

Antenna

YG0065AA Datasheet

Antenna Services

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Quectel Wireless Solutions Co., Ltd.

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China

Tel: +86 21 5108 6236

Email: info@quectel.com

Or our local offices. For more information, please visit:

<http://www.quectel.com/support/sales.htm>.

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About the Document

Revision History

Version	Date	Author	Note
-	2021-03-10	Kenny YIN	Creation of the document
1.0	2021-03-10	Kenny YIN	First official release
1.1	2021-12-06	Kenny YIN	Updated the product description in Chapter 1.
1.2	2022-05-06	Xiaodong YANG	Updated the data (Chapter 2, 3, 4 and 5.1).

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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 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

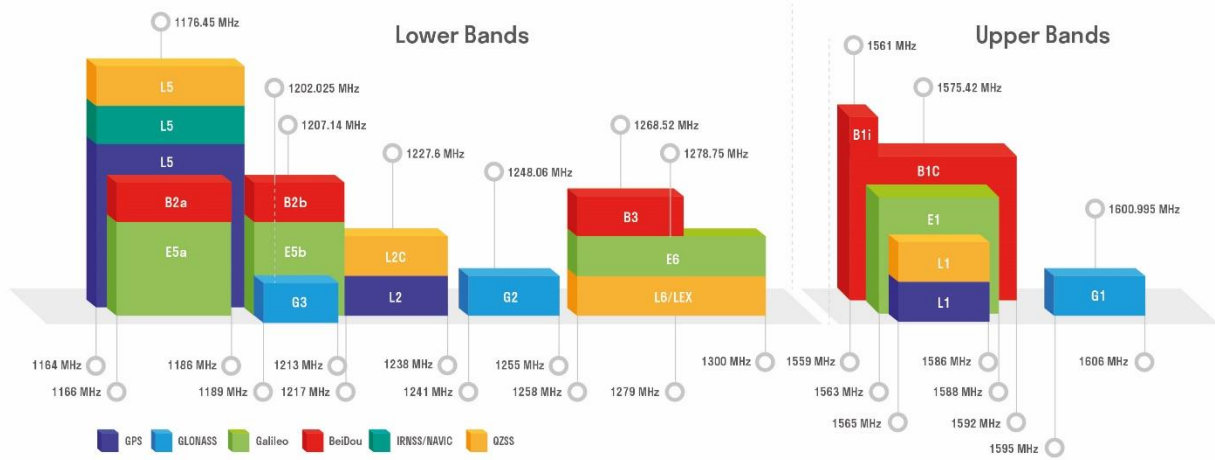
- GPS L1+ GLONASS G1
- High efficiency
- Excellent performance



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

Passive Electrical Specifications

Frequency Range	1575–1602 MHz
Input Impedence	50 Ω
VSWR	Typ. 2.0
Gain	1575.42 MHz: 2.4 dBi 1602 MHz: 2.8 dBi
Polarization Type	RHCP

Mechanical Specifications

Antenna Size	34.5 mm × 37.5 mm × 12.5 mm;
Cable Type & Length	RG174 Black & 3000 mm
Casing	ABS
Connector Type	FAKRA Female (Code C)
Working Temperature	-40 °C to +85 °C
Radome Color	Black
Installation Method	Magnet
IP Rating	IP66

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. Electrical Specification

- All values are defined at 25 ±15 °C, 65 ±20 % RH, power handling 1 u watt, air pressure 960 ±100 hPa unless otherwise noted.
- Patch characteristics are measured with a 70 × 70 mm test ground plane in an anechoic chamber.

Patch

Characteristics	Specification	
Frequency Range	1575~1610 MHz	
Peak Gain	1575.42 MHz	2.4 dBic
	1602 MHz	2.8 dBic
Polarization	RHCP	
VSWR	2.0 typ.	
Impedance	50 ohm	

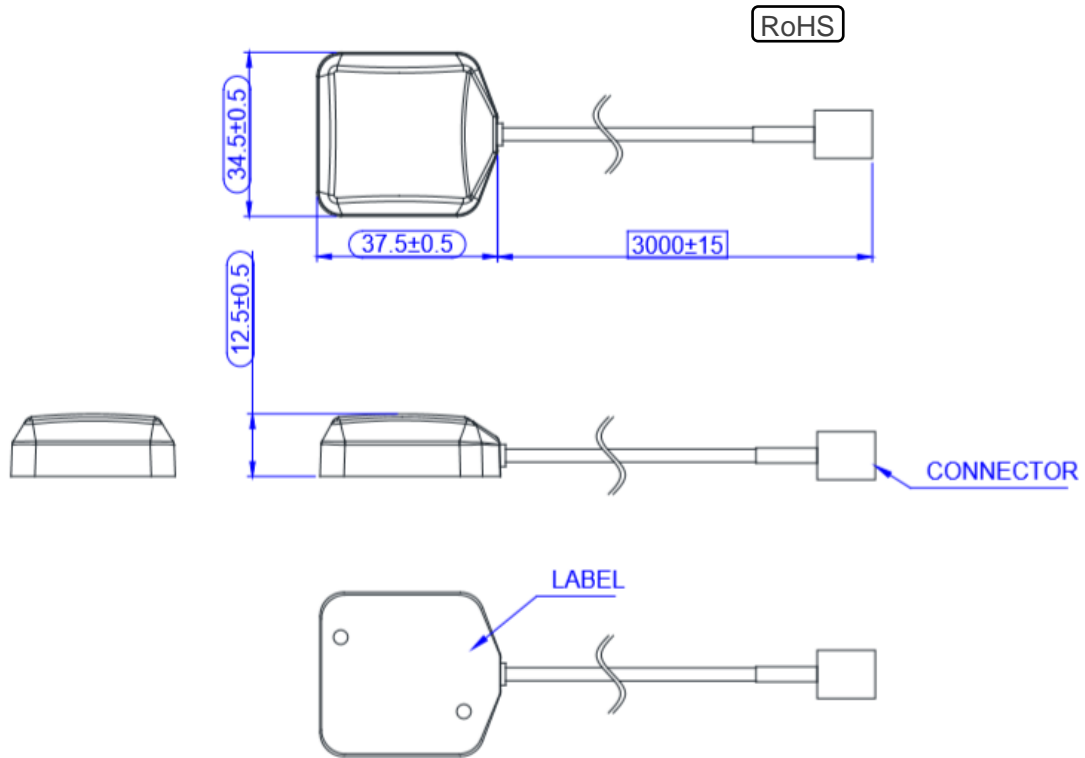
Filter / LNA

Characteristics	Specification		
Frequency Range	1575~1602 MHz		
Gain	1575.42 MHz	27.0±3.0 dB	
	1602 MHz	27.0±3.0 dB	
Noise Figure	2.0 dB typ.		
Filter Out Band Attenuation	F ₁ = 1575.42 MHz	F ₁ -50 MHz	> 30 dB
		F ₁ -100 MHz	> 35 dB
	F ₂ = 1602 MHz	F ₂ +50 MHz	> 30 dB
		F ₂ +100 MHz	> 35 dB
Output VSWR	2.0 typ.		
Operation Voltage	3.3 V		
Current	10.0±3.0 mA		

Overall Specification (Through Antenna, LNA, Without Cable Loss)

Characteristics	Specification	
Frequency Range	1575~1602 MHz	
Gain	1575.42 MHz	29.4±3.0 dBic
	1602 MHz	29.8±3.0 dBic
Output VSWR	2.0 typ.	
Operation Voltage	3.3 V	
Current	10.0±3.0 mA	

6 Product Size



NOTE :

1. "○" INDICATES PROCESS CONTROL DIMENSION.
2. "□" INDICATES CPK CONTROL DIMENSION.

Connector Appearance (FAKRA FEMALE C CODE)

