Antenna

YG0063AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
-	2021-05-25	Kenny YIN/ Aria CHU	Creation of the document
1.0	2021-05-25	Kenny YIN/ Aria CHU	First official release
1.1	2021-07-01	Aria CHU	Added the RoHS marking in Chapter 5.
1.2	2021-08-18	Aria CHU	Added the weight information (Chapter 3).
1.3	2021-12-06	Aria CHU	Updated the product description in Chapter 1.

Contents

1 Product Description

This Quectel GNSS antenna adopts a diversity of forms to guarantee the most suitable polarization type. Quectel's positioning products support single-band or multi-band operation modes to meet various high-precision positioning requirements of customers' products. Quectel ~~also~~ provides both passive and active antennas to satisfy the customer demand for high gain. Such antenna supports different installation or connection methods such as pin mount, surface mount, magnetic mount, internal cable, and external SMA. Customized connector type and cable length are provided according to requirements.

We provide comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs.

2 Product Features

- GPS L1/L2/L5, BDS B1/B2/B3, GLONASS L1/L2, Galileo E1/E5a/E5b/E6, L-band
- High efficiency
- Excellent performance

3 Product Specifications

Passive Electrical Specifications	
Frequency Range	GPS L1/L2/L5; BDS B1/B2/B3; GLONASS L1/L2; Galileo E1/E5a/E5b/E6; L-band
Input Impendence	50 Ω
VSWR	≤ 2
Gain	< 7.0 dBi
Axial Ratio	< 3 dB
Phase Center Error	±2 mm
Polarization Type	RHCP
LNA Electrical Properties	
Center Frequency	GPS L1/L2/L5; BDS B1/B2/B3; GLONASS L1/L2; Galileo E1/E5a/E5b/E6; L-band
Gain	40 ±2 dBi
Noise Figure	< 2.5 dB
Output VSWR	< 2.0
Input VSWR	< 2.0
Voltage	DC 3.3–18 V
Current	< 45 mA (Measuring Voltage: 3.3 V)
Impedance	50 Ω
Mechanical Specifications	
Antenna Size	Φ 165 mm × 68 mm
Casing	ASA
Connector Type	TNC-K
Working Temperature	-40 °C to +80 °C
Radome Color	White
IP Rating	IP65
Weight	461 ±3 g

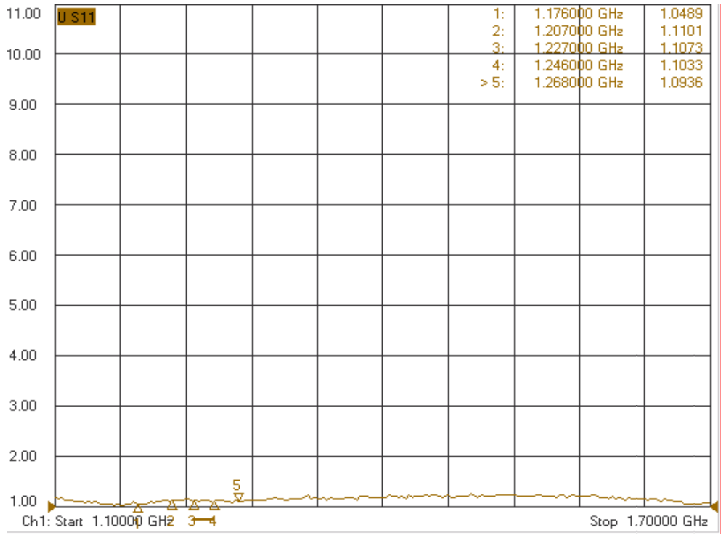
4 Overall Performance

4.1. Test Environment

- KEYSIGHT VNA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone®2800 Chamber 5G (FR1) SISO/MIMO, 400 MHz – 8.0 GHz

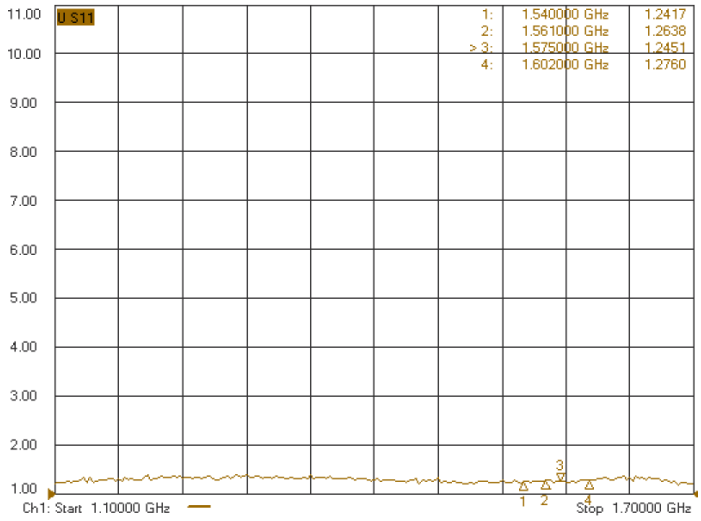
4.2. VSWR

GPS L2/L5, BDS B2/B3, GLONASS L2, Galileo E5a/E5b/E6



Frequency (MHz)	1176	1207	1227	1246	1268
VSWR	1.04	1.11	1.1	1.1	1.1

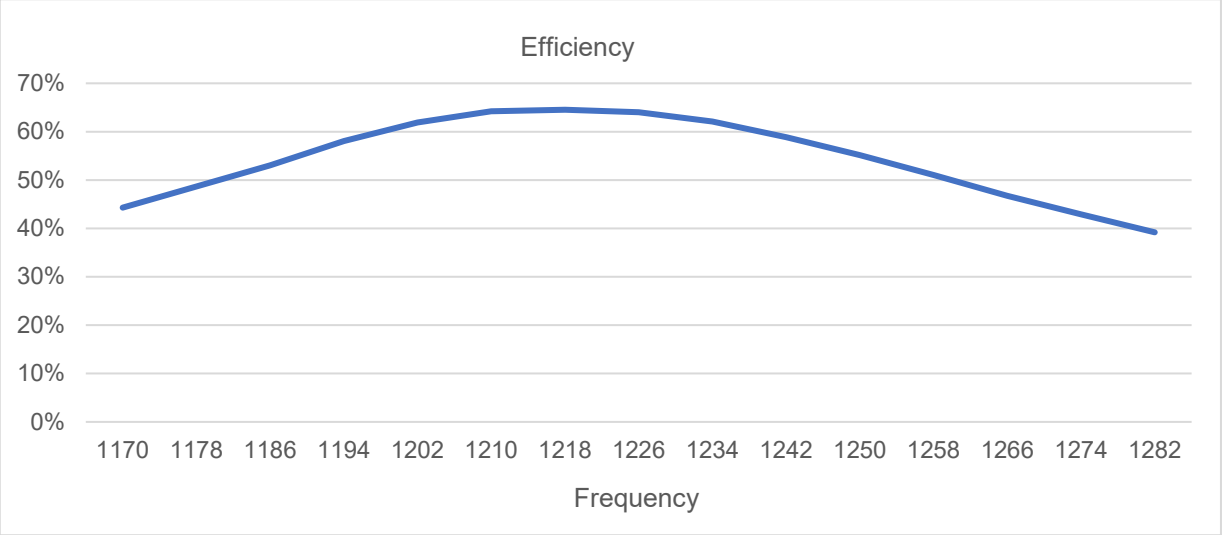
GPS L1, BDS B1, GLONASS L1, Galileo E1, L-band



Frequency (MHz)	1540	1561	1575	1602
VSWR	1.24	1.26	1.25	1.28

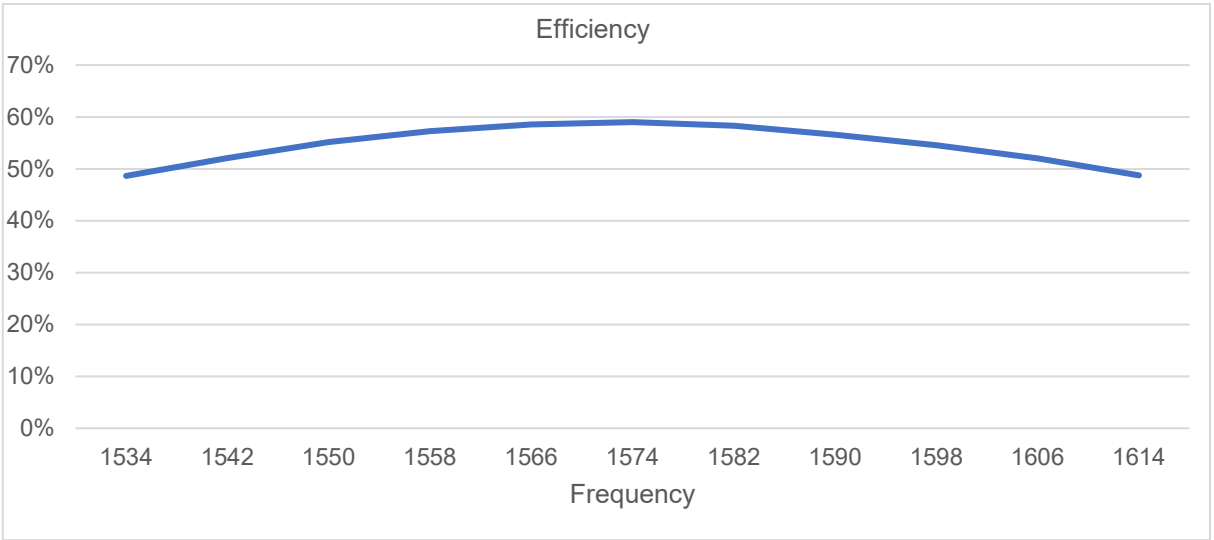
4.3. Efficiency

GPS L2/L5, BDS B2/ B3, GLONASS L2, Galileo E5a/E5b/E6



Frequency (MHz)	1176	1207	1227	1246	1268
Efficiency (%)	48	62	64	57	47

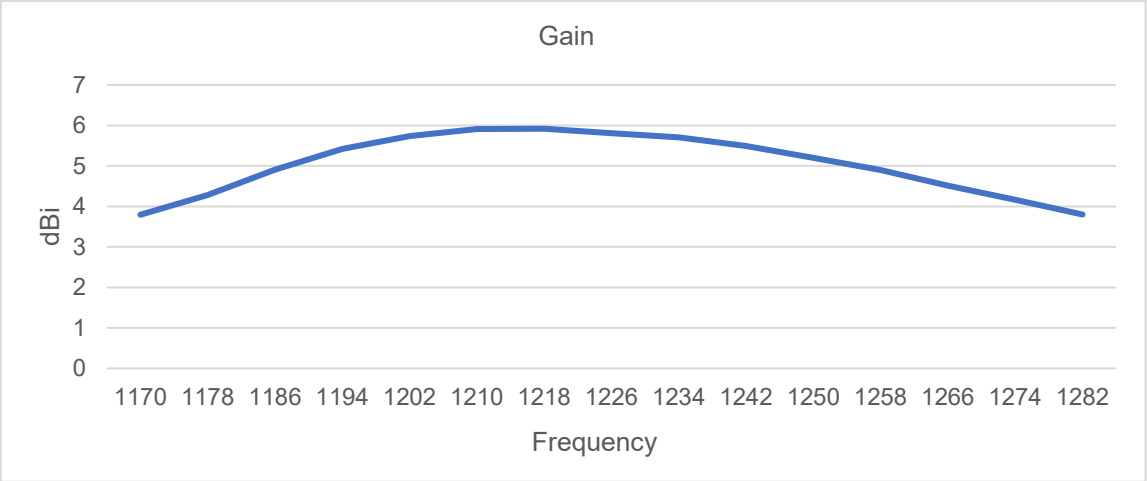
GPS L1, BDS B1, GLONASS L1, Galileo E1, L-band



Frequency (MHz)	1540	1561	1575	1602
Efficiency (%)	52	58	59	53

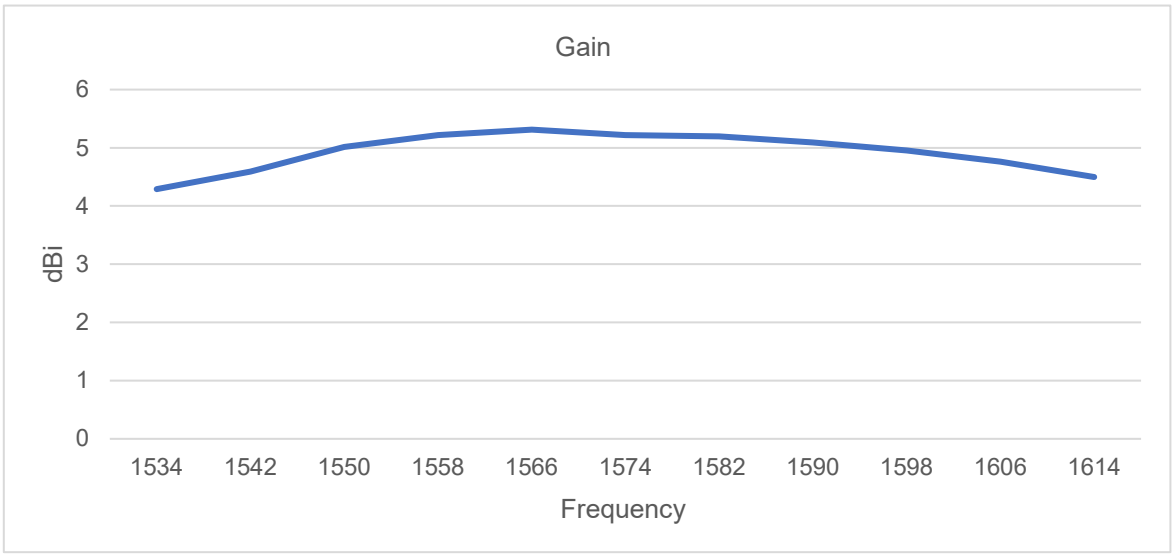
4.4. Gain

GPS L2/L5, BDS B2/ B3, GLONASS L2, Galileo E5a/E5b/E6



Frequency (MHz)	1176	1207	1227	1246	1268
Gain (dBi)	4.1	5.8	5.8	5.3	4.3

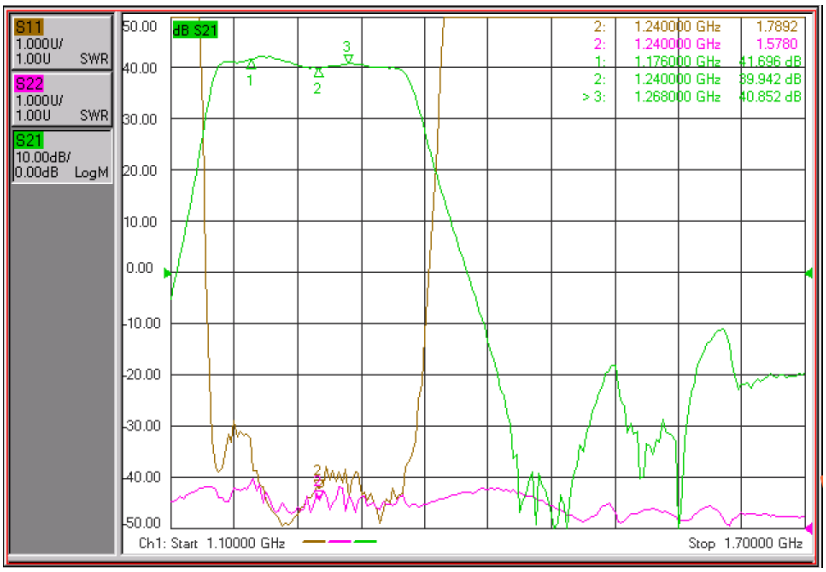
GPS L1, BDS B1, GLONASS L1, Galileo E1, L-band



Frequency (MHz)	1540	1561	1575	1602
Gain (dBi)	4.6	5.3	5.5	4.9

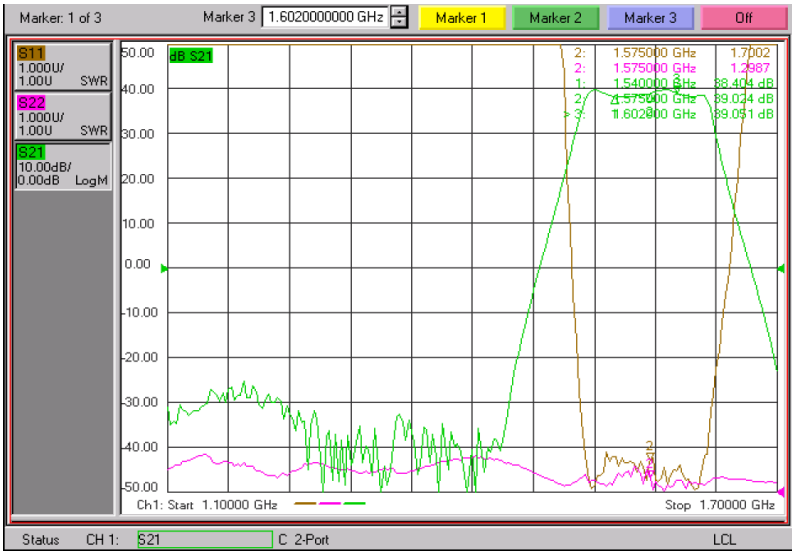
4.5. LNA Gain

GPS L2/L5, BDS B2/ B3, GLONASS L2, Galileo E5a/E5b/E6



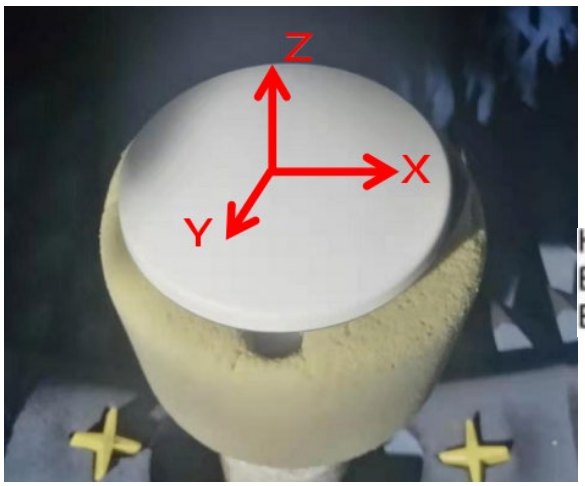
Frequency (MHz)	1176	1240	1268
Gain (dBi)	41.5	40	40.8

GPS L1, BDS B1, GLONASS L1, Galileo E1, L-band



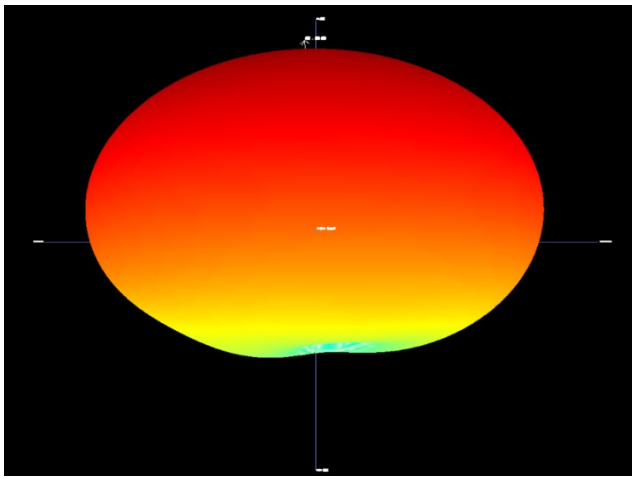
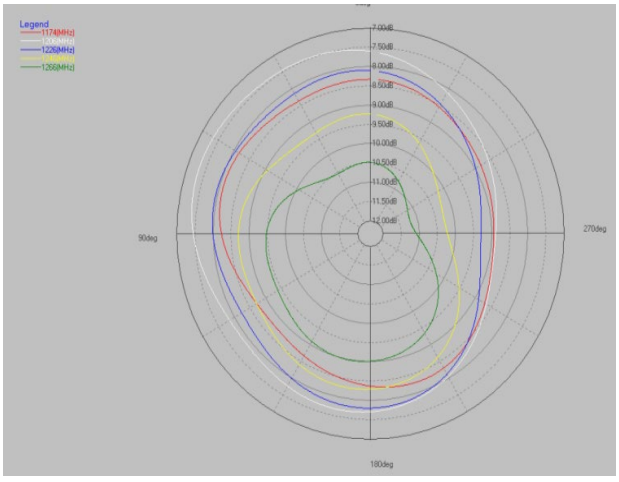
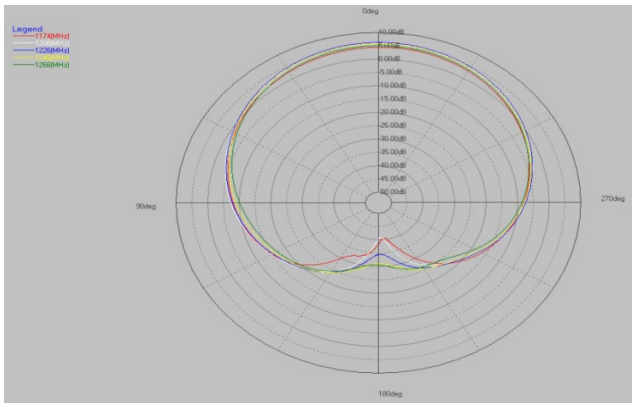
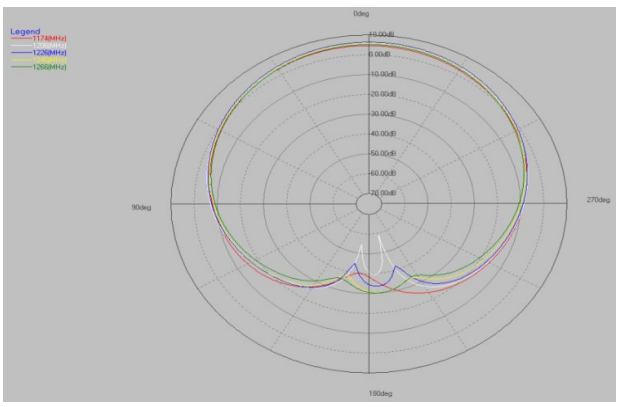
Frequency (MHz)	1540	1575	1602
Gain (dBi)	38.5	39	39

4.6. Radiation Pattern

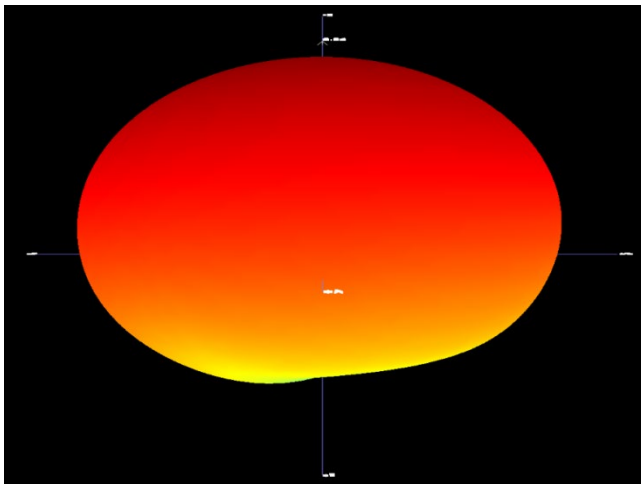
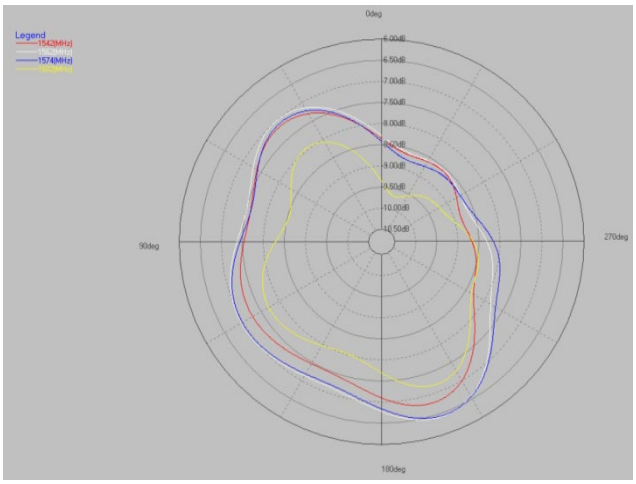
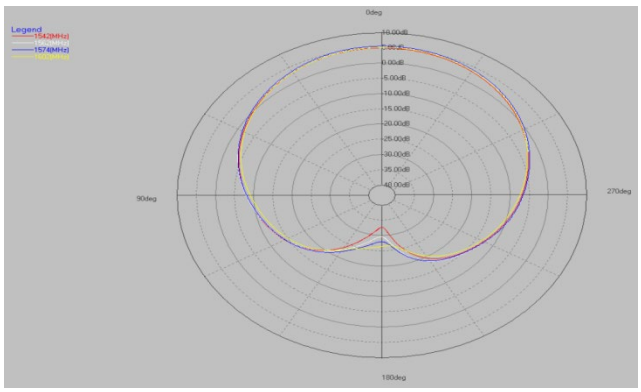
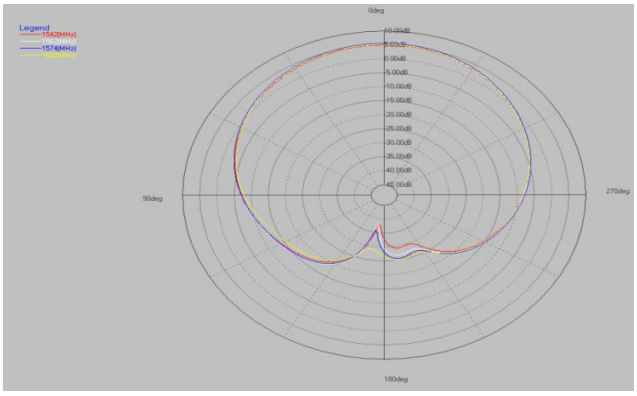


H plane: the tangent of XY
E1 plane: the tangent of XZ
E2 plane: the tangent of YZ

GPS L2/L5, BDS B2/ B3, GLONASS L2, Galileo E5a/E5b/E6

3D	H
	
E1	E2
	

GPS L1, BDS B1, GLONASS L1, Galileo E1, L-band

3D	H
	
E1	E2
	

5 Product Size

RoHS