



TAOGLAS®



Datasheet

Part No:
GA.110.101111

Description

4G/3G/2G High Gain Magnetic Mount Ultra-Wideband Antenna

Features:

Magnetic Mount Ultra-Wideband Antenna

Coverage: 600-6000MHz

IP67 Waterproof Enclosure

Dims: Ø50 x 32.5mm (Whip: 298mm Long)

Cable: 1m of RG-174

Connector: SMA(M)

RoHS & Reach Compliant

1.	Introduction	3
2.	Specification	4
3.	Mechanical Drawing	5
4.	Packaging	6
5.	Antenna Characteristics	7
6.	Radiation Patterns	11
	Changelog	20

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 **GA.110** is a magnetic-mount ultra-wideband cellular antenna designed to deliver stable omni-directional performance across global cellular networks. Covering a wide frequency range from 600 MHz to 6 GHz, the antenna supports 2G, 3G, and 4G technologies, enabling reliable connectivity across multiple regions and network standards.

The wideband design allows a single antenna to be used across different deployments without the need for replacement when switching between regional frequency bands or cellular technologies such as CDMA, GSM, or LTE. This simplifies product design and reduces the complexity of global device rollouts while maintaining consistent RF performance.

The magnetic-mount base enables quick and secure installation on metallic surfaces, using a strong neodymium magnet to ensure reliable attachment and high stability in mobile or vibration-prone environments. When mounted on a suitable ground plane, the GA.110 achieves optimal radiation performance with a reliable return loss below -10 dB, meeting the requirements of leading module manufacturers and network operators. The antenna is typically supplied with short cable lengths (≤ 1 m recommended) to maintain optimal performance and can be customized with different cable lengths and connector types to suit specific application requirements.

Typical applications include:

- Cellular routers and gateways
- Vehicle connectivity and telematics
- Industrial IoT devices
- Remote monitoring systems
- Mobile broadband and fixed wireless access

For further support on integration, customization, or performance optimization of the GA.110 in your application, please contact your regional Taoglas customer support team.

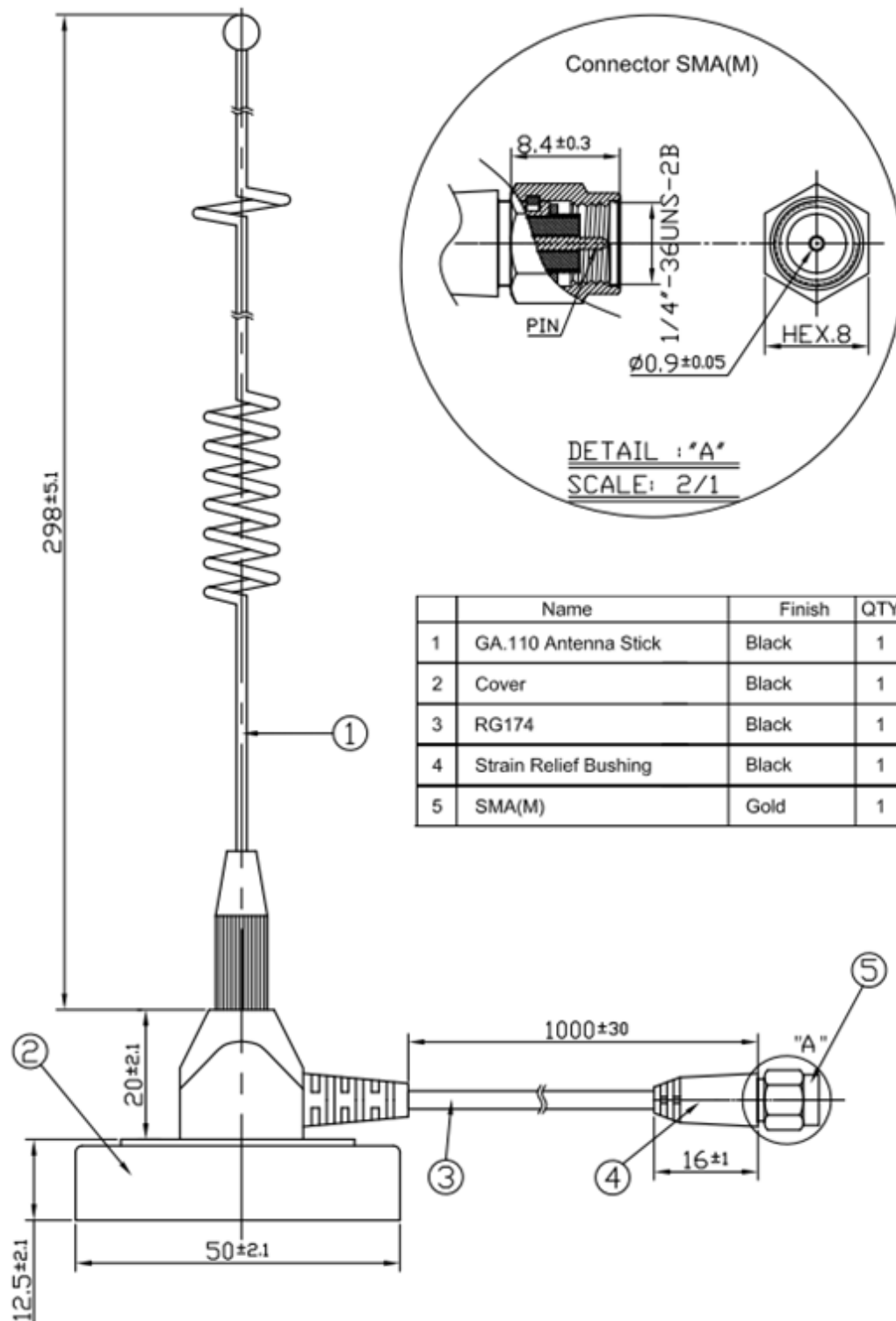
2. Specification

Electrical								
Band	Frequency (MHz)	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
5GNR/4G Band 71	617-698	29.9	-5.25	-0.32	50 Ω	Linear	Omni directional	50W
4G/3G Band 12,13,14,17,28,29	698-806	24.7	-6.07	-0.45				
4G/3G/NB-IoT/Cat M Band 5,8,18,19,20,26,27	824-960	51.1	-2.92	1.03				
5GNR/4G Band 21,32,74,75,76	1427-1518	58.0	-2.36	3.74				
4G/3G Band 1,2,3,4,9,23,25,35,39,66	1710-2200	49.5	-3.06	4.22				
4G/3G Band 7,30,38,40,41	2300-2690	35.2	-4.54	3.85				
5GNR/4G Band 22,42,48,77,78,79	3300-5000	34.5	-4.62	3.57				
LTE5200/Wi-Fi5800	5150-5925	11.8	-9.27	-0.34				

Mechanical	
Dimensions (Base)	Ø50 x 32.5mm
Weight	298mm
Whip Material	Coated Brass
Connector	SMA(M)
Cable	1m of RG-174

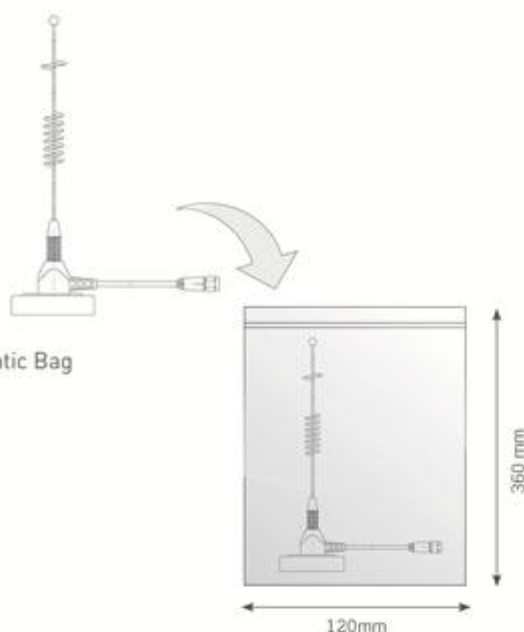
Environmental	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Relative Humidity	Non-condensing 65°C 95% RH

3. Mechanical Drawing

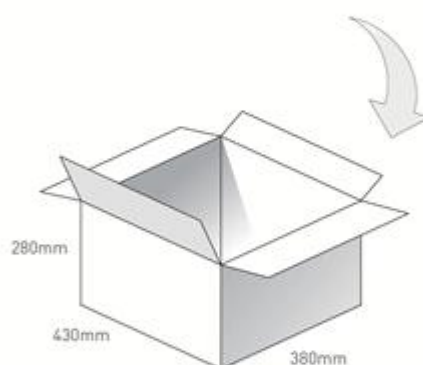


4. Packaging

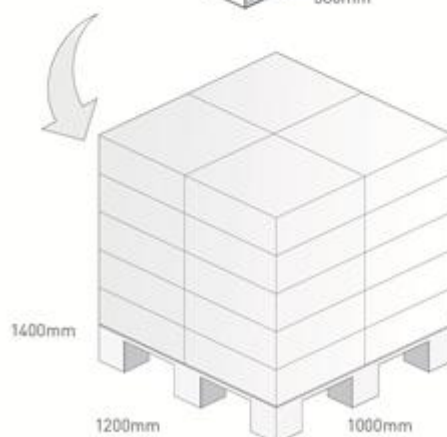
1pc GA.110.101111 in small in Anti-static Bag
Dimensions - 120*360mm
Weight - 114g



100pcs GA.110.101111 in one carton
Carton Dimensions - 430*380*280mm
Weight - 13.6Kg



Pallet Dimensions 1200*1000*1400mm
20 Cartons per Pallet
4 Cartons per layer
5 Layers



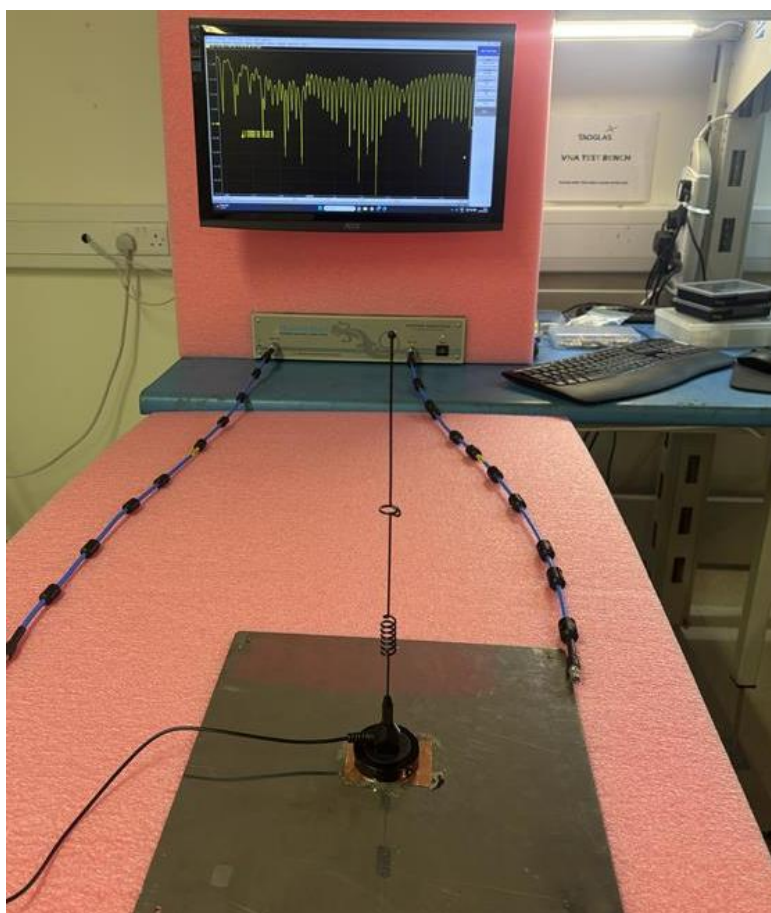
Text here...

5. Antenna Characteristics

5.1 Test Setup

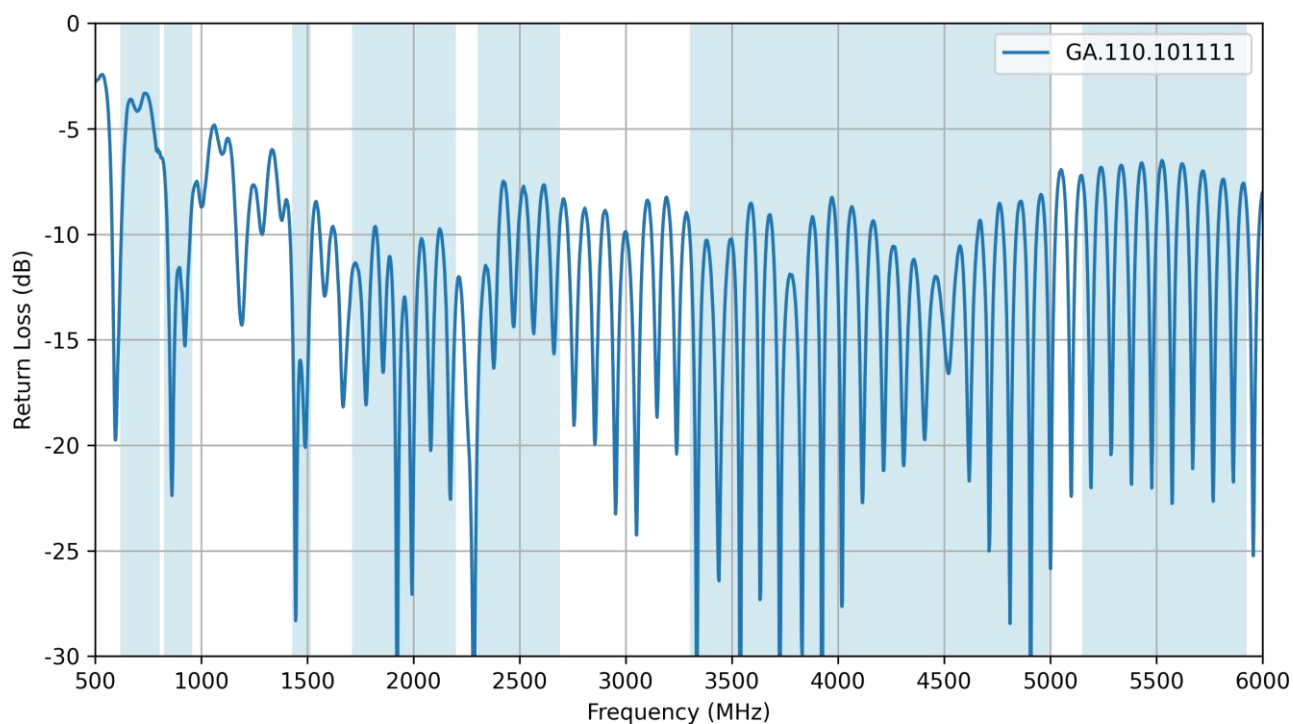


Vector Network Analyzer

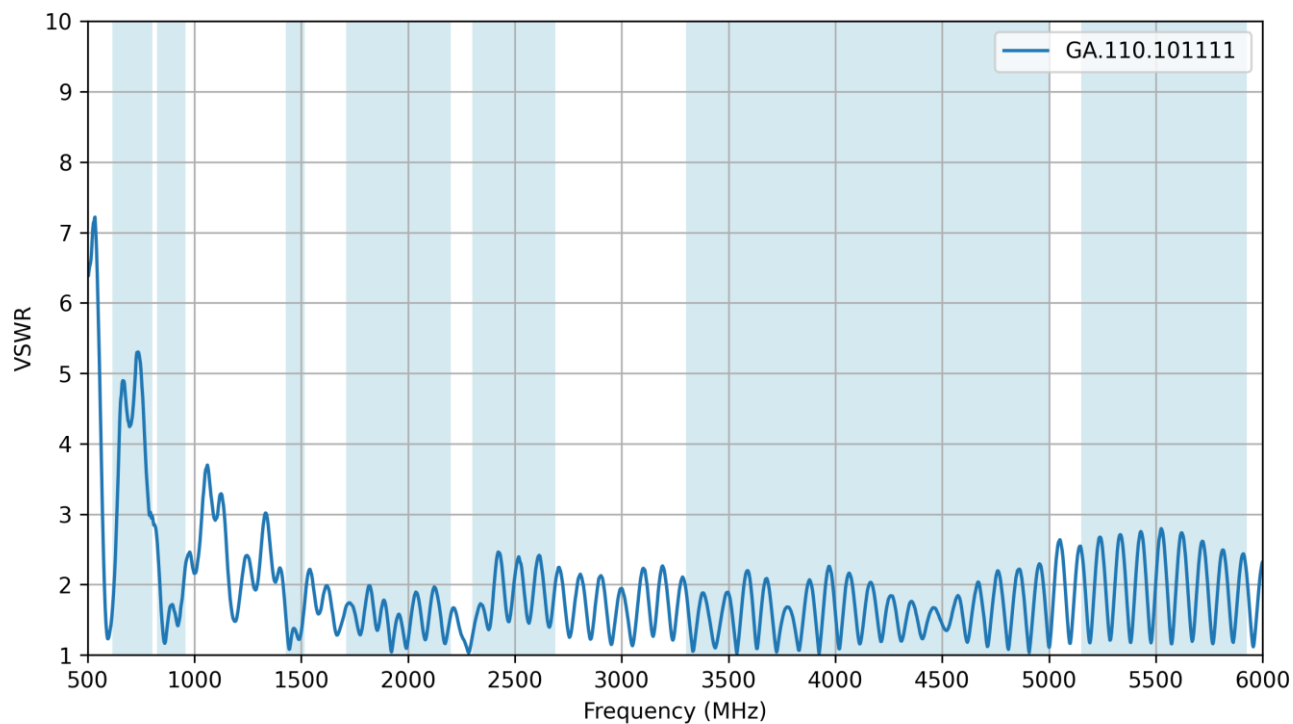


VNA test set-up on 30x30cm Ground Plane

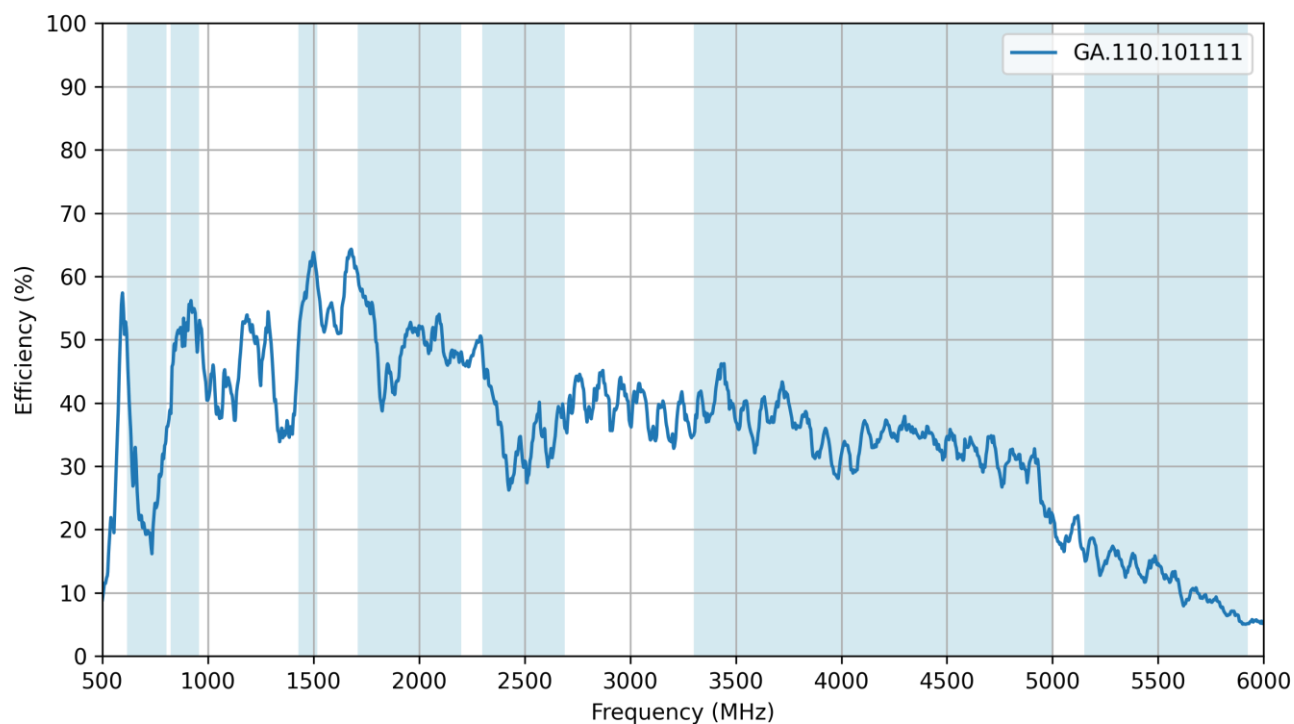
5.2 Return Loss



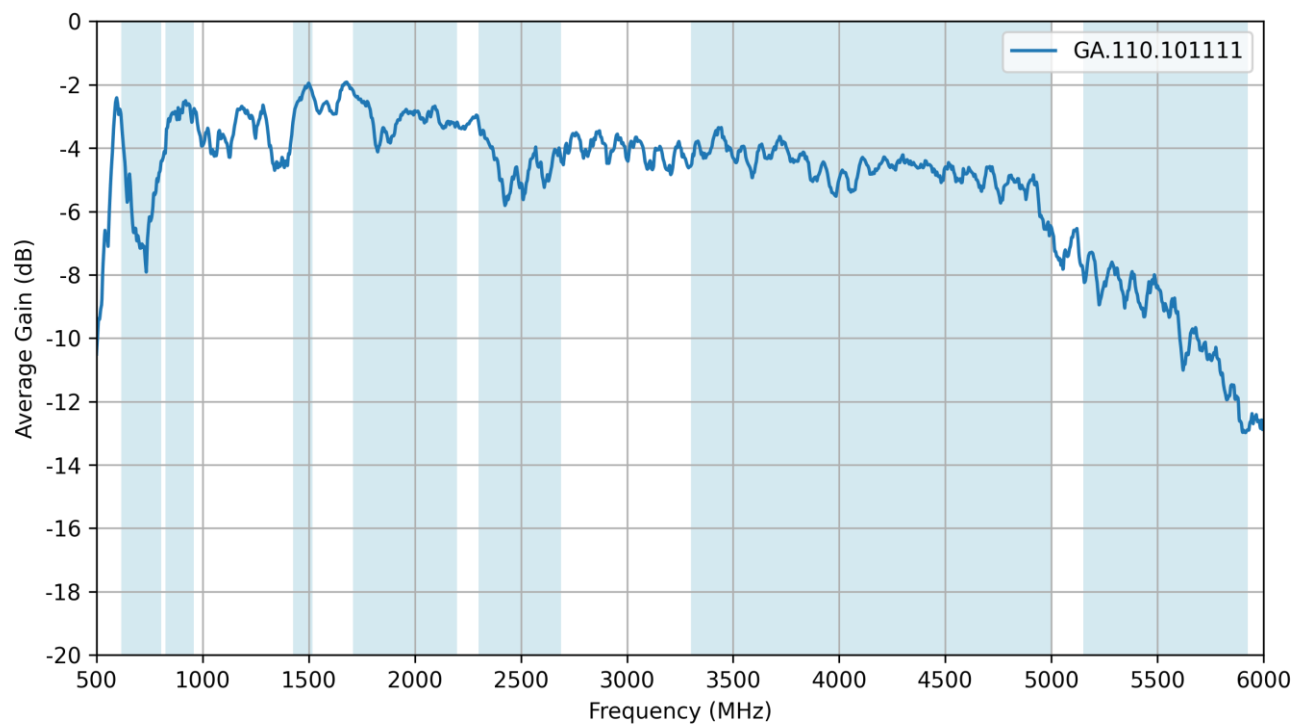
5.3 VSWR



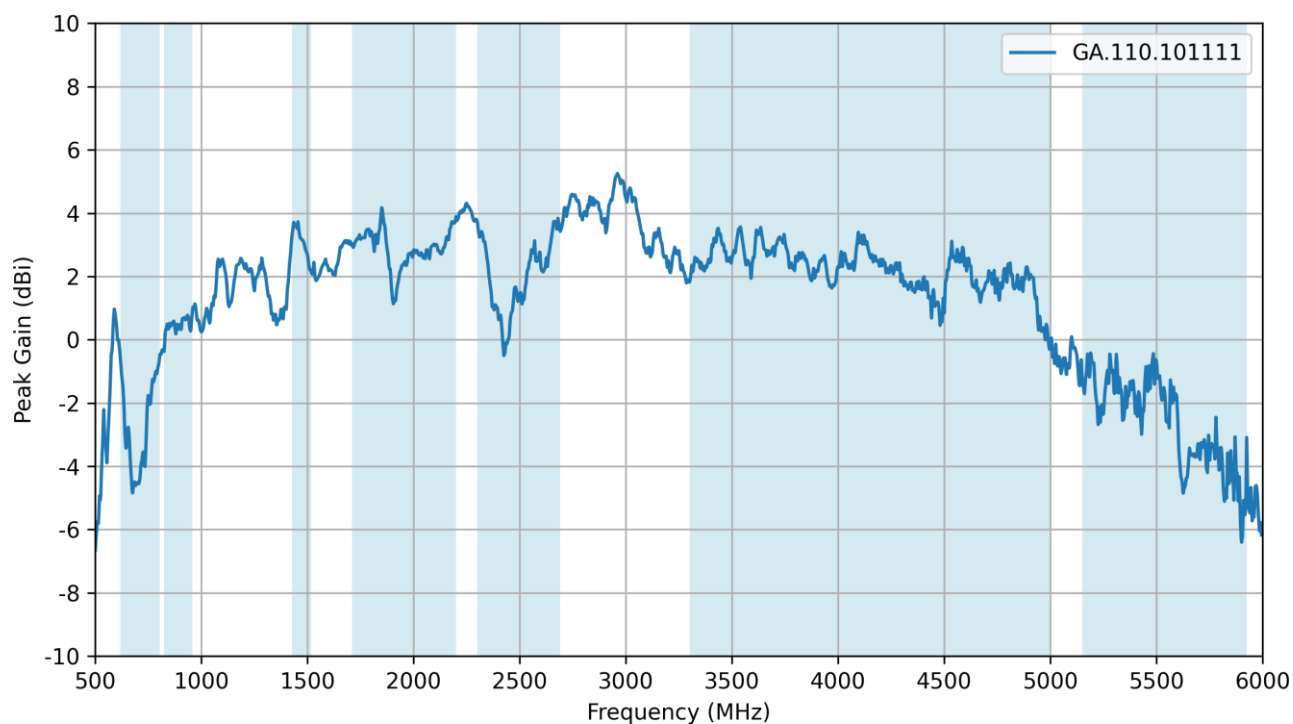
5.4 Efficiency



5.5 Average Gain

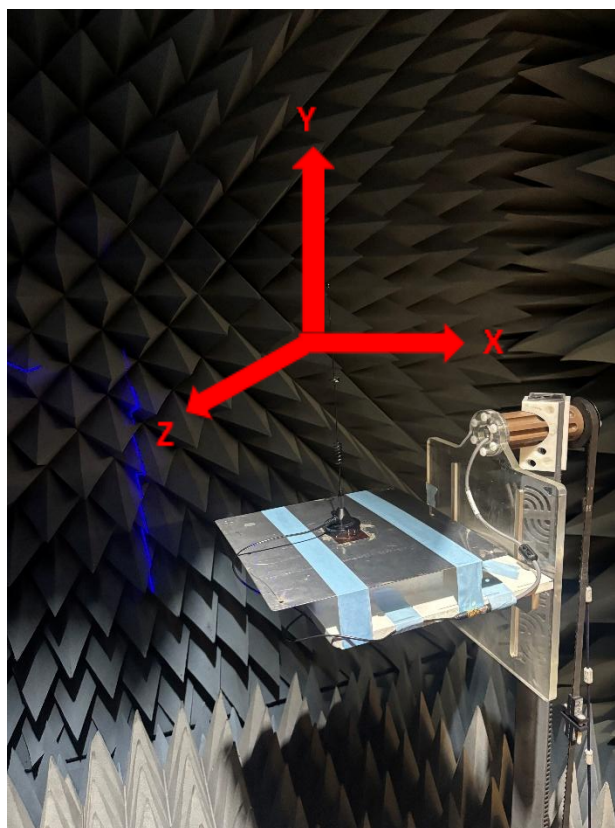
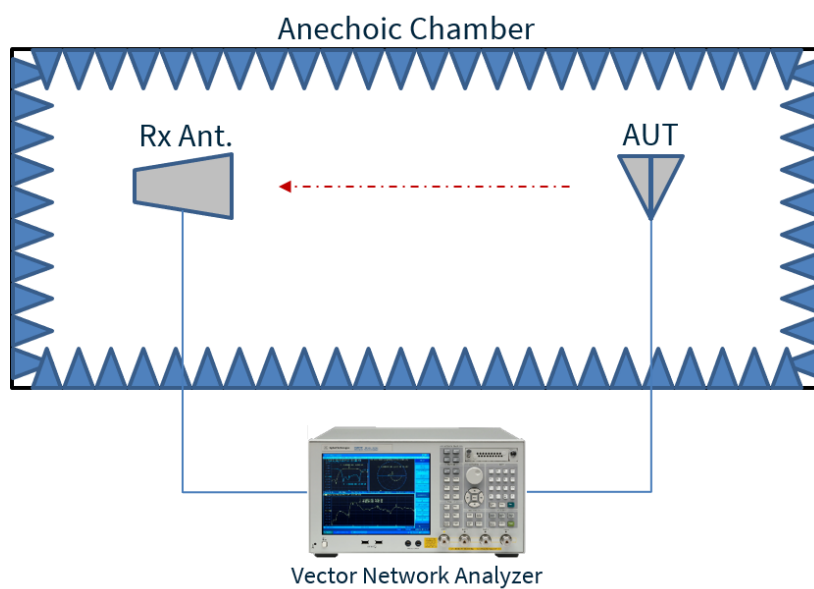


5.6 Peak Gain



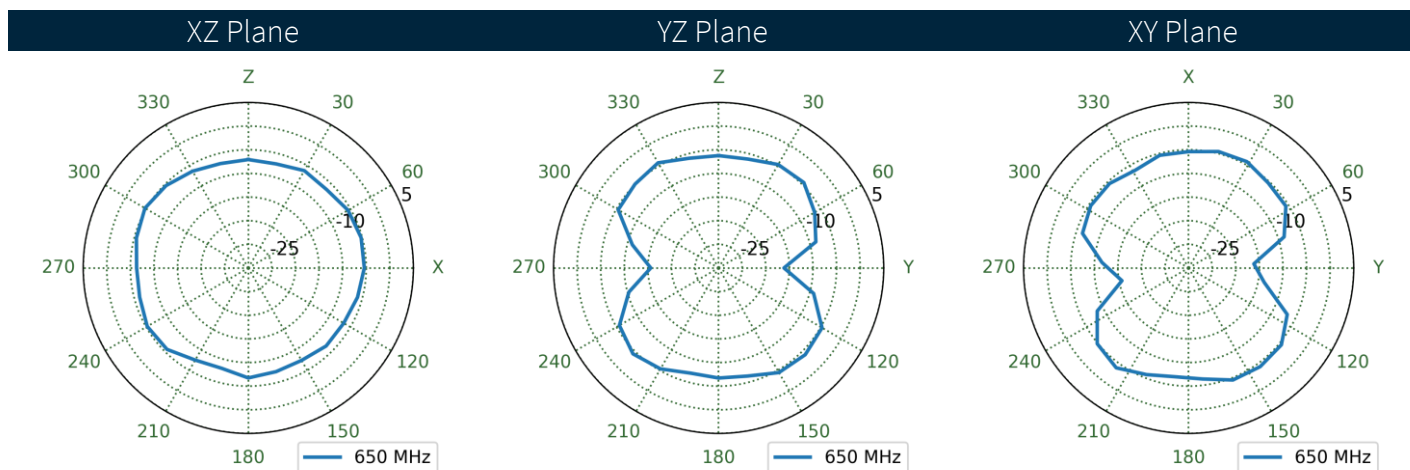
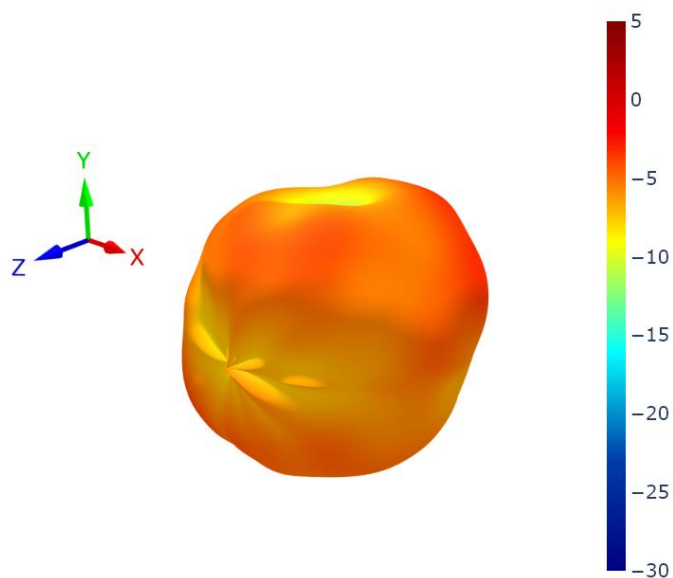
6. Radiation Patterns

6.1 Test Setup

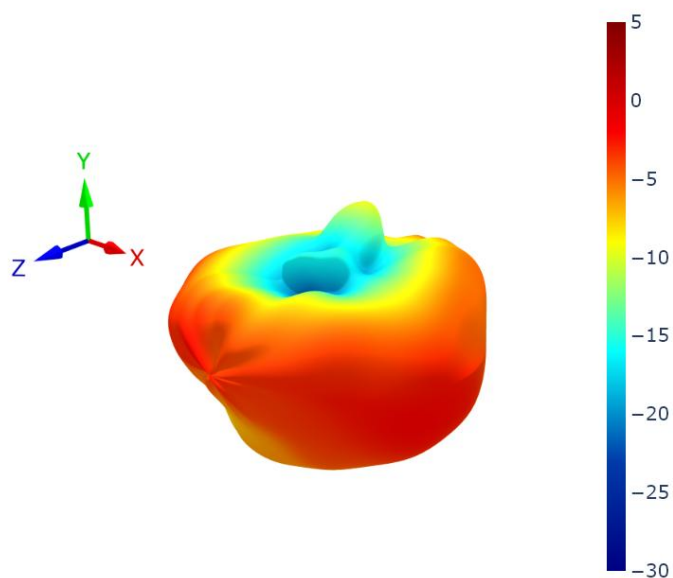


Chamber test set-up on 30x30cm Ground Plane

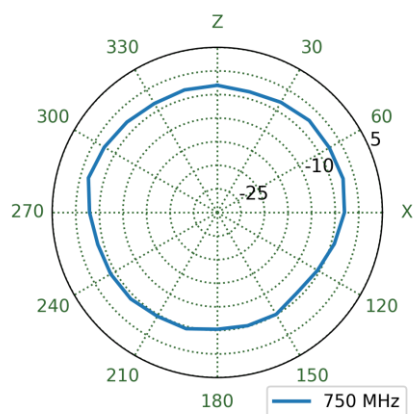
6.2 Patterns at 650 MHz



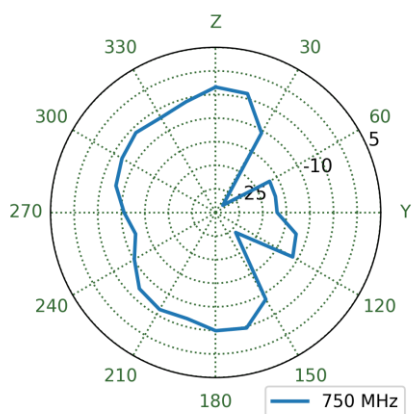
6.3 Patterns at 750 MHz



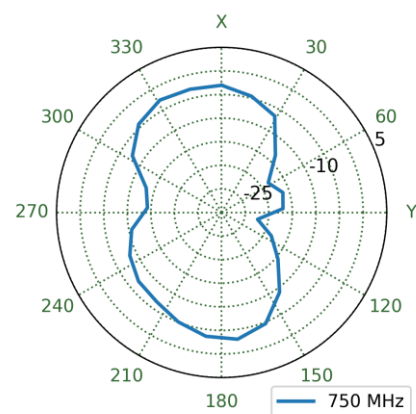
XZ Plane



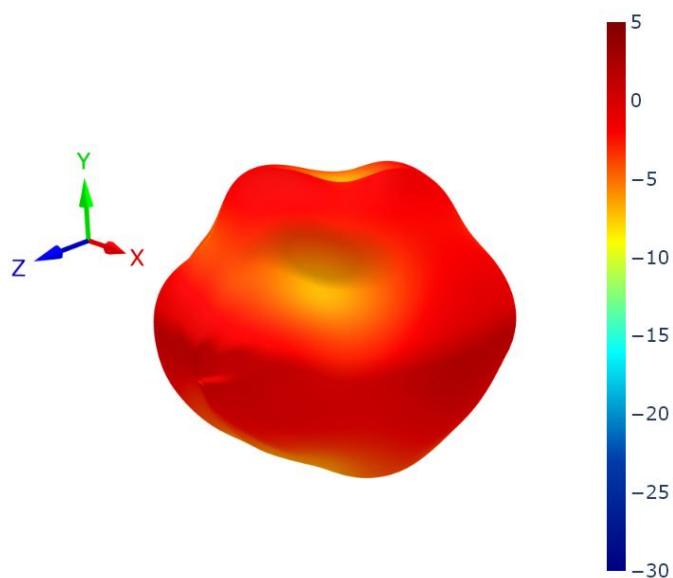
YZ Plane



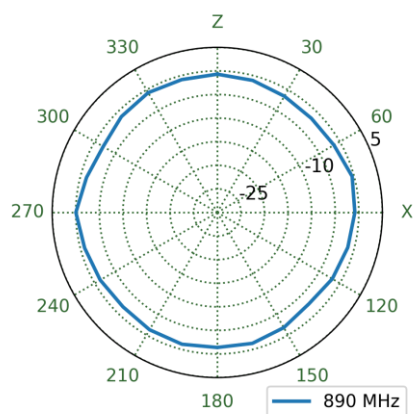
XY Plane



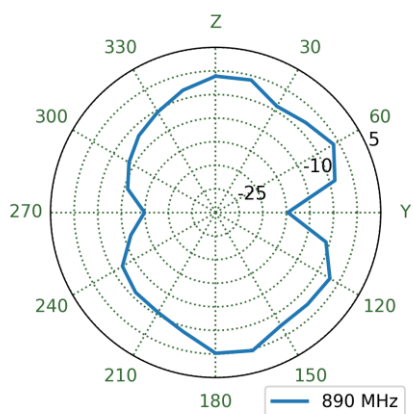
6.4 Patterns at 890 MHz



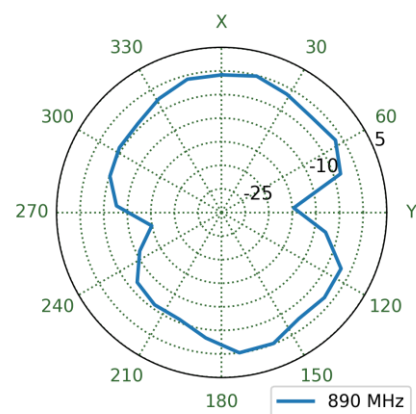
XZ Plane



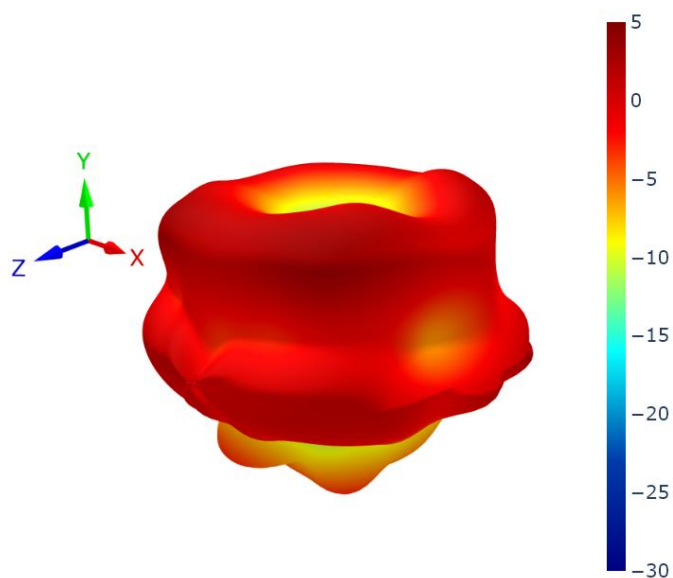
YZ Plane



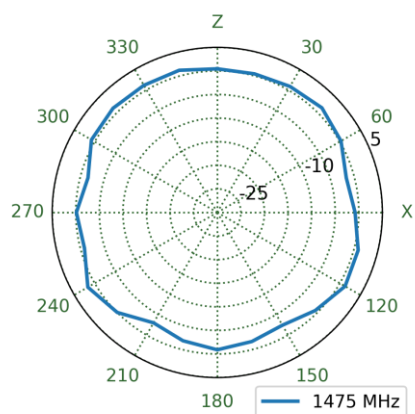
XY Plane



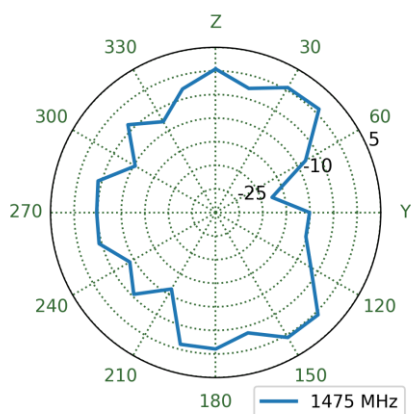
6.5 Patterns at 1475 MHz



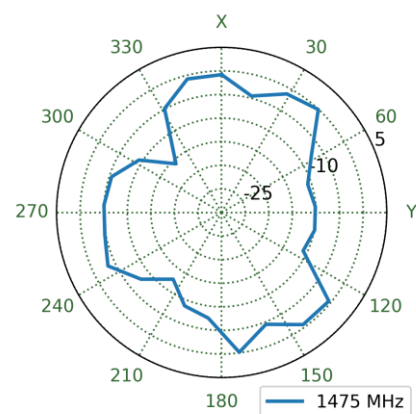
XZ Plane



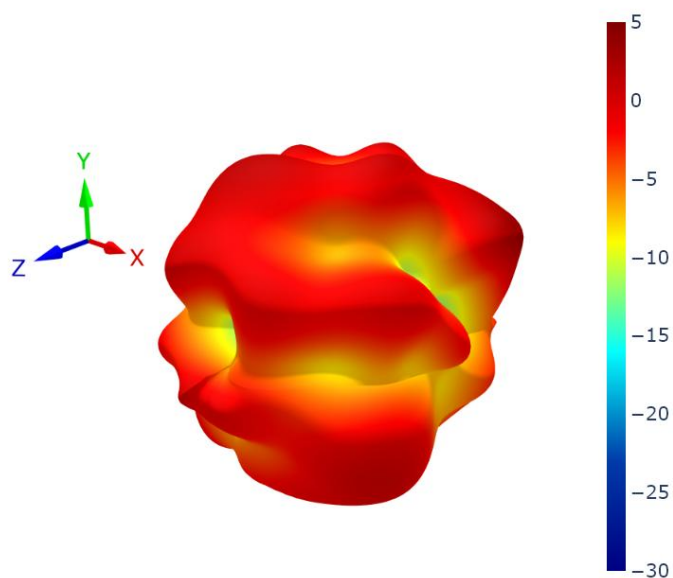
YZ Plane



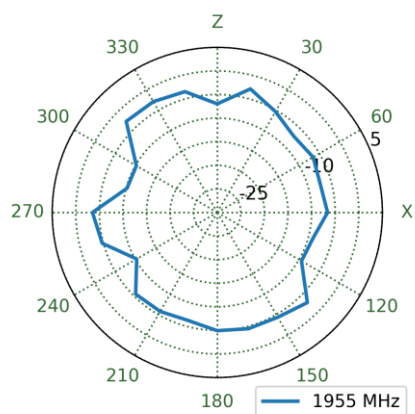
XY Plane



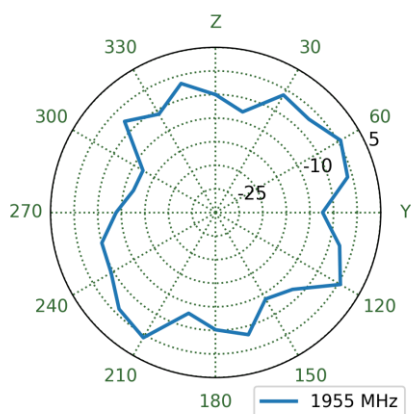
6.6 Patterns at 1955 MHz



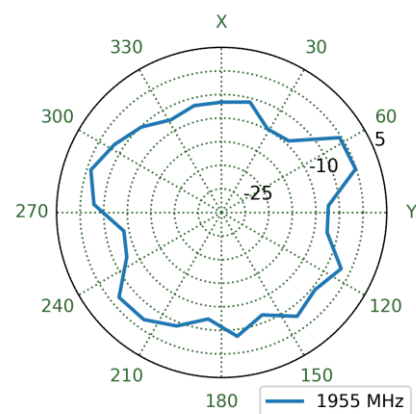
XZ Plane



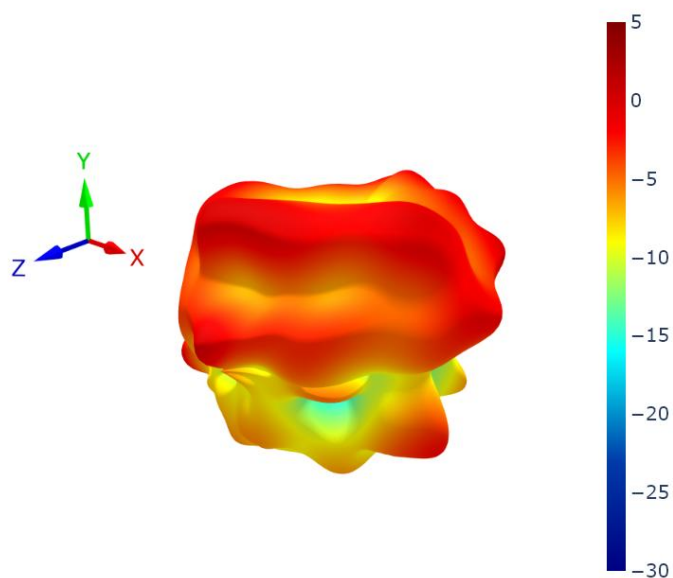
YZ Plane



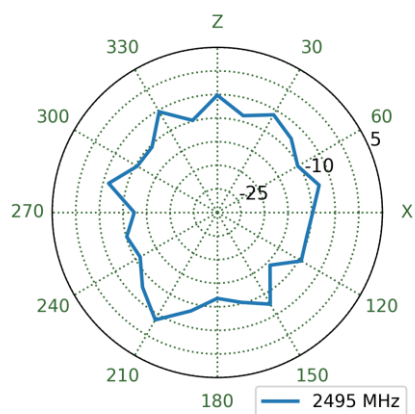
XY Plane



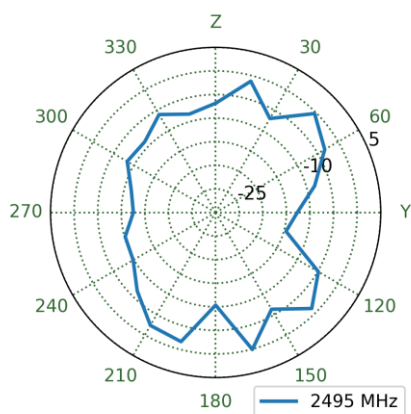
6.7 Patterns at 2495 MHz



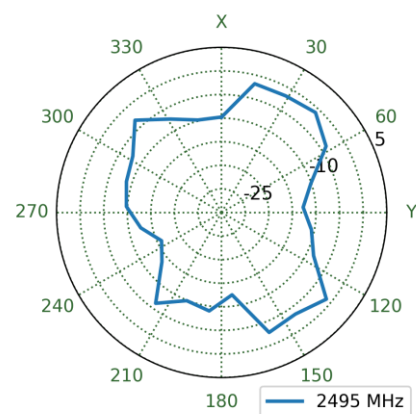
XZ Plane



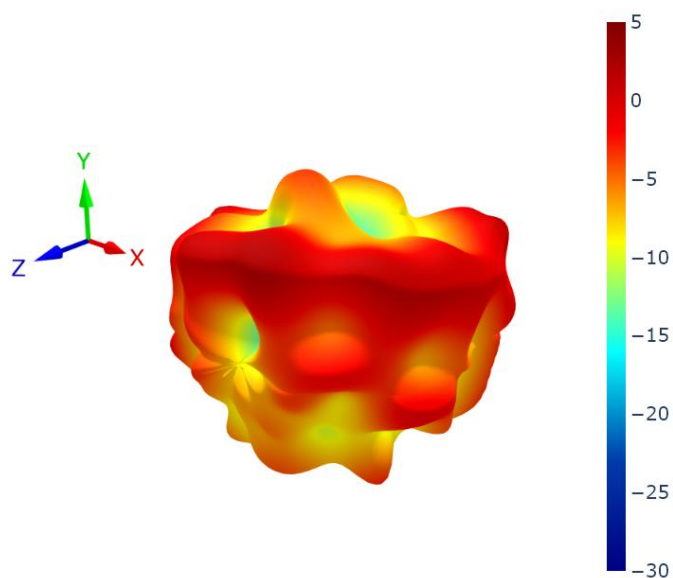
YZ Plane



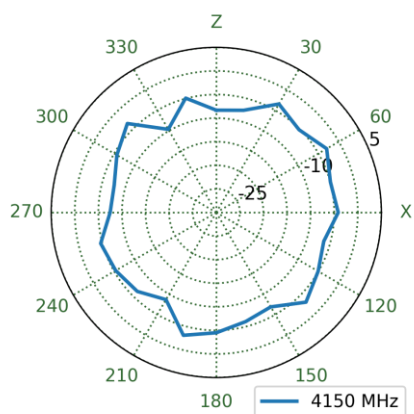
XY Plane



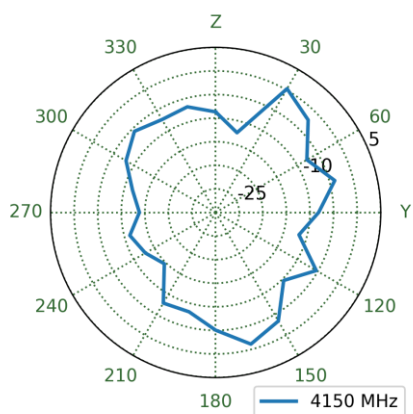
6.8 Patterns at 4150 MHz



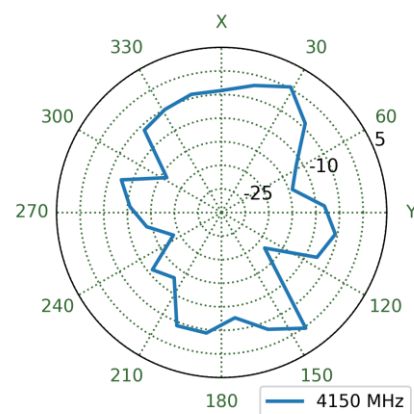
XZ Plane



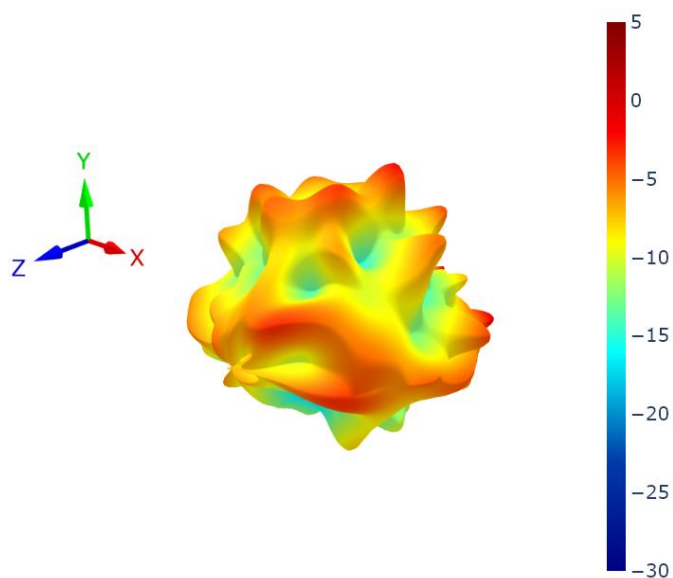
YZ Plane



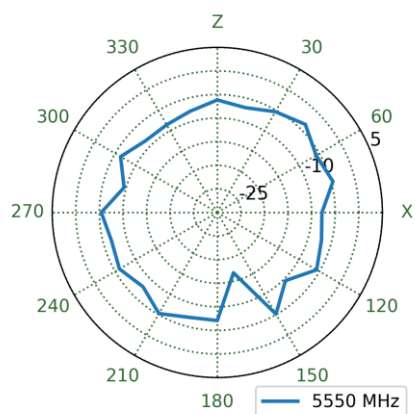
XY Plane



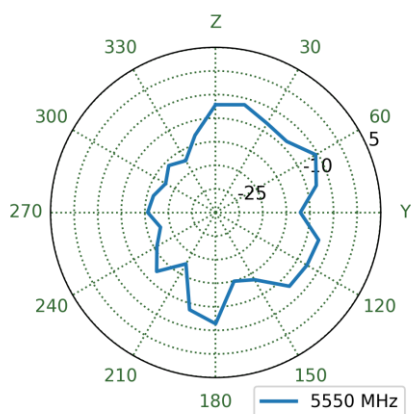
6.9 Patterns at 5550 MHz



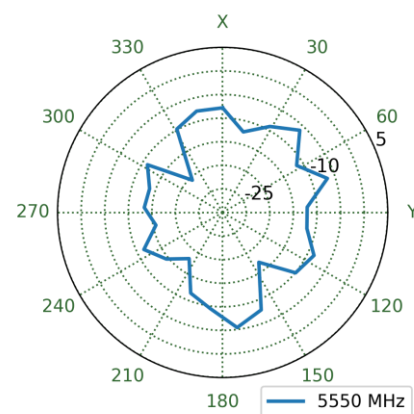
XZ Plane



YZ Plane



XY Plane



Changelog for the datasheet

SPE-12-8-127– GA.110.101111

Revision: F (Current Version)

Date:	2026-05-20
Changes:	Full datasheet update.
Changes Made by:	Gary West

Previous Revisions

Revision: E

Date:	2018-04-03
Changes:	Updated Packaging
Changes Made by:	Jack Conroy

Revision: D

Date:	2017-06-09
Changes:	Updated Packaging
Changes Made by:	Peter Monahan

Revision: C

Date:	2015-04-05
Changes:	Update
Changes Made by:	Technical Writer

Revision: B

Date:	2013-01-28
Changes:	Update
Changes Made by:	Technical Writer

Revision: A (Original First Release)

Date:	2012-10-05
Notes:	Initial Release
Author:	Technical Writer



www.taoglas.com

