



Antenna Datasheet

Product OC: YEGT002BA

Version: 2.0

Date: 2023-08-26

Status: Released

Product Name: Passive GNSS L1 Antenna

Key Features:

Frequency Band: 1559–1606 MHz

Dimensions: Φ 10.5 × 53.5 mm

Efficiency: Up to 44.5 %

RoHS and REACH Compliant

IP53

Overview

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.

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1 Specification

Test Condition: Free Space

1.1. Electrical

Electrical	
Frequency Range	1559–1606 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omnidirectional

Band	GPS L5	GALILEO	GPS L2	GLONASS	BEIDOU	BEIDOU	GPS L1	
	GALILEO E5a	GALILEO E5b	GPS L2 QZSS L2C	GLONASS G2	BEIDOU B3	BEIDOU B1I	GALILEO E1	GLONASS G1
Frequency (MHz)	BEIDOU B2a-B2I	BEIDOU B2b					BEIDOU B1C	
	QZSS L5						QZSS L1	
	IRNSS L5							
	1176	1207	1227	1248	1268	1561	1575	1602
VSWR	-	-	-	-	-	2.1	1.9	1.7
Return Loss (dB)	-	-	-	-	-	-9.2	-10.1	-12.1
Efficiency (%)	-	-	-	-	-	41.2	40.0	40.4
Peak Gain (dBi)	-	-	-	-	-	1.2	1.2	1.3

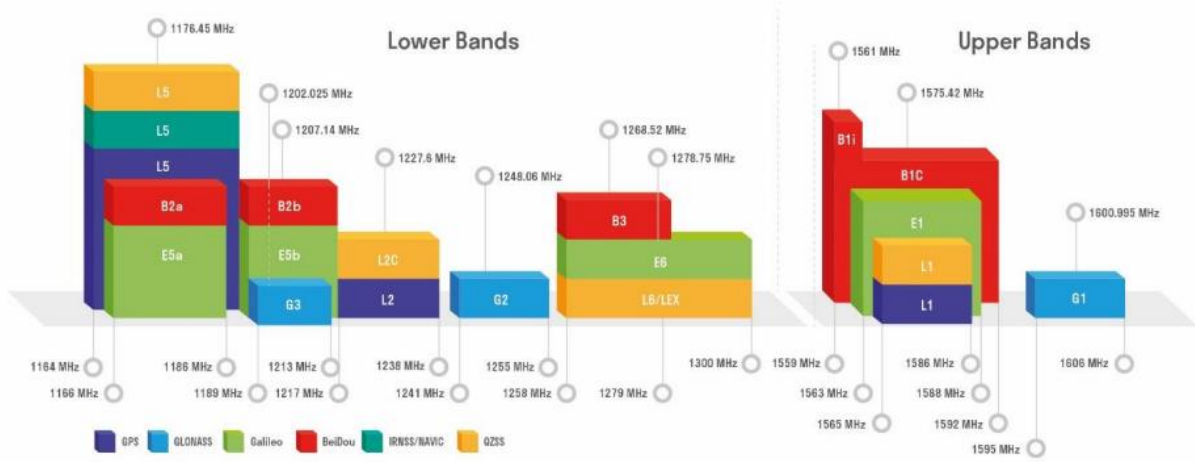
1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 10.5 × 53.5 mm
Casing Material & Color	TPEE & Black
Connector Type	SMA Male
Mounting Type	Terminal
Weight	Typ. 4.9 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Ingress Protection (IP) Rating	IP53
RoHS and REACH Compliant	Yes

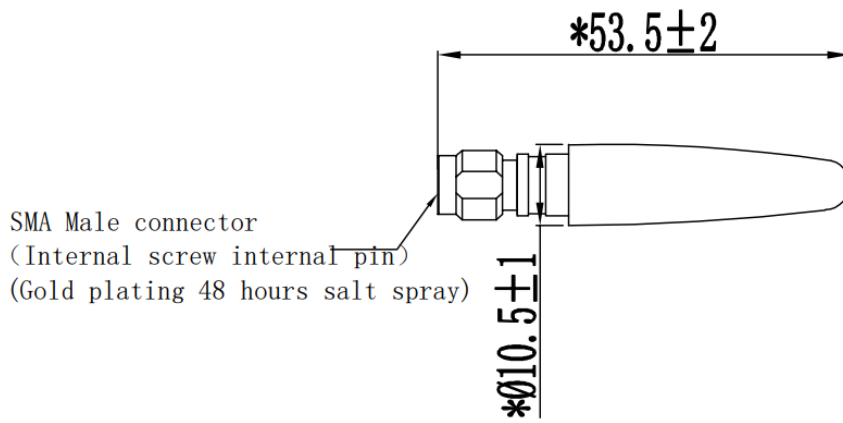
1.3. Supported GNSS Frequency Bands

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-L10C-L10F Centre 1601 (1595–1606)	G2-L20C-L20F Centre 1248.06 (1241–1255)	G3-L30C 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 Centre 1176.45 (1166–1187)	B2b-B2I 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



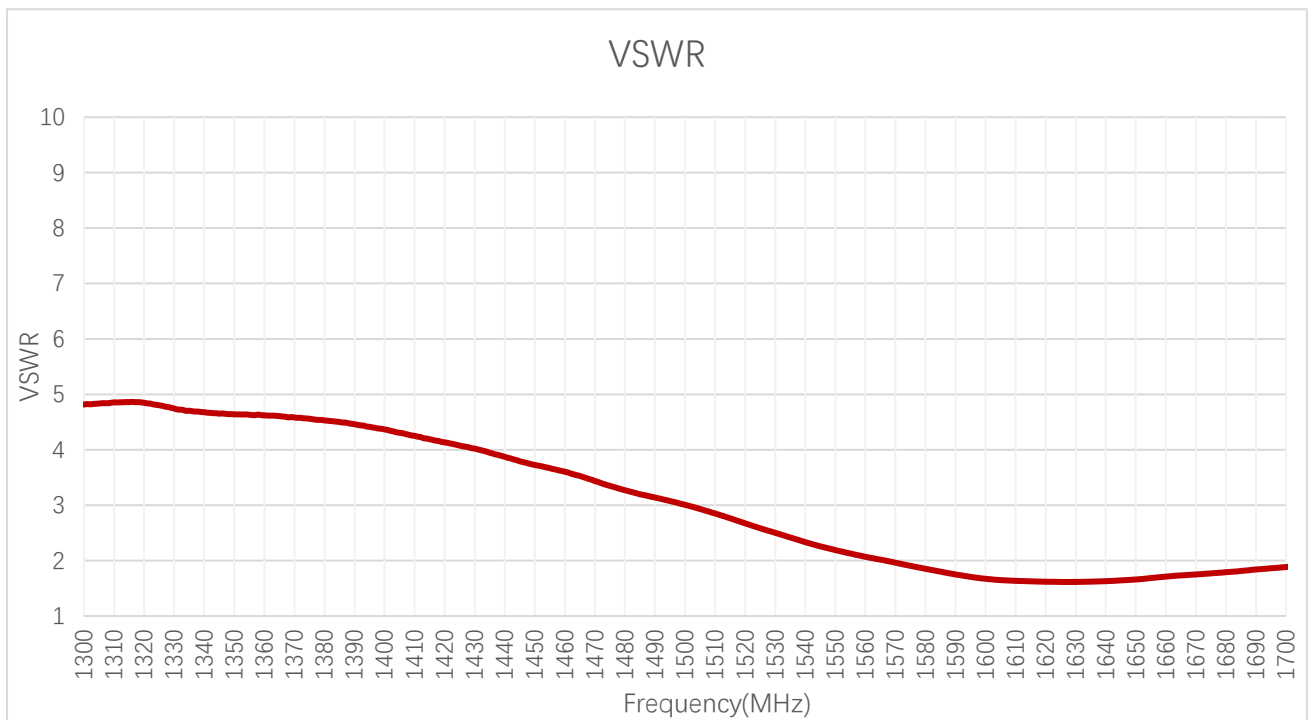
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

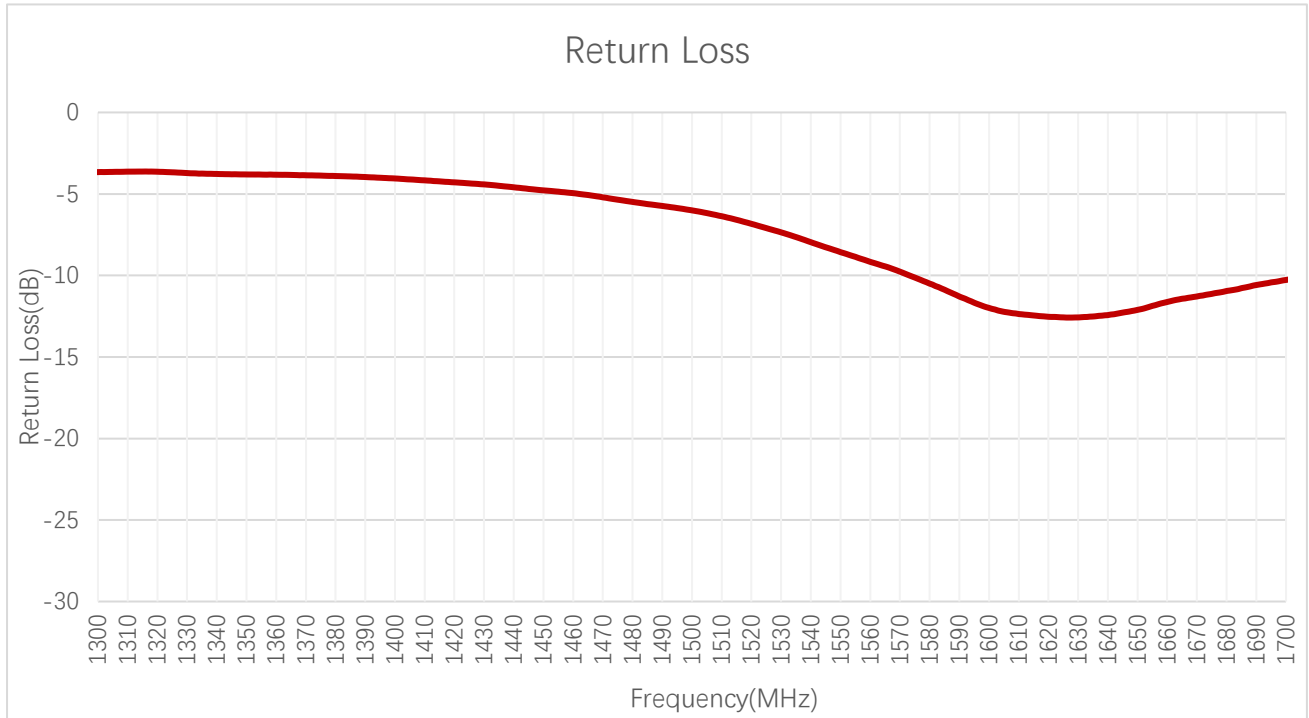
3.1.1. VSWR



VSWR

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
VSWR	-	-	-	-	-	2.1	1.9	1.7

3.1.2. Return Loss

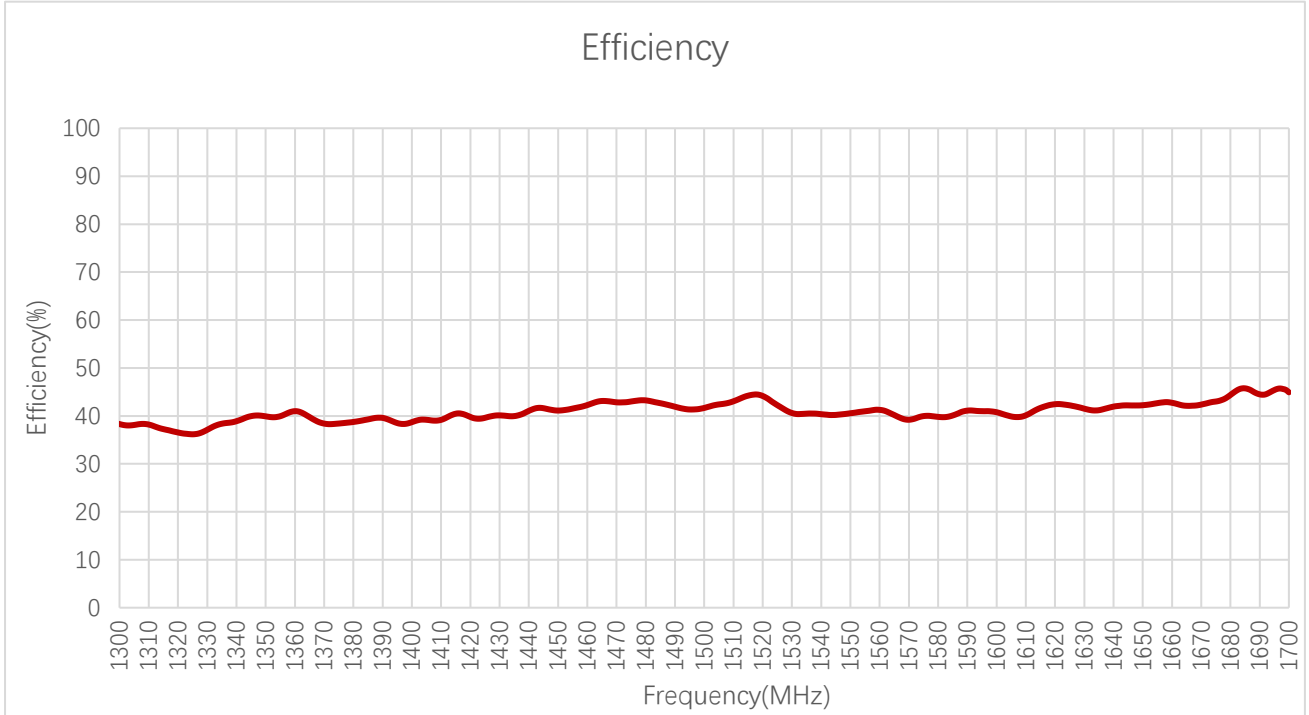


Return Loss (dB)

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
Return Loss (dB)	-	-	-	-	-	-9.2	-10.1	-12.1

3.2. Radiation Performance Test

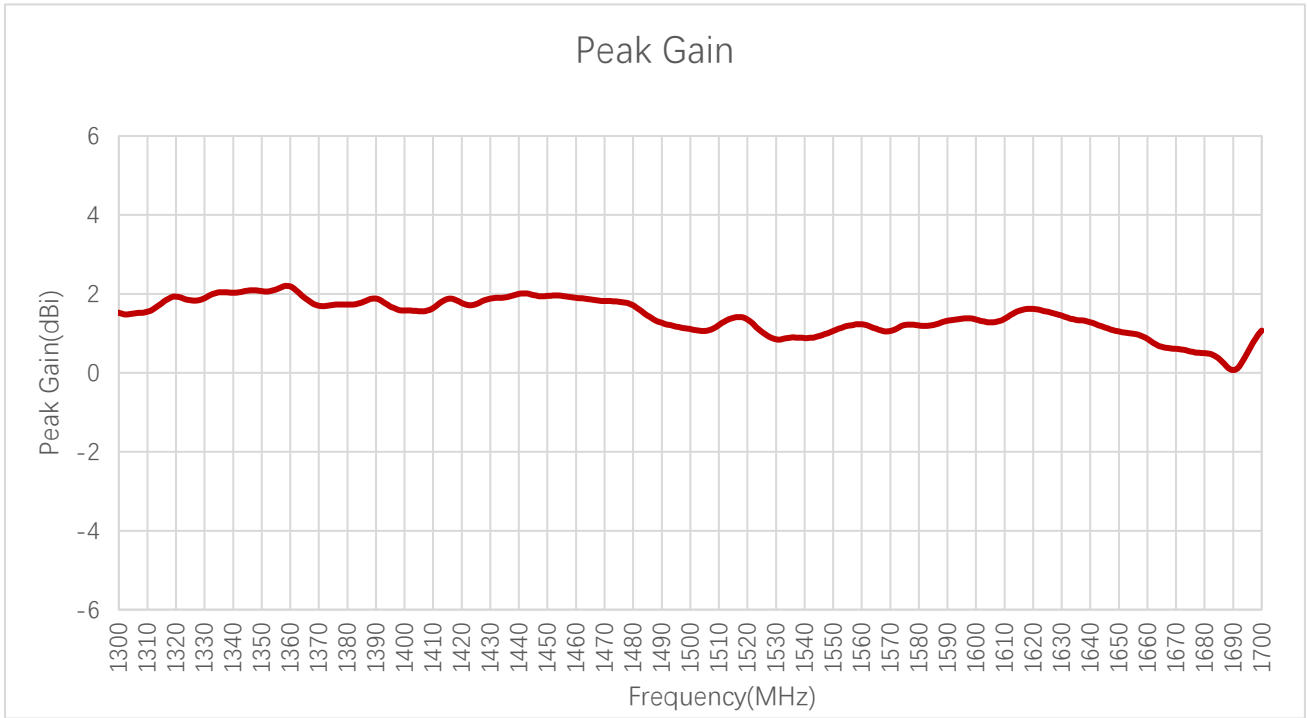
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
Efficiency (%)	-	-	-	-	-	41.2	40.0	40.4

3.2.2. Peak Gain

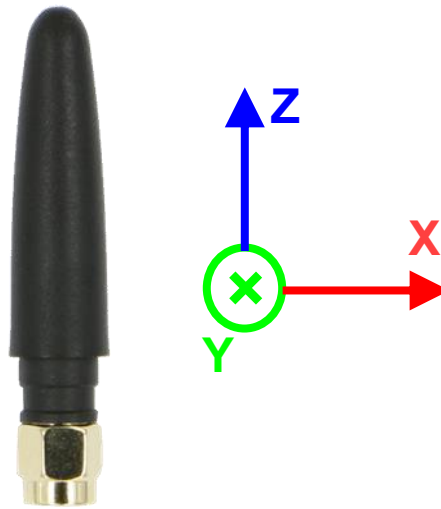


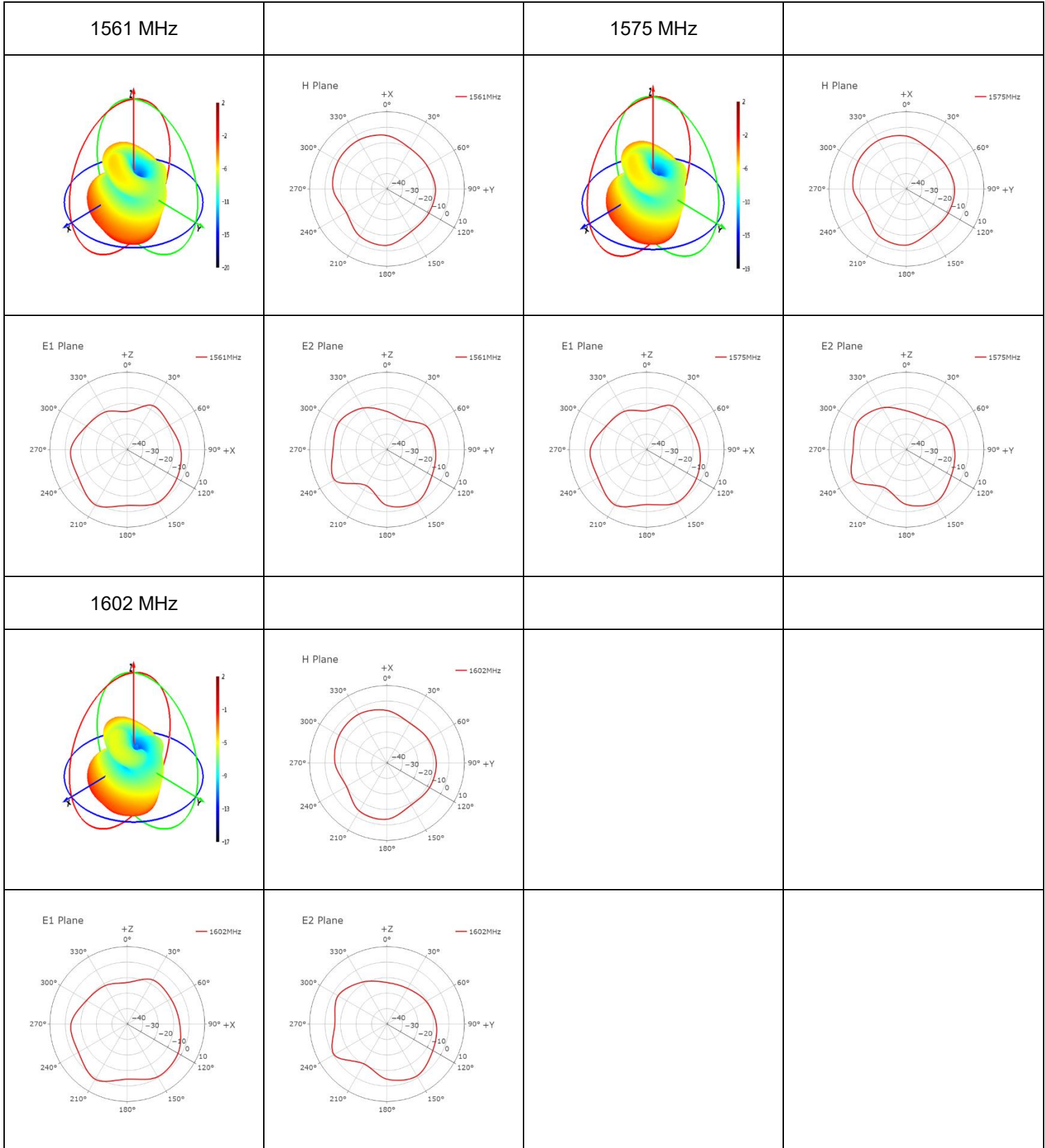
Peak Gain (dBi)

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
Peak Gain (dBi)	-	-	-	-	-	1.2	1.2	1.3

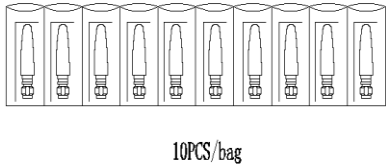
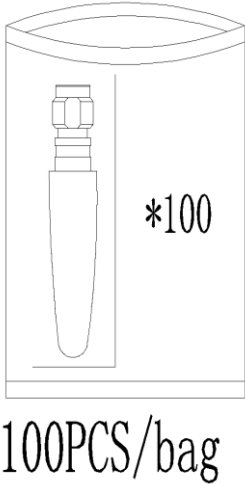
3.2.3. 3D & 2D Radiation Pattern

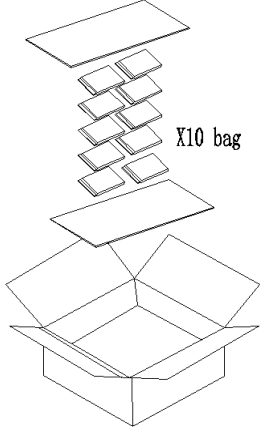
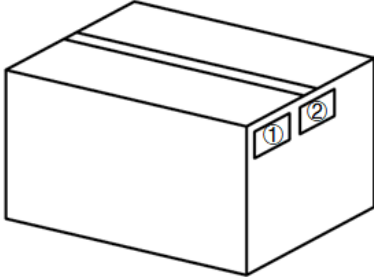
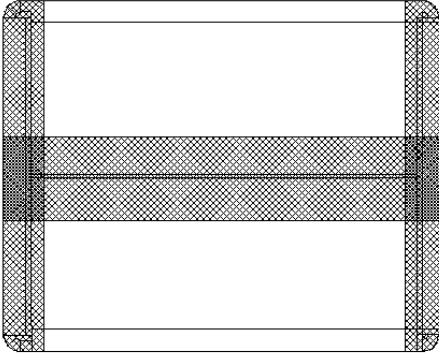
- Test Condition: Free Space
- Test Chamber: GL-S-1





4 Packaging

Step	Packaging Picture / 2D Picture	Description
1	 <p>10PCS/bag</p>	(10 pcs antennas per piece bag)
2	 <p>*100</p> <p>100PCS/bag</p>	100 pcs antenna products in a big PE bag; (100 pcs antennas per big PE bag)

<p>3</p>	 <p>X10 bag</p>	<p>(10 big PE bags per carton box)</p> <p>(1000 pcs antennas per carton box)</p> <p>Estimated quantity</p> <p>Unsatisfactory cases will be shipped in suitable cartons.</p> <p><u>Carton Size:</u> <u>L × W × H = 380 × 290 × 210 mm</u></p>
<p>4</p>		<p>Position for Attaching Labels</p> <p>① Carton Label</p> <p>② Quality Label</p>
<p>5</p>		<p>Sealing Cartons</p> <p>“工” type sealing cartons</p>
<p>6</p>	<p>Initial packaging plan and the final packaging method are subject to the physical supply.</p>	

Contact Us

At Quectel, our aim is to provide timely and comprehensive services to our customers. If you require any assistance, please contact our headquarters:

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

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Revision History

Version	Date	Author	Note
-	2022-06-22	Ezail TAN/ Jason LONG	Creation of the document
1.0	2022-06-22	Ezail TAN/ Jason LONG	First official release
1.1	2022-10-17	Aria CHU	Updated the IP rating.
1.2	2022-12-29	Bunny ZHANG	Updated the product size (Chapter 5).
2.0	2023-08-26	Black LI/ Lucky FENG/ David LIU/ Aria CHU	Updated all test data in this datasheet.

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