



Antenna Datasheet

Product OC: YETN001L1A

Version: 1.5

Date: 2026-03-16

Status: Released

Product Name: L-Band & GNSS L1 & Iridium Screw Mount Low Profile
Passive External Antenna

Key Features:

Frequency Band:

GNSS L1: 1559–1606 MHz

Iridium: 1616–1626.5 MHz

L-Band: TX: 1626.5–1660.5 MHz, 1668–1675 MHz

RX: 1518–1559 MHz

Peak Gain: 4.3 dBic (Max)

RoHS and REACH Compliant

IP67

IK09

Overview

The Quectel YETN001L1A represent the pinnacle of rugged, high-performance NTN antenna technology, designed to deliver multi-constellation, L-Band (GNSS L1 & Iridium) positioning in the most demanding environments. Combining active amplification with industrial-grade durability, these antennas provide unmatched signal clarity and reliability for applications requiring centimeter-level accuracy. With IP67 ingress protection, IK09 impact resistance, and extended temperature operation (-40 °C to +85 °C), they are engineered to thrive in harsh outdoor, automotive, and industrial settings.

- **Key Features & Technical Specifications**

- ✓ **Dual-Band Precision & Active Amplification**
Frequency Bands: TX: 1626.5–1660.5 MHz, 1668–1675 MHz, RX: 1518–1559 MHz (L-Band). 1559–1606 MHz (L1), supporting GPS, Galileo, BDS, QZSS, and GLONASS. 1616–1626.5 MHz (Iridium).
- ✓ **Superior RF Performance**
Peak Efficiency: 71.5% at 1661 MHz with RHCP polarization for multipath rejection.
Low axial Ratio ensures near-perfect circular polarization.
- ✓ **Industrial-Grade Durability**
IP67 Rating: Fully dustproof and waterproof, suitable for marine or outdoor deployments.
UV-Resistant & Flame-Retardant Housing: Compliant with UL 94 V-0 and UL 746c f1 standards.
- ✓ **YETN001L1A: Screw base for quick installation.**
- ✓ **Power Efficiency & Compliance**
RoHS/REACH Compliant: Environmentally safe for global deployments.

- **Target Applications**

- ✓ These antennas are ideal for mission-critical systems requiring high precision and reliability:
- ✓ **Autonomous Vehicles:** Lane-level navigation for ADAS and robotics.
- ✓ **Marine:** Offshore navigation, and other positioning devices.
- ✓ **Precision Agriculture:** Guidance systems for tractors and harvesters.
- ✓ **Industrial IoT:** Asset tracking in ports, mining, and logistics.
- ✓ **Surveying & Geodesy:** High-accuracy mapping and timing synchronization.

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, 1668–1675 MHz RX: 1518–1559 MHz
	GNSS	1559–1606 MHz
	Iridium	1616–1626.5 MHz
Impedance		50 Ω
Polarization		RHCP
Radiation Pattern		Directional

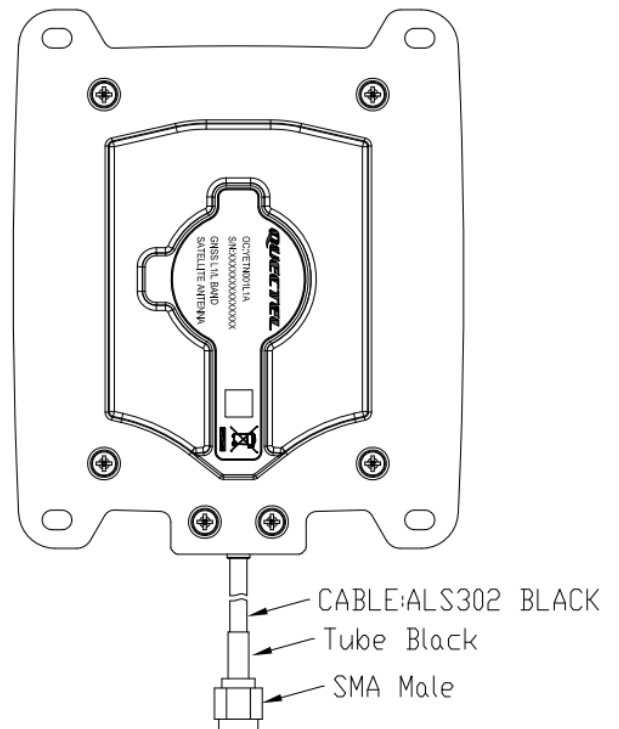
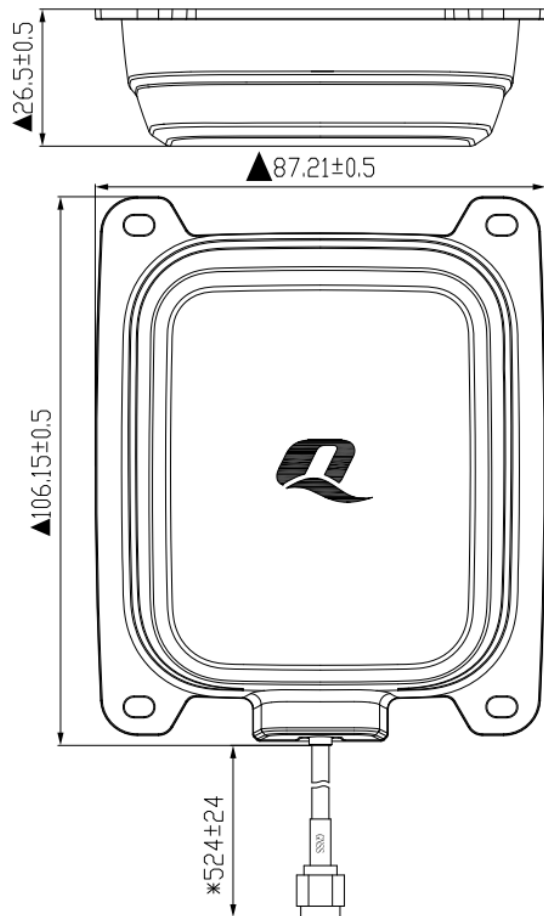
Band Frequency (MHz)	L-Band TX					L-Band RX				GPS L1 GALILEO E1 BDS B1C QZSS L1	GLONASS G1	Iridium		
	1626	1645	1661	1668	1675	1518	1525	1543	1559	1575	1600	1616	1621	1626
VSWR	1.3	1.3	1.5	1.5	1.6	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3
Return Loss (dB)	-17	-15	-13	-13	-12	-19	-19	-20	-19	-20	-22	-20	-19	-17
Efficiency (%)	70.0	71.2	71.5	71.4	68.8	45.1	47	52.6	58.3	61.5	65.3	68.2	69.3	70.0
Peak Gain (dBic)	3.8	3.7	4.1	4.2	4.1	2.8	2.9	2.8	3.0	3.5	4.3	4.2	4.0	3.8
Axial Ratio (dB)	2.7	3.3	3.8	3.9	3.9	1.4	1.4	1.2	1.7	2.4	2.6	2.6	2.6	2.7

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	106.15 mm × 87.21 mm × 26.5 mm
Casing Material & Color	PC + ADC12 & Black + Silver
Cable Type & Color & Length	ALS302 & Black & 524 ±24 mm
Connector Type	SMA Male (The current state of the SMA connector is not waterproof. If a waterproof connector is required, it can be customized.)
Mounting Type	Screw
Weight	Typ. 167.2 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Ingress Protection (IP) Rating	IP67 (After Installation) IP69K (After Installation)
Impact Protection (IK) Rating	IK09 (Only the surface of the housing with a silk screen Q was tested.)
RoHS & REACH Compliant	Yes
Housing Flame Rating	UL 94 V-0
Housing UV Resistant	UL 746c f1

2 Drawing

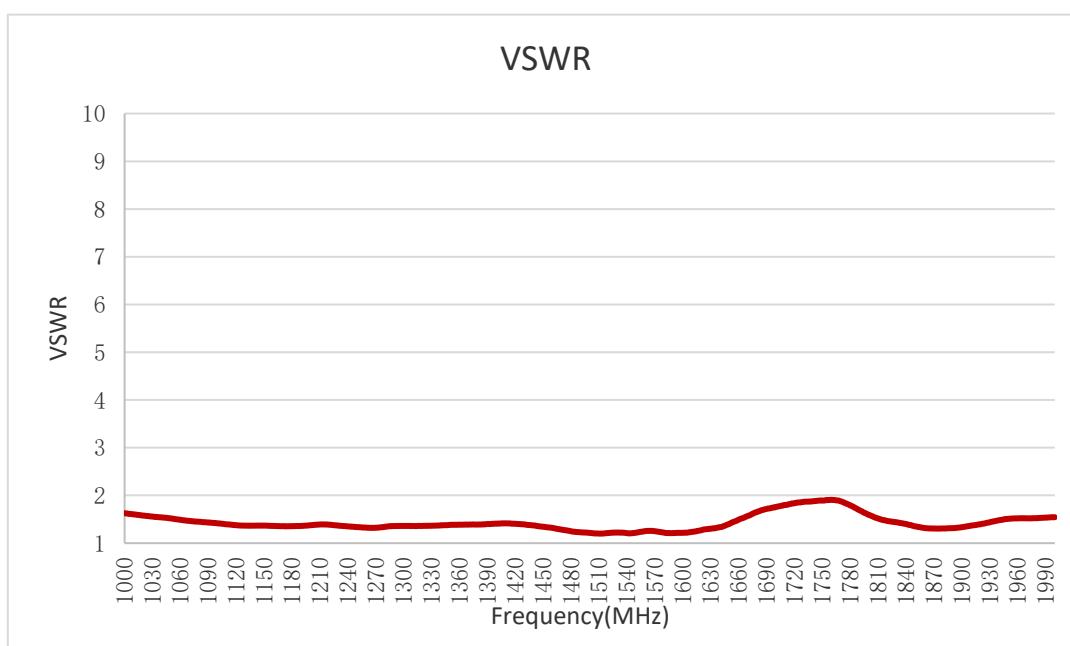
ROHS



3 Detailed Performance

3.1. S-Parameter Test

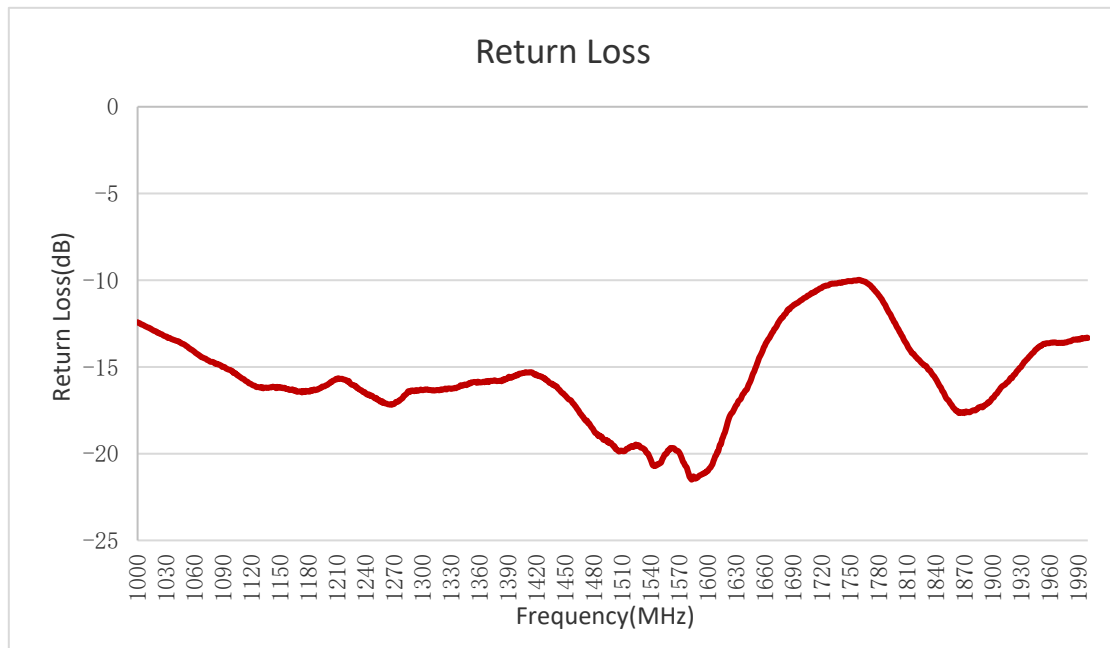
3.1.1. VSWR



VSWR

Frequency (MHz)	1518	1525	1543	1559	1575	1600	1616	1621	1626	1645	1661	1668	1675
VSWR	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.5	1.5	1.6

3.1.2. Return Loss

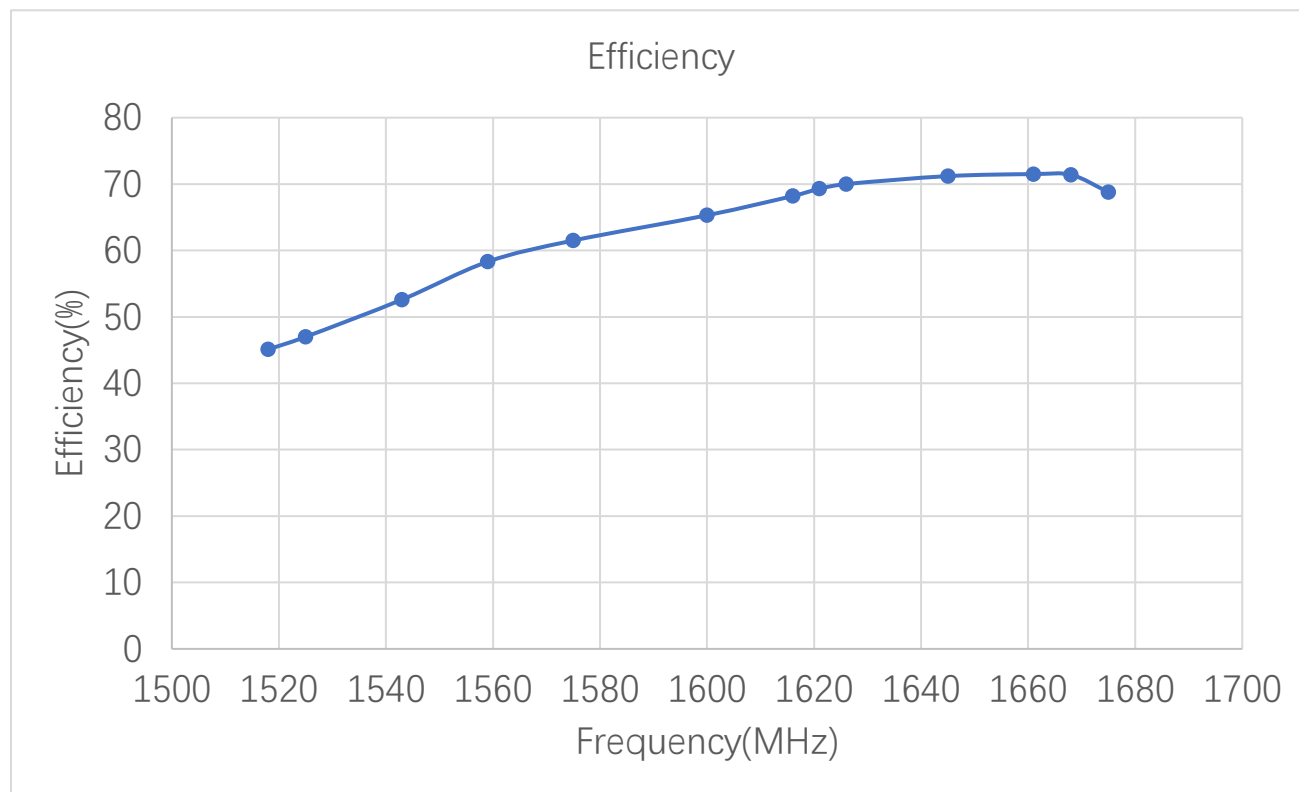


Return Loss (dB)

Frequency (MHz)	1518	1525	1543	1559	1575	1600	1616	1621	1626	1645	1661	1668	1675
Return Loss (dB)	-19	-19	-20	-19	-20	-22	-20	-19	-17	-15	-13	-13	-12

3.2. Radiation Performance Test

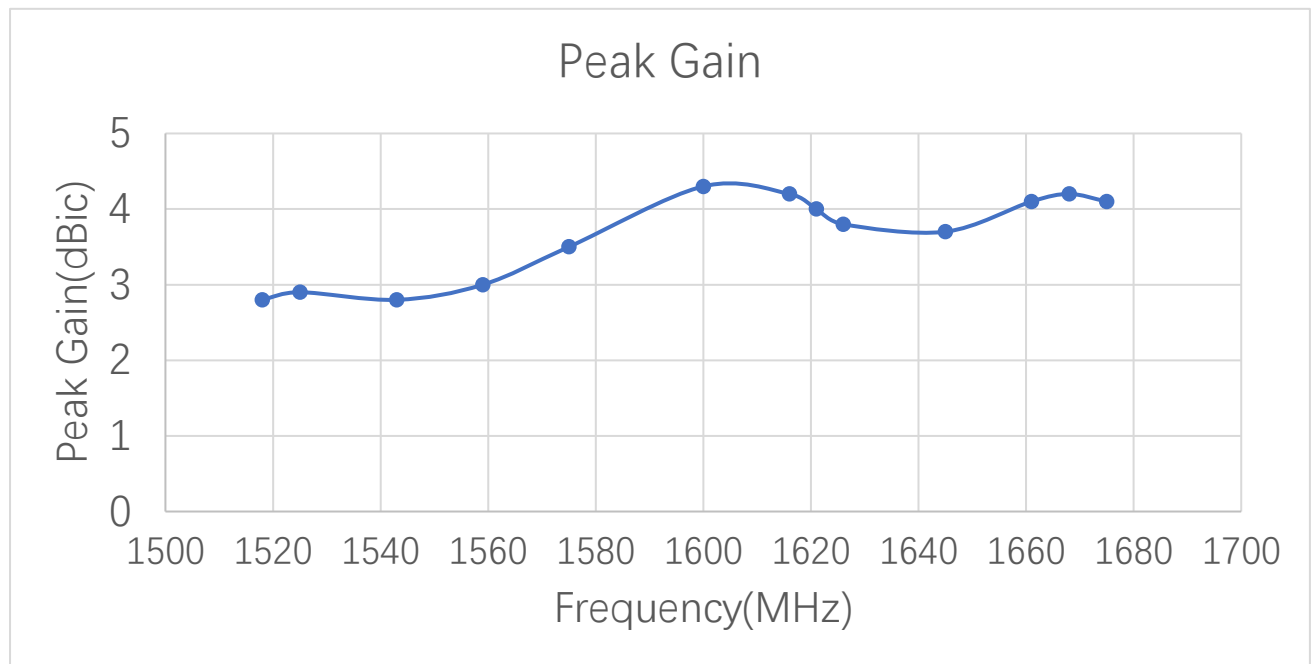
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	1518	1525	1543	1559	1575	1600	1616	1621	1626	1645	1661	1668	1675
Efficiency (%)	45.1	47.0	52.6	58.3	61.5	65.3	68.2	69.3	70.0	71.2	71.5	71.4	68.8

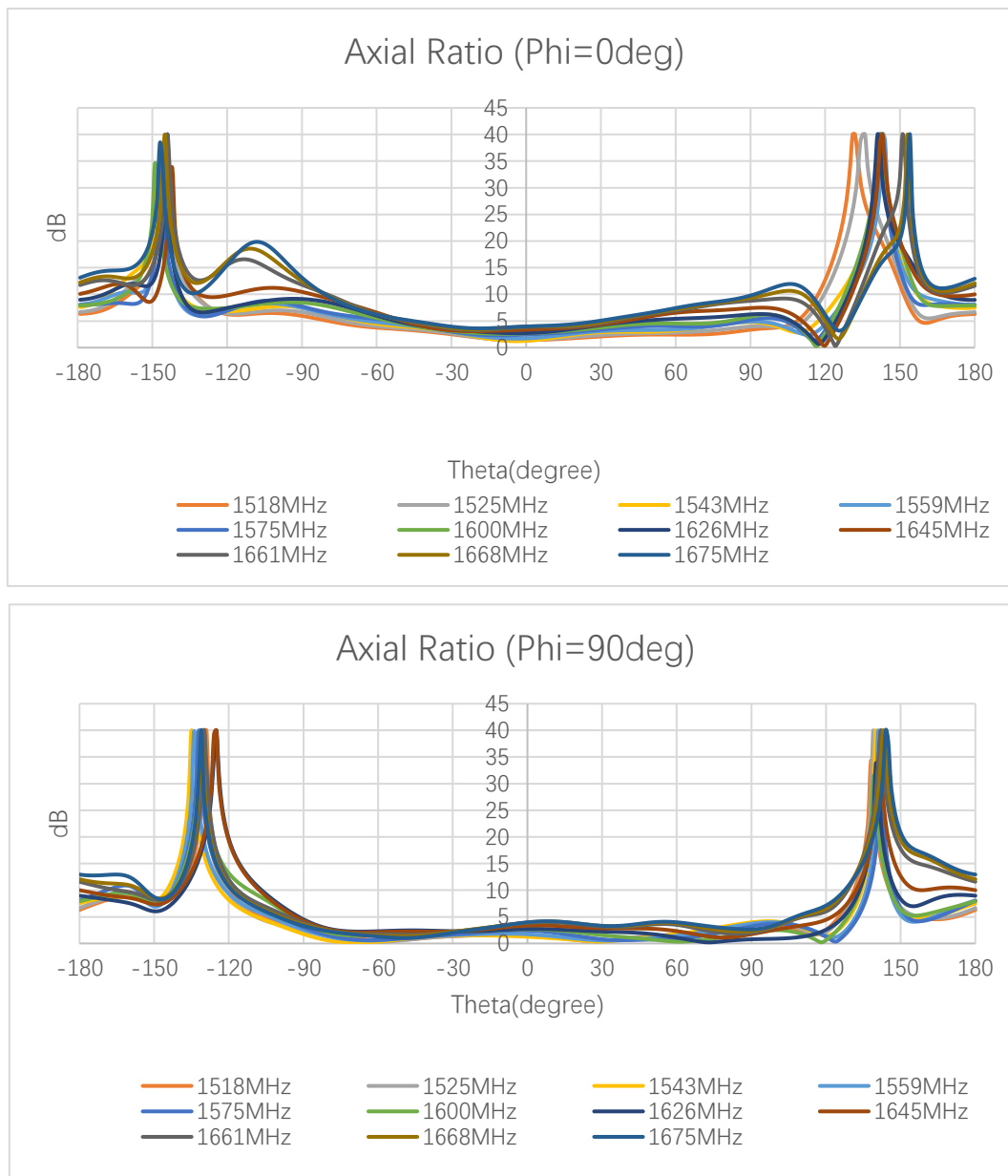
3.2.2. Peak Gain



Peak Gain (dBic)

Frequency (MHz)	1518	1525	1543	1559	1575	1600	1616	1621	1626	1645	1661	1668	1675
Peak Gain (dBic)	2.8	2.9	2.8	3.0	3.5	4.3	4.2	4.0	3.8	3.7	4.1	4.2	4.1

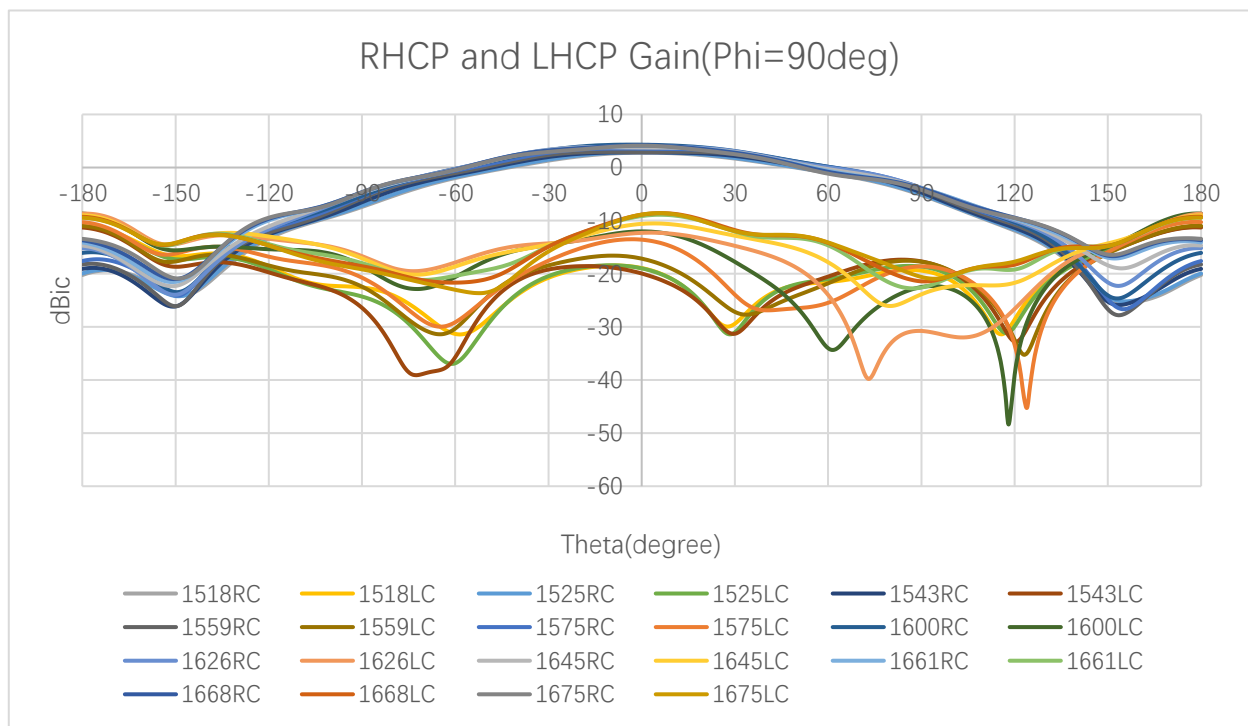
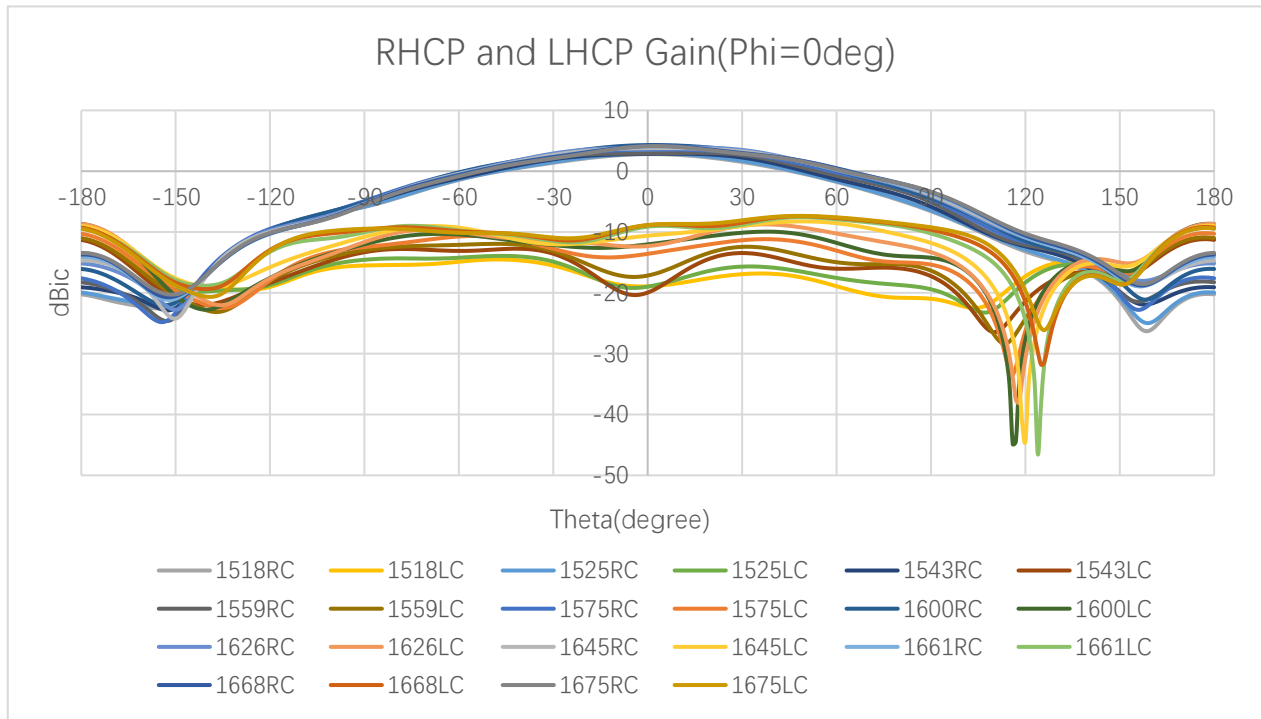
3.2.3. Axial Ratio



Axial Ratio (dB)

Frequency (MHz)		1518	1525	1543	1559	1575	1600	1626	1645	1661	1668	1675
Axial Ratio (dB)	Phi=0 (deg) Theta=0 (deg)	1.4	1.4	1.2	1.7	2.4	2.6	2.7	3.3	3.8	3.9	3.9
	Phi=90 (deg) Theta=0 (deg)	1.4	1.4	1.2	1.7	2.4	2.6	2.7	3.3	3.8	3.9	3.9

3.2.4. 2D RHCP and LHCP Gain

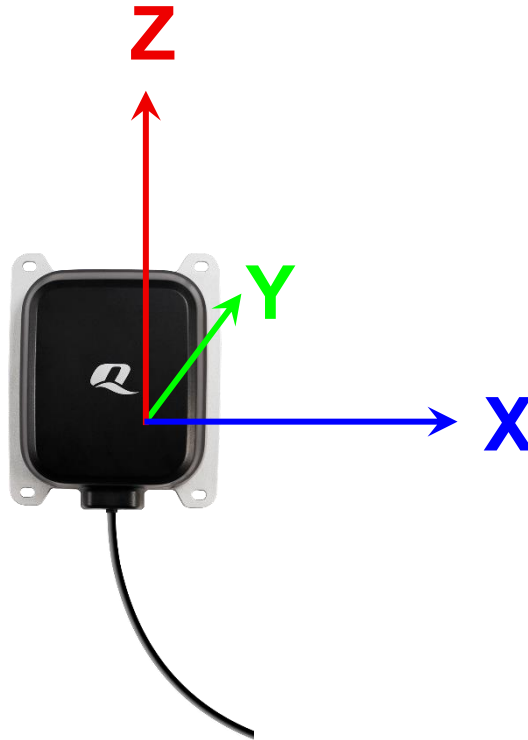


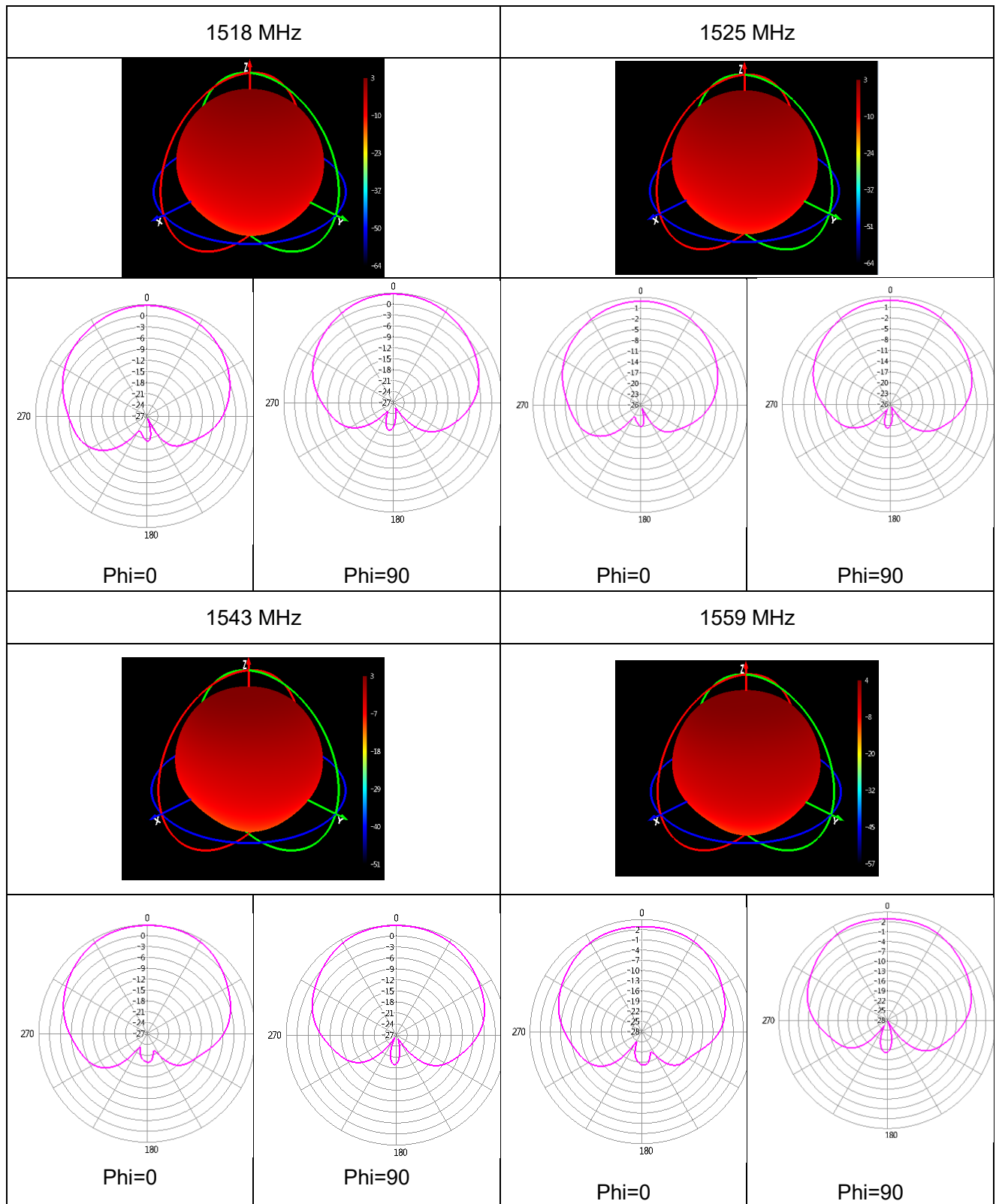
2D RHCP and LHCP Gain (dBic)

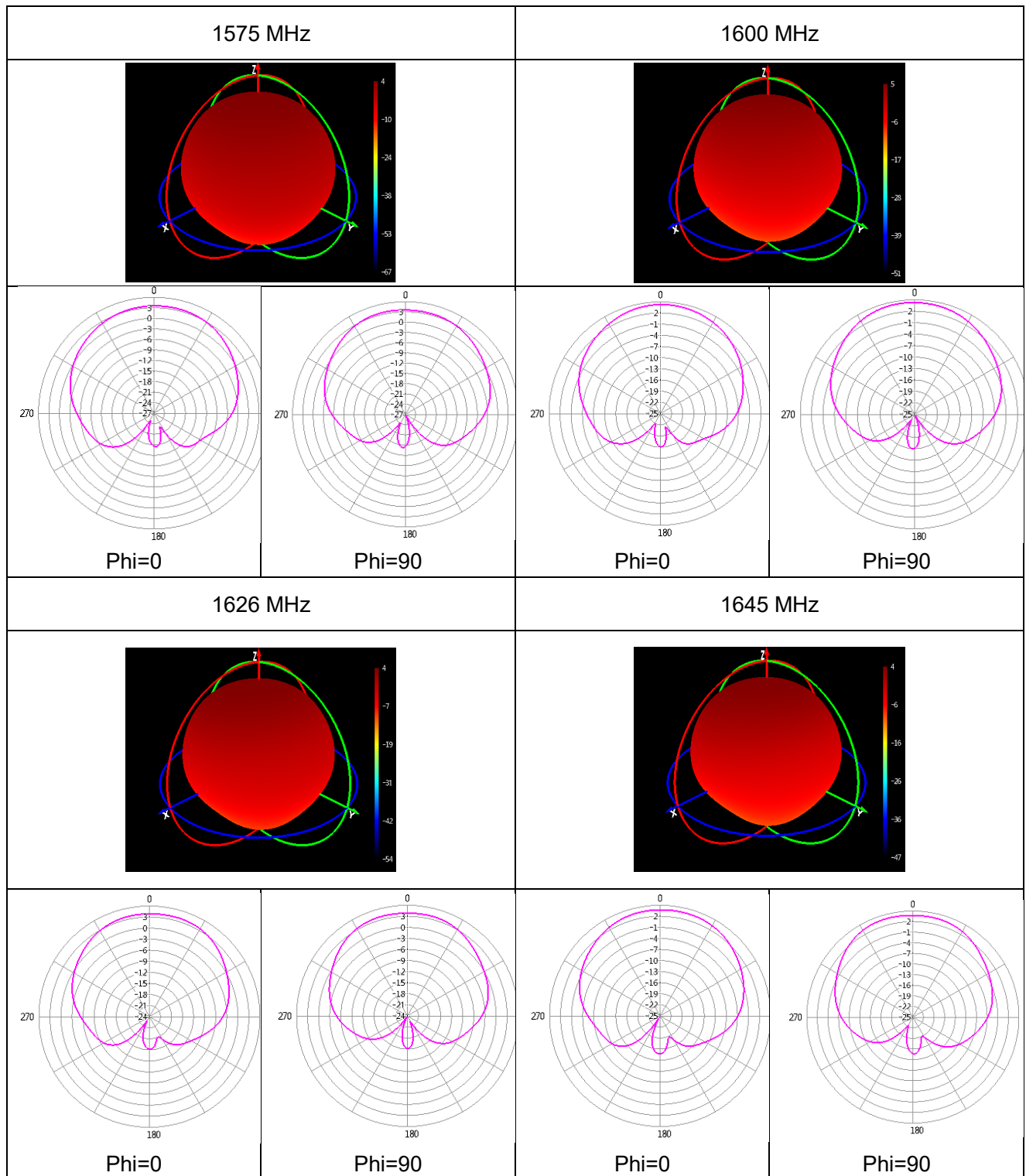
Frequency (MHz)		1518	1525	1543	1559	1575	1600	1626	1645	1661	1668	1675
RHCP Gain (dBic)	Phi = 0 (deg) Theta = 0 (deg)	2.8	2.9	2.8	3.0	3.5	4.3	3.8	3.7	4.1	4.2	4.1
	Phi = 90 (deg) Theta = 0 (deg)	2.8	2.9	2.8	3.0	3.5	4.3	3.8	3.7	4.1	4.2	4.1
LHCP Gain (dBic)	Phi = 0 (deg) Theta = 0 (deg)	-18.9	-18.8	-19.9	-17.1	-13.5	-12	-12.3	-10.6	-9.1	-8.8	-8.8
	Phi = 90 (deg) Theta = 0 (deg)	-18.9	-18.8	-19.9	-17.1	-13.5	-12	-12.3	-10.6	-9.1	-8.8	-8.8

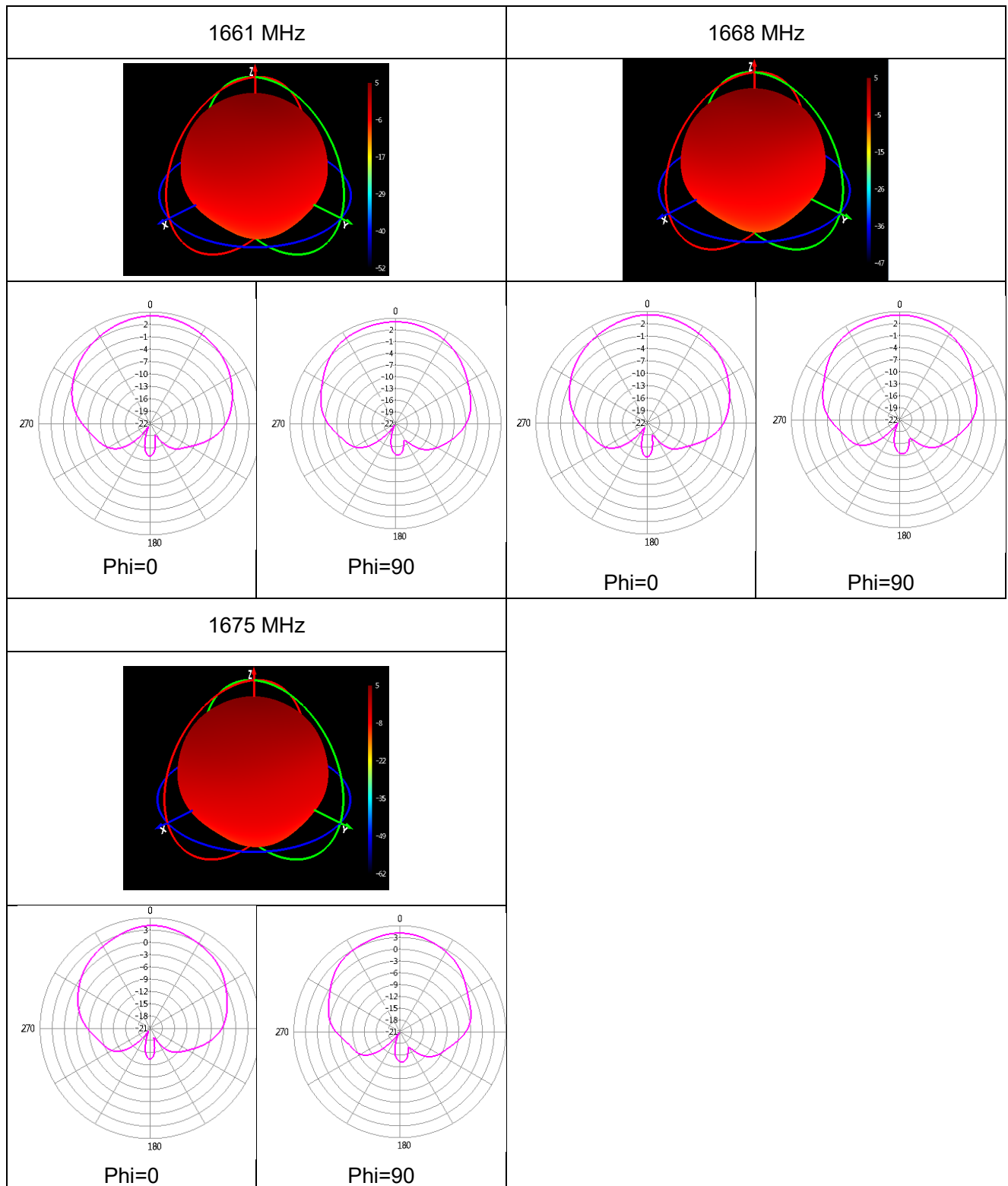
3.2.5. 3D & 2D Radiation Pattern

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

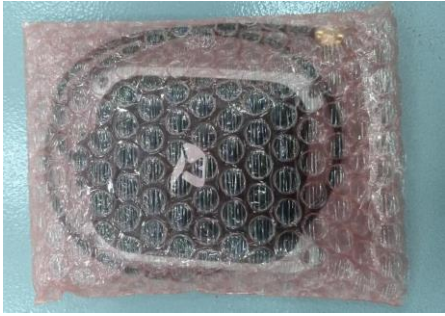


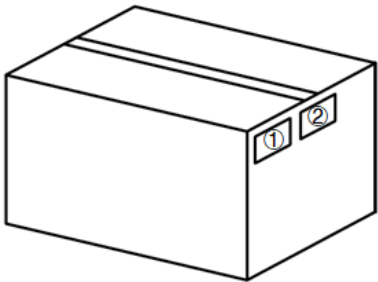
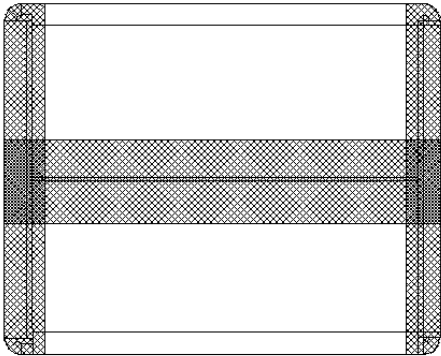






4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		1 antenna product in a bubble bag. (1 Antenna / Bubble Bag)
2		2 antenna products in an inner box. (2 Antennas / Inner Box)
3		(32 Inner Boxes / Carton Box) (64 Antennas / Carton Box) Products that cannot fill the entire carton box are packed in a suitable size carton box. <u>Carton Size:</u> <u>L × W × H = 600 × 405 × 300 mm</u>

4		Position for Attaching Labels ① Carton Label ② Quality Label
5		Sealing Cartons H-shaped sealing cartons

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:

Quectel Wireless Solutions Co., Ltd.

No. 8 Waipojing Road, Sijing Town, Songjiang District, Shanghai 201601, China

Tel: +86 21 5108 6236

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
-	2023-11-09	Xiaodong Yang/ Rojin Luo/ David Liu/ Vinnie Liu	Creation of the document
1.0	2023-11-09	Xiaodong Yang/ Rojin Luo/ David Liu/ Vinnie Liu	Preliminary document
1.1	2023-11-27	Xiaodong Yang/ Rojin Luo/ David Liu/ Vinnie Liu	Updated Iridium frequency band (Chapter 1.1).
1.2	2024-01-24	Rojin Luo	1. Added Housing Flame Rating and Housing UV Resistant (Chapter 1.2). 2. Updated the packaging (Chapter 4).
1.3	2025-09-22	Strong Qiang/ Rainey Liao	1. Updated the antenna image (Cover page). 2. Updated the Overview. 3. Updated the packaging (Chapter 4).
1.4	2026-01-19	Strong Qiang	Updated the packaging (Chapter 4).
1.5	2026-03-16	Rainey Liao	Updated the Overview.



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