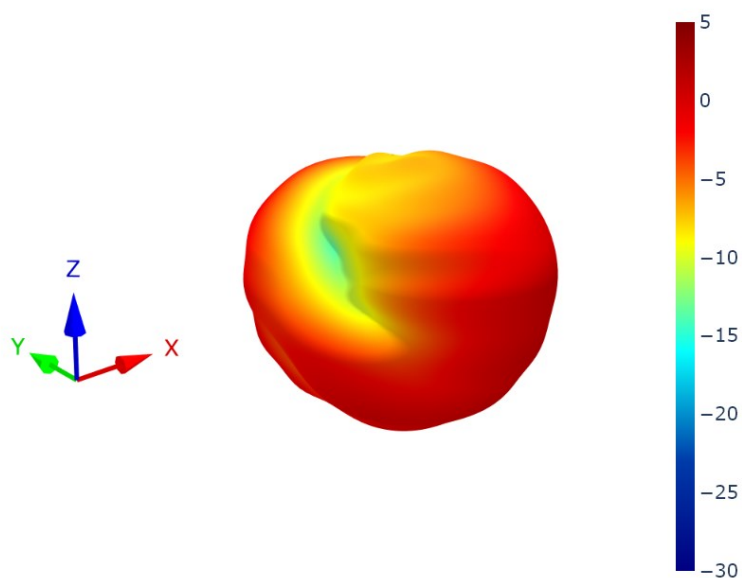
5. Radiation Patterns

5.1 Test Setup

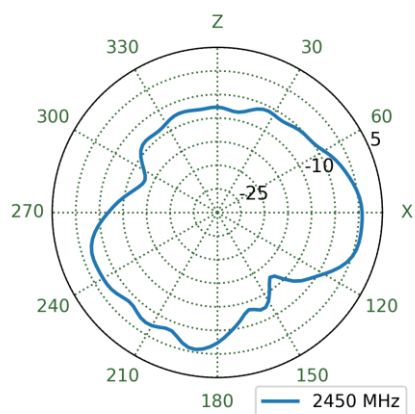


Chamber Test Set-up

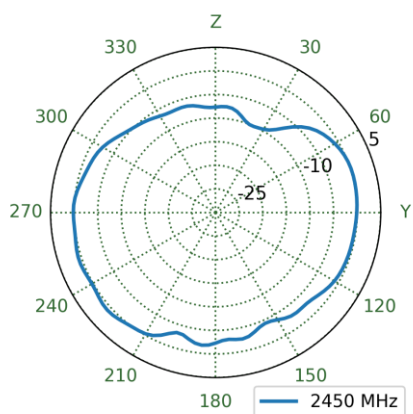
5.2 Patterns at 2450 MHz



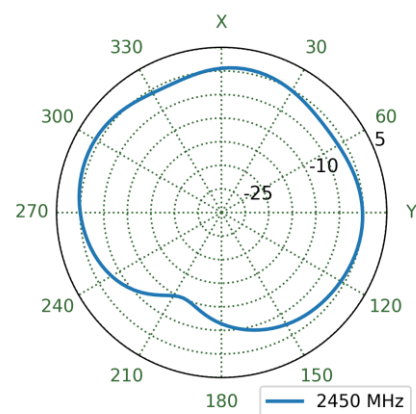
XZ Plane



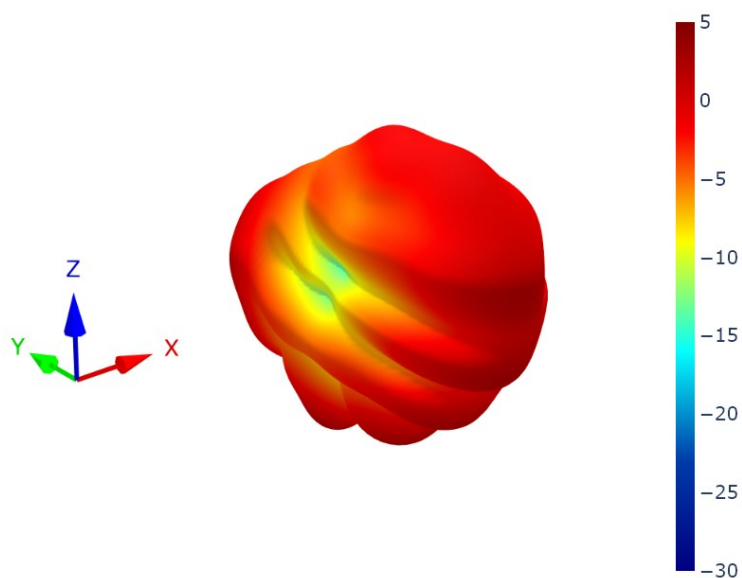
YZ Plane



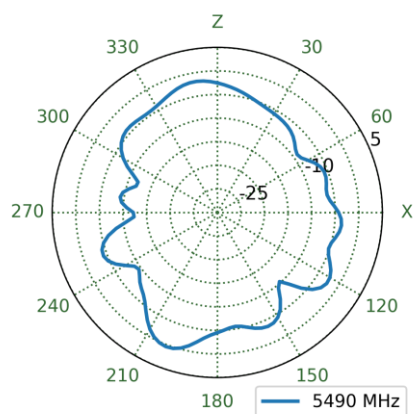
XY Plane



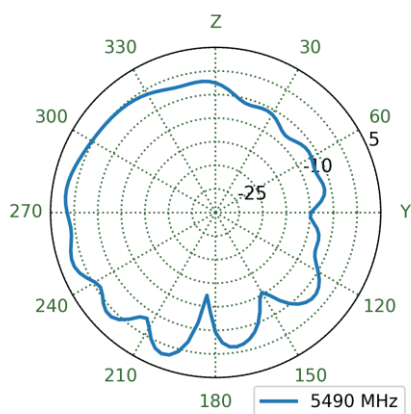
5.3 Patterns at 5500 MHz



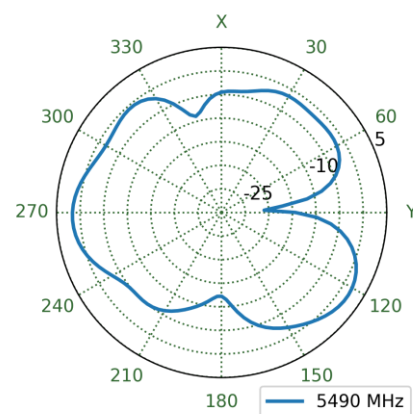
XZ Plane



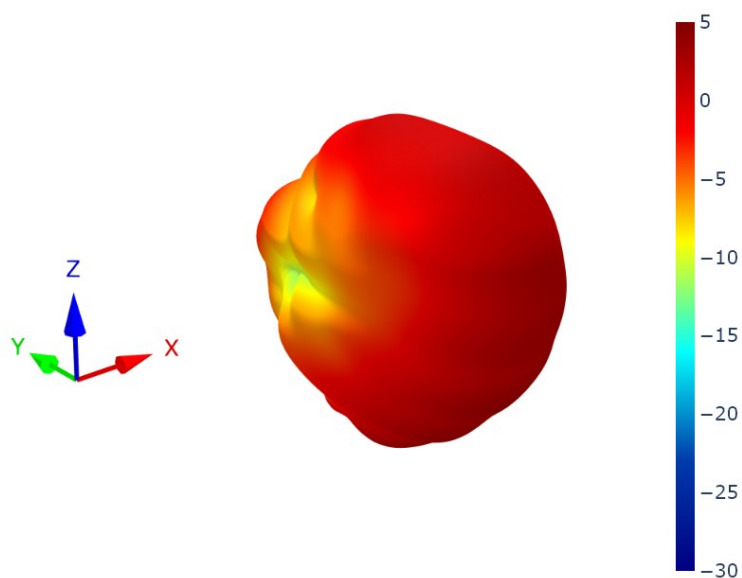
YZ Plane



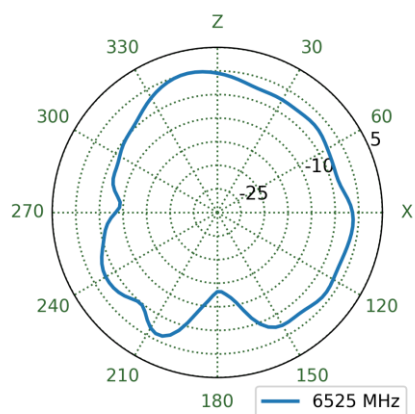
XY Plane



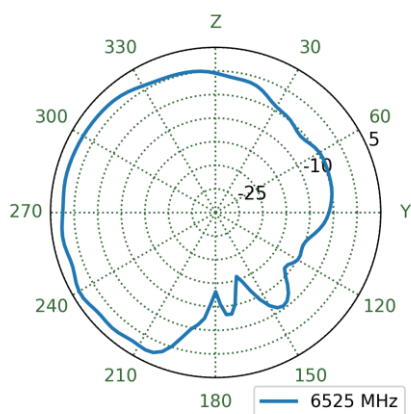
5.4 Patterns at 6525 MHz



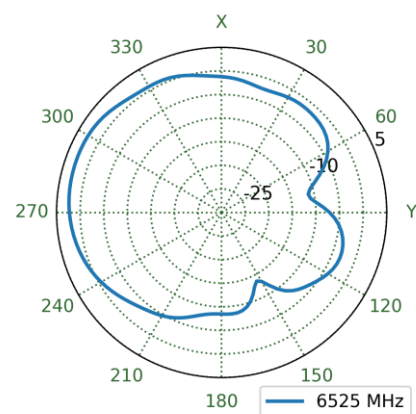
XZ Plane



YZ Plane



XY Plane



Changelog for the datasheet

SPE-24-8-249 – MPA.257.A

Revision: A (Initial Release)

Date:	2024-10-03
Notes:	Initial Datasheet Release
Author:	Gary West

Previous Revisions



www.taoglas.com

