



TAOGLAS®



Datasheet

450MHz Flexible Antenna

Part No:
FXP450.07.0100C

Description

410-470MHz Flexible PCB Antenna with 100mm 1.37 IPEX MHFI

Features:

Low-profile 450MHz FPC antenna

450MHz FPC Antenna 410 to 470MHz

Low Profile Embedded FPC Antenna Supporting 410 to 470MHz

Dimensions: 47mm * 17mm * 0.28mm

1.37mm Mini coaxial cable 100mm IPEX MHFI U.FL Compatible connector

Custom Cables and Connectors Available

RoHS & Reach Compliant

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1. Introduction



The Taoglas FXP450.07.0100C is a low-profile flexible PCB antenna designed for 450MHz applications. The antenna is designed to support all frequency channels within 410-470MHz. This antenna is highly stable and independent of different cable routing. The FXP450 has been designed to be as compact as possible while maintaining higher performance than any comparable production the market.

The FXP450 can be adhered via 3M tape on to a customer's device with care taken to ensure the antenna is placed as far away from metal components as possible. Usually, antennas that operate on 450MHz need to be much larger than the FXP450, with the design of the FXP450 we have managed to get a high performance antenna with a compact form factor.

Typical Applications Include:

- Mesh Networks
- Cellular IoT Devices
- Agriculture
- Weather Monitors

The FXP450 can be supplied with fully customized cables and connectors, please contact your regional Taoglas customer support team for further information.

2. Specification

Electrical								
Band	Frequency (MHz)	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
410MHz	410-430	29.9	-5.25	-0.36	50 Ω	Linear	Omni	10W
433MHz	430-435	29.2	-5.35	-1.57				
450MHz	450-470	34.6	-4.61	-0.05				

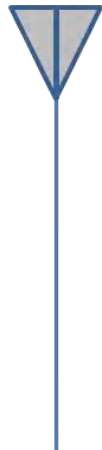
Mechanical	
Dimensions(mm)	47*17*0.08
Weight	1g
Material	Polymer
Connector	IPEX MHFI U.FL compatible
Cable	100mm 1.37

Environmental	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Relative Humidity	40% to 95%
RoHs & REACH Compliant	YES

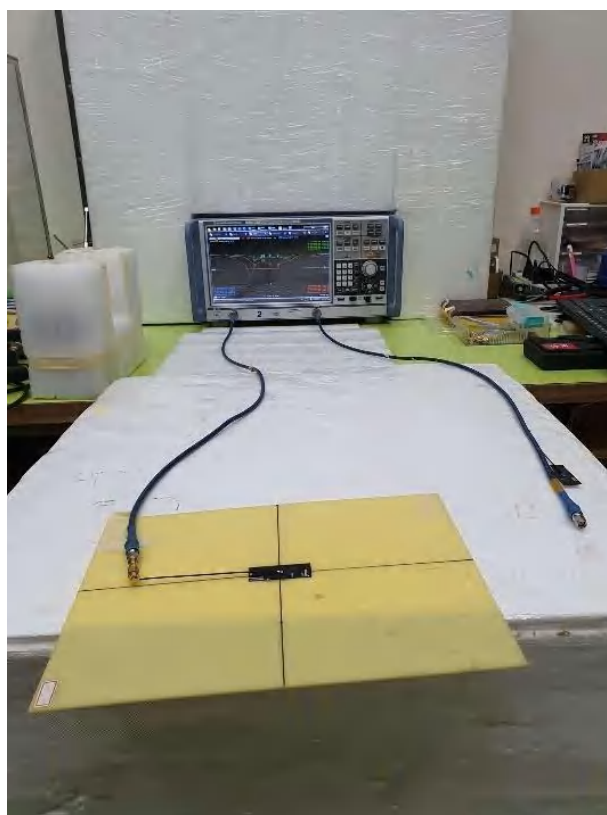
3. Antenna Characteristics

3.1 Test Setup

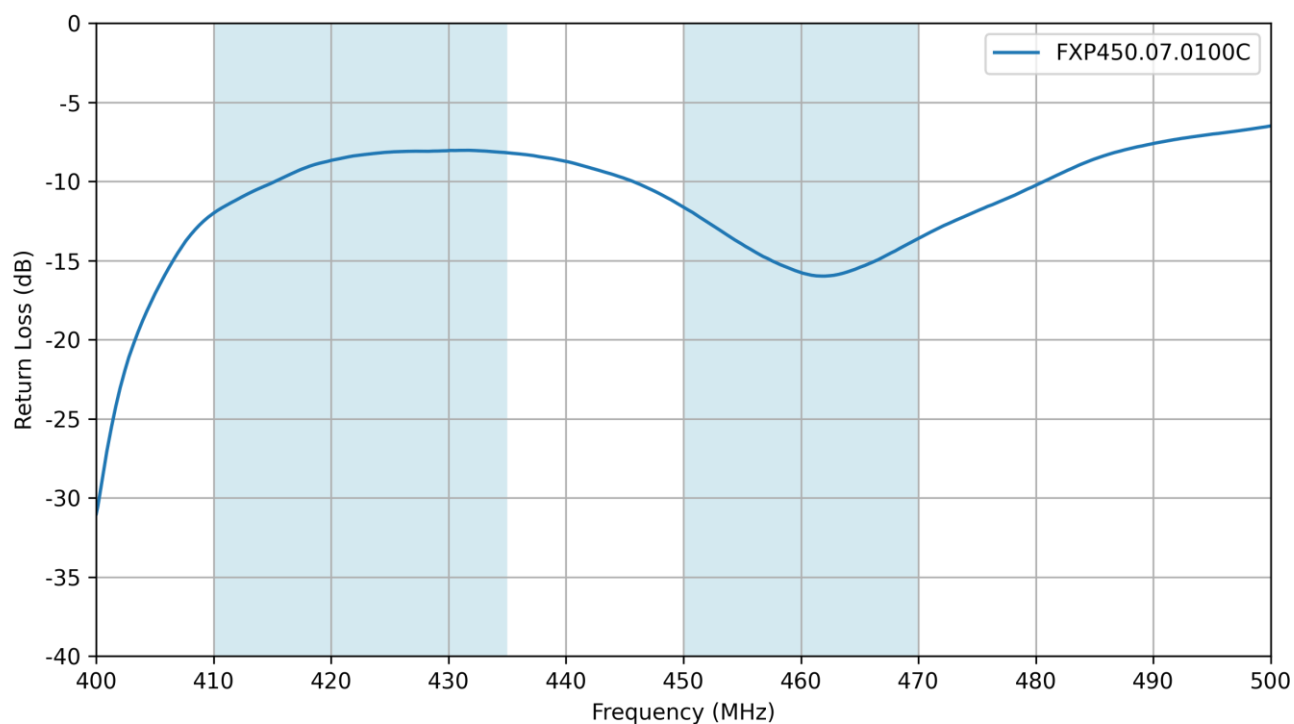
AUT



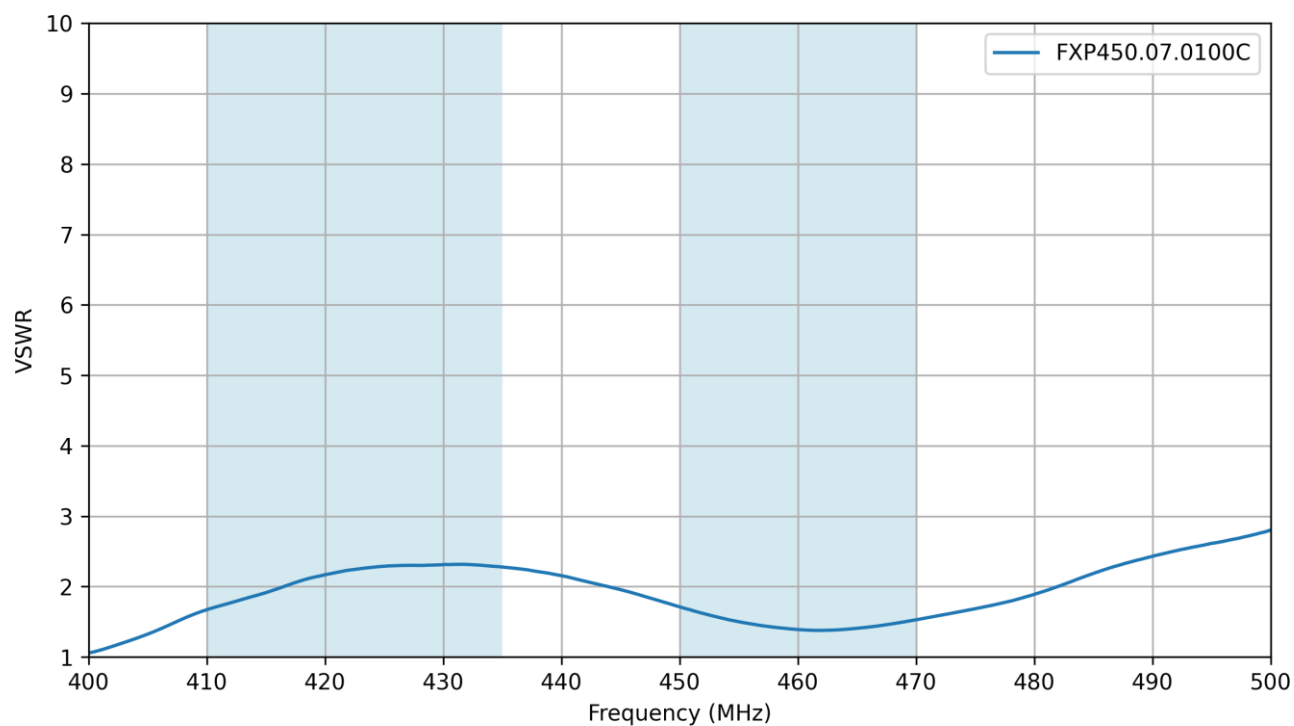
Vector Network Analyzer



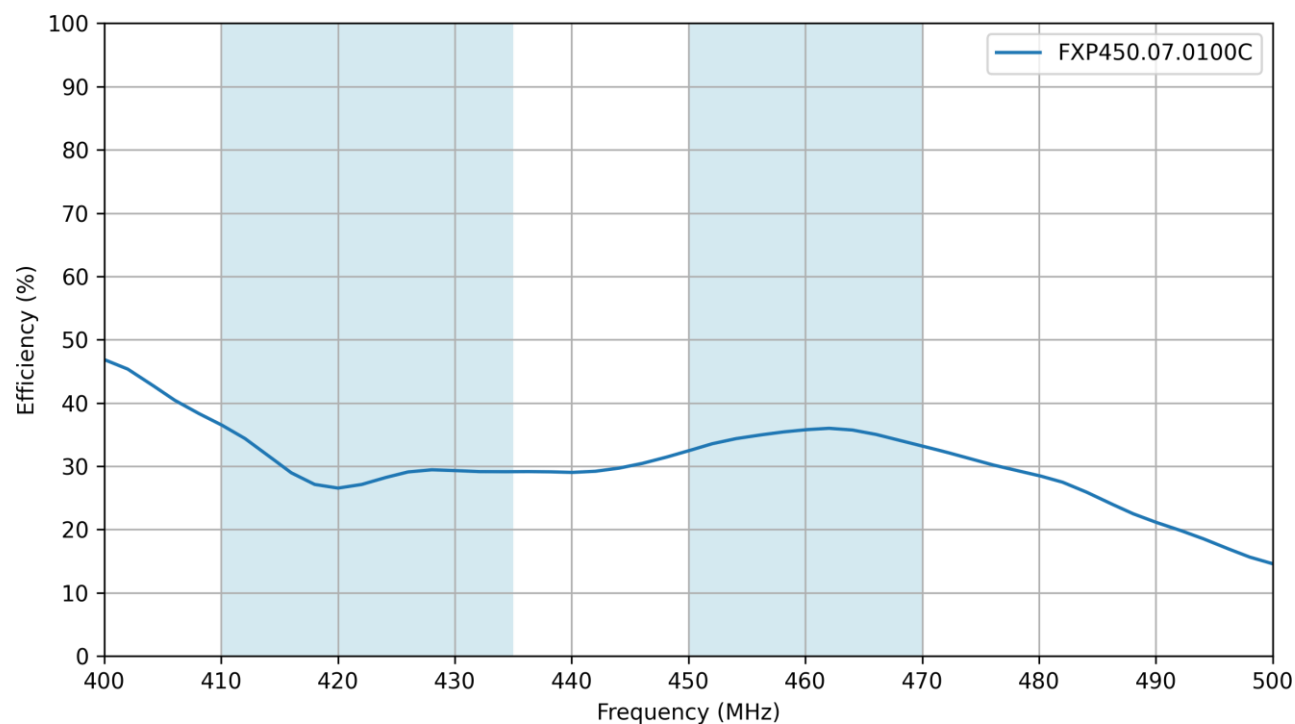
3.2 Return Loss



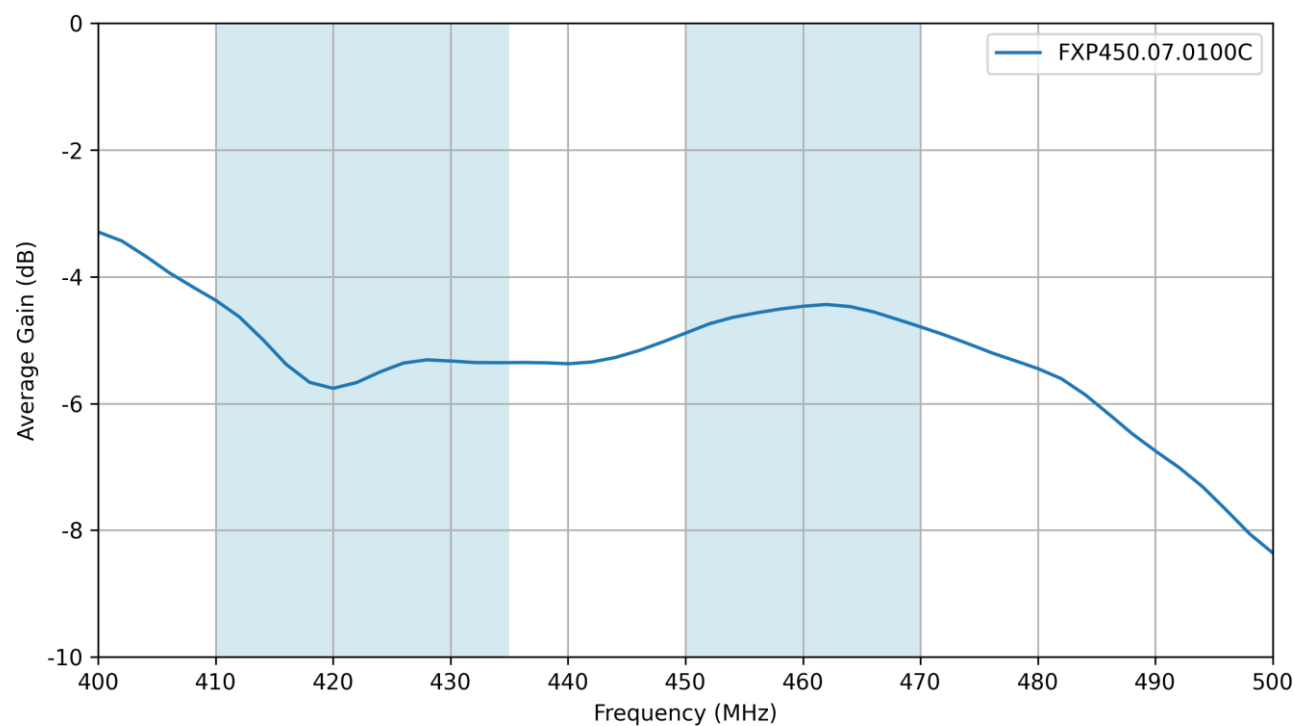
3.3 VSWR



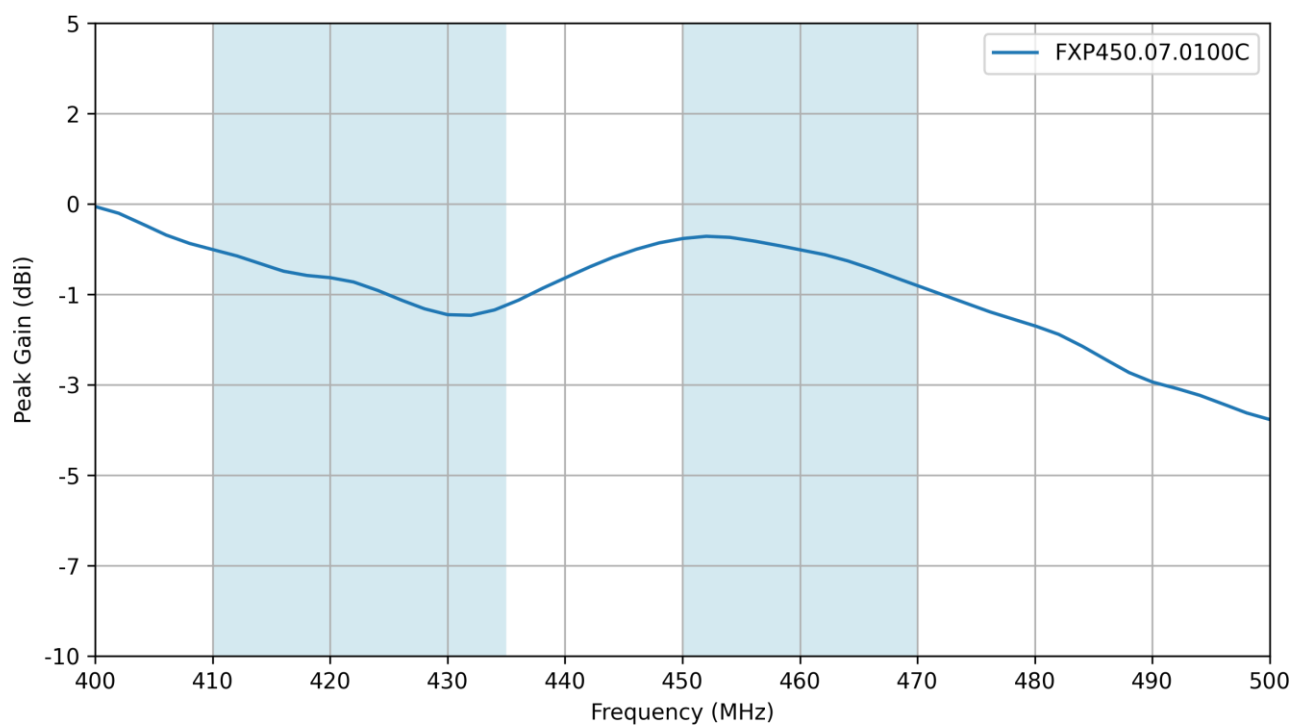
3.4 Efficiency



3.5 Average Gain

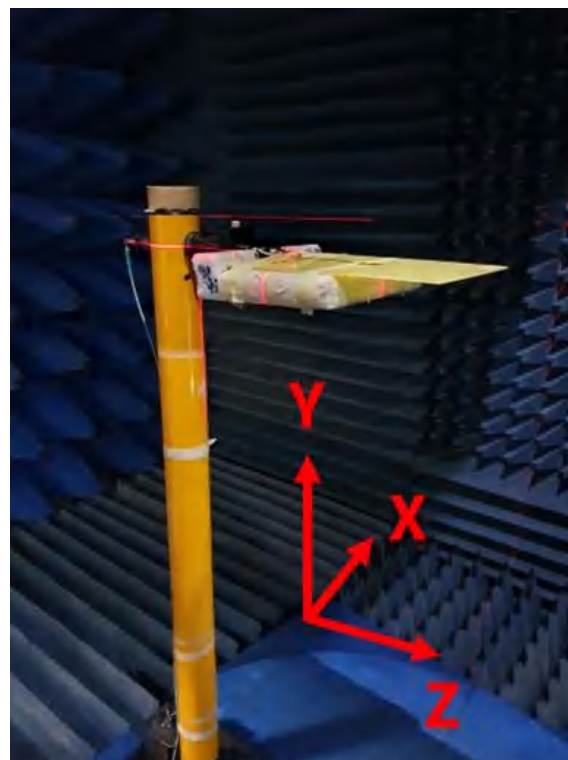
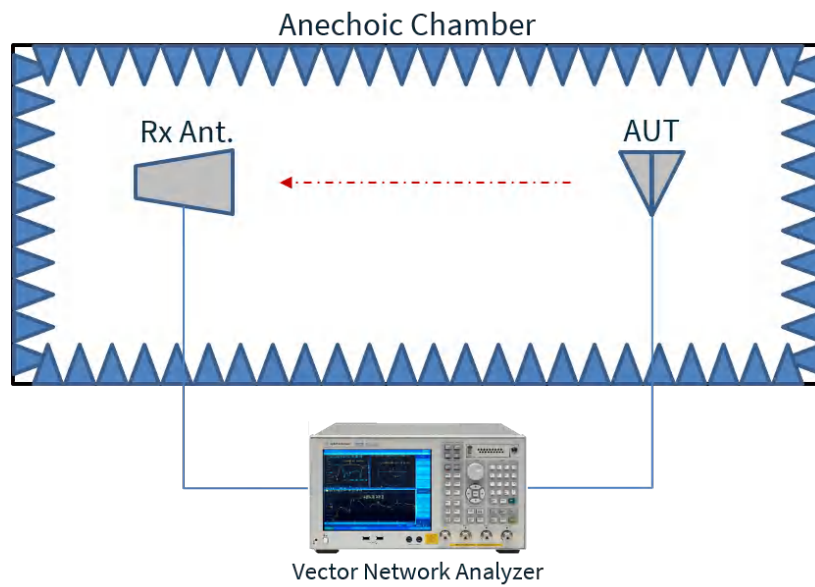


3.6 Peak Gain

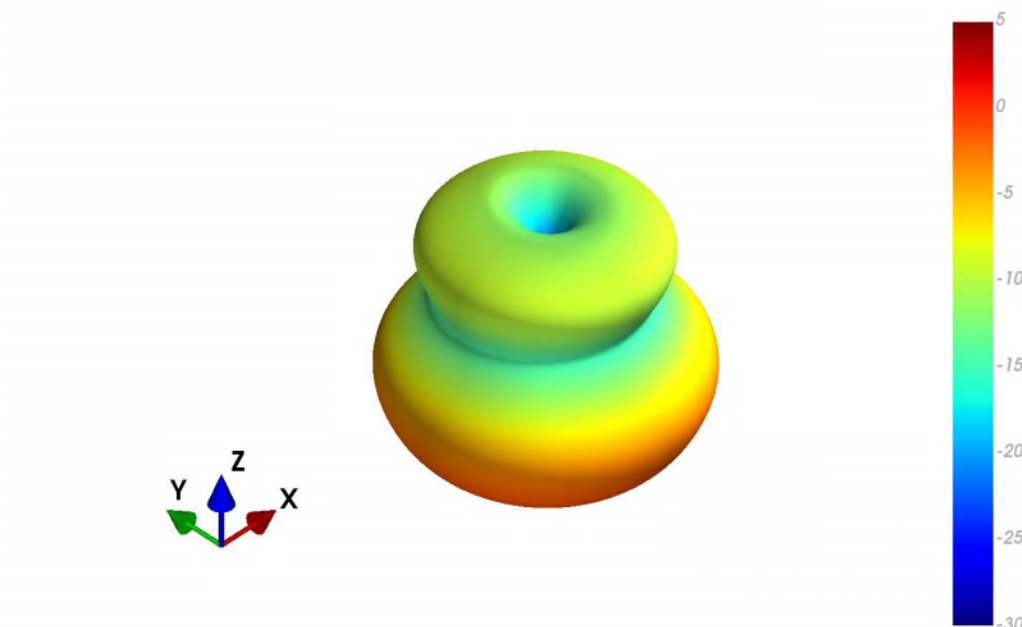


4. Radiation Patterns

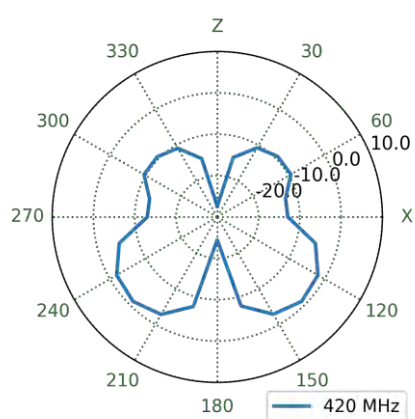
4.1 Test Setup



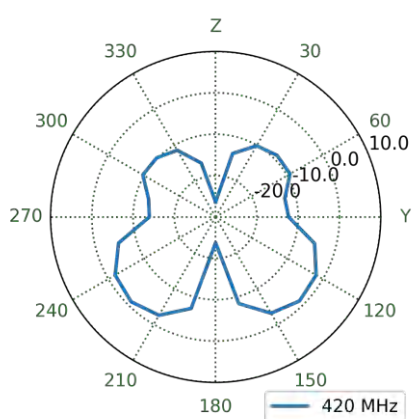
4.2 FXP450.07.0100C Patterns at 420 MHz



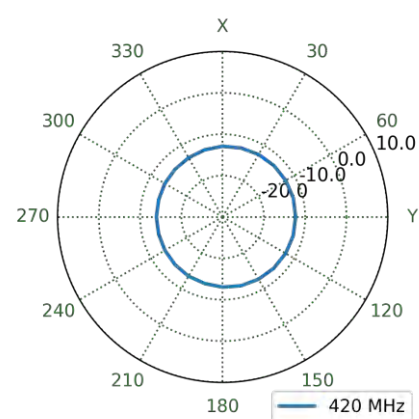
XZ Plane



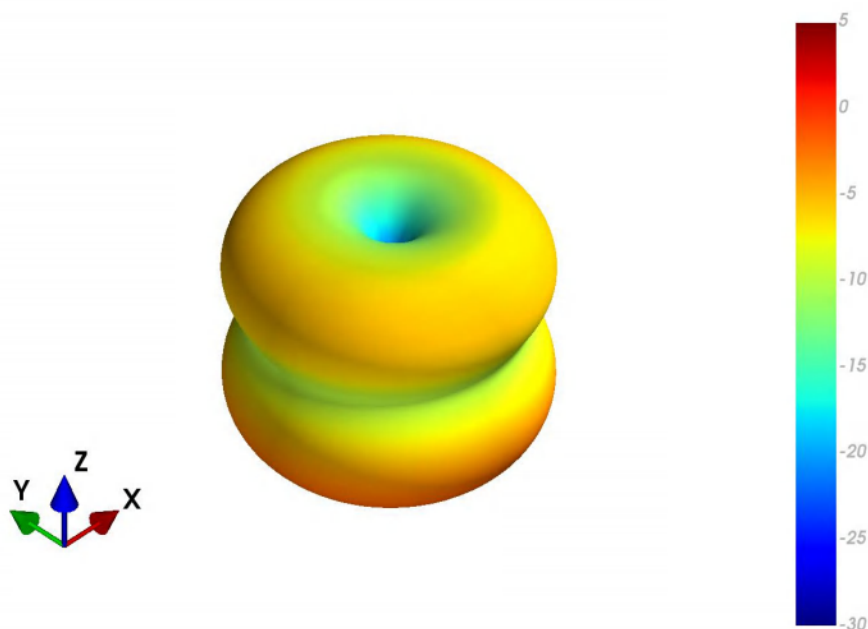
YZ Plane



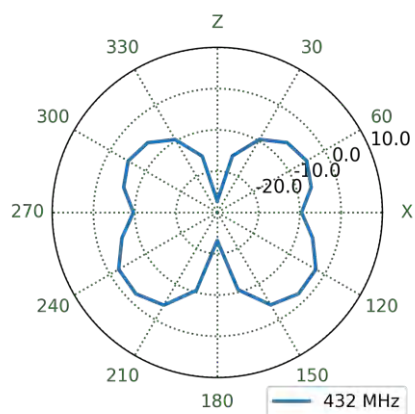
XY Plane



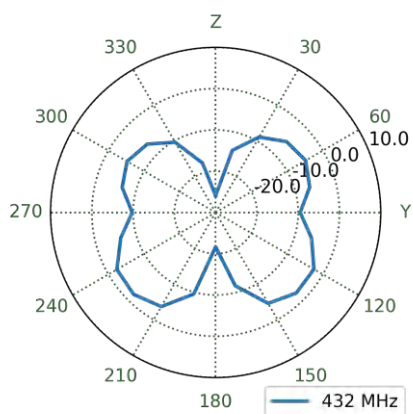
4.3 FXP450.07.0100C Patterns at 432 MHz



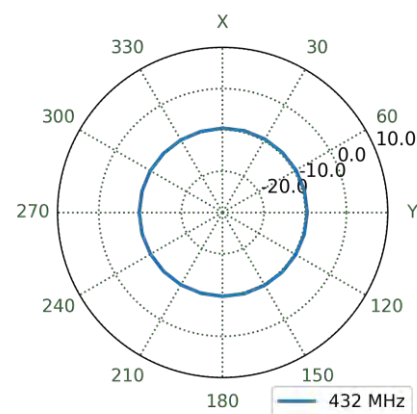
XZ Plane



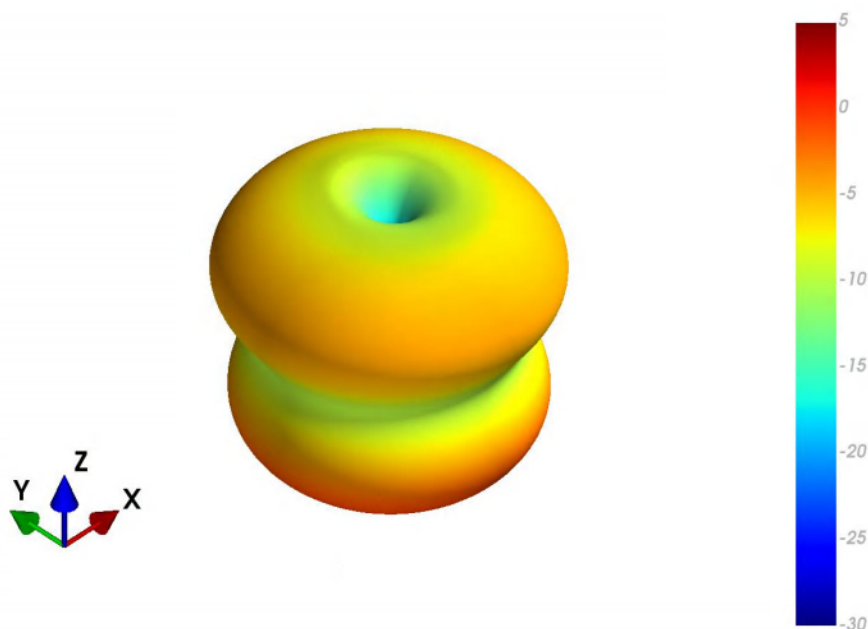
YZ Plane



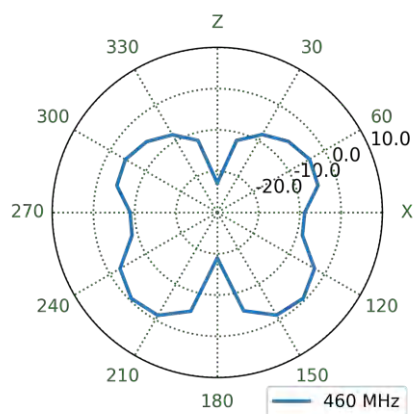
XY Plane



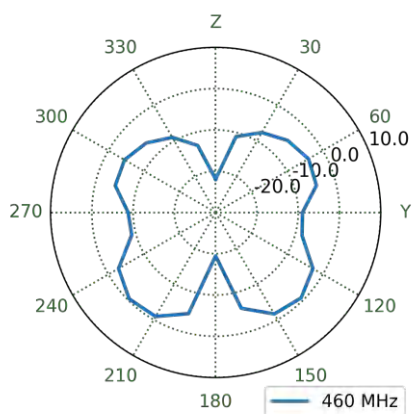
4.4 FXP450.07.0100C Patterns at 460 MHz



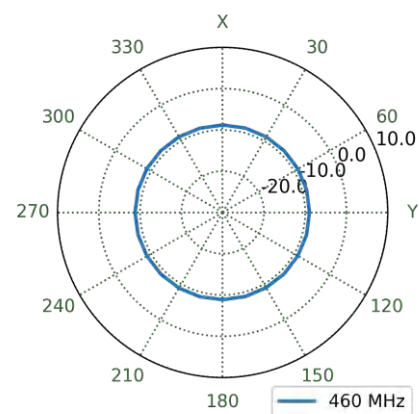
XZ Plane



YZ Plane



XY Plane



5. Mechanical Drawing

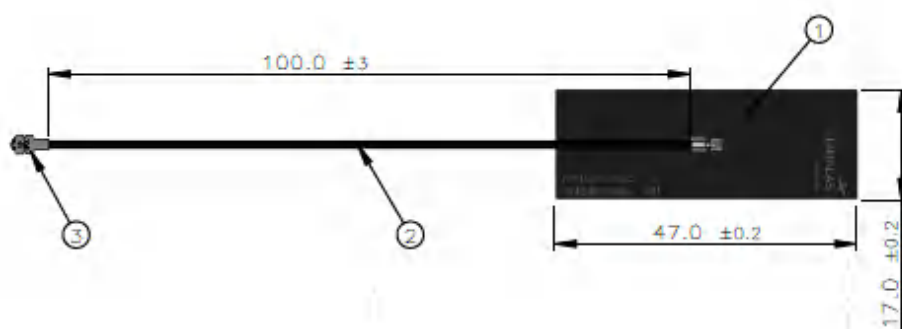
ISO NO.: EDW-23-8-0597

STATE: Release

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.
- 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	ZONE	DESCRIPTION	ENG	APPROVED	DATE
D01	All	Initial design	Aron Yan	Aaron	2023/4/21



	Name	Material	Finish	QTY
1	FXP450 PCB	Polymer 0.263	Black	1
2	1.37 Coaxial Cable	FEP	Black	1
3	IPEX MHF1	Brass	Au Plated	1

APPROVED BY: Chozen				
CHECK BY: Aaron				
DRAWN BY: Aron Yan	TITLE: 450MHz Flexible Antenna with 100mm 1.37 IPEX MHF1			
DATE: 2023/4/21				
UNLESS OTHERWISE SPECIFIED TOLERANCES ON:	PART NO.: FXP450.07.0100C			
THIRD ANGLE PROJECTION				
UNIT: mm	SCALE: 1:1	PAGES: 1/1	REV: D01	

6. Packaging

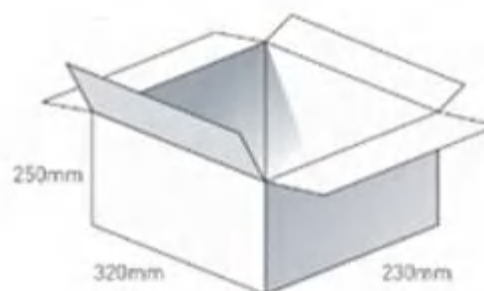
100pcs FXP450.07.0100C per PE Bag
Dimensions 300*100mm
Weight -150g



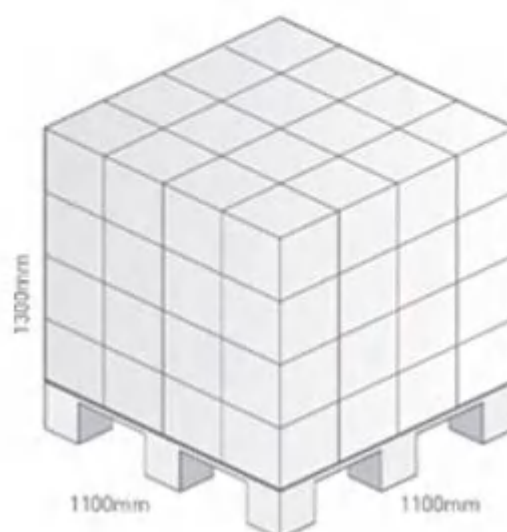
1000pcs FXP450.07.0100C per Large PE Bag
Dimensions 450*280mm
Weight -1.5Kg



5000pcs FXP450.07.0100C per carton
Dimensions 320*250*230mm
Weight -6Kg



Pallet Dimensions 1100*1100*1300mm
65 Cartons per pallet
13 Cartons per layer
5 Layers



Changelog for the datasheet

SPE-23-8-180 – FXP450.07.0100C

Revision: A (Original First Release)

Date:	2023-06-19
Notes:	First Release
Author:	Gary West

Previous Revisions



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