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SUZHOU AEON TECH CO.,LTD.(CHINA)
AEON TECH (SHANGHAI) CO.,LTD(CHINA)
DONGGUAN PARNER TECH CO.,LTD.(CHINA)



SPECIFICATION FOR APPROVAL

CUSTOMER: 捷普

PART NAME: PCB Antenna Assembly

PART NO.: BNFRC003041AR

REVISION:

W. Y. P/NO.: C6523-510003-A(SH1512-042)

REV.: X3

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :		
DATE :	2015 - 12 - 26	

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PCB Antenna Assembly

Specification

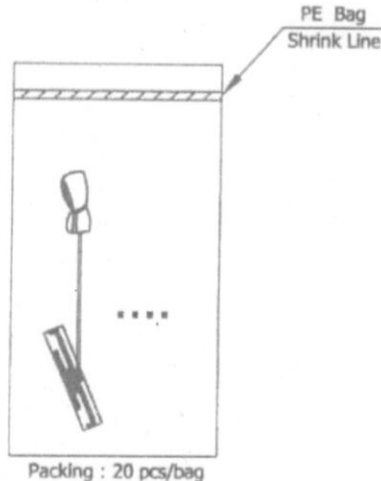
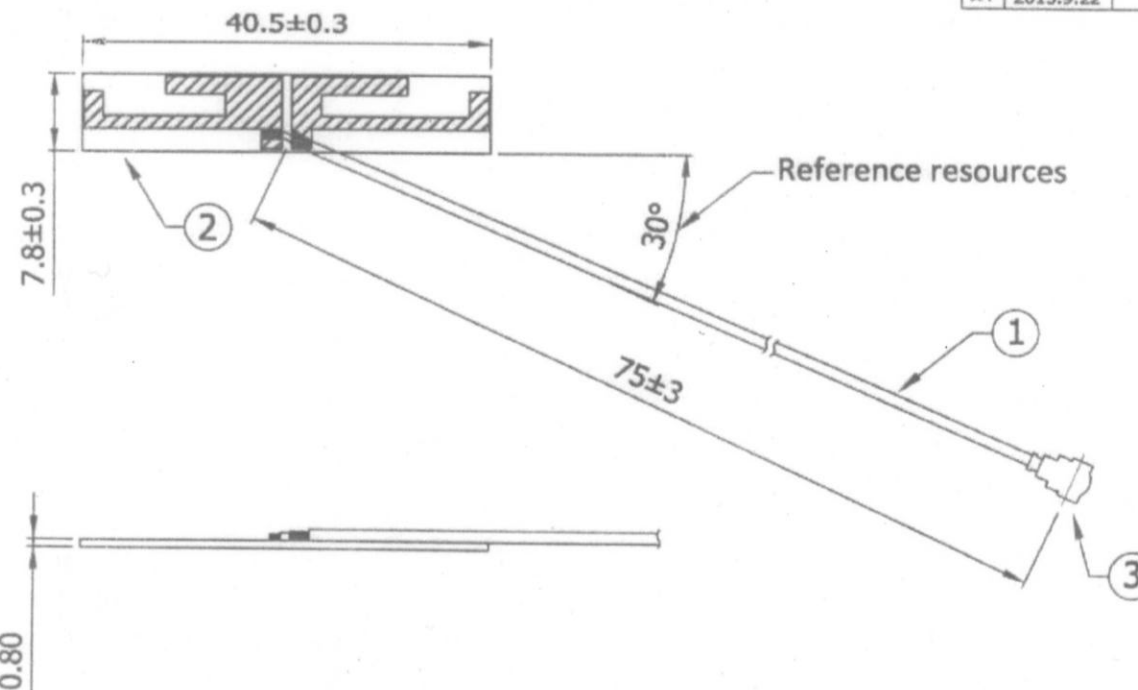
1. Electrical Properties :(With housing)

- 1.1 Frequency Range..... 2.4~2.5/4.9~5.85 GHz
- 1.2 Impedance 50Ω Nominal
- 1.3 VSWR 1.92 :1Max.@2.4~2.5GHz
..... 1.92 :1Max.@4.9~5.85 GHz
- 1.4 Return Loss..... -10 dB Max.@2.4~2.5GHz
..... -10 dB Max.@4.9~5.85 GHz
- 1.5 Radiation Omni-directional
- 1.6 Gain(peak)..... 1.98dBi @2.4GHz~2.5GHz
..... 3.38dBi @4.9GHz~5.85 GHz
- 1.7 Polarization..... Linear;
- 1.8 Admitted Power..... 1W
- 1.9 Cable..... Φ1.13 Coaxial Cable
- 1.10 Cable Loss.....0.29dB@2.4GHz~2.5GHz
.....0.41dB@4.9GHz~5.85 GHz
- 1.11 Connector..... MHF Plug

2. Physical Properties :

- 2.1 Operating Temp. -10℃ ~ +60℃
- 2.2 Storage Temp. -10℃ ~ +70℃

REV	DATE	DESCRIPTION
X1	2015.5.14	New Issue
X2	2015.6.5	增加出線角度&變更線材和PCB為黑色
X3	2015.7.25	變更線材
X4	2015.9.22	變更 PCB Layer



NO	DESCRIPTION	QTY	REMARK
3	Connector MHF Plug	1	
2	PCB FR4 ;40.5*7.8*0.8mm	1	
1	Cable Φ1.13mm Cable,Black,50 Ω;Silver tin wire	1	

XX.	±5.0	APPROVED
X.	±3.0	CHECKED
.X	±1.0	CHECKED
.XX	±0.2	CHECKED
.XXX	±0.1	DRAWING

CUSTOMER:		捷普	
PART NO :		BNRFC003041AR	
PART NAME:		PCB Antenna Assembly	
W.Y P/NO :		C6523-510003-A	
REV	UNIT	FILE	: SH1512-042
X4	mm	SHEET	: 1/1

M.gear Wha Yu Group

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CUSTOMER'S SINGATURE

Antenna Design of AP

V1.04

Document Number	HG-15039
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1st Released Date	2015.5.12
Last Released Date	2015.9.8
Author	平小東
Review by	Byron Chang

Revised History

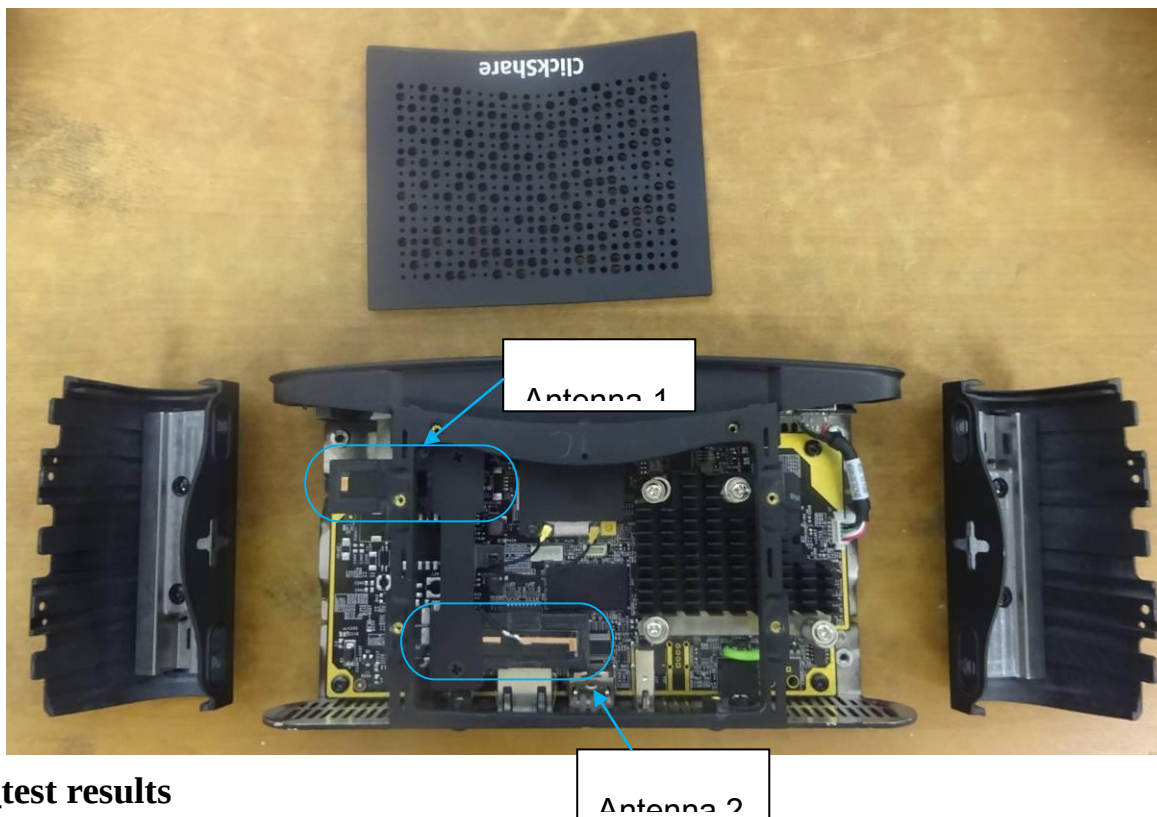
Date	Version	Revised Record
2015.5.12	1.00	New Project Antenna
2015.5.14	1.01	變更 PCB 尺寸
2015.7.22	1.02	客戶機台增加配重
2015.8.28	1.03	客戶提供增加配重機台測試
2015.9.8	1.04	客戶要求優化天線

Specification

Rough description		
Item	Initial Specification	Final Specification
Dimensions	None	
Impedance	50Ω	
Test environment	With housing	
Spectrum	WIFI	
Freq. Range	Antenna 1: 2.4~2.5/4.9~5.85 GHz Antenna 2: 2.4~2.5/4.9~5.85 GHz	
Antenna type	Antenna 1& Antenna 2: Dipole	
Gain	Antenna 1: 2.4~2.5 GHz :1.98 dBi(Peak gain) 4.9~5.85GHz : 3.34 dBi(Peak gain) Antenna 2: 2.4~2.5 GHz : 1.88 dBi(Peak gain) 4.9~5.85GHz : 3.38 dBi(Peak gain)	
Radiation	Near Omni	
Polarization	Linear	

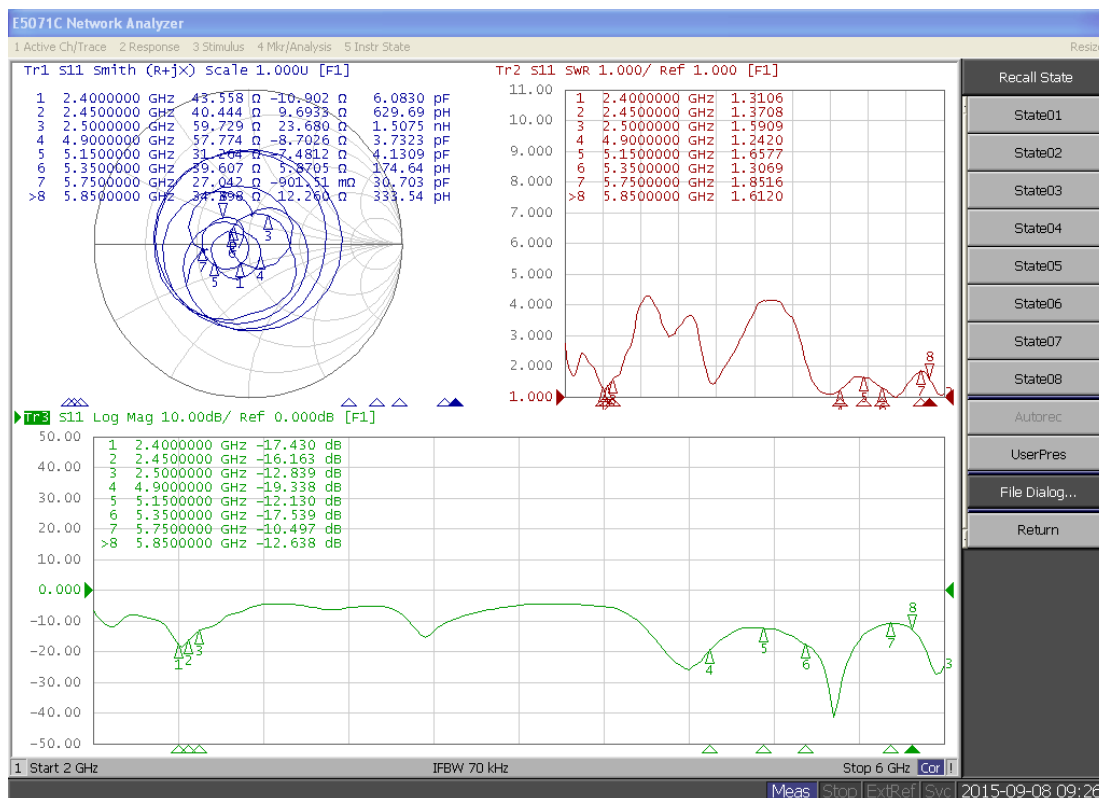
Rad. efficiency	Antenna 1: 2.4~2.5 GHz > 65 % 4.9~5.85GHz > 70 % Antenna 2: 2.4~2.5 GHz > 61 % 4.9~5.85GHz > 68 %	
Return Loss	$\leq -10\text{db}$	
Connector type	1.13mm MHF	
Cable length(Total)	None	
Isolation	$\leq -20\text{dB}$	

1. Antennas' setup and environment

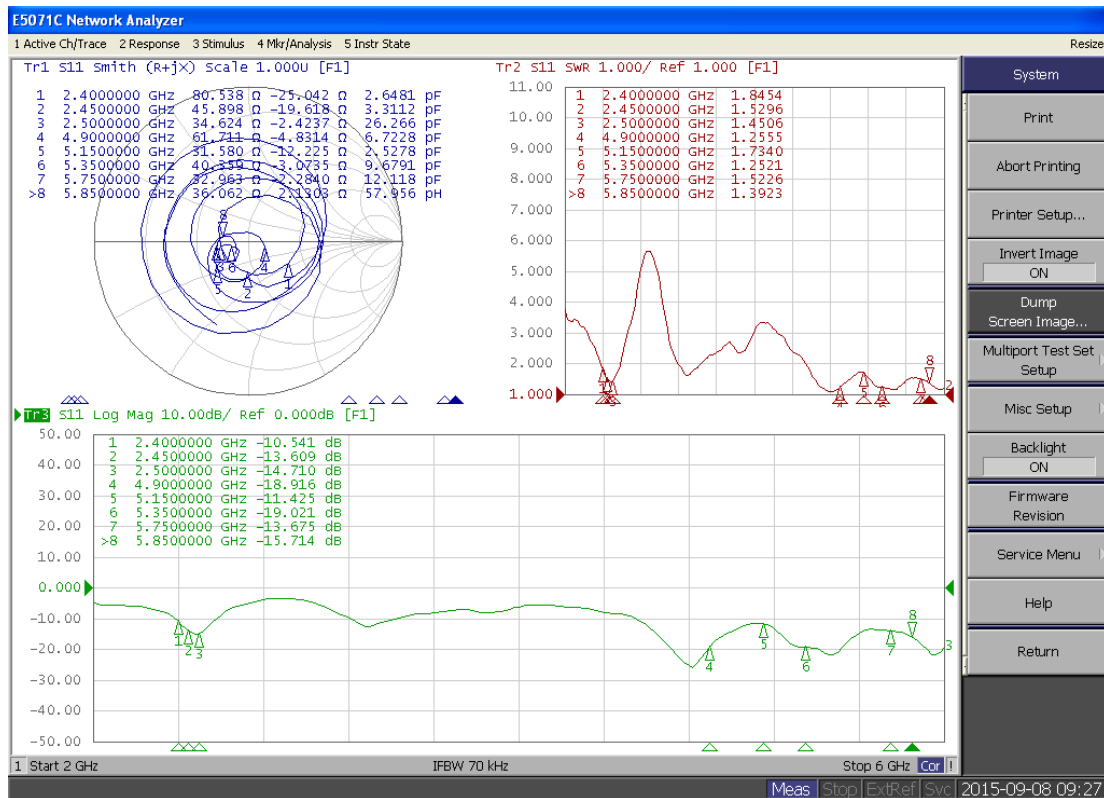


2. S11_test results

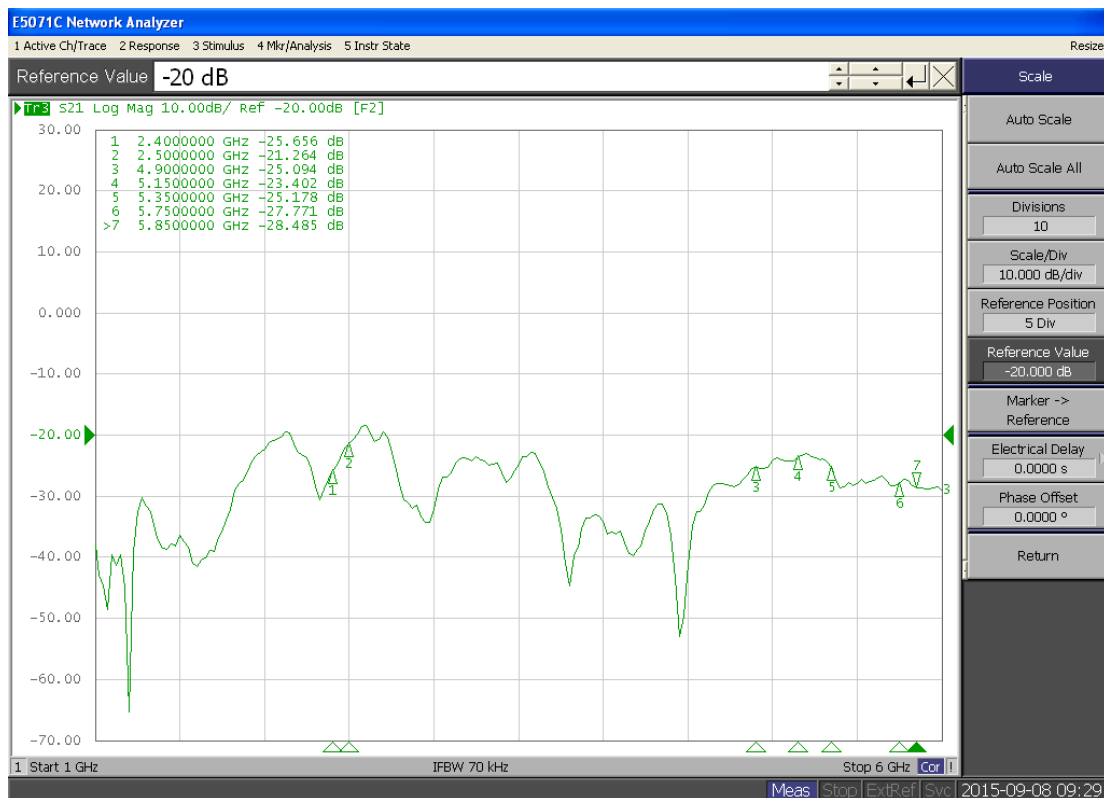
Antenna 1



Antenna 2

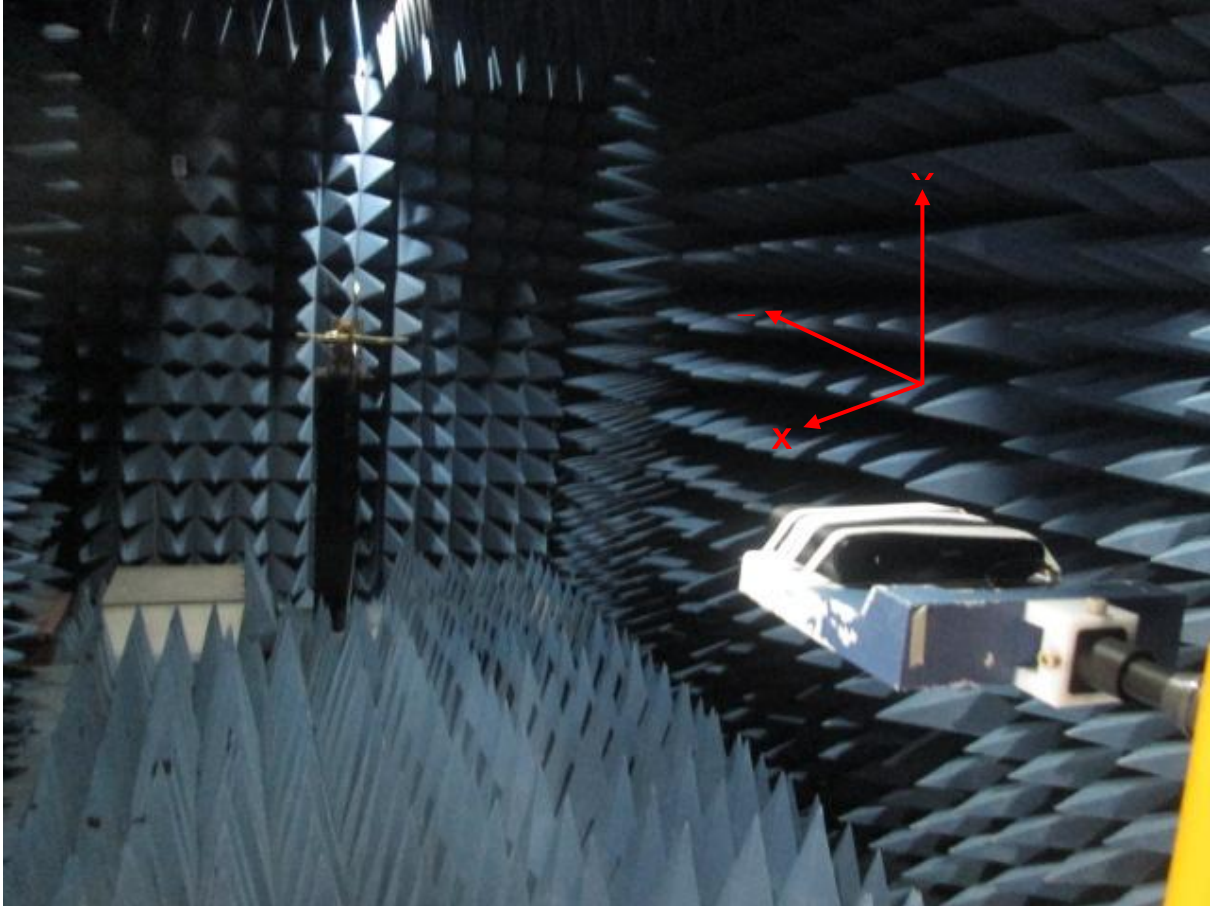


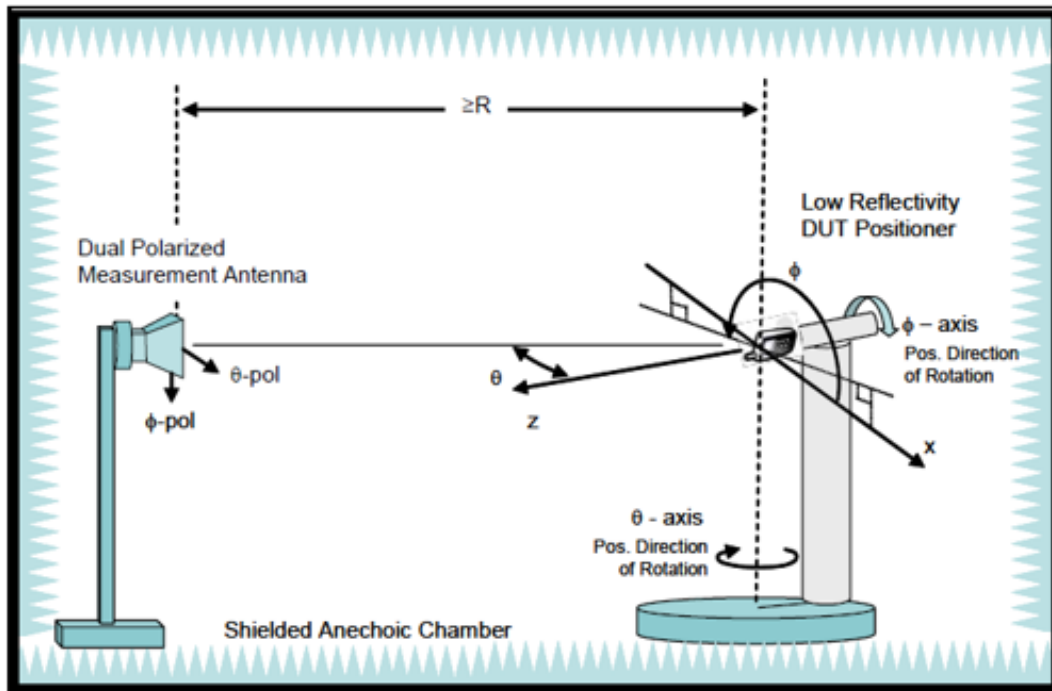
3. Isolation



4. Gain & Patterns test results

4.1 Measurement setting

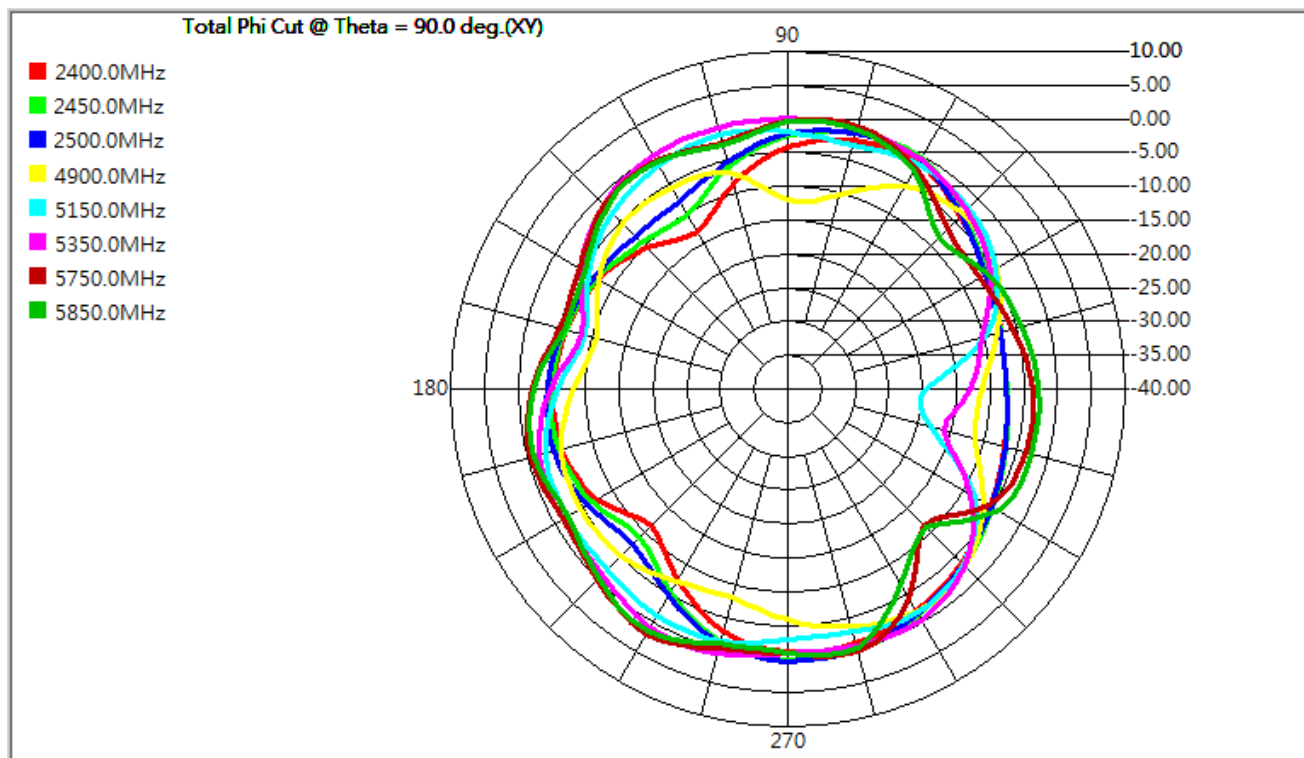




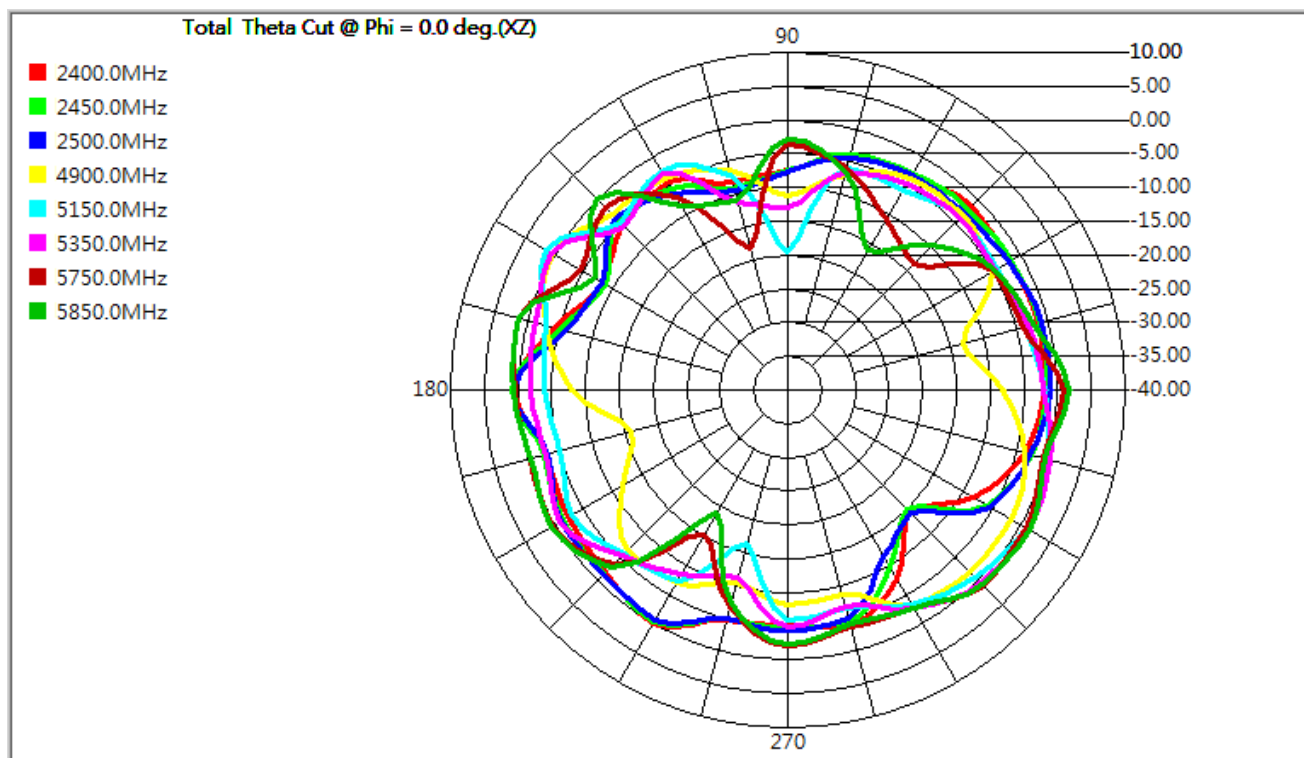
4.2 2D patterns

Antenna 1

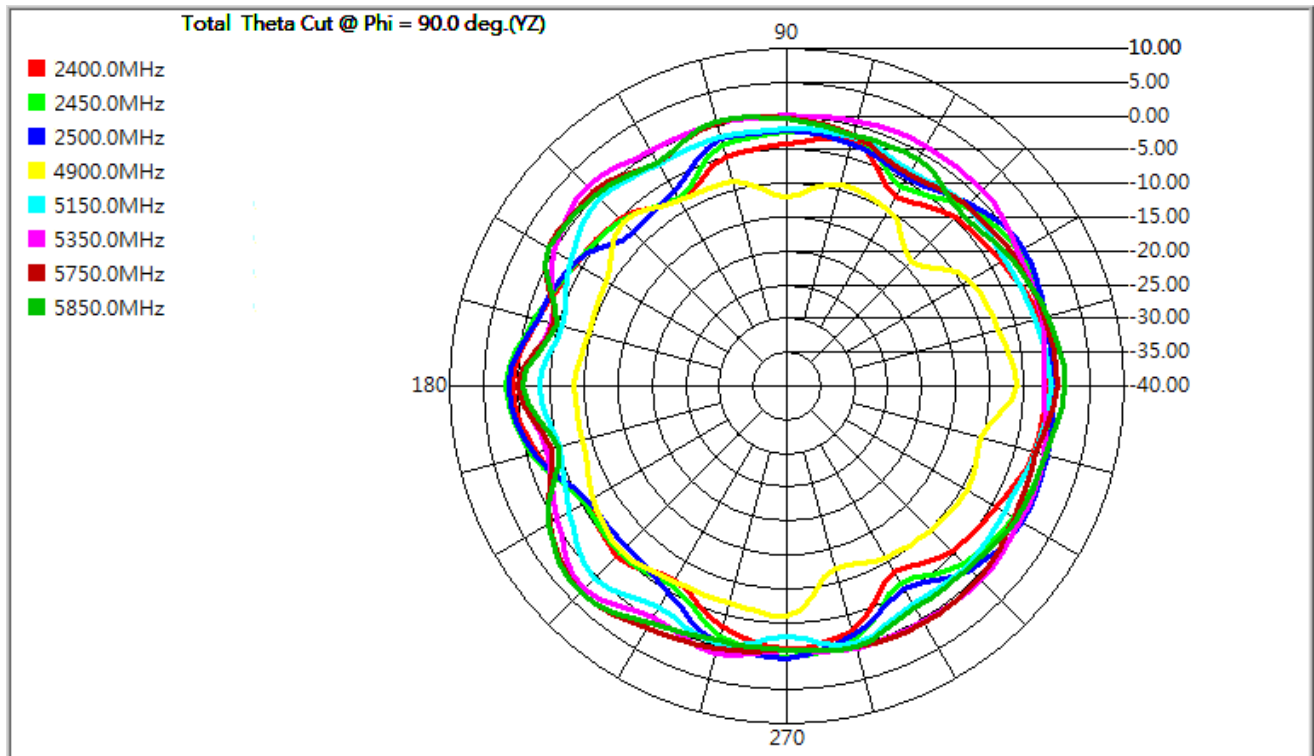
X-Y



X-Z

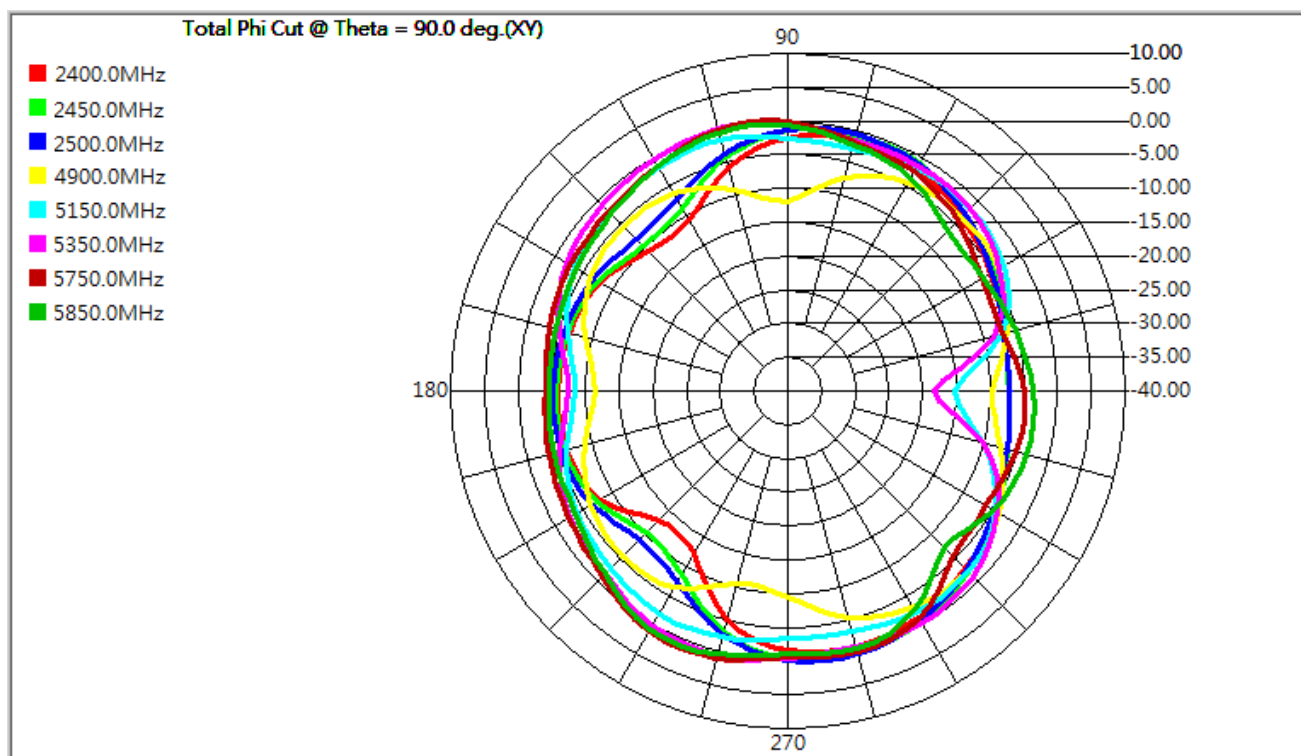


Y-Z

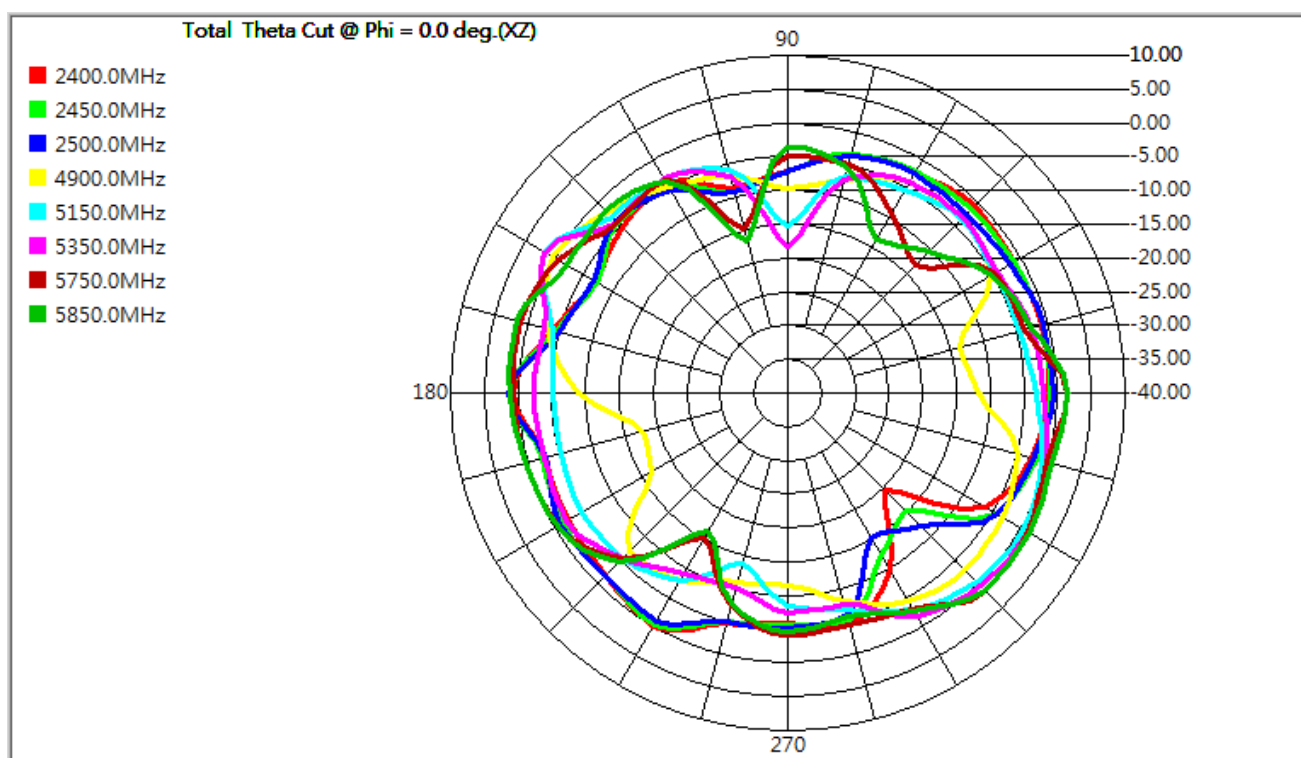


Antenna 2

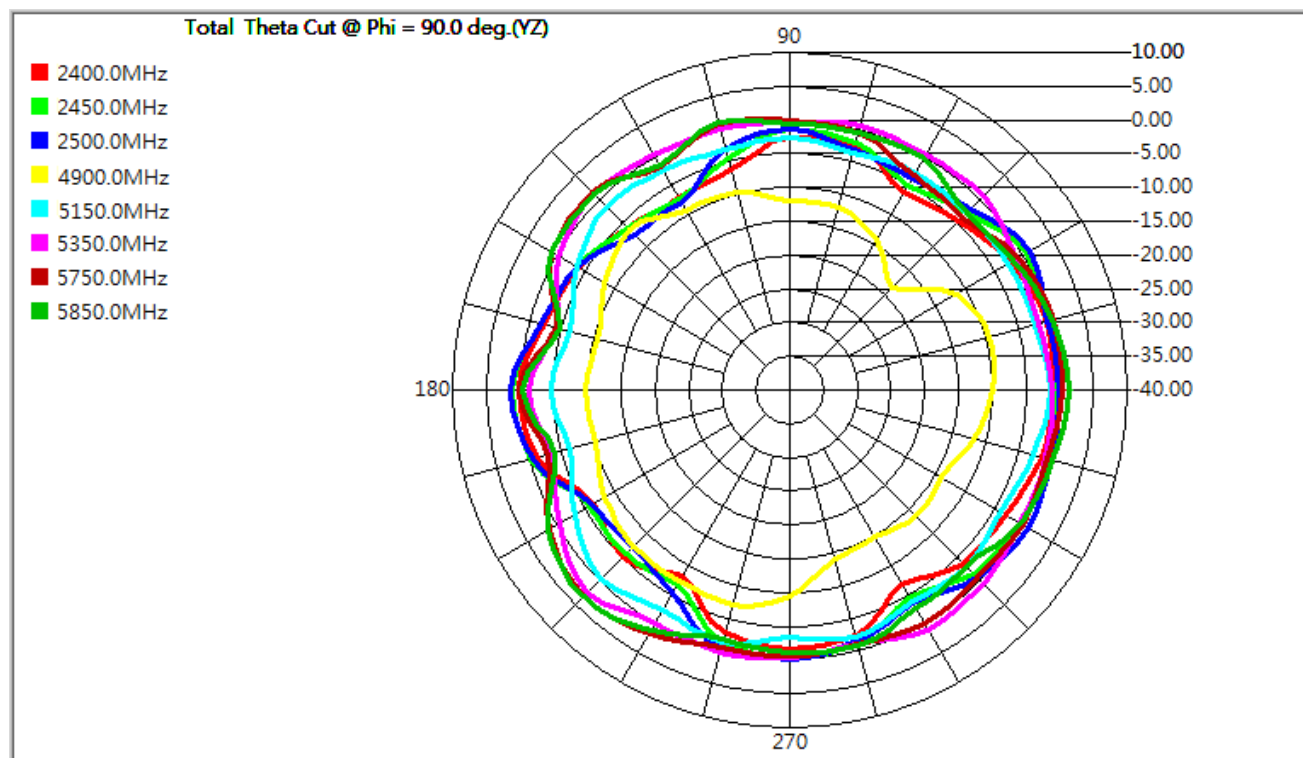
X-Y



X-Z



Y-Z



4.Summary

4.1 Return Loss

Frequency	Ant 1(dB)	Ant 2(dB)
2400MHz	-17.4	-10.5
2450MHz	-16.1	-13.6
2500MHz	-12.8	-14.7
4900MHz	-19.3	-18.9
5150MHz	-12.1	-11.4
5350MHz	-17.5	-19.0
5750 MHz	-10.4	-13.6
5850 MHz	-12.6	-15.7

4.2 Isolation

Frequency	Ant 1-2(dB)
2400MHz	-25
2500MHz	-21
4900MHz	-25
5150MHz	-23
5350MHz	-25
5750 MHz	-27
5850 MHz	-28

4.3 3D Total Peak Gain & Efficiency

Frequency	ANT 1		ANT 2	
	peak Gain(dBi)	Efficiency(%)	peak Gain(dBi)	Efficiency(%)
2400MHz	1.51	70	1.79	62
2450MHz	1.98	68	1.82	64
2500MHz	1.64	65	1.68	61
4900MHz	1.73	72	1.24	71
5150MHz	1.76	70	1.96	68
5350MHz	2.90	74	2.71	70
5750 MHz	3.30	74	3.28	72
5850 MHz	3.34	71	3.38	71