

2.4 GHz – 2.5 GHz Dipole 2dBi Antenna for Reverse Polarity SMA



ORDERING INFORMATION

Order Number	Description
001-0001	2.4 GHz Dipole Antenna for Reverse Polarity SMA Connector.
080-0001	U.FL to Reverse Polarity SMA Cable, 105mm

Table 1 Orderable Part Numbers

SPECIFICATIONS

Specification	Value
Peak Gain	+2 dBi
Impedance	50 ohms, Nominal
Type	Dipole
Polarization	Linear Vertical
VSWR	≤2.5 : 1, Maximum
Frequency	2400-2500MHz
Weight	13g
Size	105×10 mm
Antenna Color	Black
Operating Temp	-20°C to +65°C
UL Rating	UL 94HB

Table 2 Specifications

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PHYSICAL DIMENSIONS (MM)

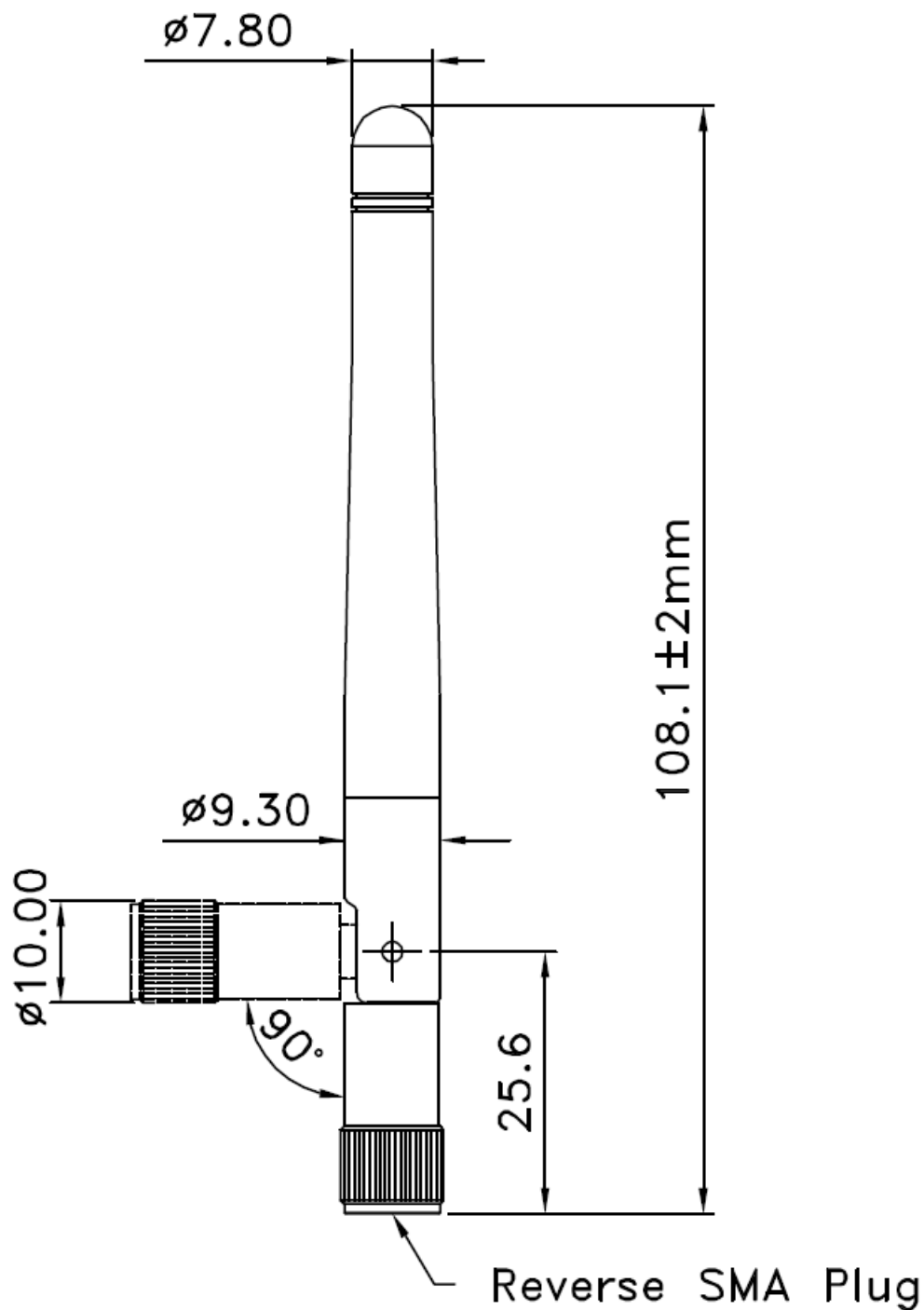


Figure 1 Physical Dimensions

TYPICAL ANTENNA REFLECTION PERFORMANCE

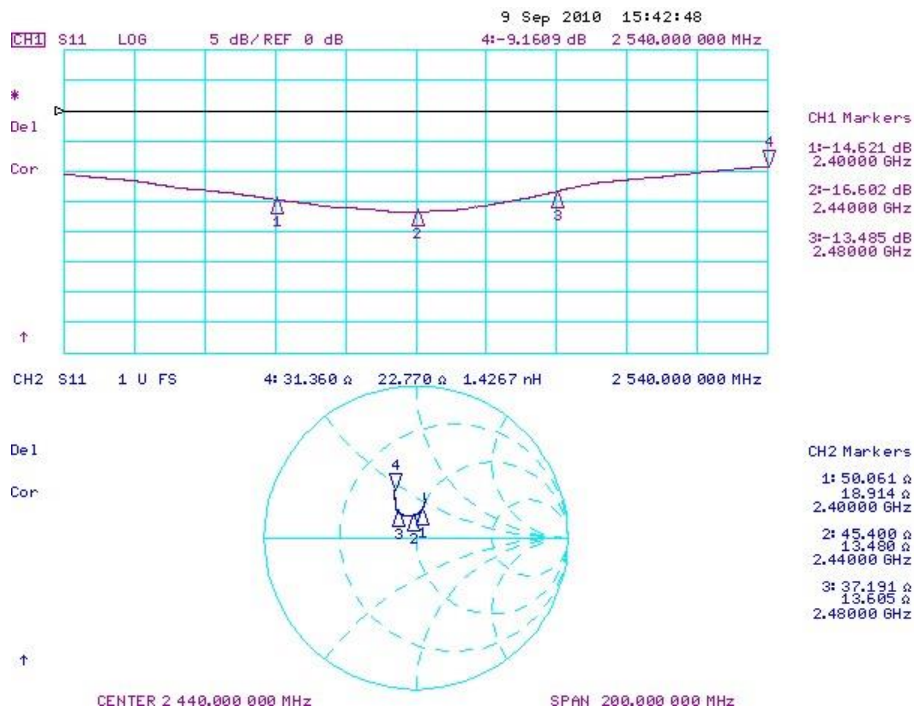


Figure 2 Reflection Parameters for Extended Configuration (S11)

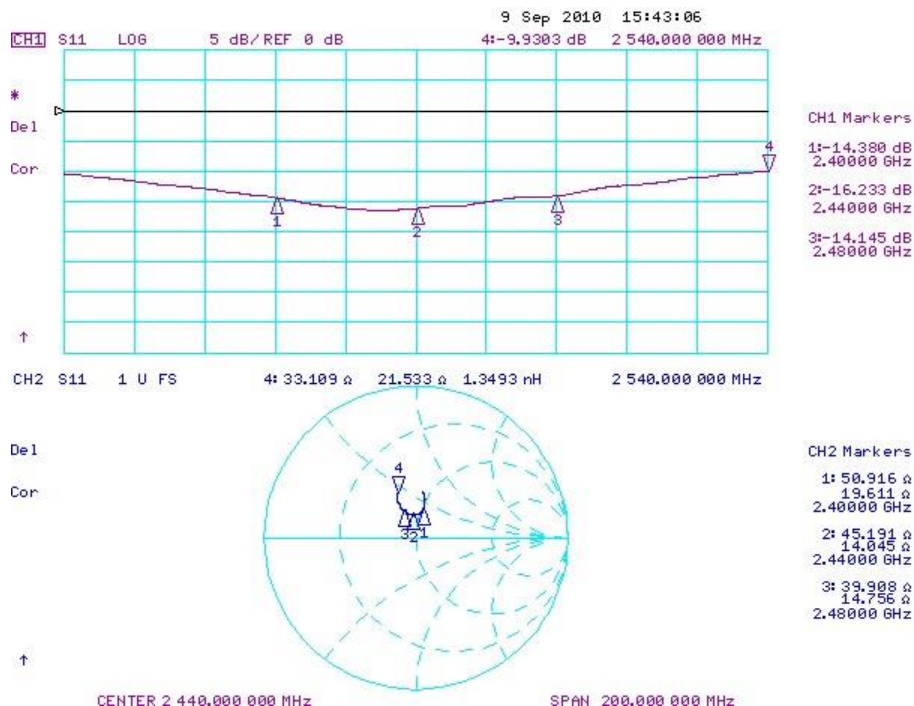
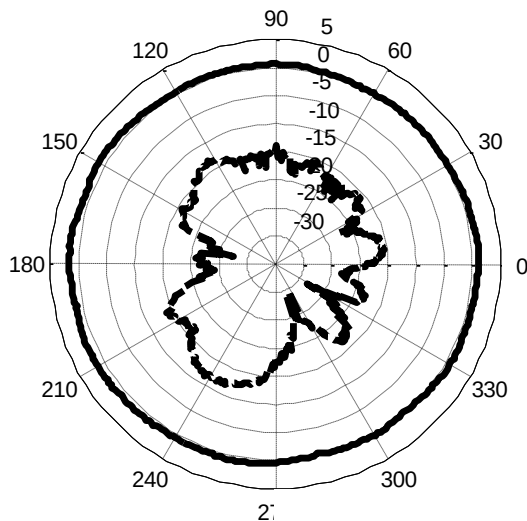


Figure 3 Reflection Parameters for Folded Configuration (S11)

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TYPICAL ANTENNA RADIATION PERFORMANCE

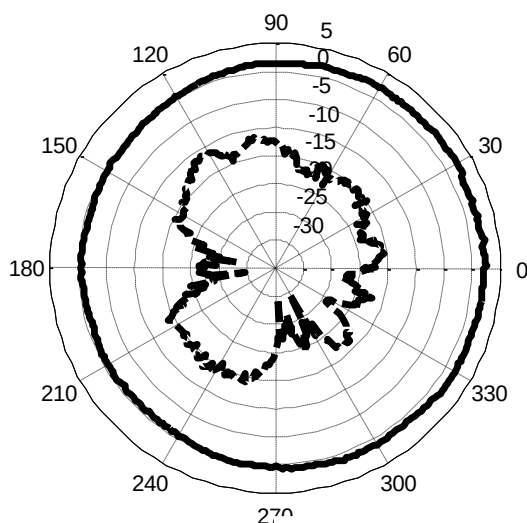
LSR ANTENNA STRAIGHT 2405 MHz



____ Vertical Polarization Gain (dBi)

----- Horizontal Polarization Gain (dBi) min: -29.7 max: -11.2 avg: -17.7

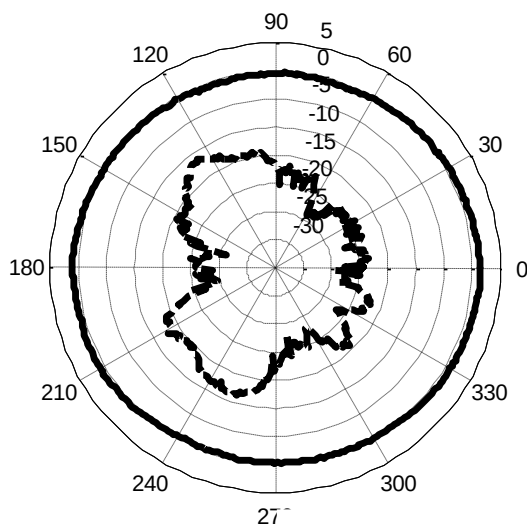
LSR ANTENNA STRAIGHT 2440 MHz



____ Vertical Polarization Gain (dBi)

----- Horizontal Polarization Gain (dBi) min: -29.8 max: -11.2 avg: -17.3

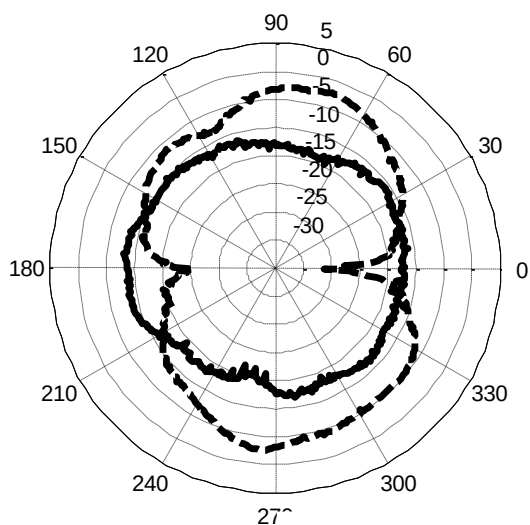
LSR ANTENNA STRAIGHT 2480 MHz



____ Vertical Polarization Gain (dBi)

----- Horizontal Polarization Gain (dBi) min: -26.0 max: -11.1 avg: -17.7

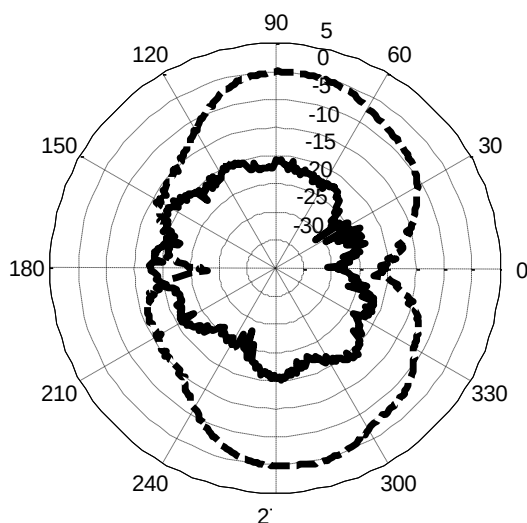
LSR ANTENNA BENT 2405 MHz



____ Vertical Polarization Gain (dBi)

----- Horizontal Polarization Gain (dBi) min: -26.2 max: -2.1 avg: -8.6

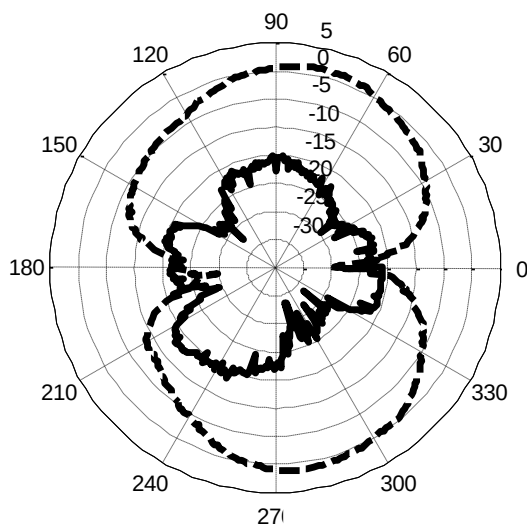
LSR ANTENNA BENT 2440 MHz



____ Vertical Polarization Gain (dBi)

----- Horizontal Polarization Gain (dBi) min: -22.8 max: +0.6 avg: -7.1

LSR ANTENNA BENT 2480 MHz



____ Vertical Polarization Gain (dBi)

----- Horizontal Polarization Gain (dBi) min: -24.7 max: +1.4 avg: -5.7

CONTACTING LS RESEARCH

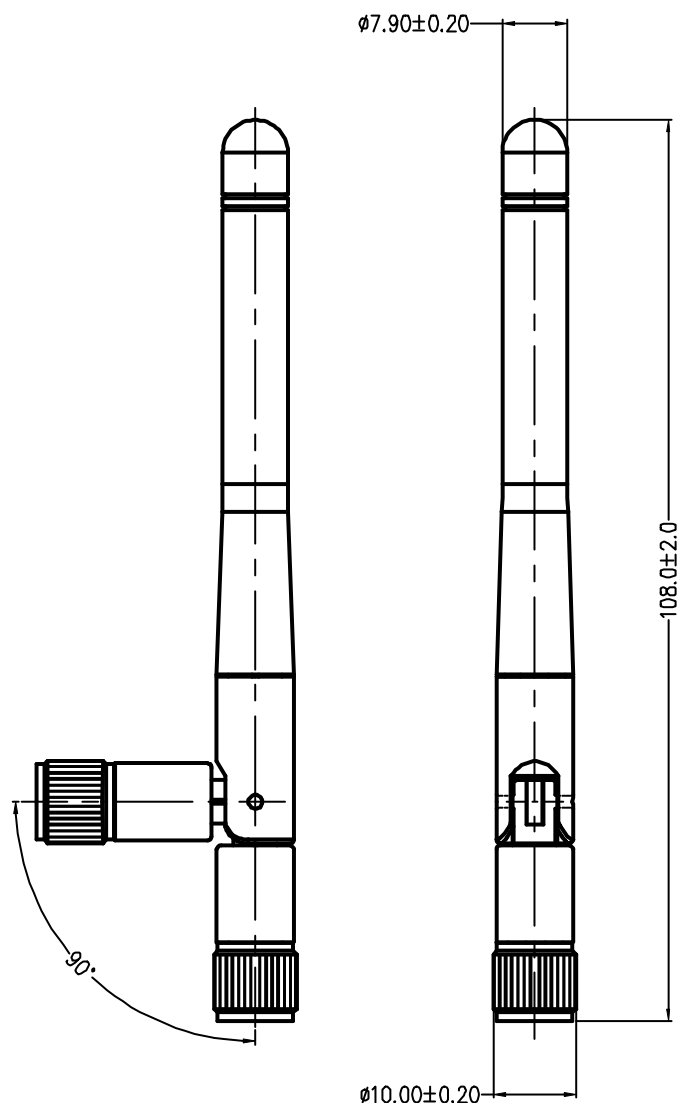
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2.4G External Outdoor Antenna

Sample Qualification Report



Document No.	C0438-ANG0012
Prepared by	Alice
Date	2019/05/16
Revision	A



Revision History

Revision	Description	Date	Approved
A	Initial Release	2019/05/16	Alice

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Item Description:

2.4G Antenna Frequency: 2.4-2.5GHz

Electrical Specification

Frequency (GHz)	2.4-2.5
VSWR (max.)	2.0
Peak Gain (dBi) Max.	2.0
3dB beamwidth (h) (°)	360°
Max Input Power (W)	10

General Data

Nominal impedance Ω	50
Polarization(Linear)	Vertical
DC grounded antenna	No
Connector	RP-SMA

Mechanical Data

Dimensions (mm)	108.0* Φ 10 mm
(Length xDiameter)	
Weight (g)	9 $\pm$ 3

Environmental Data

Environmental conditions	Outdoor
Operation temperature (°C)	-20 to 75
Storage temperature (°C)	-20 to 80
Transport temperature (°C)	-20 to 80
RoHS 2011/65/EU	Compliant
Relative humidity	Up to 95%
Low temperature	ETSI EN 300 019-2-4 T4.1E -40°C
High temperature	ETSI EN 300 019-2-4 T4.1E +60°C
Temperature cycling	ETSI EN 300 019-2-4 T4.1E
Salt-fog test	48 hours (only for the external material)
UV-function	N/A
IP rating	IP54 (matching with RF cable)

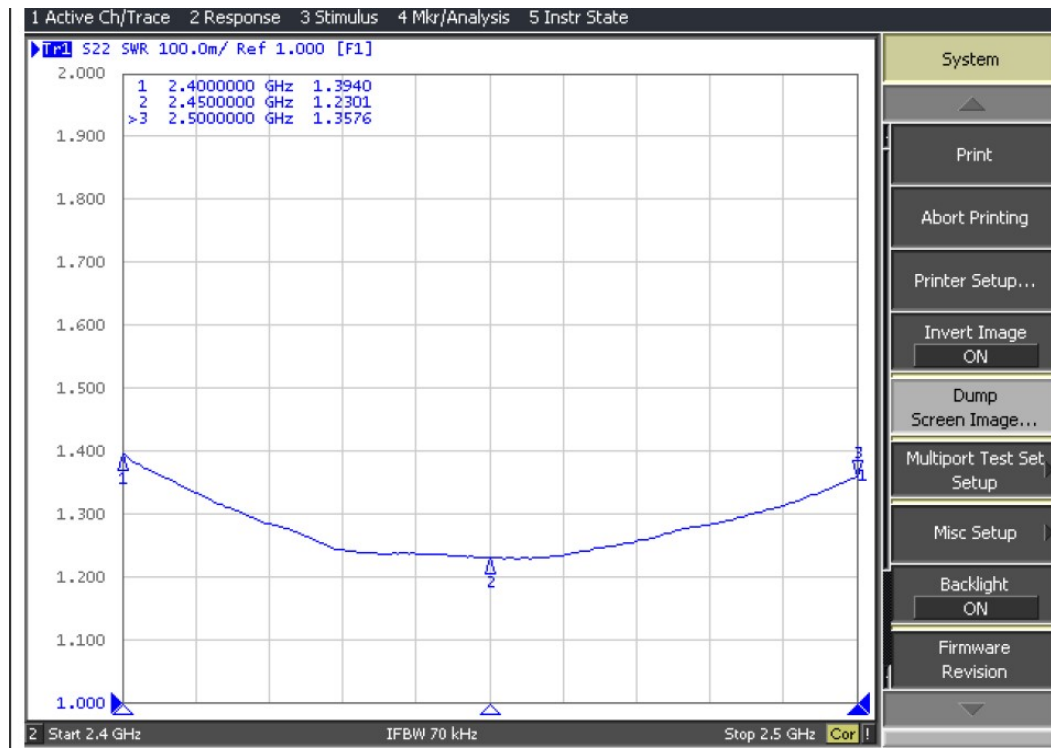
Material Data

Radome colour	Black
Radome material	Plastic



VSWR test report:

2.4-2.5GHz VSWR<2.0

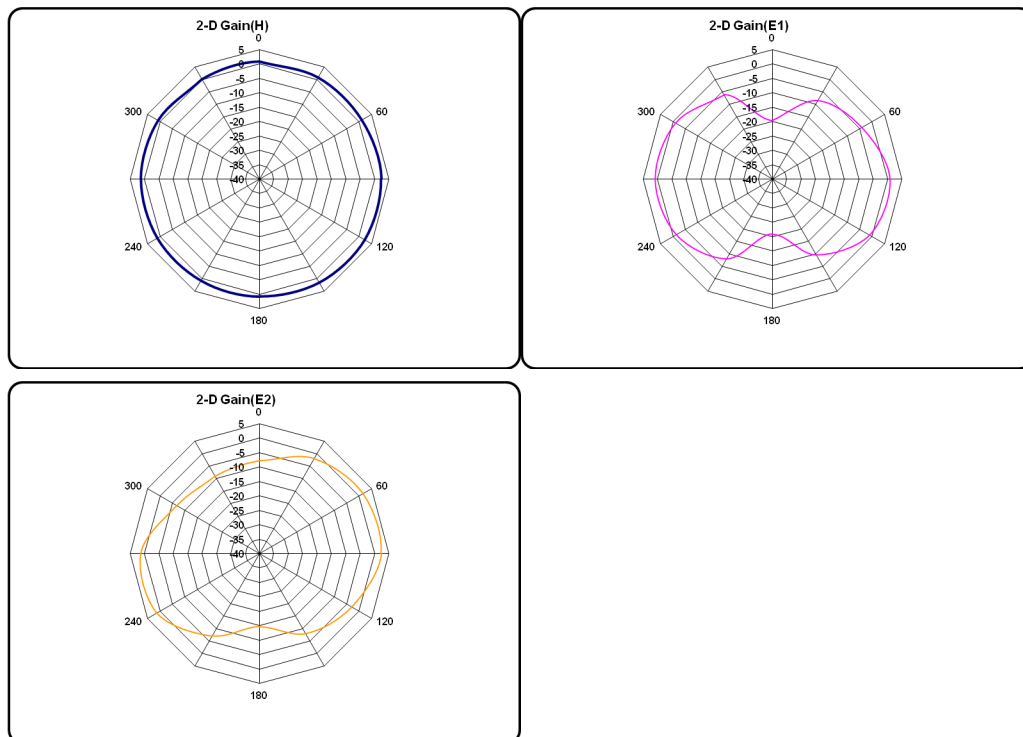


Linear:0 / 90-deg Cut

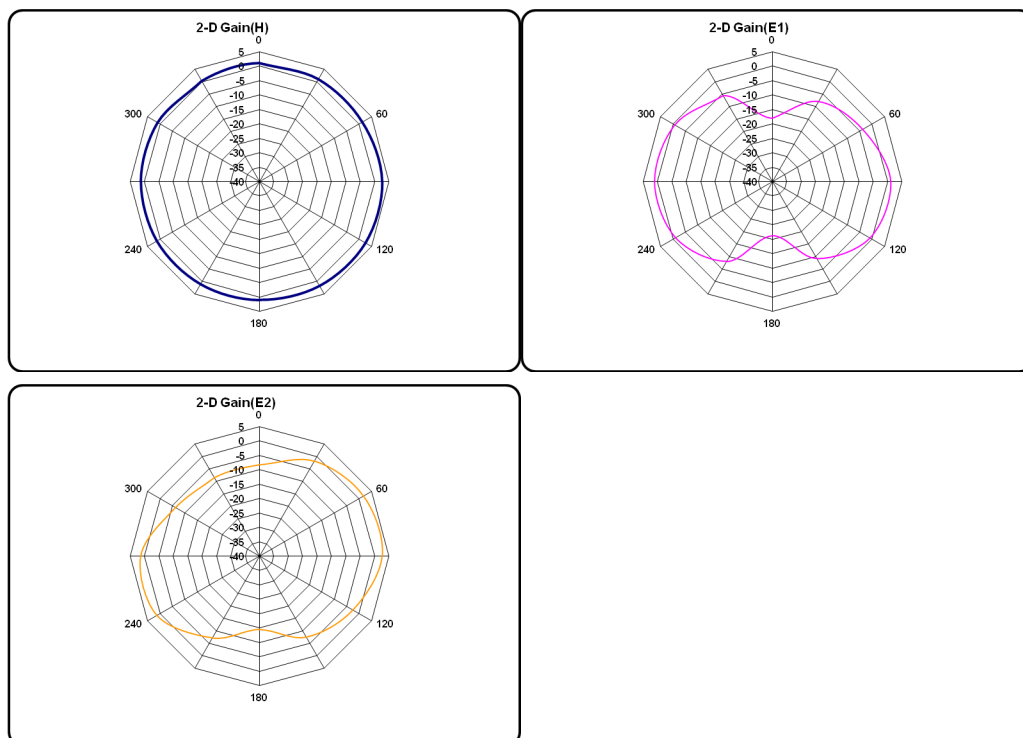


2D patterns

2400MHz

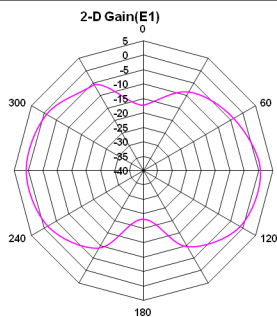
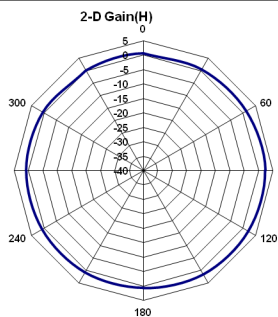


2450MHz





2500MHz

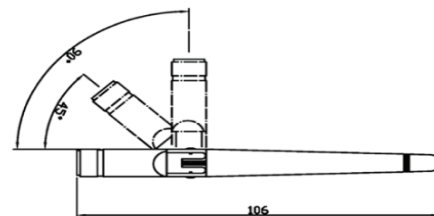




LM251 RP SMA Antenna 2dBi

Dipole for SMA Male Reverse Polarity

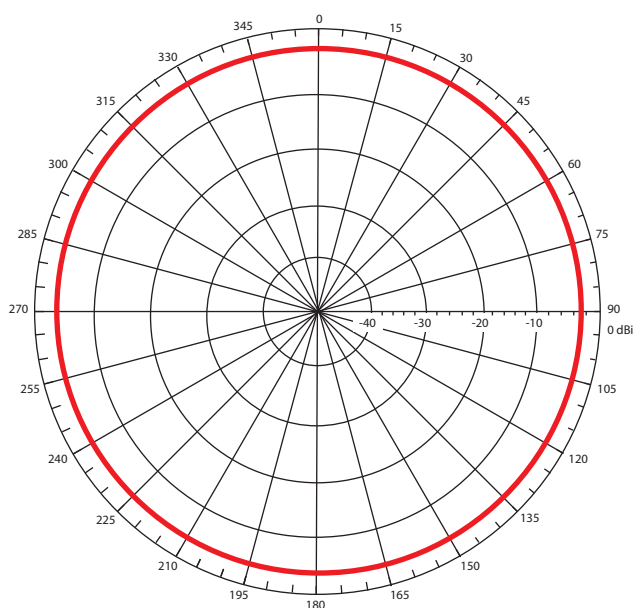
Product LM251
Part No LM251
Revised 8/NOV/2017



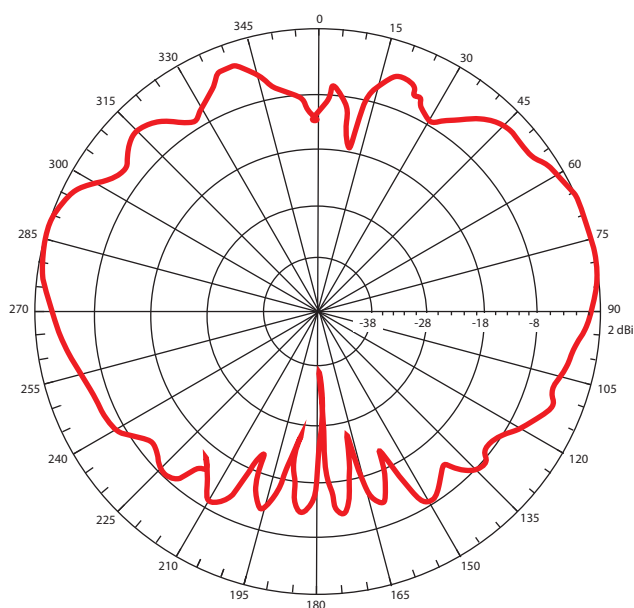
Features

- Type: Dipole
- Frequency: 2400~2500MHz
- Gain: 2dBi
- Polarization: Linear Vertical
- SWR: $\leq 1.5:1$
- Impedance: 50Ω
- Base Connector: SMA Male Reverse Polarity
- Weight: 9.25g +/- 0.25g tolerance
- Size: H 105mm $\times$ W 10mm $\times$ D 10mm

H-PLANE



E-PLANE



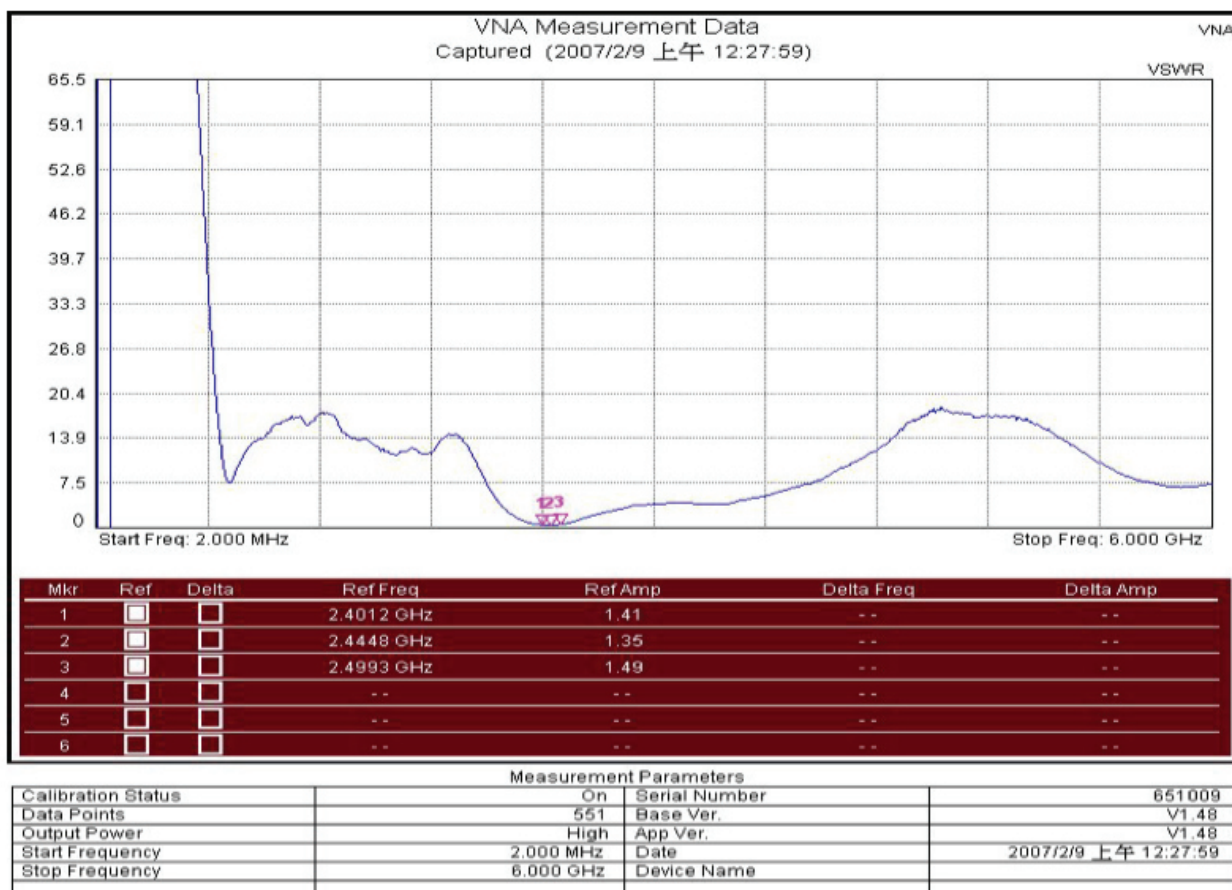
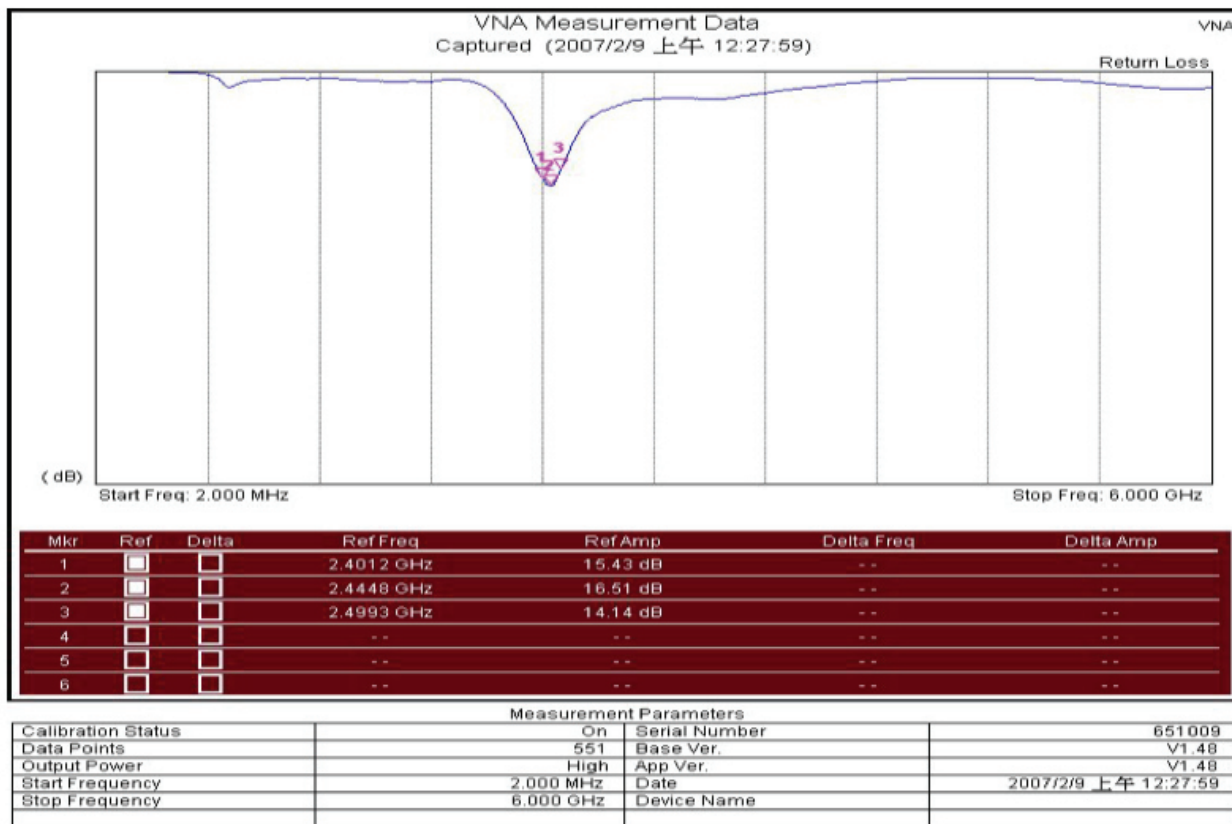


LM251 RP SMA Antenna 2dBi

Dipole for SMA Male Reverse Polarity

Product
Part No

LM251
LM251



Product Number: M04-SR
Product Name: 2.4 GHz External Antenna

2. Feature and Application

- . dipole antenna design
- . small size / high gain / omni-directional radiation pattern
- . IEEE 802.11 b / g WLAN AP (Access Point) application
- . Bluetooth / HomeRF / ISM Band and other 2.4 GHz wireless communication application

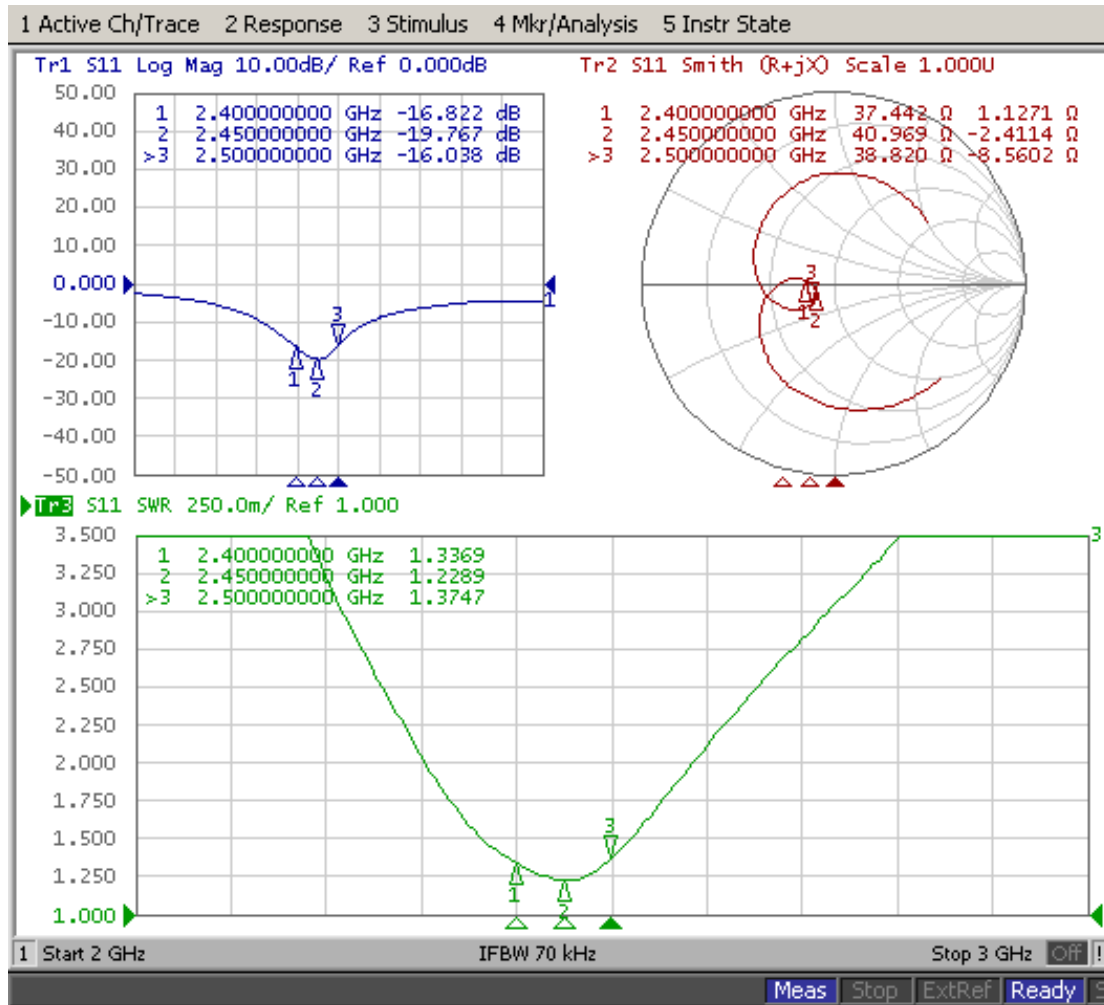
3. Technical Specification

A. Electrical Characteristics	
Working Frequency Range	2400 ~ 2500 MHz
S.W.R.	< 2.0
Antenna Gain	2.0 dBi $\pm$ 0.5dBi
Antenna Radiation Pattern	Omni-directional
Impedance	50 ohm
B. Material	
Color of Outer Cover	Black
Material of Outer Cover	TPE
Material of Hinge	PA-6
Material of Base	PA- 6
Connector Type	50 Ohm SMA Male Reverse
Tube	Copper , Sn Plated
Total Length	109 mm
C. Environmental	
Operation Temperature	- 30°C ~ + 85 °C
Storage Temperature	- 30°C ~ + 85°C

4. S11 Return Loss / S.W.R. / Impedance Testing Result

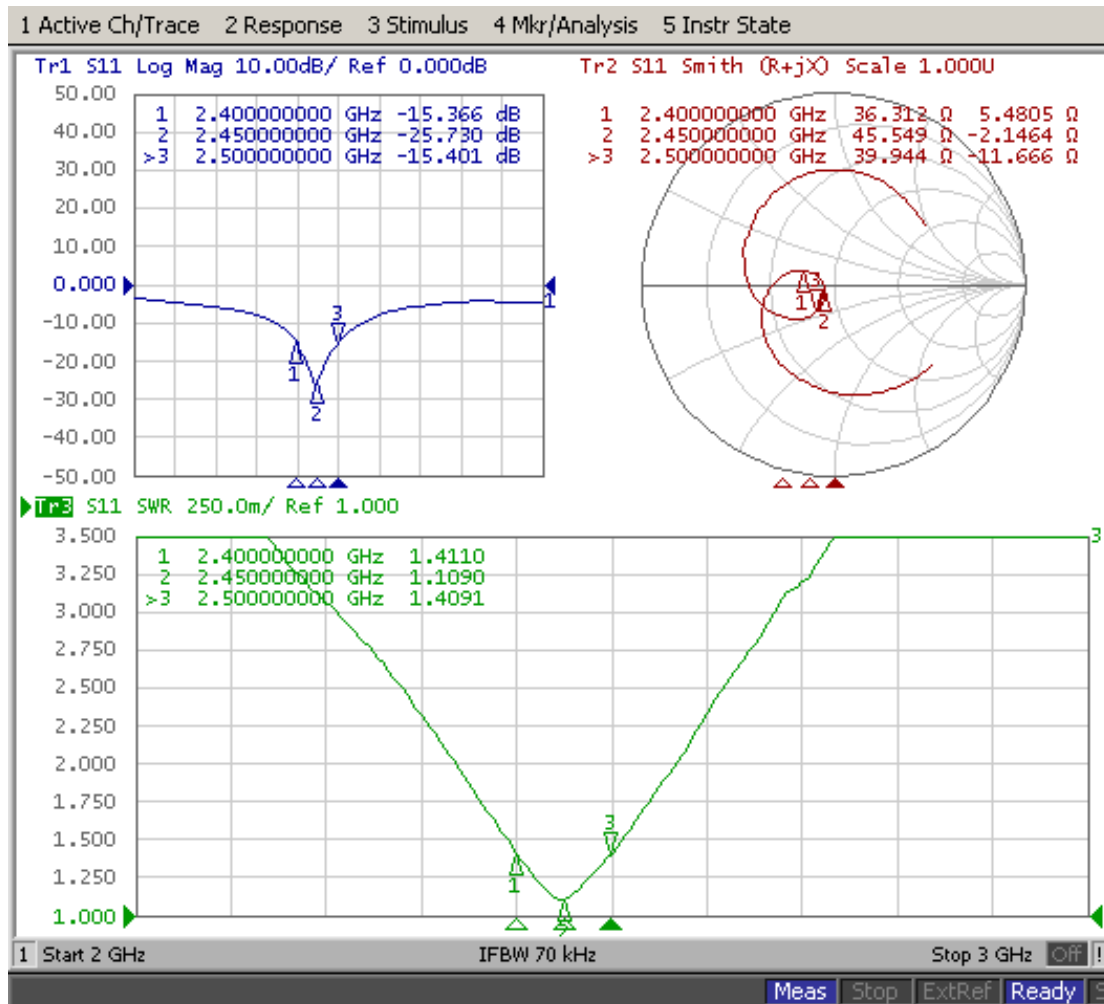
Product Number: M04-SR
Product Name: 2.4 GHz External Antenna

Antenna Hinge is 90 degree



Product Number: M04-SR
Product Name: 2.4 GHz External Antenna

Antenna Hinge is 180 degree



5. Antenna Radiation Pattern

Product Number: M04-SR
Product Name: 2.4 GHz External Antenna

Testing Equipment Specification:

Antenna Anechoic Chamber Dimension: 8 x 4 x 4 m

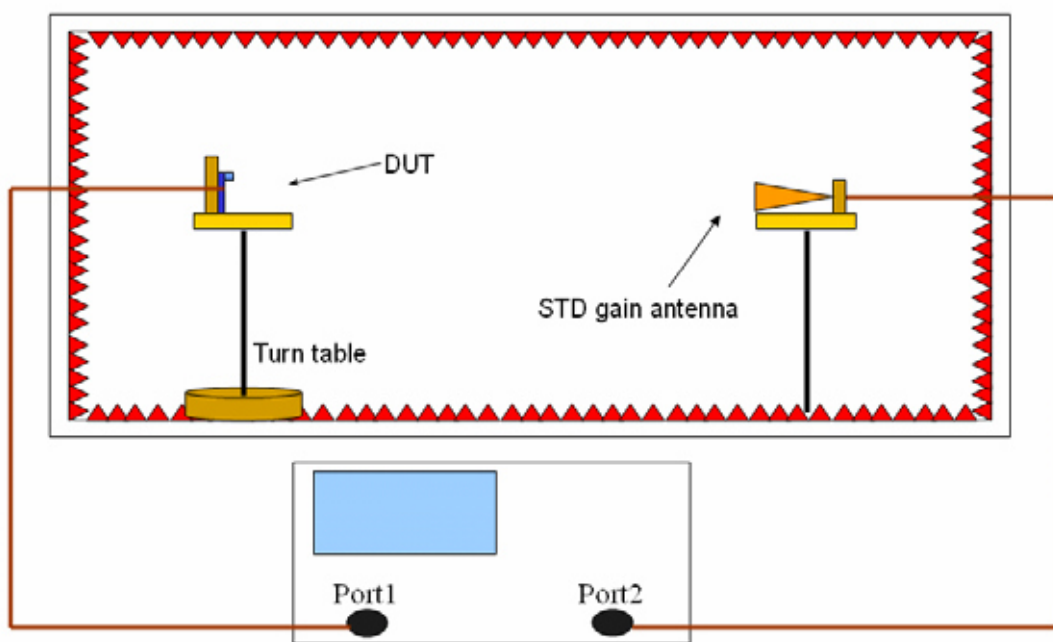
Quiet Zone: 600mm @1 GHz

Isolation: >100dB @ 1 MHz ~ 10 GHz

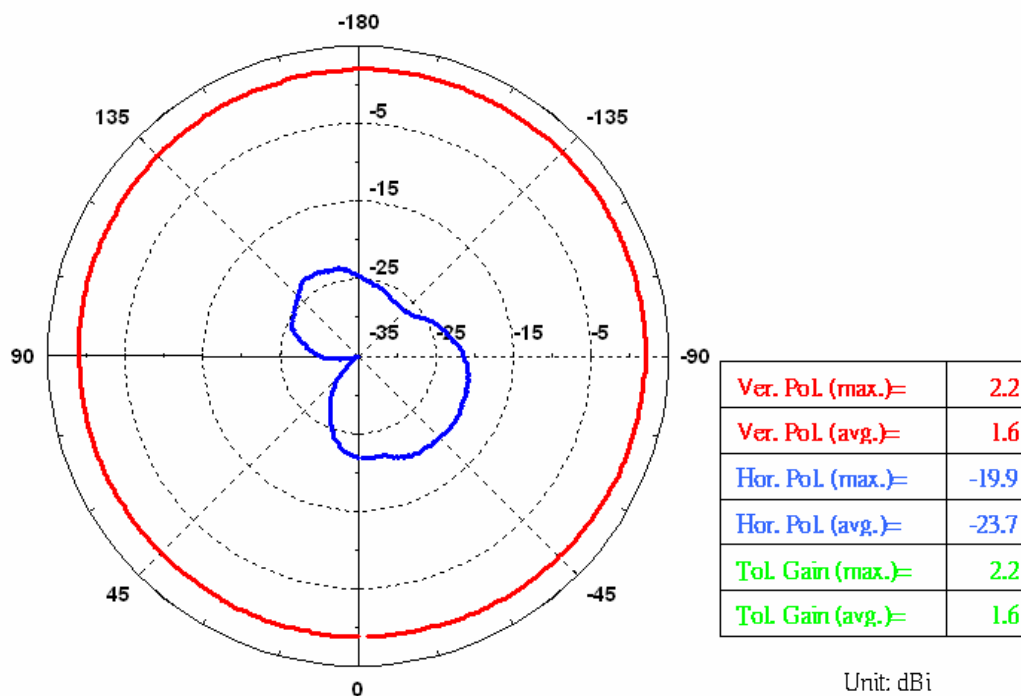
Testing Equipment: Agilent 8720D

Received Antenna: 0.7~6.0 GHz for Gain Calibration

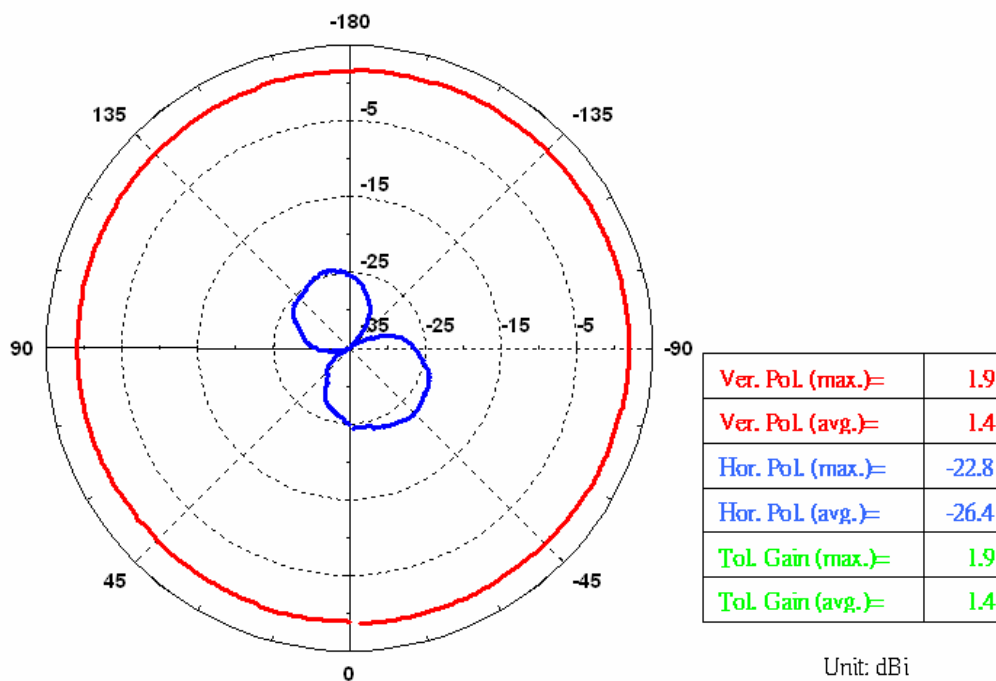
Double Ridged Horn Antenna



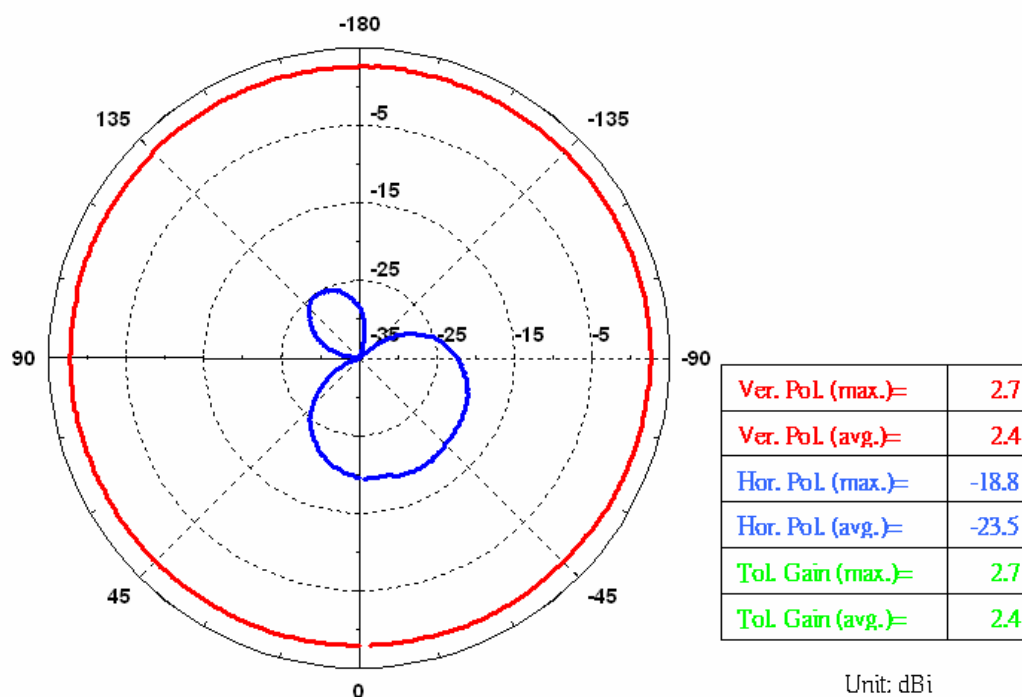
2400MHz Radiation Pattern



2450MHz Radiation Pattern

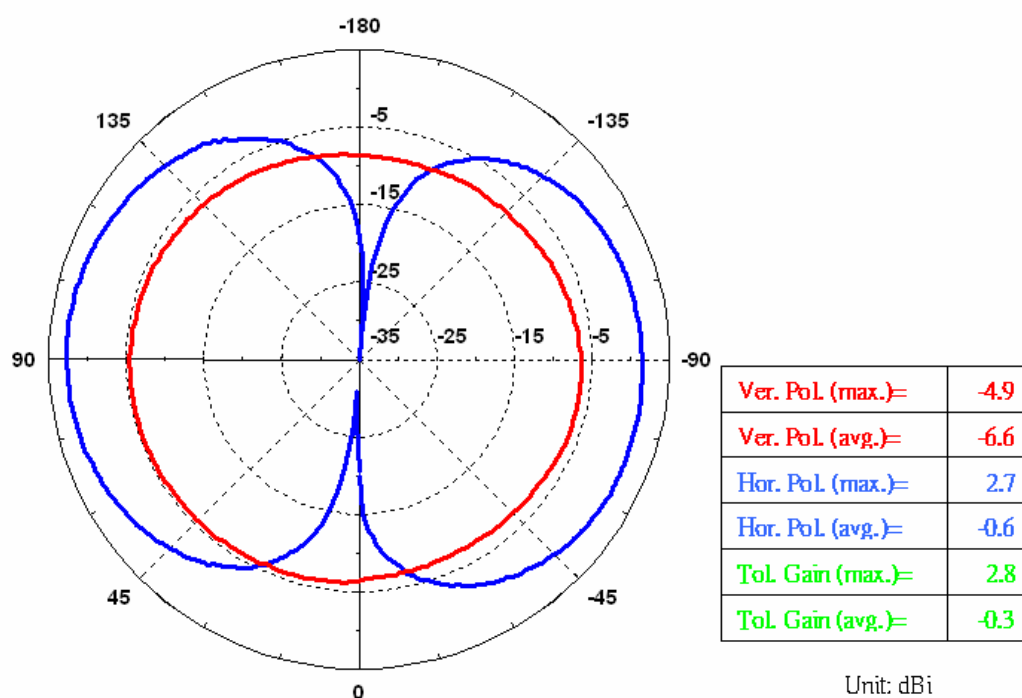


2500MHz Radiation Pattern

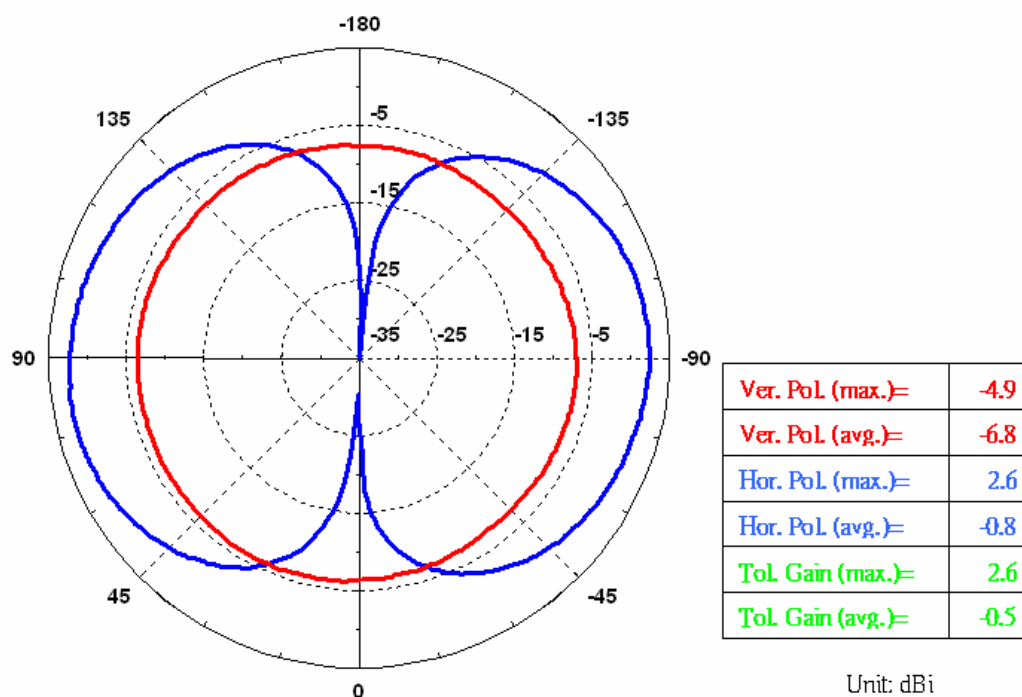


5-2. E-Plane

2400MHz Radiation Pattern



2450MHz Radiation Pattern



2500MHz Radiation Pattern

