SPECIFICATION

Part No.	:	**GW.59.3153**
Product Name	:	2.4GHz/5.1~5.85GHz 3dBi Screw mount Dipole Antenna
Description	:	RP-SMA Male Straight Connector Hinged IP-65 TPU Housing Length 156mm ROHS Compliant

1. Introduction

The GW.59 dipole RP-SMA plug mount antenna is ideal for 2.4GHz/5.15~5.85GHz wireless applications such as Bluetooth and Wireless LAN. At 156mm in length omni-directional 3dBi gain across all bands ensures constant reception and transmission. The antenna structure is designed for robust handling and the housing is made with TPU giving superior environmental reliability and a quality finish. The antenna can be rotated 90 degrees on the base hinge for ease of placement.

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.

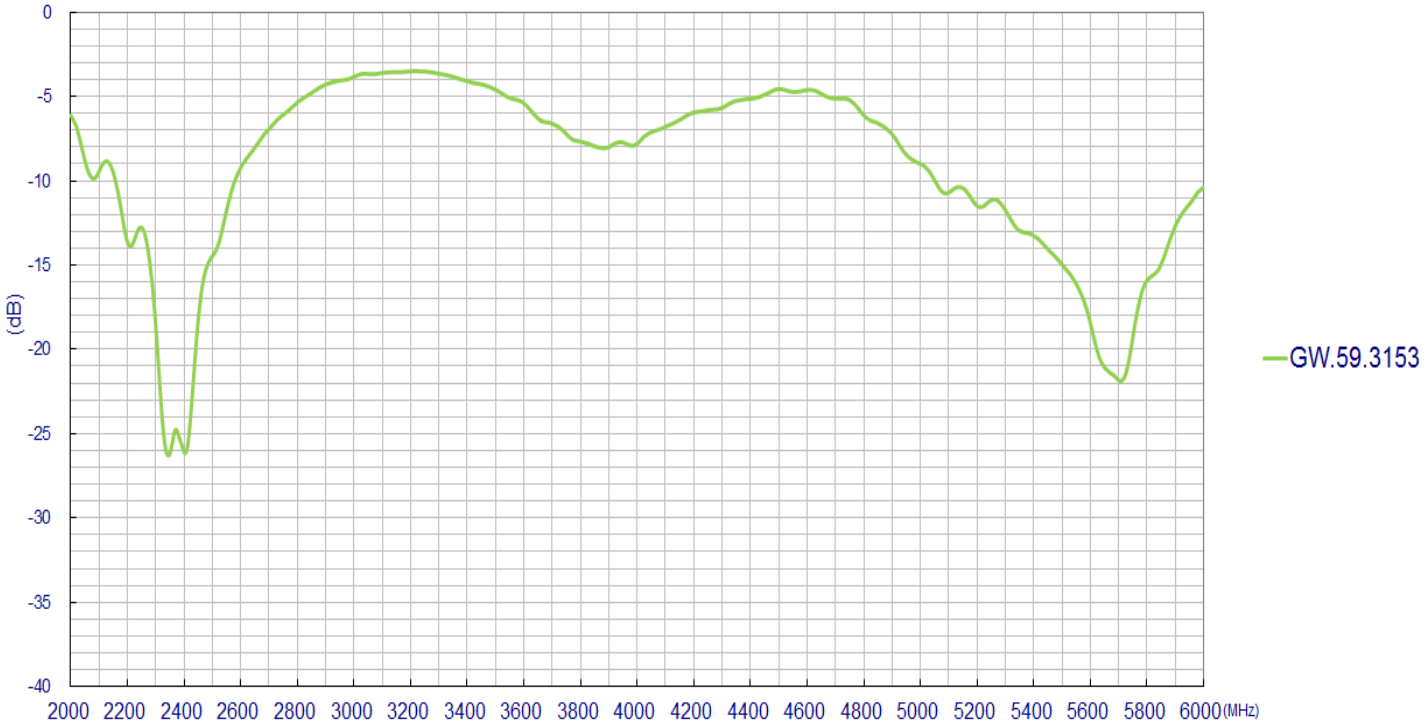
2. Specification Table

Parameter	GSM Band	
Frequency	2.4 ~ 2.5GHz,	5.15 ~ 5.85GHz
Peak Gain (dBi)*	2.37	2.93
Average Gain (dBi)*	-1.21	-1.32
Efficiency (%)*	75	73
Return Loss (dB)*	- 10 dB Maximum	
Radiation	Omni-directional	
Polarization	Linear Vertical	
Power Handling	1W	
Impedance	50 Ω	
	MECHANICAL	
Cable	RG-178 Coaxial Cable	
Antenna Cover	TPE	
Antenna Base	PC & PBT	
Color	Black	
Connector	RP-SMA(M)	
IP rating	IP65	
	ENVIRONMENTAL	
Operation Temperature	-40°C ~ + 85°C	
Storage Temperature	-40°C ~ + 85°C	

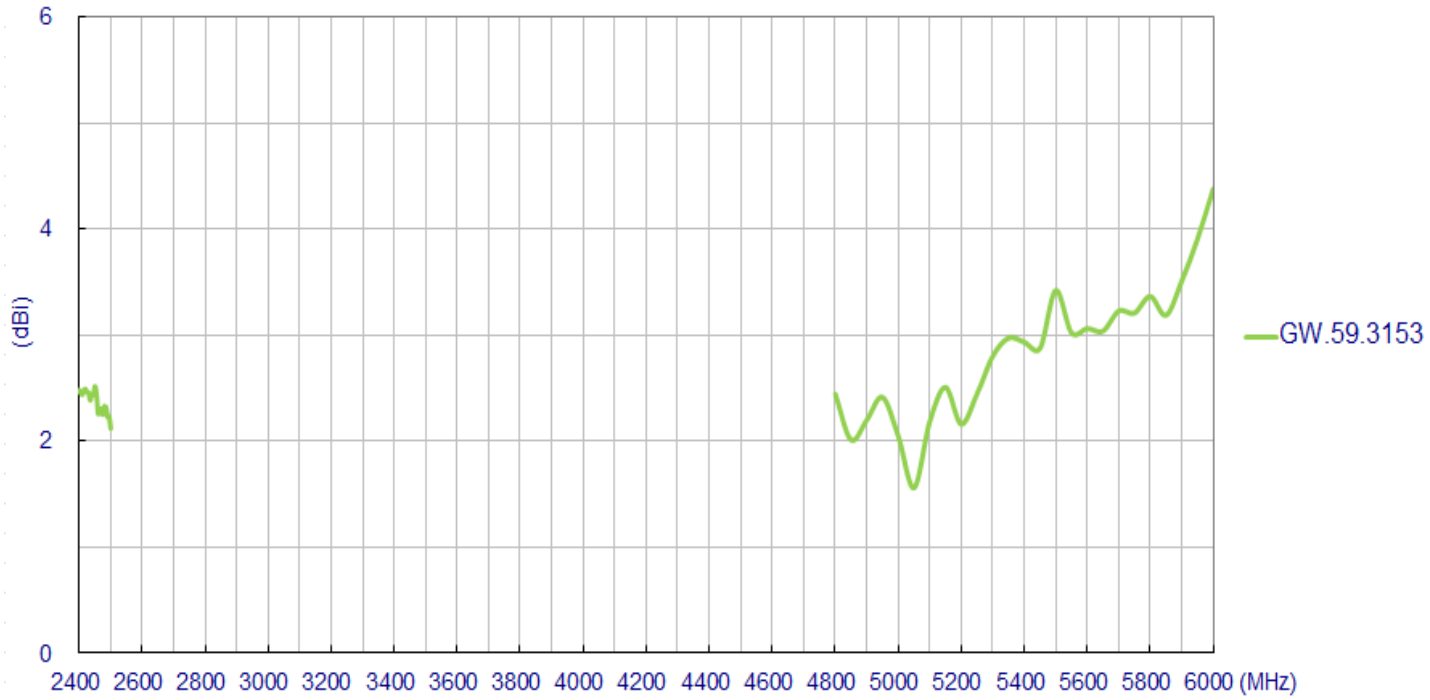
***The antenna was measured in free space.**

3. Antenna Characteristics

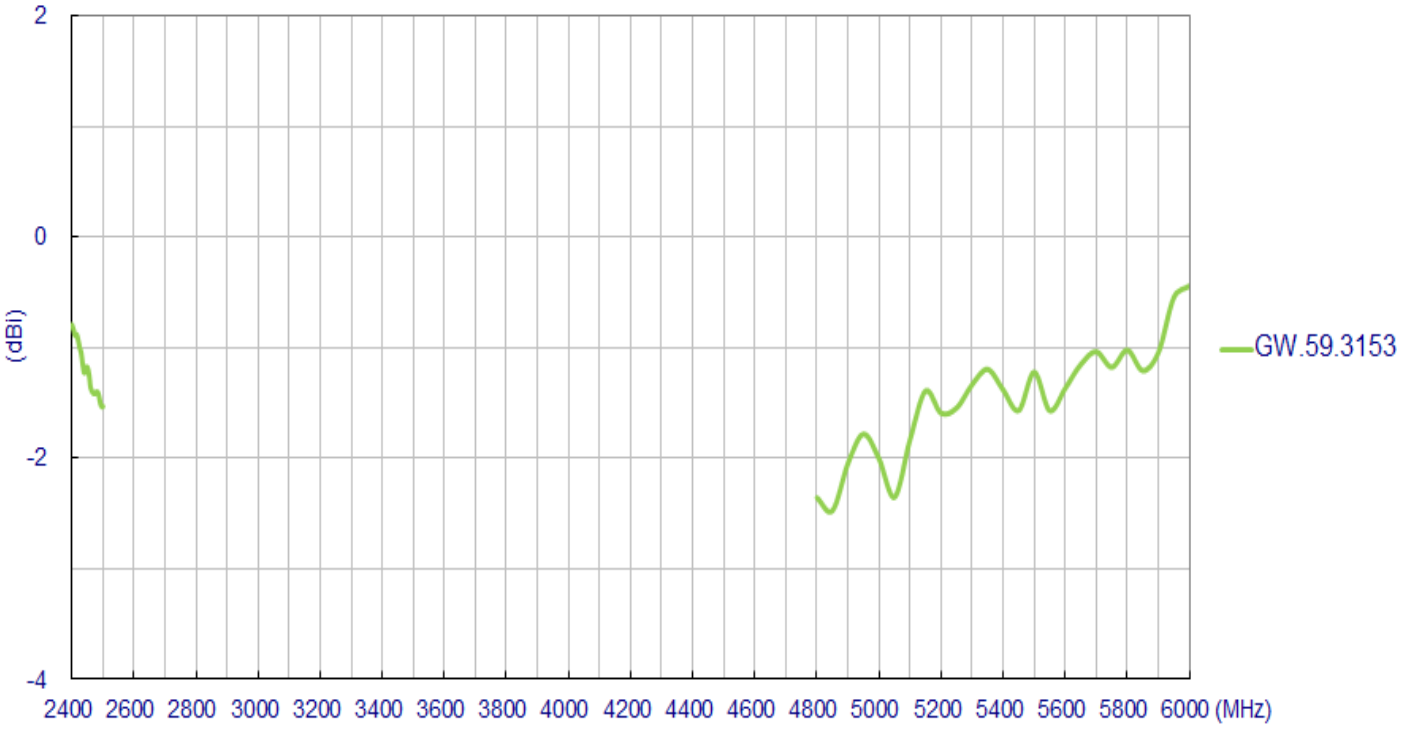
3.1. Return Loss



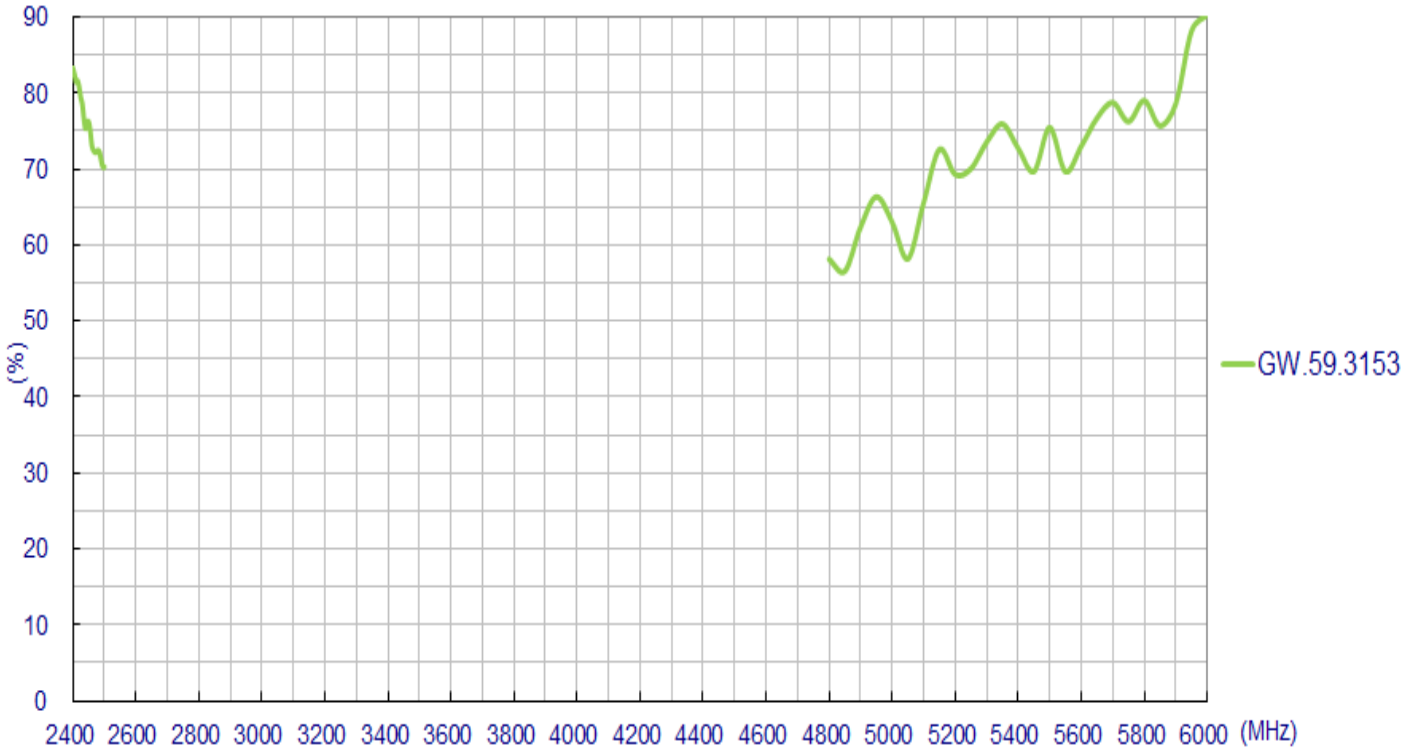
3.2. Peak Gain


6
4
2
0
(dBi)
2400 2600 2800 3000 3200 3400 3600 3800 4000 4200 4400 4600 4800 5000 5200 5400 5600 5800 6000 (MHz)
GW.59.3153

3.3. Average Gain

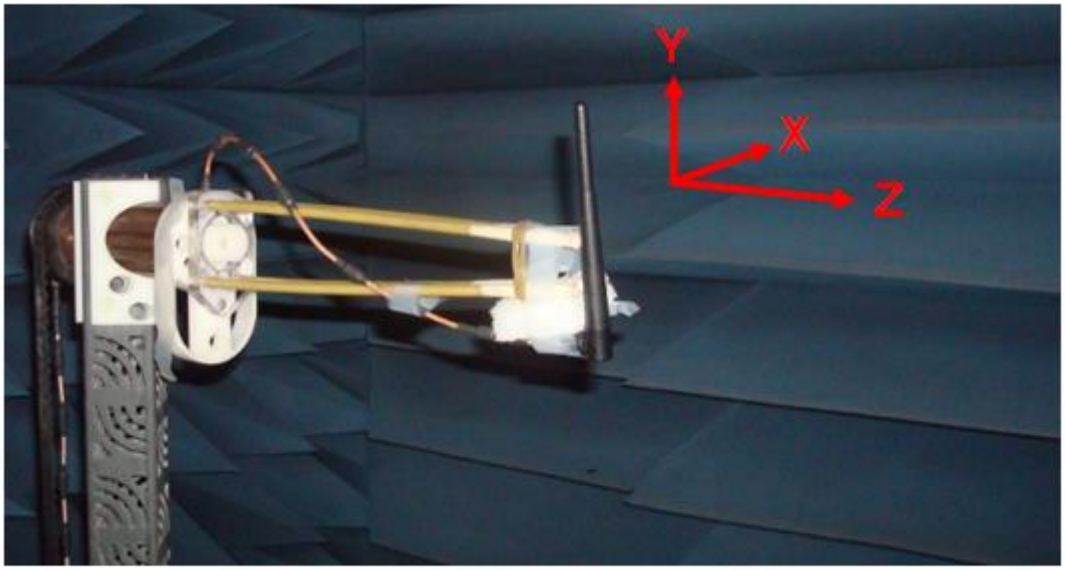


3.4. Efficiency

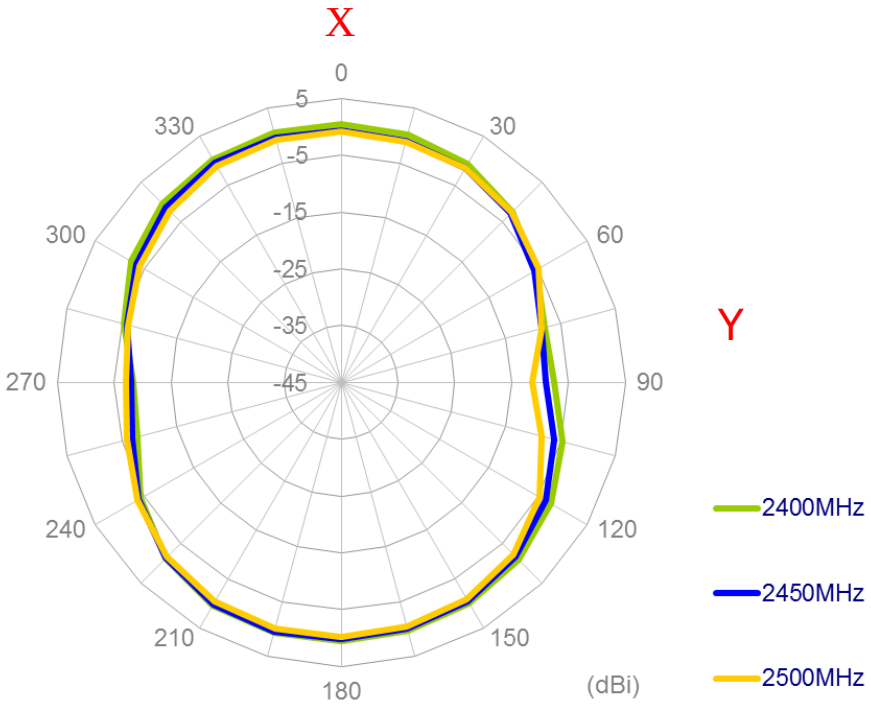


4. Radiation Patterns

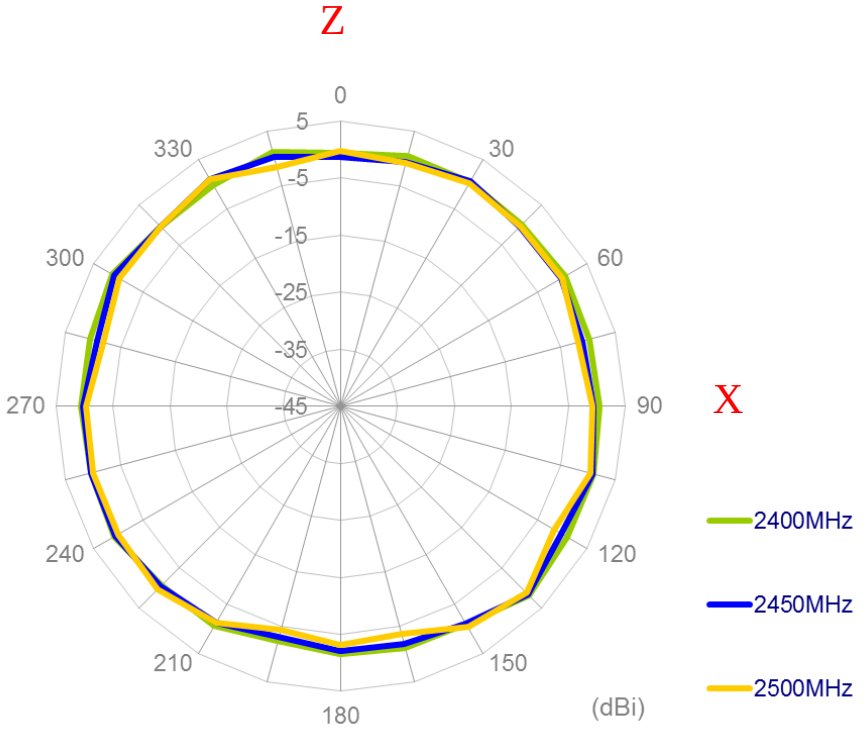
The antenna radiation pattern was measured in ETS Anechoic Chamber. The testing setup is as below. The antenna was measured in free space.



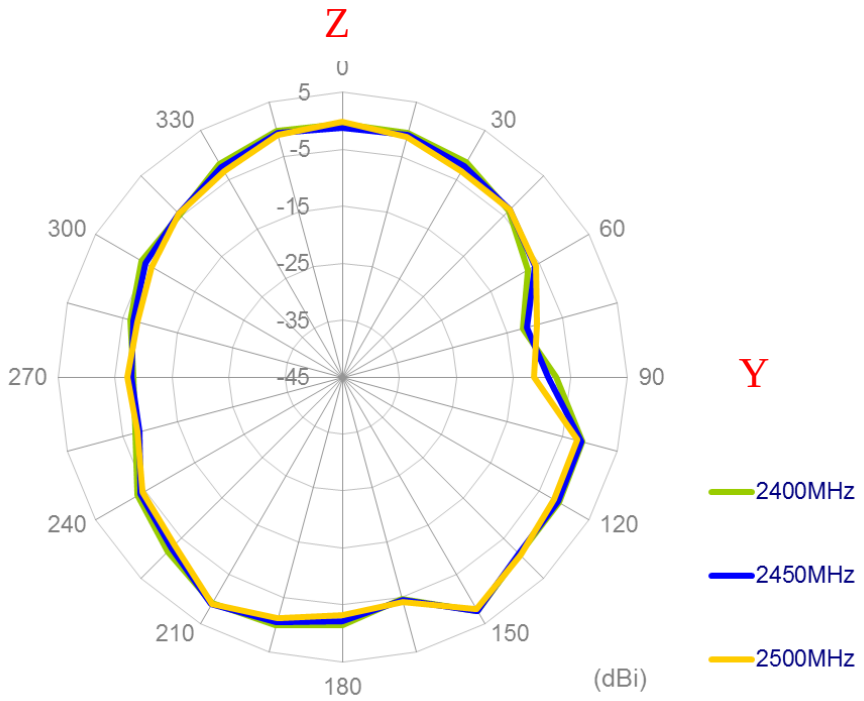
XY Plane



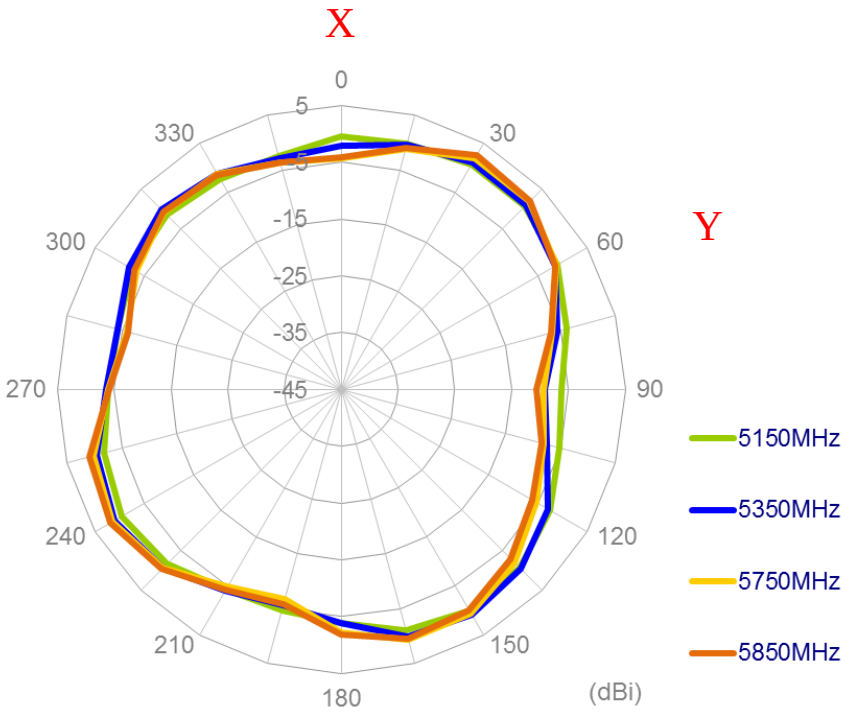
XZ Plane



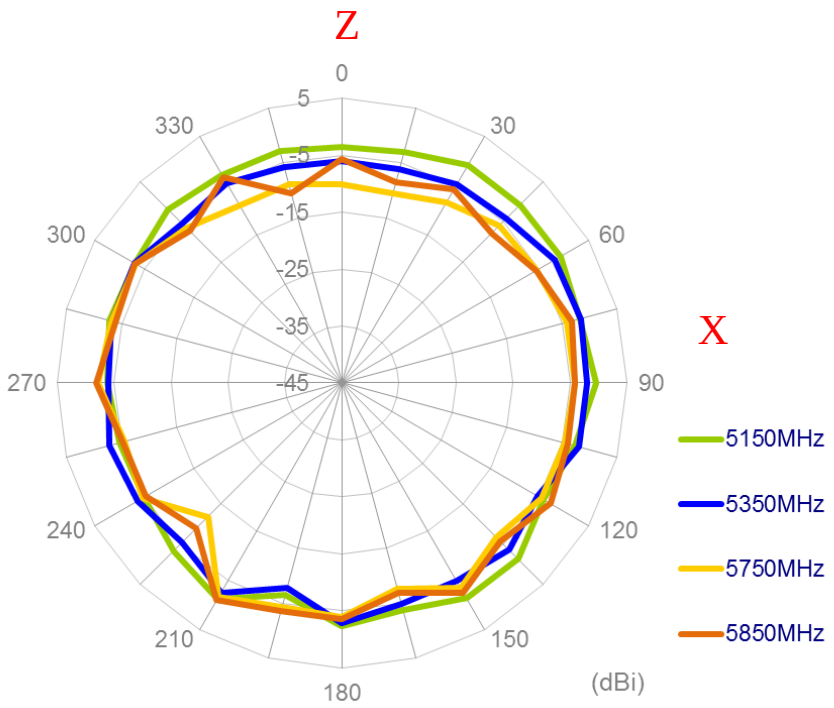
YZ Plane



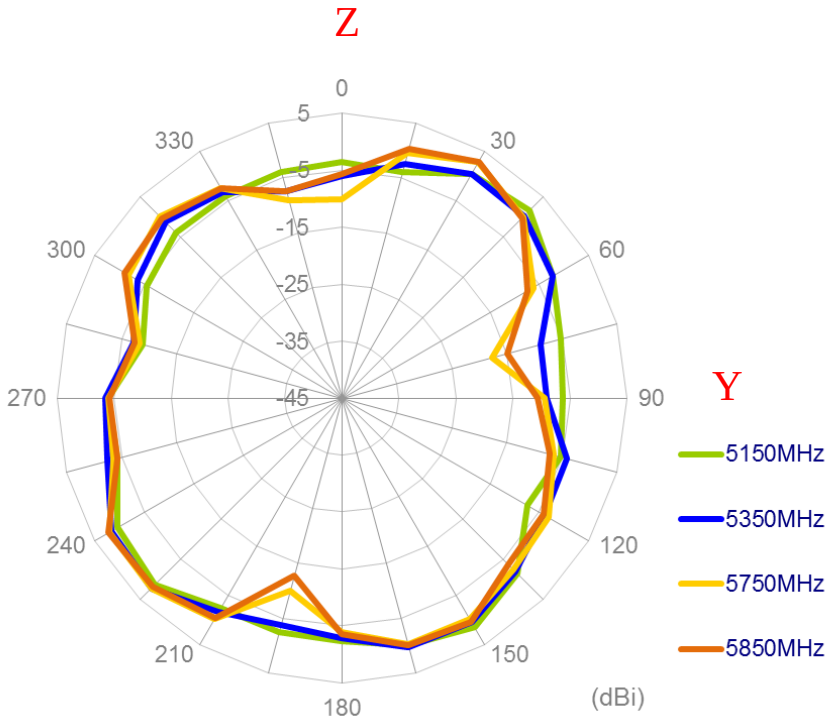
XY Plane



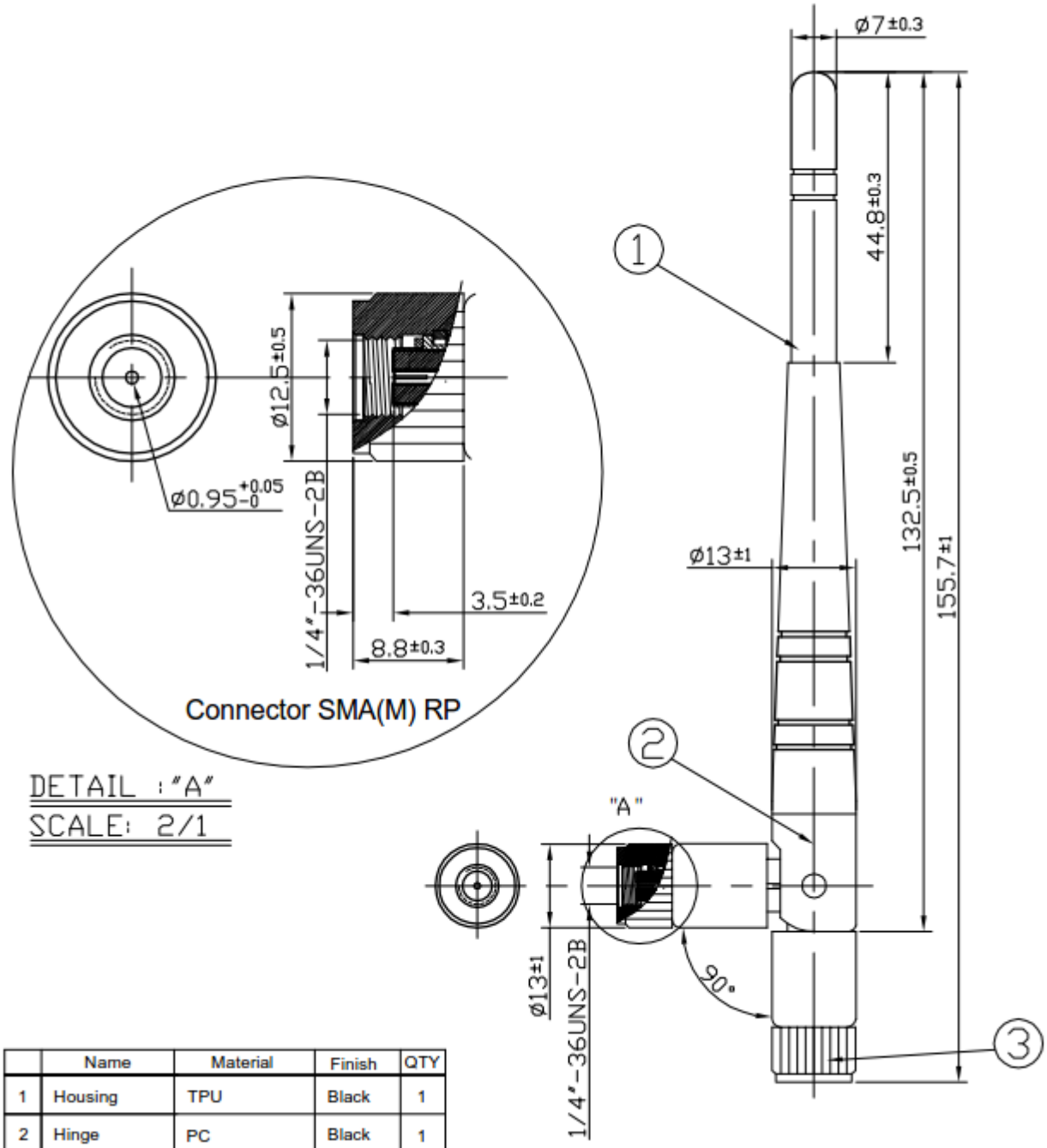
XZ Plane



YZ Plane



5. Drawing



	Name	Material	Finish	QTY
1	Housing	TPU	Black	1
2	Hinge	PC	Black	1
3	SMA(M) RP	Brass	Black	1

6. APPLICATION NOTE

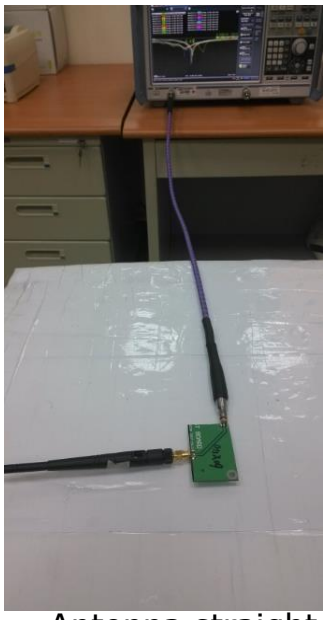
6.1 GW.59 antenna measurement setup as shown the below ,(40mmx60mm PCB board)

On the short side

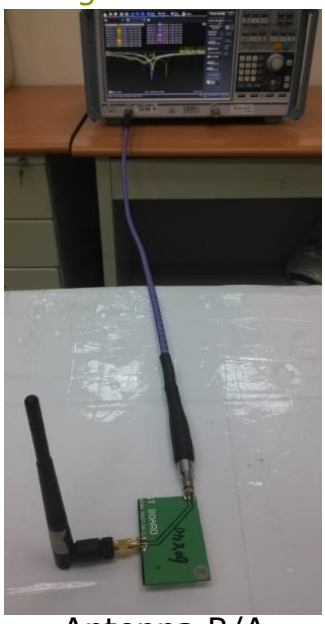
Antenna straight

Antenna R/A

On the long side



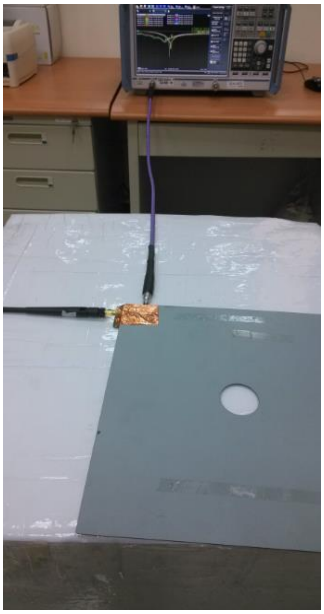
Antenna straight



Antenna R/A

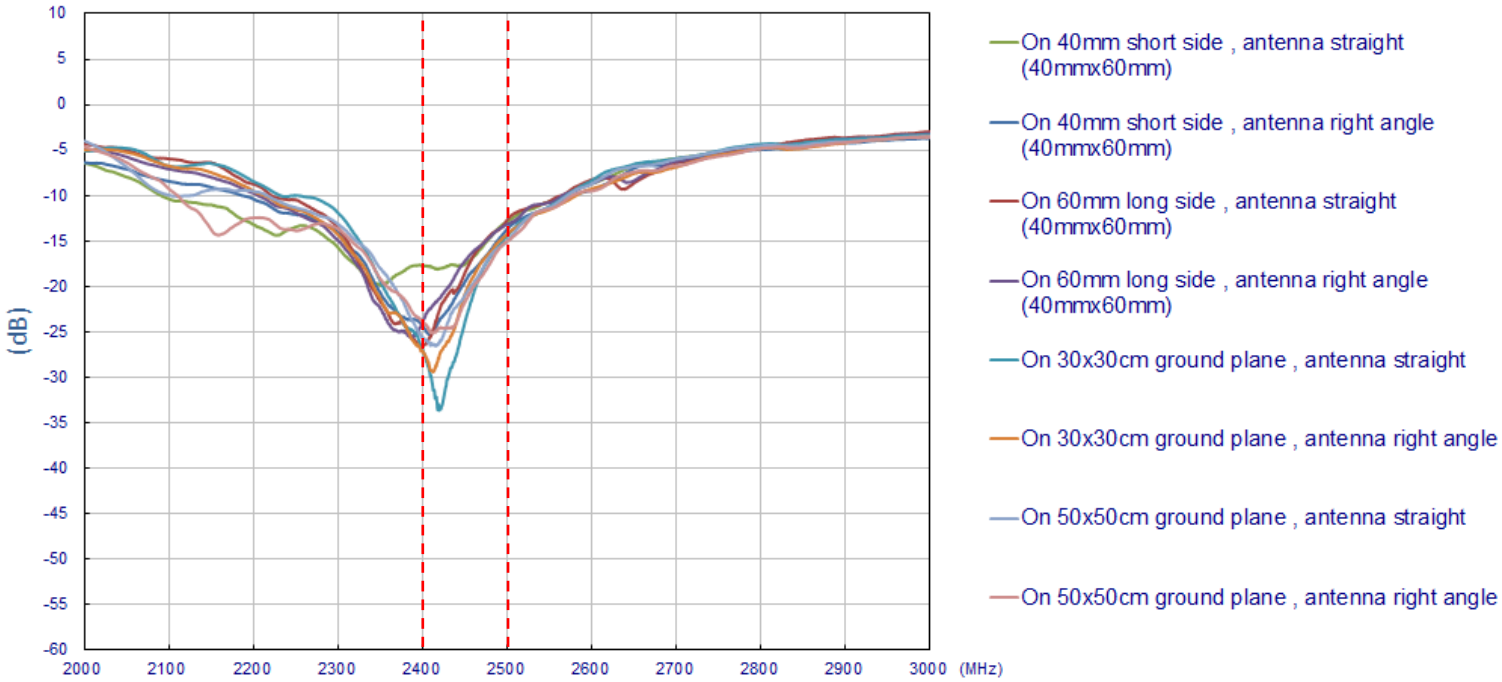
On the 30cmX30cm ground plane

On the 50cmX50cm ground plane



Antenna straight Antenna R/A Antenna straight Antenna R/A

6.2 Return Loss when antenna setup on different conditions



6.3 GW.59 antenna measurement,(40mmx100mm PCB board)

On the short side

On the long side

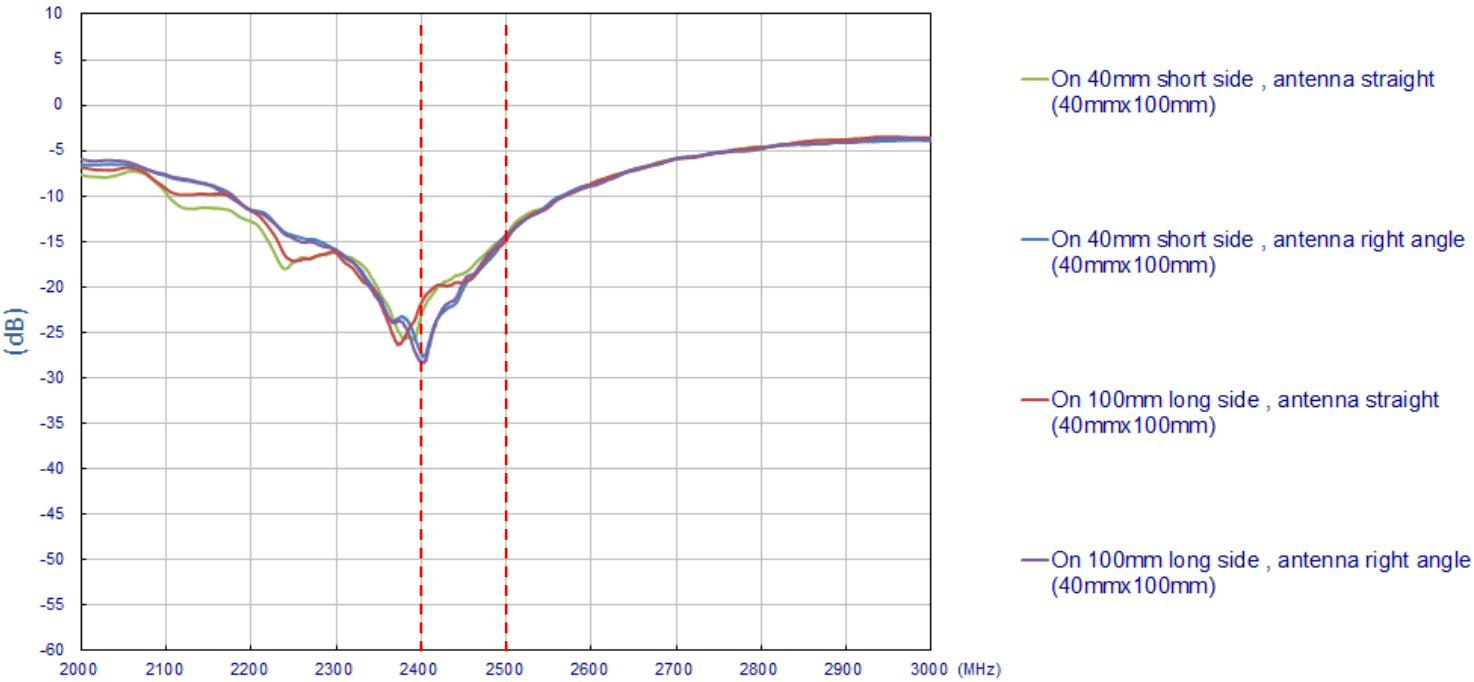
Antenna straight

Antenna R/A

Antenna straight

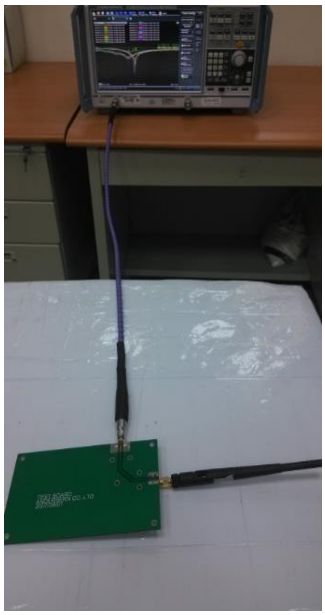
Antenna R/A

6.4 Return Loss when antenna setup on different conditions

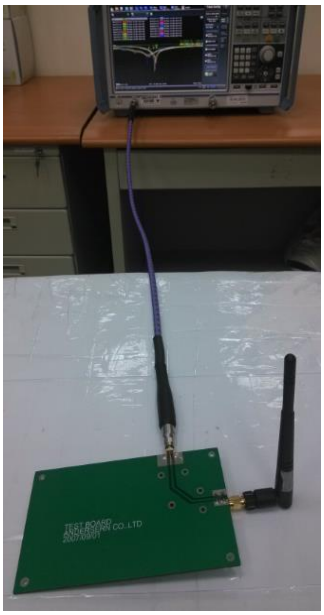


6.5 GW.59 antenna measurement,(90mmx150mm PCB board)

On the short side

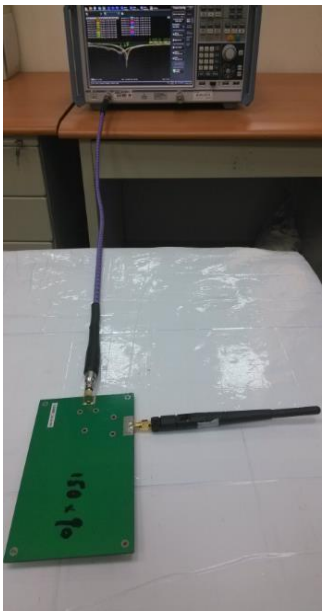


Antenna straight

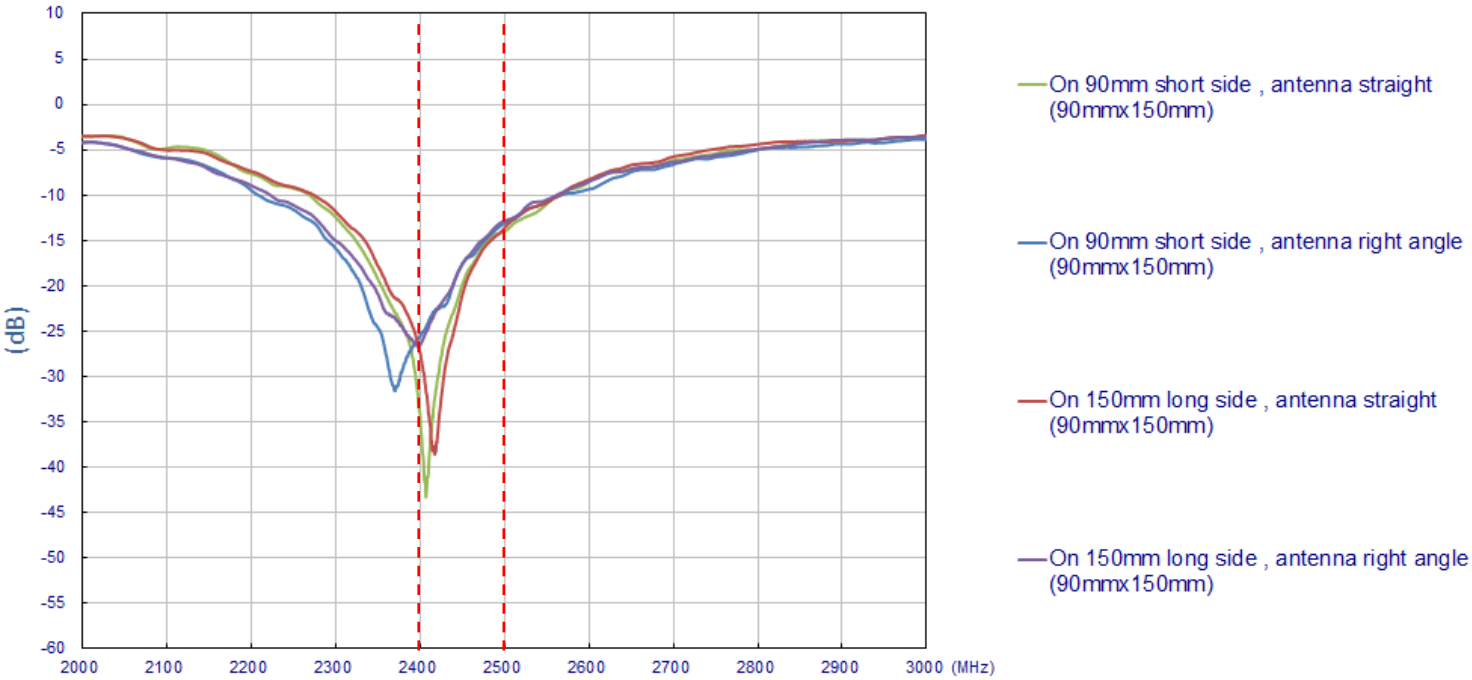


Antenna R/A

On the long side



Antenna straight

Antenna R/A

6.6 Return Loss when antenna setup on different conditions