



TAOGLAS®



Datasheet

Comet Series

Part No:
MA323.A.001

Description

Comet 3-in-1 - 2*5G/4G MIMO & Wi-Fi Adhesive/Magnetic Mount Puck Antenna

Features:

- Low-profile Housing with Adhesive/Magnetic Mount
- 2* 5G/4G MIMO 600-6000MHz
- 1*Wi-Fi 2.4GHz/5.8GHz/5.925-7.125GHz
- Worldwide 5G Bands including legacy 4G 3G and 2G bands
- IP67 Waterproof Enclosure
- Dimensions: Ø80mm * 18.1mm
- 2m Low Loss TGC-1.5DS cable with SMA(M) & RP-SMA(M) connectors
- Custom Cables and Connectors Available
- RoHS & Reach Compliant

1. Introduction	2
2. Specification	3
3. Antenna Characteristics	6
4. Radiation Patterns	16
5. Mechanical Drawing	65
6. Packaging	66
7. Application Note	67
Changelog	79

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1. Introduction



The Taoglas Comet MA323 is a low profile, puck style, adhesive/magnetic mount 3-in-1 antenna. The MA323 contains two 5G/4G high performance antennas for use in MIMO cellular systems. Through innovative antenna design techniques, it covers all worldwide cellular frequencies from 600MHz to 6GHz, with stable gain and high efficiency, normally difficult to achieve in smaller antennas. It also contains a wideband Wi-Fi antenna covering newly established Wi-Fi 6/7 frequencies, along with the legacy 2.4/5.8GHz Wi-Fi and Bluetooth frequencies.

The Comet series has been designed to be compact and low profile, measuring just 80x18mm, to be utilized in application areas where other larger and taller antennas are not appropriate. The Comet has been designed with an option for either magnetic or adhesive mounting. This allows it to be utilized and installed in applications where destructive installations are not allowed, such as drilling mounting holes to secure a permanent antenna on leased vehicles.

Typical Applications Include:

- Telematics
- Gateways and Routers
- Digital Signage
- First Responder and Emergency Services

The robust ASA magnetic mount enclosure is designed to be waterproof rated to IP67 and can be mounted internally or externally on devices or vehicles. The Comet comes with a separate 3M foam high-performance pad for adhesive mount application. All connections utilize 2m TGC-1.5DS coaxial cable with SMA(M) & RP-SMA(M) connectors as standard. Customized cable and connector versions are also available.

Contact your regional Taoglas customer support team for further information.

2. Specification

LTE Electrical									
Band	Frequency (MHz)	Antenna	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
5G/4G/3G Band 7,30,38,40,41	2300-2690	LTE1 FS	37.0	-4.32	2.94				
		LTE2 FS	61.3	-2.13	5.17				
		LTE1 GP	34.5	-4.62	6.09				
		LTE2 GP	58.3	-2.34	5.60				
LTE5200	5150-5925	LTE1 FS	38.5	-4.15	3.87				
		LTE2 FS	55.9	-2.52	4.28				
		LTE1 GP	36.7	-4.36	5.82				
		LTE2 GP	55.9	-2.52	7.76				

*FS = Free Space

*GP = Ground Plane(30x30cm)

4

[illegible]

Wi-Fi Electrical												
Band	Frequency (MHz)	Test Setup	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power			
2.4GHz	2400-2500	FS	47.1	-3.27	2.83							
		GP	36.1	-4.43	1.90							
5.8GHz	4900-5850	FS	63.2	-2.00	5.92							
		GP	63.8	-1.95	7.74							

*FS = Free Space

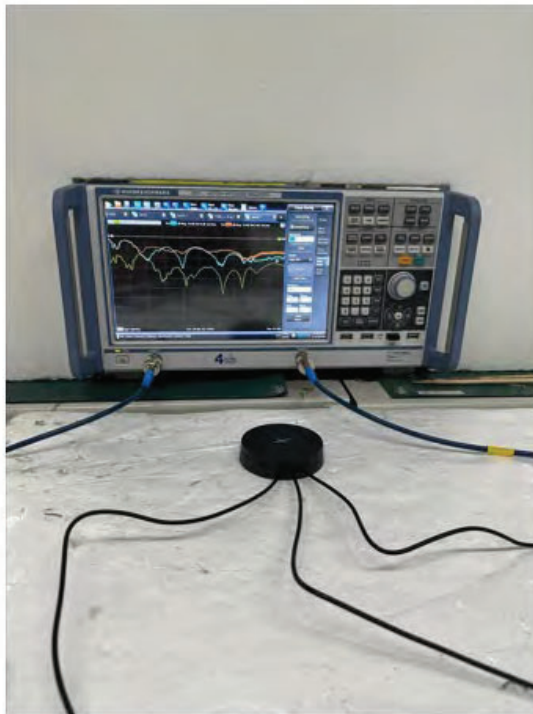
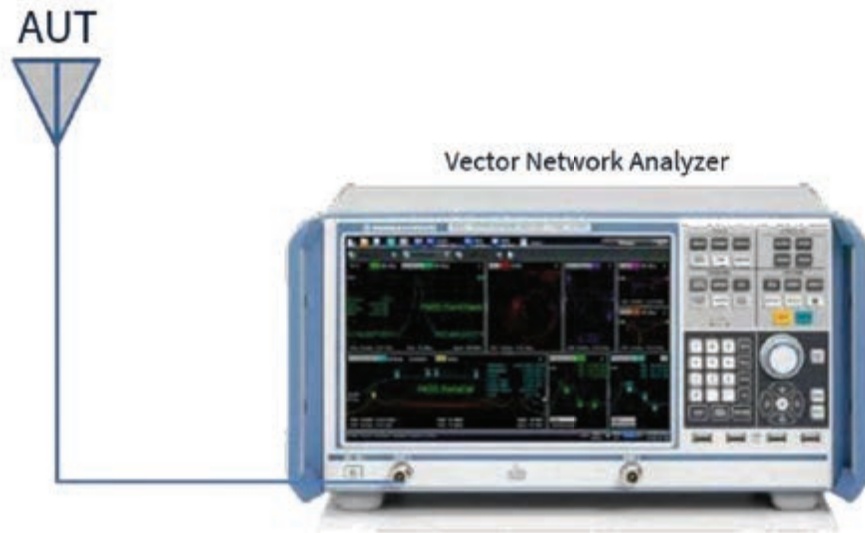
*GP = Ground Plane(30x30cm)

Mechanical	
Dimensions	80 mm Dia. X H18.01 mm
Weight	113g
Material	ASA
Connector	LTE: SMA (M)ST , Wi-Fi: RP-SMA (M)ST
Cable	2m 1.5DS

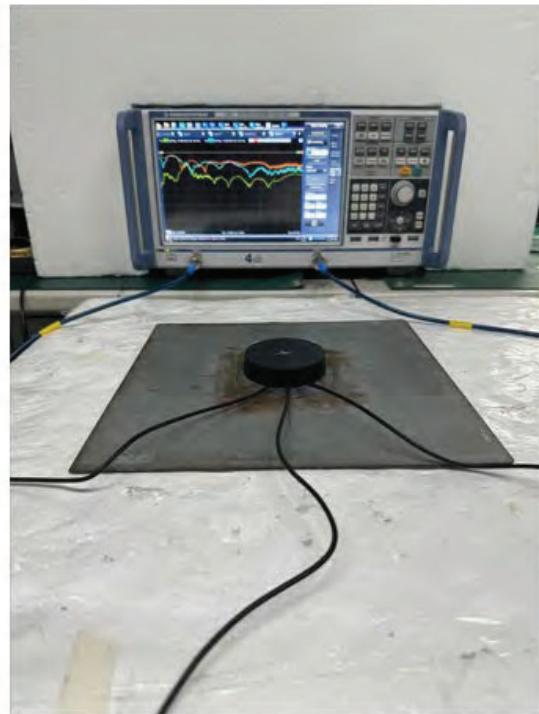
Environmental	
Waterproof Rating	IP67
Temperature Range	-40°C to 85°C
Humidity	Non-condensing 65°C 95%RH

3. Antenna Characteristics

3.1 Test Setup – S11/VSWR/Return Loss

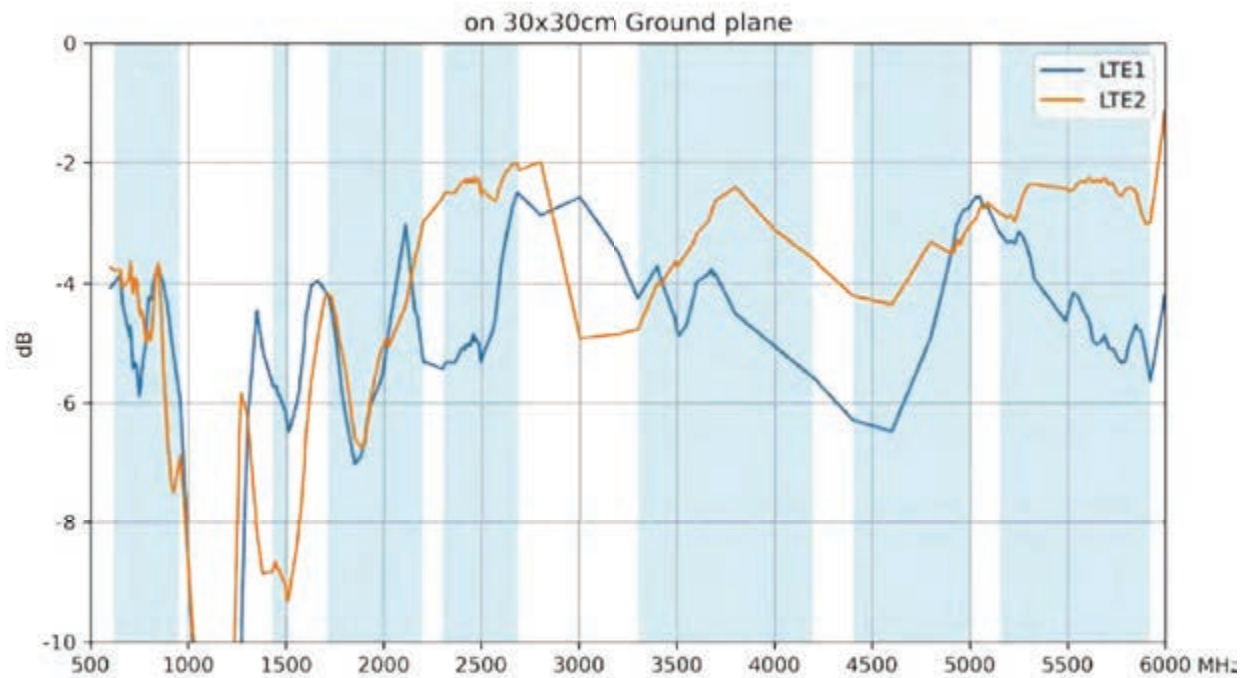
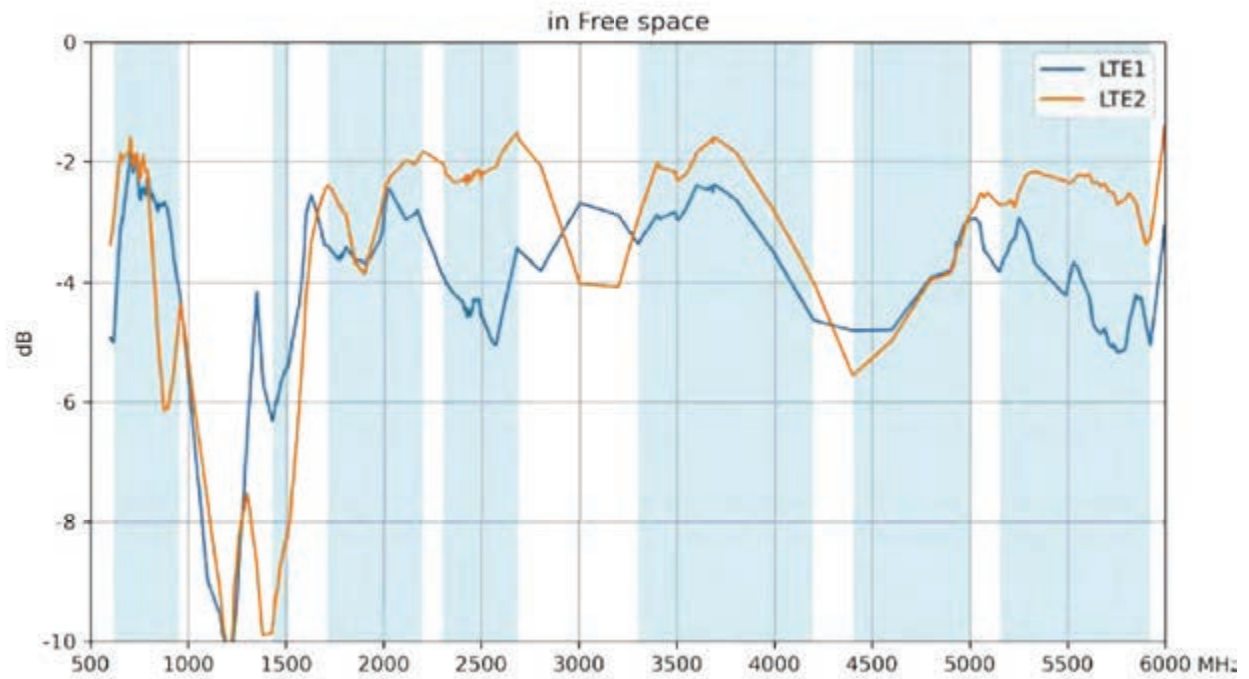


Free Space

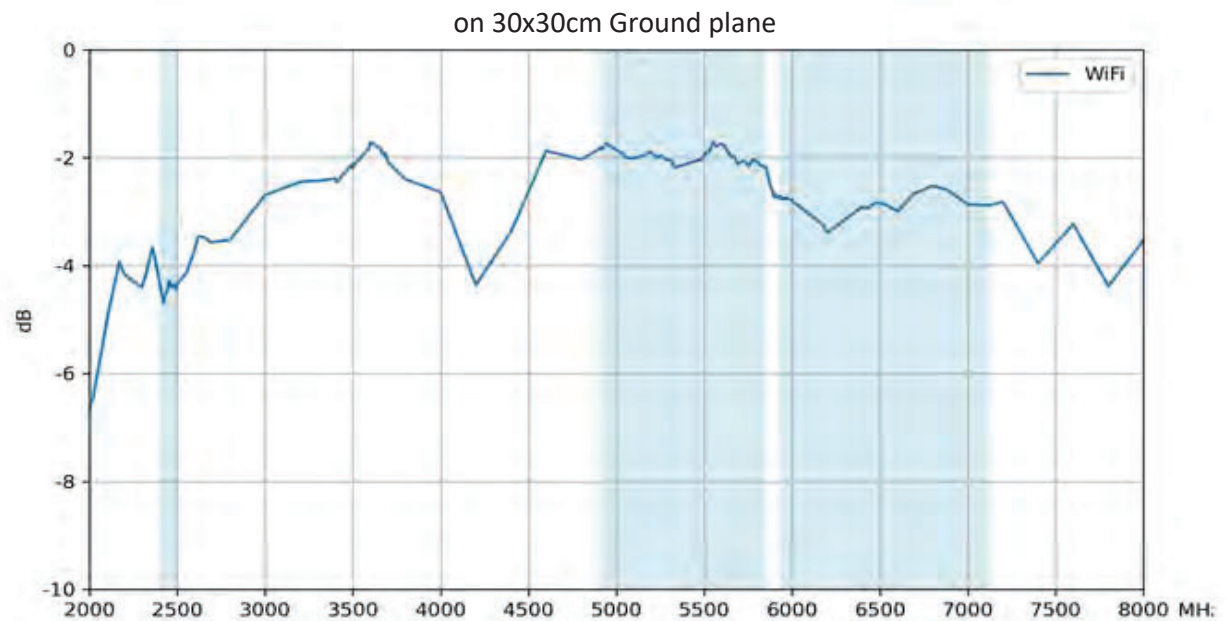
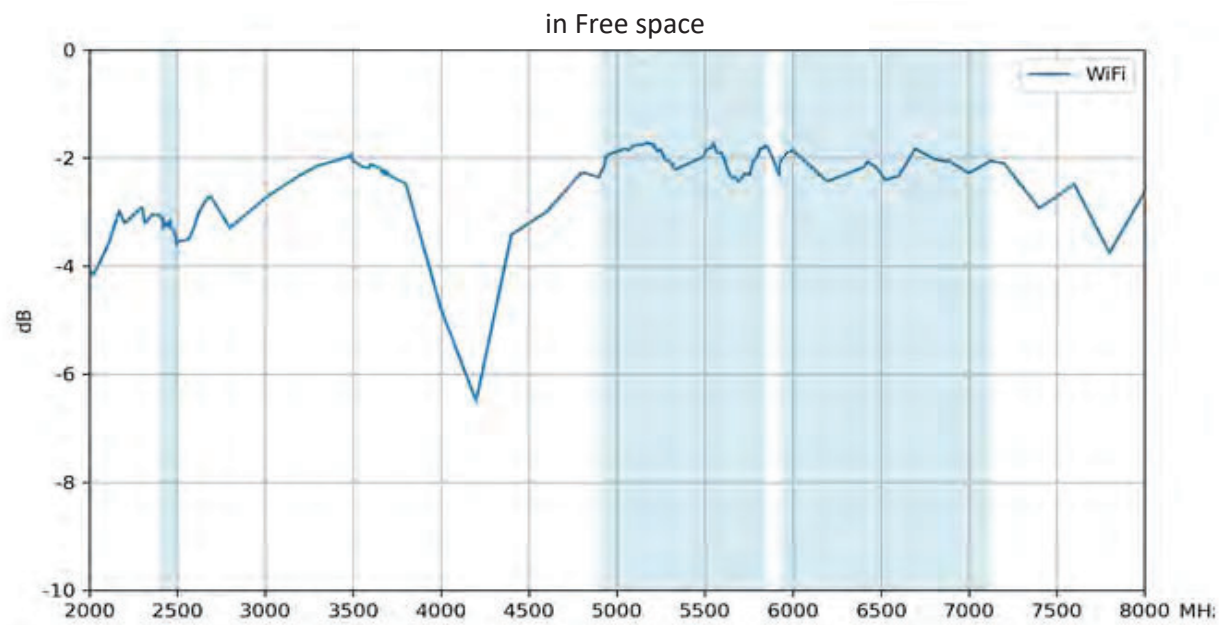


30x30cm Ground Plane

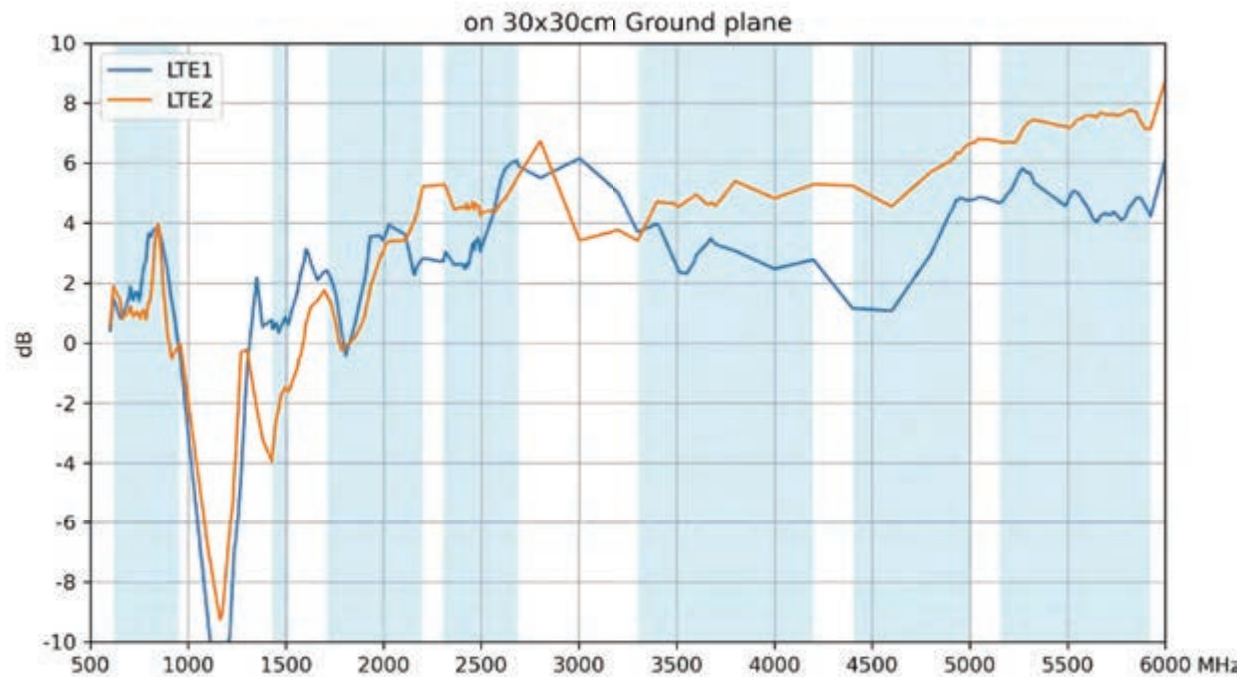
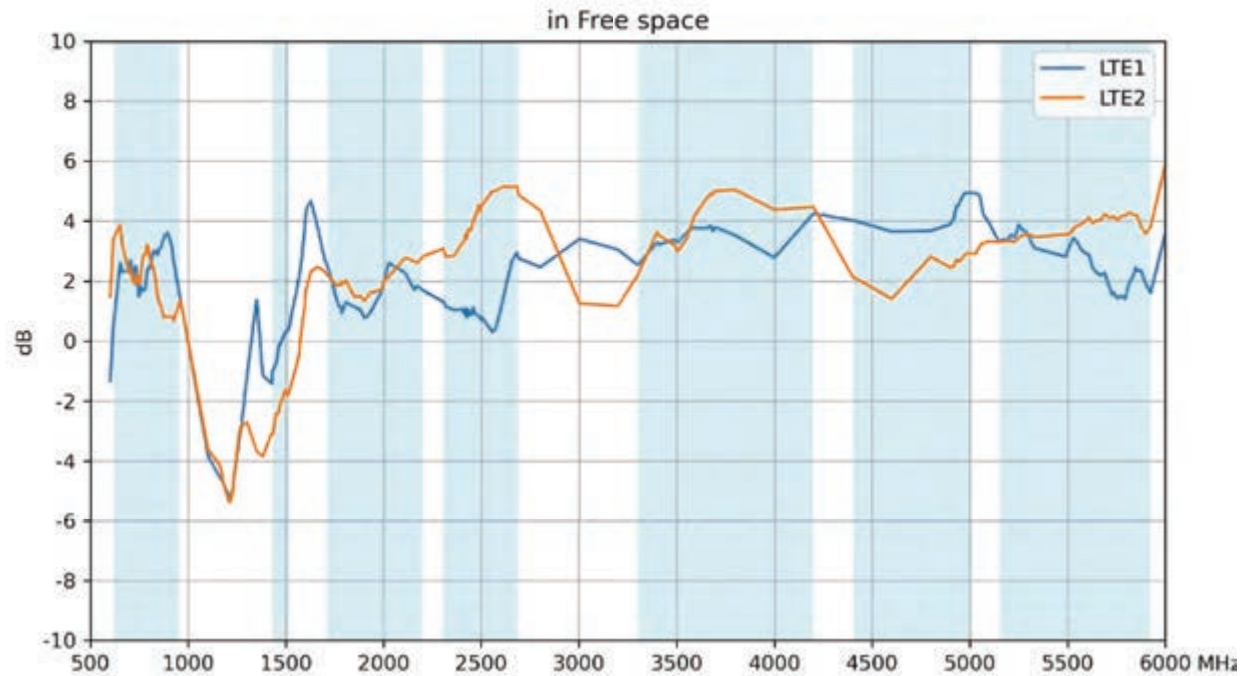
3.7 LTE - Average Gain



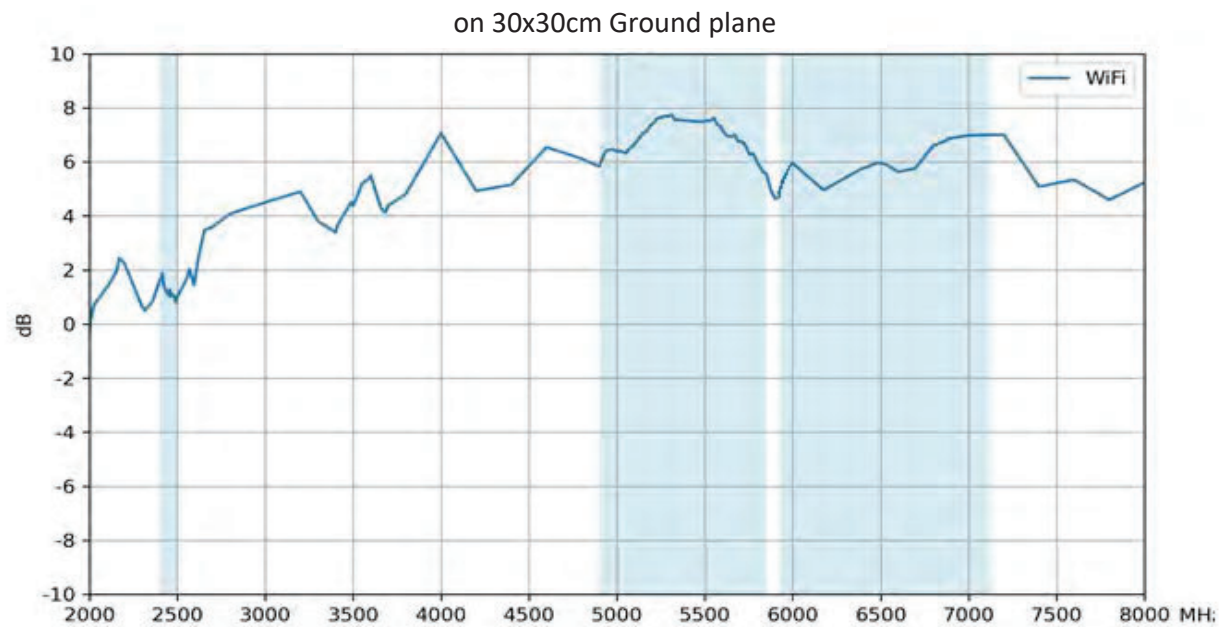
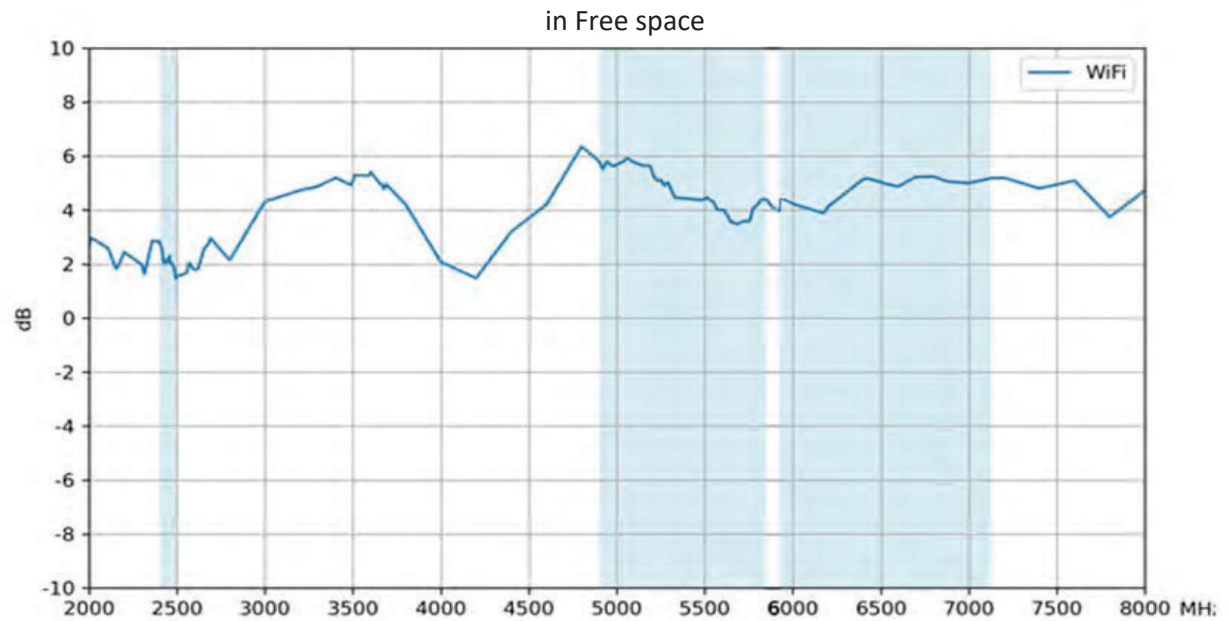
3.8 Wi-Fi - Average Gain



3.9 LTE - Peak Gain

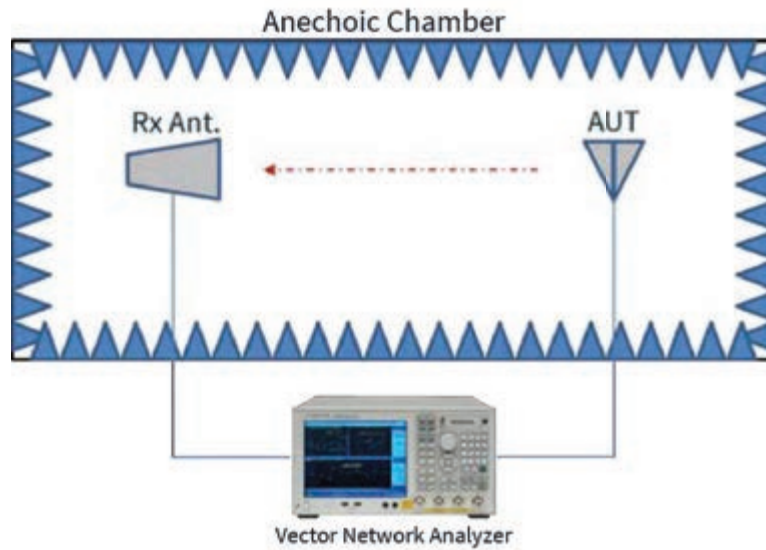


3.10 Wi-Fi - Peak Gain

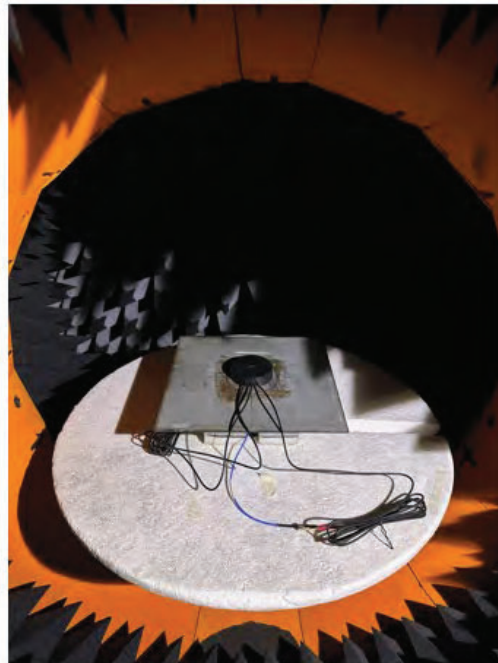


4. Radiation Patterns

4.1 Test Setup

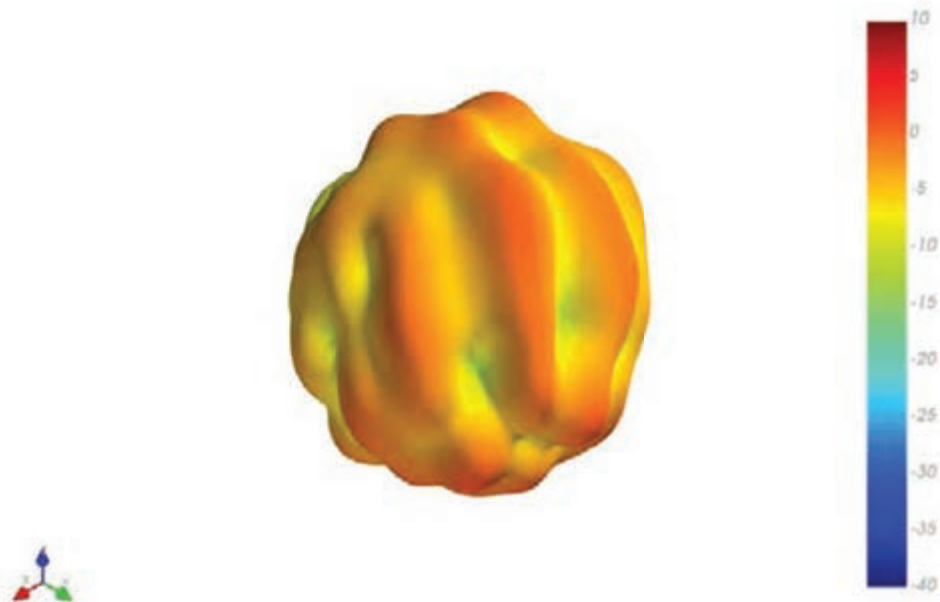


Free Space

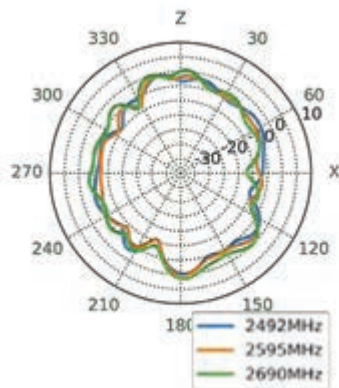


30x30cm Ground Plane

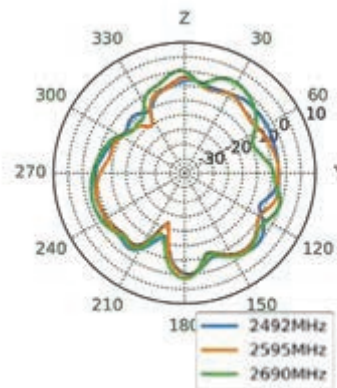
4.9 LTE 1 in Free Space - Patterns at 2595 MHz



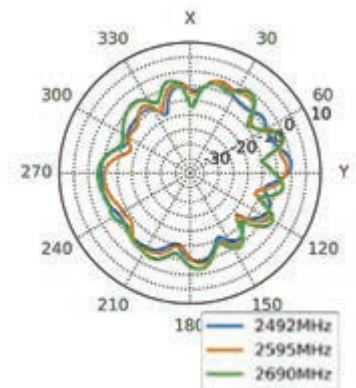
XZ Plane



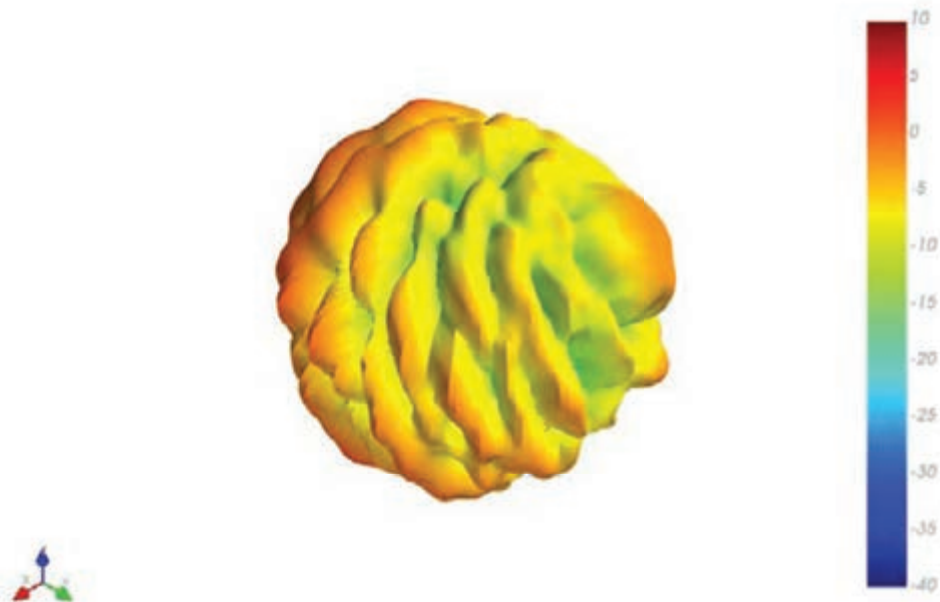
YZ Plane



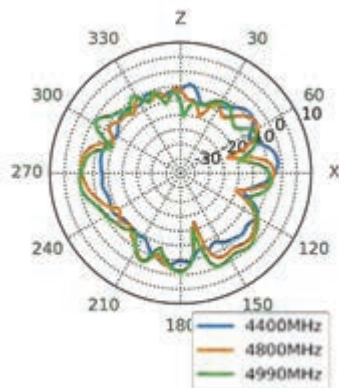
XY Plane



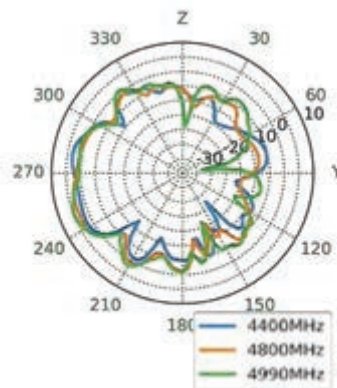
4.11 LTE 1 in Free Space - Patterns at 4800 MHz



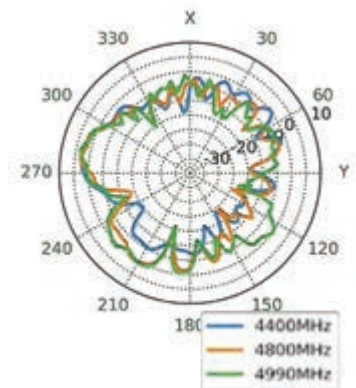
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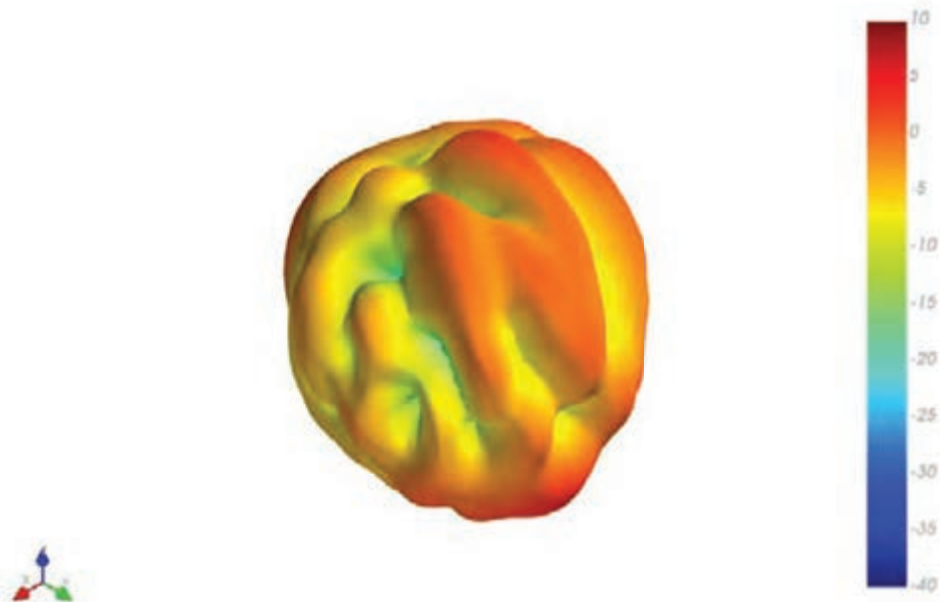
YZ Plane



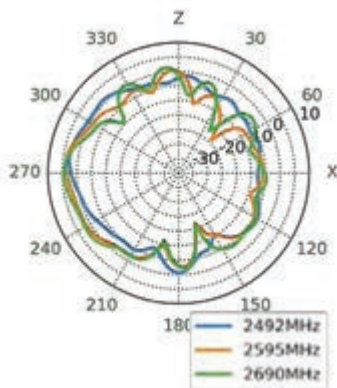
XY Plane



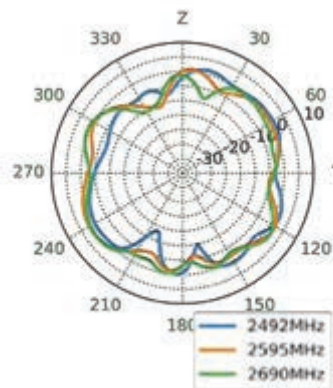
4.19 LTE 2 in Free Space - Patterns at 2595 MHz



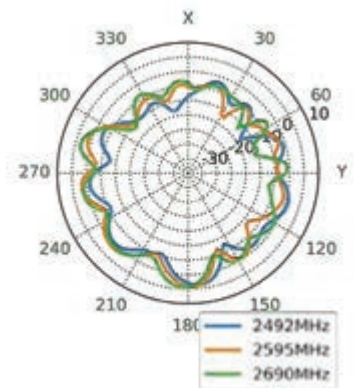
XZ Plane



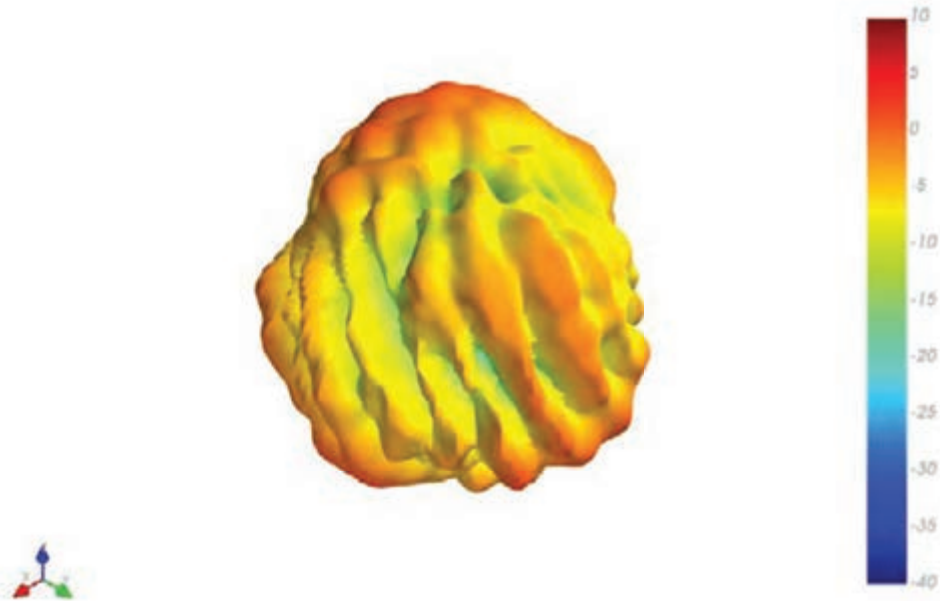
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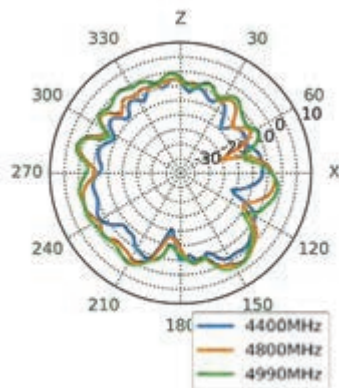
XY Plane



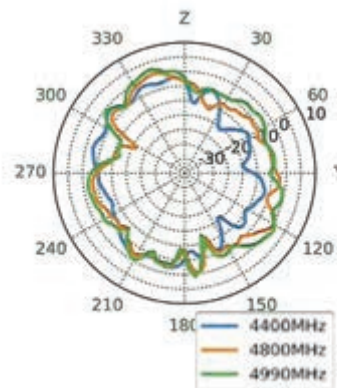
4.21 LTE 2 in Free Space - Patterns at 4800 MHz



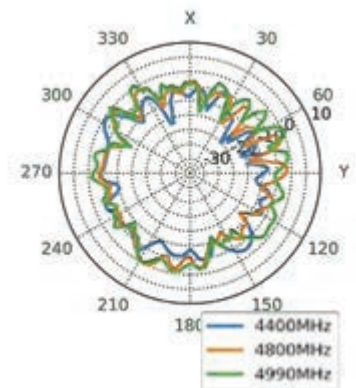
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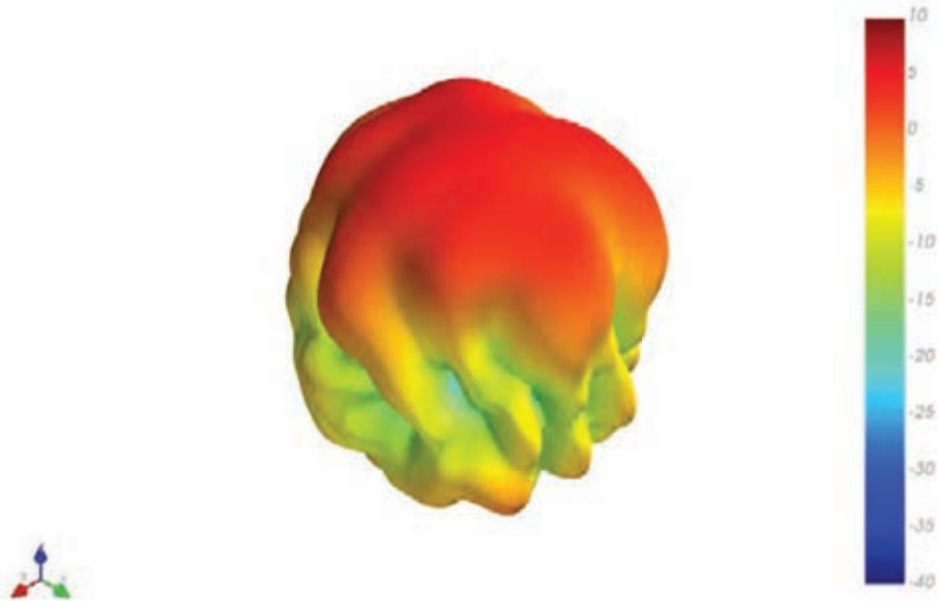
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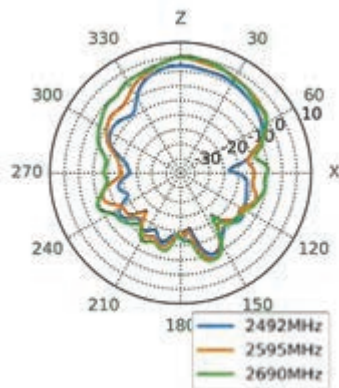
XY Plane



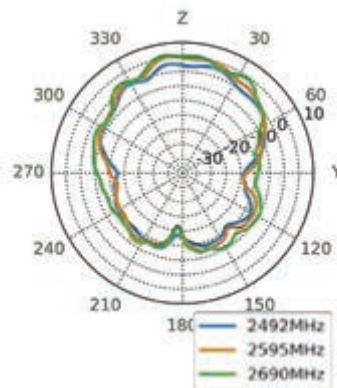
4.29 LTE 1 on 30x30cm Ground Plane - Patterns at 2595 MHz



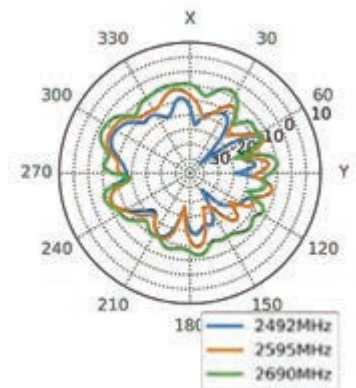
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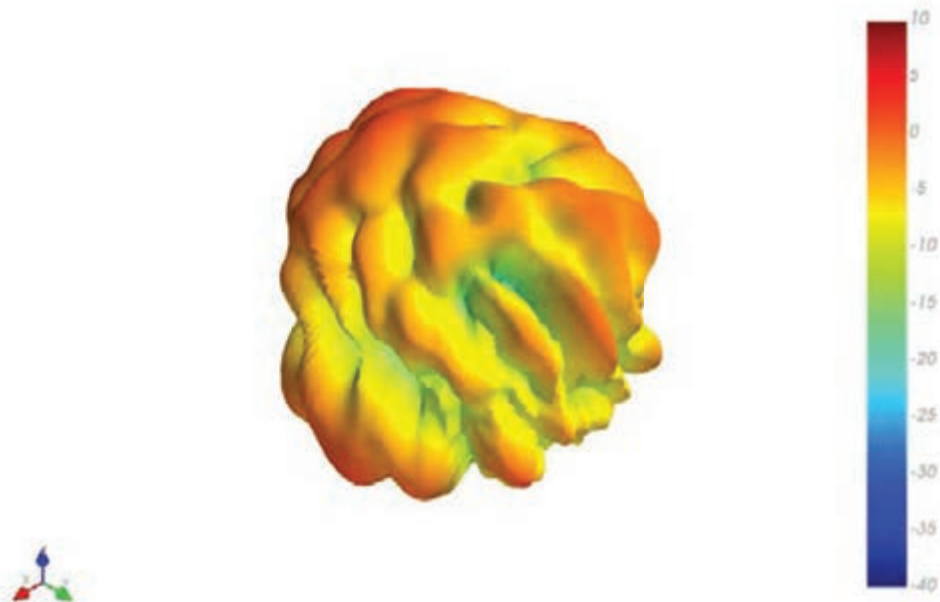
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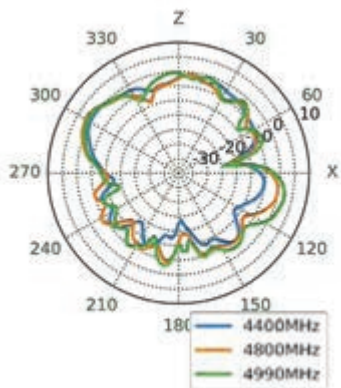
XY Plane



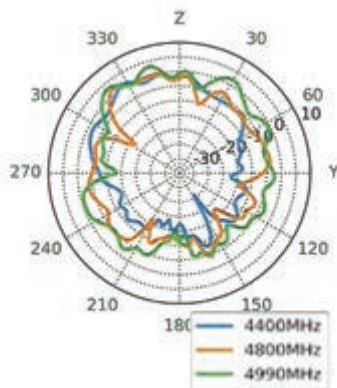
4.31 LTE 1 on 30x30cm Ground Plane - Patterns at 4800 MHz



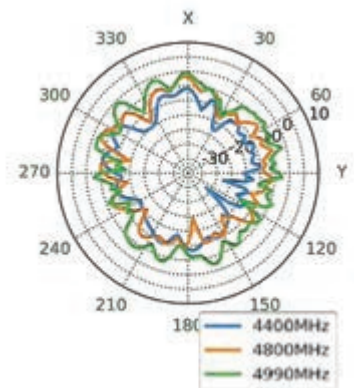
XZ Plane



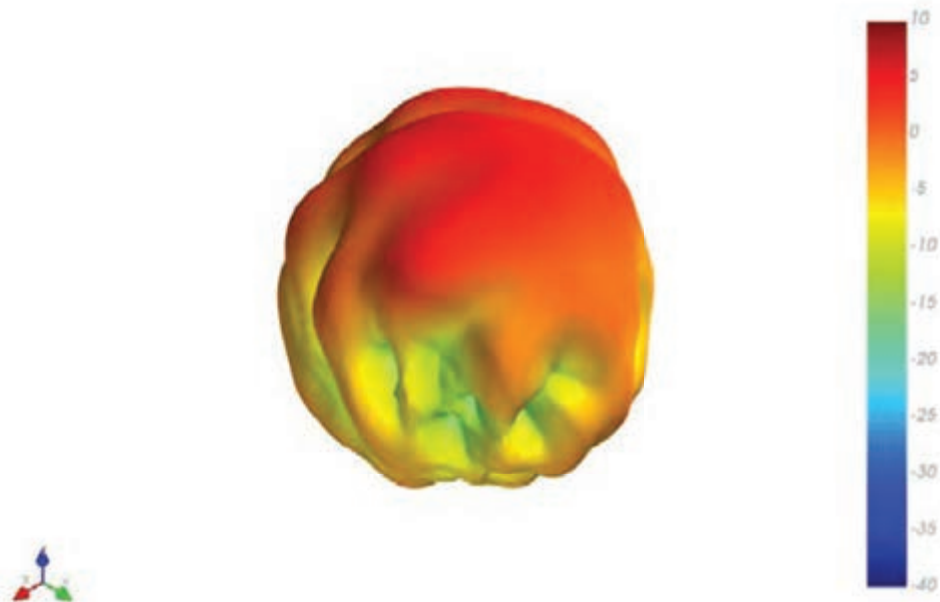
YZ Plane



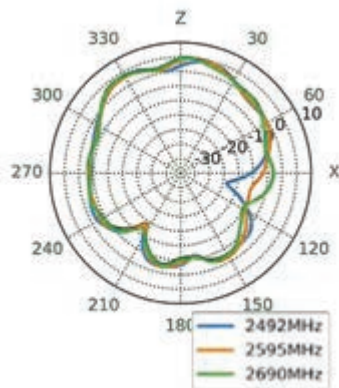
XY Plane



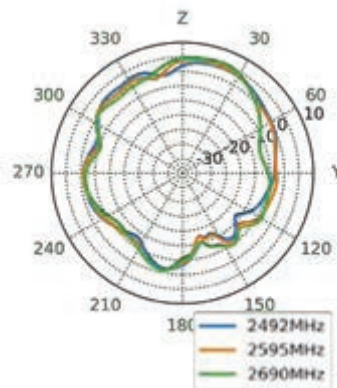
4.39 LTE 2 on 30x30cm Ground Plane - Patterns at 2595 MHz



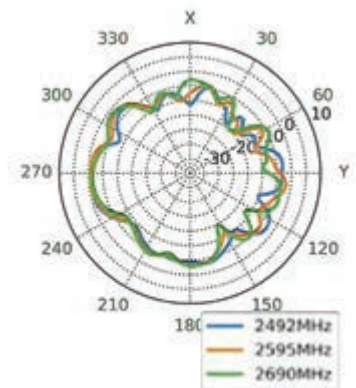
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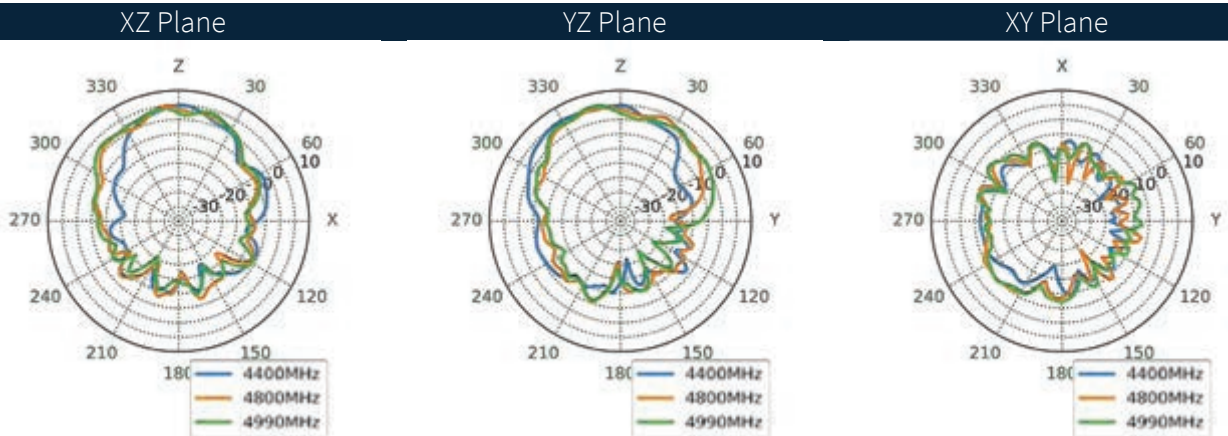
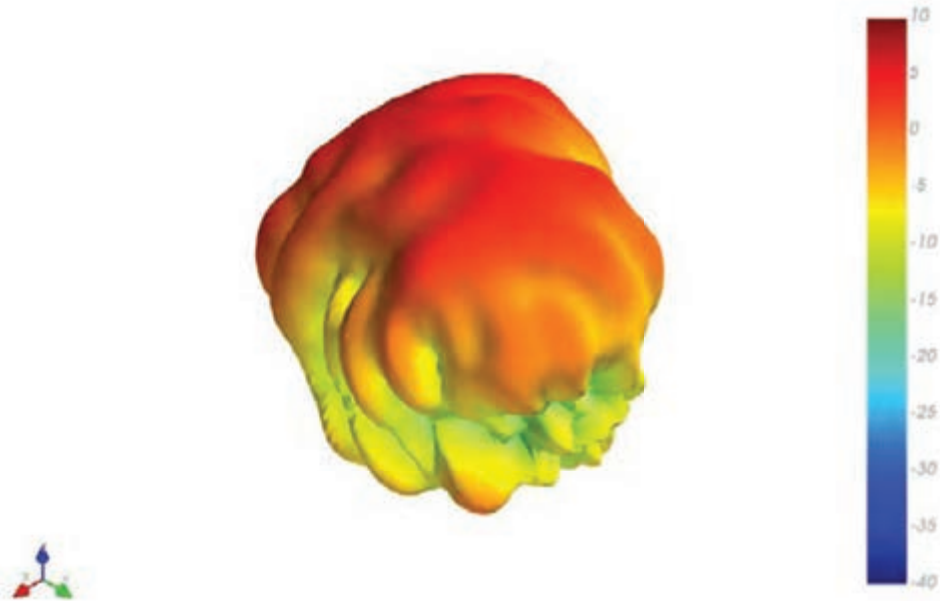
YZ Plane



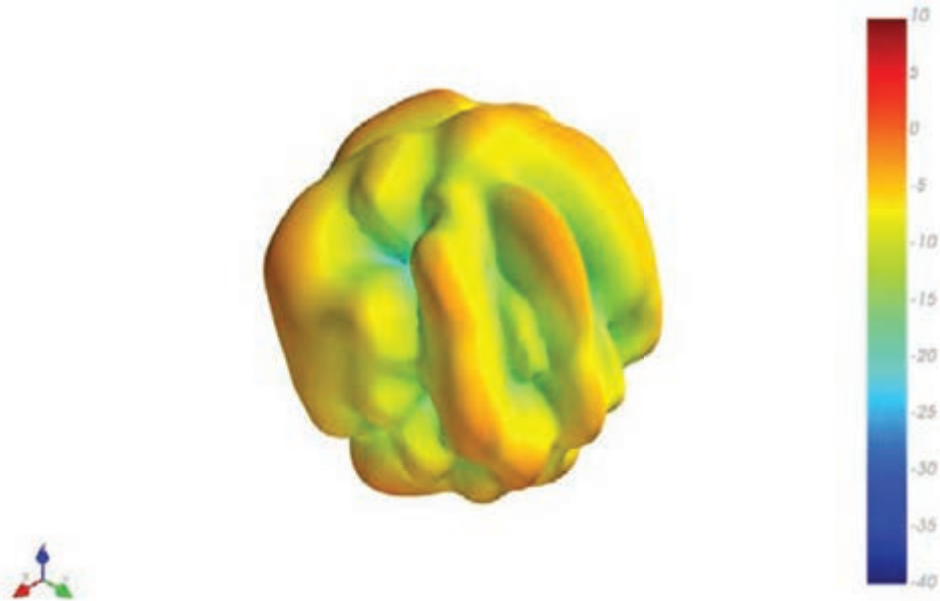
XY Plane



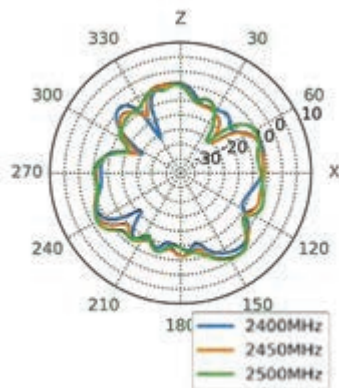
4.41 LTE 2 on 30x30cm Ground Plane - Patterns at 4800 MHz



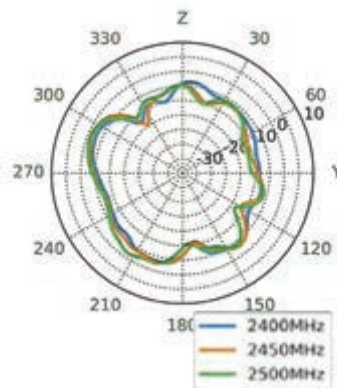
4.42 Wi-Fi in Free Space - Patterns at 2450 MHz



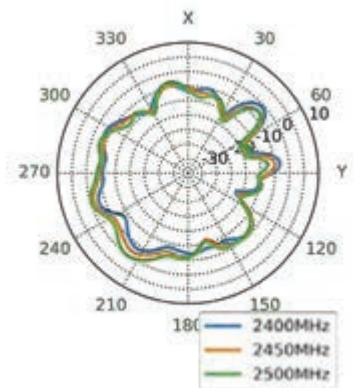
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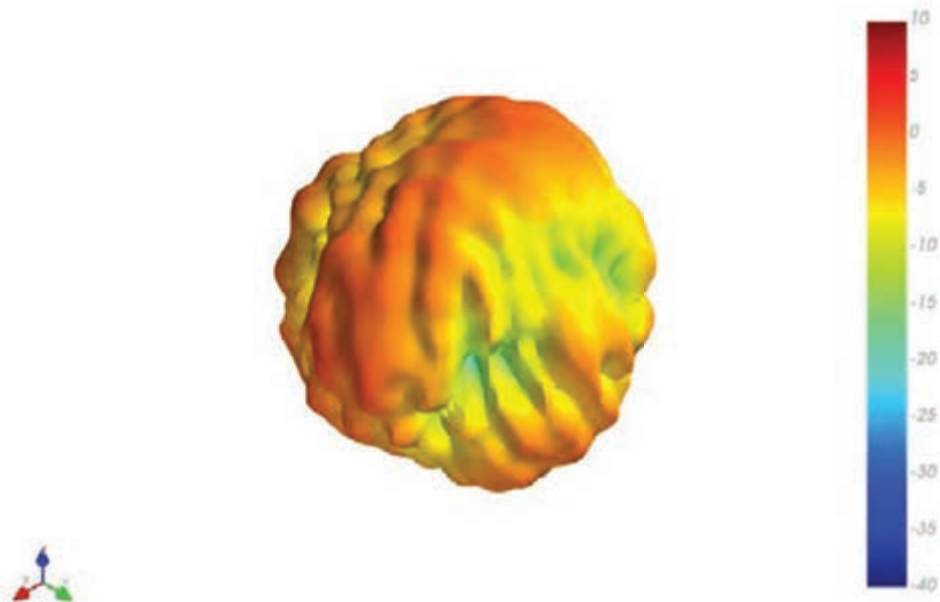
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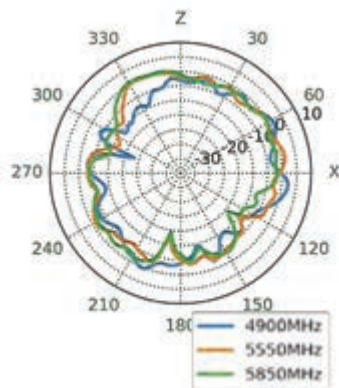
XY Plane



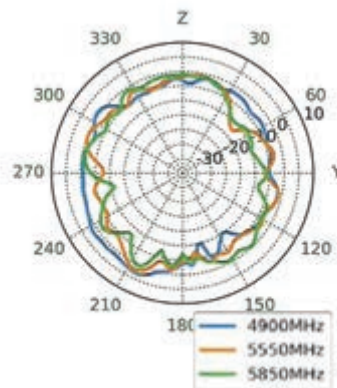
4.43 Wi-Fi in Free Space - Patterns at 5550 MHz



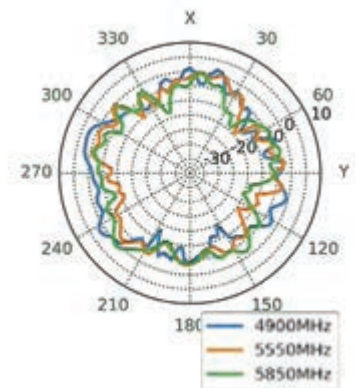
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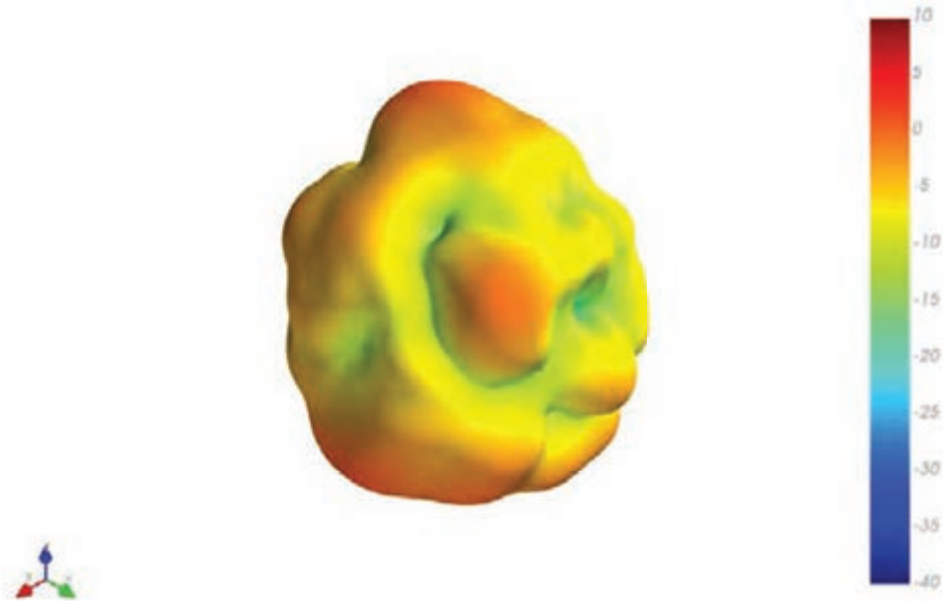
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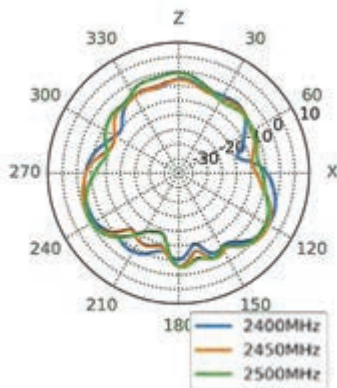
XY Plane



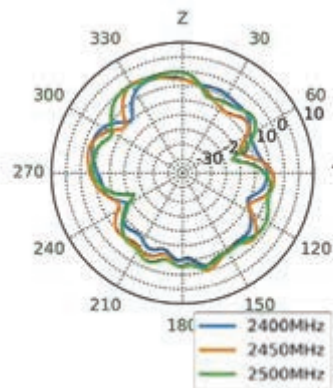
4.46 Wi-Fi on 30x30cm Ground Plane - Patterns at 2450 MHz



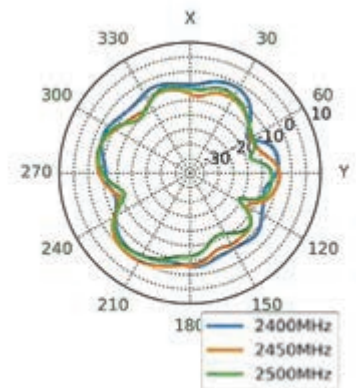
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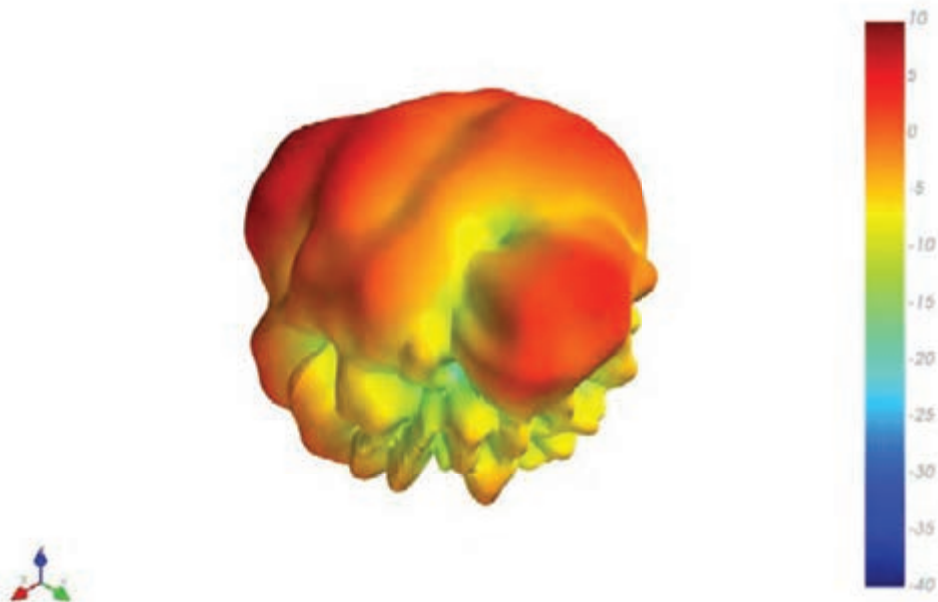
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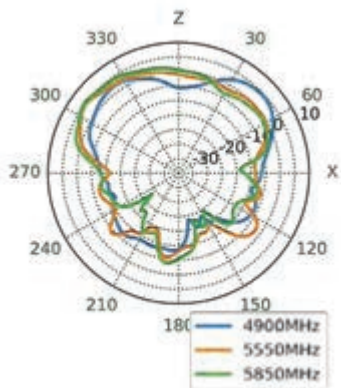
XY Plane



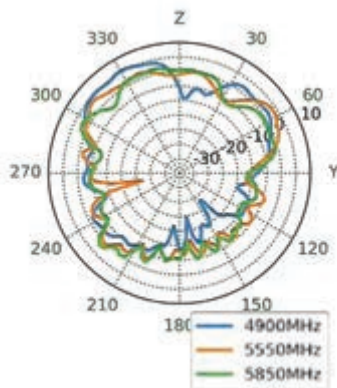
4.47 Wi-Fi on 30x30cm Ground Plane - Patterns at 5550 MHz



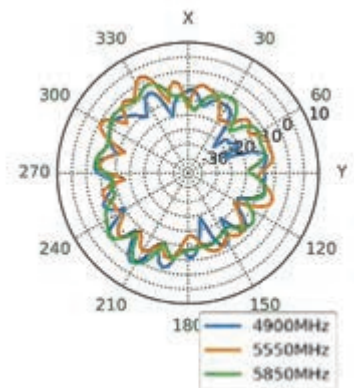
XZ Plane



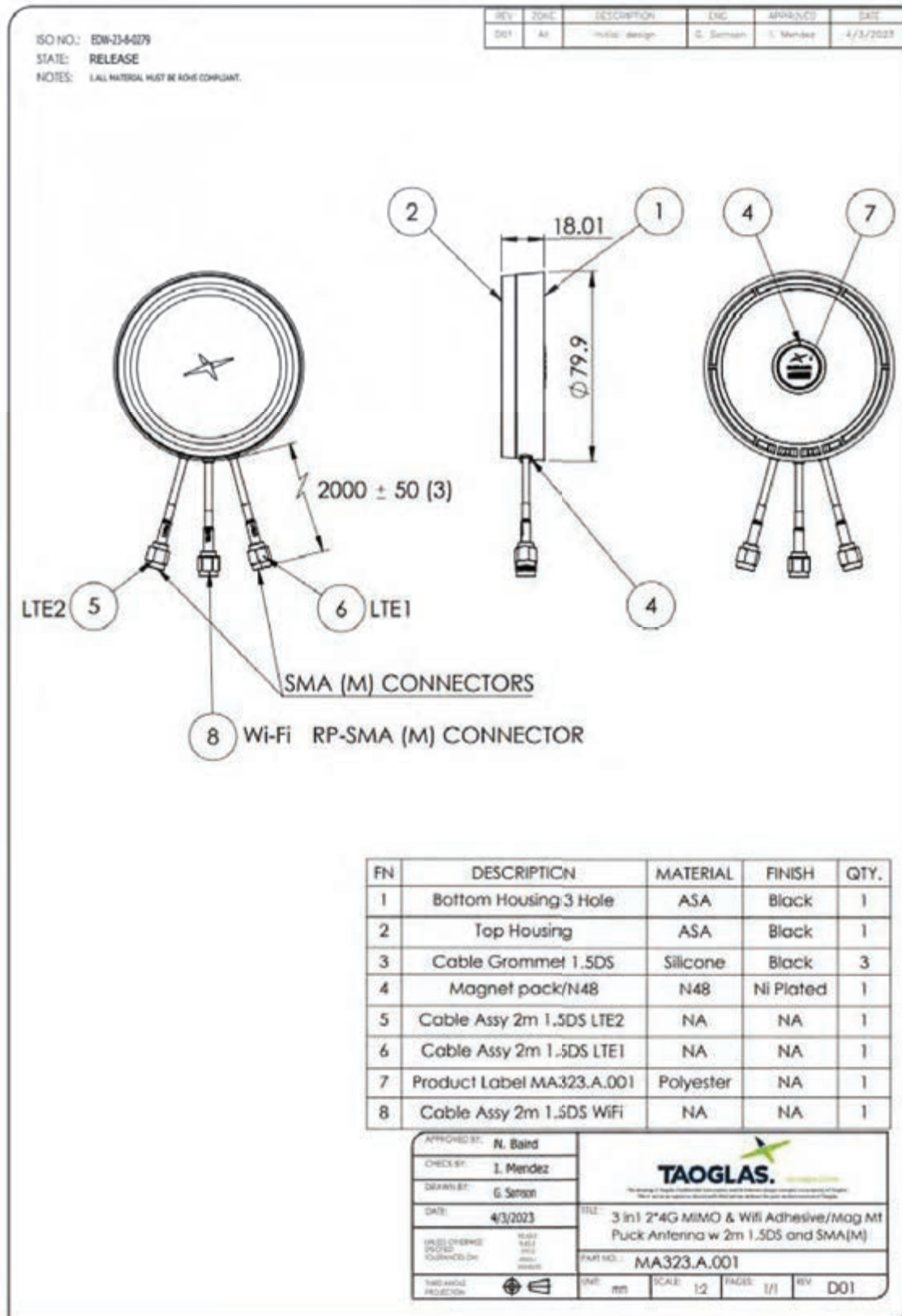
YZ Plane



XY Plane



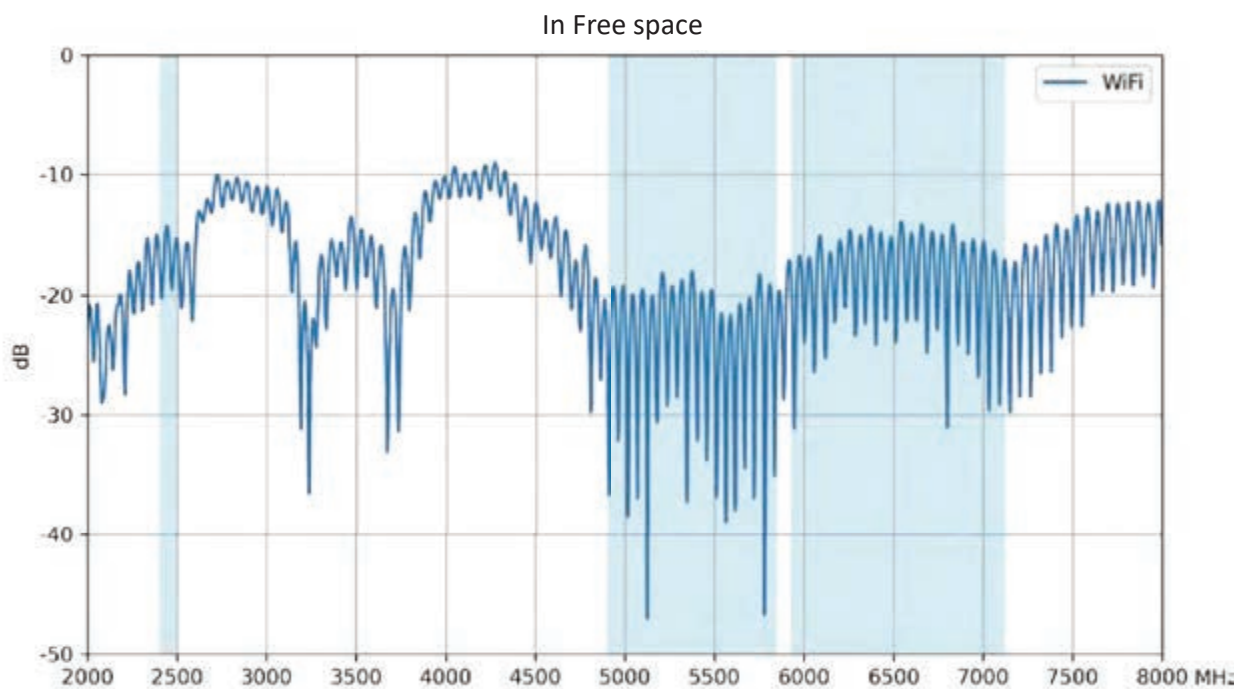
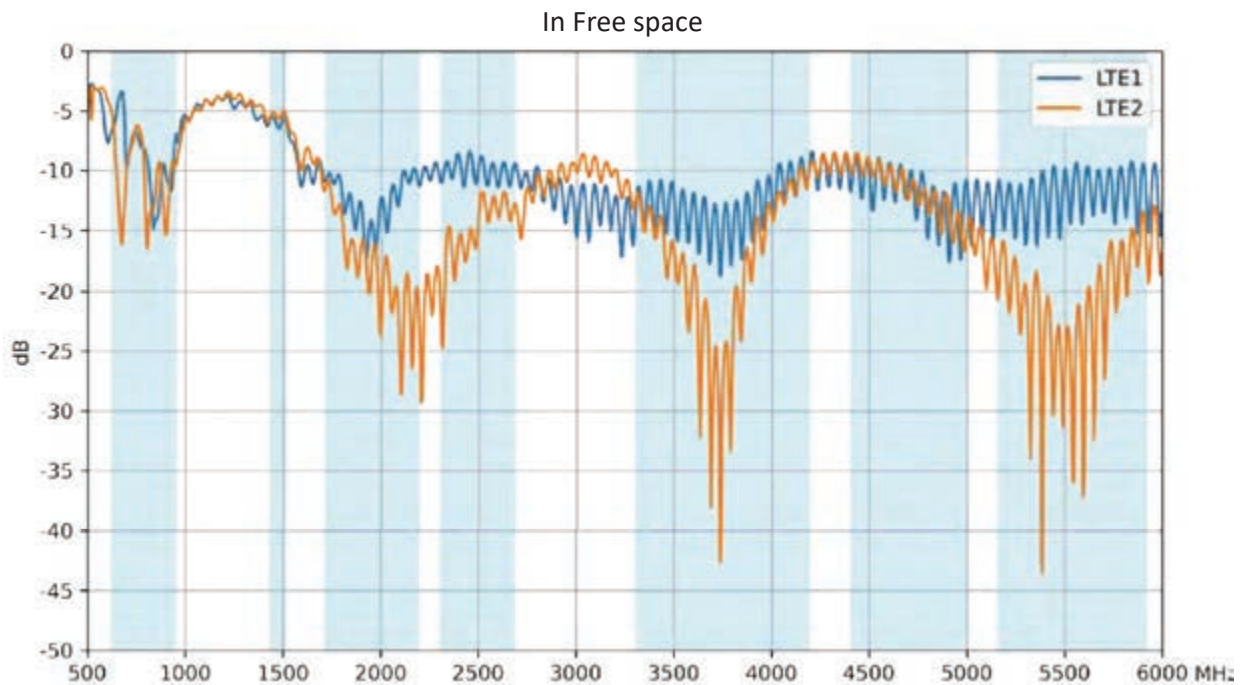
5. Mechanical Drawing



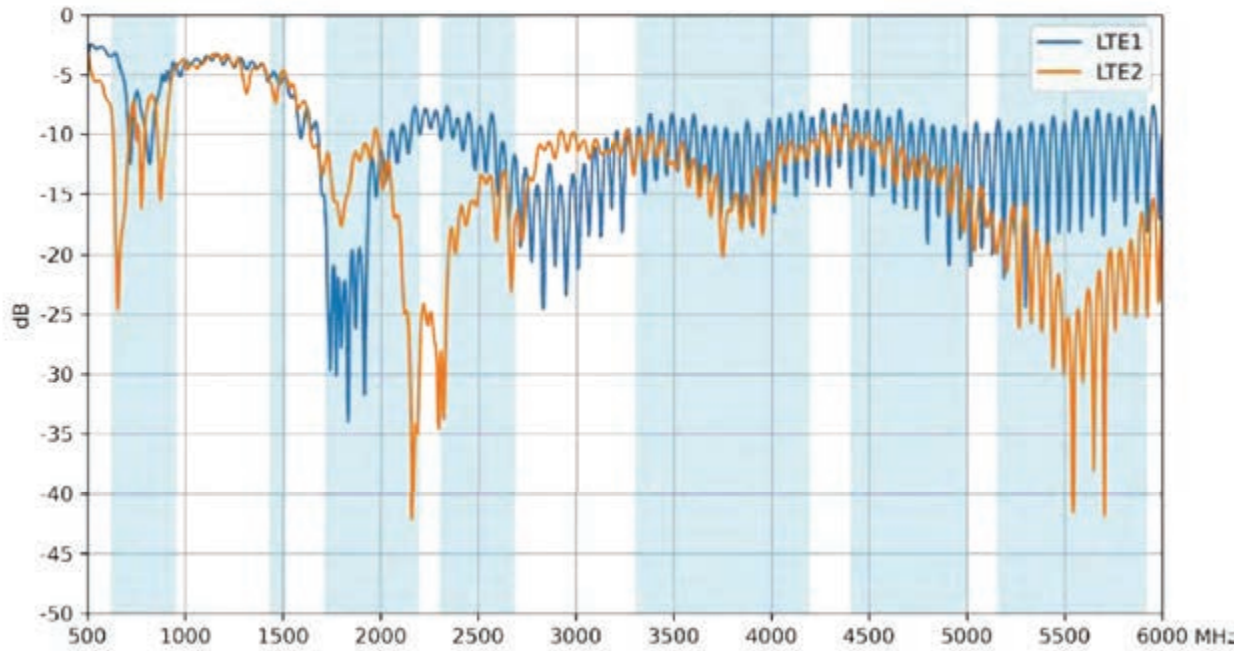
7. Application Note

This application note shows the performance of the MA323.A.001 with 2meters of 1.5DS.

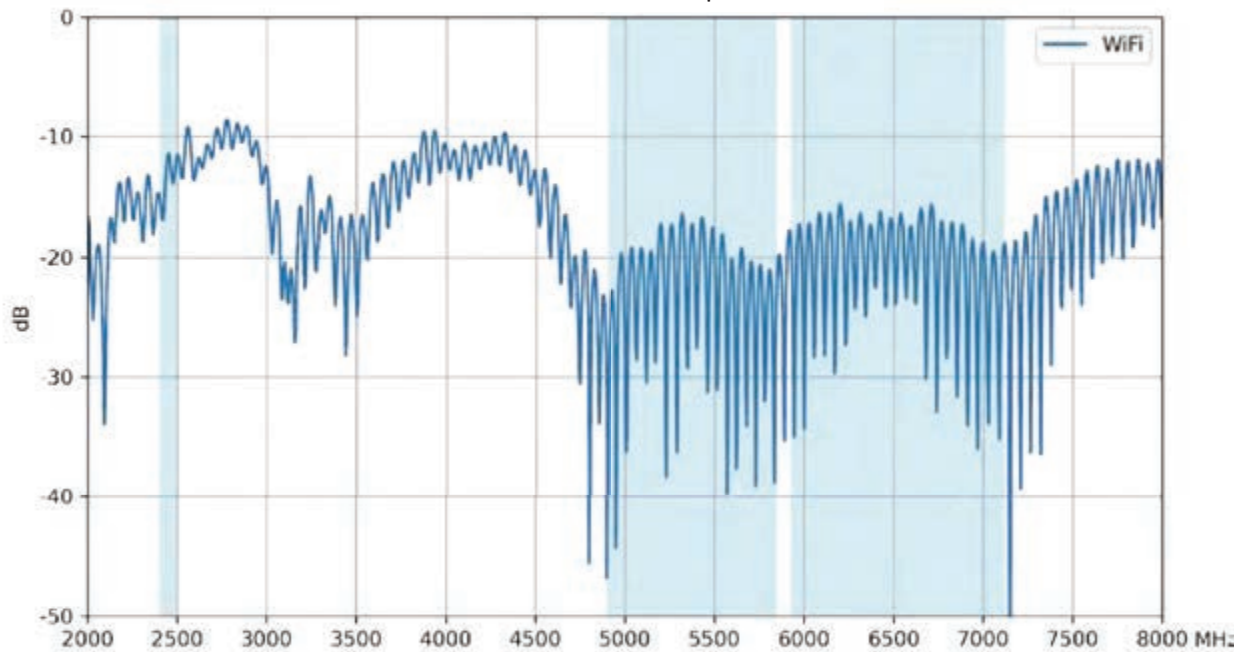
7.1 Return Loss



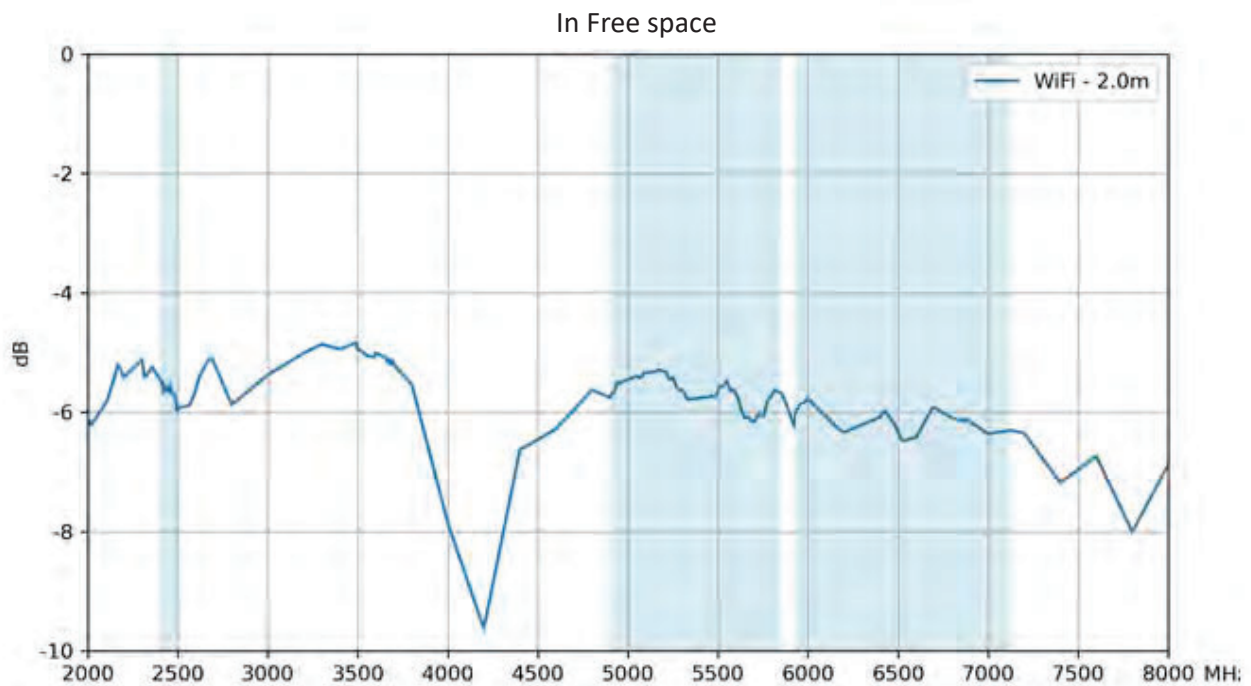
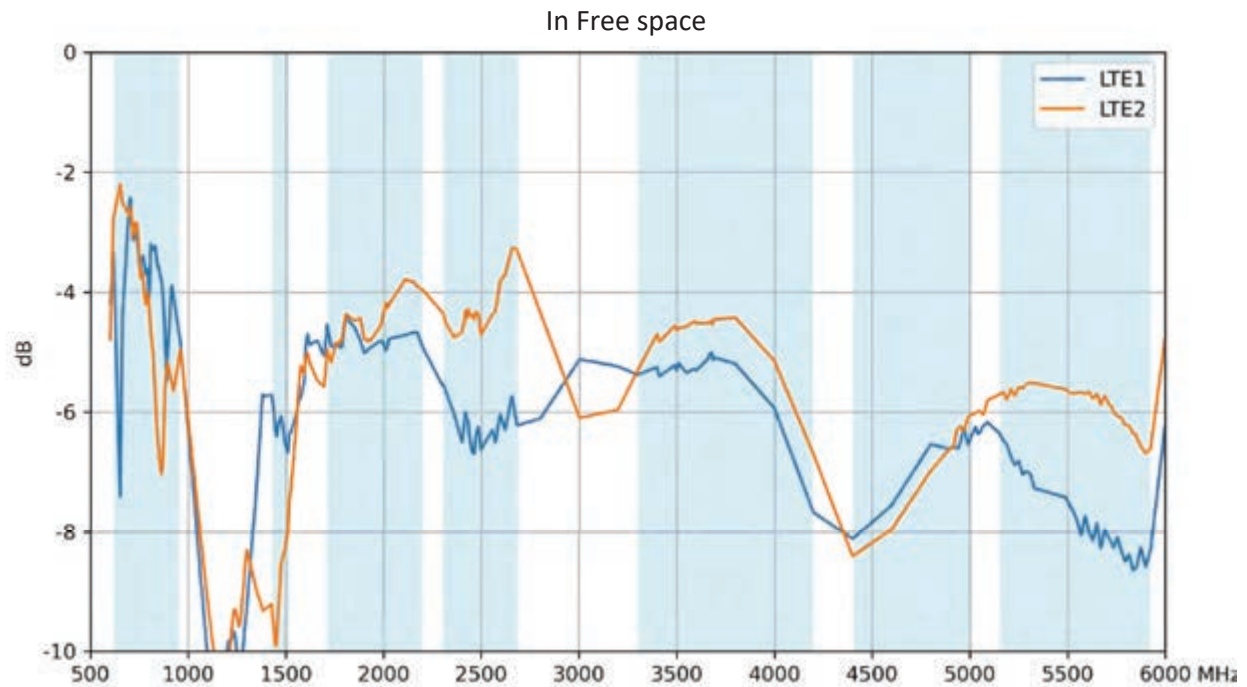
on 30x30cm Ground plane



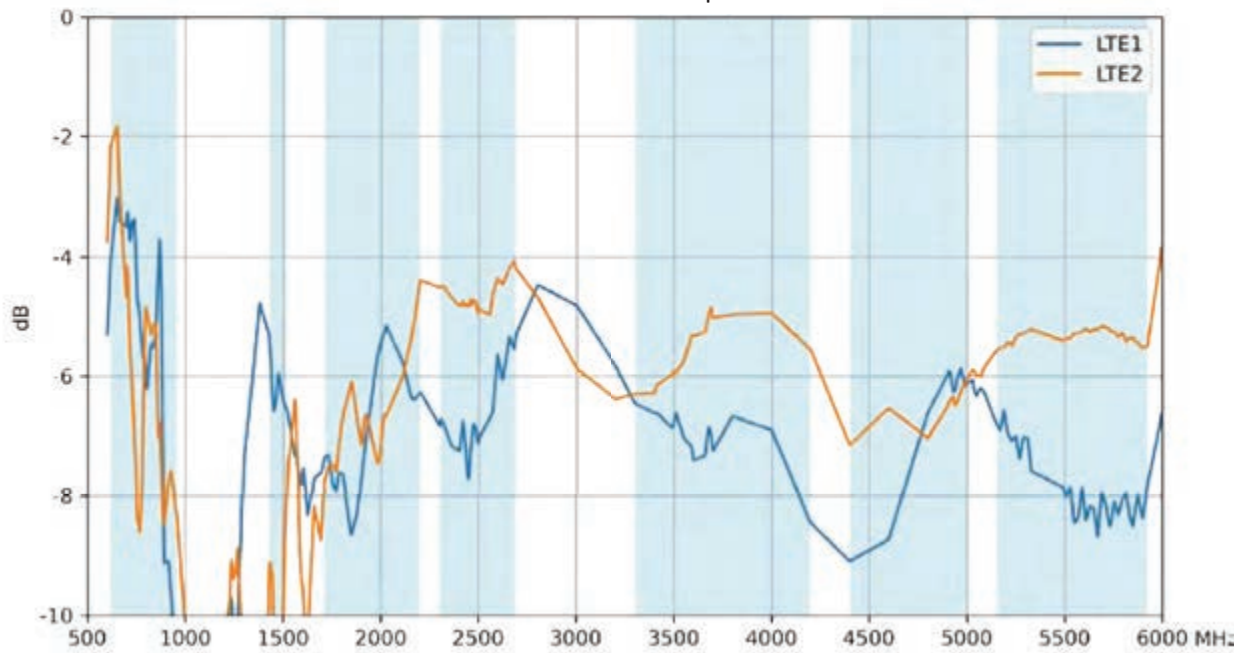
on 30x30cm Ground plane



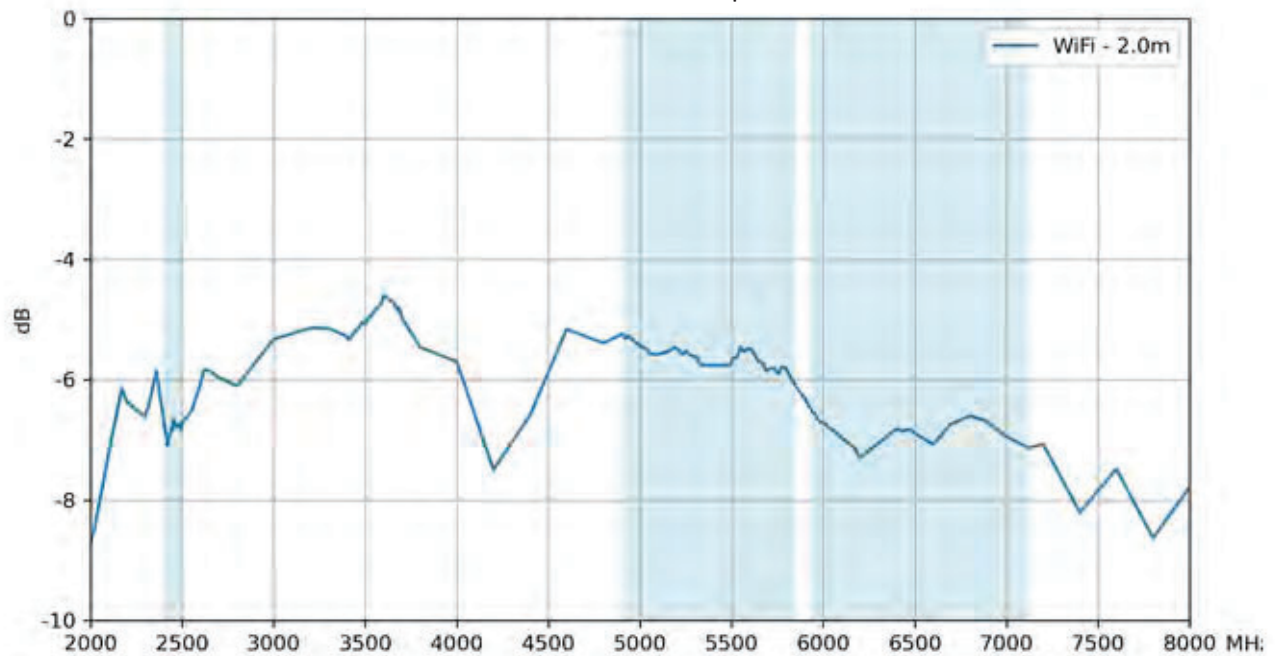
7.4 LTE - Average Gain



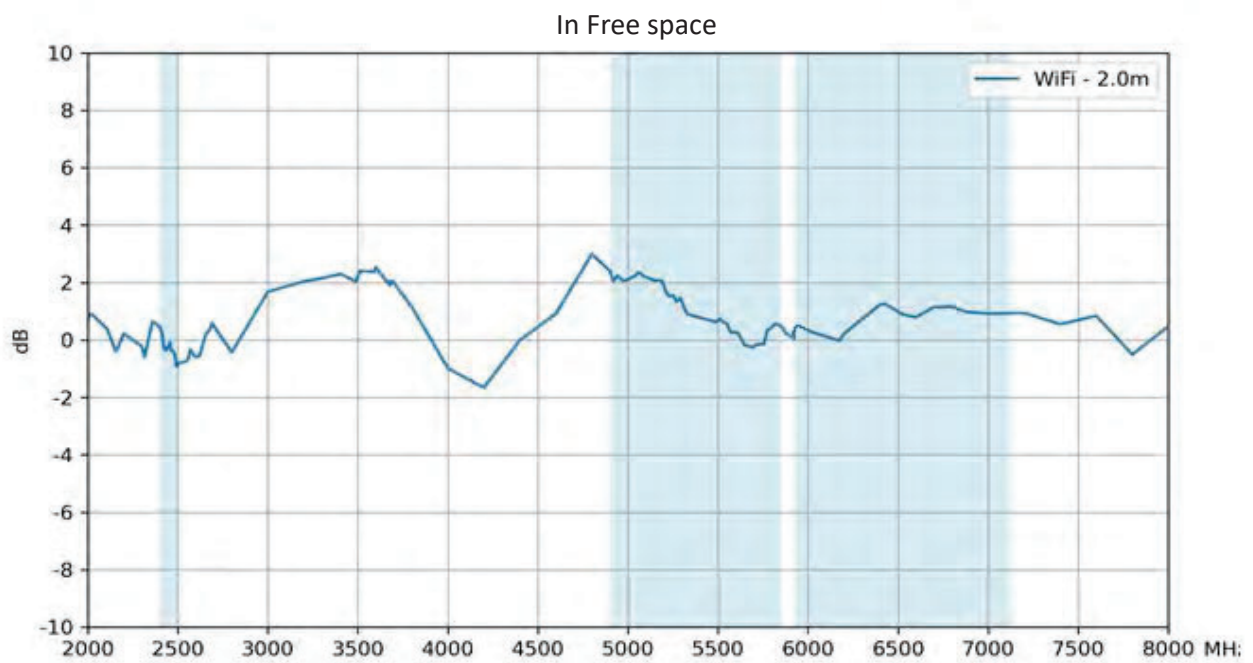
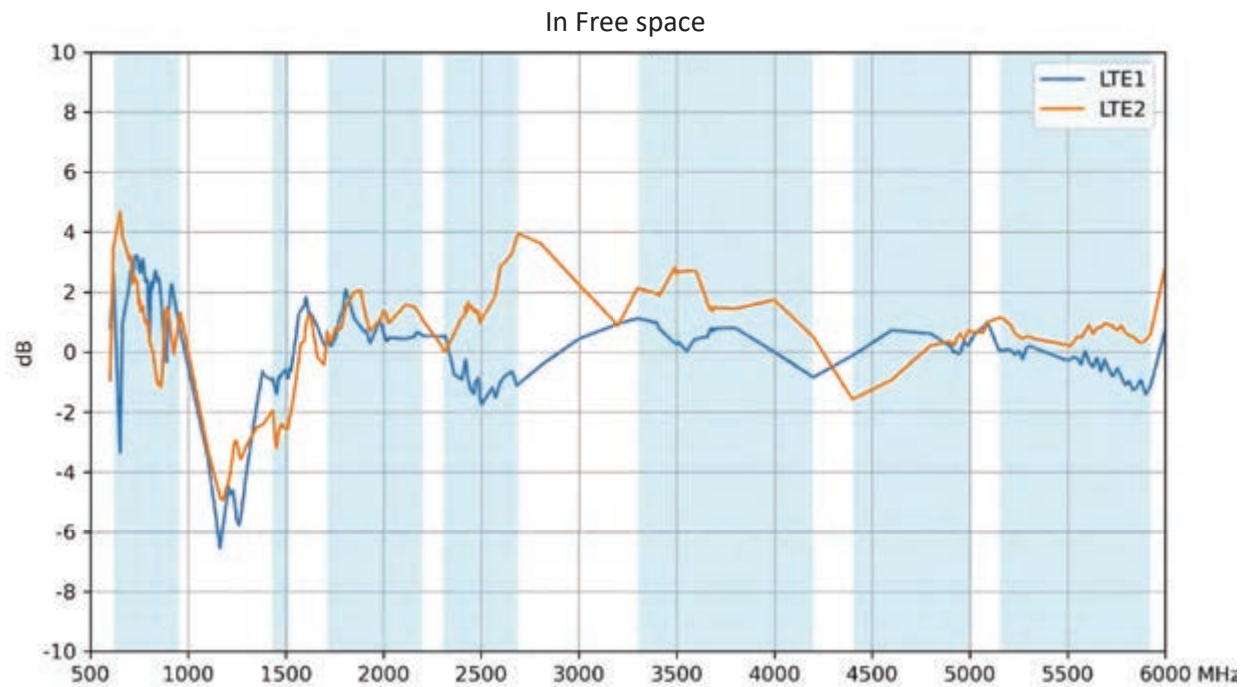
on 30x30cm Ground plane



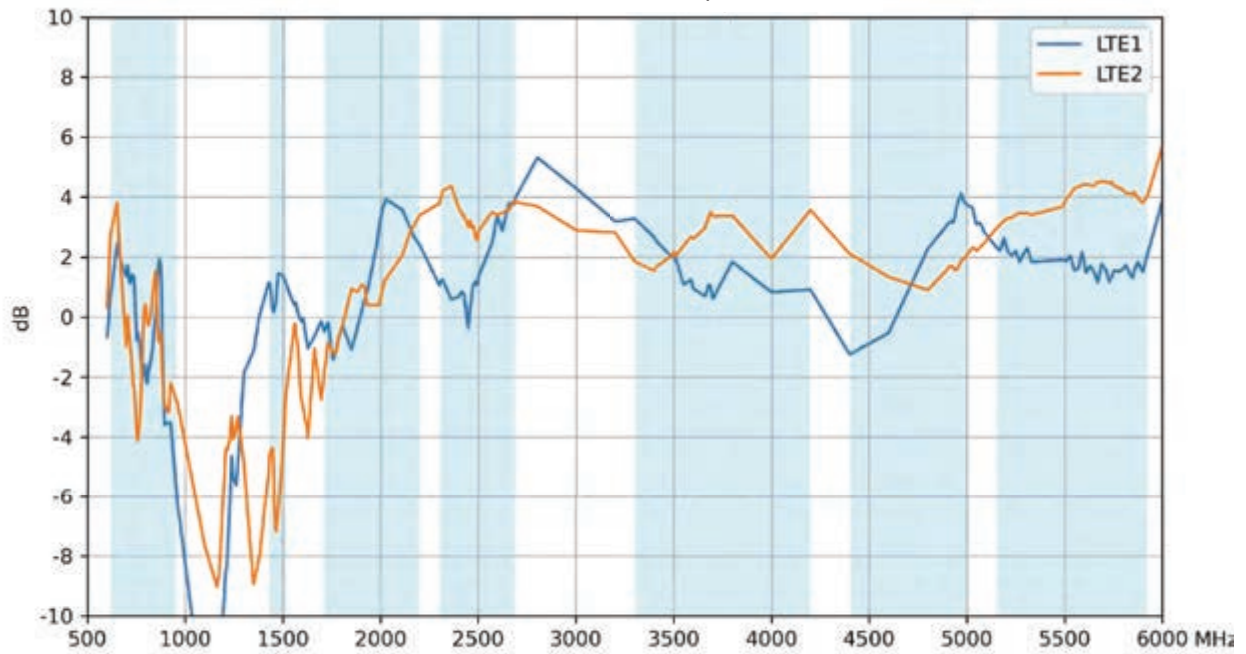
on 30x30cm Ground plane



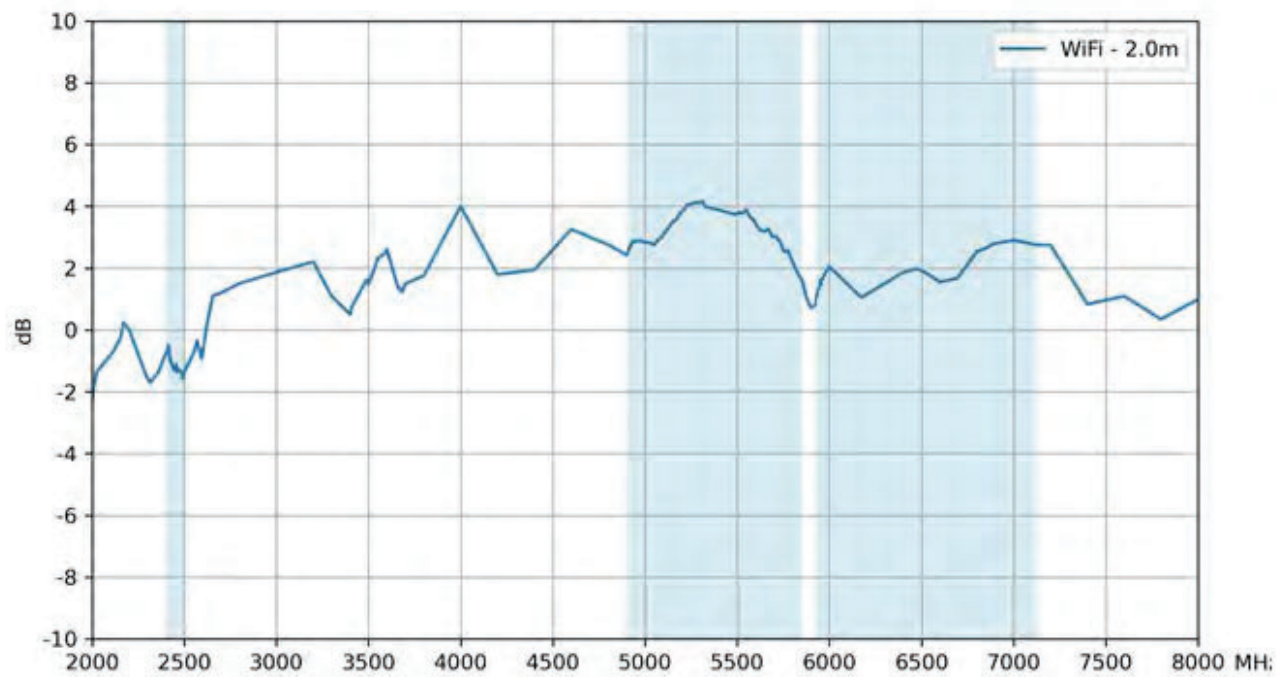
7.5 LTE - Peak Gain



on 30x30cm Ground plane



on 30x30cm Ground plane



Waymo UXC-F
Model#: CV-RQ5FN0GX
FCC ID: 2BS75CV-RQ5FN0GX
IC ID: 216BCV-RQ5FN0GX



www.taoglas.com

