



# Antenna Specifications Antenna Datasheet

## 868MHzGlue stick antenna

model:

BW868JWX105-10KJ

describe:

868MHzGlue stick antennaSMAInternal screw and internal needle interface

characteristic:

868MHzfrequency band

SMAInternal screw and internal needle interface

Structure: Foldable

360°Omnidirectional radiation

size:105mm xø10mm conform

toRoHS & REACHRegulation



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In the spirit of providing the best service to our users, Shenzhen Bat Wireless Technology Co., Ltd. (hereinafter referred to as "Bat Wireless") strives to provide users with detailed and accurate product information in this manual. However, due to the timeliness of the content in this manual, Bat Wireless cannot guarantee its currency and applicability at all times. Bat Wireless reserves the right to update the content of this manual without prior notice. To obtain the latest version of this information, please regularly visit the Bat Wireless official website or contact Bat Wireless staff. Thank you for your understanding and support!



BW868JWX105-10KJ

| Part Number Description |                           |                                                        |
|-------------------------|---------------------------|--------------------------------------------------------|
| BW                      | company /Company          | Bat Wireless /Bat Wireless                             |
| 868                     | Frequency band /Frequency | 868MHz / 868MHz                                        |
| J                       | Name /Name                | glue stick /Rubber Antenna                             |
| W                       | type /Type                | External /External                                     |
| X                       | constant /Constant        | X / X                                                  |
| 105-10                  | size /Dimensions          | 105x10mm / 105x10mm                                    |
| K                       | Features /Feature         | Foldable /Foldable                                     |
| J                       | Interface /Connector      | SMAInternal screw and internal needle /SMA Female Jack |

1. Product Description/Description



Bat WirelessBW868JWX105-10KJThis high-performance omnidirectional antenna offers exceptional penetration, ultra-long communication range, and strong environmental adaptability. Made of a foldable, premium plastic housing, it boasts excellent signal reception and transmission capabilities, providing stable and reliable support for device connections. Its compact and lightweight rubber stick design makes it easy to install and transport.

Classic application scenarios:

industry4.0: Real-time monitoring of CNC machine tools

Smart Healthcare: Surgical Robot Control

Intelligent Transportation: Rail Contact Network Monitoring

Energy Internet of Things: Substation Inspection Robot

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 andFAE.



## 2. Product Specifications/Specification

| Parameters /Parameters                                       | Typical value /Typ.                               | Unit /Unites       | Remark /Notes |
|--------------------------------------------------------------|---------------------------------------------------|--------------------|---------------|
| Electrical characteristics /Electrical Characteristics       |                                                   |                    |               |
| type /Antenna Type                                           | Glue stick antenna /Rubber Antenna                |                    |               |
| Frequency /Frequency Range                                   | 868                                               | MHz                |               |
| Input impedance /Input Impendence                            | 50                                                | $\Omega$           |               |
| Standing wave ratio /VSWR                                    | <5                                                |                    |               |
| Gain /Gain                                                   | - 1.2                                             | dBi                |               |
| Polarization mode /Polarization Type                         | vertical /Vertical                                |                    |               |
| Power capacity /Power Capacity                               | 50                                                | W                  |               |
| Lightning protection /Lightning Protection                   | -                                                 |                    |               |
| Working voltage /DC Voltage                                  | -                                                 | V                  |               |
| Radiator /Radiator                                           | -                                                 |                    |               |
| Mechanical properties /Mechanical Characteristics            |                                                   |                    |               |
| size /Dimensions                                             | 105 x $\phi$ 10                                   | mm                 |               |
| Interface type /Connector Type                               | SMAInternal screw and internal needle /SMA-J Male |                    |               |
| Cable Model /Cable Type                                      | -                                                 |                    |               |
| Cable length /Cable Length                                   | -                                                 | mm                 |               |
| Installation method /Mount way                               | Twist                                             |                    |               |
| color /Color                                                 | black                                             |                    |               |
| Material /Material                                           | ABS                                               |                    |               |
| weight /Weight                                               | 6.6                                               | g                  |               |
| Environmental characteristics /Environmental Characteristics |                                                   |                    |               |
| Protection level /Waterproof Rating                          | -                                                 |                    |               |
| ROHSstandard /ROHS Complaint                                 | conform to                                        |                    |               |
| Operating temperature /Operating Temperature                 | -45~+85                                           | $^{\circ}\text{C}$ |               |
| Storage temperature /Storage Temperature                     | -45~+85                                           | $^{\circ}\text{C}$ |               |



3.

**Actual picture/Dimensions**



| PARTS DRAWING 零件图 |     | ROHS Compliant      |                                  | REV     | PRODUCT NO.                                                                                                                                                                                                                                                                                                                                                                                                                   | DATE | NAME | DESCRIPTION |
|-------------------|-----|---------------------|----------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-------------|
| NO                |     | Name                | Description                      | Qty     |                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |             |
|                   |     |                     |                                  |         |                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |             |
| 7                 | SMA | 内螺公针 黑色 锌合金 小5      | 工作频率<br>(Frequency Range)        | 868MHz  | <div><div><div>18±2</div><div>⑤热缩管</div><div>90°</div><div>10MM</div><div>⑦公针</div></div><div><div>②</div><div>③</div><div>④</div></div><div>87.5±2MM</div><div>105±2MM</div></div>                                                                                                                                                                                                                                           |      |      |             |
| 6                 | 弹簧  | 32*5MM 黄铜 GSM       | 阻抗<br>(Z)                        | -1.2dbi |                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |             |
| 5                 | 热缩管 | 2.0黑色热缩管 L=18MM     | 对比波比<br>(VSWR)                   | 对比波形    |                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |             |
| 4                 | 下圆  | 12*9.3MM 黑色下圆       | 极化方式<br>(Polarization)           | 垂直      |                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |             |
| 3                 | 上圆  | 20*9.3MM 黑色上圆       | 特性阻抗<br>(Impedance)              | 50 Ω    |                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |             |
| 2                 | 胶杆  | 67.4*9.3MM 黑色胶管 20B | 工作温度: -45℃~85℃<br>储存温度: -45℃~85℃ |         | <div><div>公差</div><div>ANGLE PROJECTION</div><div>GB/T 1424.1-2008</div><div>50-100: ±2.00</div><div>25-50: ±0.20</div><div>10-25: ±0.15</div><div>1-10: ±0.1</div></div> <div><div>产品名称 (PRODUCT NAME)</div><div>胶棒-868MHz-SMA公头公针-178线-双锡-棕色-L=105MM</div><div><div>产品料号</div><div>单位 (UNIT)</div><div>数量 (PAGE)</div><div>1 OF 1</div><div>比例 (SIZE)</div><div>1.3</div><div>精度 (TOLERANCE)</div><div>A4</div></div></div> |      |      |             |
| 1                 | 线材  | 178线 双锡 棕色 L=52MM   |                                  |         |                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |             |

要求

1. 线材外皮无破皮、损伤。

2. 成品须100%测试导通 OK。

3. 成品须100%全检OK。

4. 采用环保制程, 成品符合ROHS要求。

5. 未注公差请以一般公差为准。



## 5. Test equipment/Test Equipment



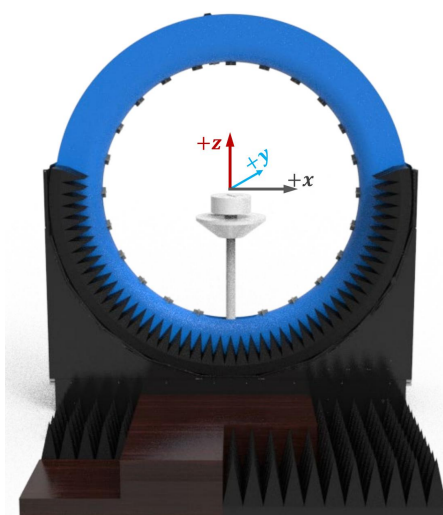
Keysight/E5071C Network Analyzer



R&S/CMW500 Comprehensive tester



R&S/SMBV100B Signal Source



### DT-3500 Datasheet / System Specifications

| Specification:                         | Description           |
|----------------------------------------|-----------------------|
| Test Frequency /Test frequency domain: | 400MHz-8.5GMHz        |
| System Size /System size:              | L*W*H=4*3.5*3.5m      |
| Number of Probes /Number of probes:    | 23 (Probe) + 1 (link) |
| Interval Angle /Sampling clamp:        | 15°                   |
| Sampling Diameter /Sampling diameter:  | 2200mm                |
| Carring Capacity /Carrying capacity:   | ≤40kg                 |

### Testing CapabilityTesting capabilities

### Description /Ability Description

#### Active measurement

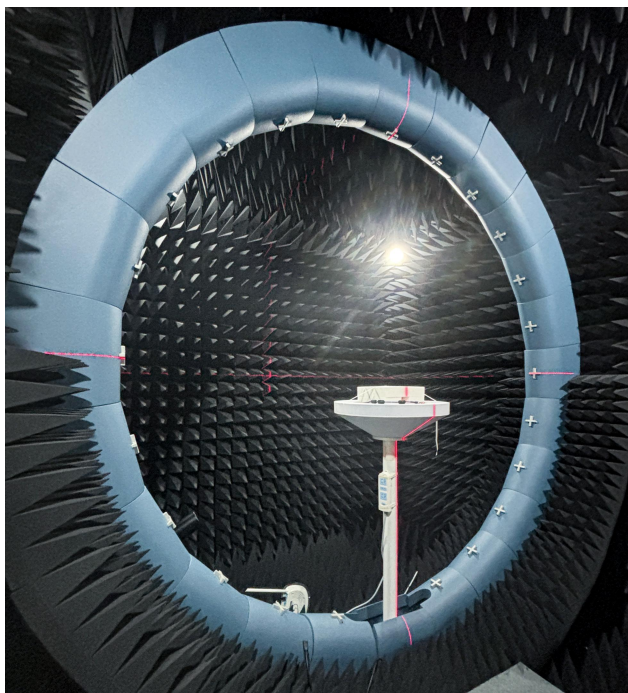
Active testing

**Capability /Test indicators:**TRP、TIS、EIRP、EIS, etc  
**Mode /Test format:**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

Passive testing

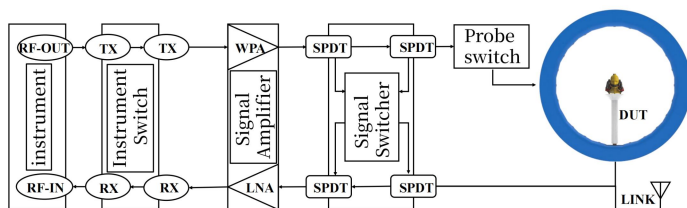
**Test category /Test Type:**Gain、Efficiency、2D pattern、3D pattern、Pattern roundness、Axial Ratio、ECC、Phase center,. etc  
**Polarization /**  
**Polarization:**Circular polarization, linear polarization, elliptical polarization



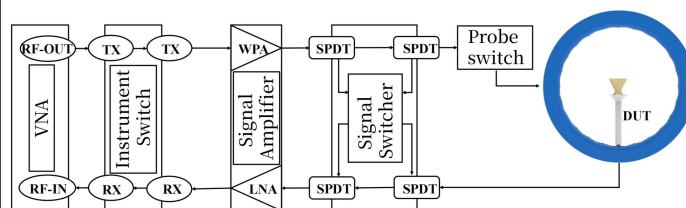
## RF Link diagram of multi probe spherical near-field testing system

RF link diagram of multi-probe spherical near-field test system

RF Link Overview  
Total RF chain diagram

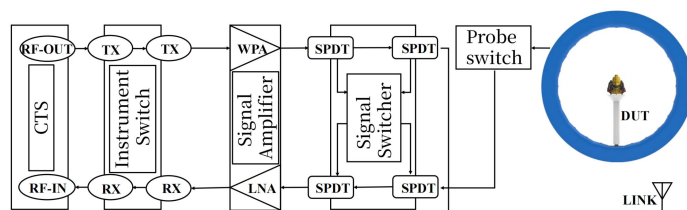


RF Link Overview  
Passive test link diagram



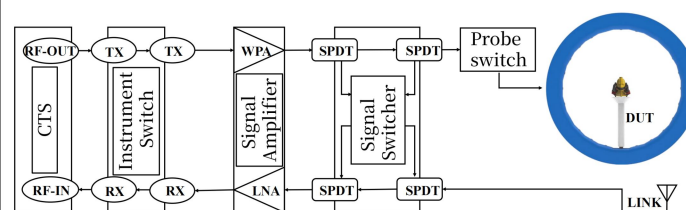
RF Link Overview

Total RF chain diagram



RF Link of Passive Measurement

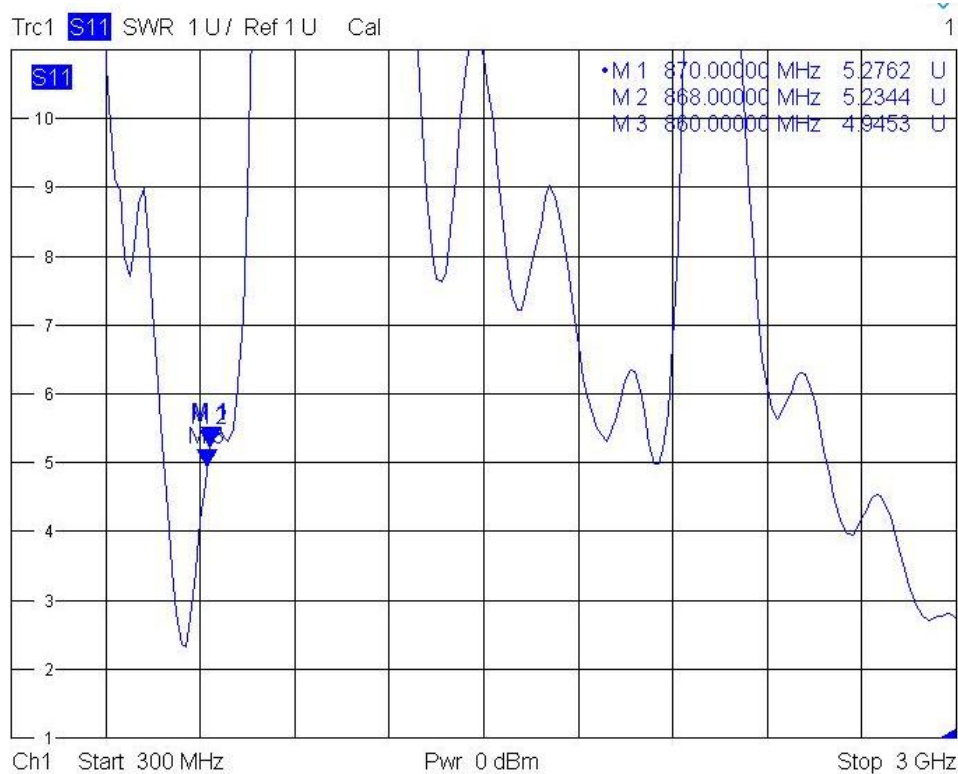
Passive test link diagram



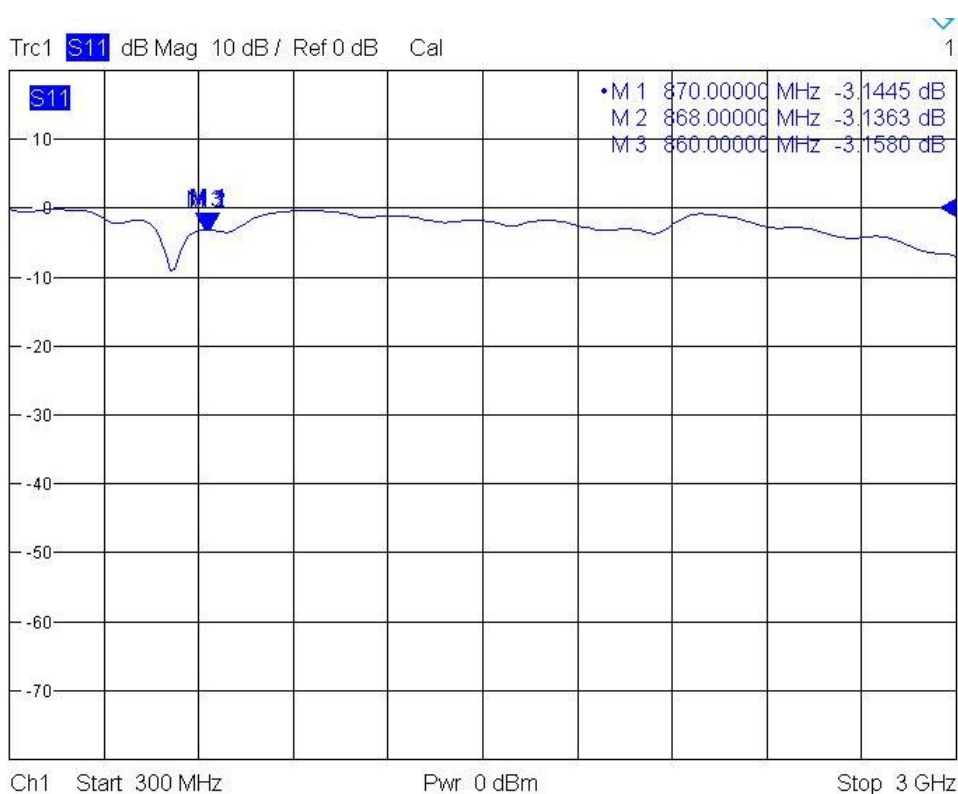


## 6. Performance data/Performance Data

### 6.1 VSWR/VSWR



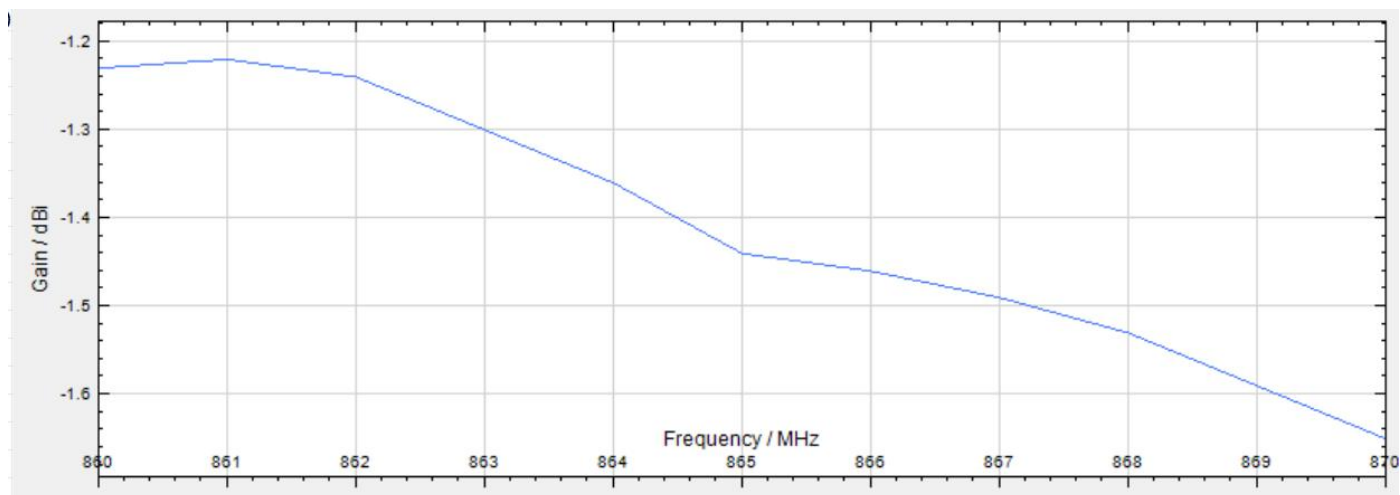
### 6.2 Return loss/Return Loss



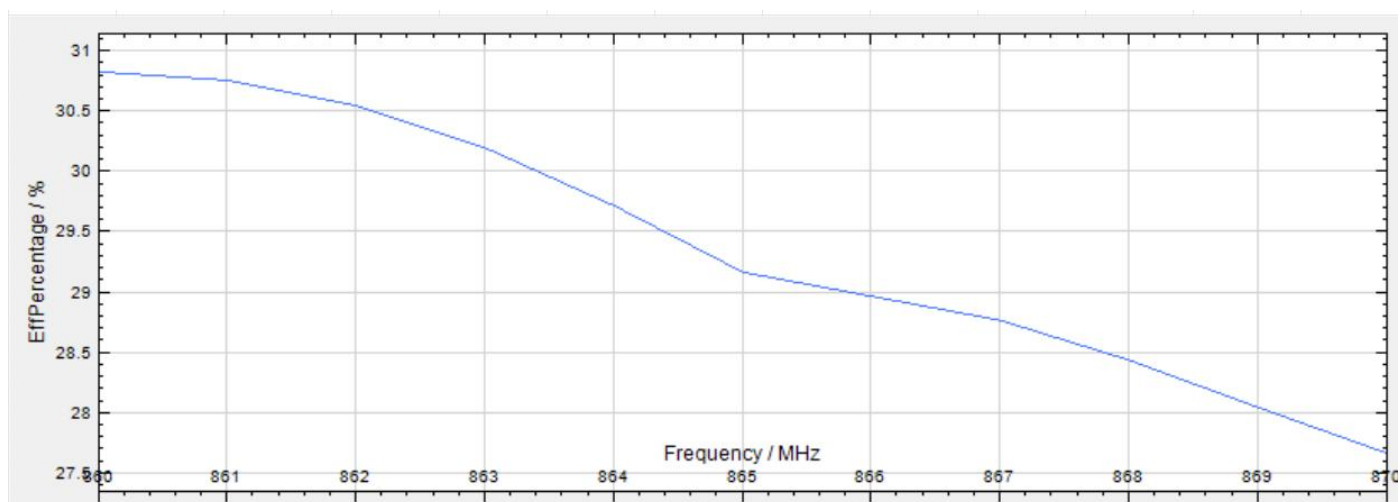


## 6. Performance data/Performance Data

### 6.3 Gain/Gain



### 6.4 efficiency/Efficiency



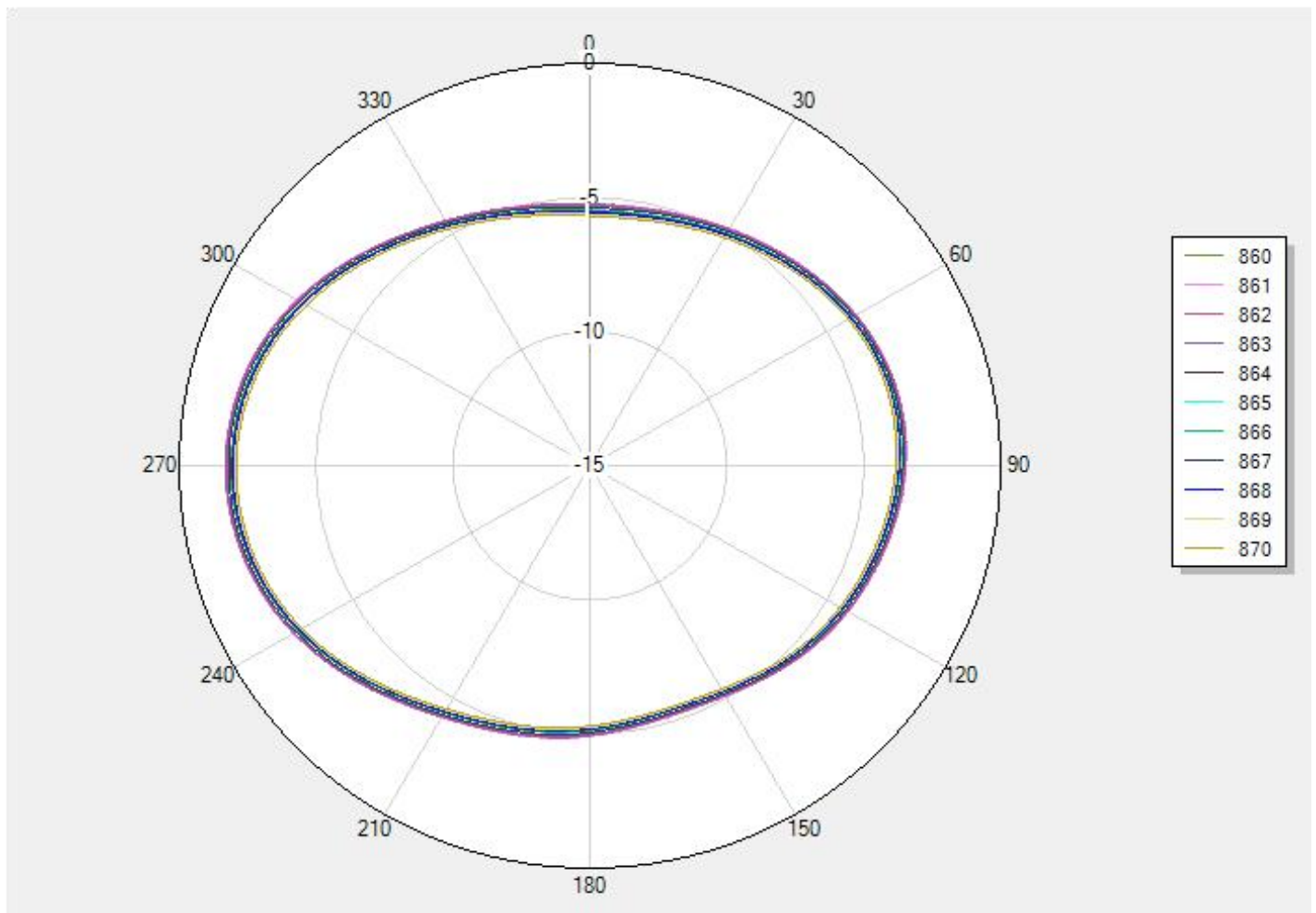
### 6.5 Antenna Gain and Efficiency

| Frequency /Frequency (MHz) | 860    | 868    | 870    |
|----------------------------|--------|--------|--------|
| Maximum gain /Gain (dBi)   | - 1.23 | - 1.53 | - 1.65 |
| efficiency /Efficiency (%) | 30.83  | 28.44  | 27.67  |



## 7. Radiation pattern/Radiation Patterns

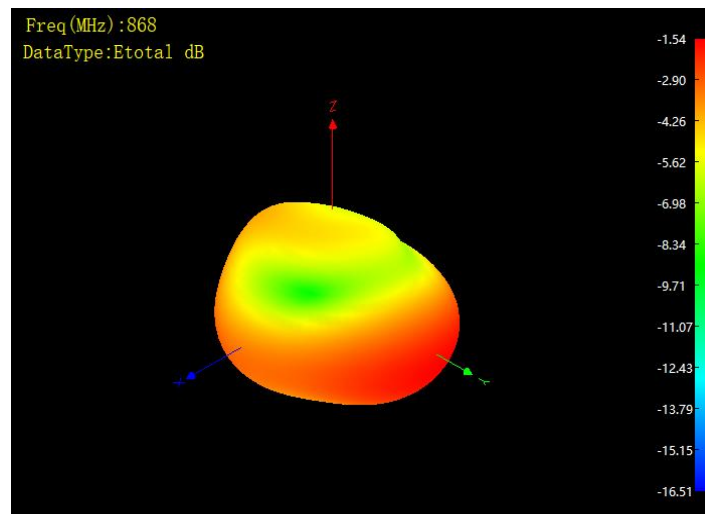
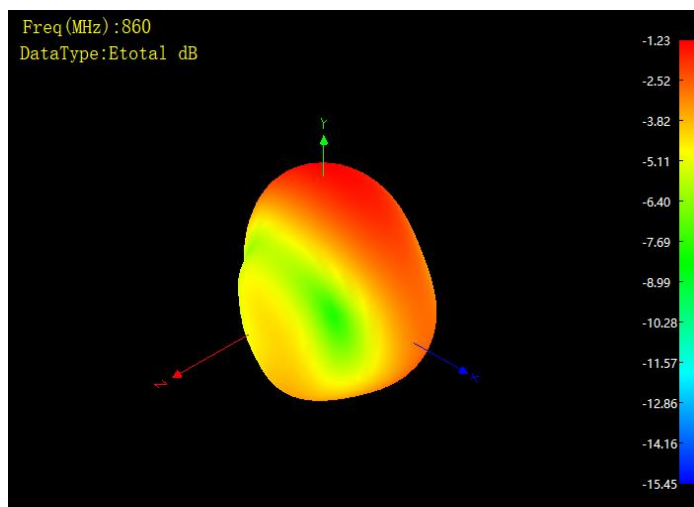
### 7.1 2DRadiation pattern diagram/Radiation Patterns





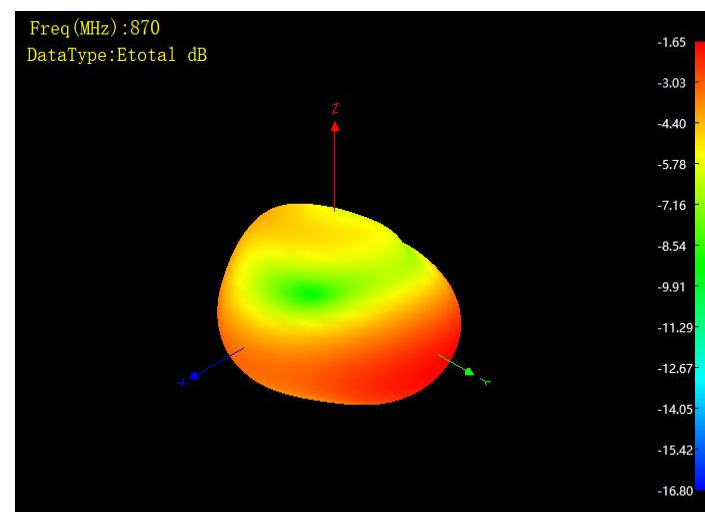
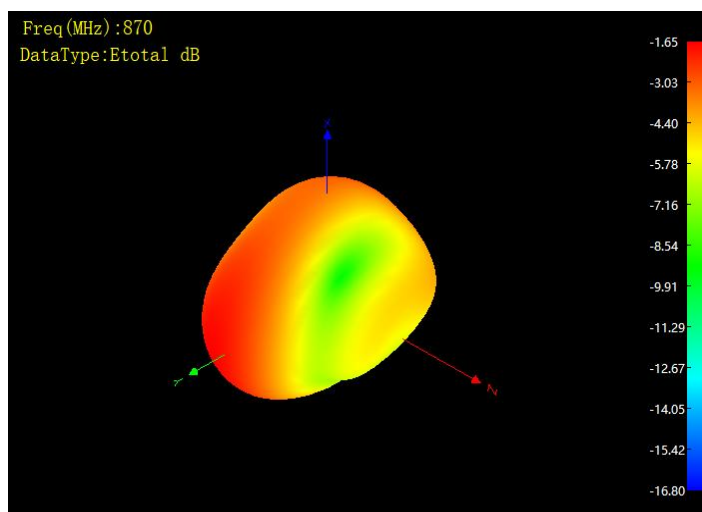
## 7.2

## 3DRadiation pattern diagram/3D Radiation Patterns—860MHz、 868MHz



## 7.3

## 3DRadiation pattern diagram/3D Radiation Patterns—870MHz





| Documentation/Documentation |                   |
|-----------------------------|-------------------|
| Version:                    | April-14-2025-A01 |
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| author:                     | Carly             |

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