Antenna Datasheet

Product OC: YETN001L1A
Version: 1.4
Date: 2026-01-19
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 GNSS 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.

Contents

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

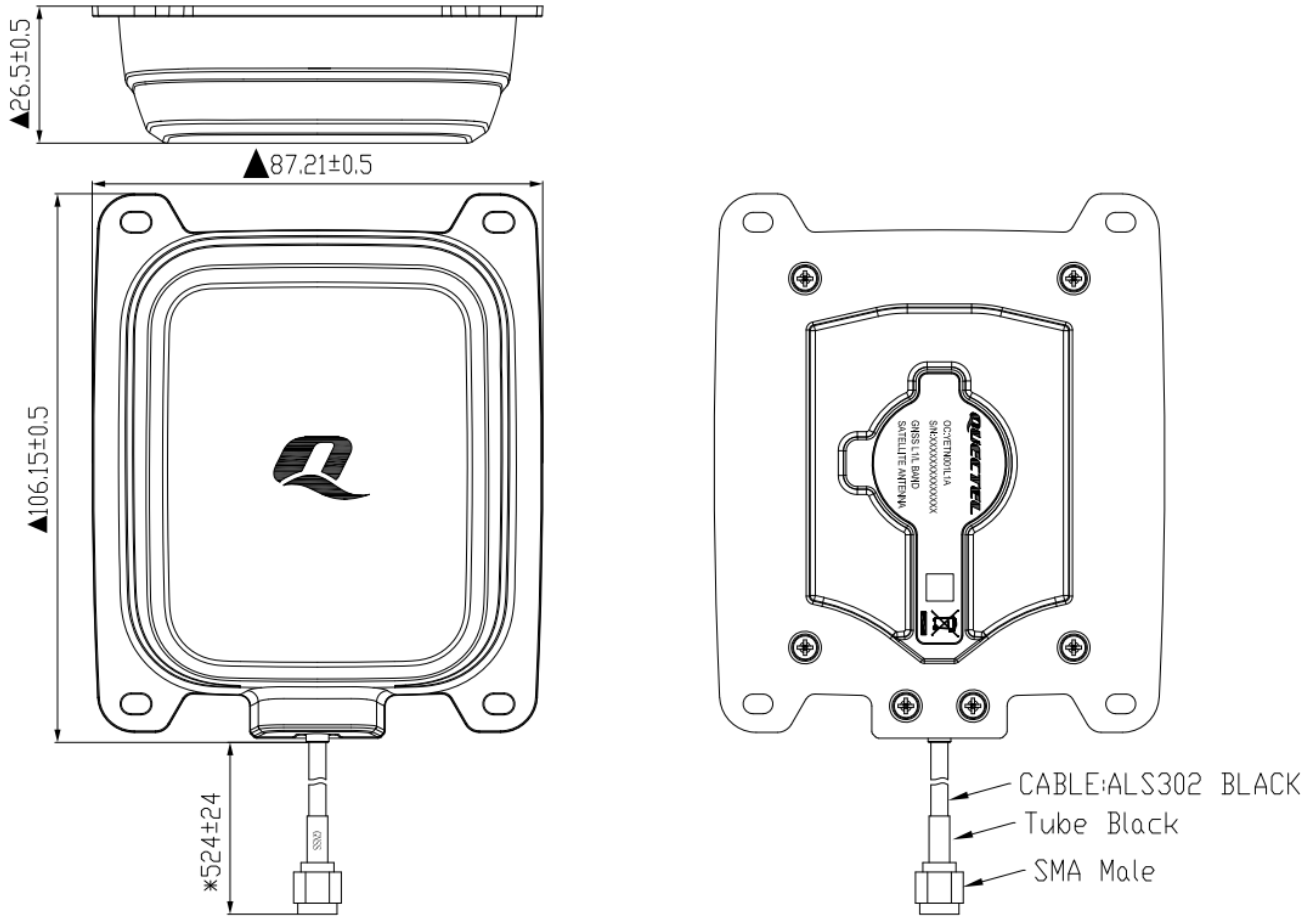
Band / Frequency (MHz)	L-Band TX					L-Band RX				GPS L1 GALILEO E1 BDS B1C QZSS L1	GLONASS G1	Iridium		
	1626	1645	1661	1668	1675	1518	1525	1543	1559	1575	1600	1616	1621	1626
VSWR	1.3	1.3	1.5	1.5	1.6	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3
Return Loss (dB)	-17	-15	-13	-13	-12	-19	-19	-20	-19	-20	-22	-20	-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

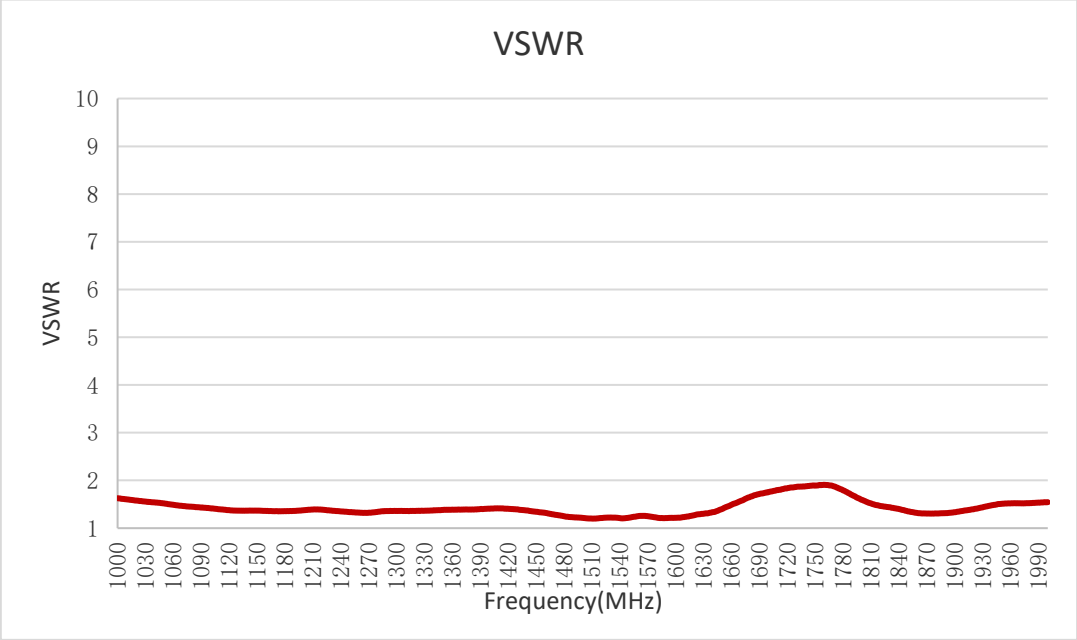
ROHS



3 Detailed Performance

3.1. S-Parameter Test

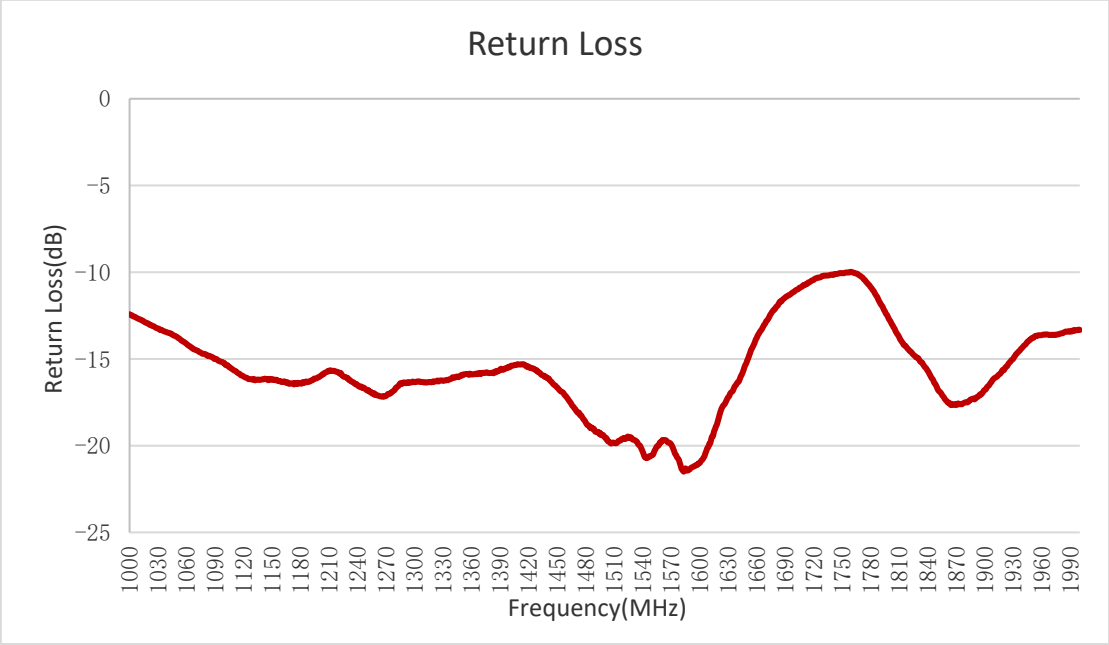
3.1.1. VSWR



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

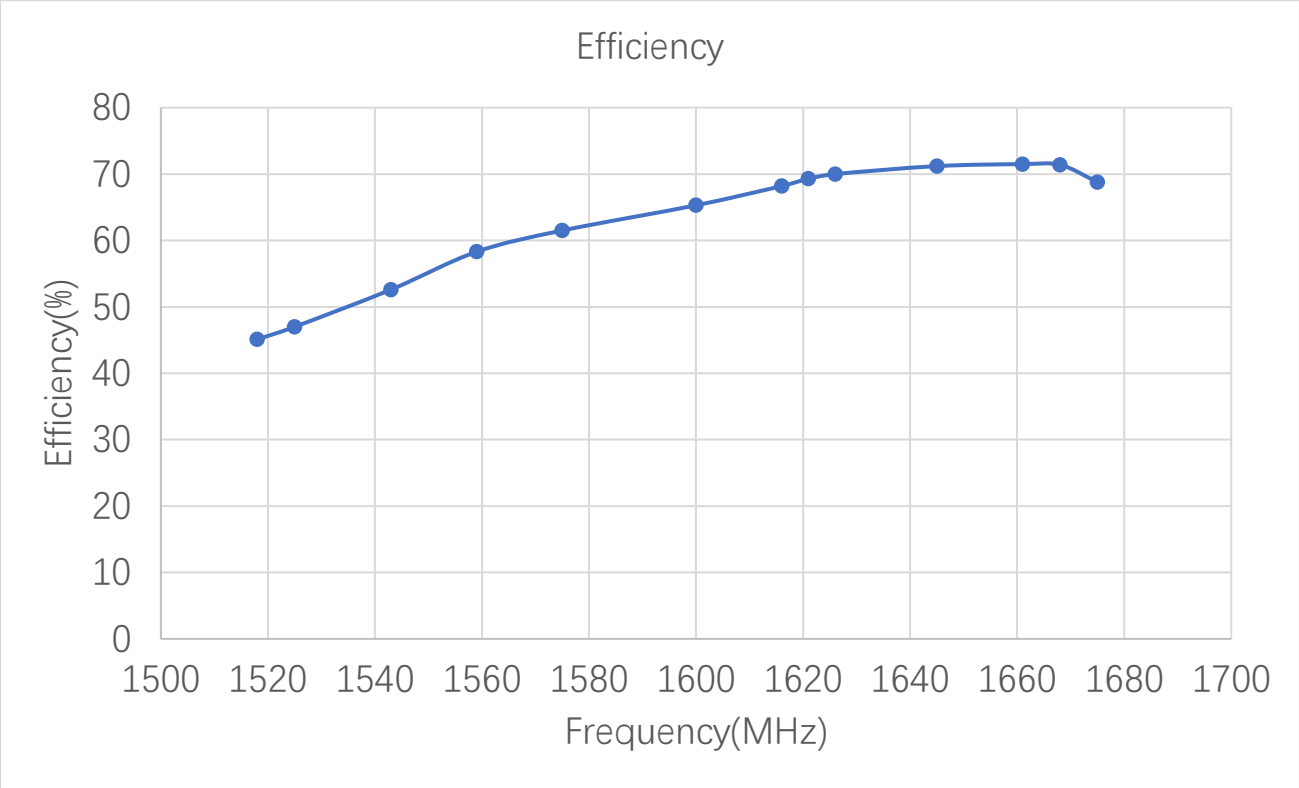


Return Loss (dB)

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

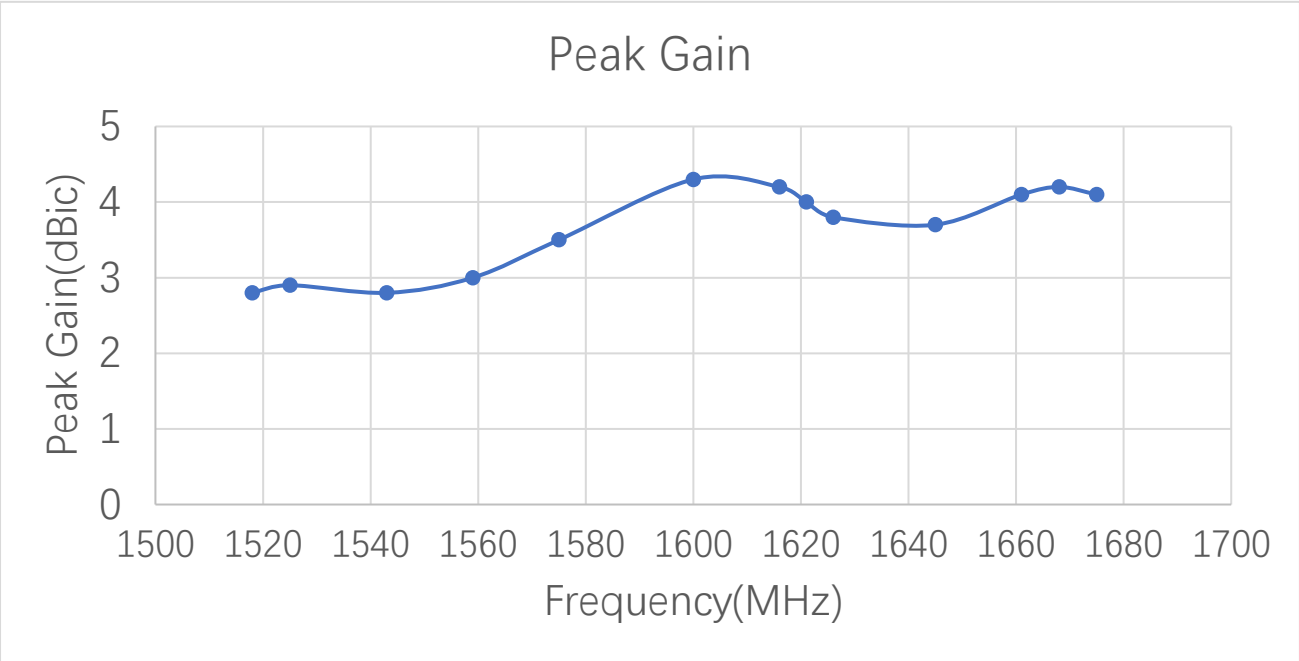
3.2.1. Efficiency



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

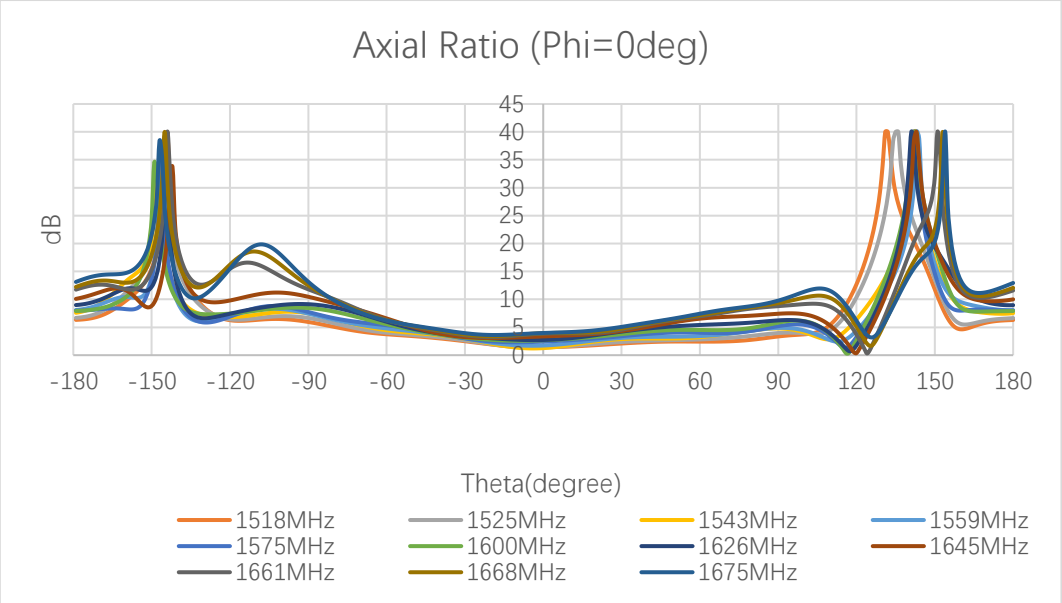
3.2.2. Peak Gain

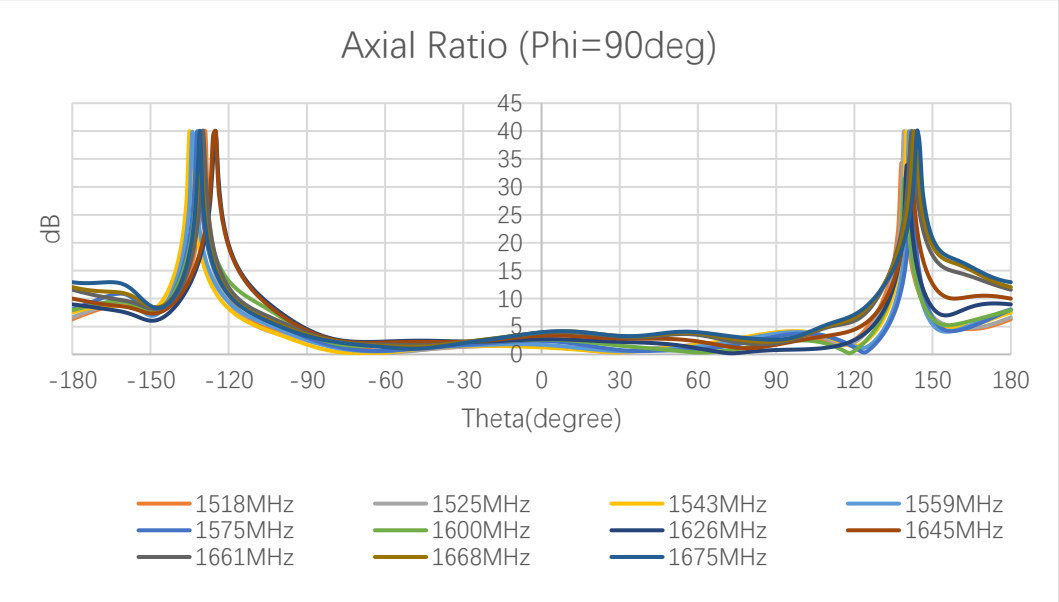


Peak Gain (dBic)

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

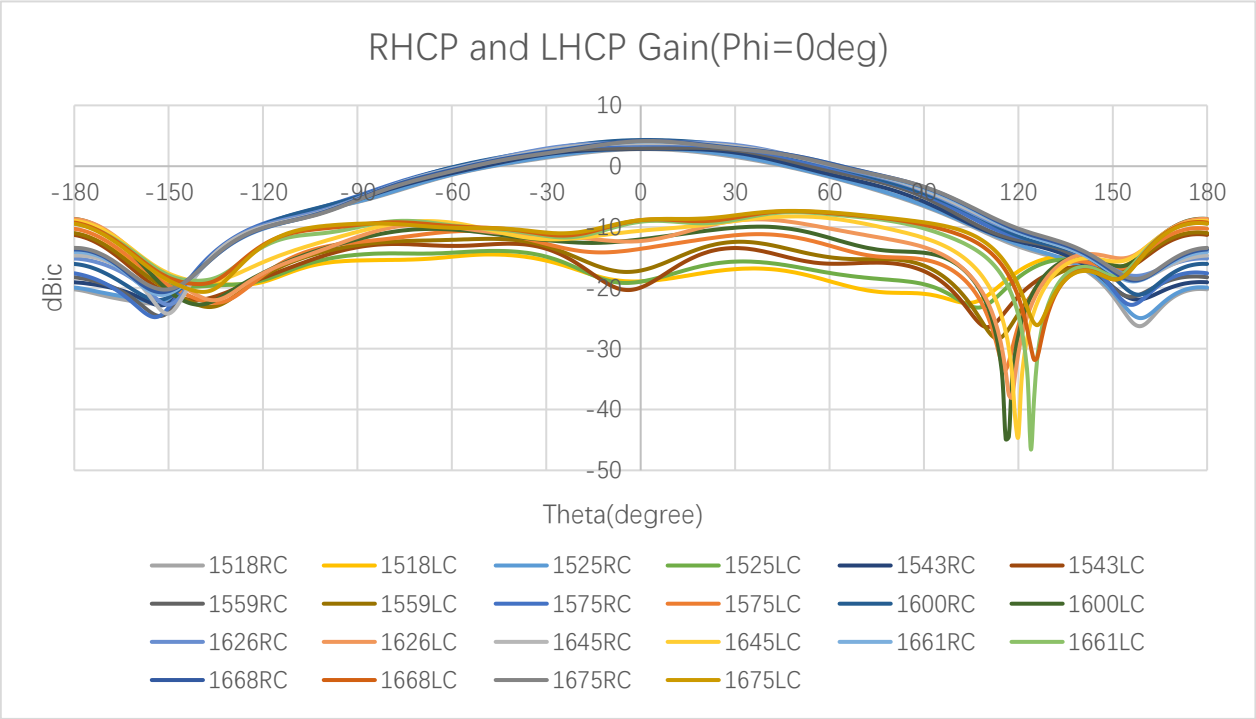


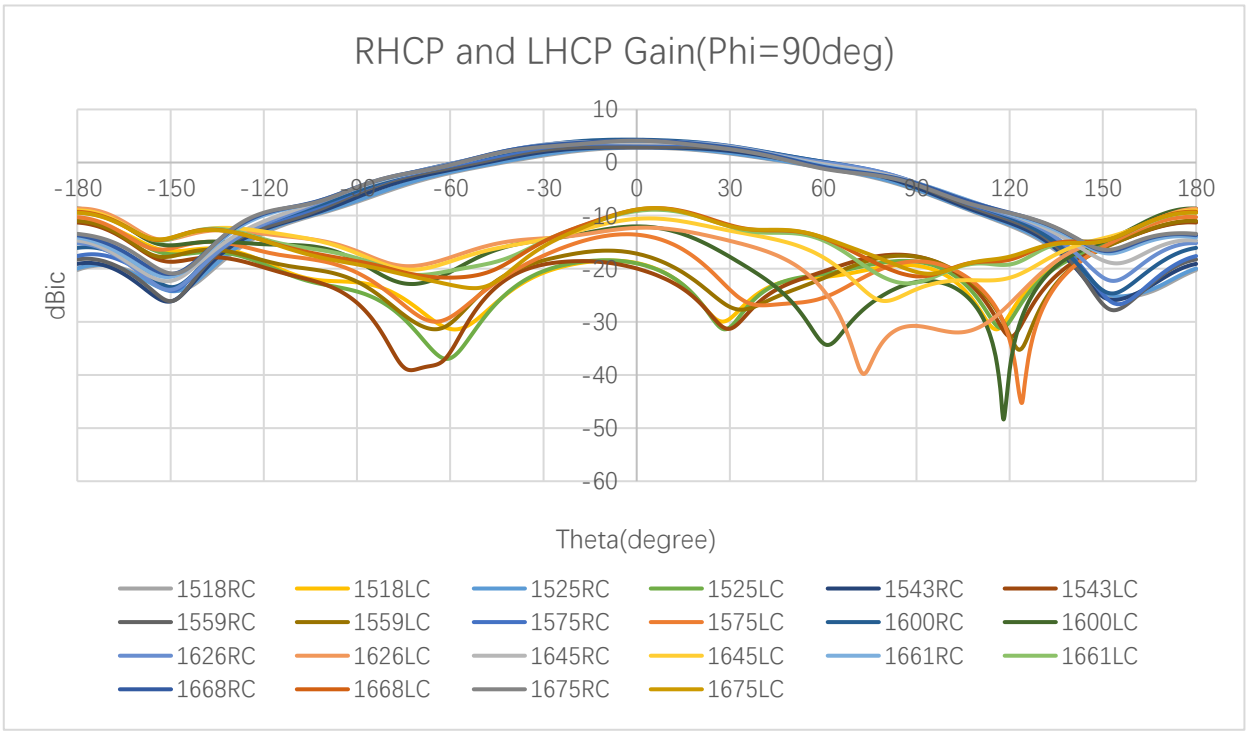


Axial Ratio (dB)

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



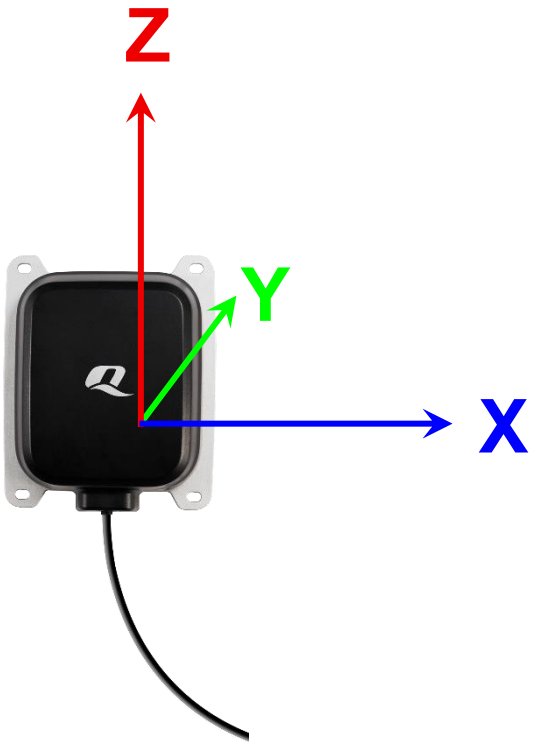


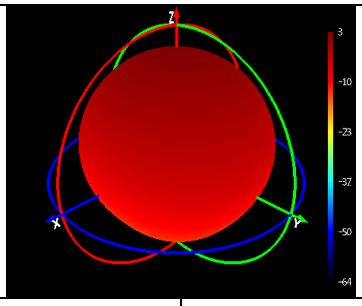
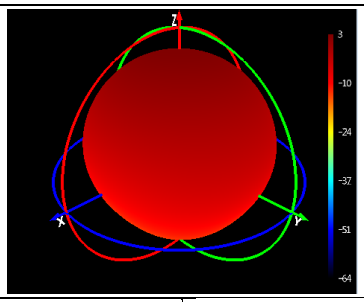
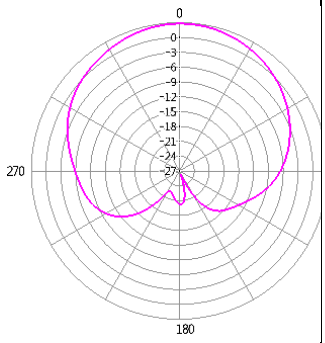
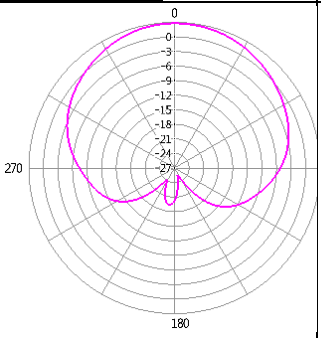
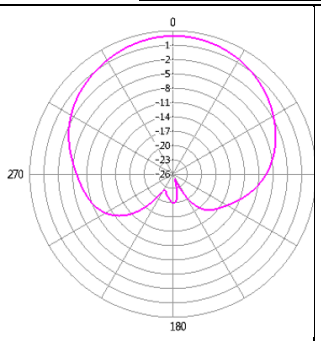
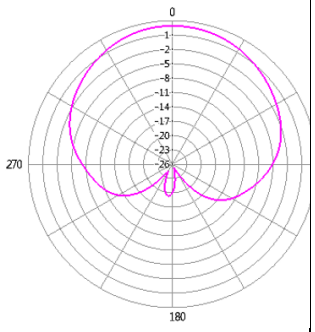
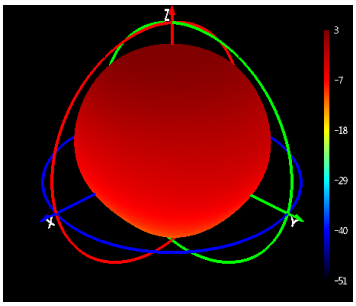
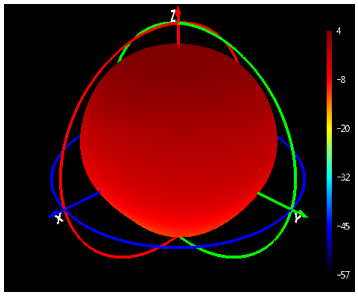
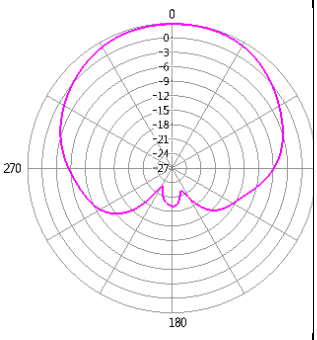
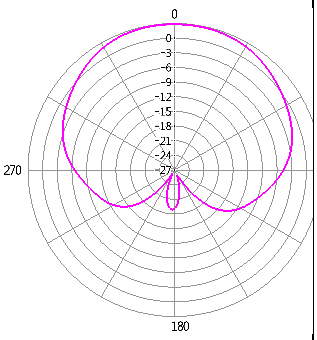
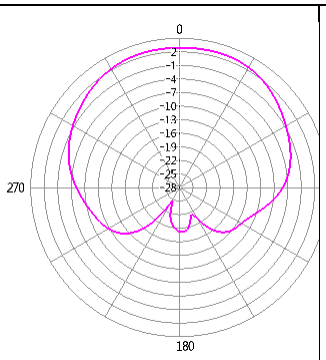
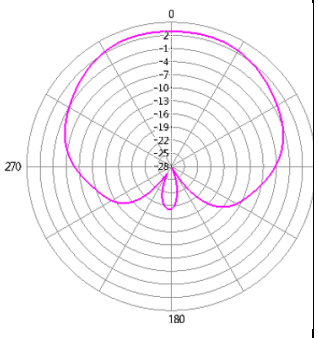
2D RHCP and LHCP Gain (dBic)

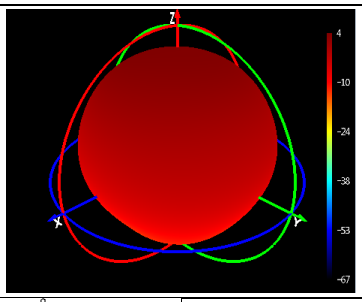
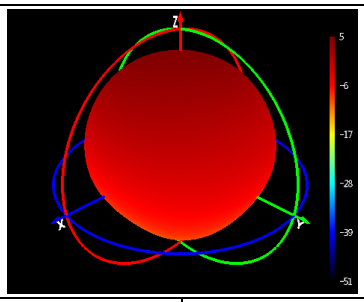
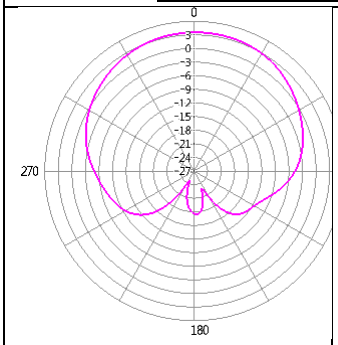
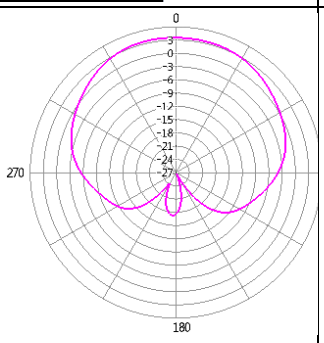
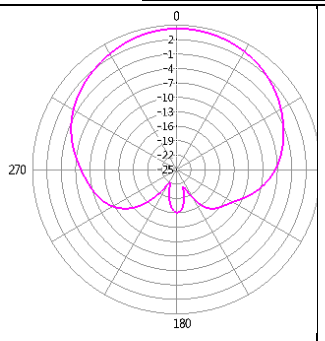
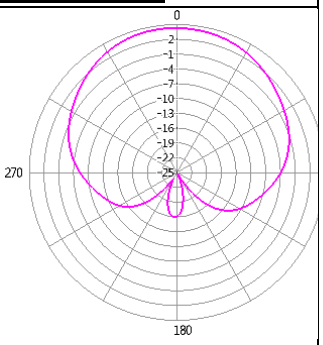
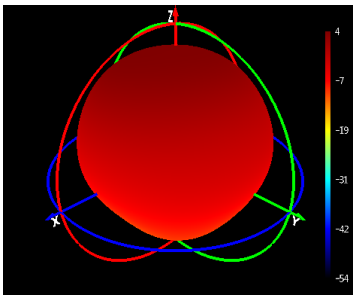
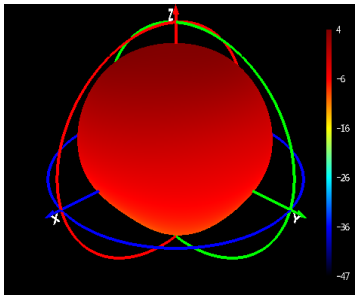
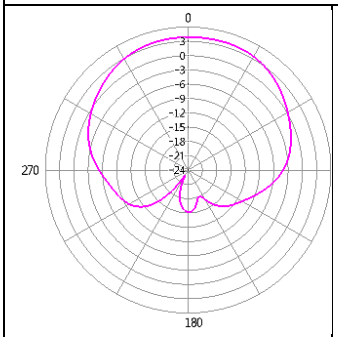
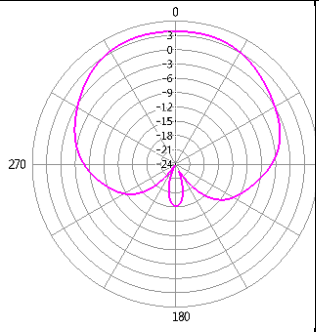
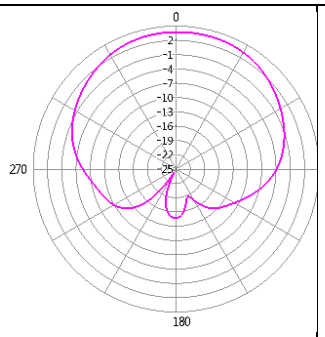
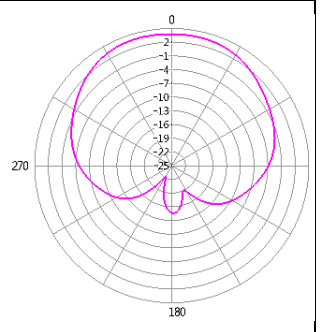
Frequency (MHz)		1518	1525	1543	1559	1575	1600	1626	1645	1661	1668	1675
RHCP Gain (dBic)	Phi = 0 (deg) Theta = 0 (deg)	2.8	2.9	2.8	3.0	3.5	4.3	3.8	3.7	4.1	4.2	4.1
	Phi = 90 (deg) Theta = 0 (deg)	2.8	2.9	2.8	3.0	3.5	4.3	3.8	3.7	4.1	4.2	4.1
LHCP Gain (dBic)	Phi = 0 (deg) Theta = 0 (deg)	-18.9	-18.8	-19.9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

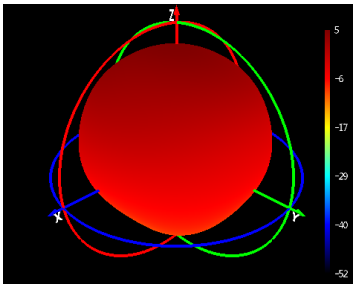
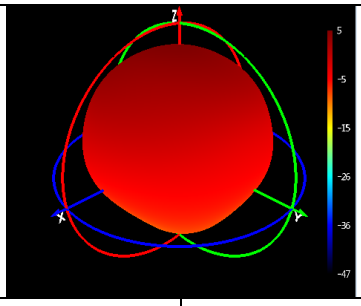
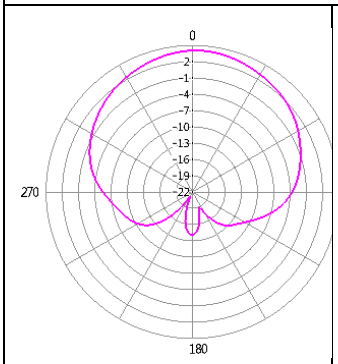
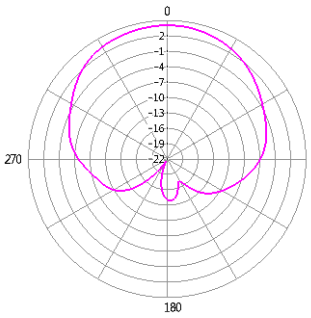
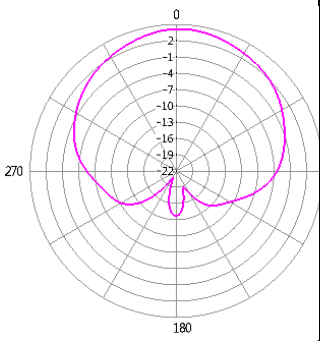
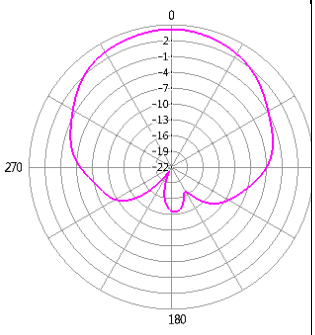
3.2.5. 3D & 2D Radiation Pattern

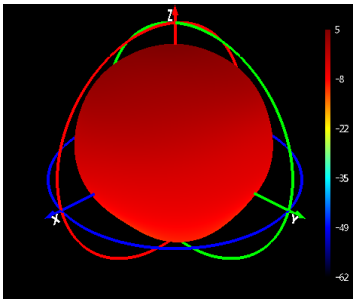
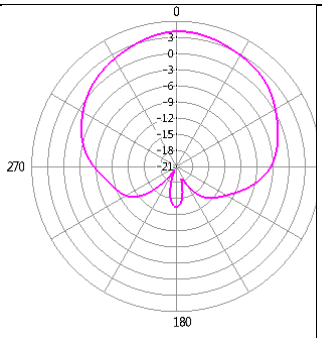
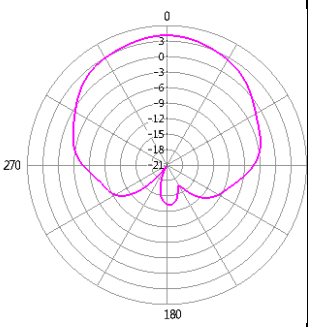
- Test Condition: Free Space
- Test Chamber: SH-SY-16M



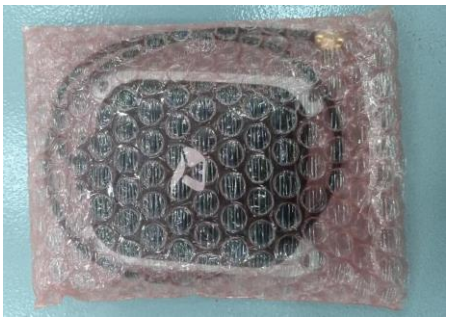
1518 MHz		1525 MHz	
			
			
Phi=0	Phi=90	Phi=0	Phi=90
1543 MHz		1559 MHz	
			
			
Phi=0	Phi=90	Phi=0	Phi=90

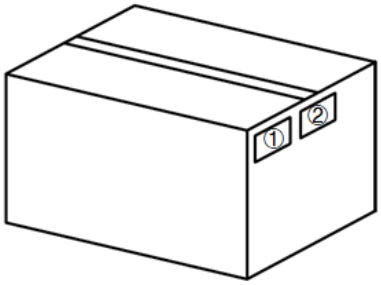
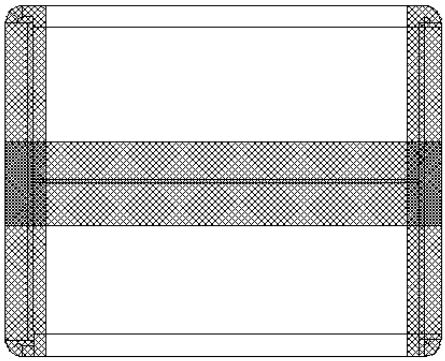
1575 MHz		1600 MHz	
			
			
Phi=0	Phi=90	Phi=0	Phi=90
1626 MHz		1645 MHz	
			
			
Phi=0	Phi=90	Phi=0	Phi=90

1661 MHz		1668 MHz	
			
			
Phi=0	Phi=90	Phi=0	Phi=90

1675 MHz	
	
	
Phi=0	Phi=90

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. Carton Size: L × W × H = 600 × 405 × 300 mm

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/.

For technical support, or to report documentation errors, please visit:
https://www.quectel.com/tech-support/.
Or email us at: support@quectel.com.

Legal Notices

We provide this document to support your product design. You are required to design your products based on the specifications and parameters set forth herein. You agree that you are responsible for using independent analysis and evaluation in designing intended products, and we provide reference designs for illustrative purposes only. Before using any hardware, software or service guided by this document, please read this notice carefully. Even though we employ commercially reasonable efforts to provide the best possible experience, you hereby acknowledge and agree that this document and related services hereunder are provided to you on an “as available” basis. You acknowledge and agree that we may add to, amend, or restate this document at any time at our sole discretion without any prior notice to you, and such additions, amendments, or restatements shall be binding upon you.

Use and Disclosure Restrictions

License Agreements

The recipient of any hardware, software, materials, or documentation provided by us shall keep such content confidential, unless expressly authorized by us. The recipient shall not disclose, access, or use any part of the received content for any purpose other than the execution and implementation of the intended project.

Copyright

Our and third-party products hereunder may contain copyrighted materials, including but not limited to protected content, hardware, software, and documentation owned by us or applicable third parties. Unless prior written consent is obtained, you shall not access, use, or disclose any documents or information provided by us, nor shall you copy, reproduce, republish, display, translate, distribute, merge, modify, or create derivative works from any such copyrighted materials. We and the applicable third party retain exclusive rights to all copyrighted materials. No license to any patents, copyrights, trademarks, or service marks shall be granted or transferred. For the avoidance of doubt, no form of purchase shall be construed as granting any license beyond a normal, non-exclusive, royalty-free license to use the product. We reserve the right to pursue legal action against any violation of confidentiality obligations, unauthorized use, or any other unlawful or malicious use of the aforementioned documents and information.

Trademarks

Unless otherwise expressly provided, nothing in this document shall be construed as conferring any rights to use any trademark, trade name, name, abbreviation, or counterfeit thereof owned by us or any third party in advertising, publicity, or any other contexts.

Third-Party Rights

You understand that this document may refer to hardware, software, and/or documentation owned by one or more third parties (“third-party materials”). Use of such third-party materials is subject to all applicable restrictions and obligations set forth herein.

We make no warranty or representation, either express or implied, regarding the third-party materials, including but not limited to any implied or statutory, warranties of merchantability or fitness for a particular purpose, quiet enjoyment, system integration, information accuracy, and non-infringement of any third-party intellectual property rights with regard to the licensed technology or use thereof. Nothing herein constitutes a representation or warranty by us to either develop, enhance, modify, distribute, market, sell, offer for sale, or otherwise maintain production of any our products or any other hardware, software, device, tool, information, or product. We moreover disclaim any and all warranties arising from the course of dealing, course of performance, or usage of trade.

Privacy Policy

To enable product functionality, certain device data may be uploaded to our or third-party servers, including those operated by carriers, chipset suppliers, or servers designated by you. We strictly comply with applicable laws and regulations and will retain, use, disclose, or otherwise process relevant data solely for the purpose of enabling product functionality, or as permitted by applicable laws. Before interacting with any third party regarding data exchange, please be informed of and understand their privacy and data security policies.

Disclaimer

a) We shall not be liable for any damages resulting from failure to comply with applicable operational or design specifications.
b) We shall bear no liability for any inaccuracies or omissions in this document, nor for any damages arising from the use of the information contained herein.
c) While we make every effort to ensure the integrity, accuracy, and timeliness of the features and functions under development, errors or omissions may nevertheless occur. Unless otherwise provided in a valid written agreement, we make no warranties of any kind, express, implied, or statutory, and disclaim all liability for any loss or damage arising from the use of any features or functions under development, to the maximum extent permitted by law, regardless of whether such loss or damage is foreseeable.
d) We assume no legal responsibility for the accessibility, safety, accuracy, availability, legality, or completeness of any information, content, advertising, commercial offers, products, services, or materials on third-party websites or third-party resources.

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).

www.quectel.com