

Antenna Datasheet

433MHz Rubber Antenna

Model:

BW433JWX50-10WJ

Description:

433MHz Rubber Antenna with SMA Male Jack

Features:

433MHz Frequency Range

SMA Male Jack (Inner Thread, Inner Pin) Connector

Structure: Angled

360° Omnidirectional Radiation

Dimensions: 50mm x 10mm

Compliant with RoHS & REACH Regulations



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BW433JWX50-10WJ

Part Number Explanation

| | | |
|-------|------------|----------------|
| BW | Company | Bat Wireless |
| 433 | Frequency | 433MHz |
| J | Name | Rubber Antenna |
| W | Type | External |
| X | Constant | X |
| 50-10 | Dimensions | 50-10mm |
| W | Feature | Angled |
| J | Connector | SMA Male Jack |

Selection Table

| | | | | | | | |
|--------------|--------|--------|--------|--------|--------|-------|--------------|
| Connector | IPEX-1 | IPEX-2 | IPEX-3 | IPEX-4 | IPEX-5 | SMA | Customizable |
| Cable Length | 100 | 150 | 200 | 250 | 300 | 500 | Customizable |
| Cable Type | RG0.81 | RG1.13 | RG1.37 | RG174 | RG178 | RG316 | Customizable |

1. Description

Bat Wireless **BW433JWX50-10WJ** is a high-performance omnidirectional antenna with excellent penetration capability, ultra-long communication distance, strong environmental adaptability, small size and light weight. It adopts a high-quality plastic shell, with a non-foldable angled head, and has excellent signal receiving and transmitting capabilities, providing stable and reliable support for device connection. Its compact and lightweight rubber rod design makes it easy to install, transport and carry.

Typical Application Scenarios:

Industry 4.0: Real-time monitoring of CNC machine tools

Smart Medical: Surgical robot control

Intelligent Transportation: Monitoring of rail catenary

Energy IoT: Substation inspection robots

Bat Wireless provides customized services to optimize your equipment. We have a mature R&D team that can respond quickly to meet your needs. If you have any requirements, please contact our sales and FAE.



2. Specification

| Parameters | Typ. | Unites | Notes |
|--------------------------------------|---------------------------|--------------------|-------|
| Electrical Characteristics | | | |
| Antenna Type | Rubber Antenna | | |
| Frequency Range | 433 | MHz | |
| Input Impedence | 50 | Ω | |
| V.S.W.R | <2 | | |
| Gain | -3 | dBi | |
| Polarization Type | Vertical | | |
| Power Capacity | 50 | W | |
| Lightning Protection | - | | |
| DC Voltage | - | V | |
| Radiator | - | | |
| Mechanical Characteristics | | | |
| Dimensions | 50 x 10 | mm | |
| Connector Type | SMA-J Male (Customizable) | | |
| Cable Type | - | | |
| Cable Length | - | mm | |
| Mount way | Screw-on | | |
| Color | Black | | |
| Meterial | ABS | | |
| Weight | 6.86 | g | |
| Environmental Characteristics | | | |
| Waterproof Rating | - | | |
| ROHS Compliant | Compliant | | |
| Operating Temperature | -45~ +85 | $^{\circ}\text{C}$ | |
| Storage Temperature | -45~ +85 | $^{\circ}\text{C}$ | |

3. Product Picture



4. Mechanical Drawing

| PARTS DRAWING | | ROHS Compliant | | REV | PRODUCT NO. | DATE | NAME | DESCRIPTION |
|---------------|------|--------------------|--------------------------|-----|-------------|------|------|-------------|
| NO | Code | Name | Description | Qty | | | | |
| 1 | | Heat Shrink Tubing | 3.5*1.8MM | 1 | | | | |
| 2 | | Rubber Shell | 48*3.3MM Phosphor Bronze | 1 | | | | |
| 3 | | Spring | 48*3.3MM Phosphor Bronze | 1 | | | | |
| 4 | | Rubber Shell | Black | 1 | | | | |
| 1 | | SMA | Bent Male | 1 | | | | |

Requirements:

- The wire jacket shall be free from cuts or damage.
- 100% continuity testing shall be performed, and all products must pass.
- 100% full inspection is required, and all products must meet specific requirements.
- Eco-friendly manufacturing process shall be adopted, and finished products must comply with ROHS requirements.
- Unless otherwise specified, general tolerances shall apply.

| | | | |
|-----------------------|------------|------------------|--|
| Frequency | 433MHz | ANGLE PROJECTION | |
| Gain | -3DBi | | |
| VSWR | <2 | | |
| Polarization | Vertical | | |
| Impedance | 50Ω | | |
| Operating Temperature | -45°C~85°C | | |
| Storage Temperature | -45°C~85°C | | |

| | | | |
|---------------------------------------|--------|--------|-----|
| PRODUCT NAME | | | |
| Rubber Antenna-433MHz-SMA Male-L=50MM | | | |
| UNIT | MM | SIZE | 1:3 |
| PAGE | 1 OF 1 | FORMMT | A4 |

5. Test Equipment



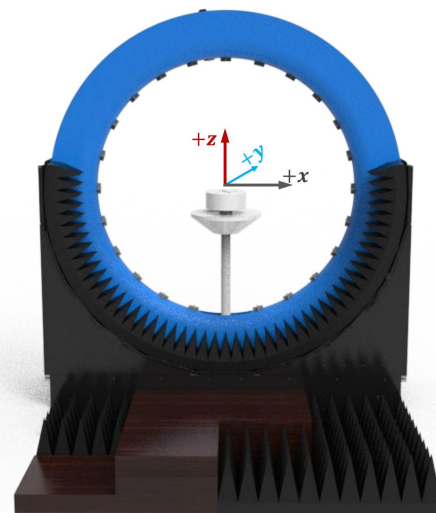
Keysight/E5071C Network Analyzer



R&S/CMW500 Comprehensive Tester



R&S/SMBV100B Signal Generator



DT-3500 Datasheet

Specification:

| Specification: | Description |
|-------------------|-----------------------|
| Test Frequency | 400MHz-8.5GHz |
| System Size | L*W*H=4*3.5*3.5m |
| Number of Probes | 23 (Probe) + 1 (link) |
| Interval Angle | 15° |
| Sampling Diameter | 2200mm |
| Carring Capacity | ≤40kg |

Testing Capability

Description

Active measurement

Capability : TRP、TIS、EIRP、EIS,. etc
Mode : 2G/3G/4G/5G、Wi-Fi b/g/n/a/ac/ax、BT、NB-IOT、Cat-M (eMTC)、GPS/BEIDOU/GLONASS、ZigBee、LoRa(Non-Signaling),.etc

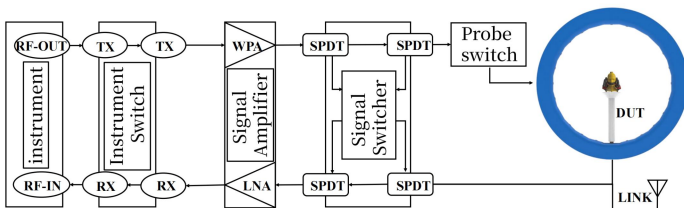
Passive measurement

Test category : Gain、Efficiency、2D pattern、3D pattern、Pattern roundness、Axial Ratio、ECC,Phase center,. etc
Polarization : Circular polarization, linear polarization, elliptical polarization

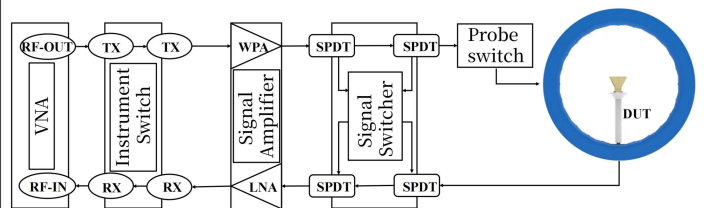


RF Link diaram of multi probe spherical near-field testing system

RF Link Overview



RF Link of Passive measurement



RF Link Overview

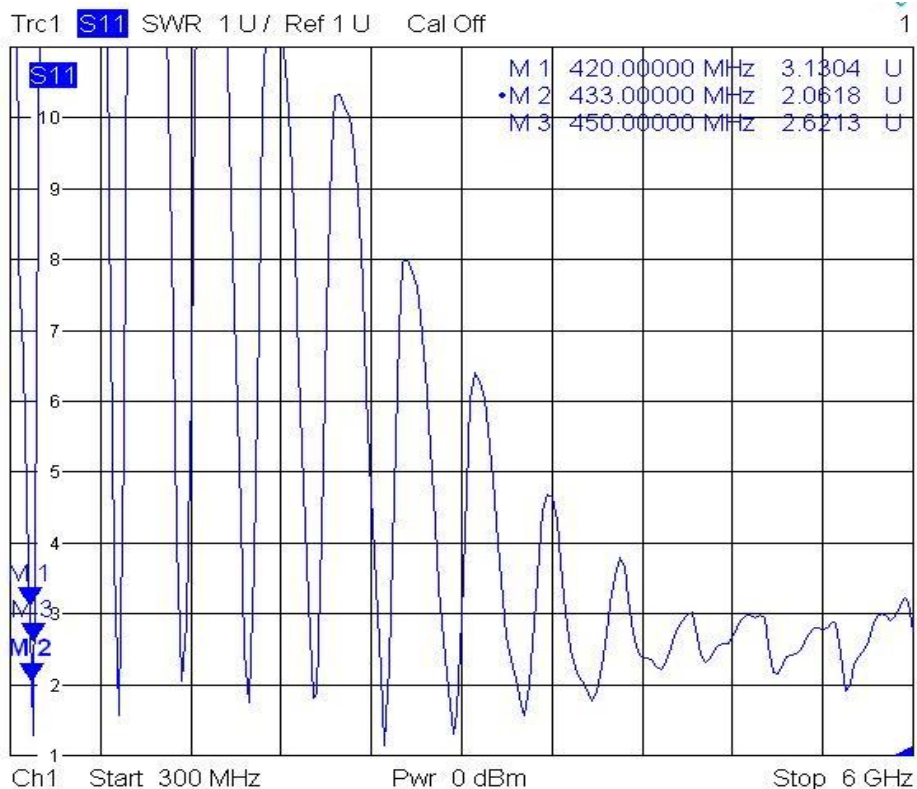


RF Link of Passive measurement

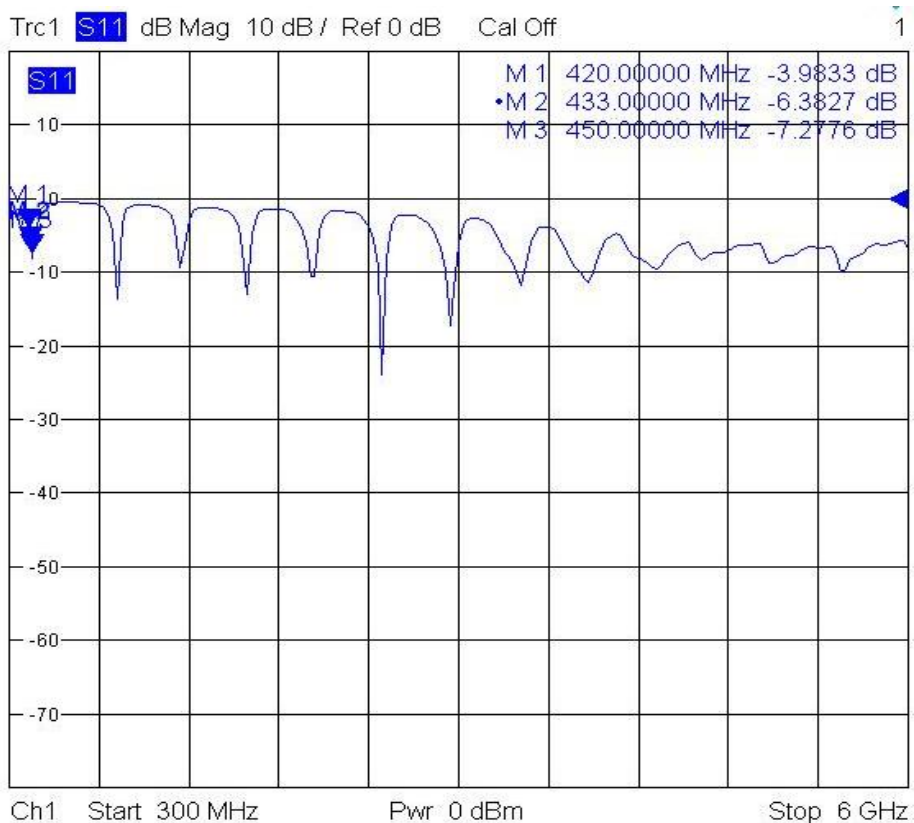


6. Performance Data

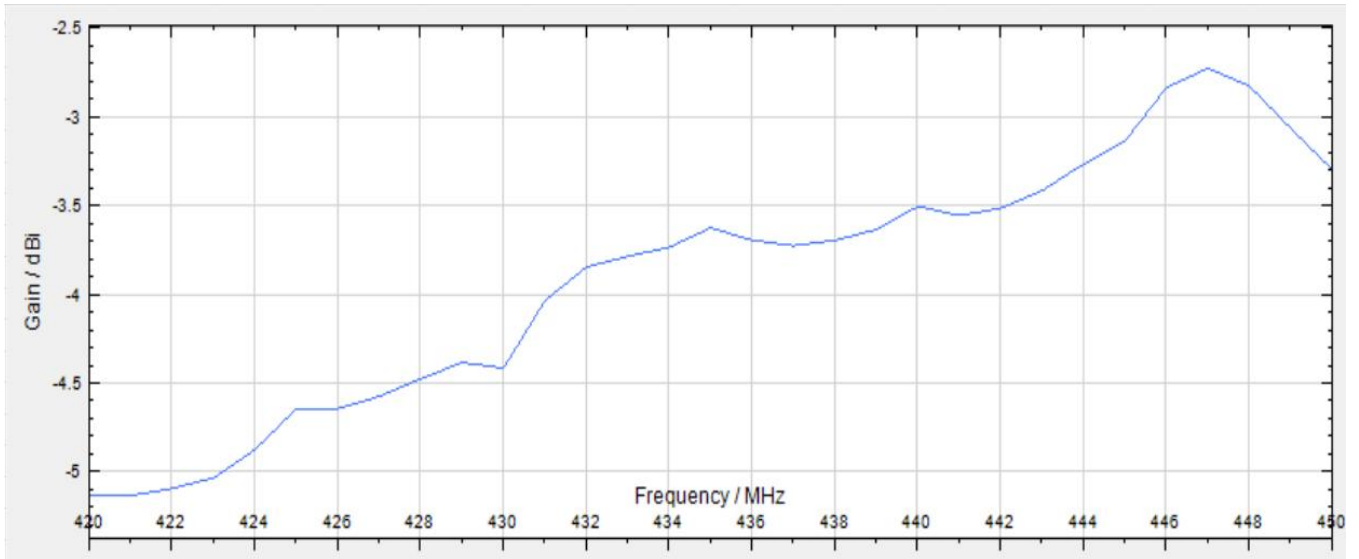
6.1 VSWR



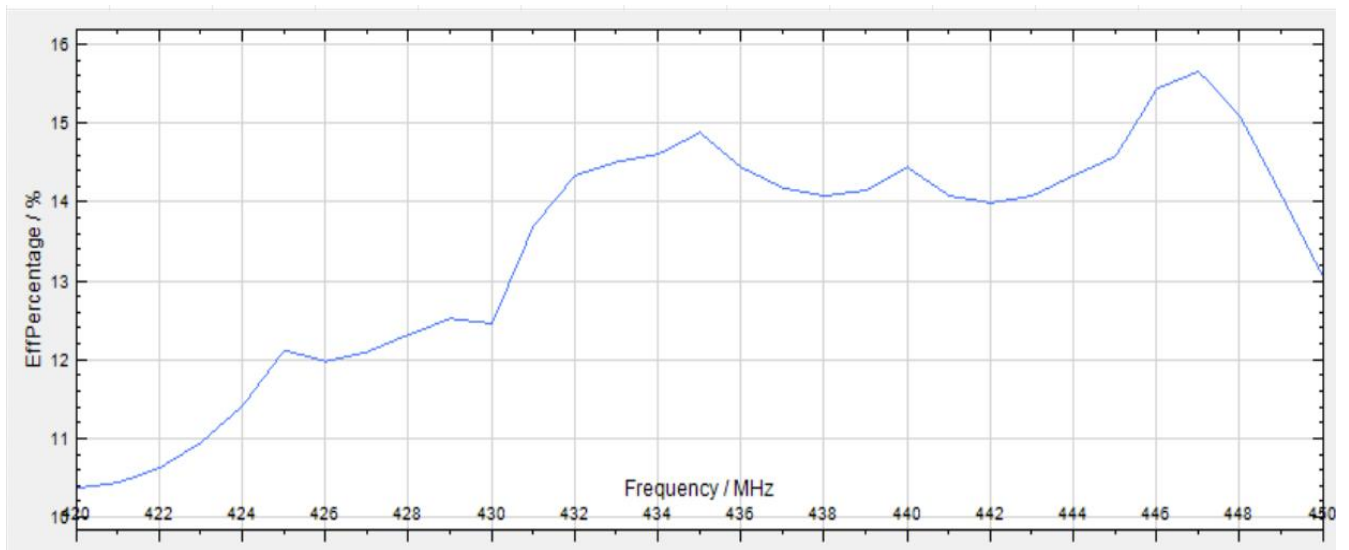
6.2 Return Loss



6. Performance Data



6.4 Efficiency



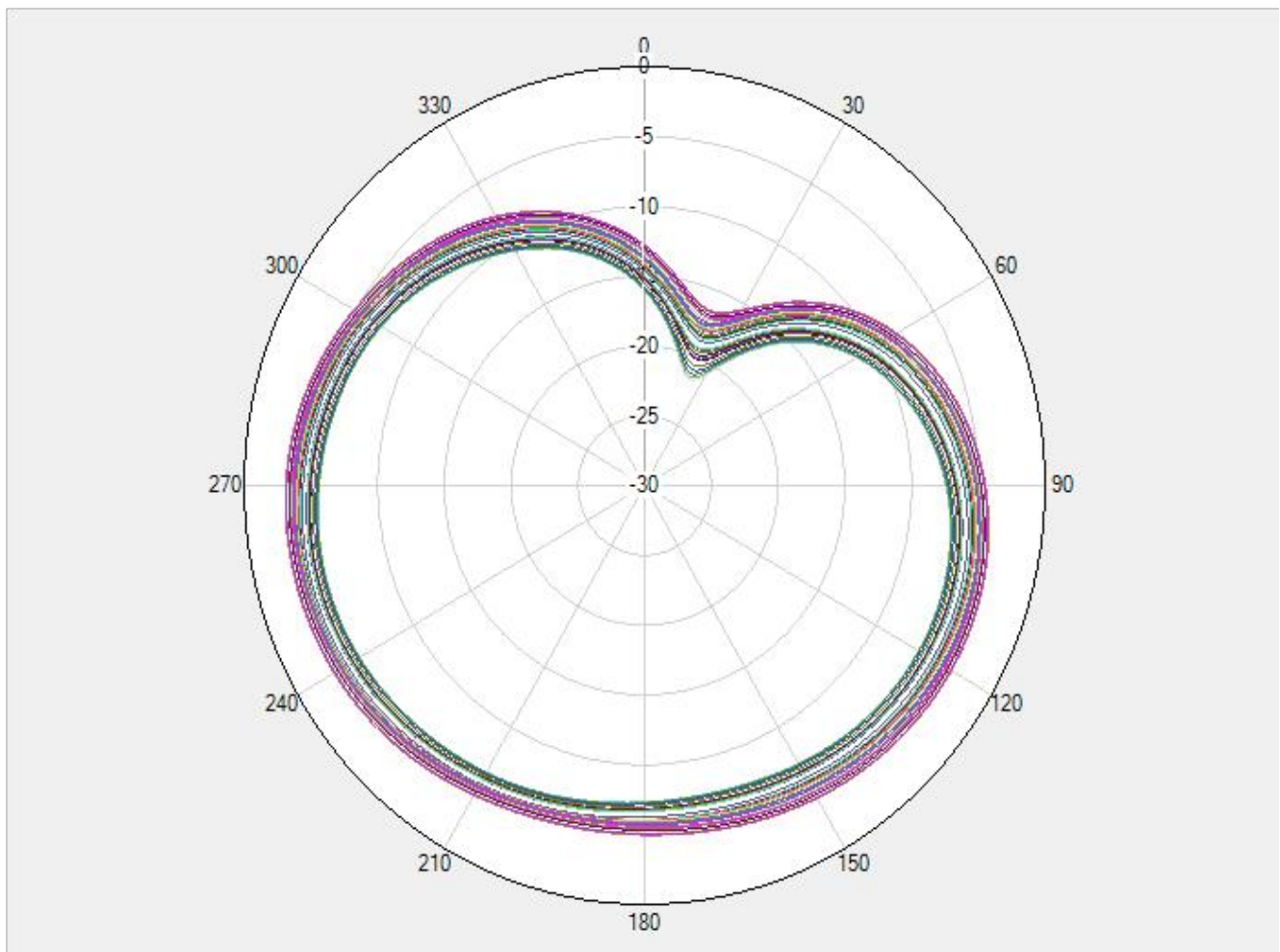
6.5 Gain and Efficiency

| Frequency (MHz) | 420 | 433 | 450 |
|-----------------|-------|-------|-------|
| Gain (dBi) | -5.13 | -3.78 | -3.29 |
| Efficiency (%) | 10.38 | 14.52 | 13.06 |



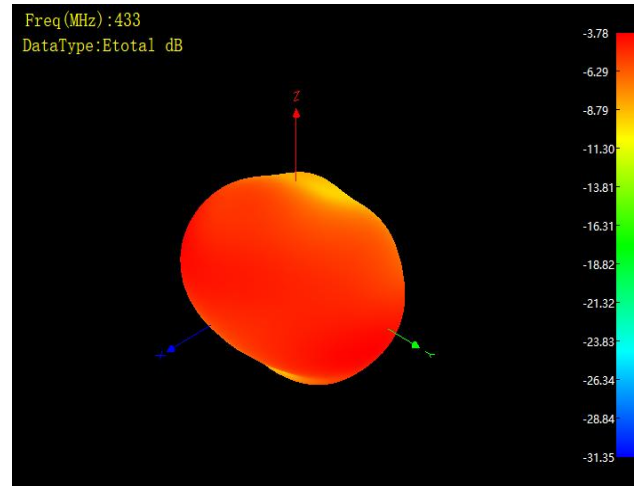
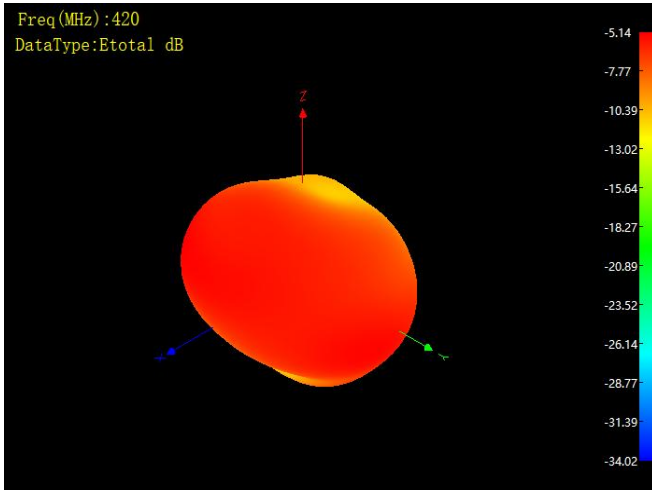
7. Radiation Patterns

7.1 2 D Radiation Patterns

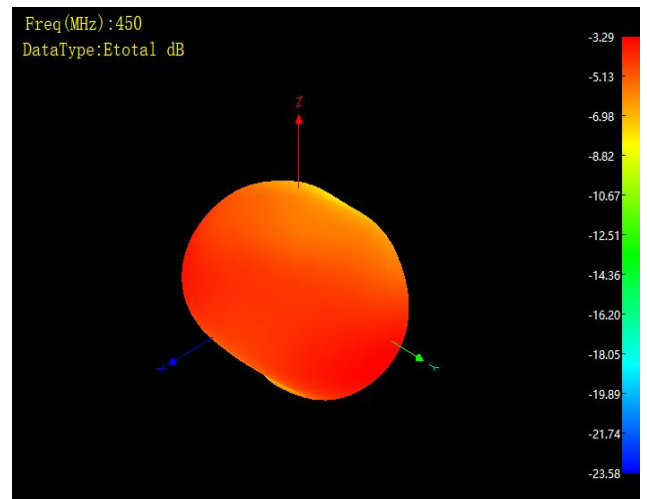
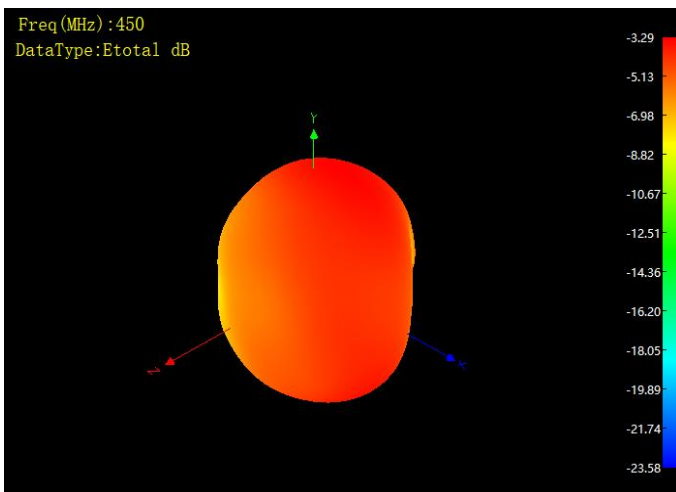




7.2 3D Radiation Patterns—420MHz、433MHz



7.2 3D Radiation Patterns—450MHz





DECLARATION:

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