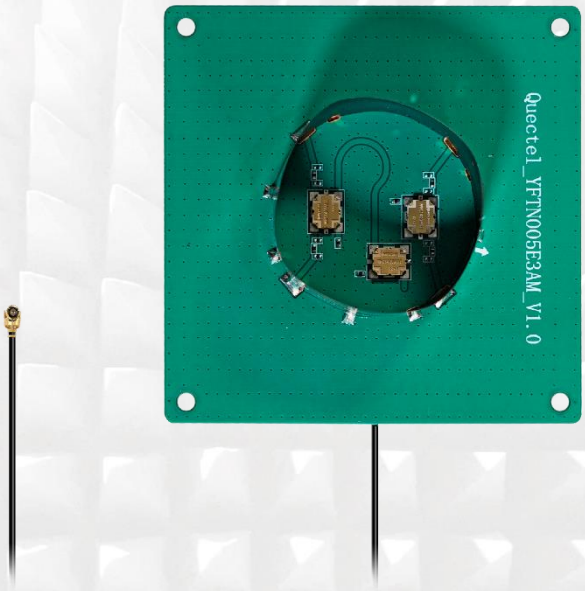


Antenna Datasheet

Product OC: YFTN005E3AM
Version: 1.0
Date: 2026-01-15
Status: Released

Product Name: Passive L-Band & Iridium Antenna
Key Features:
Frequency Band:
Iridium: 1616–1626.5 MHz
L-Band: TX: 1626.5–1660.5 MHz,
RX: 1525–1559 MHz
Peak Gain: 2.74 dBi (Max)
RoHS and REACH Compliant

Overview

The Quectel YFTN005E3AM is a passive L-Band & Iridium satellite communication antenna designed for reliable satellite connectivity applications. This compact antenna supports multiple frequency bands including Iridium (1616–1626.5 MHz) and L-Band with separate TX (1626.5–1660.5 MHz) and RX (1525–1559 MHz) ranges.

- **Key Specifications:**

✓ Peak Gain: 2.74 dBi maximum
✓ Polarization: RHCP (Right-Hand Circular Polarization)
✓ Impedance: 50 Ω
✓ Efficiency: 44-55.6 % across operating frequencies
✓ VSWR: 1.15-1.21 across frequency bands
✓ Dimensions: 80.0 mm × 80.0 mm × 19.0 mm
✓ Weight: 16.1 grams (typical)

- **Technical Features:**

✓ Directional radiation pattern for optimized signal reception
✓ Excellent axial ratio performance (0.95-1.0 dB)
✓ Wide operating temperature range: -40 °C to +85 °C
✓ RoHS and REACH compliant
✓ IPEX MHF1 connector with 100mm Φ 1.13 cable
✓ Screw mounting type for secure installation

Performance Characteristics:
The antenna demonstrates consistent performance across all specified frequencies with low return loss (-20.3 to -23.6 dB) and stable radiation patterns. The comprehensive testing includes S-parameter analysis, radiation performance measurements, and detailed 2D/3D radiation pattern documentation.

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

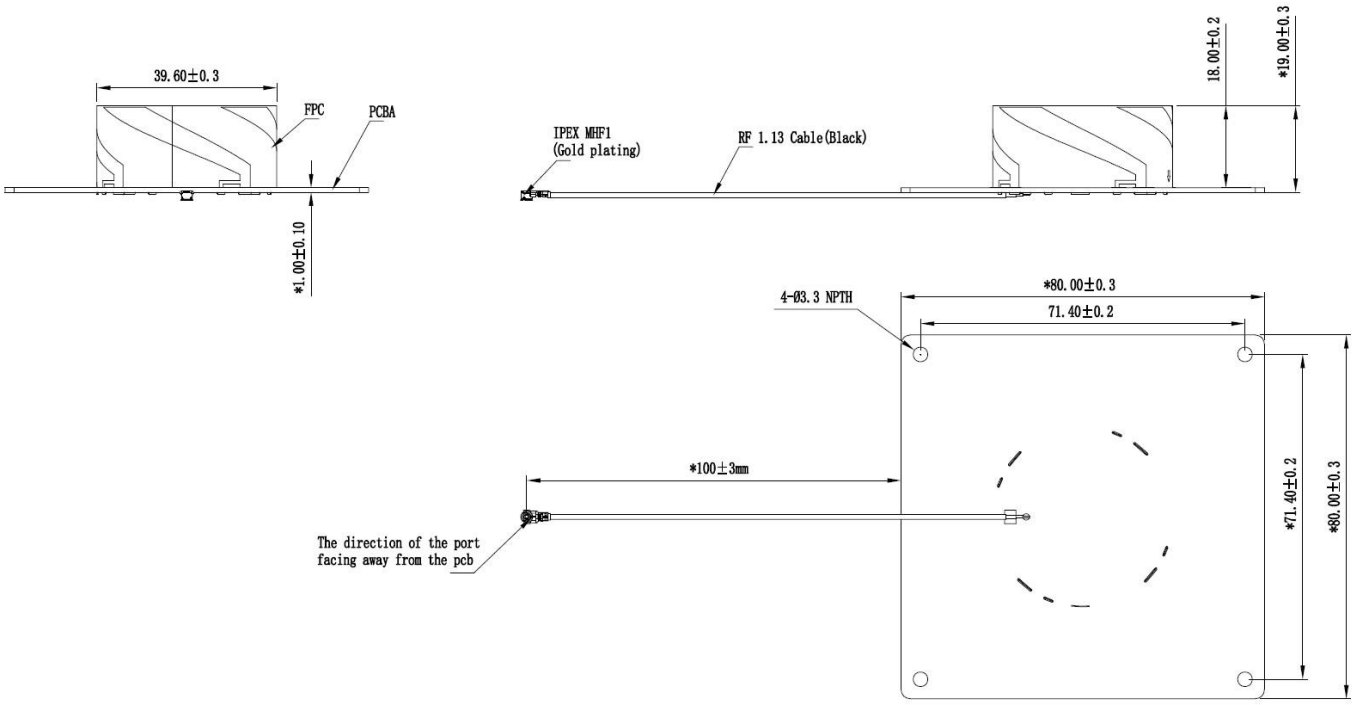
Electrical		
Frequency Range	**L-Band**	TX: 1626.5–1660.5 MHz RX: 1525–1559 MHz
	Iridium	1616–1626.5 MHz
Impedance		50 Ω
Polarization		RHCP
Radiation Pattern		Directional

Band / Frequency (MHz)	L-Band TX			L-Band RX			Iridium
	1626	**1643**	**1660**	**1525**	**1542**	**1559**	**1621**
VSWR	1.2	1.16	1.15	1.15	1.15	1.17	1.21
Return Loss (dB)	-20.5	-22.2	-22.6	-23.1	-23.6	-22.2	-20.3
Efficiency (%)	54	50	46.2	44	50.8	55.2	55.6
Peak Gain (dBi)	2.58	1.98	1.5	1.24	2	2.68	2.74
Axial Ratio (dB)	1	0.95	0.95	0.98	1	1	0.99

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	80.0 mm × 80.0 mm × 19.0 mm
Antenna Material & Color	PCBA (Green) + FPC (Black) + RF Cable
Cable Type & Color & Length	Φ1.13 Cable & Black & 100 mm
Connector Type	IPEX MHF1
Mounting Type	Screw
Weight	Typ. 16.1 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS & REACH Compliant	Yes

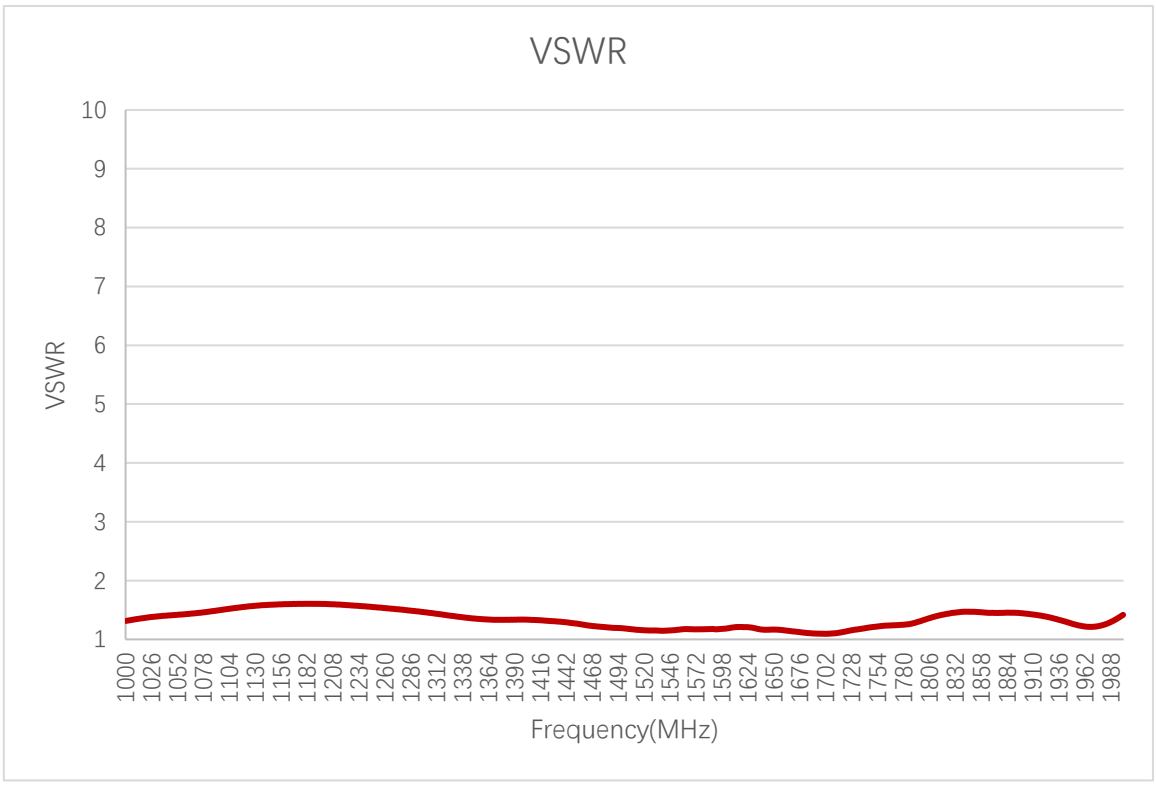
2 Drawing


39.60±0.3
FPC
PCBA
*1.00±0.10
IPEX MHF1
(Gold plating)
RF 1.13 Cable(Black)
18.00±0.2
*19.00±0.3
4-Ø3.3 NPTH
*80.00±0.3
71.40±0.2
*100±3mm
The direction of the port
facing away from the pcb
*71.40±0.2
*80.00±0.3

3 Detailed Performance

3.1. S-Parameter Test

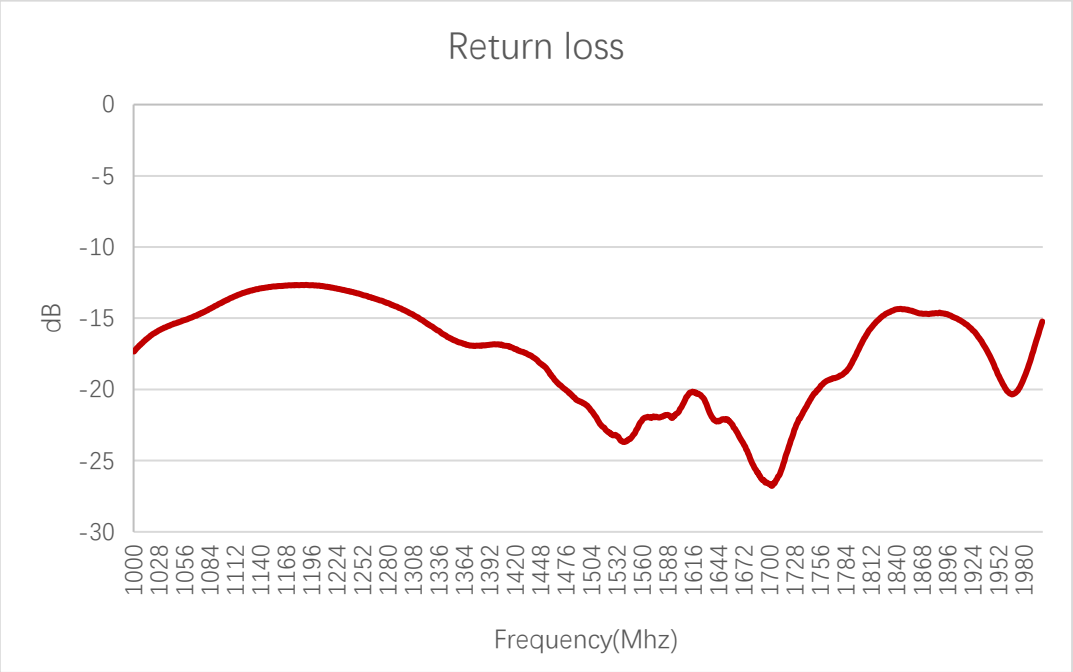
3.1.1. VSWR



VSWR

Frequency (MHz)	1525	1542	1559	1621	1626	1643	1660
VSWR	1.15	1.15	1.17	1.21	1.2	1.16	1.15

3.1.2. Return Loss

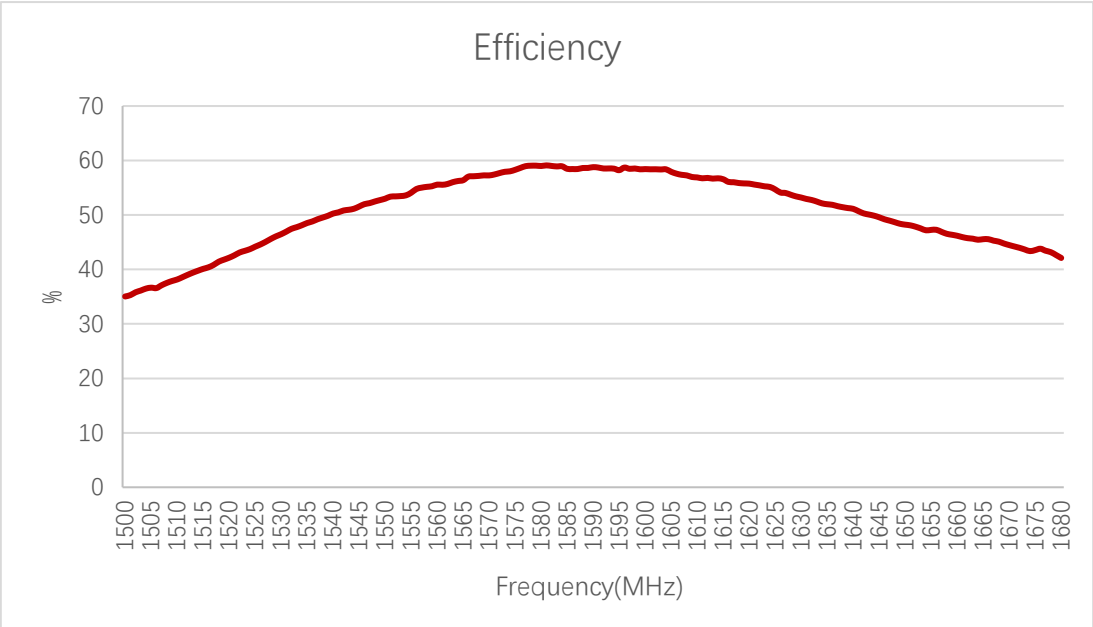


Return Loss (dB)

Frequency (MHz)	1525	1542	1559	1621	1626	1643	1660
Return Loss (dB)	-23.1	-23.6	-22.2	-20.3	-20.5	-22.2	-22.6

3.2. Radiation Performance Test

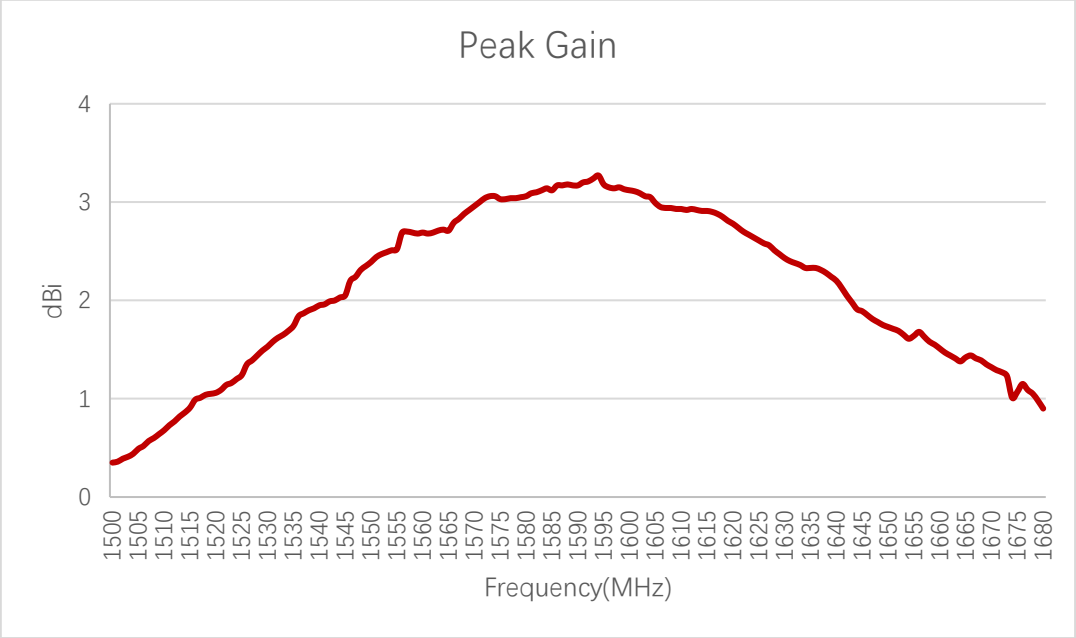
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	1525	1542	1559	1621	1626	1643	1660
Efficiency (%)	44	50.8	55.2	55.6	54	50	46.2

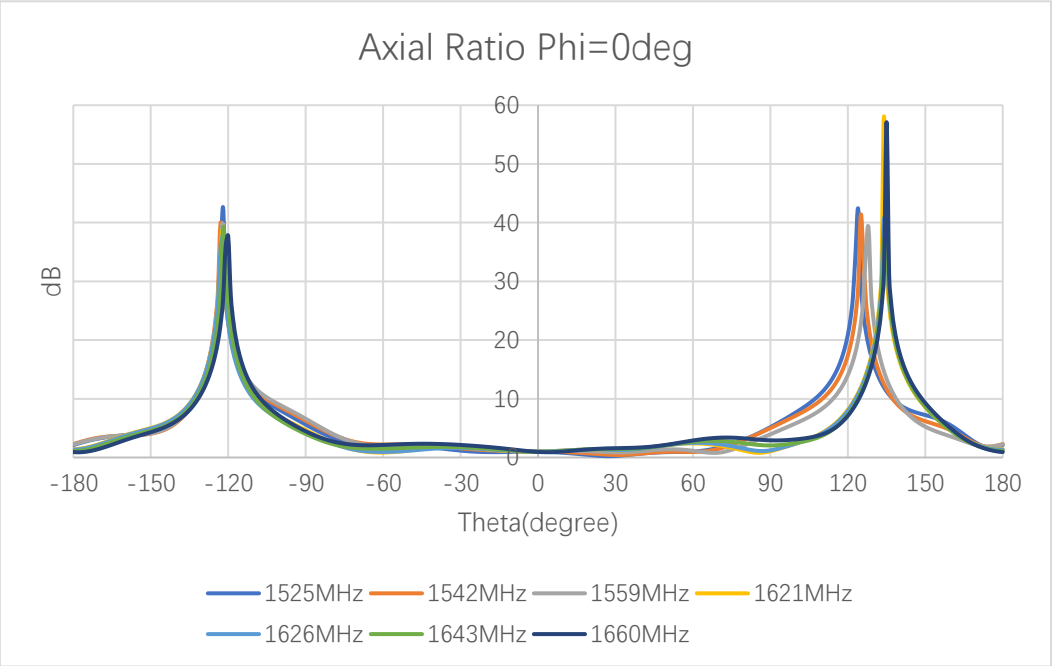
3.2.2. Peak Gain

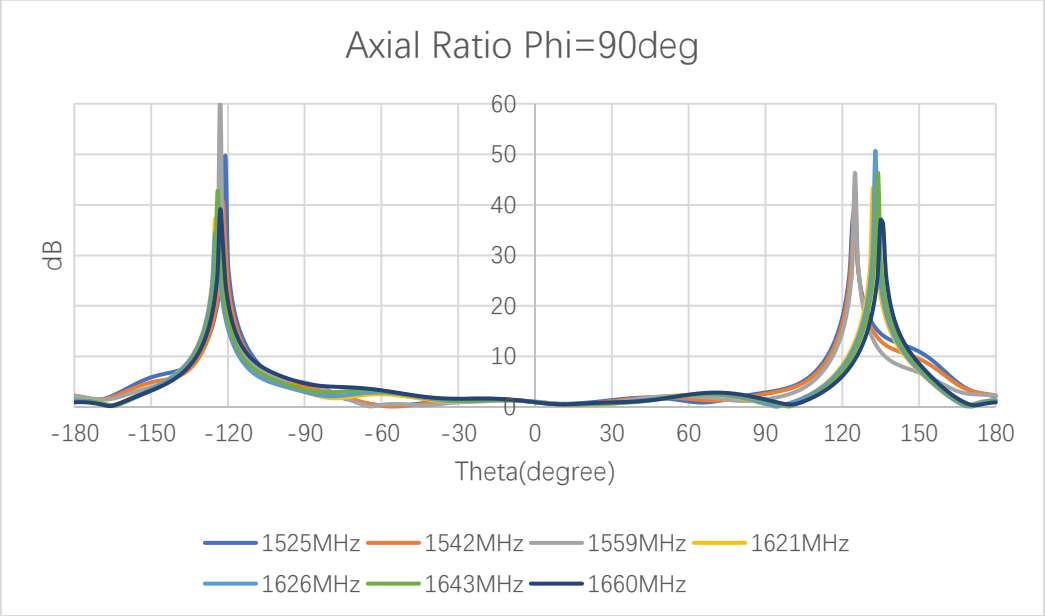


Peak Gain (dBi)

Frequency (MHz)	1525	1542	1559	1621	1626	1643	1660
Peak Gain (dBi)	1.24	2	2.68	2.74	2.58	1.98	1.5

3.2.3. Axial Ratio

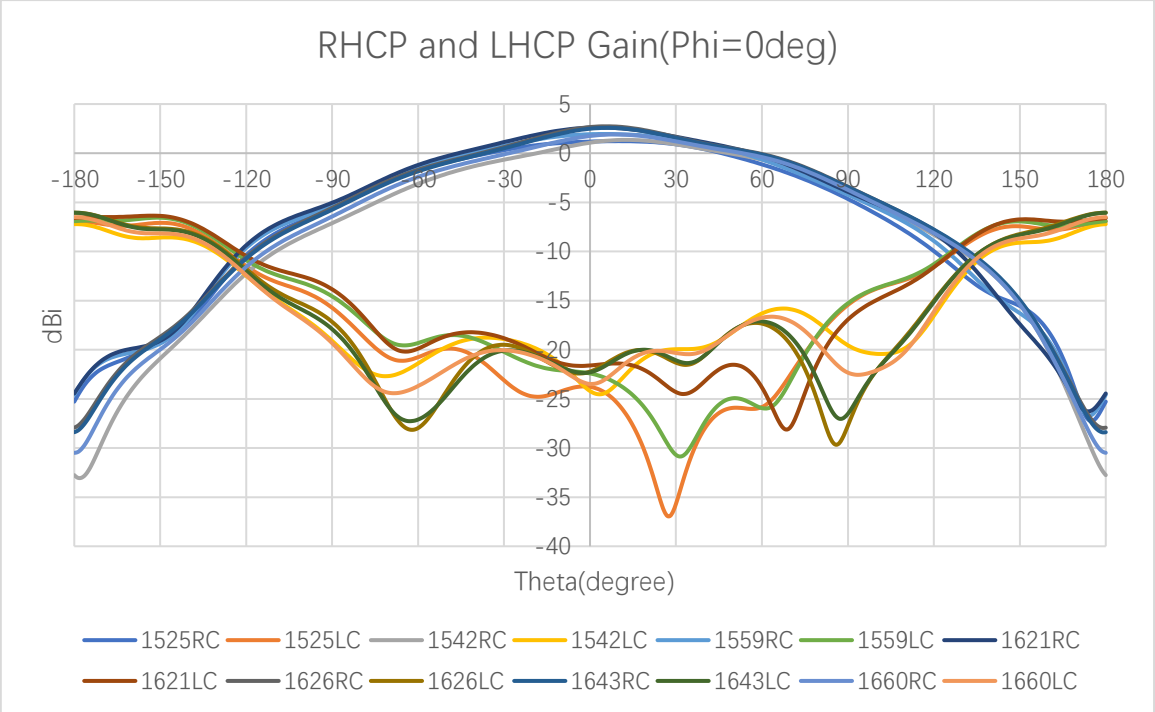


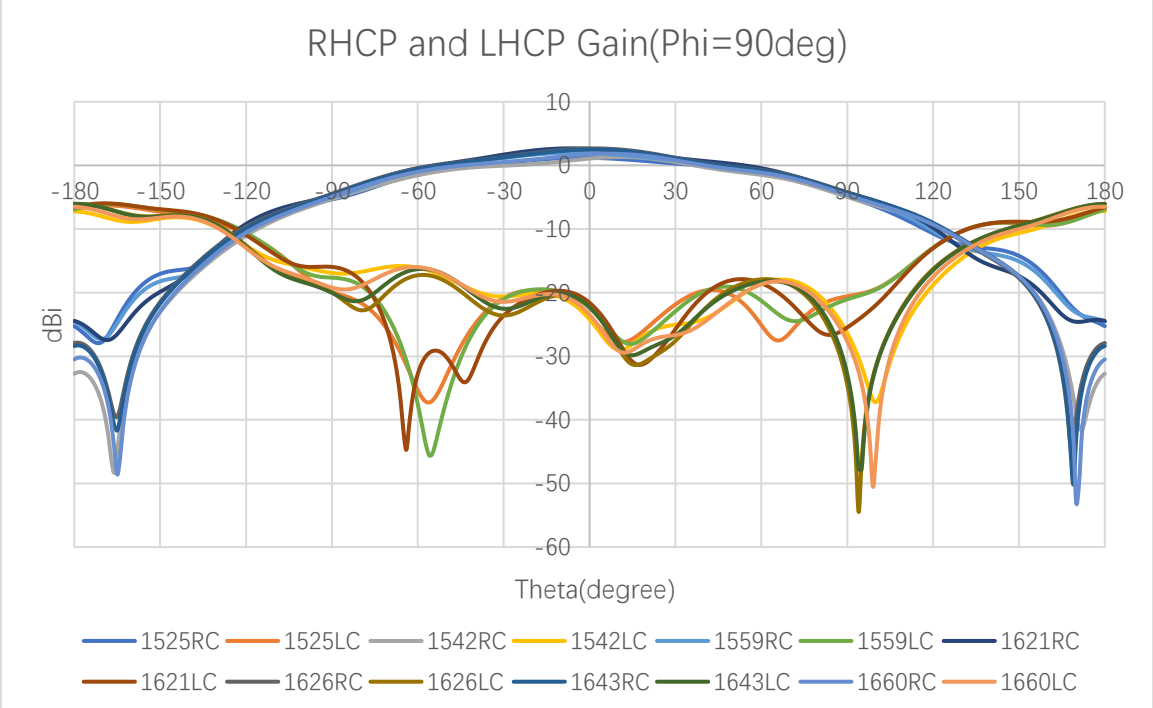


Axial Ratio (dB)

Frequency (MHz)		1525	1542	1559	1621	1626	1643	1660
Axial Ratio (dB)	Phi=0 (deg) Theta=0 (deg)	0.98	1	1	0.99	1	0.95	0.95
	Phi=90 (deg) Theta=0 (deg)	0.98	1	1	0.99	1	0.95	0.95

3.2.4. 2D RHCP and LHCP Gain



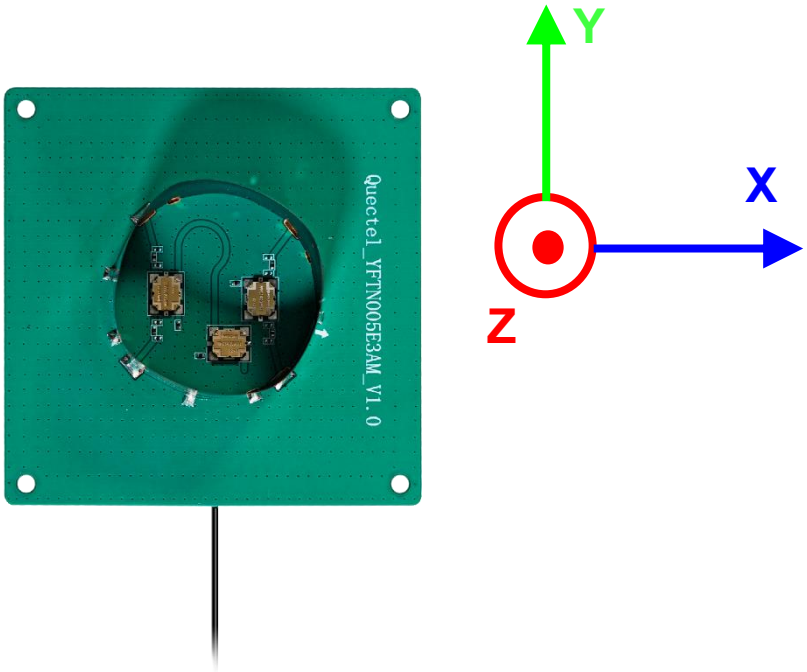


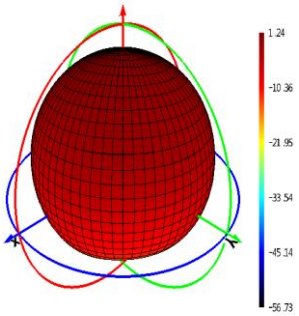
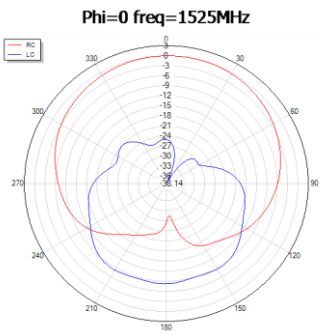
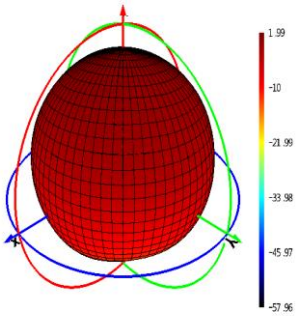
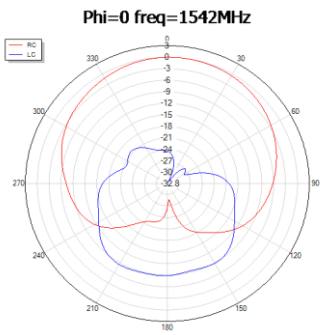
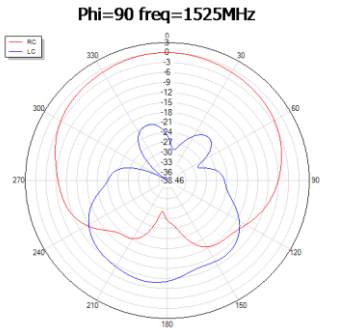
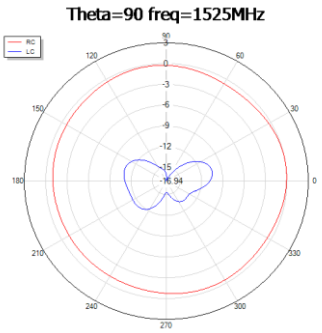
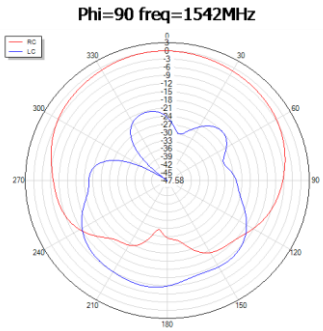
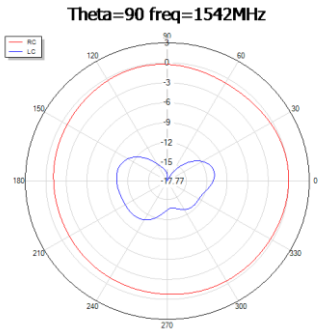
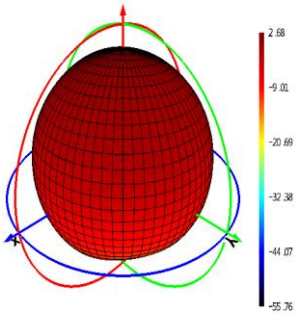
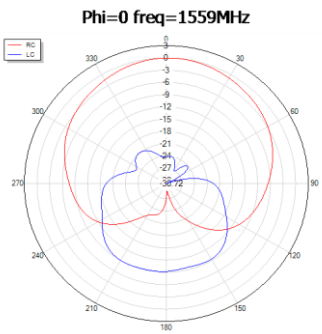
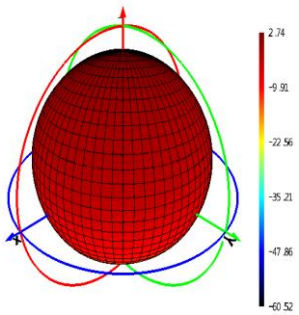
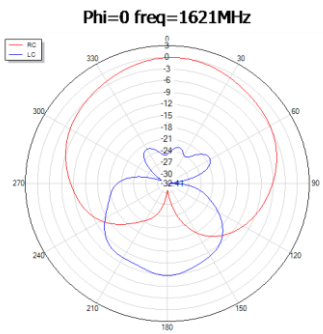
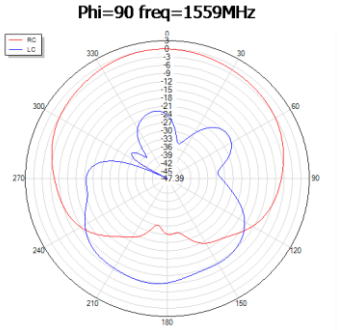
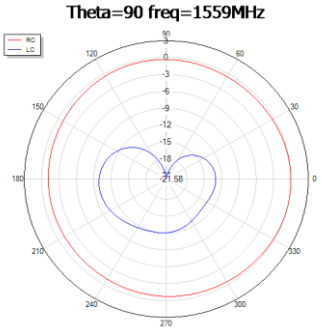
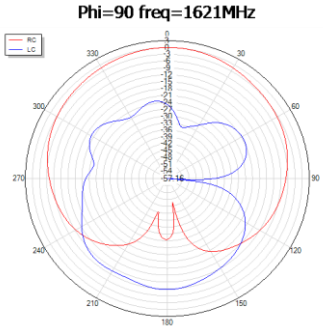
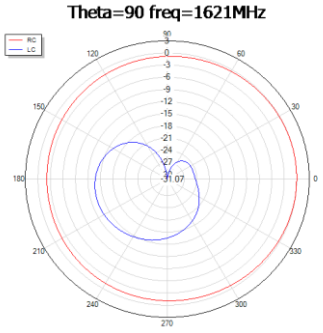
2D RHCP and LHCP Gain (dBi)

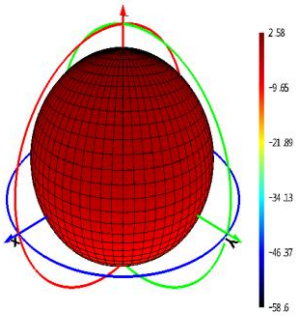
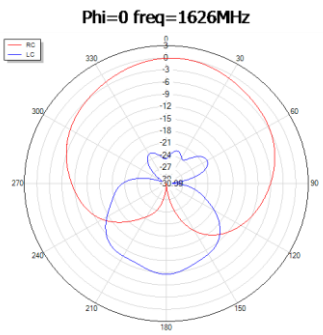
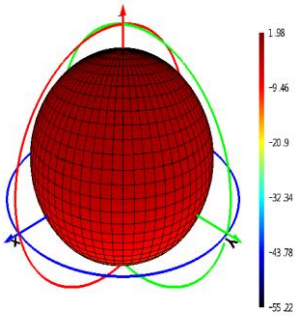
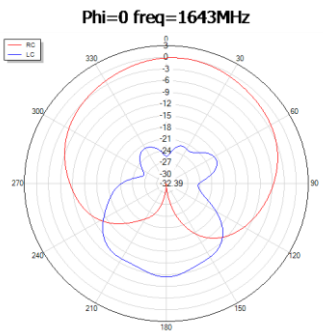
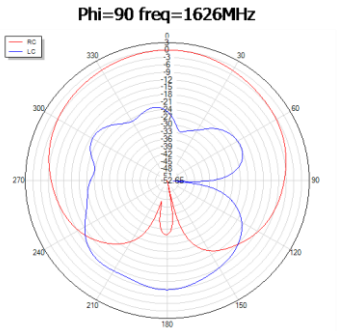
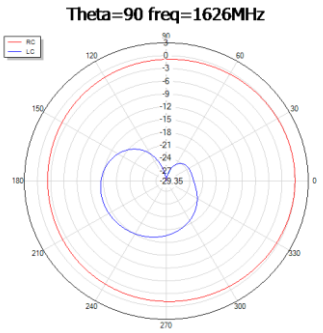
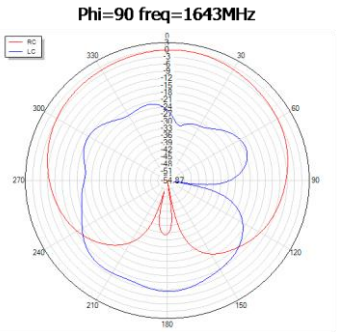
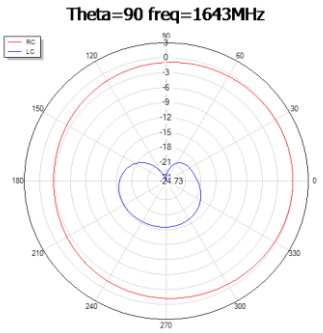
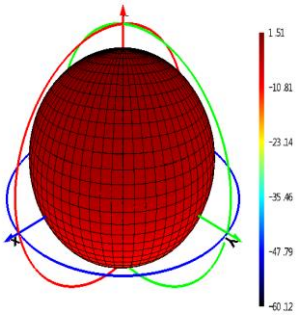
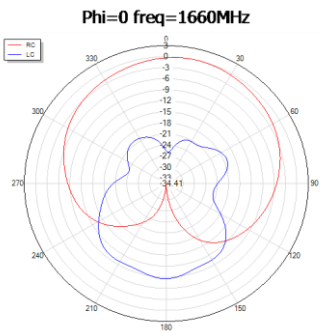
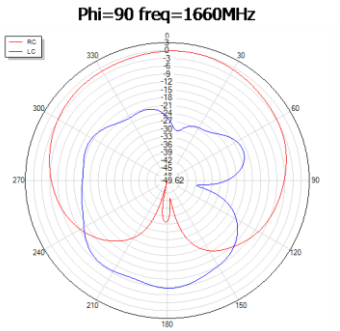
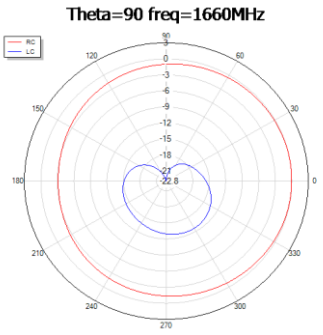
Frequency (MHz)		1525	1542	1559	1621	1626	1643	1660
RHCP Gain (dBi)	Phi = 0 (deg) Theta = 0 (deg)	1.18	1.07	1.93	2.6	2.66	2.49	1.75
	Phi = 90 (deg) Theta = 0 (deg)	1.18	1.07	1.93	2.6	2.66	2.49	1.75
LHCP Gain (dBi)	Phi = 0 (deg) Theta = 0 (deg)	-23.7	-24.2	-22.4	-21.6	-22.2	-22.3	-23.5
	Phi = 90 (deg) Theta = 0 (deg)	-23.7	-24.2	-22.4	-21.6	-22.2	-22.3	-23.5

3.2.5. 3D & 2D Radiation Pattern

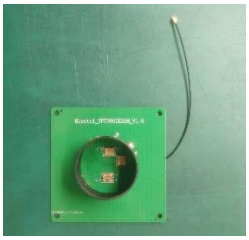
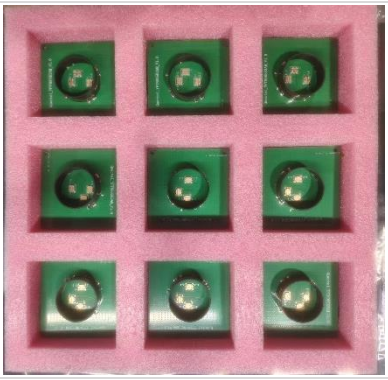
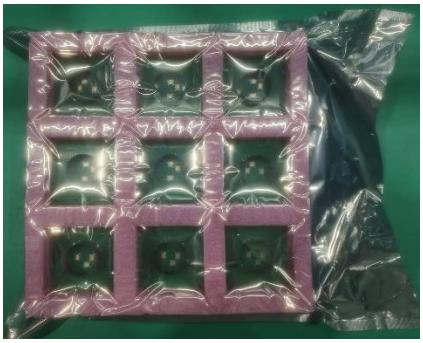
- Test Condition: Free Space
- Test Chamber: SH-SY-16M

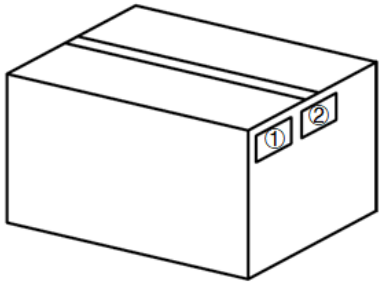
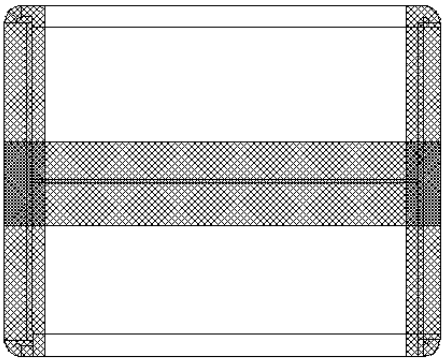


1525 MHz		1542 MHz	
			
			
1559 MHz		**1621 MHz**	
			
			

1626 MHz		1643 MHz	
			
			
1660 MHz			
			
			

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		Product drawing
2		Place the 9 antenna products into an Anti-static pearl cotton tray. (9 Antennas / Anti-Static Pearl Cotton Tray)
3		Place the 9 antenna products into an Anti-static vacuum bag for vacuuming. (9 Antennas / Anti-Static Vacuum Bag)
4		(5 Anti-Static Vacuum Bags / Carton Box) (45 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 = 370 × 370 × 295 mm

5		**Position for Attaching Labels** ① Carton Label ② Quality Label
6		**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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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.

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Revision History

Version	Date	Author	Note
-	2026-01-15	Junsen Li/ Mike Guo/ Strong Qiang/ Rainey Liao	Creation of the document
1.0	2026-01-15	Junsen Li/ Mike Guo/ Strong Qiang/ Rainey Liao	First official release

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