

# Antenna

# YG0046AA Datasheet

## Antenna Services

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# About the Document

## Revision History

Version	Date	Author	Note
-	2020-12-02	Kenny YIN	Creation of the document
1.0	2020-12-02	Kenny YIN	First official release
1.1	2021-07-13	Aria CHU/ Kenny YIN	1. Added Chapters 3 and 7. 2. Updated the drawing (Chapter 6).

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## 1 Product Description

The antenna is designed for superior performance, and can be widely used for wireless applications.

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

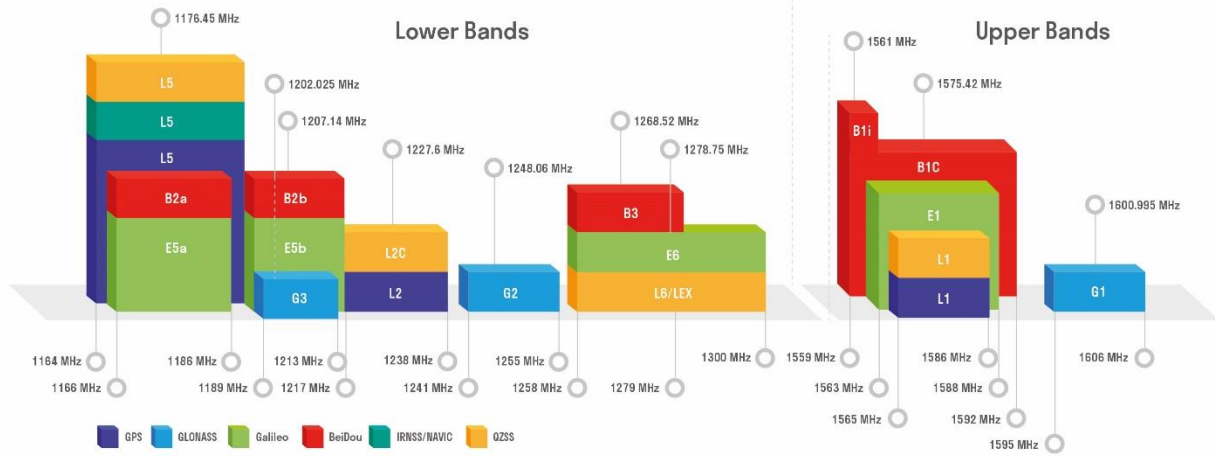
- Ceramic GNSS
- High efficiency
- Excellent performance



### 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 30 mm x 70 mm PCB.

### Passive Electrical Specifications

Frequency Range	1561 ±2 MHz, 1575.42 ±2 MHz
Input Impedence	50 Ω
S11	< -20 dB
Gain	-
Polarization Type	RHCP

### Mechanical Specifications

Antenna Size	18 mm x 18 mm x 2 mm
Connector Type	-
Working Temperature	-40°C to +85°C
Radome Color	-

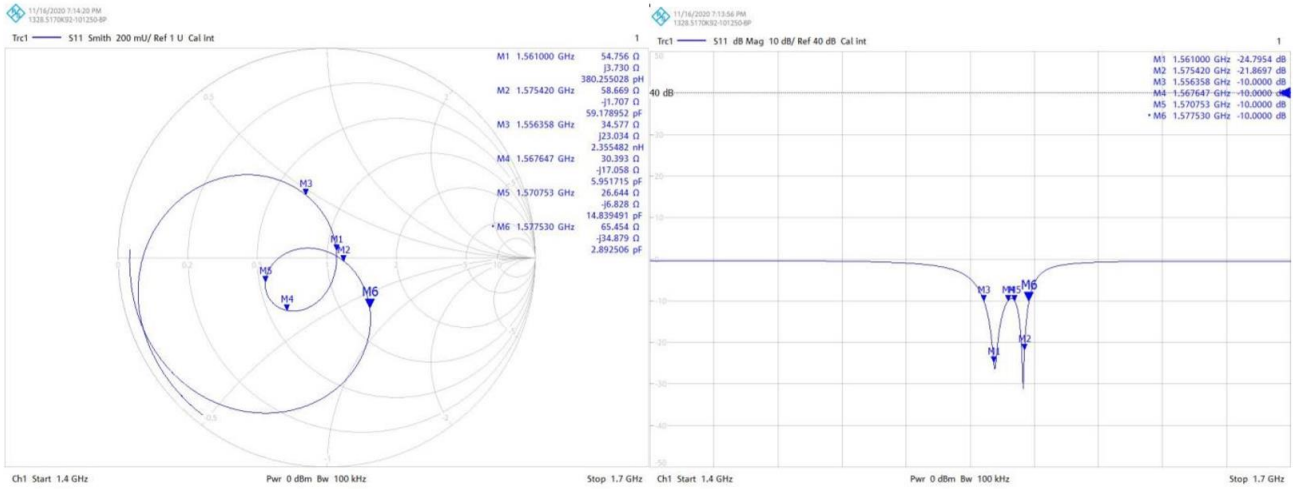
## 5 Overall Performance

### 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 Smith Chart and Return loss

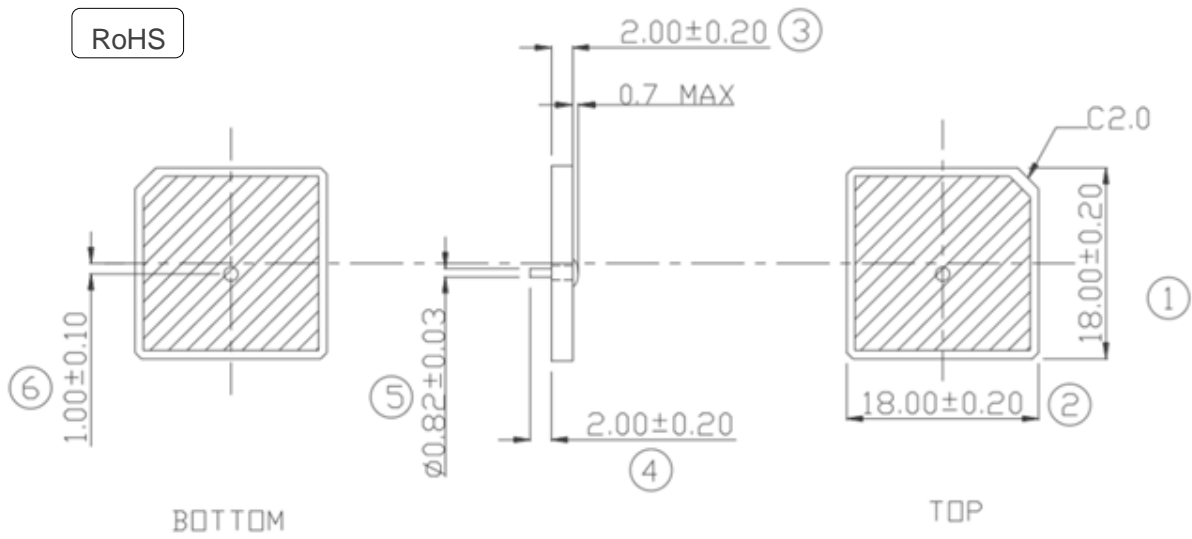


Frequency(MHz)	1561	1575.42
Impedance(Ω)	54.75+j3.73	58.66-j1.70
Return Loss(dB)	-24.79	-21.86
Band Width(MHz)	11.3	6.8

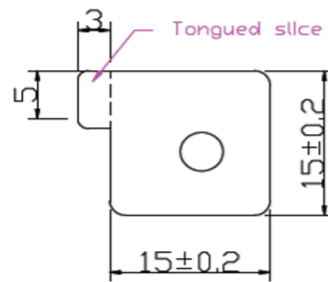
### 5.3 Efficiency and Peak Gain

Frequency(MHz)	1561	1575.42
Efficiency(%)	42.56	31.05
Peak Gain(dBic)	0.12	-0.34

## 6 Product Size

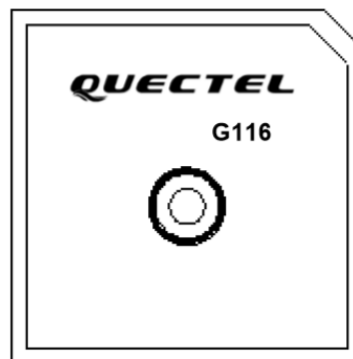


The order numbers ① to ⑥ are important dimensions.



Release Paper

Adhesive Tape: 0.12 ±5% mm



Marking

## 7 PCB Footprint Recommendation

