SPECIFICATION

Patent Pending

Part No. : **FXP522.A.07.A.001**

Product Name : **Venti WiFi MIMO 2.4/5.8GHz Flexible Embedded Antenna**
2*2 (2 ports)

Feature :
80*20*0.15mm
Efficiency : 60%+ Peak Gain : 3dBi+
Omni-directional - High isolation between ports
Port 1 & 2 -100mm cable length
1.13mm micro coax cable with IPEX MHFI connector
3M Adhesive tape for easy peel and stick mounting
Cables and Connectors are customizable.
RoHS Compliant

1. Overview

The FXP.522 Venti antenna is a 2* MIMO, flexible embedded monopole type antenna designed to be used inside high speed devices on modern WiFi networks.

Applications
- High speed HD video streaming
- High capacity mass transit communication networks

Omni-directional, the antenna has excellent efficiency and isolation performance for dual-band WiFi applications. It has over 60% efficiency in the 2.4GHz bands, and over 50% in the 5GHz bands. With a thickness of only 0.15mm, the FXP.522 is an ideal solution for maintaining high performance while fitting into narrow spaces such as plastic enclosures for routers, gateways, set-top boxes and other WiFi applications. the FXP.522 was specifically tuned on ABS plastic, ensuring reliable performance on PC and ABS housings.

The antenna has been designed on a flexible polymer with a rectangular form-factor and cable connection for an easy installation. The antenna comes with double-sided 3M tape for easy "peel and stick" mounting. The antenna cables feature IPEX MHF(u.fl) connectors for easy installation.

In order to comply with some module FCC requirements, peak gain can be reduced by using longer cable lengths or when tested in actual device environment.

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.

Customized cable lengths and connector versions can be supplied Contact a Taoglas regional support center for support.

2. Specification

ELECTRICAL				
	Port 1		Port 2	
Frequency (MHz)	2400-2500	5150-5850	2400-2500	5150-5850
Peak Gain (dBi)	3.78	4.63	3.15	4.61
Average Gain (dBi)	-1.71	-1.72	-1.61	-1.73
Efficiency (%)	67.51	67.80	68.65	67.70
Impedance	50Ω			
Polarization	Linear			
Radiation Pattern	Omni-directional			
Input Power	2W Max.			

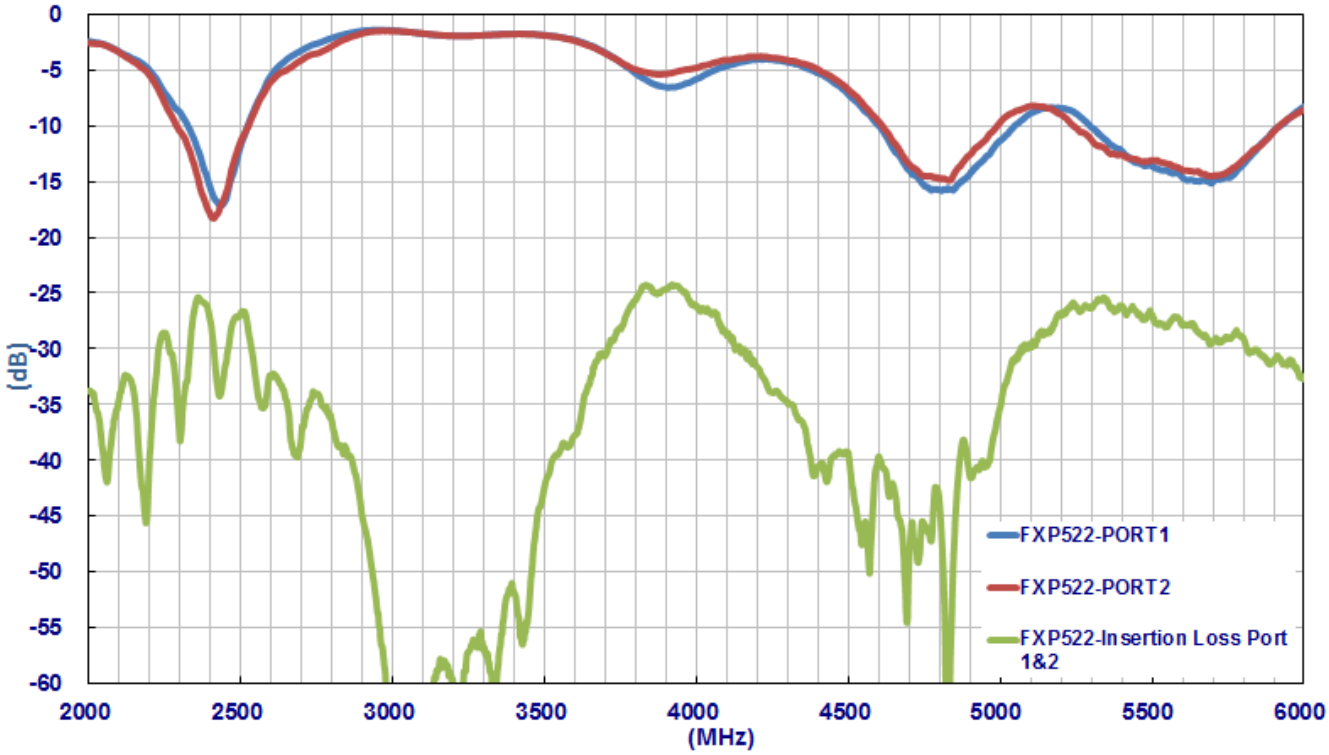
MECHANICAL	
Dimensions	80mm X 20mm X 0.1mm
Antenna Body Material	Polymer
Cable	2 x Black 1.13mm Coaxial Cable
Cable Length	100mm
Connector	2 x IPEX MHFI (u.fl)
Weight	6g

ENVIRONMENTAL	
Temperature Range	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

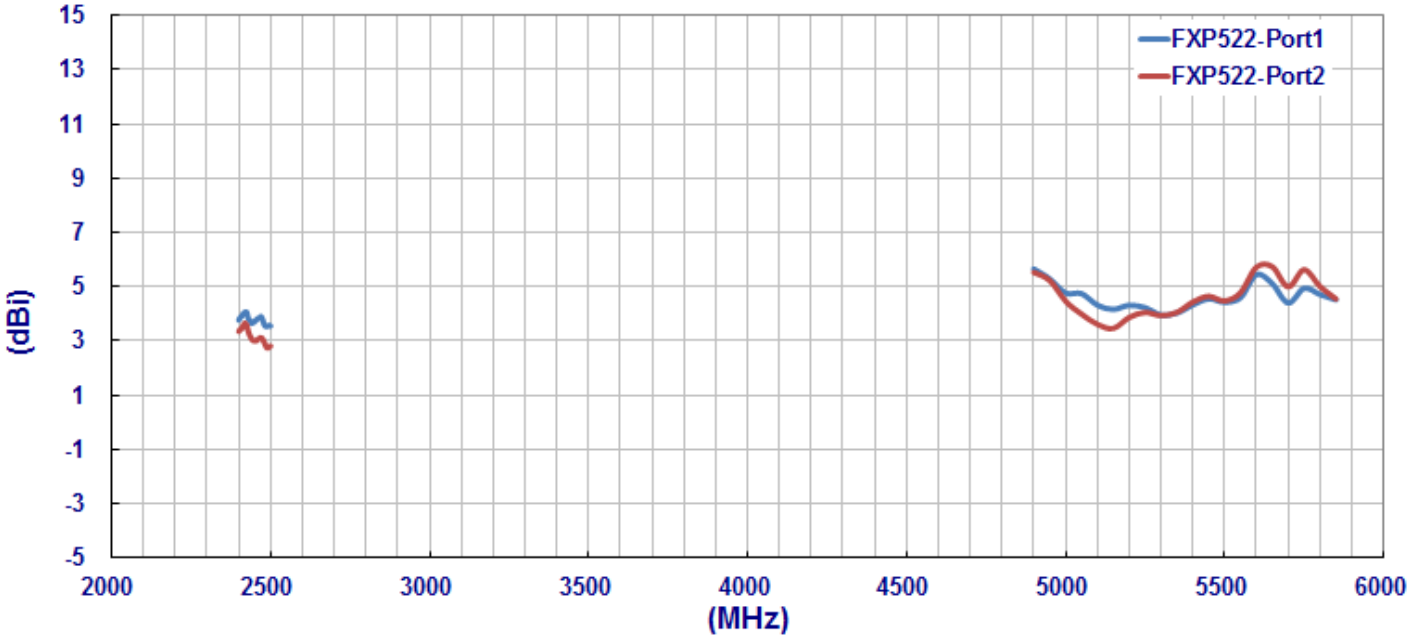
*Antenna measured on a 2mm thick ABS plastic base.

3. Antenna Characteristics

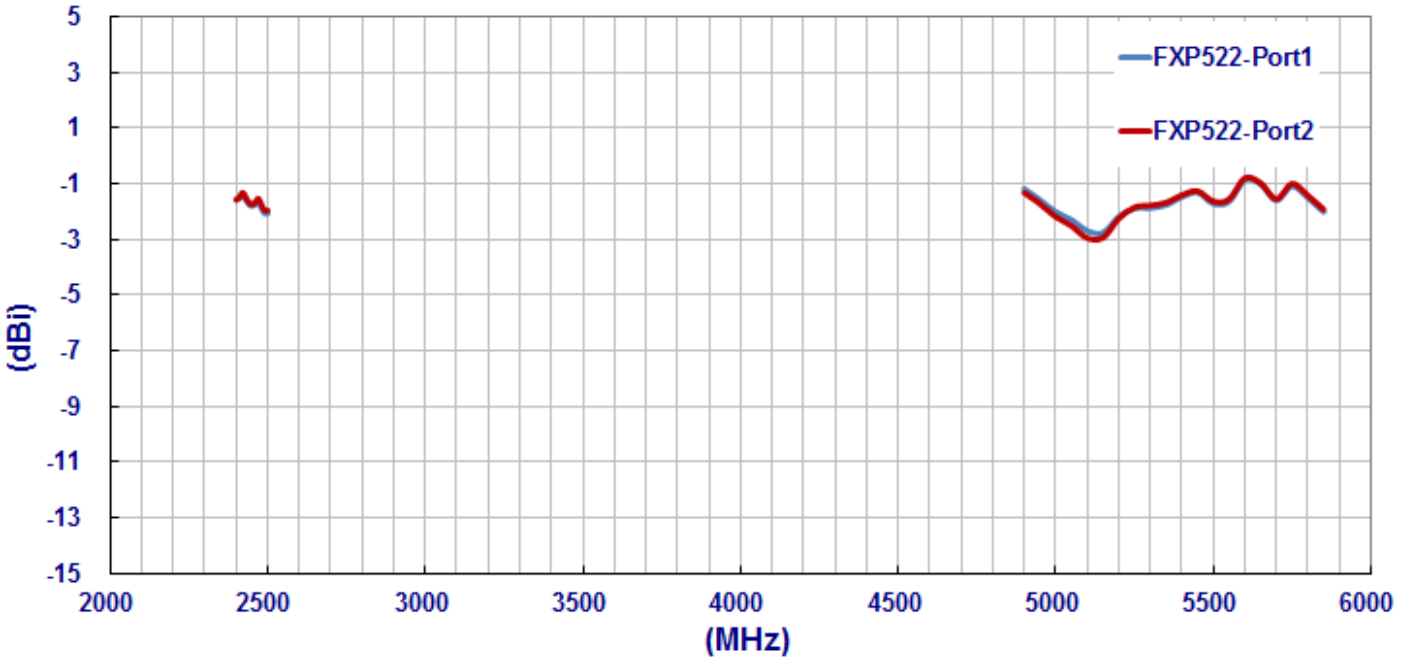
3.1 Return Loss & Isolation



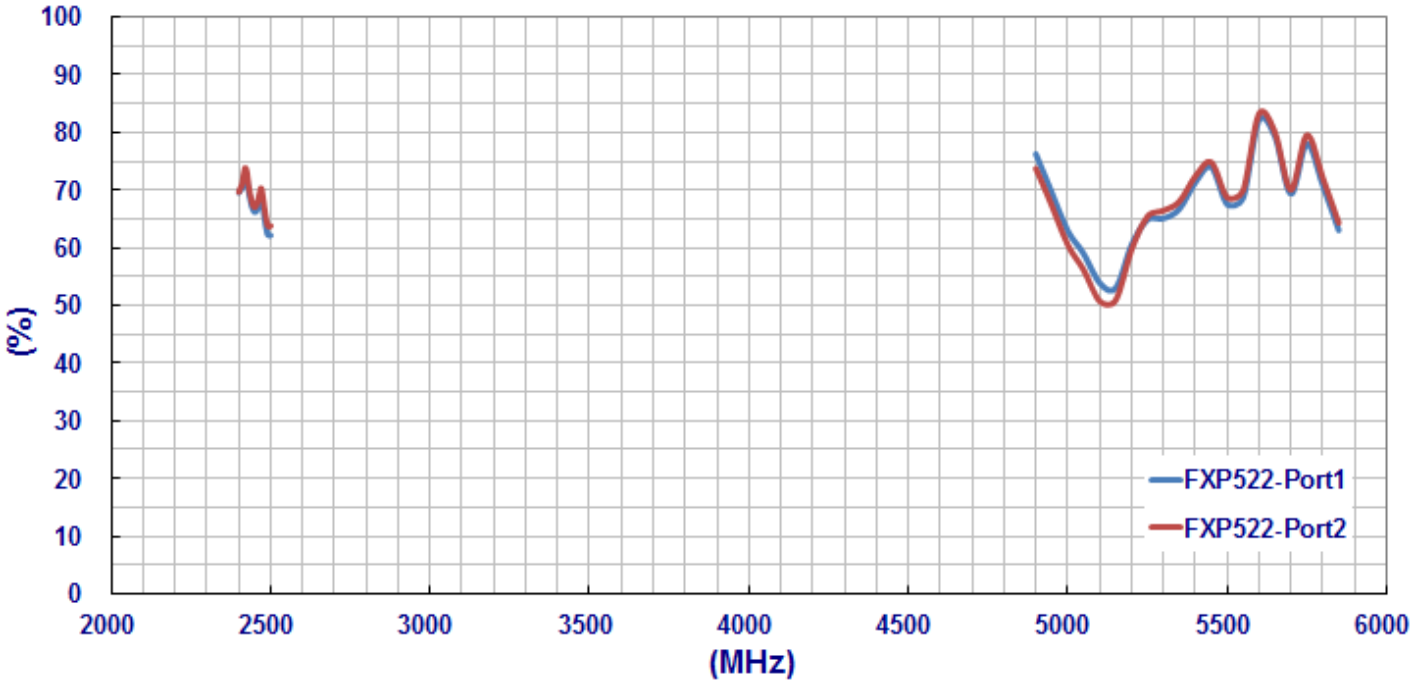
3.2 Peak Gain



3.3 Average Gain



3.4 Efficiency



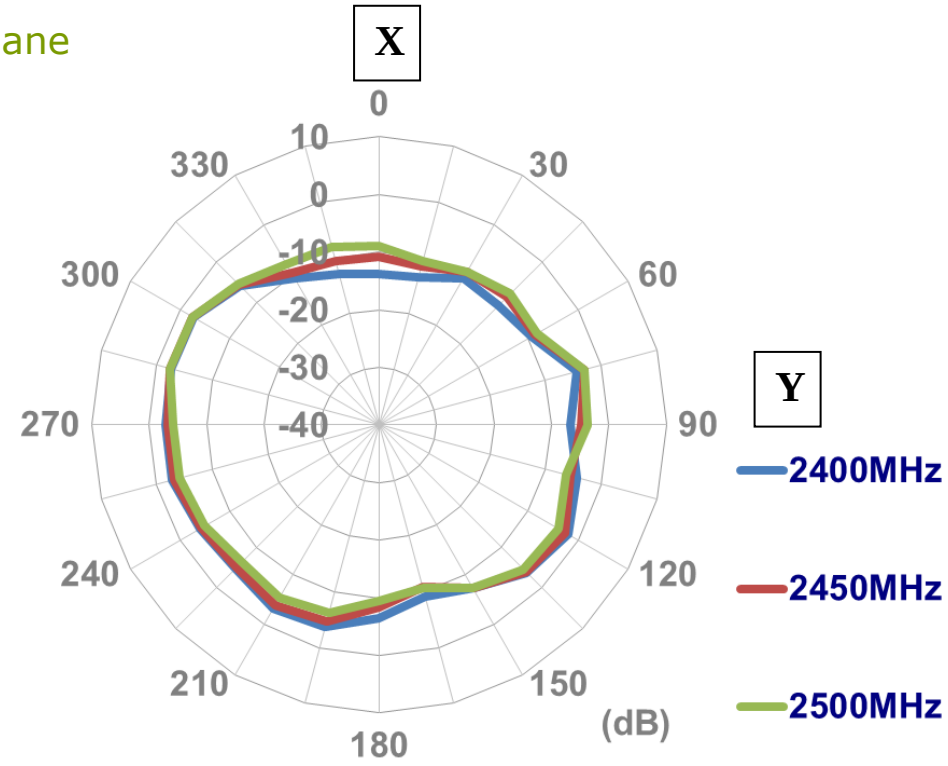
4. Antenna Radiation Patterns

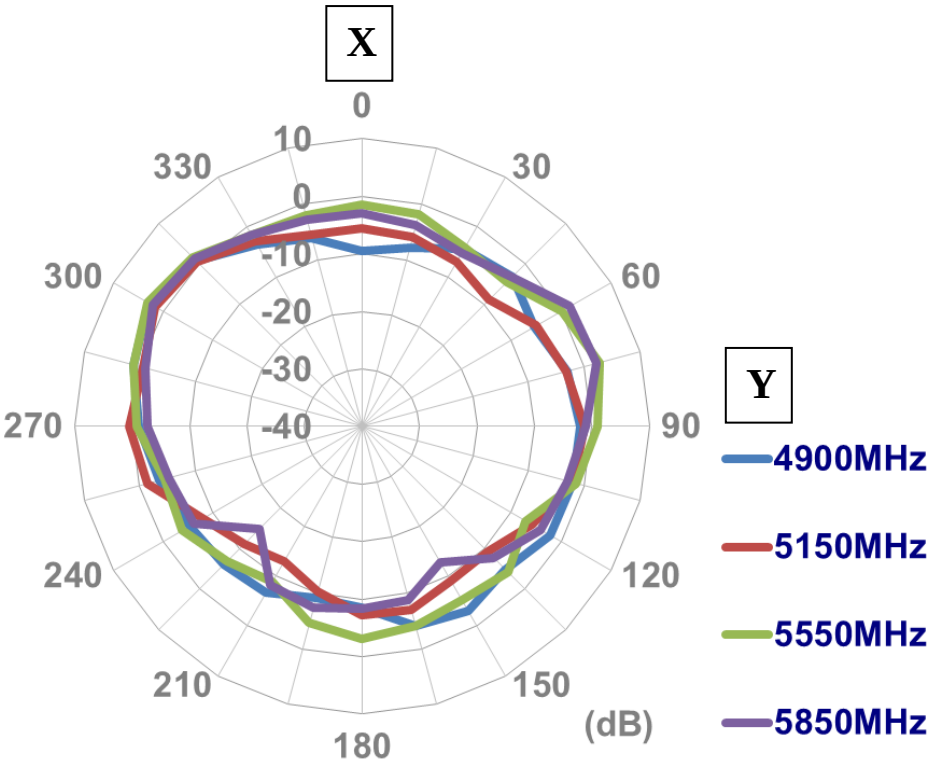
4.1 Antenna Coordinates Setup

5. Radiation Patterns

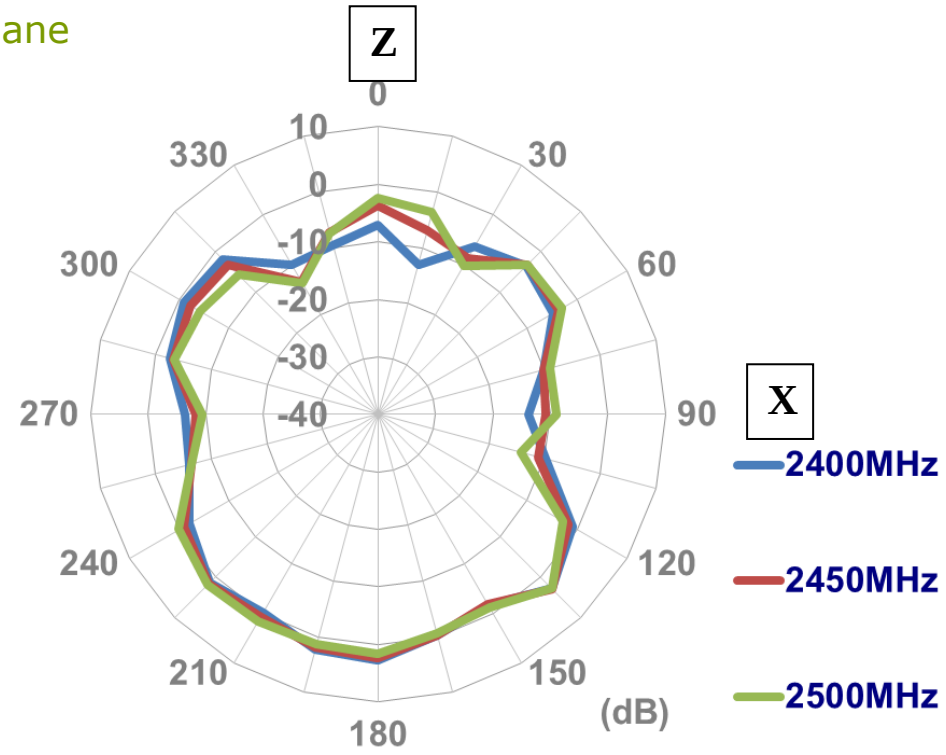
5.1 The radiation pattern of FXP.522 antenna (Port 1)

XY plane





XZ Plane


Z
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-10
-20
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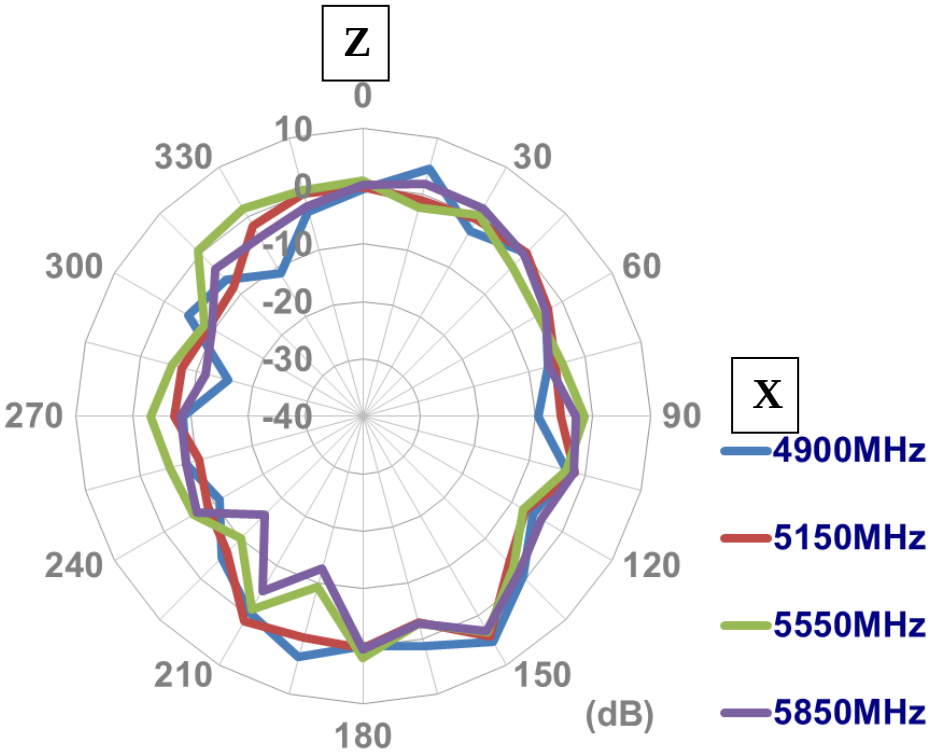
-40
(dB)
X
2400MHz
2450MHz
2500MHz


Z
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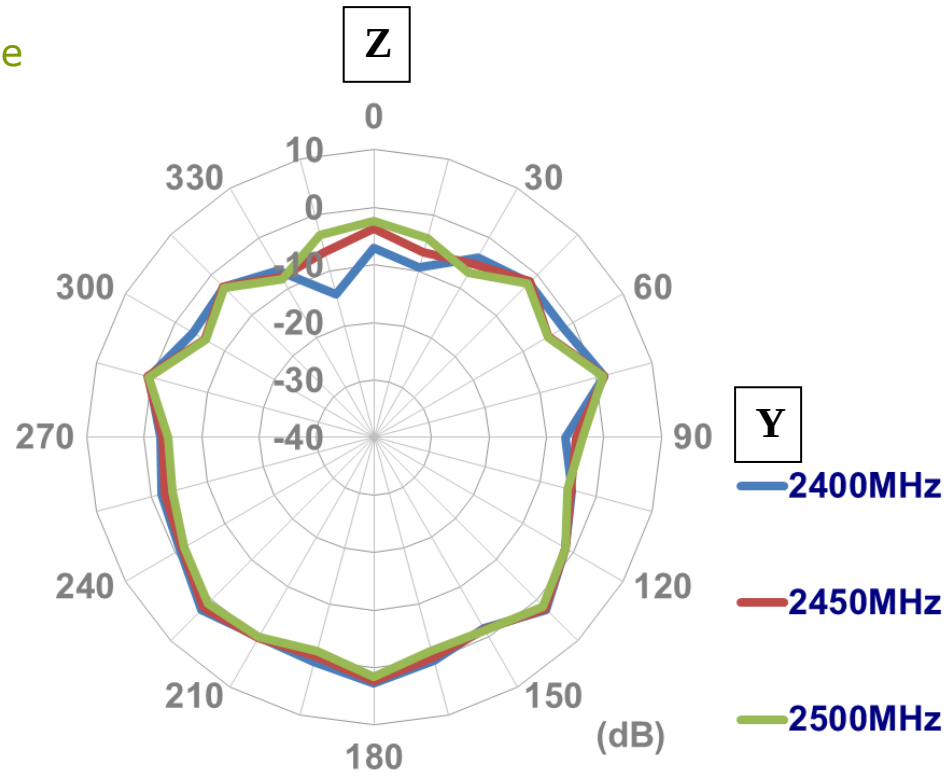
-40
(dB)
X
4900MHz
5150MHz
5550MHz
5850MHz

YZ Plane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-10
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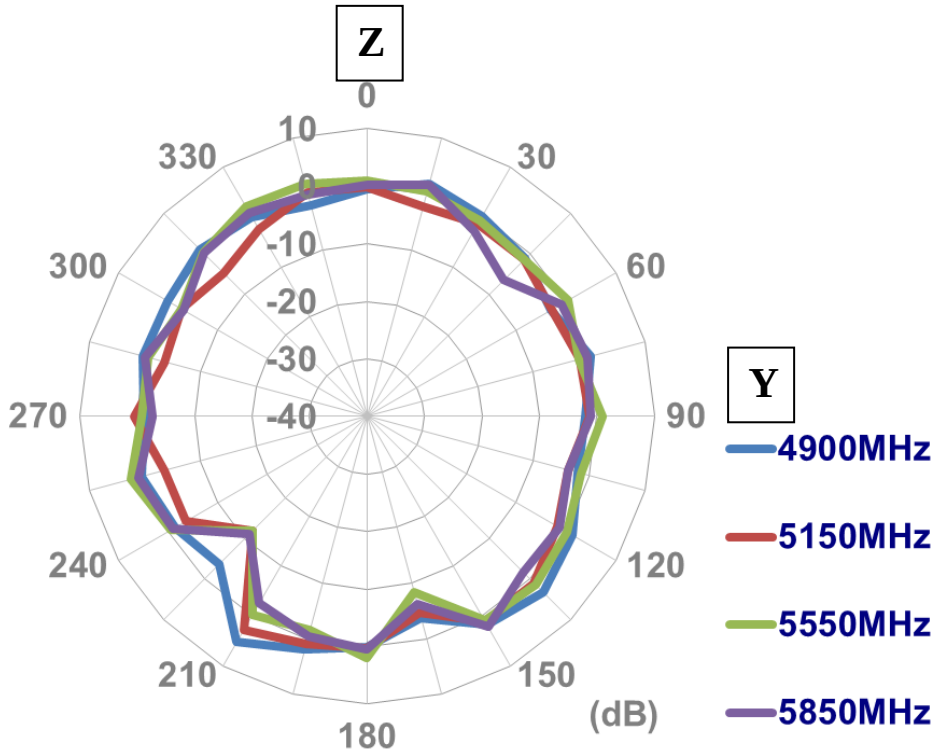
-40
(dB)
Y
2400MHz
2450MHz
2500MHz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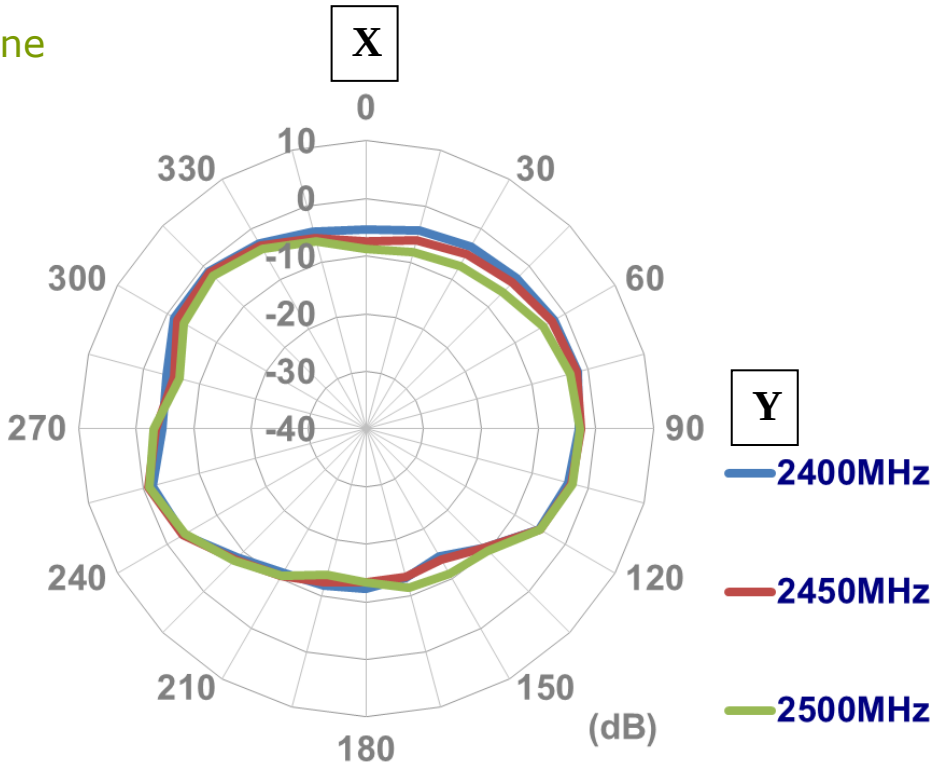
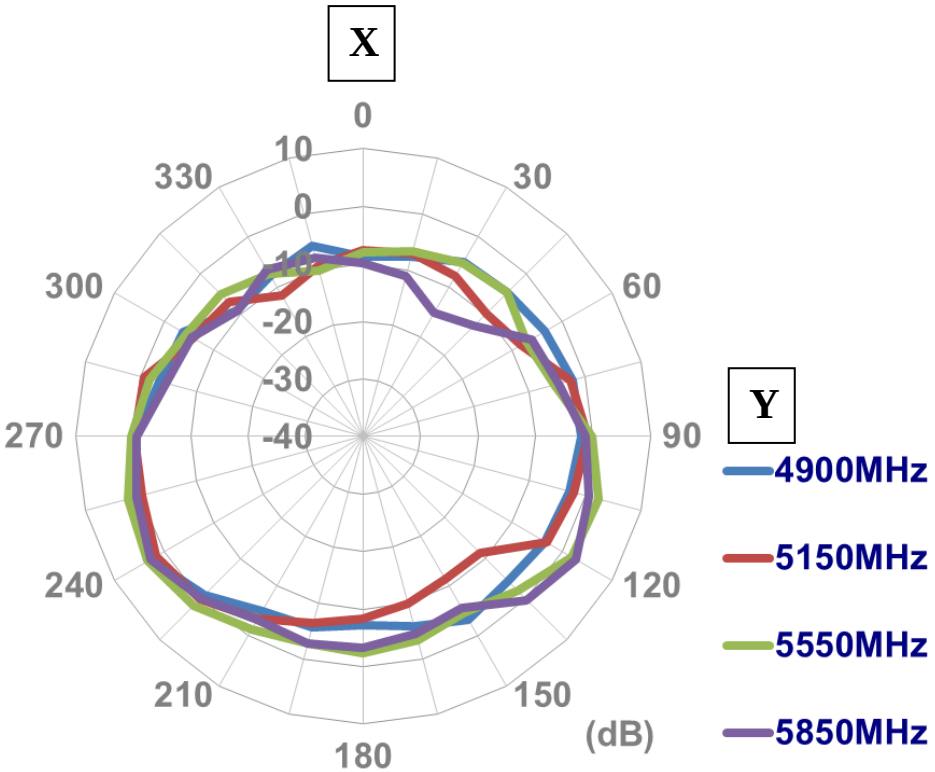
(dB)
Y
4900MHz
5150MHz
5550MHz
5850MHz

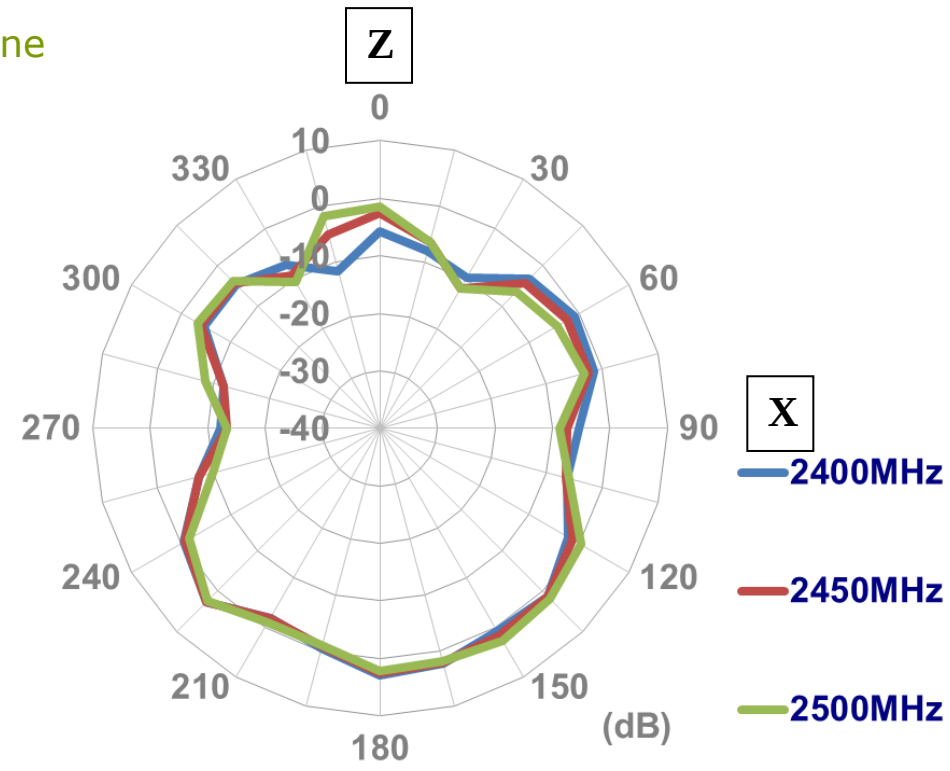
5.2 The radiation pattern of FXP.522 antenna (Port 2)

XY plane





XZ Plane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(dB)
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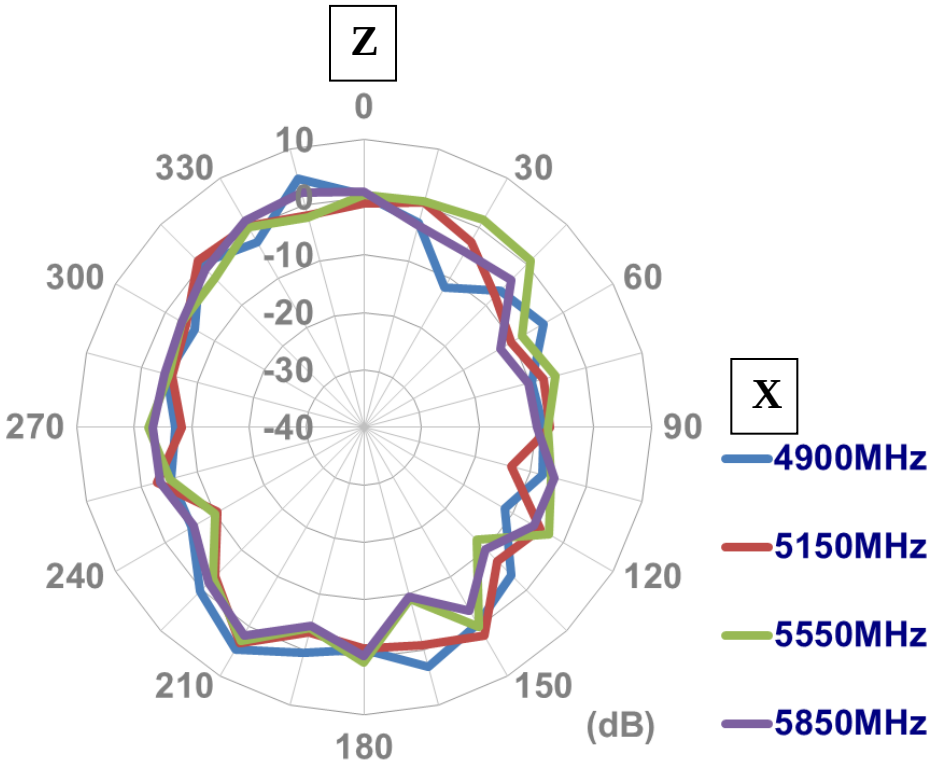
2400MHz
2450MHz
2500MHz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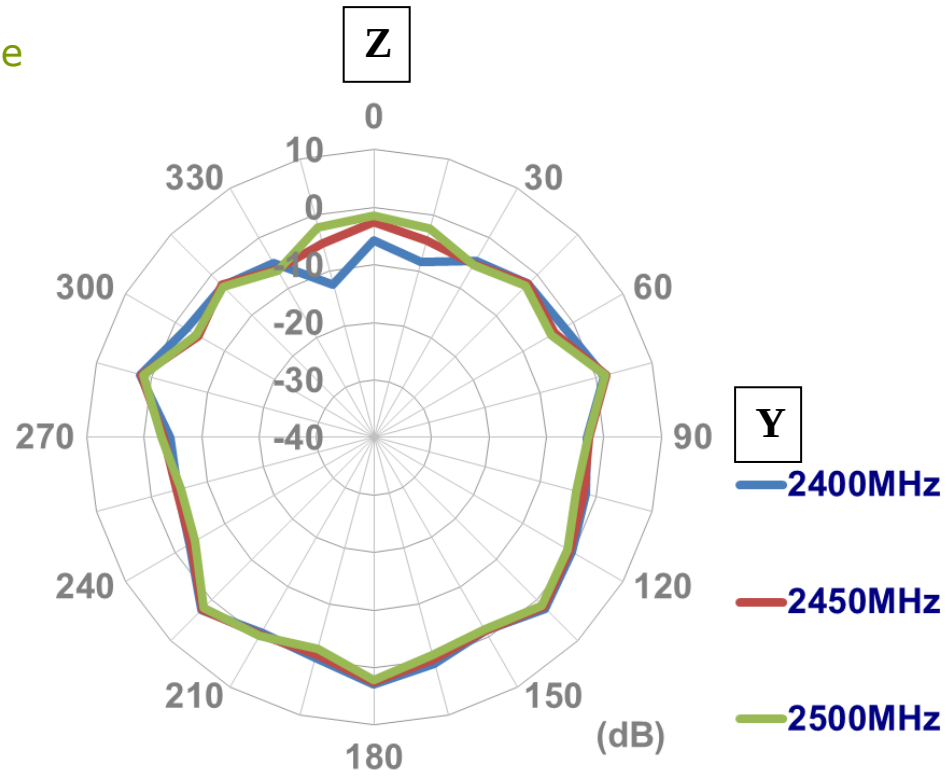
(dB)
X
4900MHz
5150MHz
5550MHz
5850MHz

YZ Plane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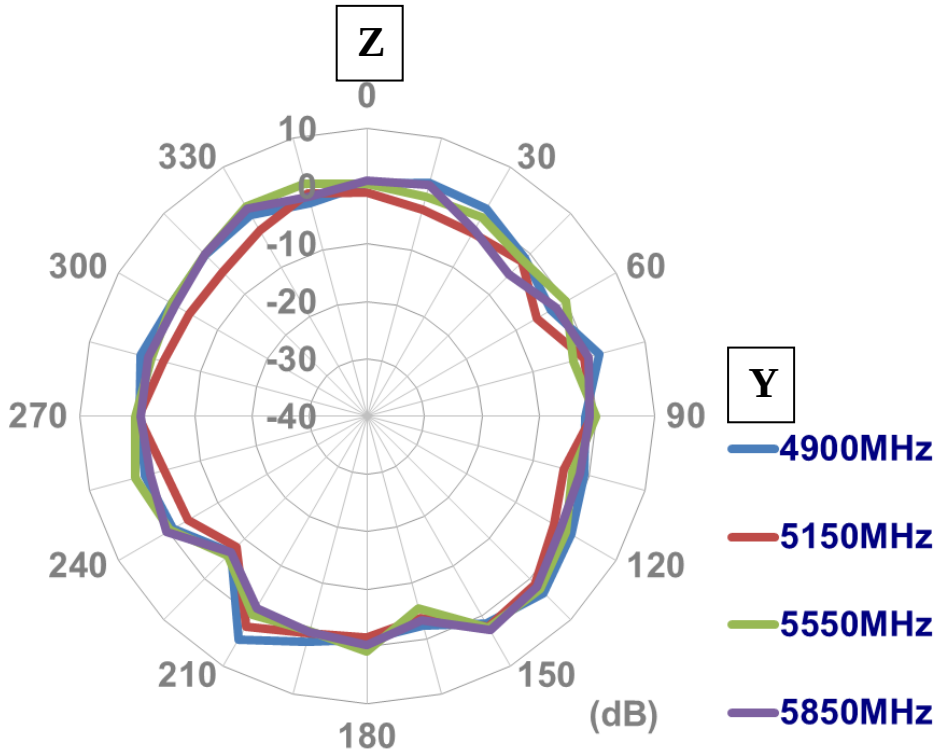
(dB)
Y
2400MHz
2450MHz
2500MHz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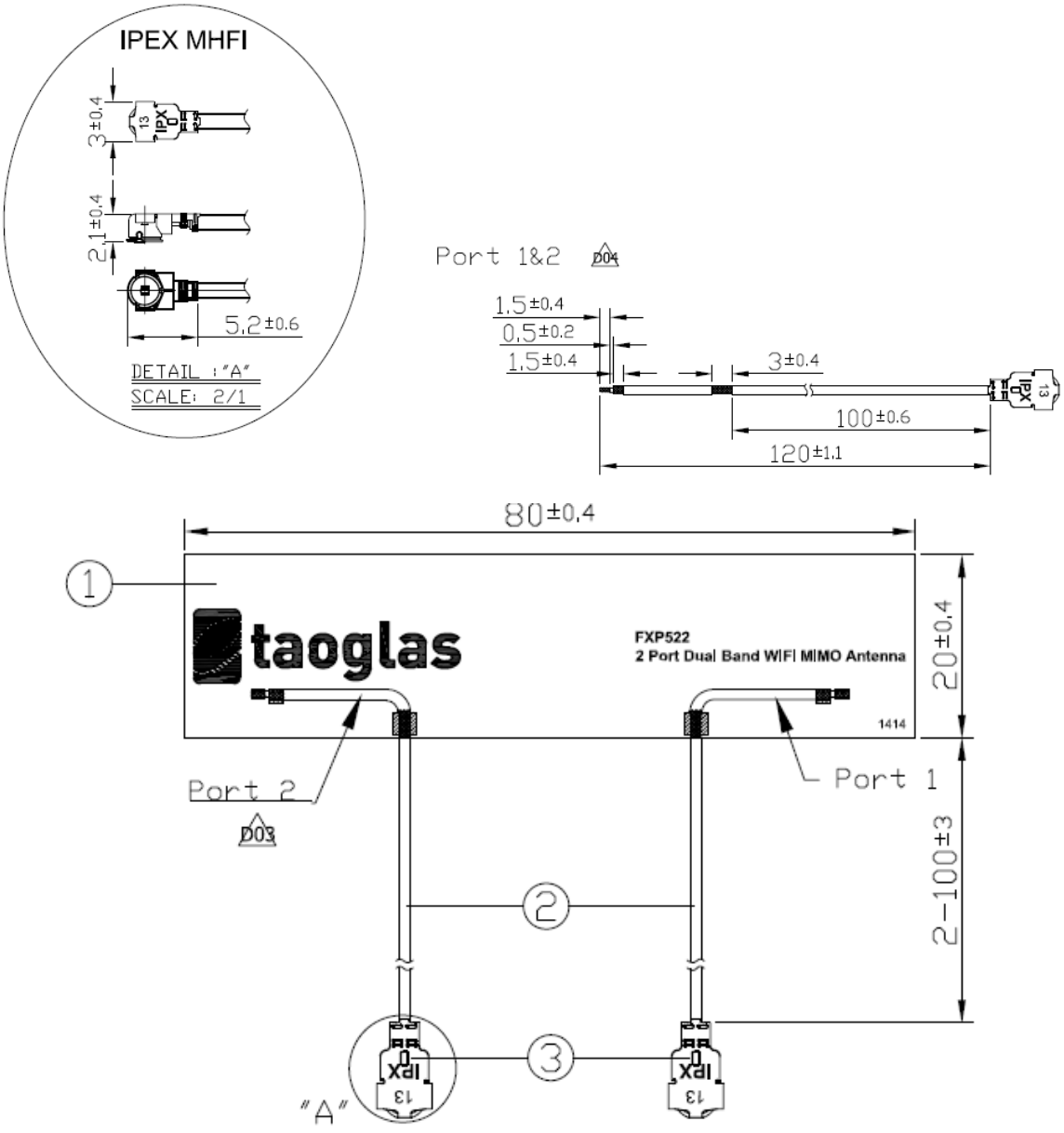
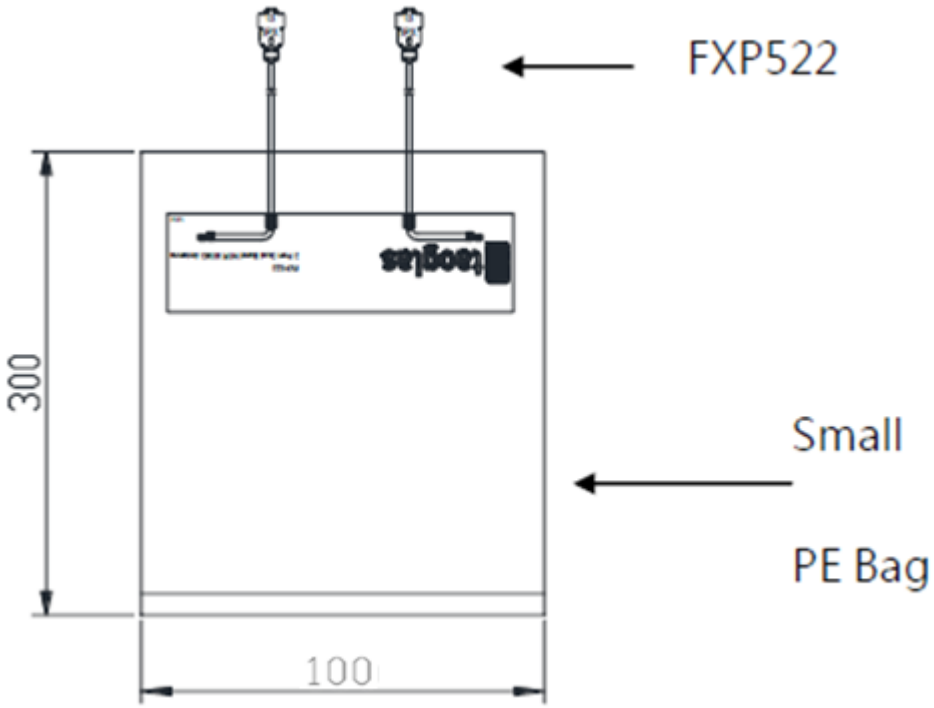
(dB)
Y
4900MHz
5150MHz
5550MHz
5850MHz

6. Drawing



	Name	Material	Finish	QTY
1	FXP522 FPCB 80x20	FPCB 0.15t	Black	1
2	1.13 Coaxial Cable	FEP	Black	2
3	IPEX.MHF1.13	Brass	Gold	2

7. Packaging



Unit:mm

10 pieces per a small PE Bag