



上海增信电子有限公司

ShangHai Signal Plus Technology Co.,Ltd.

规格承认书

SPECIFICATION FOR APPROVAL

日期
DATE: _____

版本
REV.: _____

客 户
CUSTOMER: _____

客 户 料 号
CUSTOMER P/N: _____

品 名
PART NAME: External antenna Black 2.4G 2.5dBi RP SMA-Male

供 方 料 号
SUPPLIER P/N: WZW02SMAJ002-3

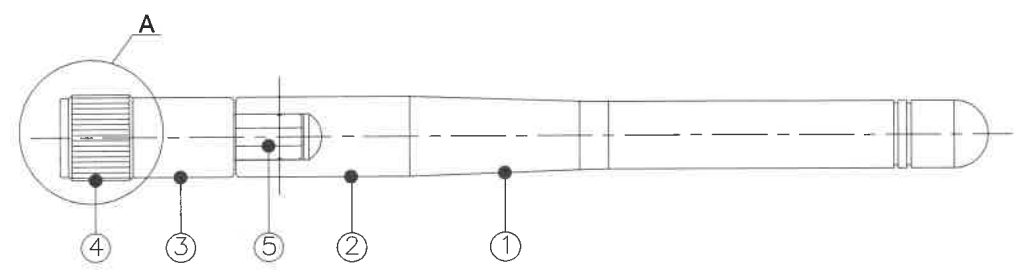
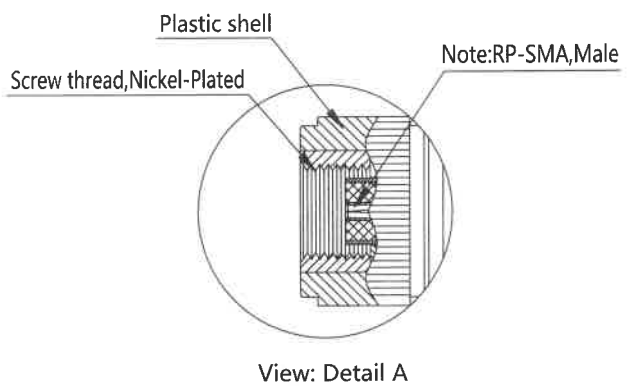
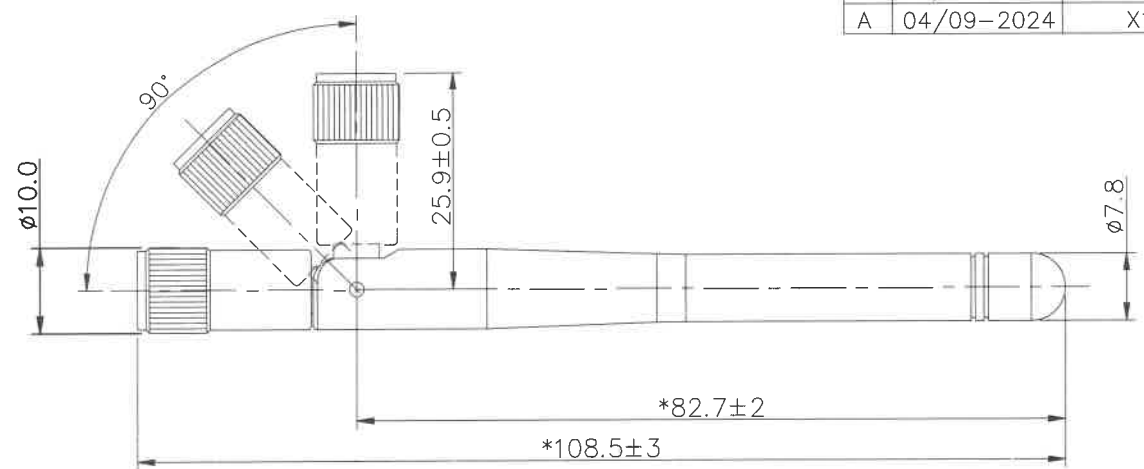
送样日期Date:	送样数量Q'TY:	Pcs
客户确认CUSTOMER APPROVED BY		
核准 Approved by	审核 Checked by	拟制 Prepared by

供方确认SUPPLIER SIGNATURE		
核准 Approved by	审核 Checked by	拟制 Prepared by
Jack		andy

ZX-QT-RD-0011-A1

Add:上海市徐汇区桂箐路69号30栋603室 Tel:021-54266190 Fax:021-54266191

REV	DATE	DESCRIPTION
X1	04/02-2024	New Issue
A	04/09-2024	X1-A



1.ELECTRICAL PROPERTIES:

- 1.1 Frequency Range.....2.4-2.5GHz
- 1.2 Impedance.....50 Ohm Nominal
- 1.3 Gain.....2.5dBi
- 1.4 VSWR.....2.0(Max)

2.These Products are in conformity with ROHS 2.0
3.With""Is Important Dimension, and () for reference

5	Cable	RG-178 Cable,Brown; 50Ω	1	
4	Connector	PR-SMA,Male(内螺纹孔);Color:Black	1	
3	Antenna Base	PC+PBT;Color:Black	1	
2	Antenna Base	PC;Color:Black	1	
1	Antenna Cover	TPEE;Color:Black	1	
NO	DESCRIPTION		Q'TY	REMARK

上海增信电子有限公司
DCC发行章
SIGNAL PLUS TECHNOLOGY CO., LTD.
杨南田

XXX. ±2.0 APPROVED
XX. ±1.0
X. ±0.5 CHECKED
.X ±0.3
.XX ±0.2 DRAWING
于云南

CUSTOMER:
PART NO:
PART NAME: RF Antenna Assembly
Z&X P/NO: WZW02SMAJ002-3
REV UNIT FILE:
A mm SHEET: 1/1

上海增信电子有限公司
Signal Plus Technology Co., Ltd.

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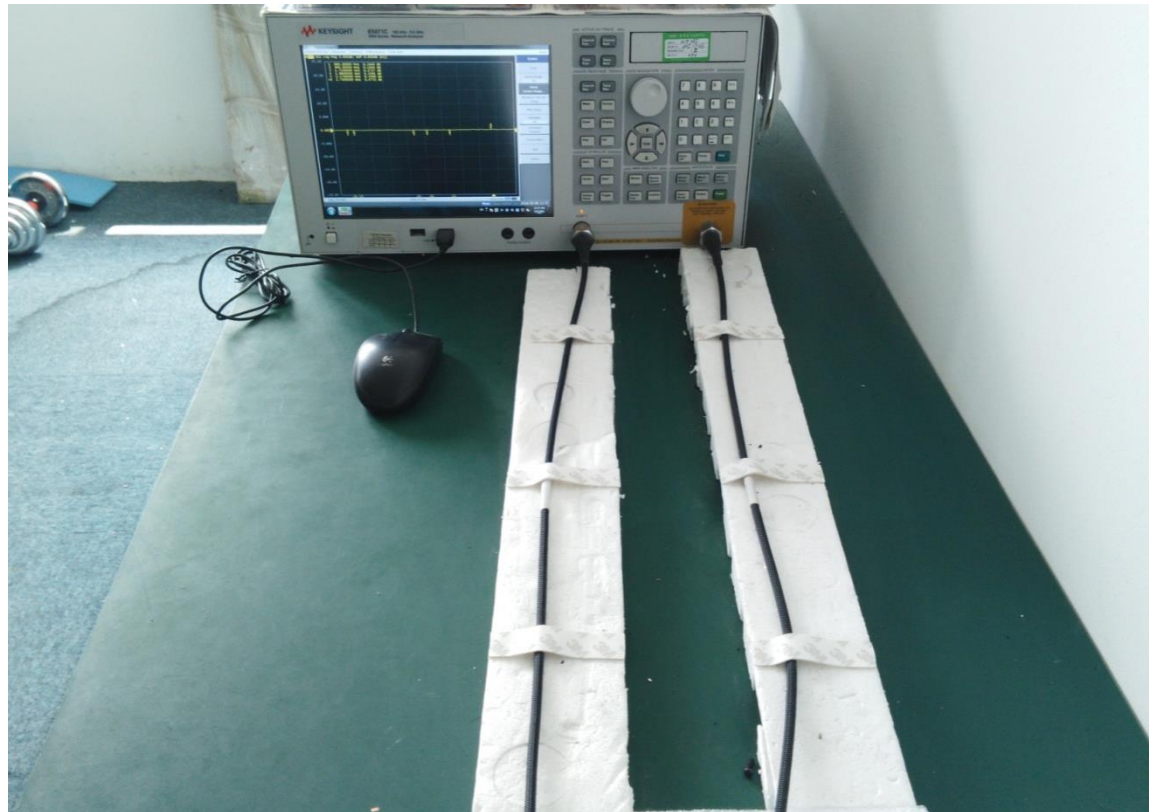
- Test setup
- Antenna Solution
- S Parameter---Return Loss, Isolation
- Efficiency and Peak Gain
- Radiation Patterns

1. Test system description---S Parameter

1.1. Test Setup

1.1.1 VNA Test Setup

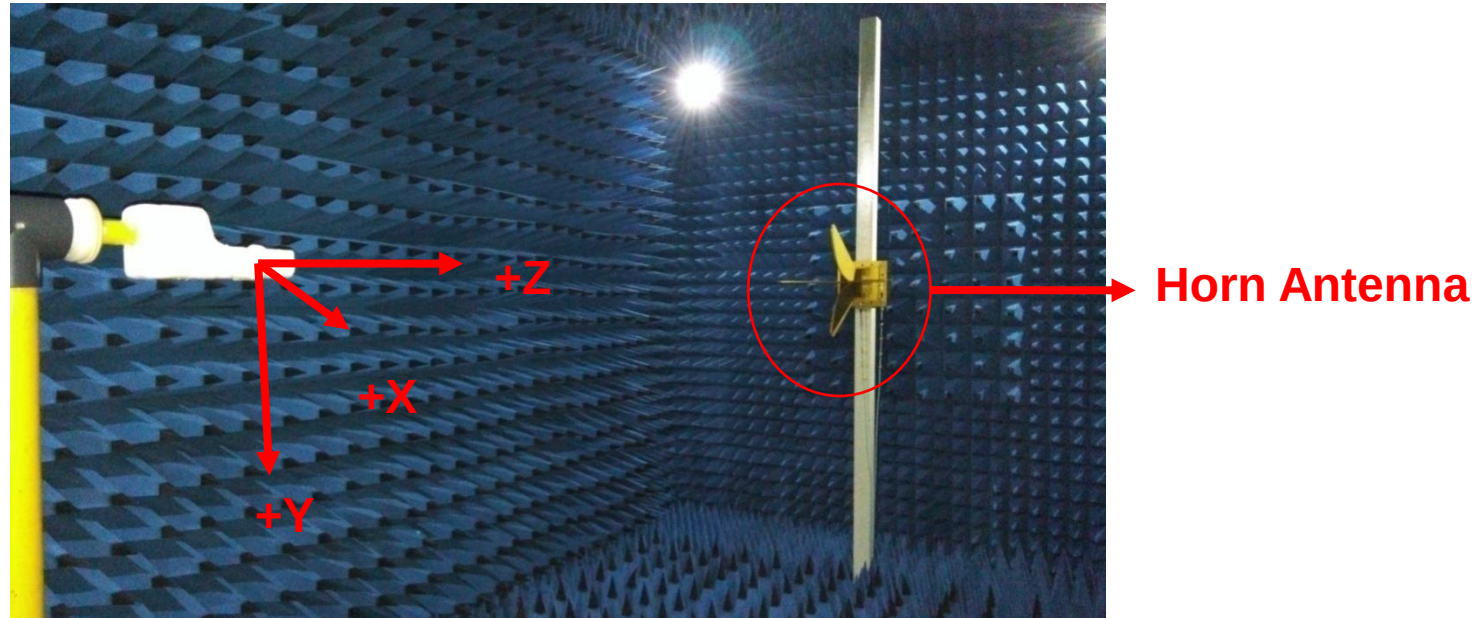
S parameter measurements (S_{11}) were performed using an Keysight E5071C Network Analyzer and previously described test fixtures. The isolation between antennas is also tested. The testing was performed with apparatus in free space.



1. Test system description--- Anechoic Chamber Test Setup

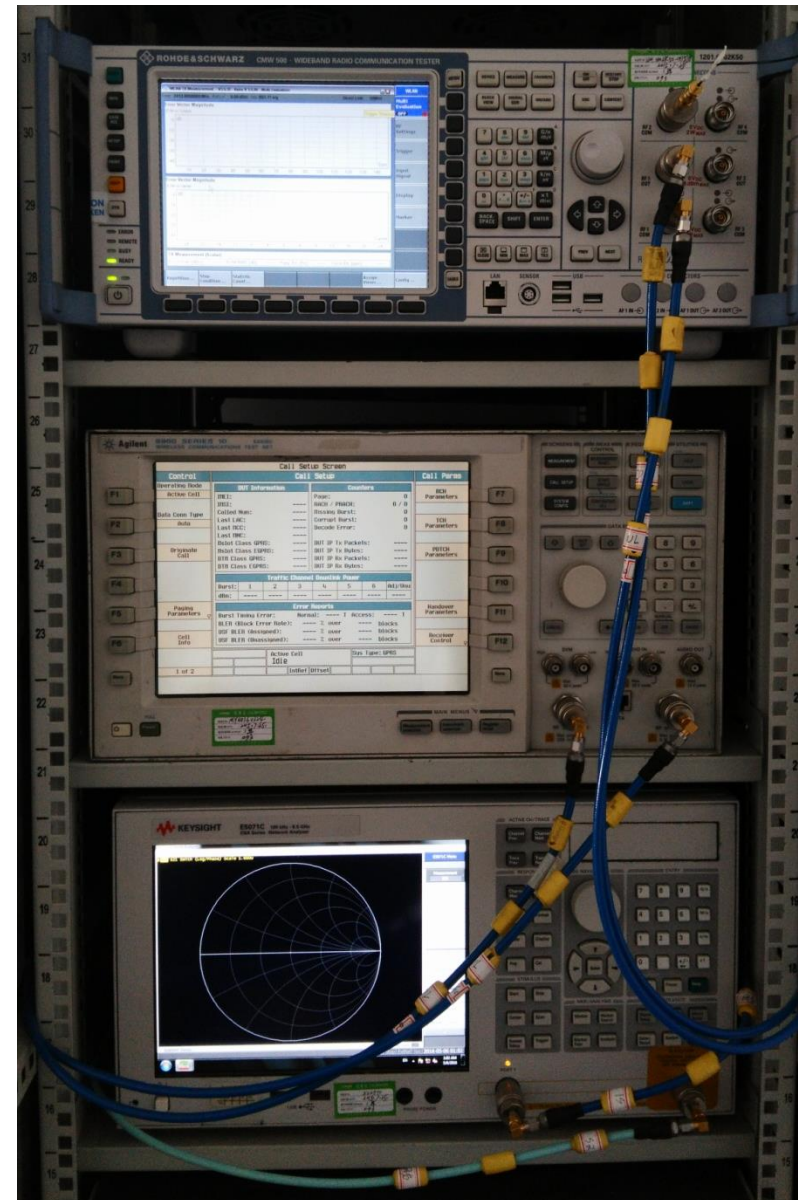
1.1.2 Anechoic Chamber Test Setup

The gain of the antenna was measured in the anechoic chamber(ETS-3D). The chamber provides less than -30 dB reflectivity from 400 MHz through 6 GHz. The chamber size is: 7m*4m*3m. The measurement results are calibrated using a leaky wave horn standard. We can measure the antenna gain and efficiency accurately.



1. Test system description--- Test Instruments

1.1.3 Instruments



R&S CMW500
4G/WIFI
(LTE/WIFI b/g/a)

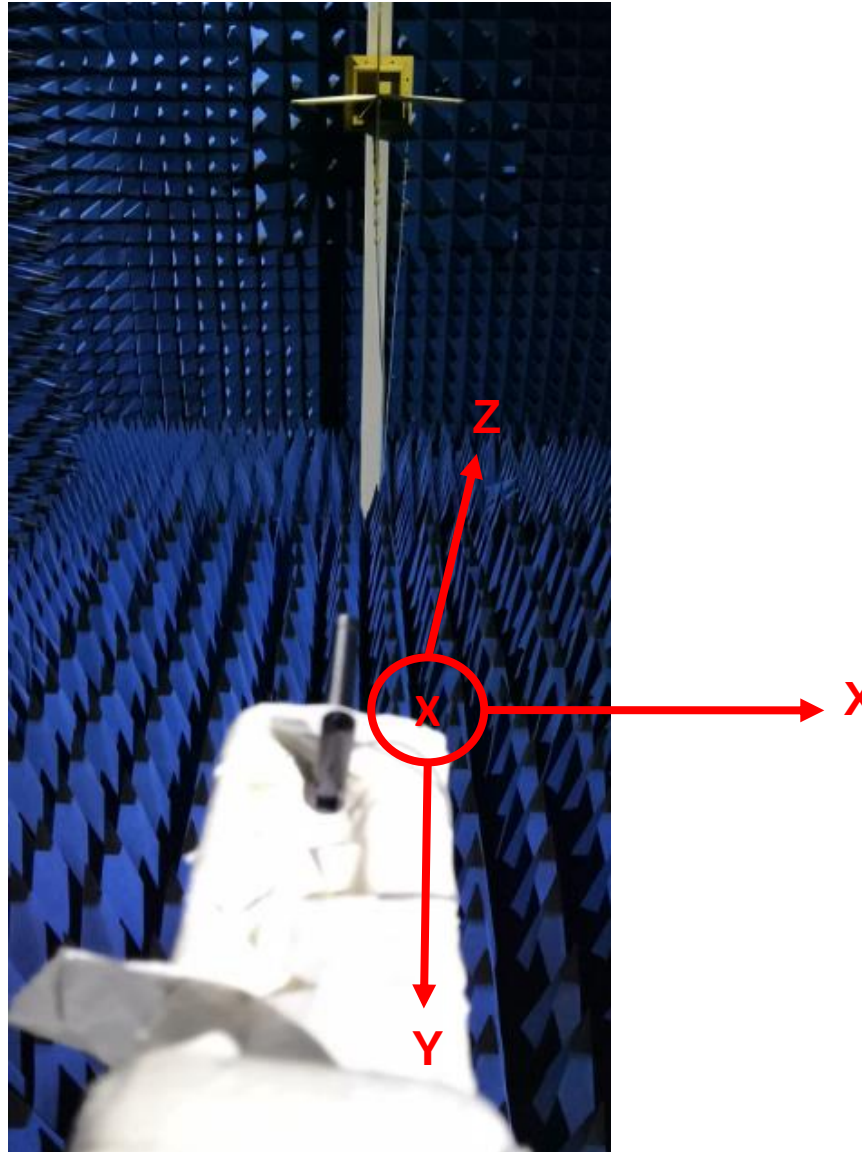
Agilent 8960
2G/3G
(GSM/CDMA/WCDMA)

KeySight E5071C
(400MHz~6GHz)

Signal **Plus**
Antennas

2. Antenna Solution

2.1 Antenna Location Pictures



2. Antenna Solution

2.1 Antenna Location Pictures



3.Test Result---Efficiency、 Gain

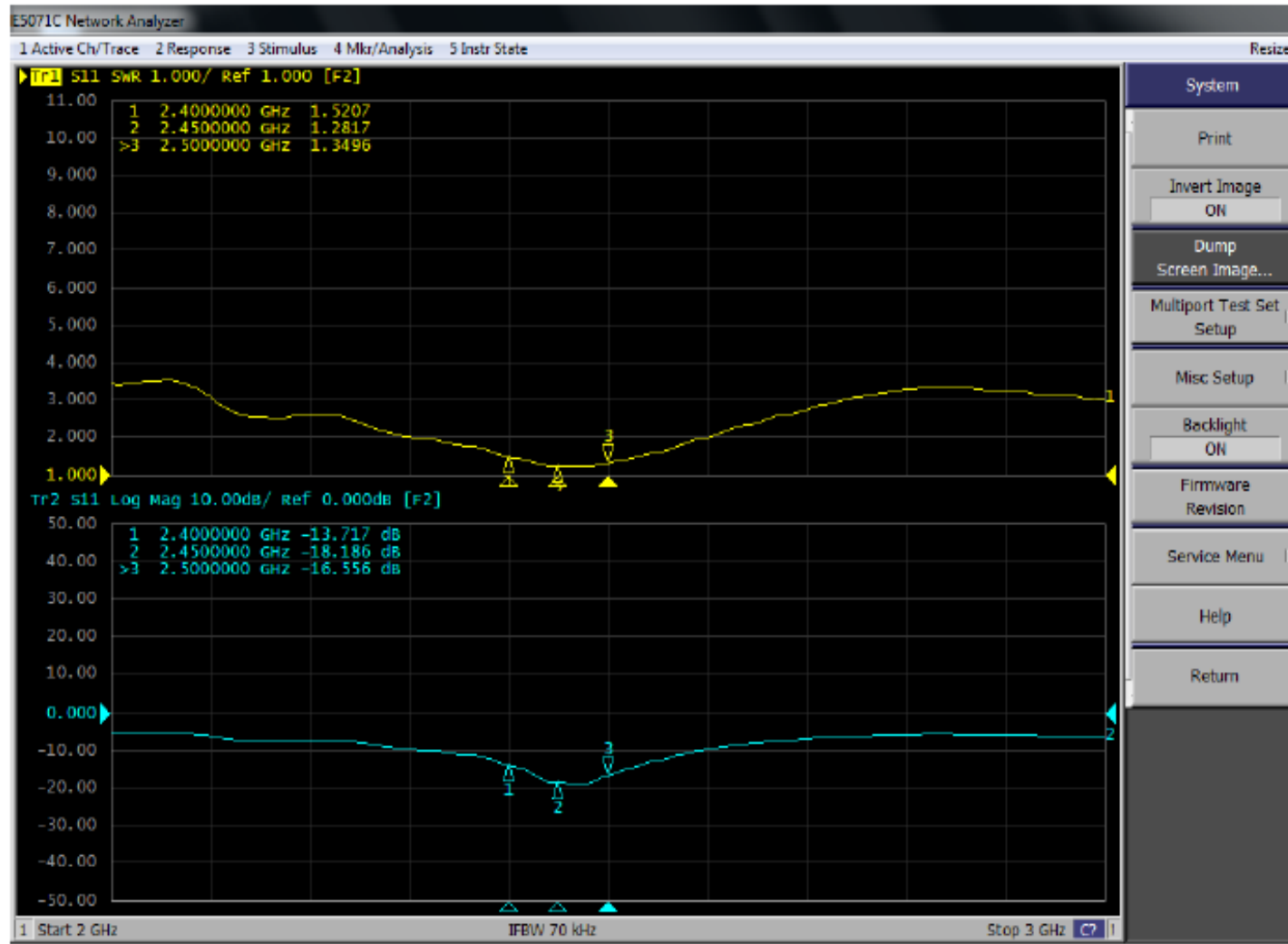
Data:

2.4G-Ant 1

Freq.(MHz)	2400	2450	2500
VSWR	1.52	1.28	1.35
Gain(dBi)	2.34	2.74	2.23
Eff.(%)	72.30	86.10	75.50

3.Test Result--Return Loss

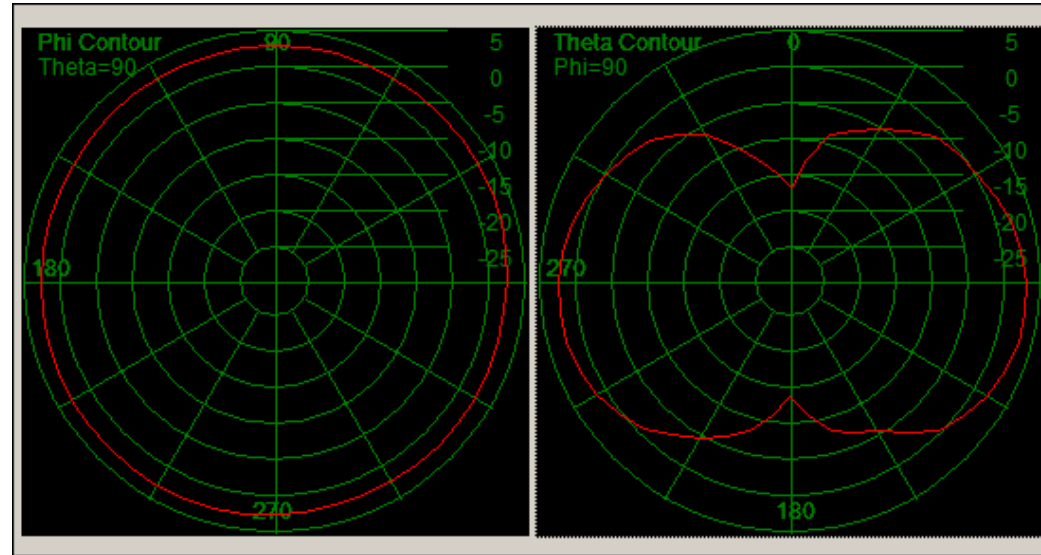
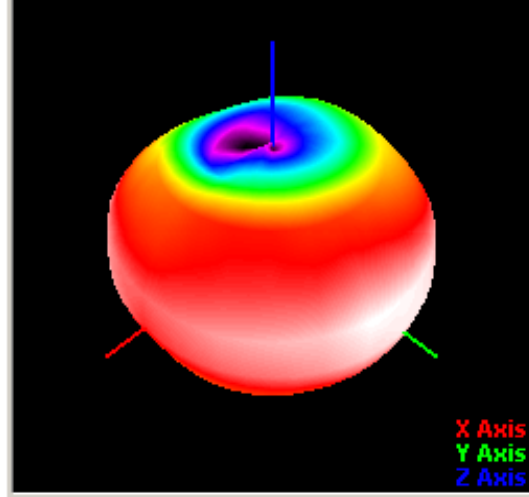
S11 (2.4G-ANT1) :



3.Test Result--Radiation Patterns

Data:

2450.00MHz@T45P45



2.4G-Ant 1