

# Antenna Datasheet

**Product OC:** YEGT001W1AM
**Version:** 1.4
**Date:** 2026-01-12
**Status:** Released

**Product Name:** GNSS Terminal Mount Rubber Passive External Antenna
**Key Features:**
Frequency Band: 1559–1606 MHz
Dimensions: 135 mm × 15.6 mm × 13 mm
Efficiency: Up to 78.2 %
RoHS Compliant
Compatible with FAKRA, TNC and N-Type connectors

# Overview

The Quectel YEGT001W1AM is a high-performance GNSS terminal mount external dipole antenna designed for precision navigation and positioning applications. Operating in the 1559–1606 MHz frequency band, it supports GPS L1, GLONASS G1, Galileo E1, and BDS B1I/B1C systems, making it ideal for automotive, industrial tracking, IoT, and telematics solutions where reliable signal reception is critical.

- **Key Features**

✓ Exceptional Efficiency: Achieves up to 78.2% efficiency in free-space conditions, ensuring robust signal capture even in challenging environments.

✓ Compact and Lightweight: With dimensions of 135 mm × 15.6 mm × 13 mm and a weight of just 16 grams, it is engineered for seamless integration into space-constrained devices.

✓ Omni-Directional Radiation: Linear polarization and an omni-directional radiation pattern provide consistent performance across diverse orientations.

✓ Flexible Connectivity: Compatible with FAKRA, TNC, and N-Type connectors, offering versatility for various installation scenarios.

✓ Durable Design: Constructed from PC + ABS materials, it operates reliably in temperatures ranging from -40 °C to +85 °C and complies with RoHS standards.

- **Performance Highlights**

✓ Low VSWR and high return loss minimize signal reflection, optimizing power transfer.

✓ High peak gain ensures strong signal reception, while tested radiation patterns confirm stability in both free-space and on-EVB conditions (straight or bent configurations).

- **Target Applications**

✓ Ideal for portable GNSS devices, the YEGT001W1AM combines precision, durability, and adaptability. Its modular packaging (up to 320 units per carton) streamlines logistics for large-scale deployments.

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 & 130 mm × 70 mm EVB**

## 1.1. Electrical

| Electrical | |
|---|---|
| **Frequency Range** | 1559–1606 MHz |
| **Impedance** | 50 Ω |
| **Polarization** | Linear |
| **Radiation Pattern** | Omni-directional |

| Frequency (MHz) / Band | | 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 | FS Straight | - | - | - | - | - | 1.2 | 1.1 | 1.2 |
| | FS Bent | - | - | - | - | - | 1.2 | 1.1 | 1.2 |
| | EVB Straight | - | - | - | - | - | 1.2 | 1.2 | 1.2 |
| | EVB Bent | - | - | - | - | - | 1.4 | 1.4 | 1.3 |
| Return Loss (dB) | FS Straight | - | - | - | - | - | -21.5 | -23.5 | -19.6 |
| | FS Bent | - | - | - | - | - | -19.7 | -23.1 | -20.4 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | EVB Straight | - | - | - | - | - | -20.4 | -20.2 | -22.5 |
| | EVB Bent | - | - | - | - | - | -14.7 | -14.9 | -16.8 |
| Efficiency (%) | FS Straight | - | - | - | - | - | 77.5 | 75.9 | 75.1 |
| | FS Bent | - | - | - | - | - | 76.2 | 75.3 | 70.4 |
| | EVB Straight | - | - | - | - | - | 74.9 | 74.0 | 71.6 |
| | EVB Bent | - | - | - | - | - | 71.2 | 69.5 | 69.9 |
| AVG Gain (dB) | FS Straight | - | - | - | - | - | -1.1 | -1.2 | -1.2 |
| | FS Bent | - | - | - | - | - | -1.2 | -1.2 | -1.5 |
| | EVB Straight | - | - | - | - | - | -1.3 | -1.3 | -1.5 |
| | EVB Bent | - | - | - | - | - | -1.5 | -1.6 | -1.6 |
| Peak Gain (dBi) | FS Straight | - | - | - | - | - | 2.9 | 2.7 | 2.5 |
| | FS Bent | - | - | - | - | - | 2.2 | 2.1 | 2.0 |
| | EVB Straight | - | - | - | - | - | 3.0 | 2.9 | 2.5 |
| | EVB Bent | - | - | - | - | - | 1.3 | 1.1 | 1.3 |
| VSWR | | FS Straight | | | ≤ 1.3 | | | | |
| | | FS Bent | | | ≤ 1.2 | | | | |
| | | EVB Straight | | | ≤ 1.2 | | | | |
| | | EVB Bent | | | ≤ 1.5 | | | | |
| Return Loss | | FS Straight | | | ≤ -18.8 dB | | | | |
| | | FS Bent | | | ≤ -19.1 dB | | | | |
| | | EVB Straight | | | ≤ -20.1 dB | | | | |
| | | EVB Bent | | | ≤ -14.7 dB | | | | |
| Peak Gain | | FS Straight | | | ≤ 2.9 dBi | | | | |

| | | |
|---|---|---|
| | **FS Bent** | ≤ 2.4 dBi |
| | **EVB Straight** | ≤ 3.0 dBi |
| | **EVB Bent** | ≤ 1.4 dBi |

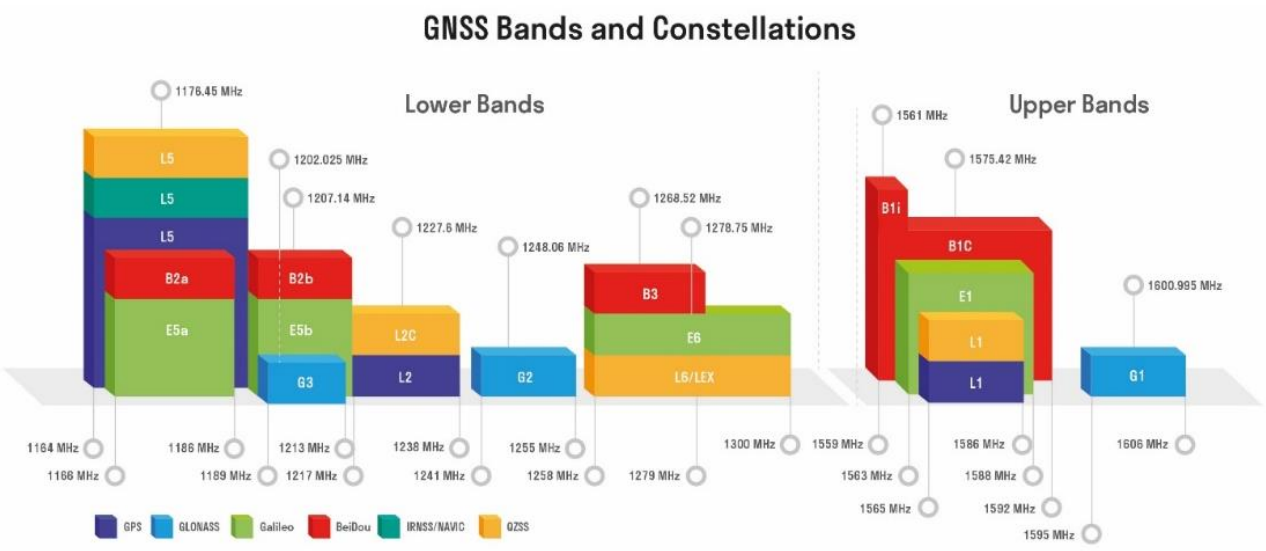
- **Straight: The connector is vertical.**
- **Bent: The connector is bend.**
- **FS: On Free Space.**
- **EVB: On 130 mm × 70 mm EVB.**

## 1.2. Mechanical & Environmental

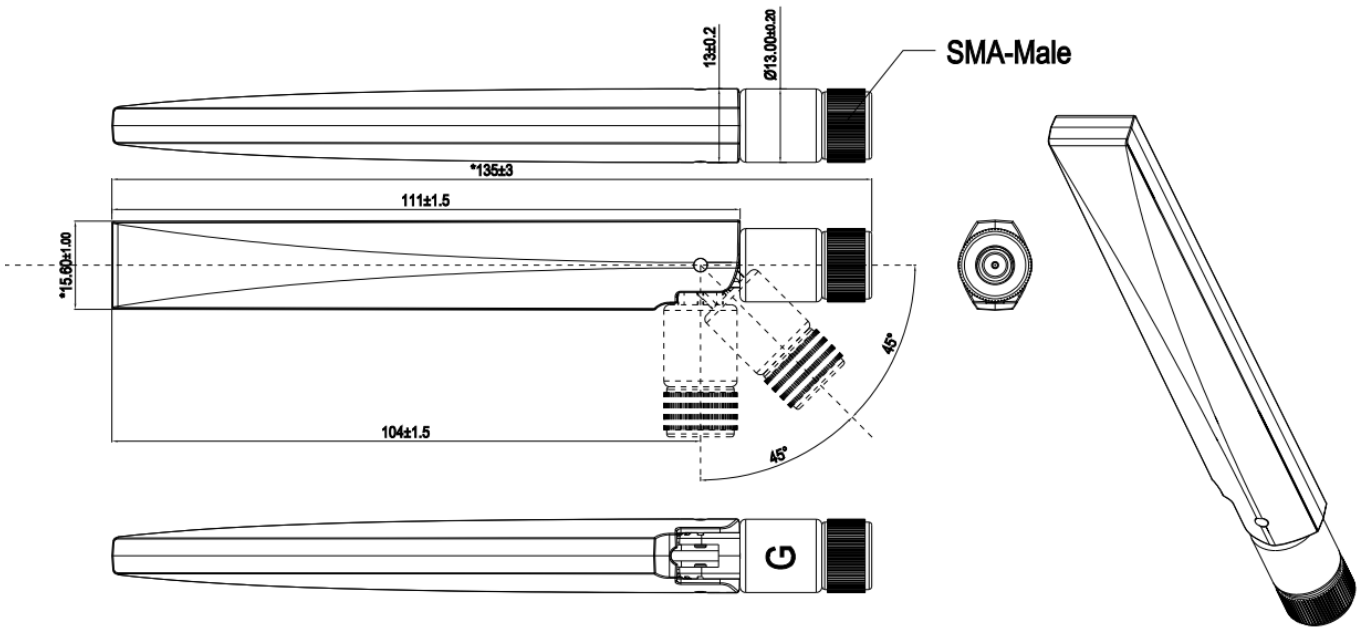
| | |
|---|---|
| **Mechanical** | |
| **Antenna Dimensions** | 135 mm × 15.6 mm × 13 mm |
| **Material & Color** | PC + ABS & Black |
| **Connector Type** | SMA Male |
| **Mounting Type** | Terminal |
| **Weight** | Typ. 16 g |
| **Environmental** | |
| **Operation Temperature** | -40 °C to +85 °C |
| **Storage Temperature** | -40 °C to +85 °C |
| **RoHS Compliant** | Yes |

## 1.3. Supported GNSS Frequency Bands

| GNSS Frequency Bands (MHz) | | | | | |
|---|---|---|---|---|---|
| **GPS** | **L1**<br>Centre 1575.42<br>(1565–1586) | **L2**<br>Centre 1227.6<br>(1217–1238) | **L5**<br>Centre 1176.45<br>(1164–1189) | | |
| | √ | - | - | | |
| **GLONASS** | **G1-L1OC-L1OF**<br>Centre 1601<br>(1595–1606) | **G2-L2OC-L2OF**<br>Centre 1248.06<br>(1241–1255) | **G3-L3OC**<br>Centre 1202.025<br>(1189–1213) | | |
| | √ | - | - | | |
| **GALILEO** | **E1**<br>Centre 1575.42<br>(1563–1588) | **E5a**<br>Centre 1176.45<br>(1166–1187) | **E5b**<br>Centre 1207.14<br>(1197–1218) | **E6**<br>Centre 1278.75<br>(1258–1300) | |
| | √ | - | - | - | |
| **BDS** | **B1I**<br>Centre 1561.098<br>(1559–1564) | **B1C (BDS-3)**<br>Centre 1575.42<br>(1559–1592) | **B2a-B2I**<br>Centre 1176.45<br>(1166–1187) | **B2b**<br>Centre 1207.14<br>(1197–1217) | **B3**<br>Centre 1268.52<br>(1258–1279) |
| | √ | √ | - | - | - |
| **QZSS** | **L1**<br>Centre 1575.42<br>(1573–1578) | **L2C**<br>Centre 1227.6<br>(1226–1229) | **L5**<br>Centre 1176.45<br>(1166–1187) | **L6**<br>Centre 1278.75<br>(1257–1300) | |
| | √ | - | - | - | |
| **IRNSS** | **L5**<br>Centre 1176.45<br>(1164–1189) | | | | |
| | - | | | | |


GNSS Bands and Constellations
Lower Bands
Upper Bands
1176.45 MHz
L5
L5
L5
B2a
E5a
1202.025 MHz
1207.14 MHz
B2b
E5b
G3
1227.6 MHz
L2C
L2
1248.06 MHz
G2
1268.52 MHz
1278.75 MHz
B3
E6
L6/LEX
1561 MHz
1575.42 MHz
B1i
B1C
E1
L1
L1
1600.995 MHz
G1
1164 MHz
1168 MHz
1186 MHz
1189 MHz
1213 MHz
1217 MHz
1238 MHz
1241 MHz
1255 MHz
1258 MHz
1279 MHz
1300 MHz
1559 MHz
1563 MHz
1565 MHz
1586 MHz
1588 MHz
1592 MHz
1595 MHz
1606 MHz
GPS
GLONASS
Galileo
BeiDou
IRNSS/NAVIC
QZSS

# 2 Drawing



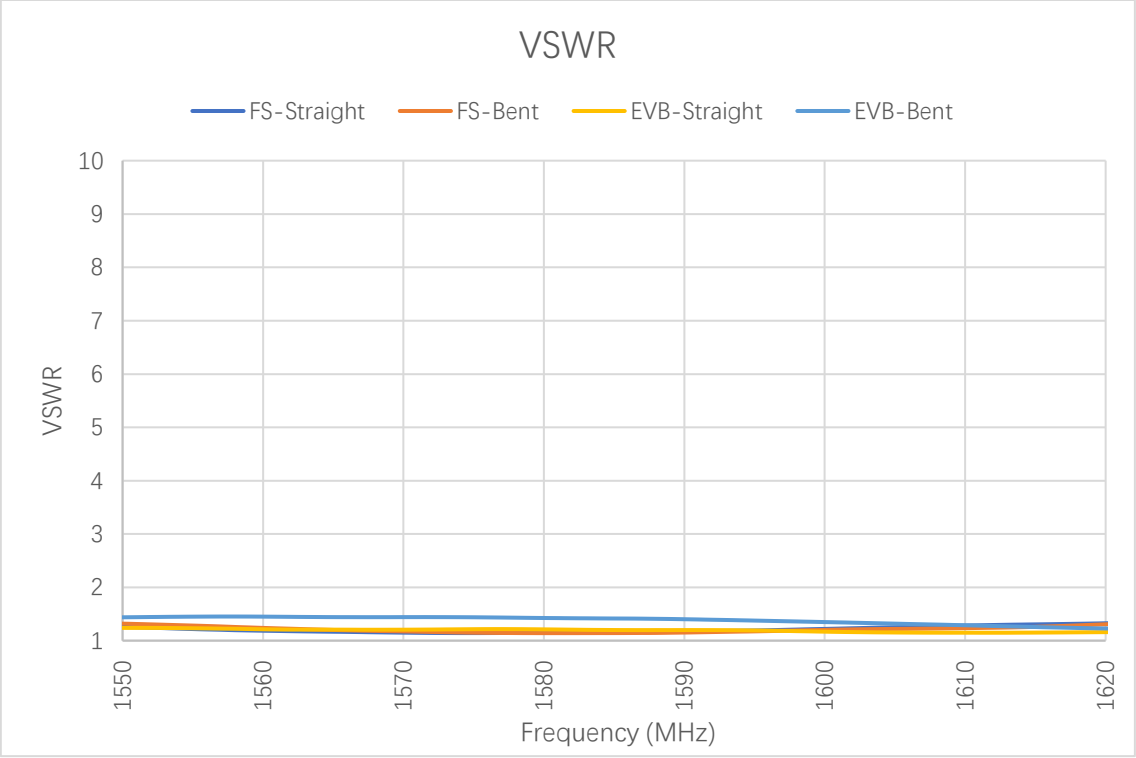

UNIT:mm

Note: If you use a torque wrench, the recommended force for mounting the antenna is 0.9Nm and the maximum torque to prevent antenna damage is 1.17Nm.

# 3 Detailed Performance

## 3.1. S-Parameter Test

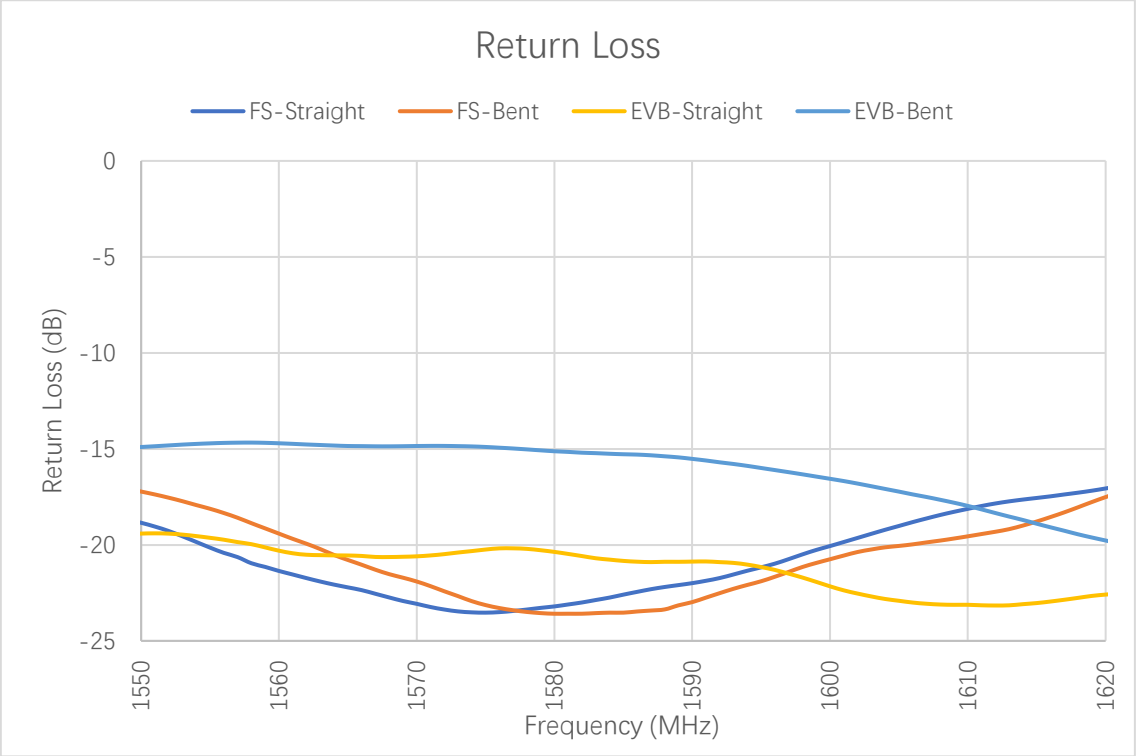
### 3.1.1. VSWR




**VSWR**

| Frequency (MHz) | 1176 | 1207 | 1227 | 1248 | 1268 | 1561 | 1575 | 1602 |
|---|---|---|---|---|---|---|---|---|
| **FS Straight** | - | - | - | - | - | 1.2 | 1.1 | 1.2 |
| **FS Bent** | - | - | - | - | - | 1.2 | 1.1 | 1.2 |
| **EVB Straight** | - | - | - | - | - | 1.2 | 1.2 | 1.2 |
| **EVB Bent** | - | - | - | - | - | 1.4 | 1.4 | 1.3 |

### 3.1.2. Return Loss

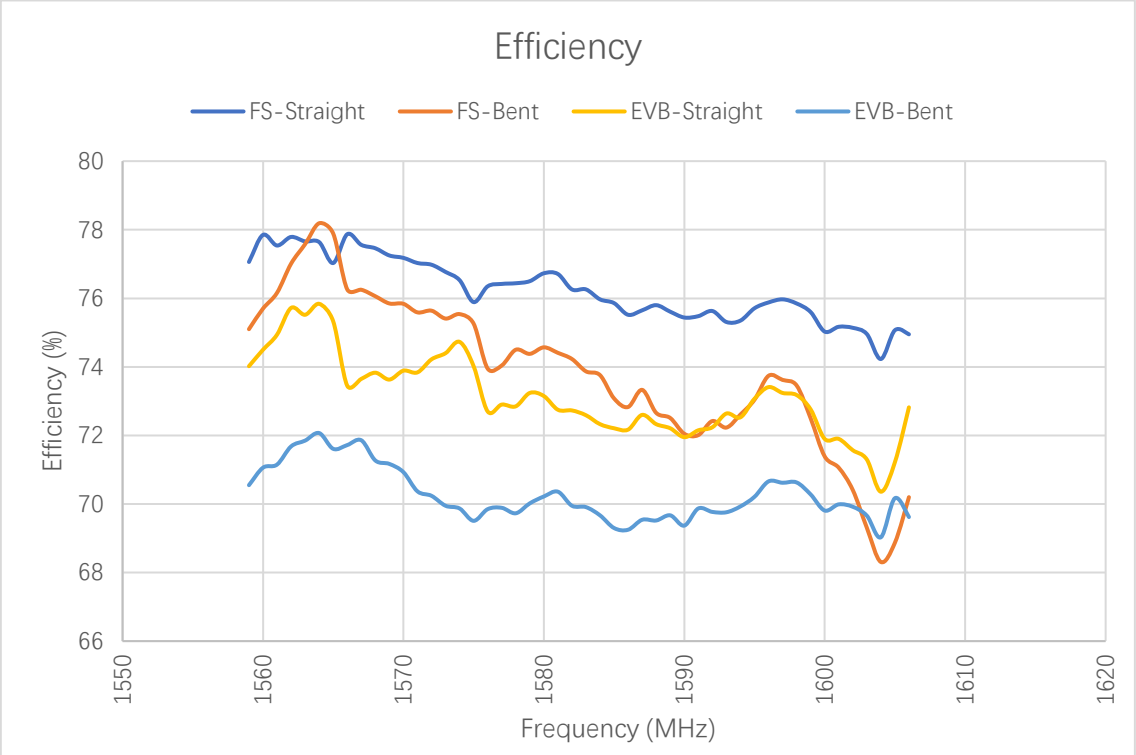



**Return Loss (dB)**

| Frequency (MHz) | 1176 | 1207 | 1227 | 1248 | 1268 | 1561 | 1575 | 1602 |
|---|---|---|---|---|---|---|---|---|
| **FS Straight** | - | - | - | - | - | -21.5 | -23.5 | -19.6 |
| **FS Bent** | - | - | - | - | - | -19.7 | -23.1 | -20.4 |
| **EVB Straight** | - | - | - | - | - | -20.4 | -20.2 | -22.5 |
| **EVB Bent** | - | - | - | - | - | -14.7 | -14.9 | -16.8 |

## 3.2. Radiation Performance Test

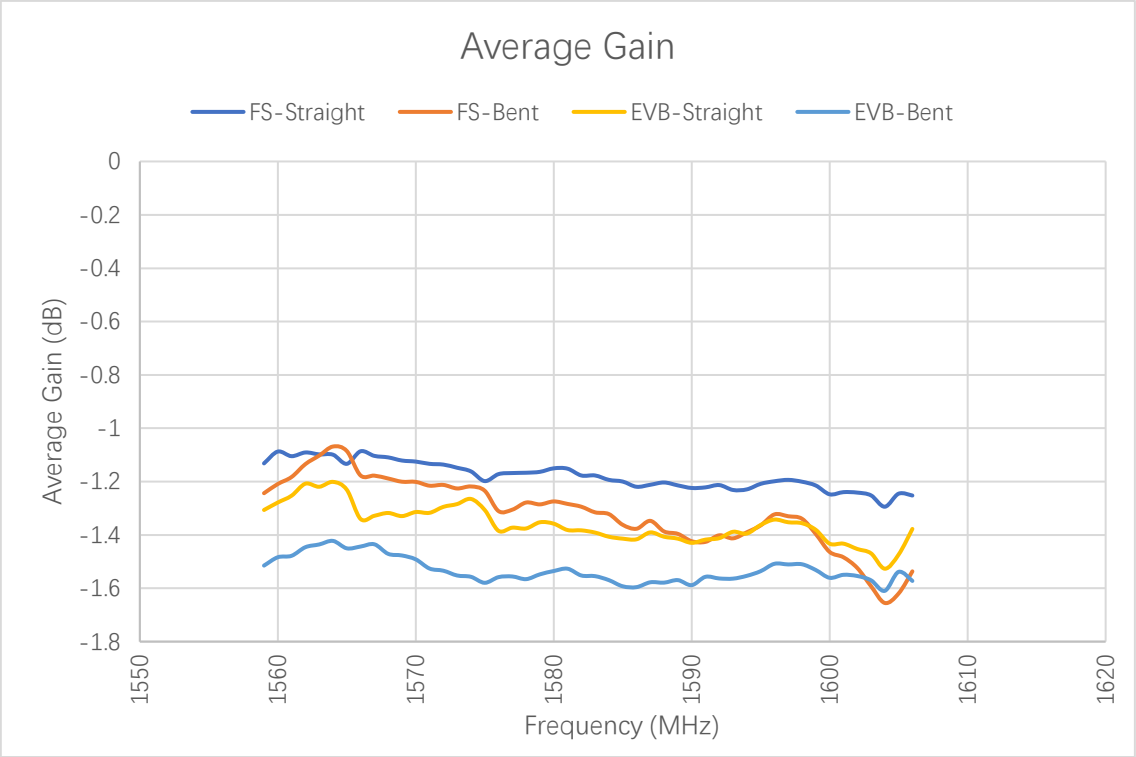
### 3.2.1. Efficiency




**Efficiency (%)**

| Frequency (MHz) | 1176 | 1207 | 1227 | 1248 | 1268 | 1561 | 1575 | 1602 |
|---|---|---|---|---|---|---|---|---|
| **FS Straight** | - | - | - | - | - | 77.5 | 75.9 | 75.1 |
| **FS Bent** | - | - | - | - | - | 76.2 | 75.3 | 70.4 |
| **EVB Straight** | - | - | - | - | - | 74.9 | 74.0 | 71.6 |
| **EVB Bent** | - | - | - | - | - | 71.2 | 69.5 | 69.9 |

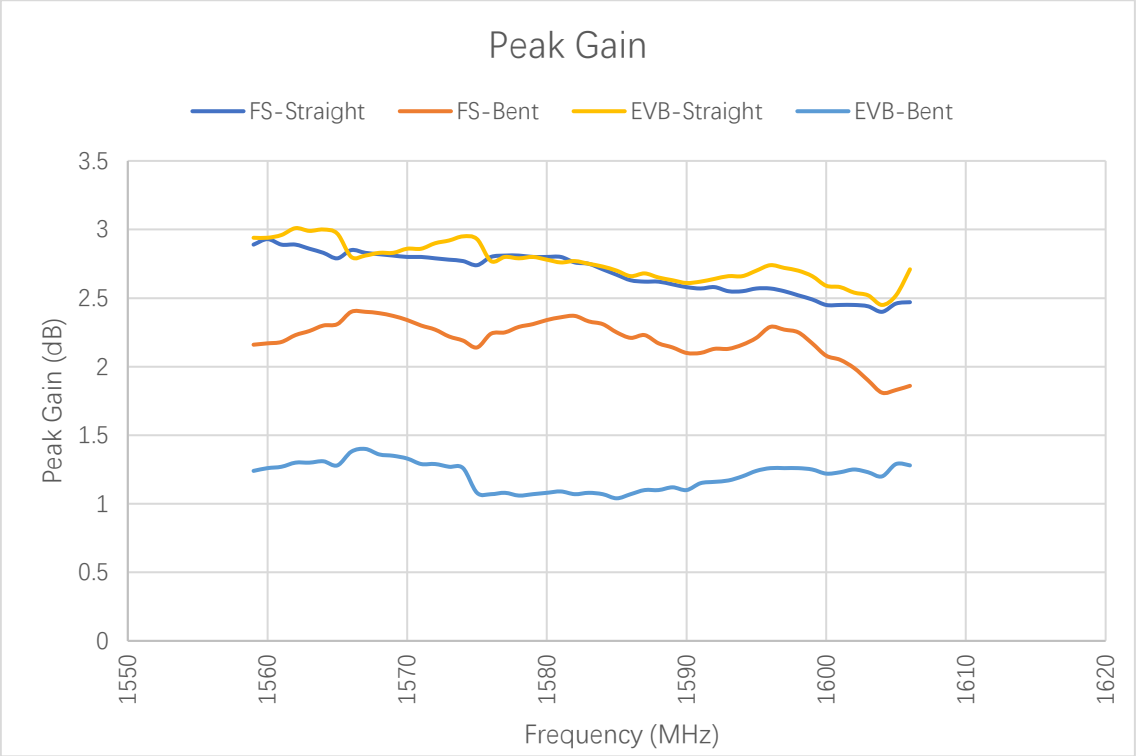
### 3.2.2. Average Gain




**Average Gain (dB)**

| Frequency (MHz) | 1176 | 1207 | 1227 | 1248 | 1268 | 1561 | 1575 | 1602 |
|---|---|---|---|---|---|---|---|---|
| **FS Straight** | - | - | - | - | - | -1.1 | -1.2 | -1.2 |
| **FS Bent** | - | - | - | - | - | -1.2 | -1.2 | -1.5 |
| **EVB Straight** | - | - | - | - | - | -1.3 | -1.3 | -1.5 |
| **EVB Bent** | - | - | - | - | - | -1.5 | -1.6 | -1.6 |

### 3.2.3. Peak Gain



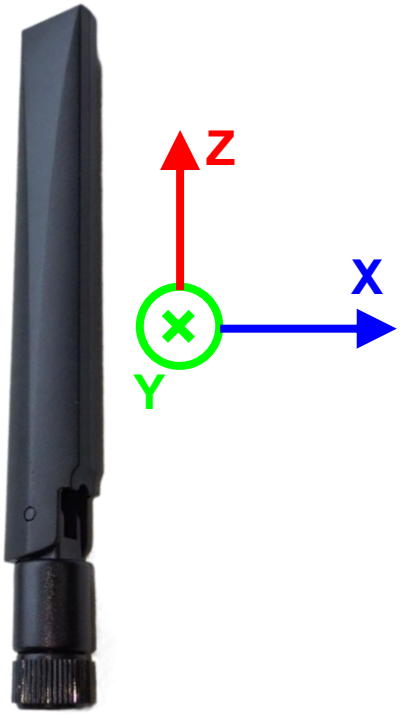

**Peak Gain (dBi)**

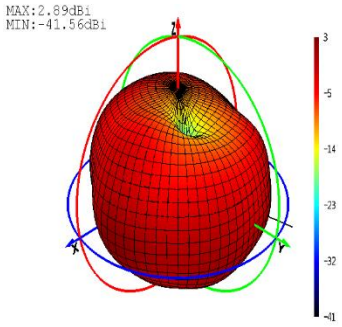
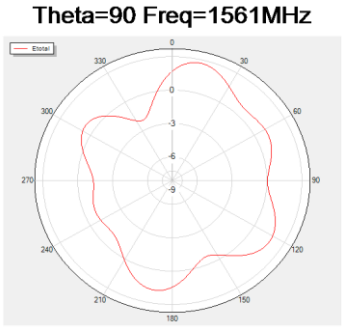
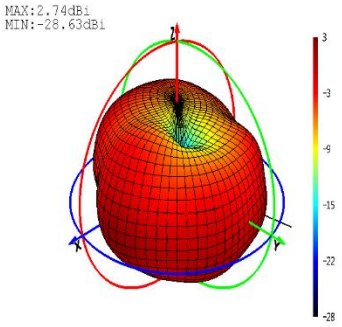
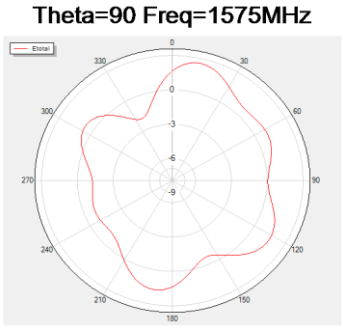
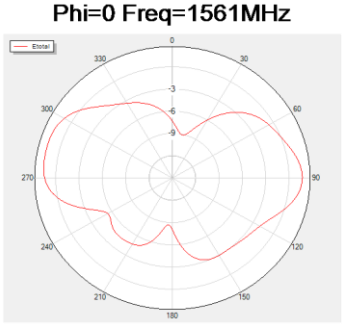
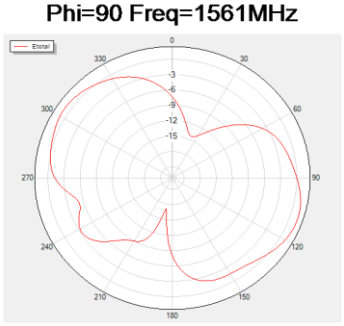
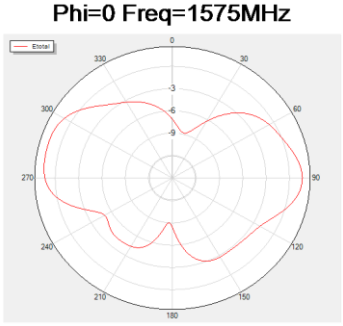
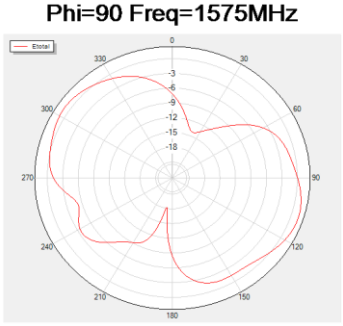
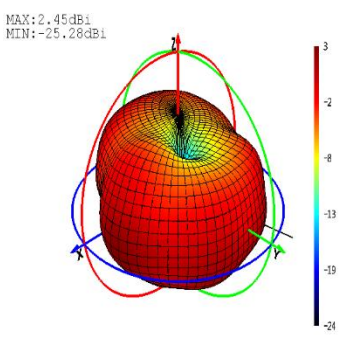
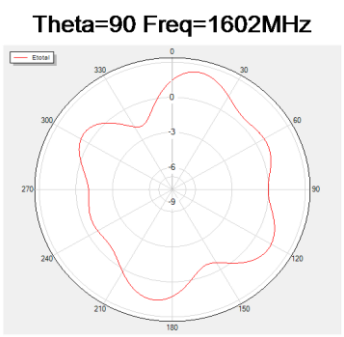
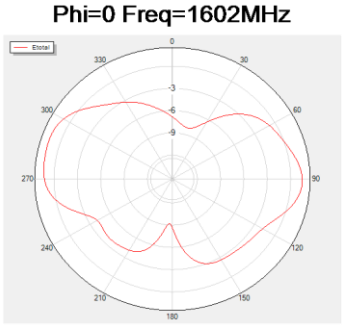
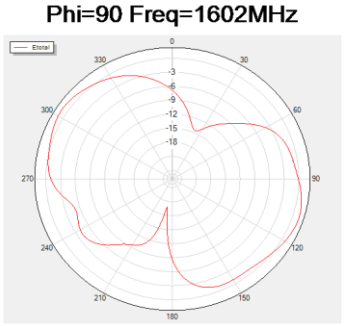
| Frequency (MHz) | 1176 | 1207 | 1227 | 1248 | 1268 | 1561 | 1575 | 1602 |
|---|---|---|---|---|---|---|---|---|
| **FS Straight** | - | - | - | - | - | 2.9 | 2.7 | 2.5 |
| **FS Bent** | - | - | - | - | - | 2.2 | 2.1 | 2.0 |
| **EVB Straight** | - | - | - | - | - | 3.0 | 2.9 | 2.5 |
| **EVB Bent** | - | - | - | - | - | 1.3 | 1.1 | 1.3 |

### 3.2.4. 3D & 2D Radiation Pattern

#### 3.2.4.1. Test Condition: Free Space Straight

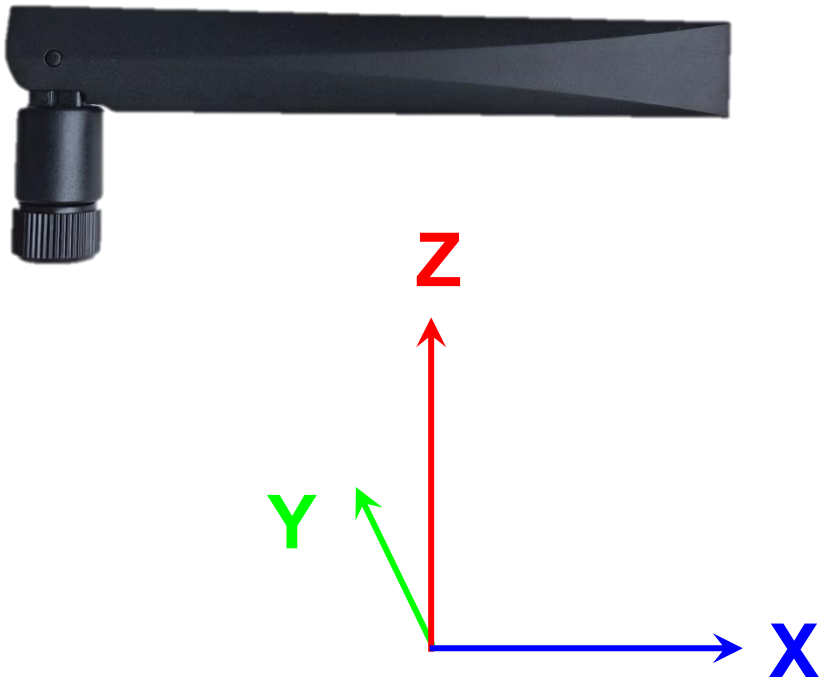
- Test Chamber: FS-S-1

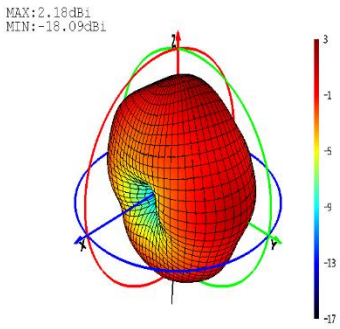
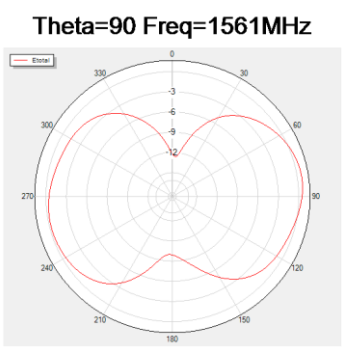
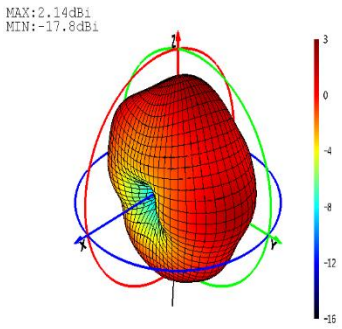
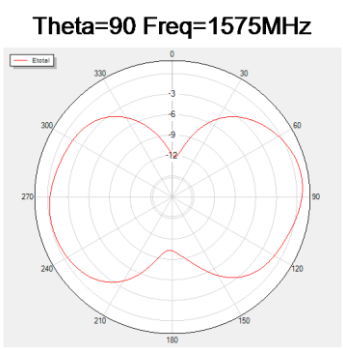
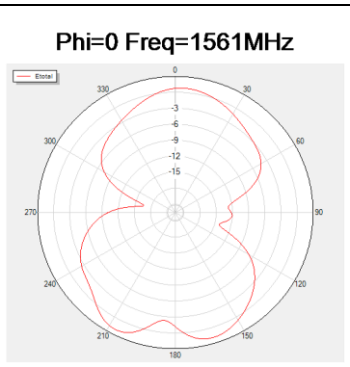
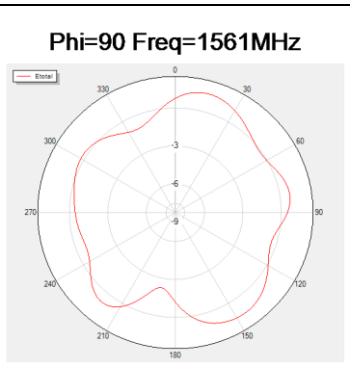
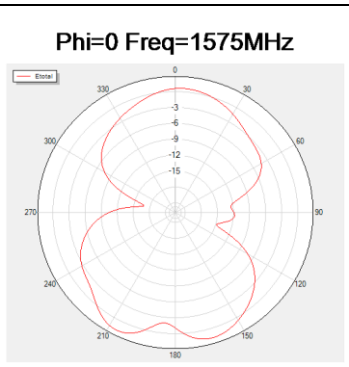
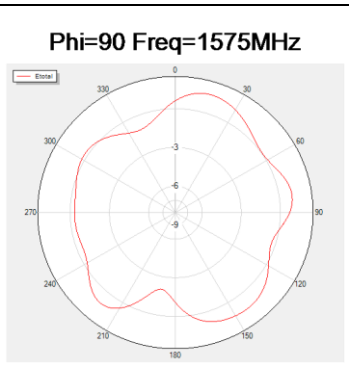
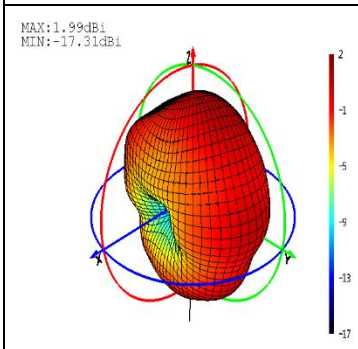
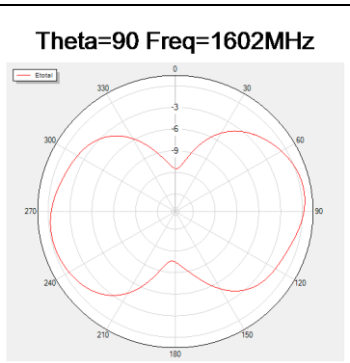
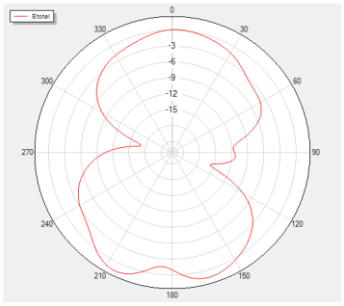
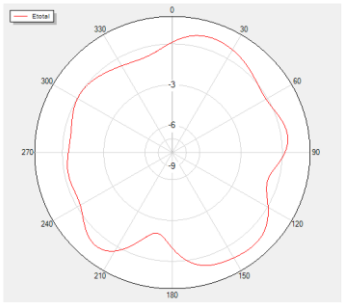


| 1561 MHz | | 1575 MHz | |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| 1602 MHz | | | |
|  |  | | |
|  |  | | |

#### 3.2.4.2. Test Condition: Free Space Bent

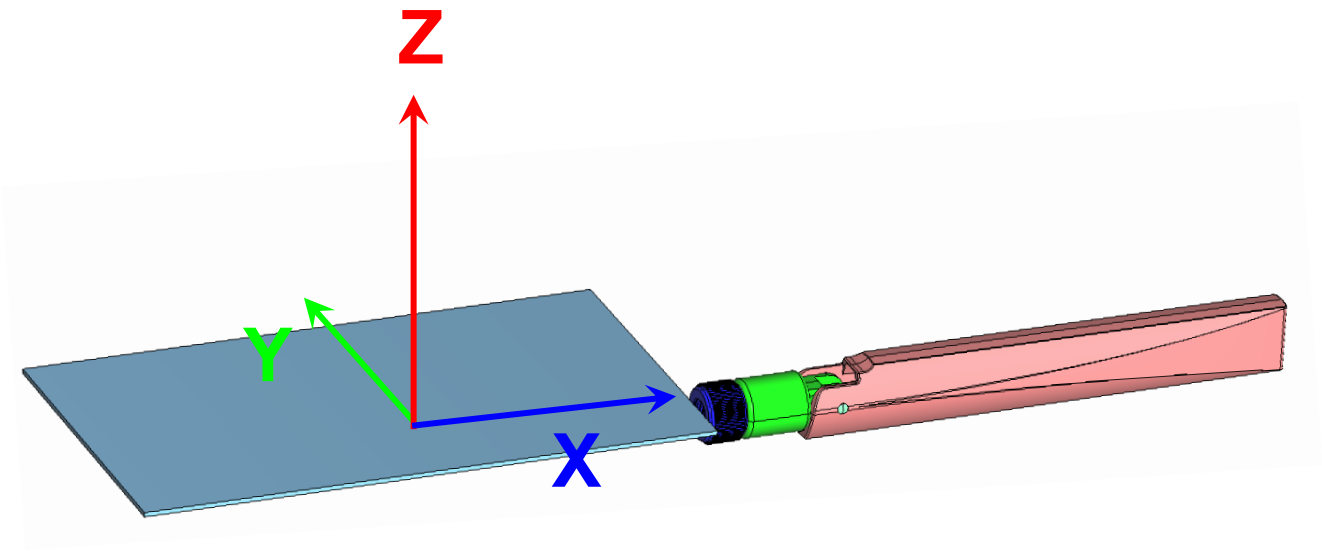
- Test Chamber: FS-S-1

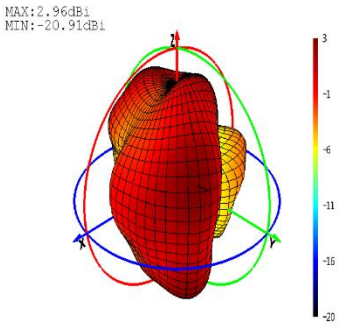
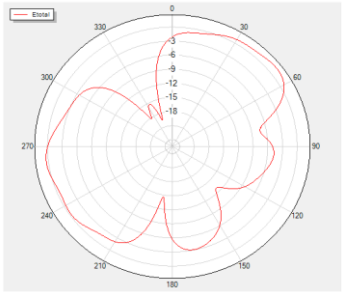
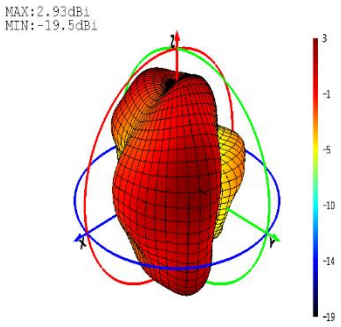
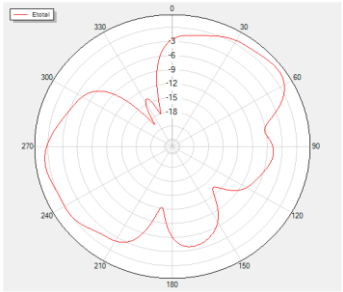
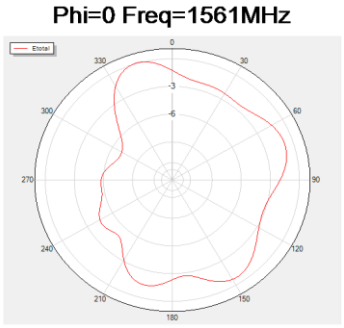
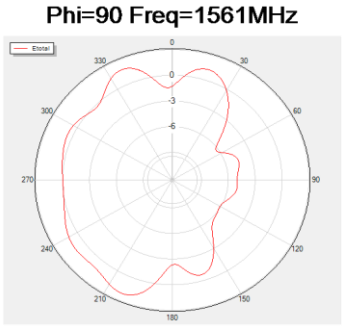
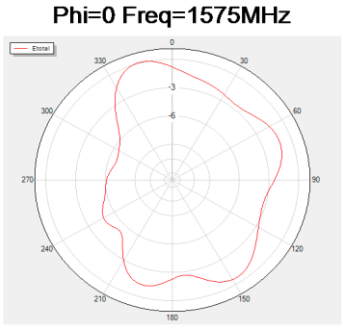
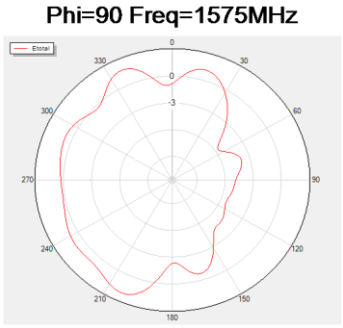
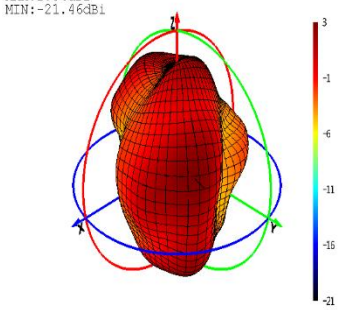
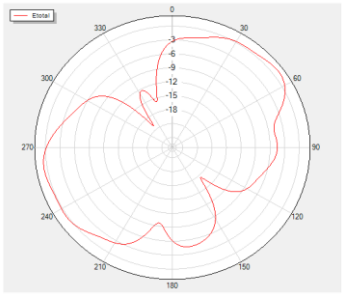
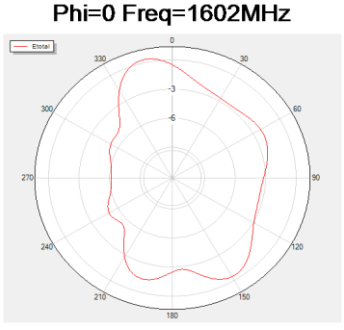
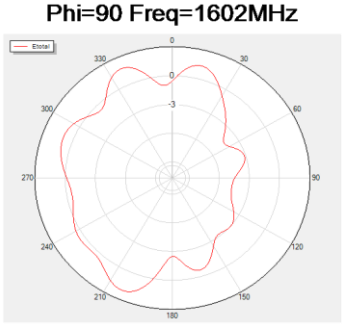


| 1561 MHz | | 1575 MHz | |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| 1602 MHz | | | |
|  |  | | |
|  |  | | |

#### 3.2.4.3. Test Condition: On 130 mm × 70 mm EVB Straight

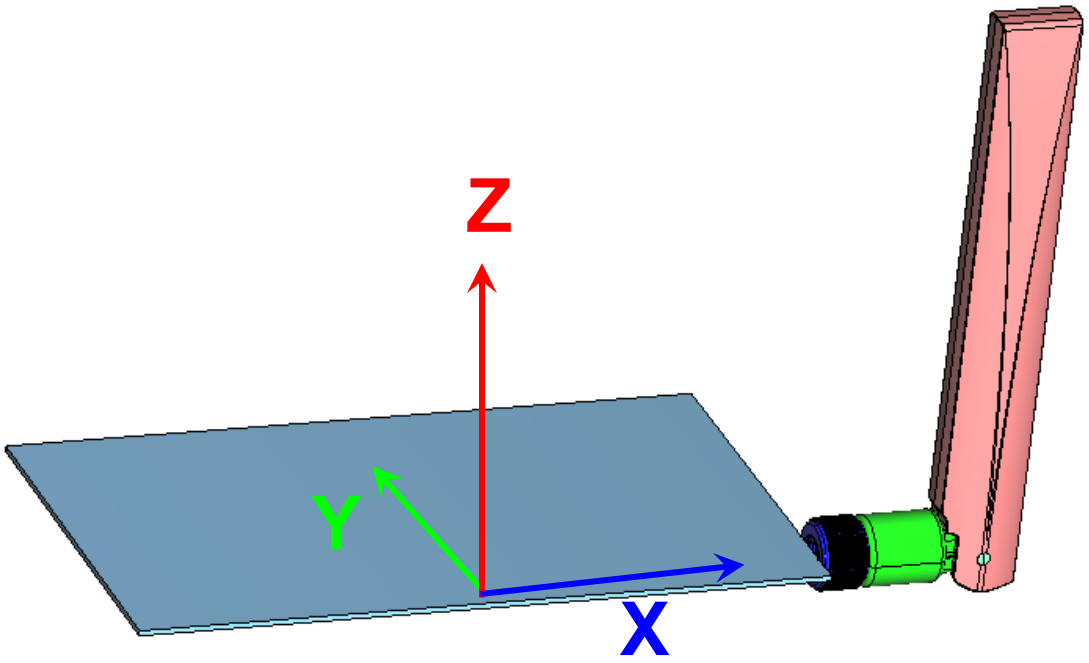
- Test Chamber: FS-S-1

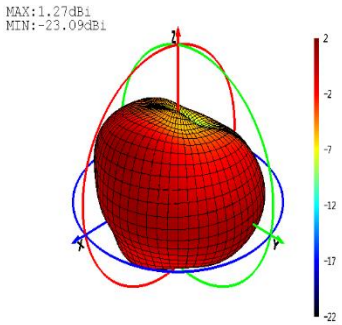
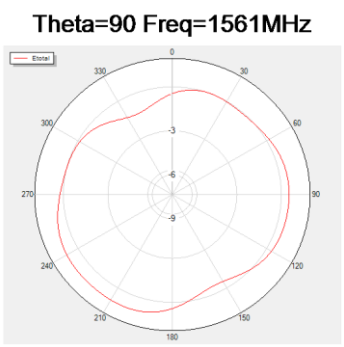
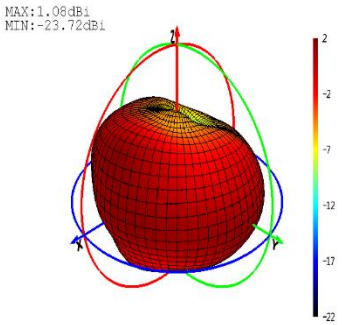
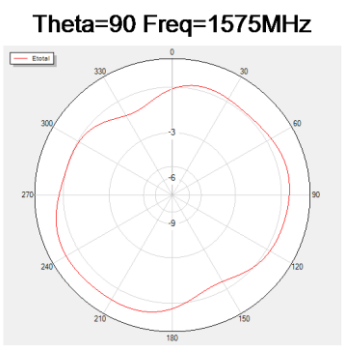
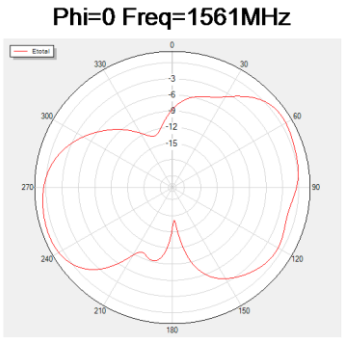
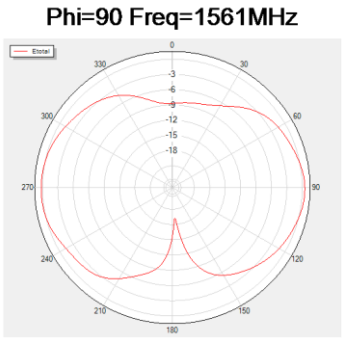
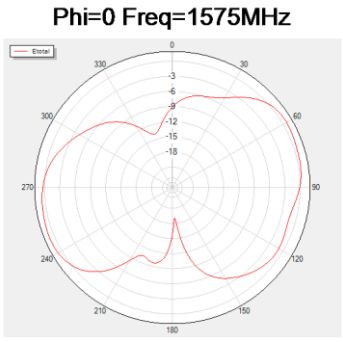
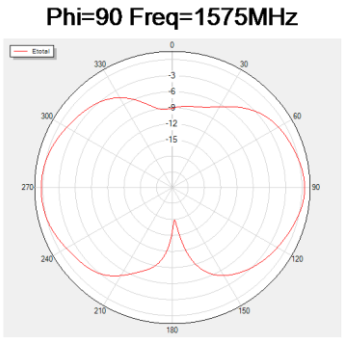
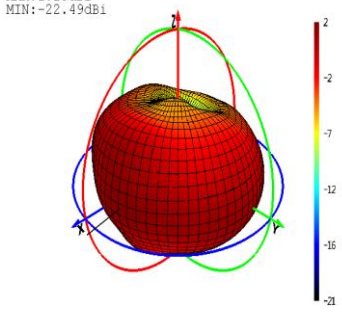
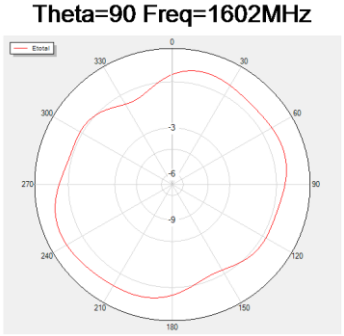
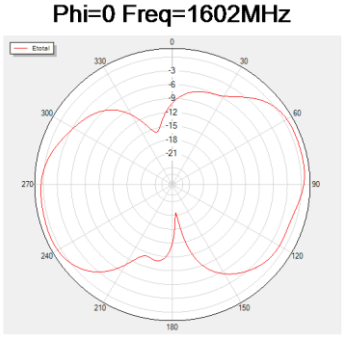
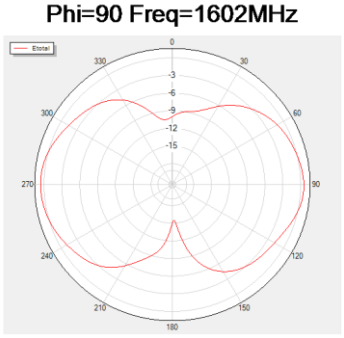


| 1561 MHz | | 1575 MHz | |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| 1602 MHz | | | |
|  |  | | |
|  |  | | |

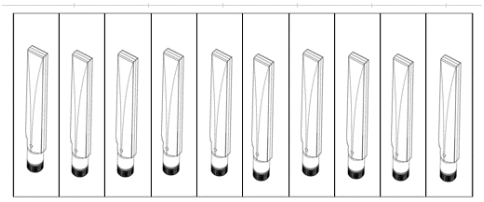
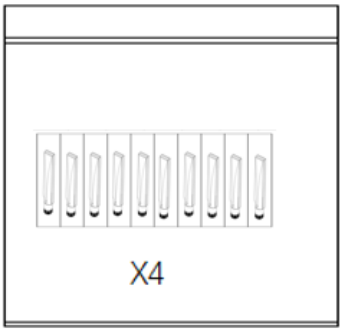
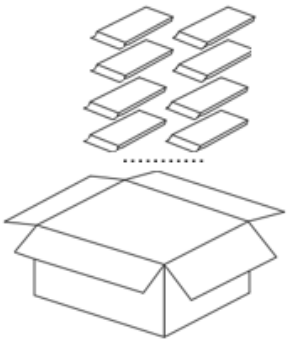
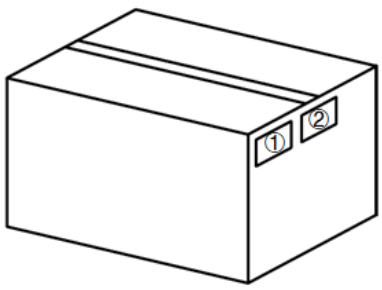
#### 3.2.4.4. Test Condition: On 130 mm × 70 mm EVB Bent

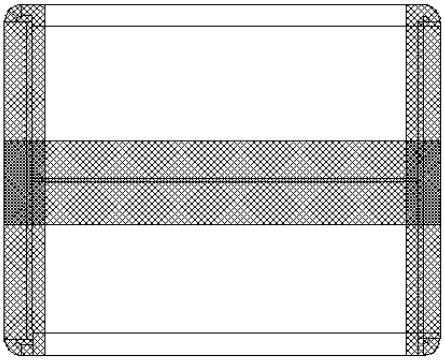
- Test Chamber: FS-S-1



| 1561 MHz | | 1575 MHz | |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| 1602 MHz | | | |
|  |  | | |
|  |  | | |

# 4 Packaging

| Step | Packaging Picture / 2D Picture | Description |
|---|---|---|
| 1 |  | 10 antenna products in a one-piece bag.<br>(10 Antennas / One-piece Bag) |
| 2 |  | 40 antenna products in a PE bag.<br>(40 Antennas / PE Bag) |
| 3 |  | (18 PE Bags / Carton Box)<br>(720 Antennas / Carton Box)<br>Estimated quantity<br>Products that cannot fill the entire carton box are packed in a suitable size carton box.<br>Carton Size:<br>L × W × H = 370 × 370 × 295 mm |
| 4 |  | **Position for Attaching Labels**<br>① Carton Label<br>② Quality Label |

| | | |
|---|---|---|
| 5 |  | **Sealing Cartons**<br>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

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# Revision History

| Version | Date | Author | Note |
|---|---|---|---|
| - | 2024-05-24 | Mordecai Liu/ Lance Sun/ David Liu/ Rainey Liao | Creation of the document |
| 1.0 | 2024-05-24 | Mordecai Liu/ Lance Sun/ David Liu/ Rainey Liao | First official release |
| 1.1 | 2024-09-03 | Mordecai Liu | Numerous changes were made to this document. It should be read in its entirety. |
| 1.2 | 2024-11-07 | Lance Sun | Updated the drawing (Chapter 2). |
| 1.3 | 2025-06-12 | Rainey Liao | 1. Updated the antenna image (Cover page).<br>2. Updated the overview. |
| 1.4 | 2026-01-12 | Strong Qiang | Updated the packaging (Chapter 4). |



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