Datasheet

Taoglas Lo-Pro™ Connect RV Antenna

Part No:
MAR140.A.001

Description

4-in-1 Low Profile RV Antenna with 2x 5G/4G MIMO, Wi-Fi®, and TV & Radio

Features:

Low-profile Housing with Wall Mount
2x 5G/4G MIMO
1x Wi-Fi® 2.4GHz/5.8 GHz
1x TV and Radio
IP67 Waterproof Enclosure
Dims: Ø423 x 76 mm
RoHS & Reach Compliant

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1. Introduction

The Taoglas LoPro™ MAR140.A combination antennas is designed to enhanced the connectivity options available to you for your recreational vehicle. With 4-in-1 connections available, including 5G/4G MIMO, Wi-Fi®, AM/FM and TV, this next generation, super low profile RV roof mount antenna eliminates the need for multiple antenna installations. In order to upgrade your connectivity capabilities, the LoPro is a direct, drop-in, replacement for legacy router / antenna products.

The super low profile, fully IP67 rated waterproof enclosure is available in black and white. It is manufactured from a robust, UV protected ABS material, ideal for use in any environment or weather condition. The antenna comes with low-loss TGC-1.5DS coaxial pigtail cables as standard, terminating in SMA(M) for LTE, RP-SMA(M) for Wi-Fi, and F-Type connector for TV-Radio. Custom cable configurations are possible depending on your requirements.

Contact your local Taoglas customer service team for more information or installation guidelines.

2. Specification

LTE Electrical									
Band	Frequency (MHz)	Measurement	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
5GNR/4G Band71	617-698	LTE1	47.6	-3.23	2.21	50 Ω	Linear	Omni	2W
		LTE2	49.7	-3.04	3.95				
4G/3G Band 12,13,14,17,28,29	698-824	LTE1	52.7	-2.79	2.84				
		LTE2	48.3	-3.16	3.21				
4G/3G/NB-IoT/Cat M Band 5,8,18,19,20,26,27	824-960	LTE1	54.6	-2.63	2.30				
		LTE2	39.3	-4.05	1.56				
5GNR/4G Band 21,32,74,75,76	1427-1518	LTE1	44.2	-3.55	2.76				
		LTE2	54.0	-2.67	3.94				
4G/3G Band 1,2,3,4,9,23,25,35,39 ,66	1710-2200	LTE1	60.2	-2.21	3.83				
		LTE2	68.1	-1.67	5.33				
4G/3G Band 7,30,38,40,41	2300-2690	LTE1	48.3	-3.16	3.99				
		LTE2	57.1	-2.43	4.40				
5GNR/4G Band 22,42,48,77,78,79	3300-5000	LTE1	33.1	-4.80	4.38				
		LTE2	34.6	-4.61	3.98				
LTE5200/Wi-Fi5800	5150-5925	LTE1	15.4	-8.11	1.47				
		LTE2	13.8	-8.60	2.74				

Wi-Fi Electrical								
Band	Frequency (MHz)	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
Wi-Fi – 2 GHz	2400-2500	57.9	-2.38	5.01	50 Ω	Linear	Omni	2W
Wi-Fi – 5 GHz	5150-5850	45.6	-3.41	5.24				

TV and Radio Electrical								
Band	Frequency (MHz)	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
UHF	470-618	67.8	-1.69	0.90	50 Ω	Linear	Omni	2W

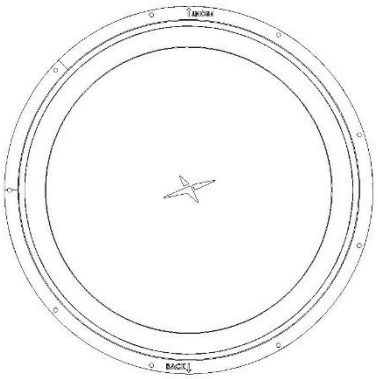
Mechanical	
Dimensions	Ø423 x 76 mm
Weight	0.84 Kg
Material	ASA
Connector	LTE: SMA(M) Wi-Fi: RP-SMA(M) TV and Radio: F-Type
Cable	LTE: 440 mm of 1.5 DS Co-axial Wi-Fi: 440 mm of 1.5 DS Co-axial

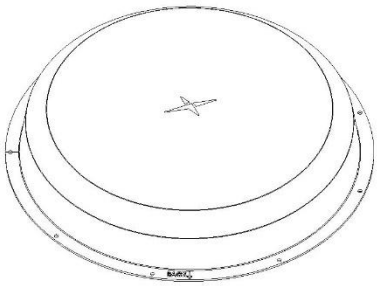
Environmental	
IP Rating	IP67
Operation Temperature	-40°C to 85°C / -40°F to 185°F
Storage Temperature	-40°C to 85°C / -40°F to 185°F
Relative Humidity	Non-condensing 65°C 95% RH / 149°C 95% RH

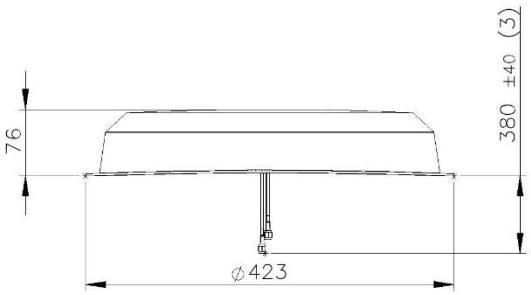
3. Mechanical Drawing

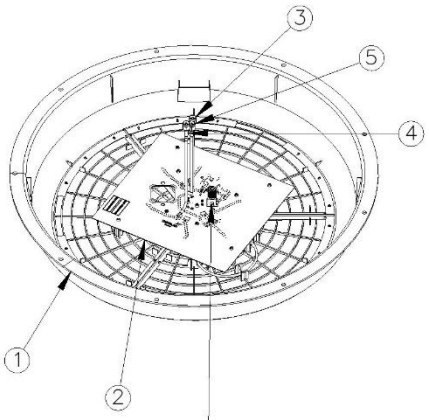
REV	ZONE	DESCRIPTION	ENG	APPROVED	DATE
D01	All	Initial design	G. Samson	I. Mendez	4/8/2024
D02	All	Updated Config Table	G. Samson	I. Mendez	4/11/2024
D03	All	Added date code and product part number labels	G. Samson	I. Mendez	4/15/2024
D04	All	Updated BOM FN 5 cable assy description and added supply voltage requirements note.	G. Samson	I. Mendez	5/22/2024

ISO NO.: See Config. Table
STATE: Released
NOTES: 1. All material must be RoHS compliant.
2. Use this drawing together with the corresponding 3D CAD database file to fully describe the part.

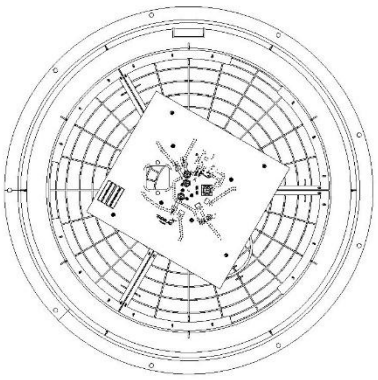








F–TYPE CONNECTOR
FOR TV AND RADIO



PRODUCT VOLTAGE REQUIREMENTS
NOTE: VOLTAGE TO BE SUPPLIED OVER 75–Ohm COAXIAL CABLE TO F–TYPE CONNECTOR, +9– +16 VDC.

ITEM NO.	DESCRIPTION	QTY.
1	Cover MAR140 Antenna	1
2	PCB Assy MAR140	1
3	CAble Assy 1.5DS SMA(M) 4G-5G-2	1
4	CAble Assy 1.5DS SMA(M) 4G-5G-1	1
5	Cable Assy 1.5DS RP-SMA(M) Wi-Fi-1	1

CONFIGURATION TABLE		
EDW #	IDW #	COLOR
EDW.001641	IDW.001638	BLACK
EDW.001663	IDW.001660	WHITE

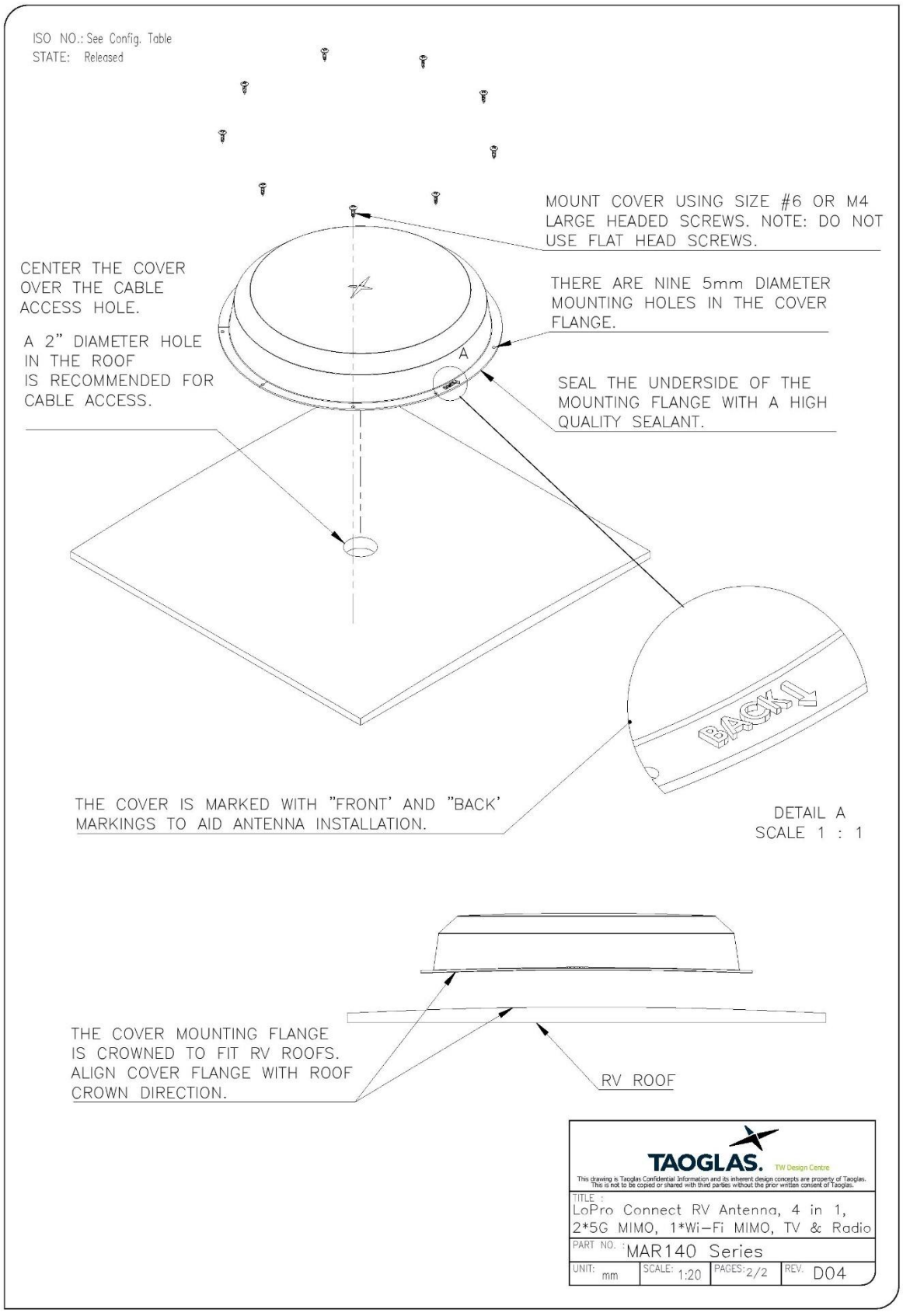
APPROVED BY:	P. Frank
CHECK BY:	I. Mendez
DRAWN BY:	G. Samson
DATE:	4/8/2024
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE REFERENCE ONLY	
THIRD ANGLE PROJECTION	

TAOGLAS. TW Design Centre

TITLE : LoPro Connect RV Antenna, 4 in 1, 2*5G MIMO, 1*Wi–Fi MIMO, TV & Radio
PART NO. : MAR140 Series

UNIT:	SCALE:	PAGES:	REV.
mm	1:10	1/2	D04

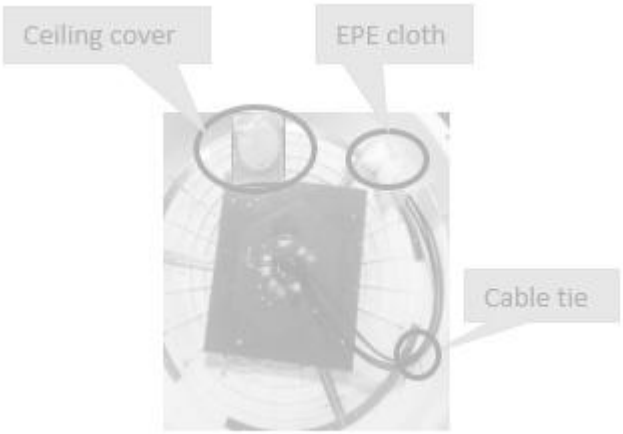
4. Installation Recommendation



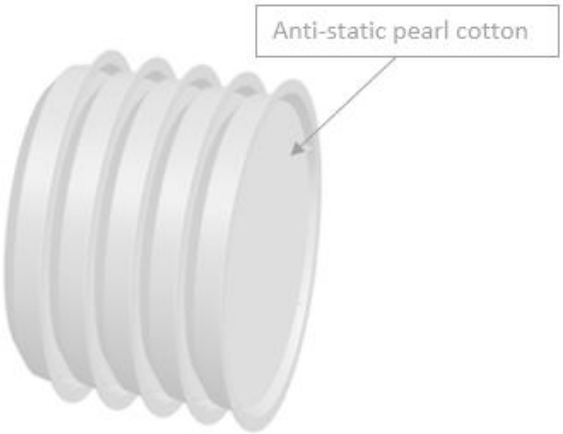
5. Packaging

1 pcs per bubble bag

1 pcs EPE cloth

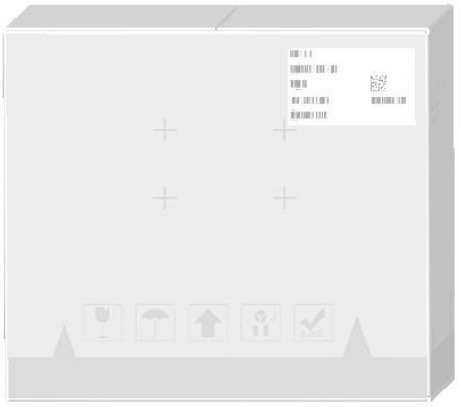


5 pcs Anti-static pearl cotton



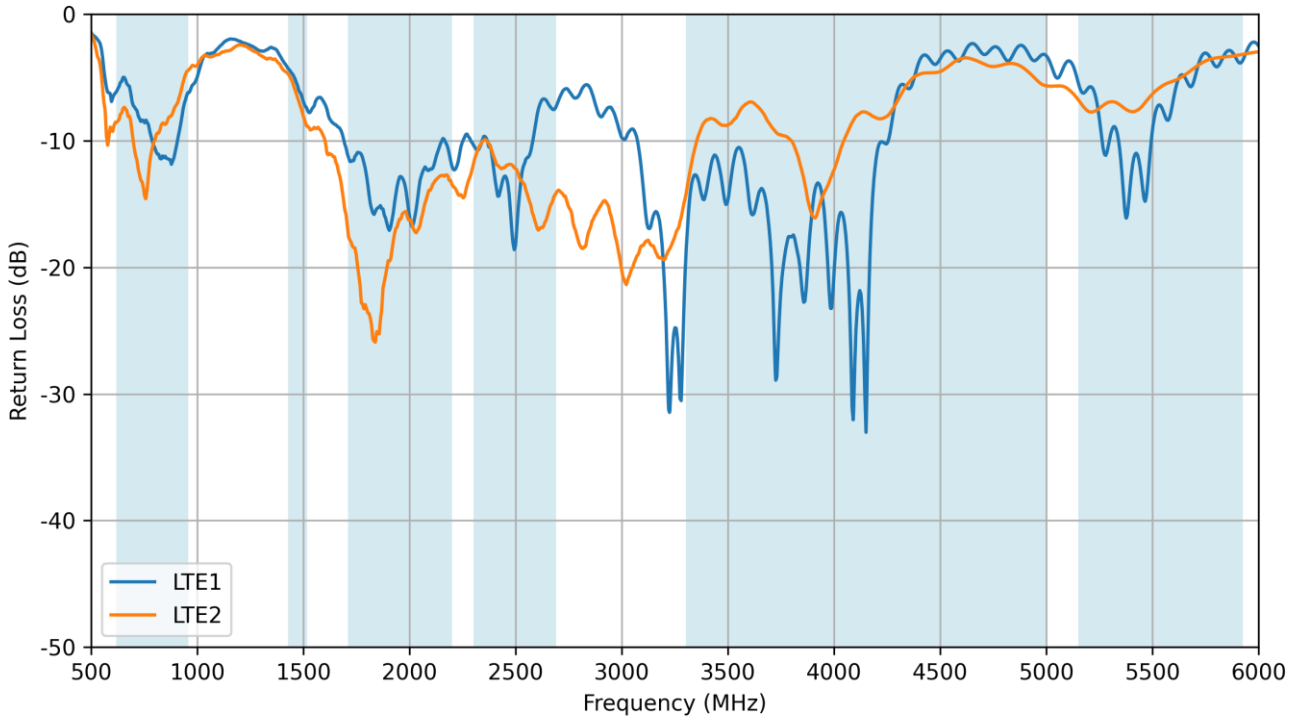
5 pcs per bag
PE bag dimensions: 600 x 500 mm
Weight: 4.2 Kg

5 pcs per carton
Carton Dimensions: 445 x 300 x 465 mm
Weight: 5.15 Kg

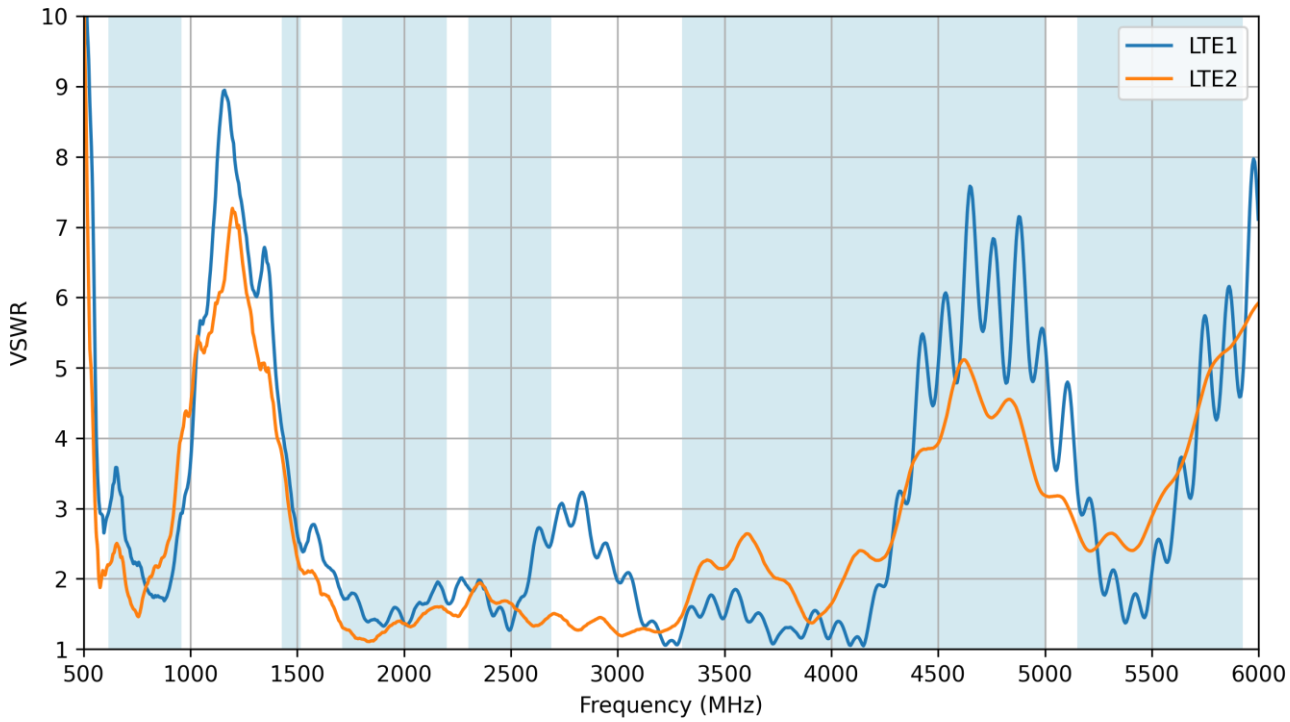


6. Antenna Characteristics

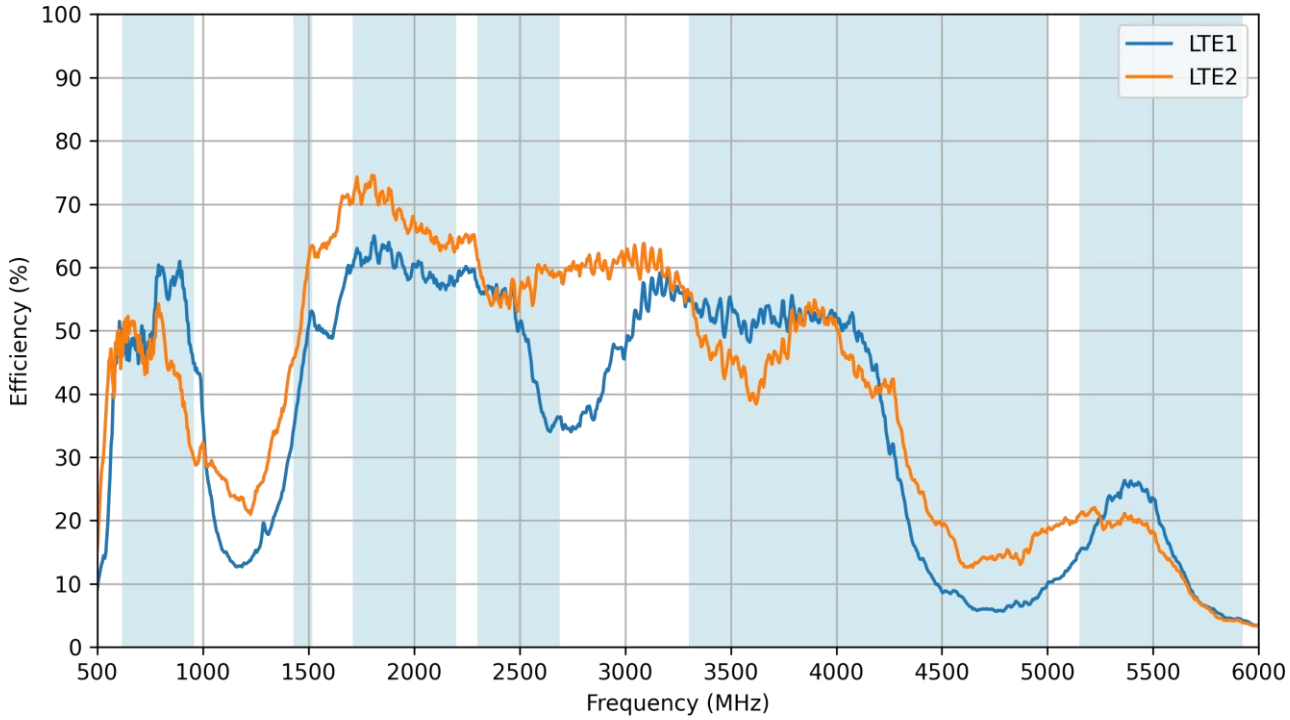
6.1 LTE - Return Loss



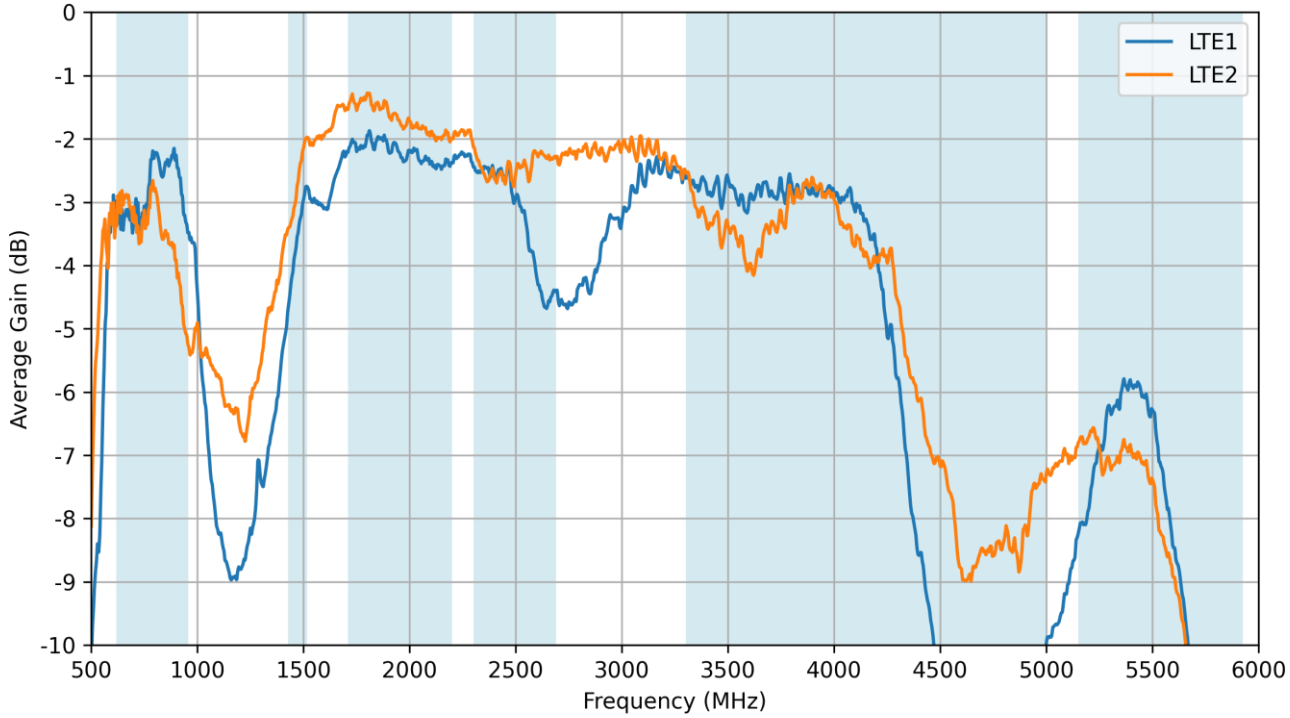
6.2 LTE - VSWR



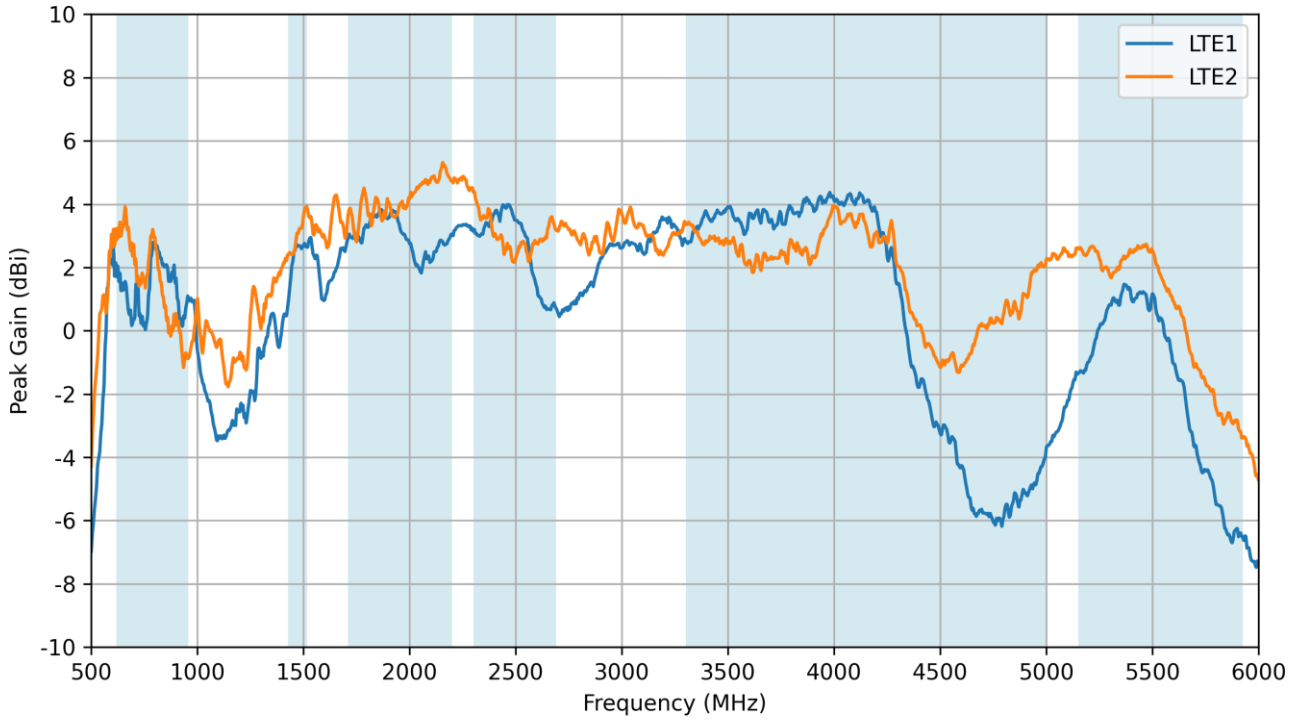
6.3 LTE - Efficiency



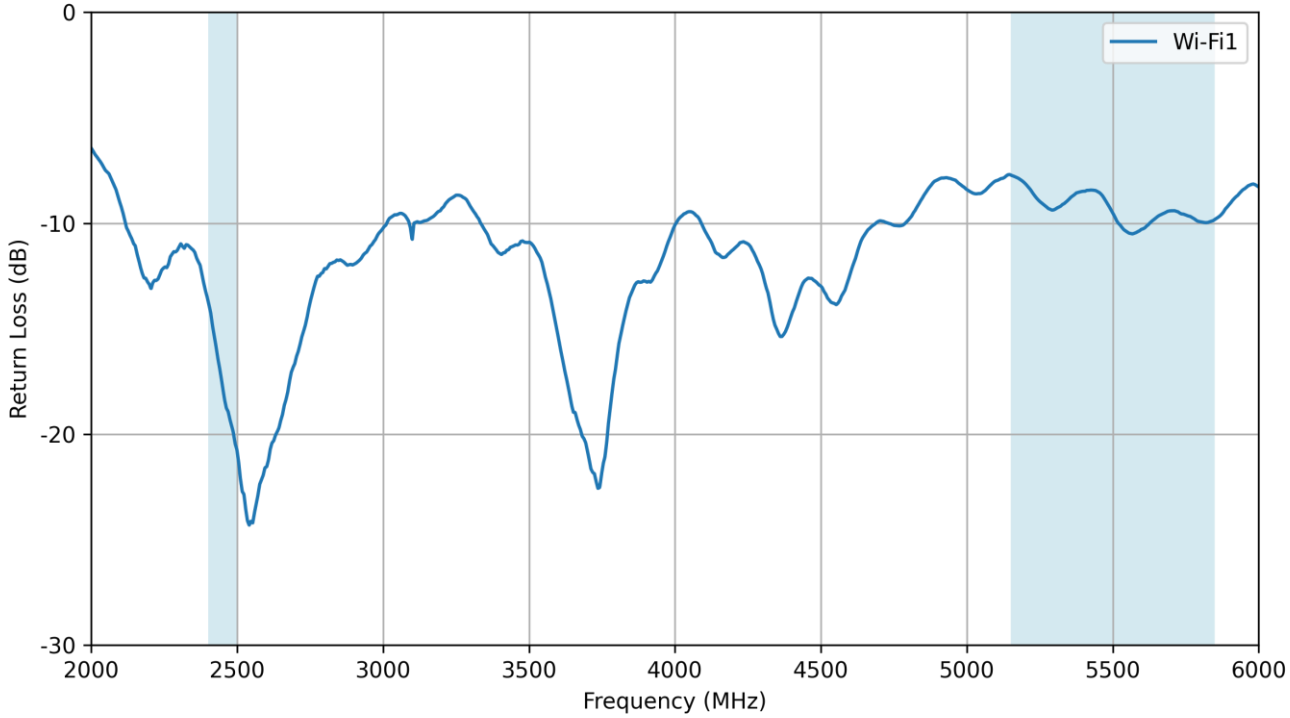
6.4 LTE - Average Gain



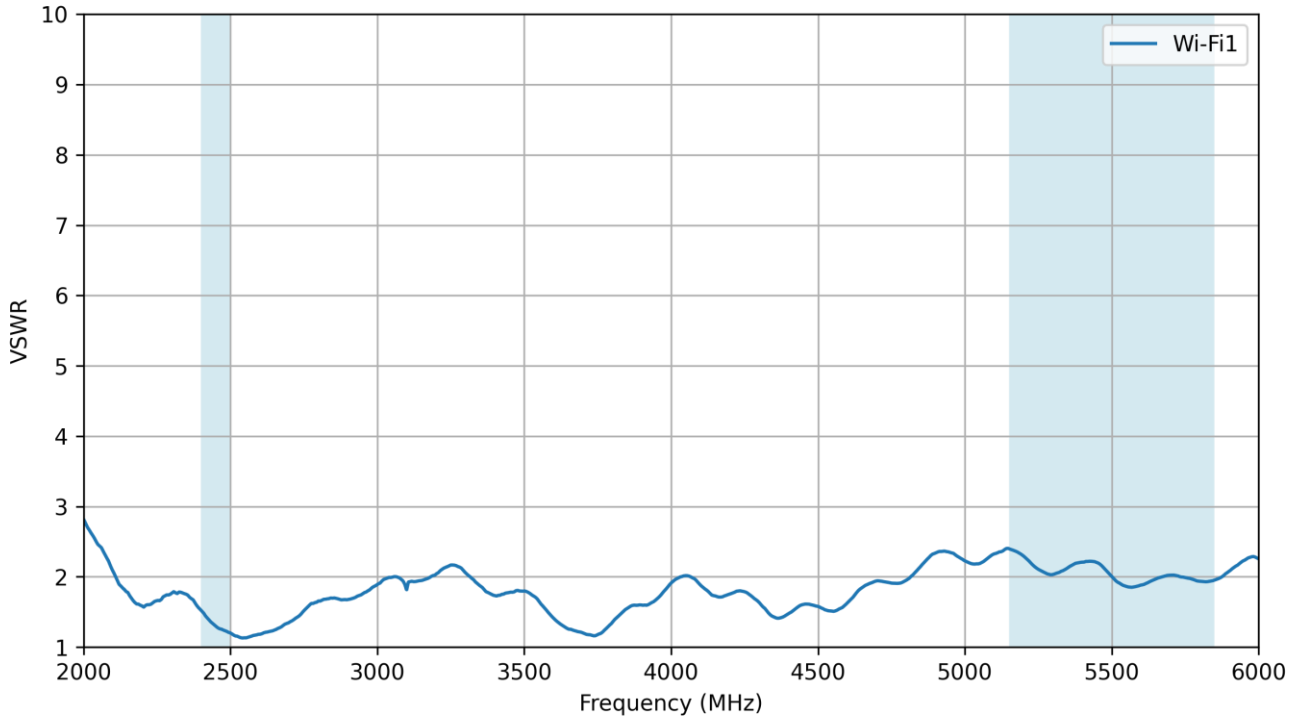
6.5 LTE - Peak Gain



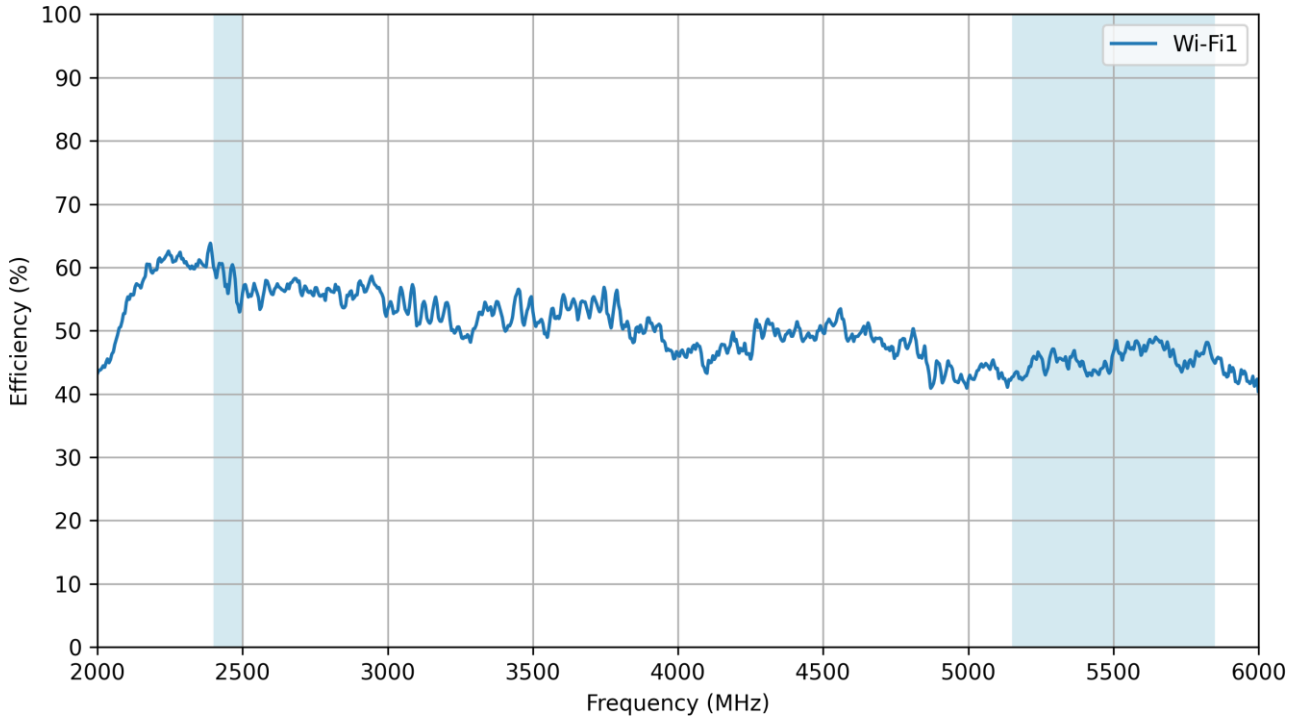
6.6 Wi-Fi - Return Loss



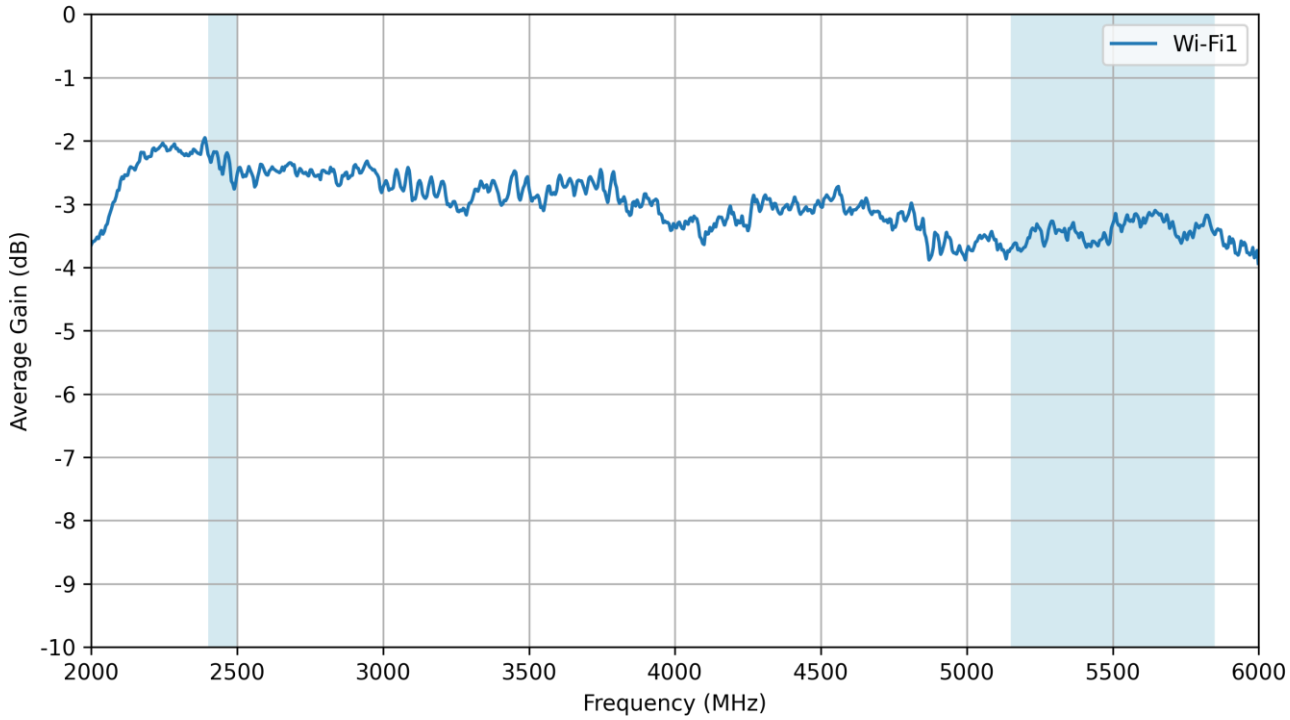
6.7 Wi-Fi - VSWR



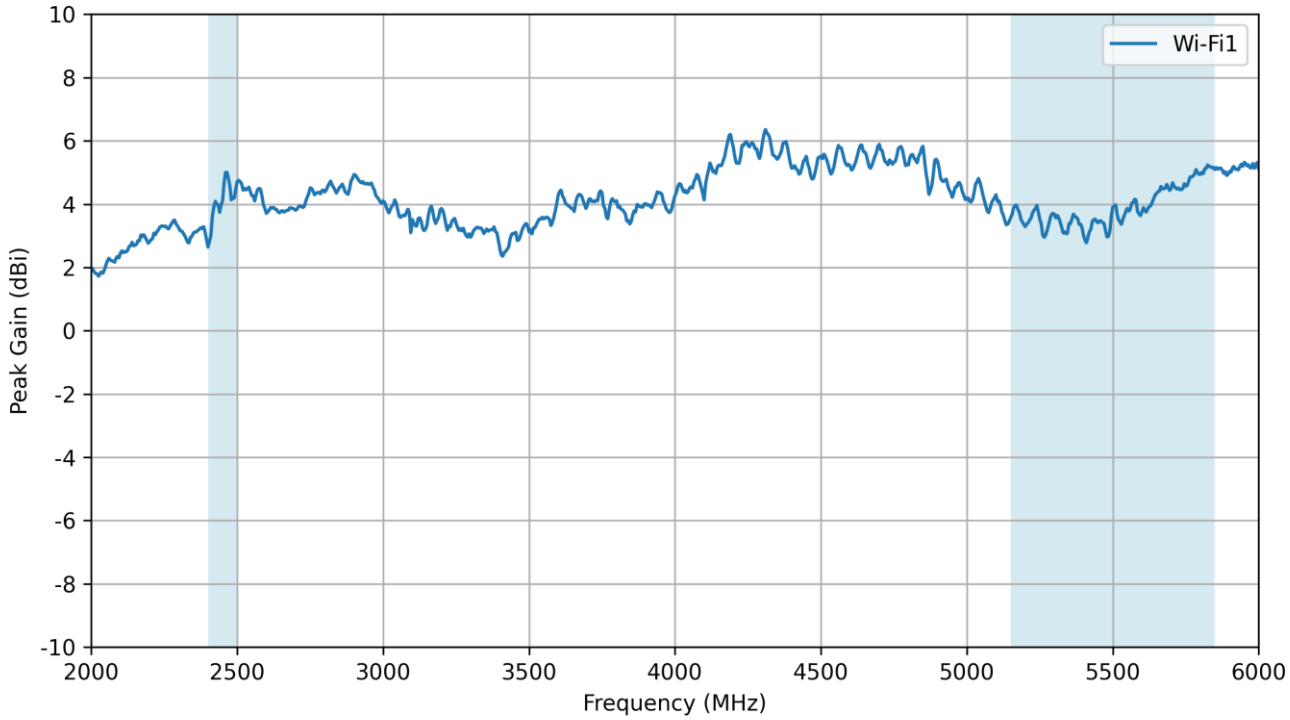
6.8 Wi-Fi - Efficiency



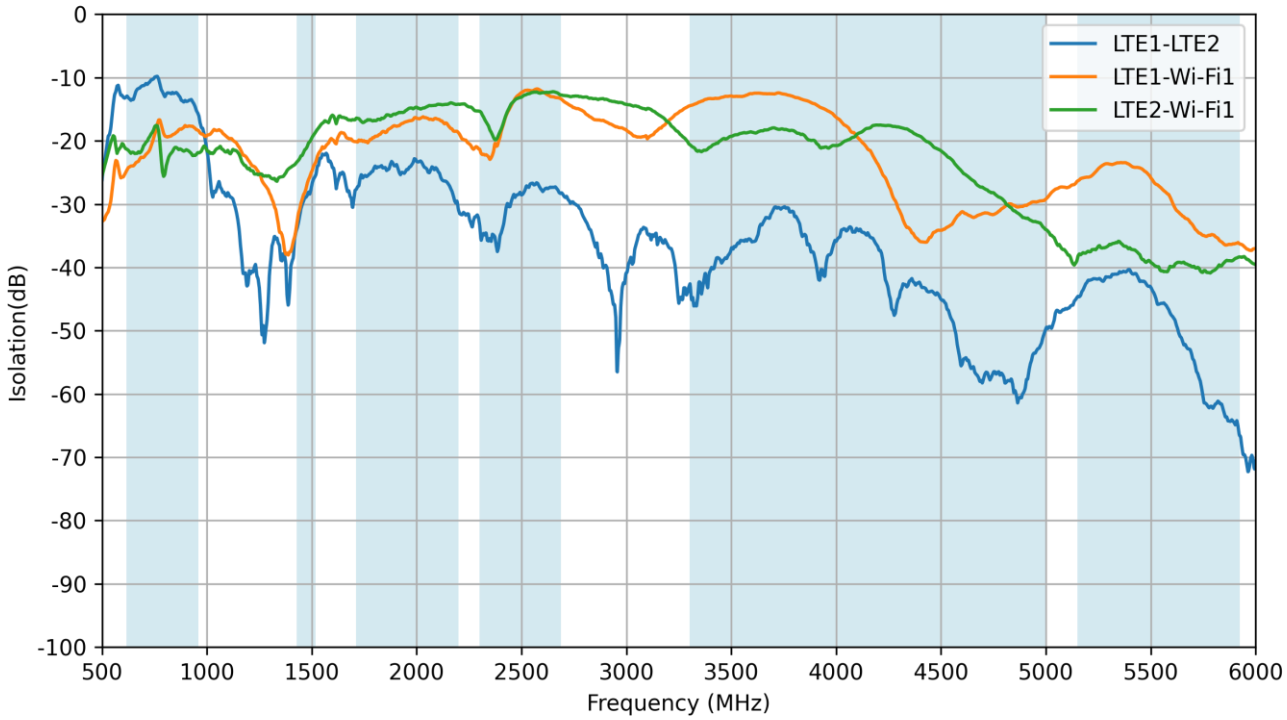
6.9 Wi-Fi - Average Gain



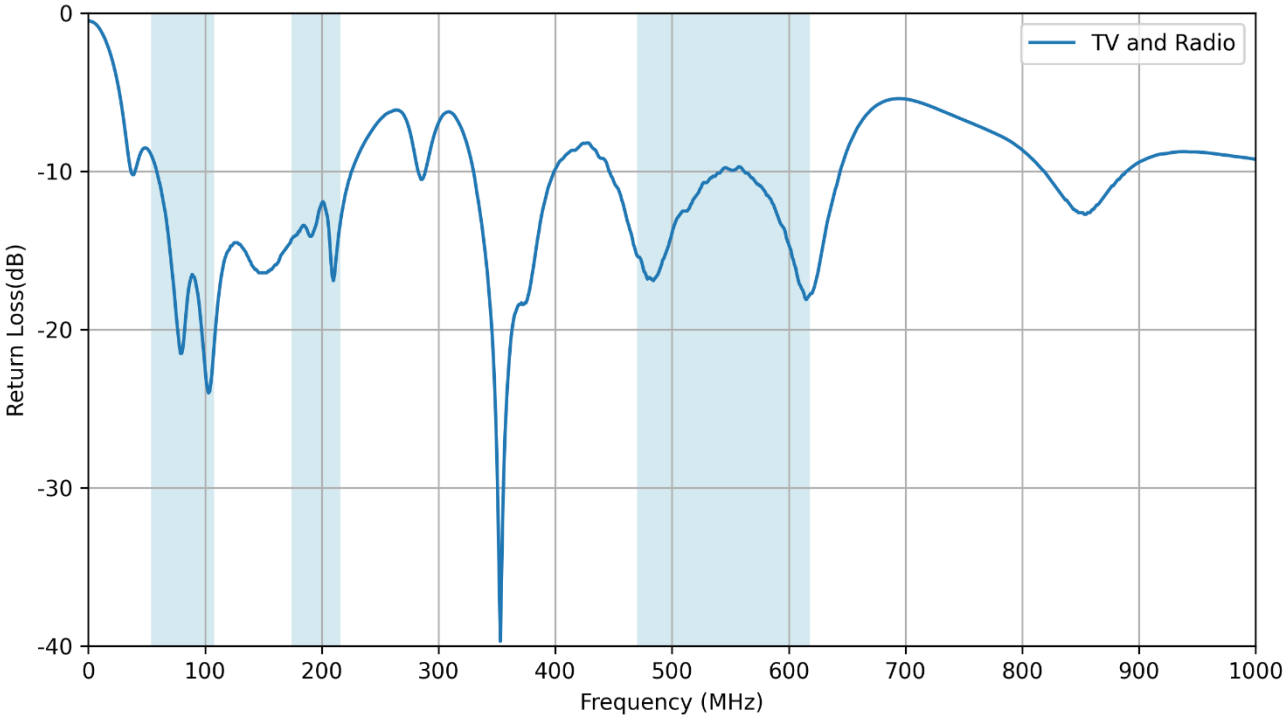
6.10 Wi-Fi - Peak Gain



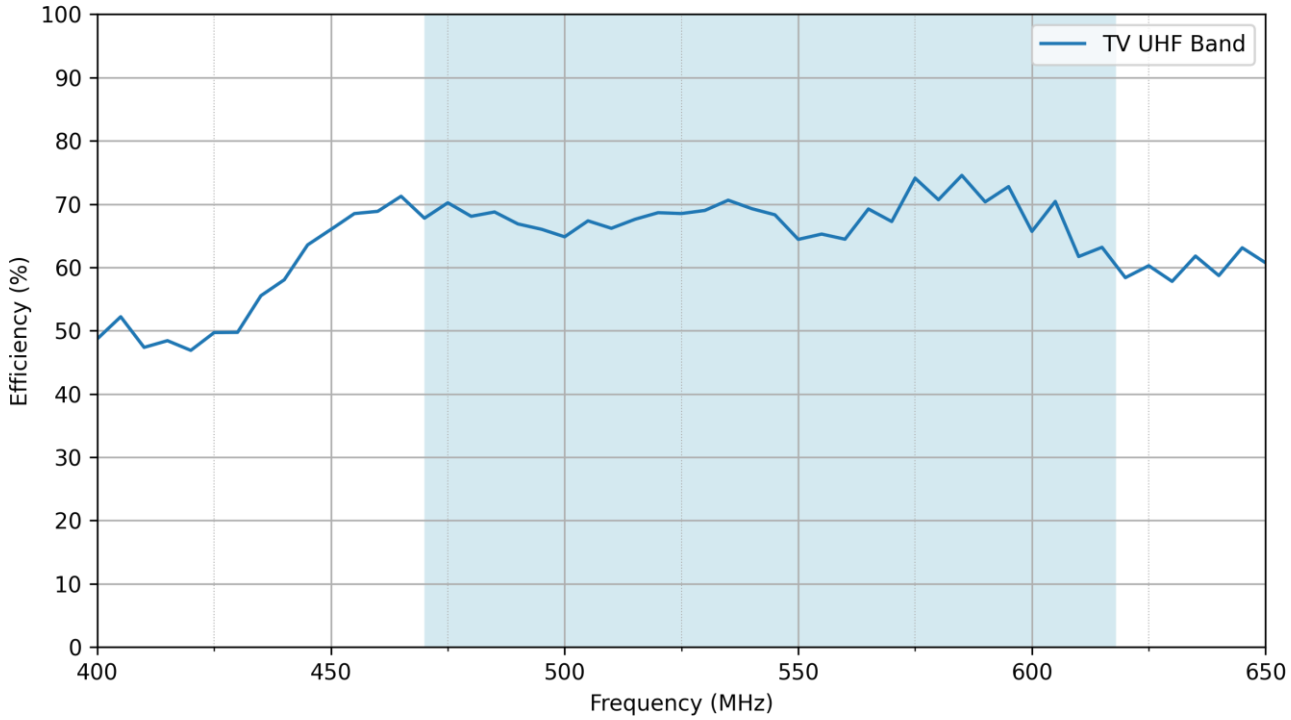
6.11 Isolation



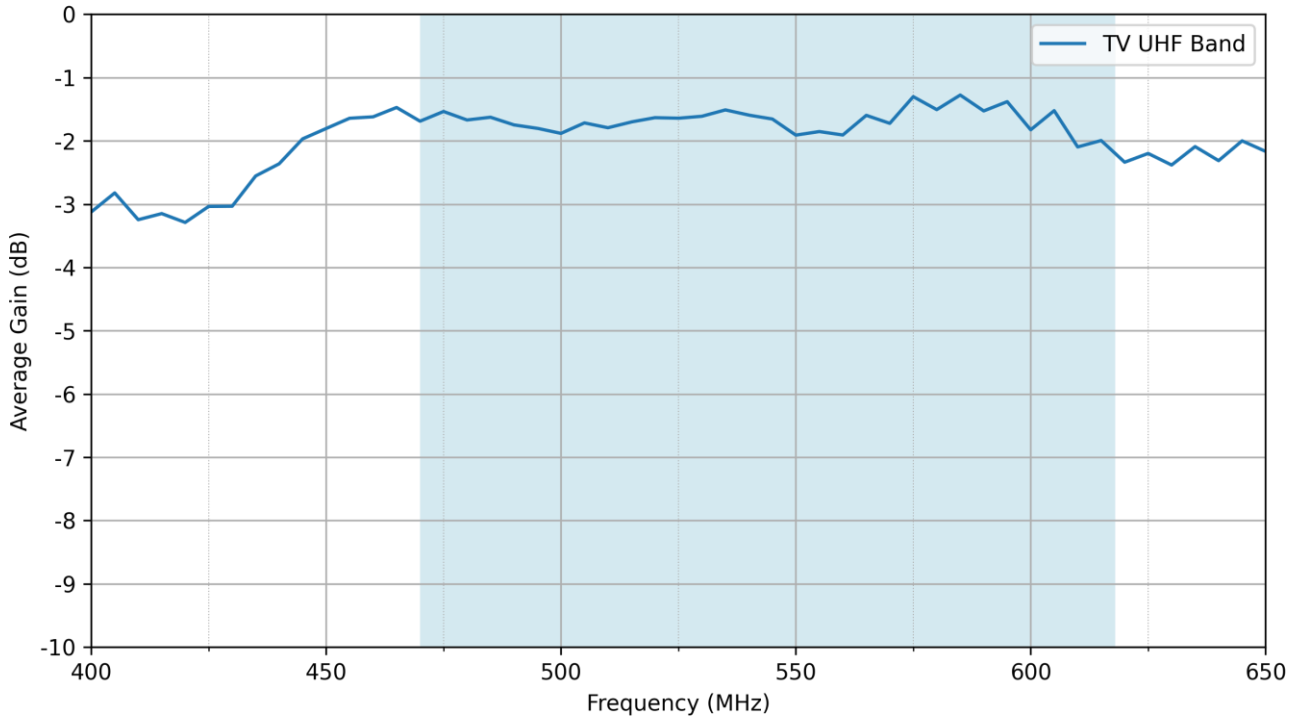
6.12 TV and Radio – Return Loss



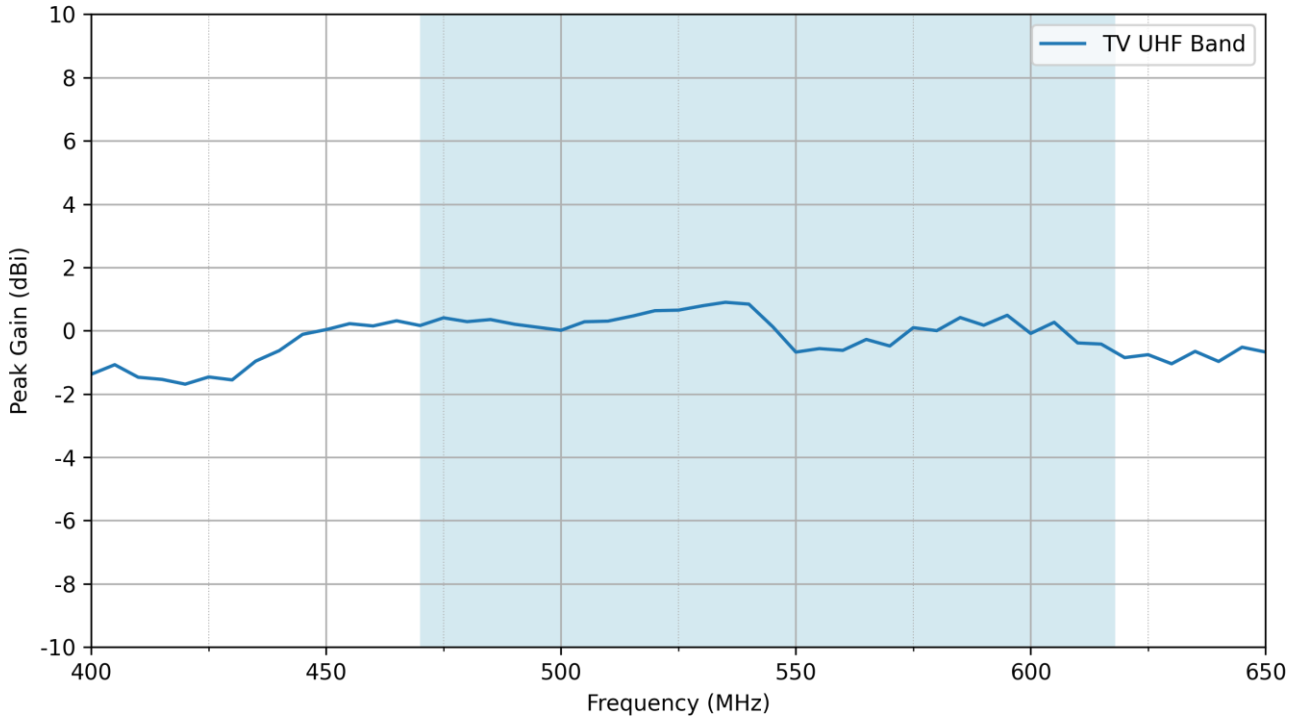
6.13 TV UHF Band - Efficiency



6.14 TV and Radio - Average Gain

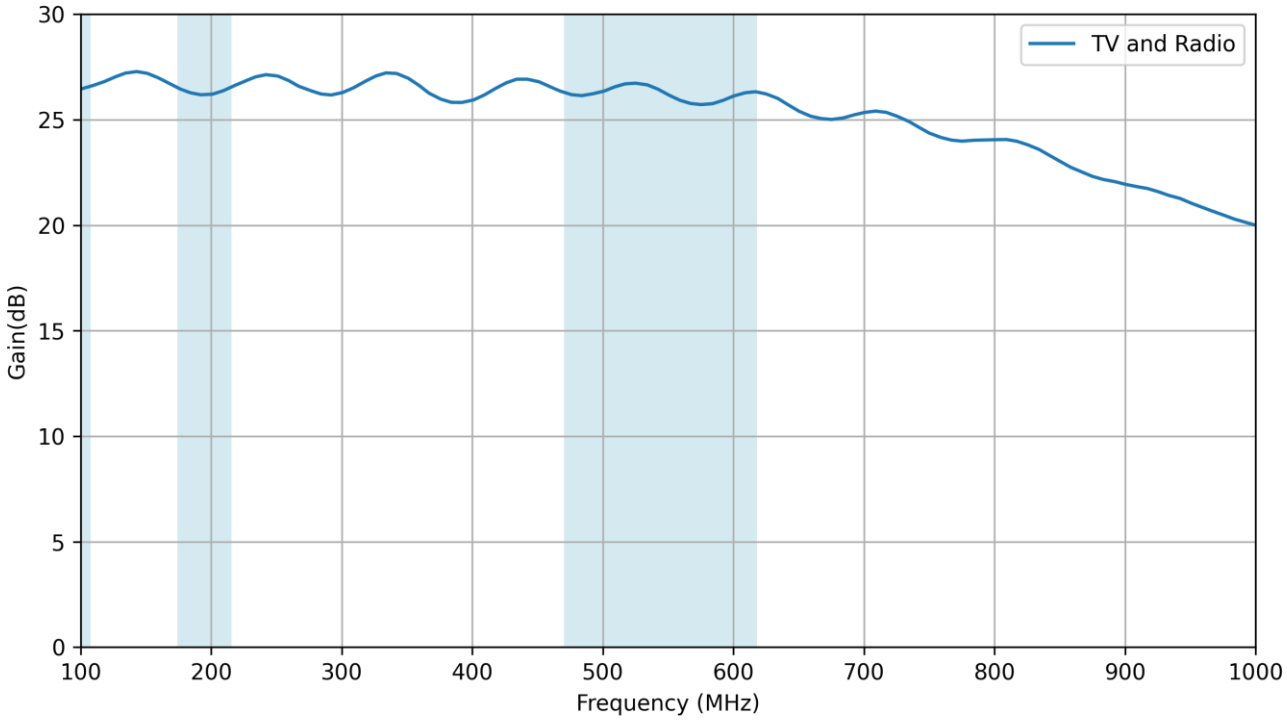


6.15 TV and Radio - Peak Gain

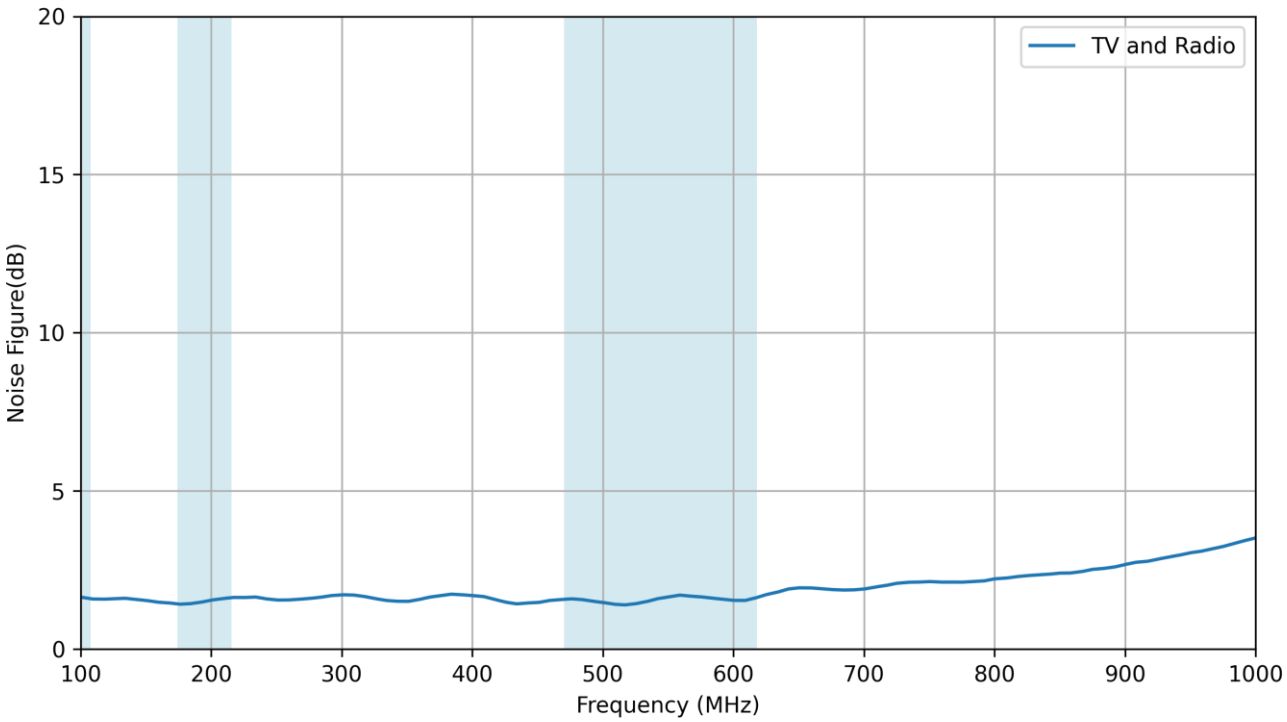


7. TV and Radio Active

7.1 Gain

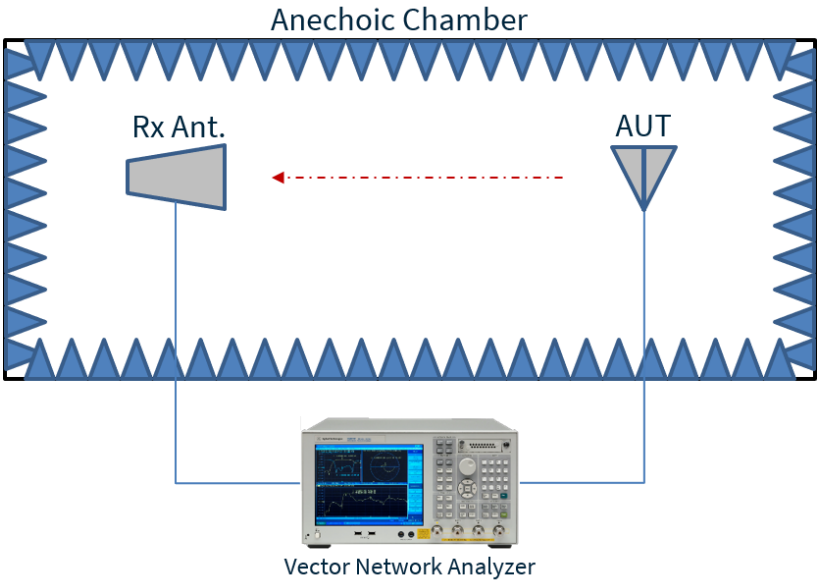


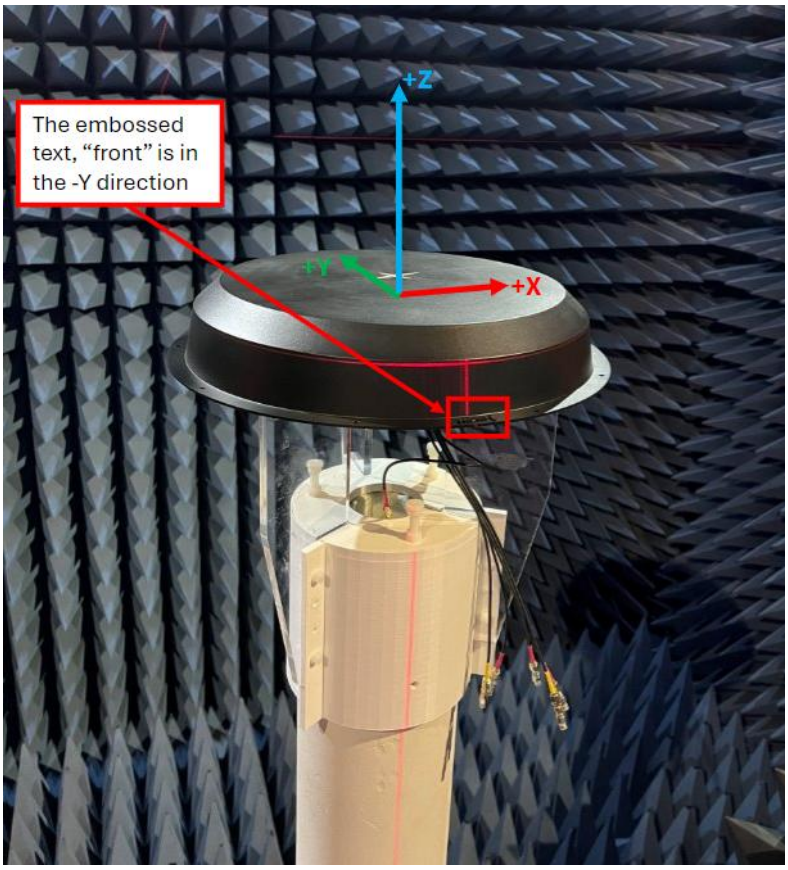
7.2 Noise Figure



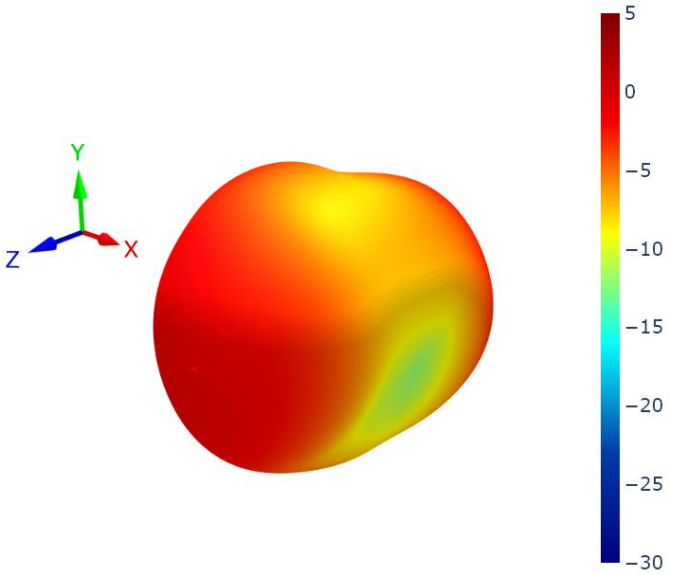
8. Radiation Patterns

8.1 Test Setup

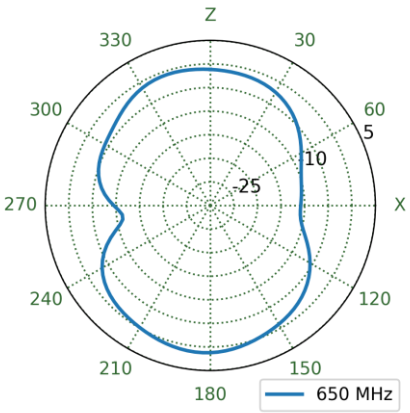


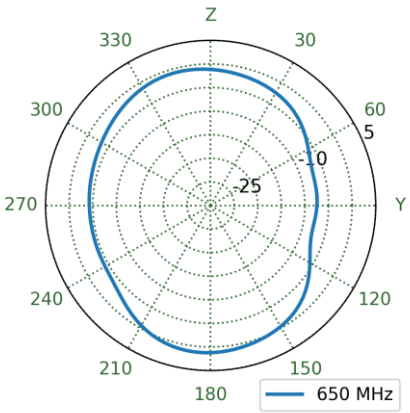


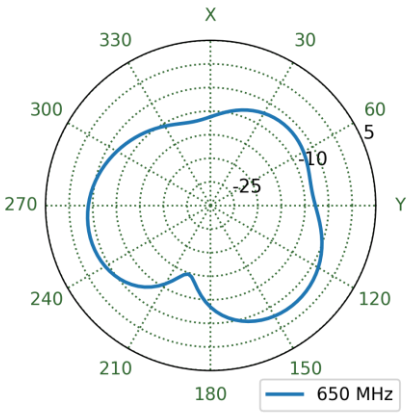
8.2 LTE1 Patterns at 650 MHz



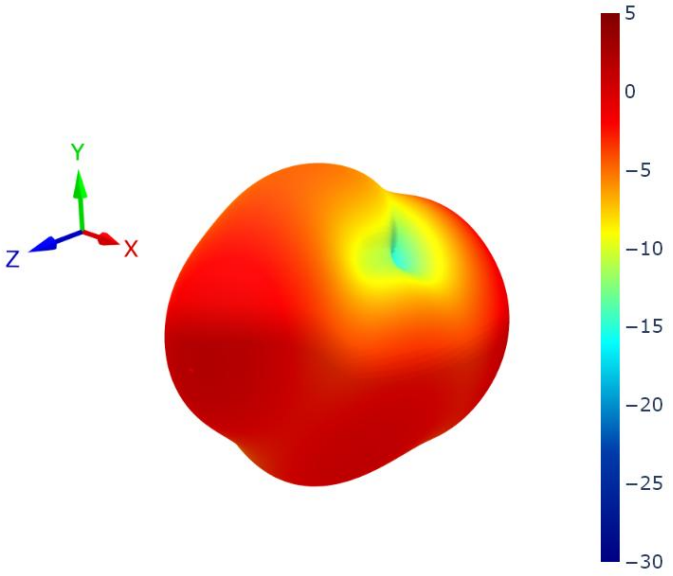
XZ Plane	YZ Plane	XY Plane

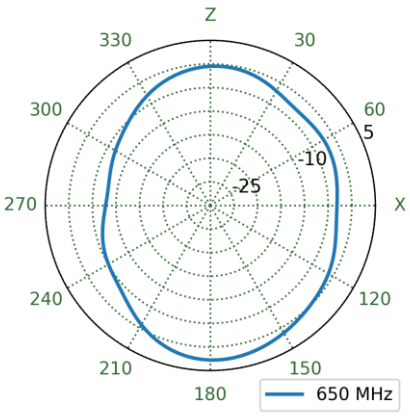
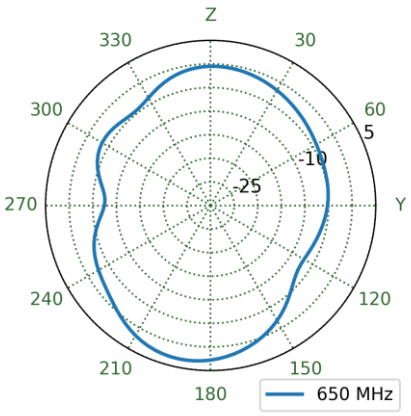
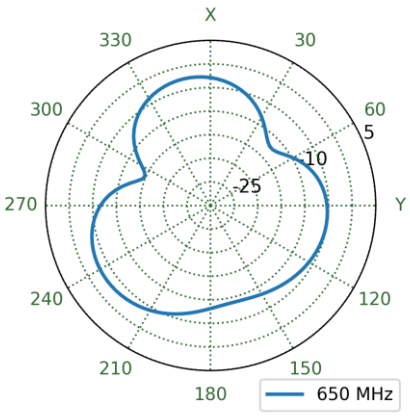




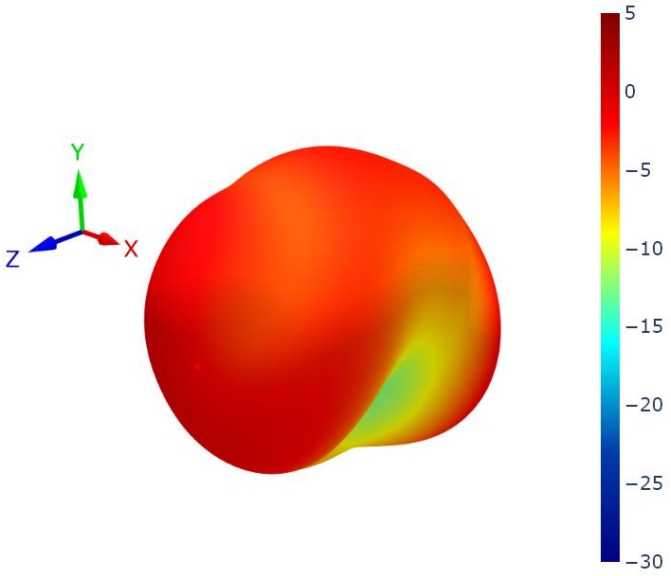


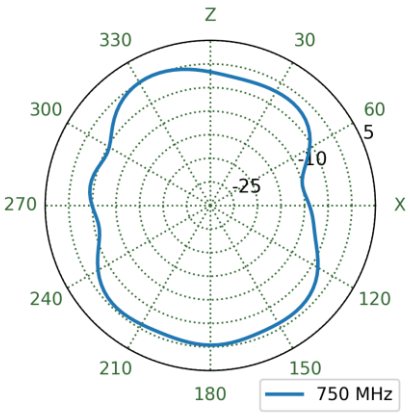
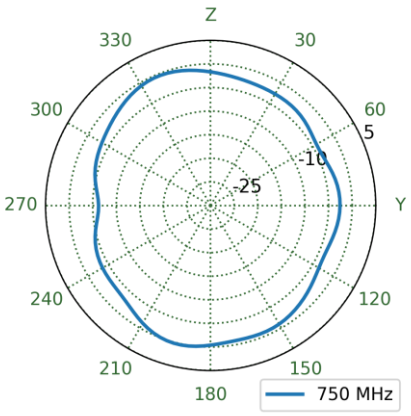
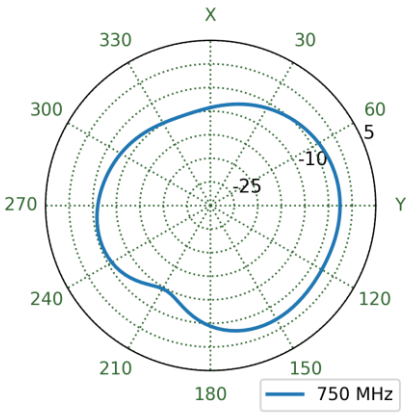
8.3 LTE2 Patterns at 650 MHz



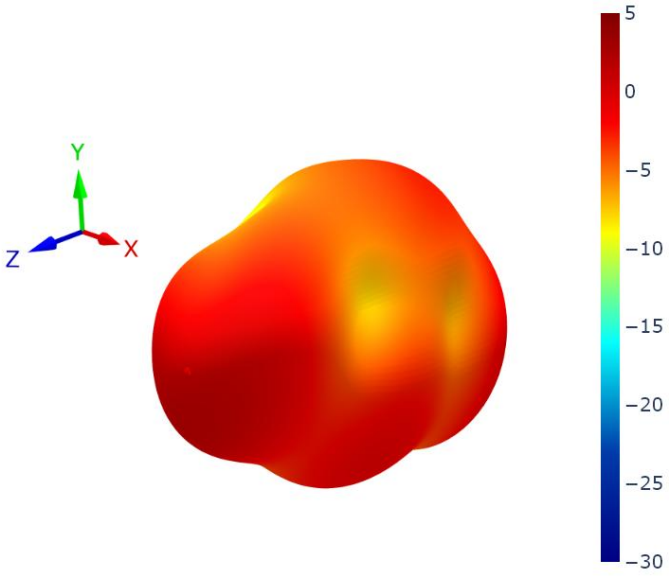
XZ Plane	YZ Plane	XY Plane
		

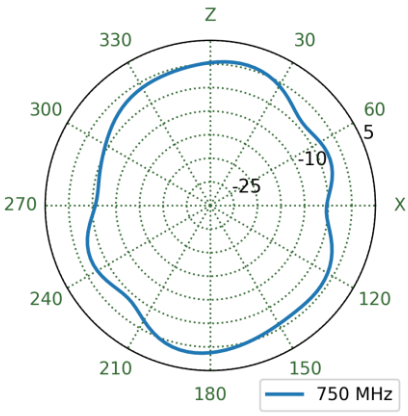
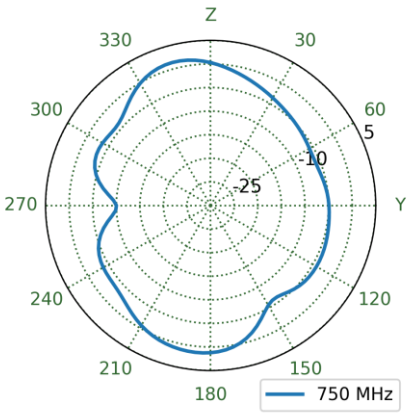
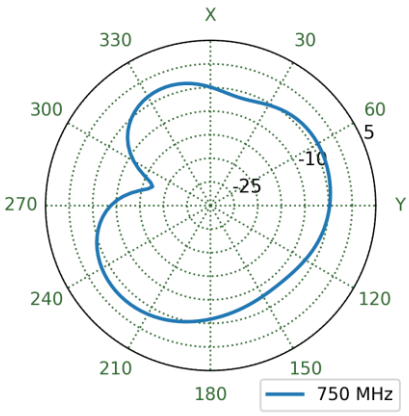
8.4 LTE1 Patterns at 750 MHz



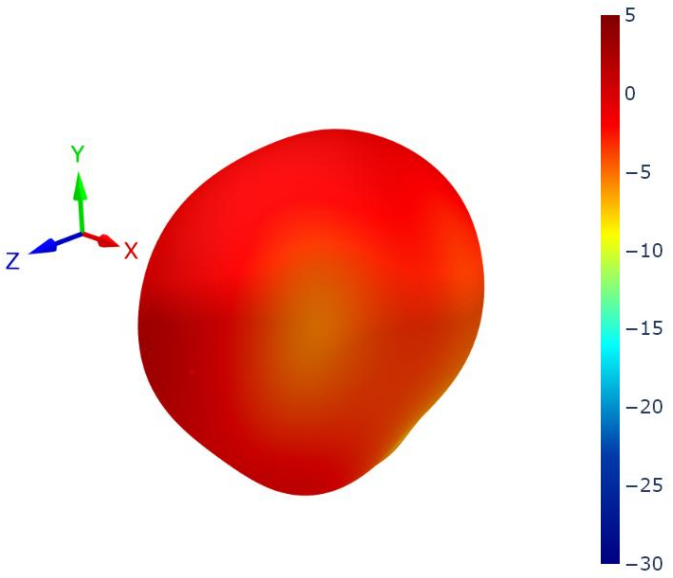
XZ Plane	YZ Plane	XY Plane
		

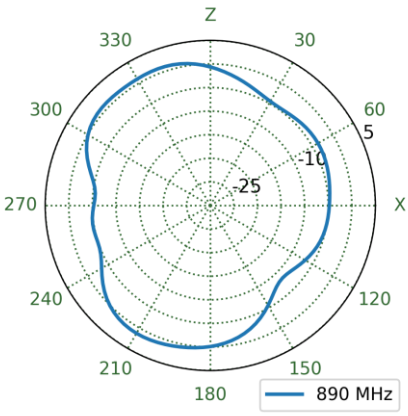
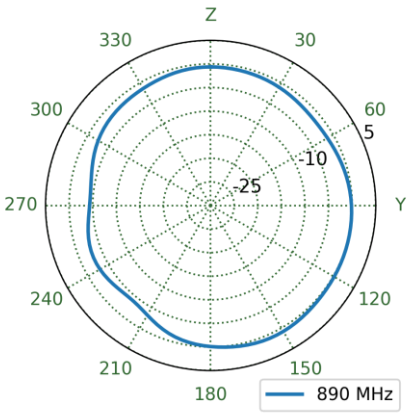
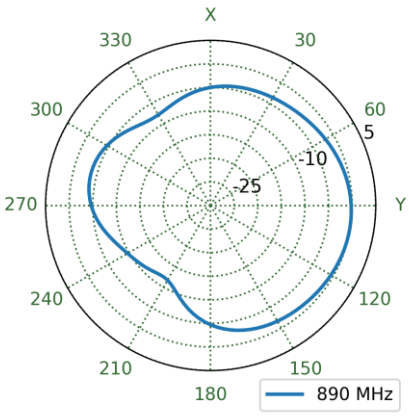
8.5 LTE2 Patterns at 750 MHz



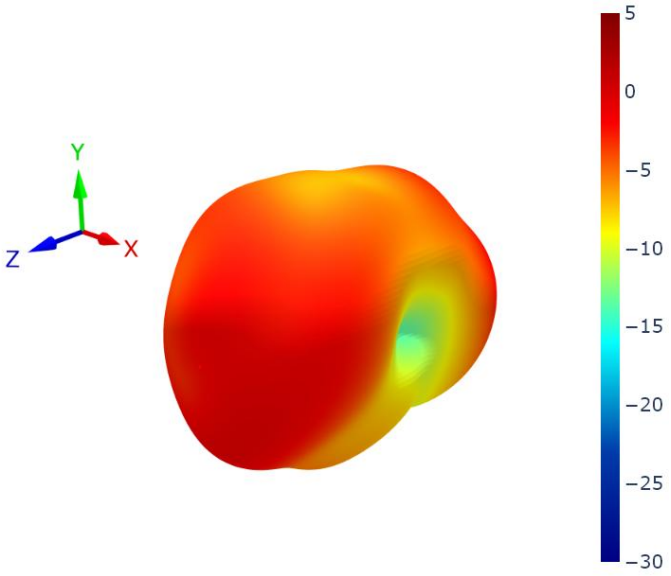
XZ Plane	YZ Plane	XY Plane
		

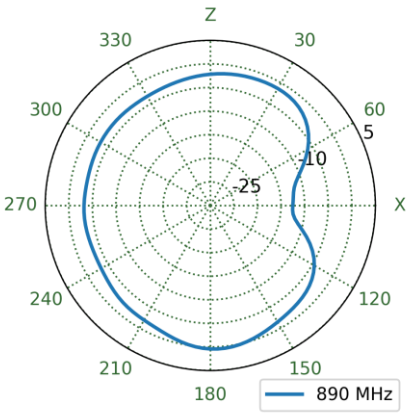
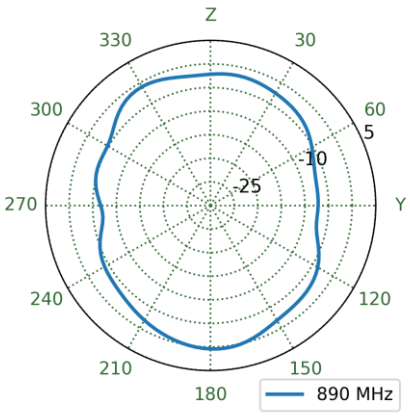
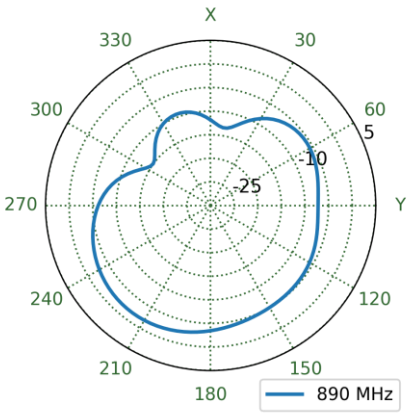
8.6 LTE1 Patterns at 890 MHz



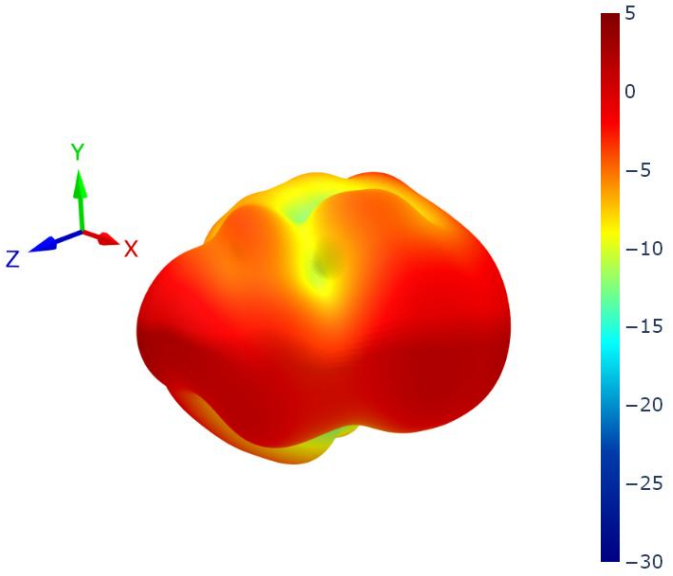
XZ Plane	YZ Plane	XY Plane
		

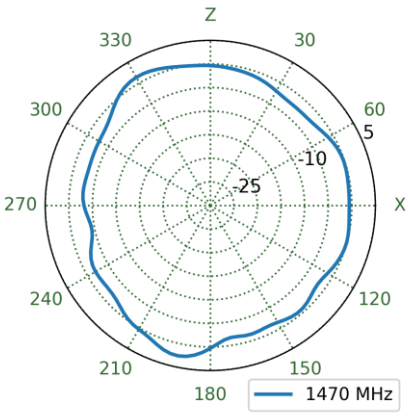
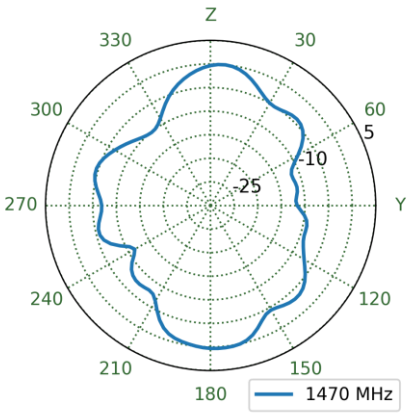
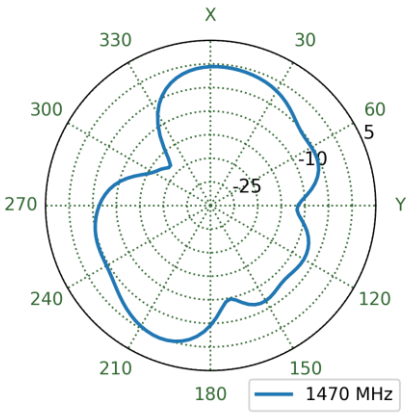
8.7 LTE2 Patterns at 890 MHz



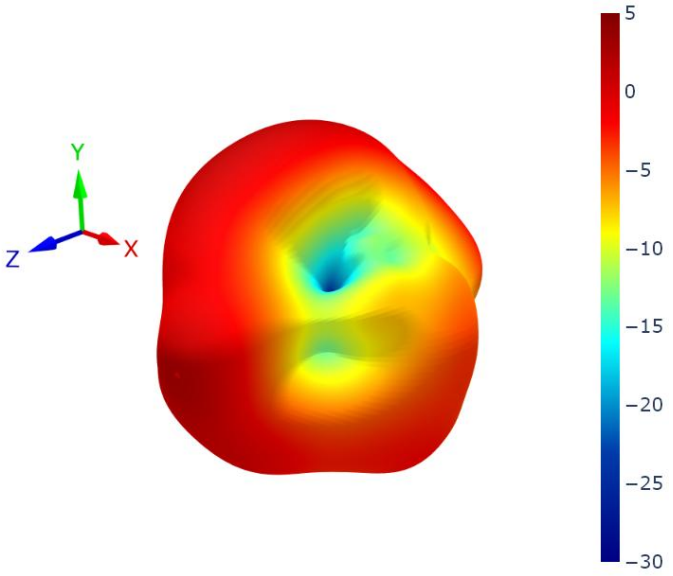
XZ Plane	YZ Plane	XY Plane
		

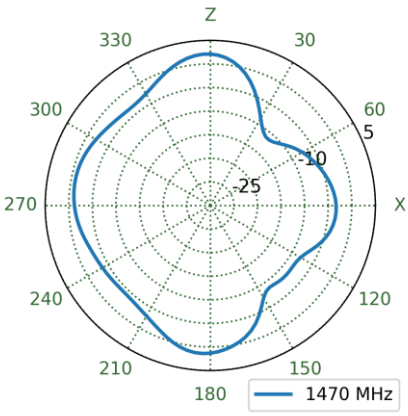
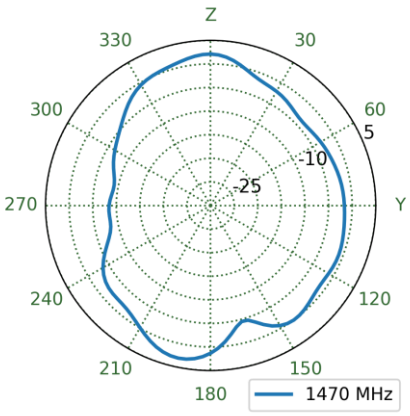
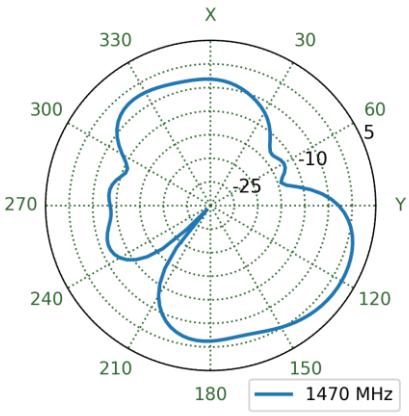
8.8 LTE1 Patterns at 1470 MHz



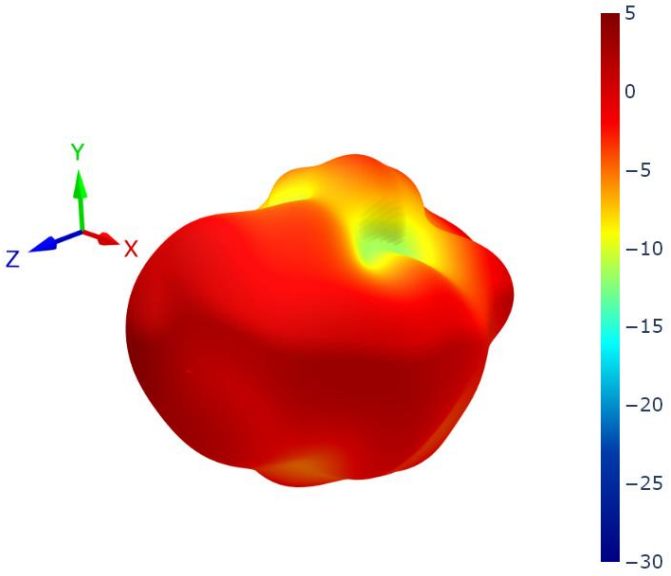
XZ Plane	YZ Plane	XY Plane
		

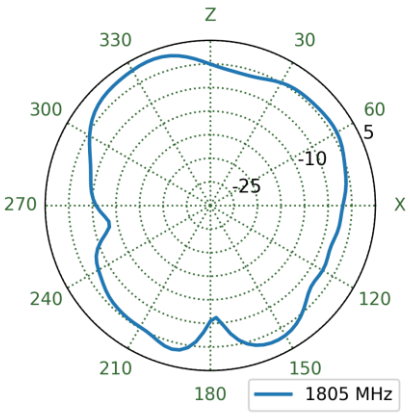
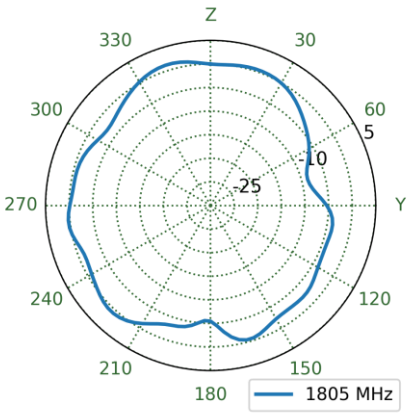
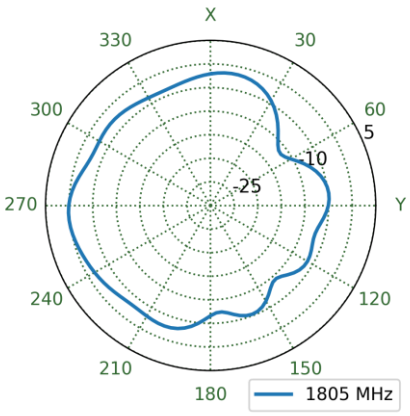
8.9 LTE2 Patterns at 1470 MHz



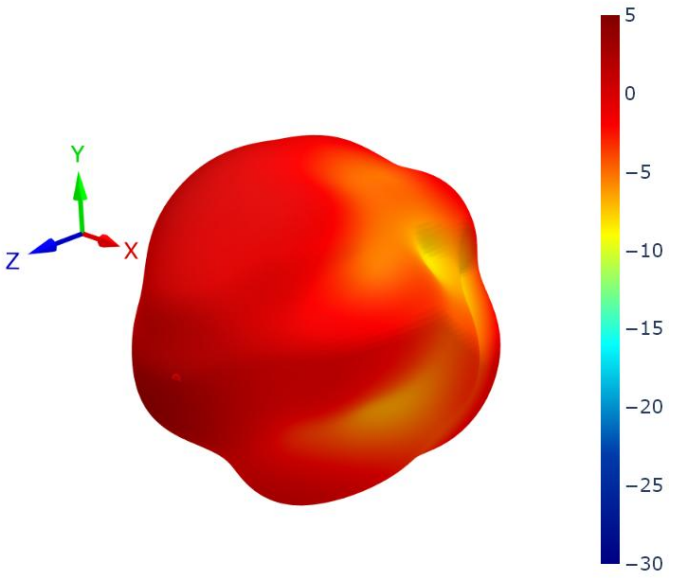
XZ Plane	YZ Plane	XY Plane
		

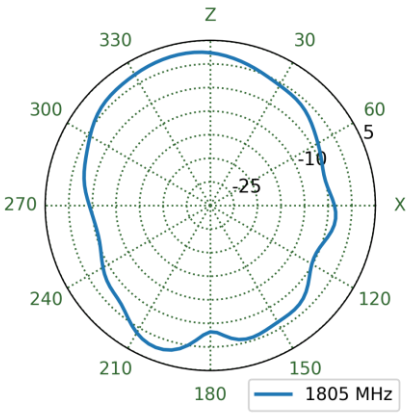
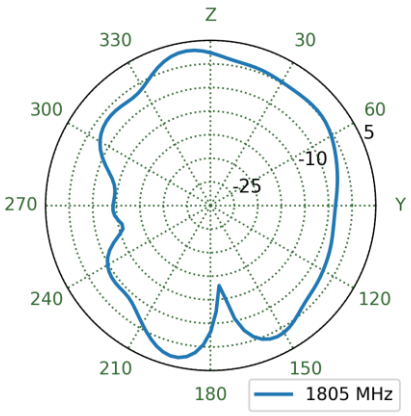
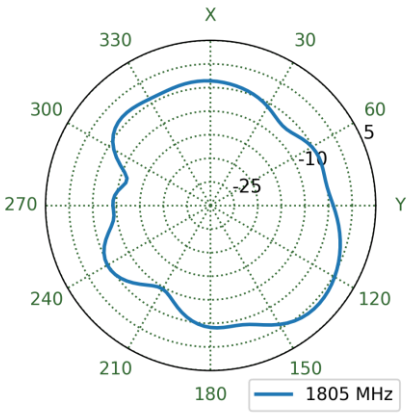
8.10 LTE1 Patterns at 1805 MHz



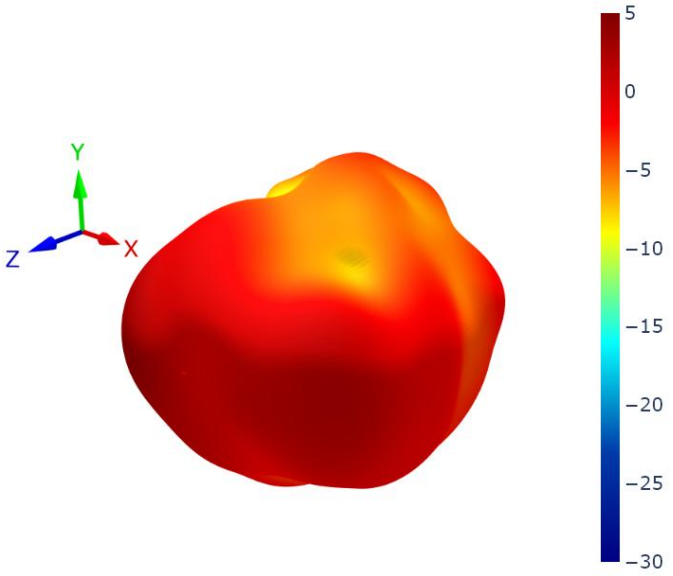
XZ Plane	YZ Plane	XY Plane
		

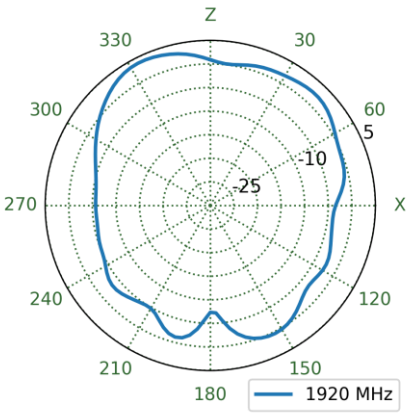
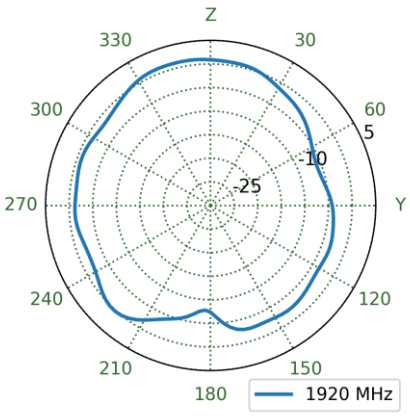
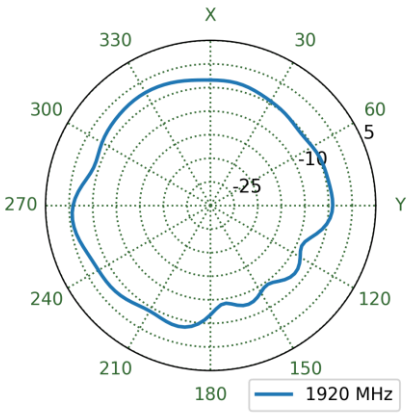
8.11 LTE2 Patterns at 1805 MHz



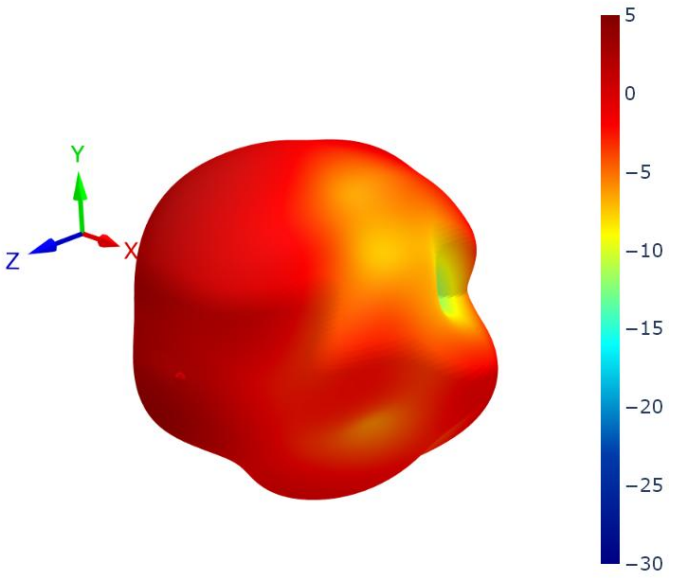
XZ Plane	YZ Plane	XY Plane
		

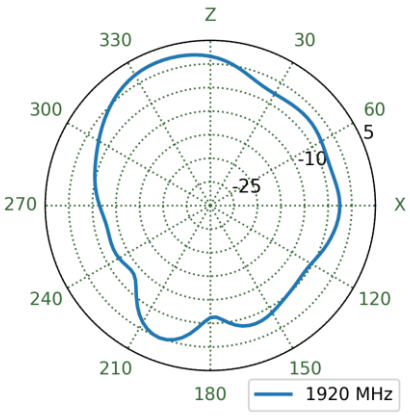
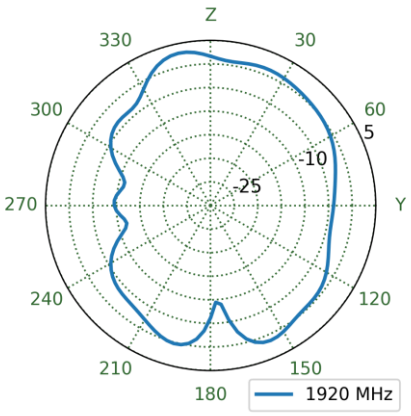
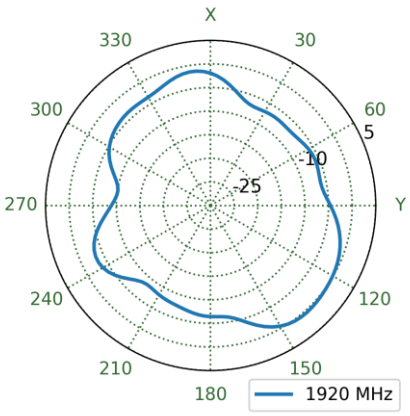
8.12 LTE1 Patterns at 1920 MHz



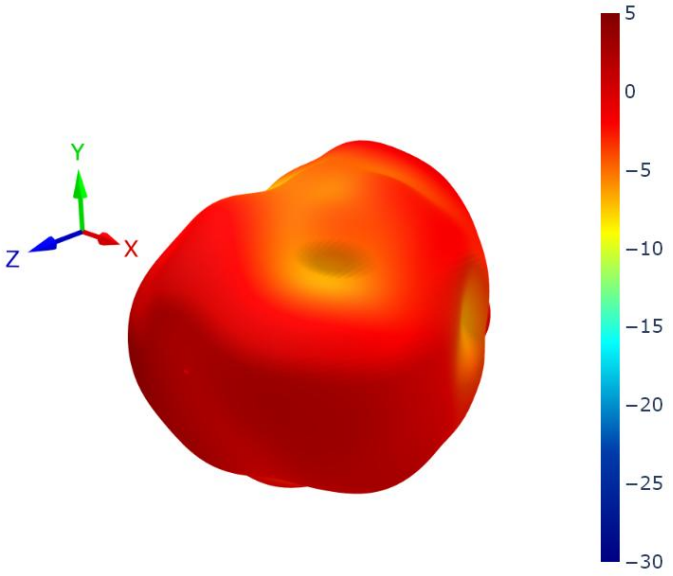
XZ Plane	YZ Plane	XY Plane
		

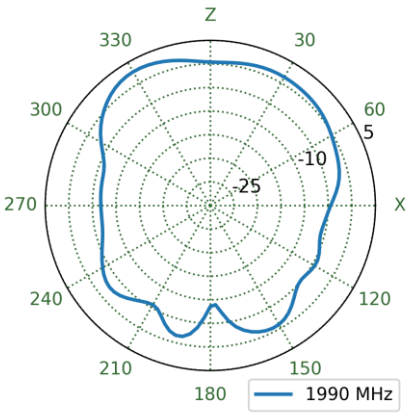
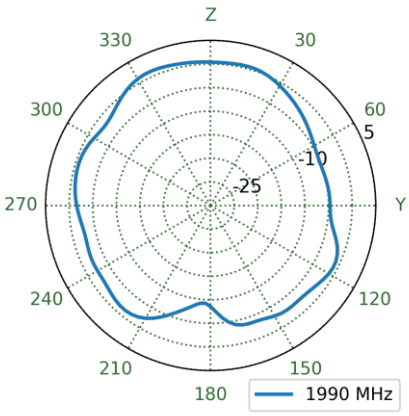
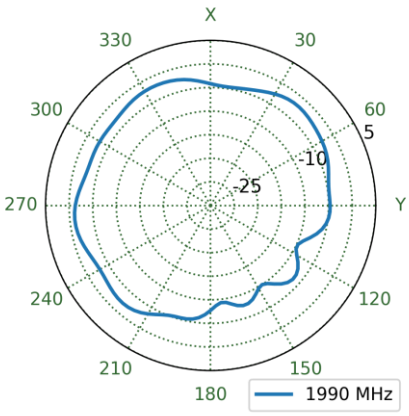
8.13 LTE2 Patterns at 1920 MHz



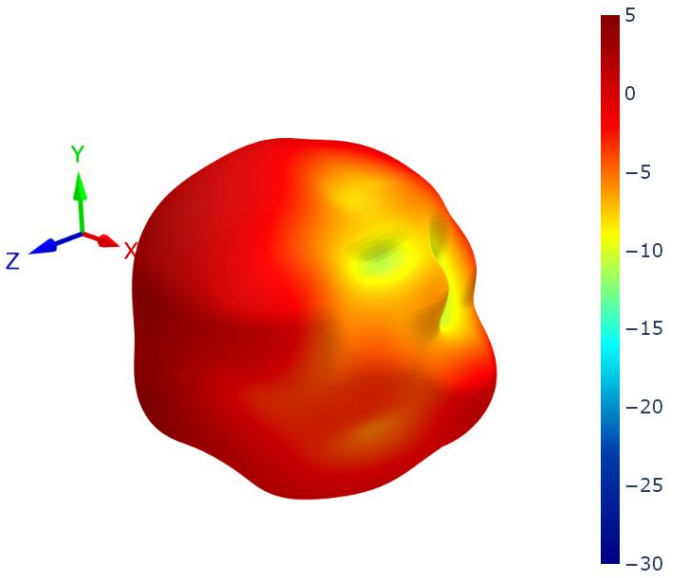
XZ Plane	YZ Plane	XY Plane
		

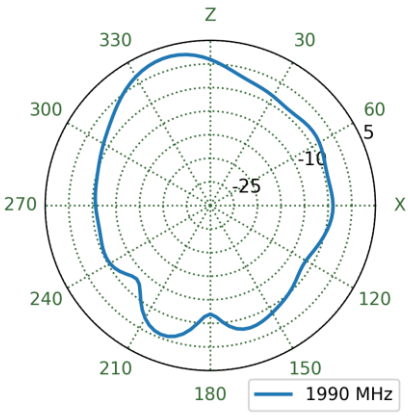
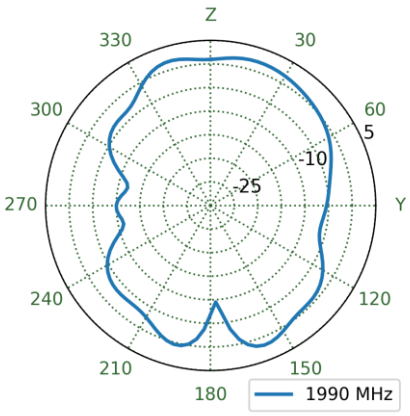
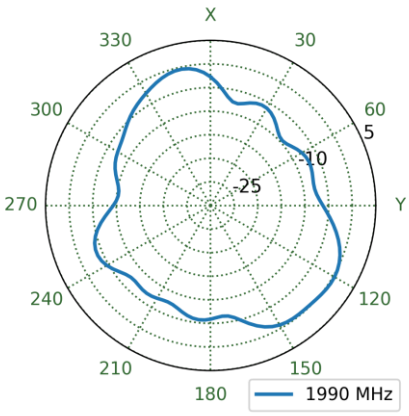
8.14 LTE1 Patterns at 1990 MHz



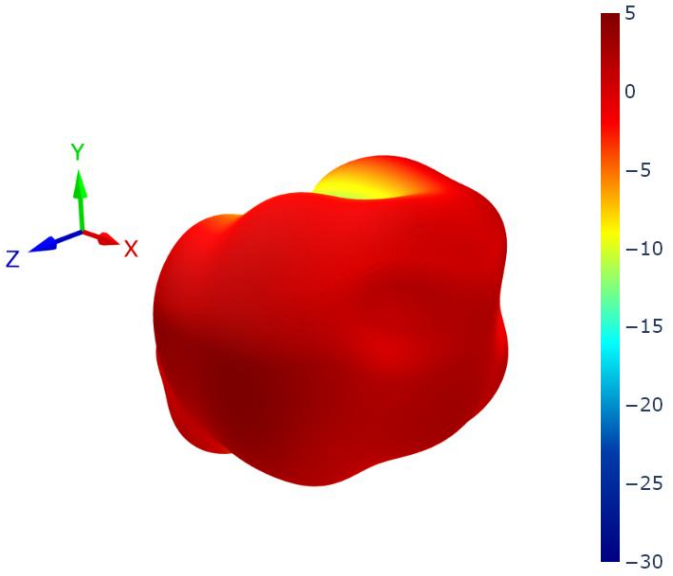
XZ Plane	YZ Plane	XY Plane
		

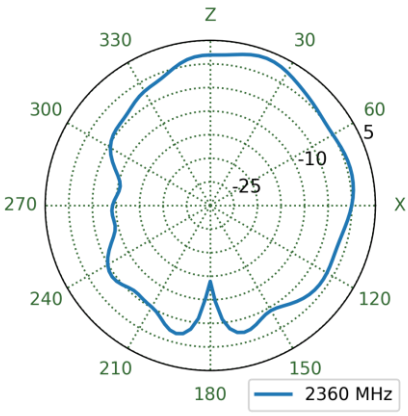
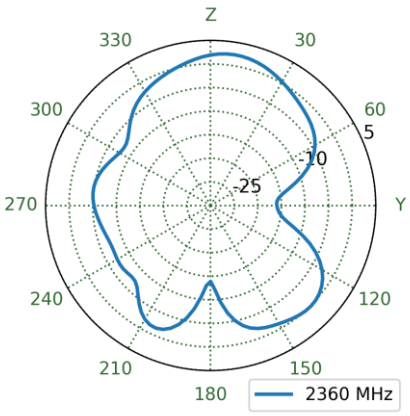
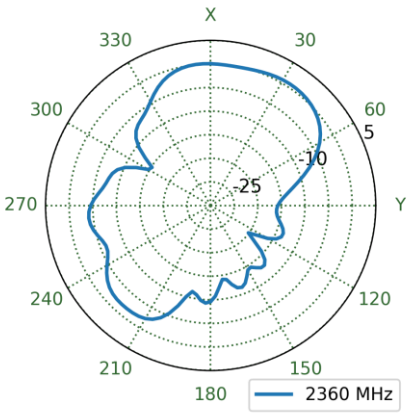
8.15 LTE2 Patterns at 1990 MHz



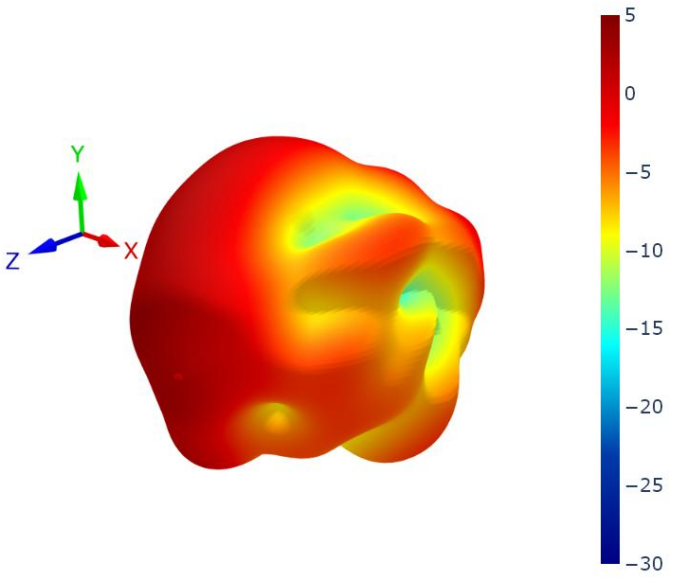
XZ Plane	YZ Plane	XY Plane
		

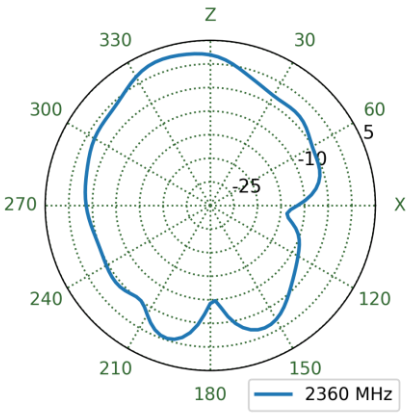
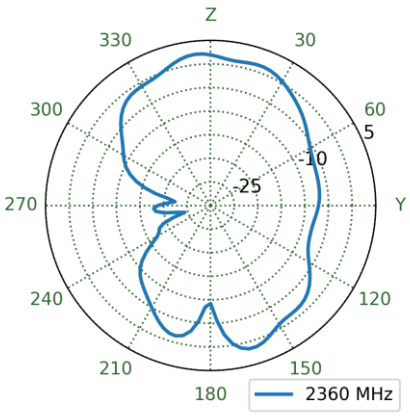
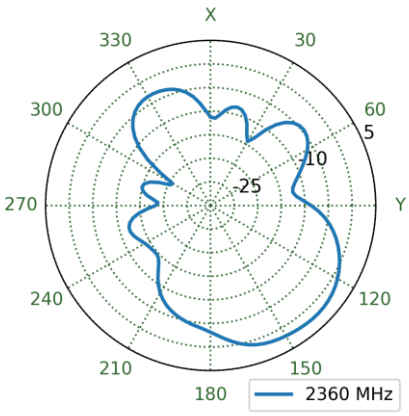
8.16 LTE1 Patterns at 2360 MHz



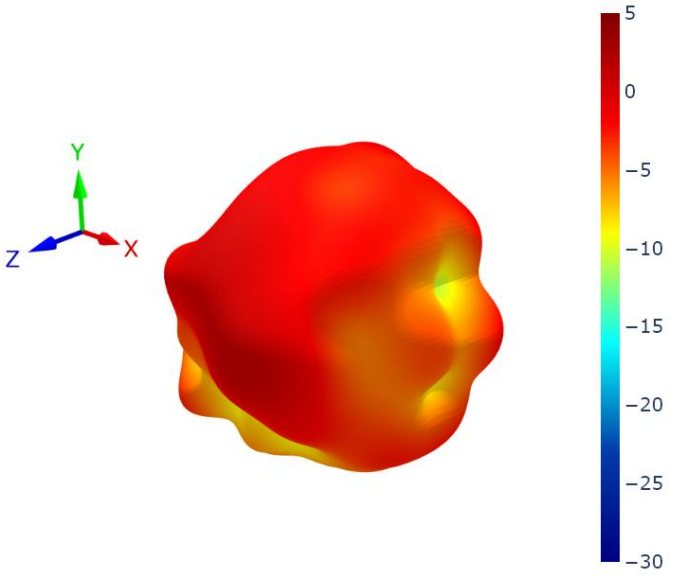
XZ Plane	YZ Plane	XY Plane
		

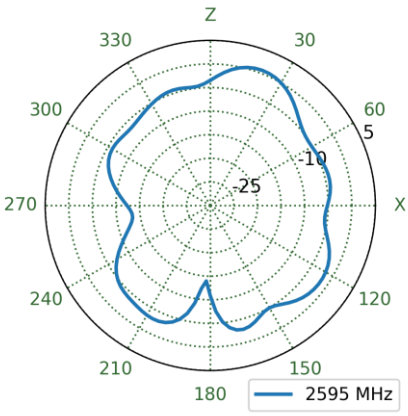
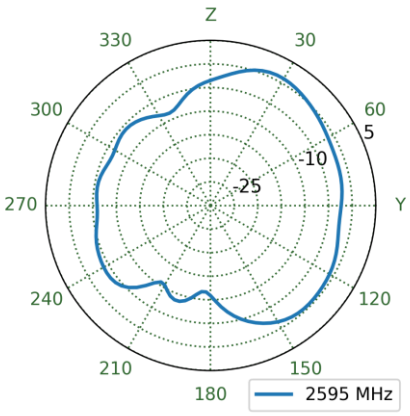
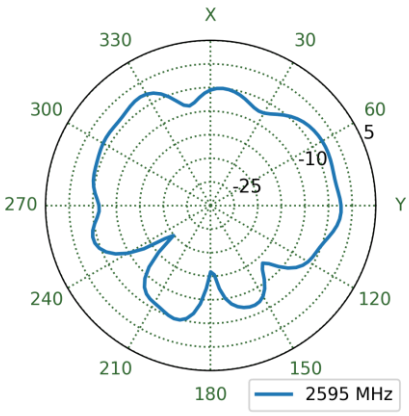
8.17 LTE2 Patterns at 2360 MHz



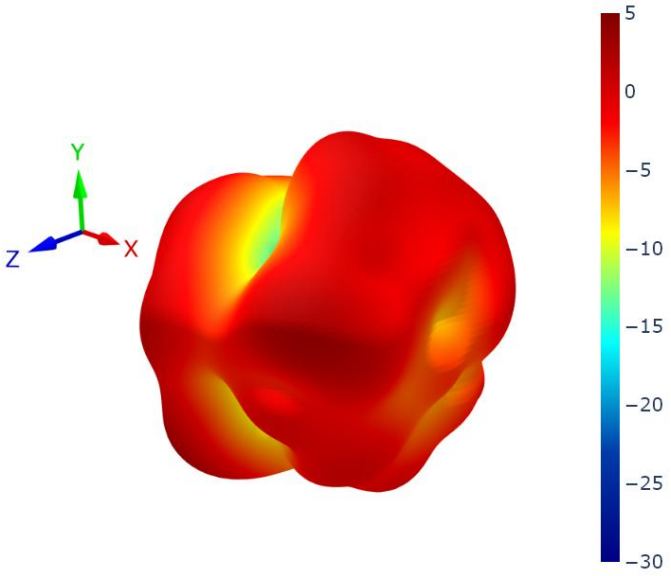
XZ Plane	YZ Plane	XY Plane
		

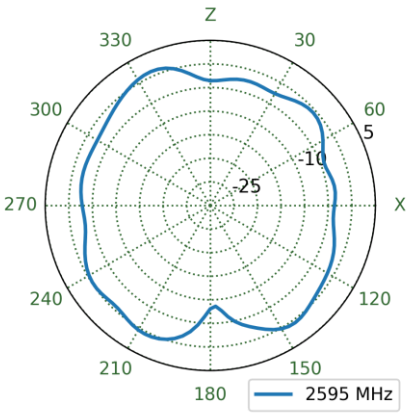
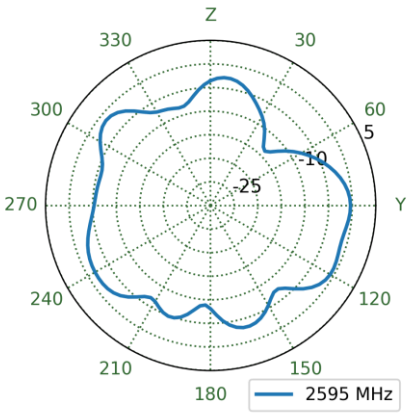
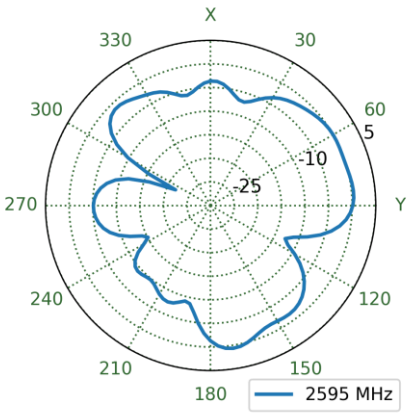
8.18 LTE1 Patterns at 2595 MHz



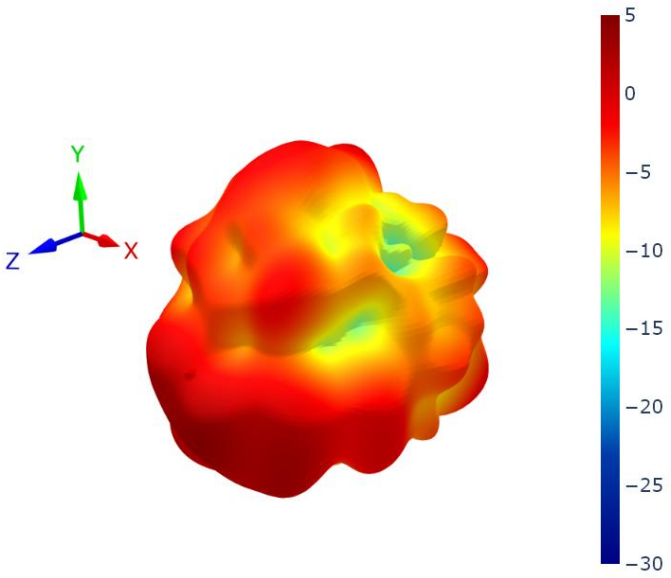
XZ Plane	YZ Plane	XY Plane
		

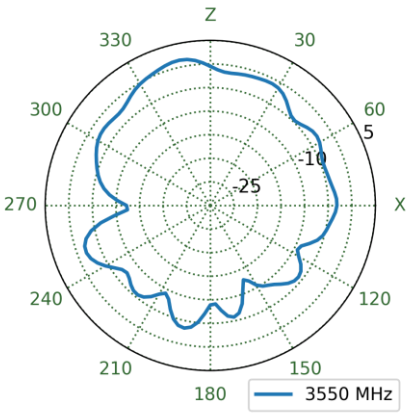
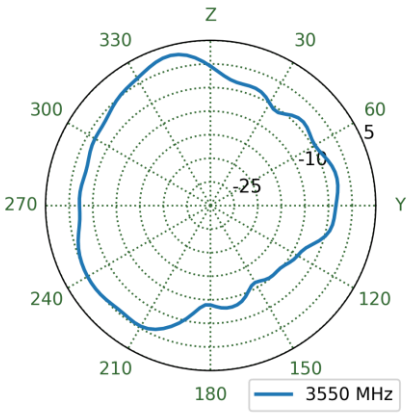
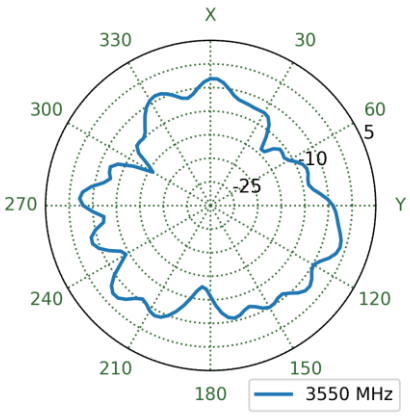
8.19 LTE2 Patterns at 2595 MHz



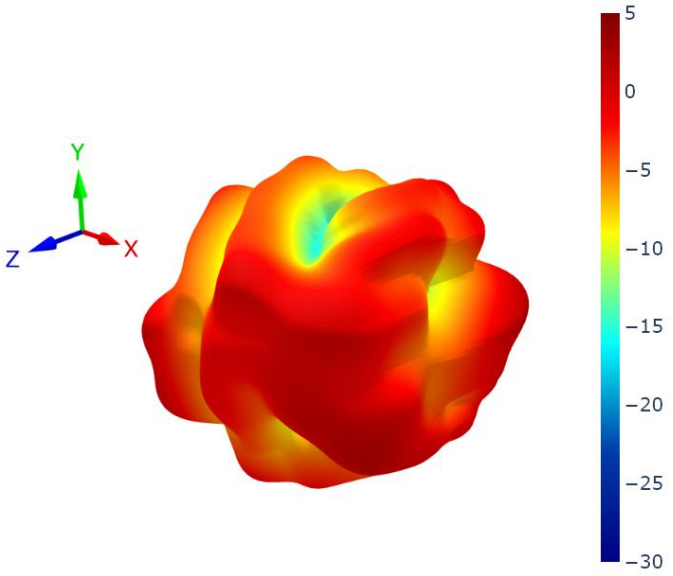
XZ Plane	YZ Plane	XY Plane
		

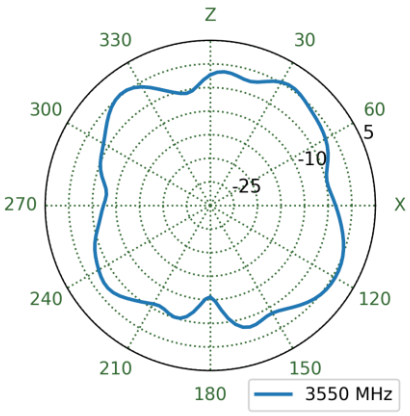
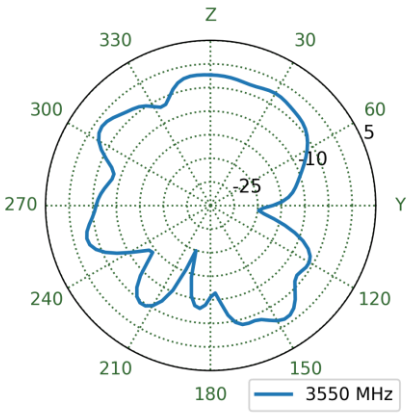
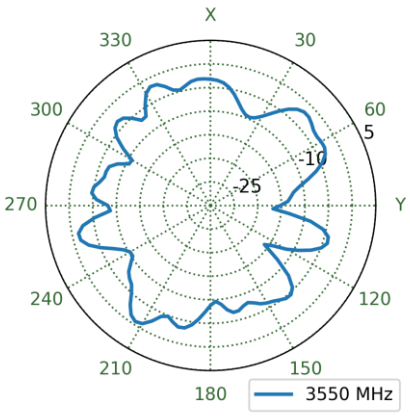
8.20 LTE1 Patterns at 3550 MHz



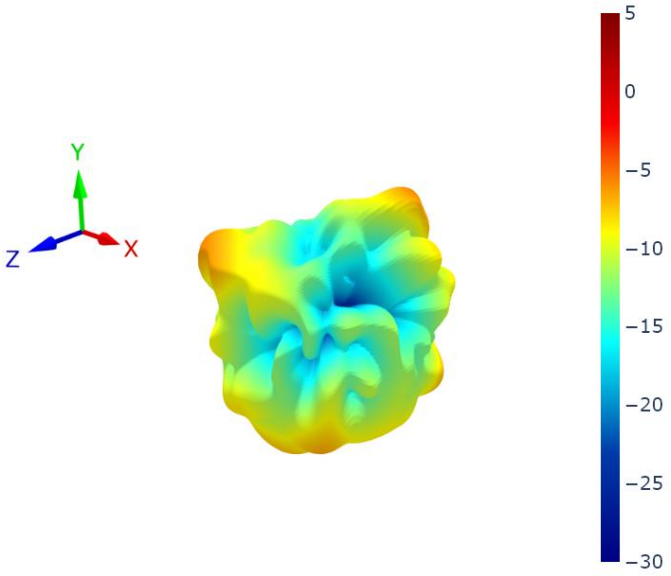
XZ Plane	YZ Plane	XY Plane
		

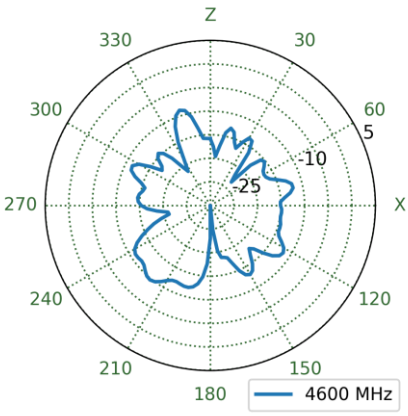
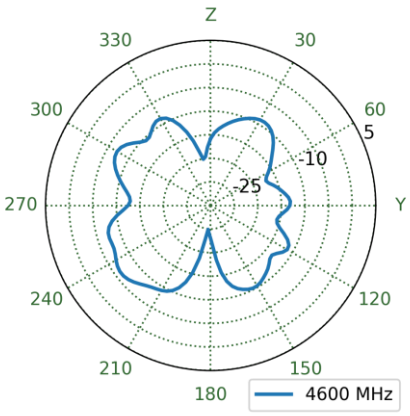
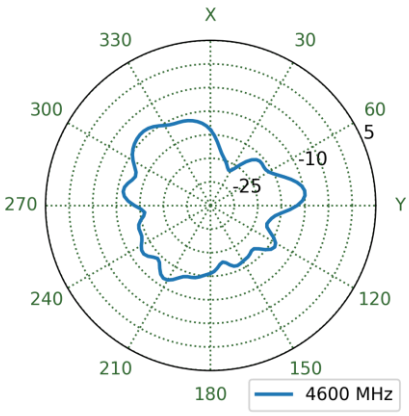
8.21 LTE2 Patterns at 3550 MHz



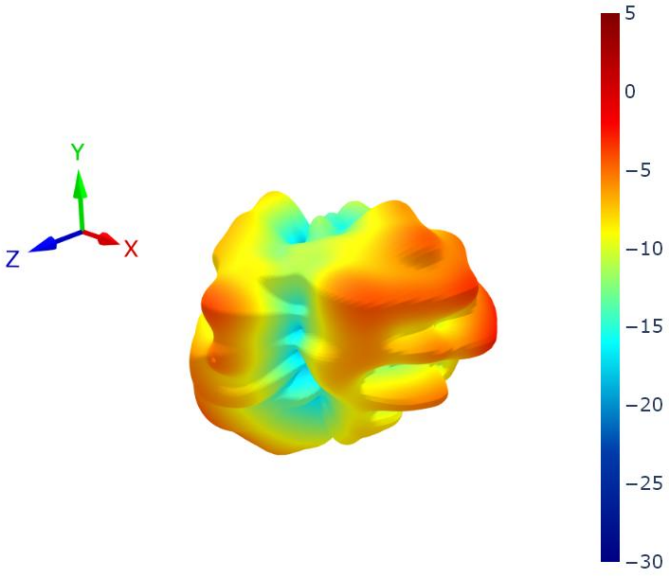
XZ Plane	YZ Plane	XY Plane
		

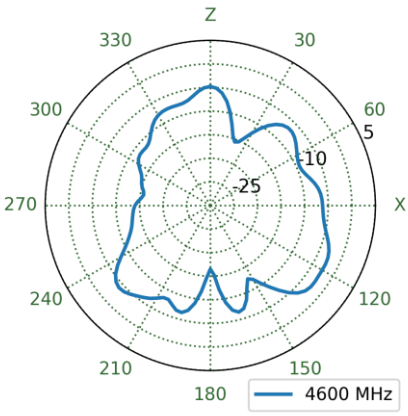
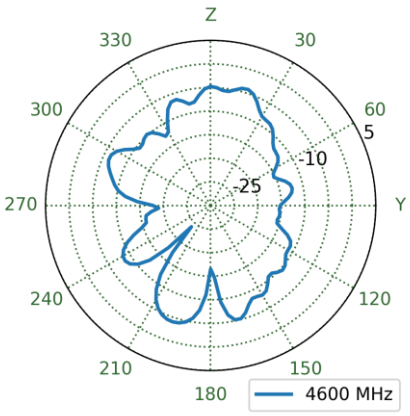
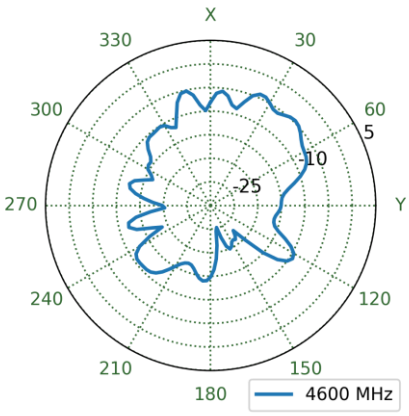
8.22 LTE1 Patterns at 4600 MHz



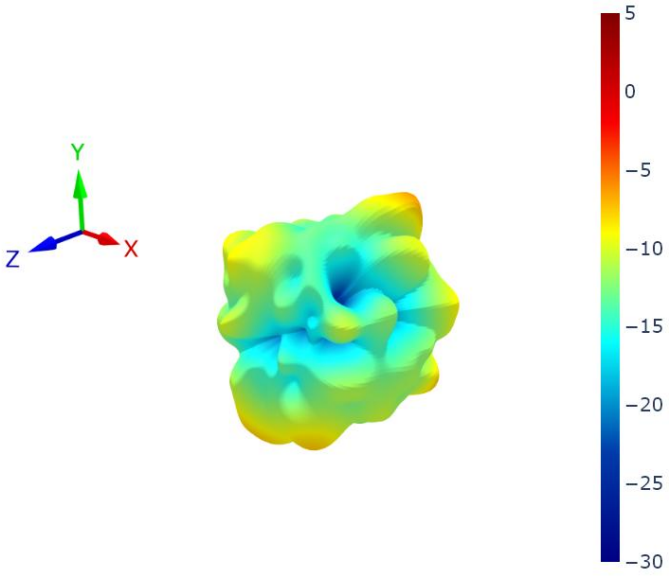
XZ Plane	YZ Plane	XY Plane
		

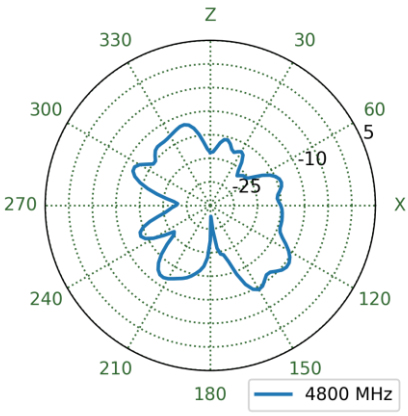
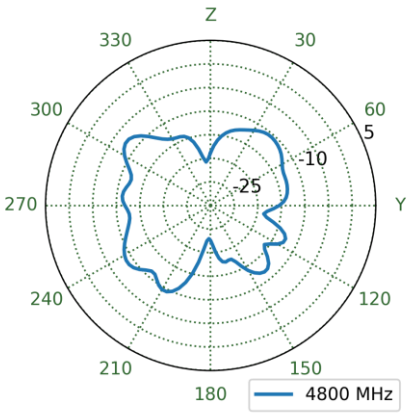
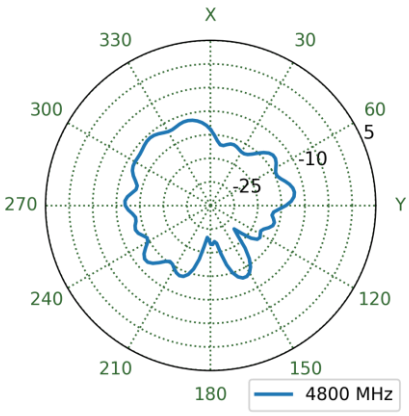
8.23 LTE2 Patterns at 4600 MHz



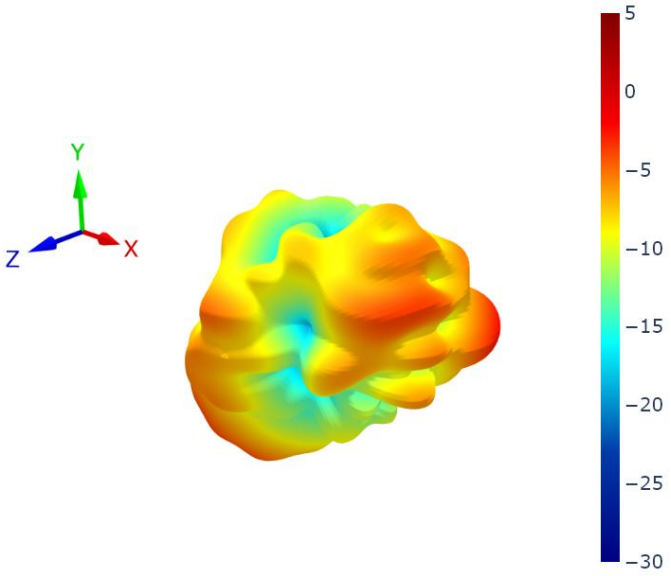
XZ Plane	YZ Plane	XY Plane
		

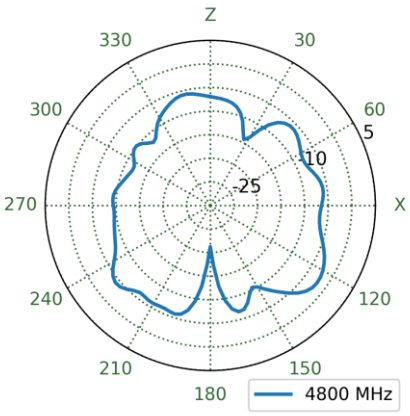
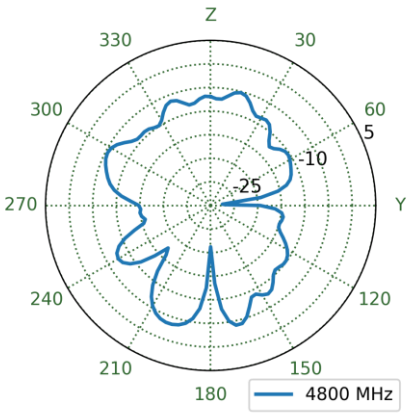
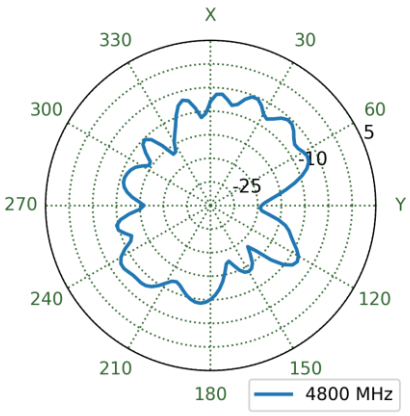
8.24 LTE1 Patterns at 4800 MHz



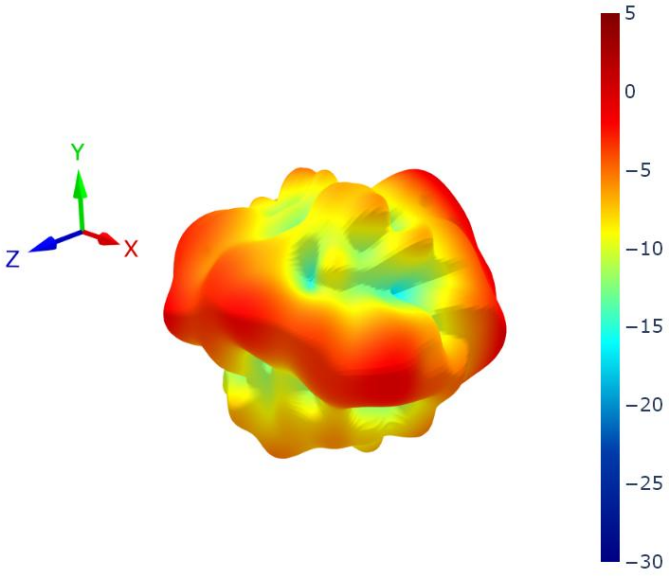
XZ Plane	YZ Plane	XY Plane
		

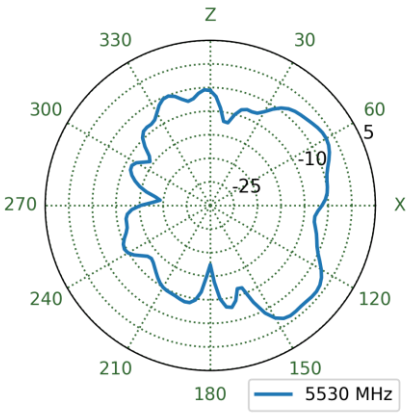
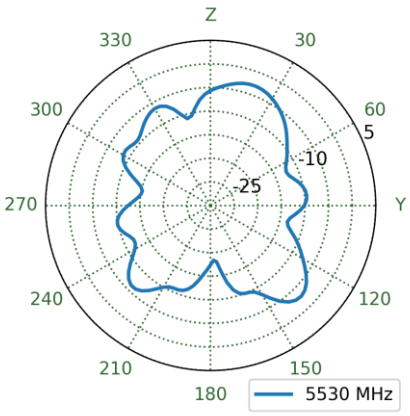
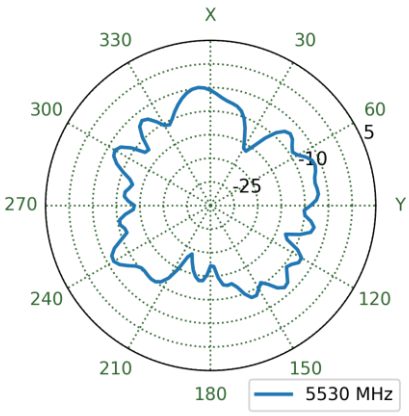
8.25 LTE2 Patterns at 4800 MHz



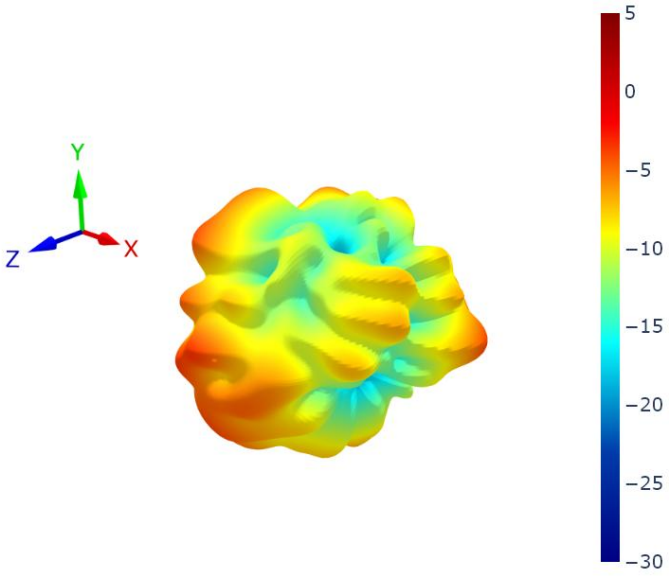
XZ Plane	YZ Plane	XY Plane
		

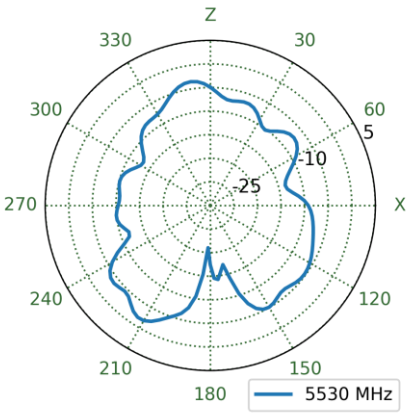
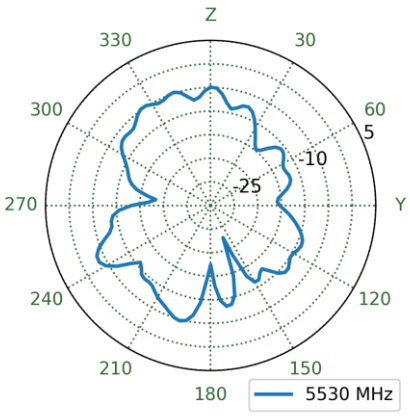
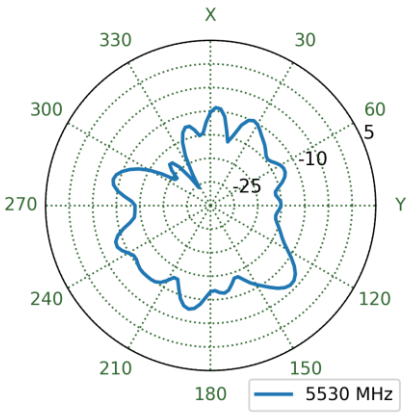
8.26 LTE1 Patterns at 5530 MHz



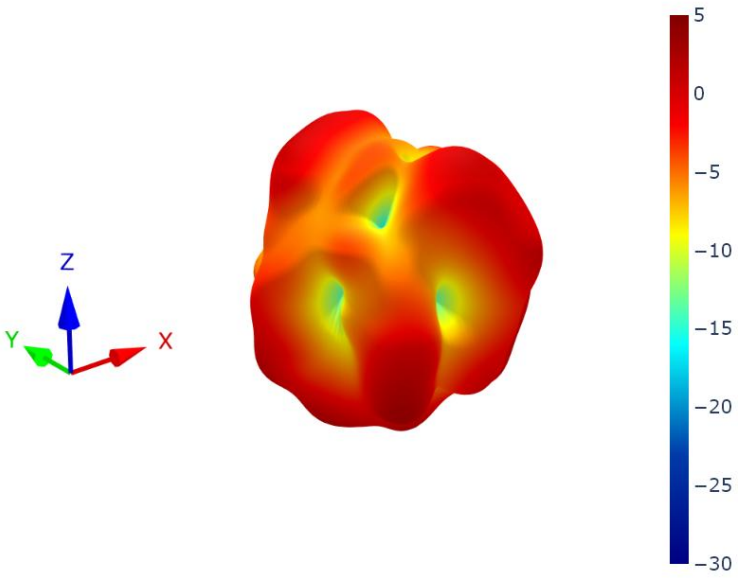
XZ Plane	YZ Plane	XY Plane
		

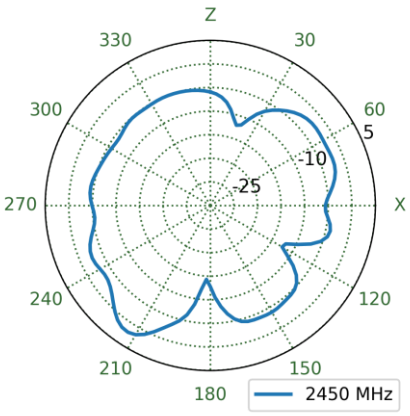
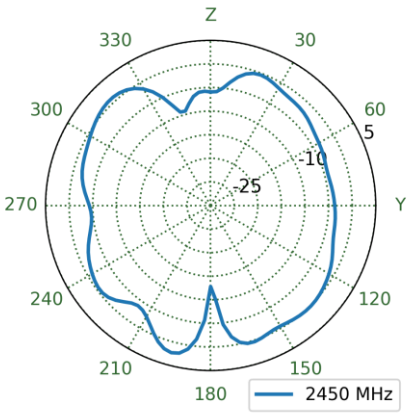
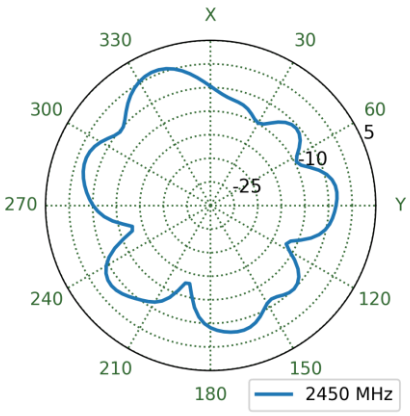
8.27 LTE2 Patterns at 5530 MHz



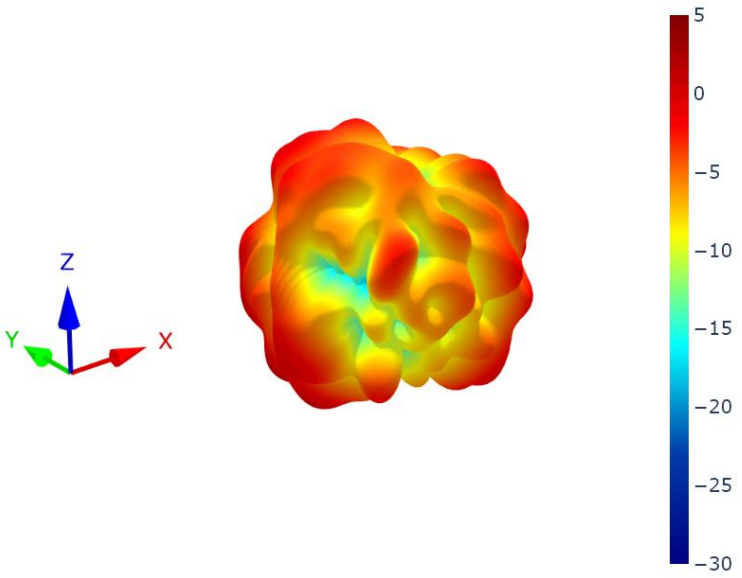
XZ Plane	YZ Plane	XY Plane
		

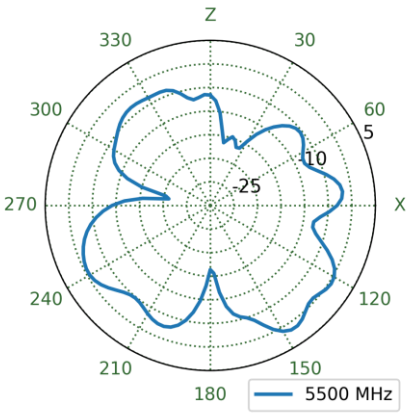
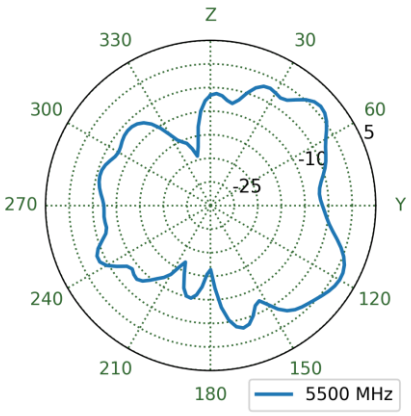
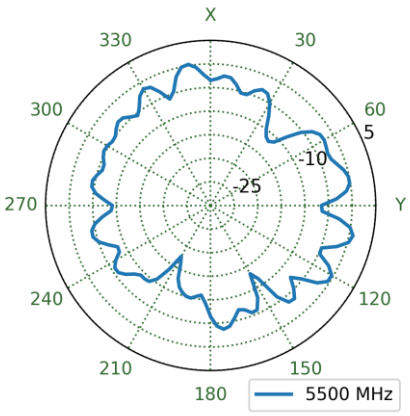
8.28 Wi-Fi1 Patterns at 2450 MHz



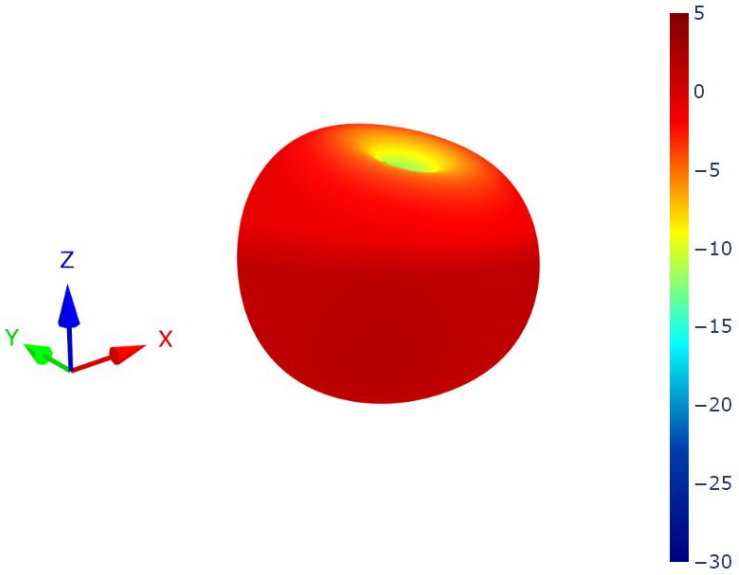
XZ Plane	YZ Plane	XY Plane
		

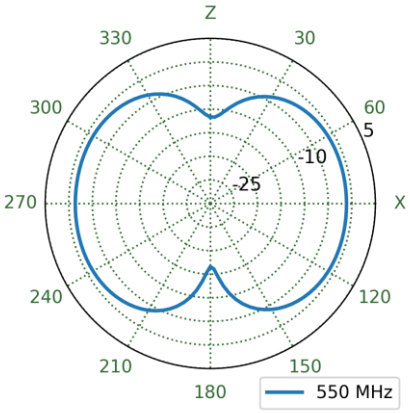
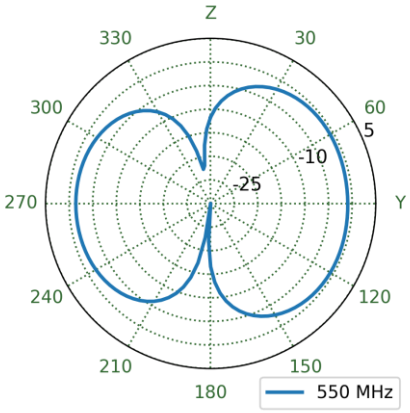
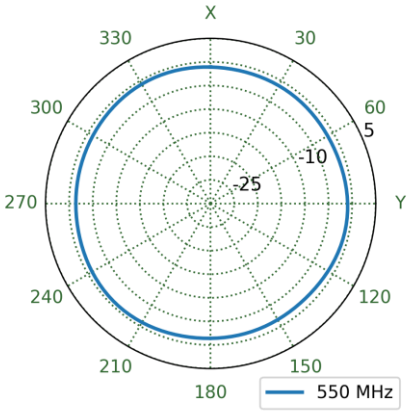
8.29 Wi-Fi1 Patterns at 5500 MHz



XZ Plane	YZ Plane	XY Plane
		

8.30 TV Patterns at 550 MHz



XZ Plane	YZ Plane	XY Plane
		

Changelog for the datasheet

SPE-24-8-231 – MAR140.A.001

Revision: B (Current Release)	
Date:	2025-10-28
Notes:	Minor content update
Author:	Frank Lennon

Previous Revisions

Revision: A (Initial Release)	
Date:	2024-09-19
Notes:	Initial Datasheet Release
Author:	Gary West

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