



Antenna Datasheet

Product OC: YFTN005E3BM

Version: 1.0

Date: 2025-12-23

Status: Released

Product Name: GNSS L-Band & Iridium Screw Mount Ceramic Patch +
Cable Passive Embedded Antenna

Key Features:

Frequency Band: Iridium: 1616–1626.5 MHz

L-Band: TX: 1626.5–1660.5 MHz,

RX: 1525–1559 MHz

Peak Gain: 4.44 dBi (Max)

Dimensions: 80.0 mm × 80.0 mm × 11.0 mm

RoHS and REACH Compliant

Overview

The Quectel YFTN005E3BM is a passive embedded antenna designed for GNSS L-Band and Iridium satellite communication applications. It features a ceramic patch design with screw mounting and an integrated cable, offering reliable performance in compact embedded systems. The antenna supports both transmit and receive functions across L-Band and Iridium frequency ranges, making it suitable for global satellite communication and positioning services.

- **Key Features:**

- ✓ **Dual-Band Support:**

Iridium: 1616–1626.5 MHz; L-Band: TX: 1626.5–1660.5 MHz, RX: 1525–1559 MHz

- ✓ **High Performance:**

Peak Gain: up to 4.44 dBi

Right-Hand Circular Polarization (RHCP)

Directional radiation pattern

- ✓ **Robust Construction:**

Compact dimensions: 80.0 mm × 80.0 mm × 11.0 mm

Operating temperature: -40 °C to +85 °C

RoHS and REACH compliant

- ✓ **Flexible Integration:**

IPEX MHF1 connector

100 mm black RF cable (Φ 1.13)

Screw-mount installation

- ✓ **Electrical Performance Highlights:**

Impedance: 50 Ω

VSWR as low as 1.42 (at 1542 MHz)

Return Loss up to -15.2 dB

Efficiency up to 71.3 %

Axial Ratio as low as 1.35 dB

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: Free Space

1.1. Electrical

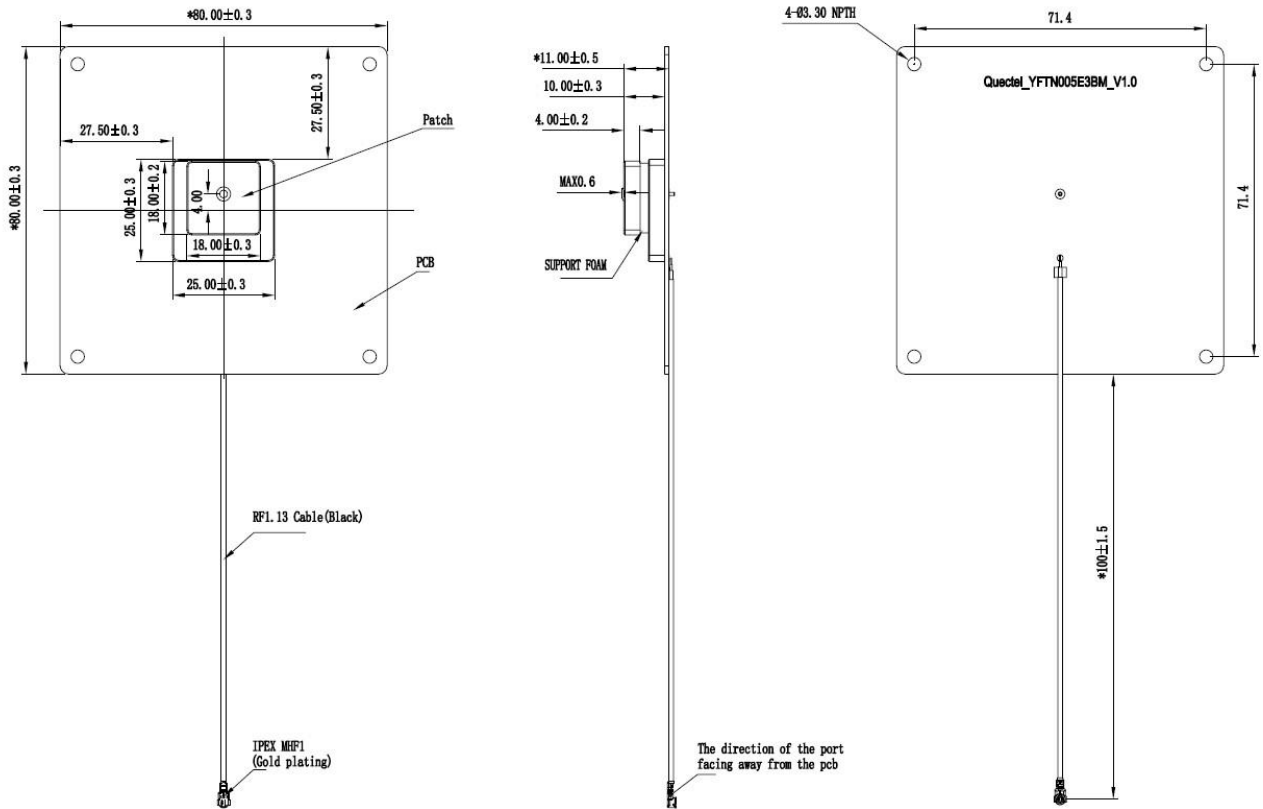
Electrical		
Frequency Range	L-Band	TX: 1626.5–1660.5 MHz RX: 1525–1559 MHz
	Iridium	1616–1626.5 MHz
Impedance	50 Ω	
Polarization	RHCP	
Radiation Pattern	Directional	

Band	L-Band TX			L-Band RX			Iridium
	1626	1643	1660	1525	1542	1559	
Frequency (MHz)							1621
VSWR	1.54	1.47	2	4.55	1.42	5.4	1.72
Return Loss (dB)	-13.4	-14.4	-9.4	-3.88	-15.2	-3.2	-11.5
Efficiency (%)	71.3	70.4	63.8	33.4	58.1	19.3	68.5
Peak Gain (dBi)	3.38	4.44	3.27	-1.38	3.64	-3.98	2.87
Axial Ratio (dB)	12.5	3.1	8.1	28.5	1.35	23.1	14.6

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	80.0 mm × 80.0 mm × 11.0 mm
Antenna Material & Color	PCBA + Ceramic + RF Cable
Cable Type & Color & Length	Φ1.13 Cable & Black & 100 mm
Connector Type	IPEX MHF1
Mounting Type	Screw
Weight	Typ. 31.3 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS & REACH Compliant	Yes

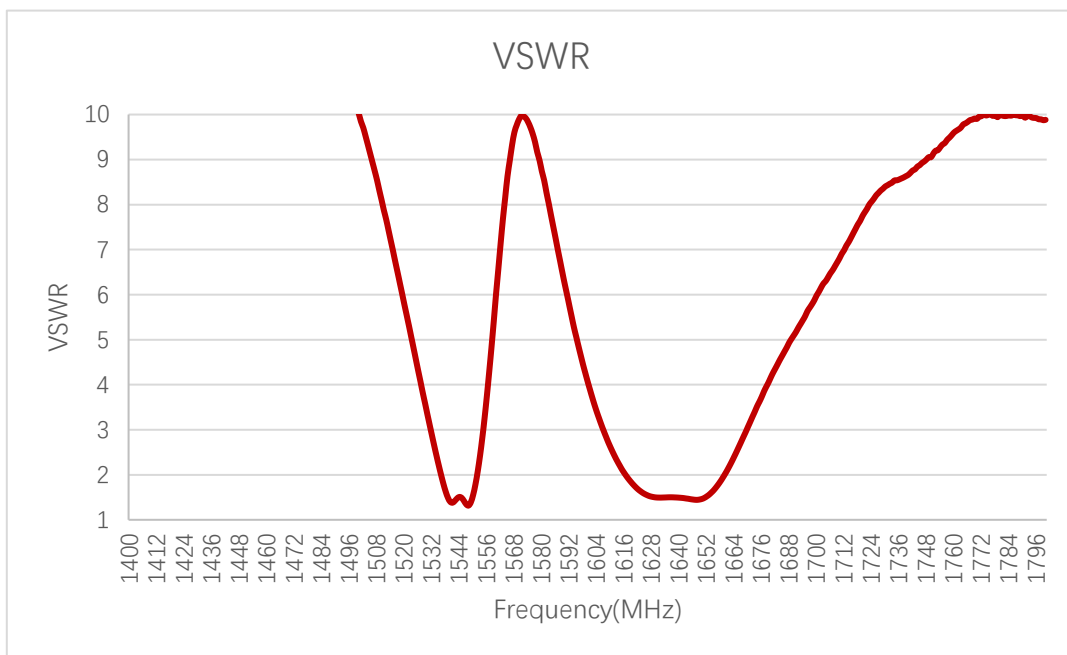
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

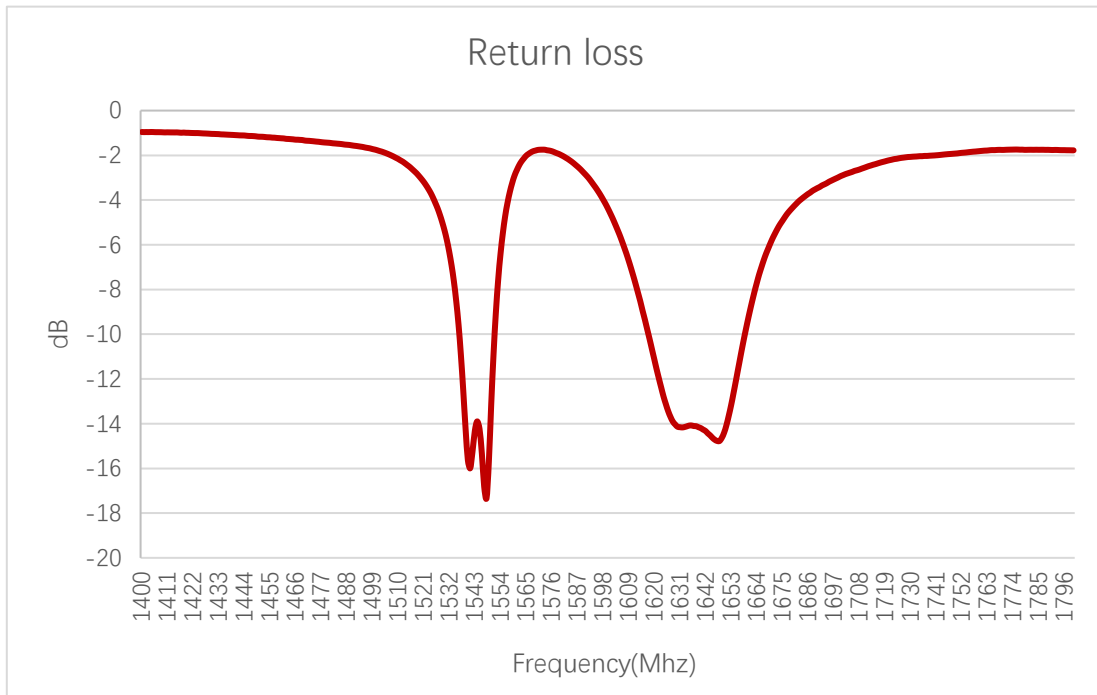
3.1.1. VSWR



VSWR

Frequency (MHz)	1525	1542	1559	1621	1626	1643	1660
VSWR	4.55	1.42	5.4	1.72	1.54	1.47	2

3.1.2. Return Loss

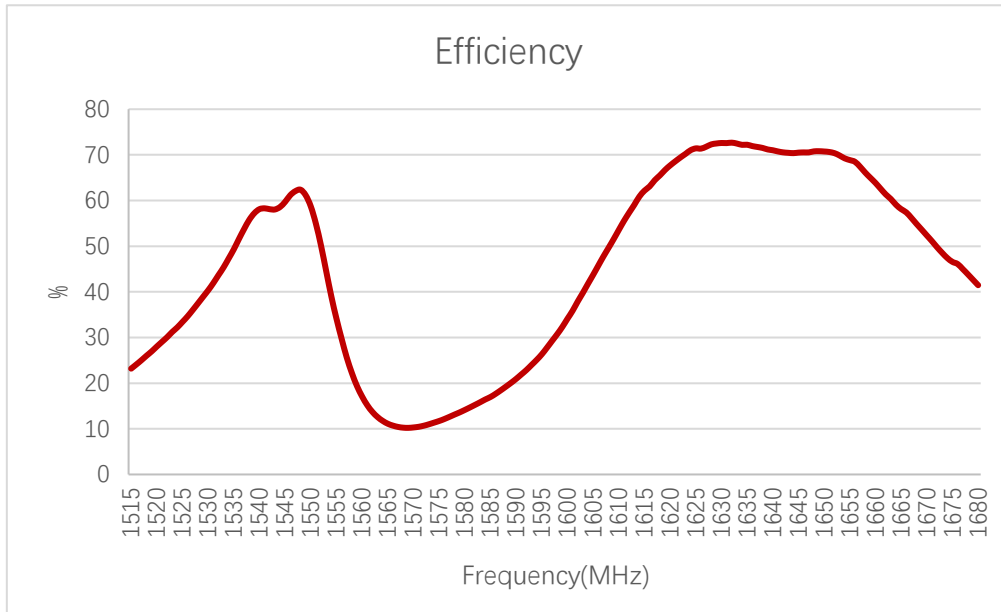


Return Loss (dB)

Frequency (MHz)	1525	1542	1559	1621	1626	1643	1660
Return Loss (dB)	-3.88	-15.2	-3.2	-11.5	-13.4	-14.4	-9.4

3.2. Radiation Performance Test

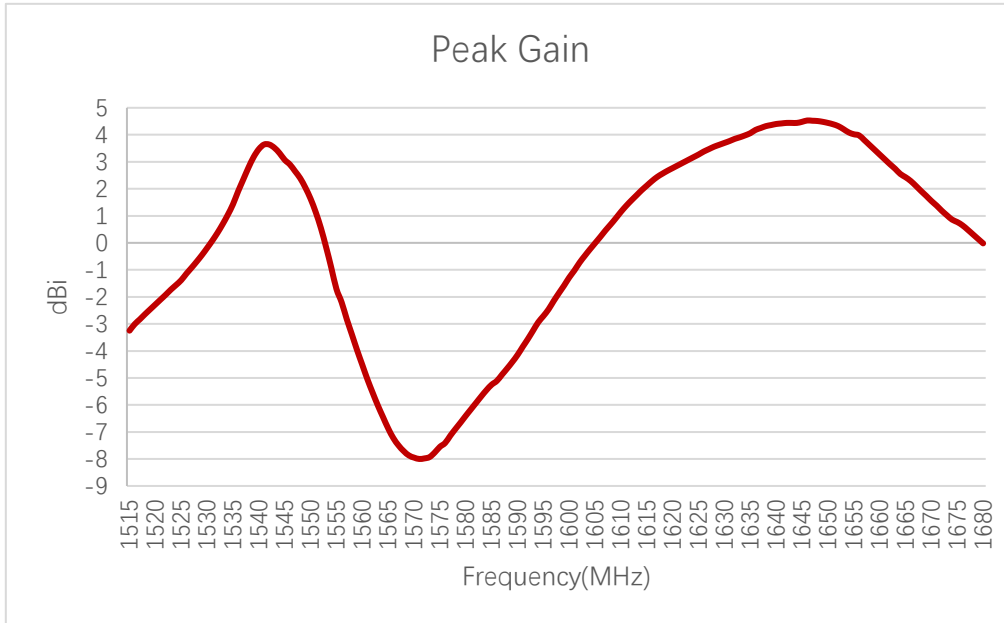
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	1525	1542	1559	1621	1626	1643	1660
Efficiency (%)	33.4	58.1	19.3	68.5	71.3	70.4	63.8

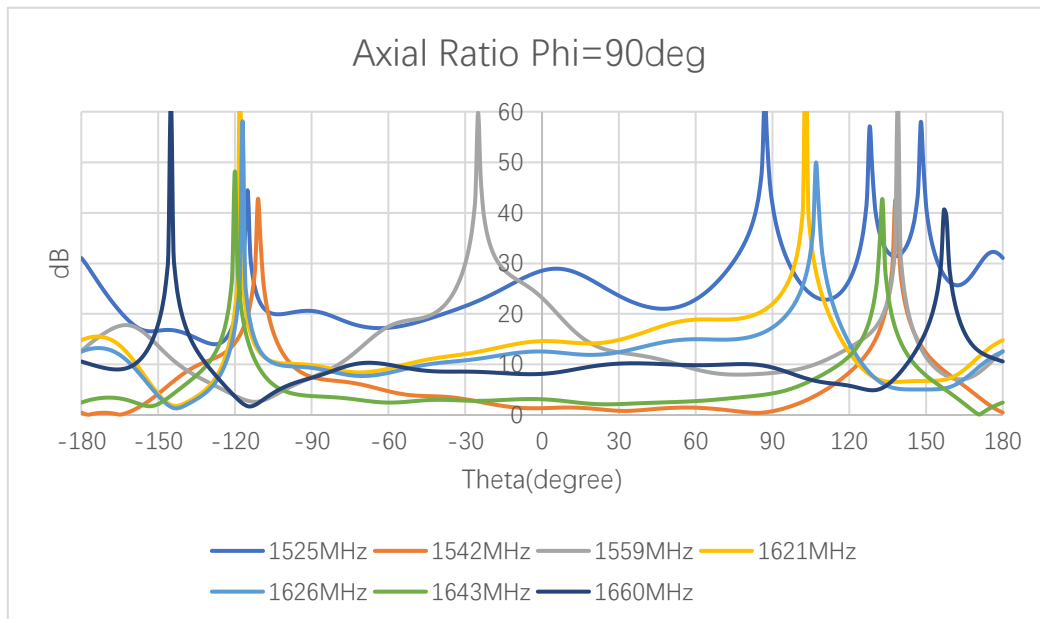
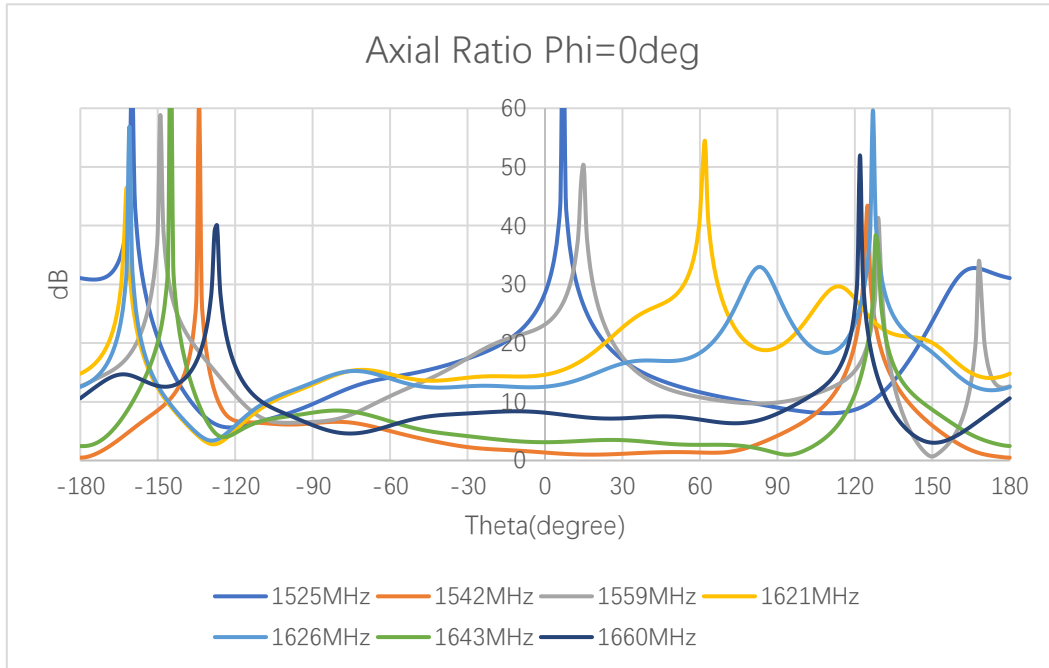
3.2.2. Peak Gain



Peak Gain (dBi)

Frequency (MHz)	1525	1542	1559	1621	1626	1643	1660
Peak Gain (dBi)	-1.38	3.64	-3.98	2.87	3.38	4.44	3.27

3.2.3. Axial Ratio

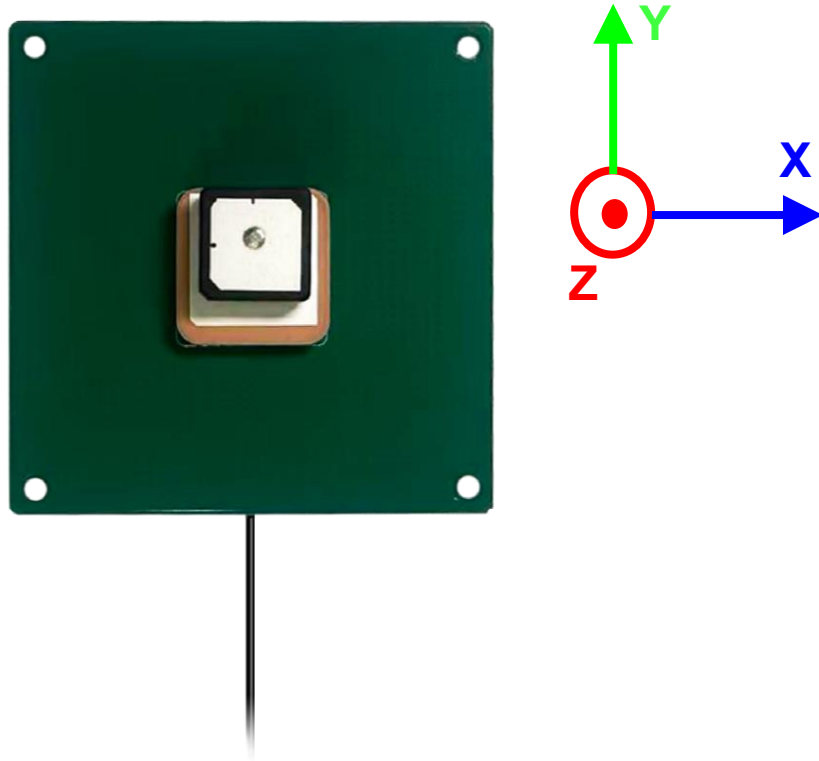


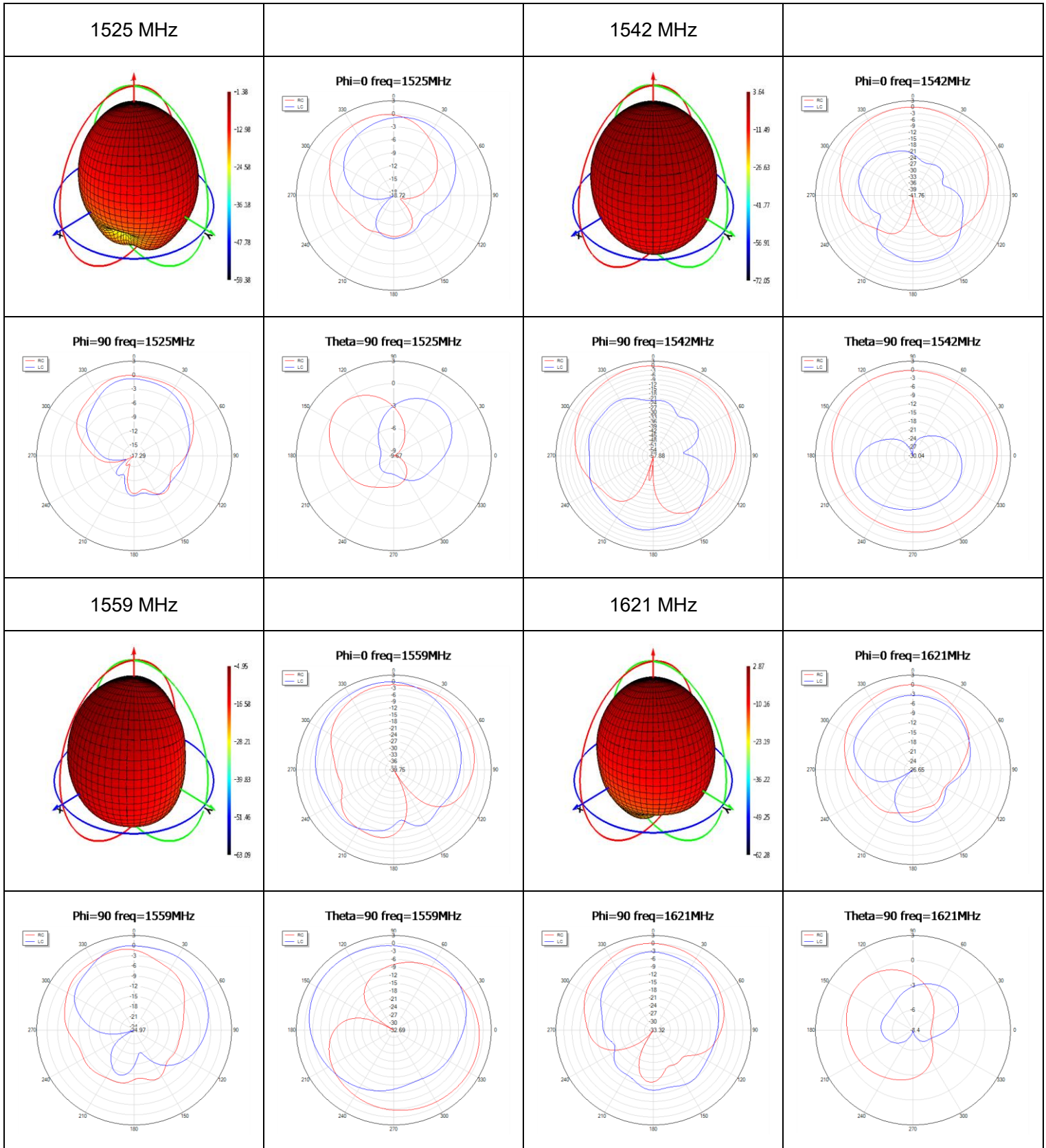
Axial Ratio (dB)

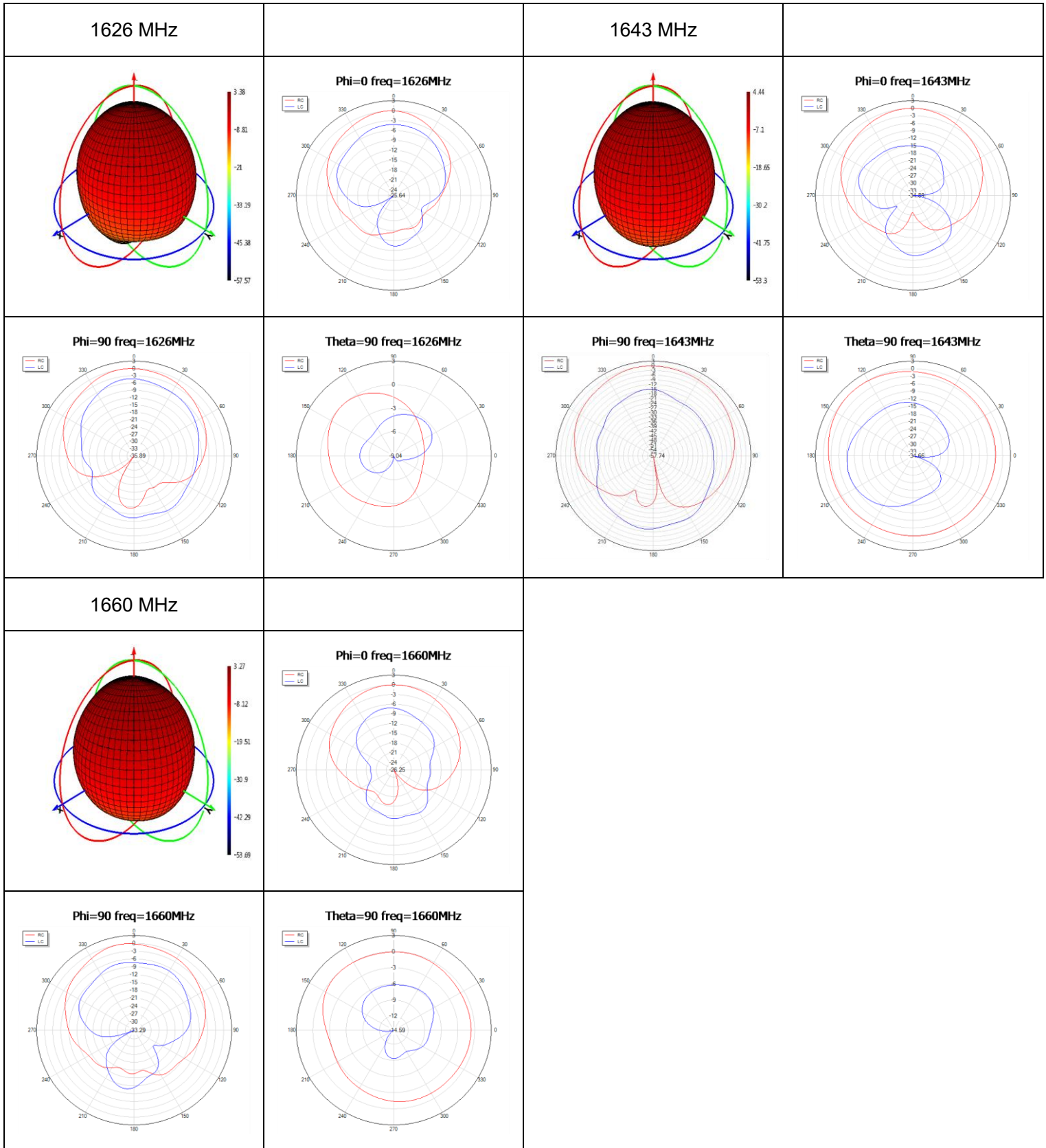
Frequency (MHz)		1525	1542	1559	1621	1626	1643	1660
Axial Ratio (dB)	Phi=0 (deg) Theta=0 (deg)	28.5	1.35	23.1	14.6	12.5	3.1	8.1
	Phi=90 (deg) Theta=0 (deg)	28.5	1.35	23.1	14.6	12.5	3.1	8.1

3.2.4. 3D & 2D Radiation Pattern

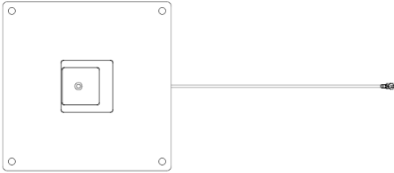
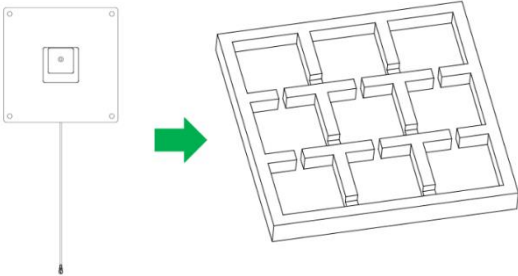
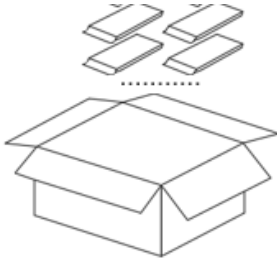
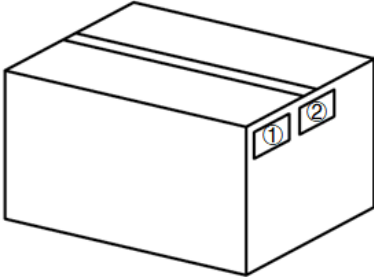
- Test Condition: Free Space
- Test Chamber: SH-SY-16M

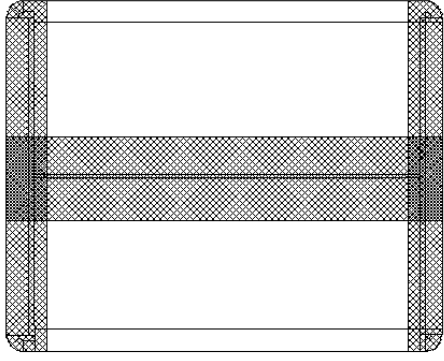






4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		Product drawing
2		9 antenna products in an anti-static pearl cotton tray. (9 Antennas / Anti-Static Pearl Cotton Tray)
3		(4 Anti-Static Pearl Cotton Tray / Carton Box) (36 Antennas / Carton Box) Estimated quantity Products that cannot fill the entire carton box are packed in a suitable size carton box. <u>Carton Size:</u> <u>L x W x H = 370 x 370 x 174 mm</u>
4		Position for Attaching Labels ① Carton Label ② Quality Label

5	 A technical drawing of an H-shaped sealing carton. It consists of a central horizontal rectangular section with a cross-hatched texture, flanked by two vertical rectangular sections, also with a cross-hatched texture. The corners of the vertical sections are rounded. The entire structure is shown in a perspective view.	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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Or our local offices. For more information, please visit:

<https://www.quectel.com/contact/>.

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Revision History

Version	Date	Author	Note
-	2025-12-23	Junsen Li/ Mike Guo/ Strong Qiang/ Rainey Liao	Creation of the document
1.0	2025-12-23	Junsen Li/ Mike Guo/ Strong Qiang/ Rainey Liao	First official release

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