

Antenna

YG0043AA Datasheet

Antenna Services

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About the Document

Revision History

| Version | Date | Author | Note |
|---------|------------|-----------------------------|-------------------------------------------------------------|
| - | 2020-12-28 | Kenny YIN/ Xiaodong YANG | Creation of the document |
| 1.0 | 2020-12-28 | Kenny YIN/ Xiaodong YANG | First official release |
| 1.1 | 2021-07-13 | Aria CHU | Added Chapters 3 and 7. |
| 1.2 | 2021-12-03 | Aria CHU | Updated the product description in Chapter 1. |
| 1.3 | 2022-02-10 | Xiaodong YANG | Updated the data (Chapter 2) and the frequency (Chapter 4). |

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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

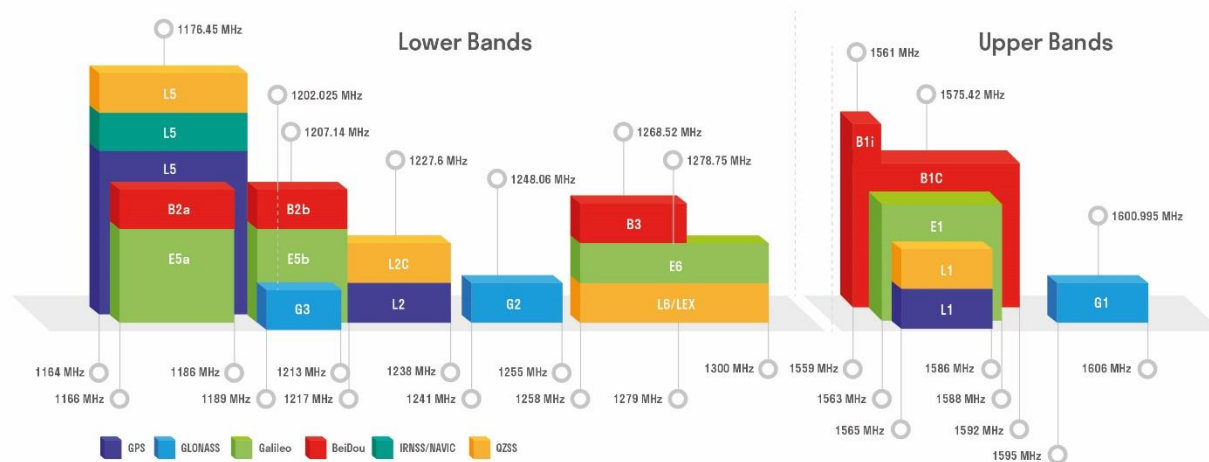
- GNSS L1
- High efficiency
- Excellent performance



3 GNSS Frequency Band Checklist

| GNSS Frequency Bands (MHz) | | | | | |
|----------------------------|---------------------------------------------------|--------------------------------------------------------|--------------------------------------------------|---------------------------------------------|--------------------------------------------|
| GPS | L1 Centre 1575.42 (1565–1586) | L2 Centre 1227.6 (1217–1238) | L5 Centre 1176.45 (1164–1189) | | |
| | ● | - | - | | |
| GLONASS | G1/L1OC/L1OF Centre 1601 (1595–1606) | G2/L2OC/L2OF Centre 1248.06 (1241–1255) | G3/L3OC Centre 1202.025 (1189–1213) | | |
| | ● | - | - | | |
| GALILEO | E1 Centre 1575.42 (1563–1588) | E5a Centre 1176.45 (1166–1187) | E5b Centre 1207.14 (1197–1218) | E6 Centre 1278.75 (1258–1300) | |
| | ● | - | - | - | |
| BEIDOU | B1I Centre 1561.098 (1559–1564) | B1C (BeiDou-3) Centre 1575.42 (1559–1592) | B2a/B2I Centre 1176.45 (1166–1187) | B2b Centre 1207.14 (1197–1217) | B3 Centre 1268.52 (1258–1279) |
| | ● | ● | - | - | - |
| QZSS | L1 Centre 1575.42 (1573–1578) | L2C Centre 1227.6 (1226–1229) | L5 Centre 1176.45 (1166–1187) | L6 Centre 1278.75 (1257–1300) | |
| | ● | - | - | - | |
| IRNSS | L5 Centre 1176.45 (1164–1189) | | | | |
| | - | | | | |

GNSS Bands and Constellations



4 Product Specifications

- This antenna is tested on a 100 mm × 80 mm PCB.

Passive Electrical Specifications

| | |
|-------------------|---------------------------------------------------------------------------------------------|
| Frequency | GPS L1: 1575.42 MHz BD B1: 1561.098 MHz GLONASS L1: 1602 MHz GALILEO E1:1575.42MHz |
| Input Impedence | 50 Ω |
| VSWR | ≤ 2.53 |
| Gain | < 3.0 dBi |
| Polarization Type | RHCP |

Mechanical Specifications

| | |
|---------------------|----------------------|
| Antenna Size | 15 mm × 15 mm × 4 mm |
| Casing | Ceramic |
| Working Temperature | -40 °C to +85 °C |
| Radome Color | - |

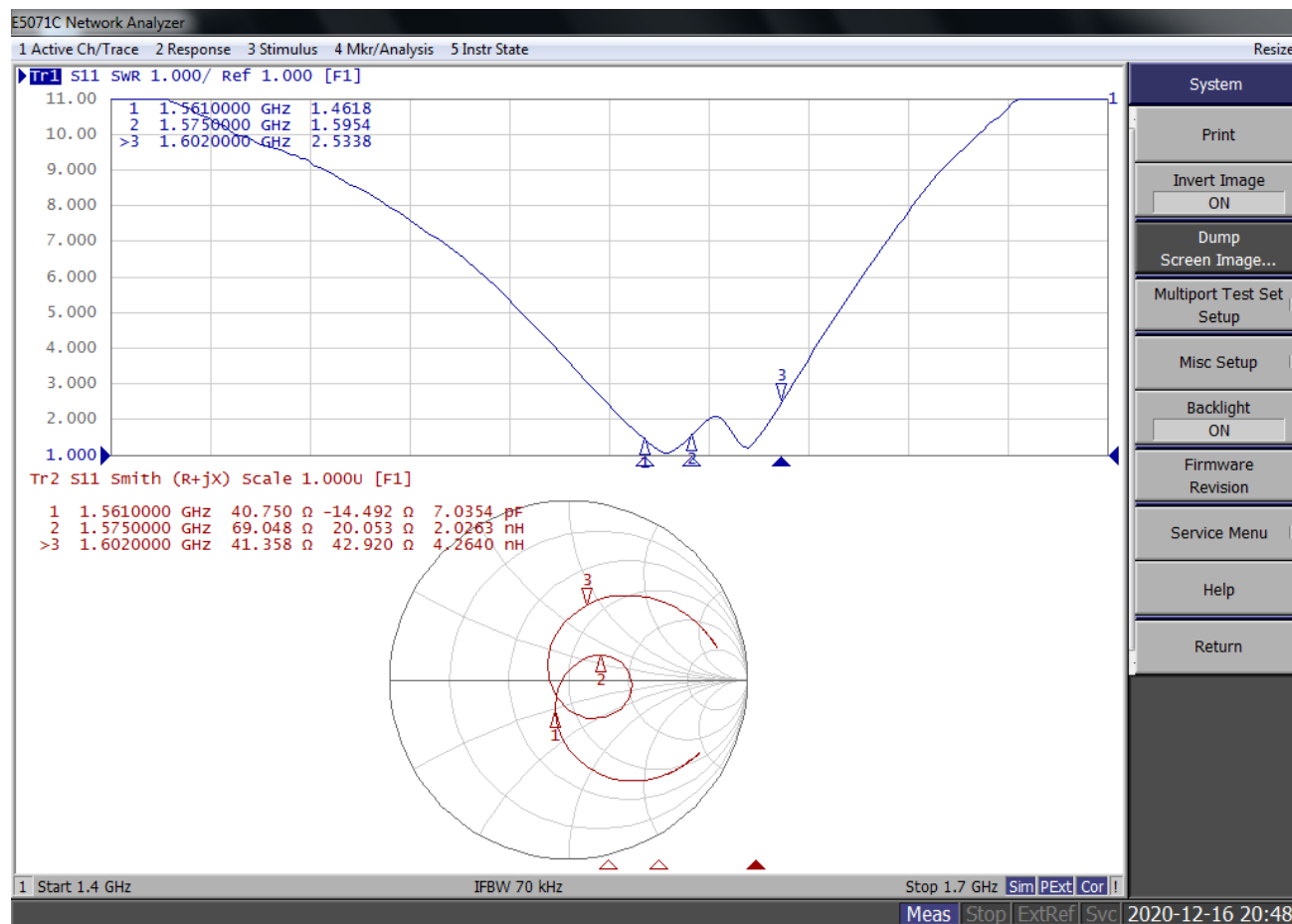
5 Overall Performance

5.1. Test Environment

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

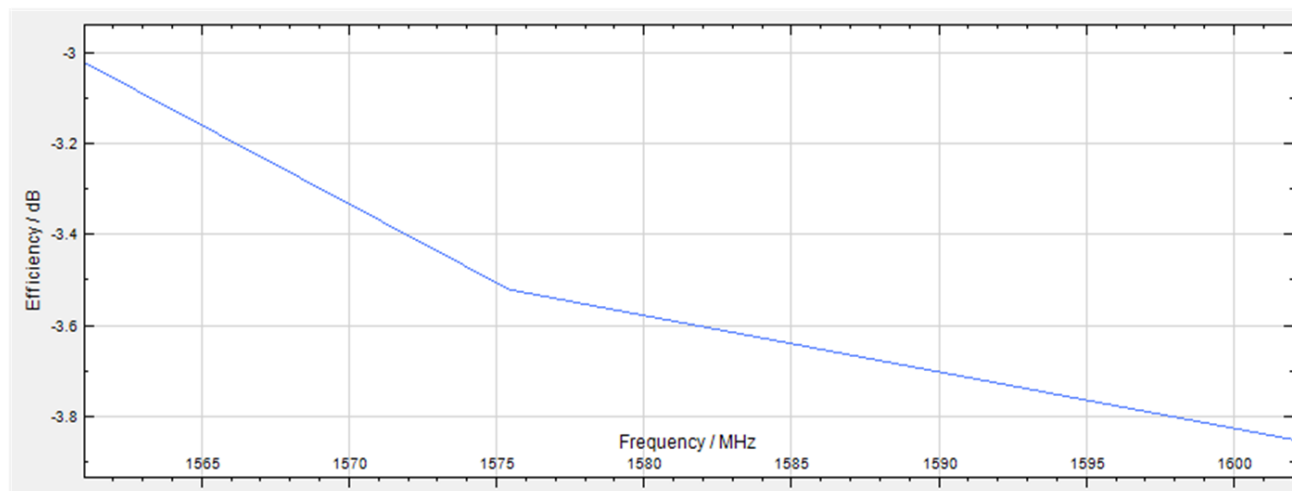


5.2. VSWR



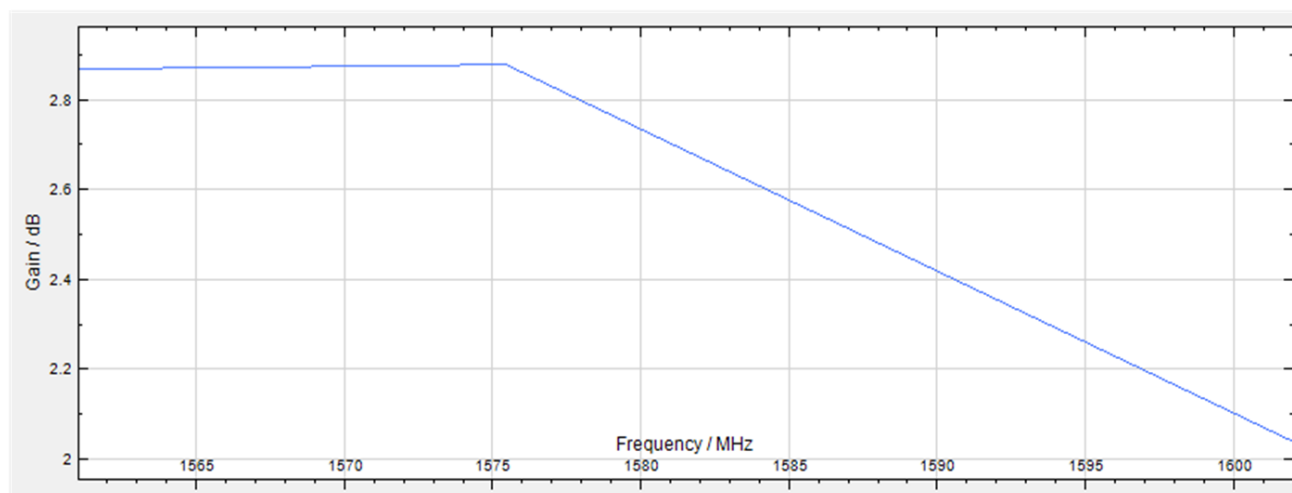
| | | | |
|-----------------|------|------|------|
| Frequency (MHz) | 1561 | 1575 | 1602 |
| VSWR | 1.46 | 1.59 | 2.53 |

5.3. Efficiency



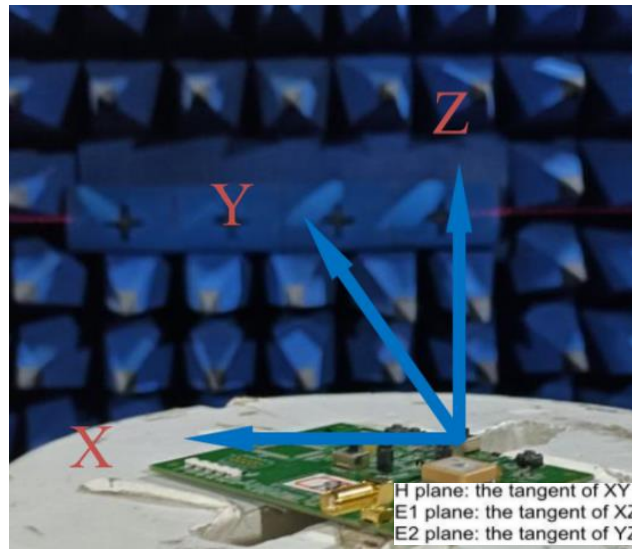
| Frequency (MHz) | 1561 | 1575 | 1602 |
|-----------------|-------|-------|-------|
| Efficiency (%) | 49.89 | 44.46 | 41.21 |

5.4. Gain



| Frequency (MHz) | 1561 | 1575 | 1602 |
|-----------------|------|------|------|
| Gain (dBi) | 2.87 | 2.88 | 2.04 |

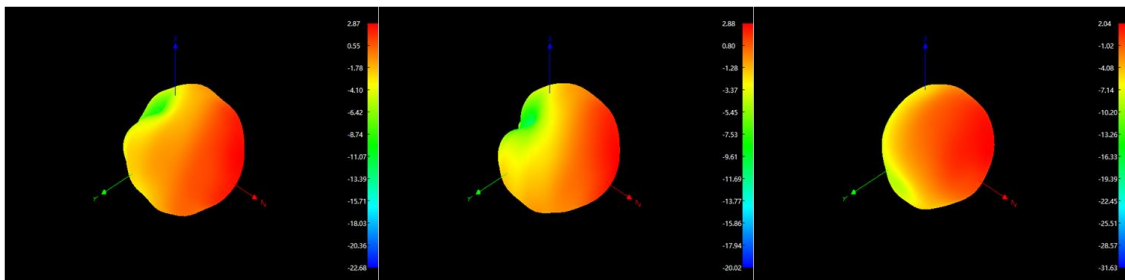
5.5. Radiation Pattern



1561 MHz

1575 MHz

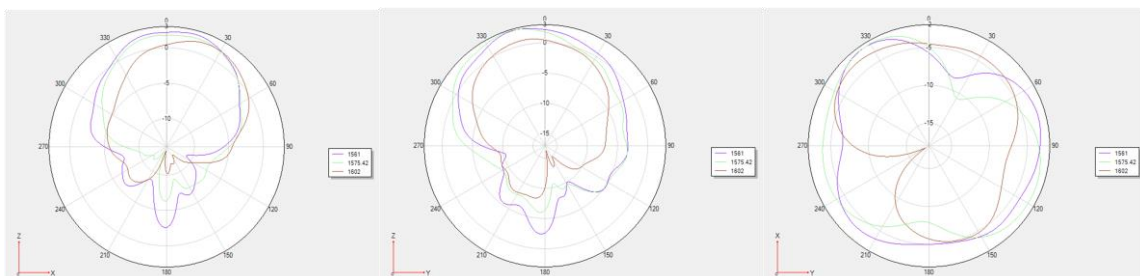
1602 MHz



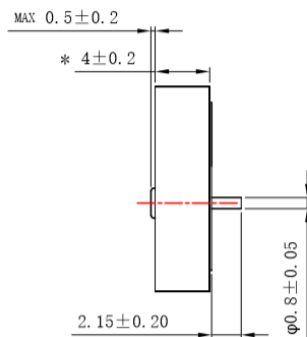
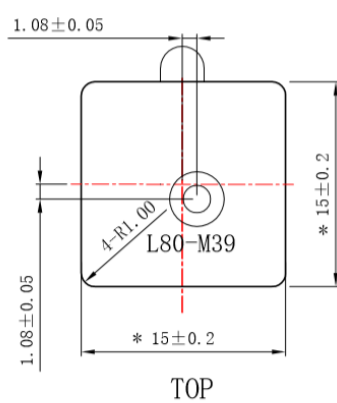
Phi 0

Phi 90

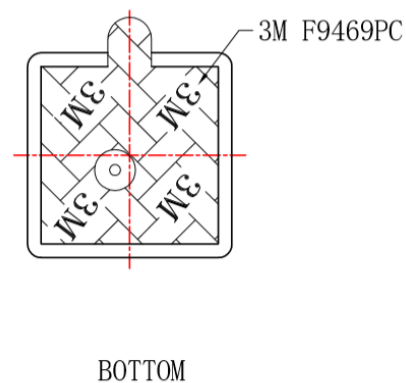
Theta 90



6 Product Size



RoHS



7 PCB Footprint Recommendation

