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Datasheet

868/915MHz ISM/LoRA Flexible PCB Antenna

Part No:
FXP890.07.0100C

Description

860-928MHz ISM/LoRA Compact Flexible PCB Antenna

Features:

Low-profile antenna

Low Profile Embedded FPC Antenna Supporting 860 to 928MHz

Dimensions: 62.2mm * 20mm * 1.6mm

Mini coaxial cable 100mm 1.13 IPEX MHFI U.FL Compatible connector

Custom Cables and Connectors Available

RoHS & Reach Compliant

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1. Introduction



The Taoglas FXP890 is an ISM/LoRA compact flexible PCB antenna designed to fit into small devices. This antenna has been expertly designed to cover frequencies used in different regions for ISM/LoRA applications, incorporating a wideband design is rare for ISM/LoRA products and with the FXP890 frequencies from 860-928MHz can be covered so one SKU can be used for global ISM/LoRA applications.

The FXP890 has been designed to be extremely compact compared to other ISM/LoRA Flexible PCB antennas meaning it can be placed in areas where other products cannot. It 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.

Typical Applications Include:
- Remote Monitoring
- Mesh Networks
- Security

The FXP890's cables and connectors are fully customizable, please contact your regional Taoglas customer support team for further information.

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2. Specification

Electrical								
Band	**Frequency (MHz)**	**Efficiency (%)**	**Average Gain (dB)**	**Peak Gain (dBi)**	**Impedance**	**Polarization**	**Radiation Pattern**	**Max. input power**
868MHz	863-870	49.7	-3.04	-0.90	50 Ω	Linear	Omni	10W
915MHz	902-928	59.2	-2.28	-0.06				

Mechanical	
Dimensions	62.2 x 20 x 1.6mm
Weight	2g
Material	Polyimide
Connector	IPEX MHFI U.FL compatible
Cable	1.13mm Coaxial

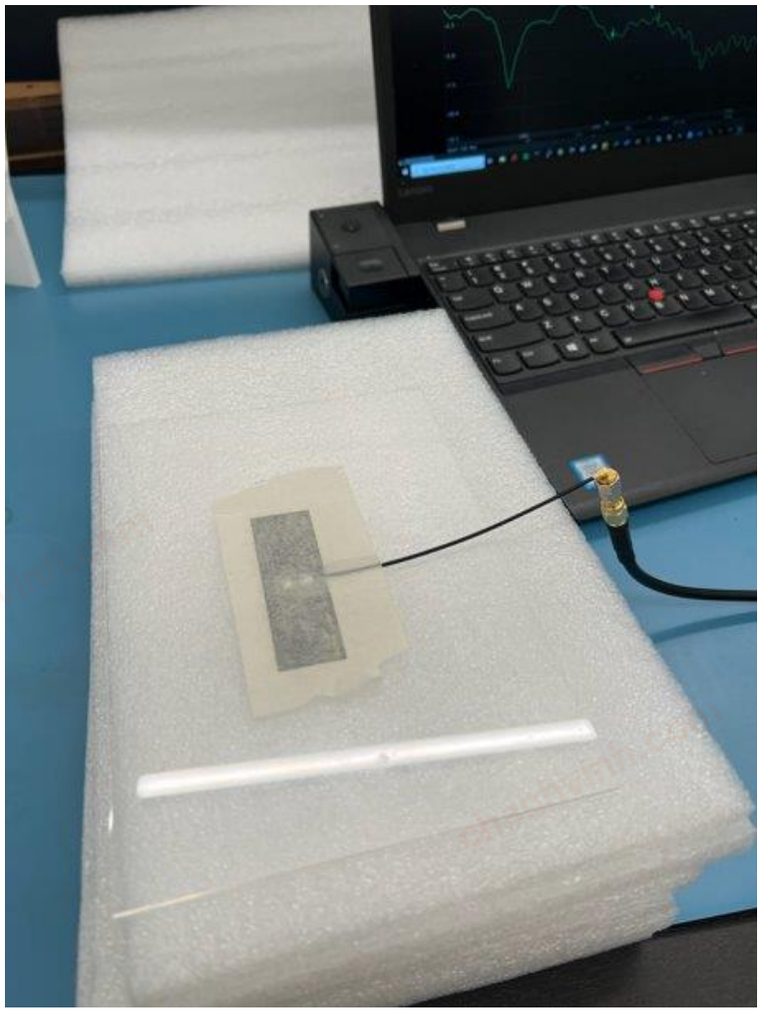
Environmental	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Relative Humidity	40% to 95%
RoHs & REACH Compliant	YES

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3. Antenna Characteristics

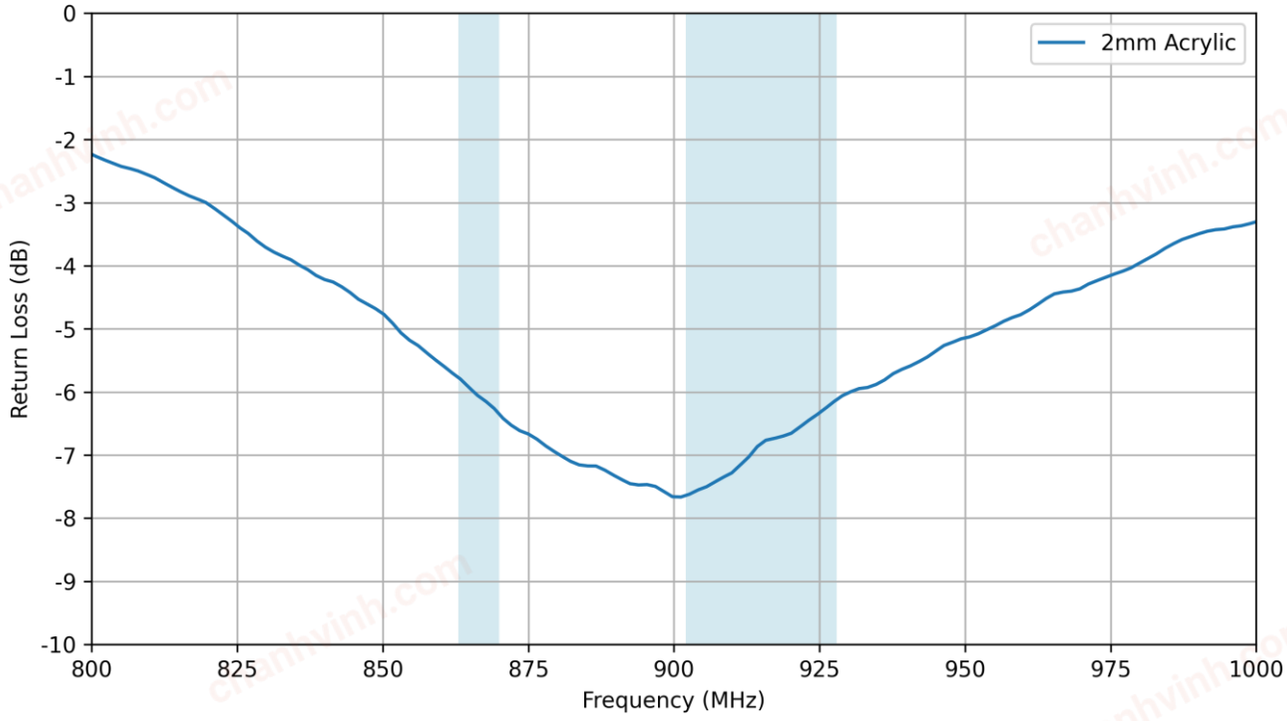
3.1 Test Setup



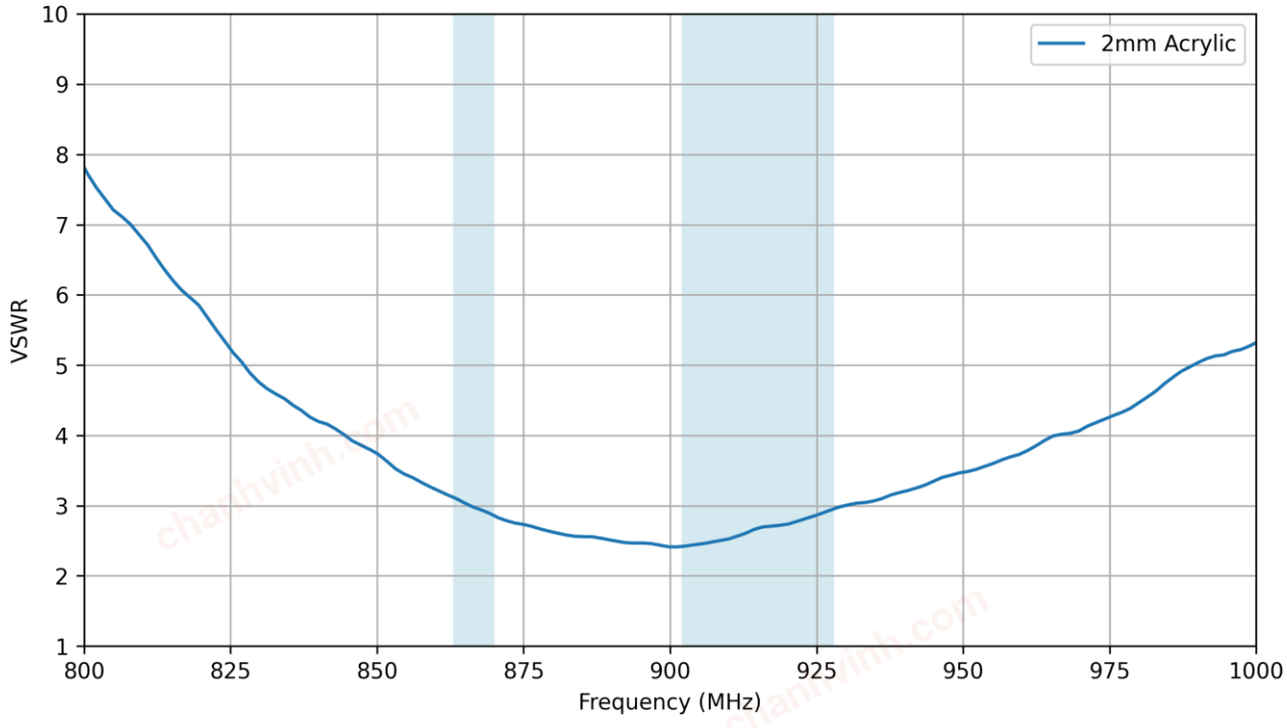


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3.2 Return Loss

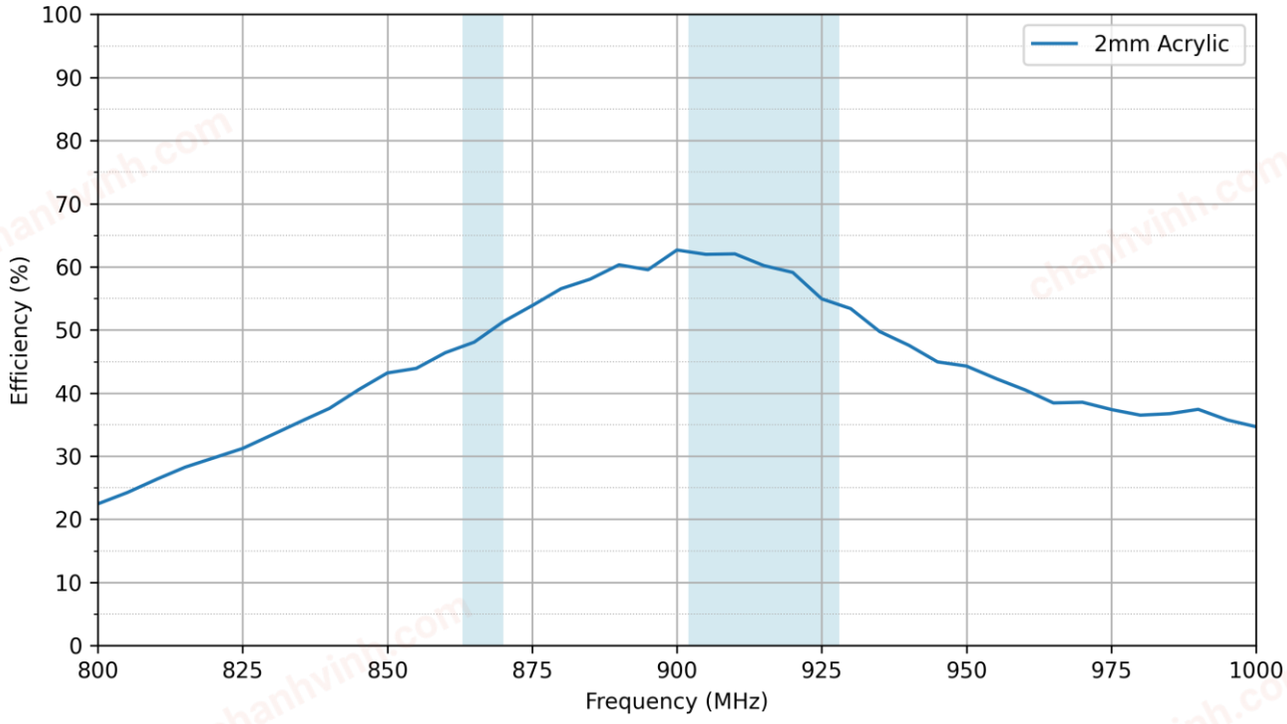


3.3 VSWR

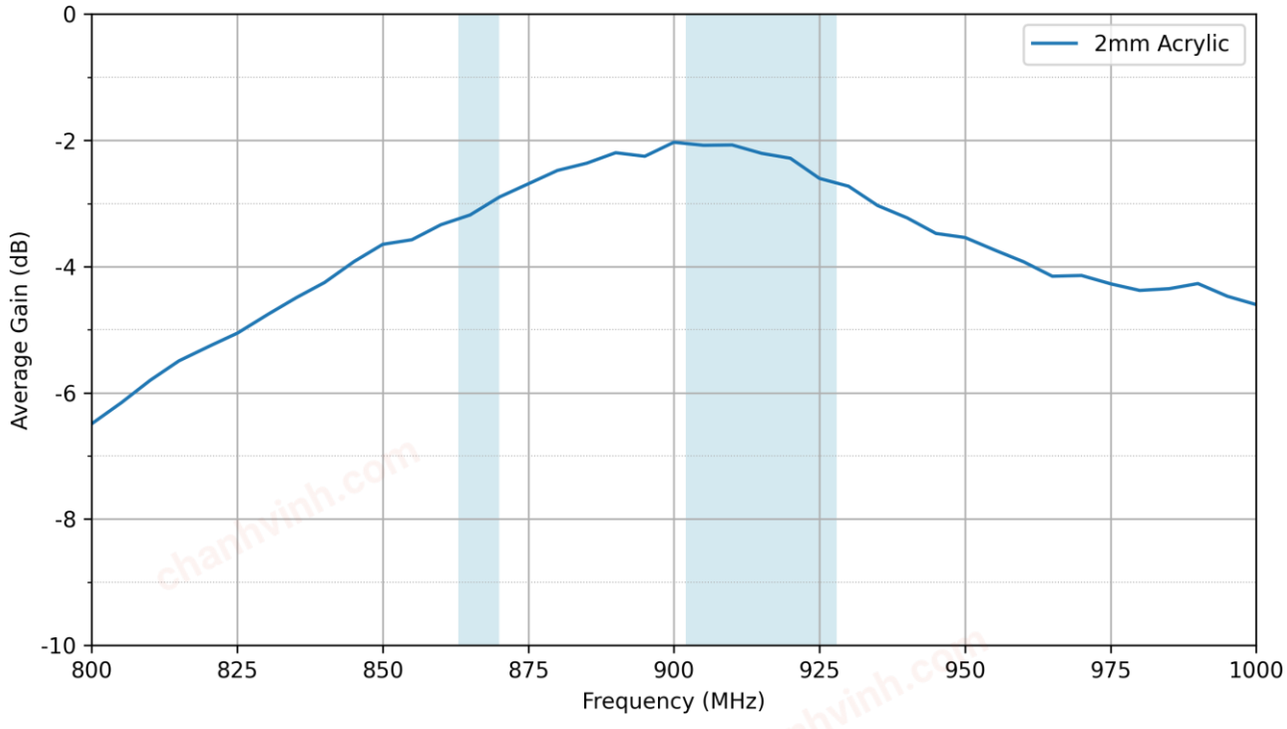


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3.4 Efficiency

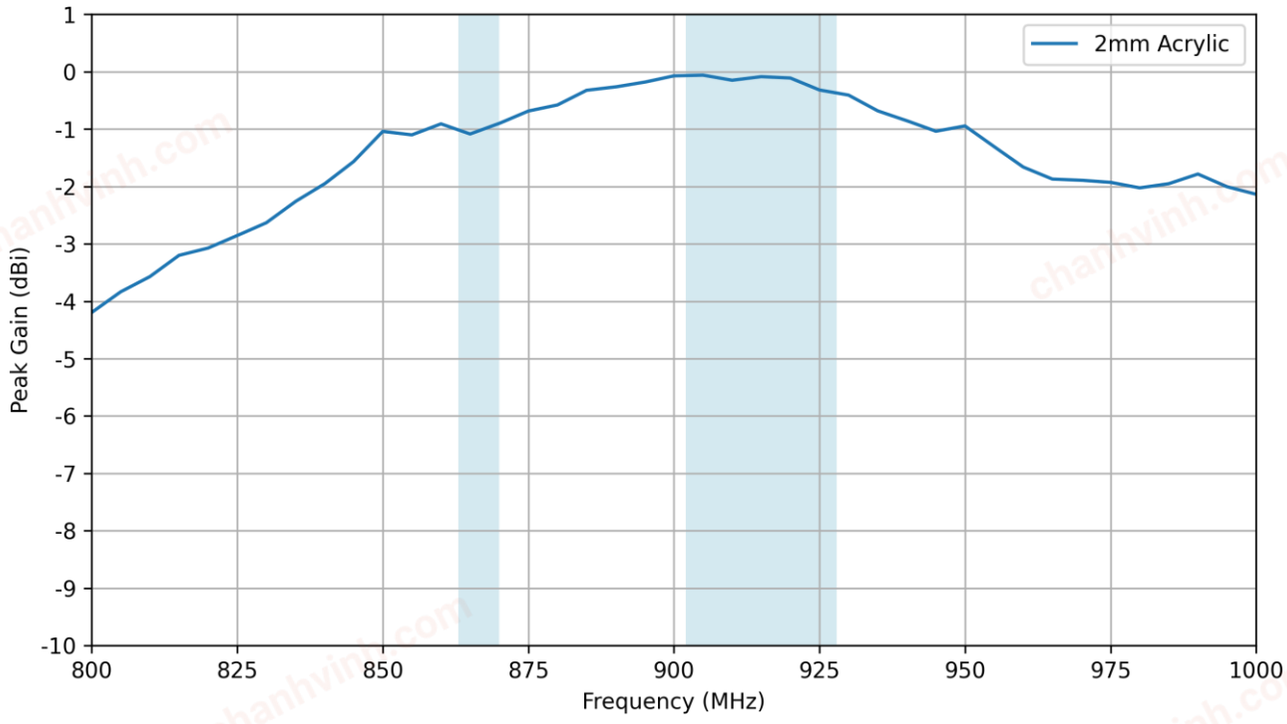


3.5 Average Gain



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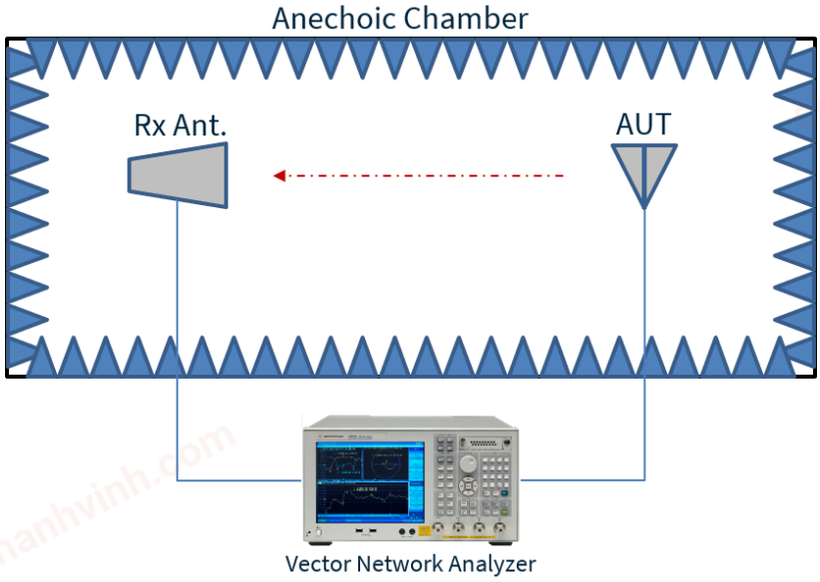
3.6 Peak Gain

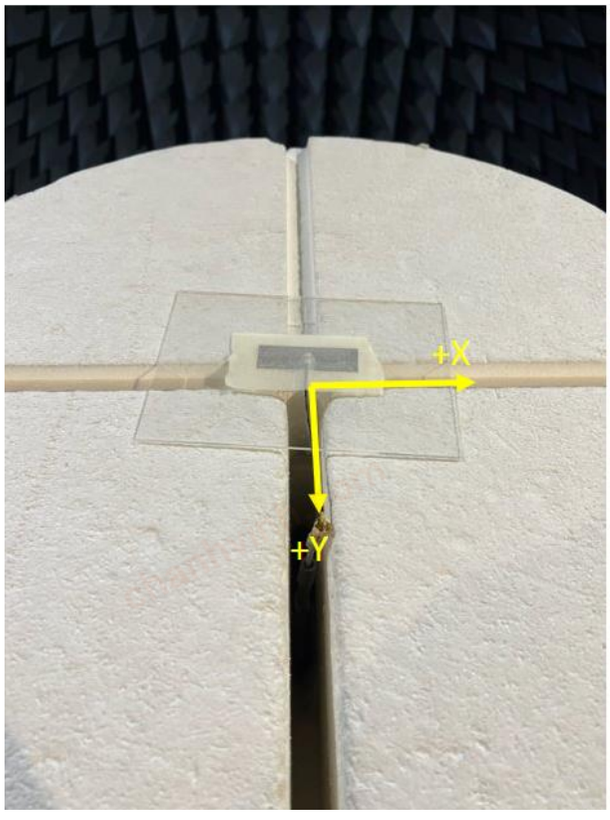


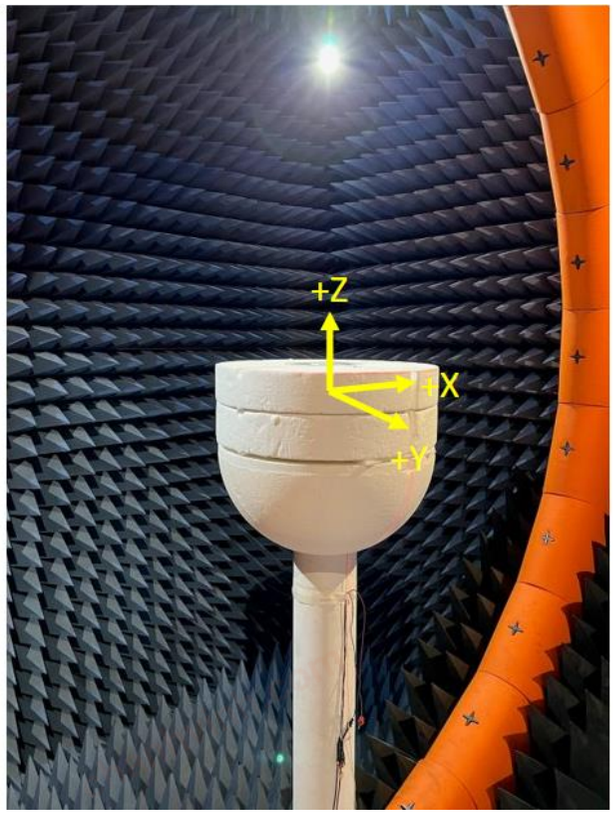
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4. Radiation Patterns

4.1 Test Setup

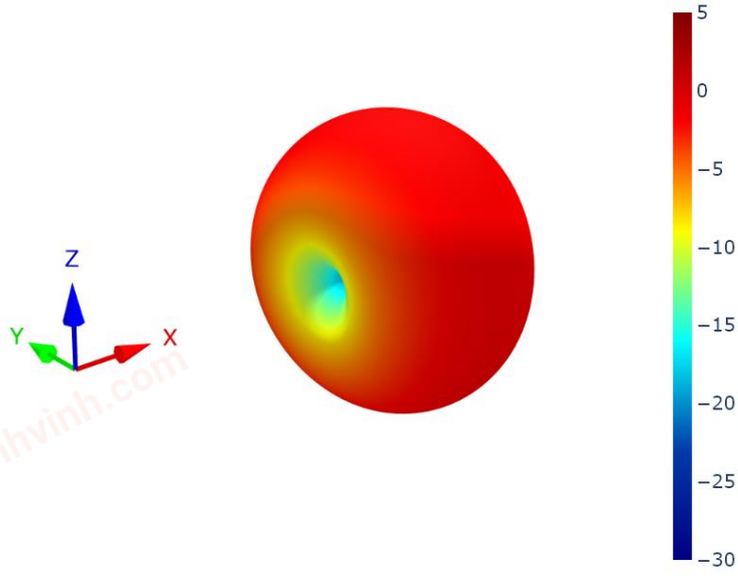




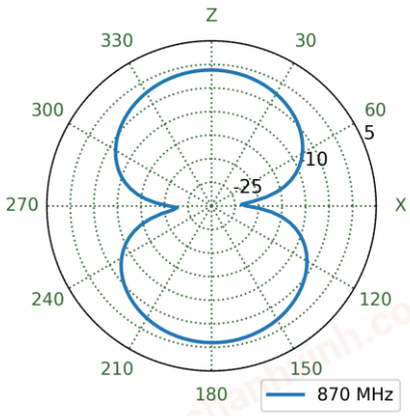


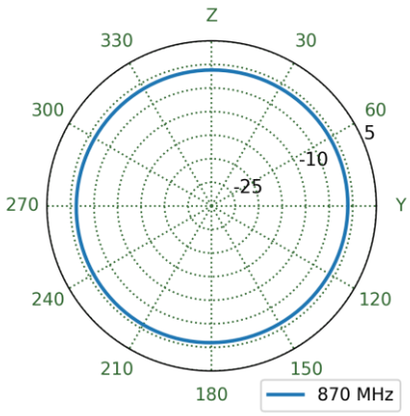
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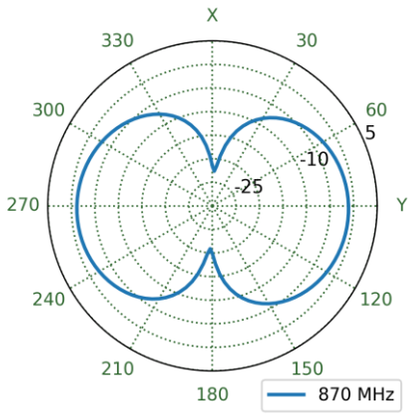
4.2 2mm Acrylic Patterns at 868 MHz



XZ Plane	YZ Plane	XY Plane

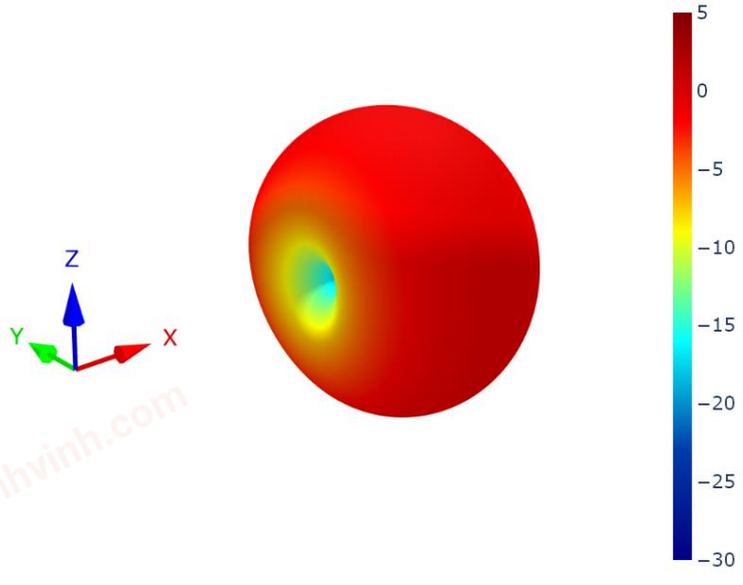




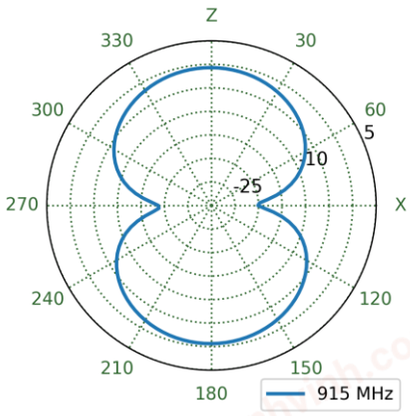


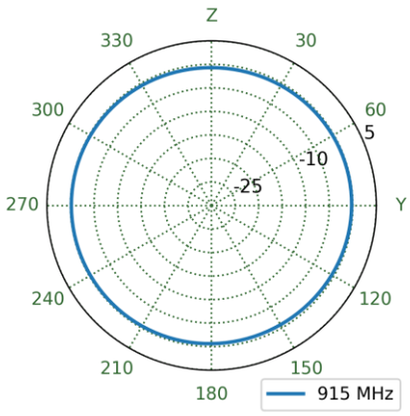
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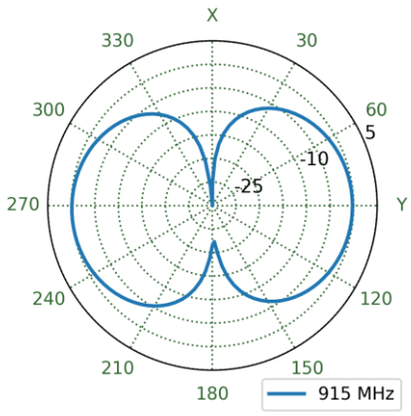
4.3 2mm Acrylic Patterns at 915 MHz



XZ Plane	YZ Plane	XY Plane





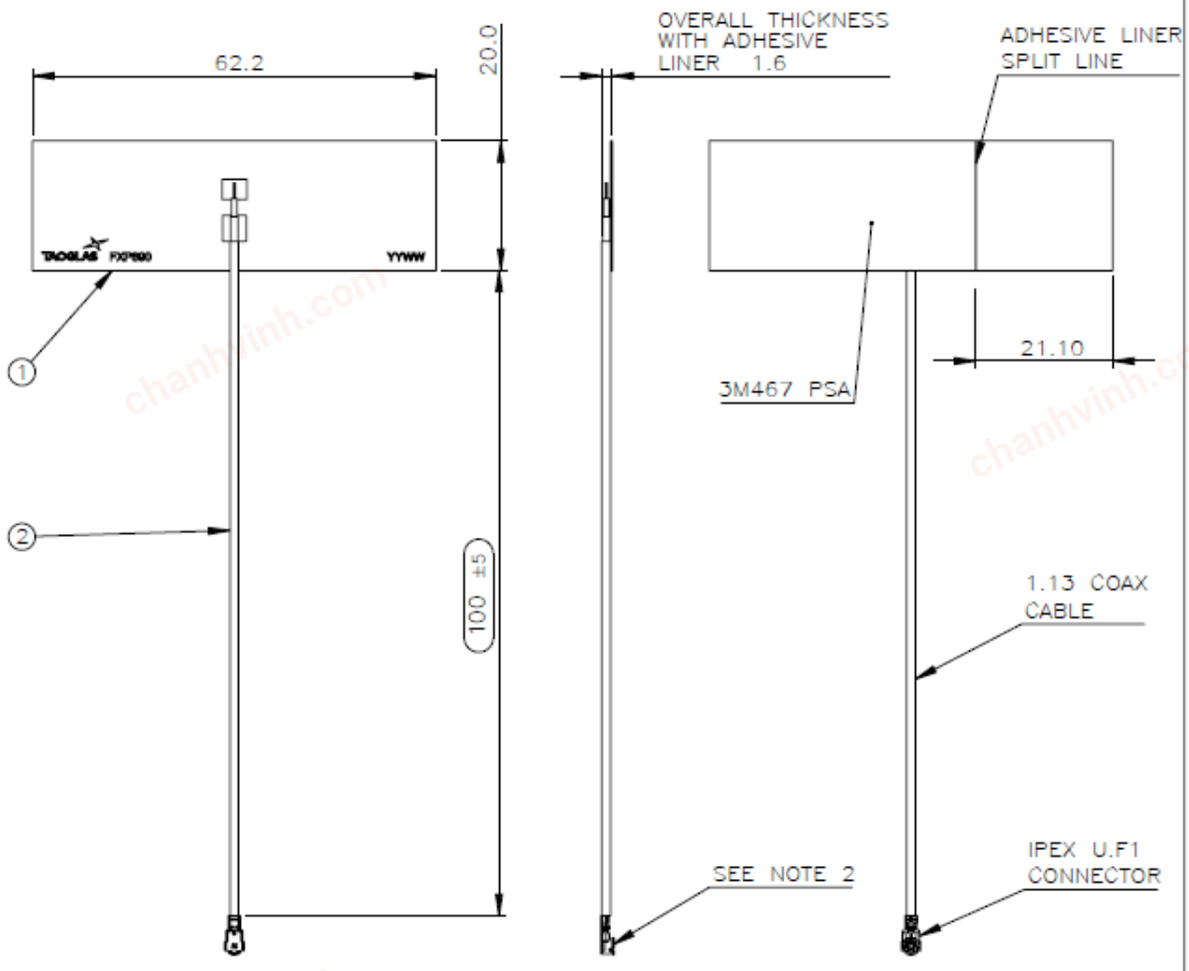


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5. Mechanical Drawing

REV	ZONE	DESCRIPTION	ENG	APPROVED	DATE
D01	All	Initial design	G. Samson	I. Mendez	4/20/2023
D02	All	Updated Adhesive Split Line Location.	G. Samson	I. Mendez	06/08/2023

ISO NO.: EDW-23-8-0517
STATE: Released
NOTES:
1. All material must be RoHS compliant.
2. The connector orientation has a fixed position to the antenna as per drawing.
3. Critical dimensions are marked with an inspection symbol ⬭.



FN	DESCRIPTION	MATERIAL	FINISH	QTY
1	FXP890 FPCB 62x20mm	Polyimide	Black	1
2	Cable Assy, FX890	Brass/FEP	Gold/Black	1

APPROVED BY: S. Peters	TAOGLAS. TW Design Centre
CHECK BY: I. Mendez	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.
DRAWN BY: G. Samson	
DATE: 4/20/2023	TITLE: 860-928 MHz Flex PCB Antenna with 100mm 1.37 I-PEX MHF1(U.FL)
UNLESS OTHERWISE SPECIFIED TOLERANCES ON: XX ±0.5, X ±0.3, .XX ±0.2, .XXX ±0.1, XXX ±0.05	PART NO.: FXP890.07.0100C
THIRD ANGLE PROJECTION	UNIT: mm / SCALE: 1:2 / PAGES: 1/1 / REV.: D02

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6. Packaging

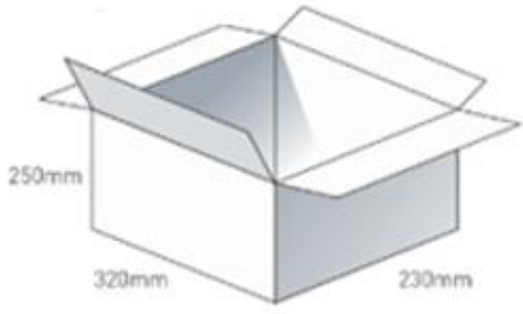
100pcs FXP890.07.0100C per PE Bag
Dimensions 300*100mm
Weight -150g



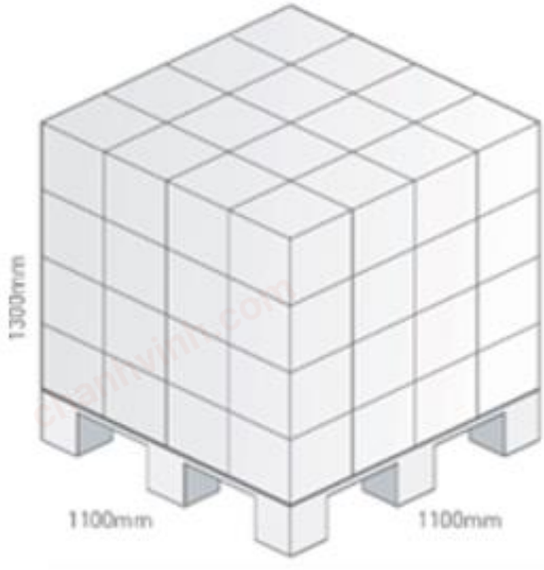
1000pcs FXP890.07.0100C per Large PE Bag
Dimensions 450*280mm
Weight -1.5Kg



5000pcs FXP890.07.0100C per carton
Dimensions 320*250*230mm
Weight -6Kg



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



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Changelog for the datasheet

SPE-23-8-181 – FXP890.07.0100C

Revision: A (Original First Release)	
Date:	2023-06-19
Notes:	First Release
Author:	Gary West

Previous Revisions

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