Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

SPECIFICATION

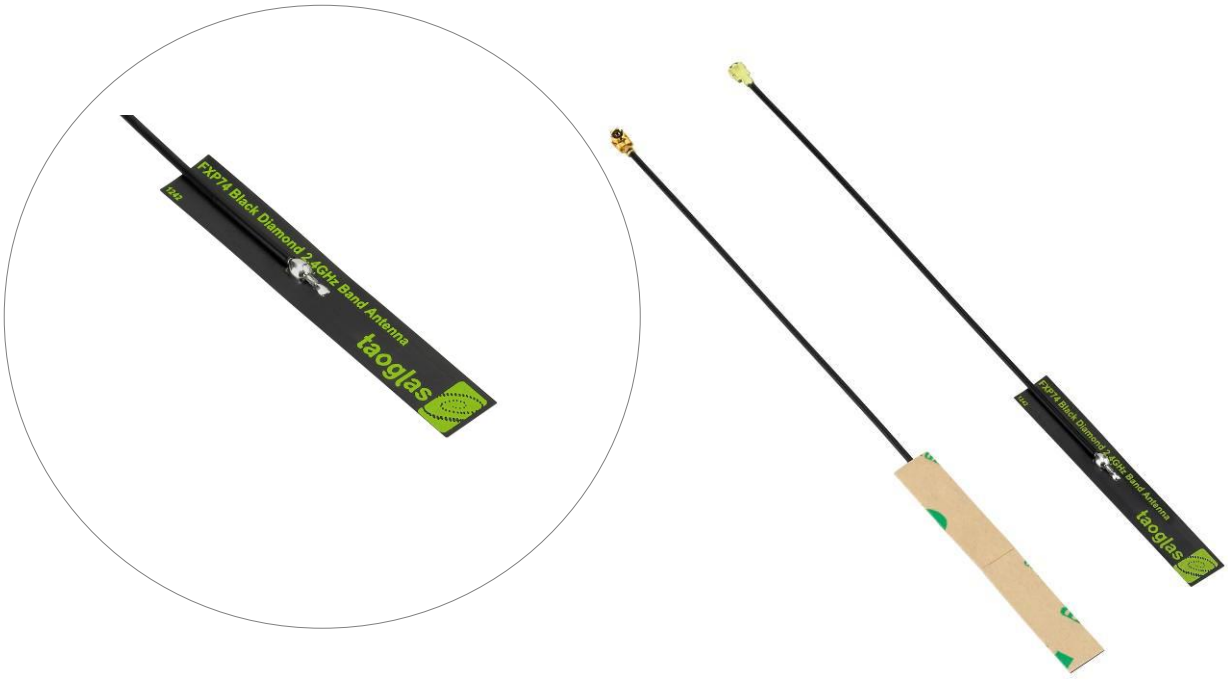
Patent Granted

FXP74 Black Diamond 2.4GHz Band Antenna

Part No. : **FXP74.07.0100A**

Product Name : FXP.74 Black Diamond 2.4GHz Antenna

Feature : 4dBi Peak Gain
Flexible, Ultra Low Profile
IPEX MHF I Connector (U.FL compatible)
100mm 1.13 Mini-Coaxial Cable
47*7*0.1 mm
RoHS Compliant✓



1. Introduction

The FXP.74 Black Diamond is a small ultra-low profile antenna for 2.4GHz band that includes Bluetooth, Zigbee and Wi-Fi single band application. The FXP.74 has a peak gain of 4dBi at 2.4GHz and efficiencies of above 50%.

This Taoglas patent granted antenna is unique in the market with exceptionally stable performance different applications. It is made from a flexible polymer, has a tiny form factor (14mm*7.0mm*0.1mm) and has double-sided 3M tape for easy and robust "peel and stick" mounting.

The FXP.74 is the ideal all-round antenna solution for fitting into narrow spaces and still maintaining high performance, for example on the inside top or adjacent side applied directly to the plastic housing of LCD monitors, tablets, smartphones, small AP routers, etc.

Many module manufacturers specify peak gain limits for any antennas that are to be connected to that module. Those peak gain limits are based on free-space conditions. In practice, the peak gain of an antenna tested in free-space can degrade by at least 1 or 2dBi when put inside a device. So ideally you should go for a slightly higher peak gain antenna than mentioned on the module specification to compensate for this effect, giving you better performance.

Upon testing of any of our antennas 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 limits. Taoglas can then issue a specification and/or report for the selected antenna in your device that will clearly show it complying with the peak gain limits, so you can be assured you are meeting regulatory requirements for that module.

For example, a module manufacturer may state that the antenna must have less than 2dBi peak gain, but you don't need to select an embedded antenna that has a peak gain of less than 2dBi in free-space. This will give you a less optimized solution. It is better to go for a slightly higher free-space peak gain of 3dBi or more if available. Once that antenna gets integrated into your device, performance will degrade below this 2dBi peak gain due to the effects of GND plane, surrounding components, and device housing. If you want to be absolutely sure, contact Taoglas and we will test. Choosing a Taoglas antenna with a higher peak gain than what is specified by the module manufacturer and enlisting our help will ensure you are getting the best performance possible without exceeding the peak gain limits.

2. Specification

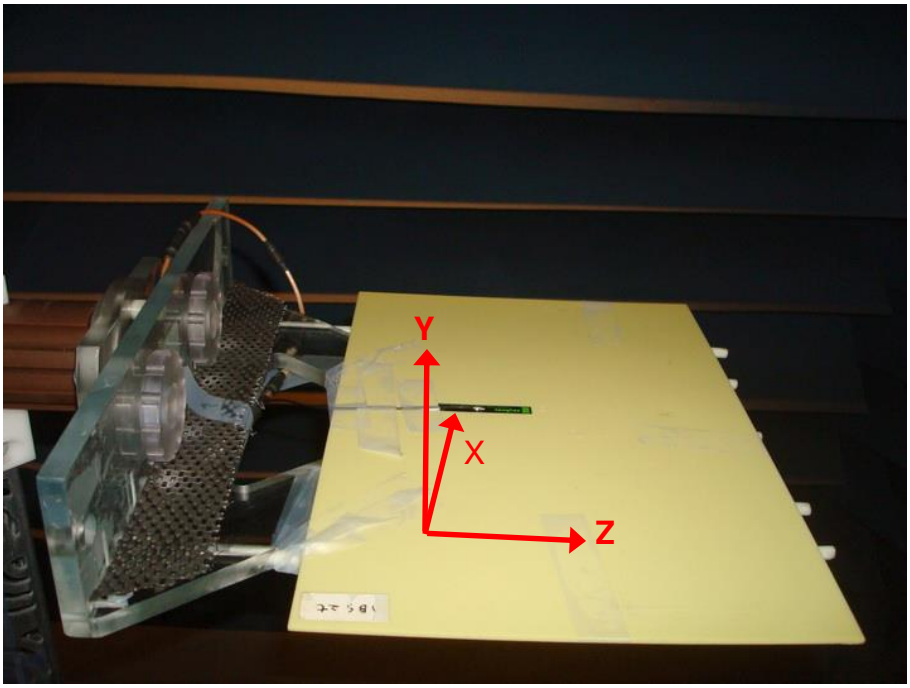
Communication System	Bluetooth	WiFi	ZigBee	2.4GHz ISM
	2401-2480	2412-2462	2410-2480	2400-2483.5
Efficiency	50%			
Gain	4dBi			
Return Loss	< -10dB			
Impedance	50 Ohms			
VSWR	≤ 2:1			
Polarization	Linear			
Power Handled	5 W			
MECHANICAL				
Dimensions	47*7*0.1 mm			
Weight	1.2 g			
Connector	MHFI (U.FL Compatible)			
Cable Standard	Mini-Coax 1.13 mm			
Cable Length and color	100mm, Black			
Adhesive tape	3M 467			
ENVIRONMENTAL				
Operation Temperature	-40 ºC ~ +85 ºC			
Storage Temperature	-40 ºC ~ +85 ºC			
RoHS Compliant	Yes			

3. Antenna Characteristics

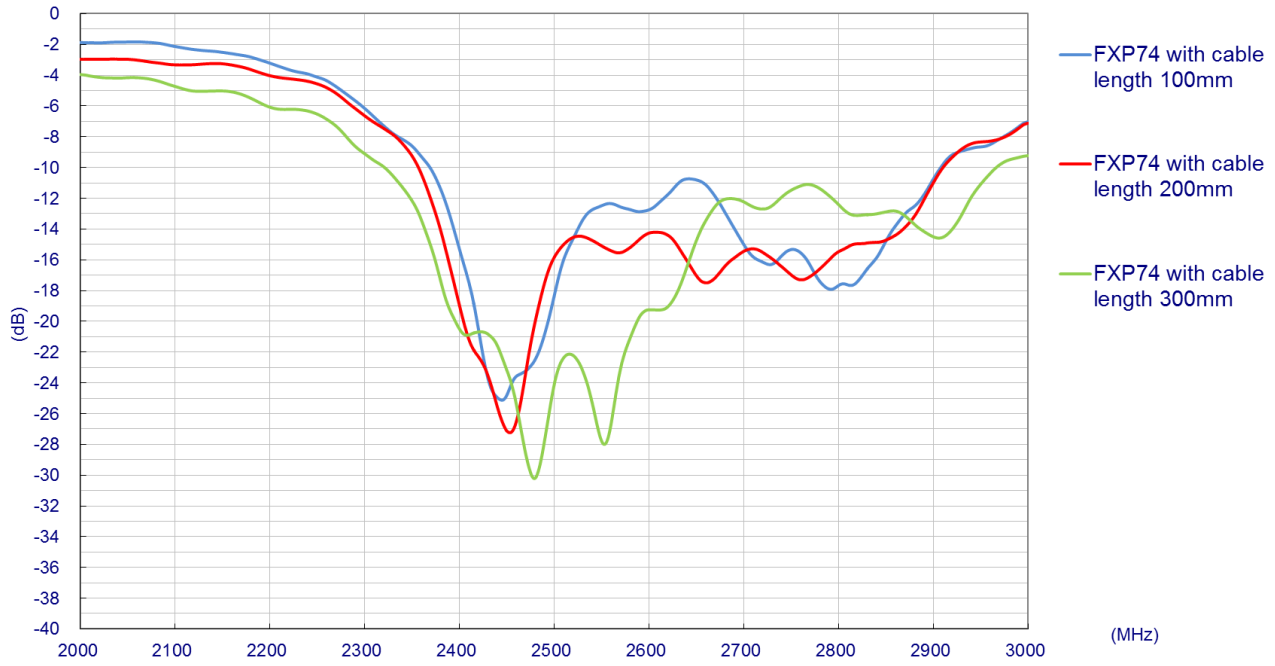
3.1. Test Setup

Rohde & Schwarz ZNB 8 Vector Network Analyzer

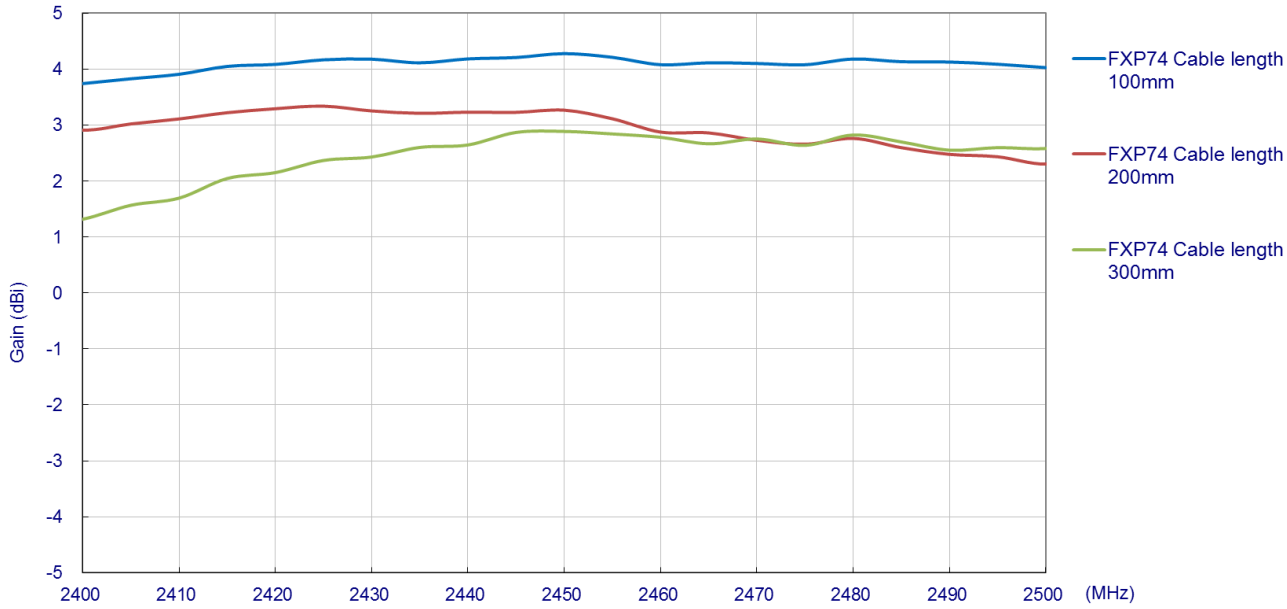
ETS 3D Radiation Scan System with Anechoic Chamber



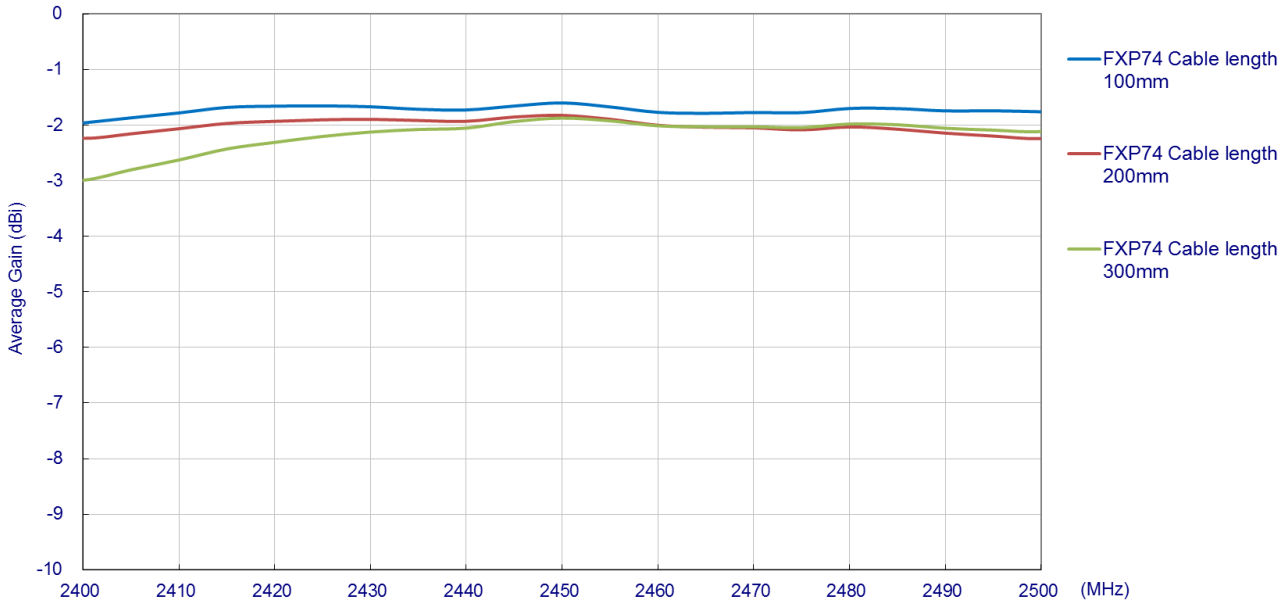
3.2. Return Loss



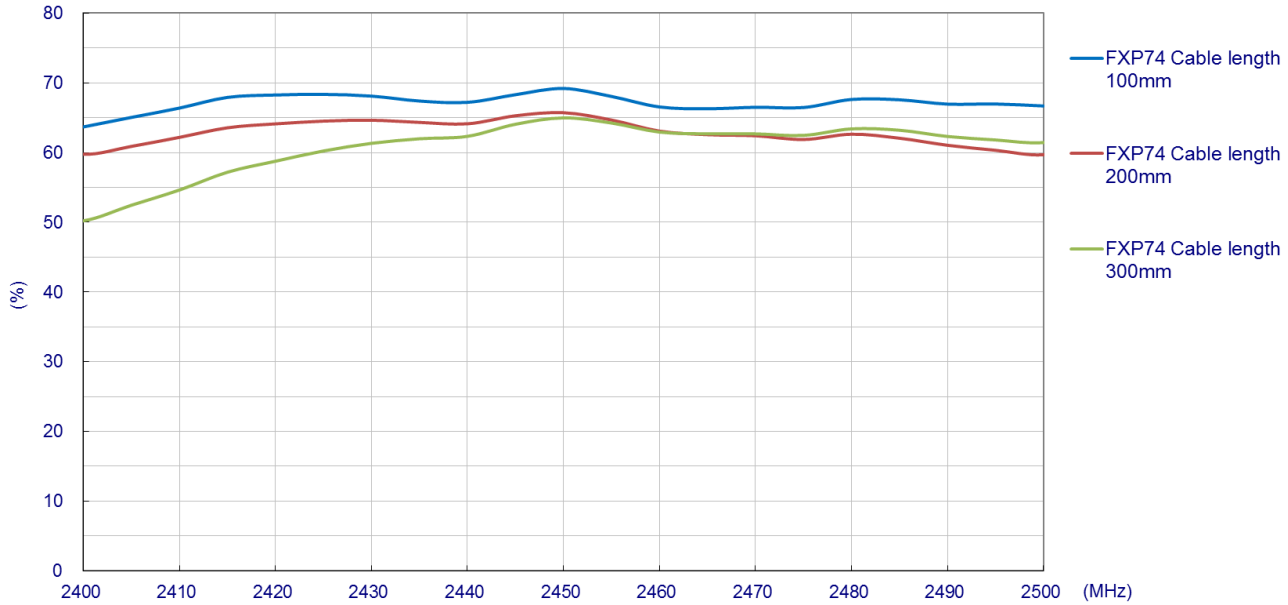
3.3. Peak Gain



3.4. Average Gain

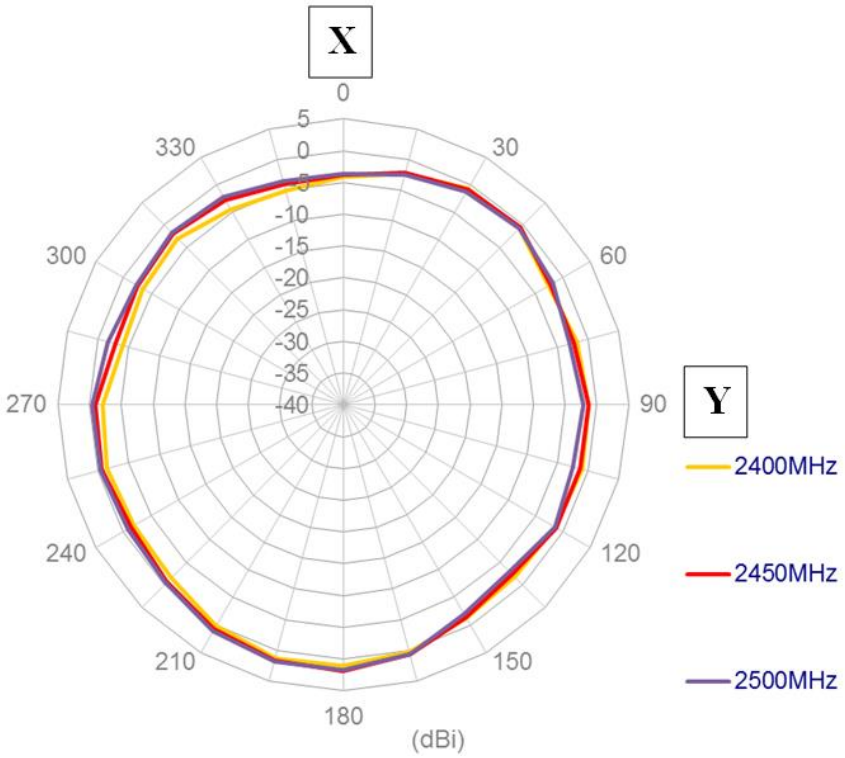


3.5. Efficiency

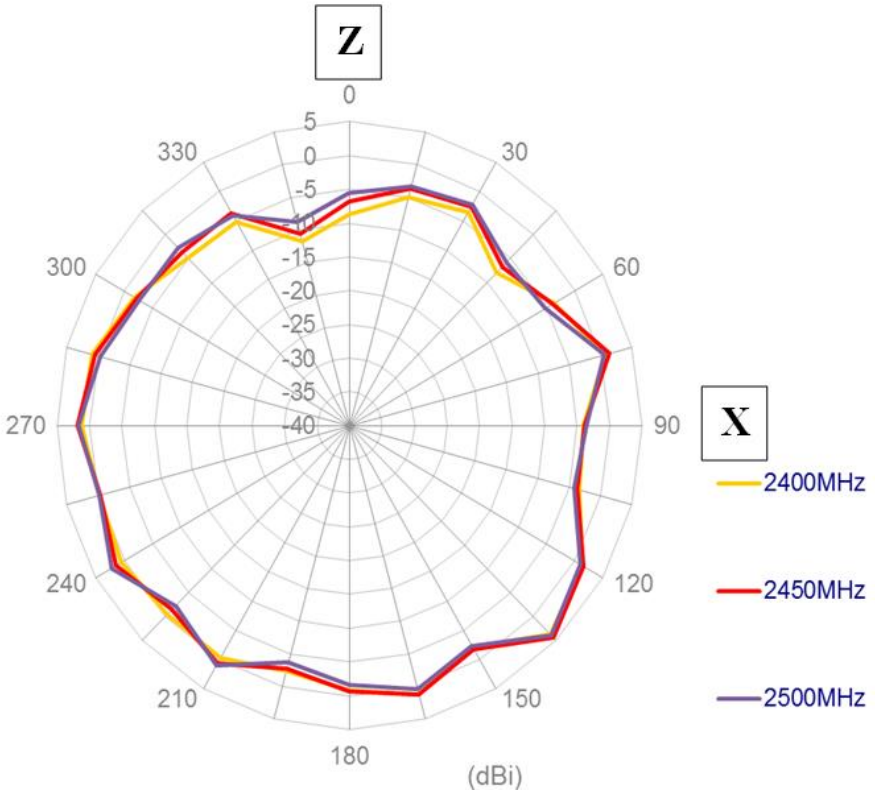


4. Antenna Radiation Pattern

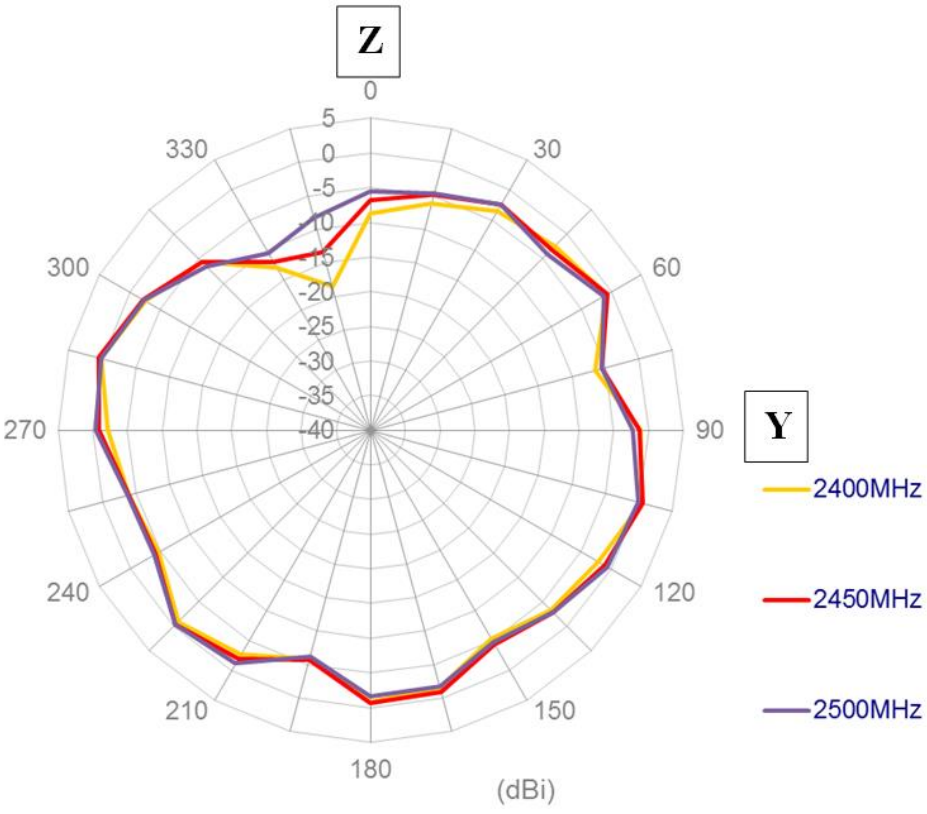
XY-plane



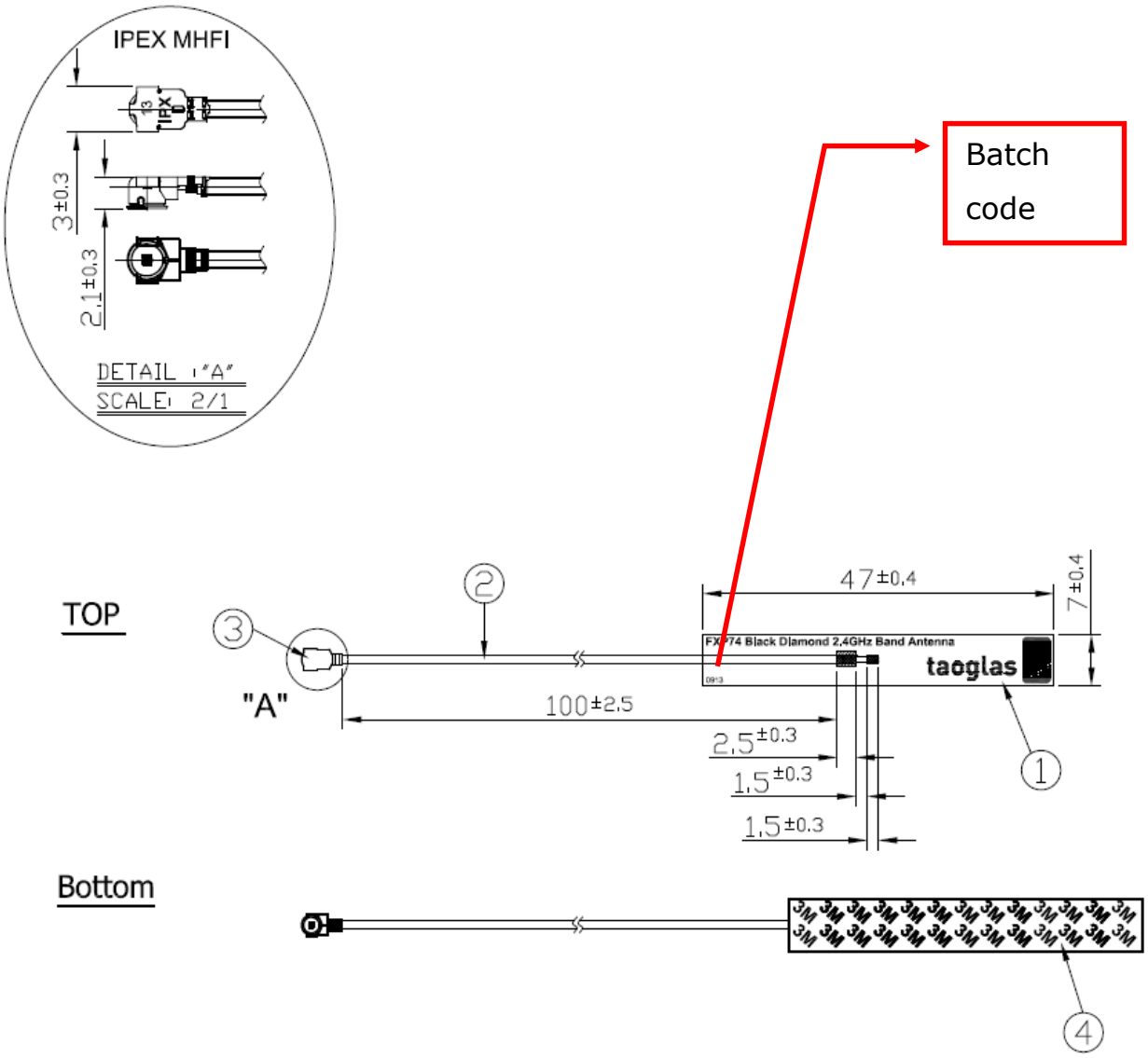
XZ-plane



YZ-plane



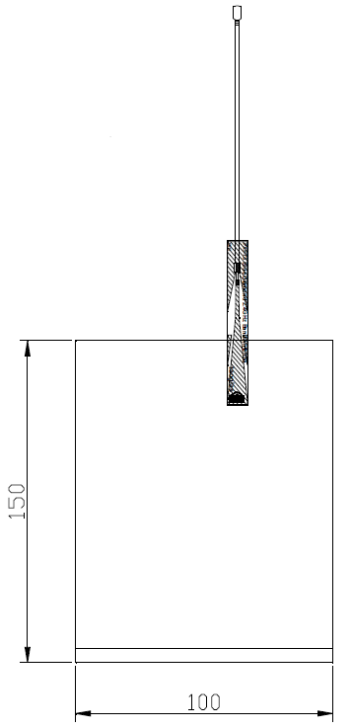
5. Antenna Drawing



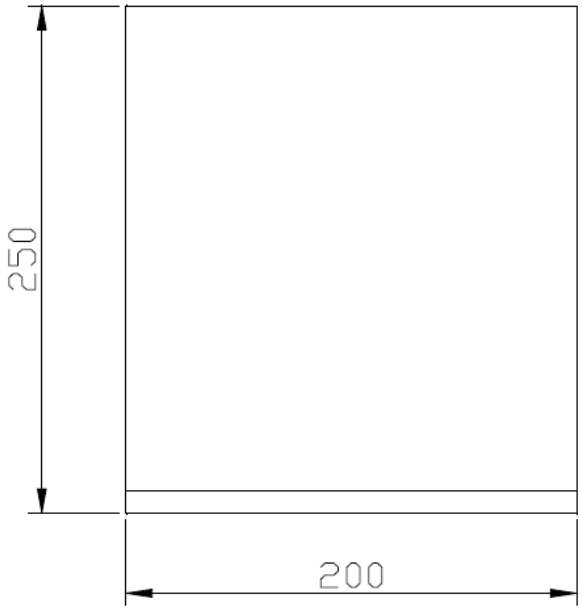
	Name	P/N	Material	Finish	QTY
①	FXP74 PCB	100112F000033A	FPCB 0.15t	Black	1
②	1.13 Mini-Coaxial Cable	OD.113.AD	FEP	Black	1
③	IPEX MHFI	IPEX.MHFI.113	Brass	Gold	1
④	Double-Sided Adhesive	100111D0000XXA	3M 467	Brown Liner	1

6. Packaging

100pcs per small PE bag



10pcs small PE bags per 1 big PE bag

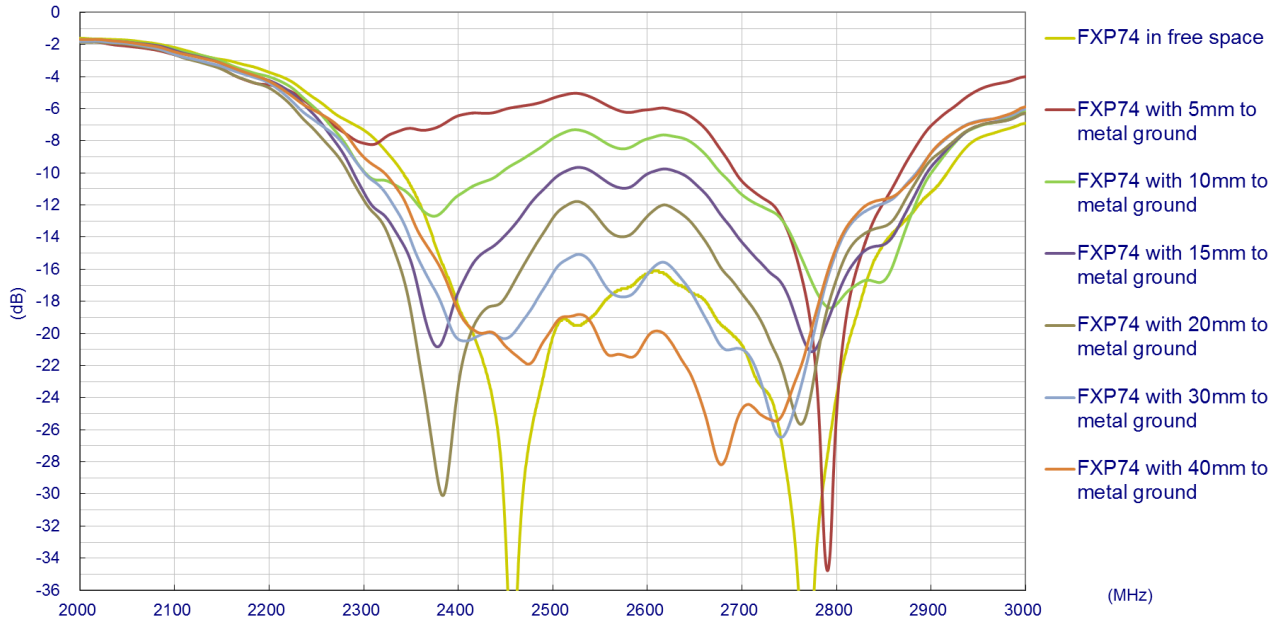


7. Return Loss – environmental effects

7.1. Antenna on different ABS thickness (Cable Length 100mm)

7.2. Proximities to metal ground plane

(Cable Length 100mm, antenna stuck on 2mm ABS base)



7.3. Antenna with different cable type (Antenna stuck on 2mm ABS base)