



M.gear

WHA YU INDUSTRIAL CO., LTD.(HEAD OFFICE)

DONGGUAN AEON TECH CO.,LTD.(CHINA)

### SPECIFICATION FOR APPROVAL

CUSTOMER: UI

PART NAME: RF Antenna Assembly

PART NO.: 683-00116-01

REVISION:

W. Y. P/NO.: C1758-510265-A(SRF20231108)

REV.: XI

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :		
DATE :		

## WHA YU GROUP

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# RF Antenna Assembly

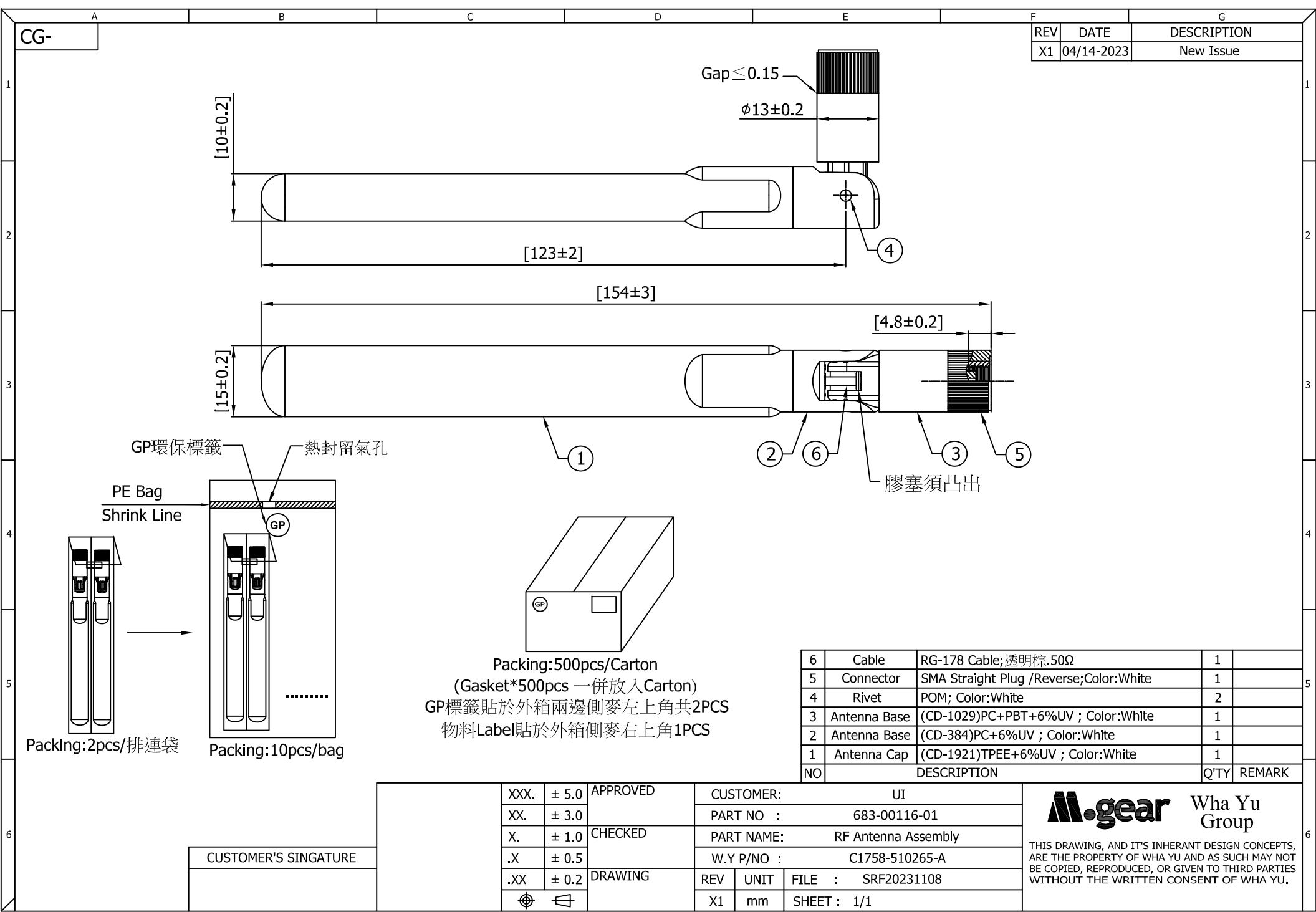
## Specification

### 1. Electrical Properties :(單天線)

- 1.1 Frequency Range..... 2.4~2.5 GHz;4.9~5.825 GHz
- 1.2 Impedance ..... 50Ω Nominal
- 1.3 VSWR ..... 1.92 :1Max.
- 1.4 Return Loss..... 10 dB Min.
- 1.5 Radiation..... Omni-directional
- 1.6 Gain(peak)..... 3.59 dBi Max.@ 2.4~2.5 GHz
- 1.7 ..... 4.57 dBi Max.@4.9~5.825 GHz
- 1.8 Cable..... RG-178 Cable
- 1.9 Connector..... SMA Connector
- 1.10 Polarization..... Linear ; Vertical

### 2. Physical Properties :

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



REV	DATE	DESCRIPTION
X1	04/14-2023	New Issue

NO	DESCRIPTION	Q'TY	REMARK
6	Cable	1	RG-178 Cable;透明棕.50Ω
5	Connector	1	SMA Straight Plug /Reverse;Color:White
4	Rivet	2	POM; Color:White
3	Antenna Base	1	(CD-1029)PC+PBT+6%UV ; Color:White
2	Antenna Base	1	(CD-384)PC+6%UV ; Color:White
1	Antenna Cap	1	(CD-1921)TPEE+6%UV ; Color:White

Packing:500pcs/Carton  
 (Gasket\*500pcs 一併放入Carton)  
 GP標籤貼於外箱兩邊側麥左上角共2PCS  
 物料Label貼於外箱側麥右上角1PCS

Packing:2pcs/排連袋  
 Packing:10pcs/bag

CUSTOMER'S SINGATURE	XXX.	± 5.0	APPROVED	CUSTOMER: UI		
	XX.	± 3.0		PART NO : 683-00116-01		
	X.	± 1.0	CHECKED	PART NAME: RF Antenna Assembly		
	.X	± 0.5		W.Y P/NO : C1758-510265-A		
	.XX	± 0.2	DRAWING	REV	UNIT	FILE : SRF20231108
		X1		mm	SHEET : 1/1	

**M.gear** Wha Yu Group

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# Antenna Design For NE3-16033

V1.02

Product Development Status		
Concept Study	In Development	Production
	X	

<b>Document Number</b>	<b>NE3-16033</b>
<b>1<sup>st</sup> Released Date</b>	<b>04/01/2016</b>
<b>Last Released Date</b>	<b>05/23/2016</b>
<b>Designers</b>	<b>Carter Su</b>
<b>Testers</b>	<b>Carter Su</b>
<b>Reviewed by</b>	<b>SKY</b>

<b>Electrical</b>		
<b>Item</b>	<b>Specification</b>	<b>Note</b>
<b>Test Environment</b>	With Housing	
<b>Frequency Range</b>	2.4GHz~2.5GHz 4.9GHz~5.825GHz	
<b>VSWR</b>	1.92 : 1 (max)	
<b>Input Impedance</b>	50 ohm	
<b>Port to Port Isolation</b>	N/A	
<b>Polarization</b>	Linear (Vertical or Horizontal)	
<b>Gain(Peak gain)</b>	ANT 1. 2.4GHz(3.59dBi) / 5GHz(4.57dBi)	
<b>Efficiency</b>	2.4GHz>80% / 5GHz>70%	
<b>Half Power Beam Width (HPBW)</b>	N/A	
<b>Mechanical</b>		
<b>Dimensions</b>	N/A	
<b>Connector</b>	SMA	
<b>Cable Type</b>	RG-178	
<b>Cable Length</b>	N/A	
<b>Radome Material</b>	N/A	
<b>Ingress Protection</b>	N/A	
<b>Operating Temperature</b>	-10 ~ +60	
<b>Storage Temperature</b>	-10 ~ +70	



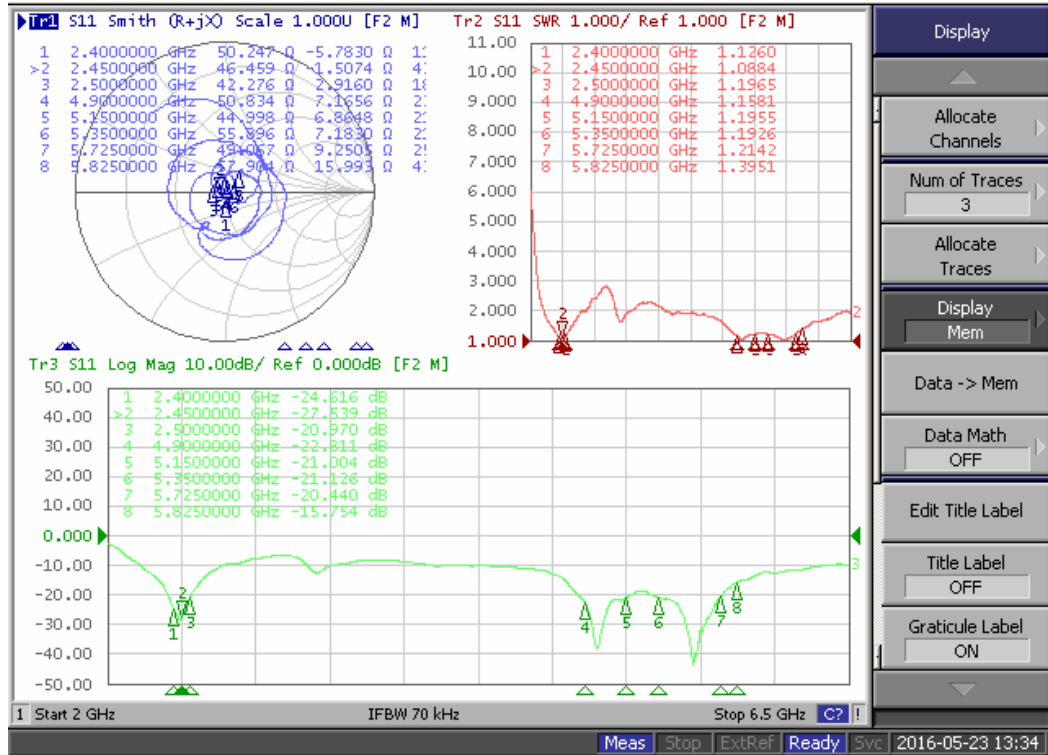
## 1 Antenna Introduction





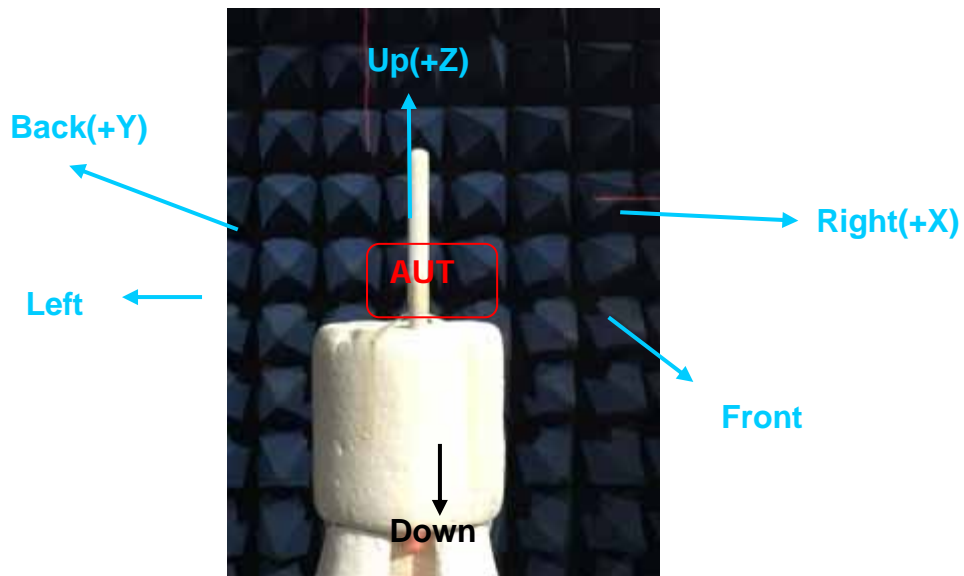
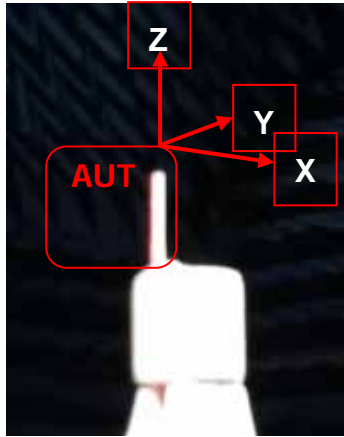
## 2 S11 test results

### 2.1 ANT 1.

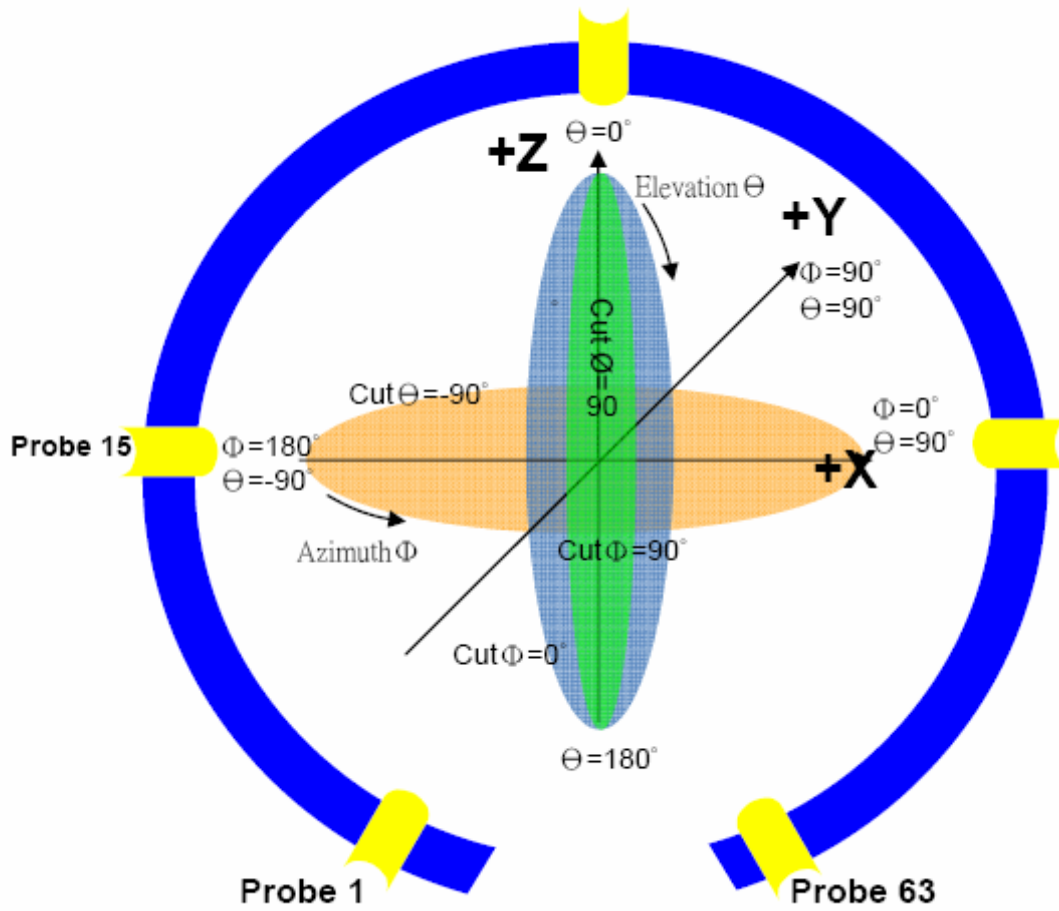


### 3 Gain & Patterns test results

#### 3.1 Measurement setting



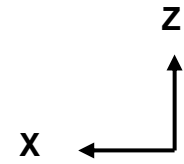
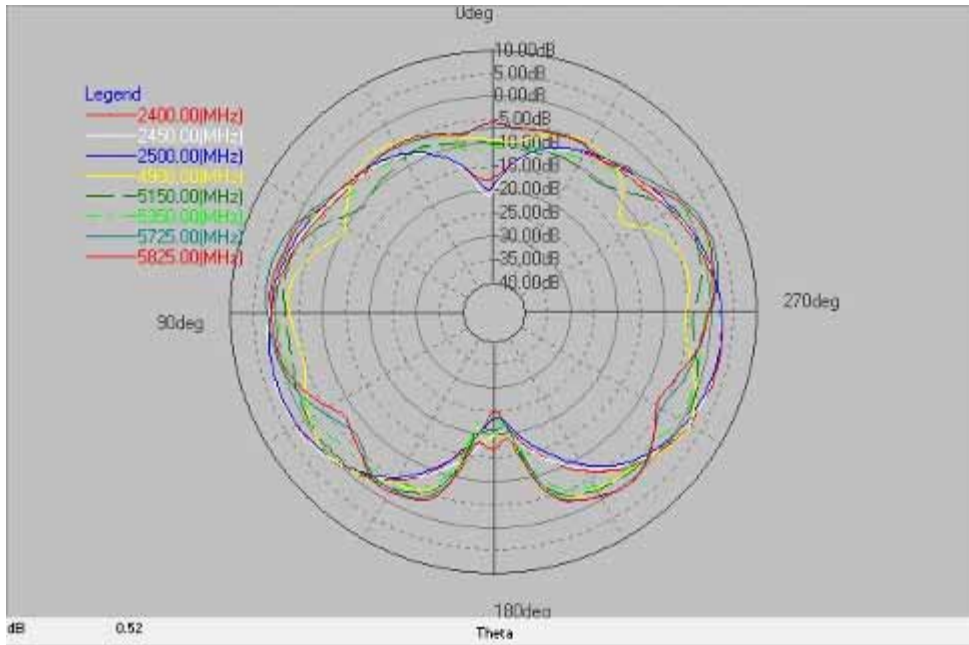
	XY	YZ	XZ
0°	Right	Up	Up
90°	Back	Back	Right
180°	Left	Down	Down
270°	Front	Front	Left



	$\theta$	$\phi$
Total angle	175°	360°
How many angle scan one point	5°	5°
Total scan point	36	73

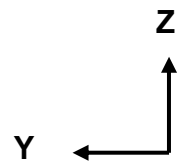
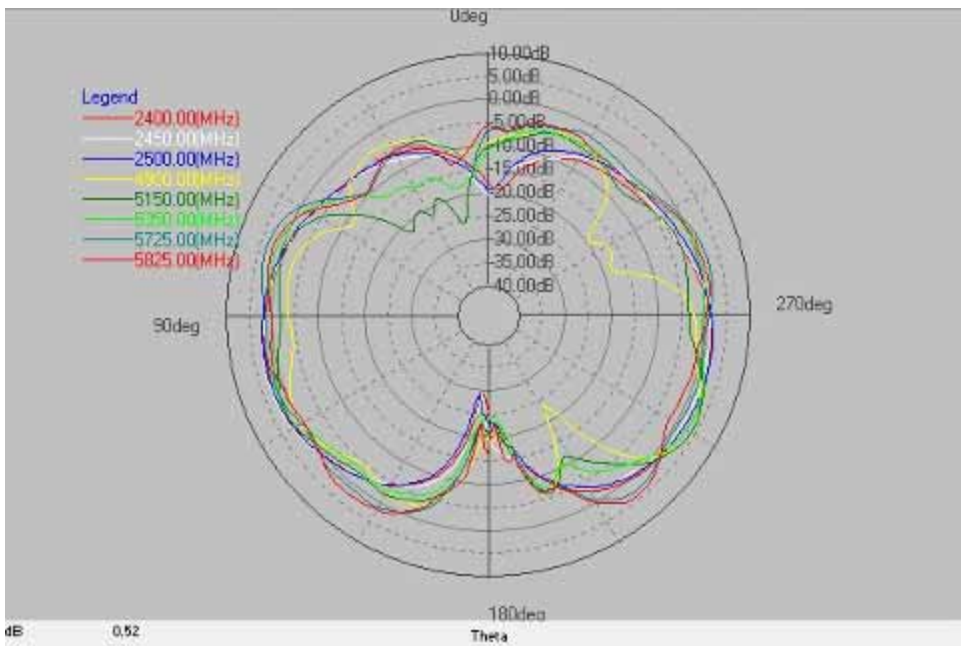
3.2 ANT 1.

2400 MHz~2500 MHz/4900 MHz~5825 MHz



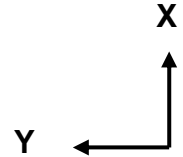
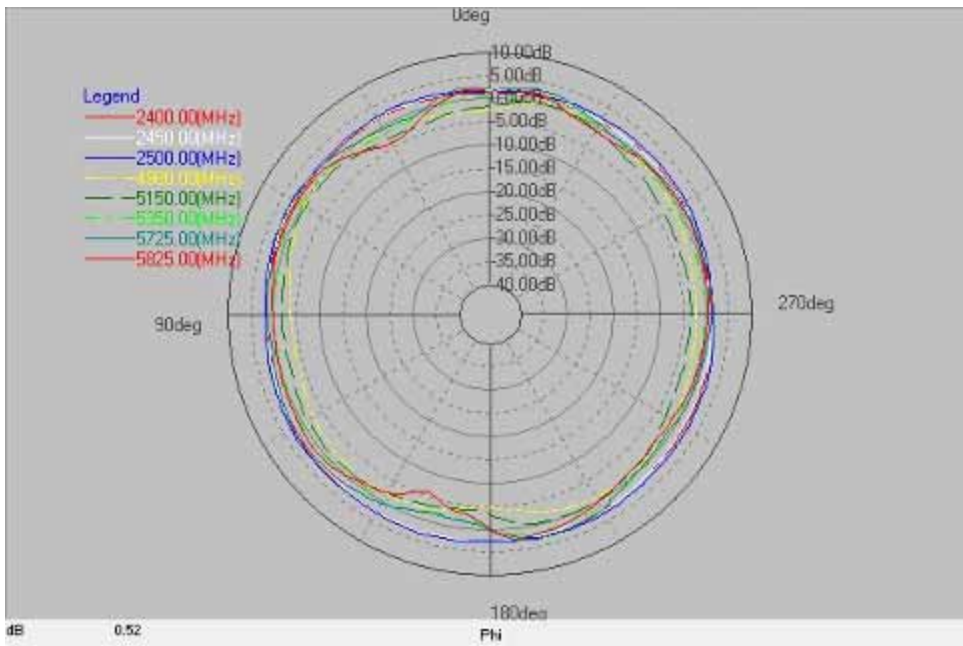
X-Z Plane (E-total)

2400 MHz~2500 MHz/4900 MHz~5825 MHz



Y-Z Plane (E-total)

2400 MHz~2500 MHz/4900 MHz~5825 MHz



X-Y Plane (E-total)

#### 4 Return Loss

Frequency	Ant 1. (dB)
2400MHz	-24.61
2450MHz	-27.63
2500MHz	-20.97
4900MHz	-22.81
5150MHz	-21.00
5350MHz	-21.12
5725MHz	-20.44
5825MHz	-15.75

#### 5 3D total Peak Gain & Efficiency

Frequency	Ant 1.	
	Peak Gain (dBi)	Efficiency (%)
2400MHz	3.59	86.35
2450MHz	3.20	86.64
2500MHz	3.29	85.27
4900MHz	3.94	72.57
5150MHz	4.57	72.46
5350MHz	3.60	73.99
5725MHz	4.19	76.23
5825MHz	4.05	76.58