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

Ireland & USA
ISO 9001:2015
Certified

Taiwan
ISO 9001:2015
Certified

IATF16949

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.

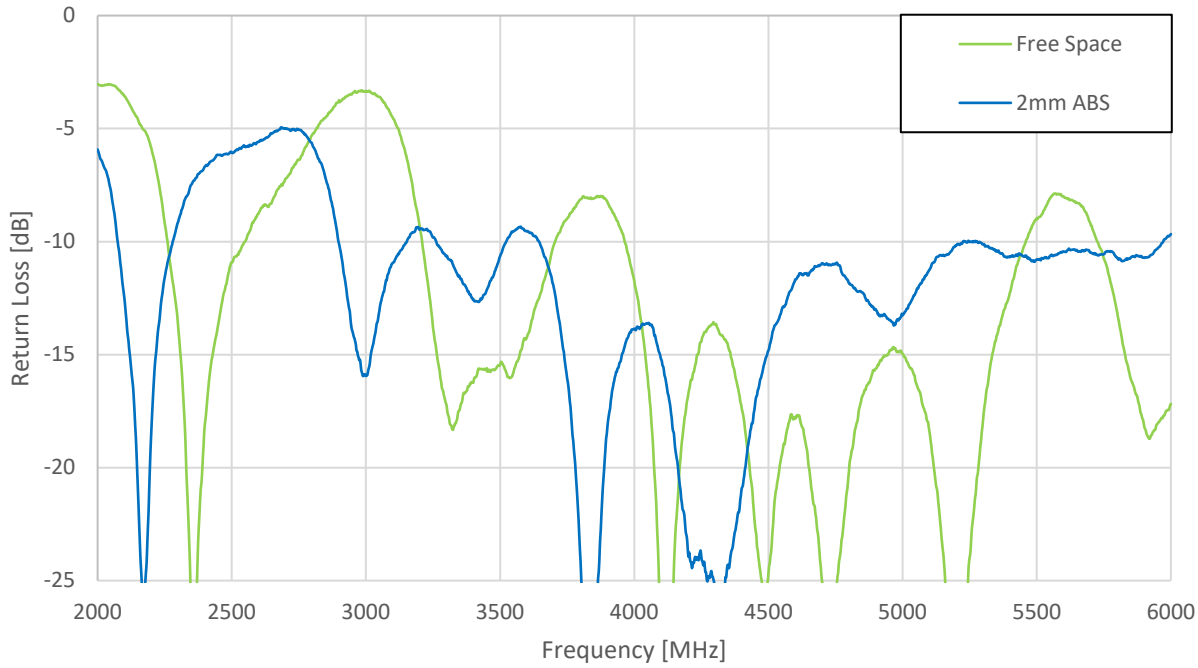
Cable and Connectors are customizable.

2. Specifications

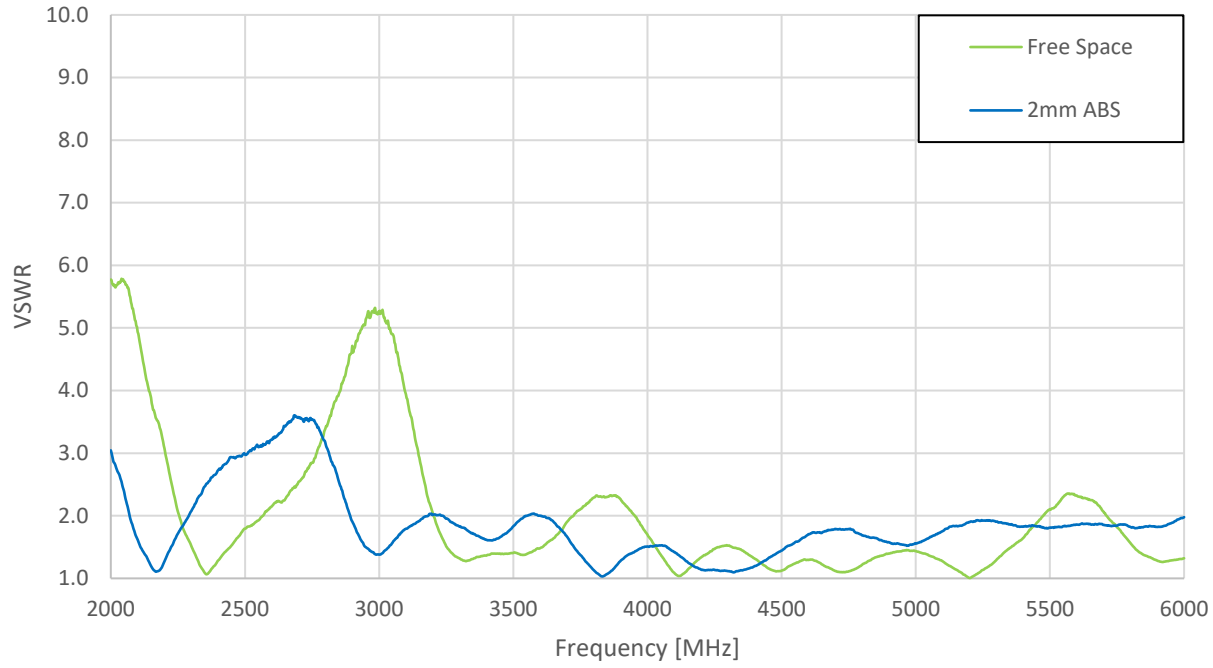
Electrical								
Frequency	**Setup**	**Efficiency (%)**	**Average Gain (dB)**	**Peak Gain (dBi)**	**Impedance**	**Polarization**	**Radiation Pattern**	**Max. input power**
2400~2500	Freespace	84	-0.7	4.7	50Ω	Linear	Omni	2W Max
	2mm ABS	66	-1.8	6.5				
5150~5850	Freespace	73	-1.4	6.5				
	2mm ABS	63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

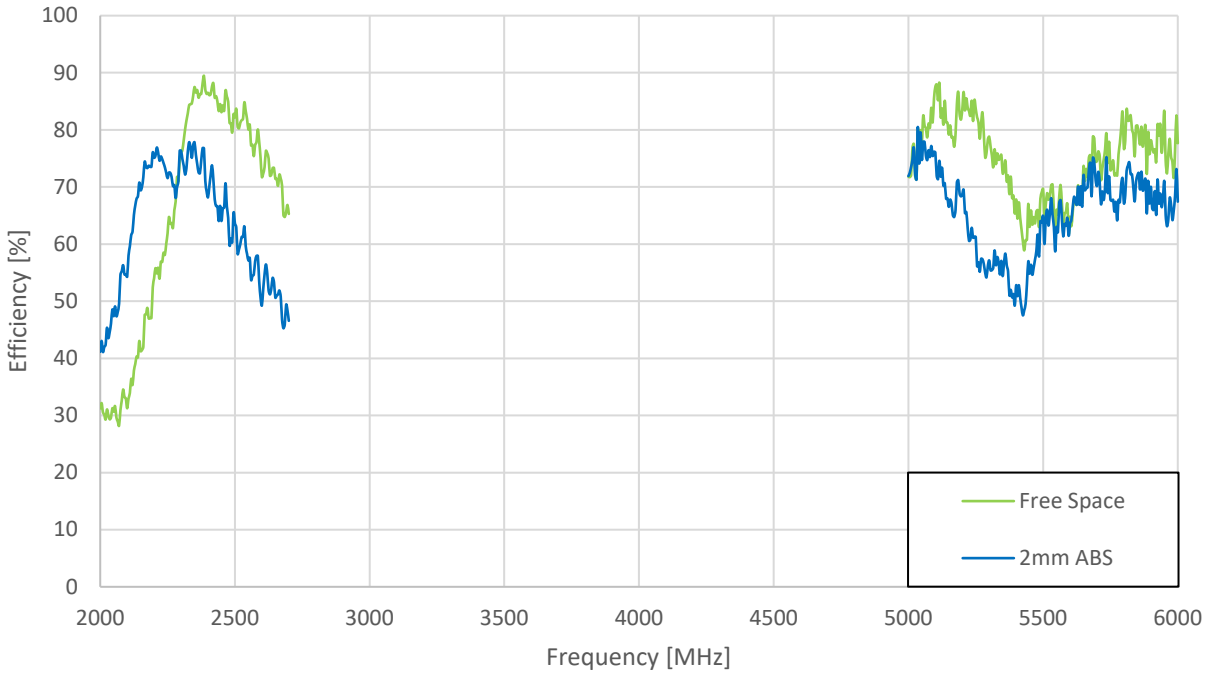
3.1 Return Loss



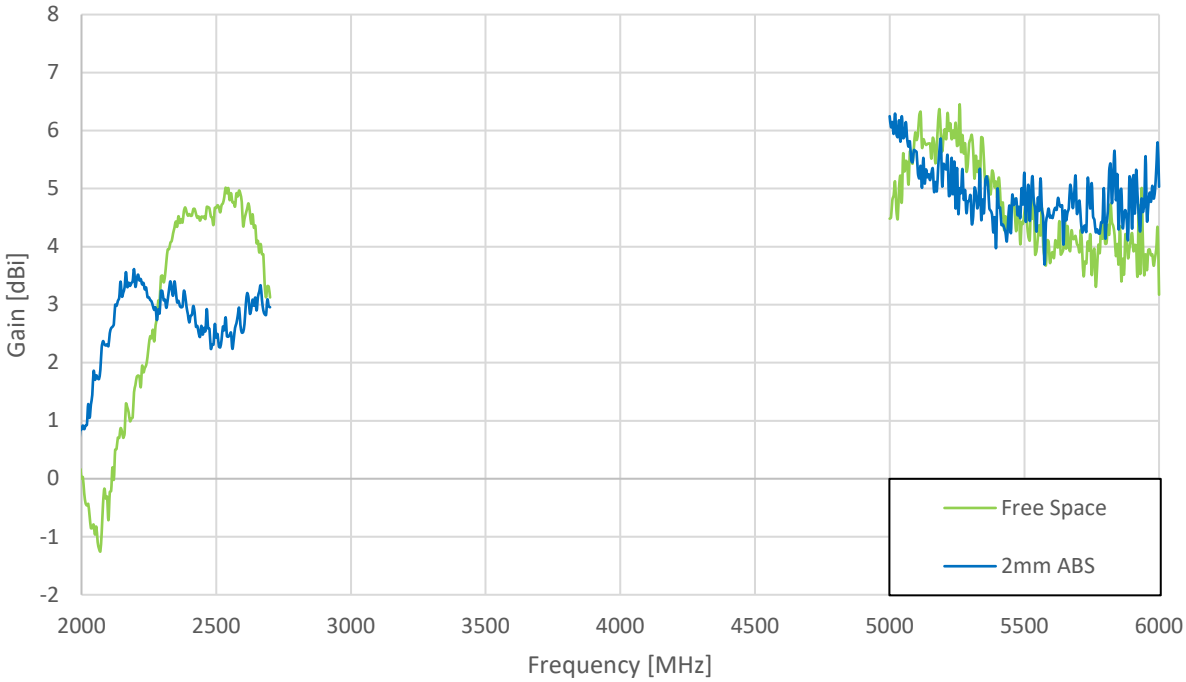
3.2 VSWR



3.3 Efficiency



3.4 Peak Gain



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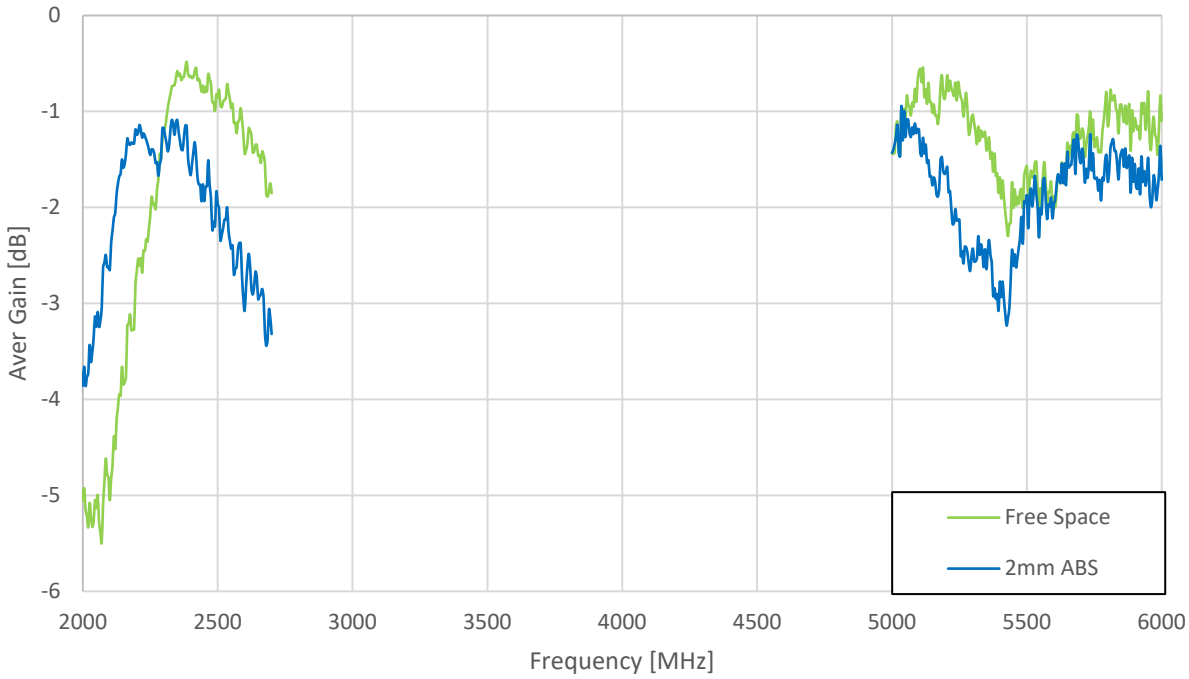
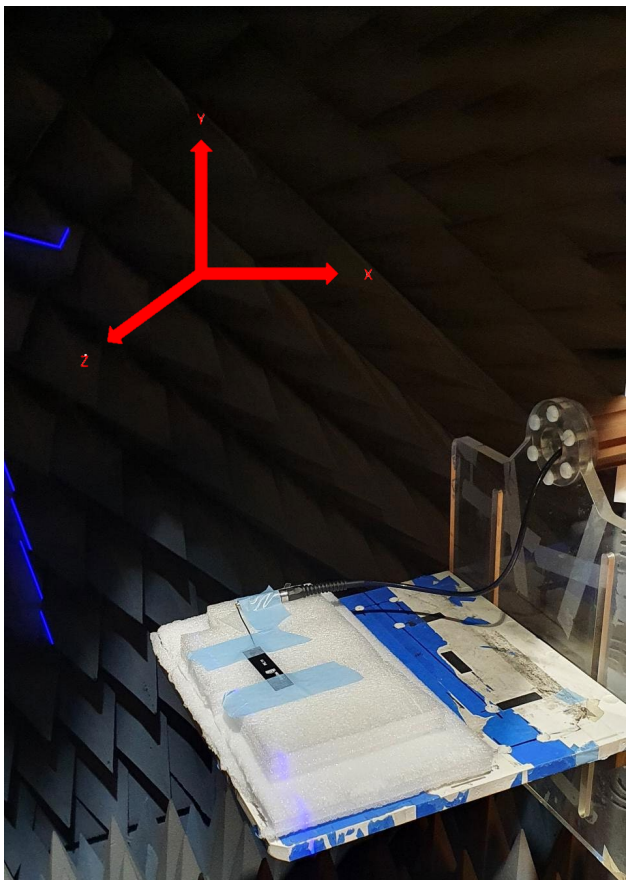
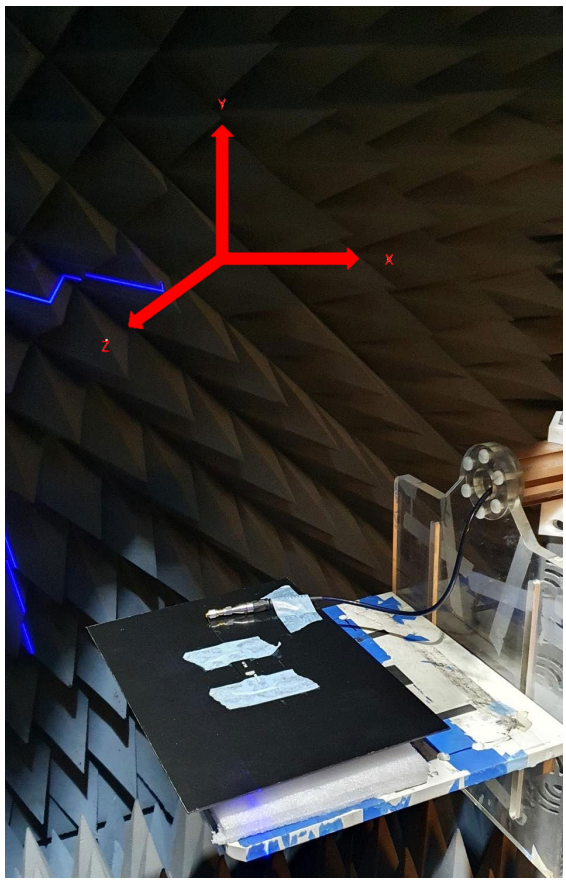


4. Radiation Patterns

4.1 Test Setup



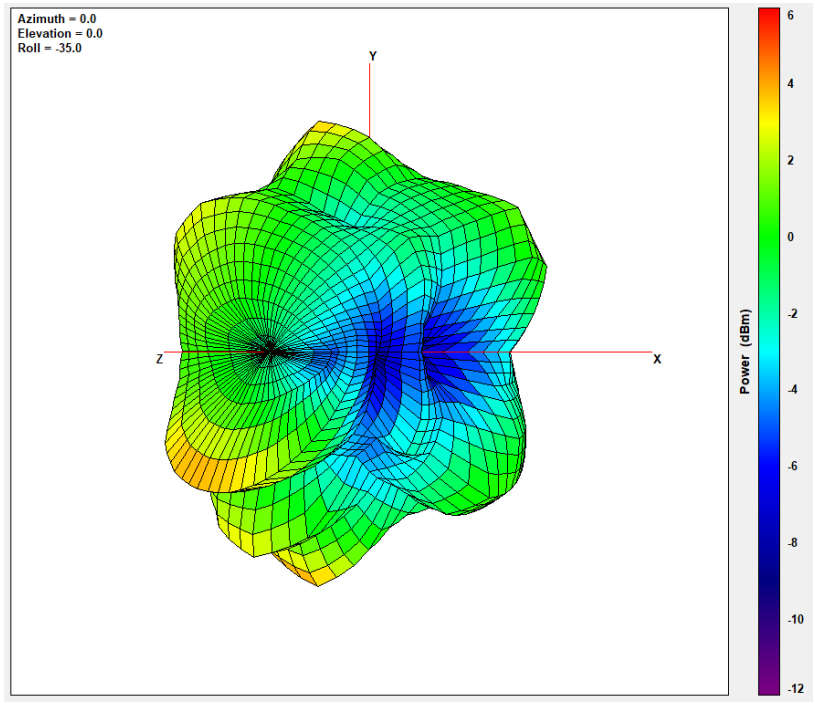
Freespace



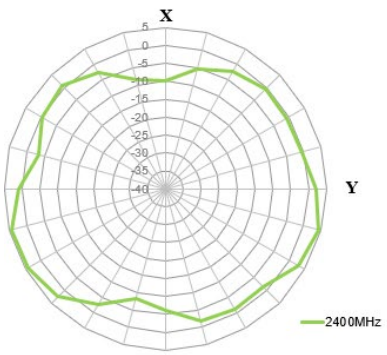
2mm ABS

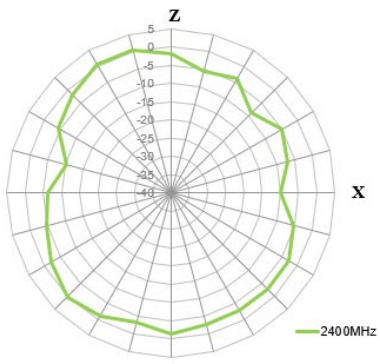
4.2 2D & 3D Radiation Patterns (Freespace)

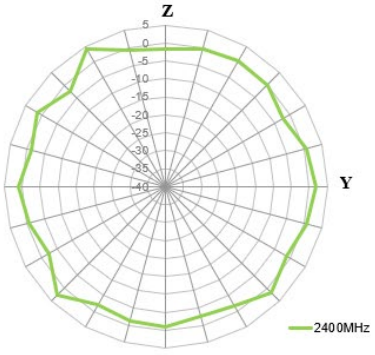
2400MHz



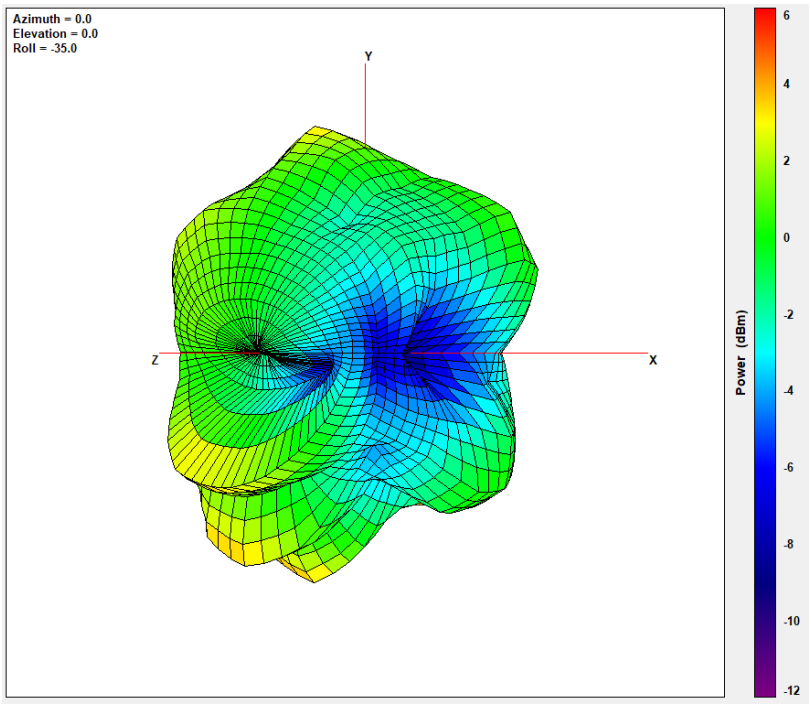
XY Plane	XZ Plane	YZ Plane



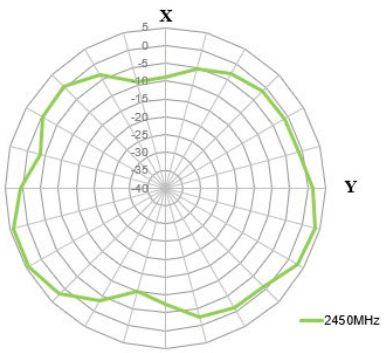


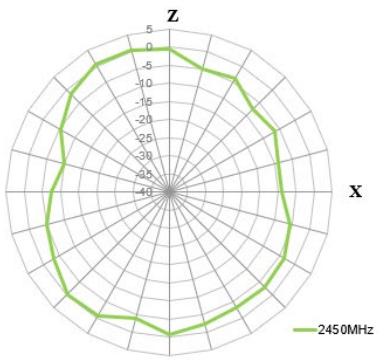


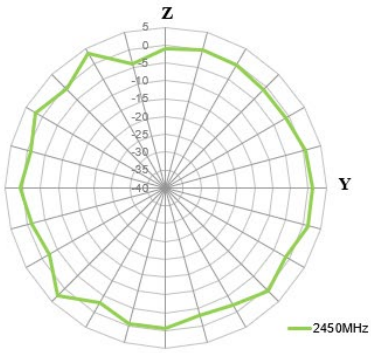
2450MHz



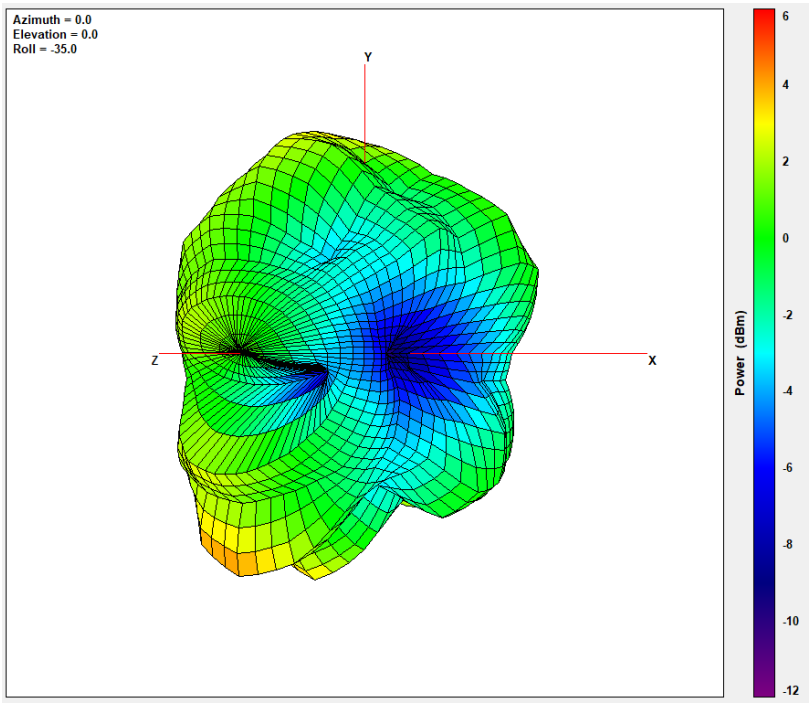
XY Plane	XZ Plane	YZ Plane



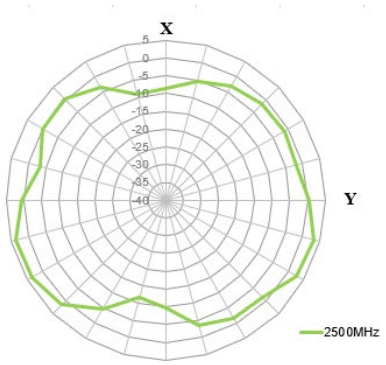


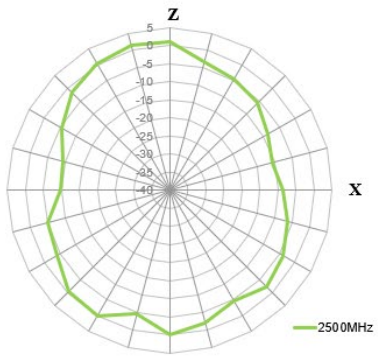


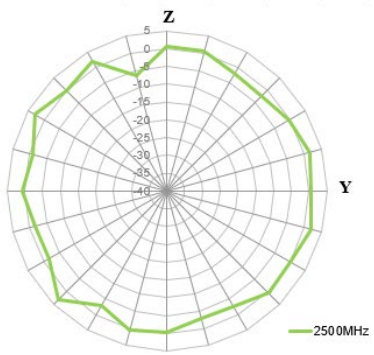
2500MHz



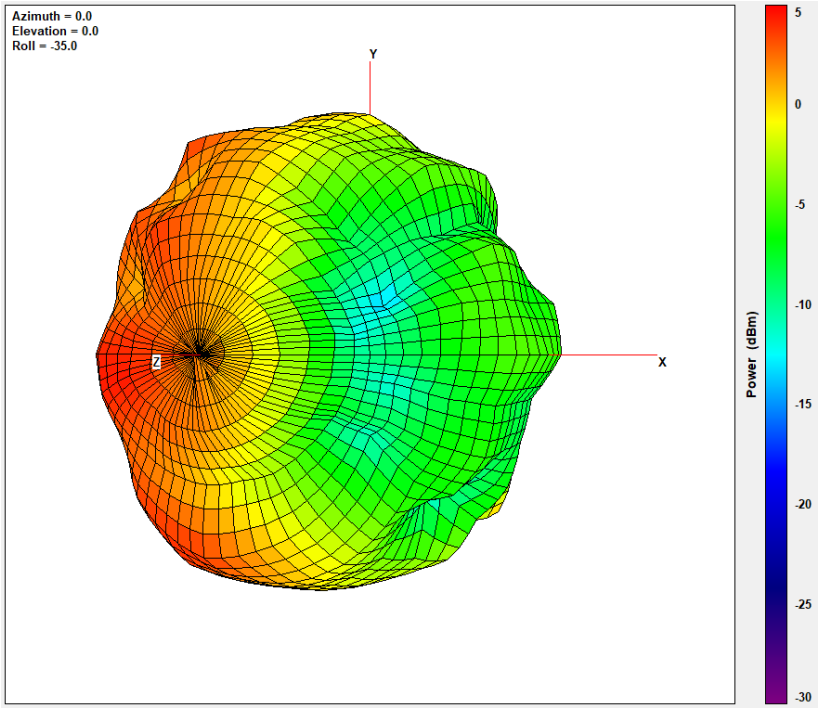
XY Plane	XZ Plane	YZ Plane



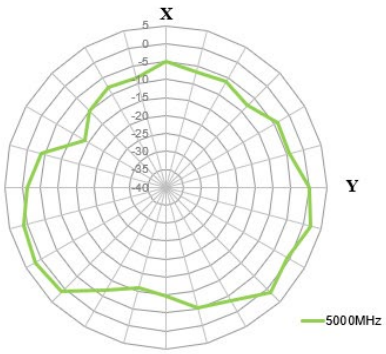


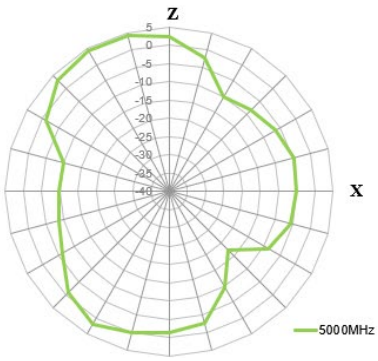


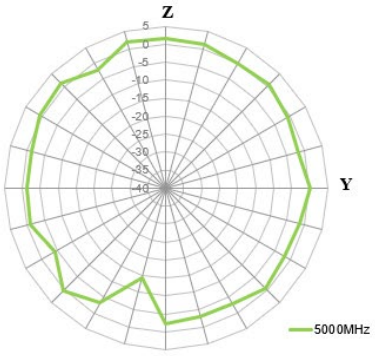
5000MHz



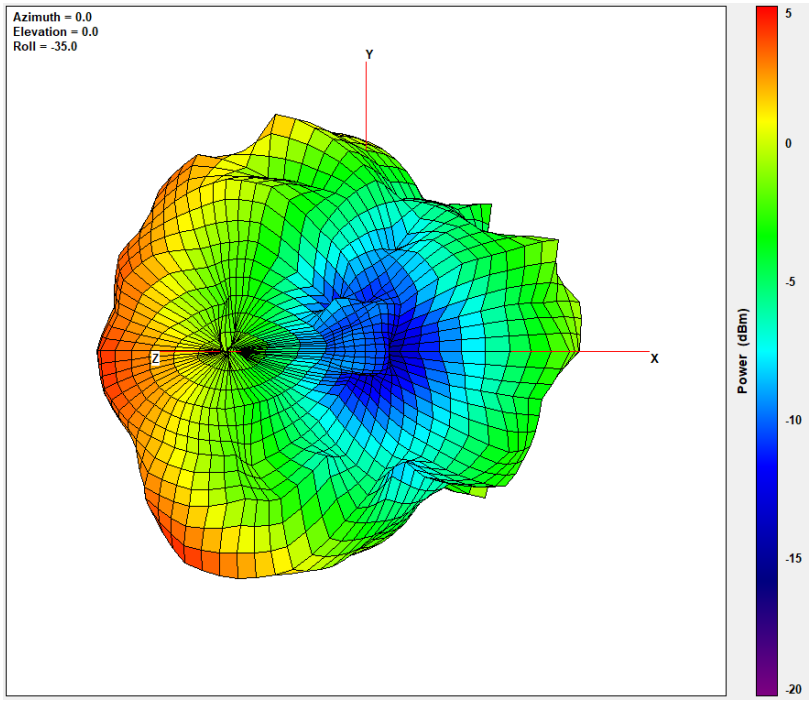
XY Plane	XZ Plane	YZ Plane



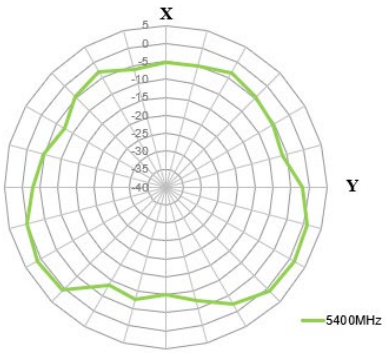


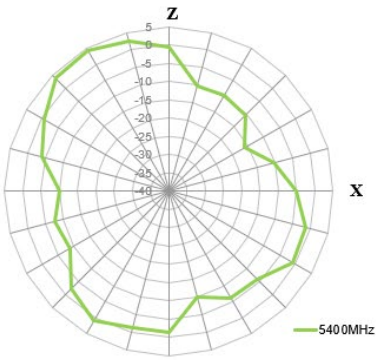


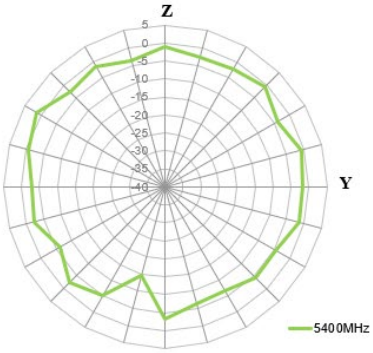
5400MHz



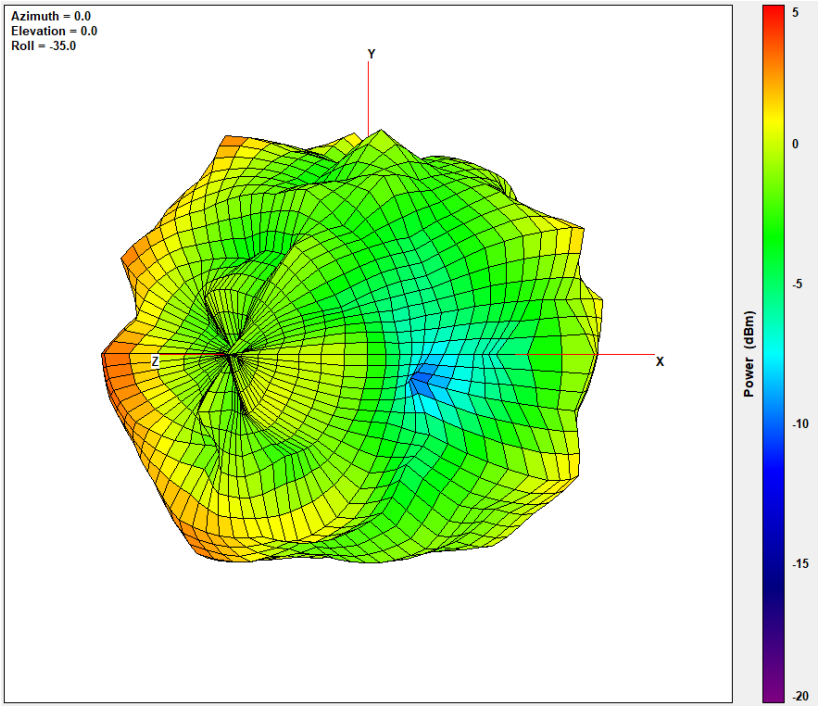
XY Plane	XZ Plane	YZ Plane



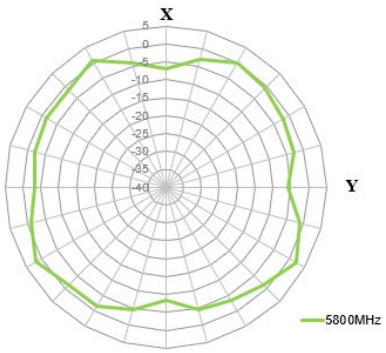


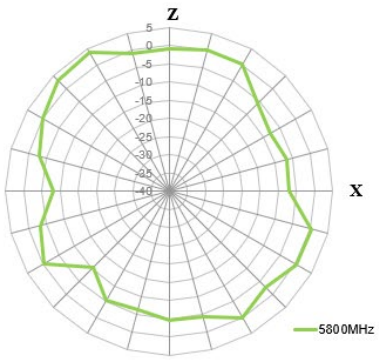


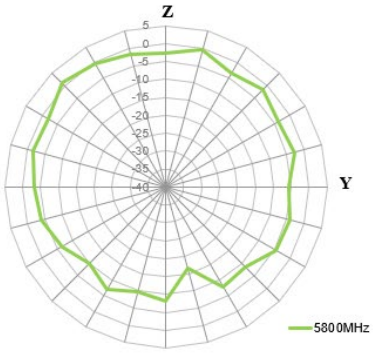
5800MHz



XY Plane	XZ Plane	YZ Plane

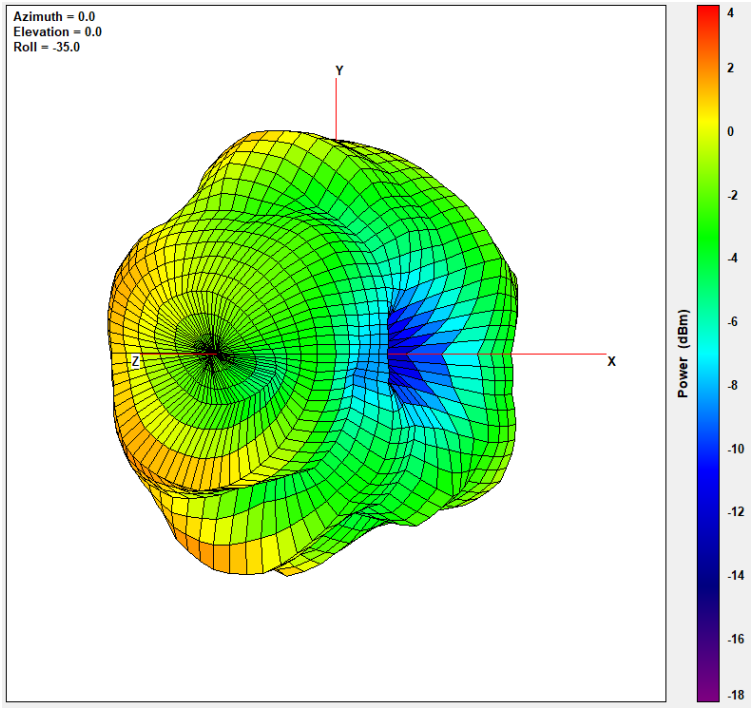




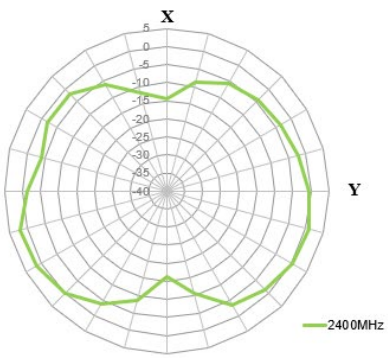


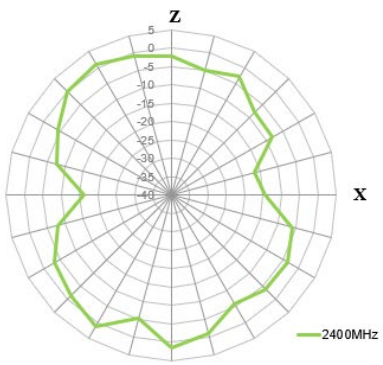
4.3 2D & 3D Radiation Patterns (2mm ABS)

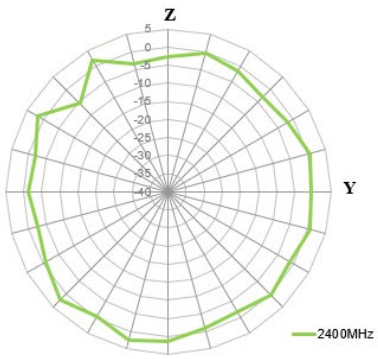
2400MHz



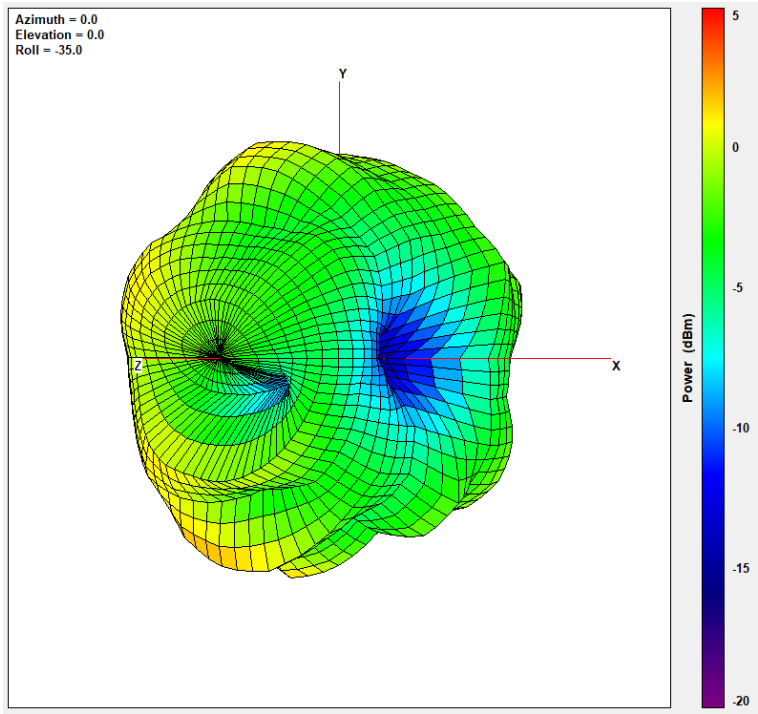
XY Plane	XZ Plane	YZ Plane



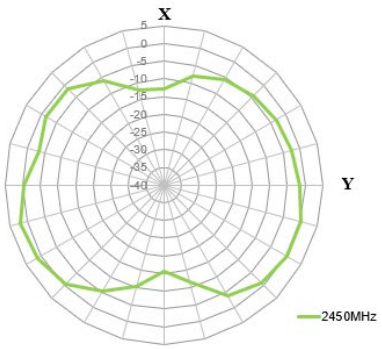


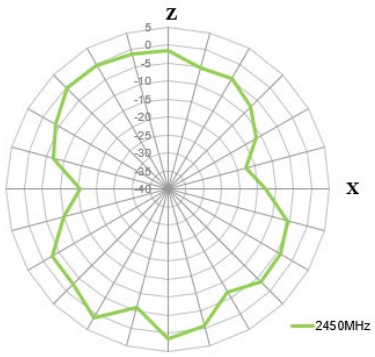


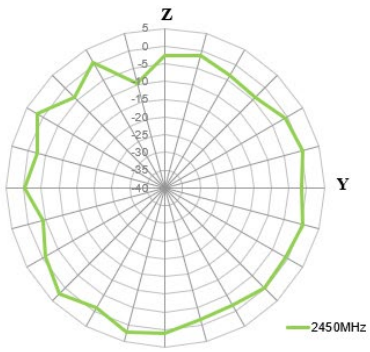
2450MHz



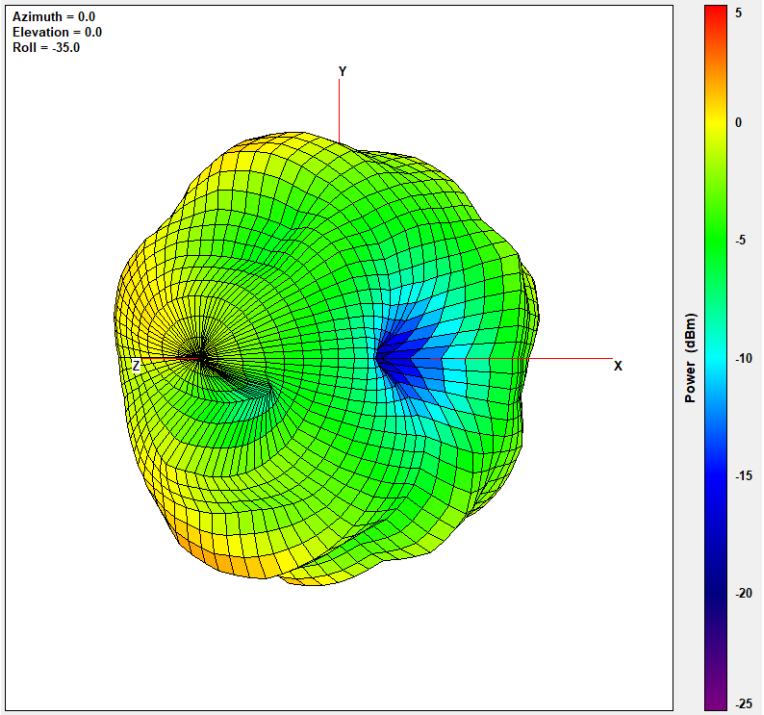
XY Plane	XZ Plane	YZ Plane



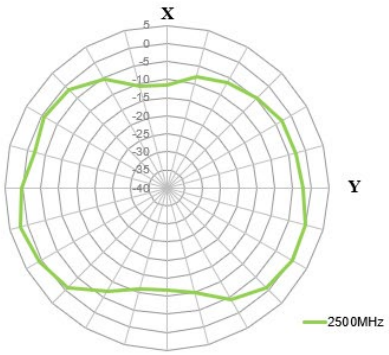


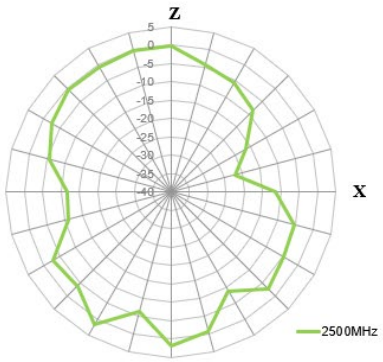


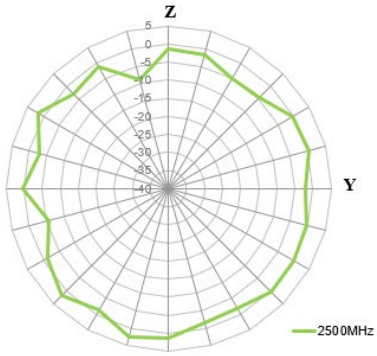
2500MHz



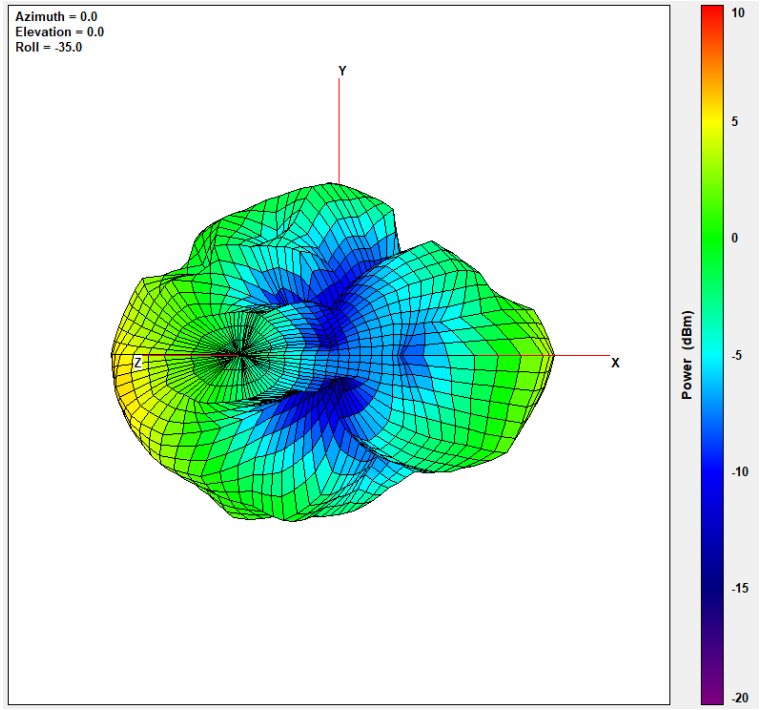
XY Plane	XZ Plane	YZ Plane



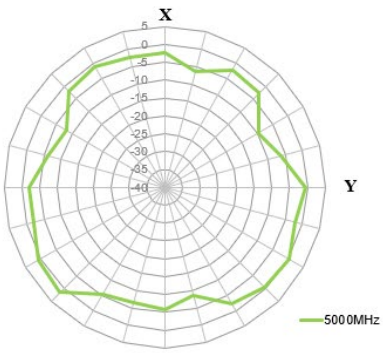


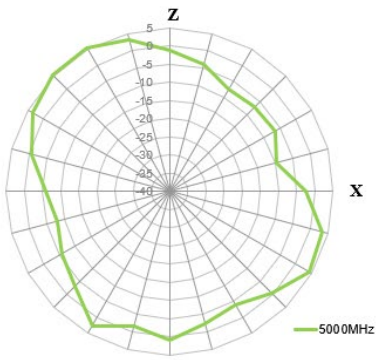


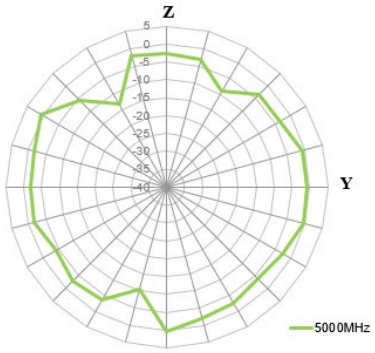
5000MHz



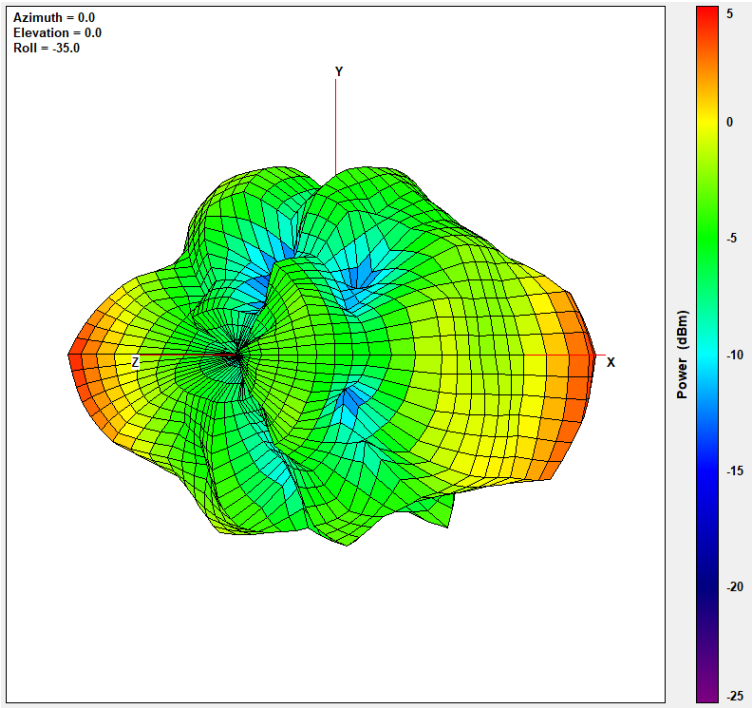
XY Plane	XZ Plane	YZ Plane



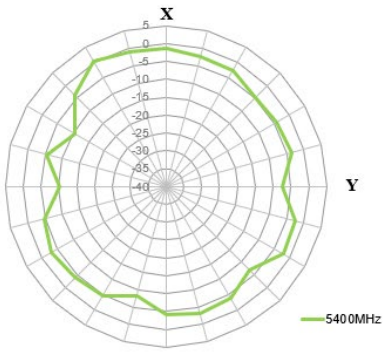


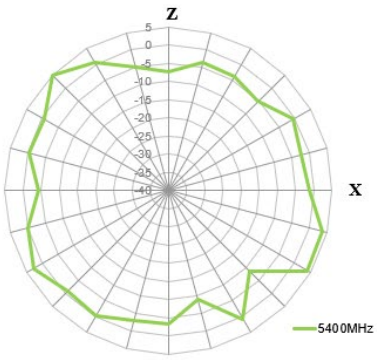


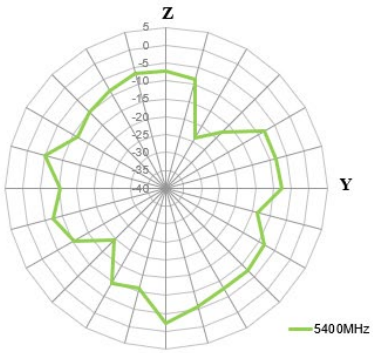
5400MHz



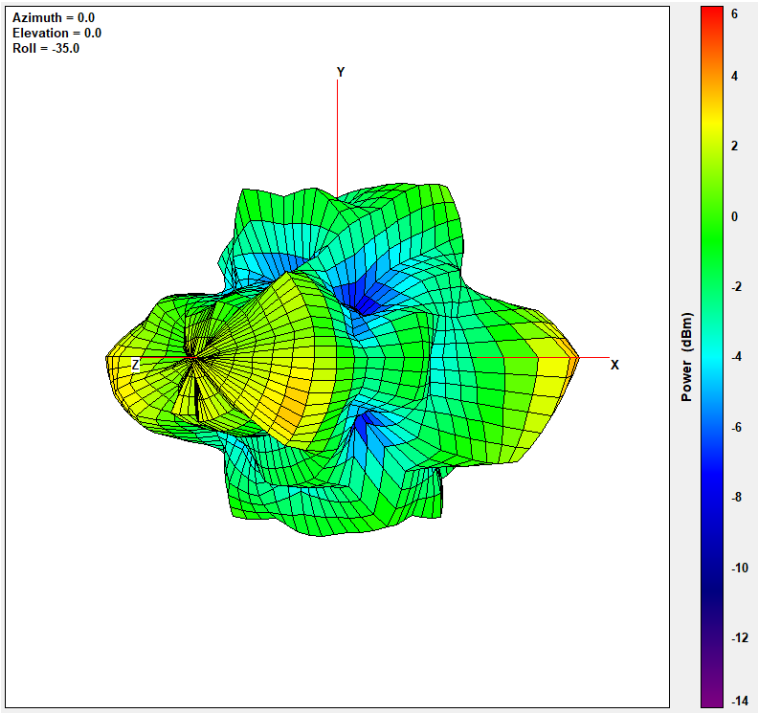
XY Plane	XZ Plane	YZ Plane



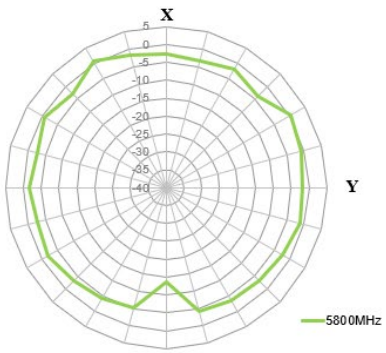


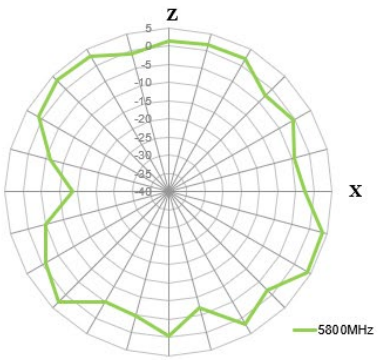


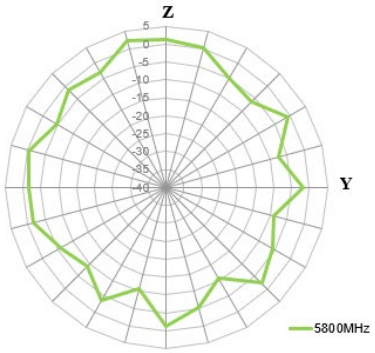
5800MHz



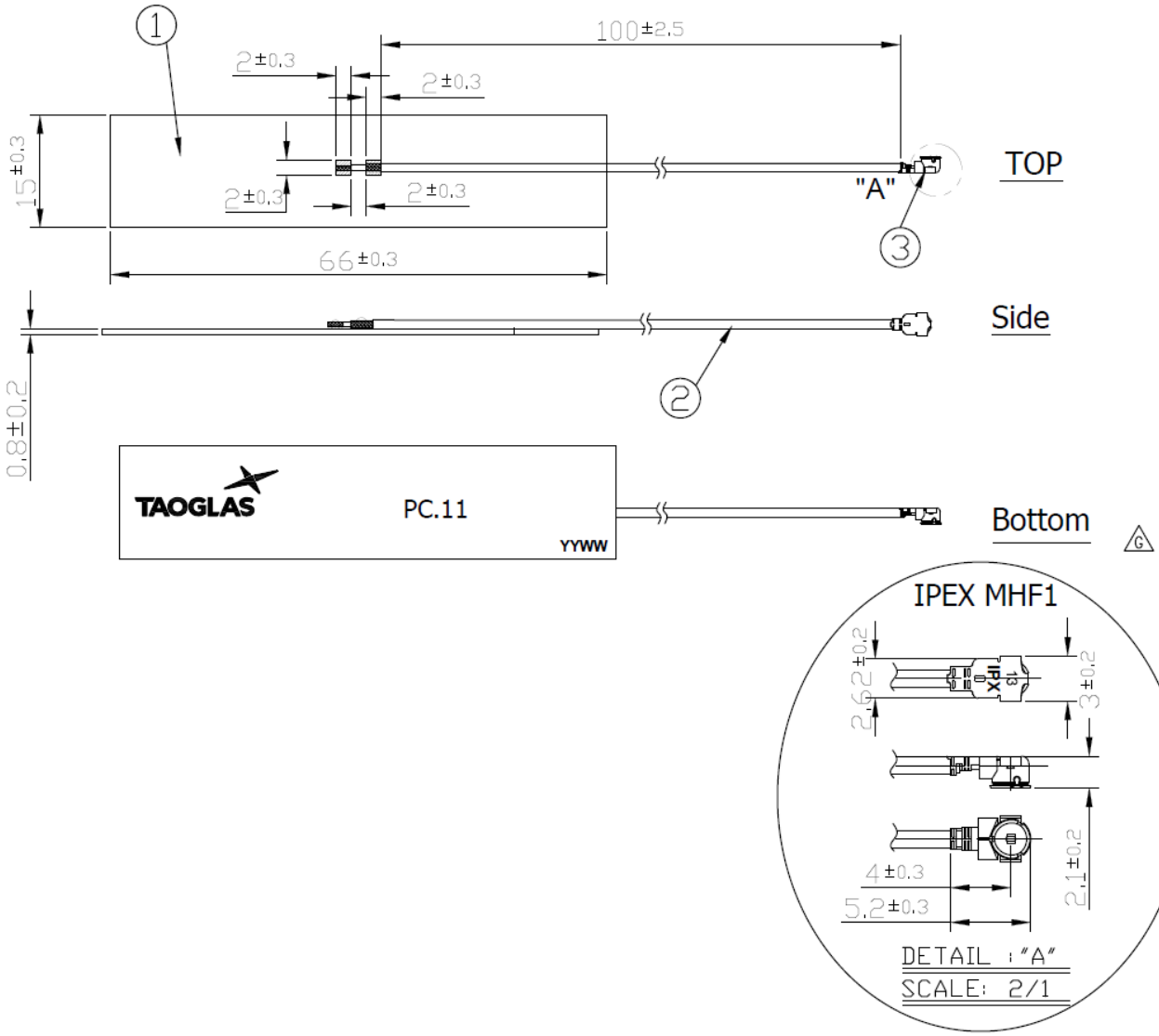
XY Plane	XZ Plane	YZ Plane







5. Mechanical Drawing (Units: mm)



NOTES:
1.No dregs or insufficient soldering. Solder thickness 0.3 ~1.7mm
2.The solder must be smooth and full to the edges of the pad.
The solder must not extend outside of the pad area.
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.

	Name	P/N	Material	Finish	QTY
1	PC11 PCB	100211C010011A	FR4.08t	Black	1
2	1.13 Coaxial Cable	300213A000013A	FEP	Black	1
3	IPEX MHF1	204113G000013A	Brass	Gold	1

Changelog for the datasheet

SPE-11-8-055 – PC11.07.0100A

Revision: E (Current Version)	
Date:	2022-09-26
Changes:	Full datasheet update.
Changes Made by:	Gary West

Previous Revisions

Revision: D	
Date:	2015-03-04
Changes:	Added note to gain.
Changes Made by:	Aine Doyle

Revision: C	
Date:	2013-02-06
Changes:	
Changes Made by:	Technical Writer

Revision: B	
Date:	2011-07-27
Changes:	
Changes Made by:	Technical Writer

Revision: A (Original First Release)	
Date:	2011-07-11
Notes:	
Author:	Technical Writer

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