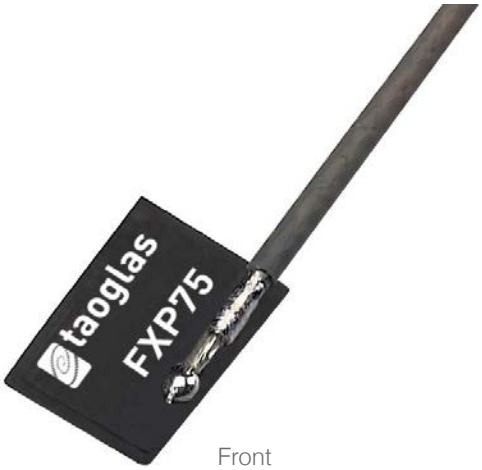


Front


Connector

Atom

FXP75.07.0045B

Specification

Patent Pending

Part No.	**FXP75.07.0045B**
Product Name	**Atom** FXP.75 Atom 2.4GHz Series Ultra-Miniaturized 2dBi Bluetooth Antenna
Feature	Patent Pending Worldwide smallest cabled 2.4GHz antenna Ideal for Bluetooth earphones Flexible Ultra Low Profile 5.9*4.1*0.24mm Adheres directly to inside of product housing Form factor and cable routing convenient for integration IPEX MHF1 Connector (U.FL compatible) 45mm Ø 0.81mm mini-coaxial cable RoHS Compliant

1. Introduction

The FXP75 Atom is a super small monopole ultra-low profile antenna for 2.4GHz band that includes Bluetooth, Wi-Fi, ZigBee and ISM bands application. The FXP75 has a peak gain of 2.5dBi at 2.4GHz and efficiencies of 45%.

This Taoglas patent pending antenna is unique in the market. Two years of constant research and development have created the world's smallest coax cabled true 2.4GHz antenna. Made from poly-flexible material, the antenna has a tiny form factor of 5.9*4.1*0.24mm and has double-sided 3M tape for easy "peel and stick" mounting.

The cable routes conveniently directly out of the bottom of the antenna, reducing the volume the antenna takes up in the device to an absolute minimum compared to other designs. The FXP75 is the ideal all-round antenna solution for fitting into narrow spaces and still maintaining high performance, for example in a Bluetooth earphone where metal and electrical noise degrades onboard SMT antenna performance. The FXP75 is small enough to be routed away from metal and electrical noise to deliver much improved range and reliable sound quality in Bluetooth earphones.

Due to the potential for detuning in a tiny device environment, Taoglas recommends that you contact us at our regional sales office for integration support and testing and optimization of the antenna in your device before going to production.

2. Specification

Electrical

Standard	2400-2500MHz
Operation Frequency (MHz)	2400-2500 MHz
Polarization	Linear
Impedance	50 Ω
Max VSWR	2:1
Max Return Loss (dB)	<-10
Peak Gain (dBi)	2.5
Efficiency (%)	45
Average Gain (dB)	-3.4
Radiation Properties	Omni
Max Input Power	2W max

* The FXP.75 antenna performance was measured on a 30x30 mm 2mm thick ABS plastic ground plane.

Mechanical

Dimensions (mm)	5.9*4.1*0.24mm
Required Space (mm)	5.9*4.1*0.24mm
Material	Polymer
Cable	Ø0.81mm coaxial cable
Connector	IPEX MHF1

Environmental

Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Relative Humidity	40% to 95%
RoHs Compliant	Yes

3. Antenna Characteristics

3.1 Test set-up

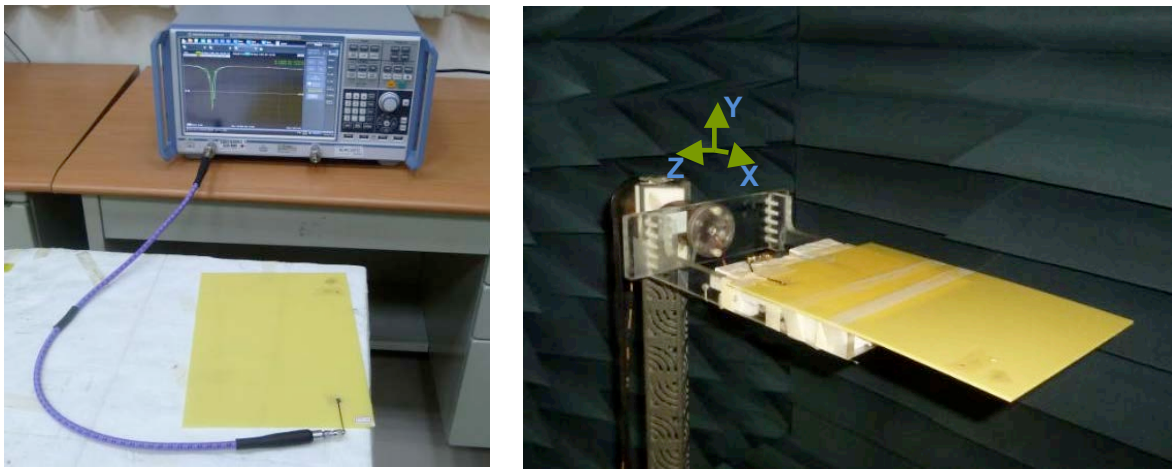


Figure 1. Impedance measurements (left side) and peak gain, efficiency and radiation pattern measurements (right side).

3.2 Return Loss

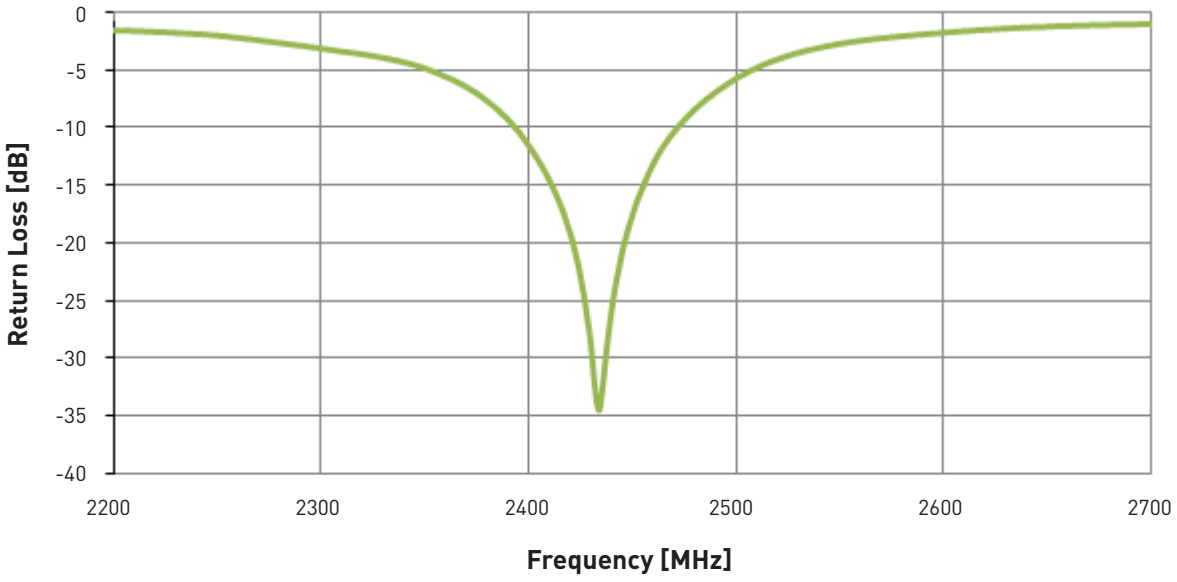


Figure 2. Return loss of the FXP75 antenna from 2200 MHz to 2700 MHz.

3. Antenna Characteristics

3.3 VSWR

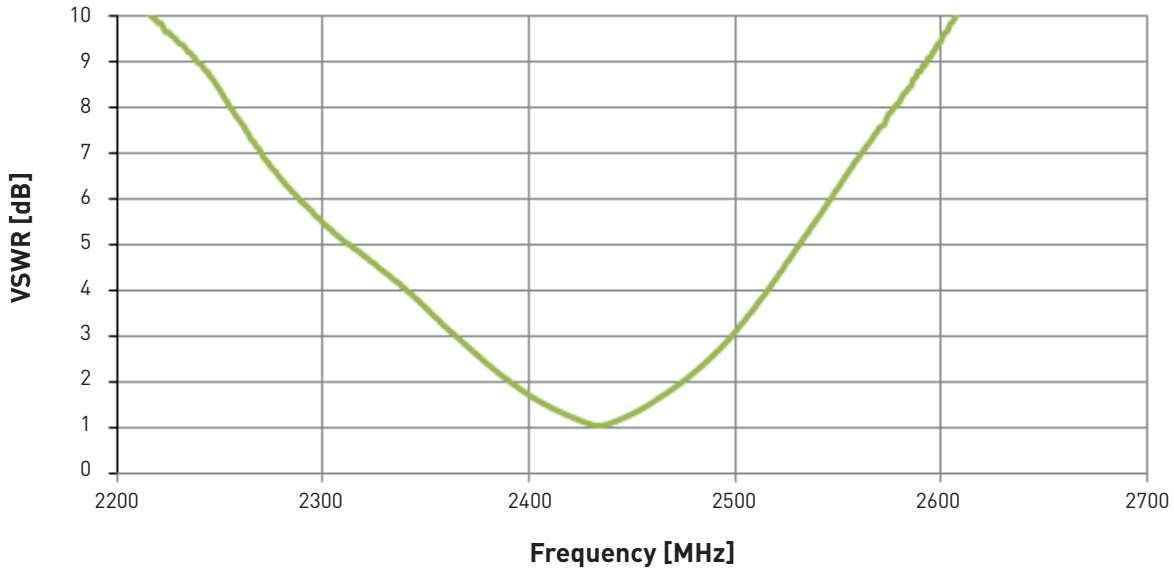


Figure 3. VSWR of the FXP75 antenna from 2200 MHz to 2700 MHz.

3.4 Efficiency

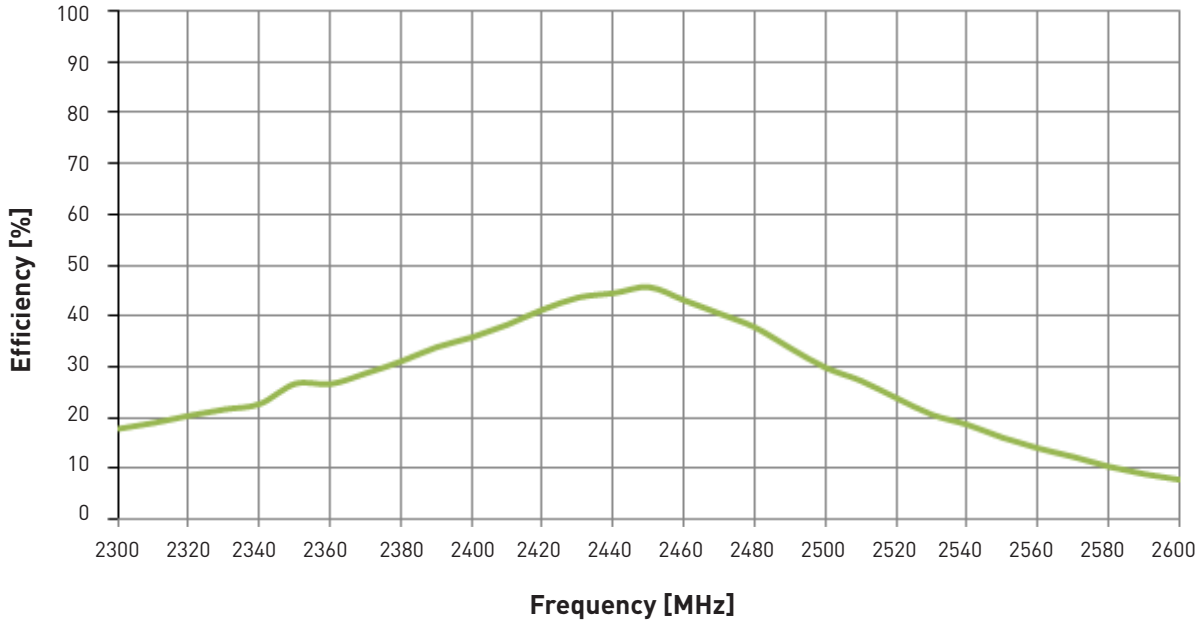


Figure 4. Efficiency of the FXP75 antenna from 2300 MHz to 2700 MHz.

3. Antenna Characteristics

3.5 Peak Gain

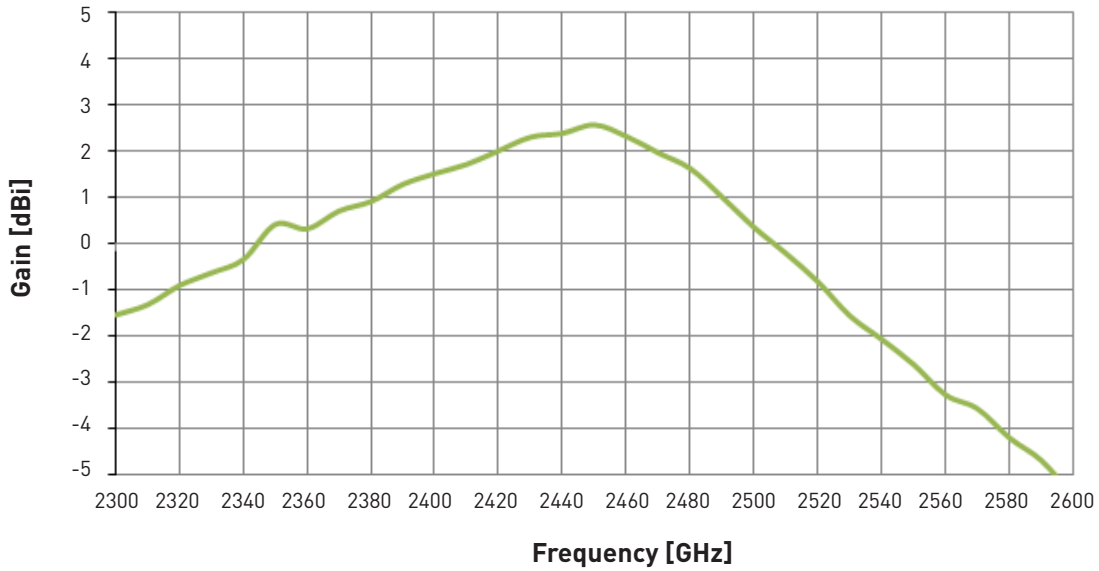


Figure 5. Peak Gain of the FXP75 antenna from 2300 MHz to 2700 MHz.

3.6 Average Gain

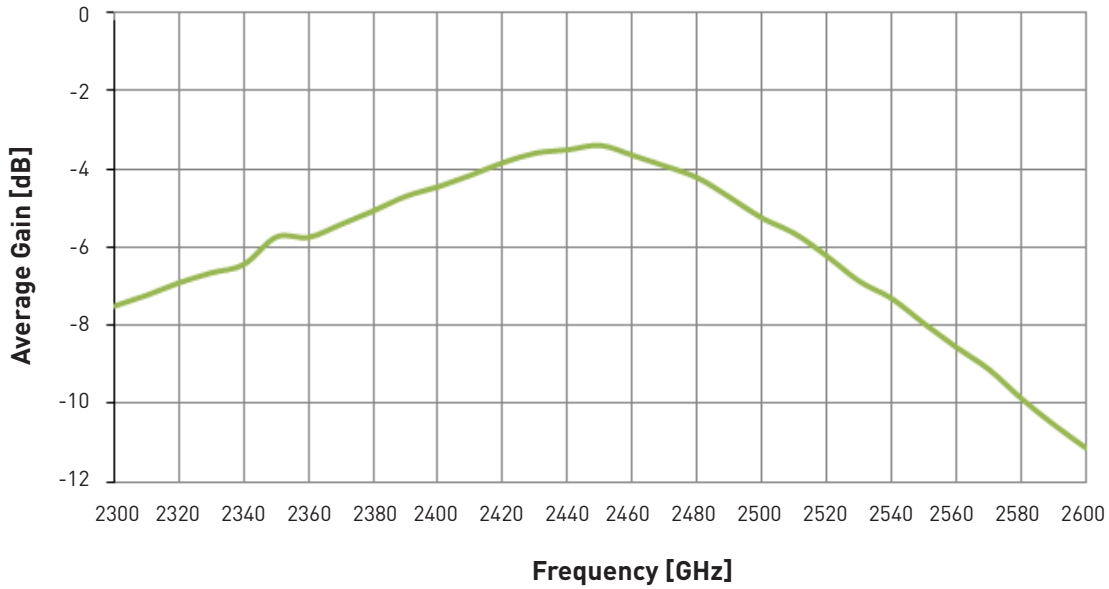


Figure 6. Average Gain of the FXP75 antenna from 2300 MHz to 2700 MHz.

3. Antenna Characteristics

3.7 3D Radiation Patterns

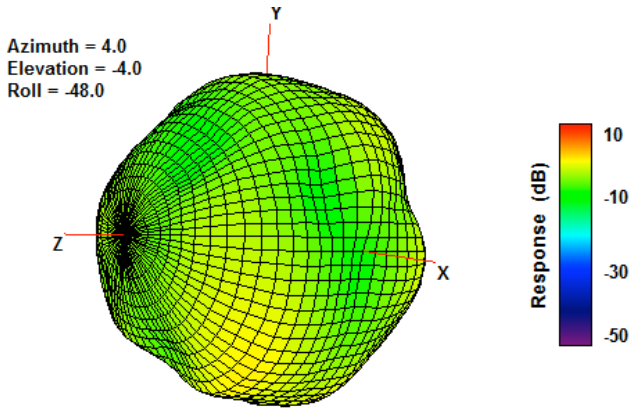
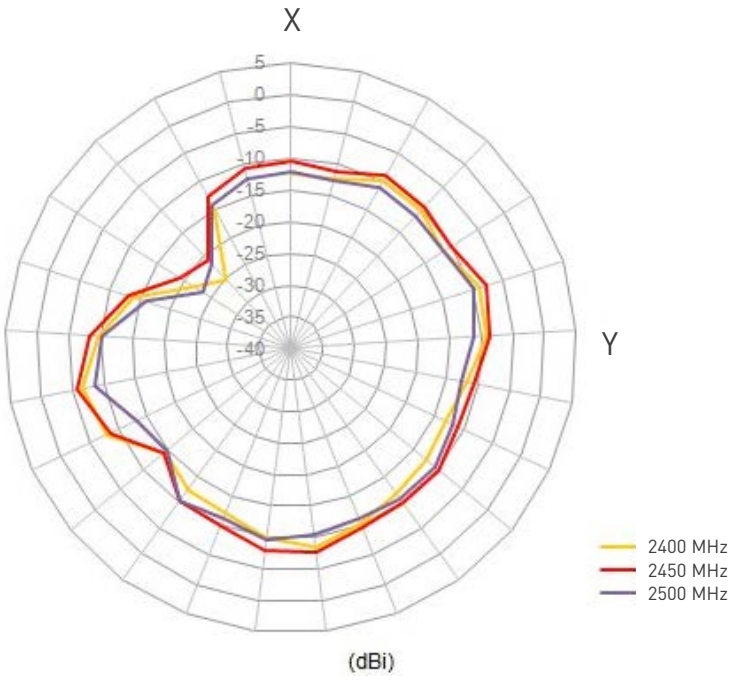


Figure 7. 3D Radiation Pattern at 2450 of the FXP75 Antenna.

3.8 2D Radiation Patterns



3. Antenna Characteristics

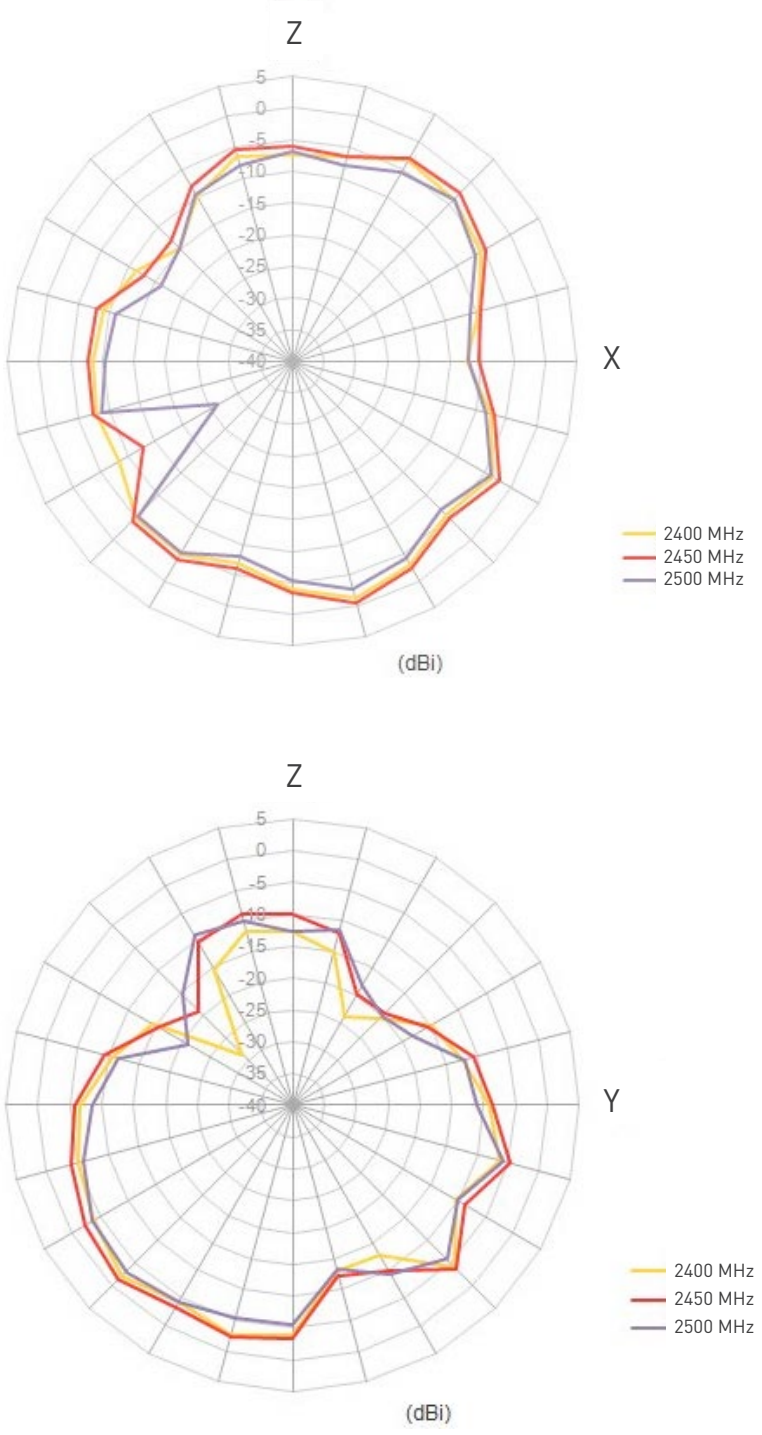
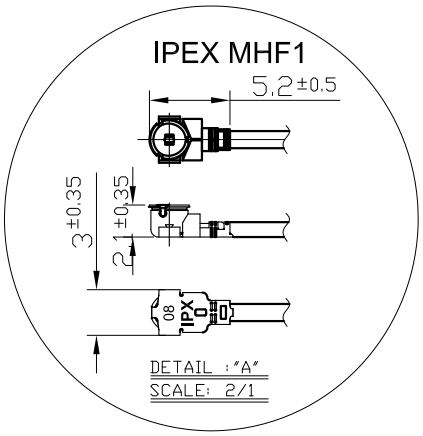
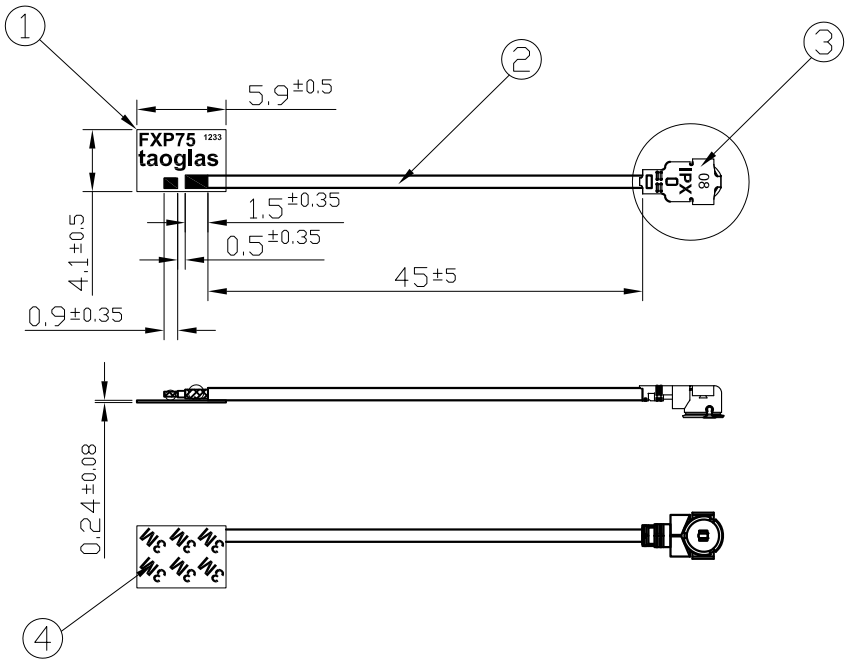


Figure 8. 2D Radiation Pattern

4. Antenna Drawing



	Name	Material	Finish	QTY
1	FXP75 FPCB	FPCB 0.15t	Black	1
2	0.81 Coaxial Cable	FEP	Black	1
3	IPEX MHF1	Brass	Gold	1
4	Double Side Adhesive	3M 467	Brown Liner	1



5. Packaging

100pcs antenna per small PE bag