SPECIFICATION

Part No.	:	**PC11.09.0100A**
Product Name	:	**TheStripe™** PCB Dual-band 2.4 / 5.2 GHz antenna
Features	:	High Efficiency Dual Band for WiFi /Bluetooth /Zigbee Applications 100mm 1.13 MMCX(M)RA RoHS Compliant



1. Introduction

This miniaturized low profile PCB antenna is based on smart TheStripe™ antenna technology. It consists of a PCB antenna and mini coaxial cable.

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.

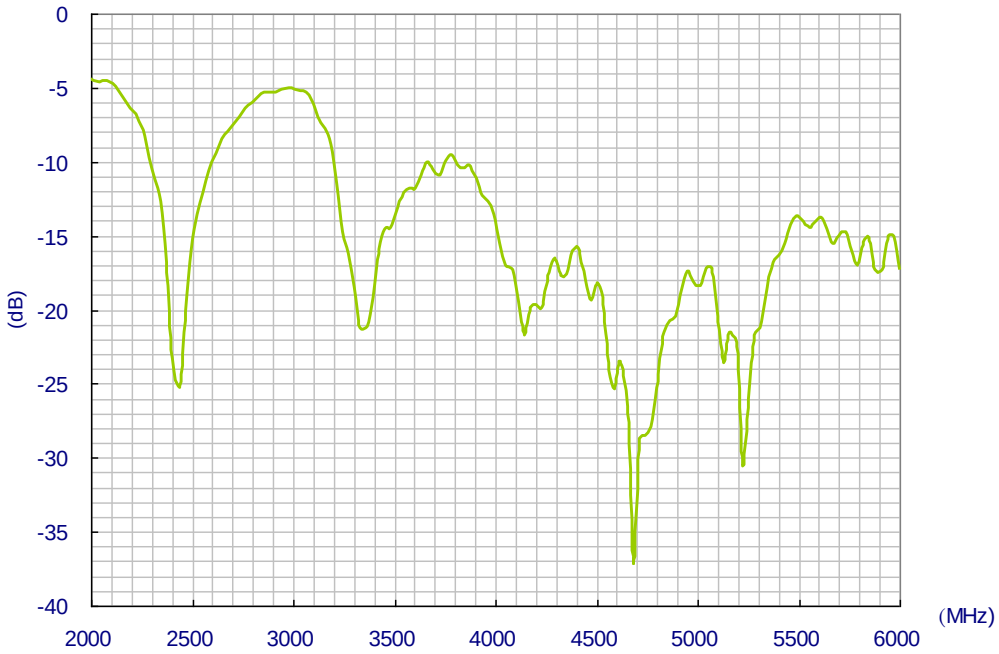
Cable and Connectors are customizable.

2. Specification

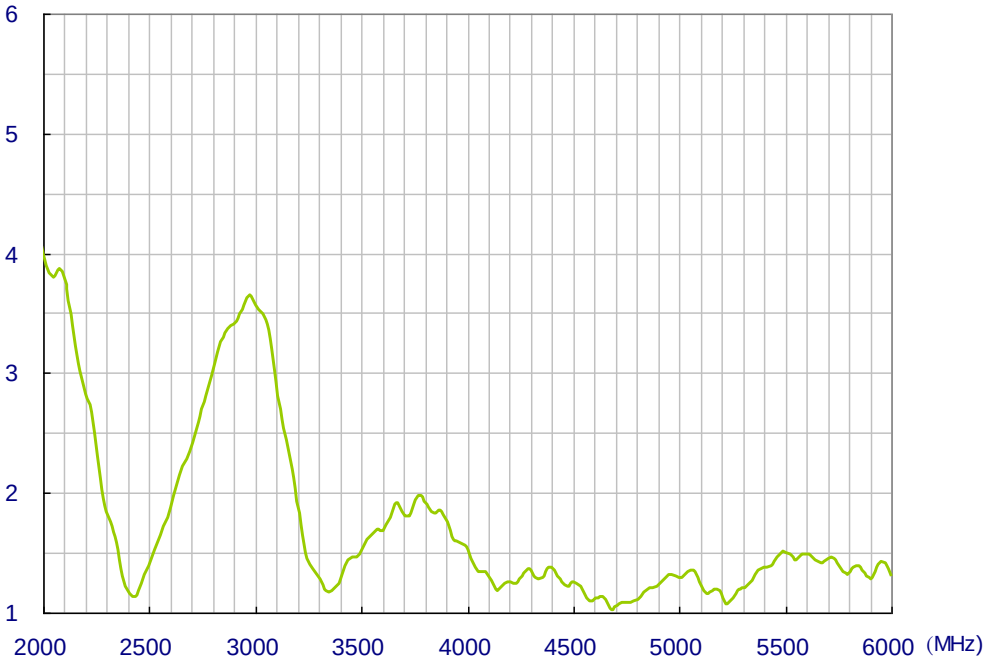
ELECTRICAL		
Frequency	2.4 ~ 2.5GHz,	4.9 ~ 5.9GHz
Peak Gain (free space)	3dBi	4.5dBi
Average Gain (on plastic)	-0.6dBi	-0.5dBI
Efficiency (free space)	85%	88%
Polarization	Linear	
Impedance	50 Ohms	
Radiation Pattern	Omni	
Input Power	2W max.	
MECHANICAL		
Dimensions	66 x 16 x 0.8 mm	
Antenna Body Material	FR4	
Cable	Black 100mm 1.13 co-axial	
Connector	MMCX(M)RA	
Weight	4g	
ENVIRONMENTAL		
Temperature Range	-40°C to 85°C	
Humidity	Non-condensing 65°C 95% RH	

3. Antenna Characteristics

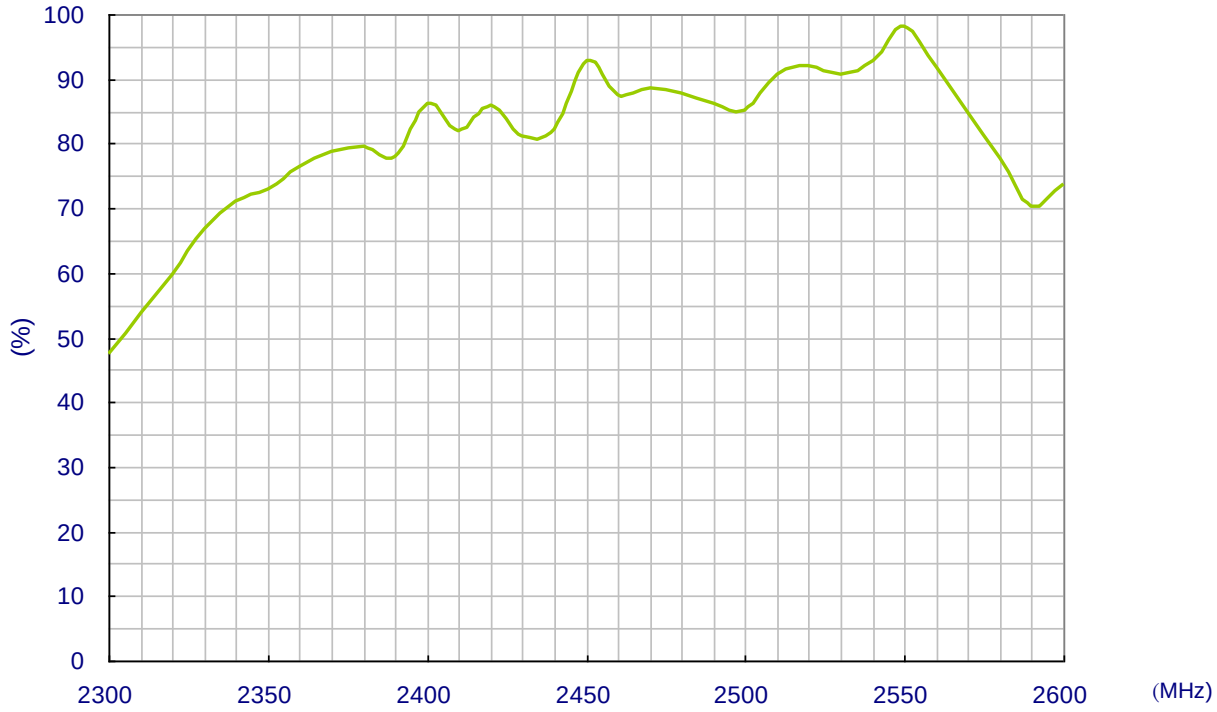
3.1. Return Loss

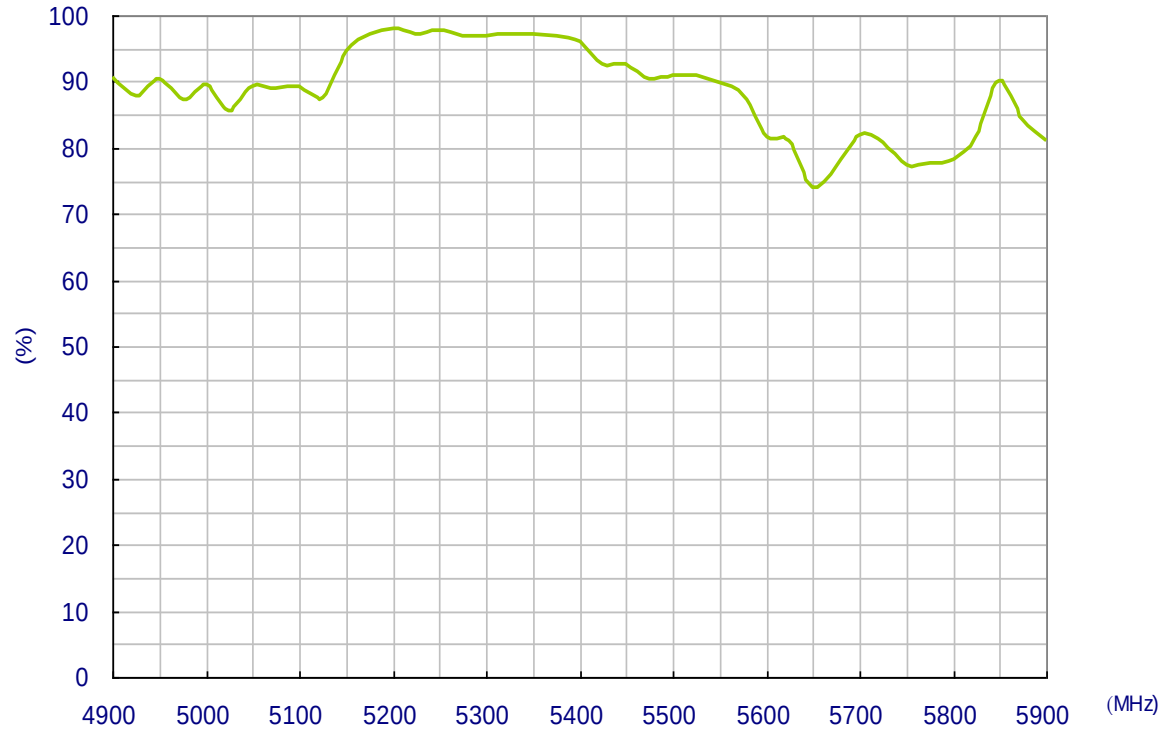


3.2. VSWR

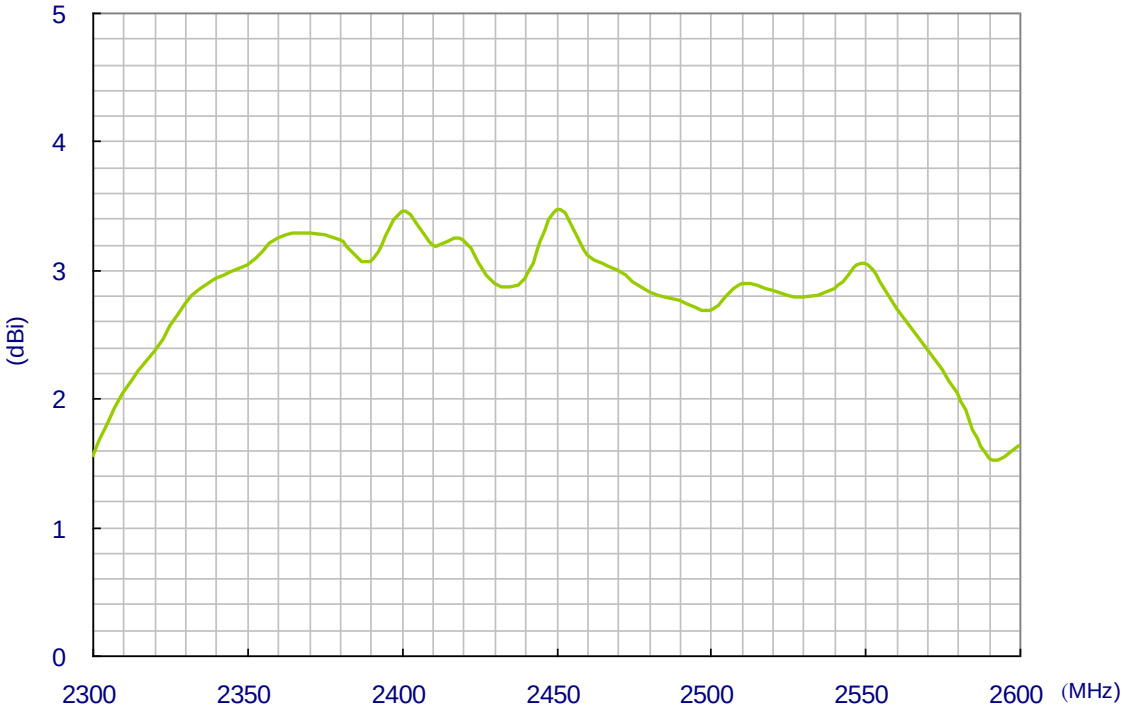


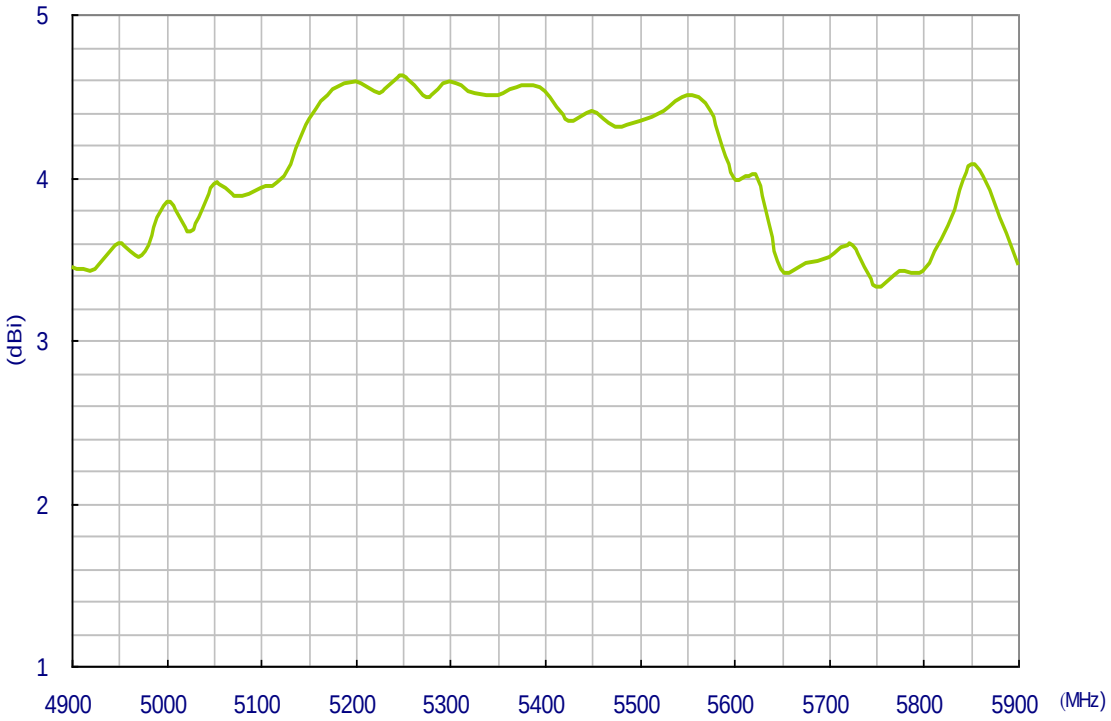
3.3. Antenna Efficiency



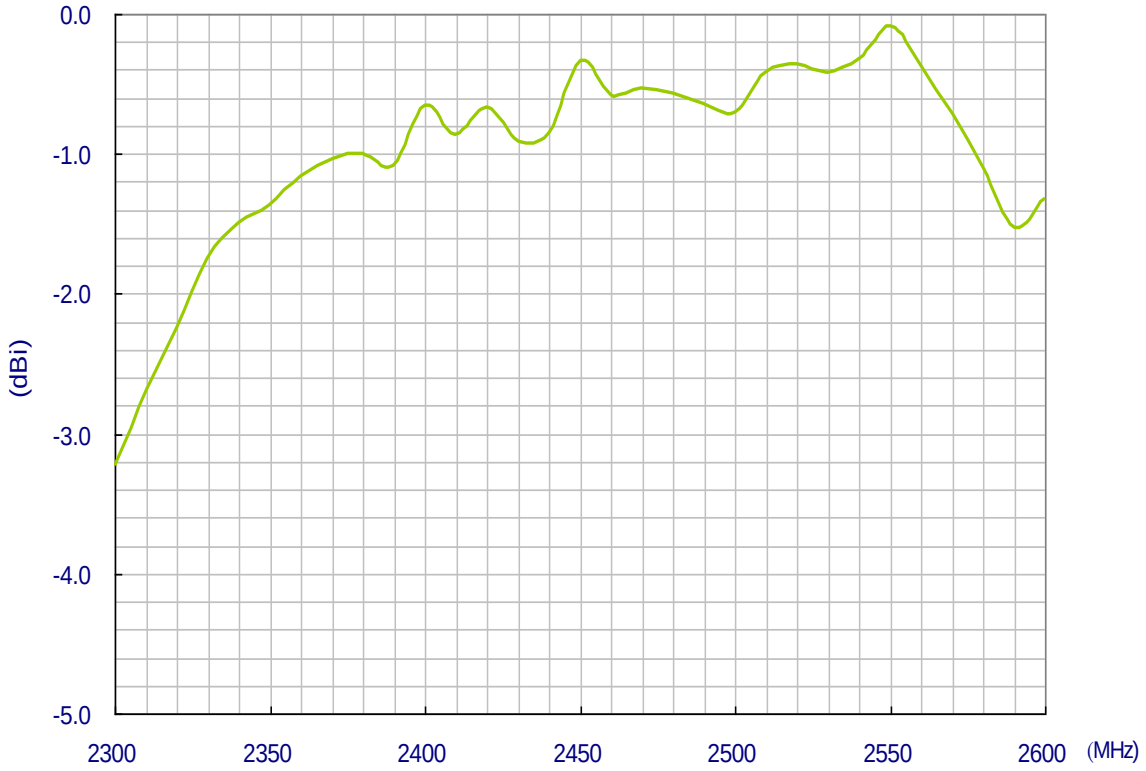


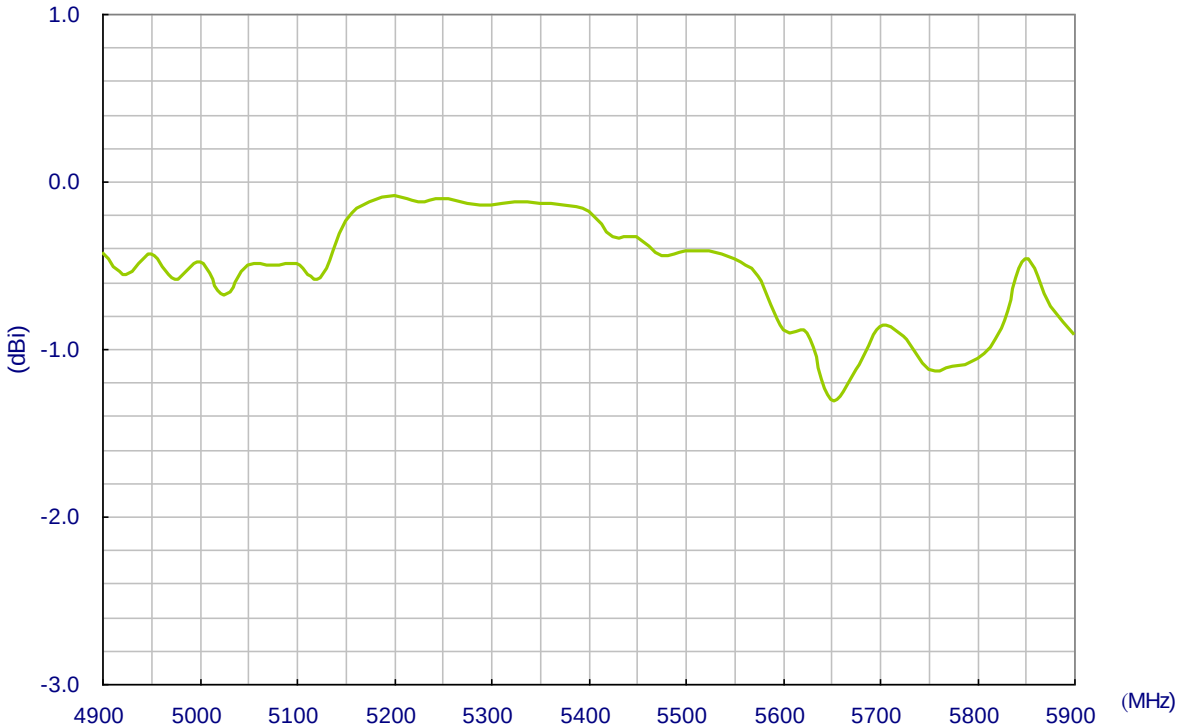
3.4. Antenna Peak Gain



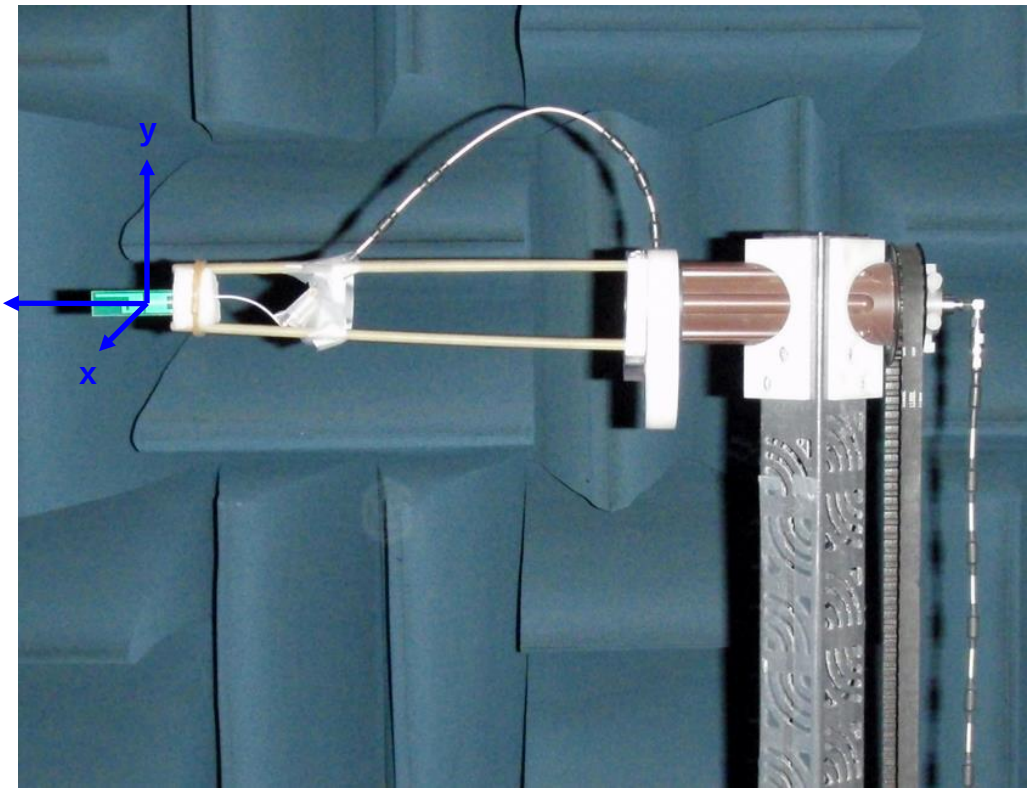


3.5. Antenna 3D Average Gain

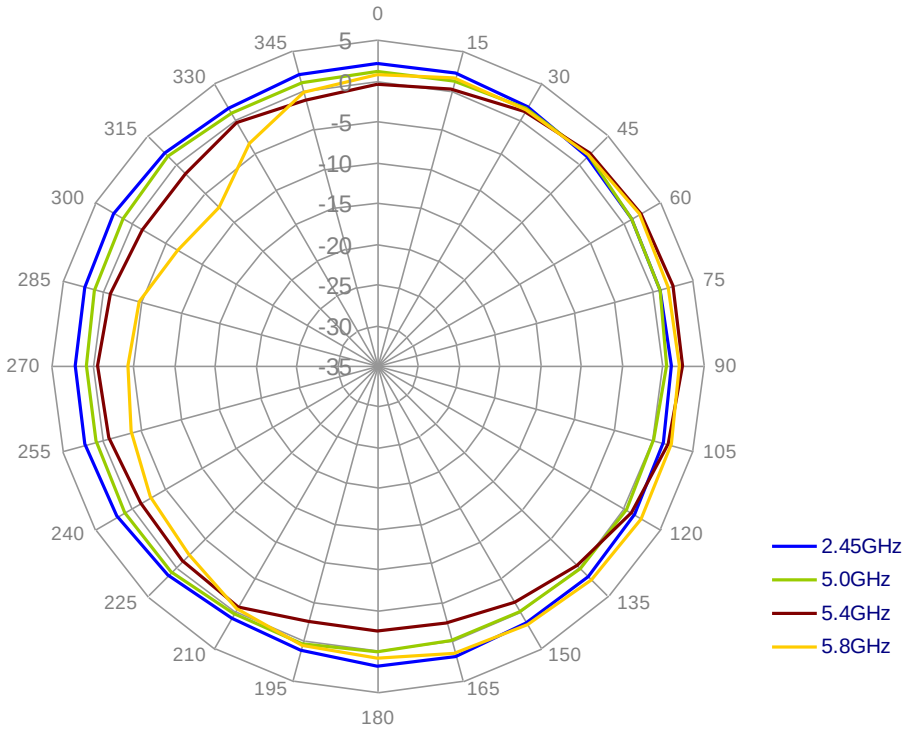




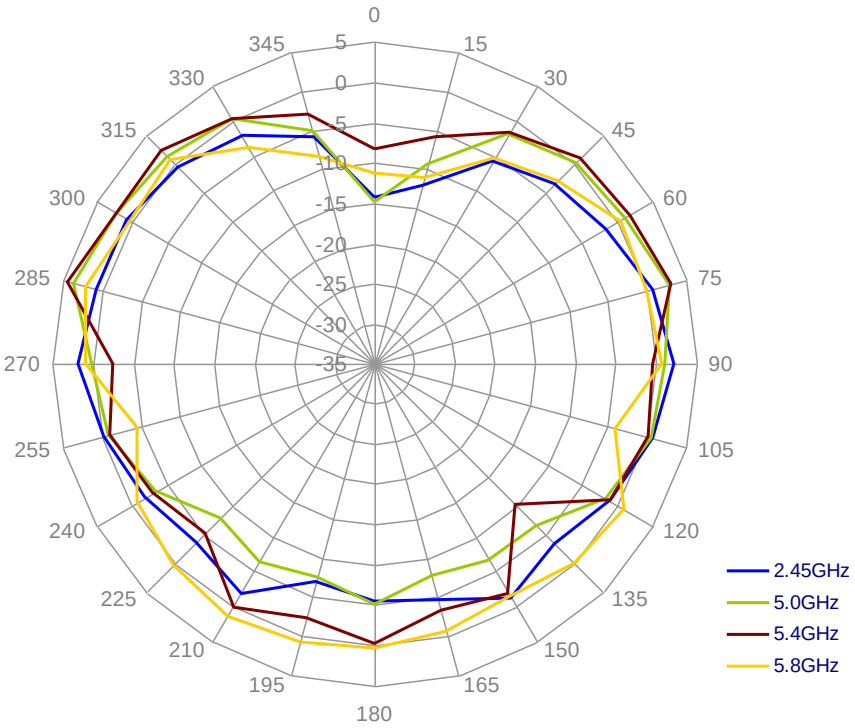
3.6. Radiation Pattern for PC11 on plastic



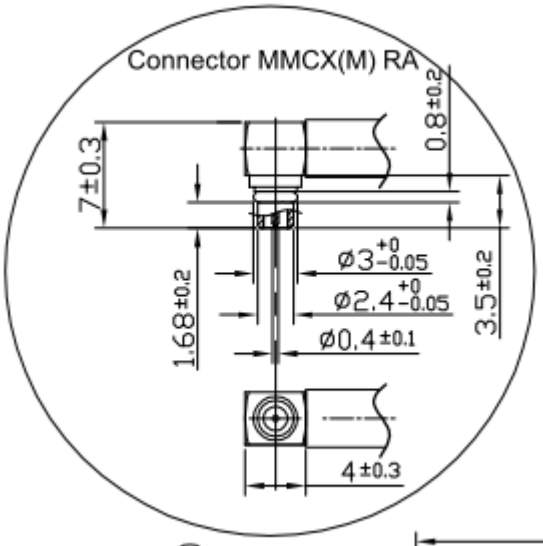
XY-plane



XZ-plane


0
15
30
45
60
75
90
105
120
135
150
165
180
195
210
225
240
255
270
285
300
315
330
345
5
0
-5
-10
-15
-20
-25
-30
-35
2.45GHz
5.0GHz
5.4GHz
5.8GHz

4. Antenna Drawing –(unit:mm)



	Name	Material	Finish	QTY
1	PC11 PCB	FR4.08t	Black	1
2	1.13 Mini-Coaxial	FEP	Black	1
3	MMCX(M) RA	Brass	Gold	1
4	Heat Shrink Tube	PE	Black	1

DETAIL :"A"
SCALE: 2/1

