

Antenna Info: WiFi and Bluetooth Module, Model WL1837MOD; FCC ID: KKG-WL18DBMOD, IC ID: 2213A-WL18DBMOD

- **Antenna #1: Taoglas PC11.17.0180 Mini FR4 PCB Antenna, 180mm MMCX**
 - A customized version of the base part number PC11.07.0100A where the coax cable length is increased from 100mm to 180mm and the U.FL connection is swapped for a MMCX connector.
- **Antenna #2: Taoglas PC11.17.0230 Mini FR4 PCB Antenna, 230mm MMCX**
 - A customized version of the base part number PC11.07.0100A where the coax cable length is increased from 100mm to 230mm and the U.FL connection is swapped for a MMCX connector.
- **Compliance to § 15.203 Antenna requirement**
 - Antennas #1 and #2 are permanently attached.
- **Compliance to § 15.204 External radio frequency power amplifiers and antenna modifications**
 - Procedures in § 2.1043 to obtain a C2PC were followed, in order to allow for the use of a system configuration that employs an antenna that operates at a higher gain than the antenna authorized with the intentional radiator.
 - Compliance testing was performed using the highest gain antenna for each type of antenna to be certified with the intentional radiator. During this testing, the intentional radiator operated at its maximum available output power level.
 - DCI shall supply a list of acceptable antenna types with the application for equipment authorization of the intentional radiator.

Electrical								
Frequency	Setup	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
2400~2500	Freespace	84	-0.7	4.7	50Ω	Linear	Omni	2W Max
	2mm ABS	66	-1.8	6.5				
5150~5850	Freespace	73	-1.4	6.5				
	2mm ABS	63	-2.0	5.8				
Polarization				Linear				
Impedance				50 Ohms				
Radiation Pattern				Omni				
Input Power				2W max.				

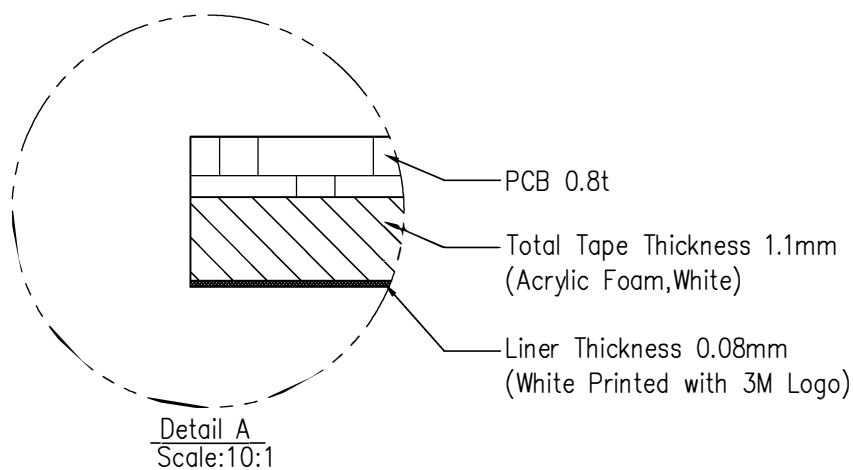
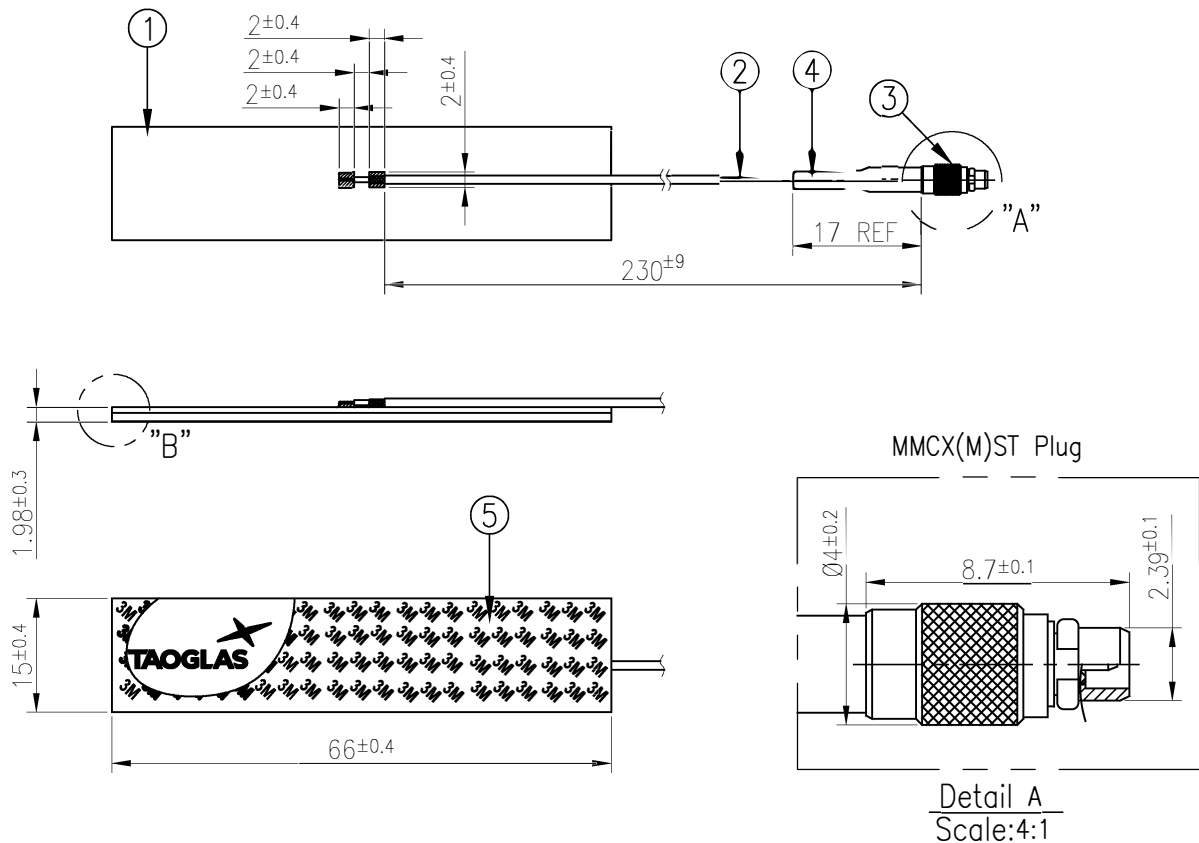
Figure 14: Wi-Fi BT Antenna Characteristics

ISO NO.: EDW.XXXXXX

STATE: RELEASE

- NOTES:
1. No dregs or insufficient soldering. Solder thickness 0.3 ~ 3mm
 2. The solder must be smooth and full to the edges of the pad.
 3. The connector position has special orientation to the PCB as per drawing.
 4. All material must be RoHS compliant.
 5. Open/short QC, VSWR required.
 6. Soldered area. 

REV.	DESCRIPTION	ENG.	APPROVED	DATE
D01	INITIAL DESIGN	Denis	Aaron	2025/07/21



	Name	Material	Finish	QTY
1	PC11 PCB	Composite 0.8t	Black	1
2	1.13 Coaxial Cable	FEP	Black	1
3	MMCX(M) ST	Brass	Au Plated	1
4	Heat Shrink Tube	PE	Black	1
5	Double-Sided Adhesive	3M 4945 VHB 1.1t	White Foam/White Liner	1

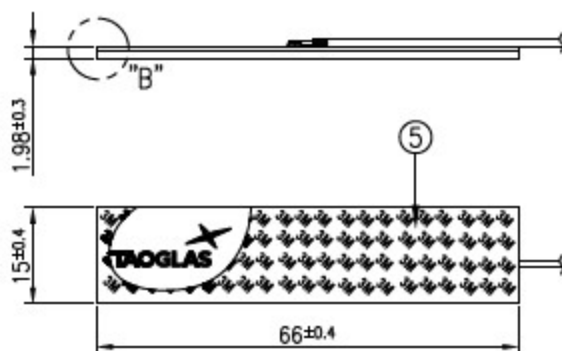
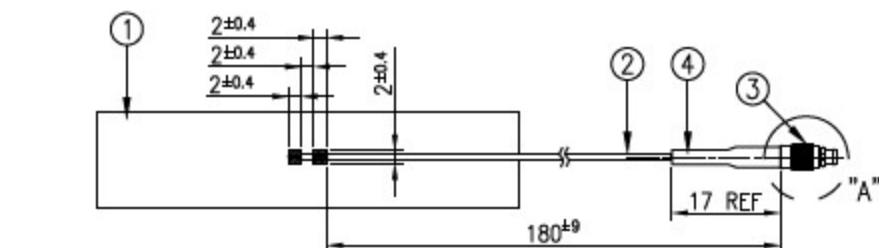
APPROVED BY: Aaron	 TW Design Centre This drawing is Taoglas Confidential Information and the inherent design concepts are property of Taoglas. This is not to be copied or shared with third parties without the prior written consent of Taoglas.
CHECK BY: Aaron	
DRAWN BY: Denis	
DATE: 2025/07/21	
UNLESS OTHERWISE SPECIFIED TOLERANCES ON: XX±0.5 X±0.3 XX±0.2 X±0.1 XXX±0.05	
THIRD ANGLE PROJECTION 	TITLE : PC11 2.4/5.8GHz FR4 PCB Antenna, 230mm 1.13 Micro Coax Black MMCX(M) with adhesive backing PART NO. : PC11.17.0230A.fv UNIT: mm SCALE: 1:1 PAGES: 1/1 REV. D01

ISO NO.: EDW.XXXXXX

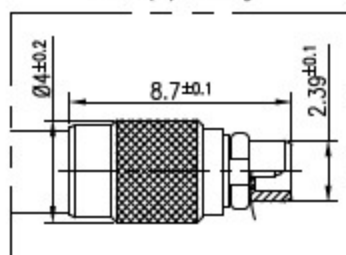
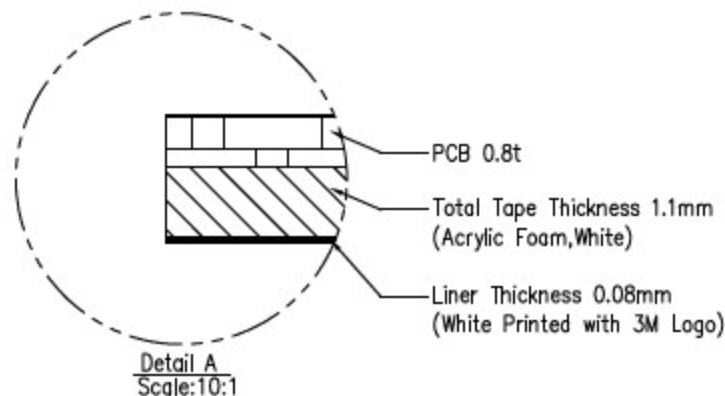
STATE: RELEASE

- NOTES:
1. No dregs or insufficient soldering. Solder thickness 0.3 ~ 3mm
 2. The solder must be smooth and full to the edges of the pad.
 3. The solder must not extend outside of the pad area.
 4. The connector position has special orientation to the PCB as per drawing.
 5. All material must be RoHS compliant.
 6. Open/short QC, VSWR required.
 7. Soldered area.

REV.	DESCRIPTION	ENG.	APPROVED	DATE
001	INITIAL DESIGN	Denis	Aaron	2025/07/21



MMCX(M)ST Plug

Detail A
Scale:4:1Detail A
Scale:10:1

Item	Material	Finish	Qty
1. PCB11 PCB	Composite 0.8t	Black	1
2. 1.13 Coaxial Cable	FEP	Black	1
3. MMCX(M) ST	Stress	As Plated	1
4. Heat Shrink Tube	PE	Black	1
5. Double-Sided Adhesive	See 4945 VHB 1.1t	White, Foam/White User	1

APPROVED BY: Aaron	 TAOGLAS Design Centre This drawing is TAOGLAS Confidential Information and its inherent design concepts are property of TAOGLAS. This is not to be copied or altered without the prior written consent of TAOGLAS.
CHECK BY: Aaron	
DRAWN BY: Denis	
DATE: 2025/07/21	
UNLESS OTHERWISE SPECIFIED TOLERANCES ON:	
THIRD ANGLE PROJECTION	TITLE: PCB11 2.4/5.8GHz FR4 PCB Antenna, 180mm 1.13 Micro Coax Black MMCX(M) with adhesive backing PART NO.: PCB11.17.0180A.fv UNIT: mm SCALE: 1:1 PAGES: 1/1 REV: D01



TAOGLAS®



Datasheet

TheStripe™ PCB Dual-band 2.4 / 5.2 GHz antenna

Part No:
PC11.07.0100A

Features:

- High Efficiency
- Dual Band for Wi-Fi®/Bluetooth®/Zigbee® Applications
- IPEX MHF Connector (U.FL compatible)
- 1.13 Mini Co-axial Cable
- RoHS Compliant

1. Introduction	3
2. Specifications	4
3. Antenna Characteristics	5
4. Radiation Patterns	8
5. Mechanical Drawing	21
Changelog	22

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Ireland & USA
ISO 9001:2015
Certified



Taiwan
ISO 9001:2015
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1. Introduction



This miniaturized low profile PCB antenna is based on smart TheStripe™ antenna technology. It consists of a PCB antenna and mini coaxial cable.

Many module manufacturers specify peak gain limits for any antennas that are to be connected to that module. Those peak gain limits are based on free-space conditions. In practice, the peak gain of an antenna tested in free-space can degrade by at least 1 or 2dBi when put inside a device. So ideally you should go for a slightly higher peak gain antenna than mentioned on the module specification to compensate for this effect, giving you better performance.

Upon testing of any of our antennas with your device and a selection of appropriate layout, integration technique, or cable, Taoglas can make sure any of our antennas' peak gain will be below the peak gain limits. Taoglas can then issue a specification and/or report for the selected antenna in your device that will clearly show it complying with the peak gain limits, so you can be assured you are meeting regulatory requirements for that module.

For example, a module manufacturer may state that the antenna must have less than 2dBi peak gain, but you don't need to select an embedded antenna that has a peak gain of less than 2dBi in free-space. This will give you a less optimized solution. It is better to go for a slightly higher free-space peak gain of 3dBi or more if available. Once that antenna gets integrated into your device, performance will degrade below this 2dBi peak gain due to the effects of GND plane, surrounding components, and device housing. If you want to be absolutely sure, contact Taoglas and we will test. Choosing a Taoglas antenna with a higher peak gain than what is specified by the module manufacturer and enlisting our help will ensure you are getting the best performance possible without exceeding the peak gain limits.

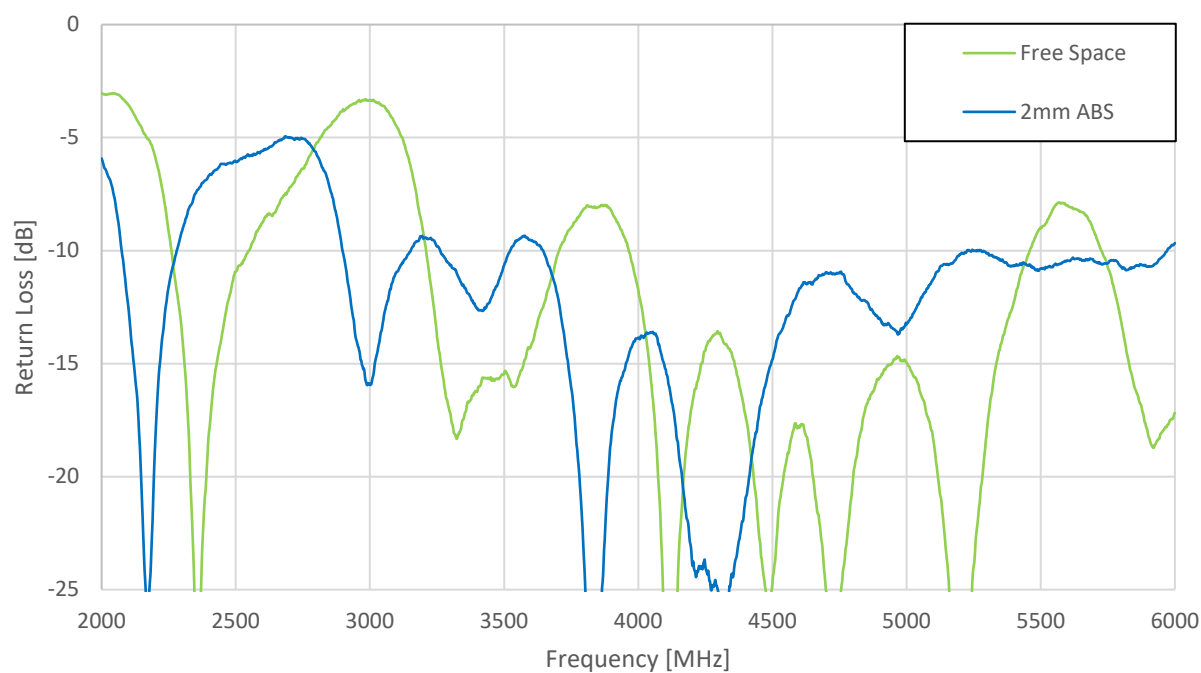
Cable and Connectors are customizable.

2. Specifications

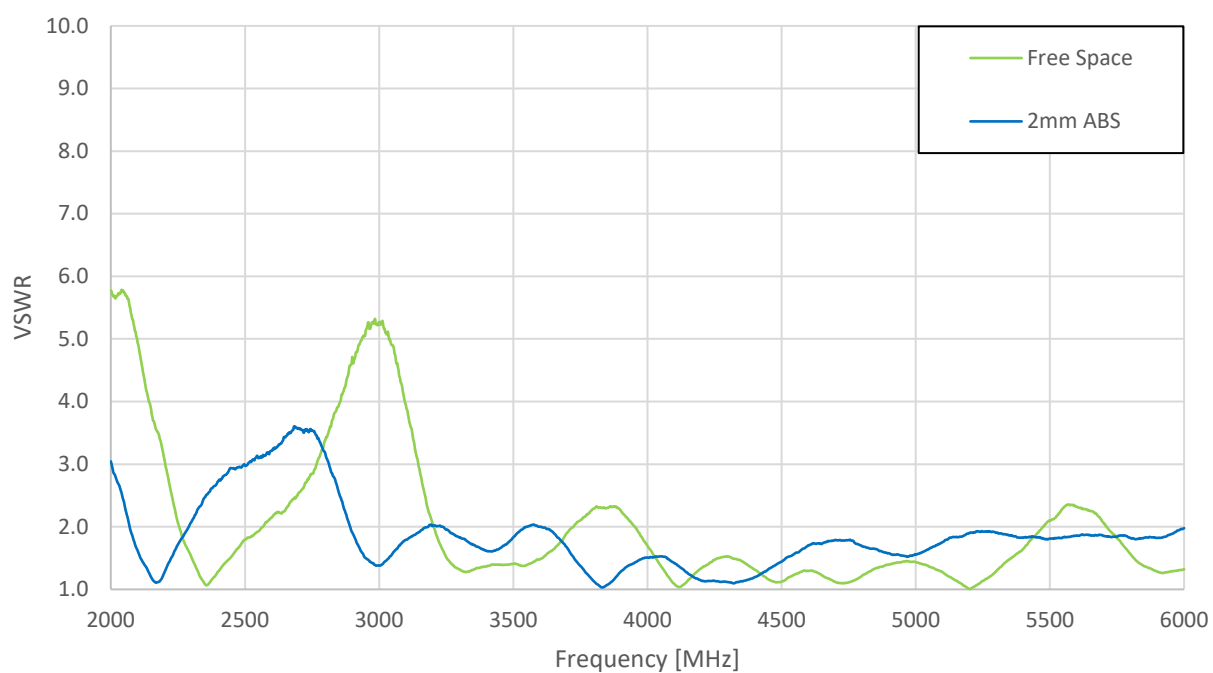
Electrical								
Frequency	Setup	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
2400~2500	Freespace	84	-0.7	4.7	50Ω	Linear	Omni	2W Max
	2mm ABS	66	-1.8	6.5				
5150~5850	Freespace	73	-1.4	6.5				
	2mm ABS	63	-2.0	5.8				
Polarization			Linear					
Impedance			50 Ohms					
Radiation Pattern			Omni					
Input Power			2W max.					
Mechanical								
Dimensions			66 x 16 x 0.8 mm					
Antenna Body Material			FR4					
Cable			Black 100mm 1.13 co-axial					
Connector			IPEX MHFI					
Weight			2g					
Environmental								
Temperature Range			-40°C to 85°C					
Humidity			Non-condensing 65°C 95% RH					

3. Antenna Characteristics

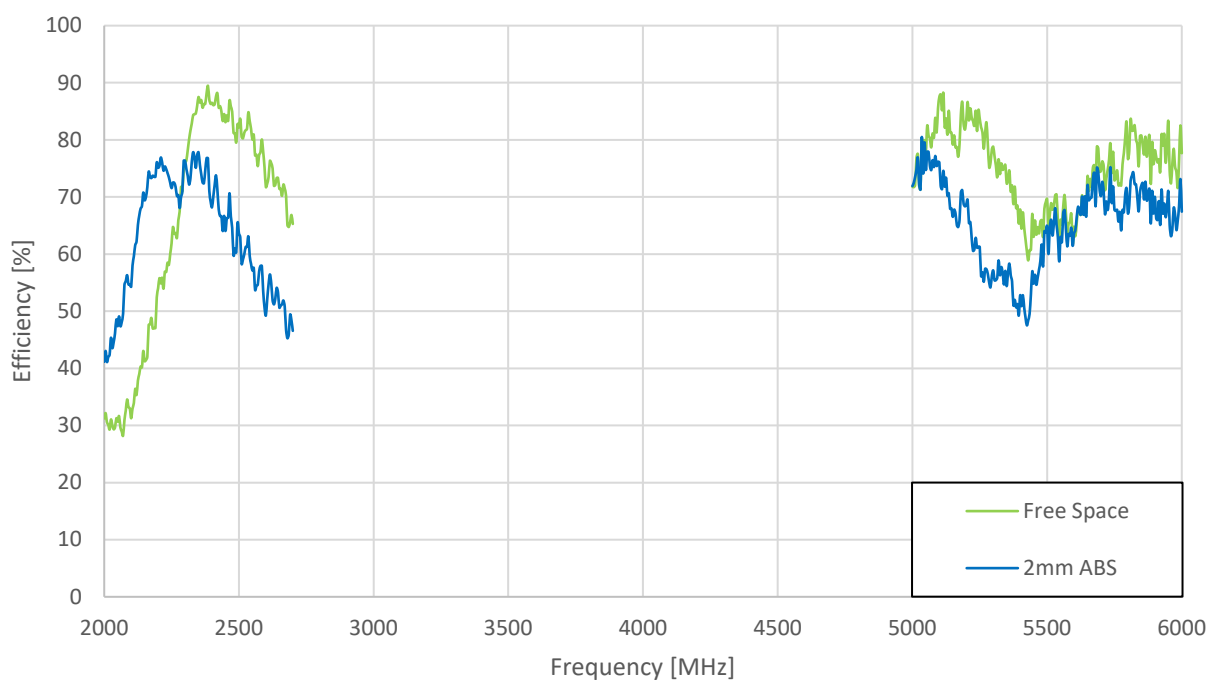
3.1 Return Loss



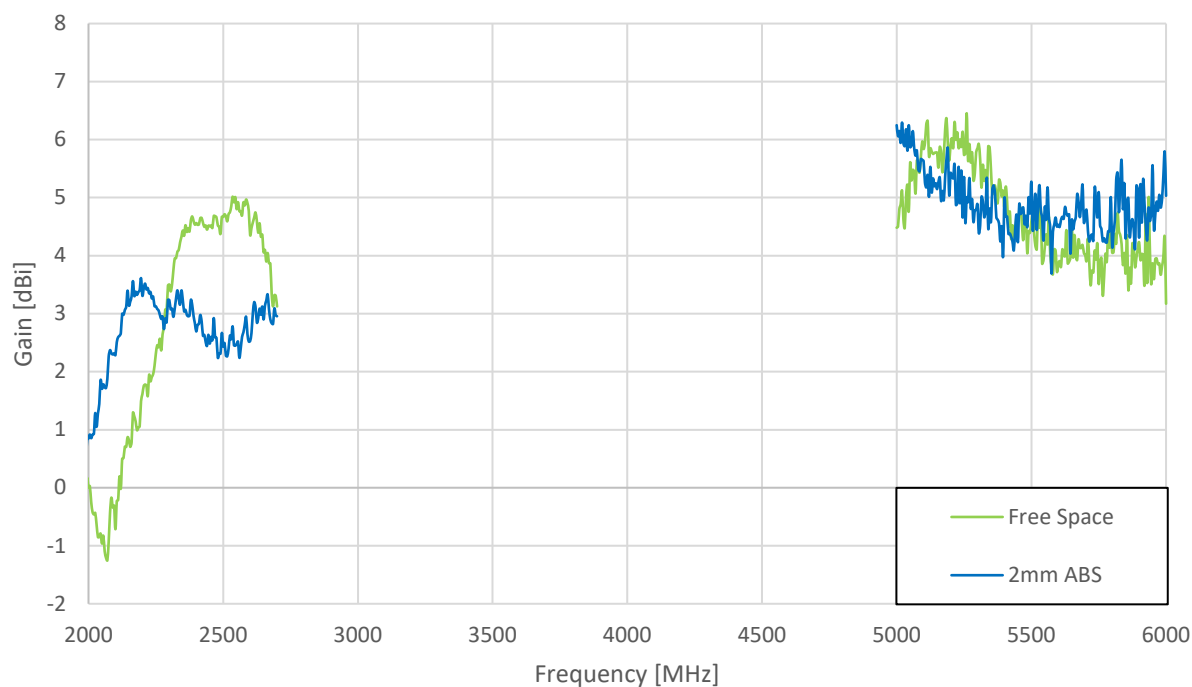
3.2 VSWR



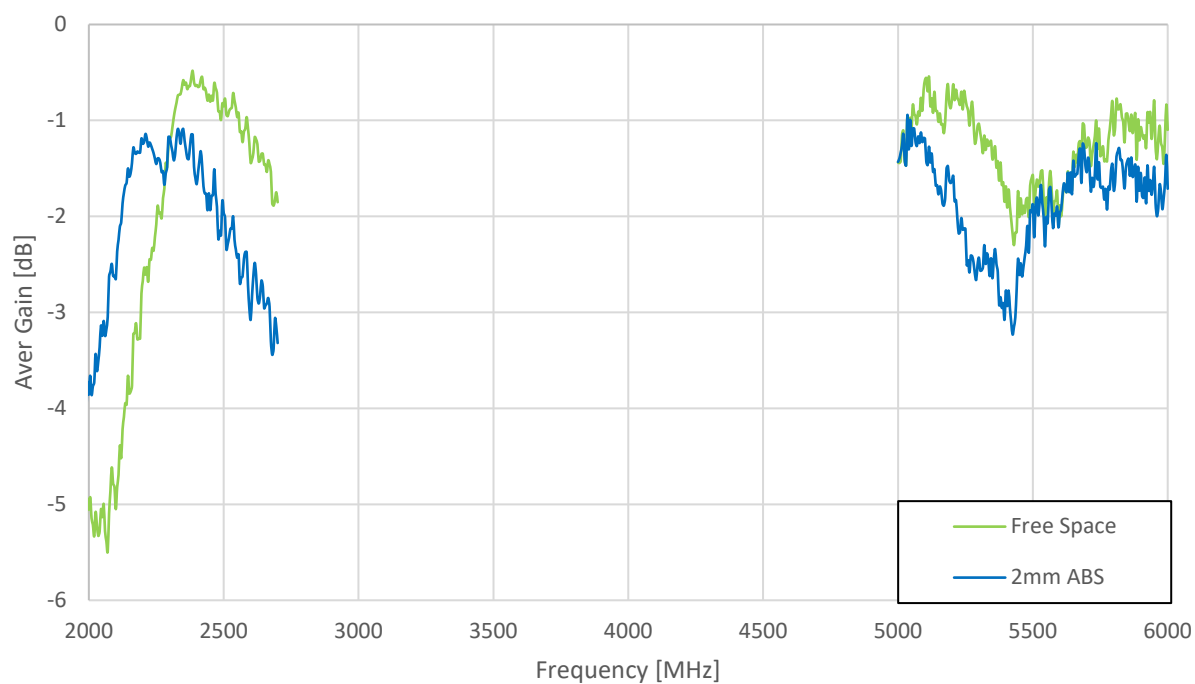
3.3 Efficiency



3.4 Peak Gain

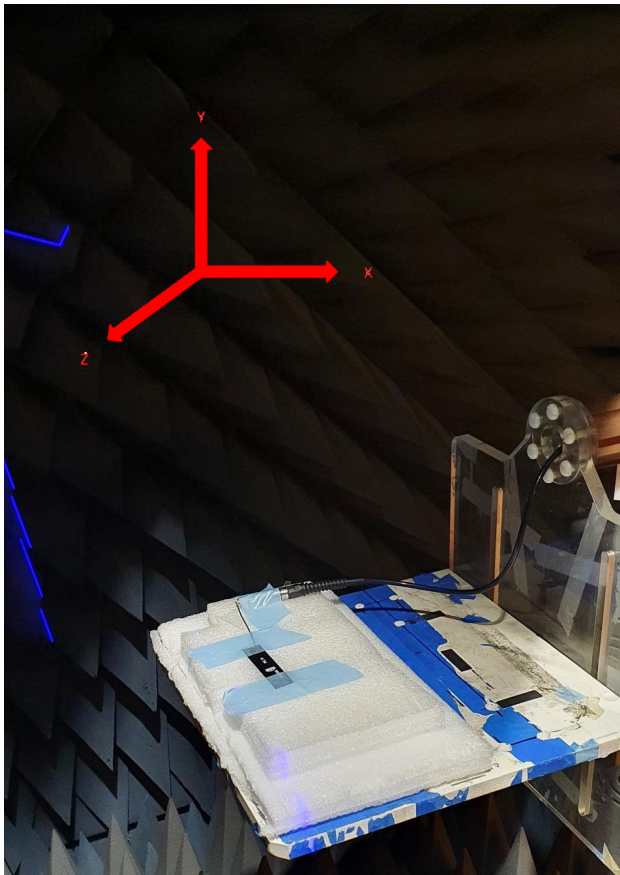


3.5 Average Gain

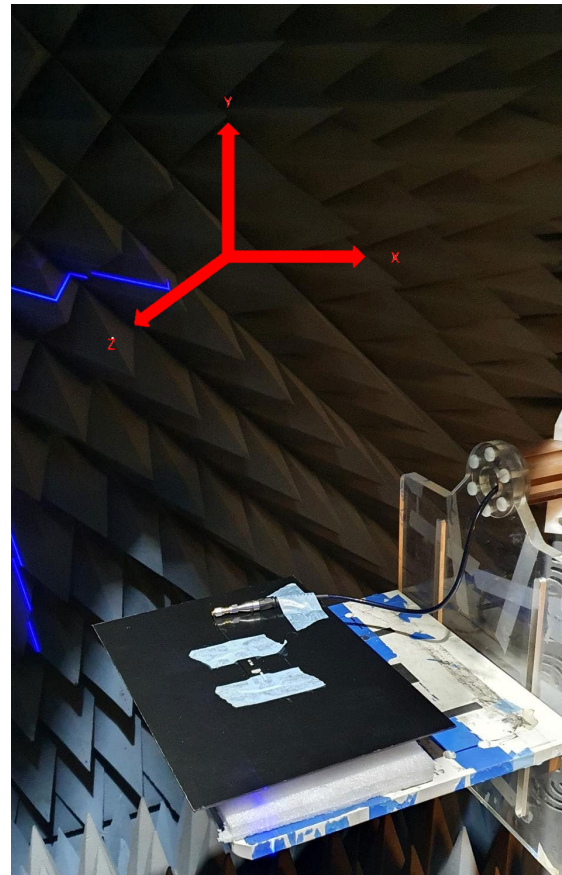


4. Radiation Patterns

4.1 Test Setup



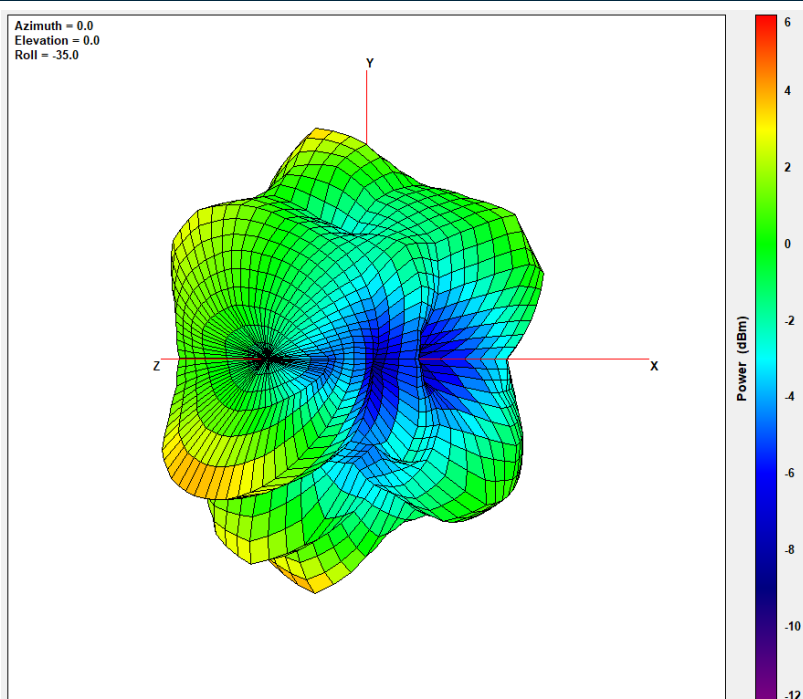
Freespace



2mm ABS

4.2 2D & 3D Radiation Patterns (Freespace)

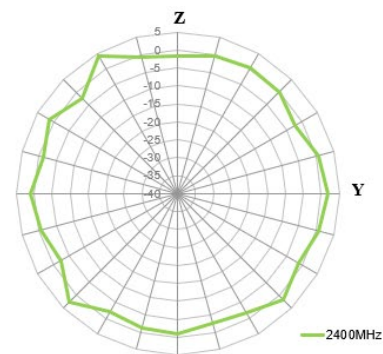
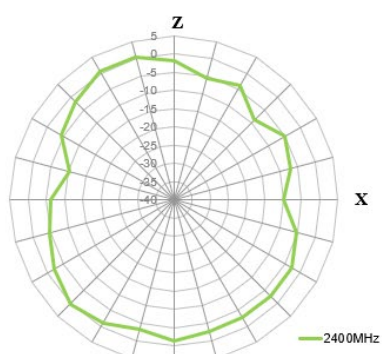
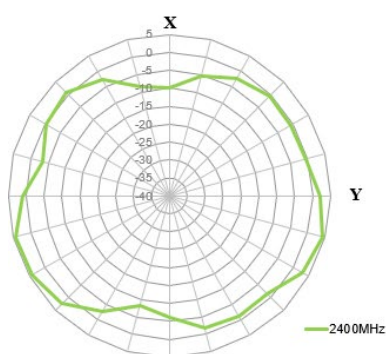
2400MHz



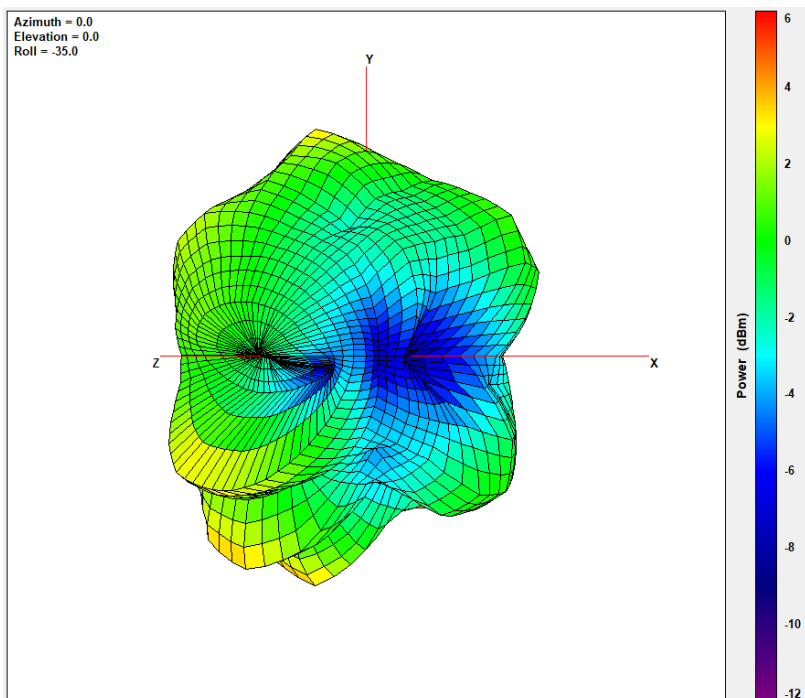
XY Plane

XZ Plane

YZ Plane



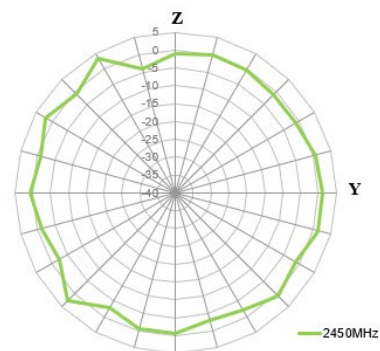
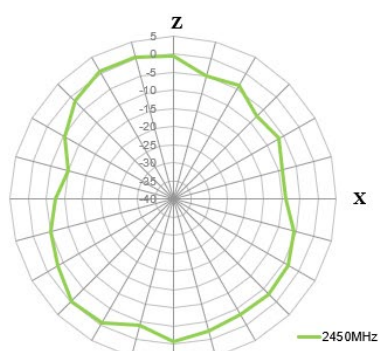
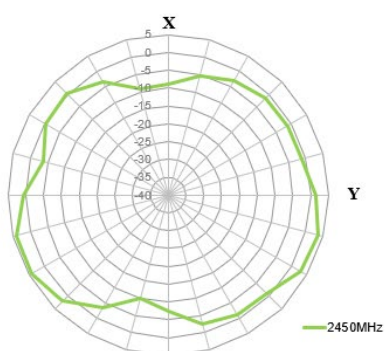
2450MHz



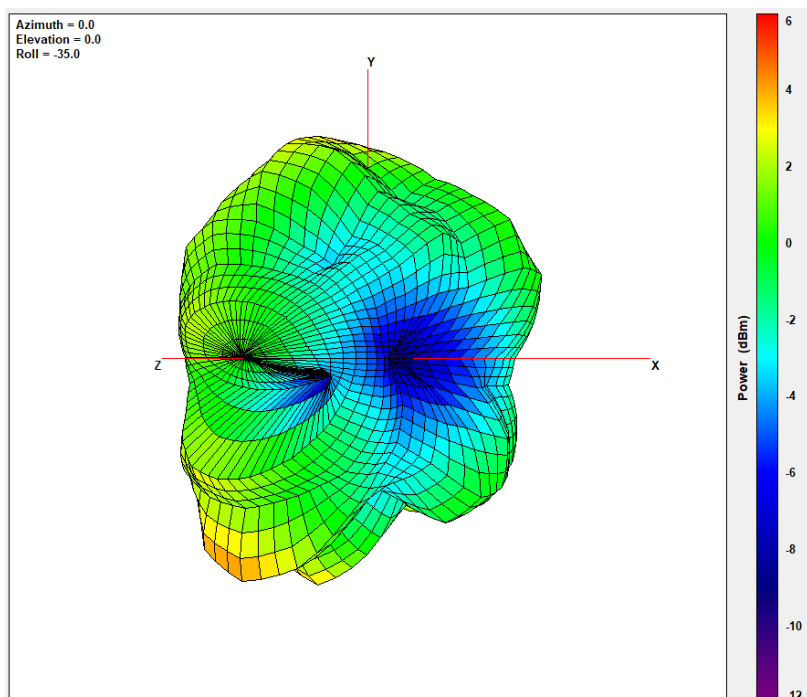
XY Plane

XZ Plane

YZ Plane



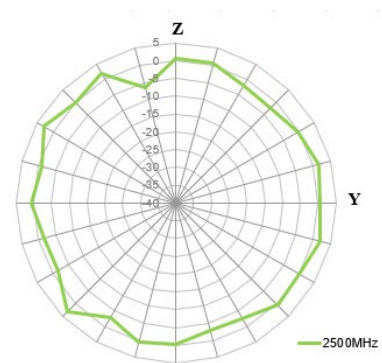
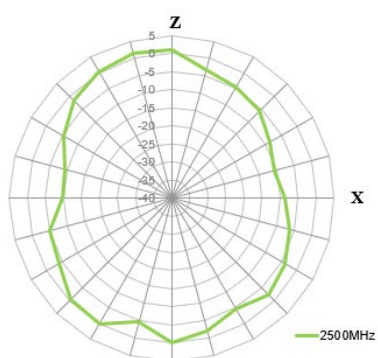
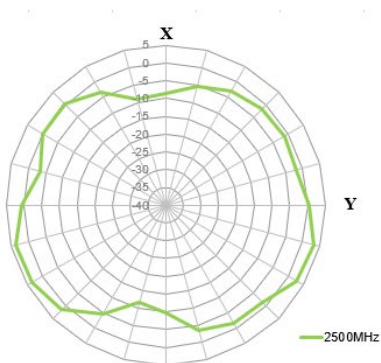
2500MHz



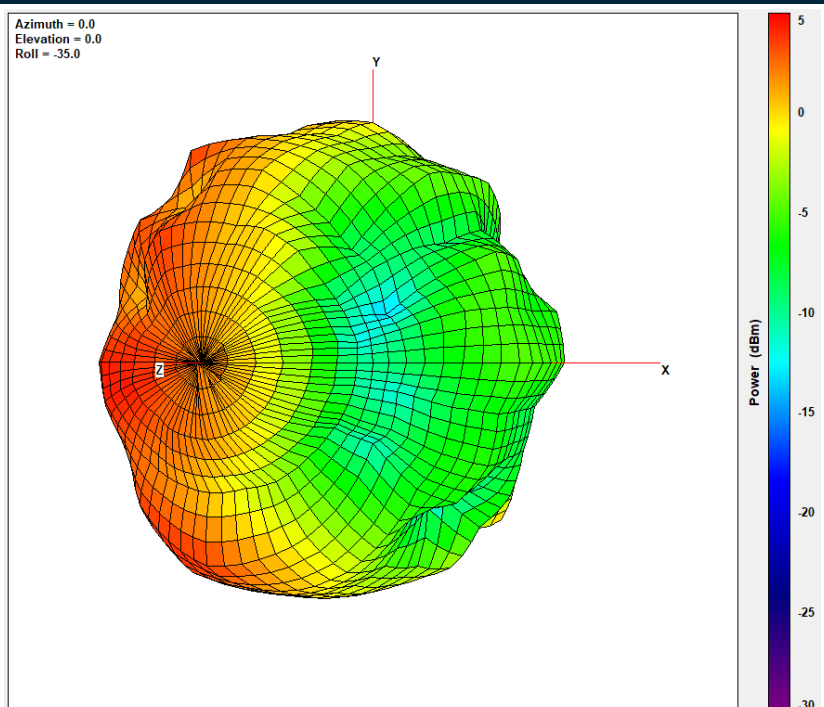
XY Plane

XZ Plane

YZ Plane



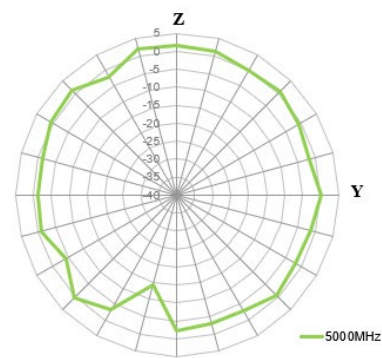
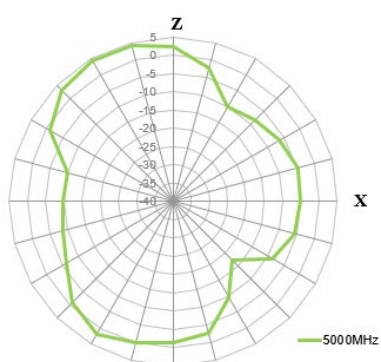
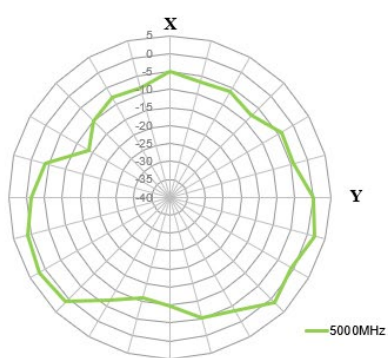
5000MHz



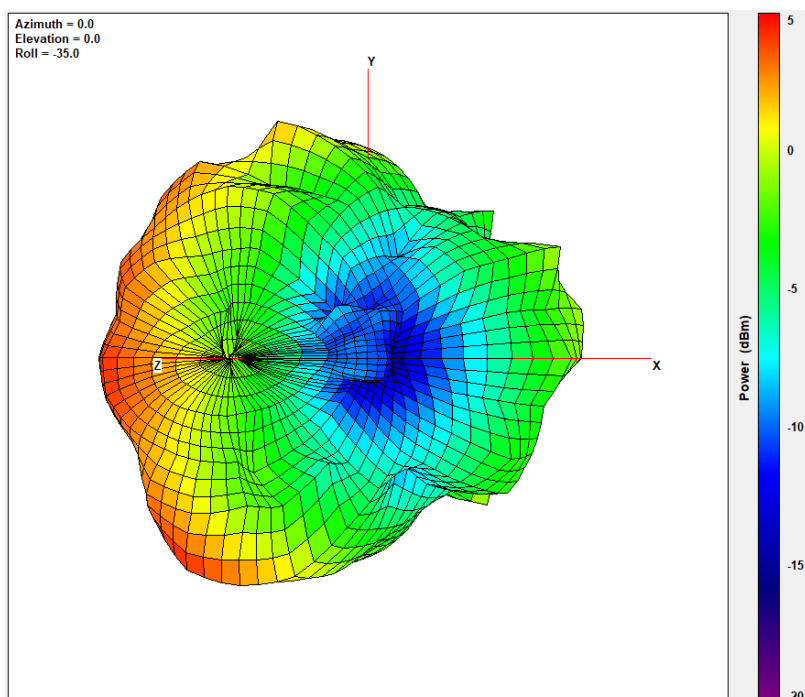
XY Plane

XZ Plane

YZ Plane



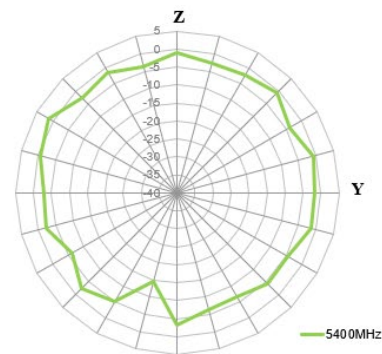
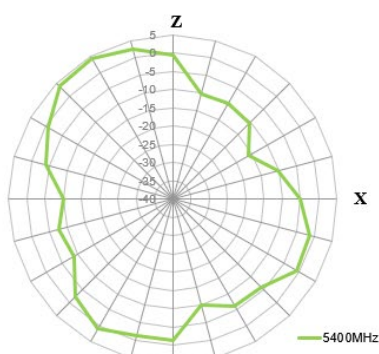
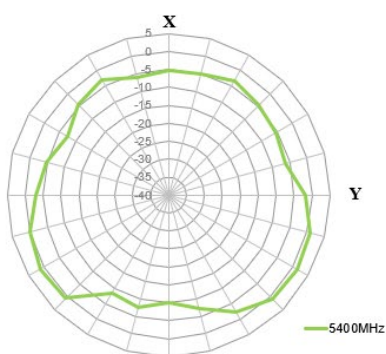
5400MHz



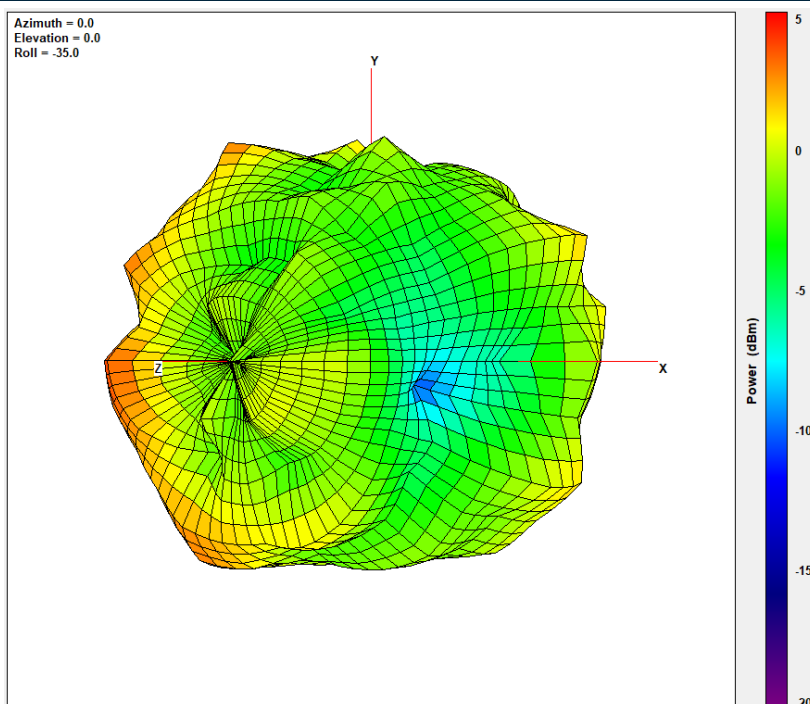
XY Plane

XZ Plane

YZ Plane



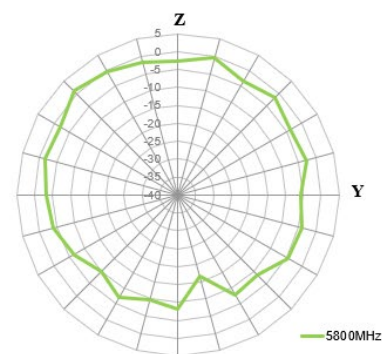
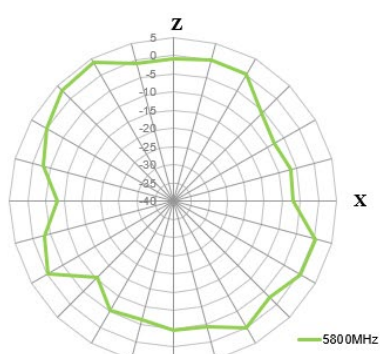
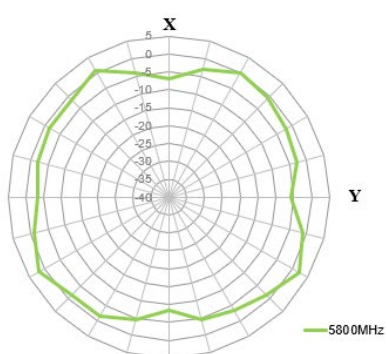
5800MHz



XY Plane

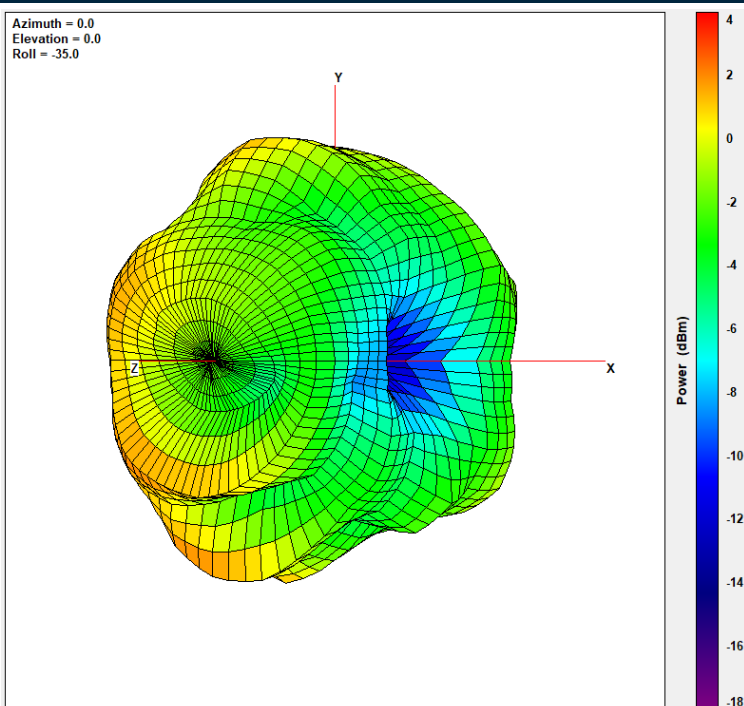
XZ Plane

YZ Plane



4.3 2D & 3D Radiation Patterns (2mm ABS)

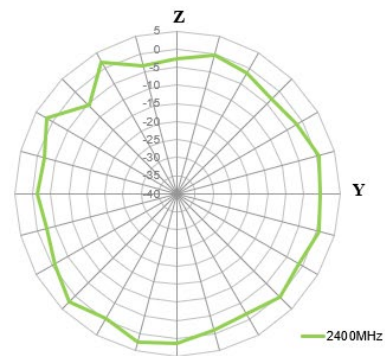
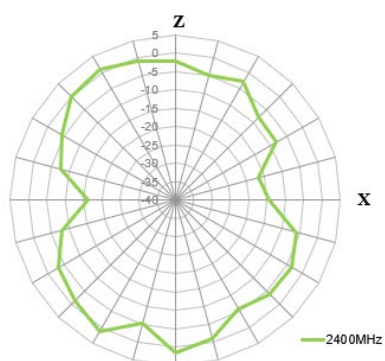
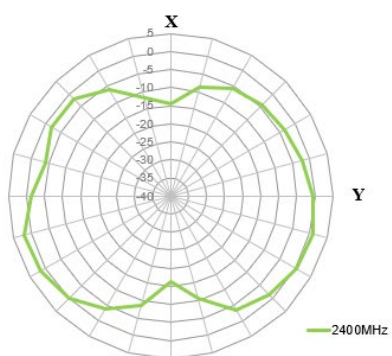
2400MHz



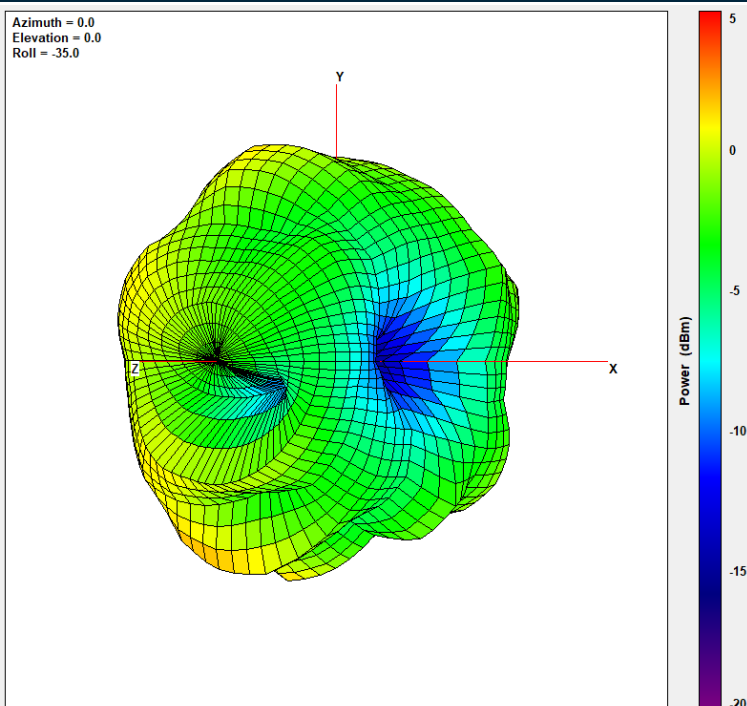
XY Plane

XZ Plane

YZ Plane



2450MHz



XY Plane

XZ Plane

YZ Plane

