Antenna Datasheet

Product OC: YFTC025WWAM
Version: 1.0
Date: 2026-01-09
Status: Released

Product Name: GNSS L-Band Adhesive & Soldering Mount Ceramic Patch Passive Embedded Antenna

Key Features:

Frequency Band: 1627–1653 MHz
Dimensions: 25 mm × 25 mm × 4 mm
Peak Gain: 4.86 dBi (Max)
RoHS and REACH Compliant

Overview

The YFTC025WWAM is a compact, passive embedded GNSS antenna engineered for high-performance L-Band satellite communication. Operating in the 1627–1653 MHz frequency band, it is designed to provide reliable signal reception for satellite data services and augmentation systems.

With its miniature ceramic patch design measuring 25 mm × 25 mm × 4 mm and featuring an adhesive and soldering mount, it offers exceptional integration flexibility for space-constrained applications. The antenna delivers a peak gain of up to 4.86 dBi and utilizes Right-Hand Circular Polarization (RHCP) with a directional radiation pattern for optimal signal capture.

Its robust ceramic construction ensures durability, supporting an operating temperature range of -40 °C to +85 °C. Fully compliant with RoHS and REACH environmental standards, it is built for global market deployment. This antenna is an ideal solution for IoT devices, asset trackers, and other embedded systems requiring dependable, low-profile L-Band connectivity.

- **Key Specification Snapshot:**

✓ Type: Passive, Ceramic Patch
✓ Frequency:1627–1653 MHz (L-Band)
✓ Dimensions: 25 mm × 25 mm × 4 mm
✓ Peak Gain: Up to 4.86 dBi
✓ Mounting: Adhesive & Soldering
✓ Polarization: RHCP
✓ Operating Temp: -40 °C to +85 °C

Quectel provides comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs. We have regional R & D centers to offer quick response to meet your requirements. Please contact our sales & FAEs if you have any requests.

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1 Specification

Test Condition: On 70 mm × 70 mm EVB

1.1. Electrical

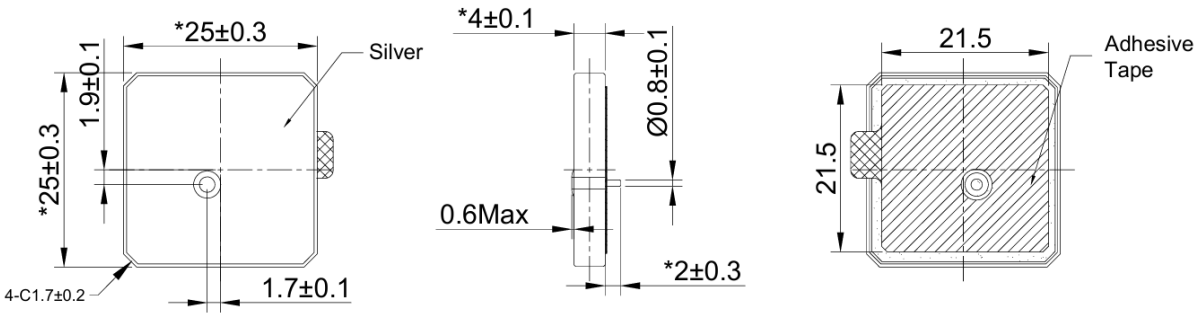
Electrical	
Frequency Range	1627–1653 MHz
Impedance	50 Ω
Polarization	RHCP
Radiation Pattern	Directional

Band / Frequency (MHz)	L-Band		
	1627	**1640**	**1653**
VSWR	1.28	1.3	1.34
Return Loss (dB)	-18.1	-17.6	-16.6
Efficiency (%)	81.3	80	82.9
Peak Gain (dBi)	3.91	4.62	4.39
Axial Ratio (dB)	8.9	2.8	8.7

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	25 mm × 25 mm × 4 mm
Material	Ceramic
Mounting Type	Adhesive & Soldering
Weight	Typ. 9.2 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Recommended Reflow Temperature and Time	260 °C & 5 s
RoHS & REACH Compliant	Yes

2 Drawing

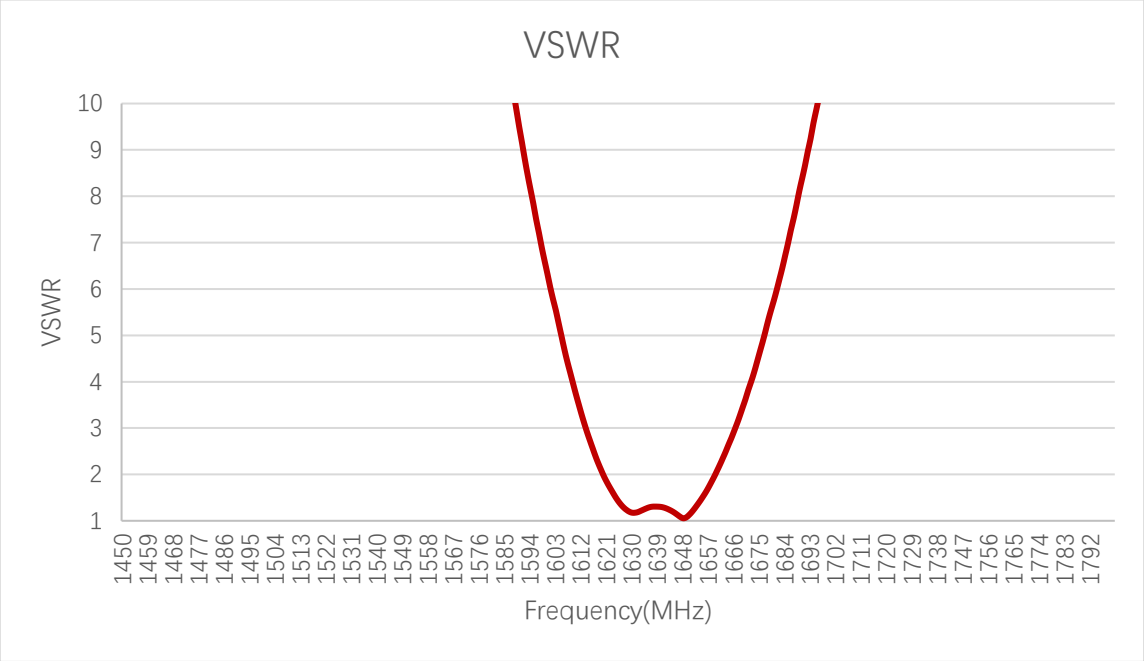


TOP SIDE BOTTOM

3 Detailed Performance

3.1. S-Parameter Test

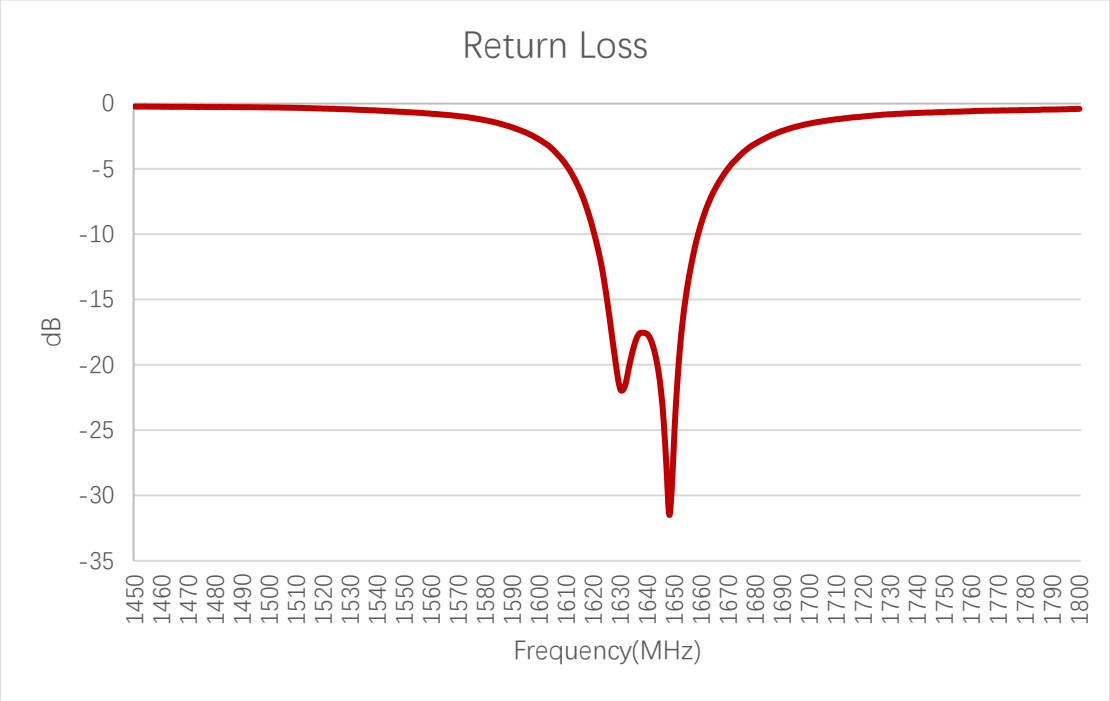
3.1.1. VSWR



VSWR

Frequency (MHz)	1627	1640	1653
VSWR	1.28	1.3	1.34

3.1.2. Return Loss

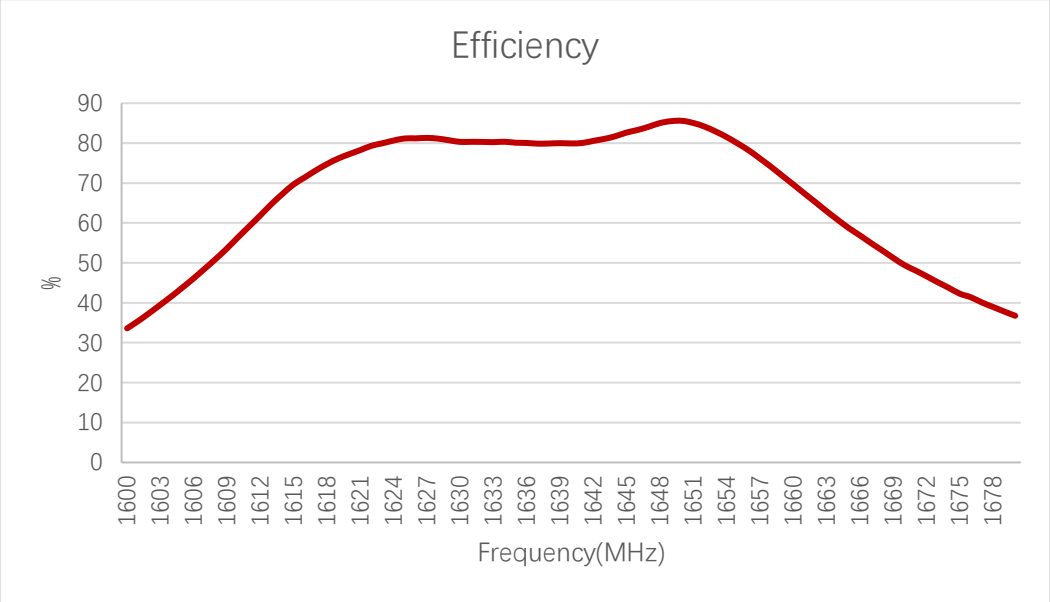


Return Loss (dB)

Frequency (MHz)	1627	1640	1653
Return Loss (dB)	-18.1	-17.6	-16.6

3.2. Radiation Performance Test

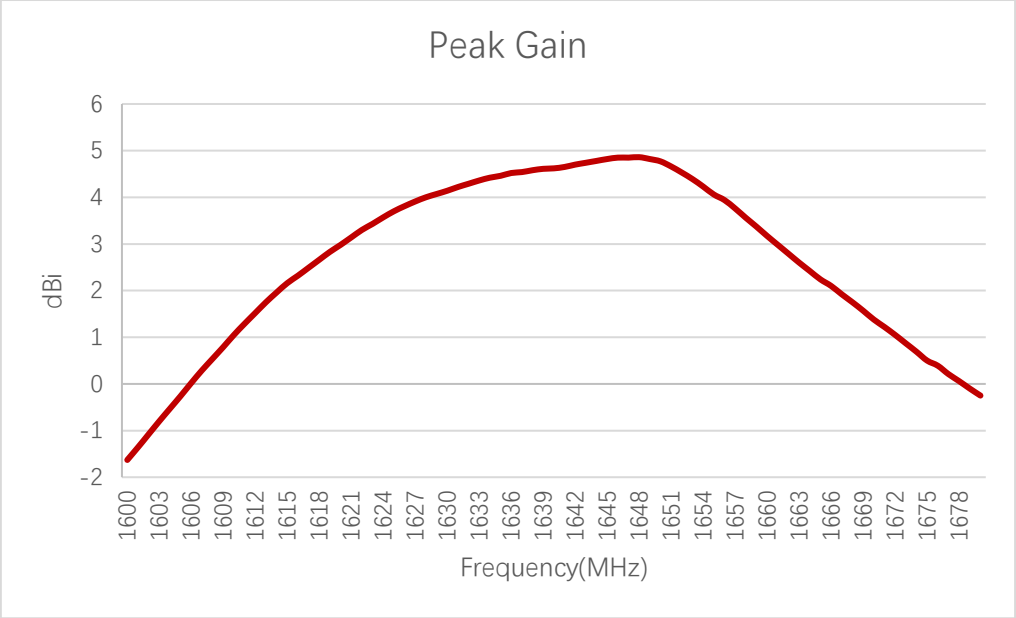
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	1627	1640	1653
Efficiency (%)	81.3	80	82.9

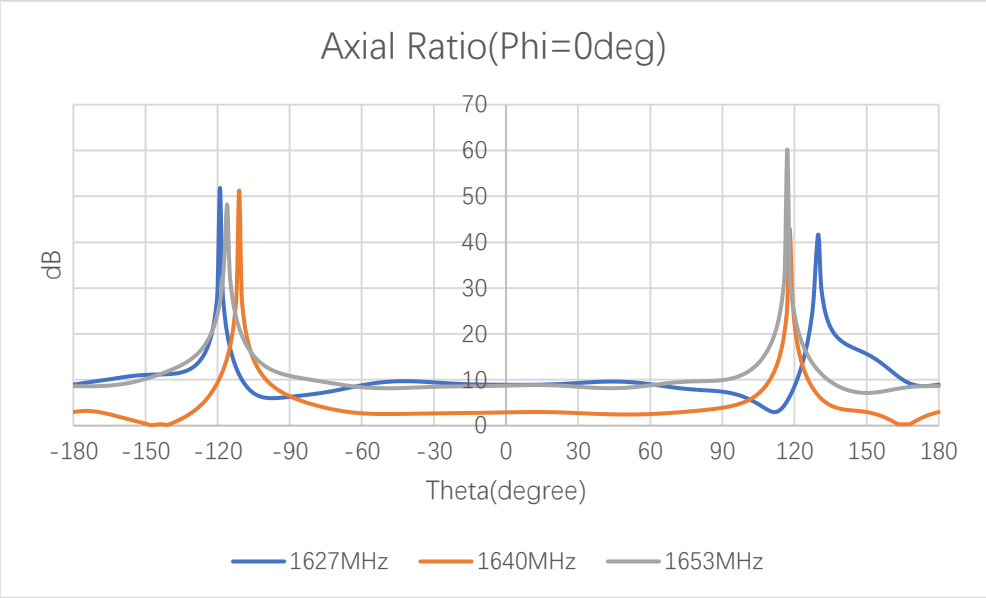
3.2.2. Peak Gain

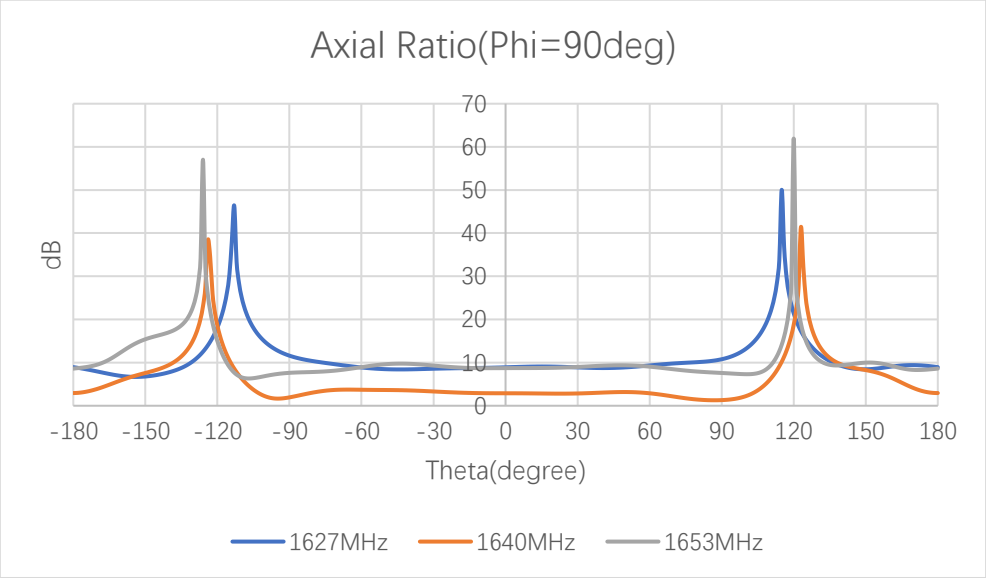


Peak Gain (dBi)

Frequency (MHz)	1627	1640	1653
Peak Gain (dBi)	3.91	4.62	4.39

3.2.3. Axial Ratio



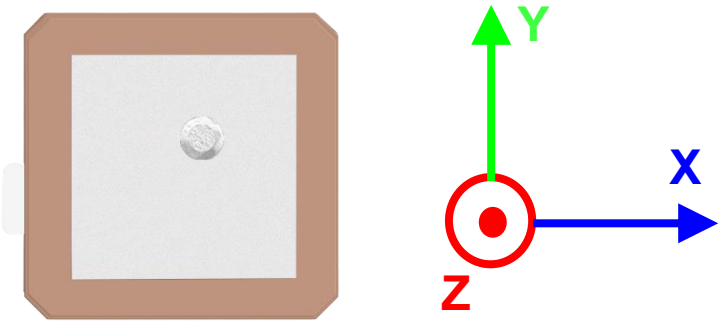


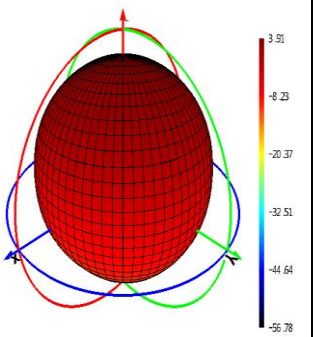
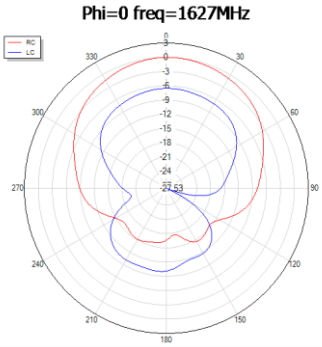
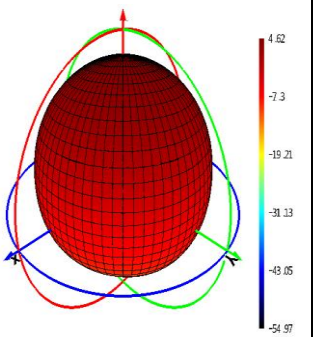
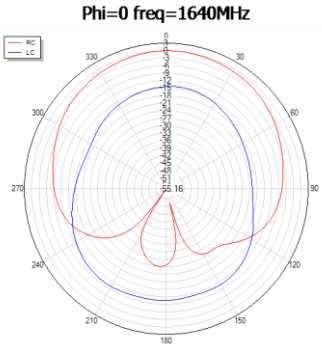
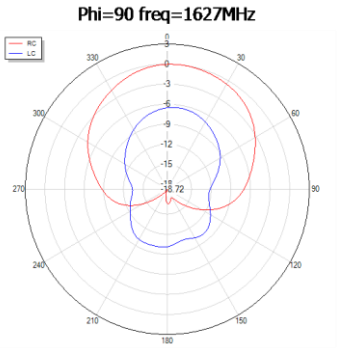
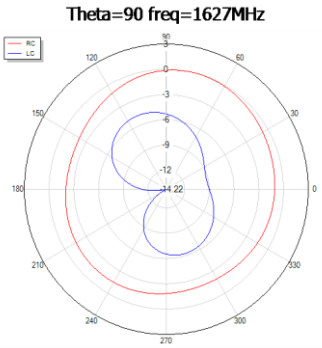
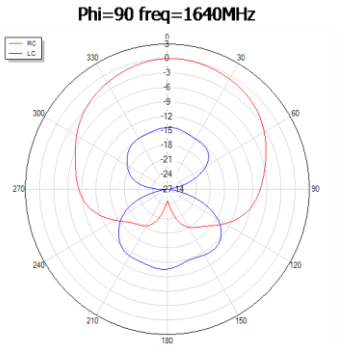
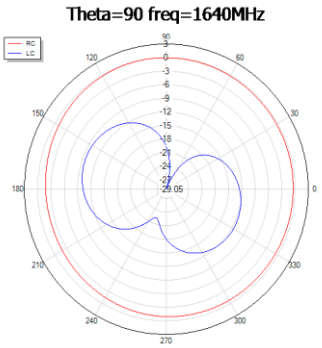
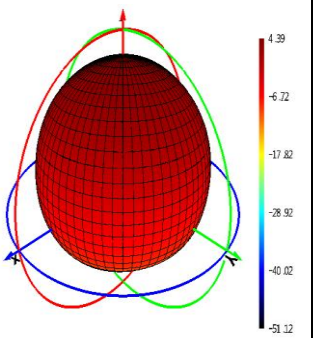
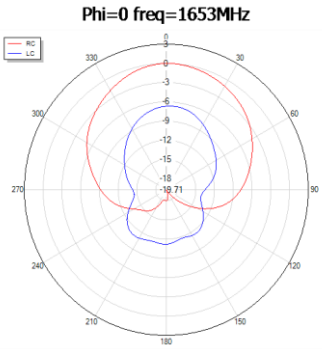
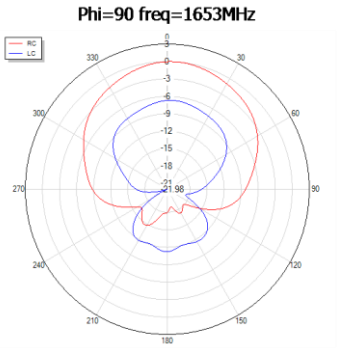
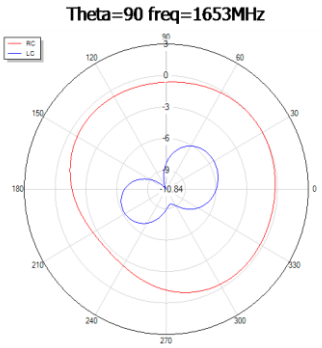
Axial Ratio (dB)

Frequency (MHz)		1627	1640	1653
Axial Ratio (dB)	Phi=0 (deg) Theta=0 (deg)	8.9	2.8	8.7
	Phi=90 (deg) Theta=0 (deg)	8.9	2.8	8.7

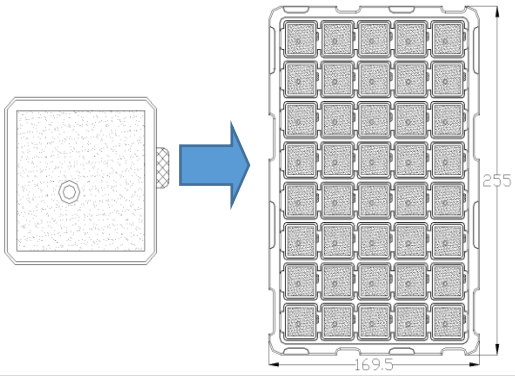
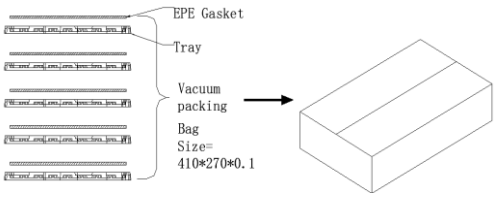
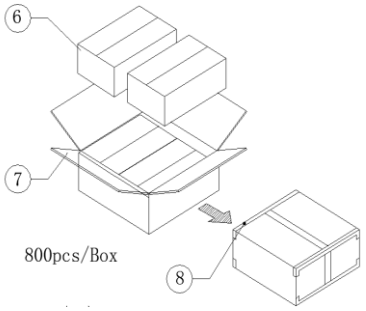
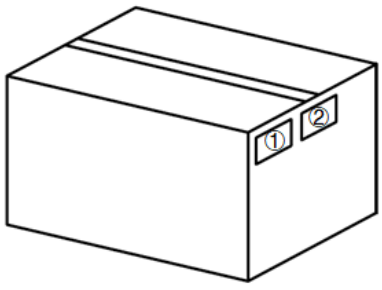
3.2.4. 3D & 2D Radiation Pattern

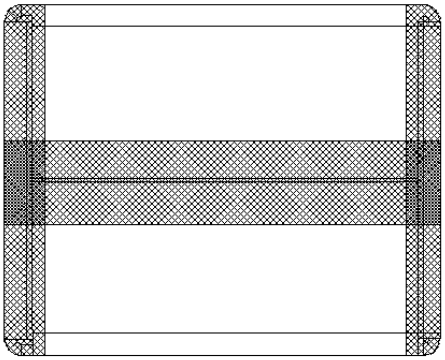
- Test Condition: On 70 mm × 70 mm EVB
- Test Chamber: SH-SY-16M



1627 MHz		1640 MHz	
			
			
1653 MHz			
			
			

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		40 antenna products in a blister tray. (40 Antennas / Blister Tray)
2		200 antenna products in an inner box. (200 Antennas / Inner Box)
3		(4 Inner Boxes / Carton Box) (800 Antennas / Carton Box) Estimated quantity Products that cannot fill the entire carton box are packed in a suitable size carton box. Carton Size: L × W × H = 405 × 293 × 185 mm
4		**Position for Attaching Labels** ① Carton Label ② Quality Label

5		**Sealing Cartons** H-shaped sealing cartons
Note	The initial packaging method described above is for reference only, and the final actual packaging method shall be subject to the actual shipping packaging.	

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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Email: info@quectel.com

Or our local offices. For more information, please visit:
https://www.quectel.com/contact/.

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Revision History

Version	Date	Author	Note
-	2026-01-09	Junsen Li/ Mike Guo/ Strong Qiang/ Rainey Liao	Creation of the document
1.0	2026-01-09	Junsen Li/ Mike Guo/ Strong Qiang/ Rainey Liao	First official release

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