Bat Wireless
BAT WIRELESS

# Antenna Specification Document

# Antenna Datasheet

## Dual-Band Adhesive Rod Antenna

model：

BW258JWX157-14KJ

description：

Characteristics of the dual-frequency adhesive rod antenna SMA internal thread and inner hole interface:

Frequency range: 2400–2500 MHz; Frequency range: 5150–5850 MHz; SMA internal threaded port

Structure: Foldable, 360º omnidirectional radiation

Dimensions: 157 mm x 12.8 mm; compliant with RoHS and REACH regulations

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# BW258JWX157-14KJ

| Part Number Description | | |
|---|---|---|
| BW | Company / Company | Bat Wireless / Bat Wireless |
| 258 | Frequency Band / Frequency | 2400-2500MHz，51500-5850MHz |
| J | Name / Name | Rubber rod / Rubber antenna |
| W | Type / Type | External / External |
| X | Constant / Constant | X / X |
| 157-14 | Approximate dimensions | 157-14mm / 157-14mm |
| K | Feature | Foldable |
| J | Interface/Connector | SMA internal thread hole / SMA |

## 1. Product Description/Description

The Bat Wireless BW258JWX157-14KJ is a high-performance omnidirectional antenna supporting both 2.4GHz and 5.8GHz bands, ideal for applications such as Wi-Fi, drone video transmission, and industrial control. Featuring a premium plastic housing with foldable design, it delivers exceptional signal reception and transmission capabilities, providing stable and reliable connectivity support. Its compact, lightweight stick-shaped design facilitates easy installation and portability.

Common application scenarios:

Smart Home/Wi-Fi Extension: Enhanced Wireless Network Coverage
Security Monitoring: Ensures stable signal transmission for outdoor cameras
Industrial Internet of Things (IIoT): Wireless data interaction between devices
Drone Communication: Provides stable remote control and high-definition video transmission

Bat Wireless offers customized services to optimize your devices. With a seasoned R&D team, we can respond swiftly to meet your requirements. For any inquiries, please contact our sales or FAE team.

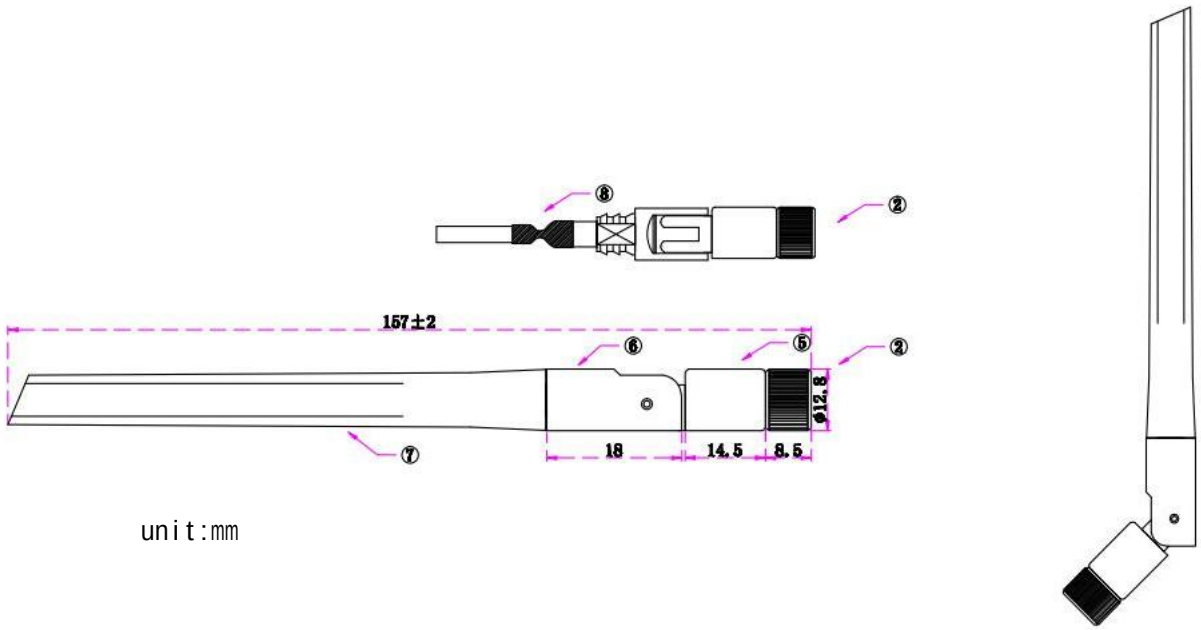
## 2. Product Specifications/Specification

| Parameters / Parameters | Typical value / Typ. | Unit / Units | Notes |
|---|---|---|---|
| Electrical Characteristics | | | |
| Type /Antenna Type | Rubber Antenna / Rubber Antenna | | |
| Frequency / Frequency Range | 2400-2500，5150-5850 | MHz | |
| Input Impedance / Input Impedance | 50 | Ω | |
| Standing wave ratio /V.S.W.R | 3 | | |
| Gain / Gain | 2 21 | dBi | |
| Polarization Type | Vertical / Vertical | | |
| Power Capacity / Power Capacity | 50 | W | |
| Lightning Protection / Lightning Protection | - | | |
| Working voltage / DC Voltage | - | V | |
| Radiator / Radiator | - | | |
| Mechanical Characteristics | | | |
| Dimensions / Dimensions | 157 x ⌀ 12.8 | mm | |
| Interface Type / Connector Type | SMA internal thread hole / SMA | | |
| Cable Type / Cable Type | - | | |
| Cable length / Cable Length | - | mm | |
| Installation method / Mounting method | Twist | | |
| Color / Color | Black | | |
| Material / Meterial | ABS | | |
| Weight /Weight | - | g | |
| Environmental Characteristics | | | |
| Waterproof Rating | - | | |
| ROHS Standard / ROHS Complaint | Accord with | | |
| Operating Temperature / Operating Temperature | -45~ +85 | ℃ | |
| Storage Temperature / Storage Temperature | -45~ +85 | ℃ | |

## 3. Physical Figure/ Dimensions

The image is for reference only; the actual product shall prevail.

## 4. Dimension Drawing/Mechanical Drawing



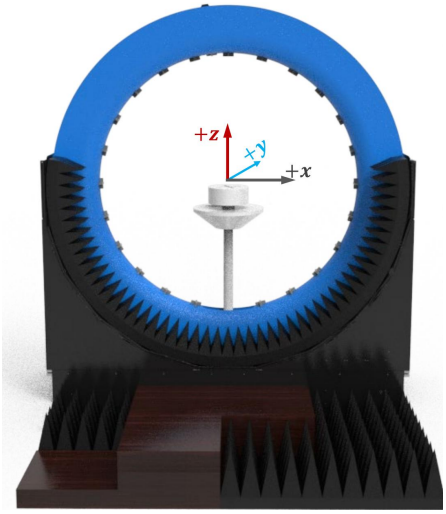

unit:mm

## 5. Test equipment/Test Equipment

Keysight/E5071C Network Analyzer

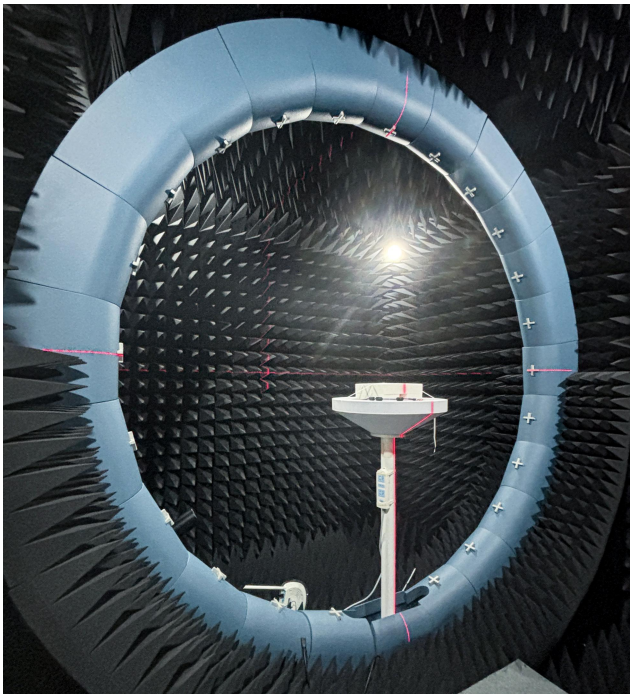
R&S/CMW500 Comprehensive tester

R&S/SMBV100B Signal Source




| DT-3500 Data Sheet / System Specifications | |
|---|---|
| **Specification:** | **Description** |
| Test Frequency / Test Frequency Range: | 400MHz-8.5GHz |
| System Size / System Dimension: | L*W*H=4*3.5*3.5m |
| Number of Probes: | 23 (Probe) + 1 (link) |
| Interval Angle / Sampling Clamping Foot: | 15º |
| Sampling Diameter / Sampling Diameter: | 2200mm |
| Carrying Capacity: | ≦40kg |

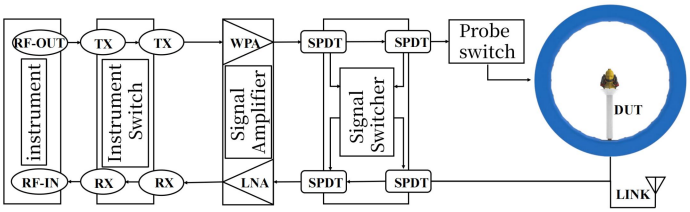
| Testing Capability / Testing Capacity | Description/Capability Description |
|---|---|
| Active measurement Active testing | **Capability/Test Metrics:**TRP, TIS, EIRP, EIS, etc. **Mode/Test standards:**2G/3G/4G/5G, Wi-Fi b/g/n/a/ac/ax, Bluetooth (BT), NB-IoT, Cat-M (eMTC), GPS/Beidou/GLONASS, ZigBee, LoRa (Non-Signaling), etc. |
| Passive measurement Passive testing | **Test category/Type:**Gain, Efficiency, 2D pattern, 3D pattern, Pattern roundness, Axial Ratio, ECC, Phase center, etc.**Polarization/Method:** Circular polarization, Linear polarization, Elliptical polarization |



# RF Link Diagram for the Multi-Probe Spherical Near-Field Testing System

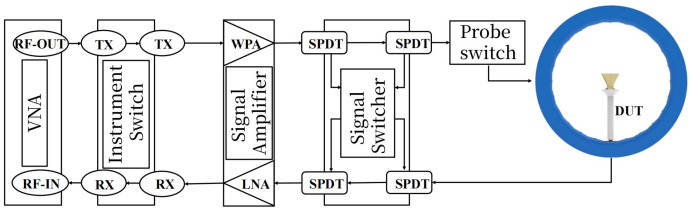
## RF Link Overview

Total RF Link Diagram



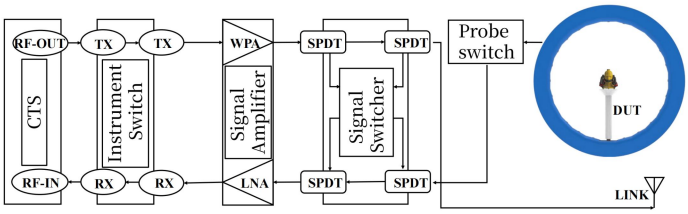

## RF Link of Passive measurement

Passive Test Link Diagram



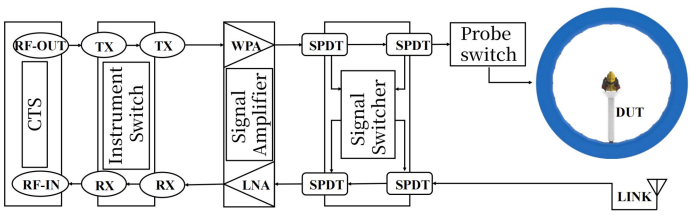

## RF Link Overview

Overall RF Link Diagram



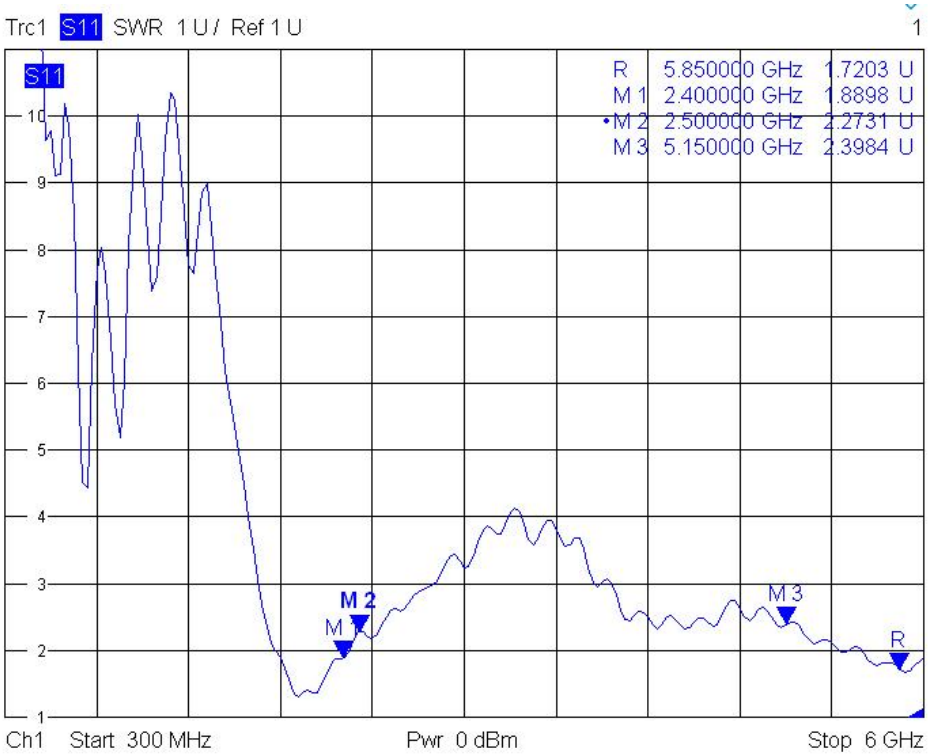

## RF Link of Passive measurement

Passive Test Link Diagram

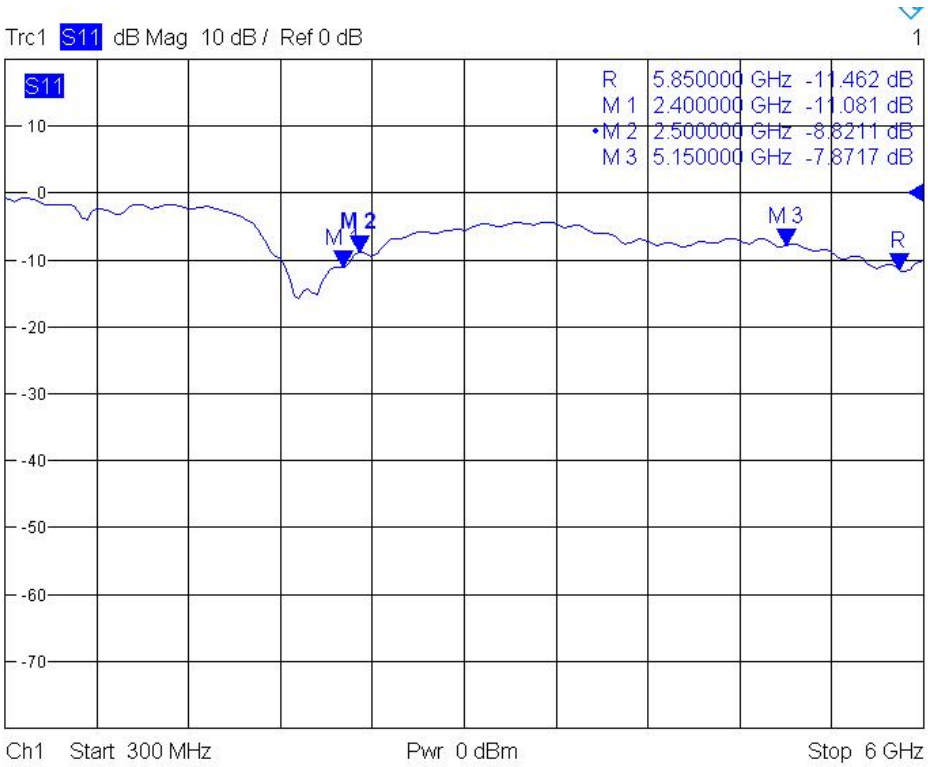


## 6. Performance Data/ Performance Data

### 6.1 Voltage Standing Wave Ratio / VSWR

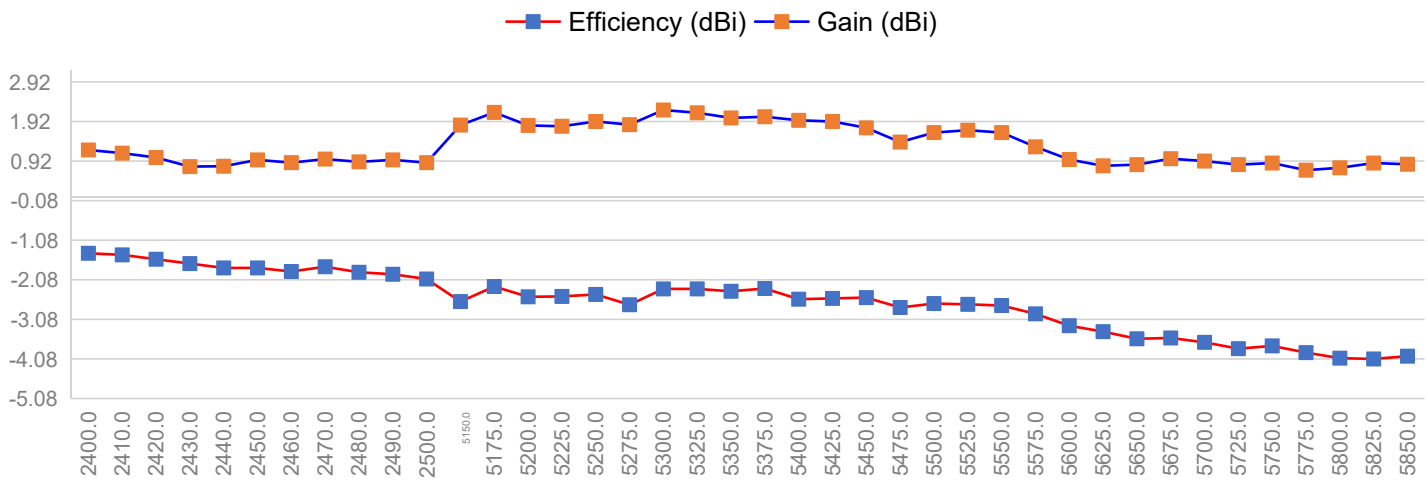



### 6.2 Return Loss/ Return Loss

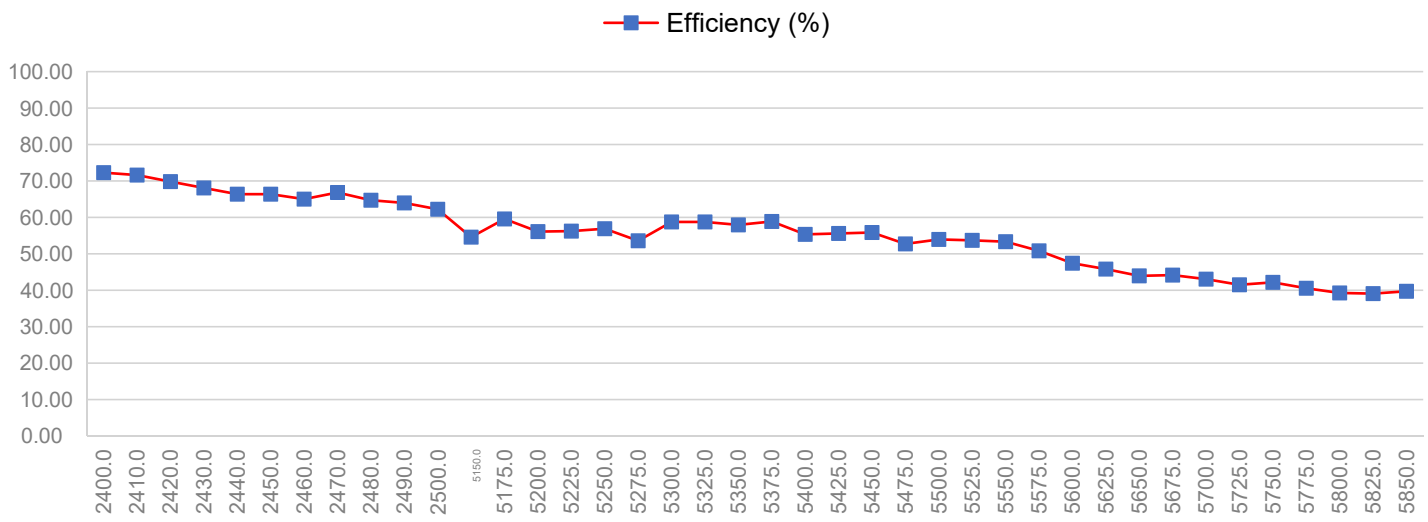


## 6. Performance Data/ Performance Data

### 6.3 Gain/ Gain




### 6.4 Efficiency/ Efficiency

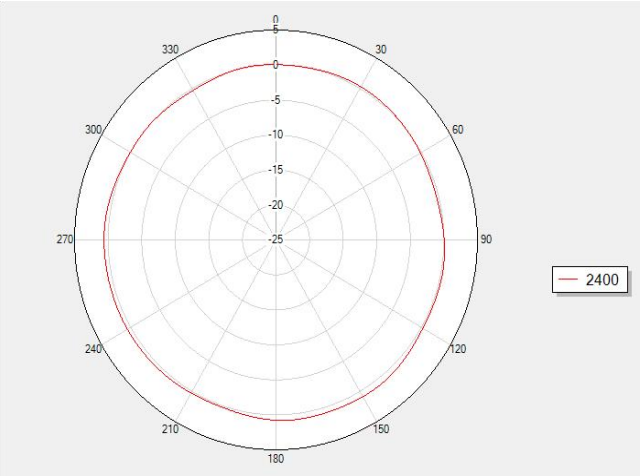


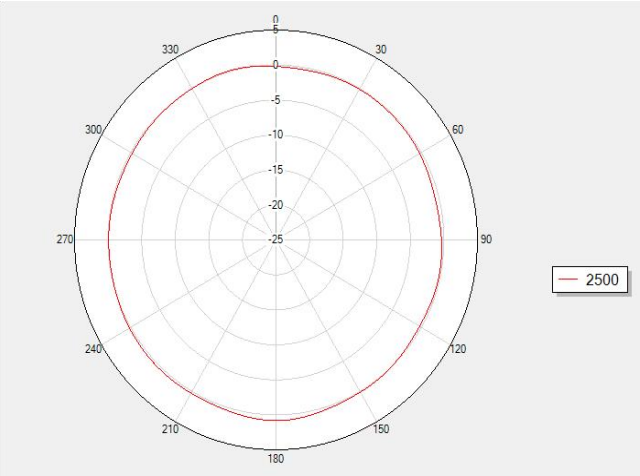

### 6.5 Antenna Gain and Efficiency

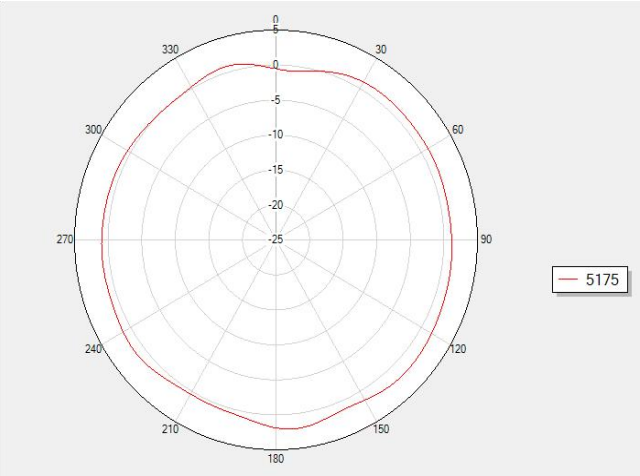
| Frequency / Frequency (MHz) | 2400-2500 | 5150-5500 | 5500-5850 |
|---|---|---|---|
| Maximum gain / Gain (dBi) | 1.2 | 1.7 | 1.7 |
| Efficiency (%) | 72.28 | 53.95 | 53.95 |

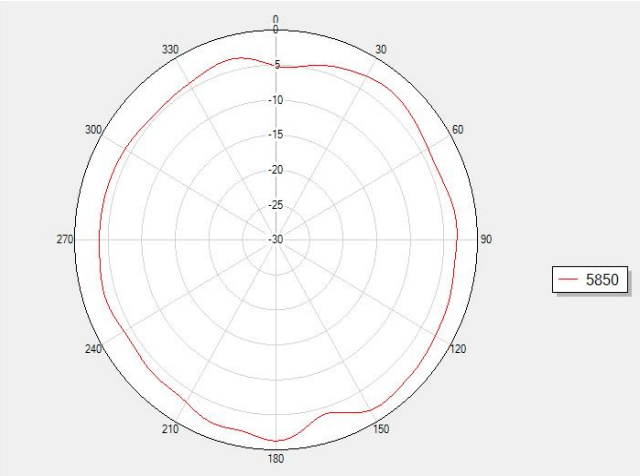
# 7. Radiation Patterns

7.1 2D **Radiation Pattern Diagram**/Radiation Patterns

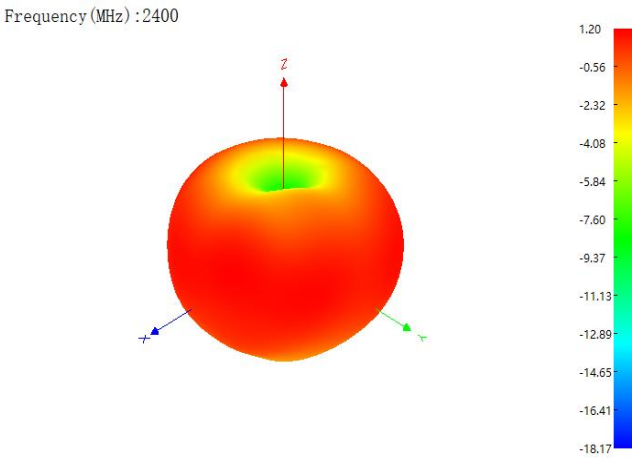


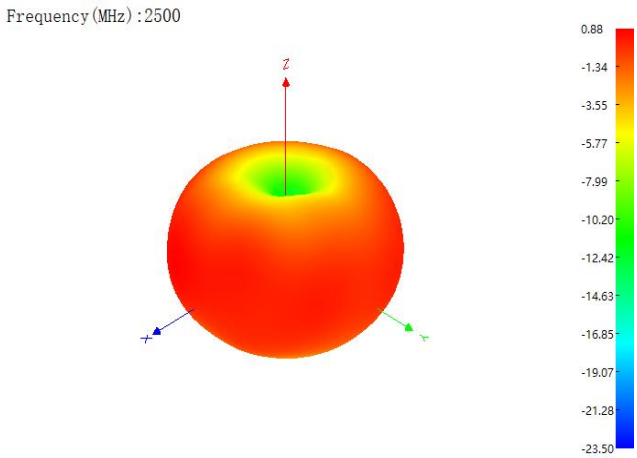



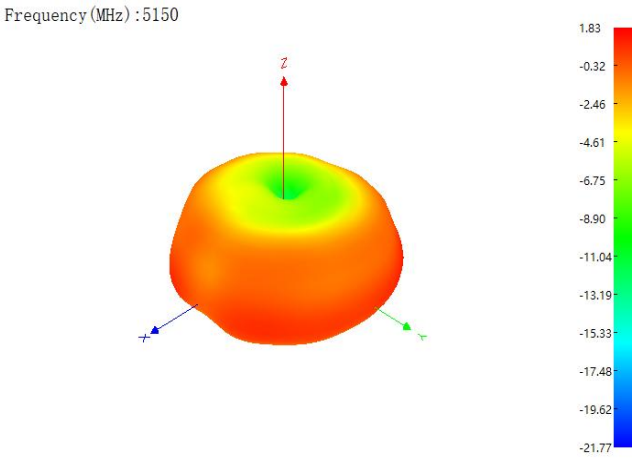



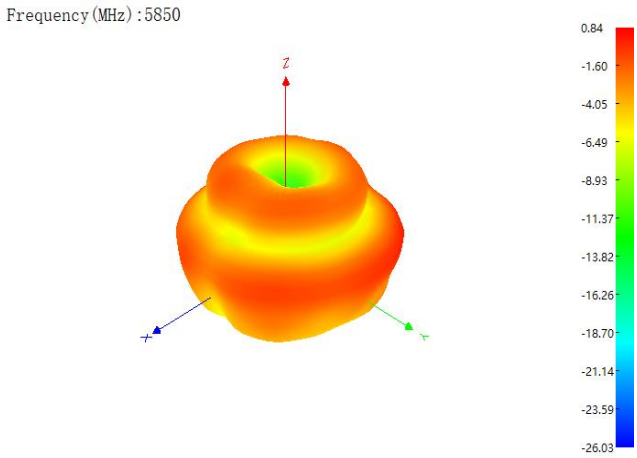



## 7.2 3D Radiation Pattern Diagram/3D Radiation Patterns



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