

Antenna

YG0015AA Datasheet

Antenna Services

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About the Document

Revision History

| Version | Date | Author | Note |
|---------|------------|------------------------|--|
| 1.0 | 2020-08-24 | Kenny YIN | Initial |
| 2.0 | 2021-06-16 | Kenny YIN/ Aria CHU | Updated all test data in this datasheet. |
| 2.1 | 2021-08-18 | Aria CHU | Added the weight information (Chapter 3). |
| 2.2 | 2021-11-30 | Aria CHU | Updated the product description (Chapter 1). |
| 2.3 | 2023-08-14 | Blake XIANG | Updated the drawing (Chapter 5). |
| 2.4 | 2023-12-13 | Blake XIANG | Updated the drawing (Chapter 5). |

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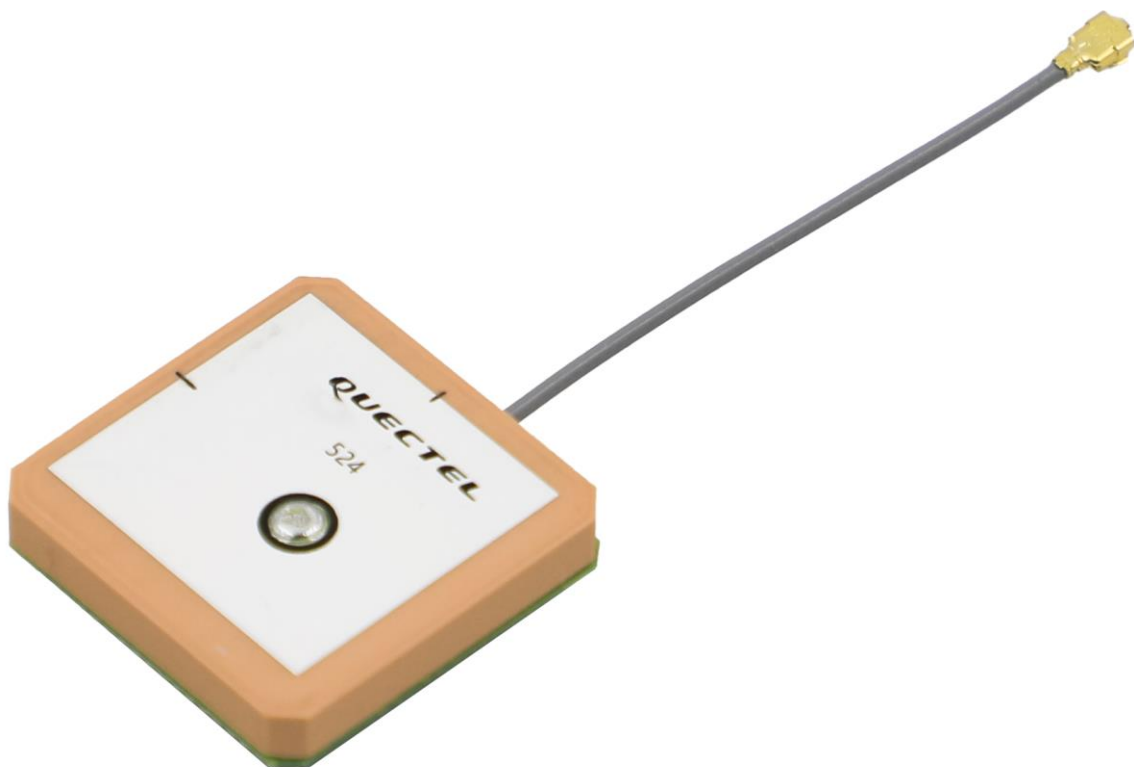
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1 Product Description

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.

2 Product Features

- GNSS
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

| | |
|-------------------|--|
| Frequency Range | 1575.42–1602 MHz |
| Input Impedance | 50 Ω |
| VSWR | ≤ 2.0 |
| Peak Gain | 1575.42 MHz: < 0.47 dBi 1602 MHz: < -0.29 dBi |
| Polarization Type | RHCP |

LNA Electrical Specifications

| | |
|-------------------------|---|
| Frequency Range | 1575.42–1602 MHz |
| VSWR | ≤ 2.0 |
| Noise Figure | 1575.42 MHz: Typ. 2.5 dB 1602 MHz: Typ. 2.7 dB |
| Gain | 1575.42 MHz: 26.0 \pm 3.0 dB 1602 MHz: 25.0 \pm 3.0 dB |
| Out-of-Band Attenuation | F1 -50 MHz > 30 dB F1 -100 MHz > 30 dB F2 +50 MHz > 40 dB F2 +100 MHz > 40 dB (F1 = 1575.42 MHz; F2 = 1602 MHz) |
| Operation Voltage | 3.0 V |
| Current | 8.0 \pm 3.0 mA |

Mechanical Specifications

| | |
|---------------------|---------------------------------------|
| Antenna Size | 25 mm \times 25 mm \times 7.76 mm |
| Casing | Ceramics |
| Connector Type | IPEX MHF I |
| Working Temperature | -40 $^{\circ}$ C to +85 $^{\circ}$ C |
| Storage Temperature | -40 $^{\circ}$ C to +85 $^{\circ}$ C |
| Weight | 11.68 \pm 1 g |

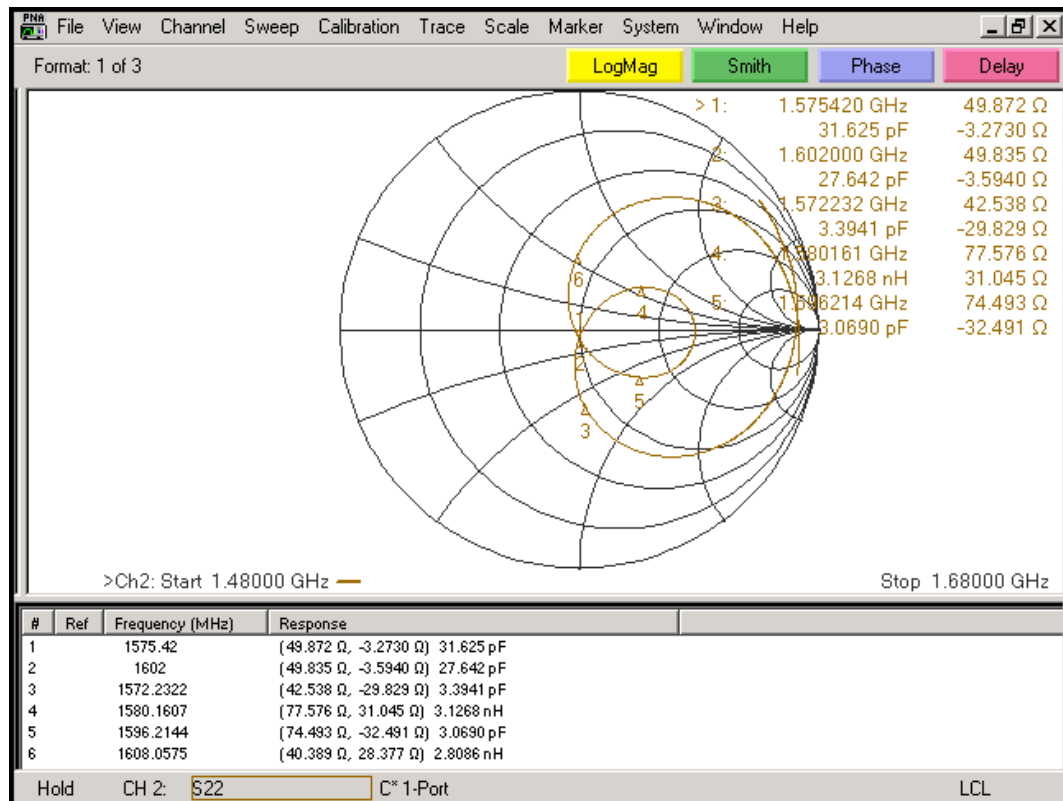
4 Overall Performance

4.1. Test Environment

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

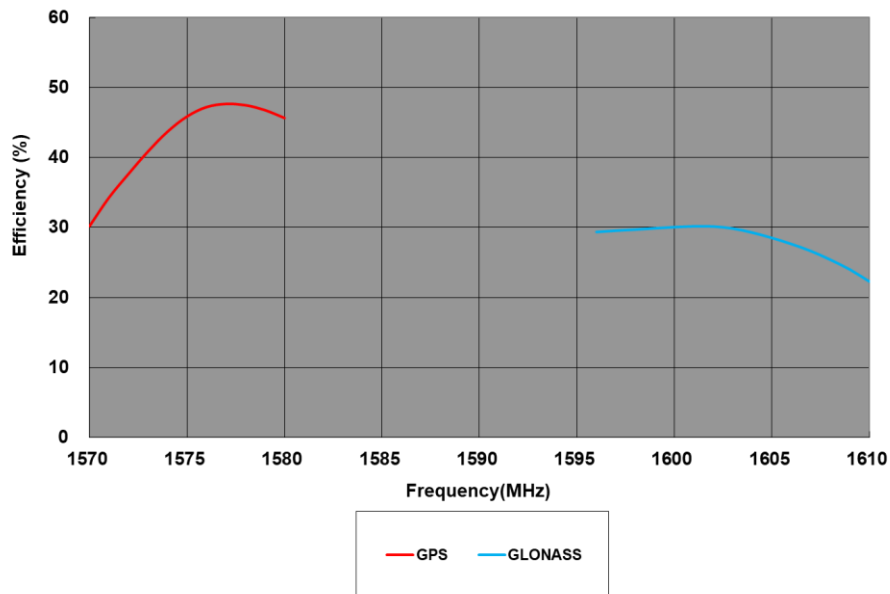


4.2. Return Loss



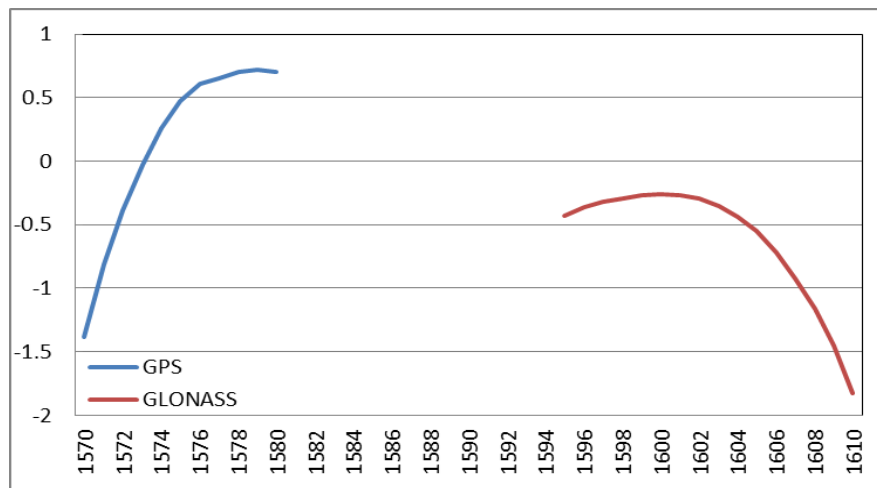
| | | |
|-----------------|---------|--------|
| Frequency (MHz) | 1575.42 | 1602 |
| RL | -29.77 | -28.87 |

4.3. Efficiency



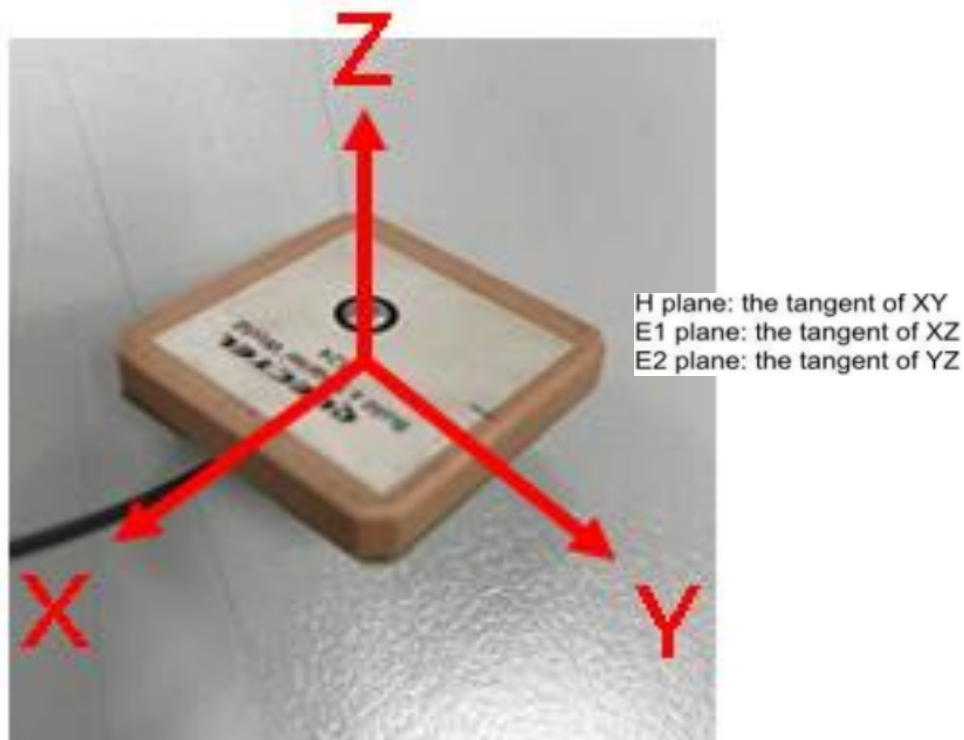
| | | |
|-----------------|---------|-------|
| Frequency (MHz) | 1575.42 | 1602 |
| Efficiency (%) | 45.87 | 30.15 |

4.4. Peak Gain

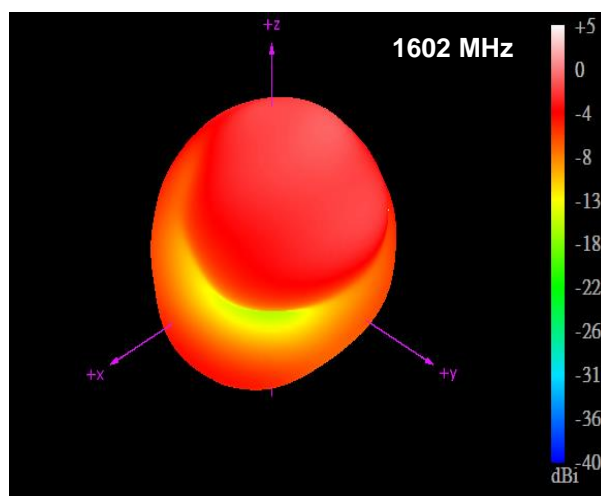
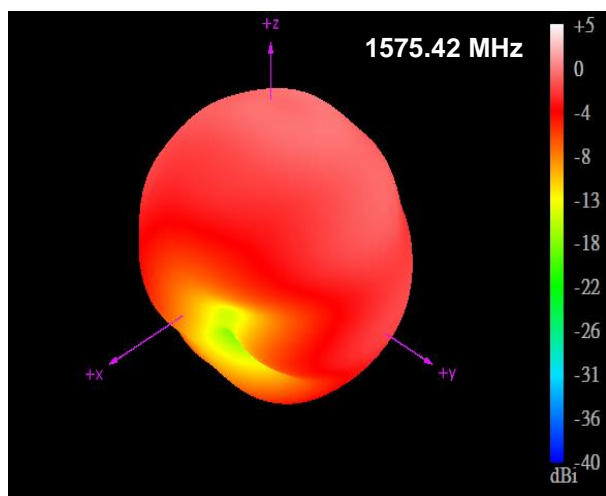


| | | |
|-----------------|---------|-------|
| Frequency (MHz) | 1575.42 | 1602 |
| Peak Gain (dBi) | 0.47 | -0.29 |

4.5. Radiation Pattern

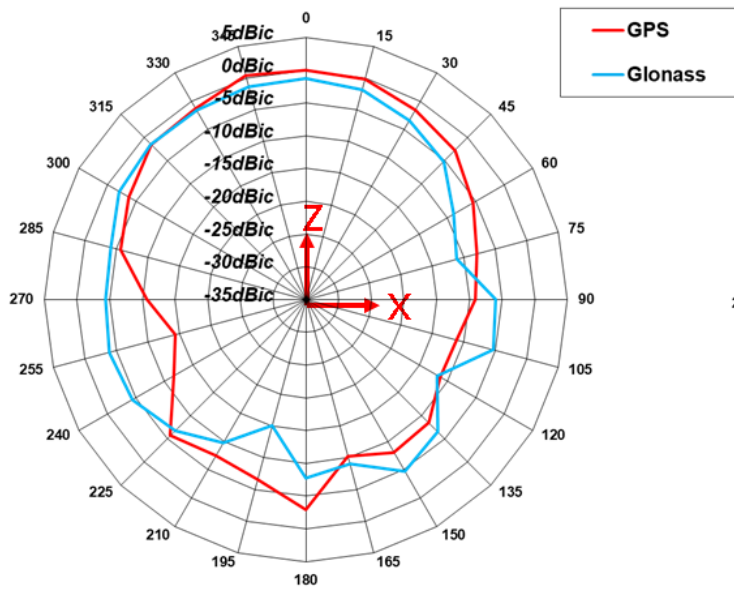


4.5.1. 3D Circular Polarization Gain Pattern

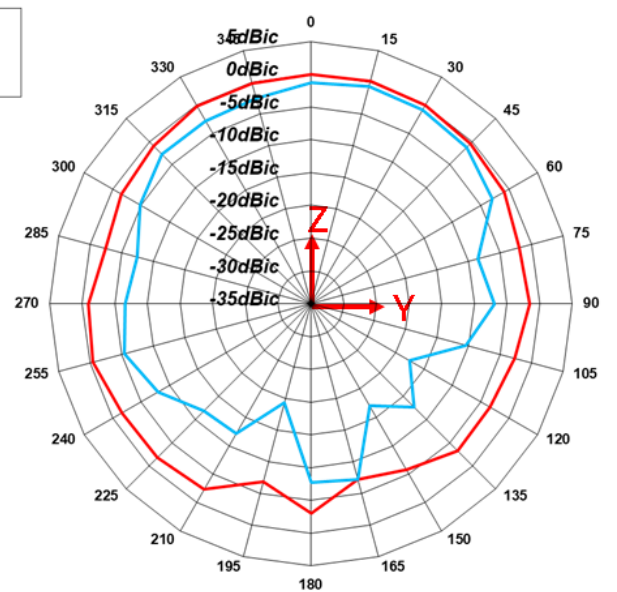


4.5.2. 2D Circular Polarization Gain Pattern

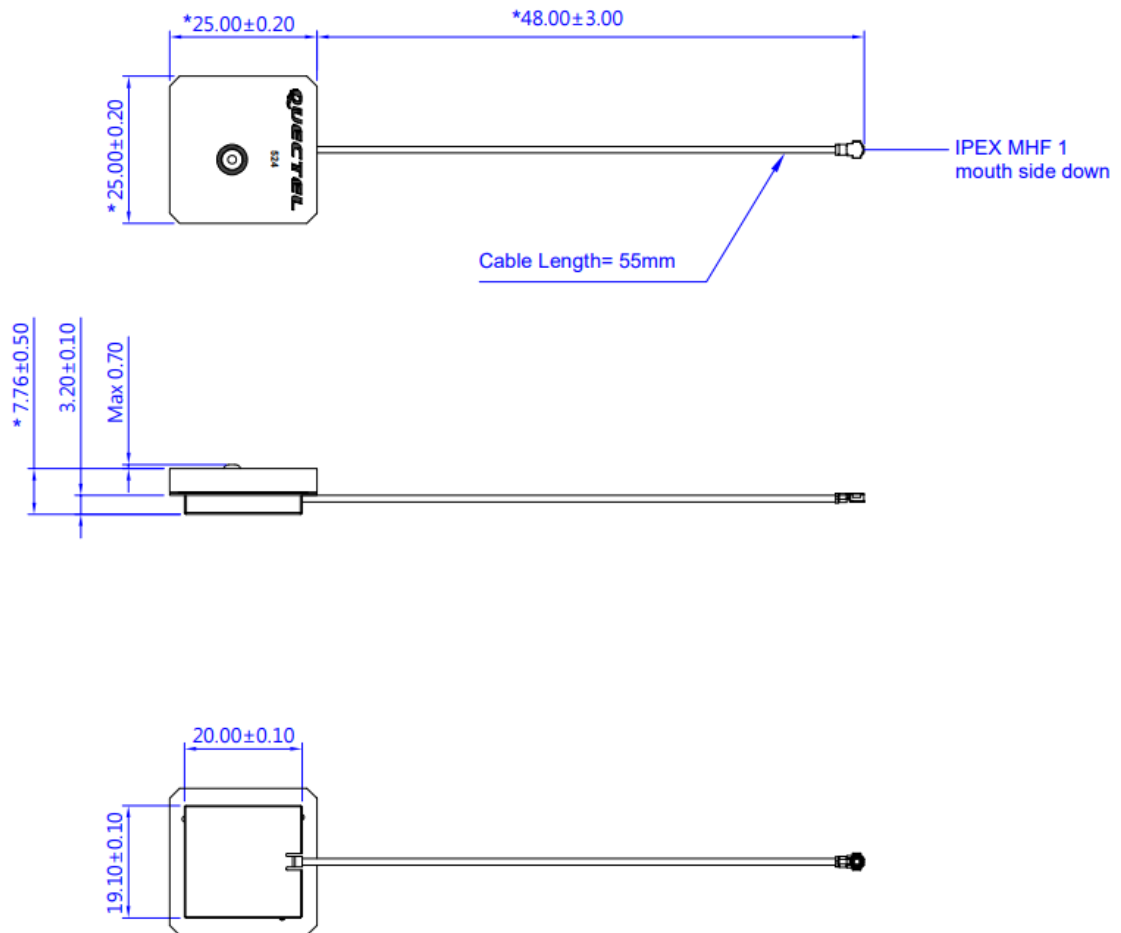
Circular Gain Radiation **XZ** Pattern



Circular Gain Radiation **YZ** Pattern



5 Product Size



Mouser Electronics

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