

# SPECIFICATION

Patent Pending

Part No. : **FXP.830.07.0100C**  
Product Name : FXP.830 Freedom Wi-Fi 2.4/5 GHz Dipole  
Antenna  
Features : Very High Efficiency  
Ground-plane Independent  
IPEX MHF1 Connector (U.FL compatible)  
RoHS Compliant



## 1. Introduction

The FXP.830 has a peak gain of 1.8dBi at 2.4GHz and efficiencies of 50%, and 3-4dBi and 80-90% along bands 4.9GHz to 6GHz.

The FXP830 is a high efficiency, small, dual-band, dipole antenna for 2.4/4.9-6GHz band including Bluetooth and Wi-Fi. This Taoglas patent pending antenna is unique in the market because it is made from poly-flexible material, has a tiny form factor (42\*7\*.01mm) and has double-sided 3M tape for easy "peel and stick" mounting.

The FXP.830 is the ideal all-round antenna solution for squeezing into narrow spaces and still maintaining high performance, for example at the top of LCD devices.

Many module manufacturers specify peak gain requirements for any antennas that is to be connected to that module. Upon testing of any of our antenna with your device and a selection of appropriate layout, integration technique, or cable, Taoglas can make sure any of our antennas peak gain will be below the peak gain requirements. Taoglas can then issue a specification and/or report for this selected WiFi antennas in your device that will clearly show it complying with the peak gain requirements, so you can be assured you are meeting regulatory requirements for that module.

It is better not to select an embedded antenna with very low free-space peak gain (<2dBi) directly, as this antenna would have worse performance in your device, and lead to compromised performance compared to using a Taoglas antenna.

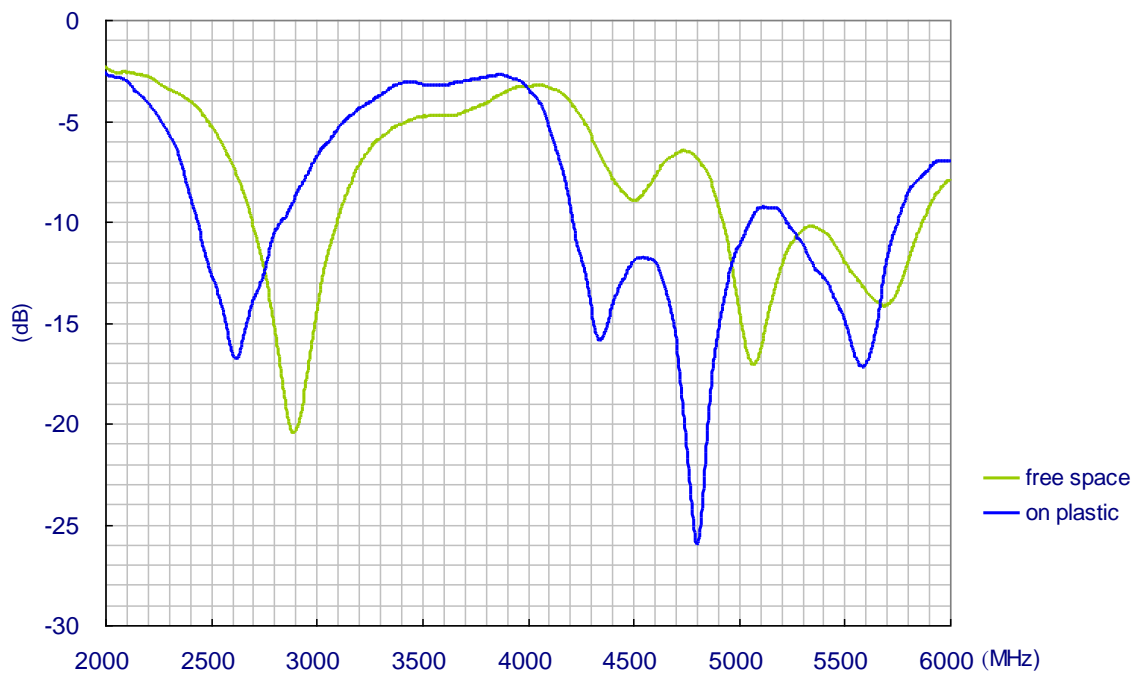
## 2. Specification

ELECTRICAL		
Frequency	2.4 ~ 2.5GHz,	4.9 ~ 5.8GHz
Peak Gain (free space)	1.8dBi	3.6dBi
Peak Gain (on plastic*)	2.6dBi	5.0dBi
Average Gain (free space)	-3.0dBi	-0.6dBi
Average Gain (on plastic)	-3.0dBi	-0.7dBI
Efficiency (free space)	50%	86%
Efficiency (on plastic)	50%	84%
Polarization	Linear	
Impedance	50 Ohms	
Radiation Pattern	Omni	
Input Power	2W max.	
MECHANICAL		
Dimensions	42mm x 7mm	
Antenna Body Material	Polymer	
Cable	Gray 100mm 1.37 co-axial	
Connector	IpeX MHF	
ENVIRONMENTAL		
Temperature Range	-40°C to 85°C	
Humidity	Non-condensing 65°C 95% RH	

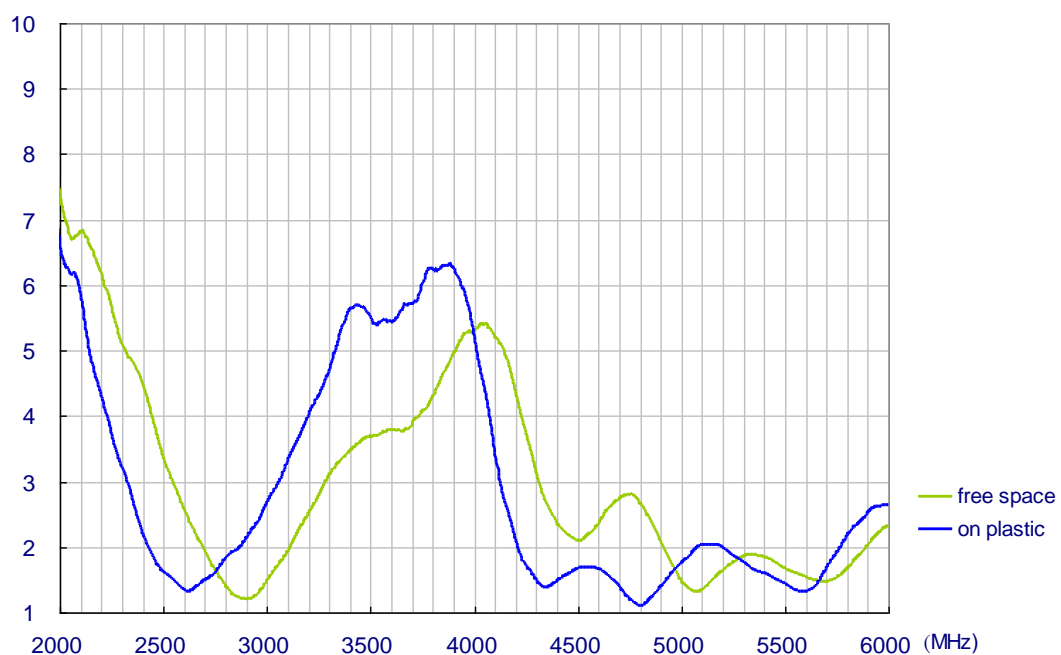
\* FXP.830 is likely to be mounted on plastic in many applications so we provide the antenna measurement in both free space and mounted on a 1mm thick plastic.

## 3. Antenna Characteristics

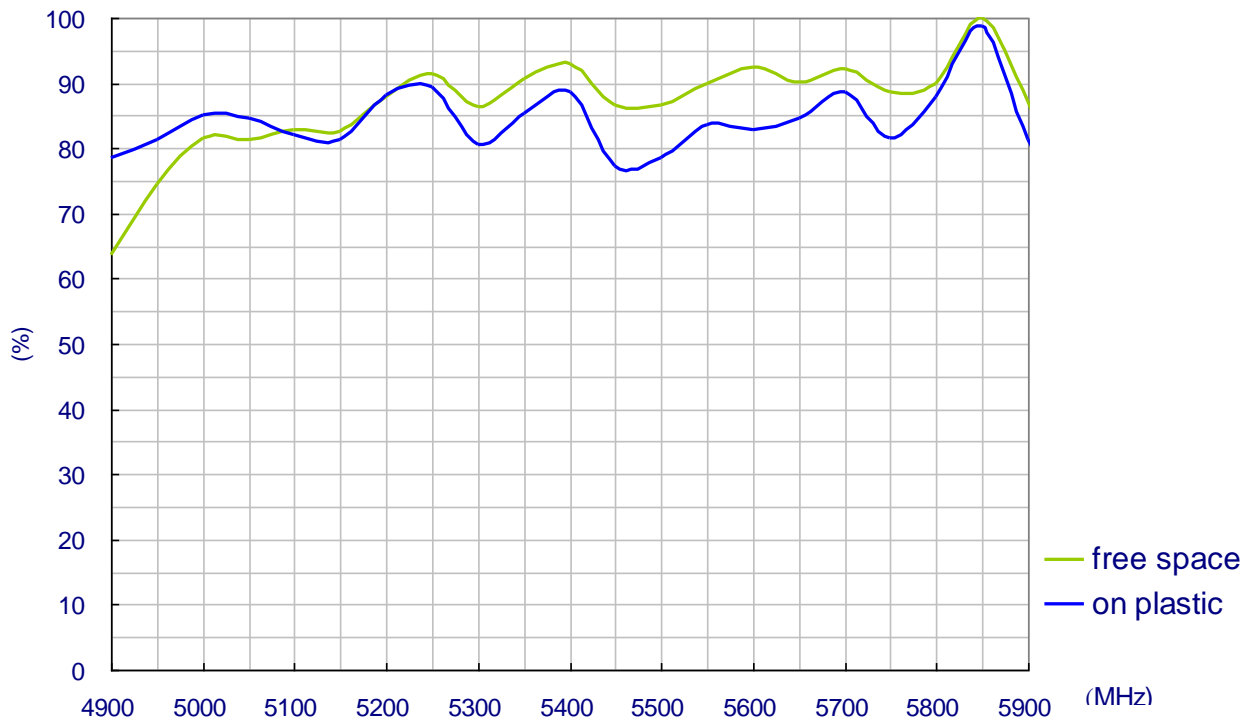
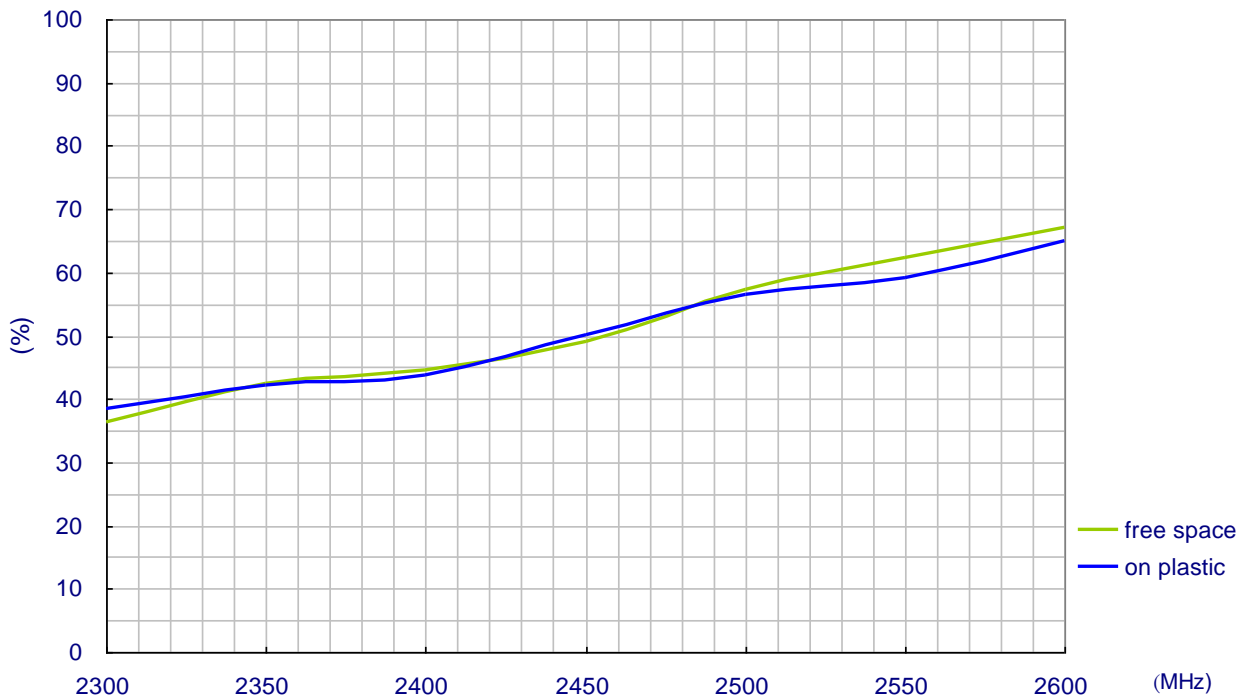
### 3.1. Return Loss



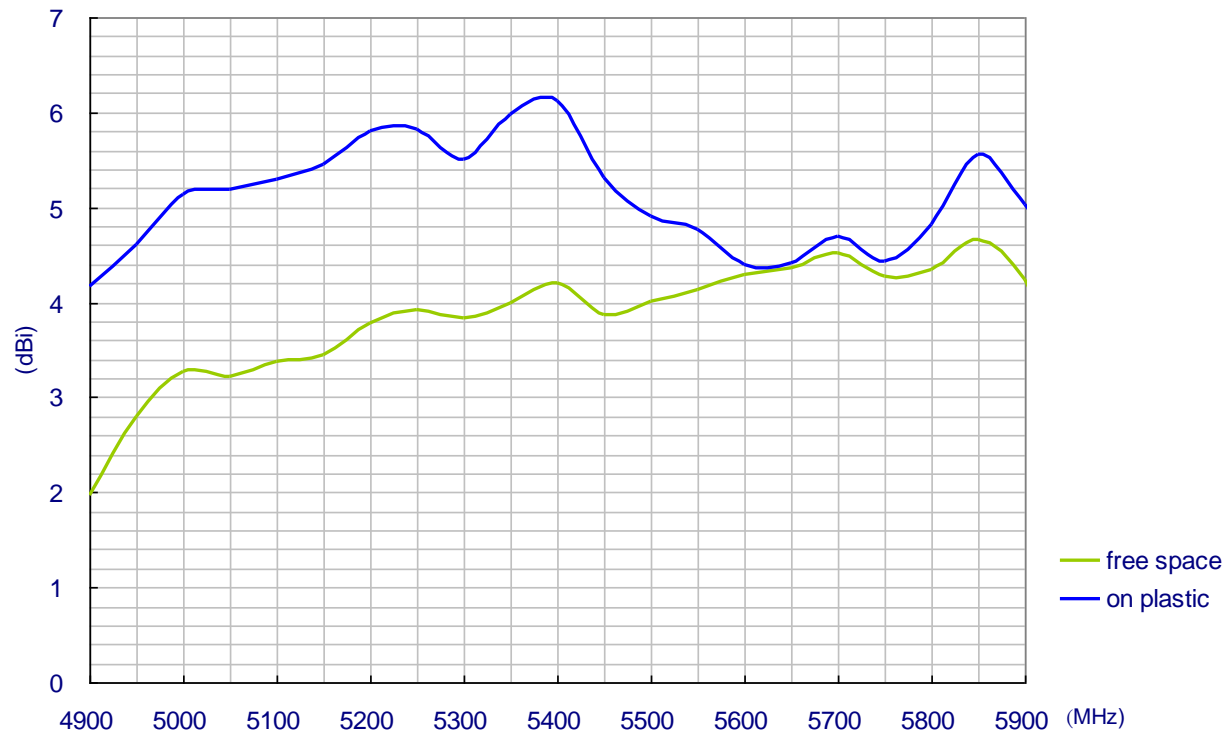
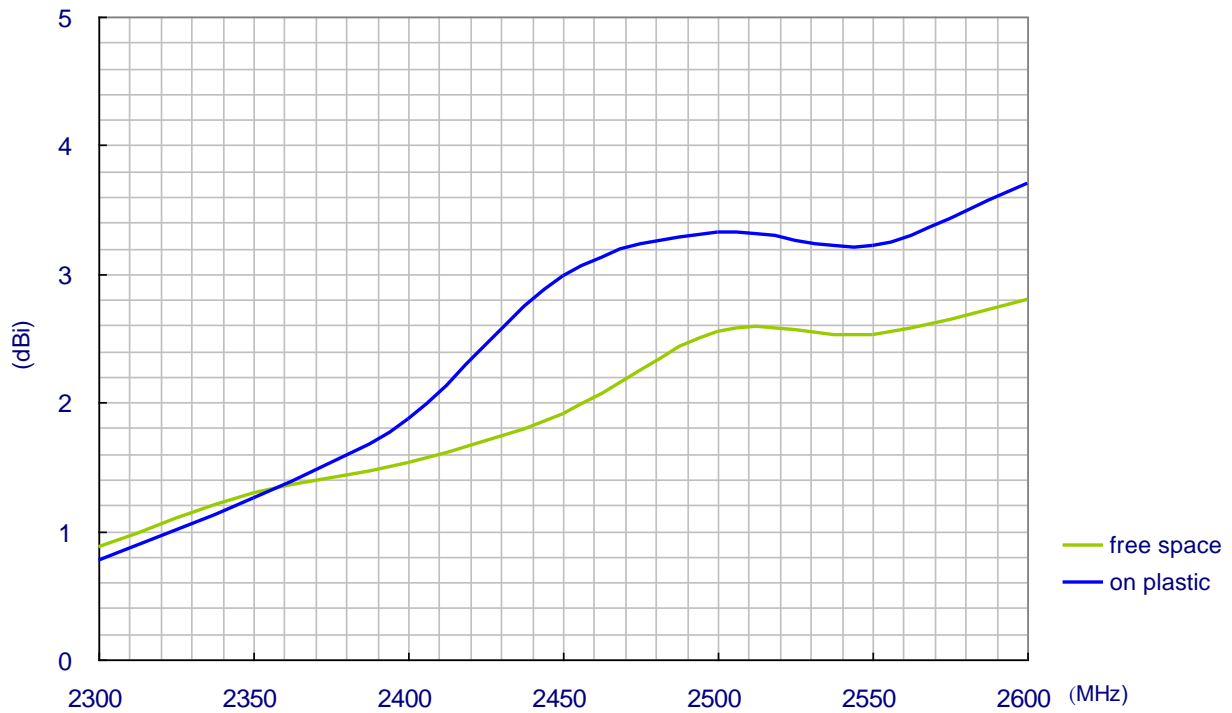
### 3.2. VSWR



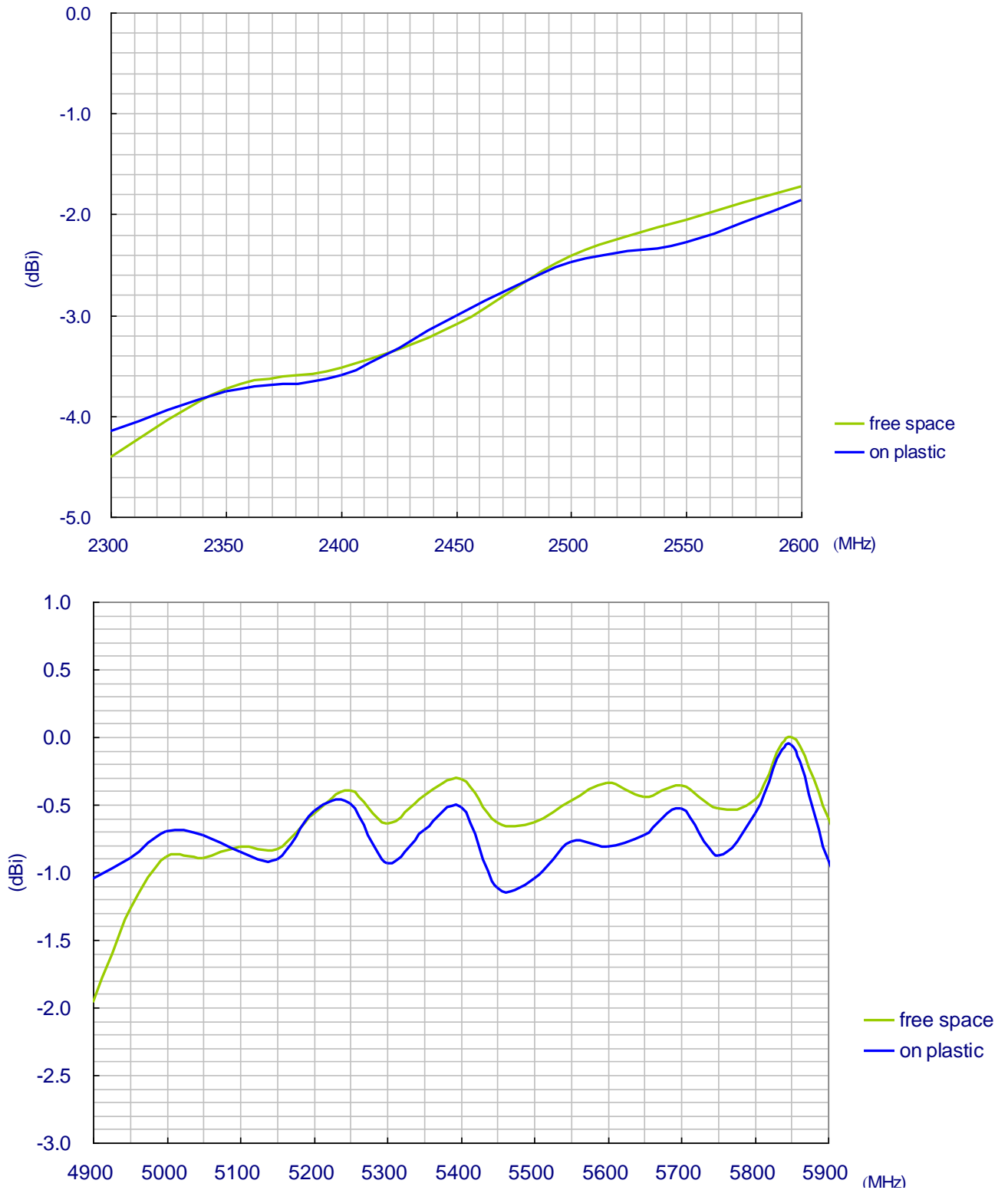
### 3.3. Antenna Efficiency



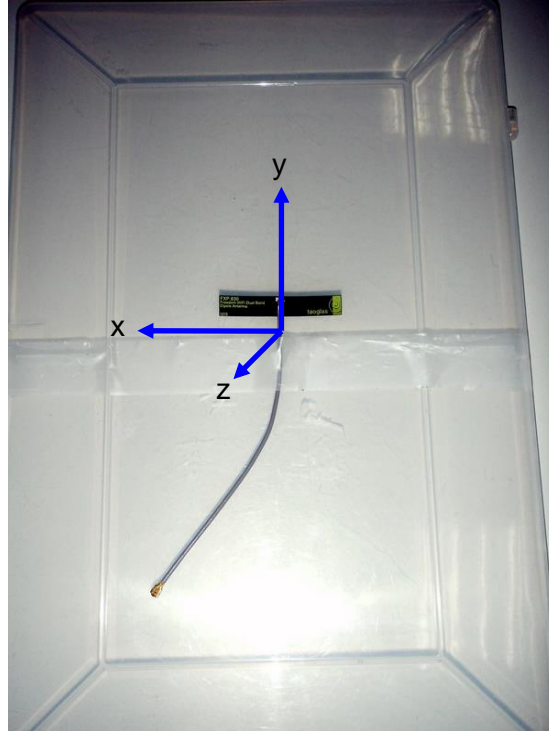
### 3.4. Antenna Peak Gain



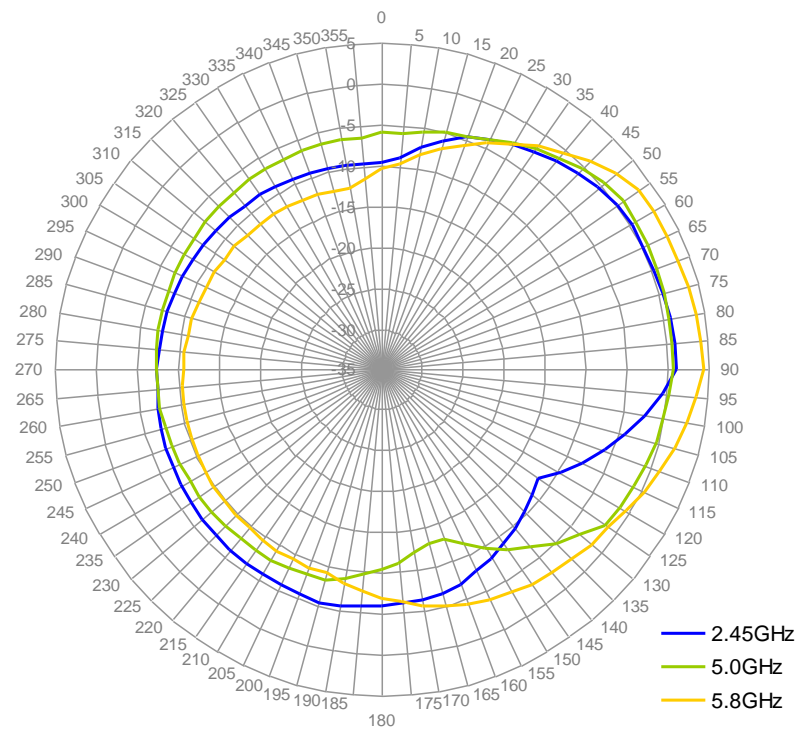
### 3.5. Antenna 3D Average Gain



### 3.6. Radiation Pattern for FXP.830 on plastic

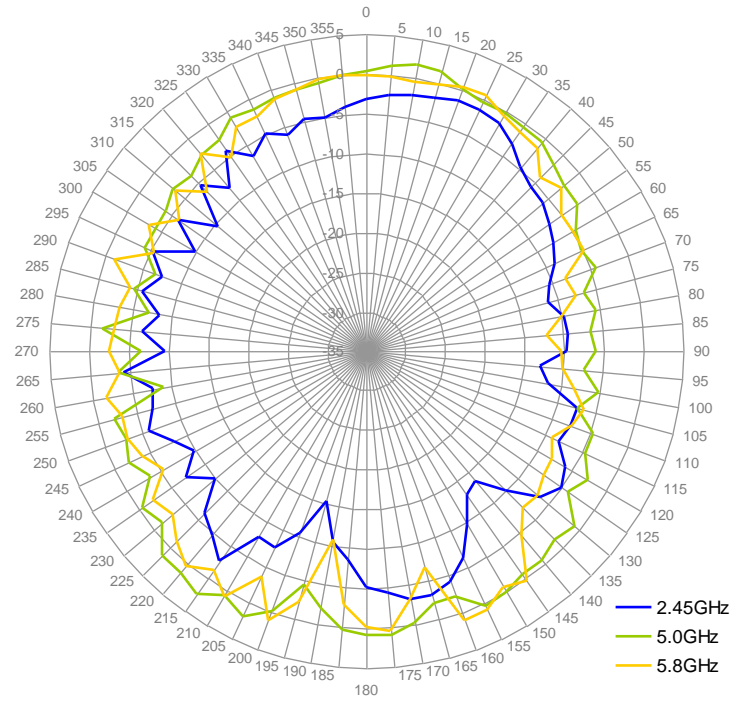


**XY-plane**



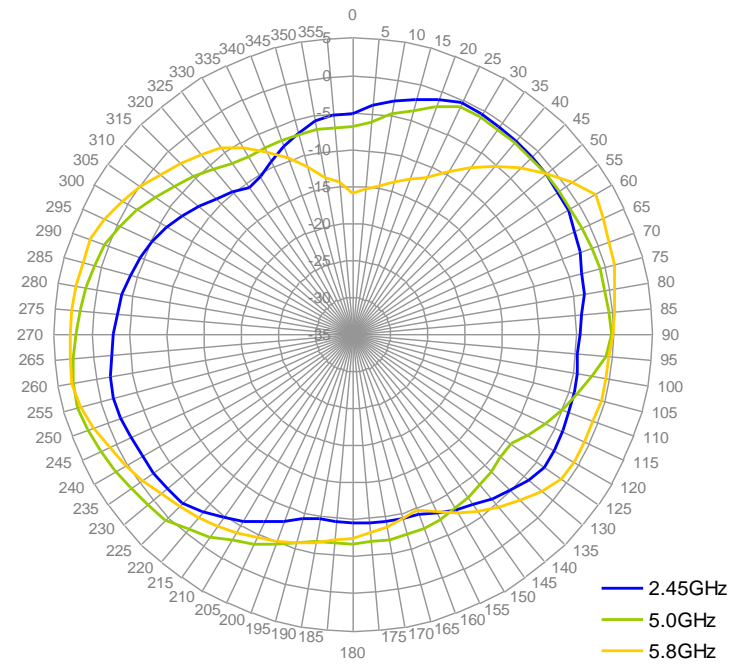


### XZ-plane

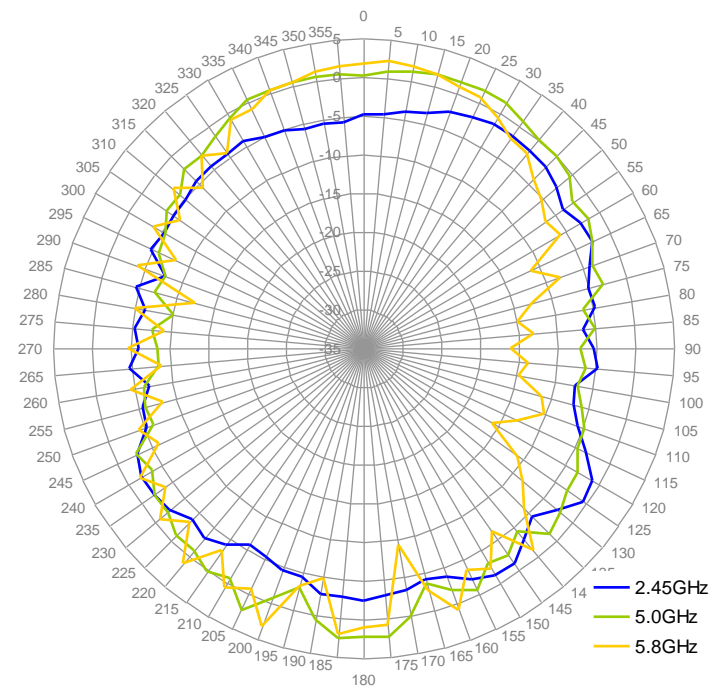


## 3.7. Free Space Radiation

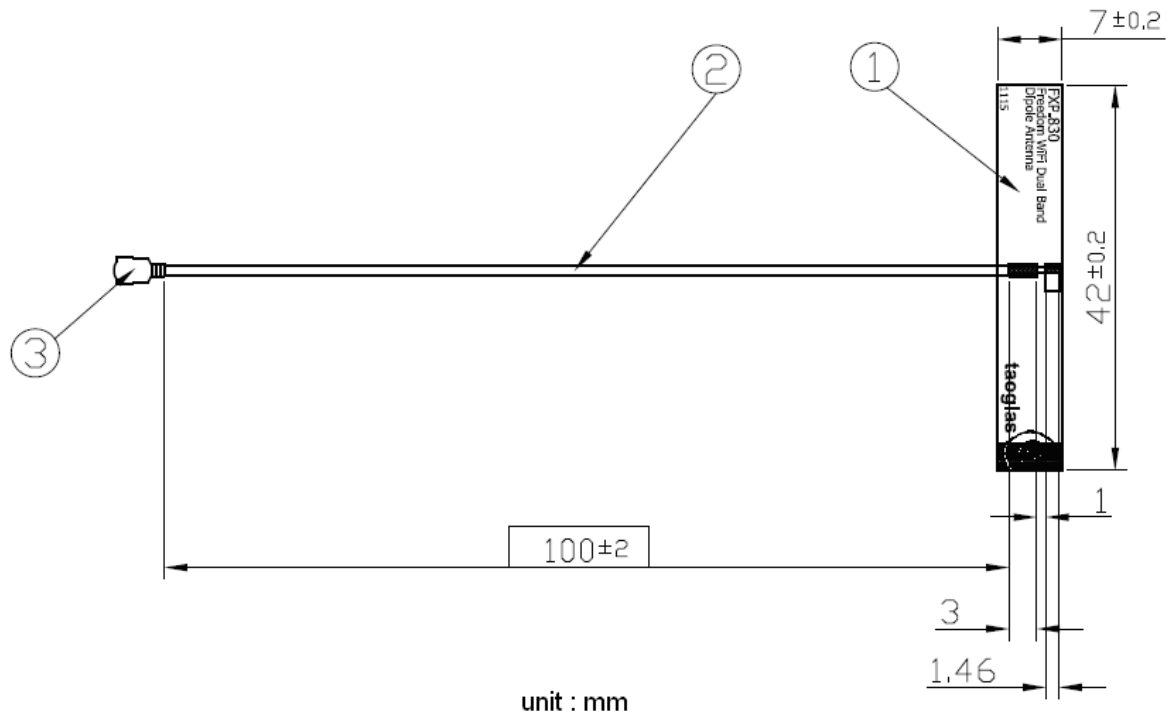
### XY-plane



### XZ-plane



## 4. Antenna Drawing



	Name	Material	Finish	QTY
①	FXP.830 FPCB	FPCB 0.1t	Black	1
②	1.37 Mini-Coaxial	1.37 Cable	Black	1
③	IPEX Connector	Brass	Gold	1

## 5. Packaging

