THE DATASHEET OF

FXP75.07.0045B

TAOGLAS

Datasheet

Part No:
FXP75.07.0045B

Description

Atom FXP75 2.4GHz Flex PCB Super Micro PCB Antenna 45mm Ø0.81 and I-PEX MHF® I (U.FL)

Features:

Ultra Compact Flexible PCB Wi-Fi Antenna
Ideal for Bluetooth® Applications
Worlds smallest cabled 2.4GHz flex pcb antenna
Dims: 5.9 x 4.1 x 0.24mm
Cable: 45mm of Ø 0.81mm mini-coaxial cable
Connector: I-PEX MHF® I (U.FL)
RoHS and Reach Compliant

1. Introduction

FXP75 Atom Ultra-Miniature 2.4 GHz Antenna

The **FXP75 Atom** is an ultra-miniature, ultra-low-profile monopole antenna designed for high-performance wireless connectivity in extremely space-constrained devices. Operating across the 2.4 GHz band, it supports Bluetooth®, Wi-Fi®, ZigBee® and ISM applications, making it an ideal choice for compact products that demand reliable RF performance without sacrificing industrial design.
One of the smallest true cabled 2.4 GHz antennas available, the FXP75 measures just 5.9 × 4.1 × 0.24 mm, enabling seamless integration into wearables, earbuds and miniaturized IoT devices. Built on a flexible polymer substrate, it is optimized to perform consistently in dense electronic environments, while the double-sided 3M adhesive backing allows for fast, repeatable peel-and-stick assembly in high-volume manufacturing.
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Typical applications include:

- Bluetooth® earphones and headsets
- Wearable devices
- Compact IoT sensors
- Smart home and consumer electronics
- Space-constrained embedded devices

The FXP75 combines an exceptionally small footprint with dependable 2.4 GHz performance, giving device manufacturers the freedom to design smaller, sleeker products without compromising wireless reliability. Cable and connector options can be fully customized to meet specific design requirements—please contact your regional Taoglas customer support team for more information.

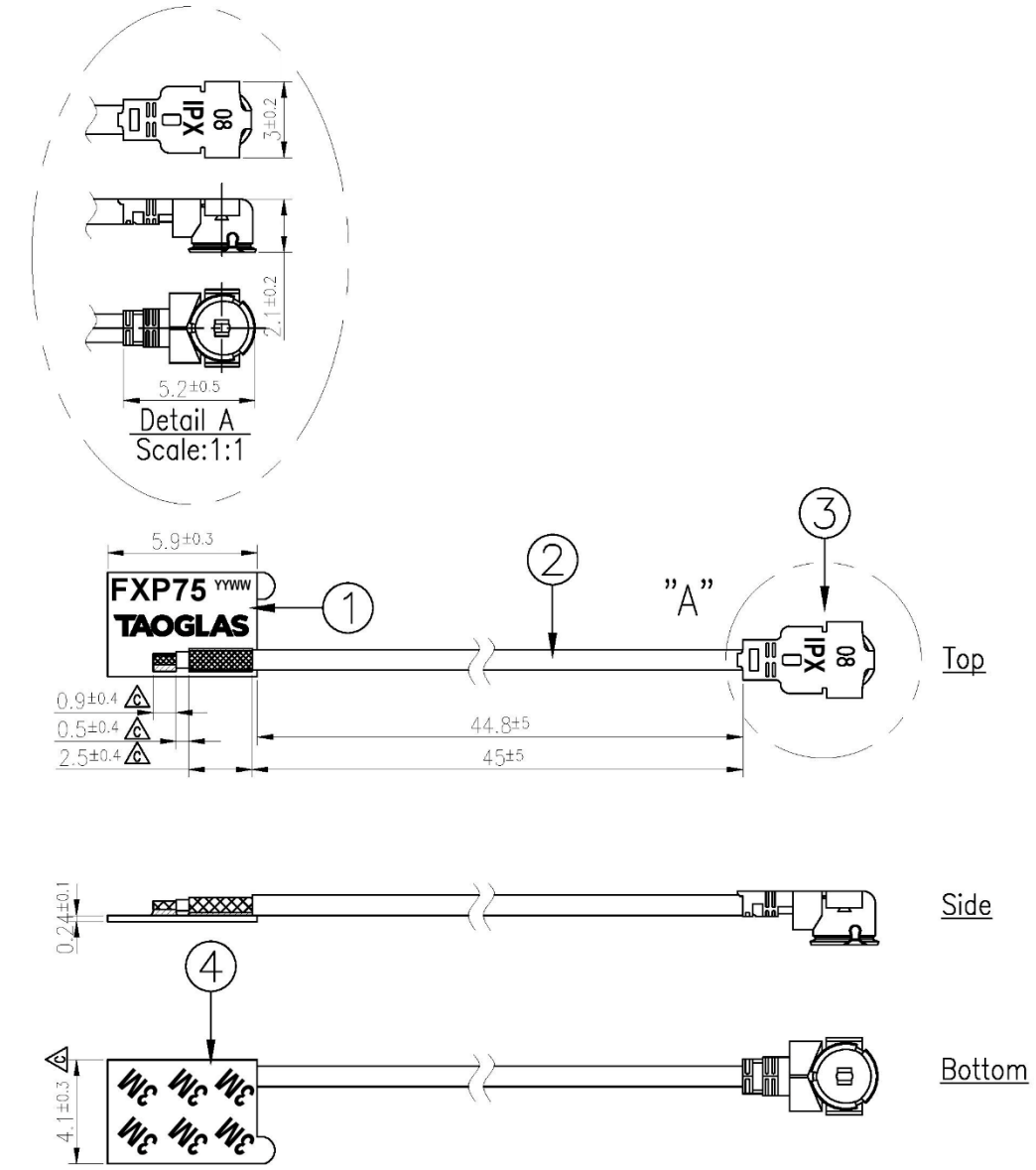
2. Specification

Electrical								
Band	Frequency (MHz)	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
Wi-Fi - 2GHz	2400-2500	36.3	-4.4	0.84	50 Ω	Linear	Omni directional	2W

Mechanical	
Dimensions	5.9 x 4.1 x 0.24mm
Material	Polymer
Connector	I-PEX MHFI
Cable	Ø0.81mm coaxial cable

Environmental	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Relative Humidity	Non-condensing 65°C 95% RH

3. Mechanical Drawing

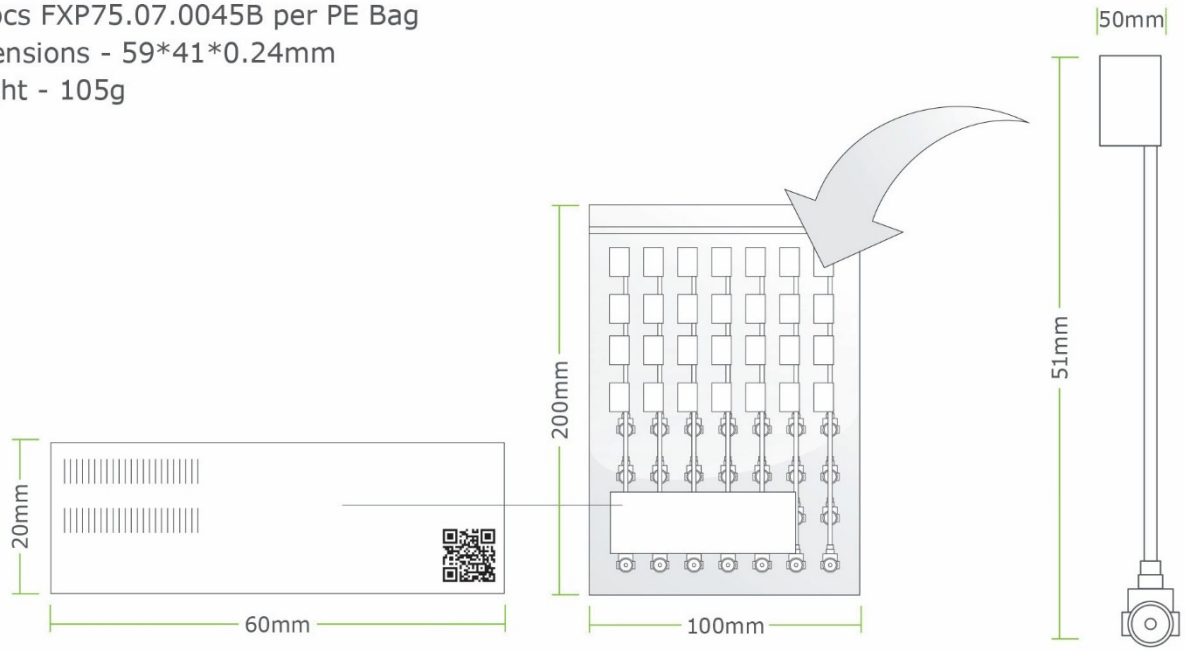


NOTES:
1.No dregs or insufficient soldering. Solder thickness 0.2 ~1.7mm
2.The solder must be smooth and full to the edges of the pad.The solder must not extend outside of the pad area.
3.The connector position has special orientation to the PCB as per drawing.
4.All material must be RoHS compliant.
5.Open/short QC, VSWR required.
6.Soldered area.

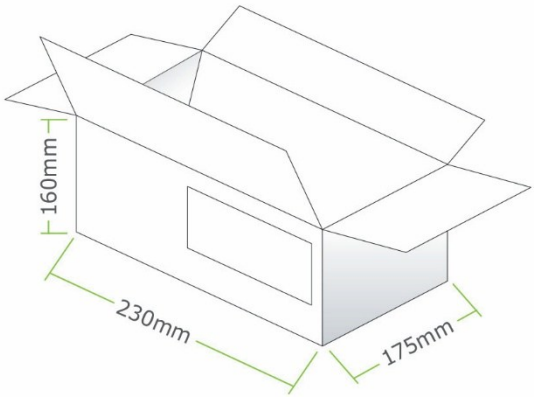
	Name	P/N	Material	Finish	QTY
1	FXP75 FPCB	100112F010011A	Polymer 0.24t C	Black	1
2	0.81 Coaxial Cable	300815C010000A	FEP	Black	1
3	IPEX MHF1	204111E000013A	Brass	Au Plated	1
4	Double Side Adhesive	100112F010011A	3M 467	Brown Liner	1

4. Packaging

100pcs FXP75.07.0045B per PE Bag
Dimensions - 59*41*0.24mm
Weight - 105g

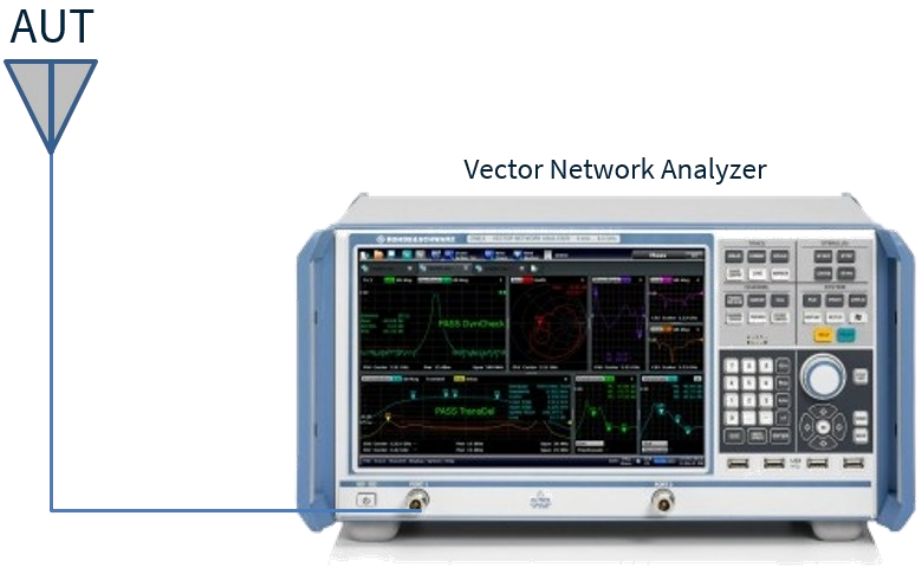


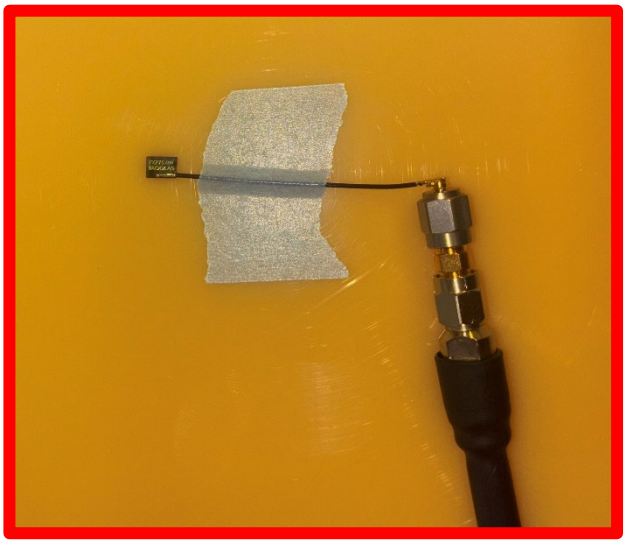
2000pcs per Large Carton
Carton Dimensions - 230*175*160mm
Weight - 2.1Kg



5. Antenna Characteristics

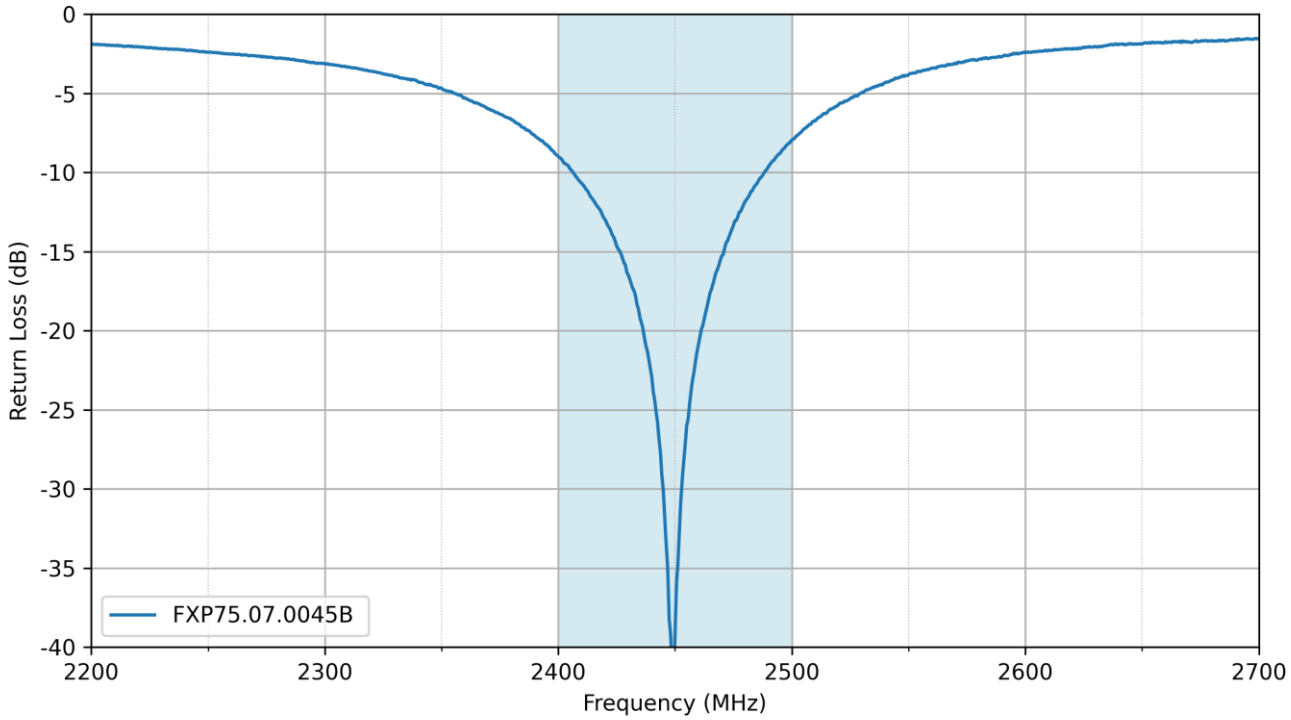
5.1 Test Setup



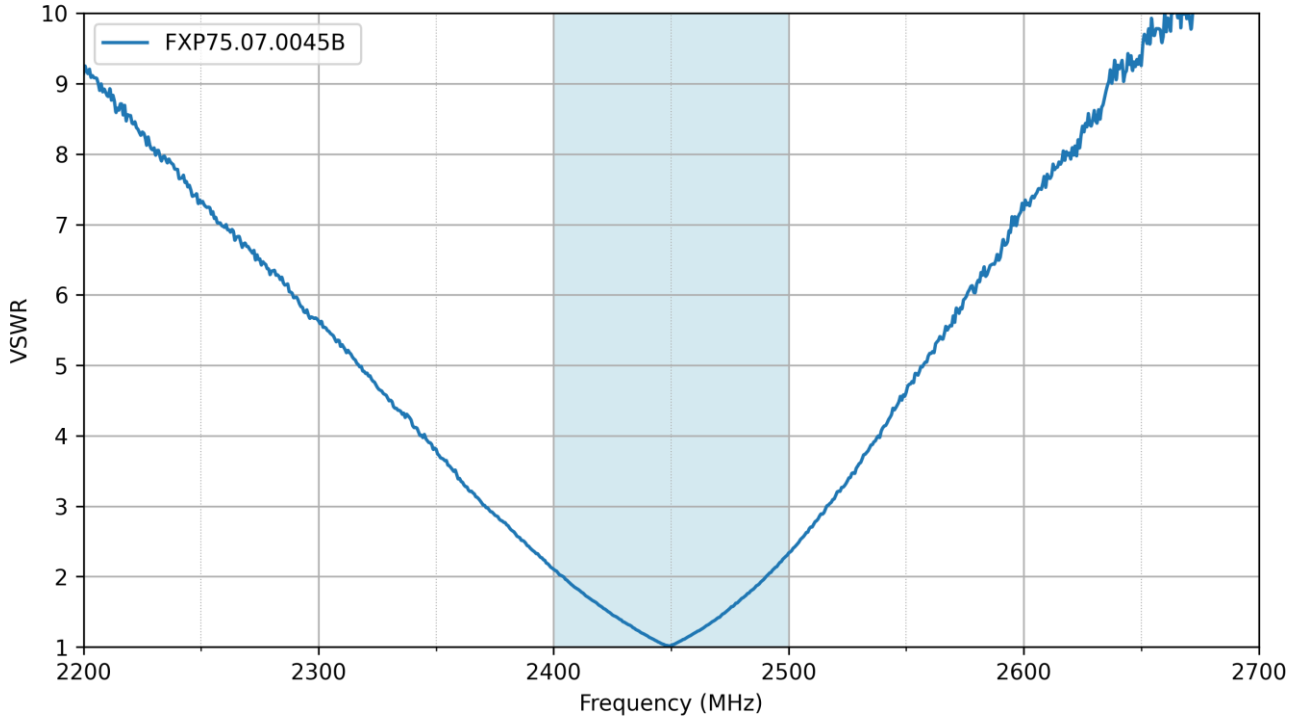


VNA Test Setup on 2mm ABS

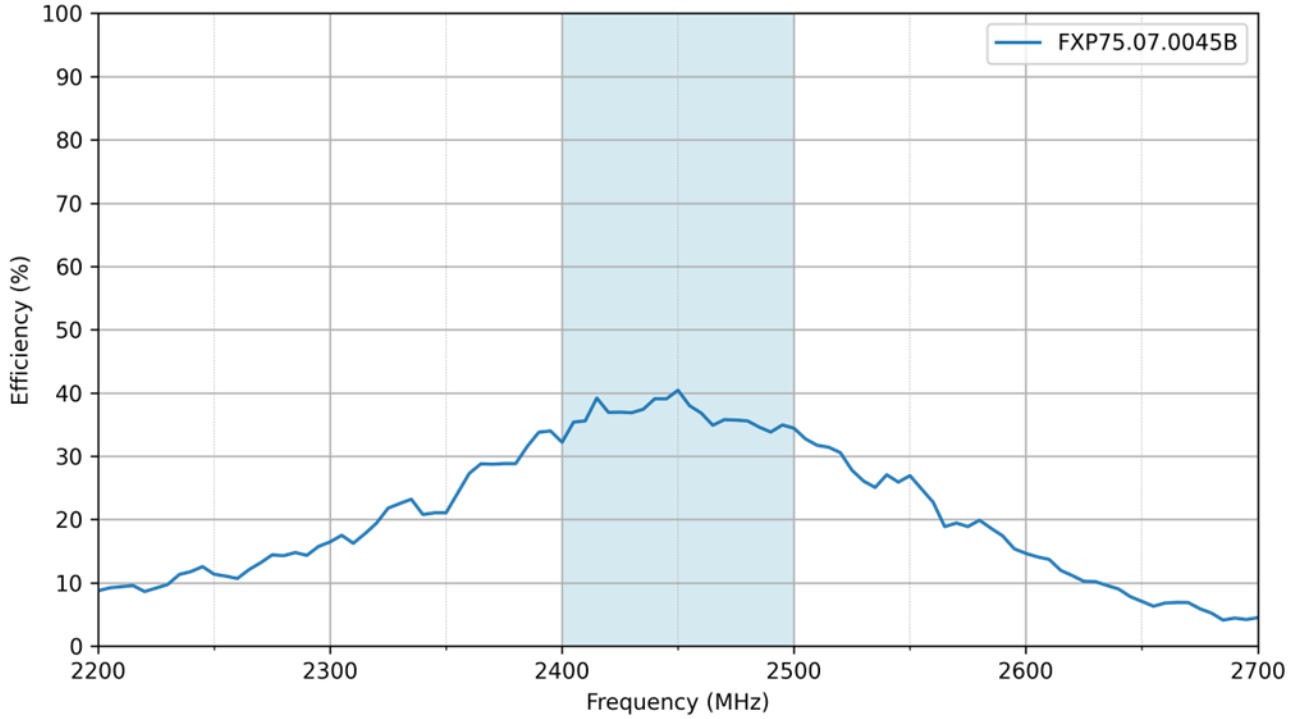
5.2 Return Loss



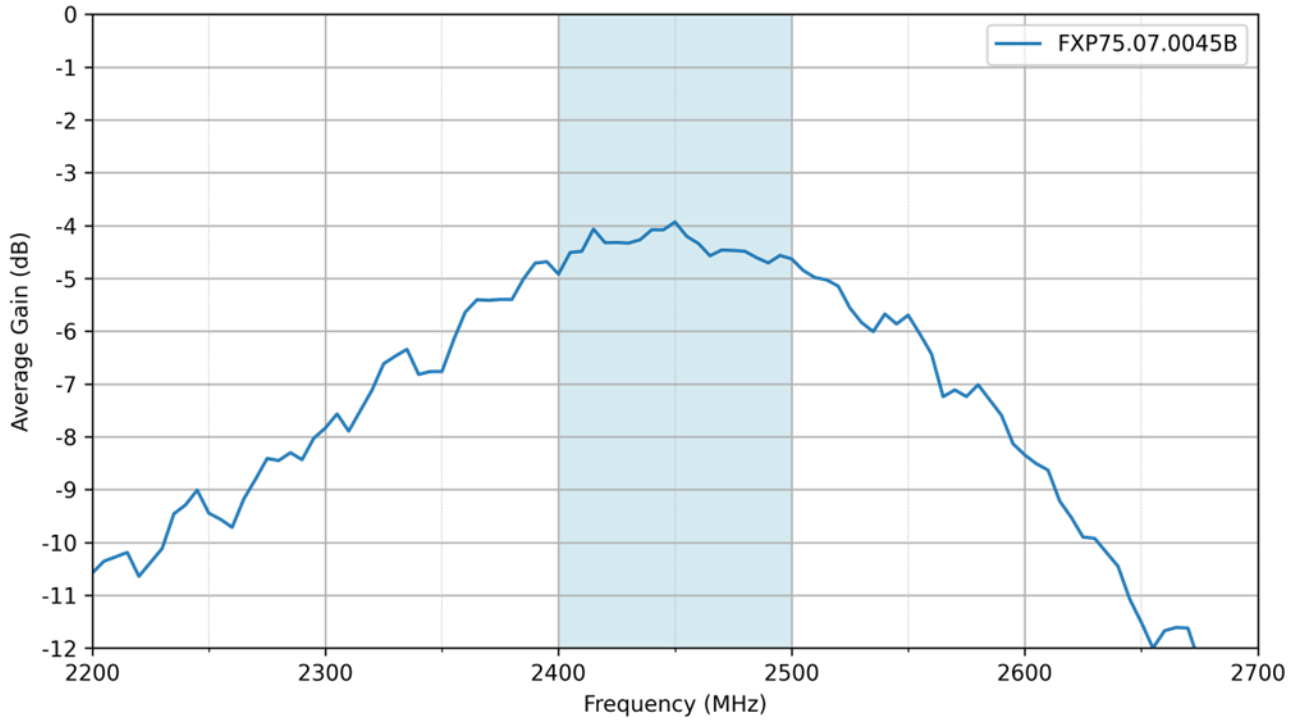
5.3 VSWR



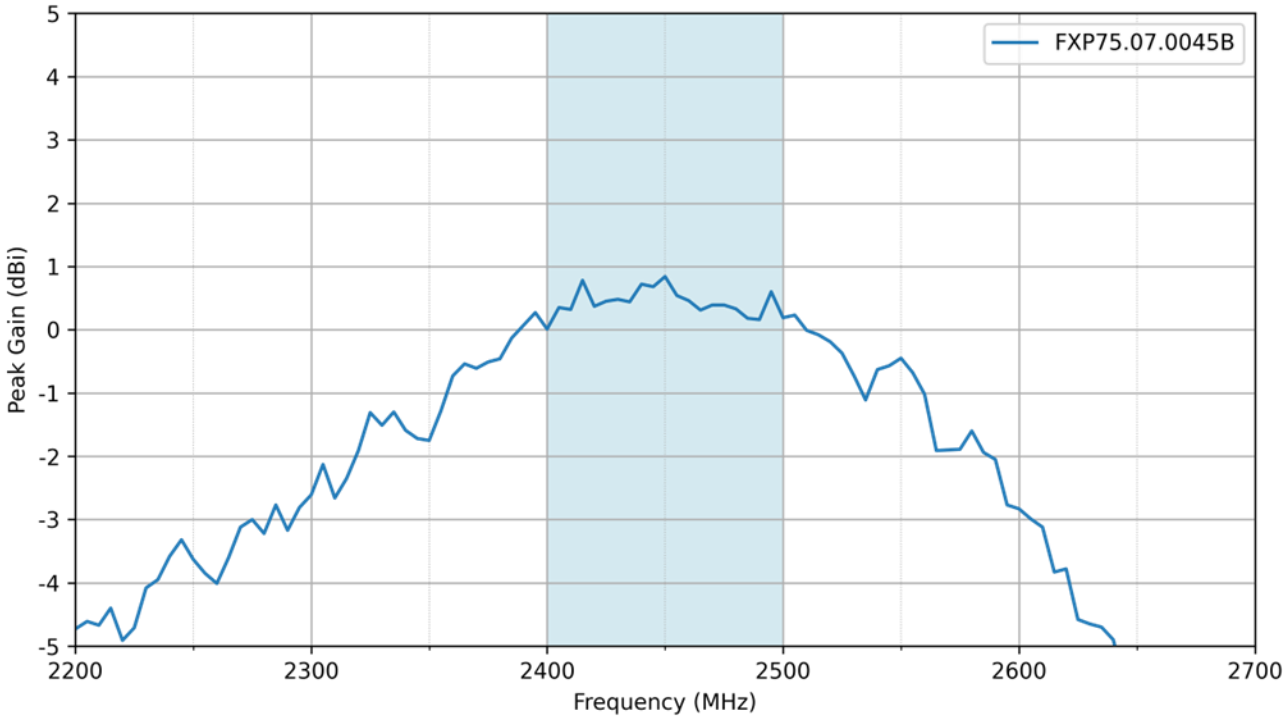
5.4 Efficiency



5.5 Average Gain

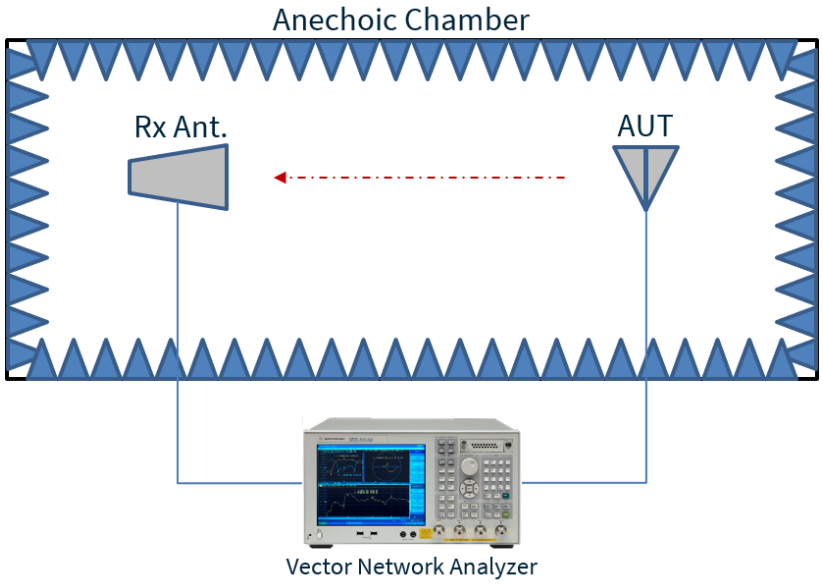


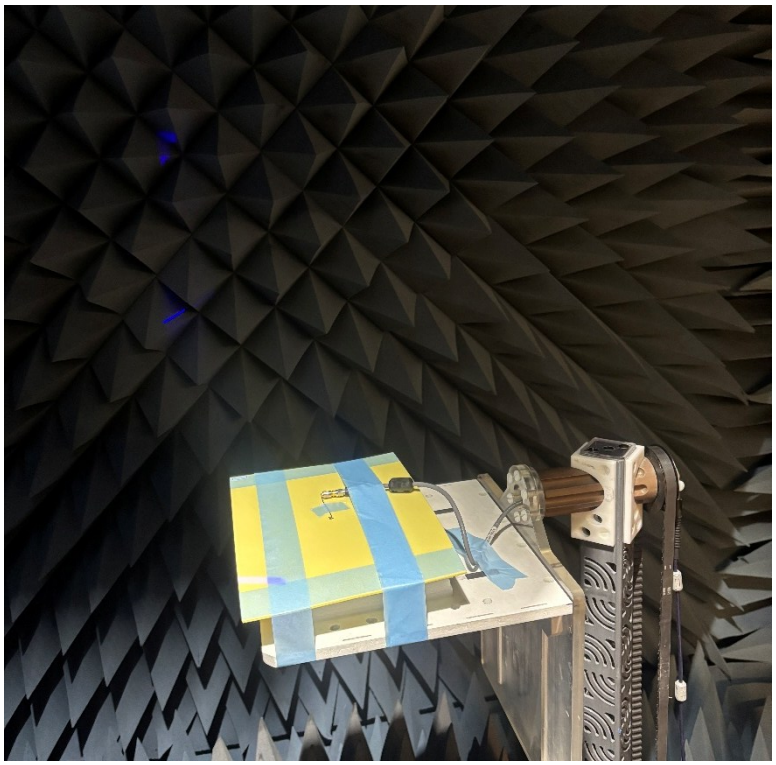
5.6 Peak Gain


FXP75.07.0045B
Peak Gain (dBi)
5
4
3
2
1
0
-1
-2
-3
-4
-5
2200
2300
2400
2500
2600
2700
Frequency (MHz)

6. Radiation Patterns

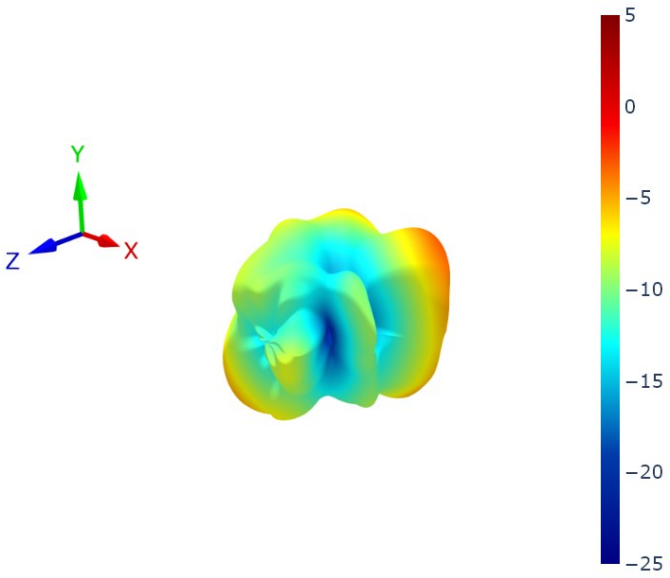
6.1 Test Setup



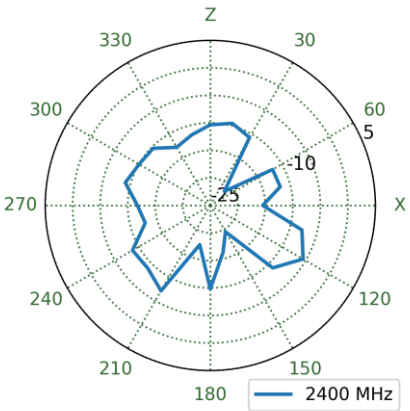


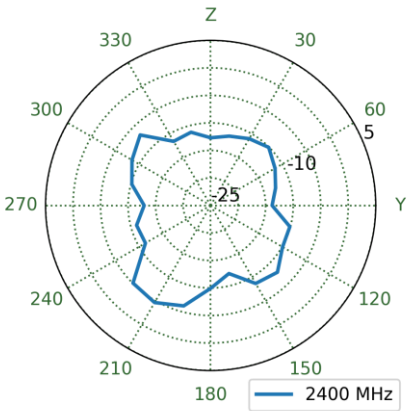
Chamber Test Setup on 2mm ABS

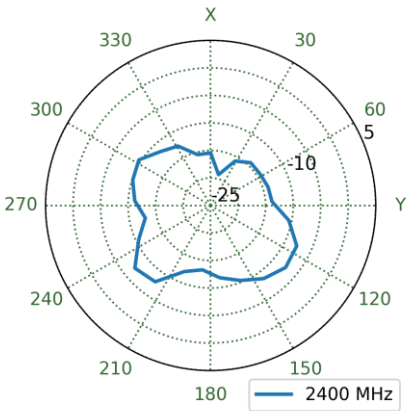
6.2 Patterns at 2400 MHz



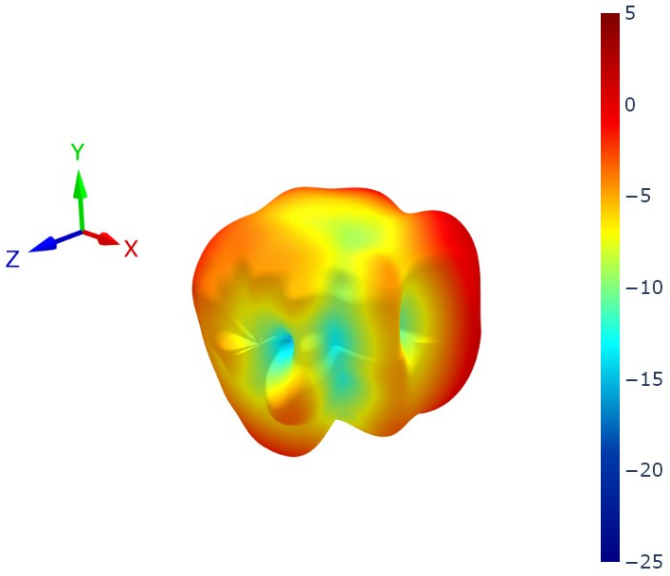
XZ Plane	YZ Plane	XY Plane

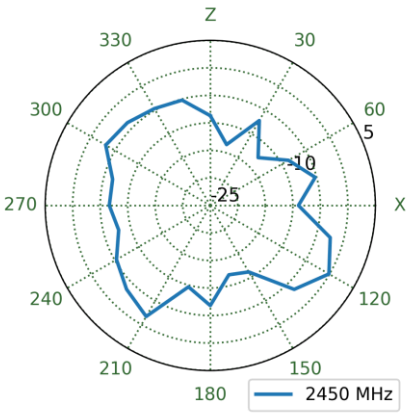
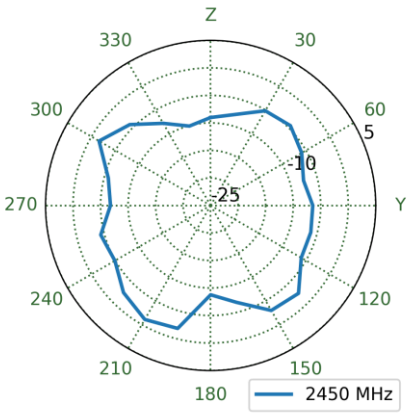
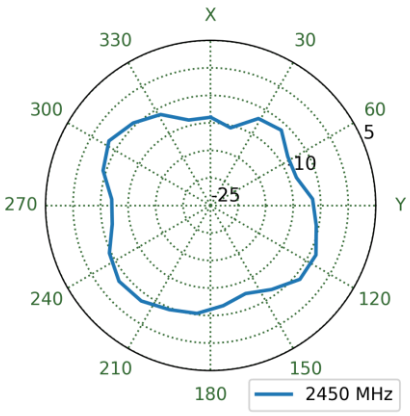




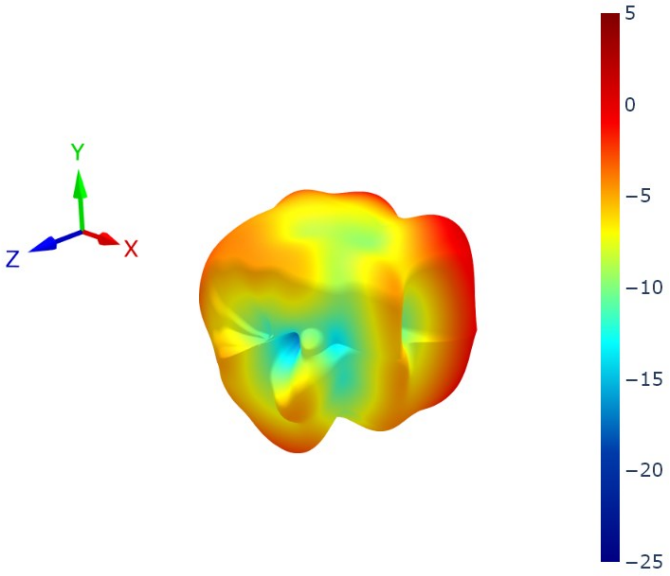


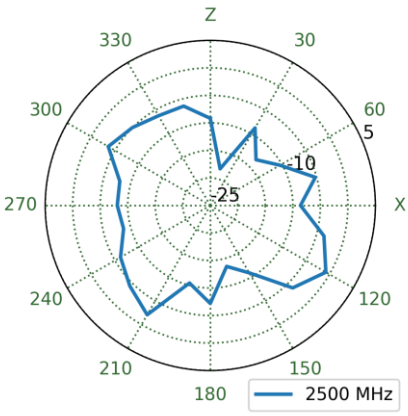
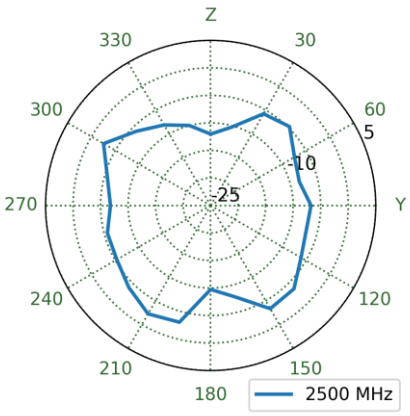
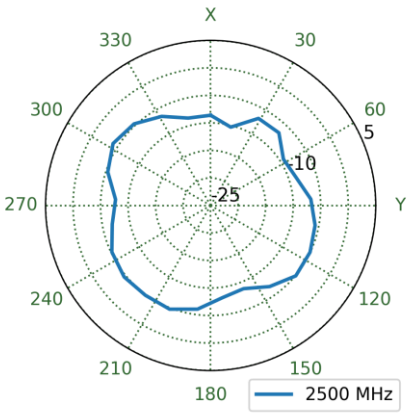
6.3 Patterns at 2450 MHz



XZ Plane	YZ Plane	XY Plane
		

6.4 Patterns at 2500 MHz



XZ Plane	YZ Plane	XY Plane
		

Changelog for the datasheet

SPE-13-8-067 – FXP75.07.0045B

Revision: F (Current Version)	
Date:	2026-04-08
Changes:	Updated product photos
Changes Made by:	Cesar Sousa

Previous Revisions

Revision: E	
Date:	2026-02-05
Changes:	Full datasheet update.
Changes Made by:	Gary West

Revision: D	
Date:	2024-09-13
Changes:	Updated product photos
Changes Made by:	Conor McGrath

Revision: C	
Date:	2015-05-11
Changes:	Amended frequency labels on 3.4 and 3.5 tables
Changes Made by:	Aine Doyle

Revision: B	
Date:	2015-02-05
Changes:	Added note on Gain
Changes Made by:	Aine Doyle

Revision: A (Original First Release)	
Date:	2013-10-07
Notes:	
Author:	Technical Writer

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