



TAOGLAS®



Datasheet

Part No:
FXP050.07.0100C

Description

GNSS/Wi-Fi Flex PCB Antenna 100mm 1.37 cable IPEX MHFI
With Wi-Fi 6 frequency bands included

Features:

Covers Extended Wi-Fi Frequencies of 2.4-2.5GHz, 5-7.125GHz
GNSS frequencies of 1.56-1.61GHz,
Flex PCB Antenna
Dimensions: 53*18*0.2mm
Cables: 100mm of Ø1.37mm
Connectors: I-PEX MHF® I (U.FL Compatible)
RoHS & Reach Compliant

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ISO 9001: 2015
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Taiwan
ISO 9001: 2015
Certified



1. Introduction



The FXP050 is an embedded GNSS and Wi-Fi flexible PCB antenna designed to be widely used with modern Wi-Fi networks, including all Wi-Fi 2.4/5.8/7.125GHz and GNSS frequencies on the L1 Bands from 1560-1610MHz.

Typical Applications Include:

- Asset Tracking Systems
- Smart Home Devices
- Telemedicine devices
- Gaming devices
- Navigation Devices

By integrating both Wi-Fi and GNSS functionality into a single compact and flexible PCB easy to install design, the FXP050 offers an efficient and space-saving solution. It provides manufacturers and designers with the flexibility to incorporate advanced wireless connectivity and precise positioning capabilities into their product.

The FXP050 has excellent efficiency and isolation performance for Wi-Fi and GNSS applications. With a thickness of only 0.24mm, the FXP050 is an ideal solution for maintaining high performance with over 50% efficiency across all Wi-Fi bands and GNSS L1 bands, while fitting into narrow spaces such as plastic enclosures for routers, gateways, set-top boxes, and other Wi-Fi and GNSS applications.

With its versatility and compatibility with a wide range of Wi-Fi networks, including the latest standards, as well as its support for GNSS frequencies, the FXP050 is an ideal choice for various wireless applications, from smart home devices and IoT devices to industrial equipment and navigation systems.

For further optimization to customer-specific device environments and for support to integrate and test this antennas performance in your device, contact your regional Taoglas Customer Services Team.

2. Specification

GNSS & Wi-Fi Electrical								
Band	Frequency (MHz)	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
L1 [1575.42 MHz]	1565-1586	75.6	-1.22	2.14	50 Ω	Linear	Omni	2W
G1/L1OC [1600.995 MHz]	1596-1610	66.8	-1.75	1.65				
B1I [1561 MHz]	1559-1565	75.7	-1.21	2.11				
WiFi - 2GHz	2400-2500	83.3	-0.79	3.62				
WiFi - 5GHz	5150-5850	74.3	-1.29	5.80				
WiFi - 6GHz	5925-7125	70.4	-1.52	6.57				

Mechanical	
Dimensions	53*18*0.24mm
Material	Polymer
Connector	IPEX
Cable	1.37mm Coaxial Cable

Environmental	
Operation Temperature	-40°C to +85°C
RoHS & REACH Compliant	Yes

3. Antenna Characteristics

3.1 Test Setup

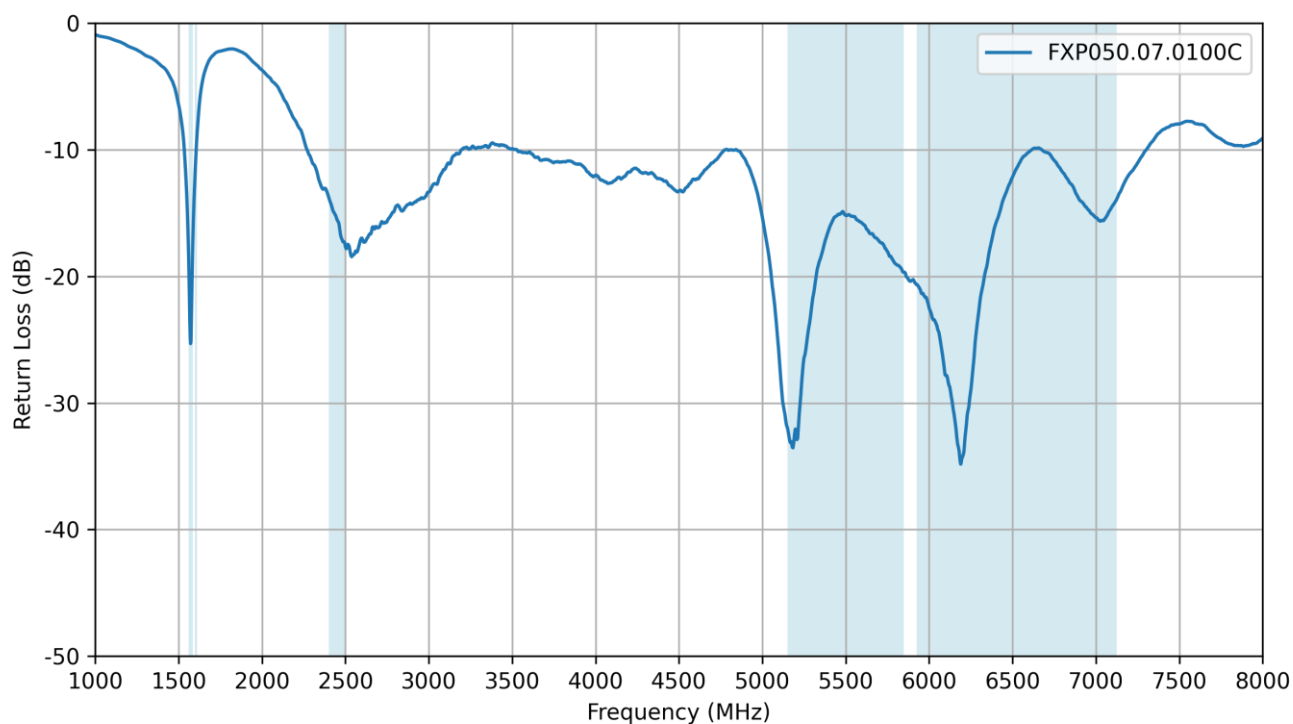
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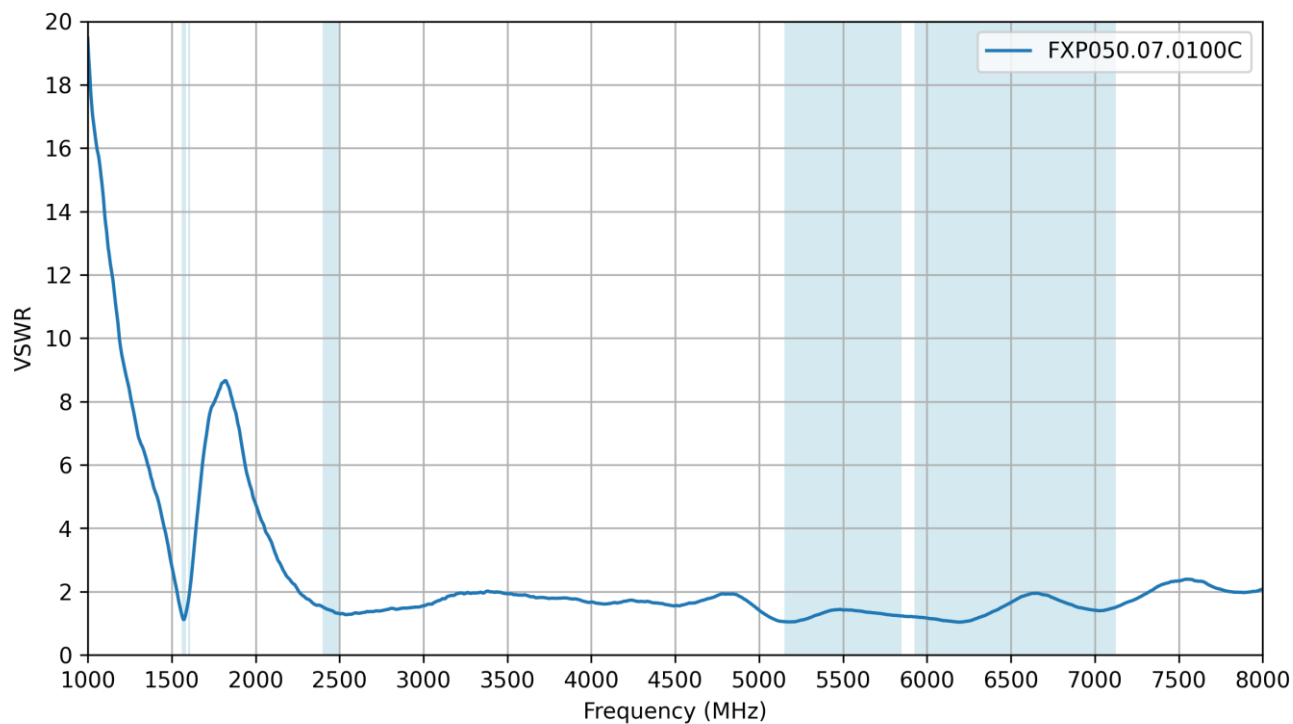
Vector Network Analyzer



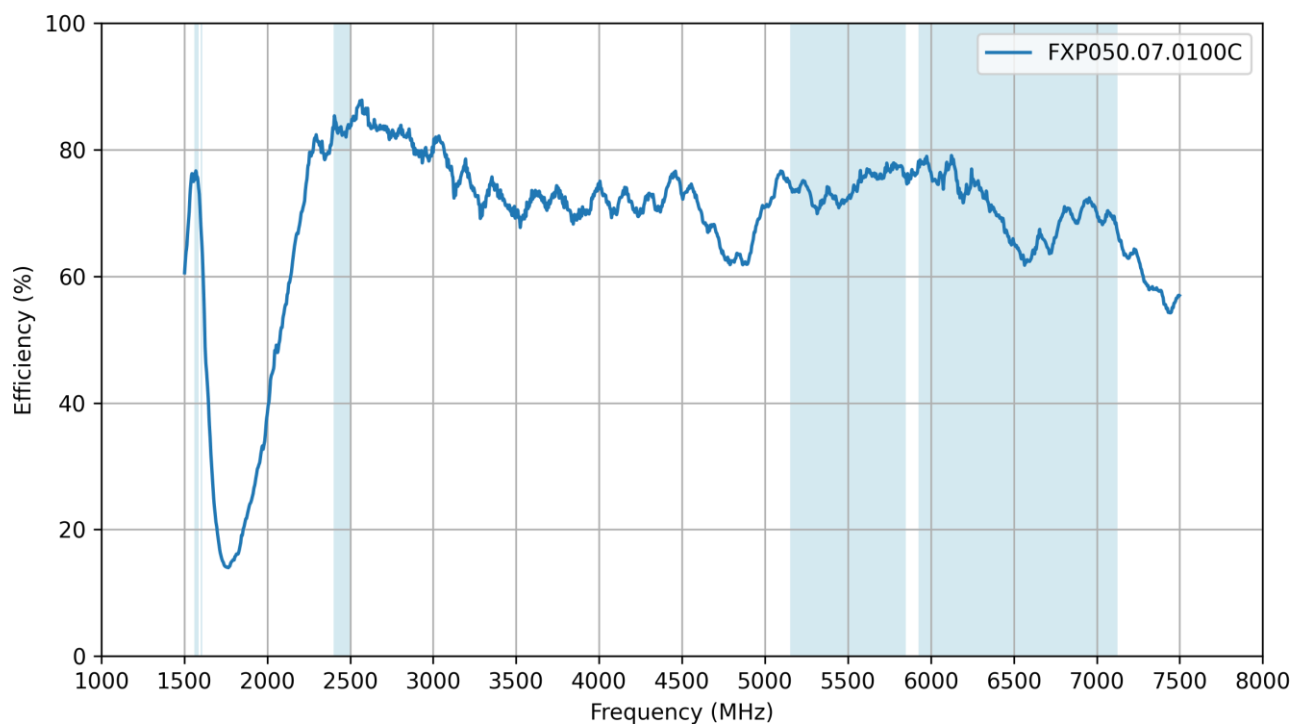
3.2 Return Loss



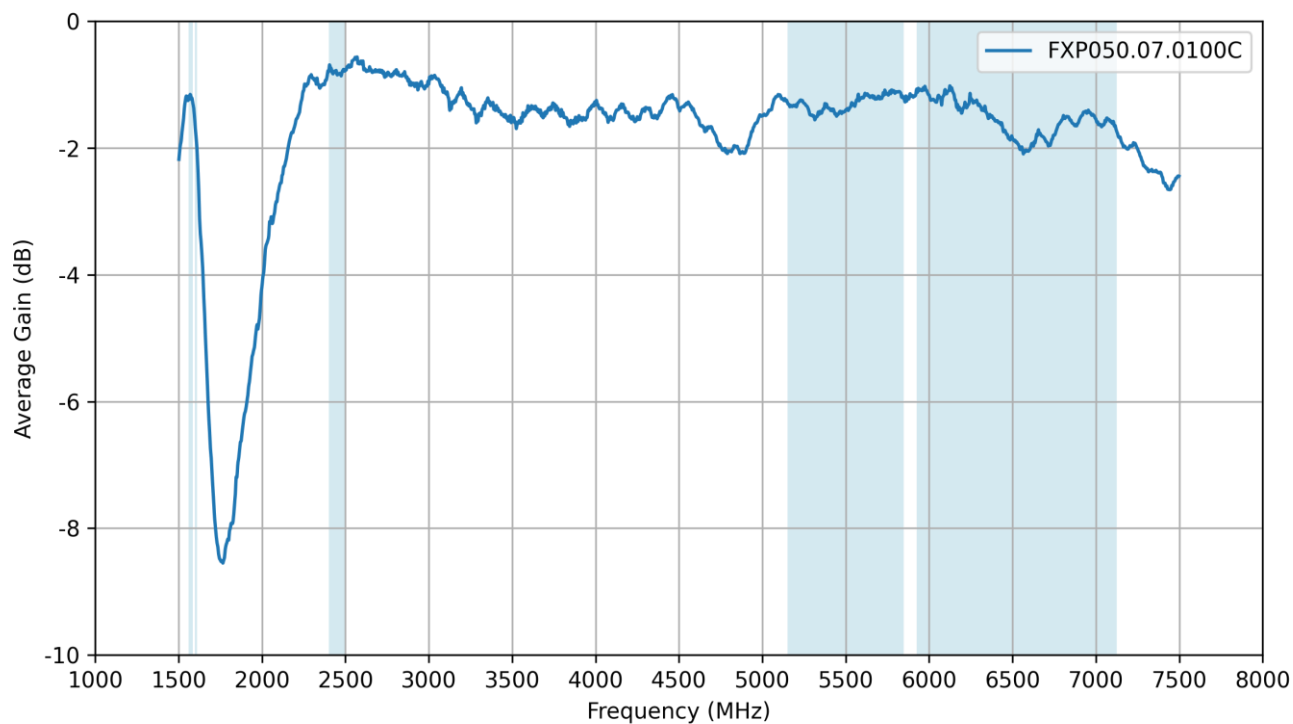
3.3 VSWR



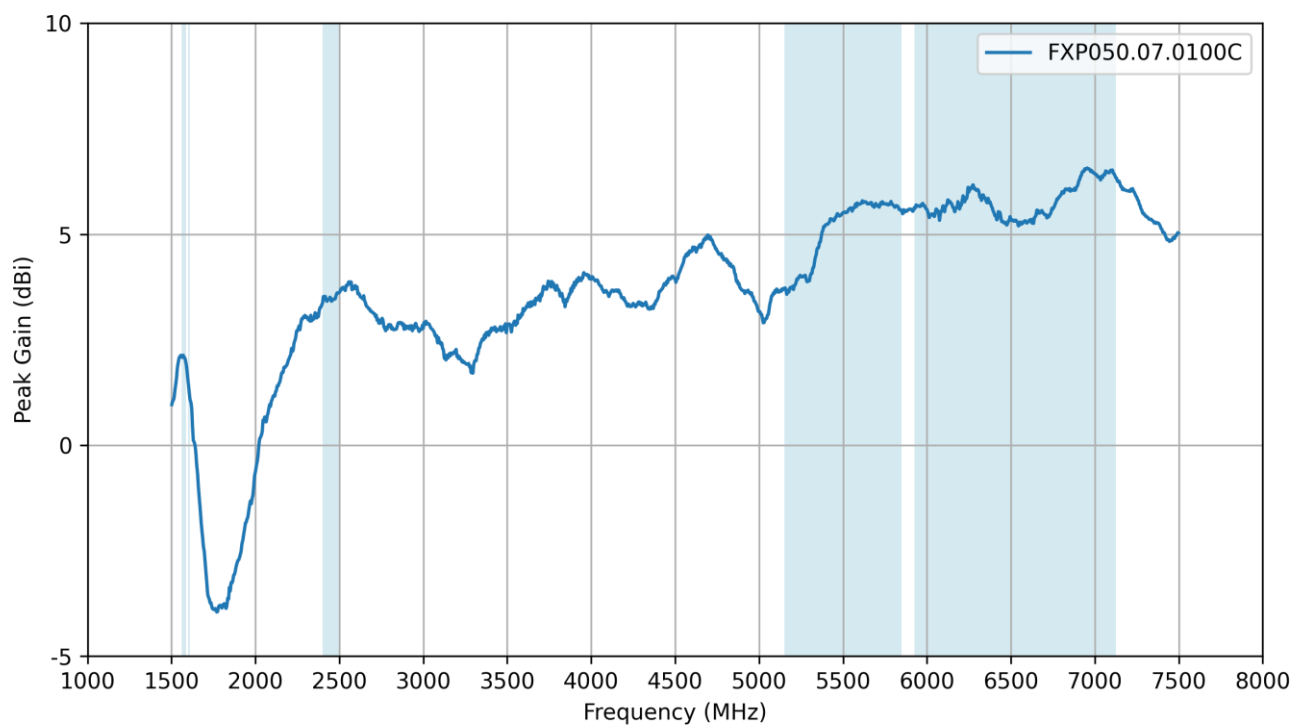
3.4 Efficiency



3.5 Average Gain

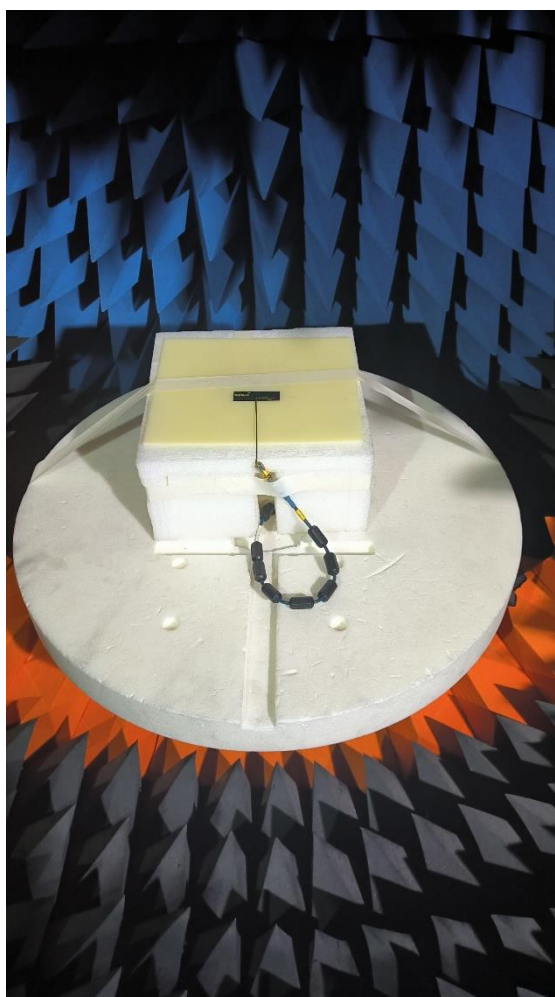
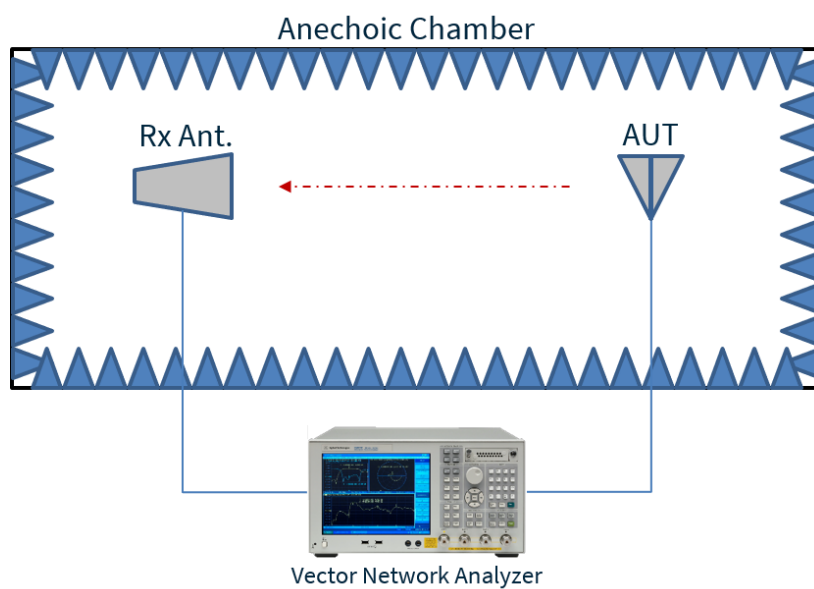


3.6 Peak Gain

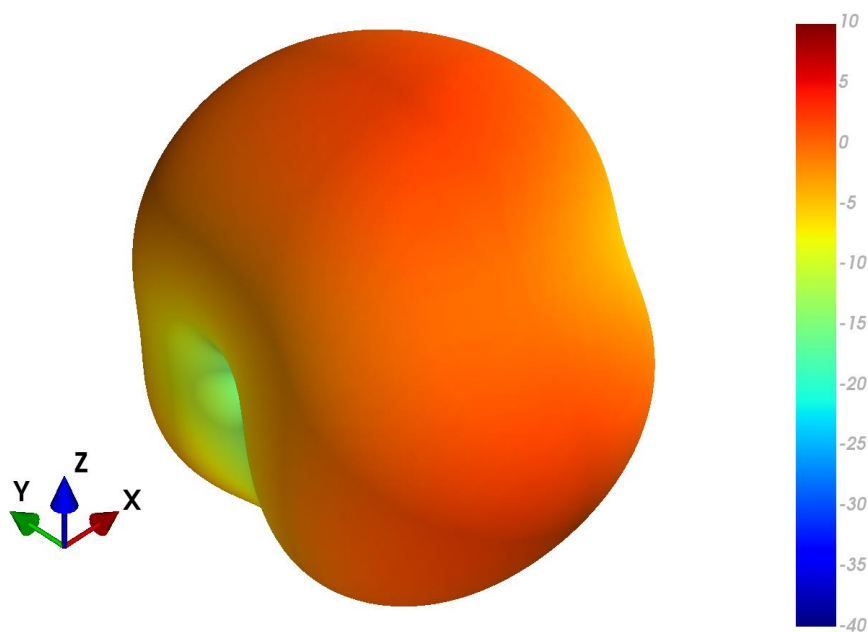


4. Radiation Patterns

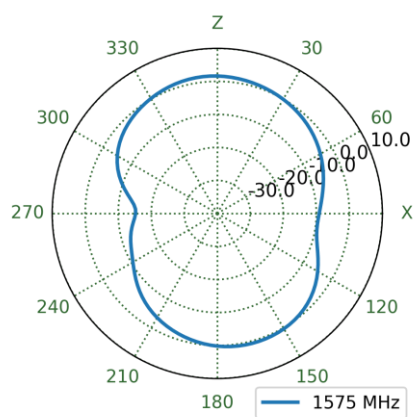
4.1 Test Setup



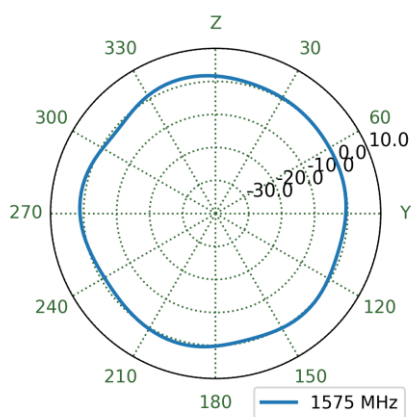
4.2 FXP050.07.0100C Patterns at 1576 MHz



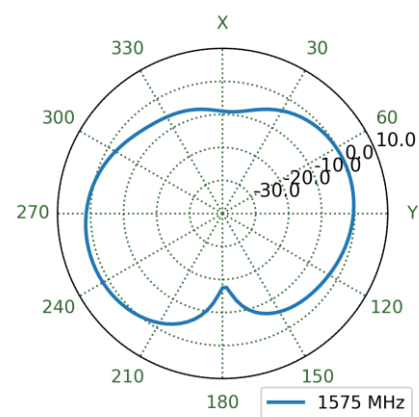
XZ Plane



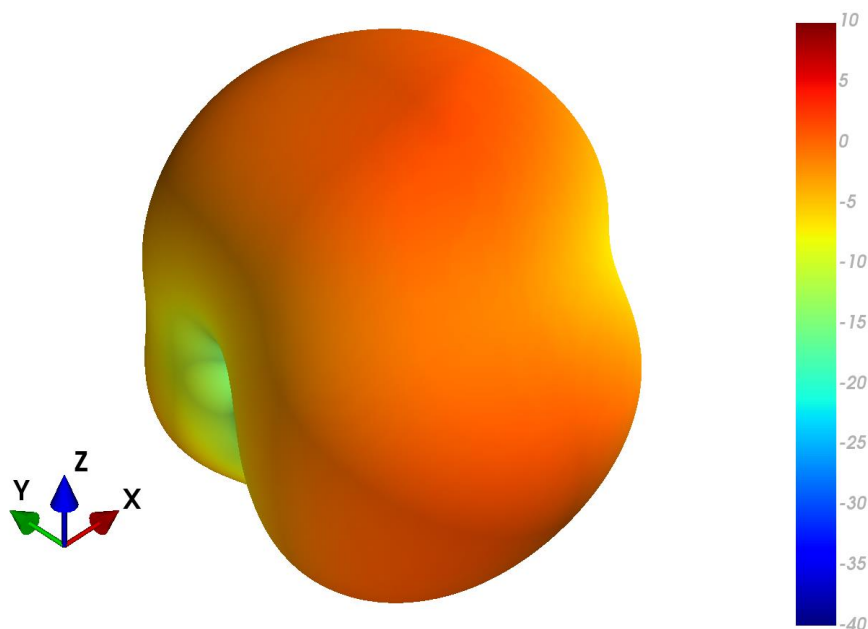
YZ Plane



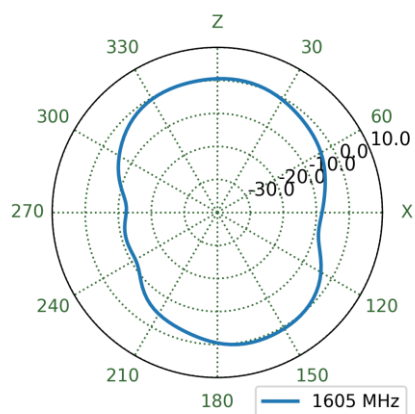
XY Plane



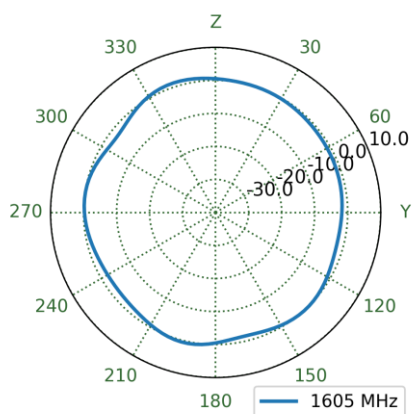
4.3 FXP050.07.0100C Patterns at 1603 MHz



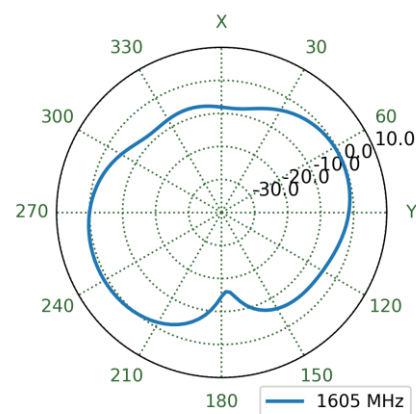
XZ Plane



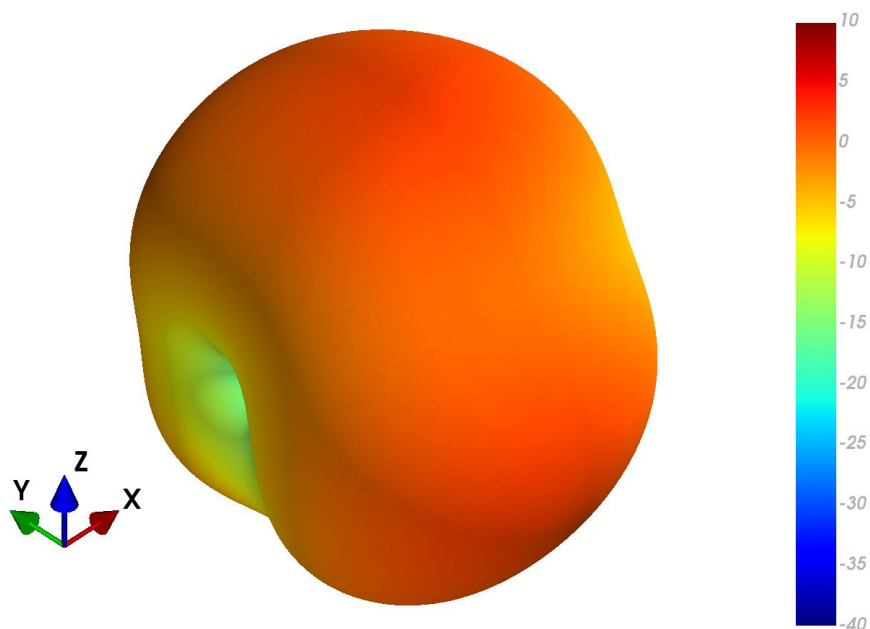
YZ Plane



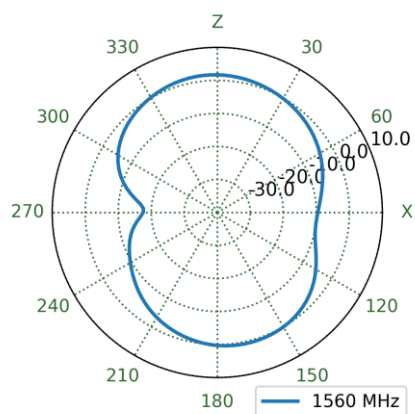
XY Plane



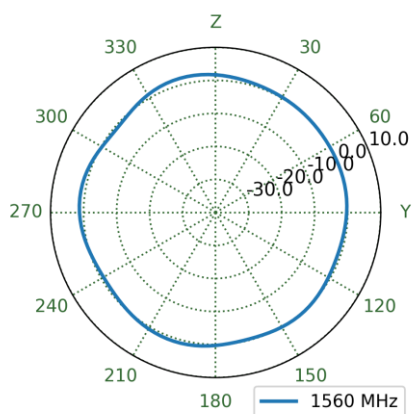
4.4 FXP050.07.0100C Patterns at 1562 MHz



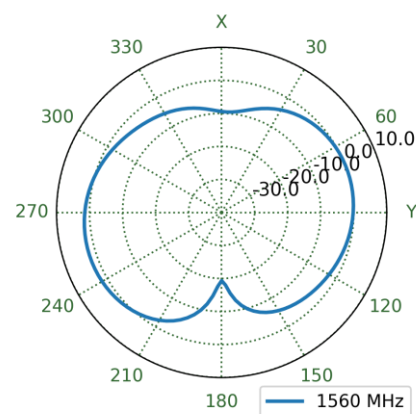
XZ Plane



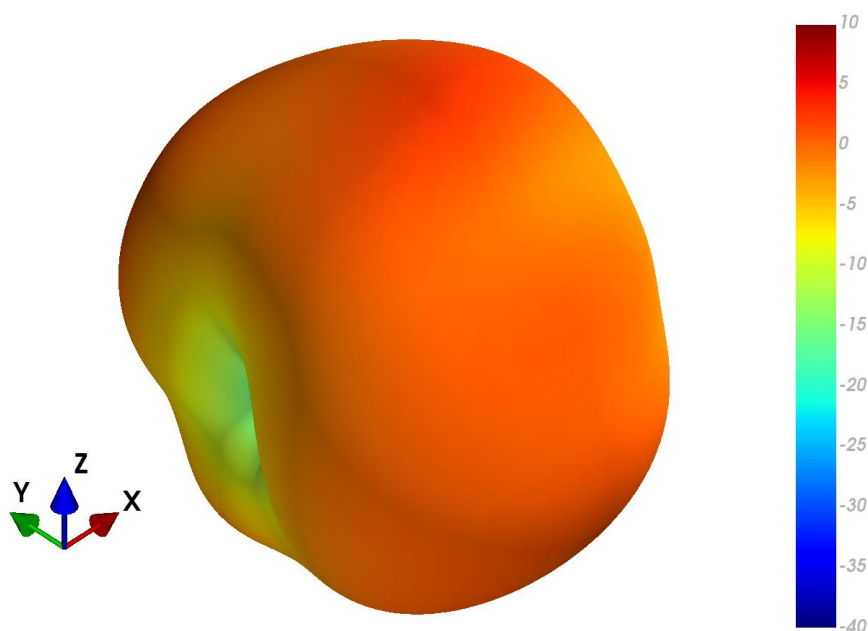
YZ Plane



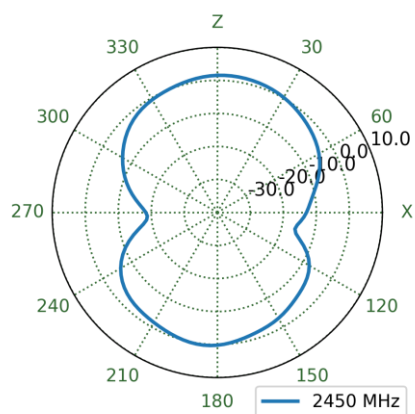
XY Plane



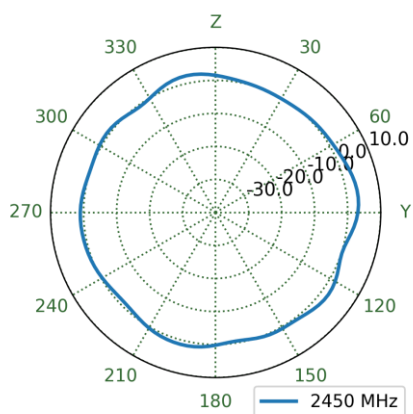
4.5 FXP050.07.0100C Patterns at 2450 MHz



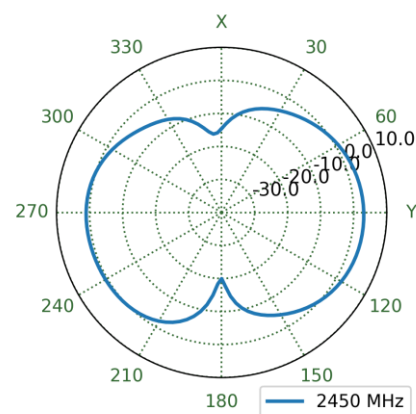
XZ Plane



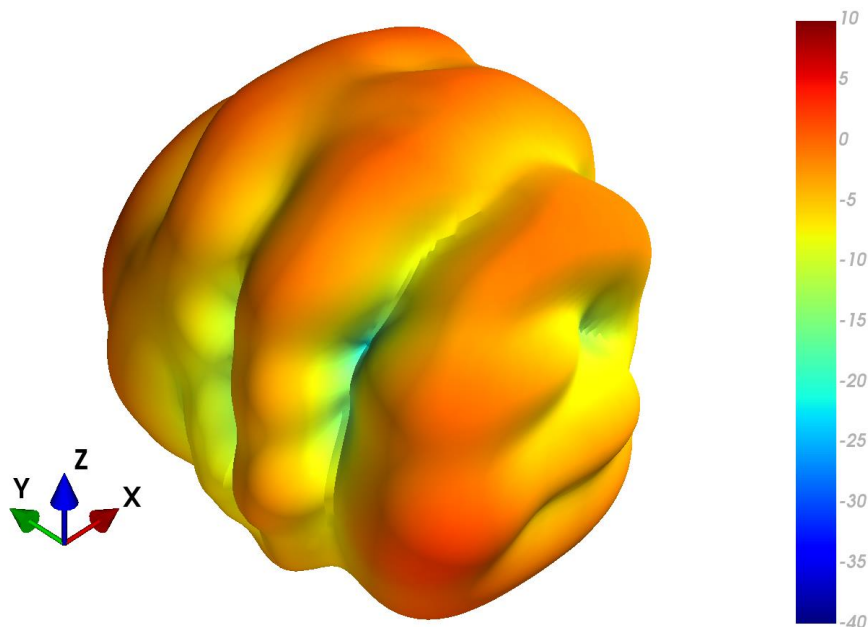
YZ Plane



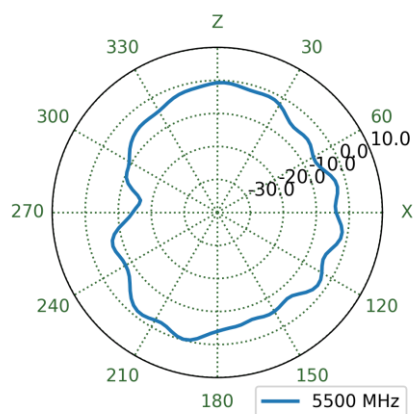
XY Plane



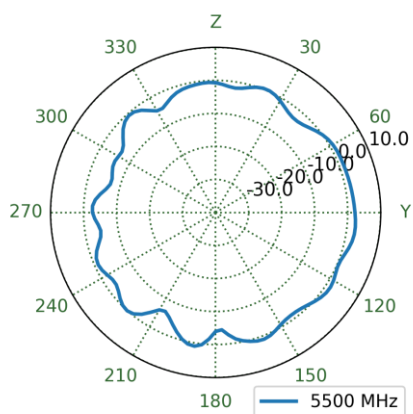
4.6 FXP050.07.0100C Patterns at 5500 MHz



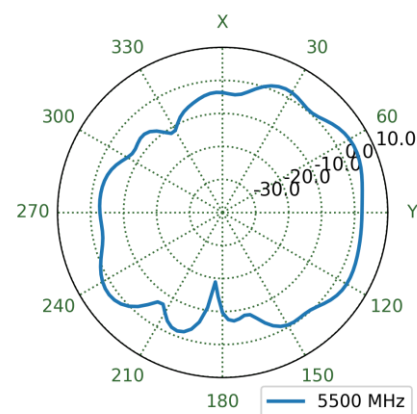
XZ Plane



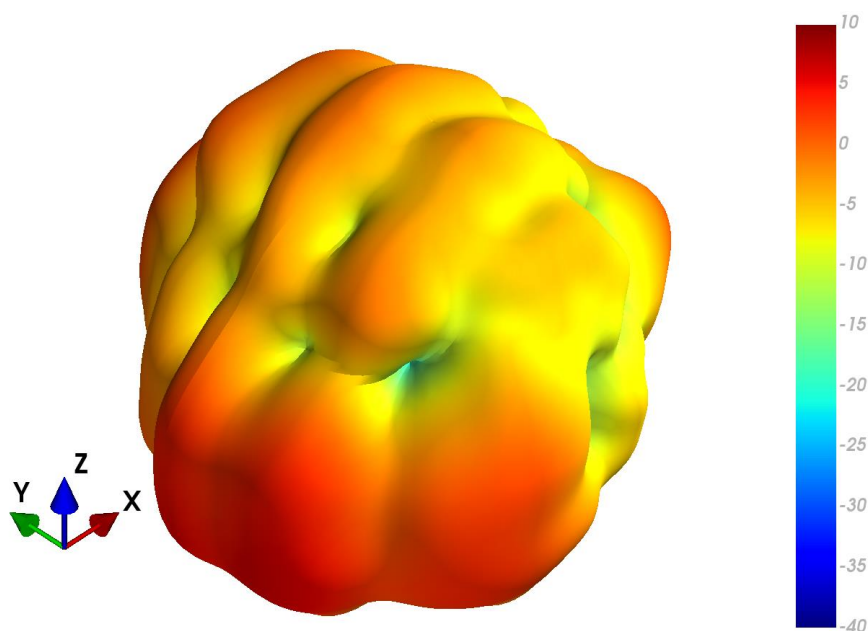
YZ Plane



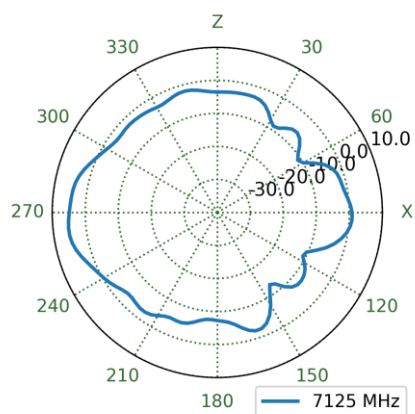
XY Plane



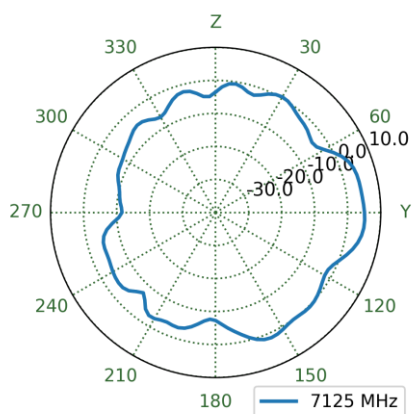
4.7 FXP050.07.0100C Patterns at 7125 MHz



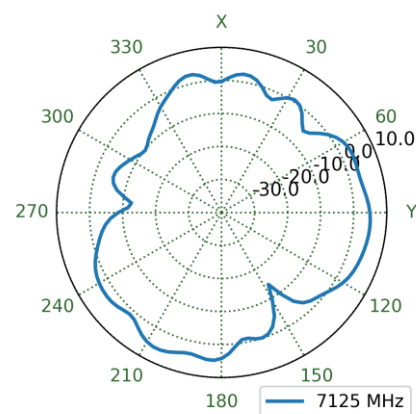
XZ Plane



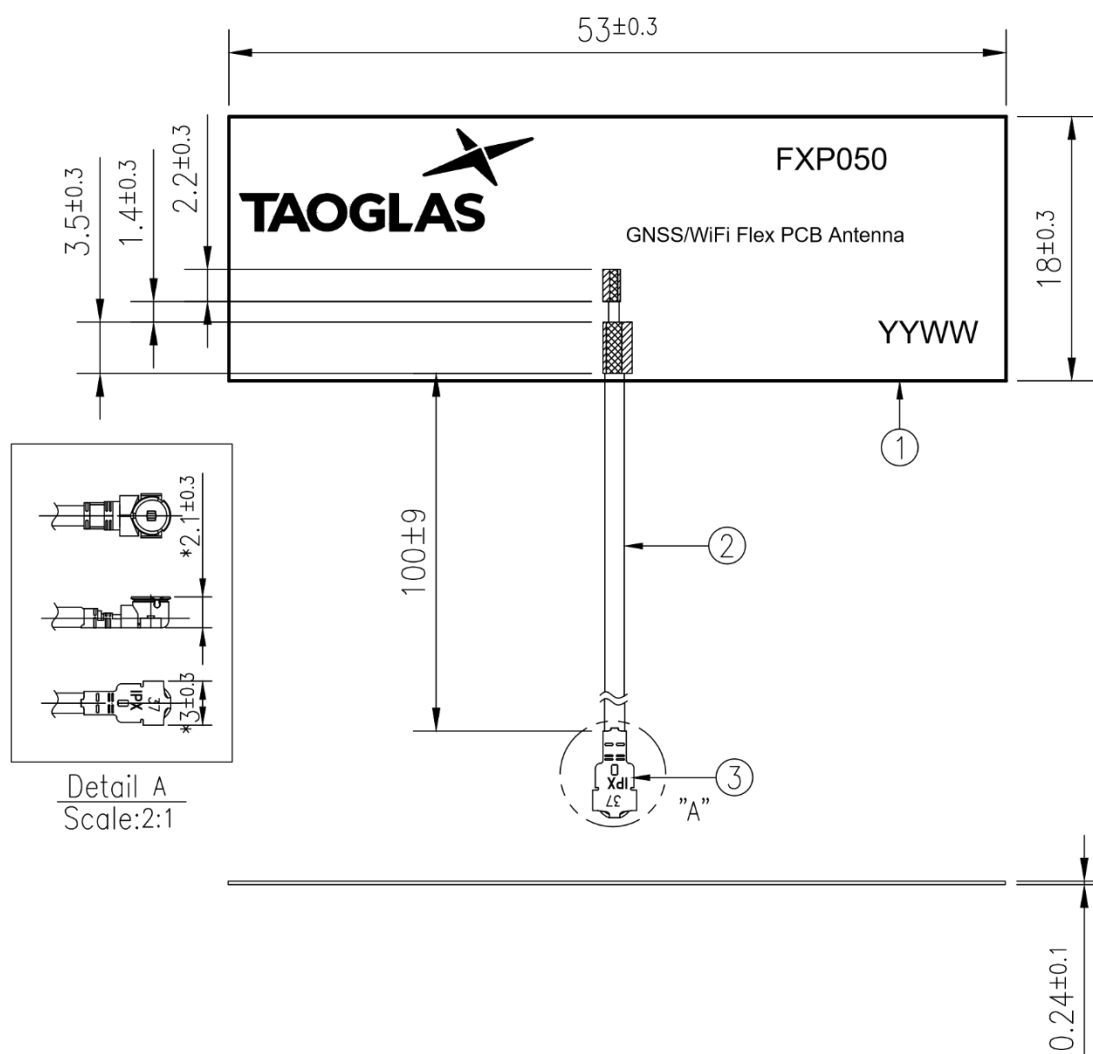
YZ Plane



XY Plane



5. Mechanical Drawing



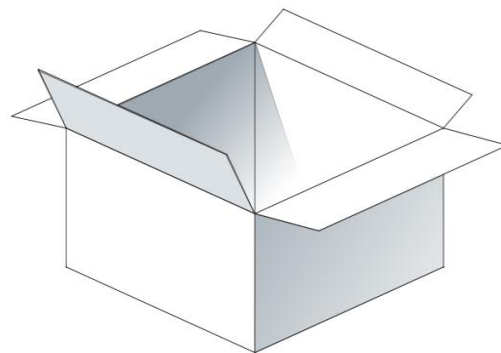
	Name	Material	Finish	QTY
1	FXP050 FPC	FPCB 0.24t	Black	1
2	1.37Coaxial Cable	FEP	Black	1
3	MPX MHFI	Brass	Gold	1

6. Packaging

FXP050.07.0100C
100 pcs / PE Bag



5000 pcs / Carton
Carton(mm): 320x230x250



Changelog for the datasheet

SPE-23-8-118 – FXP050.07.0100C

Revision: A (Original First Release)

Date:	2023-06-20
Changes:	Initial Release
Author:	Cesar Sousa

Previous Revisions



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