

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

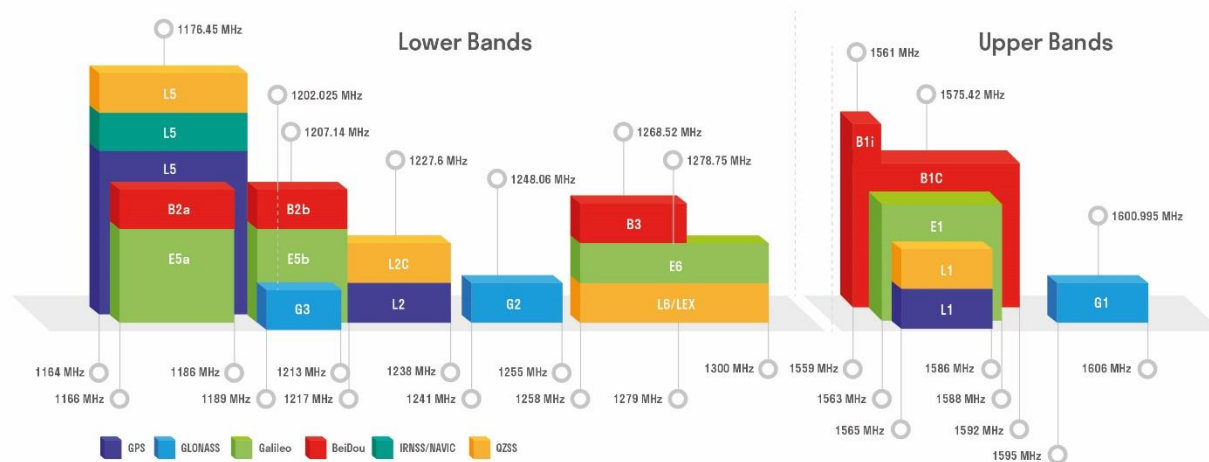
- GNSS L1
- High efficiency
- Excellent performance



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	-

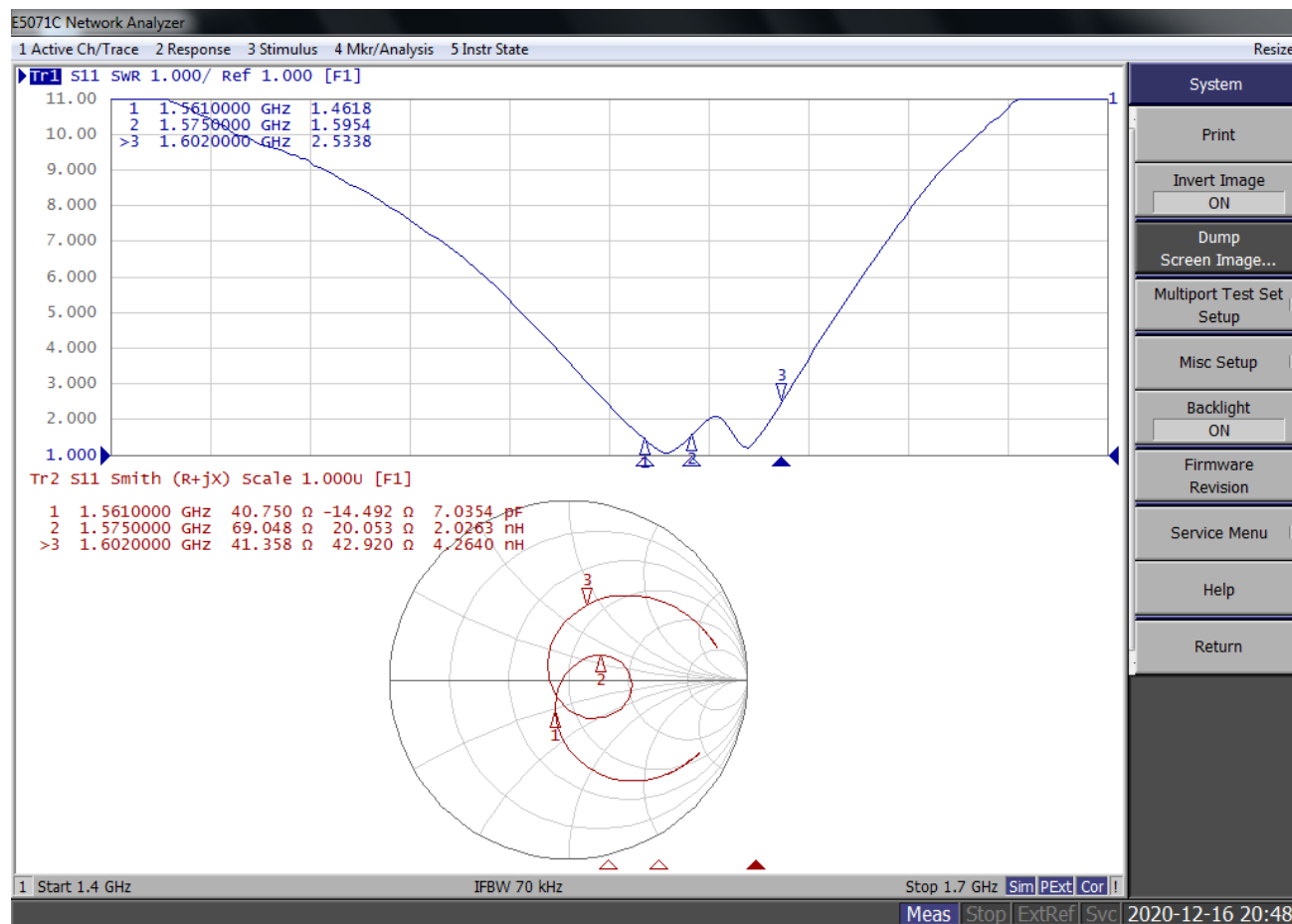
5 Overall Performance

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

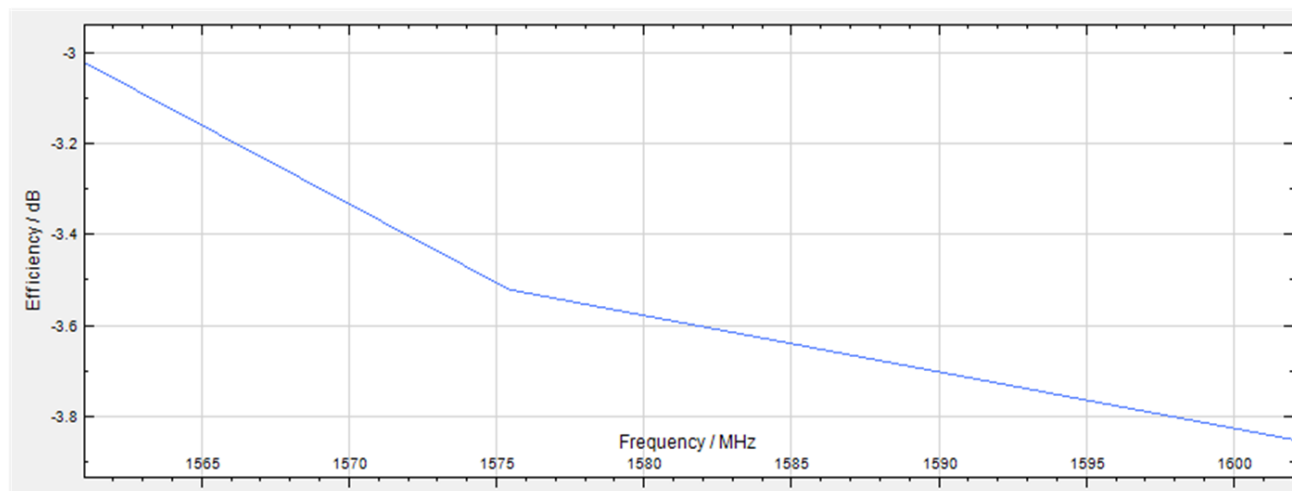


5.2. VSWR



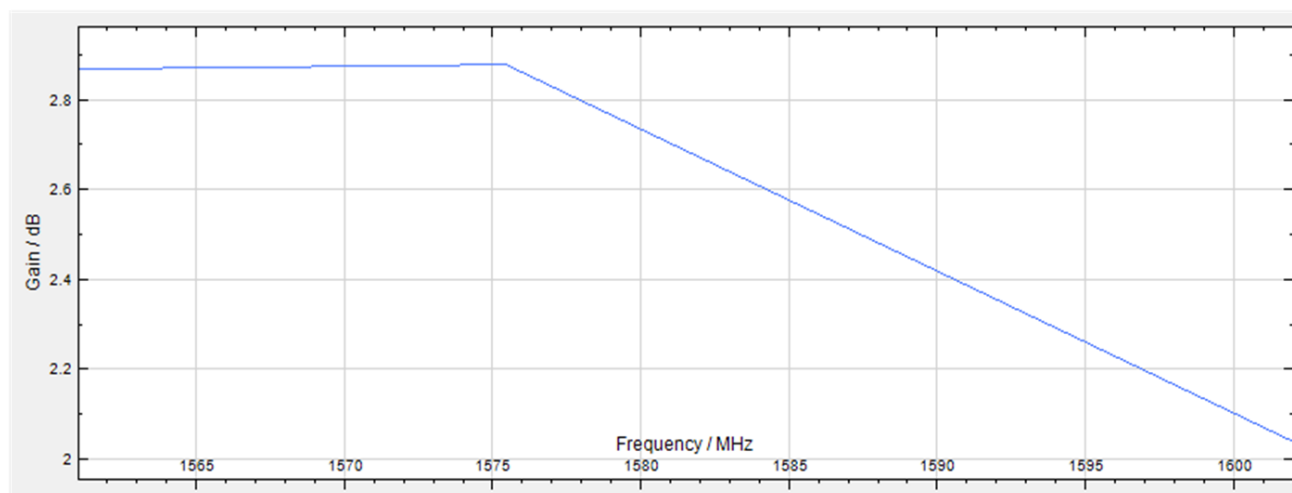
Frequency (MHz)	1561	1575	1602
VSWR	1.46	1.59	2.53

5.3. Efficiency



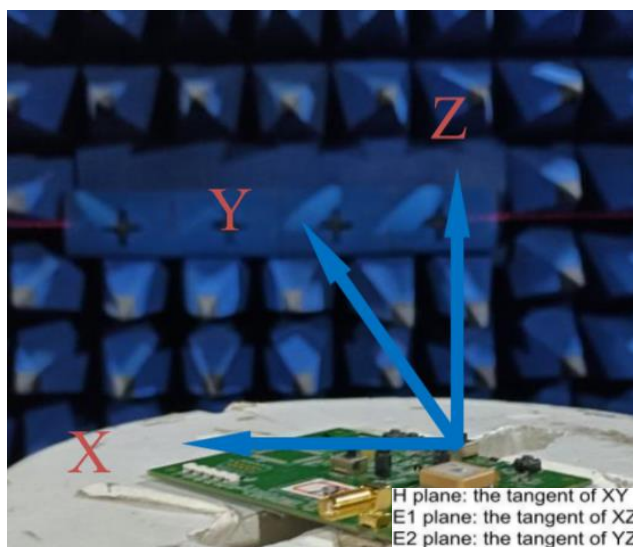
Frequency (MHz)	1561	1575	1602
Efficiency (%)	49.89	44.46	41.21

5.4. Gain

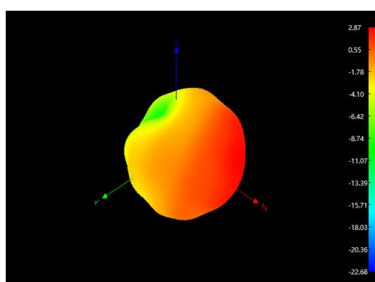


Frequency (MHz)	1561	1575	1602
Gain (dBi)	2.87	2.88	2.04

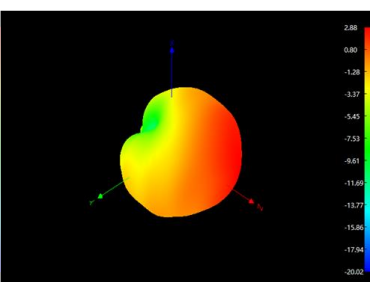
5.5. Radiation Pattern



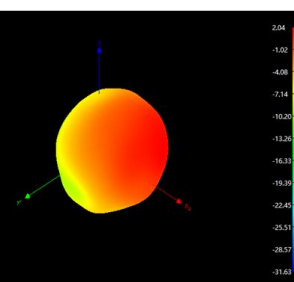
1561 MHz



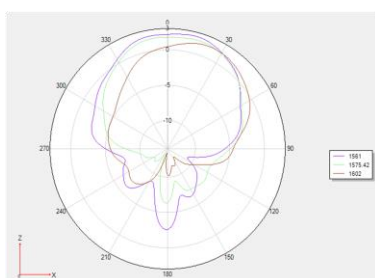
1575 MHz



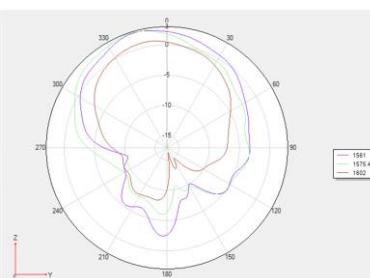
1602 MHz



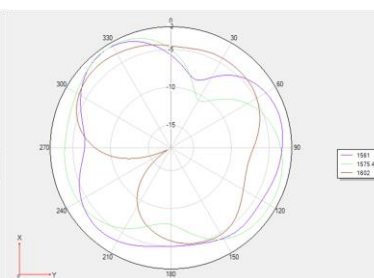
Phi 0



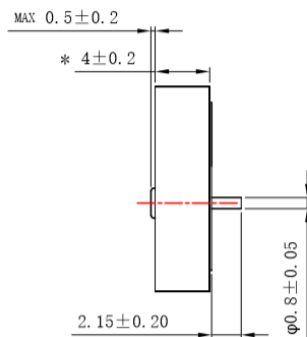
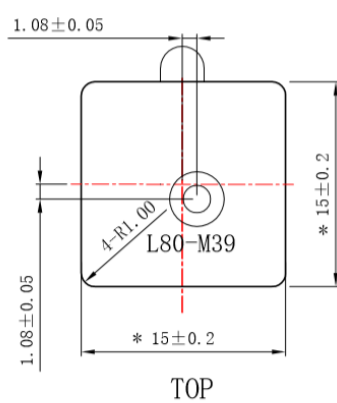
Phi 90



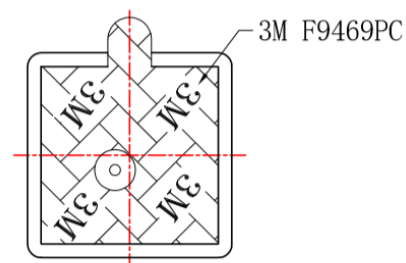
Theta 90



6 Product Size

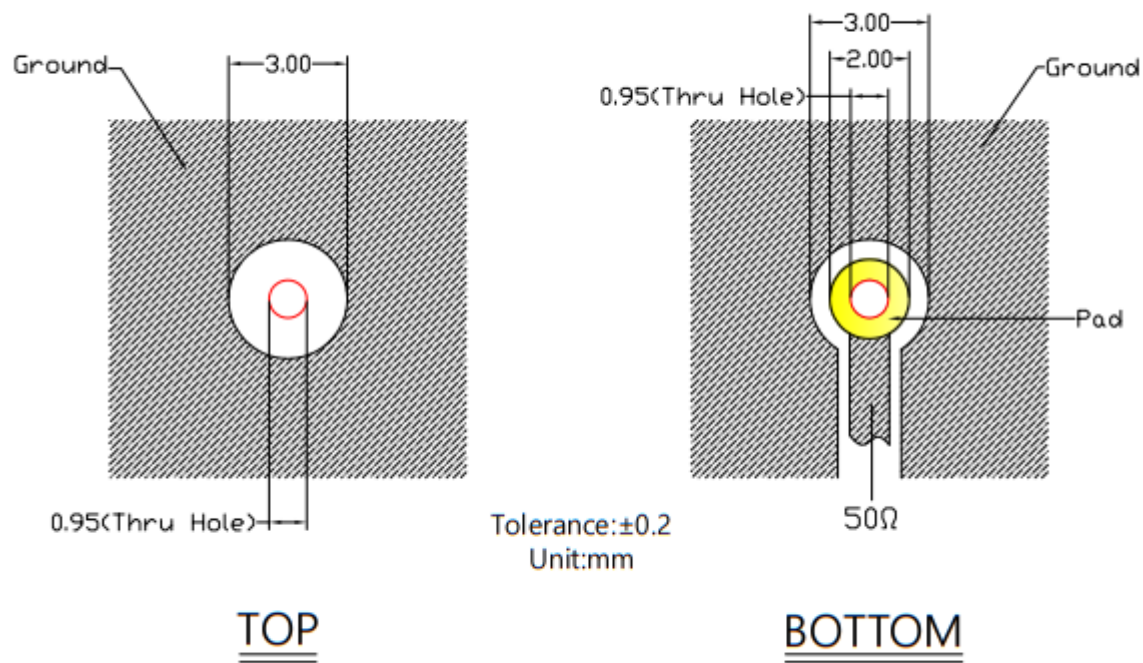


RoHS



BOTTOM

7 PCB Footprint Recommendation



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