

Antenna

YCGO009AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
-	2021-06-04	Kenny YIN/ Aria CHU	Creation of the document
1.0	2021-06-04	Kenny YIN/ Aria CHU	First official release
1.1	2021-06-23	Aria CHU	Added the LNA electrical properties in Chapter 3.
1.2	2021-11-30	Aria CHU	Updated the product description in Chapter 1.
2.0	2021-12-08	Xiaodong YANG	Updated all test data in this datasheet.

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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 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.

2 Product Features

- GNSS L1
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	1575–1602 MHz
Input Impedance	50 Ω
VSWR	≤ 3.5
Gain	≤ 3.0 dBi
Polarization Type	Linear

LNA Electrical Properties

Center Frequency	1575–1602 MHz
Gain	16 ±3 dB
Noise Figure	Typ. 1.5 dB (25 +5 °C)
Output VSWR	< 2.0
Input VSWR	< 2.0
Voltage	DC 3–5 V
Current	≤ 10 mA
Impedance	50 Ω

Mechanical Specifications

Antenna Size	15 mm × 15 mm × 6.2 mm
Casing	Ceramic
Connector Type	IPEX MHF I
Working Temperature	-40 °C to +85 °C
Radome Color	-

4 Overall Performance

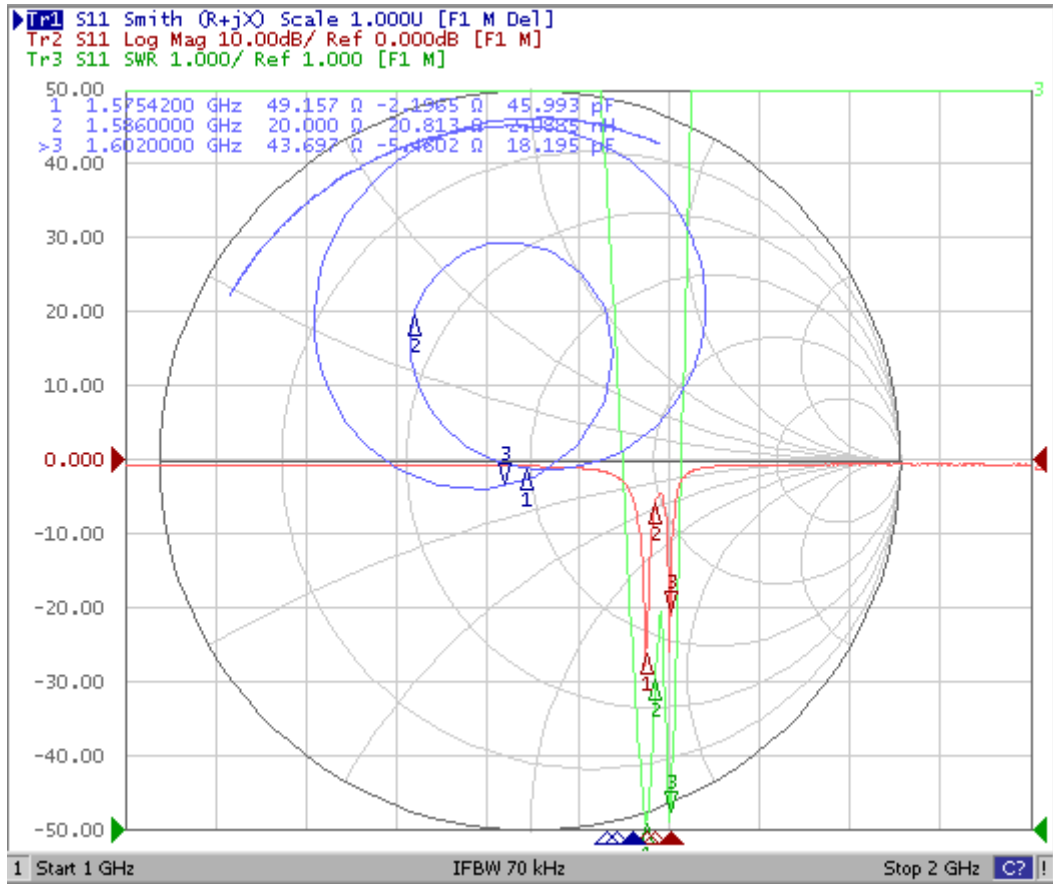
4.1. Test Environment

- KEYSIGHT VNA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 600 MHz – 8.5 GHz



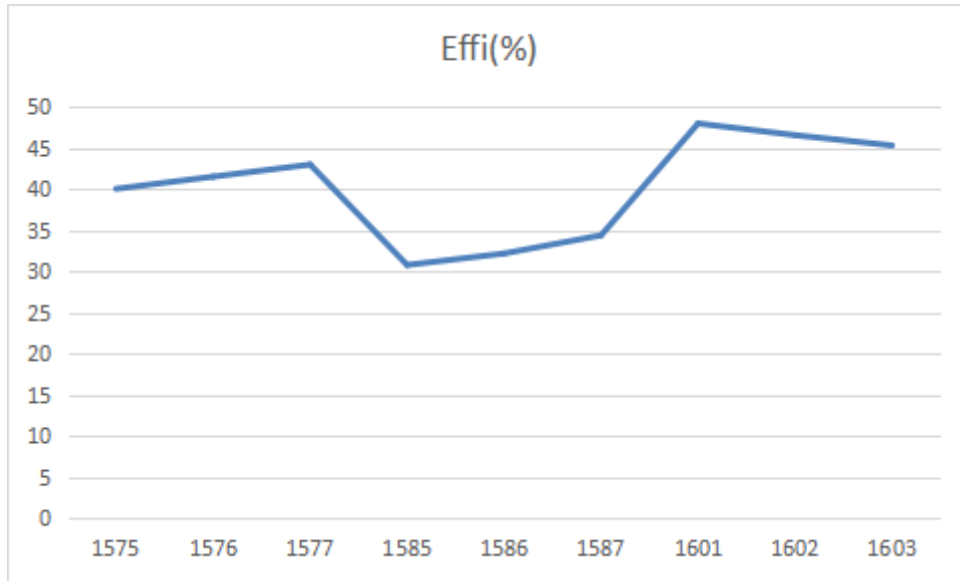
4.2. VSWR

- Note: 15 mm x 15 mm ground plane for grounding test and debugging.



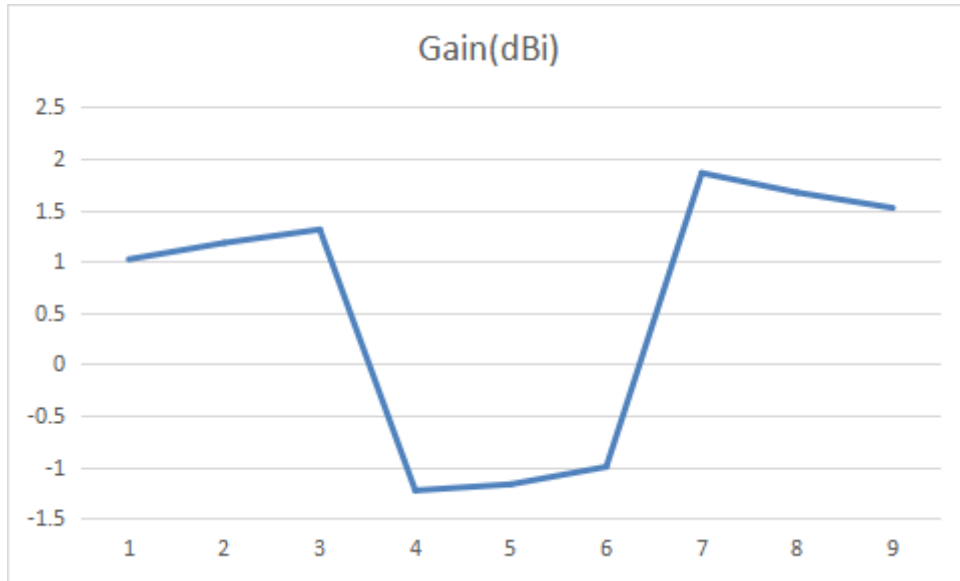
Frequency (MHz)	1575	1586	1602
VSWR	1.13	3.05	1.22

4.3. Efficiency



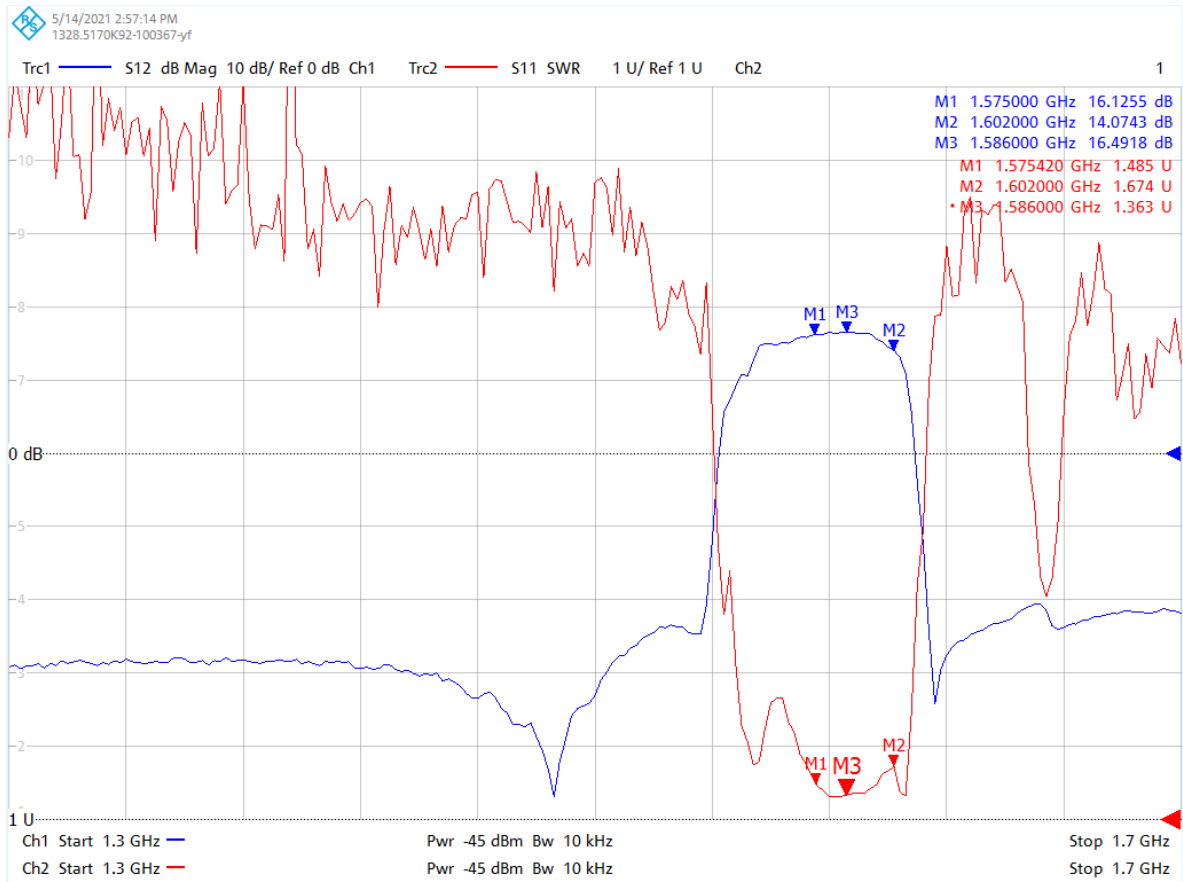
Frequency (MHz)	1575	1586	1602
Efficiency (%)	40.08	32.21	46.61

4.4. Gain

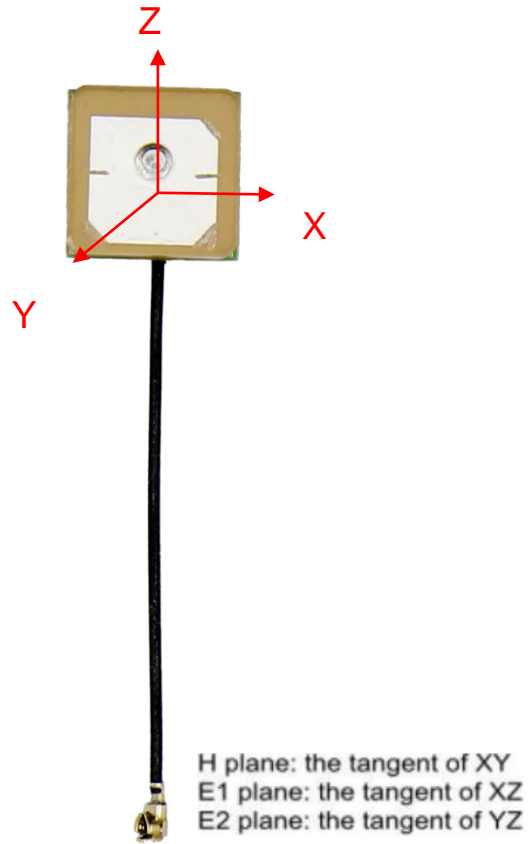


Frequency (MHz)	1575	1586	1602
Gain (dBi)	1.08	-1.17	1.67

4.5. LNA data

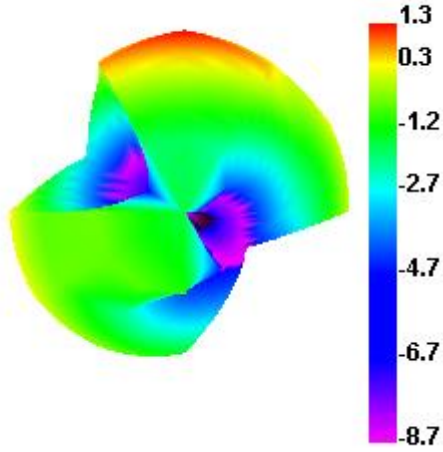


4.6. Radiation Pattern

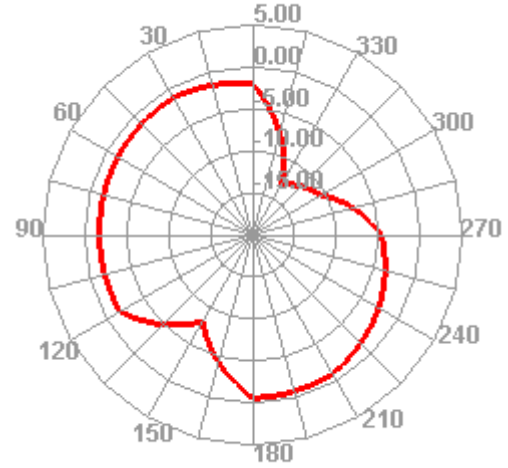


4.6.1. 1575 MHz

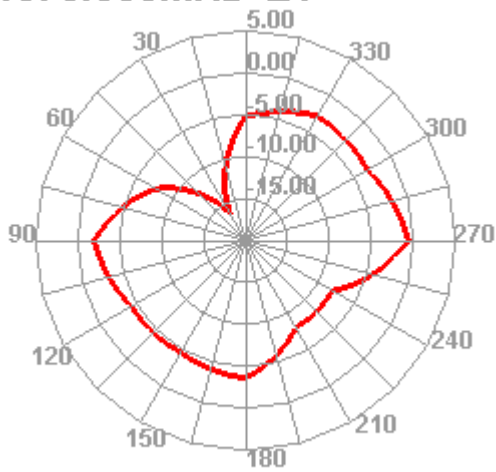
1575.000MHz



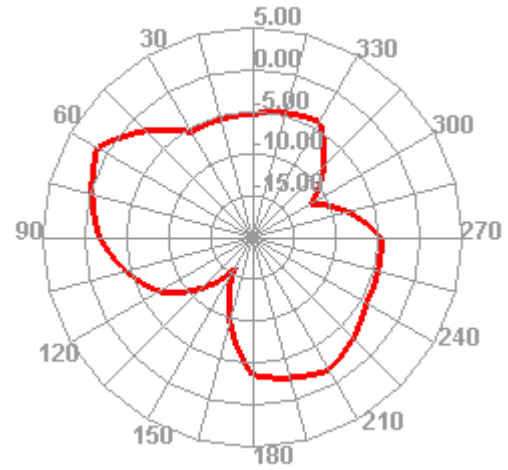
1575.000MHz H



1575.000MHz E1

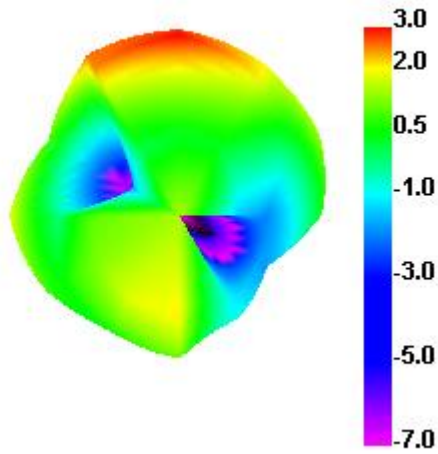


1575.000MHz E2

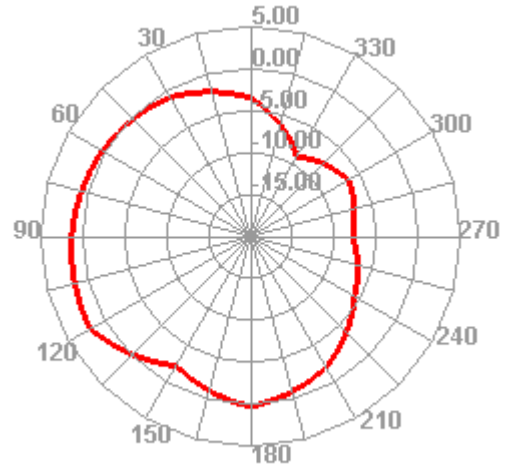


4.6.2. 1586 MHz

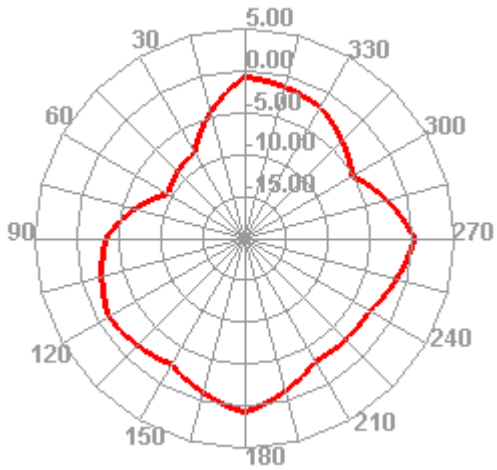
1586.000MHz



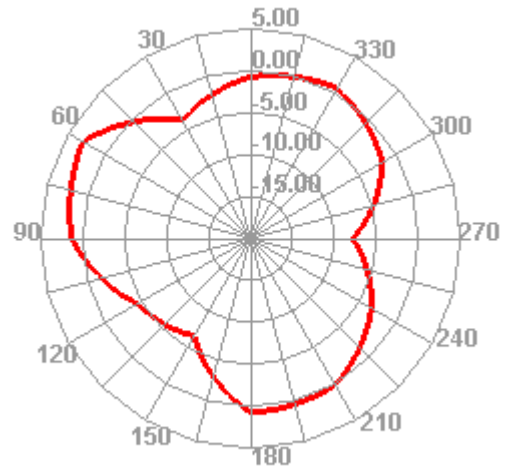
1586.000MHz H



1586.000MHz E1

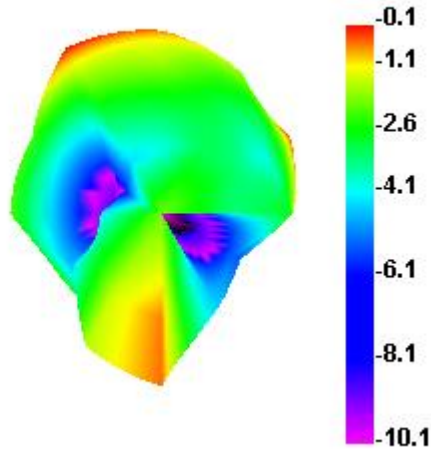


1586.000MHz E2

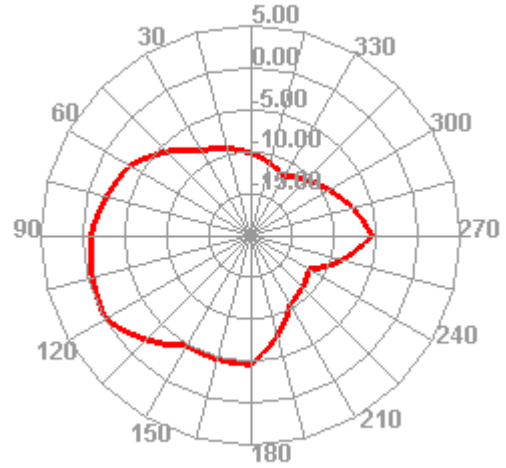


4.6.3. 1602 MHz

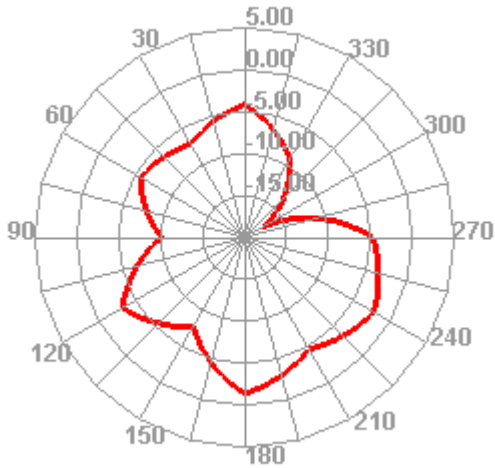
1602.000MHz



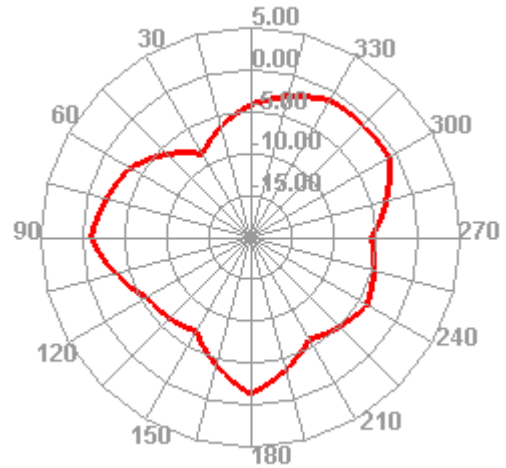
1602.000MHz H



1602.000MHz E1



1602.000MHz E2



5 Product Size

