



Antenna Datasheet

Product OC: YEGT000W8A

Version: 1.4

Date: 2026-04-13

Status: Released

Product Name: GNSS Screw Mount Low Profile Active External Antenna

Key Features:

Frequency Band: 1164–1189 MHz, 1559–1606 MHz

Dimensions: Φ 65 × 45 mm

LNA Gain: 28 ±3 dB

RoHS Compliant

IP67

Overview

The Quectel YEGT000W8A is a high-performance active GNSS antenna designed to support multi-band positioning across L1 and L5 frequencies (1164–1189 MHz and 1559–1606 MHz). It is engineered to deliver exceptional accuracy and reliability for applications requiring high-precision navigation, such as automotive, industrial tracking and IoT devices.

- **Key features**

- ✓ Include a built-in Low-Noise Amplifier (LNA) with a gain of 28 ± 3 dB, ensuring robust signal reception even in challenging environments.
- ✓ Covers all major global navigation systems, Broadband Multi-GNSS Support Global Compatibility: Supports GPS, GLONASS, Galileo, BDS, QZSS, and IRNSS across L1/L5 bands.
- ✓ Its compact design (Φ 65 mm × 45 mm) and IP67-rated housing provide durability against water, dust, and extreme temperatures (-45°C to $+85^{\circ}\text{C}$).

- **Target Applications**

- ✓ Highway and parking lot management.
- ✓ Autonomous driving and intelligent transportation systems.
- ✓ Smart cities and IoT applications: Intelligent traffic signal control, environmental monitoring, and data transmission for public safety systems.

Telematics & Fleet Management: Enables real-time tracking for logistics and heavy equipment.

The YEGT000W8A offers flexible installation options with a TNC-K connector and M18 nut mounting, catering to diverse deployment needs. Advanced electrical performance, including low VSWR (< 1.5), high efficiency (up to 48 %), and right-hand circular polarization (RHCP), ensures optimal signal integrity. Additionally, it complies with RoHS and features UV-resistant materials (UL 746C f1) for long-term outdoor use.

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	1164–1189 MHz, 1559–1606 MHz
Impedance	50 Ω
Polarization	RHCP
Radiation Pattern	Directional

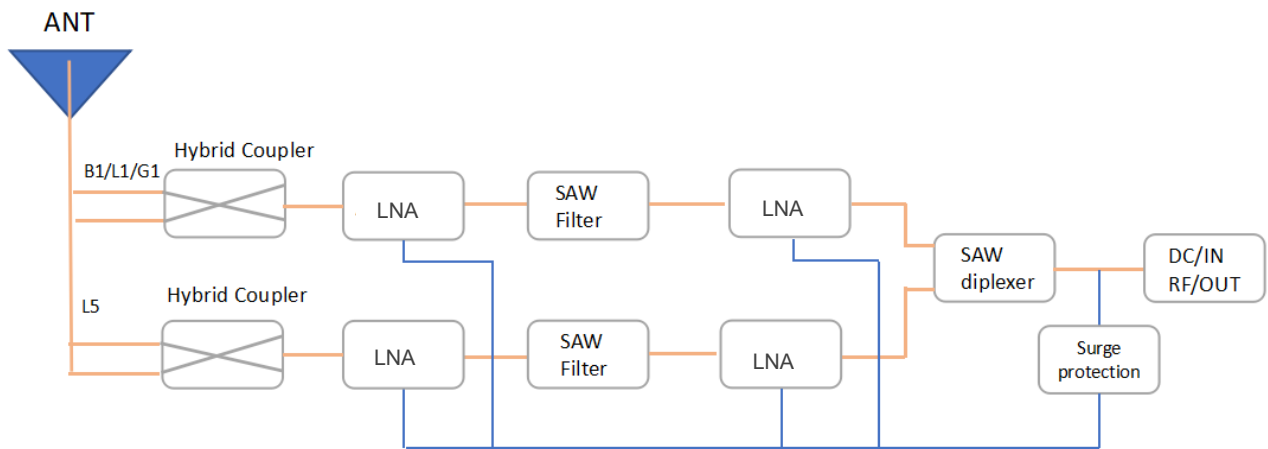
Band Frequency (MHz)	GPS L5 GALILEO E5a BDS B2a-B2I QZSS L5 IRNSS L5	GALILEO E5b BDS B2b	GPS L2 QZSS L2C	GLONASS G2	BDS B3	BDS B1I	GPS L1 GALILEO E1 BDS B1C QZSS L1	GLONASS G1
	1176	1207	1227	1248	1268	1561	1575	1602
VSWR	1.5	-	-	-	-	1.5	1.3	1.5
Return Loss (dB)	-13.4	-	-	-	-	-13.1	-16.4	-13.0
Efficiency (%)	48	-	-	-	-	27	36	29
AVG Gain (dB)	-3.1	-	-	-	-	-5.6	-4.4	-5.3
Peak Gain (dBi)	-0.5	-	-	-	-	-1.7	-0.5	-1.3
Axial Ratio (dB)	2.6	-	-	-	-	0.4	0.6	2.4

LNA Electrical	
LNA Gain	28 $\pm$ 3 dB @ 3–5 V 26 $\pm$ 3 dB @ 1.8 V
Noise Figure	$\leq$ 1.5 dB
Output VSWR	< 2.0
Group Delay Ripple	< 10 ns
Filter Out-of-Band Attenuation	$\geq$ 40 dB @ $f_0 \pm 40$ MHz ($f_0 = 1176$ MHz) $\geq$ 50 dB @ $f_0 \pm 50$ MHz ($f_0 = 1176$ MHz) $\geq$ 50 dB @ $f_0 \pm 50$ MHz ($f_0 = 1580$ MHz) $\geq$ 55 dB @ $f_0 \pm 100$ MHz ($f_0 = 1580$ MHz)
Pout 1dB Gain Compression Point	-3 dBm
Working Voltage	1.8–5.0 V
Working Current	< 30 mA
Impedance	50 Ω

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 65 mm $\times$ 45 mm
Casing Material & Color	ASA & White
Connector Type	TNC-K
Mounting Type	Screw (M18 Nut)
Weight	Typ. 130.7 g
Environmental	
Operation Temperature	-45 $^{\circ}$ C to +85 $^{\circ}$ C
Storage Temperature	-45 $^{\circ}$ C to +85 $^{\circ}$ C
Ingress Protection (IP) Rating	IP67
RoHS Compliant	Yes
Housing UV Resistant	UL 746C f1

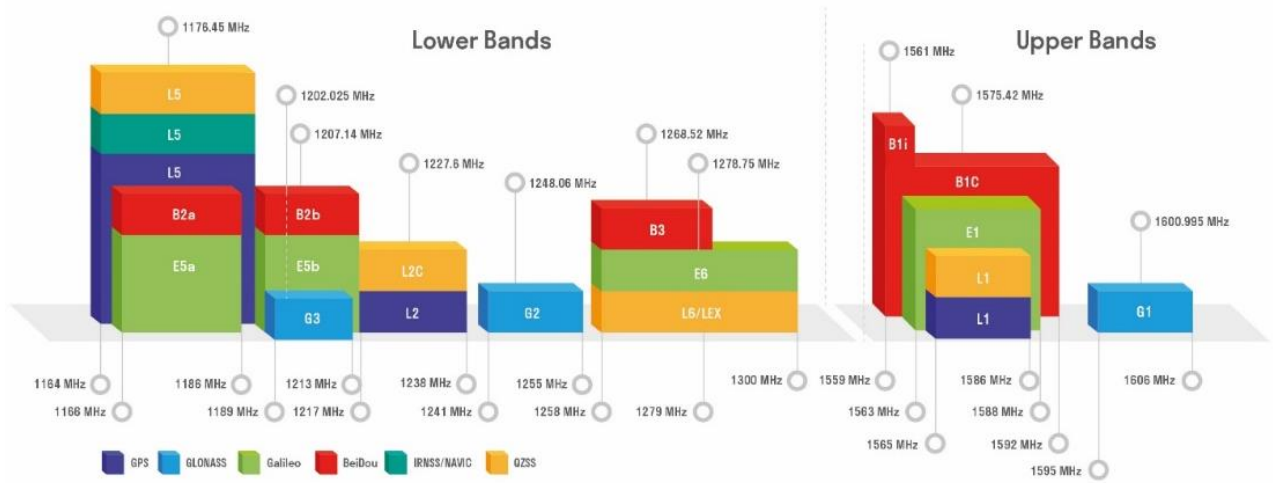
1.3. Block Diagram (Active Antenna)



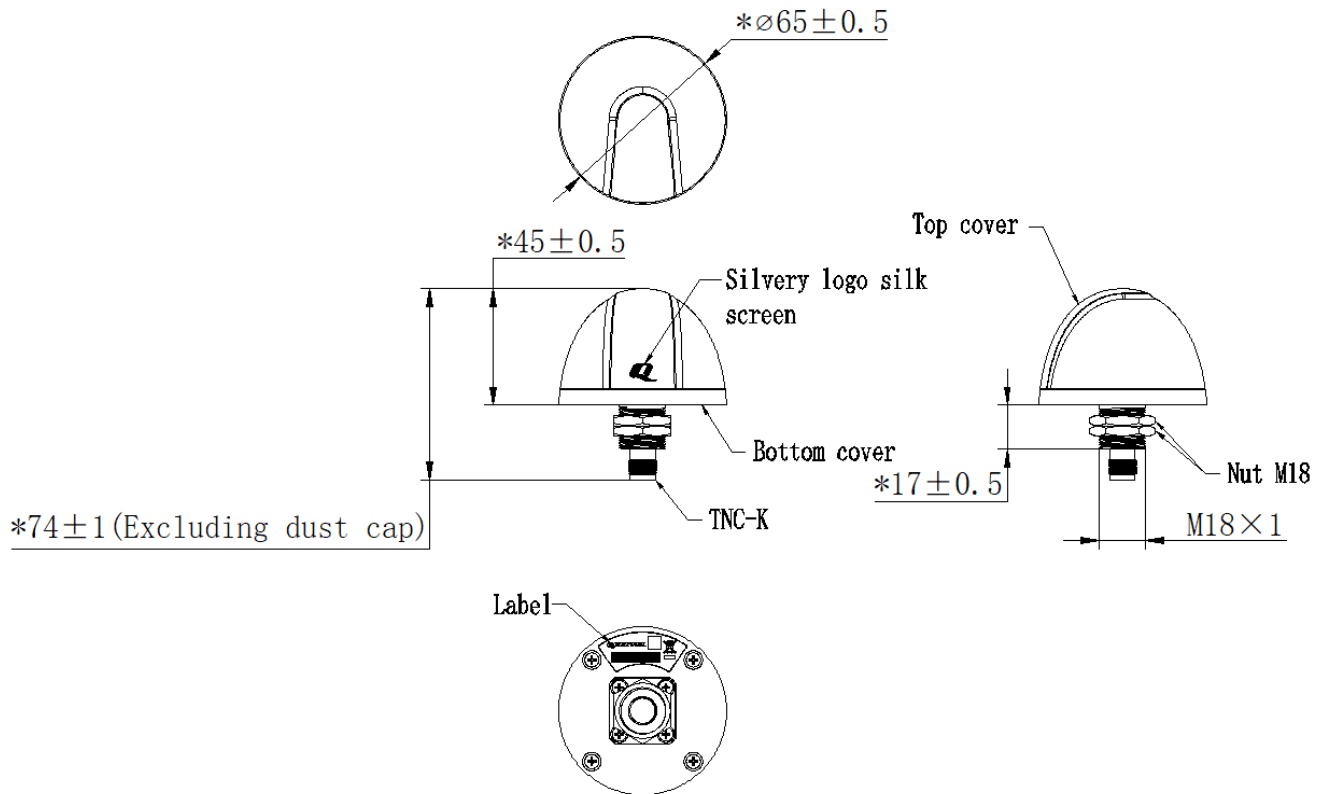
1.4. Supported GNSS Frequency Bands

GNSS Frequency Bands (MHz)					
GPS	L1 Centre 1575.42 (1565–1586)	L2 Centre 1227.6 (1217–1238)	L5 Centre 1176.45 (1164–1189)		
	√	-	√		
GLONASS	G1-L10C-L10F Centre 1601 (1595–1606)	G2-L20C-L20F Centre 1248.06 (1241–1255)	G3-L30C Centre 1202.025 (1189–1213)		
	√	-	-		
GALILEO	E1 Centre 1575.42 (1563–1588)	E5a Centre 1176.45 (1166–1187)	E5b Centre 1207.14 (1197–1218)	E6 Centre 1278.75 (1258–1300)	
	√	√	-	-	
BDS	B1I Centre 1561.098 (1559–1564)	B1C (BDS-3) Centre 1575.42 (1559–1592)	B2a-B2I Centre 1176.45 (1166–1187)	B2b Centre 1207.14 (1197–1217)	B3 Centre 1268.52 (1258–1279)
	√	√	√	-	-
QZSS	L1 Centre 1575.42 (1573–1578)	L2C Centre 1227.6 (1226–1229)	L5 Centre 1176.45 (1166–1187)	L6 Centre 1278.75 (1257–1300)	
	√	-	√	-	
IRNSS	L5 Centre 1176.45 (1164–1189)				
	√				

GNSS Bands and Constellations



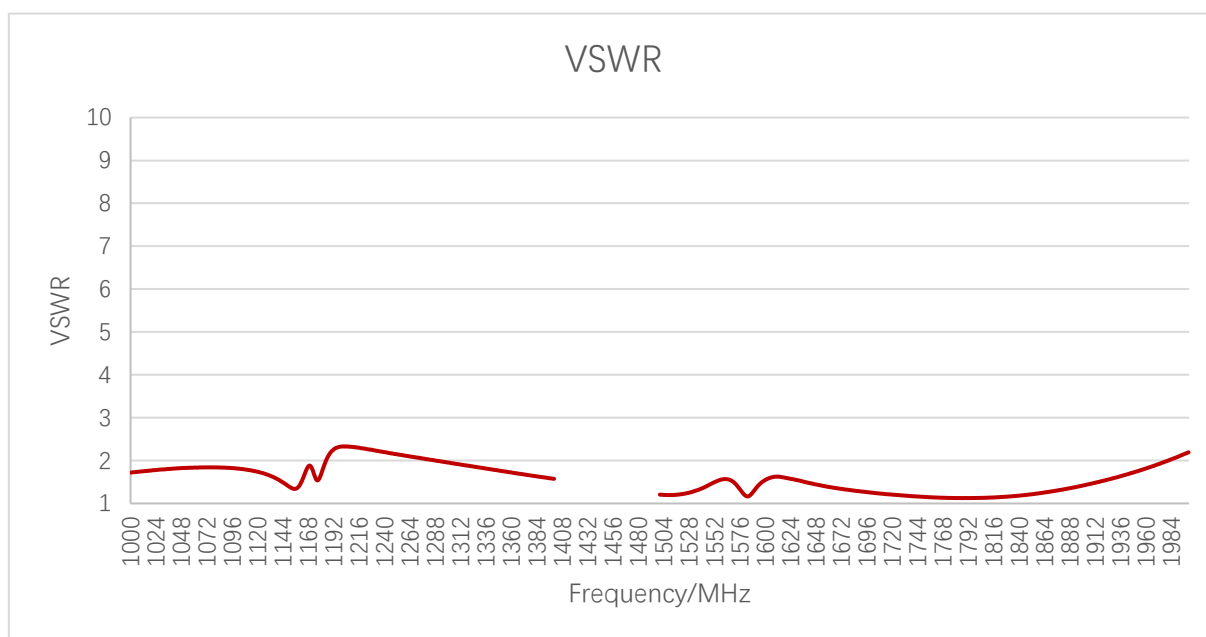
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

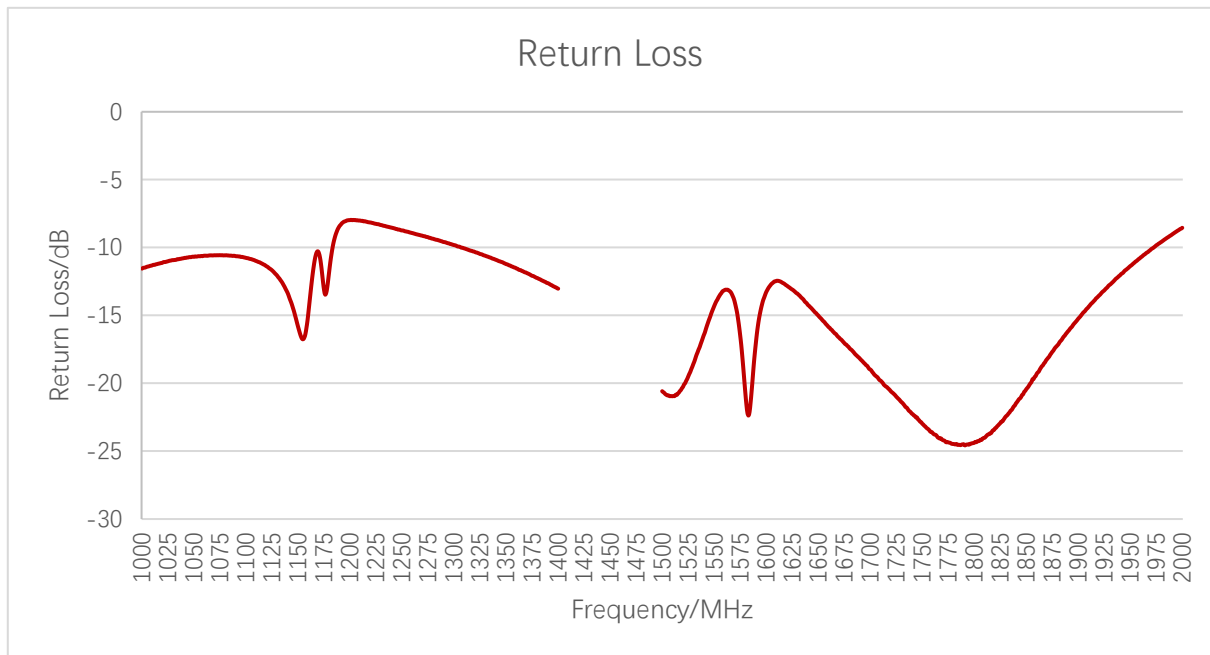
3.1.1. VSWR



VSWR

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
VSWR	1.5	-	-	-	-	1.5	1.3	1.5

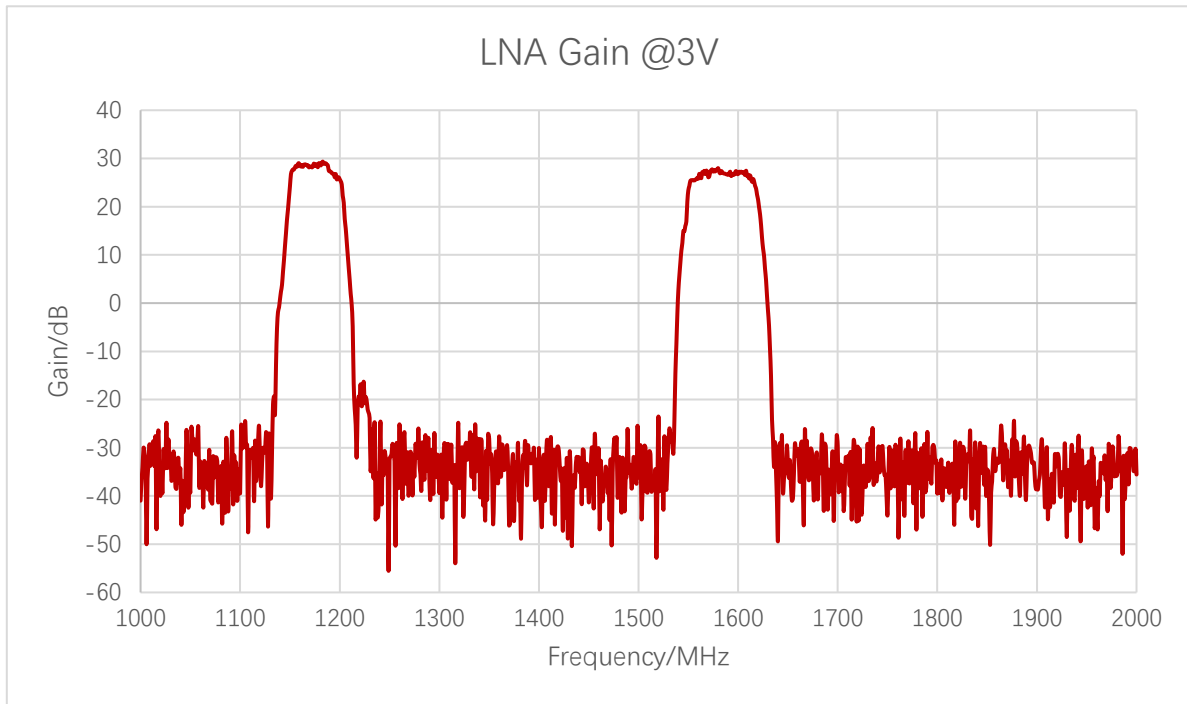
3.1.2. Return Loss



Return Loss (dB)

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
Return Loss (dB)	-13.4	-	-	-	-	-13.1	-16.4	-12.9

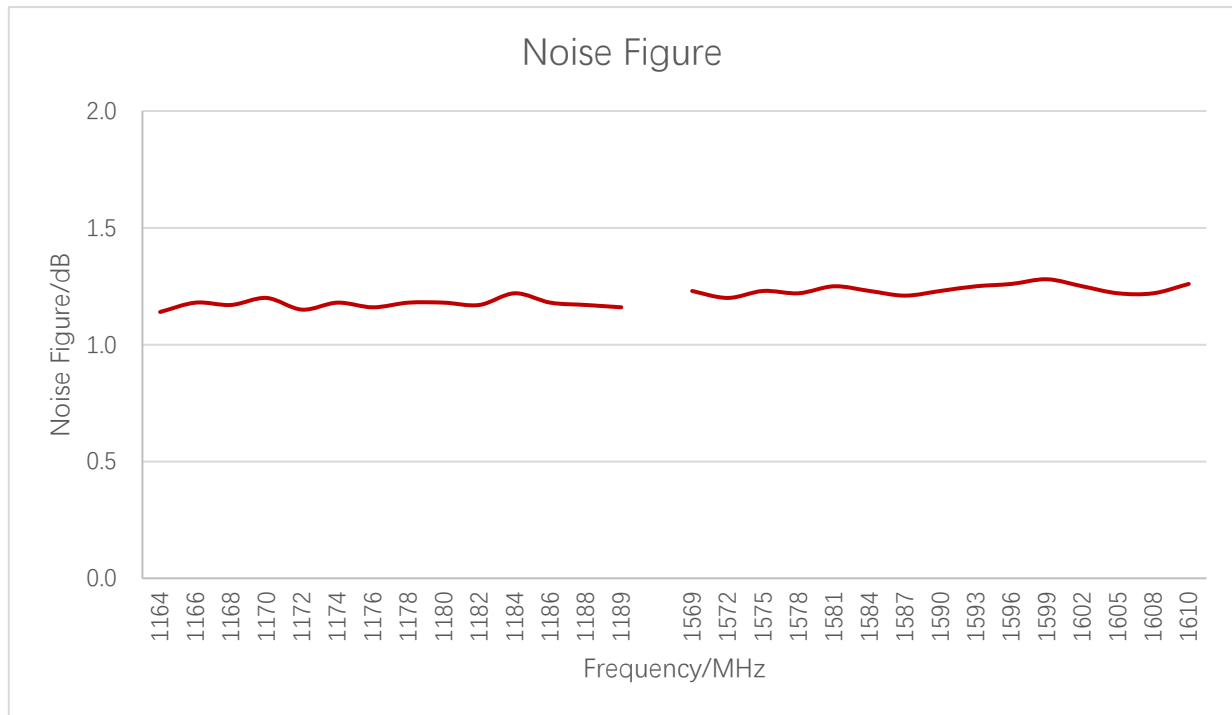
3.1.3. GNSS LNA Gain



LNA Gain (dB)

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
LNA Gain (dB)	28.5	-	-	-	-	26.8	27.2	27.0

3.1.4. Noise Figure

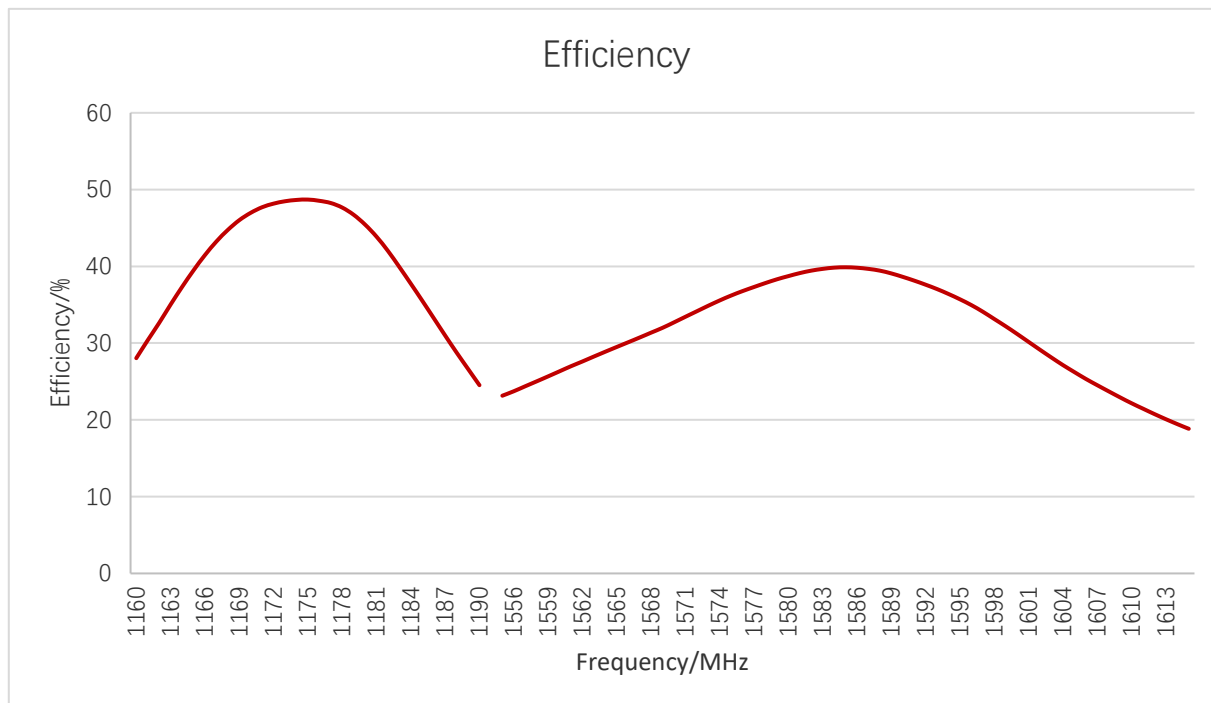


Noise Figure (dB)

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
Noise Figure (dB)	1.1	-	-	-	-	1.3	1.2	1.2

3.2. Radiation Performance Test

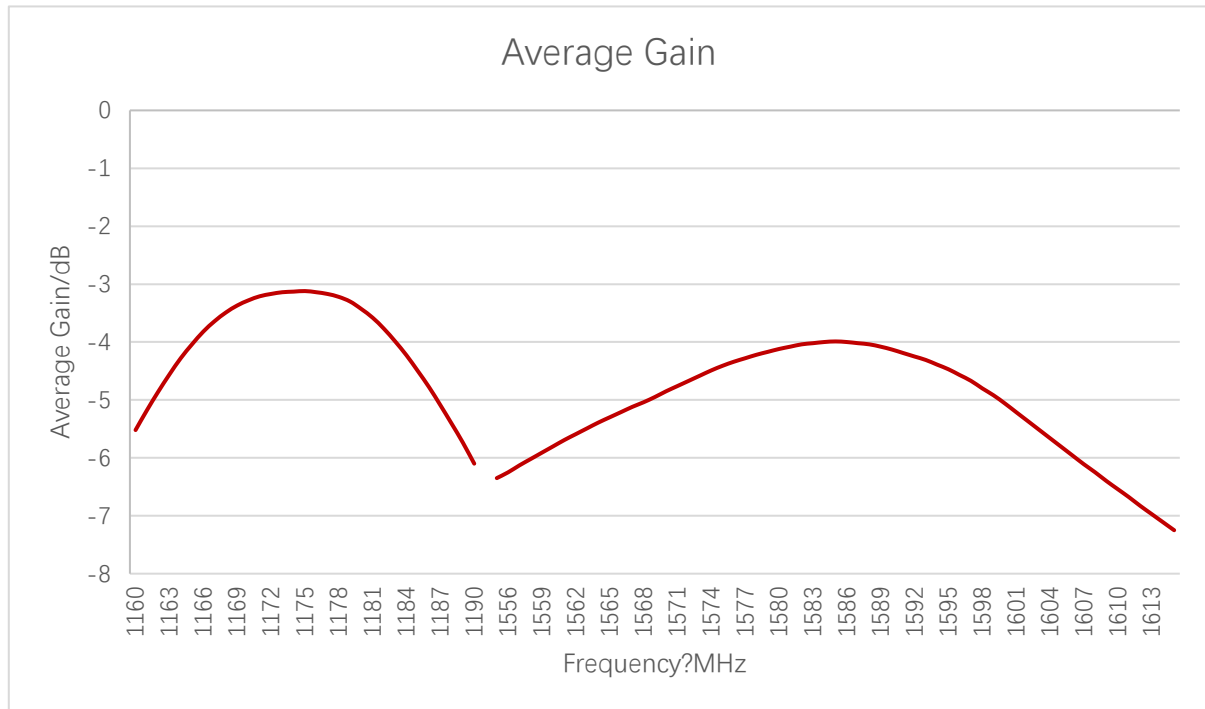
3.2.1. Efficiency



Efficiency (%)

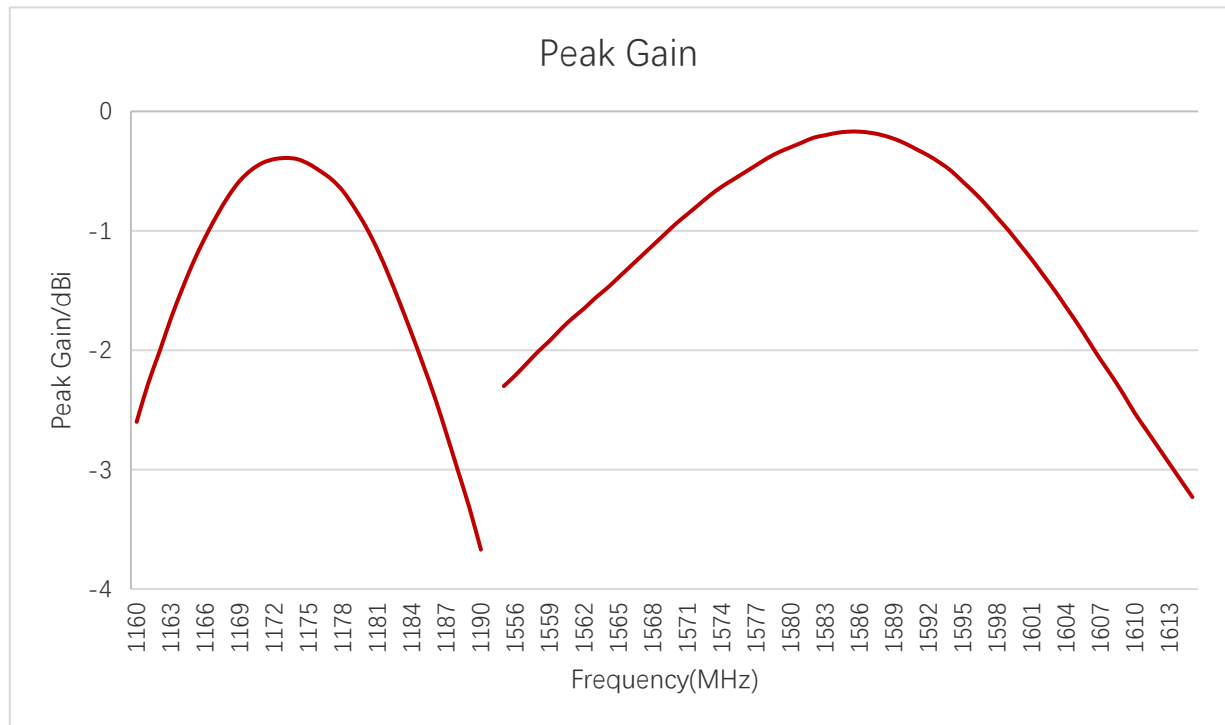
Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
Efficiency (%)	48	-	-	-	-	27	36	29

3.2.2. Average Gain



Average Gain (dB)								
Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
Average Gain (dB)	-3.1	-	-	-	-	-5.6	-4.4	-5.3

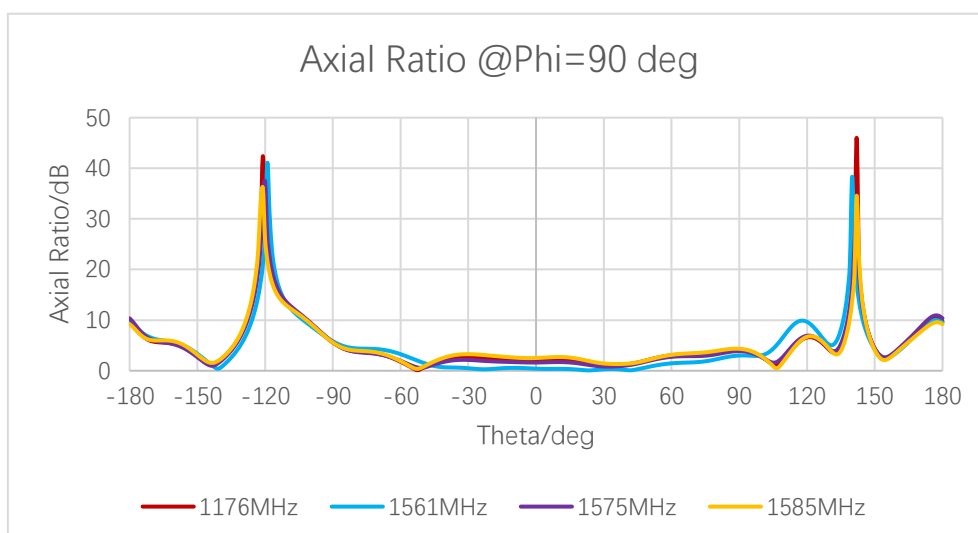
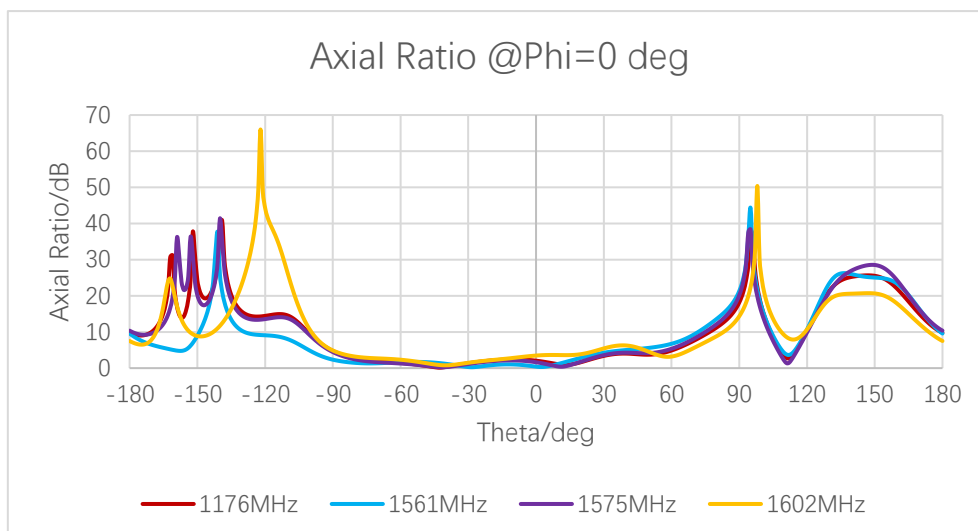
3.2.3. Peak Gain



Peak Gain (dBi)

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
Peak Gain (dBi)	-0.5	-	-	-	-	-1.7	-0.5	-1.3

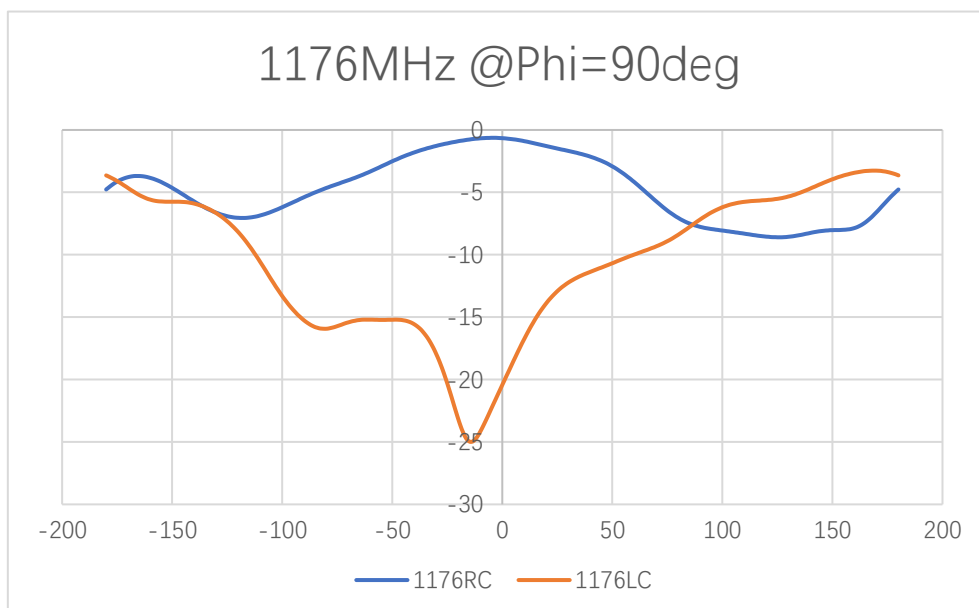
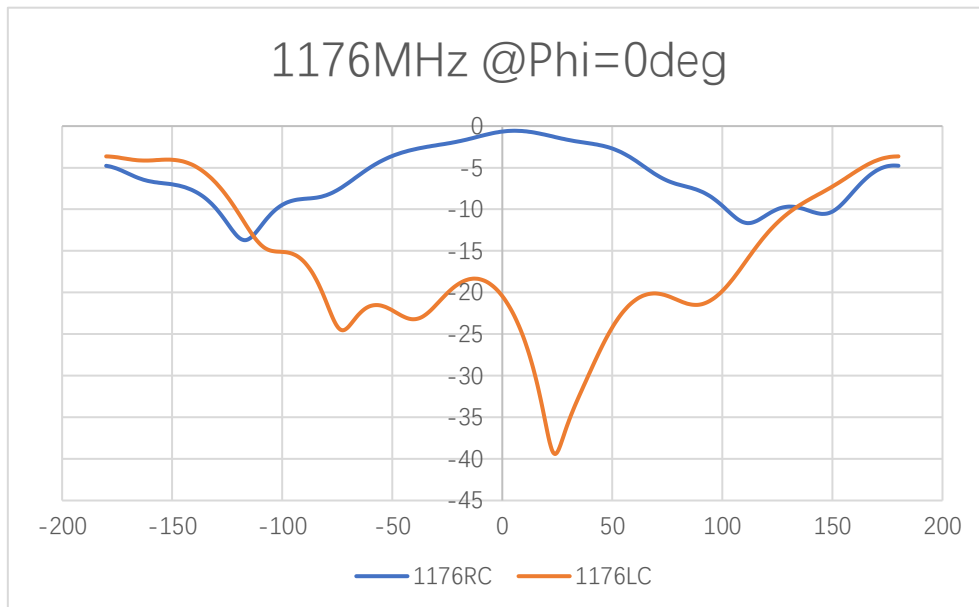
3.2.4. Axial Ratio

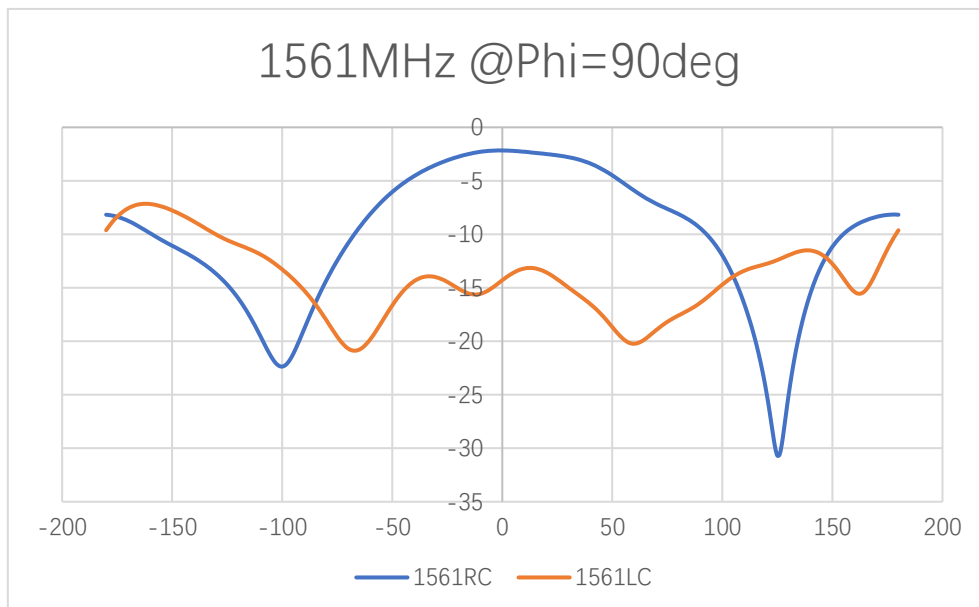
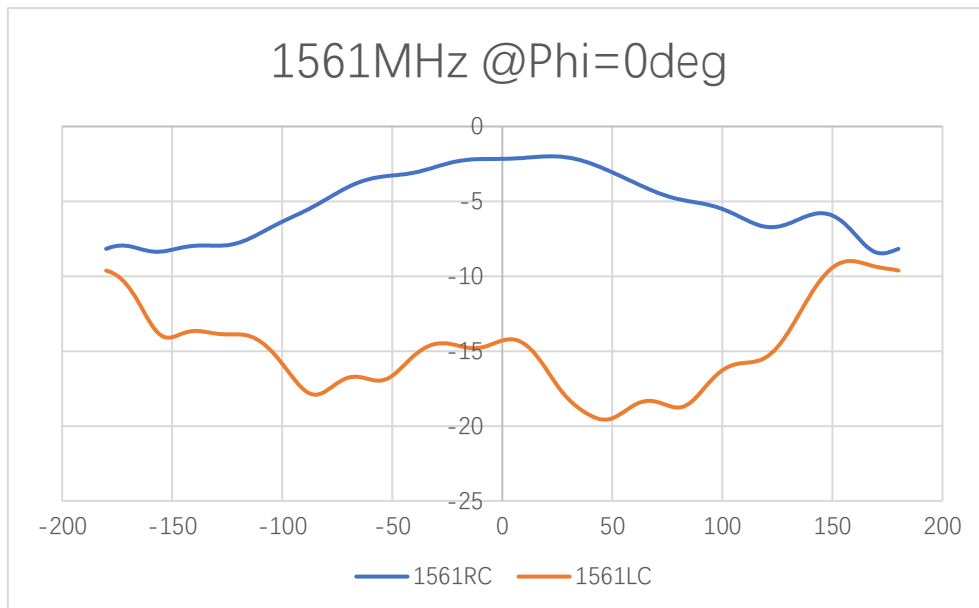


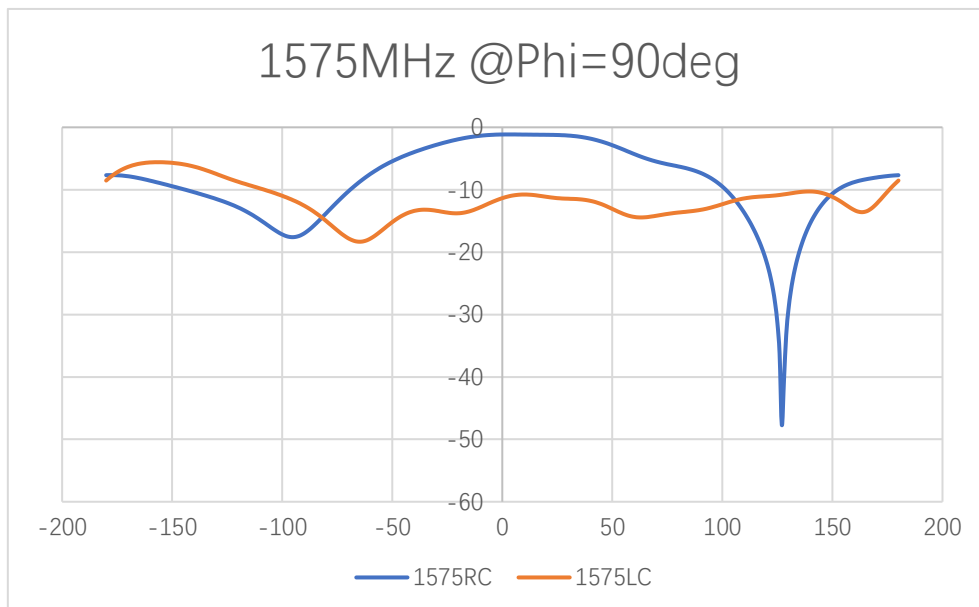
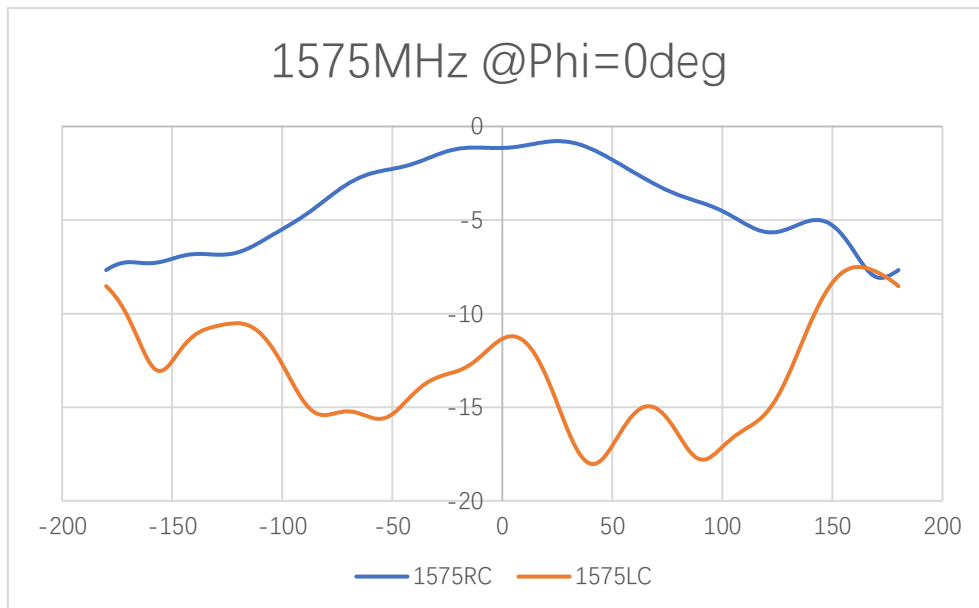
Axial Ratio (dB)

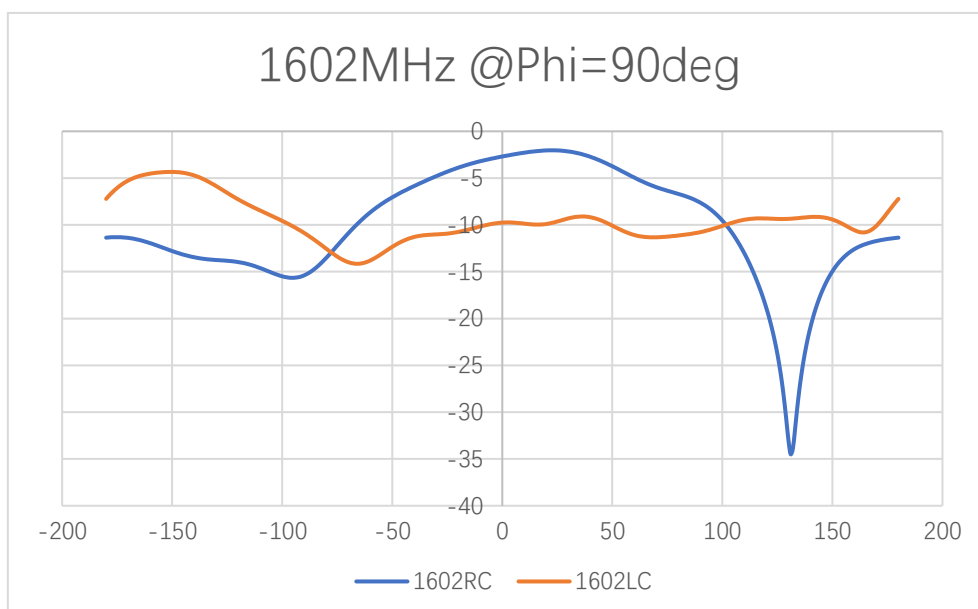
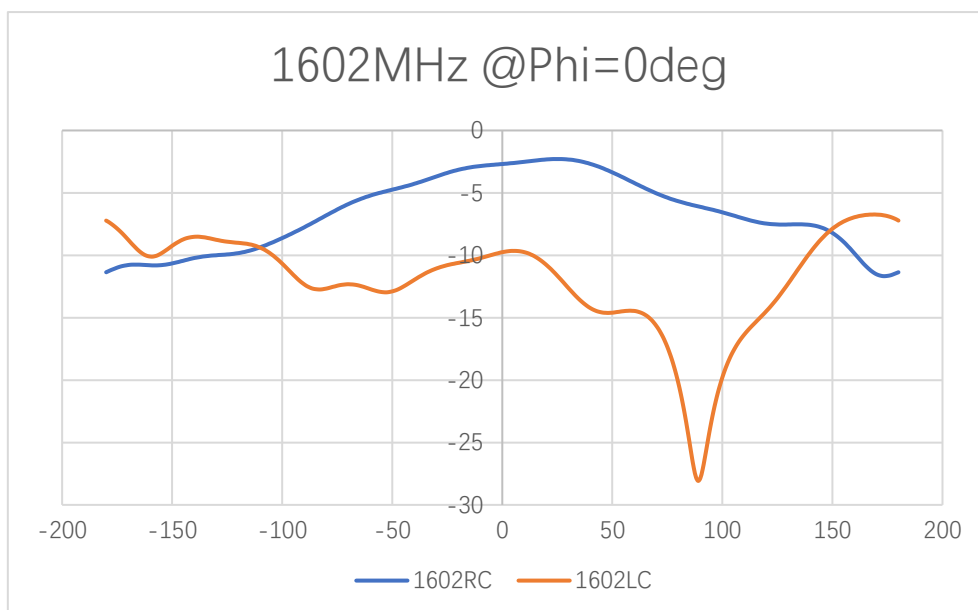
Frequency (MHz)		1176	1207	1227	1248	1268	1561	1575	1602
Axial Ratio (dB)	Phi = 0 (deg) Theta = 0 (deg)	2.6	-	-	-	-	0.4	0.6	2.4
	Phi = 90 (deg) Theta = 0 (deg)	2.6	-	-	-	-	0.4	0.6	2.4

3.2.5. 2D RHCP and LHCP Gain







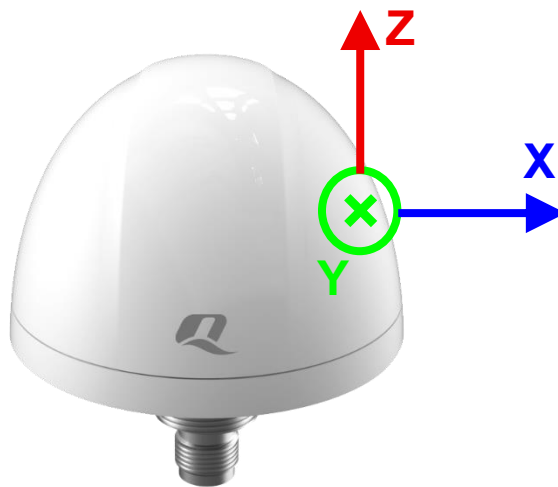


RHCP and LHCP Gain (dBi)

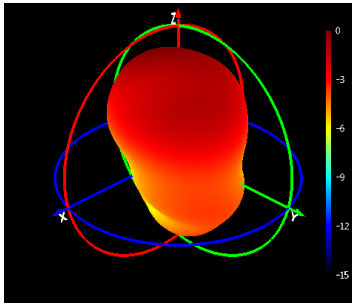
Frequency (MHz)		1176	1207	1227	1248	1268	1561	1575	1602
RHCP Gain (dBi)	Phi = 0 (deg) Theta = 0 (deg)	-0.6	-	-	-	-	-2.1	-1.1	-2.7
	Phi = 90 (deg) Theta = 0 (deg)	-0.6	-	-	-	-	-2.1	-1.1	-2.7
LHCP Gain (dBi)	Phi = 0 (deg) Theta = 0 (deg)	-20.4	-	-	-	-	-14.3	-11.3	-9.7
	Phi = 90 (deg) Theta = 0 (deg)	-20.4	-	-	-	-	-14.3	-11.3	-9.7

3.2.6. 3D & 2D Radiation Pattern

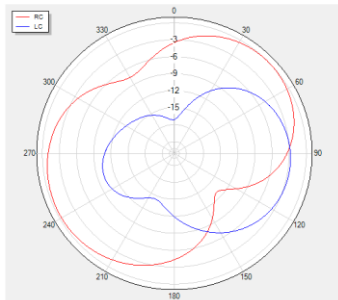
- Test Condition: Free Space
- Test Chamber: FS-G-1



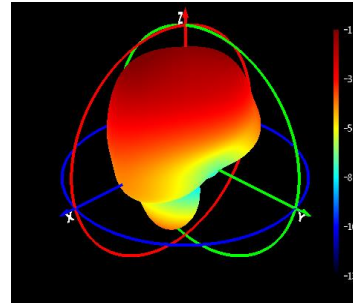
1176 MHz



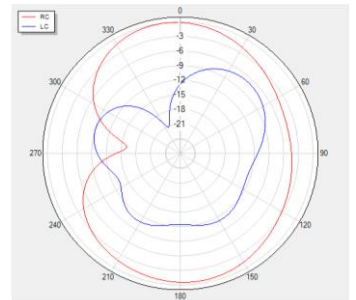
H plane



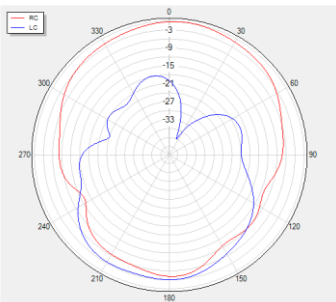
1561 MHz



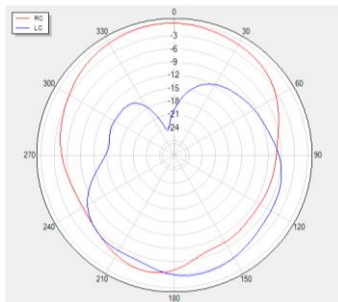
H plane



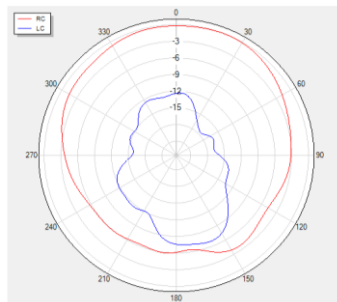
E1 plane



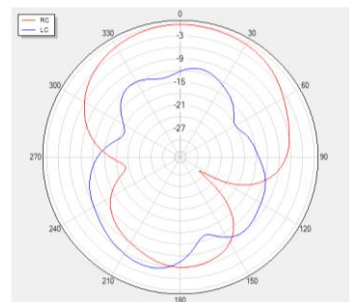
E2 plane



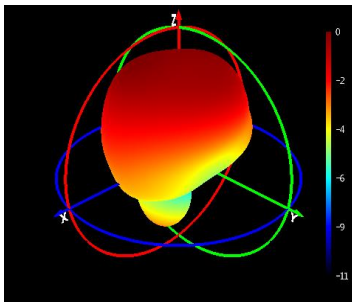
E1 plane



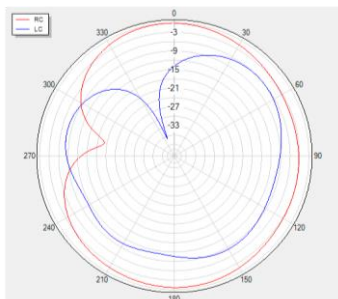
E2 plane



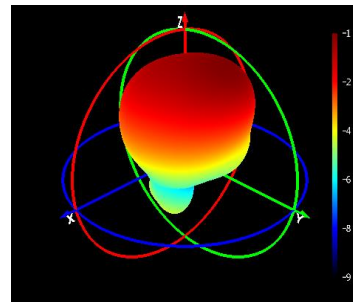
1575 MHz



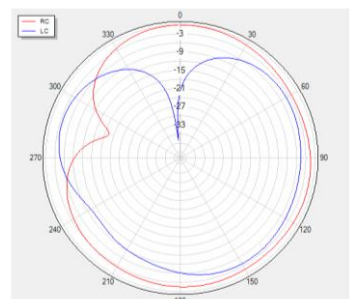
H plane



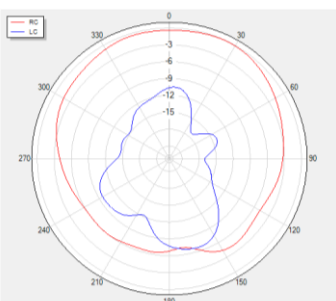
1602 MHz



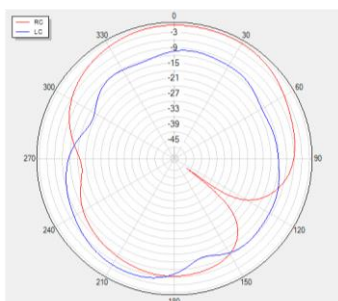
H plane



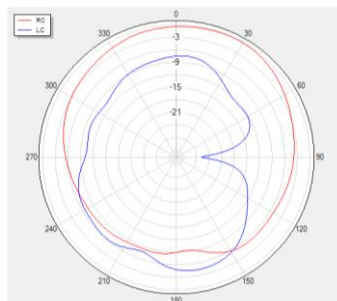
E1 plane



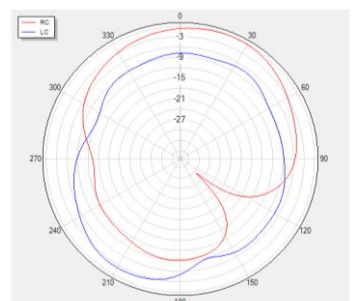
E2 plane



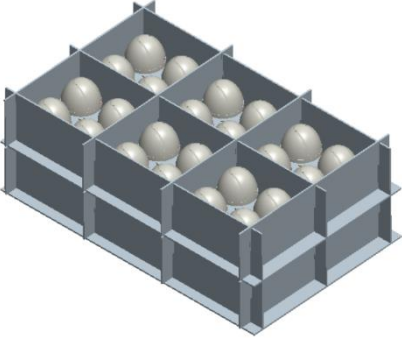
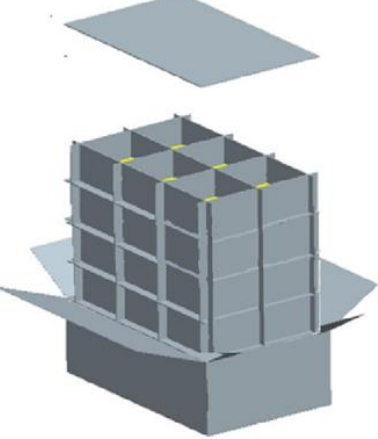
E1 plane

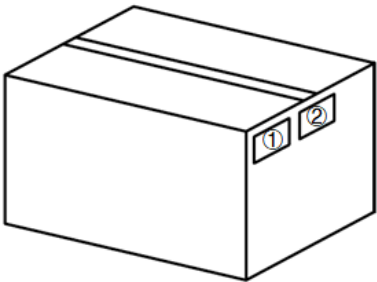
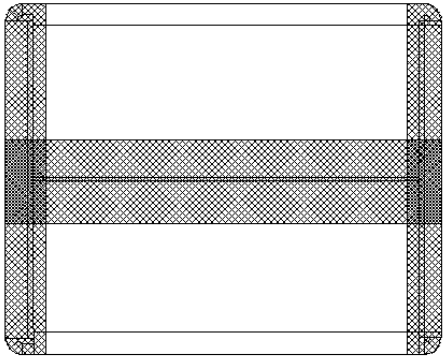


E2 plane



4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		Put the product in a bubble bag.
2		Each knife card slot holds 4 products and one layer of knife cards holds 24 products.
3		Stack knife cards in 4 layers. (96 Antennas / Carton Box) <u>Carton Size:</u> <u>L × W × H = 550 × 350 × 405 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:

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Email: info@quectel.com

Or our local offices. For more information, please visit:

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Revision History

Version	Date	Author	Note
-	2023-05-10	Mastin Zeng/ Jason Long/ David Liu/ Vinnie Liu	Creation of the document
1.0	2023-05-10	Mastin Zeng/ Jason Long/ David Liu/ Vinnie Liu	First official release
1.1	2024-01-24	Jason Long	Added Housing UV Resistant (Chapter 1.2)
1.2	2025-06-20	Jason Long/ Rainey Liao	1. Updated the antenna image (Cover page). 2. Updated the overview. 3. Updated the drawing (Chapter 2).
1.3	2025-10-27	Junsen Li	Added LNA gains according to different supply voltages (Chapter 1.1).
1.4	2026-04-13	Kessie Geng	Updated the packaging (Chapter 4).



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