

Antenna

YLY001CA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
1.0	2020-07-28	Kenny YIN	Initial
1.1	2020-11-19	Kenny YIN	Added the mounting method in Chapter 3.
1.2	2020-12-11	Kenny YIN	Updated the antenna picture in Chapter 2.
1.3	2021-01-27	Kenny YIN	Added the IP rating description, updated drawing and product size description.
1.4	2021-03-02	Kenny YIN	Added the electrical performance information.
1.5	2021-07-25	Kenny YIN	Updated working temperature (Chapter 3).
1.6	2021-10-20	Aria CHU	Updated the data (Chapter 4.3).
1.7	2021-10-20	Aria CHU	Updated the data (Chapter 4).
2.0	2021-11-04	Xiaodong YANG	Updated all test data in this datasheet.
2.1	2021-12-06	Aria CHU	Updated the product description in Chapter 1.

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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 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

- GNSS
- High efficiency
- Excellent performance



3 Product Specifications

Electrical Specifications

Frequency Range	1575–1602 MHz
10 dB Bandwidth	≥ 20 MHz
Output VSWR	≤ 2.0
Efficiency	≥ 50 %
Gain	≤ 0.8 dBi
Polarization Type	RHCP
Axial Ratio	≤ 5
Impedance	50 Ω

LNA Electrical Properties

Frequency range	1575–1602 MHz
Gain	26 $\pm$ 2dB
Noise Figure	≤ 1.5 dB
Output VSWR	≤ 2.0
Passband Ripple	$\leq \pm 2$ dB
Voltage	DC 3.3 $\pm$ 0.3 V
Current	≤ 15 mA
Impedance	50 Ω

Mechanical Specifications

Antenna Size	45.7 mm $\times$ 38.3 mm $\times$ 12.99 mm
Casing	PC
Connector Type	SMA Male (Center Pin)
Working Temperature	-40 $^{\circ}$ C to +85 $^{\circ}$ C
Radom Color	Black
Mounting Type	Magnet
IP Rating	IP66

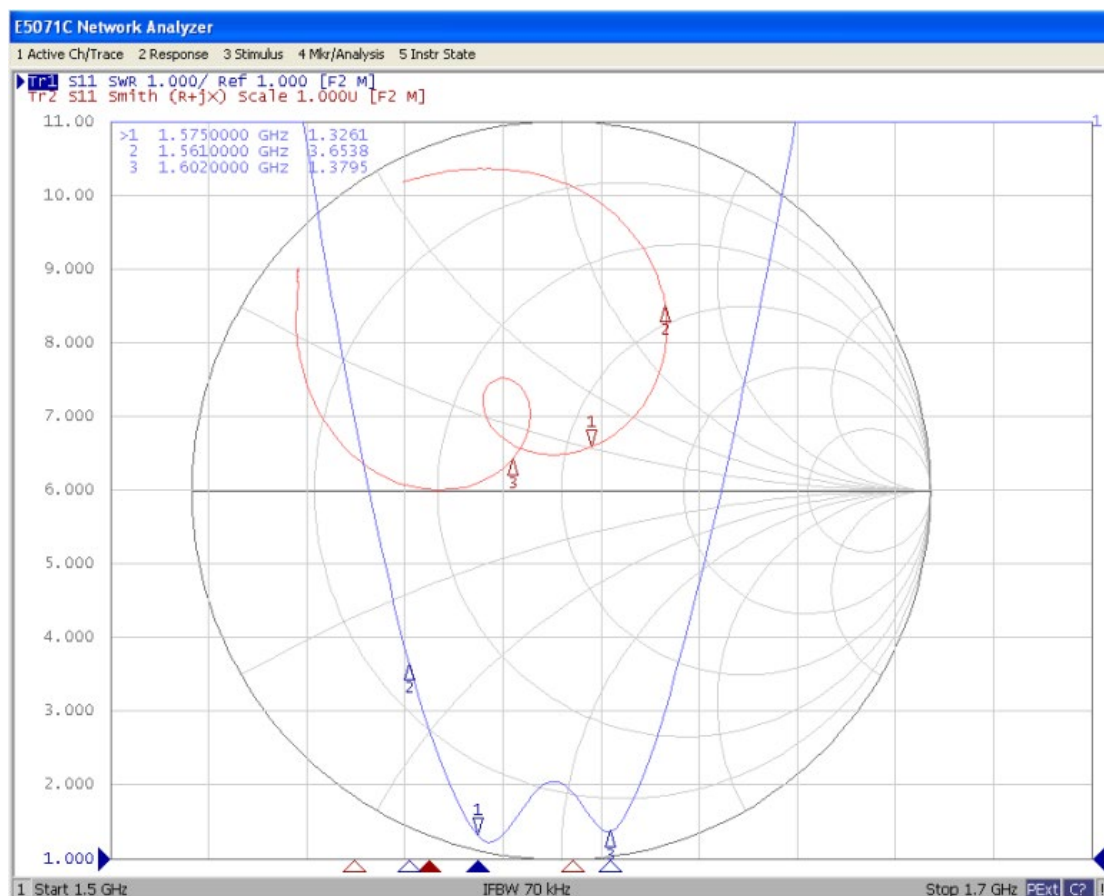
4 Overall Performance

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.

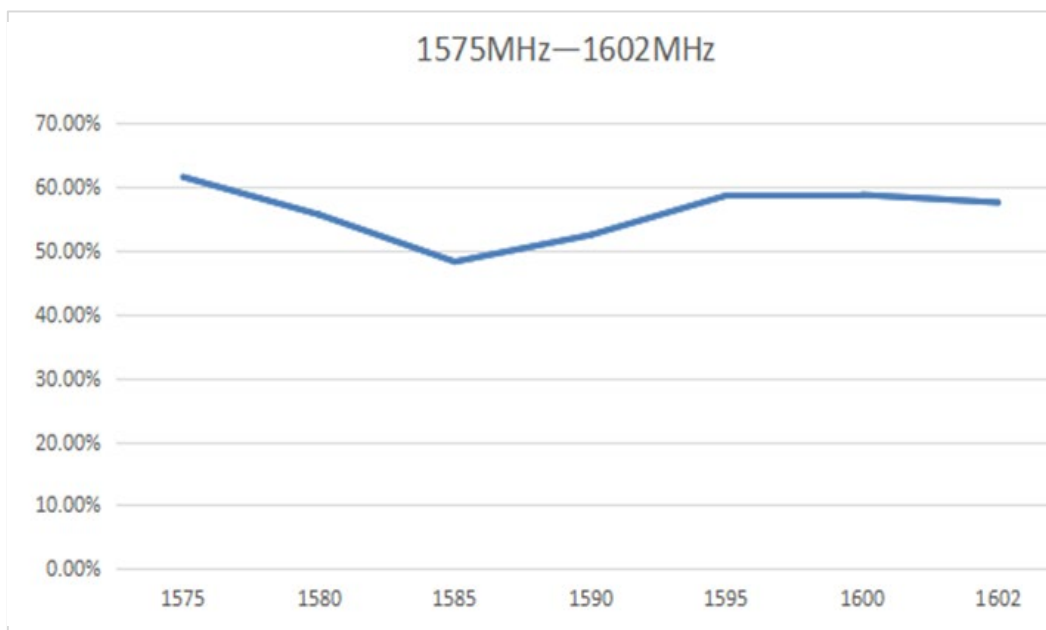


4.2. VSWR



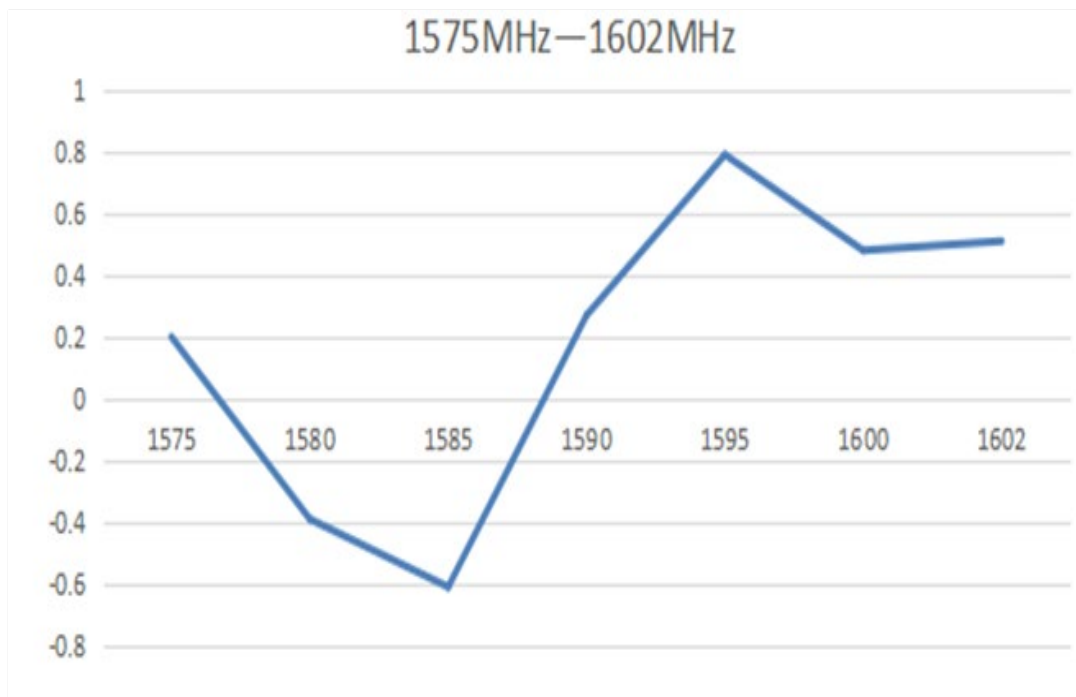
Frequency (MHz)	1575	1602
VSWR	1.72	1.60

4.3. Efficiency



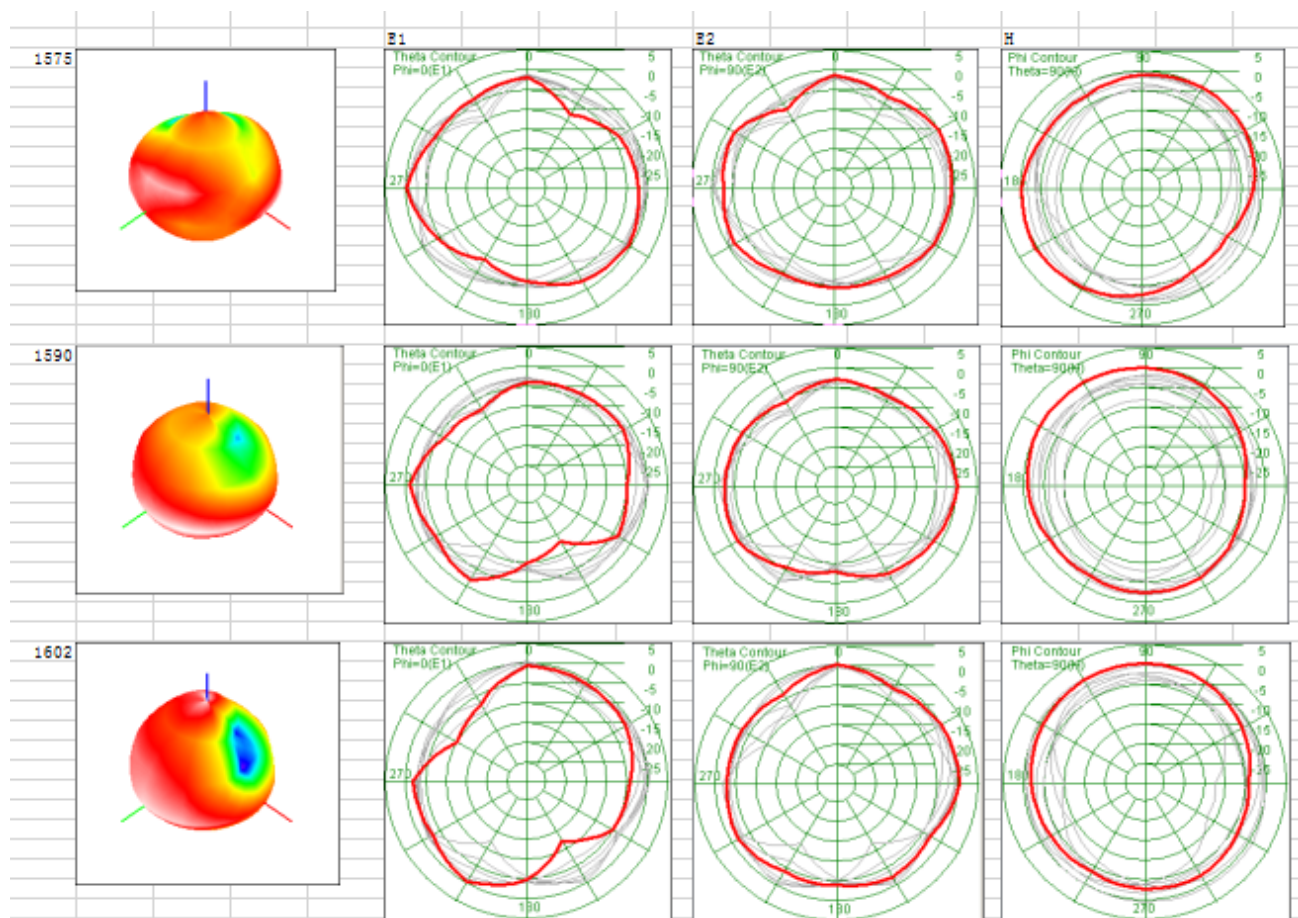
Frequency (MHz)	1575	1602
Efficiency (%)	61.5	57.5

4.4. Gain

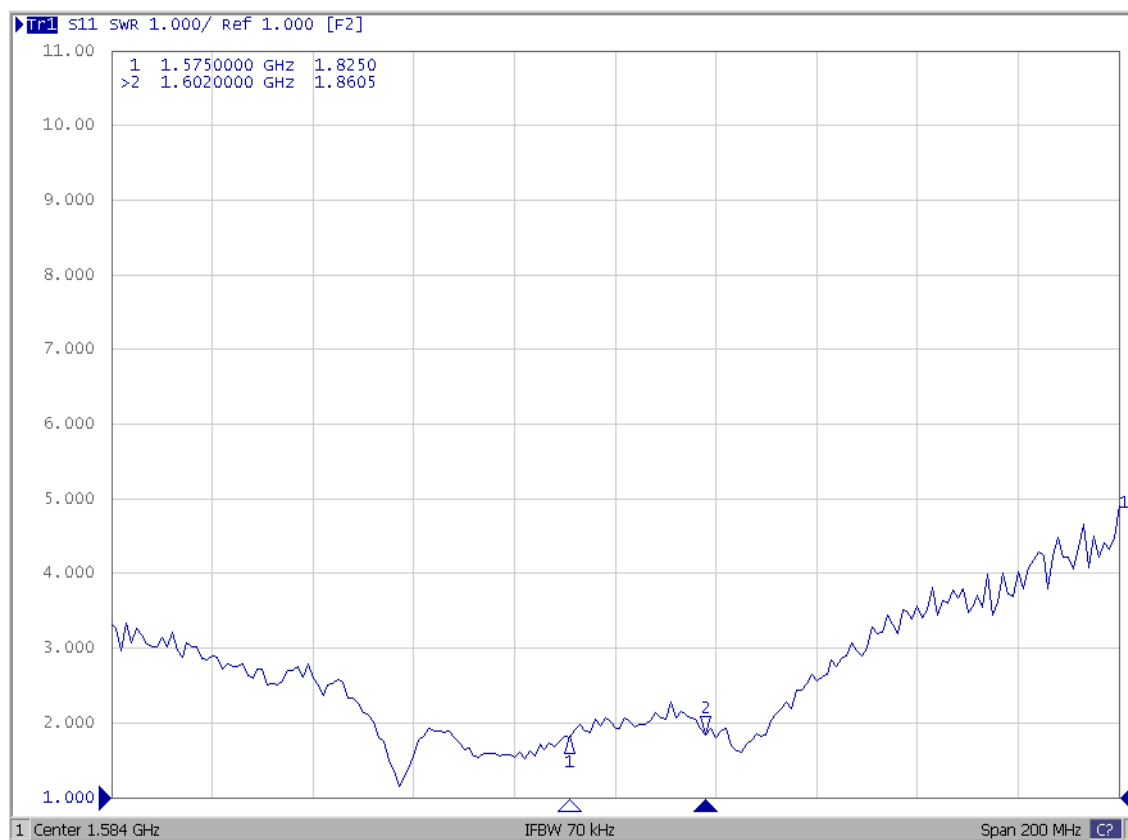


Frequency (MHz)	1575	1602
Gain (dBi)	0.20	0.51

4.5. Radiation Pattern

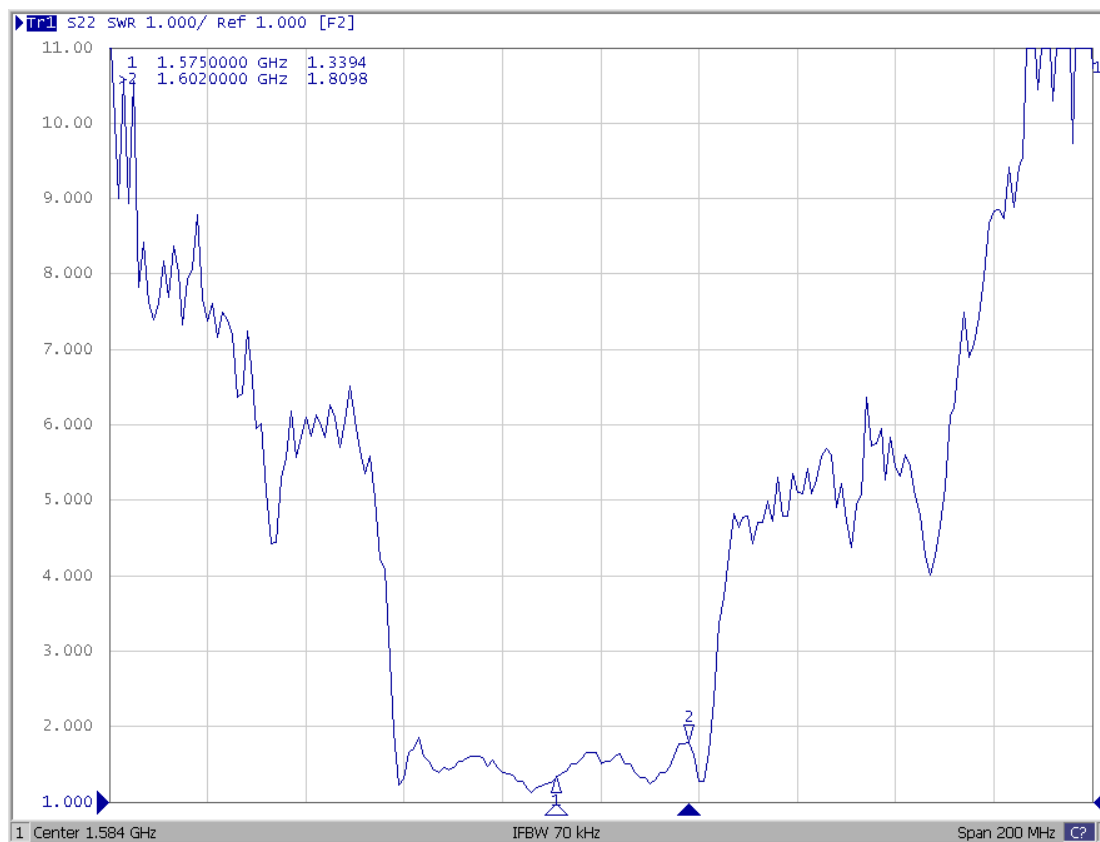


4.6. Input VSWR



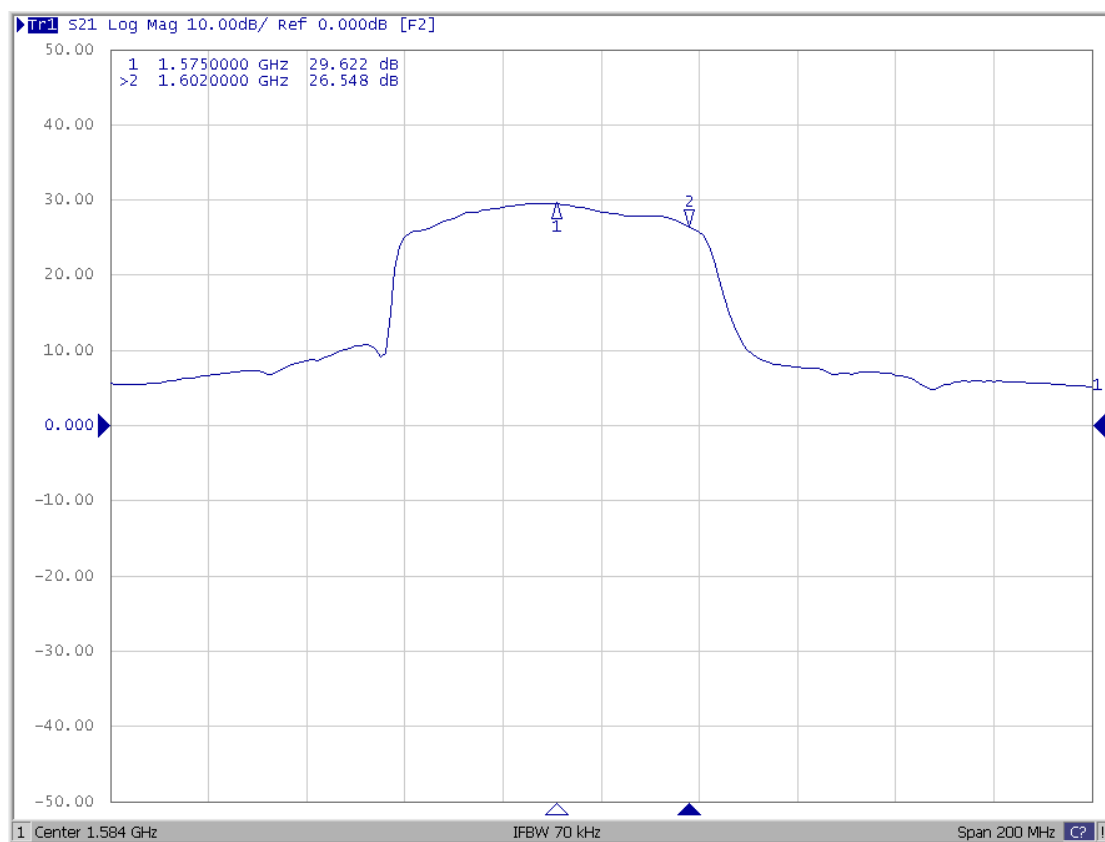
Frequency (MHz)	1575	1602
Input VSWR	1.83	1.86

4.7. Output VSWR



Frequency (MHz)	1575	1602
Input VSWR	1.34	1.81

4.8. Output Gain



Frequency (MHz)	1575	1602
Output Gain (dB)	29.6	26.5

5 Product Size

