

# Antenna

# YFGA004AA Datasheet

**Antenna Services**

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# About the Document

## Revision History

Version	Date	Author	Note
-	2021-08-27	Jason LONG/ Xiaodong YANG	Creation of the document
1.0	2021-08-27	Jason LONG/ Xiaodong YANG	First official release
1.1	2021-09-14	Junsen LI	1. Updated the product feature (Chapter 2.0). 2. Updated the picture (Chapter 5.4).
1.2	2021-12-03	Junsen LI	Updated the product description in Chapter 1.

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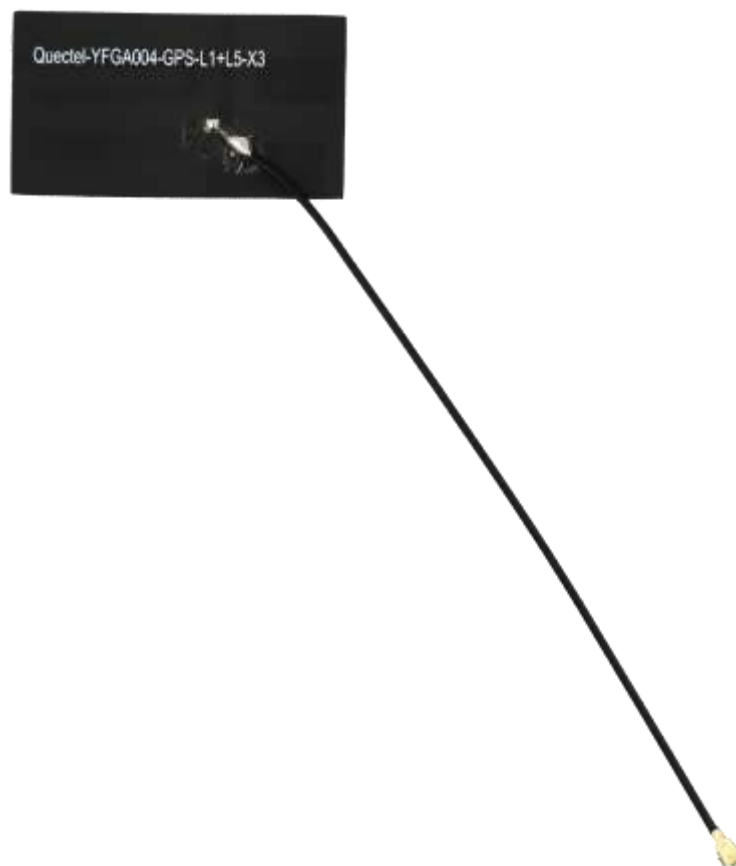
## 1 Product Description

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

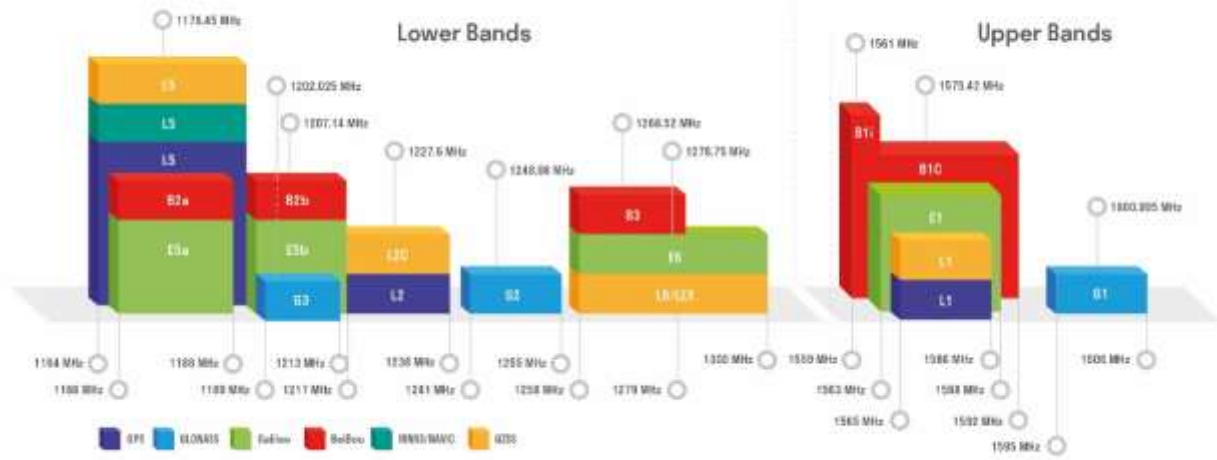
- GPS L1/L5; BDS B1; GLONASS G1; FPC Antenna
- High efficiency
- Excellent performance



### 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/L10C/L10F</b> Centre 1601 (1595–1606)	<b>G2/L20C/L20F</b> Centre 1248.06 (1241–1255)	<b>G3/L30C</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

### Passive Electrical Specifications

Frequency Range	1176.45 MHz, 1575.42 MHz
Input Impedence	50 $\Omega$
VSWR	$\leq 2.0$
Gain	$\leq 2.5$ dBi
Polarization Type	Linear

### Mechanical Specifications

Antenna Size	43 mm x 24 mm x 0.12 mm
Radiator	FPC
Connector Type	RF1
Working Temperature	-40 °C to +85 °C
Radome Color	Black
Mounting Type	Adhesive

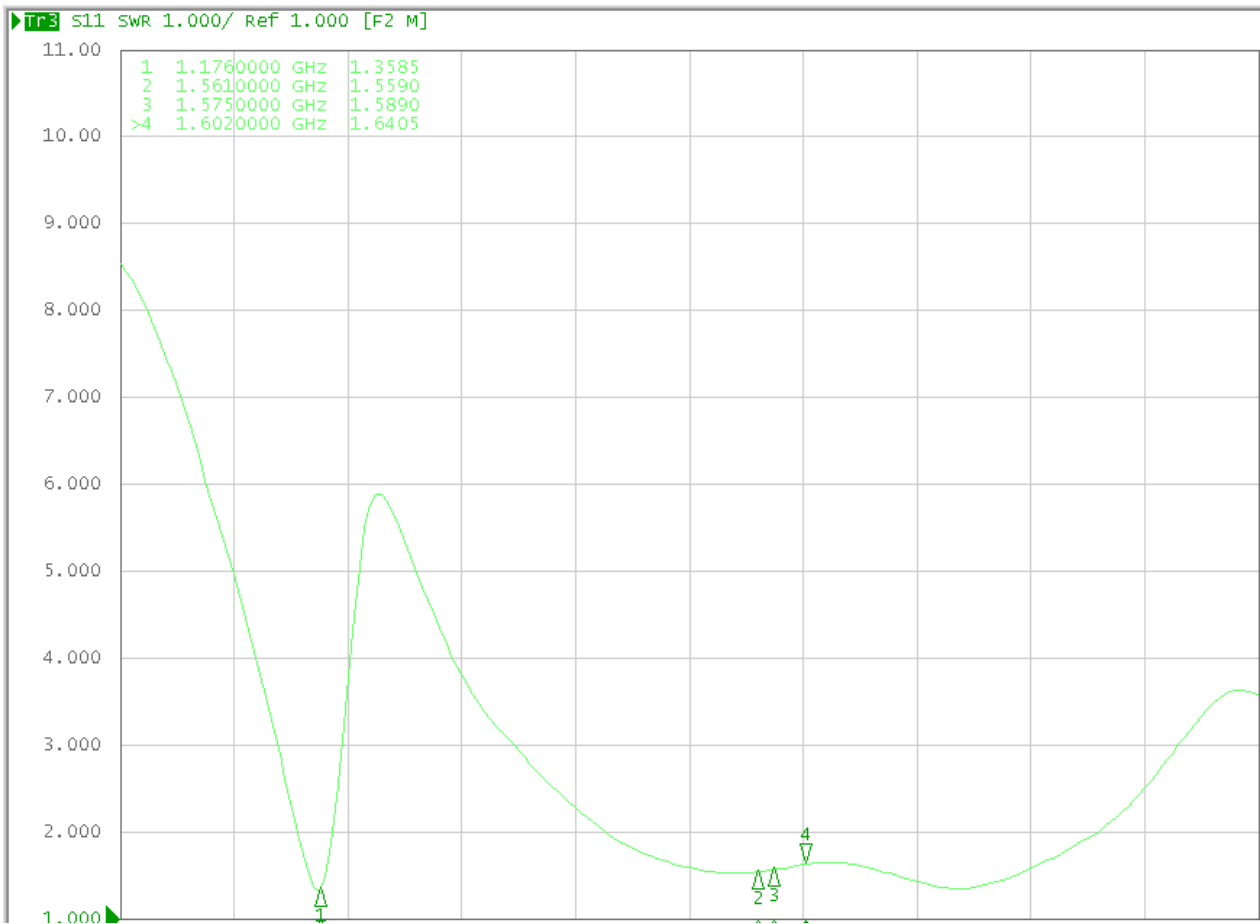
## 5 Overall Performance

### 5.1. Test Environment

- KEYSIGHT VNA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 400 MHz – 8.0 GHz

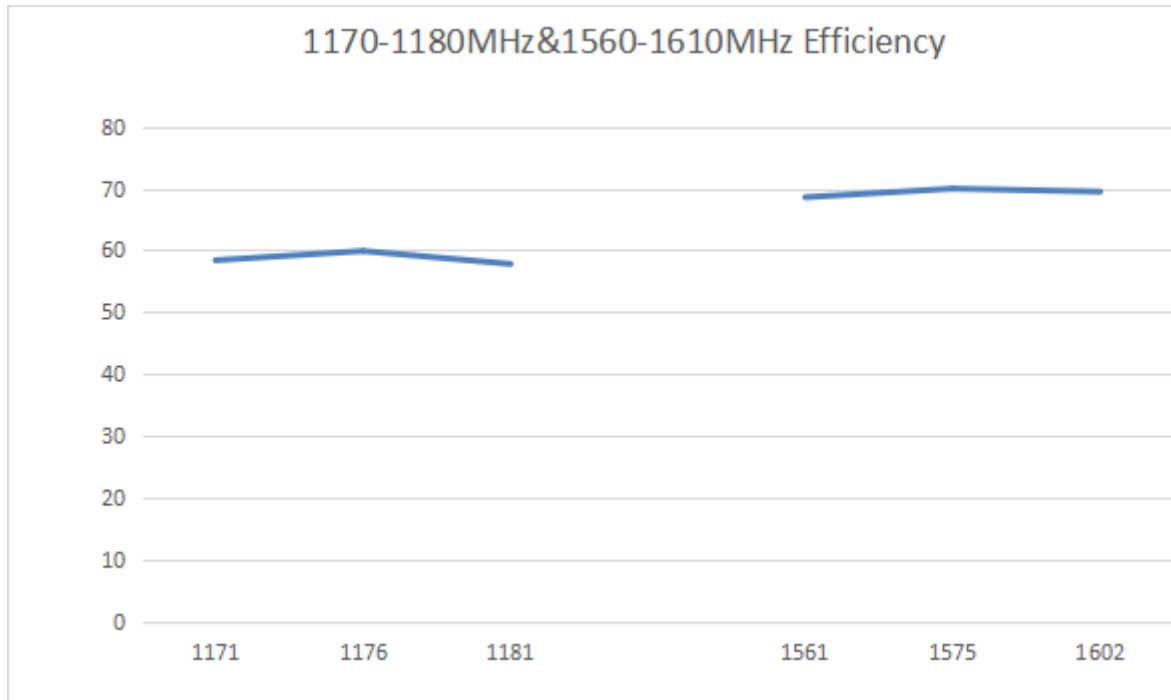


## 5.2. VSWR



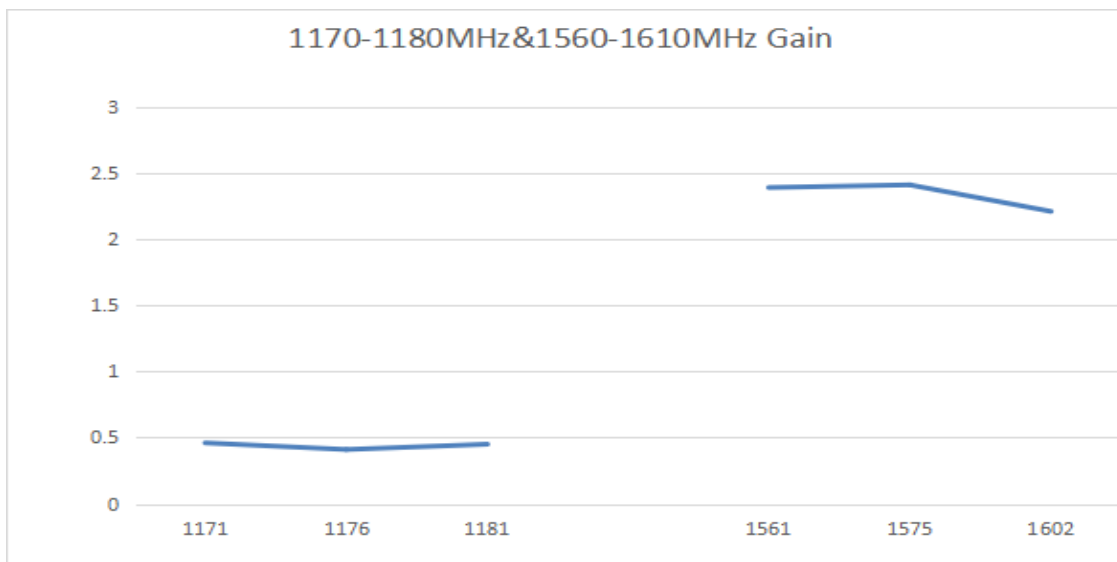
<b>Frequency (MHz)</b>	1176	1561	1575	1602
<b>VSWR</b>	1.35	1.55	1.58	1.64

### 5.3. Efficiency



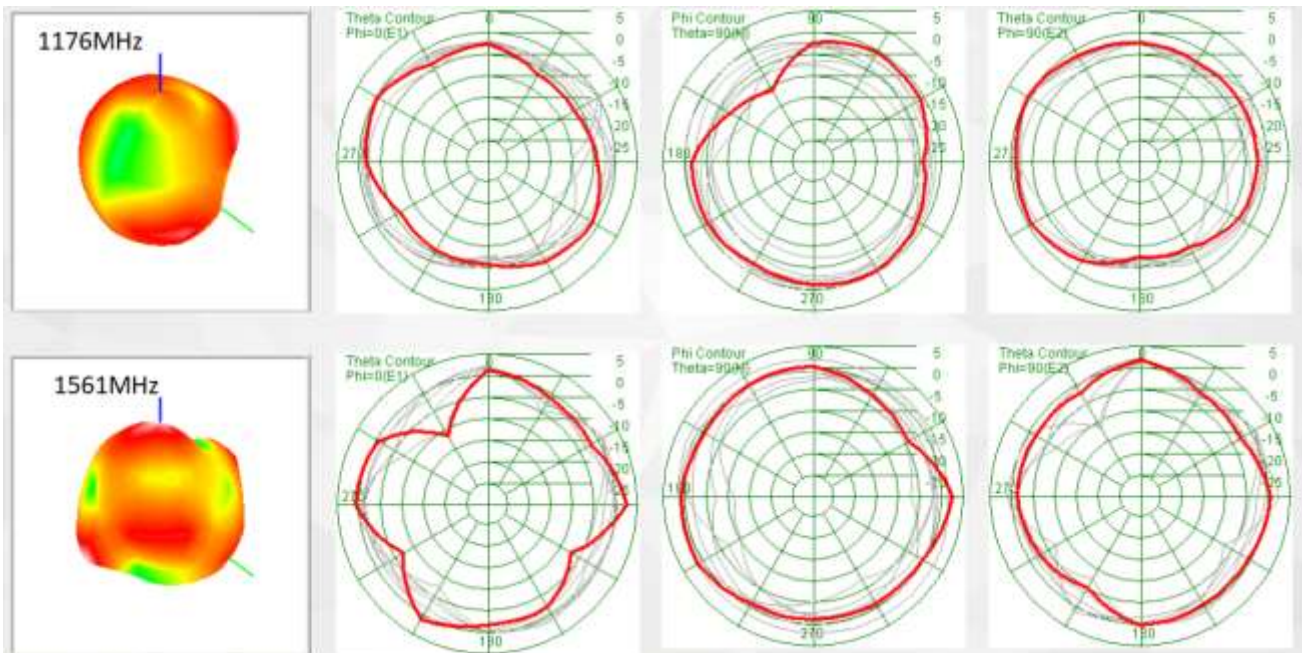
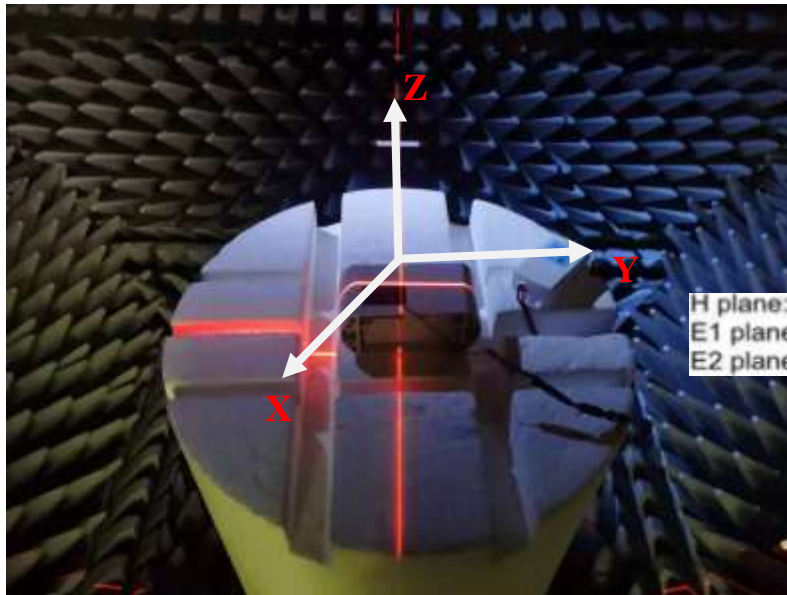
<b>Frequency (MHz)</b>	1176	1561	1575	1602
<b>Efficiency (%)</b>	59.90	68.60	70.00	69.50

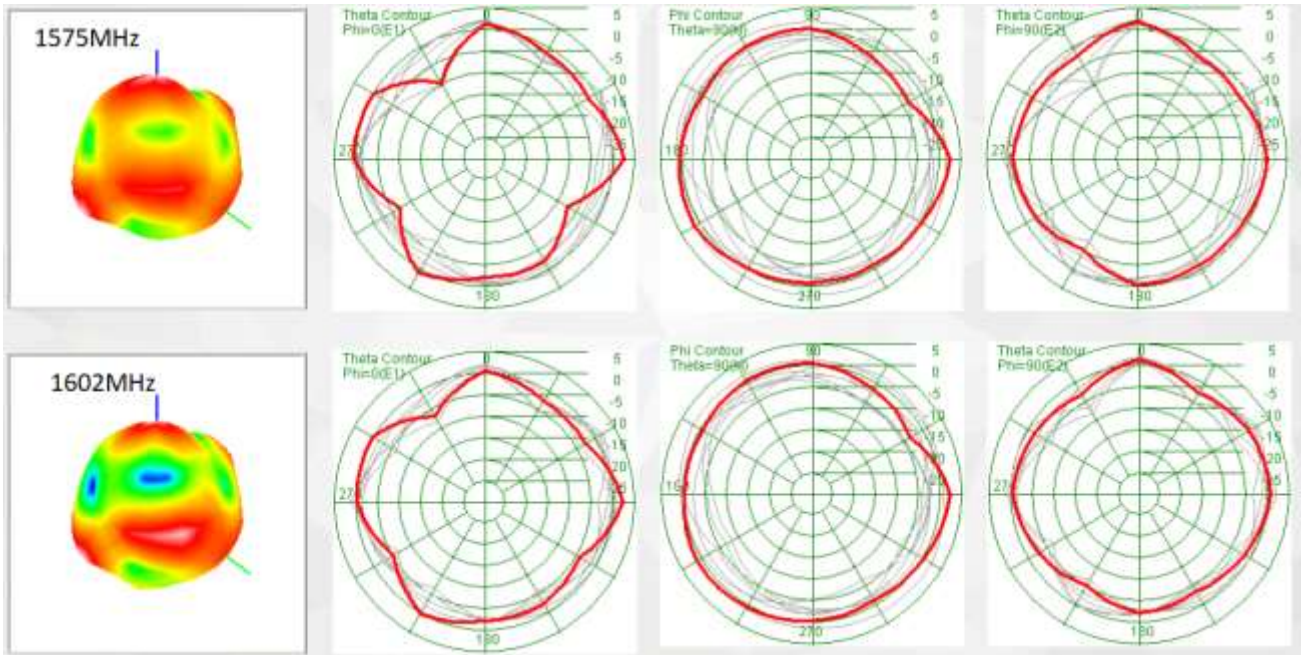
### 5.4. Gain



<b>Frequency (MHz)</b>	1176	1561	1575	1602
<b>Gain (dBi)</b>	0.41	2.39	2.41	2.21

### 5.5. Radiation Pattern





## 6 Product Size

ROHS

