Antenna

YXH001CA Datasheet

Antenna Services

Version: 1.2

Date: 2021-12-03

Status: Preliminary

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Quectel Wireless Solutions Co., Ltd.
Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China
Tel: +86 21 5108 6236
Email: info@quectel.com

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About the Document

Revision History

Version	Date	Author	Note
-	2020-12-01	Kenny YIN	Creation of the document
1.0	2020-12-01	Kenny YIN	First official release
1.1	2021-07-01	Kenny YIN	1. Added mounting type and IP rating in Chapter 3; 2. Added test condition in Chapter 4.5.
1.2	2021-12-03	Aria CHU	Updated the data(chapter 3)

Contents

1 Product Description

This Quectel external 5G antenna covers 5G NR Sub-6 GHz frequency bands and is compatible with 4G/3G/2G/LPWA bands. Featuring high efficiency and gain, it is an ideal omni-directional antenna solution to ensure high-speed data transmission, which can be widely used in a diversity of wireless communication devices such as AP, routers, outdoor equipment, real-time monitoring equipment, and many more. The antenna is designed to work with any ground plane size or in free space for ease of integration. Quectel also offers flexible installation with custom cable length and connector options.
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2 Product Features

- Cellular 5G
- High efficiency
- Excellent performance

3 Product Specifications

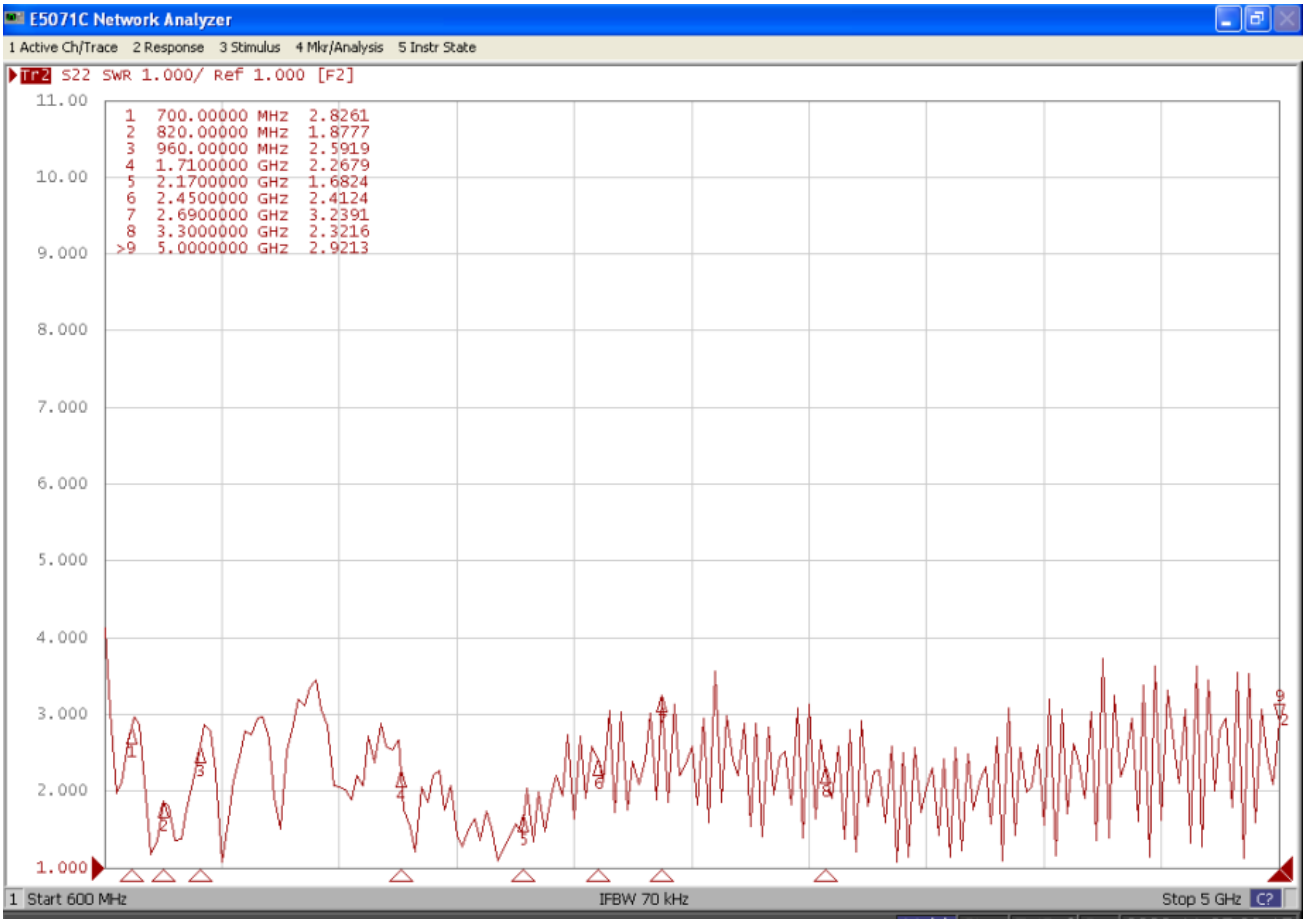
Passive Electrical Specifications	
Frequency Range	700–5000 MHz
Input Impendence	50 Ω
VSWR	< 3.5
Gain	< 4.0 dBi
Polarization Type	Linear
Mechanical Specifications	
Antenna Size	285 mm × 45 mm, RG195 Cable Length = 3000 mm
Casing	ABS
Connector Type	SMA Male (Center Pin)
Working Temperature	-20 °C to +85 °C
Radome Color	Black
IP Rating	IP65
Mounting Type	Magnet

4 Overall Performance

4.1. Test Environment

- KEYSIGHT VNA Network Analyzer E5063A 100 kHz – 6.5 GHz
- RayZone®2800 Chamber 5G (FR1) SISO/MIMO, 400 MHz – 6.0 GHz

4.2. VSWR



Frequency (MHz)	700	820	960	1710	2170	2450	2690	3300	5000
VSWR	2.82	2.87	2.59	2.26	1.681	2.417	3.23	2.32	2.92

4.3. Efficiency

4.3.1. 700–960 MHz

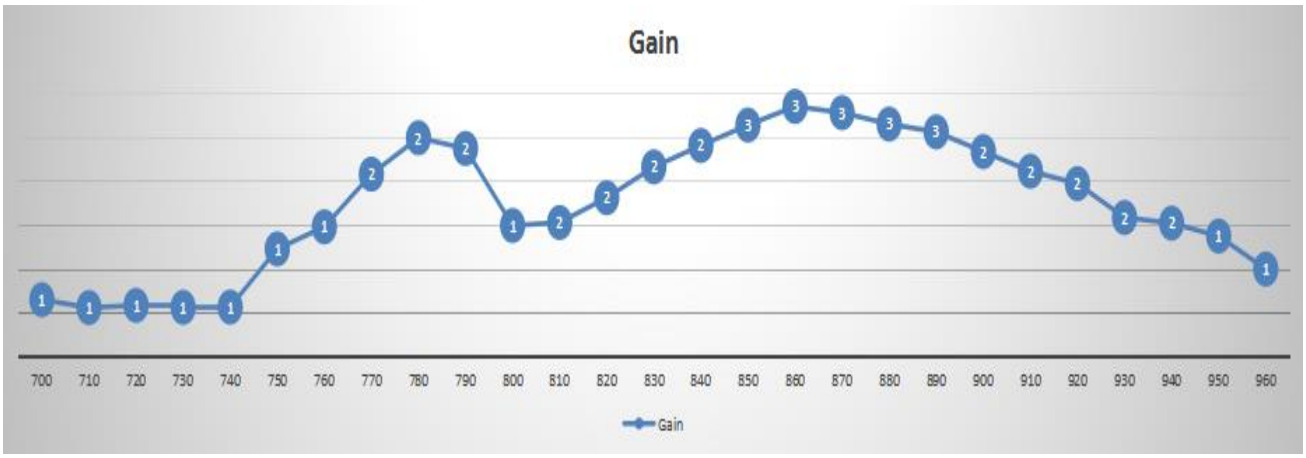
4.3.2. 1710–2690 MHz

4.3.3. 3300–5000 MHz

Frequency (MHz)	700	820	960	1710	2170	2450	2690	3300	4200	5000
Efficiency (%)	45	40	39	28	42	30	24	38	26	15

4.4. Gain

4.4.1. 700–960 MHz



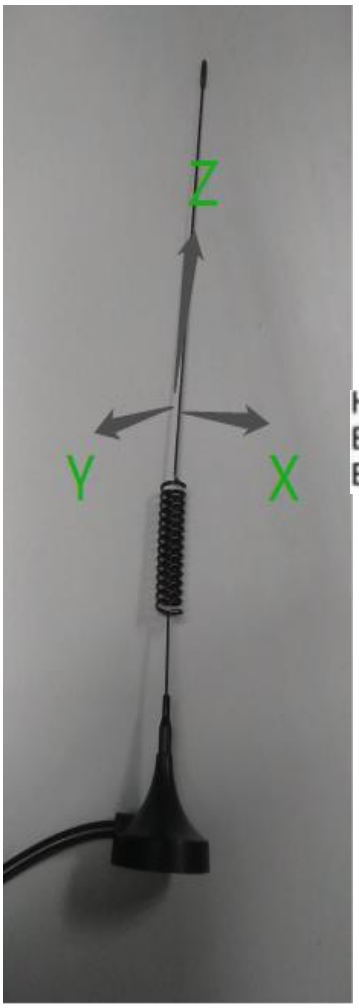
4.4.2. 1710–2690 MHz

4.4.3. 3300–5000 MHz

Frequency (MHz)	700	820	960	1710	2170	2450	2690	3300	4200	5000
Gain (dBi)	1.0	2.0	1.0	1.0	4.0	1.0	1.0	2.0	3.0	2.0

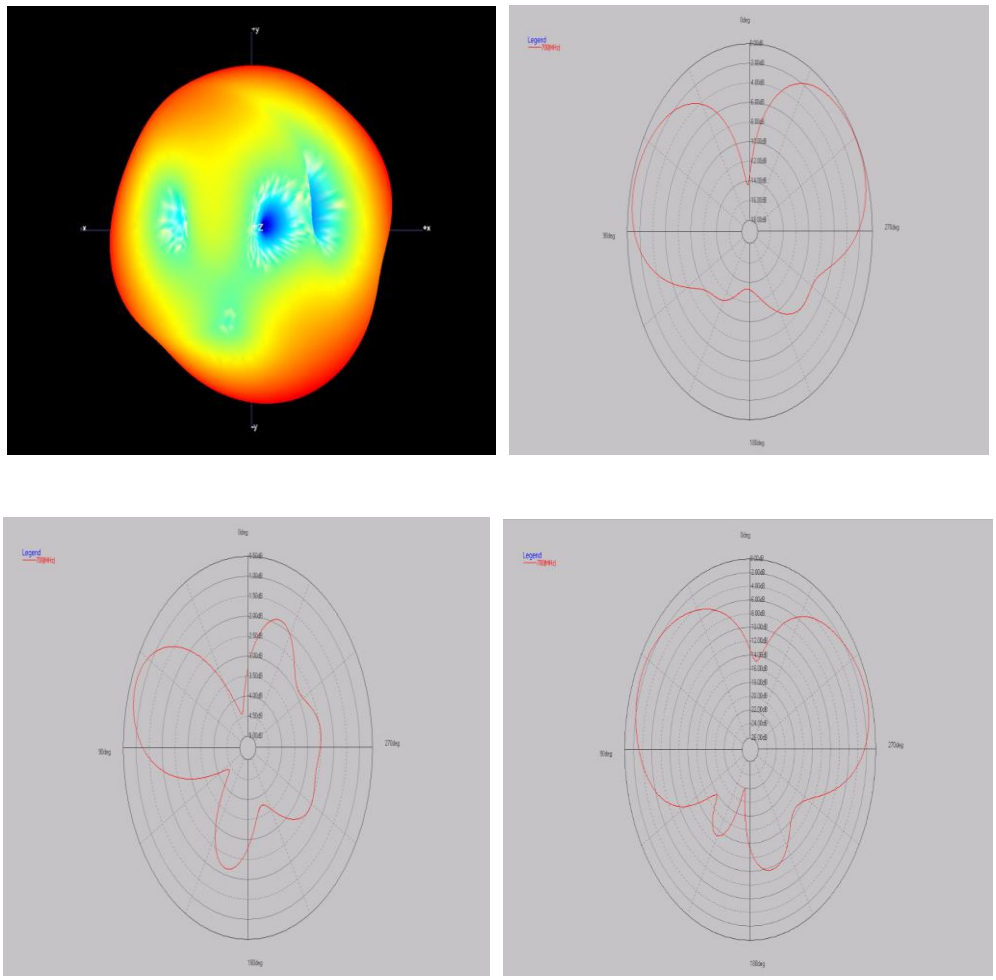
4.5. Radiation Pattern

- Test condition: with ground plane (10 cm x 15 cm metal plate).

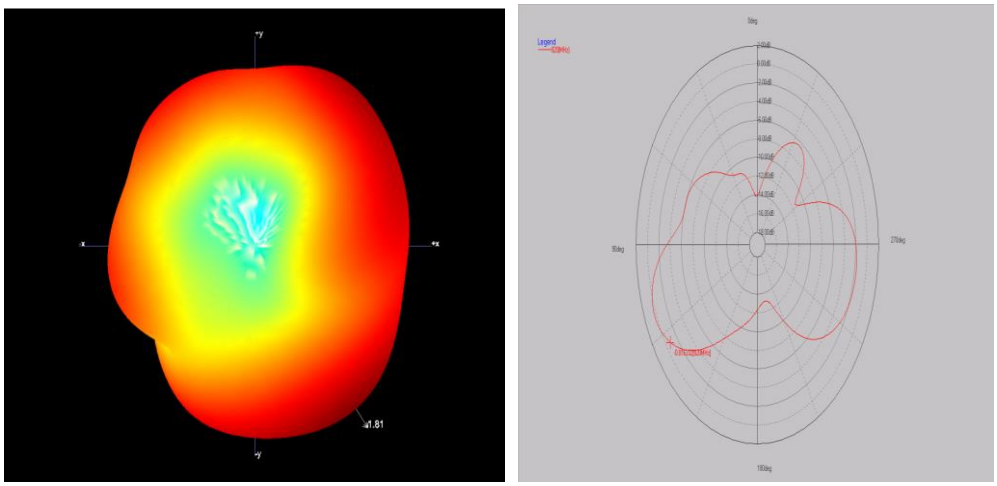


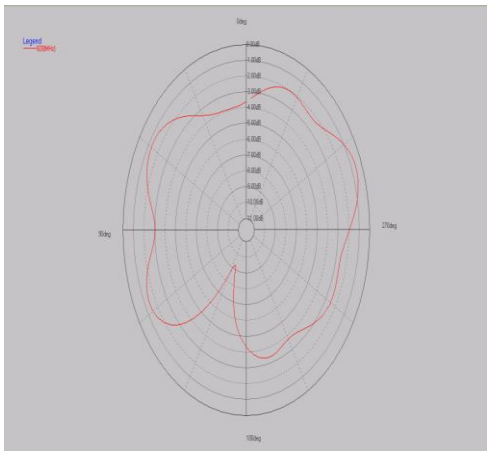
H plane: the tangent of XY
E1 plane: the tangent of XZ
E2 plane: the tangent of YZ

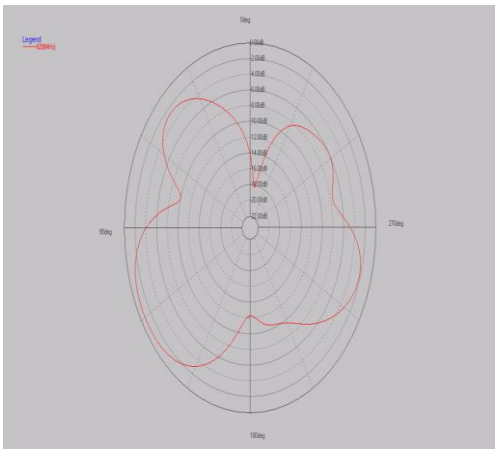
4.5.1. 700 MHz



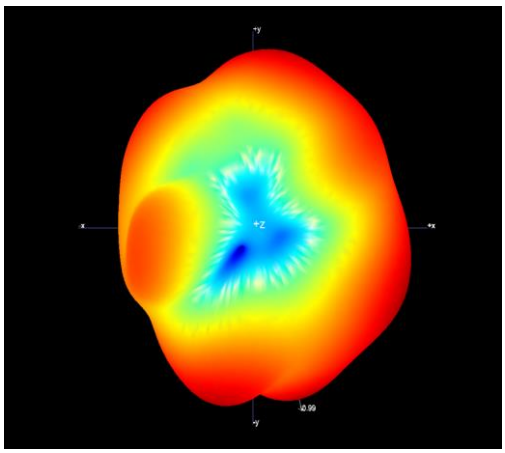
4.5.2. 820 MHz

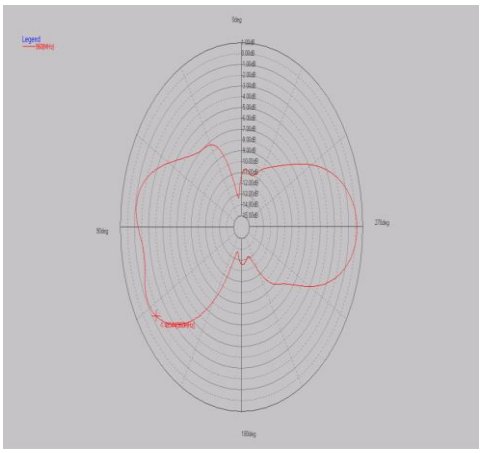


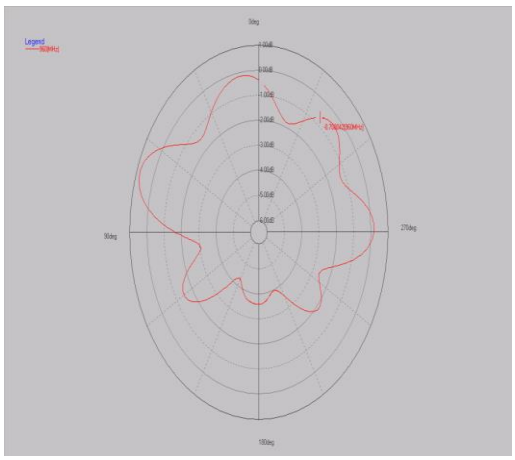


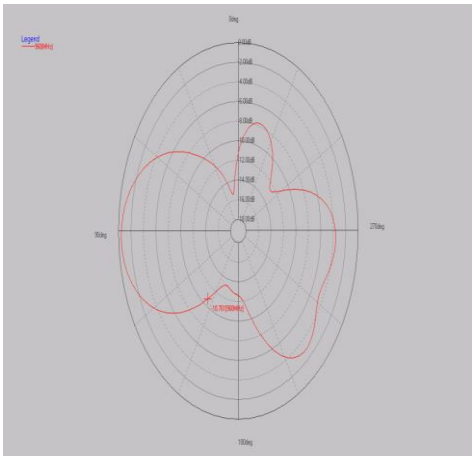


4.5.3. 960 MHz

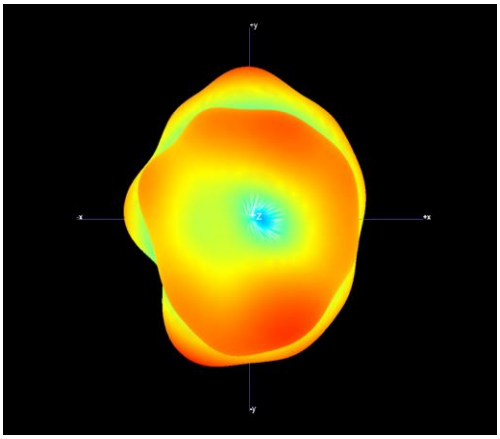
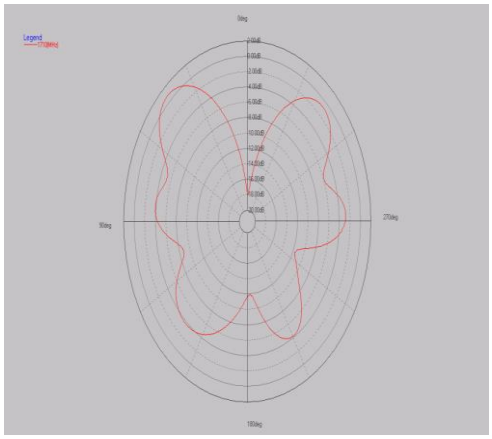
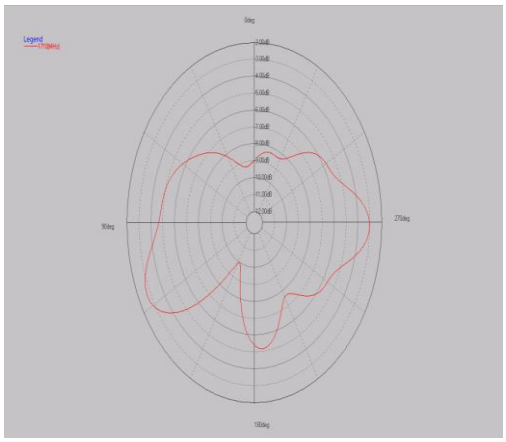
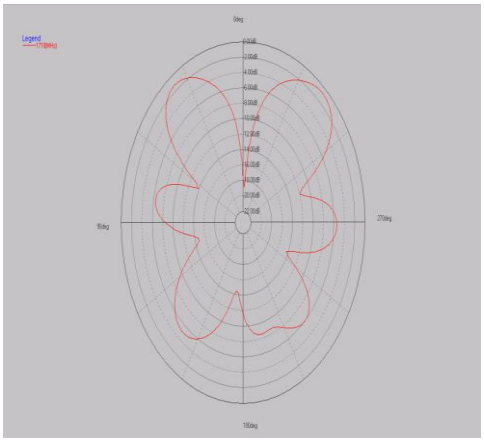




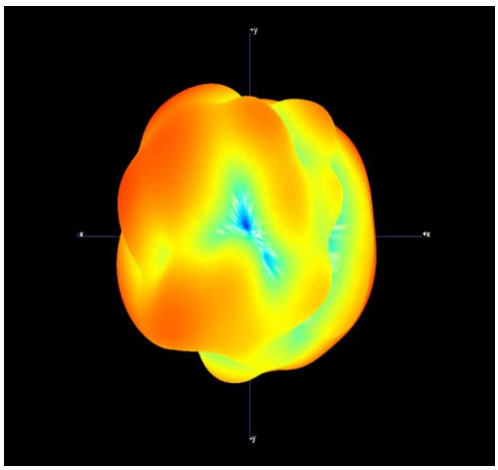
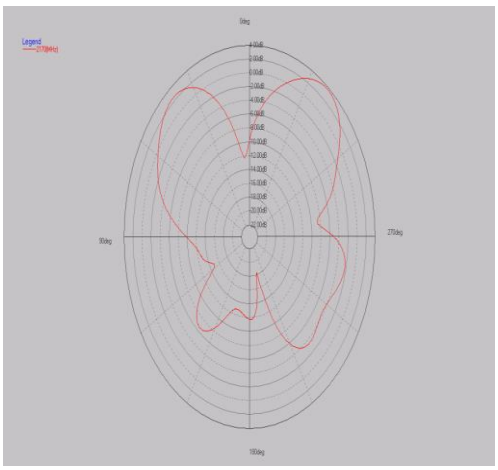


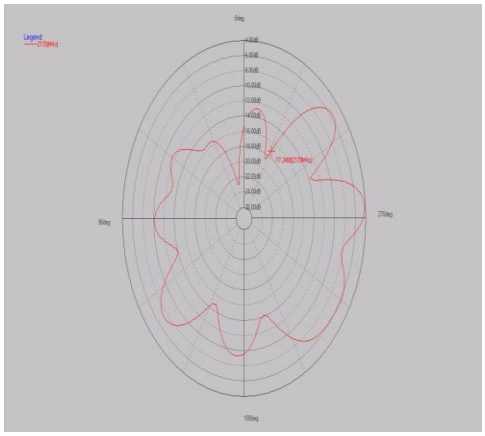


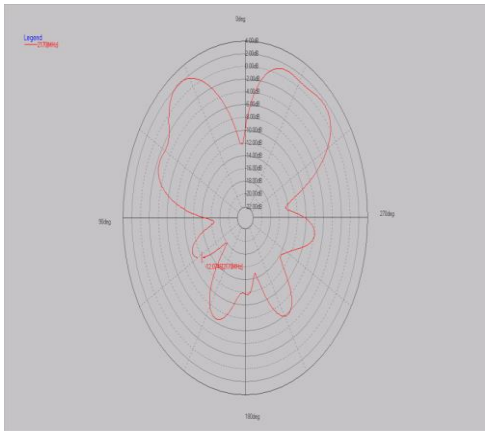
4.5.4. 1710 MHz

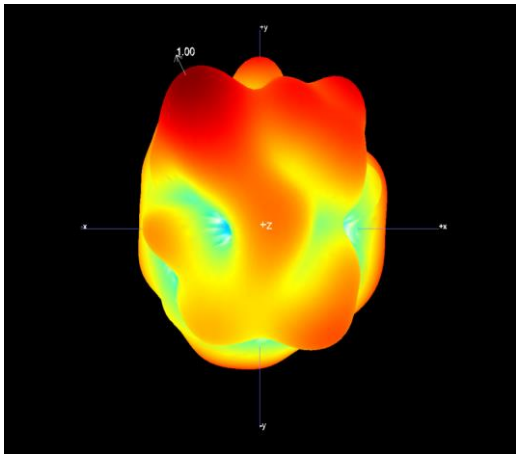
4.5.5. 2170 MHz

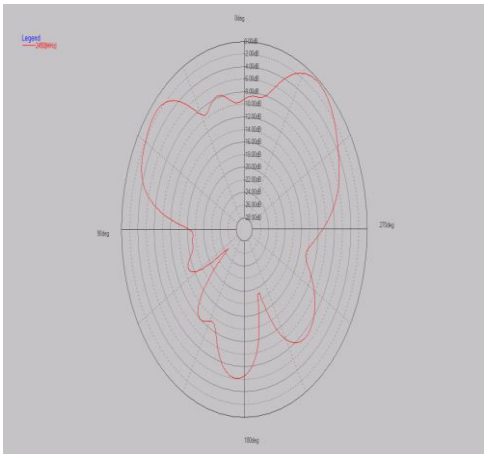



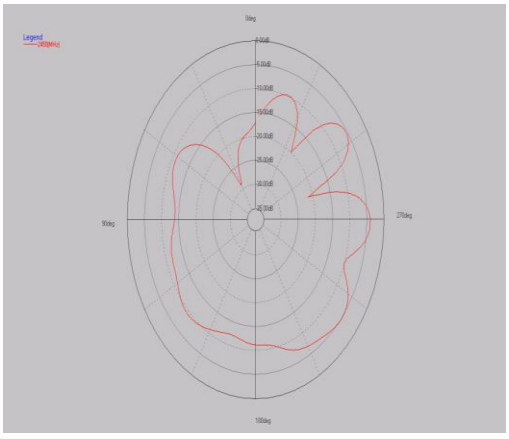


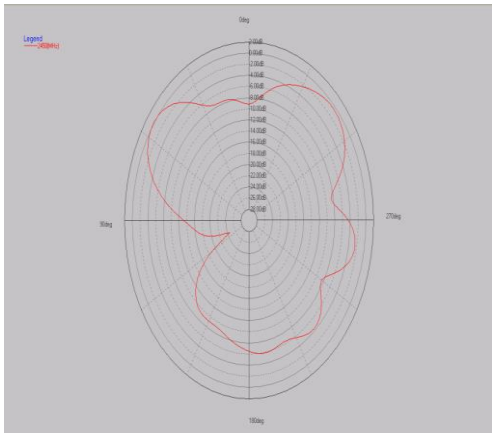


4.5.6. 2450 MHz

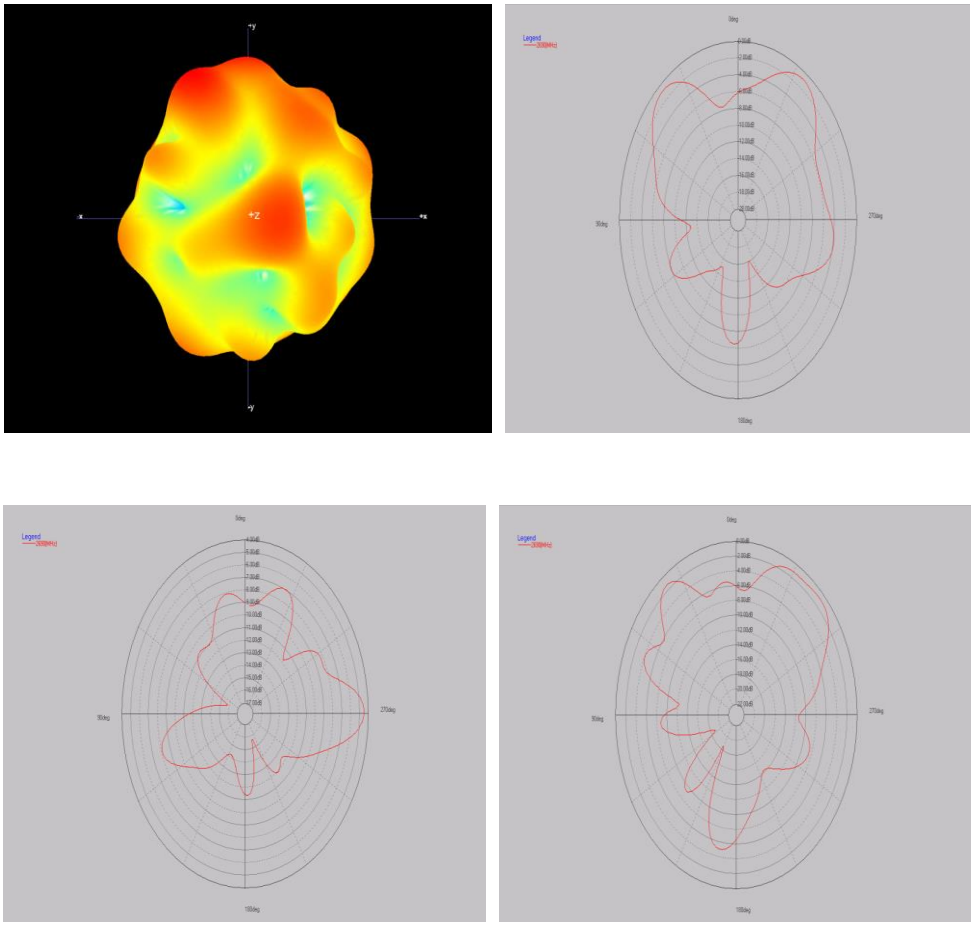




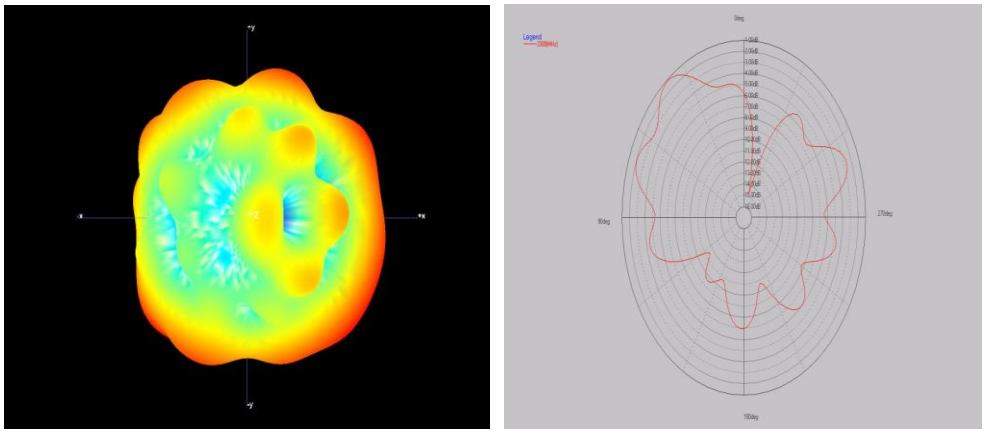


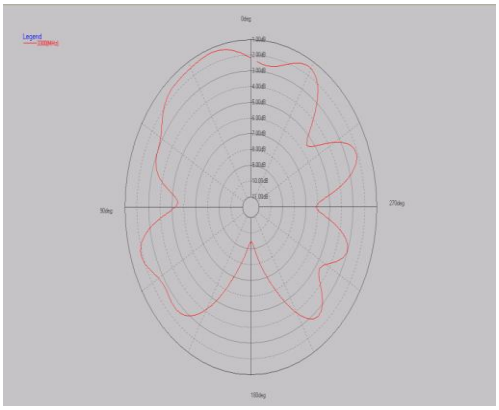


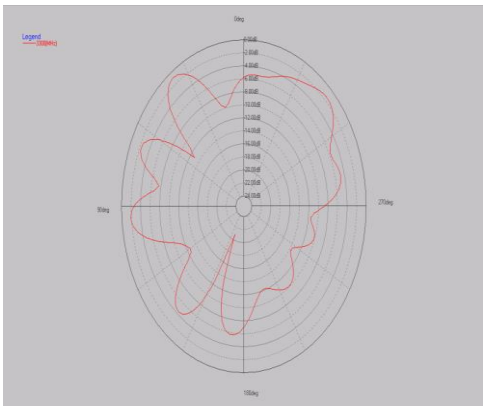
4.5.7. 2690 MHz



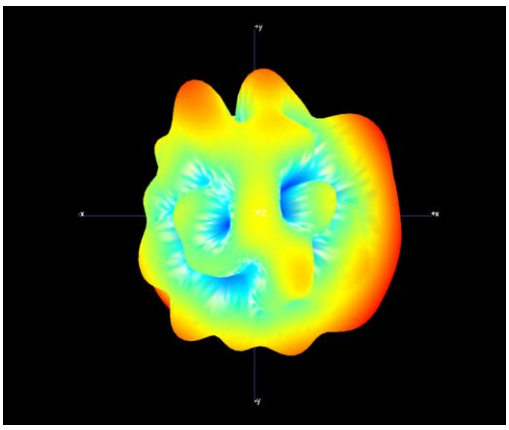
4.5.8. 3300 MHz

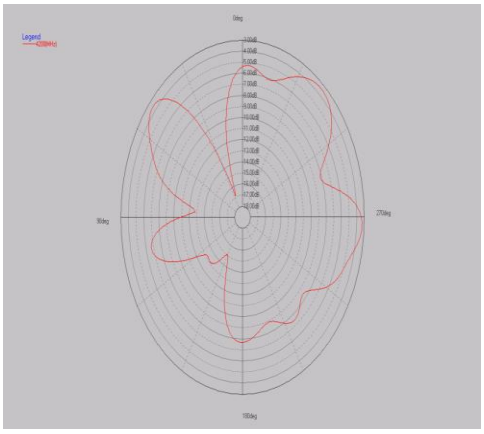


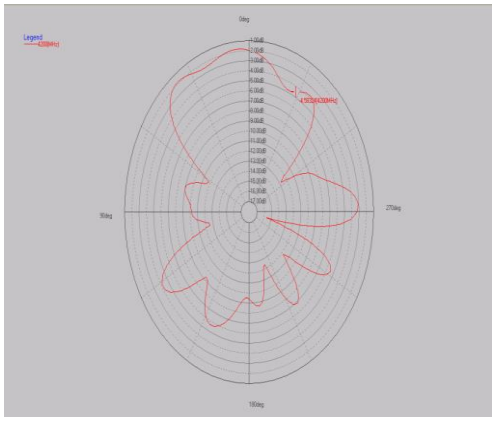


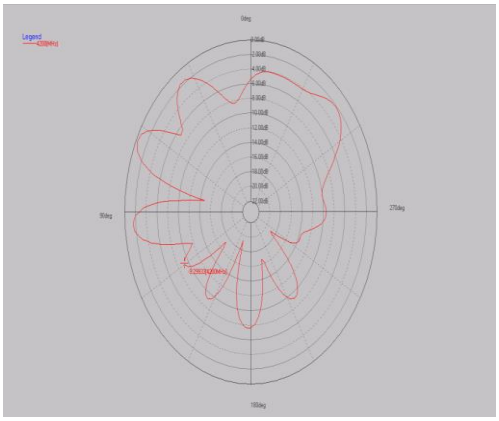


4.5.9. 4200 MHz

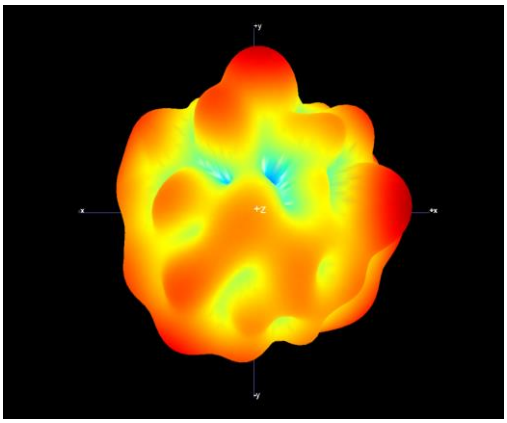
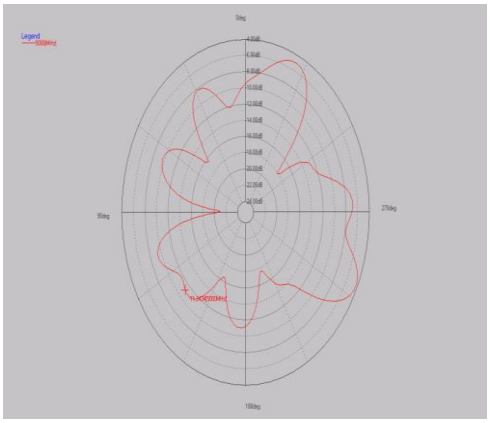
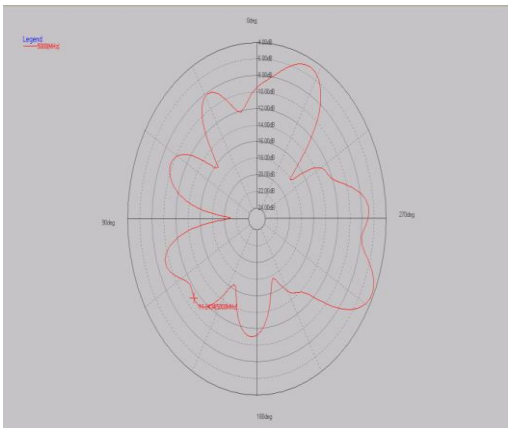
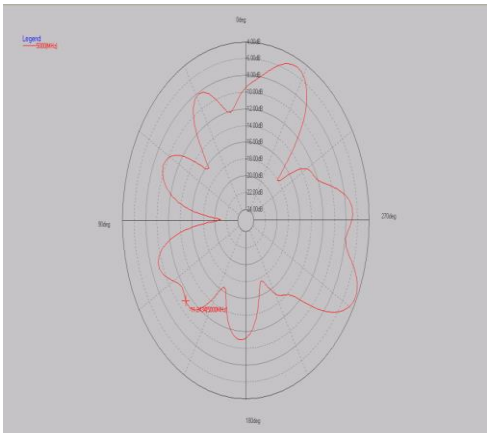








4.5.10. 5000 MHz

5 Product Size

ROHS