SPECIFICATION

Patent Pending

Part No. : **FXP524.D.07.C.001**

Product Name : **Venti WLAN MIMO 2.4/5.0GHz Antenna with 4 ports**

Venti Flex PCB MIMO Antenna

Port 1&2&3&4-100mm Cable Length

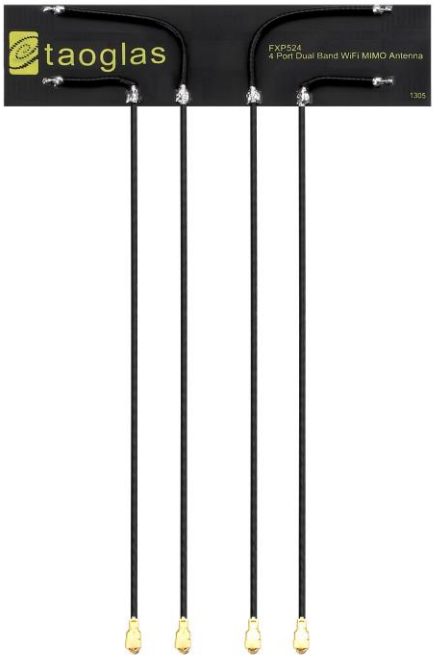
1.37mm dia. Cable with IPEX MHFHT connector

Feature : 80*20*0.15mm

Adhesive tape for easy mounting.

Cables and Connectors are customizable.

RoHS Compliant



1. Introduction

The FXP.524 Venti antenna is a 4-in-1 MIMO, flexible PCB monopole type antenna. The antenna has excellent efficiency and isolation performance for dual-band WiFi applications. It has over 40% efficiency in the 2.4GHz bands, and over 50% in the 5GHz bands. Featuring a low profile height of only 0.15mm, the FXP.524 is an ideal solution for maintaining high performance while fitting into narrow spaces such as plastic enclosures for laptops, tablets, routers, and other WiFi applications.

The antenna has been designed in a flexible material with a rectangular form-factor and cable connection for an easy installation. The antenna comes with double-sided 3M tape for easy and robust "peel and stick" mounting. The antenna cables feature IPEX connectors for easy installation.

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

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

ELECTRICAL								
	Port 1		Port 2		Port 3		Port 4	
Frequency (MHz)	2400-2500	5150-5850	2400-2500	5150-5850	2400-2500	5150-5850	2400-2500	5150-5850
Peak Gain (dBi)	5.01	6.30	2.49	6.28	2.01	6.36	3.55	6.33
Average Gain (dBi)	-2.06	-1.78	-2.90	-2.00	-2.61	-1.80	-2.51	-2.06
Efficiency (%)	62.21	66.47	51.37	63.17	54.77	66.21	56.19	62.37
Impedance	50Ω							
Polarization	Linear							
Radiation Pattern	Omni-directional							
Input Power	2W Max.							

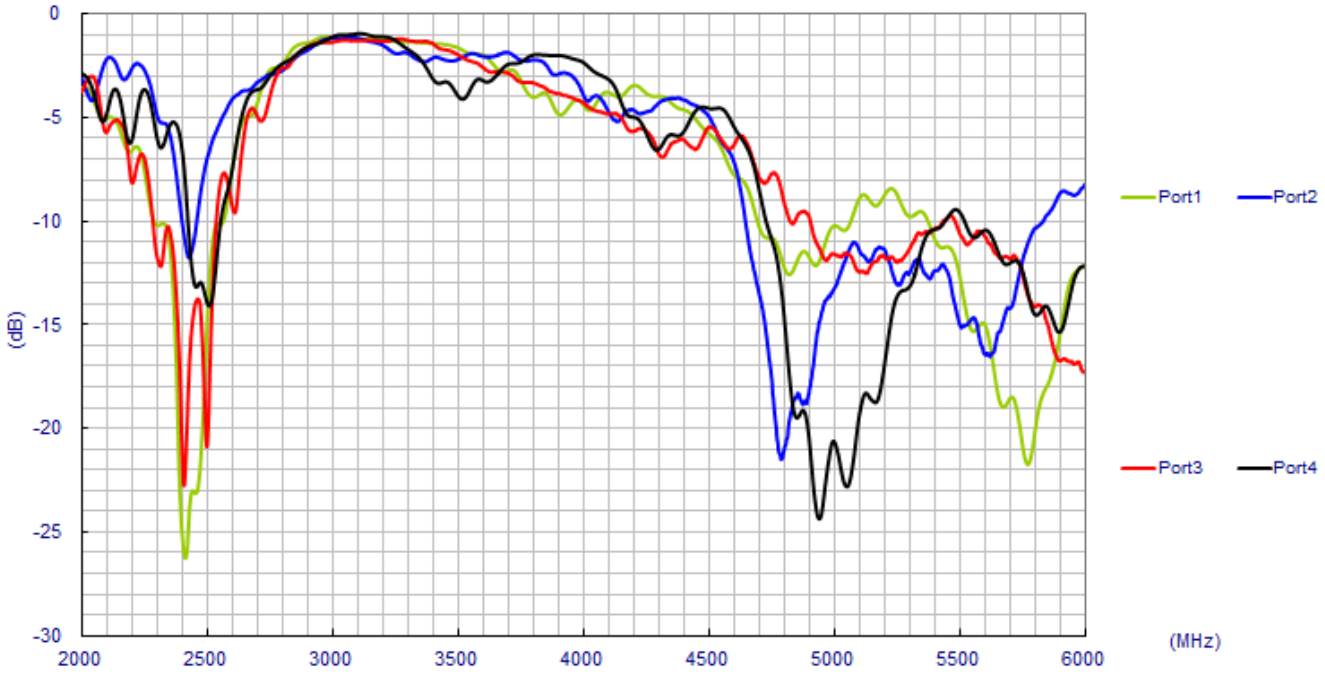
MECHANICAL	
Dimensions	80mm X 20mm X 0.1mm
Antenna Body Material	Polymer
Cable	4* Black 1.37mm Coaxial Cable
Cable Length	100mm
Connector	IPEX MHFHT
Weight	8g

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

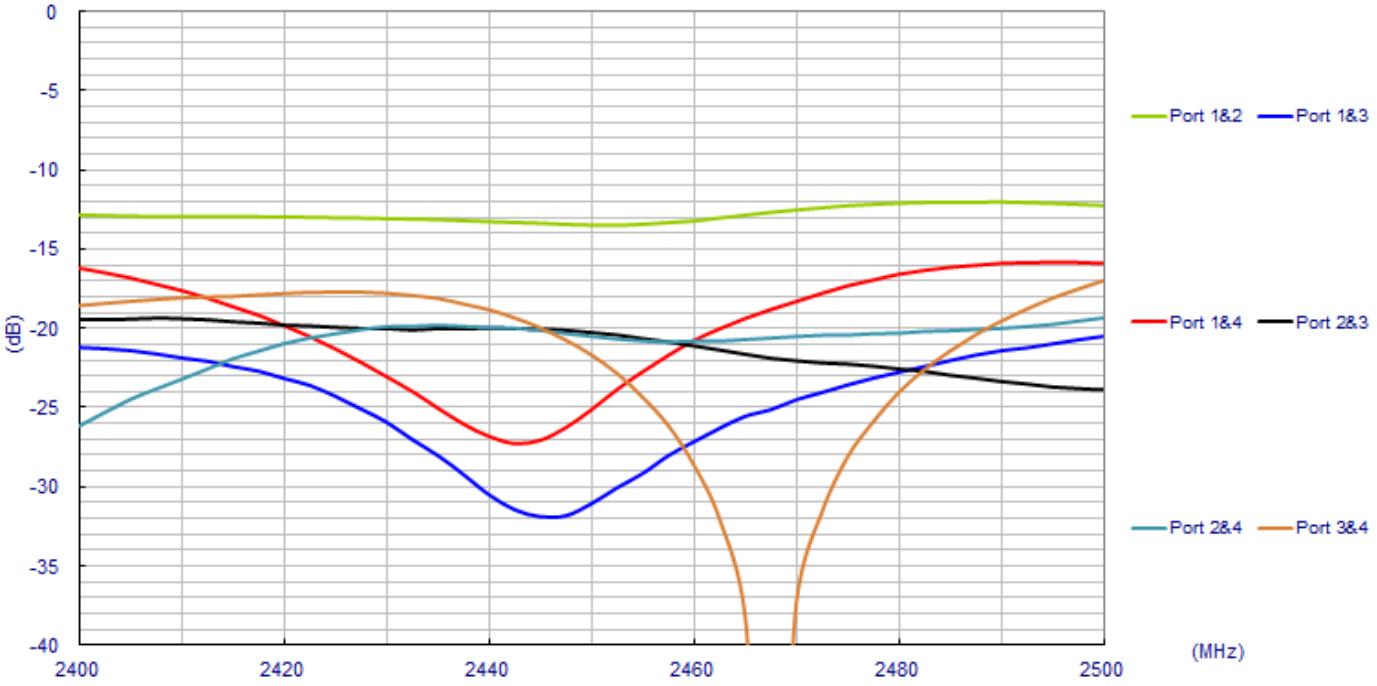
*The antenna was measured with 2mm thick ABS plastic base.

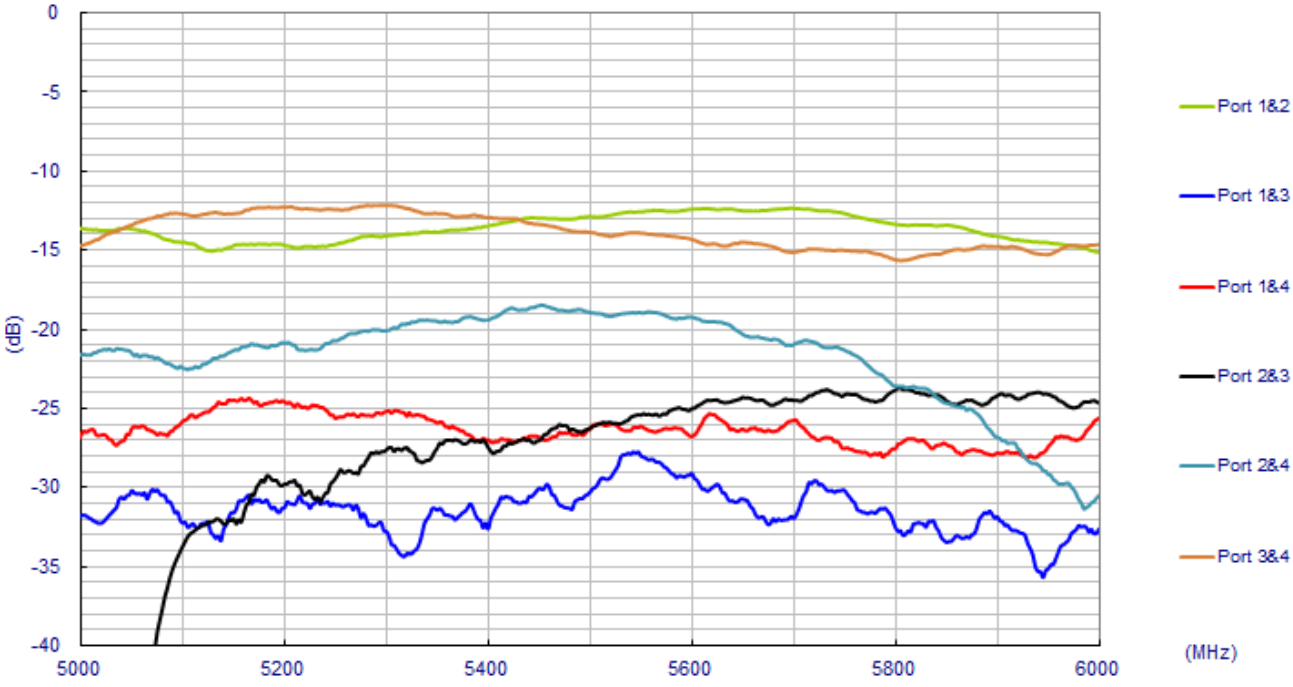
3. Antenna Characteristics

3.1 Return Loss

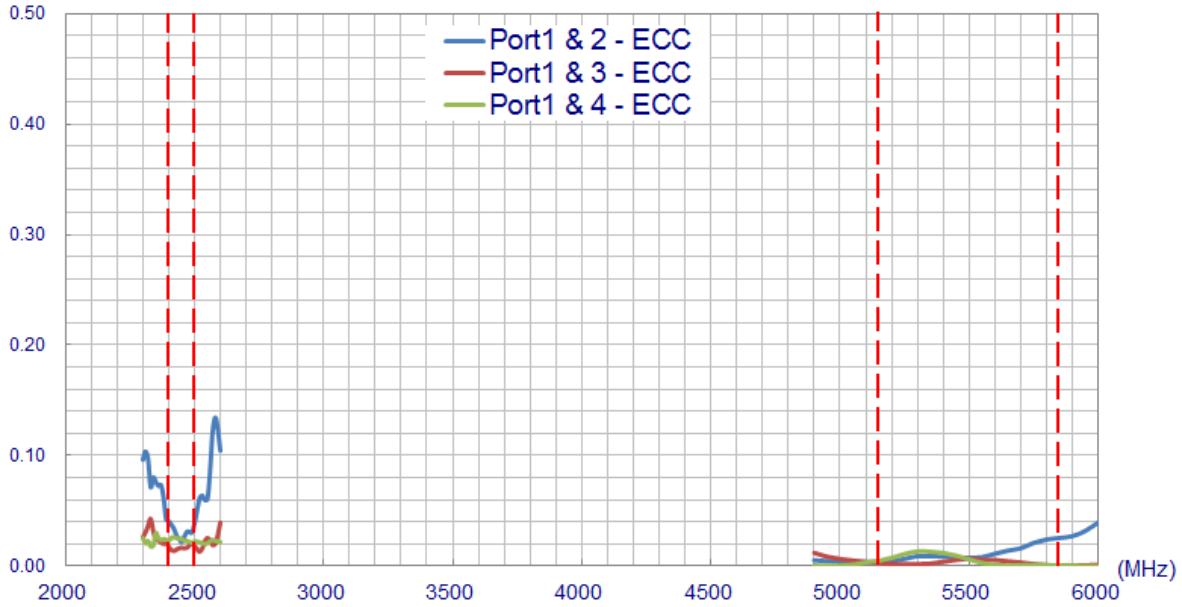


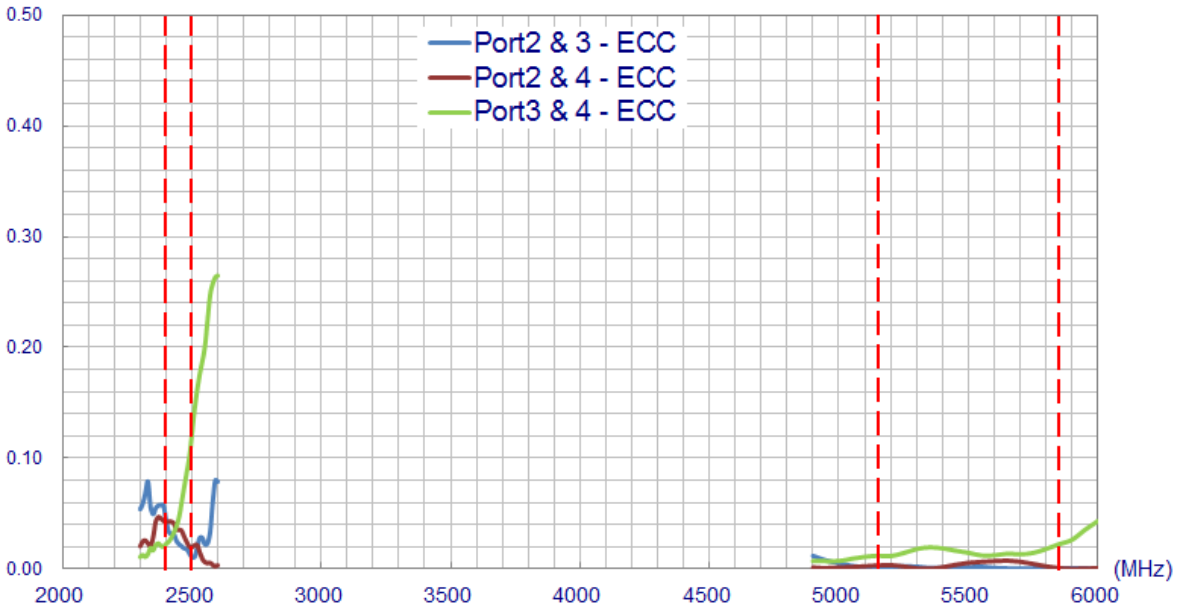
3.2 Antenna Isolation



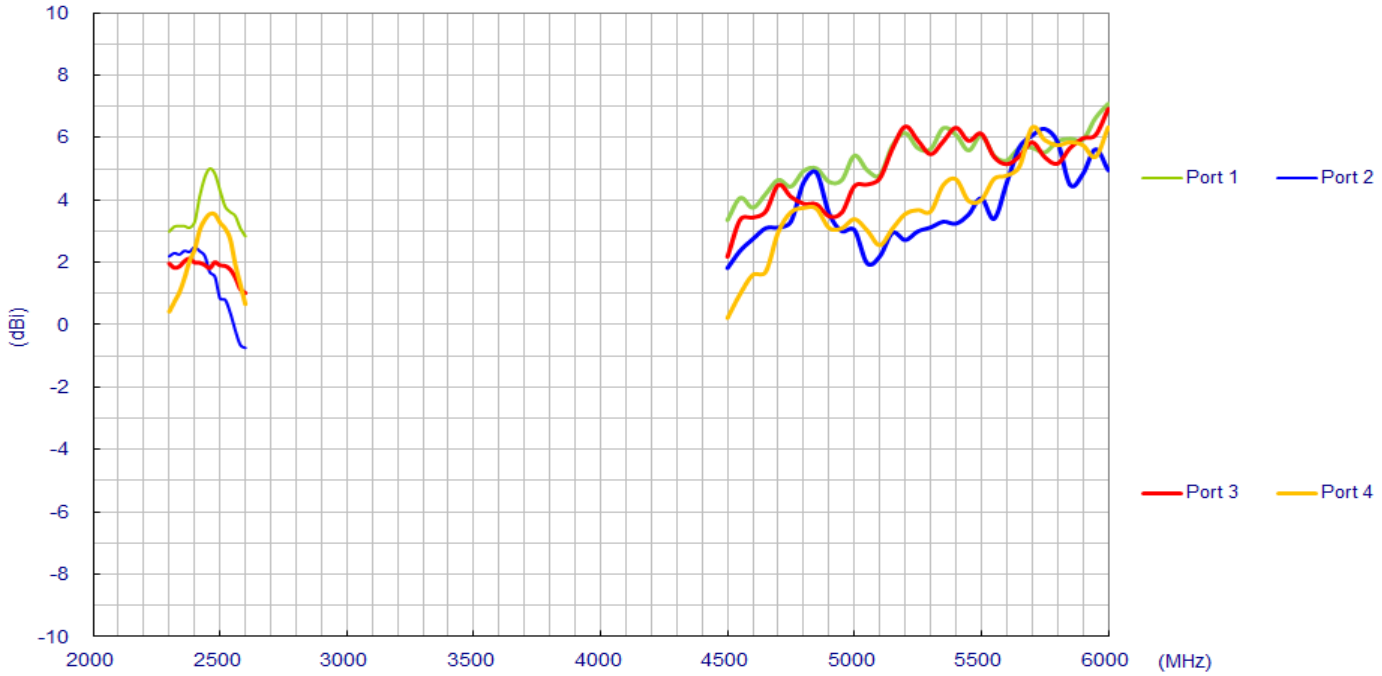


3.3 Envelope Correlation Coefficient

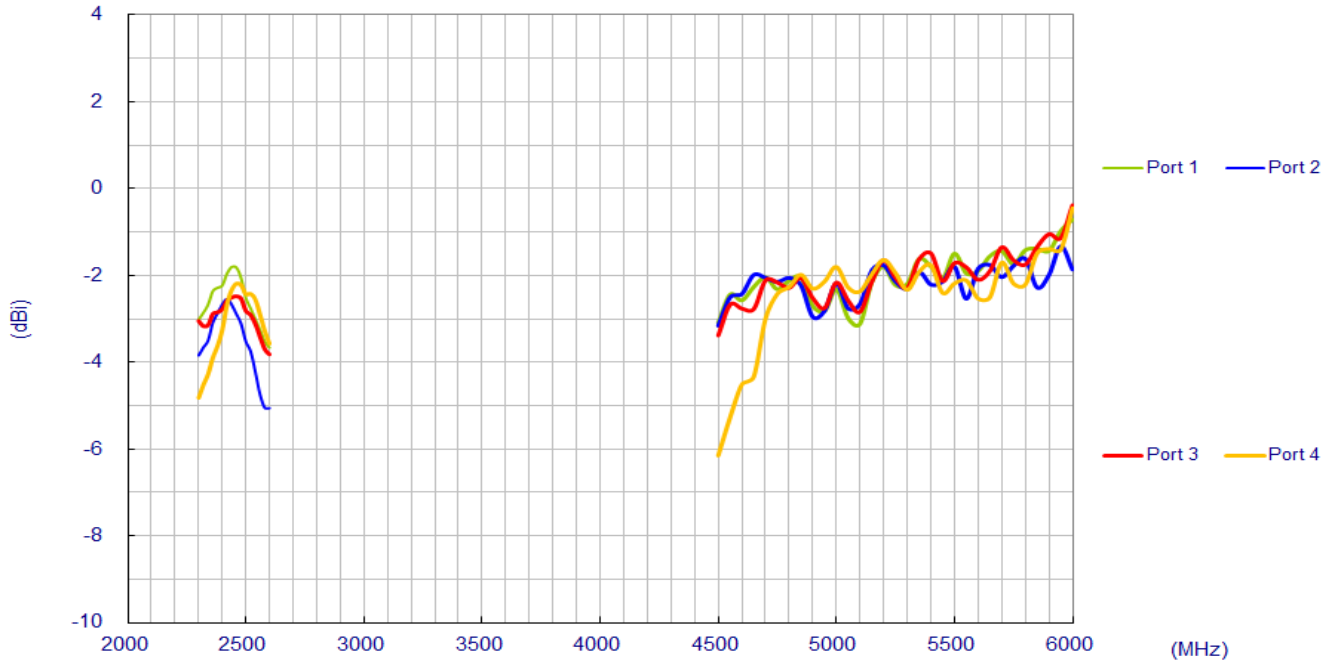




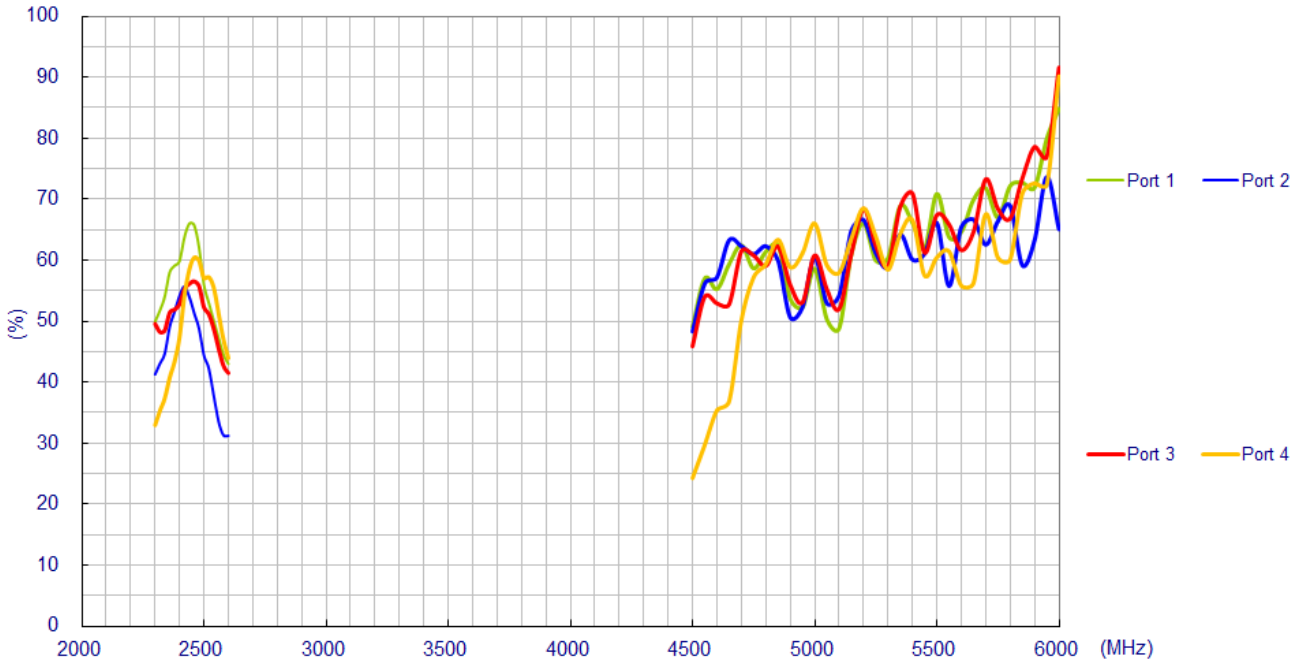
3.4 Peak Gain



3.5 Average Gain

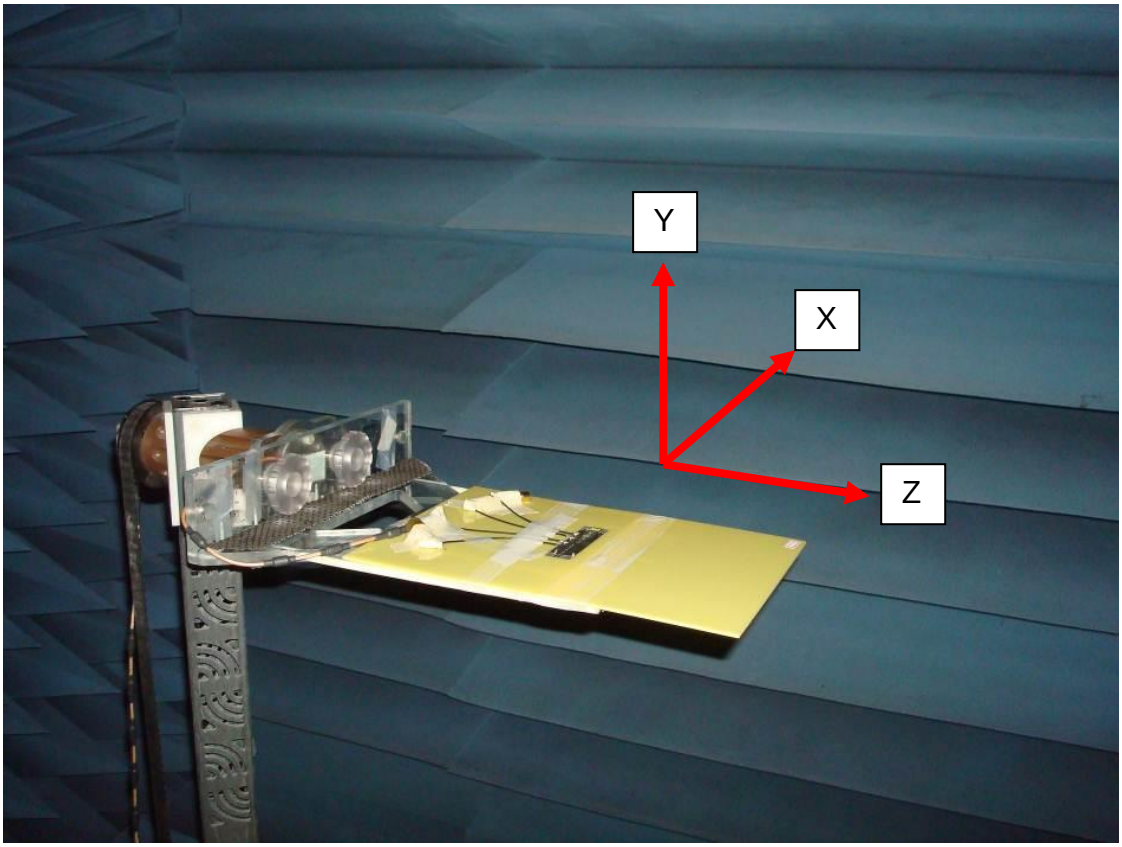


3.6 Efficiency



4. Antenna Radiation Patterns

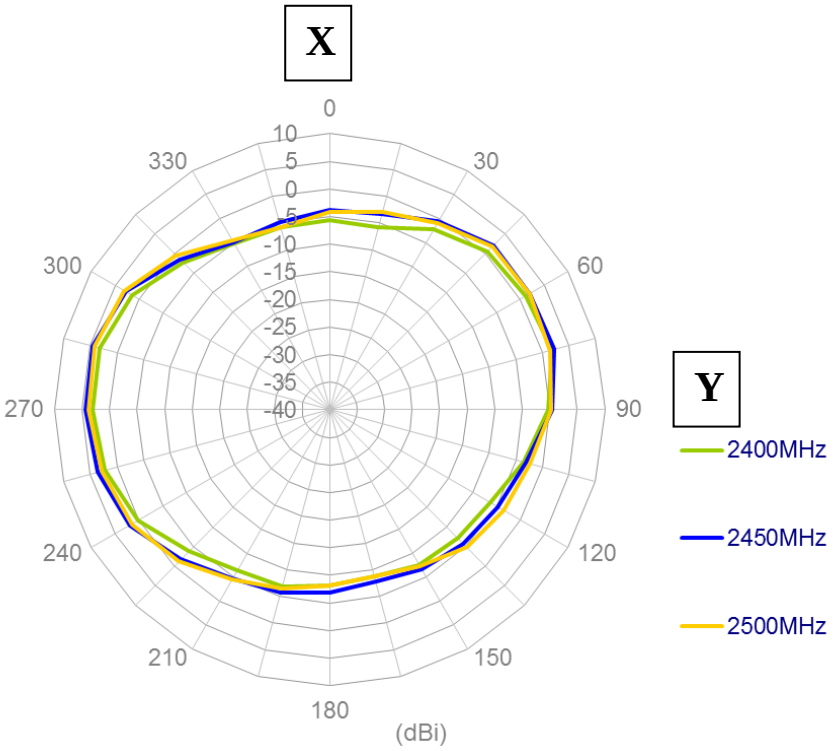
4.1 Antenna setup in Anechoic Chamber

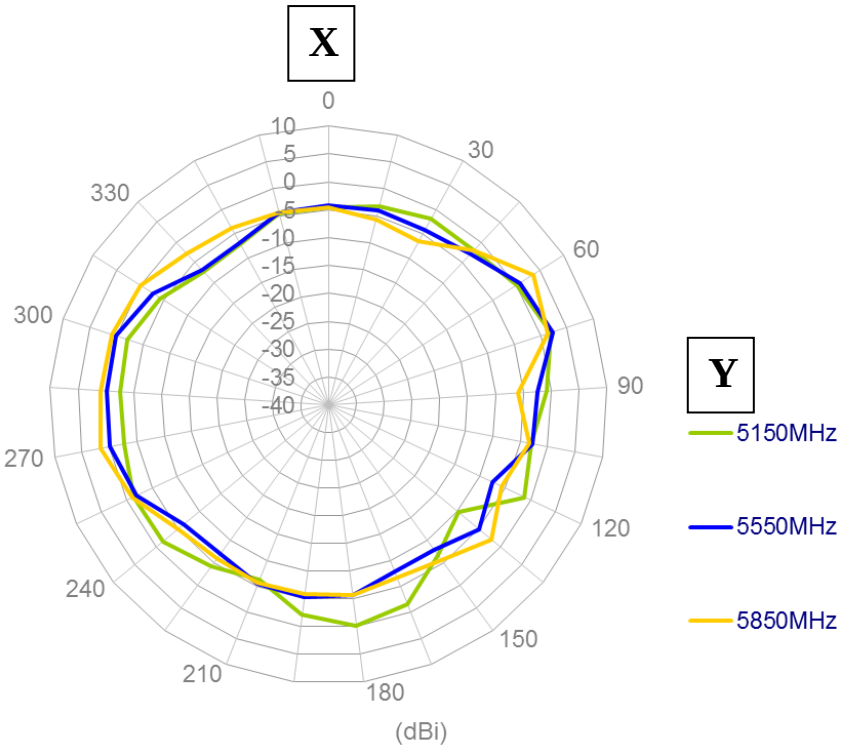


5. Radiation Patterns

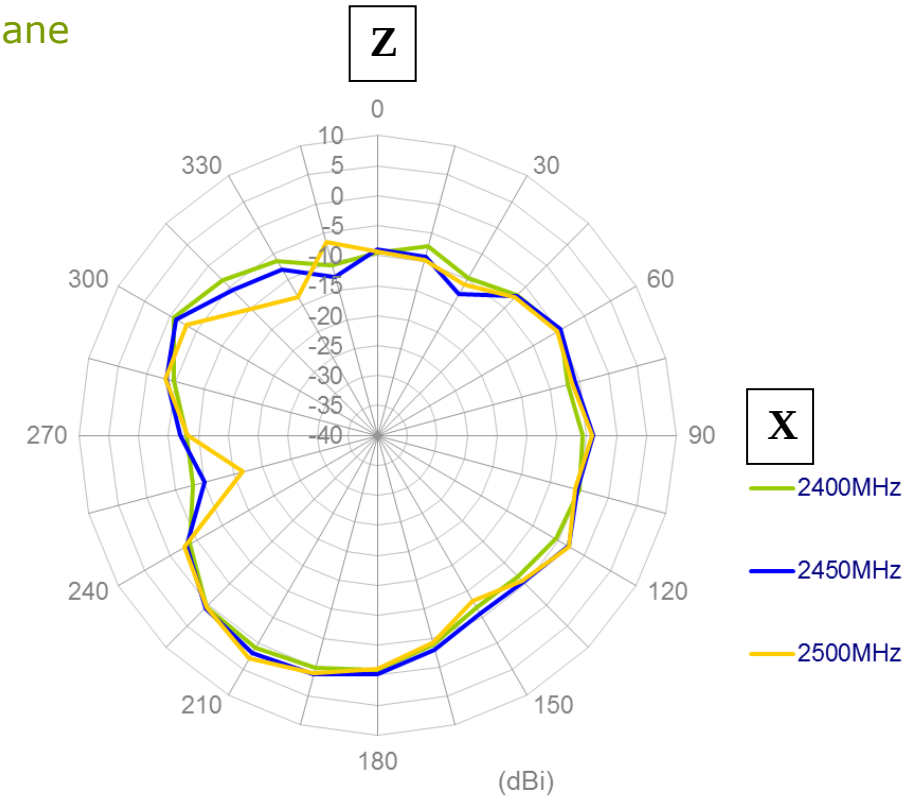
5.1 The radiation pattern of FXP.524 antenna (Port 1)

XY plane





XZ Plane


Z
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240
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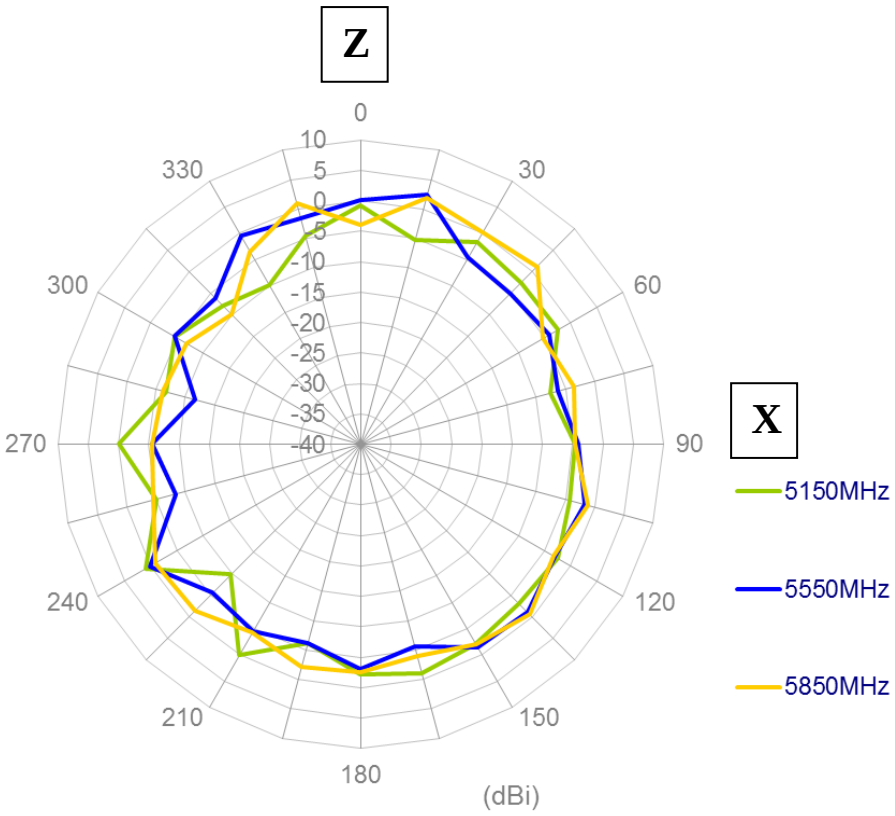
330
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
(dBi)
X
2400MHz
2450MHz
2500MHz


Z
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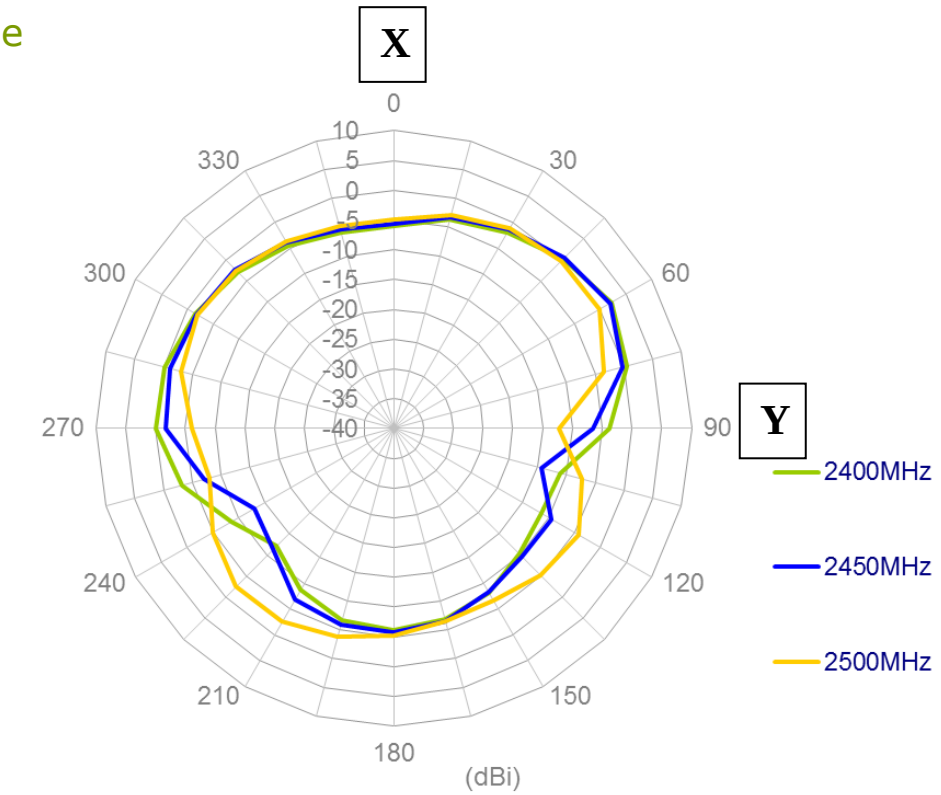
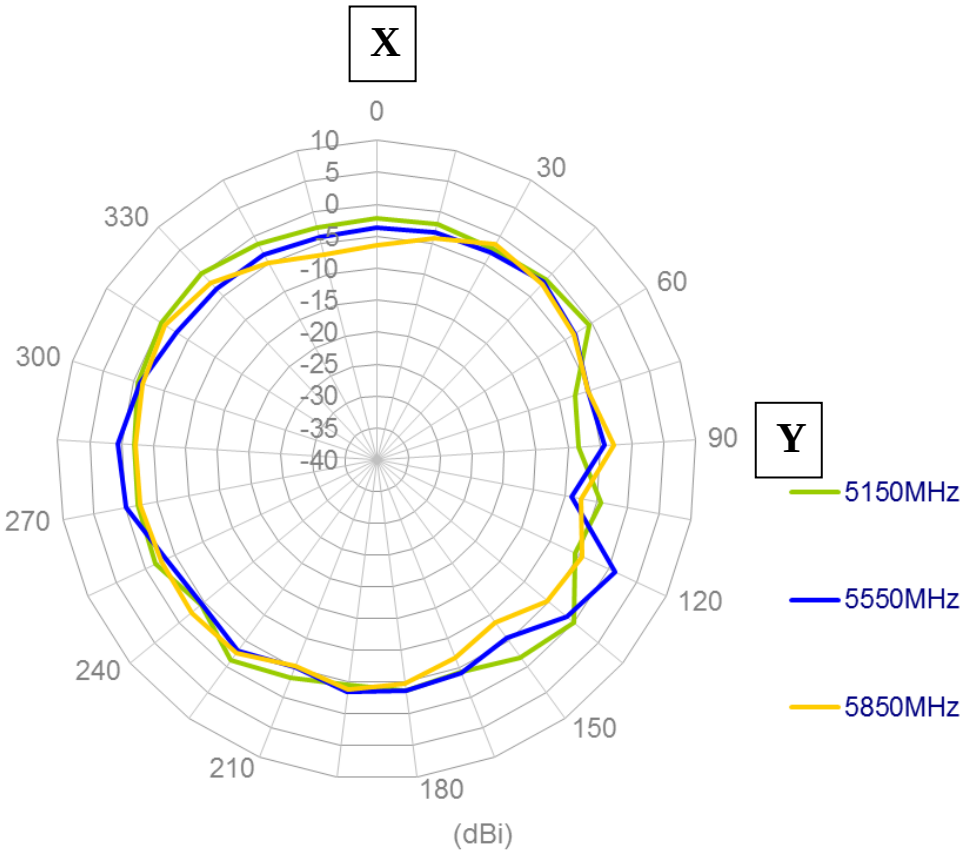
-5
-10
-15
-20
-25
-30
-35
-40
(dBi)
X
5150MHz
5550MHz
5850MHz

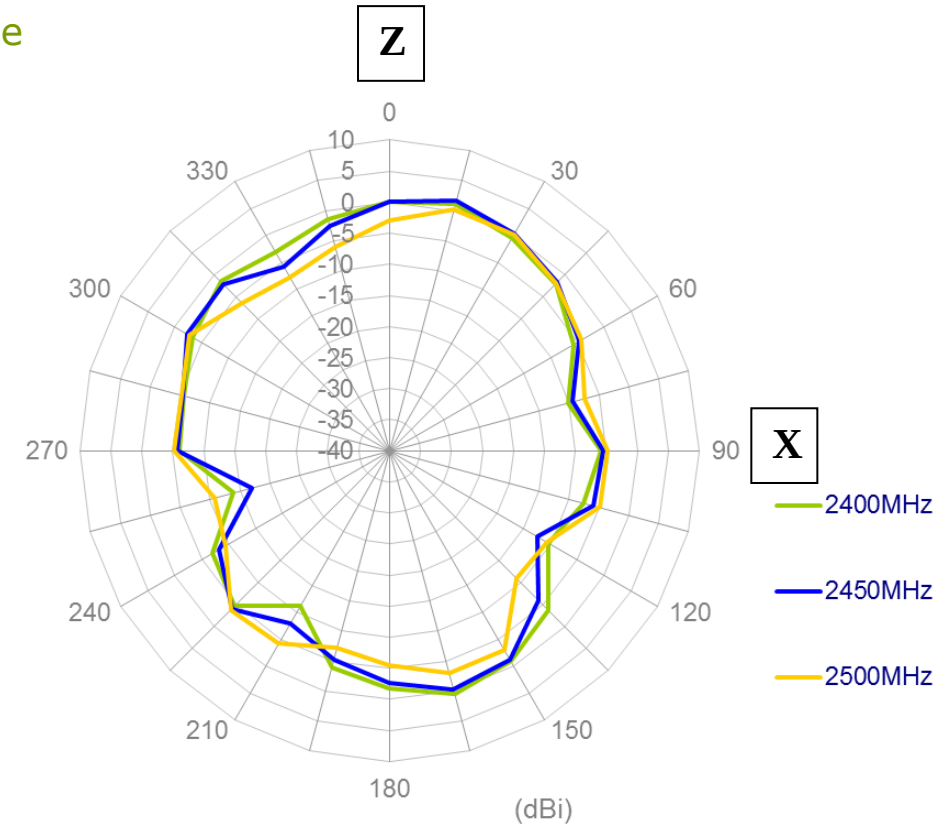
5.2 The radiation pattern of FXP.524 antenna (Port 2)

XY plane





XZ Plane


Z
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-5
-10
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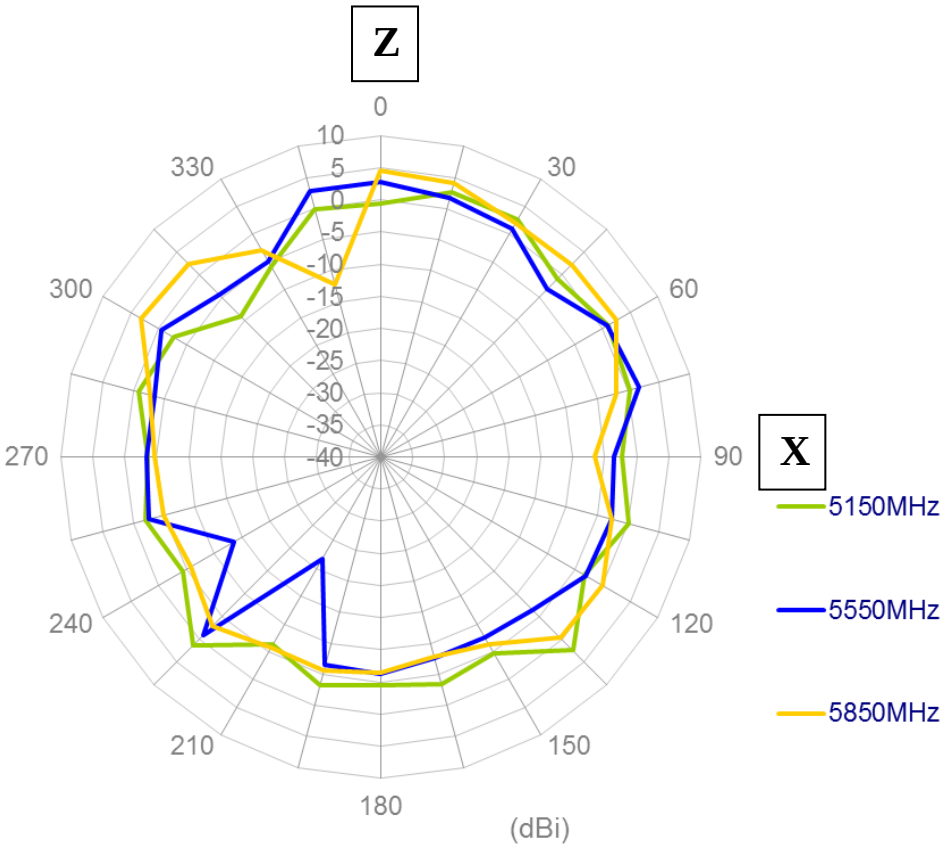
-20
-25
-30
-35
-40
X
2400MHz
2450MHz
2500MHz
(dBi)


Z
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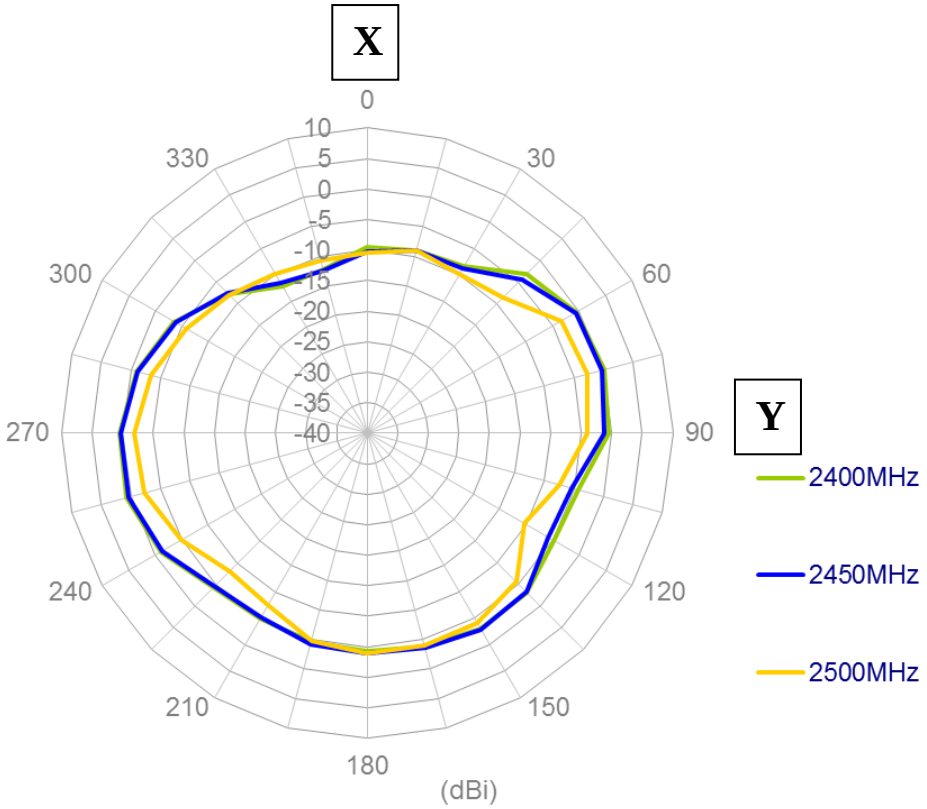
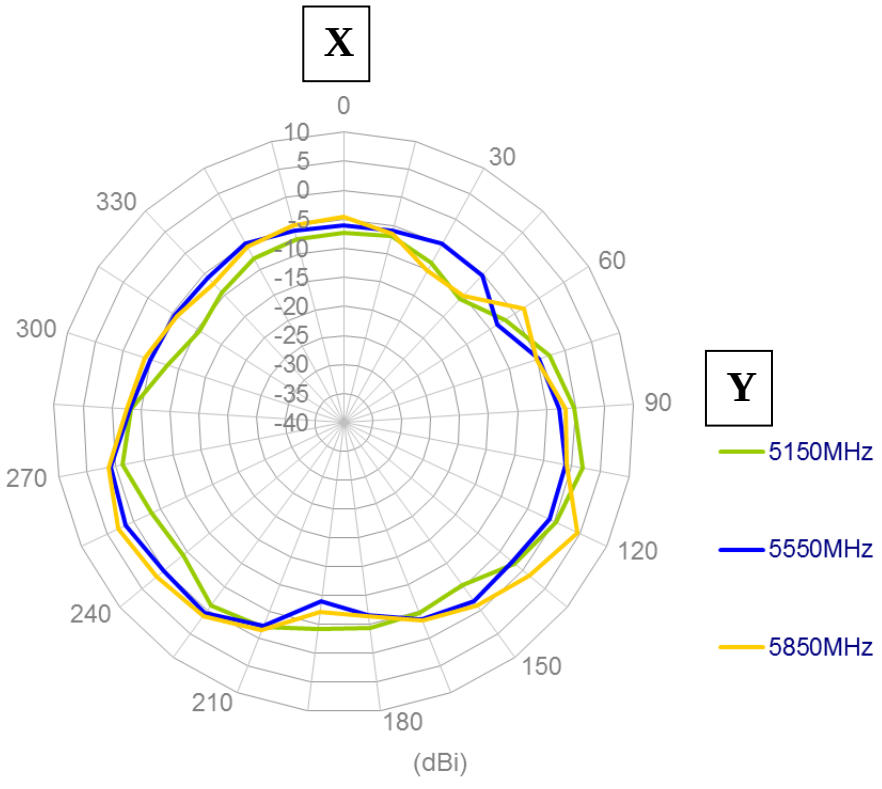
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
X
5150MHz
5550MHz
5850MHz
(dBi)

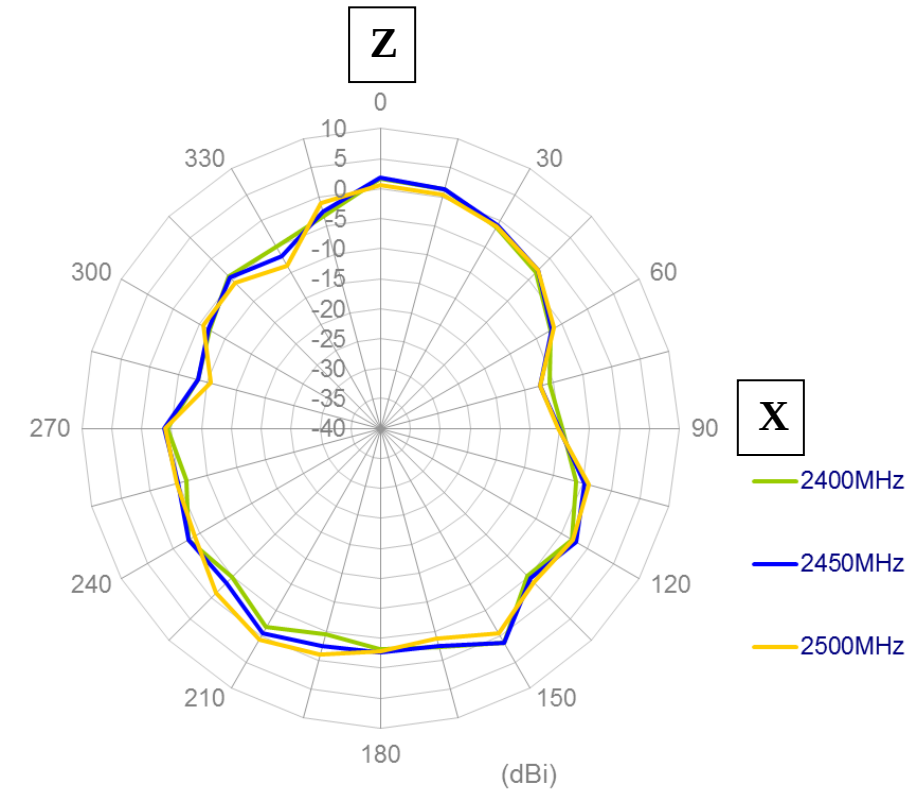
5.3 The radiation pattern of FXP.524 antenna (Port 3)

XY Plane





XZ plane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-20
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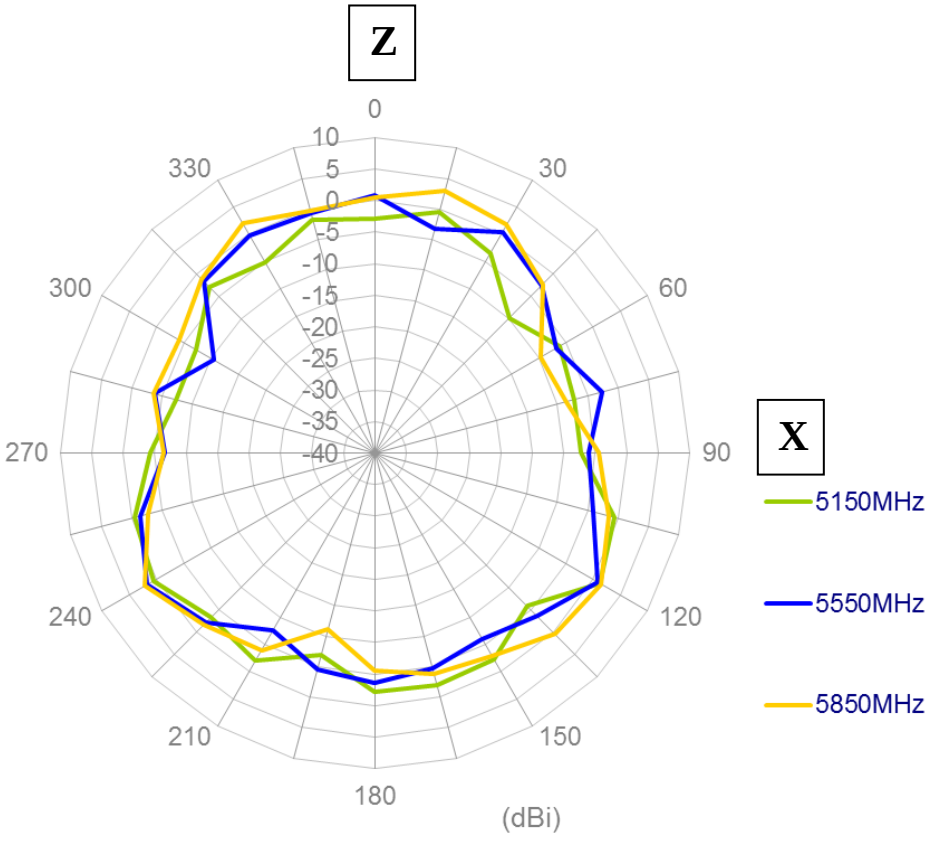
-30
-35
-40
X
2400MHz
2450MHz
2500MHz
(dBi)


Z
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270
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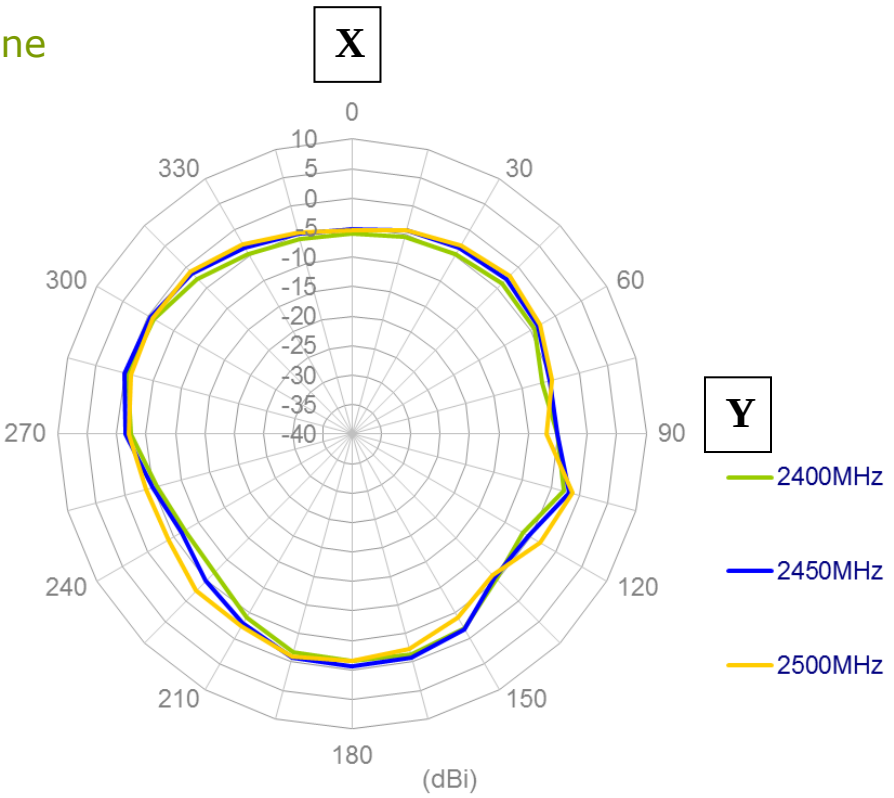
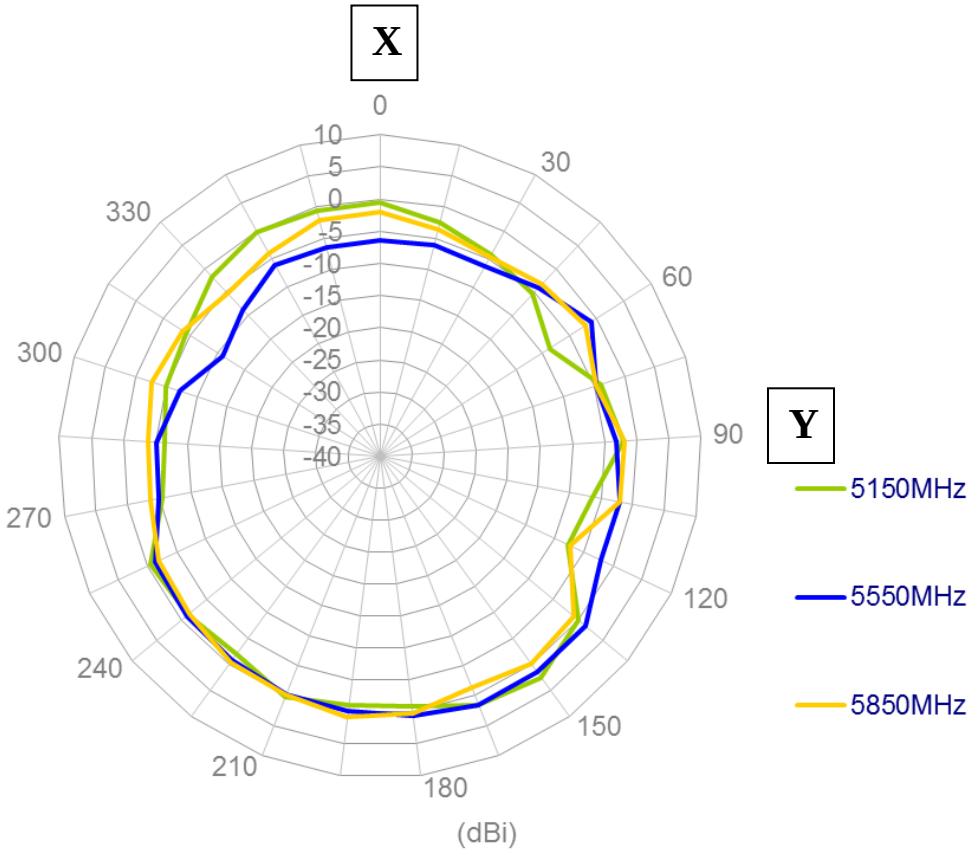
330
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
X
5150MHz
5550MHz
5850MHz
(dBi)

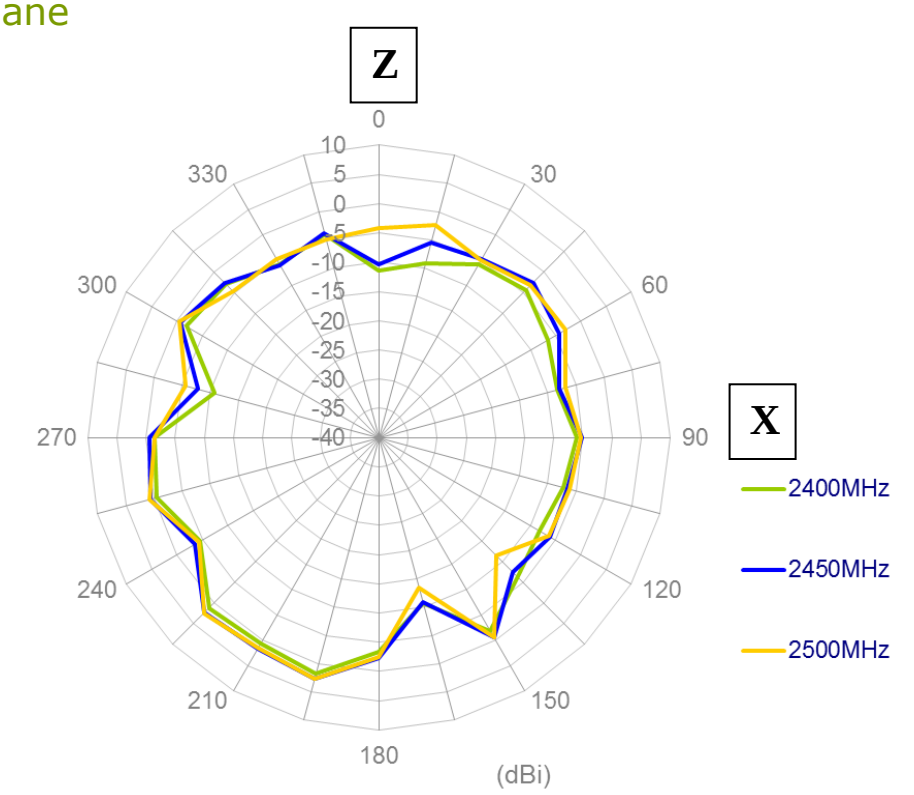
5.4 The radiation pattern of FXP.524 antenna (Port 4)

XY plane





XZ plane


Z
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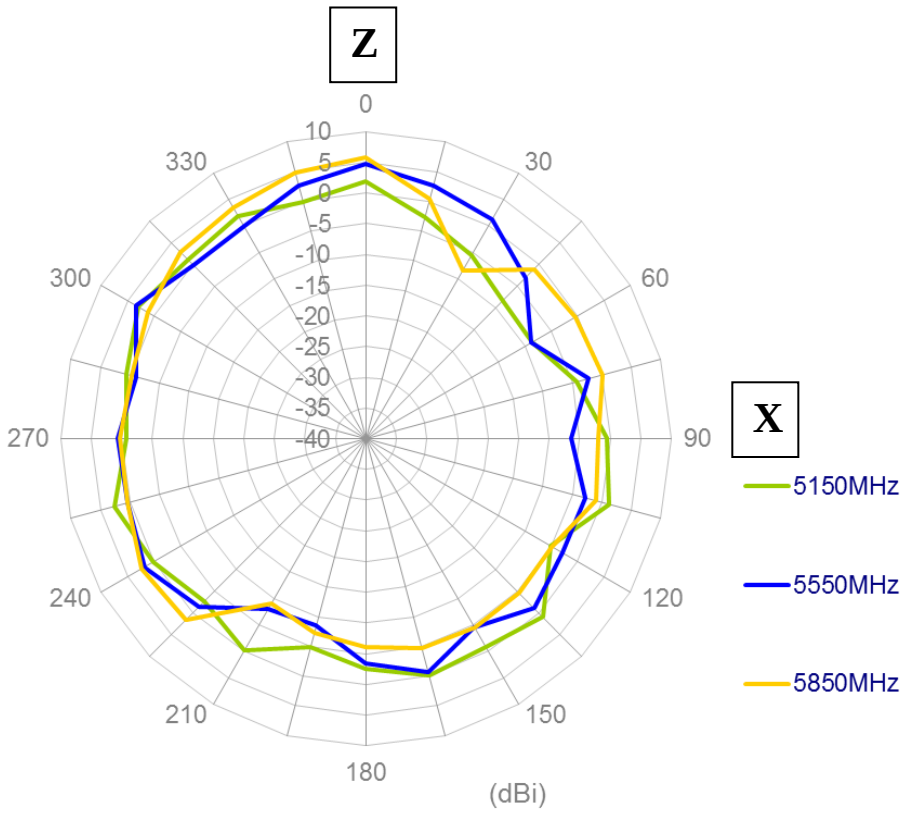
240
270
300
330
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
X
2400MHz
2450MHz
2500MHz
(dBi)


Z
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-5
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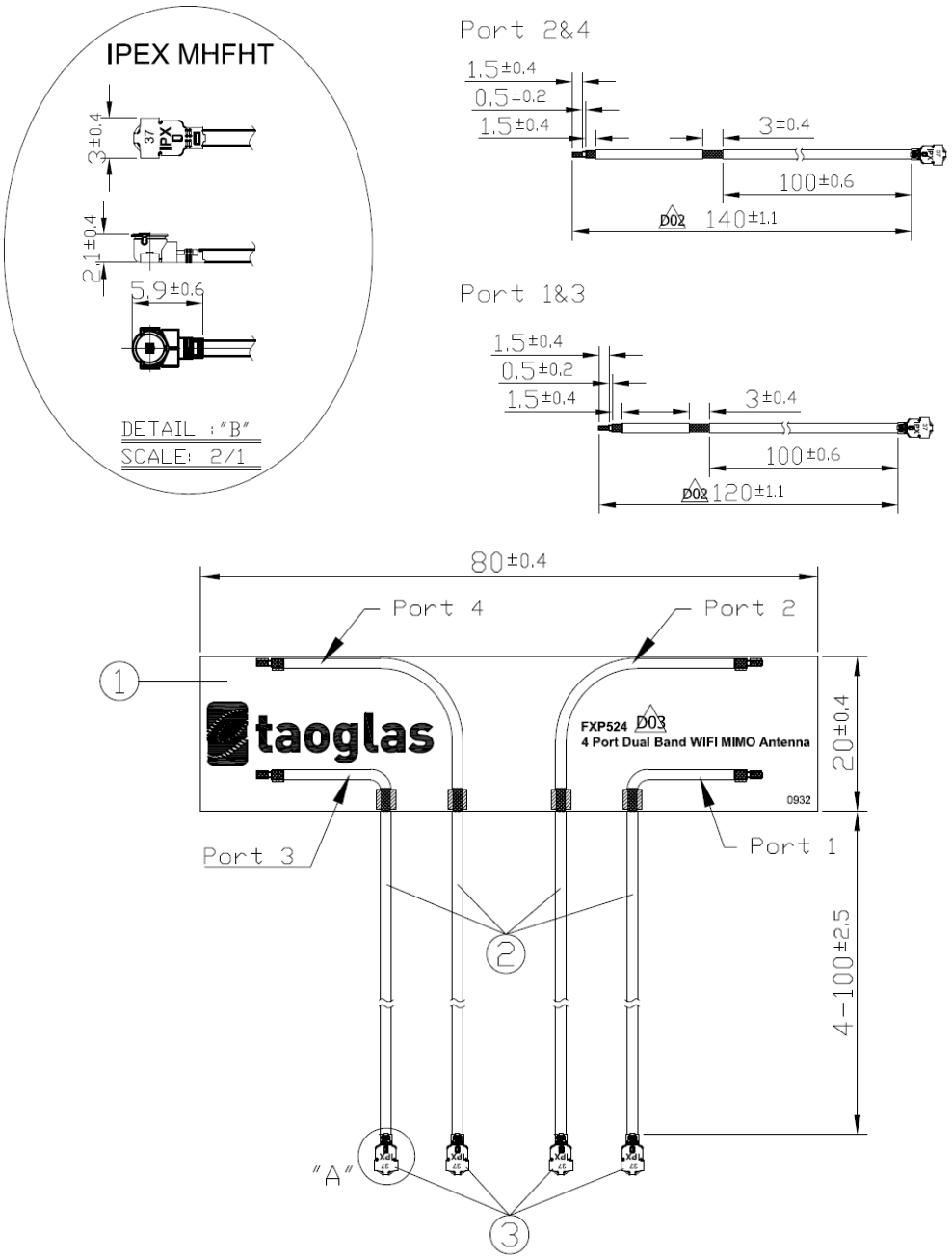
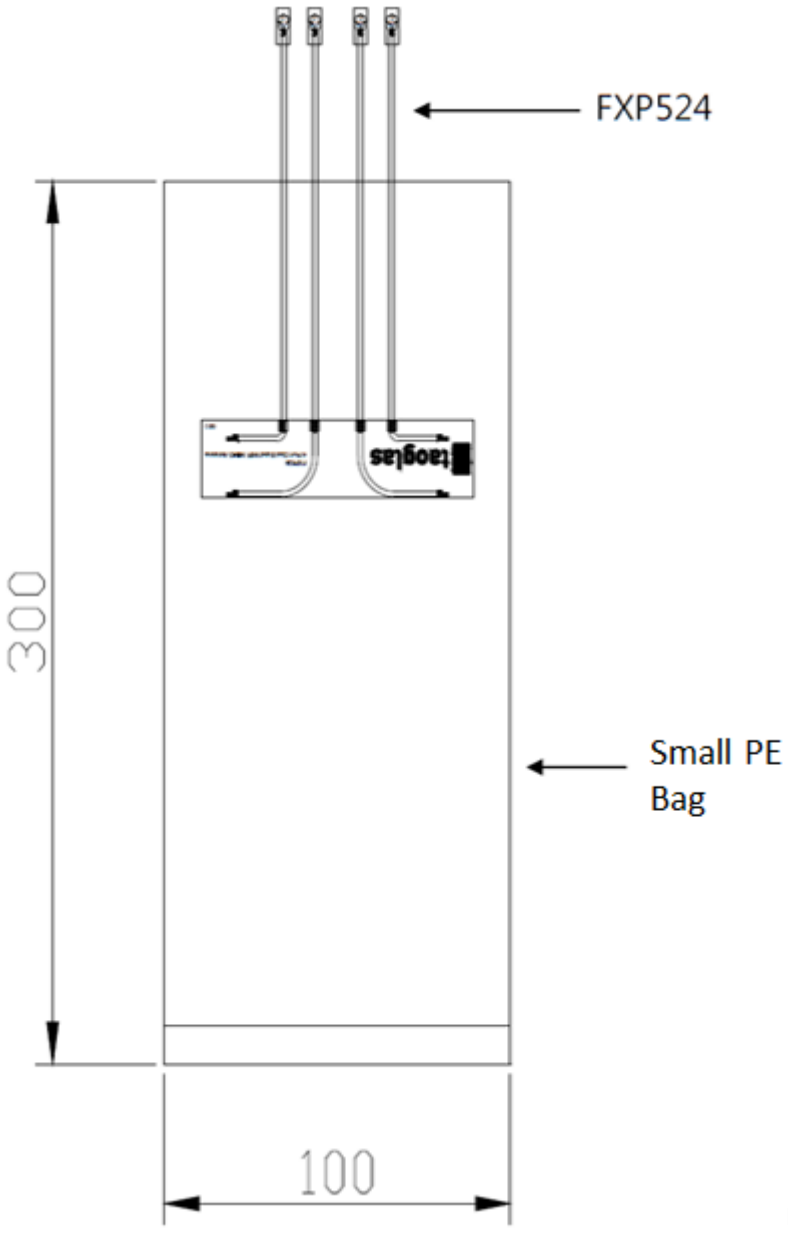
-20
-25
-30
-35
-40
X
5150MHz
5550MHz
5850MHz
(dBi)

6. Drawing



	Name	P/N	Material	Finish	QTY
1	FXP524 FPCB D03	100112K000033A	FR4 0.15t	Black	1
2	1.37 Coaxial Cable	300513A000002A	FEP	Black	4
3	IPEX.MHFHT.137	204511G000002A	Brass	Gold	4

7. Packaging



Unit:mm

10 pieces per a small PE Bag