

# 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

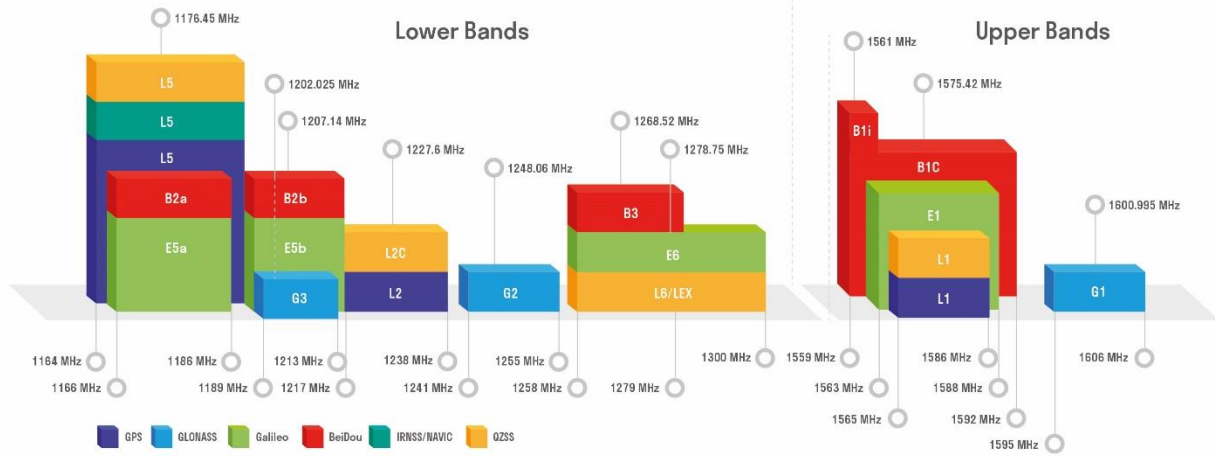
- GNSS L1
- High efficiency
- Excellent performance



### 3 GNSS Frequency Band Checklist

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

### GNSS Bands and Constellations





## 4 Product Specifications

- This antenna is tested on a 100 mm x 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 $\Omega$
VSWR	$\leq 2.53$
Gain	< 3.0 dBi
Polarization Type	RHCP

### Mechanical Specifications

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

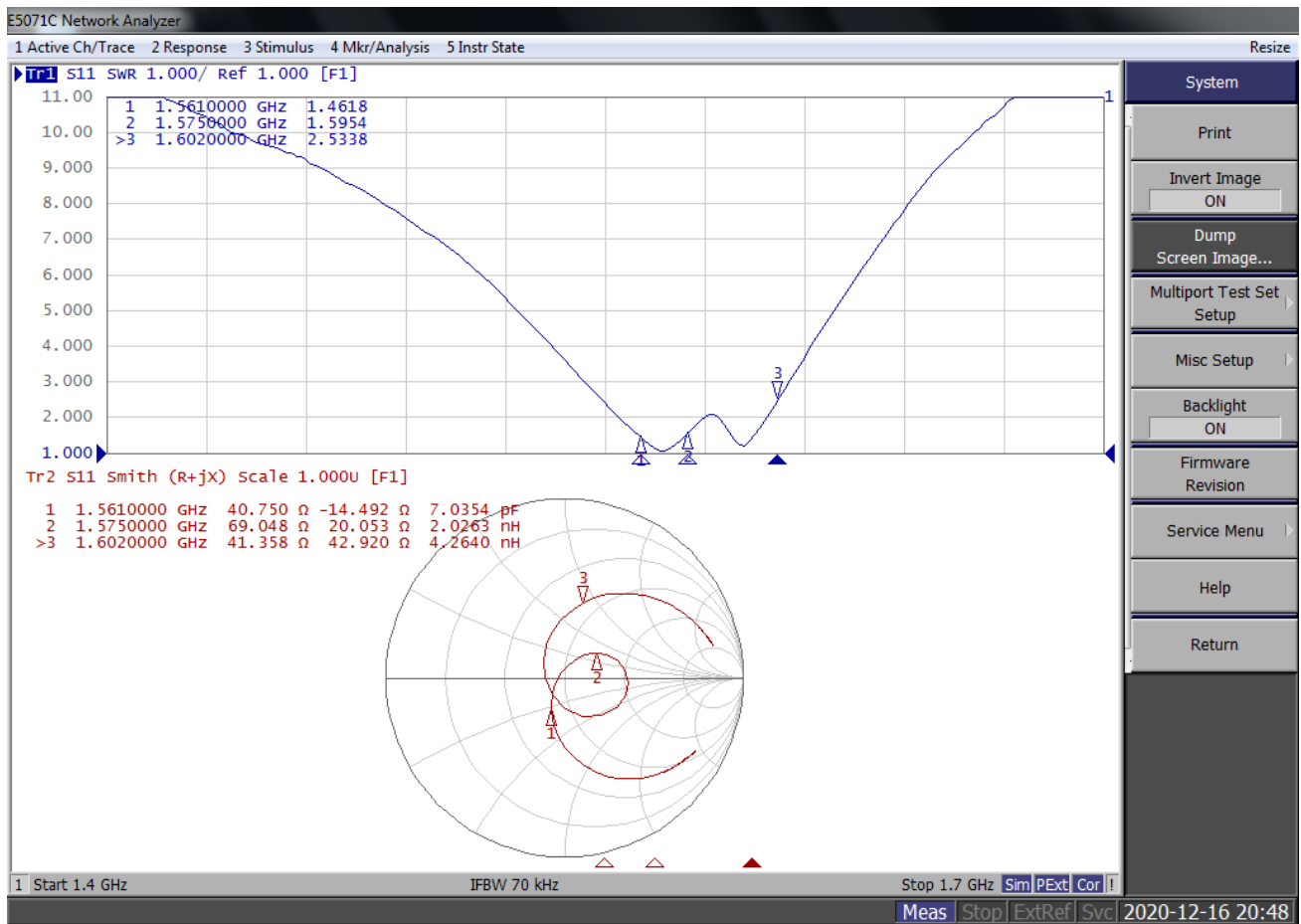
## 5 Overall Performance

### 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

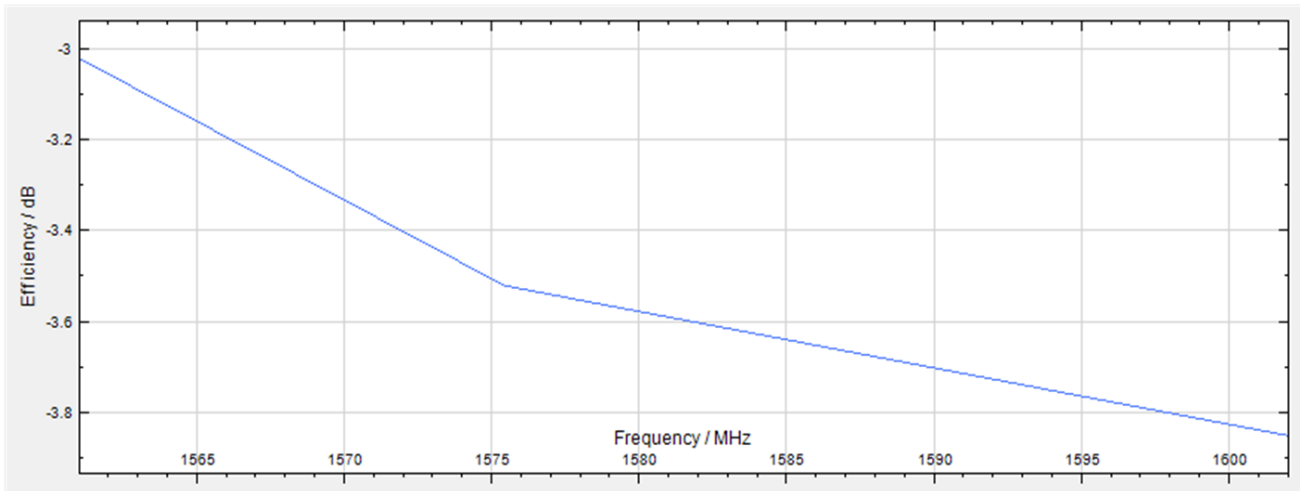


## 5.2. VSWR



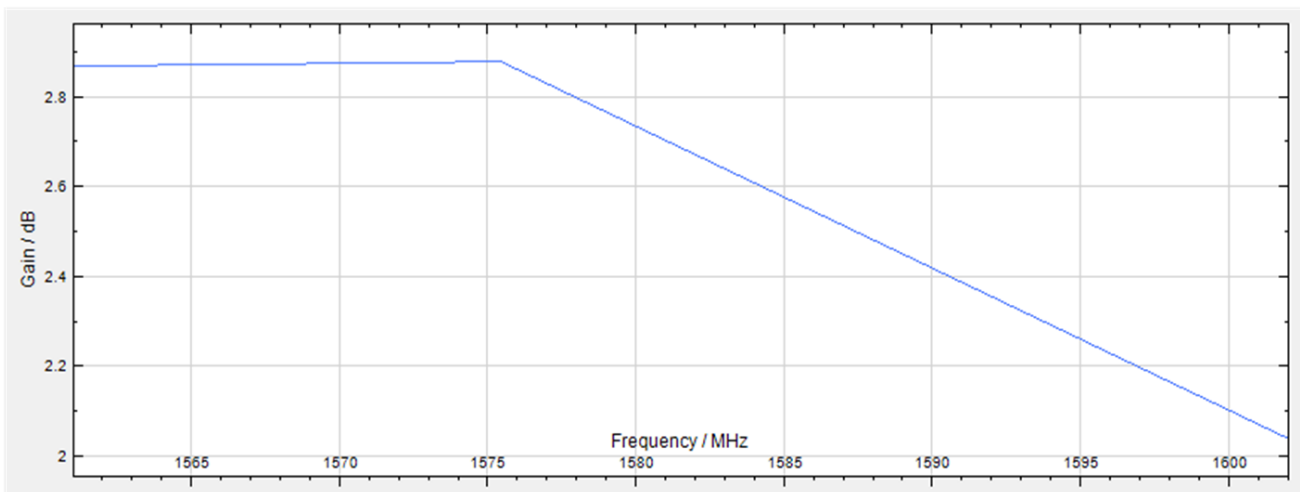
Frequency (MHz)	1561	1575	1602
VSWR	1.46	1.59	2.53

### 5.3. Efficiency



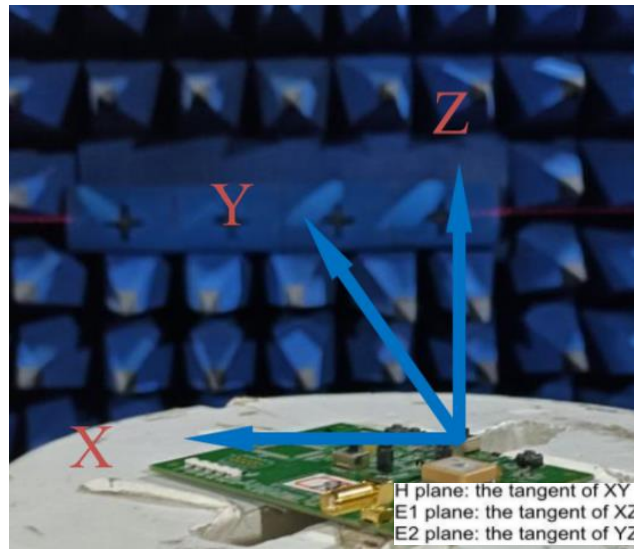
<b>Frequency (MHz)</b>	1561	1575	1602
<b>Efficiency (%)</b>	49.89	44.46	41.21

### 5.4. Gain



<b>Frequency (MHz)</b>	1561	1575	1602
<b>Gain (dBi)</b>	2.87	2.88	2.04

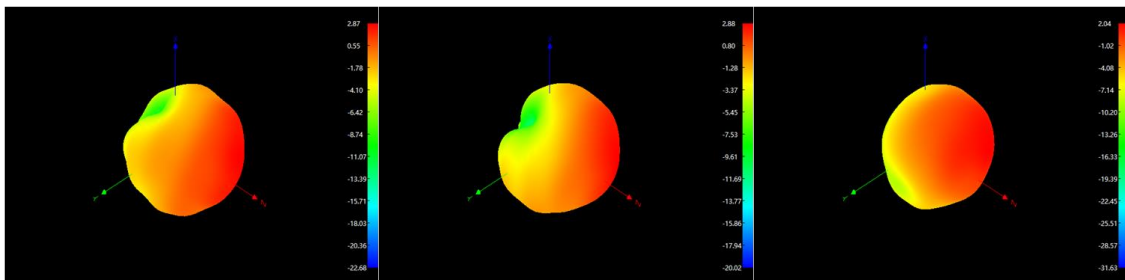
### 5.5. Radiation Pattern



1561 MHz

1575 MHz

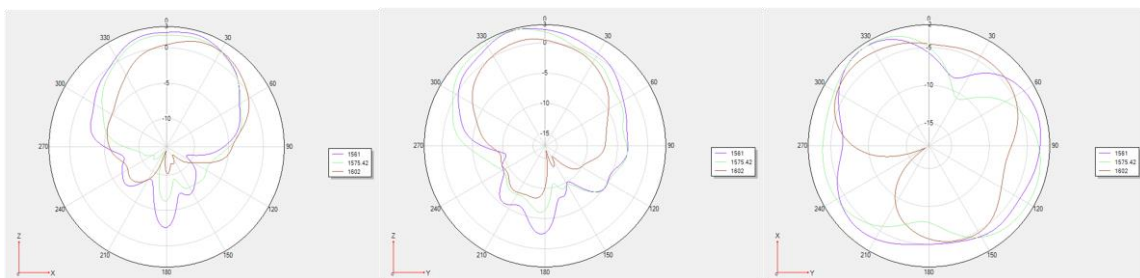
1602 MHz



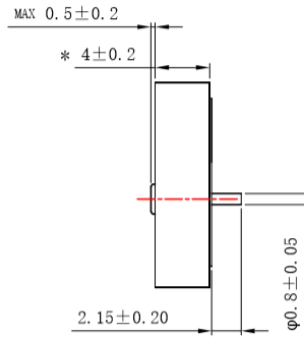
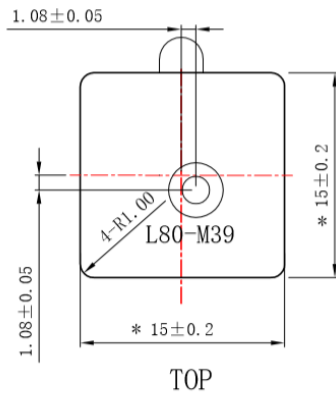
Phi 0

Phi 90

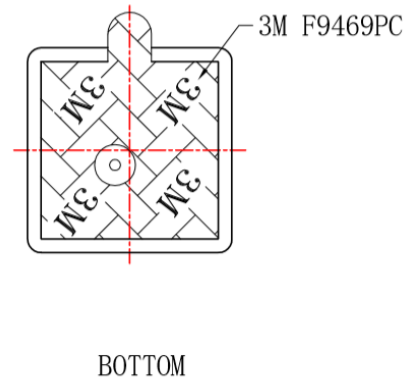
Theta 90



## 6 Product Size



RoHS



## 7 PCB Footprint Recommendation

