



# TAOGLAS®



# Datasheet

**Part No:**  
FXM100.07.0060C

**Description**

Wi-Fi 2.4/5.8/7.125 GHz Antenna on a Carrier for RJ45 Mounting

**Features:**

Patent Pending Design  
Wi-Fi Flex PCB Antenna on Plastic Carrier  
Covering: 2.4GHz/5.8/7.125GHz  
Dimensions: 26.65 x 15.65 x 13.1mm  
Cables: 60mm of  $\varnothing$ 1.37mm Coaxial  
Connectors: I-PEX MHF® I (U.FL Compatible)  
RoHS & Reach Compliant

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# 1. Introduction



## Innovative, space-saving Wi-Fi antenna for mounting on an RJ45 Jack

The Taoglas FXM100 is a patent-pending, flexible PCB Wi-Fi antenna, supplied pre-attached to a lightweight, plastic carrier that allows the antenna to be mounted on an RJ45 Jack. By placing the Wi-Fi antenna on an RJ45 jack inside your device, the FXM100 allows you to save on valuable board space without compromising on the antenna's performance. Despite its size, the FXM100 is a high-efficiency, small, omnidirectional, dipole antenna and covers 2.4GHz, 5.8GHz and 7.1GHz bands including Bluetooth, Wi-Fi and the newly established Wi-Fi 6 / 6E and Wi-Fi 7, making this an ideal solution for futureproofing an IoT device.

This Taoglas patent-pending antenna, a market first, is manufactured from flexible PCB material, has a small form factor, overall just 26.6 x 15.6 x 13.1mm, and has adhesive conductive foam for easy "peel and stick" mounting on the RJ45.

Typical applications:

- Modems and Routers
- Industrial Gateways
- Factory Automation
- Industrial Process Control
- Industrial Robotics (fabrication and assembly)
- Test and Measurement Systems



Supplied with 60mm of 1.37 micro coax cable and an I-PEX MHF1 connector as standard, both can be fully customised to suit your application requirements or device. Following extensive testing, and for optimized integration, it is recommended that the product is used with the cable mounted in a straight position. Bending or routing the cable inside a device may impact the performance.

For more information on the FXM100, or to request samples, contact your local Taoglas customer services team.

## 2. Specification

### Wi-Fi Electrical

Band	Frequency (MHz)	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
Wi-Fi - 2GHz	2400-2500	51.9	-2.85	2.11	50 $\Omega$	Linear	Omni	2W
Wi-Fi - 5GHz	5150-5850	45.6	-3.41	4.56				
Wi-Fi - 6GHz	5925-7125	48.3	-3.16	5.03				

\*Testing performed with cable in a straight position

### Mechanical

Dimensions	26.65 x 15.65 x 13.1mm
Weight	2g
Material	Flexible Polymer
Connector	IPEX MHF1 (U.FL Comp)
Cable	60mm 1.37 Coaxial

### Environmental

Temperature Range	-40°C to 85°C
Relative Humidity	65°C, 95%RH for 96 hours
RoHs & REACH Compliant	Yes



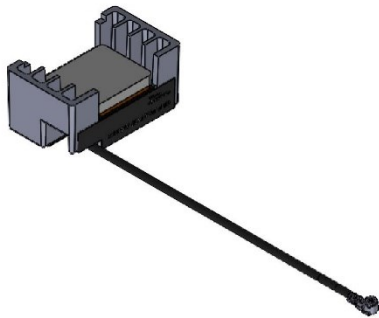
# 3. Mechanical Drawing

ISO NO.: EDW.000202

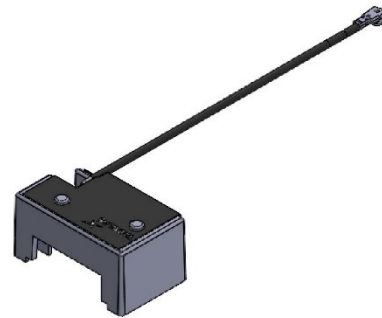
STATE: **RELEASE**

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.

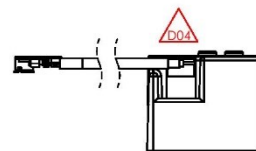
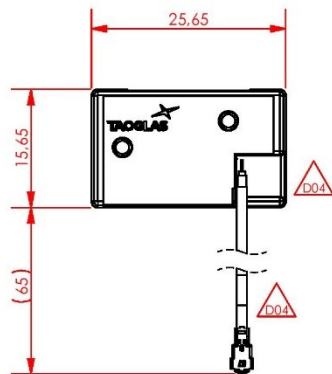
REVISIONS				
REV.	DESCRIPTION	DATE	ENGINEER	APPROVED
D01	FIRST ISSUE	18AUG2023	SC	WL
D02	CHANGES TO PRINTED TEXT	25SEP2023	SC	WL
D03	CORRECTED ORIENTATION OF IPEX CONNECTOR	06OCT2023	SC	MMG
D04	CABLE DIAMETER INCREASED. SOLDER PAD AREA MODIFIED.	13OCT2023	SC	WL



MODEL VIEW  
SCALE 1:1



MODEL VIEW  
SCALE 1:1



APPROVED BY:	NW	 EMEA Design Centre This drawing and its inherent design concepts are property of Taoglas. Not to be copied or given to third parties without the written consent of Taoglas.	
CHECK BY:	WL		
DRAWN BY:	SC		
DATE:	18AUG2023		
UNLESS OTHERWISE SPECIFIED TOLERANCES ON:	.XX±0.2 X.0±0.3 X.0±0.7 .X±0.1 .XX±0.05	TITLE:	Wi-Fi Flex PCB Antenna with Conductive Carrier for RJ45 mounting 60mm 1.37 IPEX MHF1(U.FL comp)
THIRD ANGLE PROJECTION		PART NO.:	FXM100.07.0060C
		UNIT:	mm
		SCALE:	5:4
		PAGES:	1/1
		REV.	D04

## 4. Packaging

1pc FXM100.07.0060C per Ziploc bag  
 Bag dimensions – 50x70mm  
 Weight - 2g



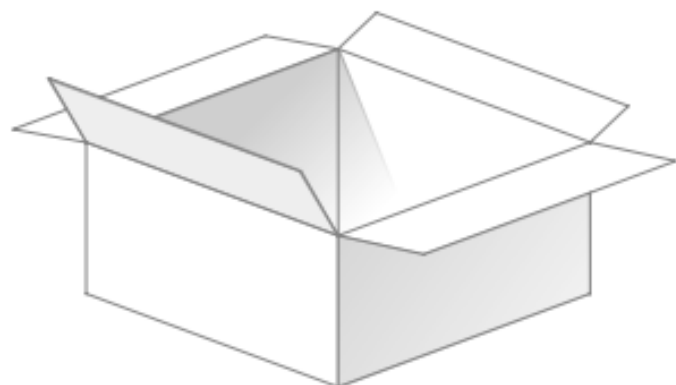
30pcs FXM100.07.0060C per Tray  
 Tray dimensions 365x300x25mm  
 Weight - 65g



120pcs FXM100.07.0060C per vacuum bag  
 2pcs 3g Desiccant  
 Dimensions 420x560mm  
 Weight – 0.8Kg



360pcs FXM100.07.0060C per carton  
 Dimensions 390x320x290mm  
 Weight – 3.3Kg

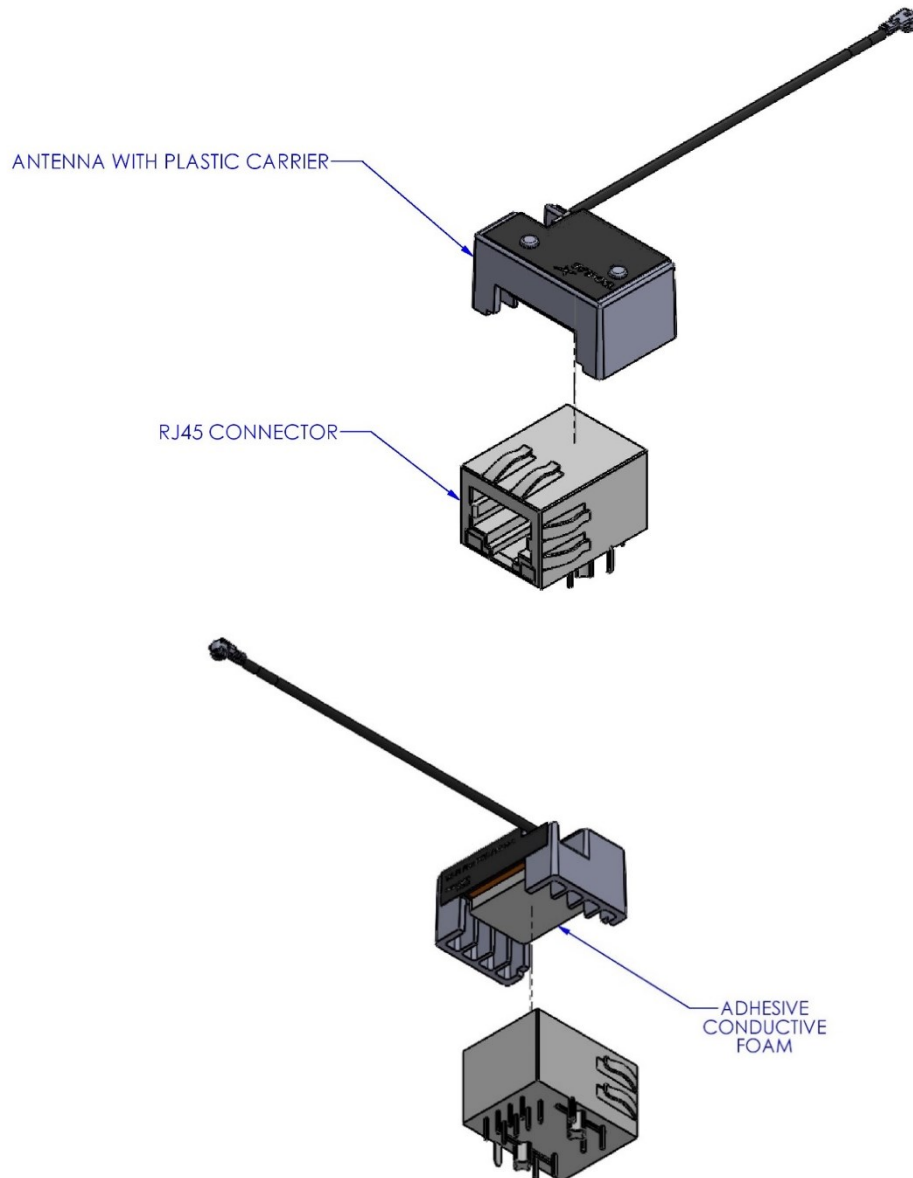


## 5. Installation Guidelines

The Taoglas FXM100 is compatible with the following Taoglas RJ45 connectors:

**Taoglas RJ45 connectors Part Number**

TMJ0011ABNL	TMJ167819BENL	TMJG0820GENL	TMJG4813-8KGDNL4	TMJG4944GENL
TMJ0011BBNL	TMJ19911ADNL	TMJG16391A4NL	TMJG4820G4NL	TMJM4938HENL
TMJ0026ABNL	TMJ4011ABNL	TMJG16459-8ADNL	TMJG4820GENL	TMJUTGW0021102440
TMJ0162GDNL	TMJ4011BBNL	TMJG16459BDNL	TMJG4887GENL	TMJUTGW0121102420
TMJ0277AHNL	TMJ4049HDNL	TMJG16470ADNL	TMJG4926HENL	TMJUTHW0021102420
TMJ1011BBNL	TMJG0801GENL	TMJG16540A4NL	TMJG4933-8GENL	TMJUTVW0021192448
TMJ16611AENL	TMJG0803HENL	TMJG16565-8ADNL	TMJG4933GENL	TMJG4933HENL
TMJ166323B10NL	TMJG0813GENL	TMJG37867A5NL		



## 6. Antenna Characteristics

### 6.1 Test Setup

AUT



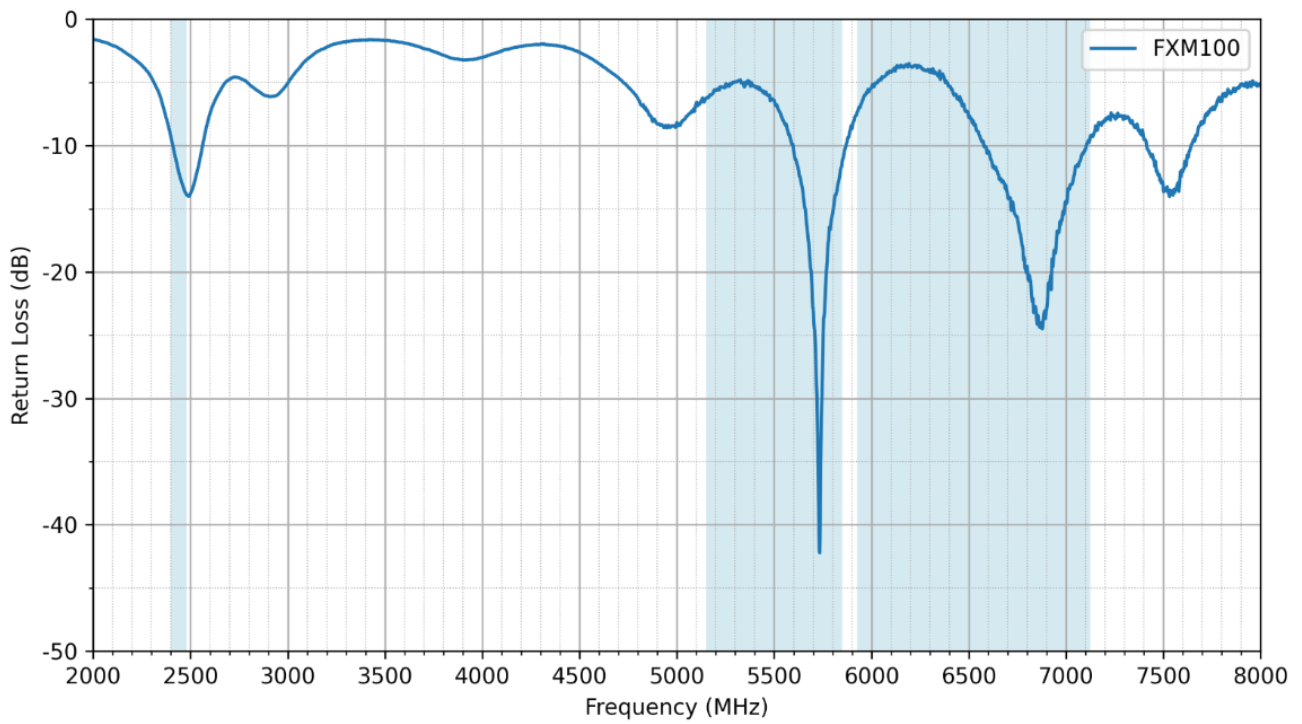
Vector Network Analyzer



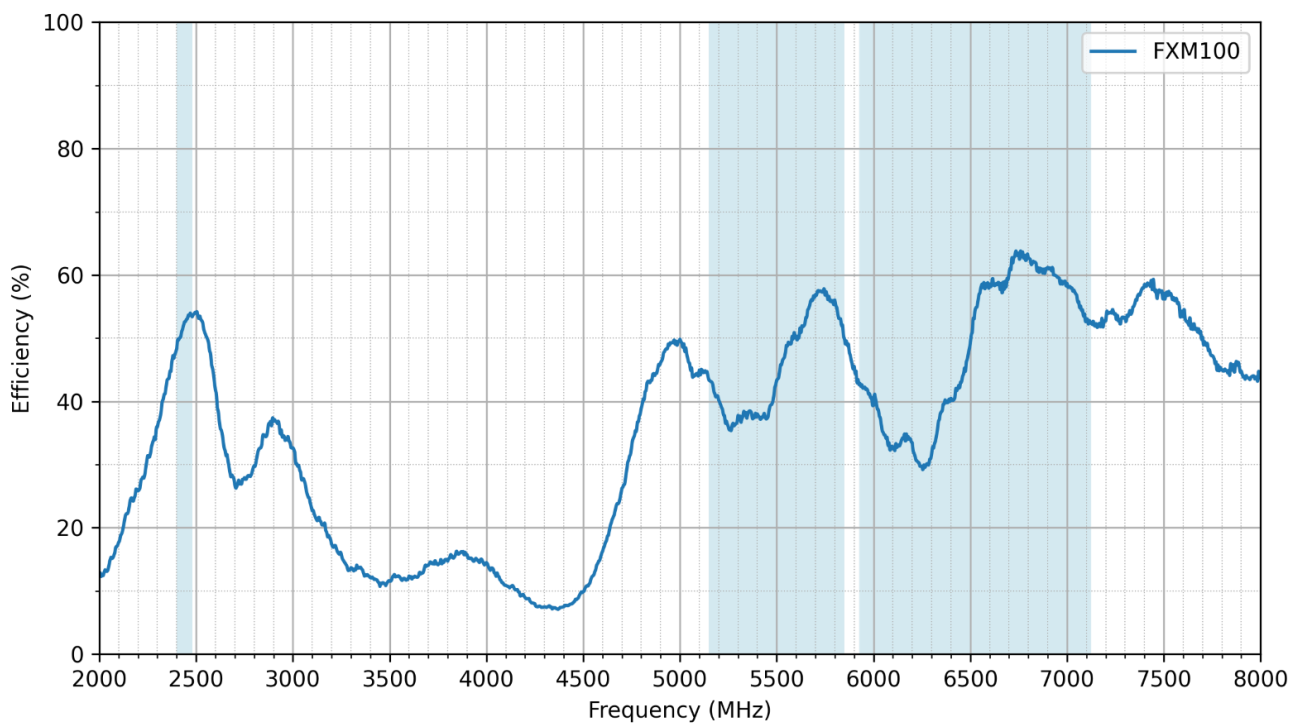
FXM100.07.0060C VNA Test Set-up



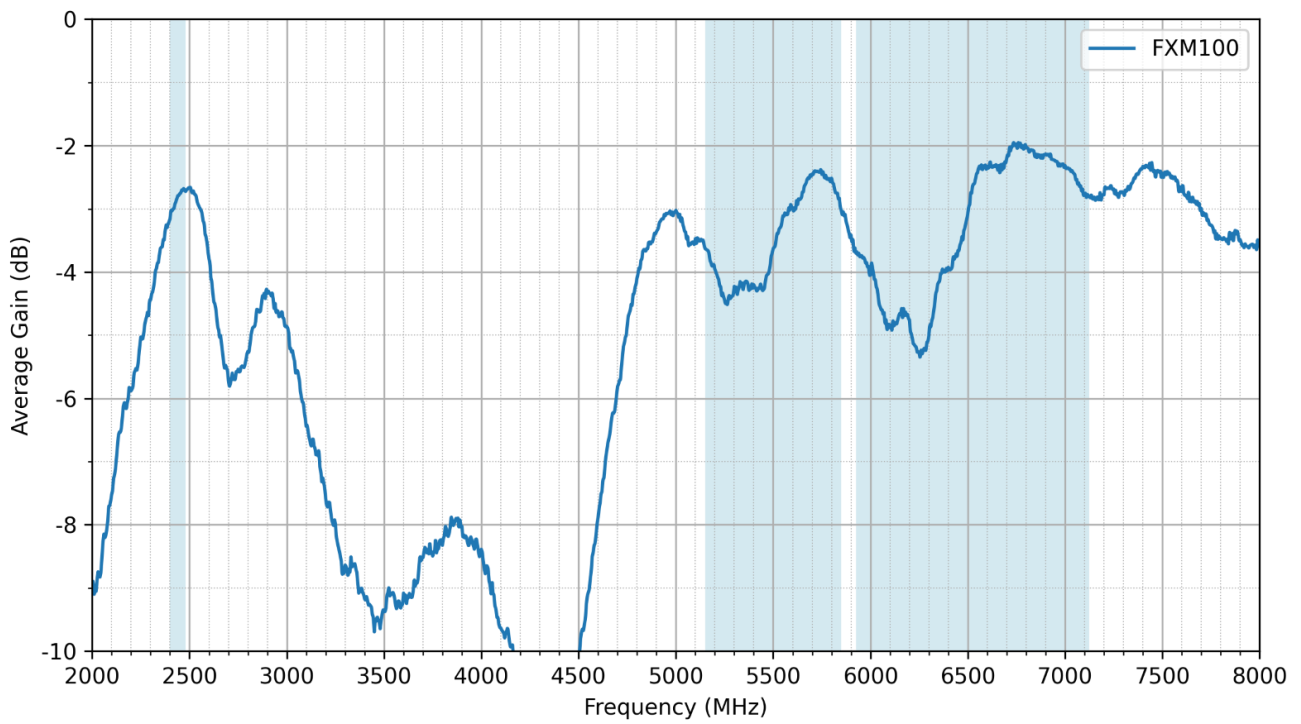
## 6.2 Return Loss



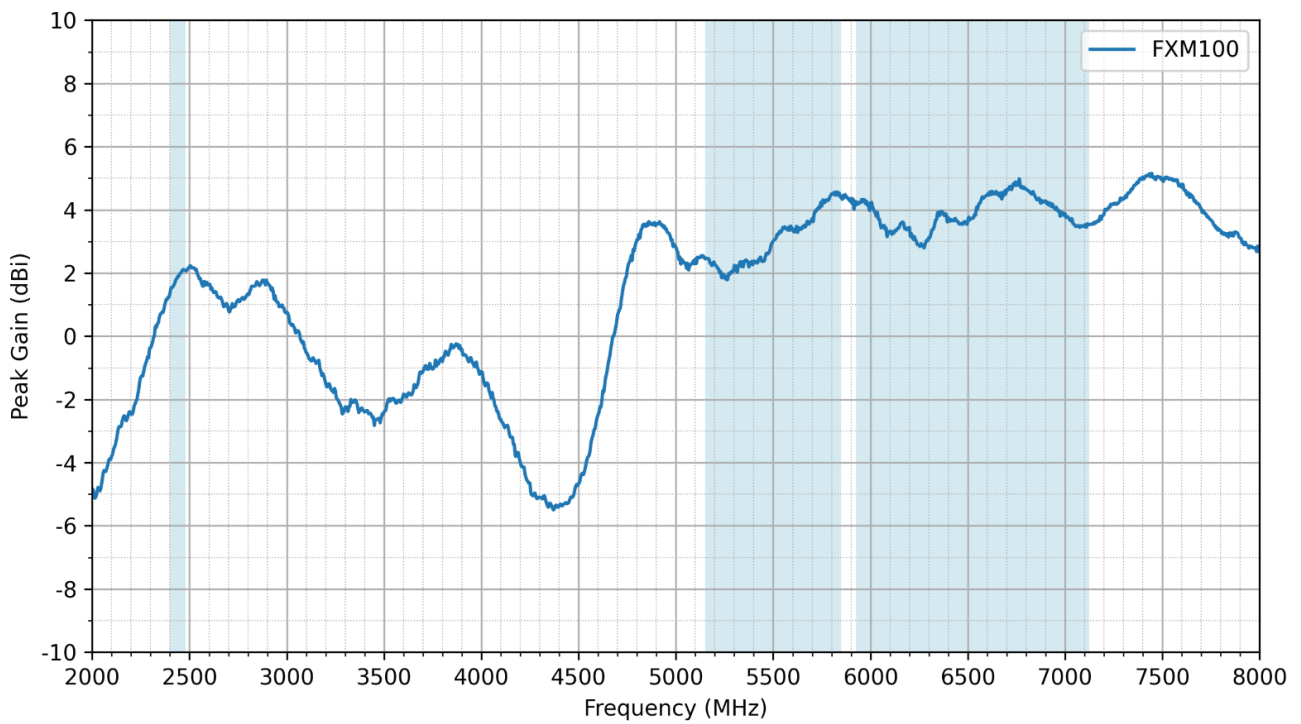
## 6.3 Efficiency



## 6.4 Average Gain

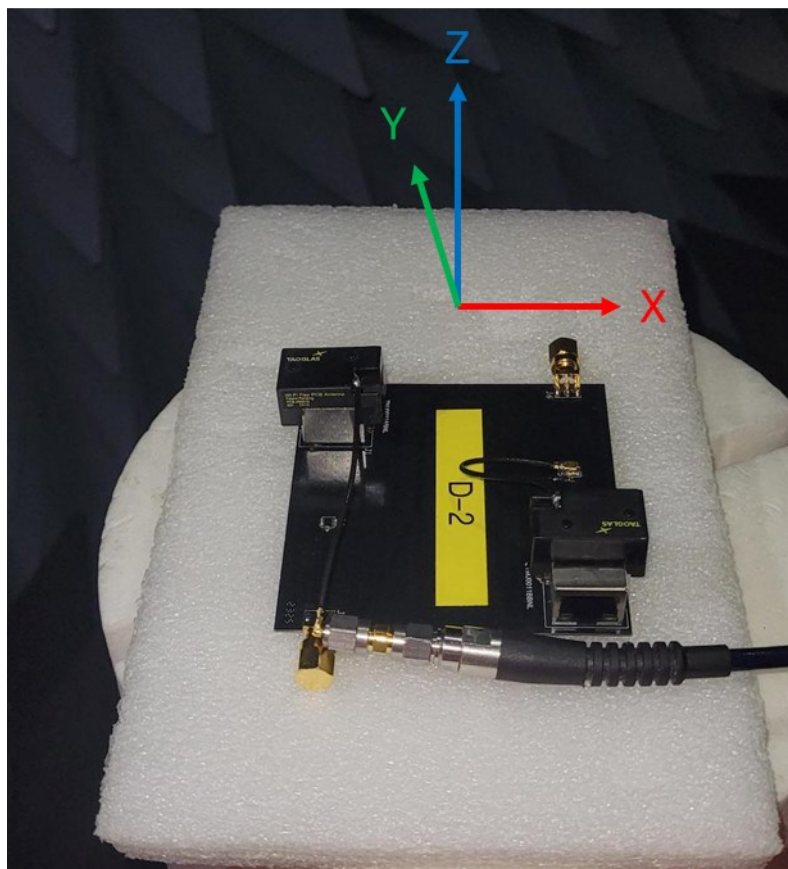
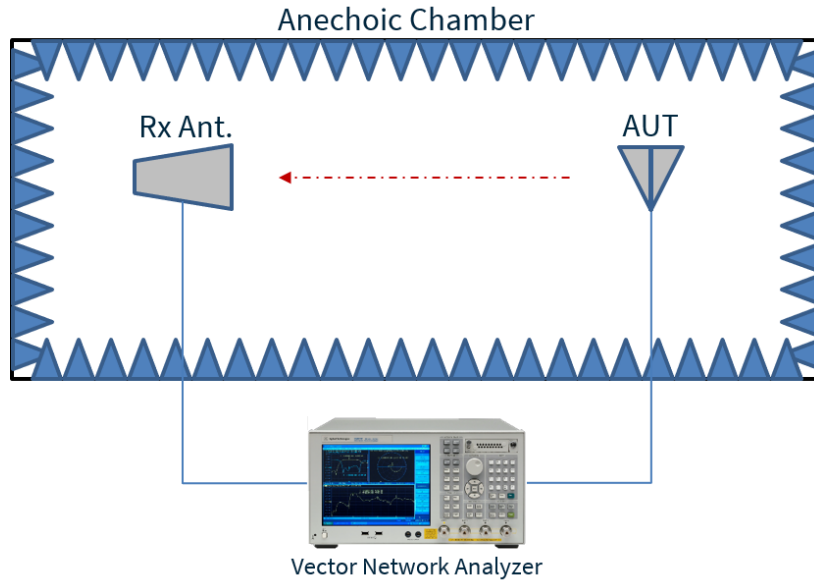


## 6.5 Peak Gain



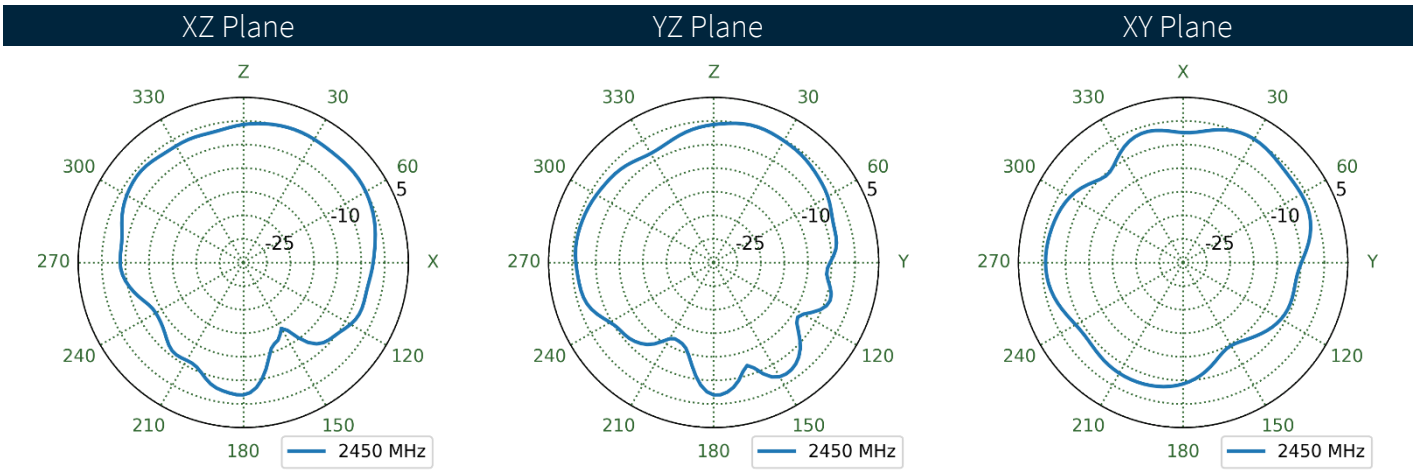
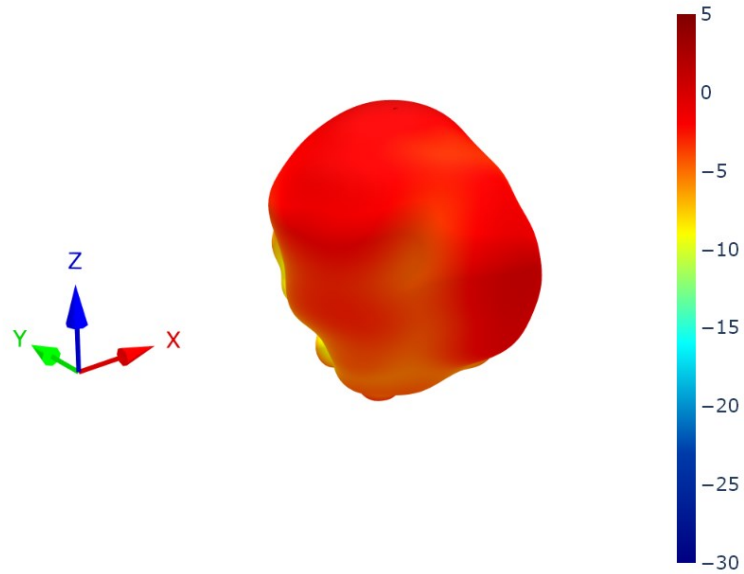
# 7. Radiation Patterns

## 7.1 Test Setup

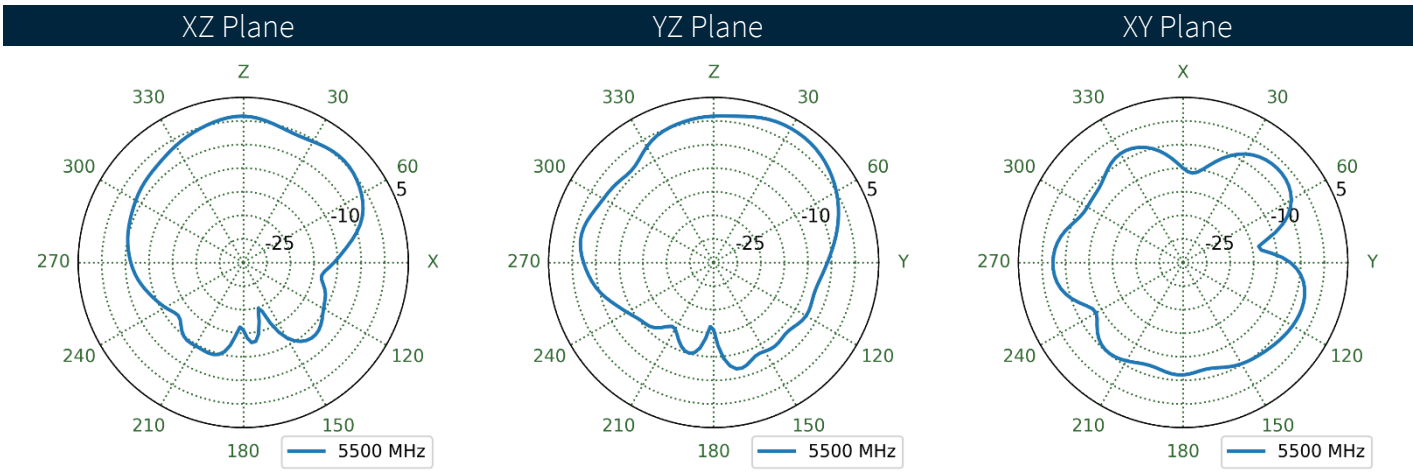
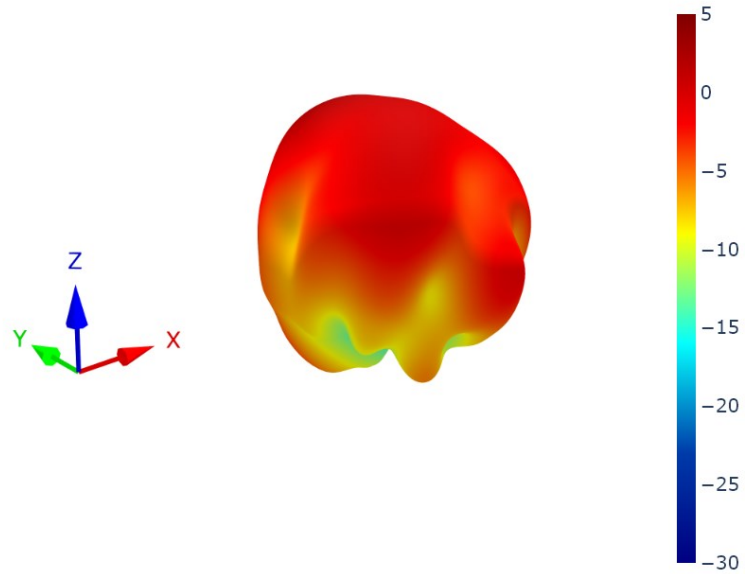


FXM100.07.0060C Chamber Test Set-up

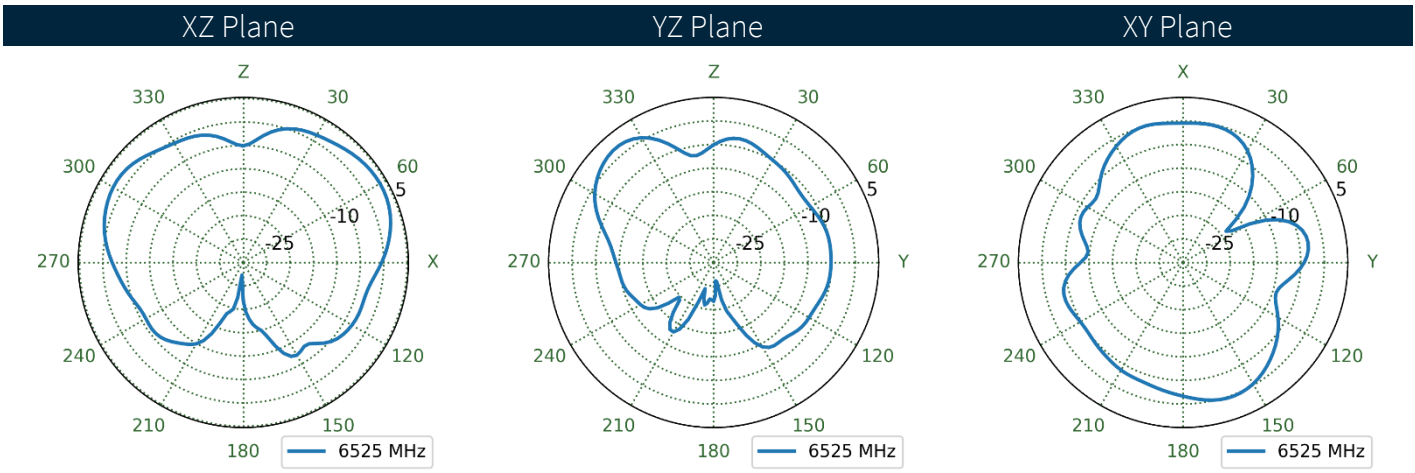
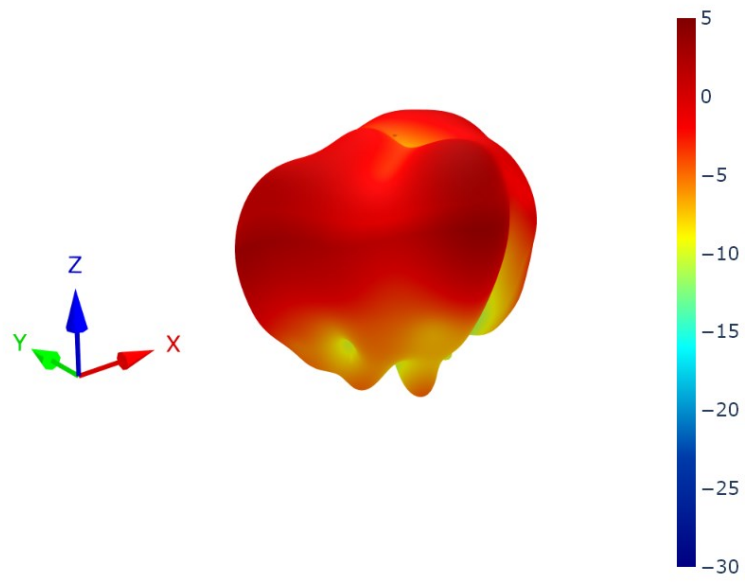
7.2 Patterns at 2450 MHz



7.3 Patterns at 5550 MHz



7.4 Patterns at 6525 MHz



Changelog for the datasheet

**SPE-24-8-081 - FXM100.07.0060C**

**Revision: A (Original First Release)**

Date: 2024-04-25

Notes: Initial Release

Author: Gary West

**Previous Revisions**




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