DRAFT SPECIFICATION

Part No. : **LPDA.03.032H21**

Description : Engager External Wide Band Directional LPDA Antenna

Features :
Frequency: 450-6000MHz
Peak Gain: 7dBi
Dims: 520*630*42mm
Dims with Bracket: 520*770*95mm
Cable Length: 300mm
Connector: SMA(M)
RoHS Compliant

1. Introduction

The LPDA.03.032H21 Engager is a wideband directional LPDA exterior antenna that operates within the 450-6000MHz frequency bands. It is an innovative and future proof solution ideal for LTE 4G and 2G/3G networks as well as 2.4GHz and 5.8GHz Wi-Fi.

This wideband design eliminates the need to purchase different antennas for each frequency which simplifies installations since the same antenna can be used for a wide array of wireless applications where wide coverage is desired.

The LPDA.03 has a 70° beam width in both orthogonal planes. The ABS external housing is robust, UV resistant and waterproof ensuring it is completely weatherproof and sealed, making it fully IP67 rated. For various mounting options, it is supplied with tilt and swivel wall and pole brackets. The LPDA.03 has been tested for wind resistance up 200 km/h.

LTE 4G and 2.4GHz and 5.8GHz Wi-Fi applications demand high speed data uplink and downlink and where required, two LPDA.03 antennas can be mounted in space at 90° to create a MIMO arrangement.

Cable type, length and connectors are customizable for large order volumes. Please contact your regional Taoglas sales office for support.

2. Specification

ELECTRICAL							
Operation Frequency (MHz)	LTE 700 GSM 900	DCS PCS	UMTS HSPA	Wi-Fi	LTE 2600	LTE 3500	Wi-Fi
	698-960	1710-1990	1755-2170	2400-2500	2500-2700	3400-3600	5700-5900
Return Loss (dB)	-10	-10	-10	-10	-10	-6	-6
Efficiency (%)	75	65	65	55	50	40	25
Peak Gain (dBi)	7	7	7	6	5.5	5	2.5
Max VSWR	2:1	2:1	2:1	2:1	2:1	3:1	3:1
Radiation Properties	Directional						
Polarization	Linear						
Impedance	50Ω						
Max input Power (Watts)	10						

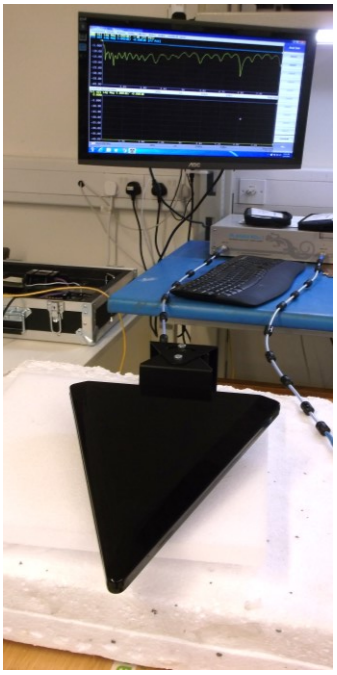
MECHANICAL	
Dimension	520*630*42mm without Bracket 520*770*95mm with Bracket
Material	Body: PC Coated UV Stabilized ABS Bracket: Black Powder Coated 316 Stainless
Connector	SMA(M)
Weight	819g with Bracket 430g without Bracket
Cable Type	300mm RG-174

ENVIRONMENTAL	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 105°C
Humidity	Non-condensing 65°C 95% RH
Wind Resistance	Up to 200km/h

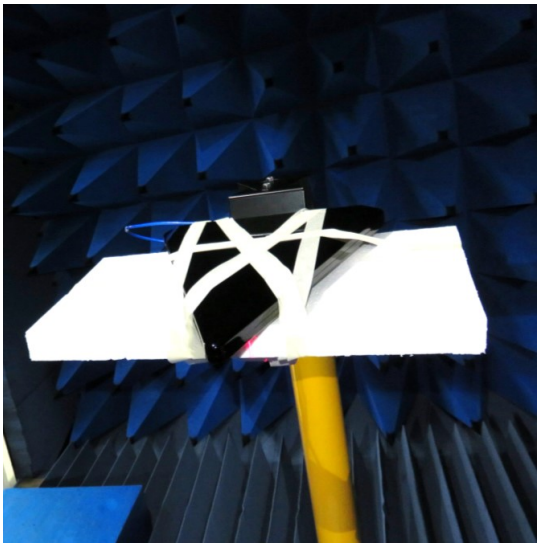
3. Antenna Characteristics

3.1 Set up

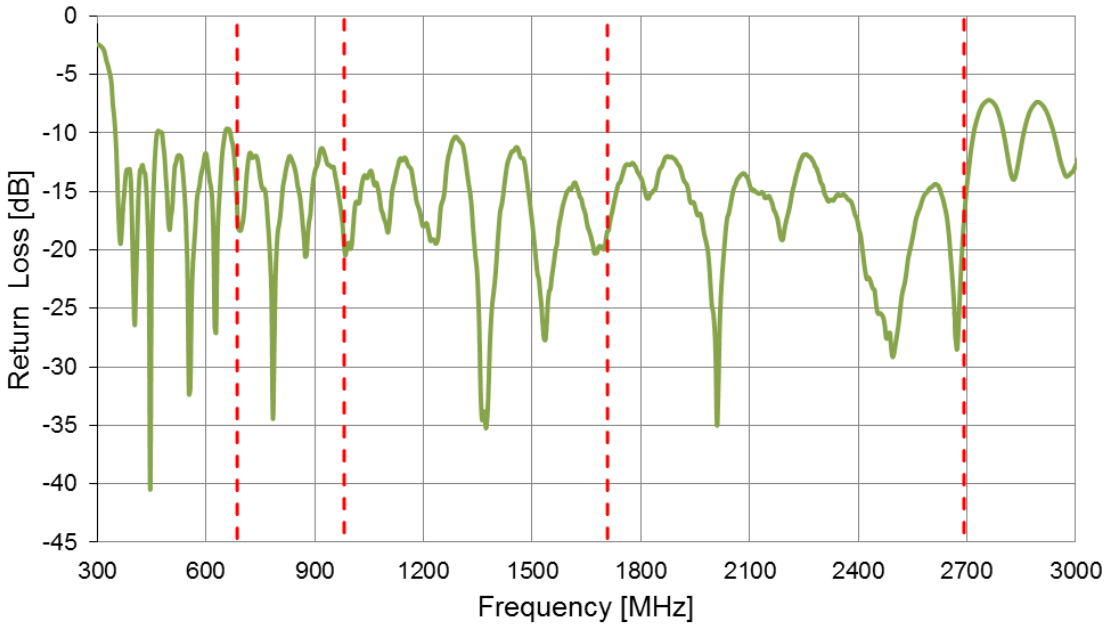
Return Loss and VSWR Measurement

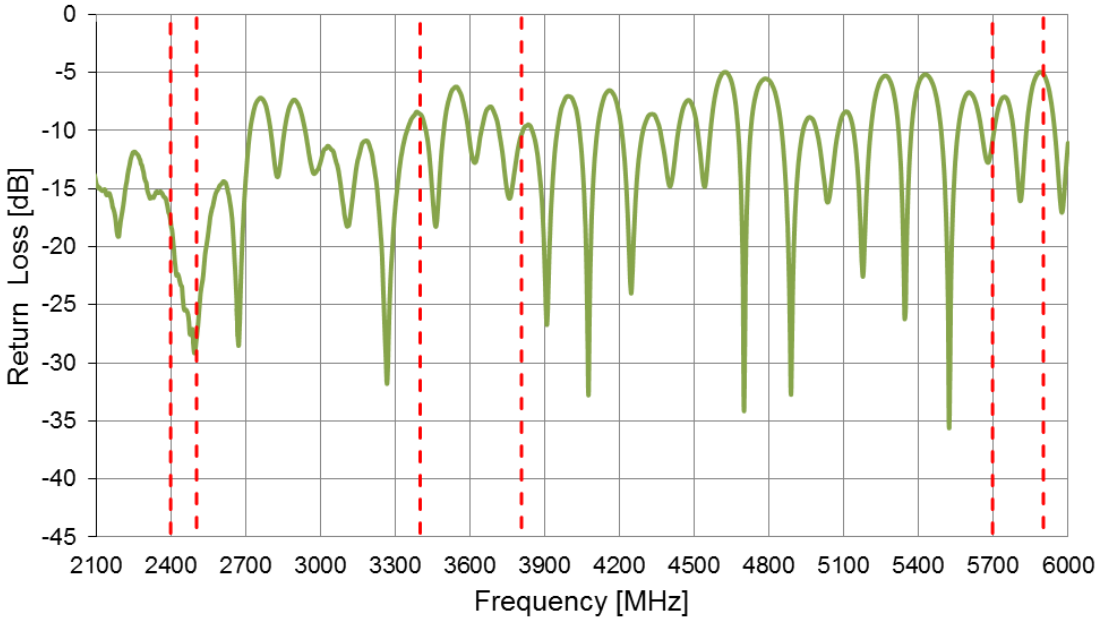


Efficiency and Gain Measurement

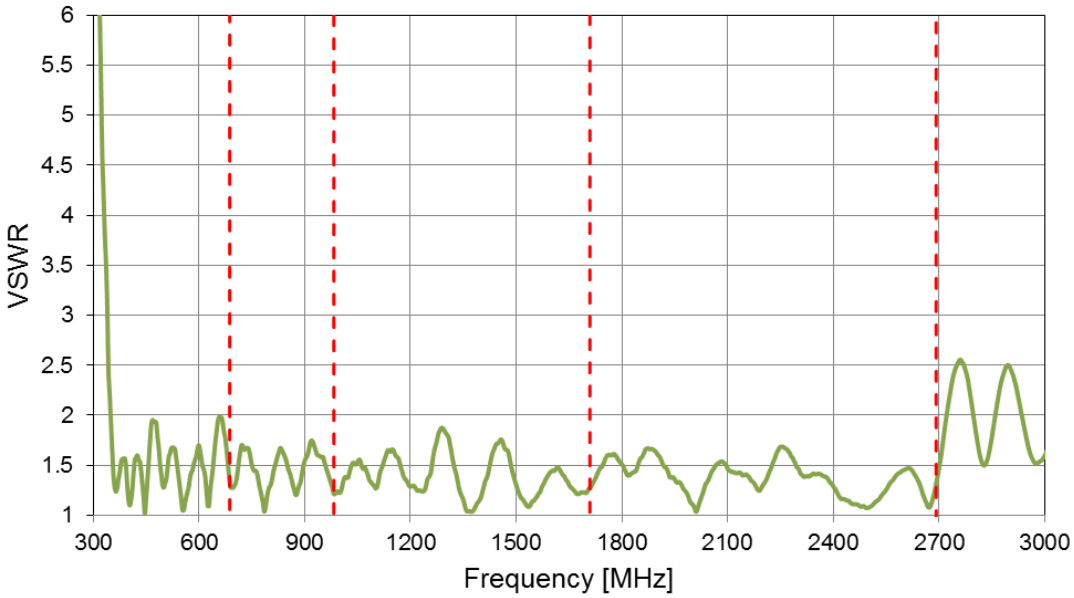


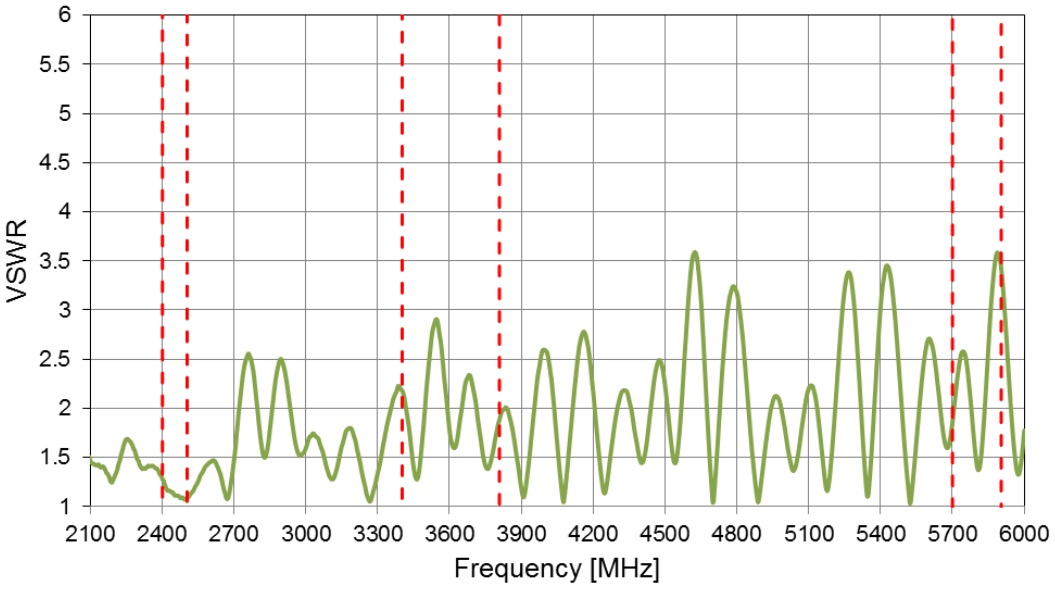
3.2 Return Loss



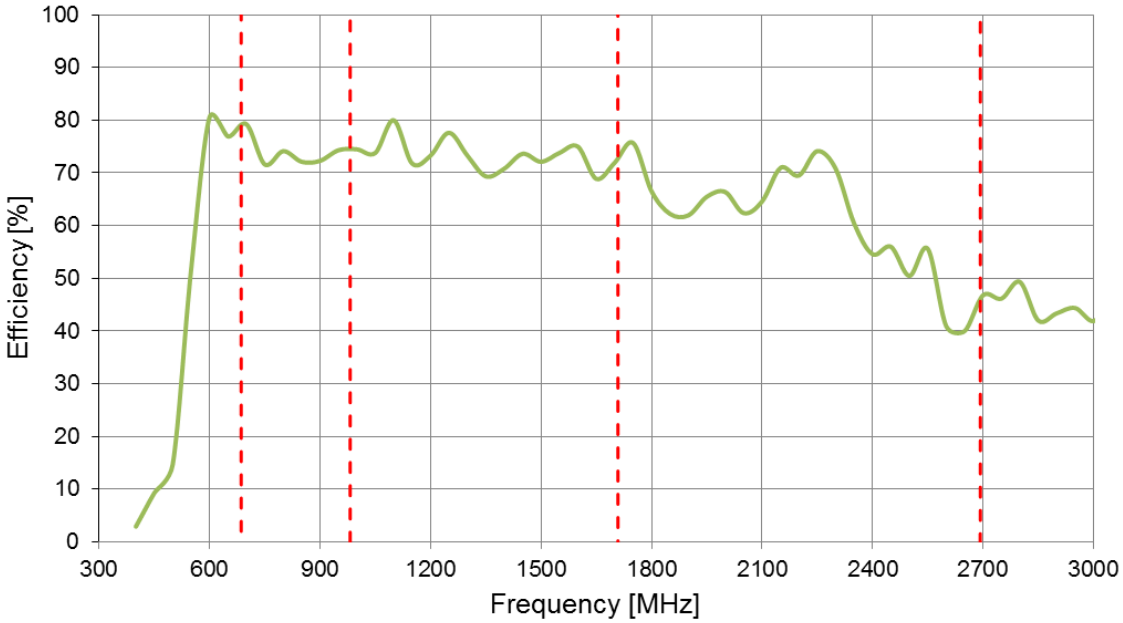


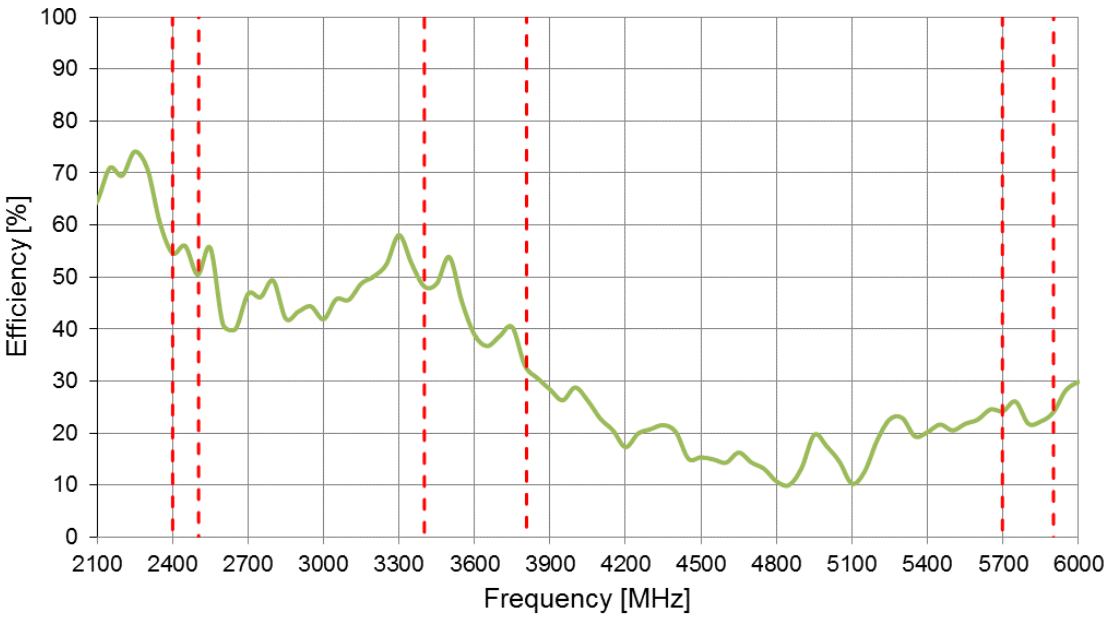
3.3 VSWR


VSWR
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
300
600
900
1200
1500
1800
2100
2400
2700
3000
Frequency [MHz]

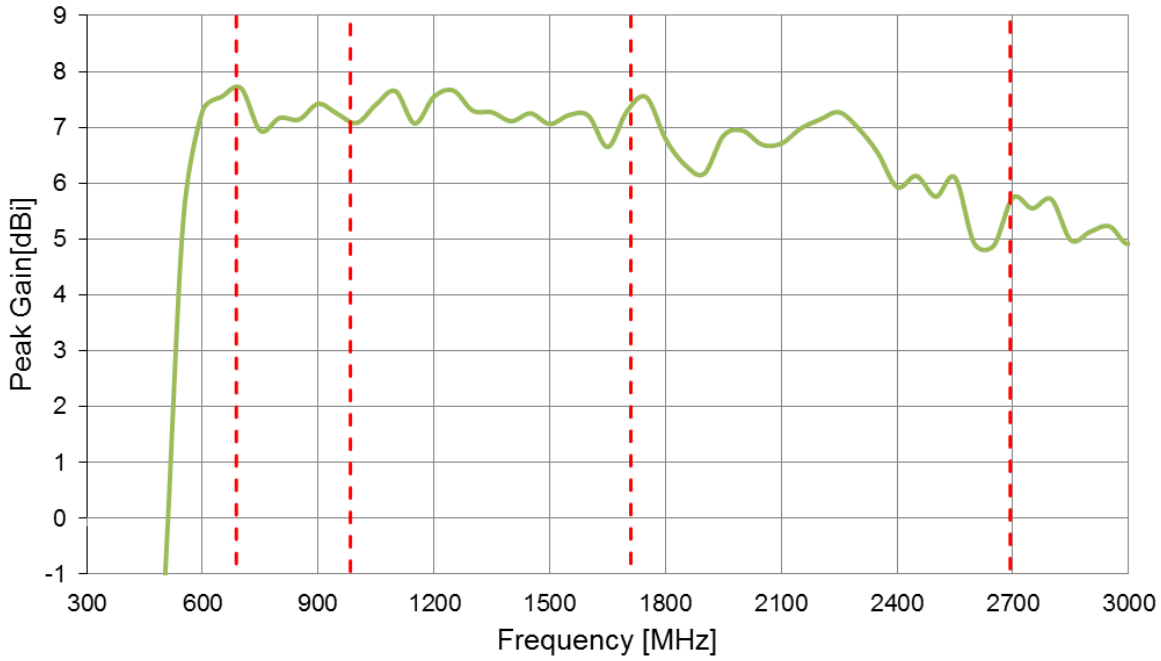

VSWR
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
2100
2400
2700
3000
3300
3600
3900
4200
4500
4800
5100
5400
5700
6000
Frequency [MHz]

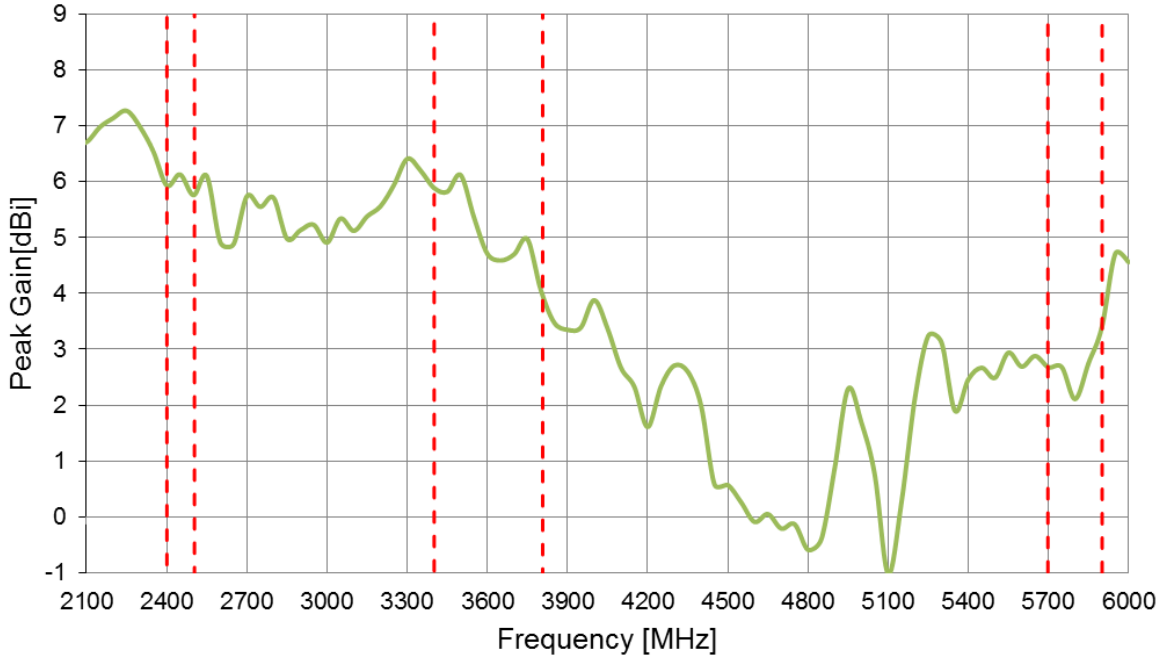
3.4 Efficiency



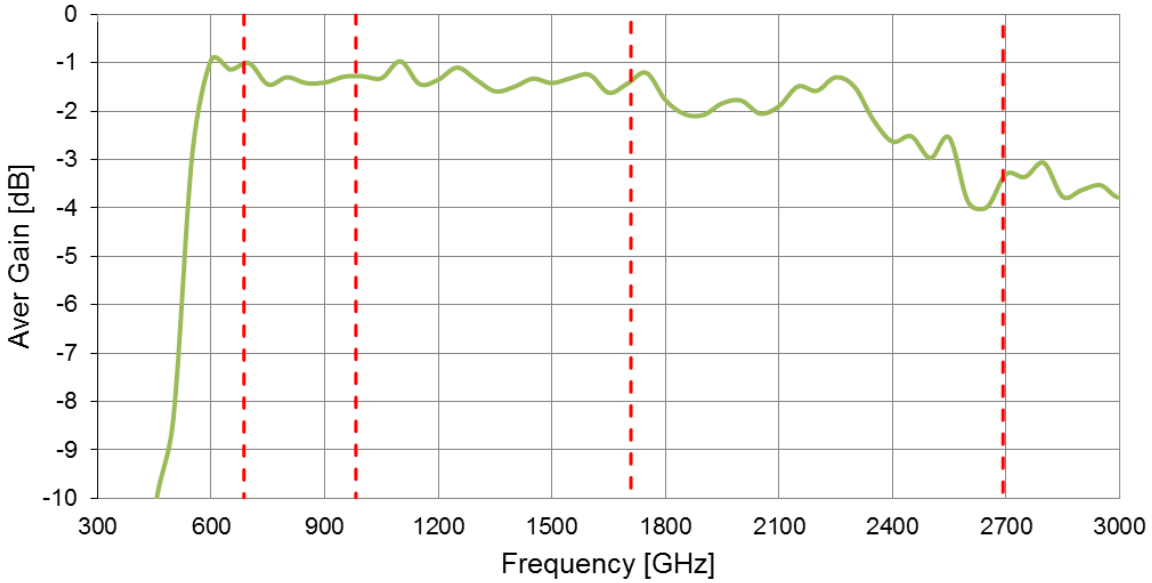


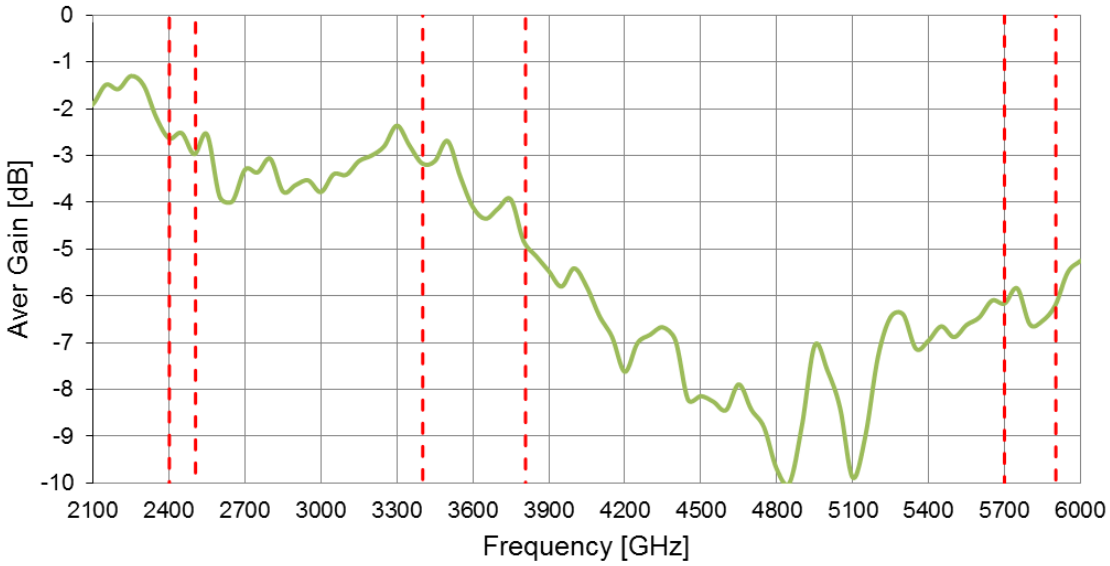
3.5 Peak Gain


Peak Gain[dBi]
9
8
7
6
5
4
3
2
1
0
-1
300
600
900
1200
1500
1800
2100
2400
2700
3000
Frequency [MHz]


Peak Gain[dBi]
9
8
7
6
5
4
3
2
1
0
-1
2100
2400
2700
3000
3300
3600
3900
4200
4500
4800
5100
5400
5700
6000
Frequency [MHz]

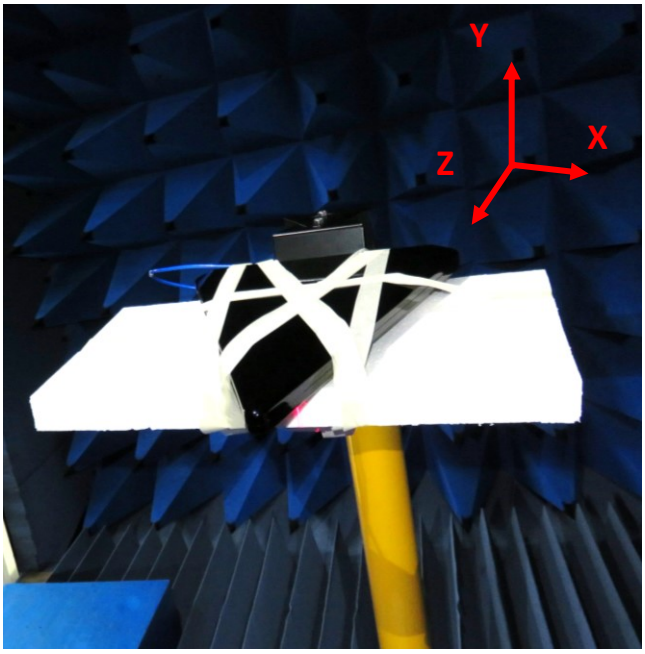
3.6 Average Gain





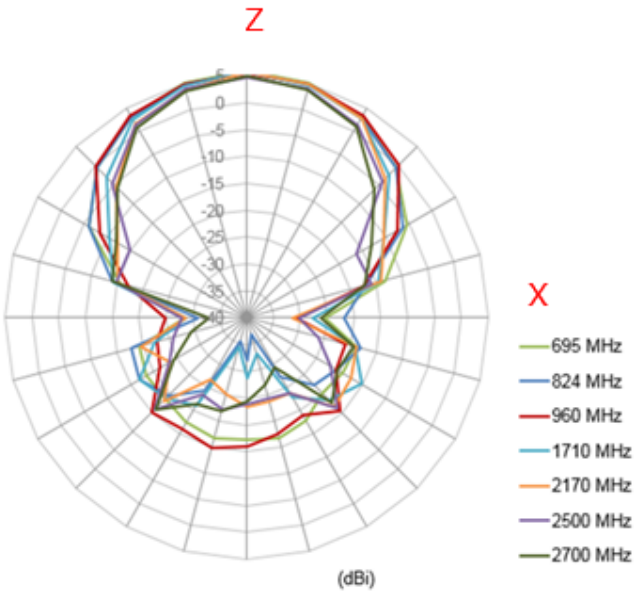
4. Antenna Radiation Pattern

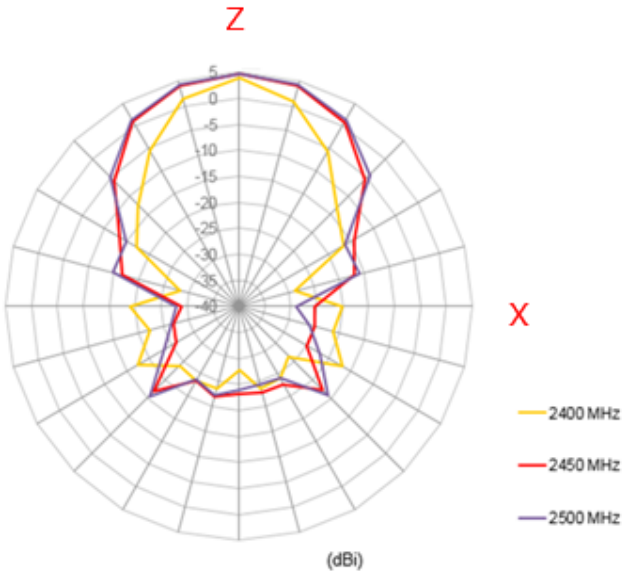
4.1 Measurement Setup

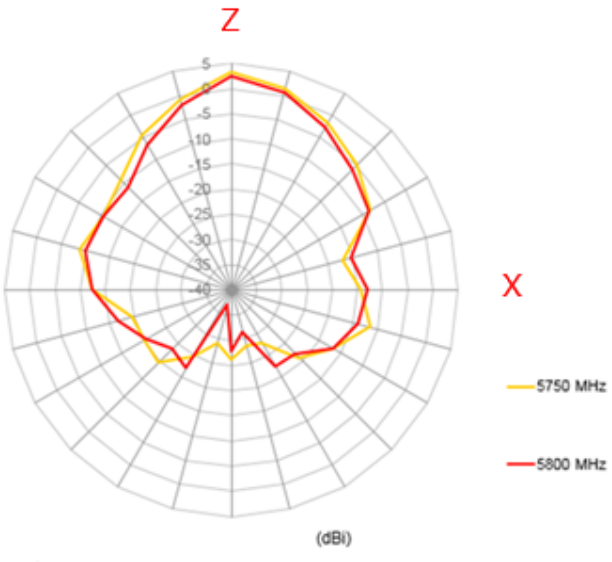


4.2 2D Radiation Pattern

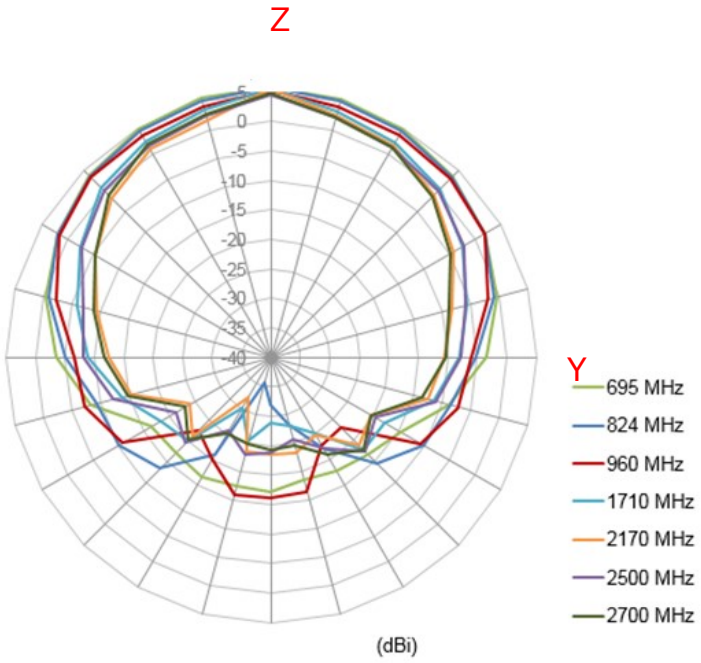
XZ Plane

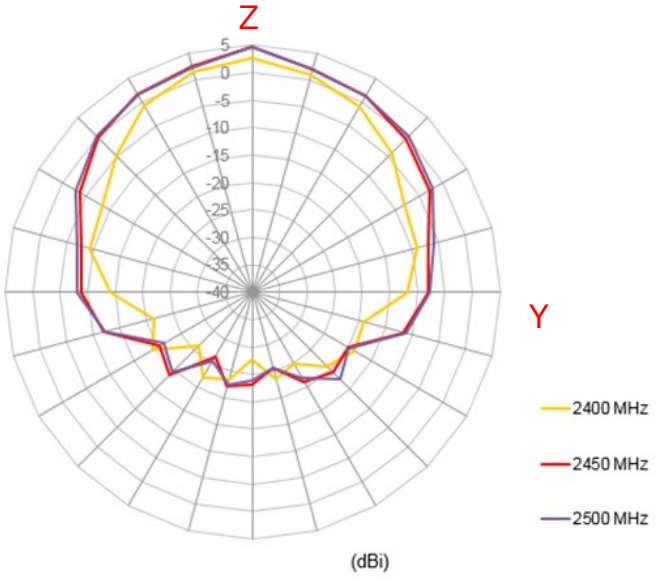


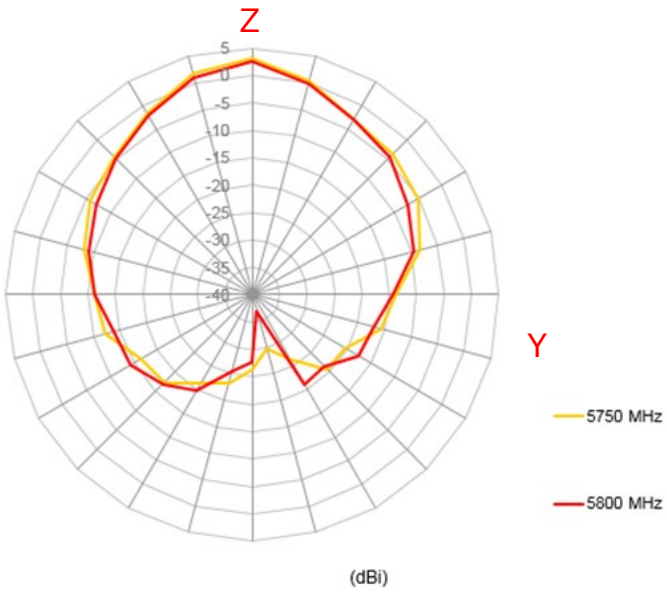




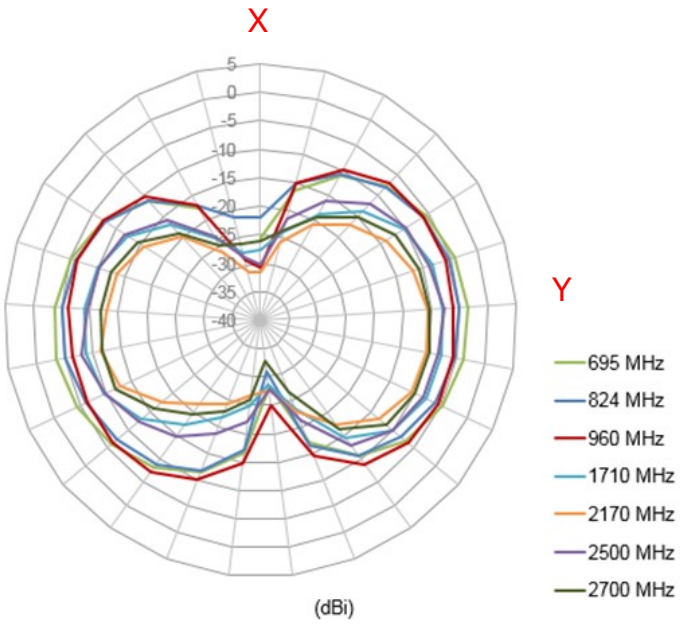
YZ Plane

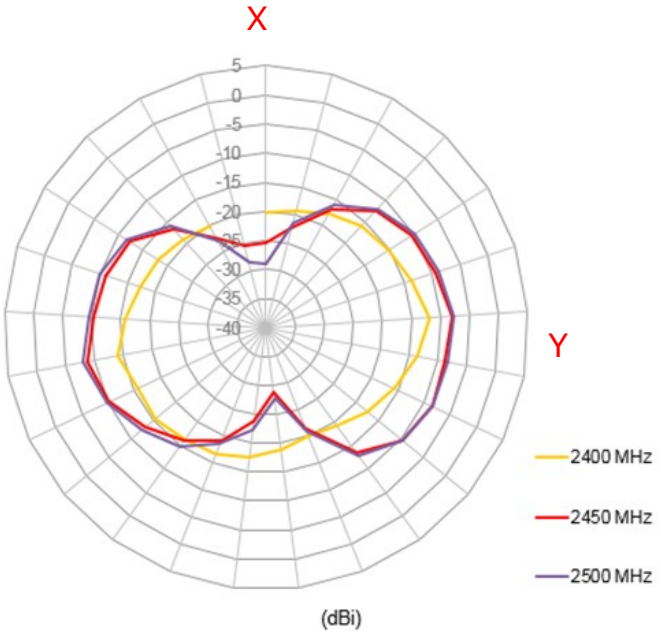

Z
5
0
-5
-10
-15
-20
-25
-30
-35
-40
Y
695 MHz
824 MHz
960 MHz
1710 MHz
2170 MHz
2500 MHz
2700 MHz
(dBi)

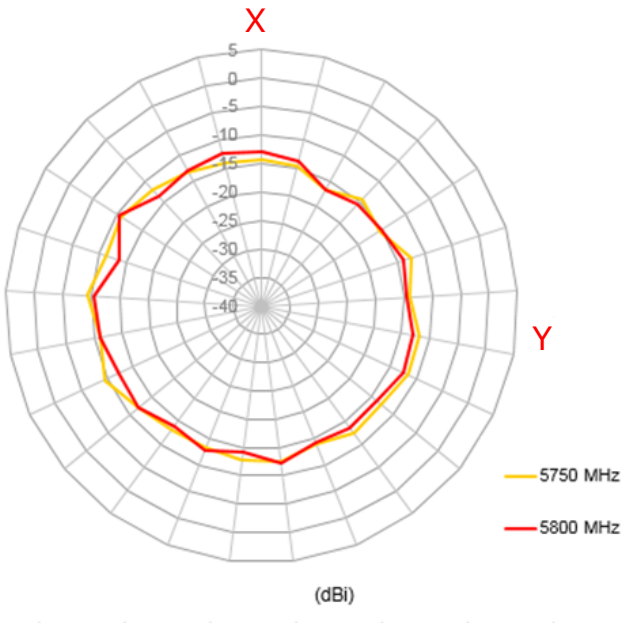

Z
5
0
-5
-10
-15
-20
-25
-30
-35
-40
Y
2400 MHz
2450 MHz
2500 MHz
(dBi)


Z
5
0
-5
-10
-15
-20
-25
-30
-35
-40
Y
5750 MHz
5800 MHz
(dBi)

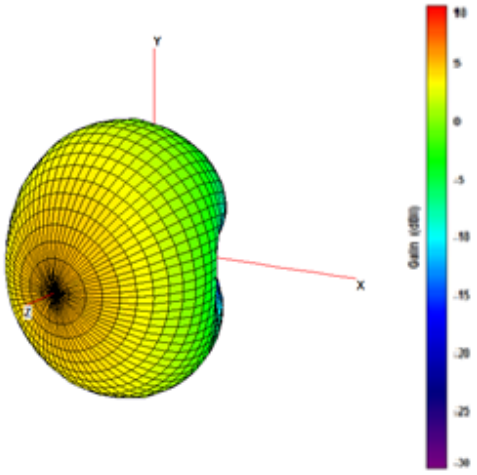
XY Plane


X
Y
5
0
-5
-10
-15
-20
-25
-30
-35
-40
695 MHz
824 MHz
960 MHz
1710 MHz
2170 MHz
2500 MHz
2700 MHz
(dBi)

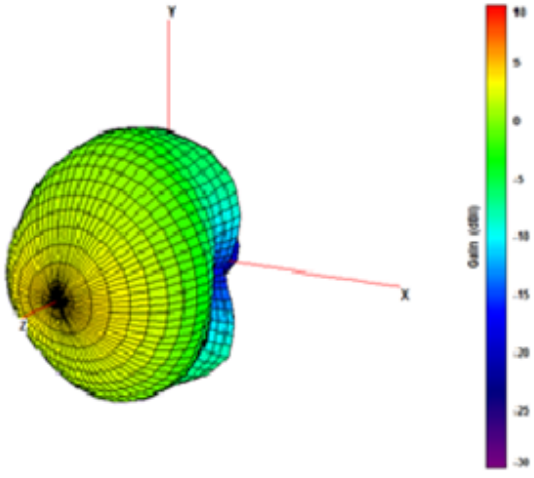

X
Y
5
0
-5
-10
-15
-20
-25
-30
-35
-40
2400 MHz
2450 MHz
2500 MHz
(dBi)


X
Y
5
0
-5
-10
-15
-20
-25
-30
-35
-40
5750 MHz
5800 MHz
(dBi)

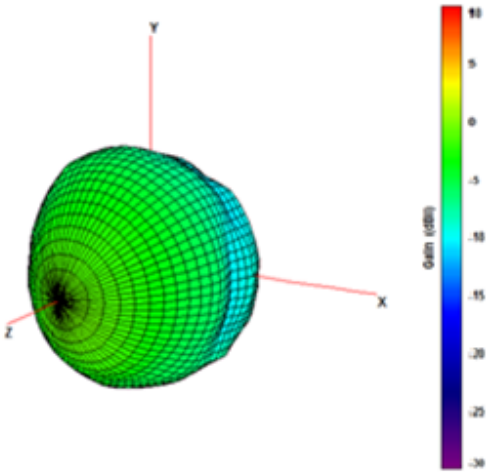
4.3 3D Radiation Pattern



824MHz



2500MHz



5800MHz

5. Mechanical Drawing (Unit: mm)

Currently under development

6. Packaging

Currently under development.

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