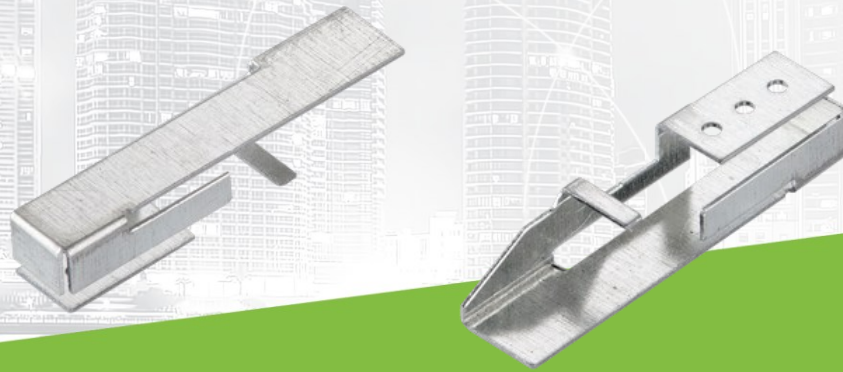




TAOGLAS®



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

| | | |
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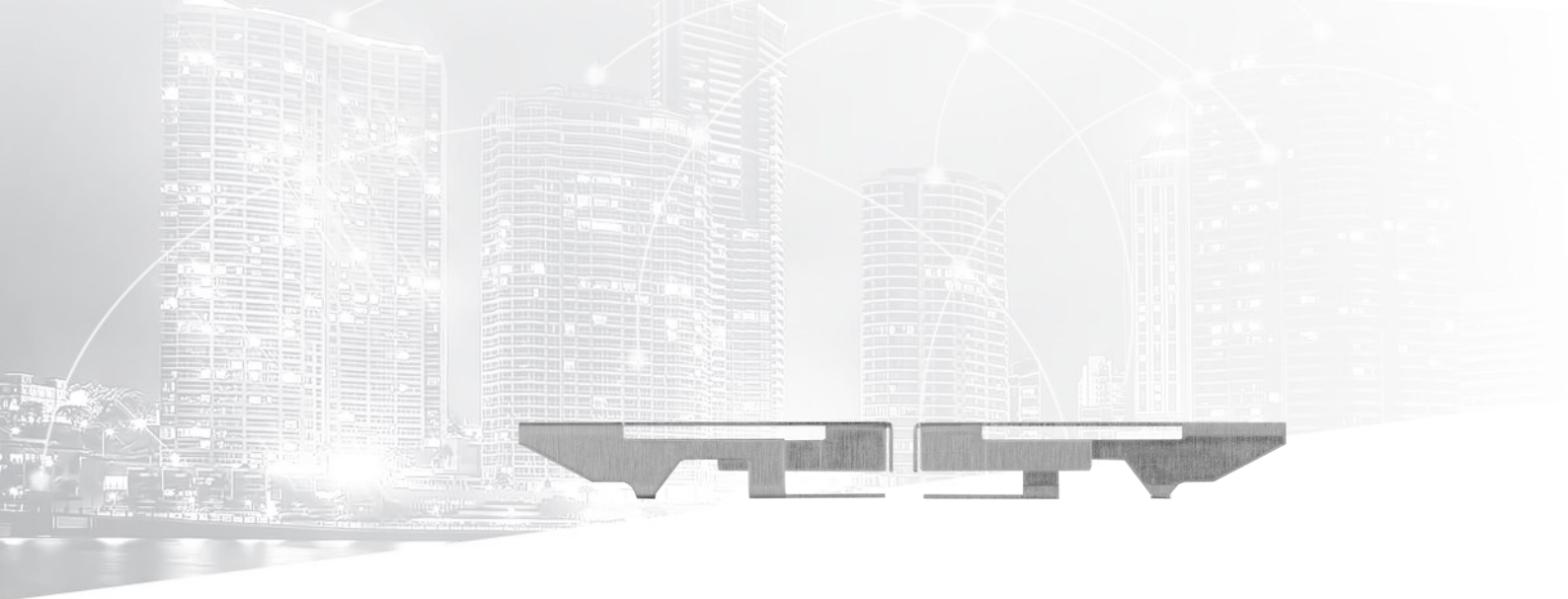
Ireland & USA
ISO 9001:2015
Certified



Taiwan
ISO 9001:2015
Certified



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.

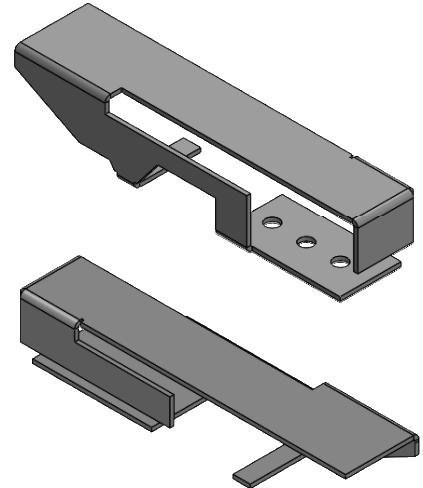
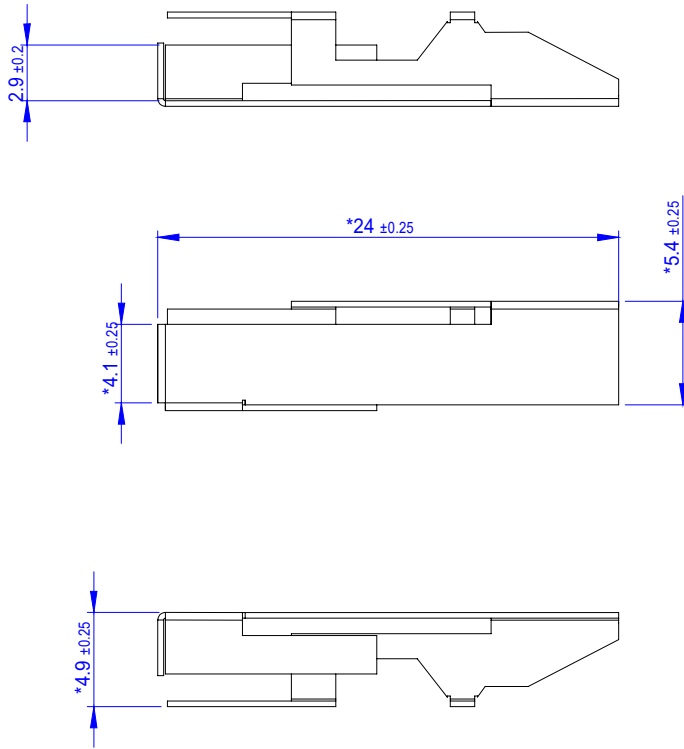
2. Specification

| 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 |

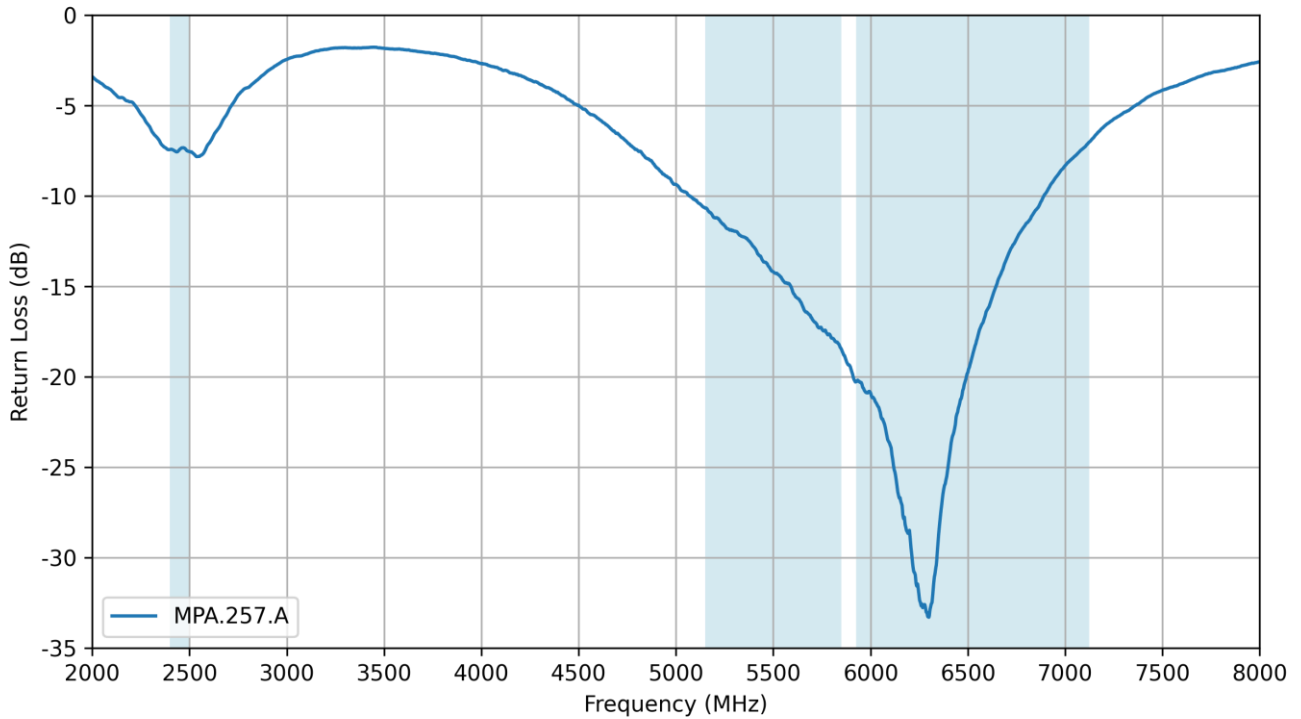
| Environmental | |
|-----------------------|----------------------------|
| Operation Temperature | -40°C to 85°C |
| Storage Temperature | -40°C to 85°C |
| Relative Humidity | Non-condensing 65°C 95% RH |

3. Mechanical Drawing

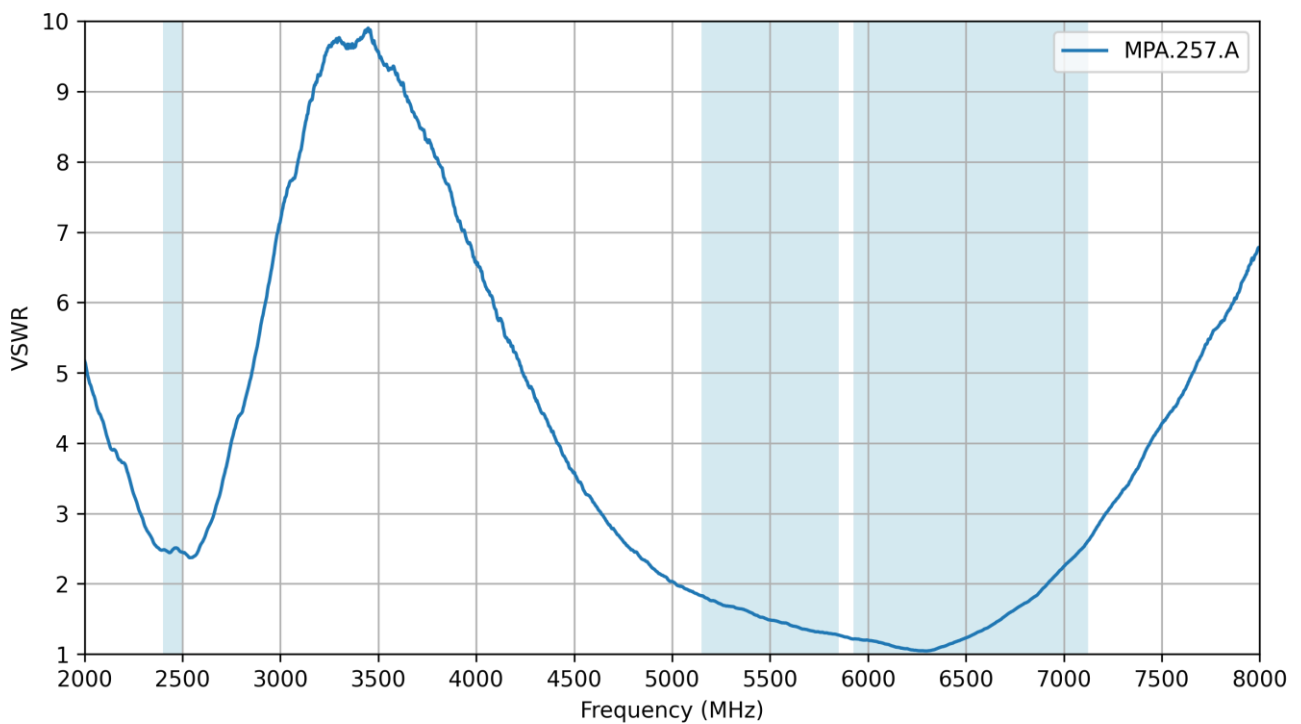


4. Antenna Characteristics

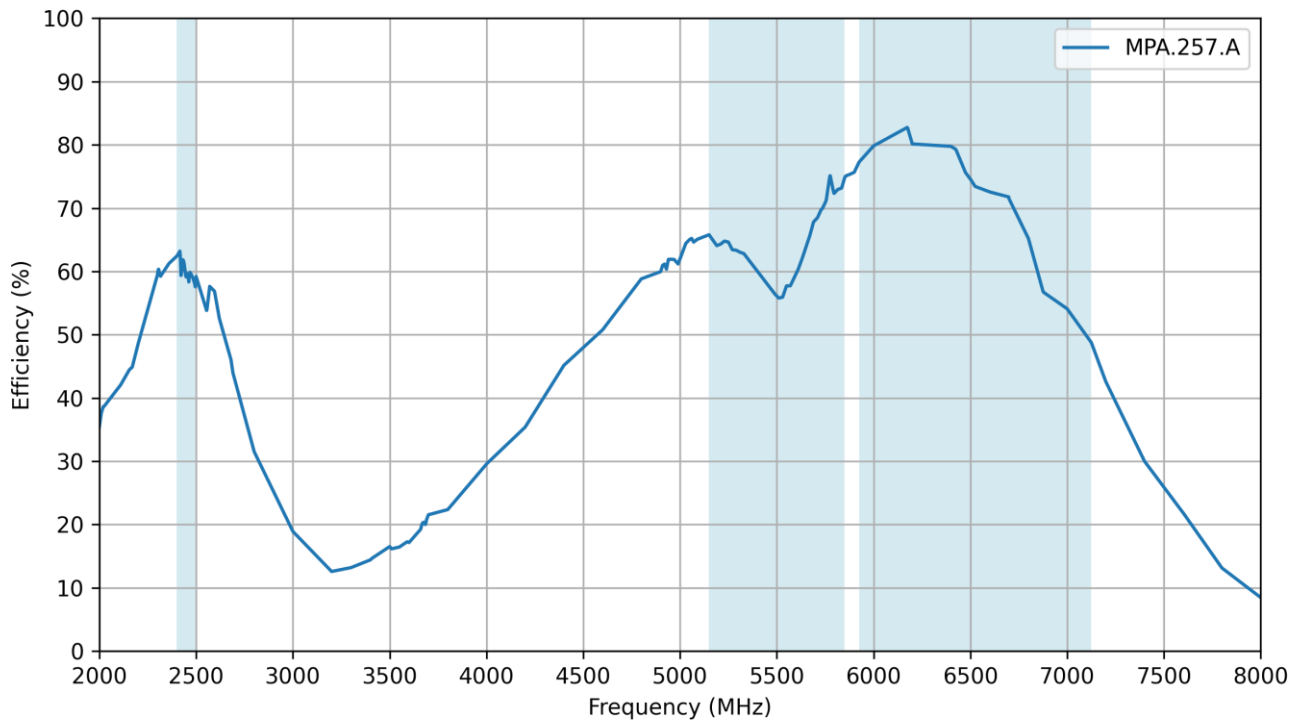
4.1 Return Loss



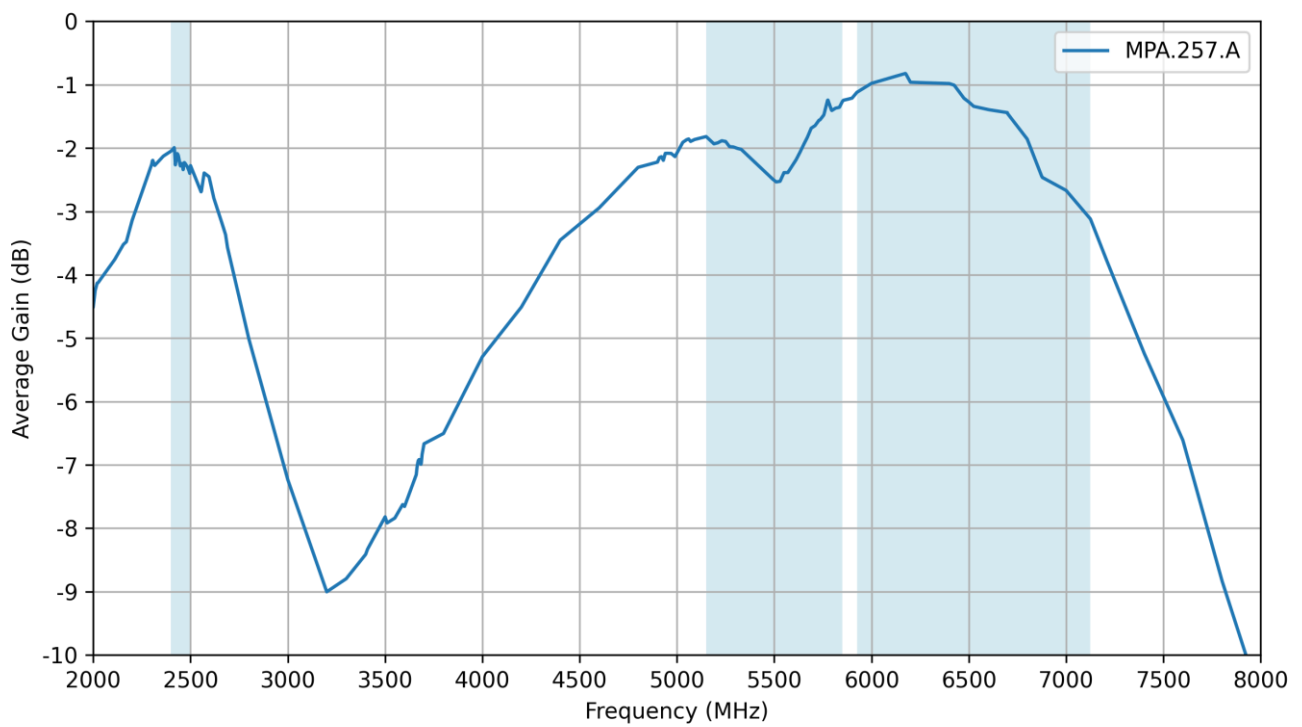
4.2 VSWR



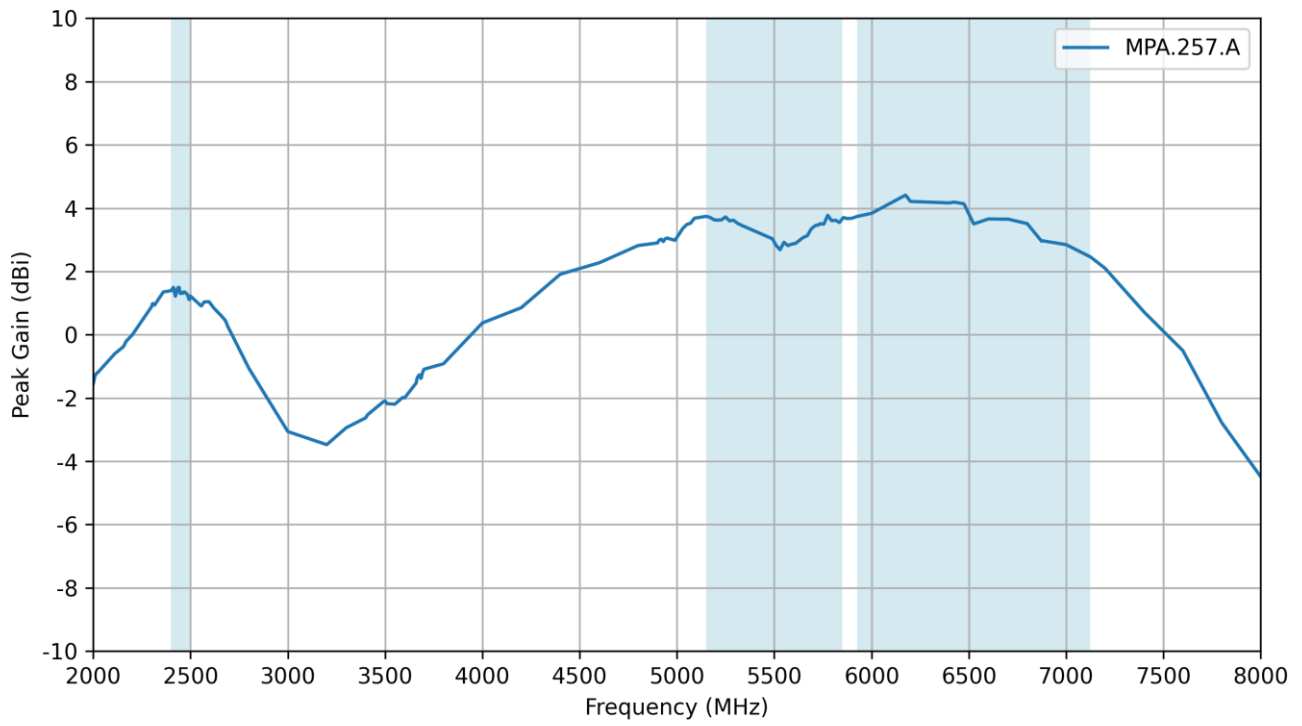
4.3 Efficiency



4.4 Average Gain

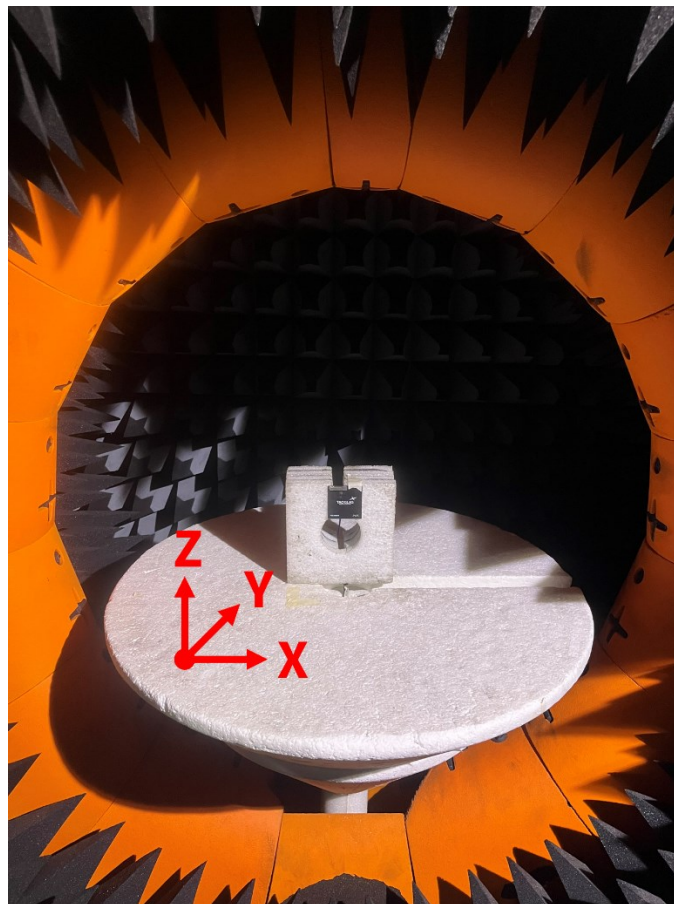
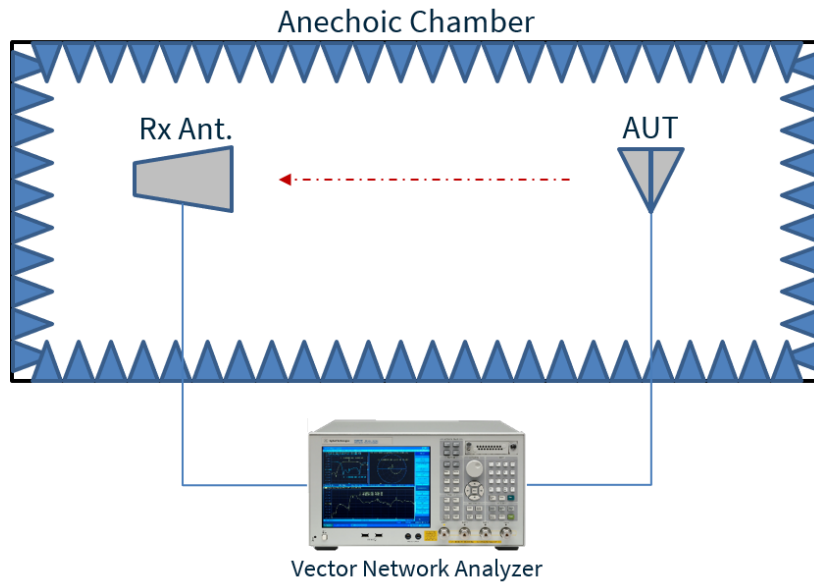


4.5 Peak Gain



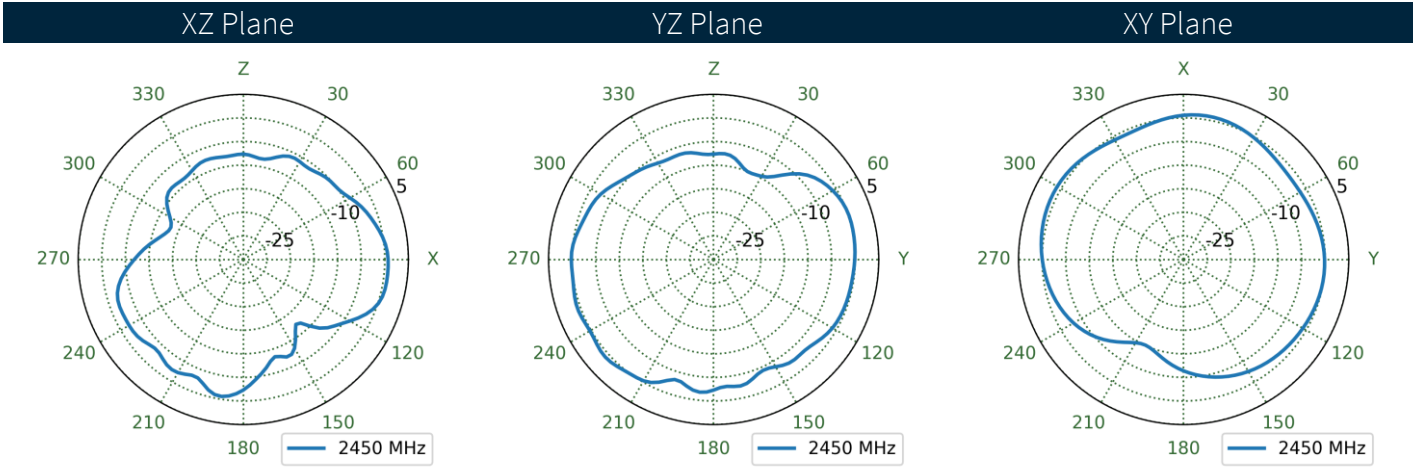
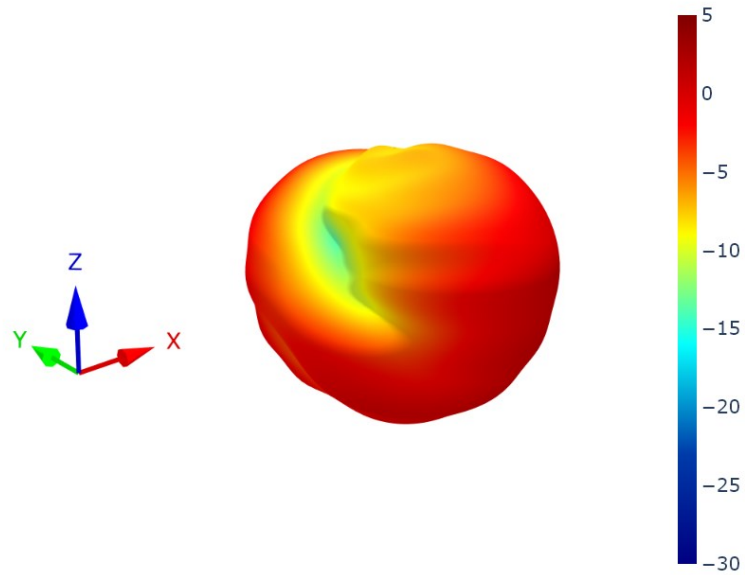
5. Radiation Patterns

5.1 Test Setup

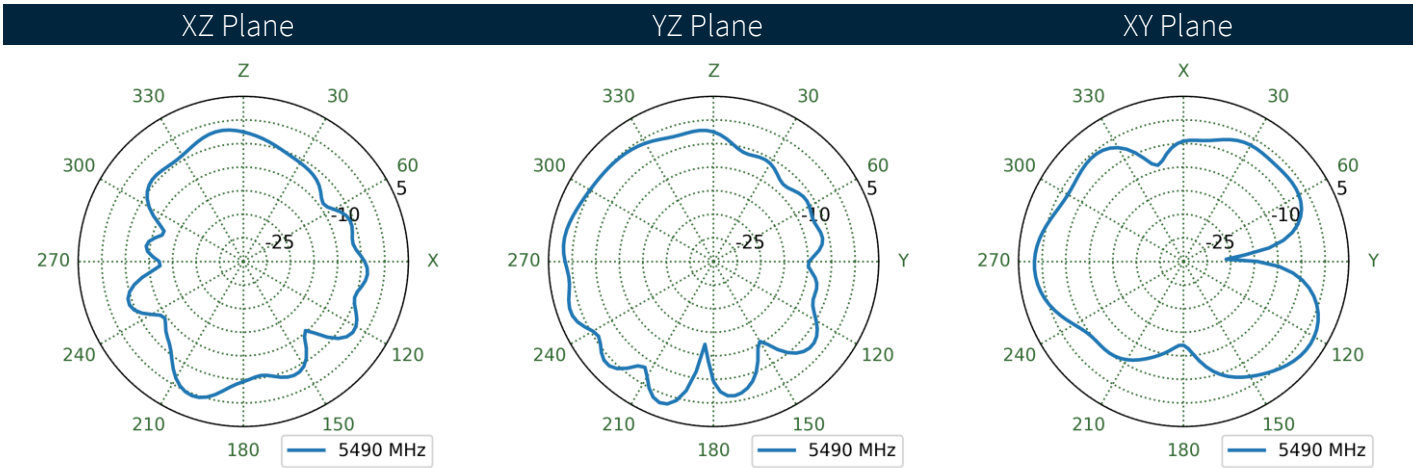
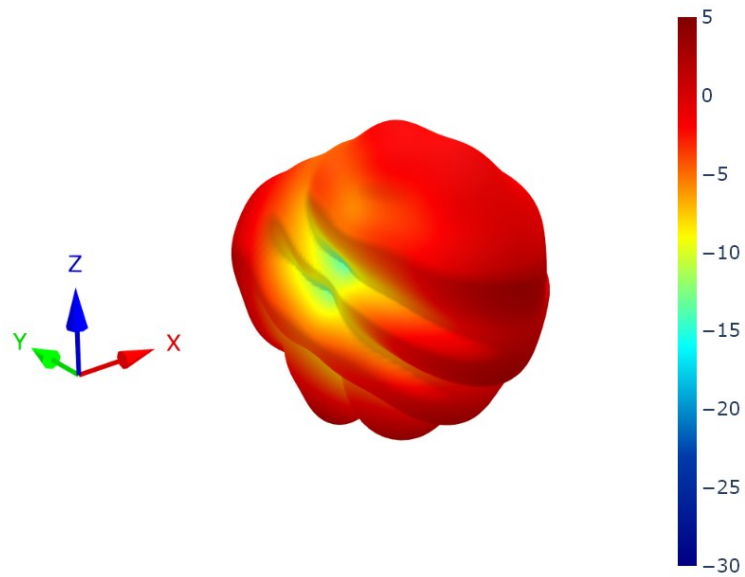


Chamber Test Set-up

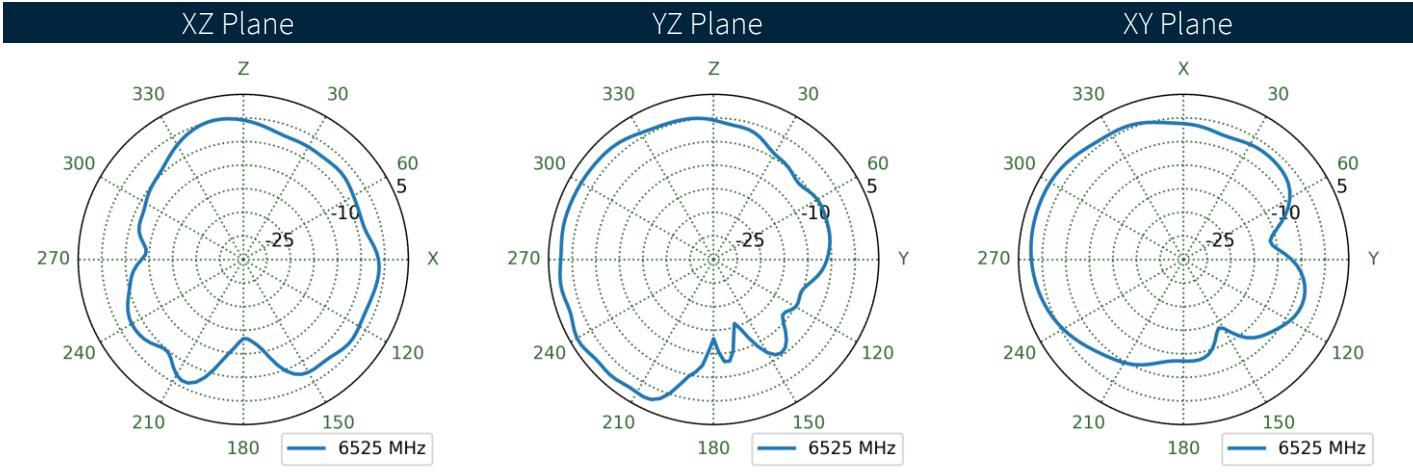
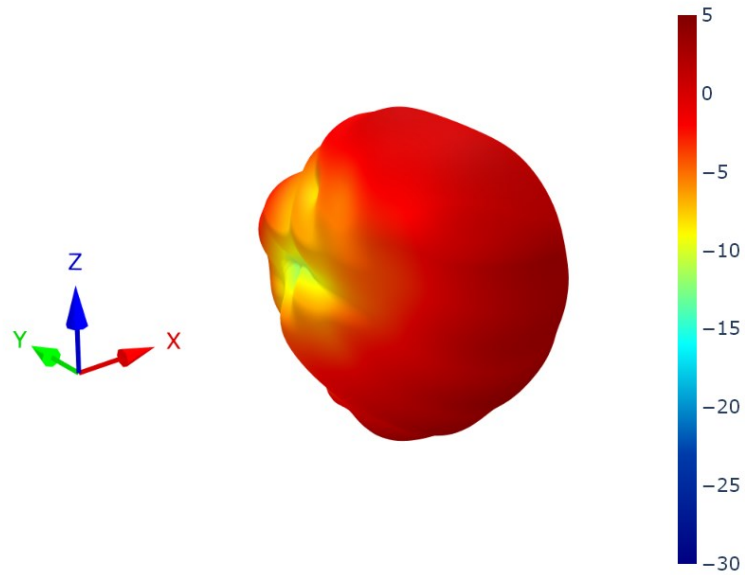
5.2 Patterns at 2450 MHz



5.3 Patterns at 5500 MHz



5.4 Patterns at 6525 MHz



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

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