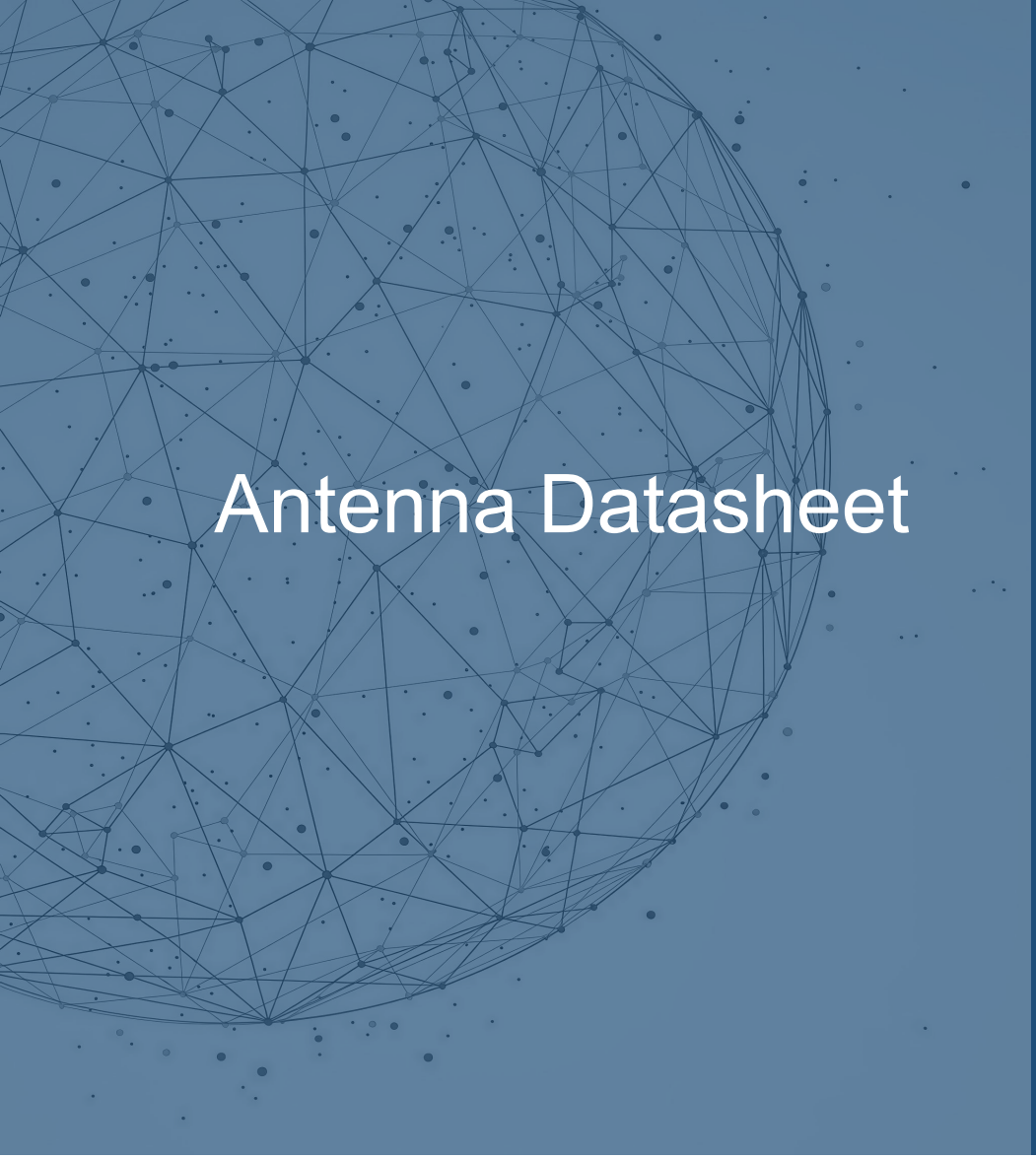

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# Antenna Datasheet

## Passive Ceramic Antenna

Model:

BWGNSCNX18-18W2

Description:

BeiDou/GPS Passive Ceramic Antenna

Features:

1575±5MHz Frequency Range

1561±5MHz Frequency Range

360º Omnidirectional Radiation

Dimensions: 18mm x 18mm x 2mm

Compliant with RoHS & REACH Regulations

# Contents

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# BWGNSCNX18-18W2

## Part Number Explanation

| | | |
|---|---|---|
| BW | Company | Bat Wireless |
| GNS | Frequency | GNSS / GNSS |
| C | Name | Ceramic Antenna |
| N | Type | Internal |
| X | Constant | X |
| 18-18 | Dimensions | 18-18mm |
| W | Type | Passive Antenna |
| 2 | Thickness | 2mm |

## 1. Description

Bat Wireless BWGNSCNX18-18W2 is a ceramic antenna, operating in the 1575 MHz and 1561 MHz frequency bands. It adopts a special ceramic dielectric material to reduce antenna size while maintaining good performance, featuring low dielectric loss and high radiation efficiency. With low loss and high stability, the ceramic dielectric minimizes signal attenuation and ensures excellent temperature stability, making it suitable for in-vehicle, outdoor, and other harsh environments, as well as for low-power applications.

The right-hand circular polarization design matches the polarization mode of BeiDou satellite signals, providing strong anti-multipath interference capability and improving positioning accuracy. It is easy to integrate, typically featuring an ANT connection pin and a ground pin for convenient soldering or modular design.

Classic Application Scenarios:

Automotive and Transportation: Vehicle navigation systems, commercial fleet management, intelligent transportation facilities

Consumer Electronics and Portable Devices: Smartphones/tablets, outdoor sports devices, shared-economy devices

IoT and Asset Tracking: Logistics tracking, agricultural IoT

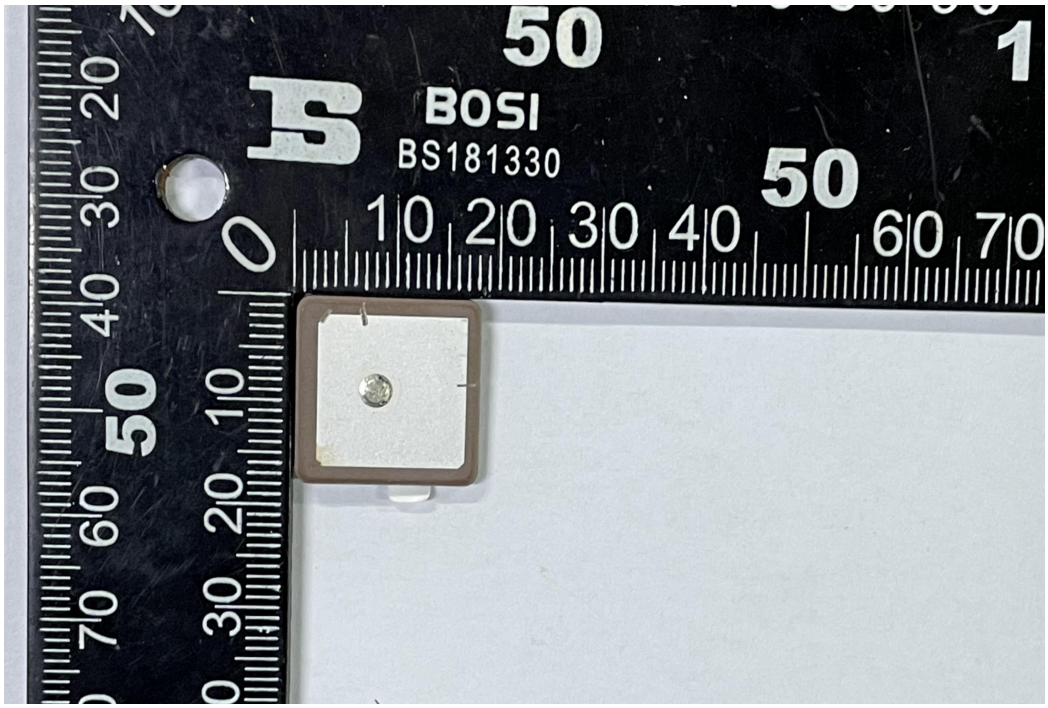
Aerospace and Defense: UAVs, satellite communication terminals, military equipment

Bat Wireless provides customized services to optimize your equipment. We have a mature R&D team that can respon d 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 | Ceramic Antenna | | |
| Frequency Range | 1575±5，1561±5 | MHz | |
| Input Impendence | 50 | Ω | |
| V.S.W.R | <2 | | |
| Gain | 1 | dBi | |
| Polarization Type | RHCP | | |
| Power Capacity | 50 | W | |
| Lightning Protection | - | | |
| DC Voltage | - | V | |
| Radiator | - | | |
| **Mechanical Characteristics** | | | |
| Dimensions | 18 x 18 x 2 | mm | |
| Connector Type | - | | |
| Cable Type | - | | |
| Cable Length | - | mm | |
| Mount way | - | | |
| Color | Sliver White | | |
| Meterial | Ceramic | | |
| Weight | 4.72 | g | |
| **Environmental Characteristics** | | | |
| Waterproof Rating | - | | |
| ROHS Complaint | Compliant | | |
| Operating Temperature | -45~ +85 | ℃ | |
| Storage Temperature | -45~ +85 | ℃ | |

## 3. Product Picture



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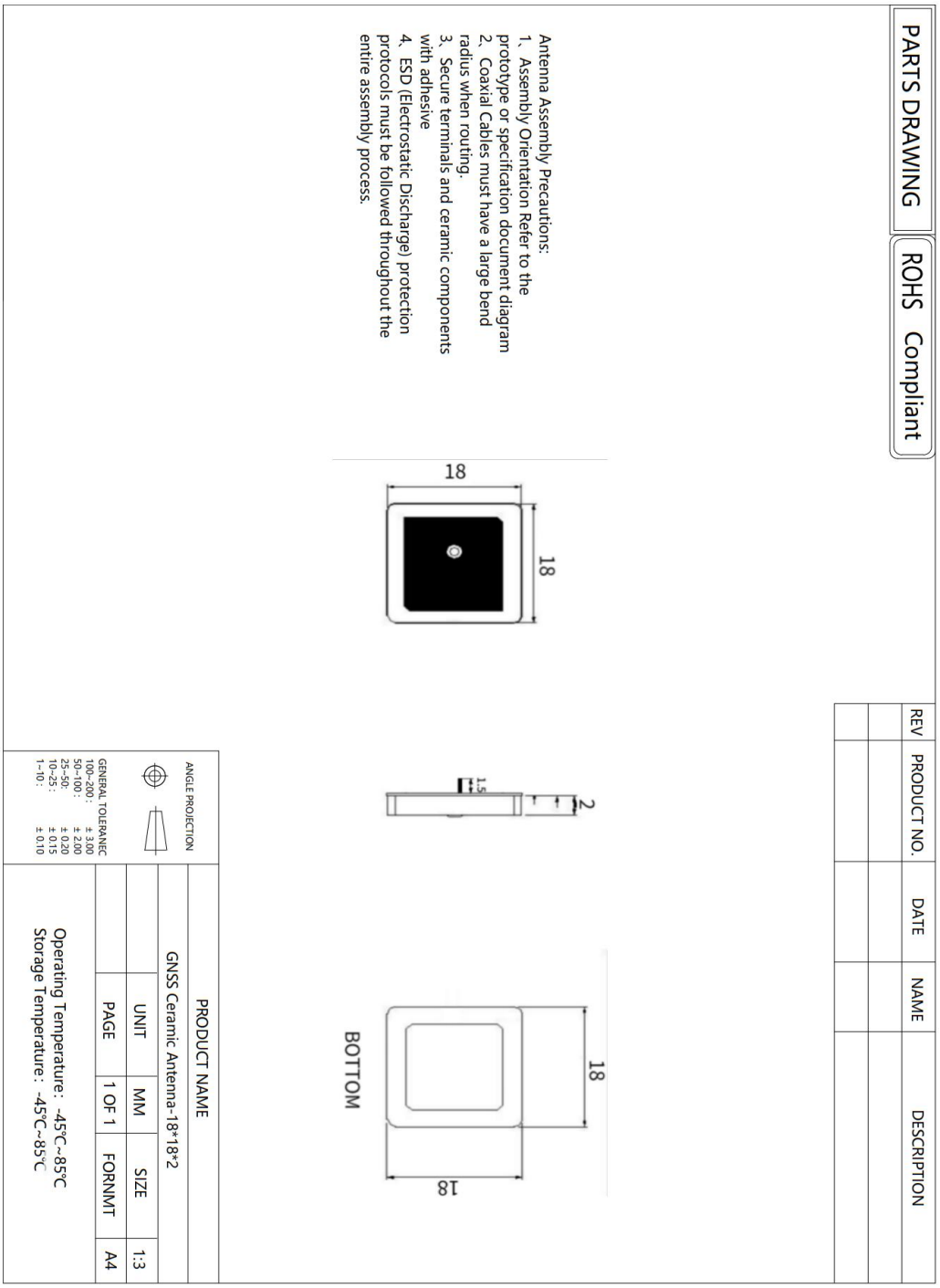
## 4. Mechanical Drawing

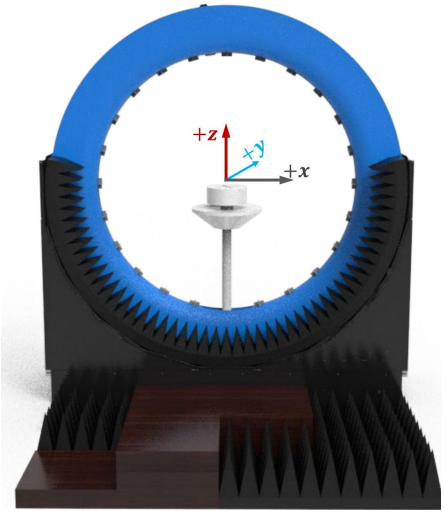


## 5. Test Equipment

Keysight/E5071C Network Analyzer

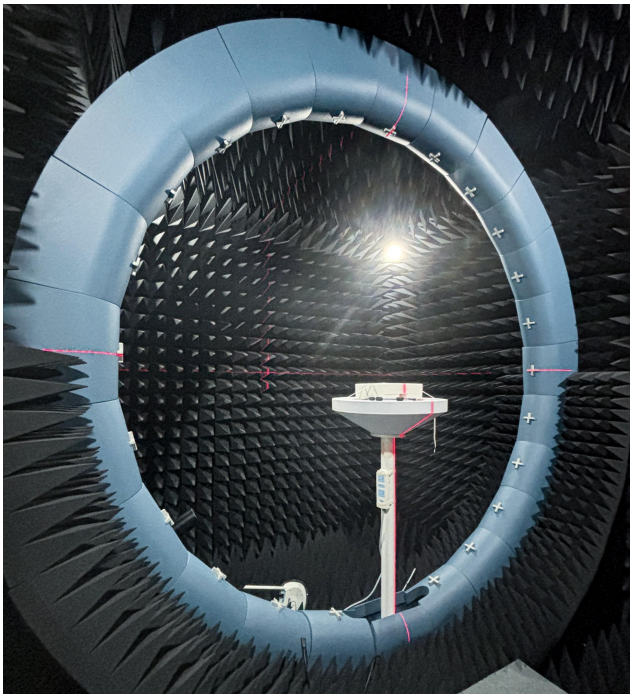
R&S/CMW500 Comprehensive Tester

R&S/SMBV100B Signal Generator



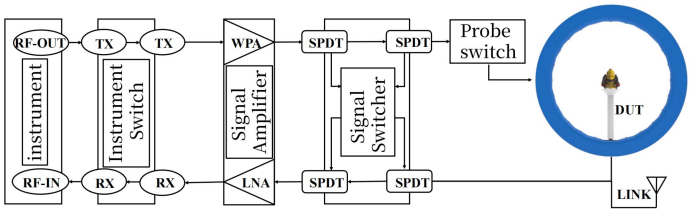

| DT-3500 Datasheet | |
|---|---|
| **Specification:** | **Description** |
| Test Frequency | 400MHz-8.5GHz |
| System Size | L*W*H=4*3.5*3.5m |
| Number of Probes | 23 (Probe) + 1 (link) |
| Interval Angle | 15º |
| Sampling Diameter | 2200mm |
| Carring Capacity | ≦40kg |

| Testing Capability | Description |
|---|---|
| **Active measurement** | **Capability :** TRP、TIS、EIRP、EIS,. etc<br>**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 |
| **Pasive measurement** | **Test category :** Gain、Efficiency、2D pattern、3D pattern、Pattern roundness、Axial Ratio, ECC,Phase center,. etc<br>**Polarization :** Circular polarization, linear polarization, elliptical polarization |

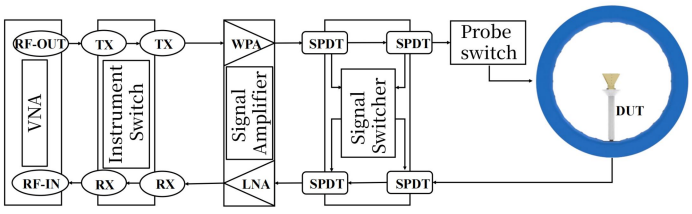


## RF Link diaram of multi probe spherical near-field testing system

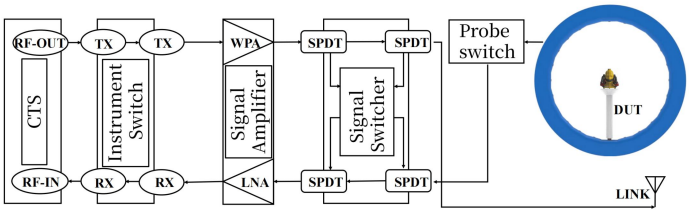
### RF Link Overview



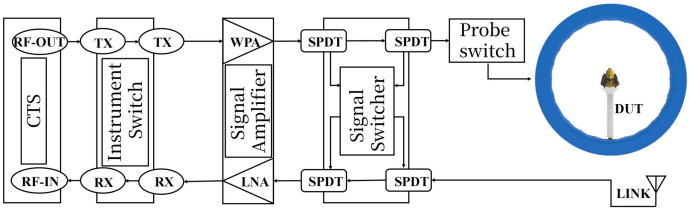

### RF Link of Passive measurement




### RF Link Overview

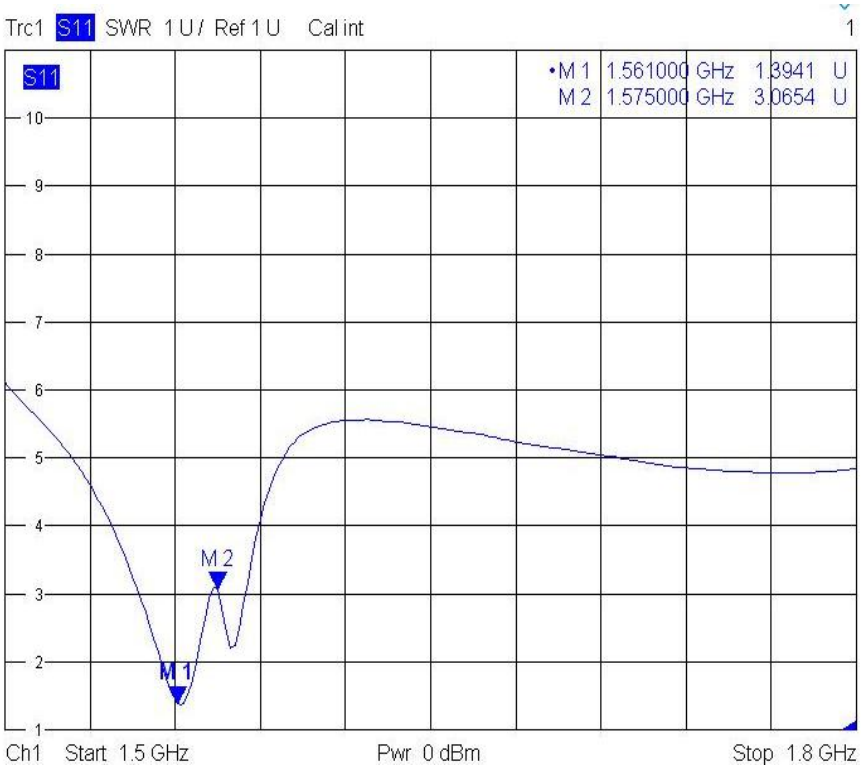



### RF Link of Passive measurement

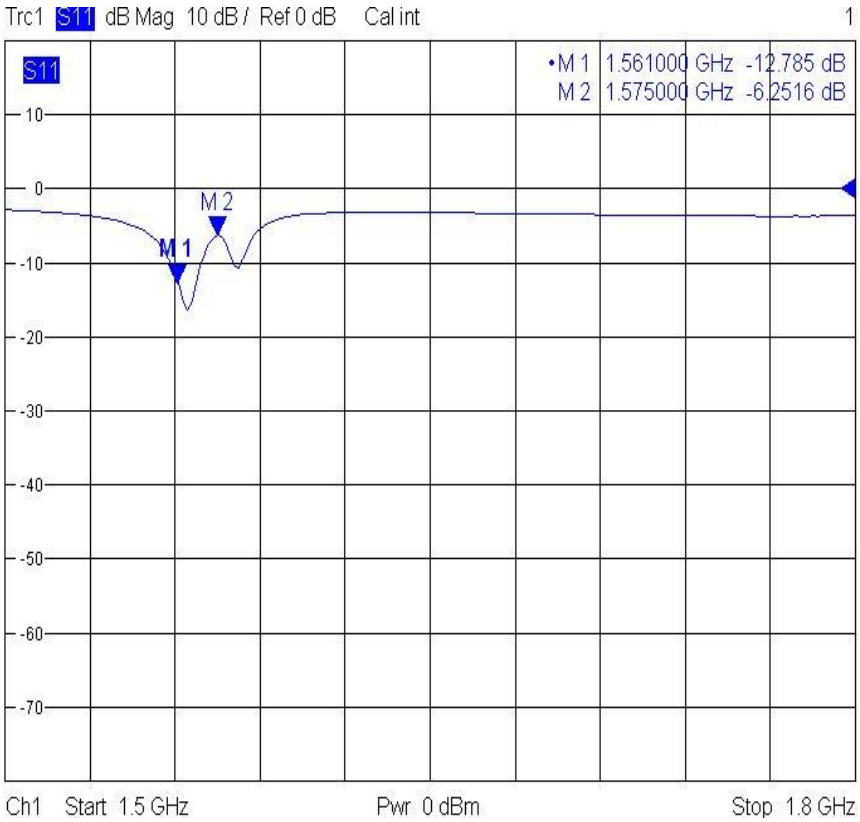


# 6. Performance Data

## 6.1 VSWR

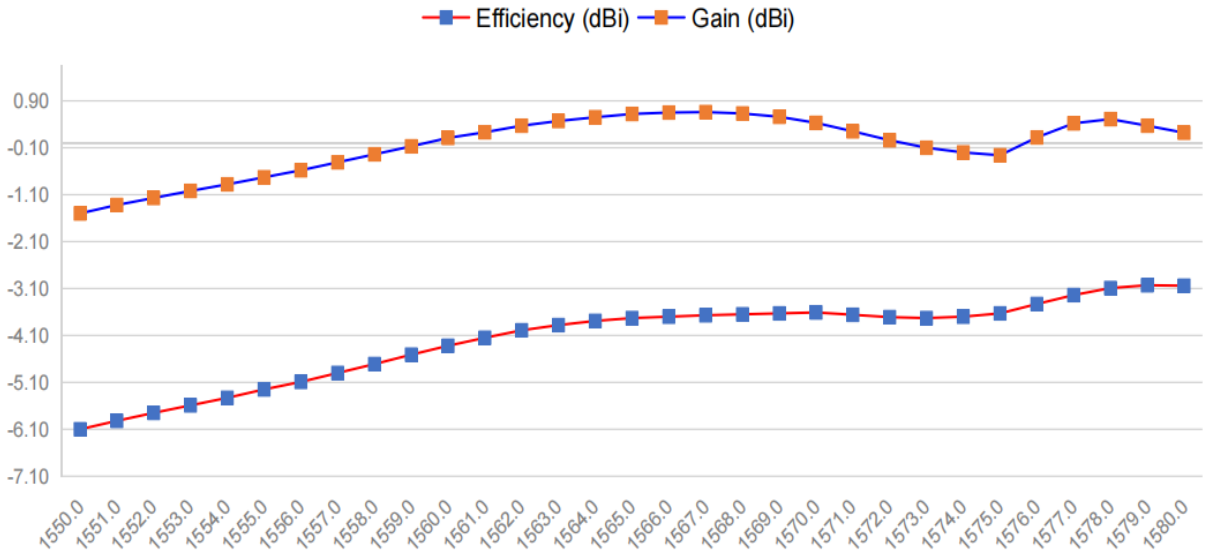



## 6.2 Return Loss

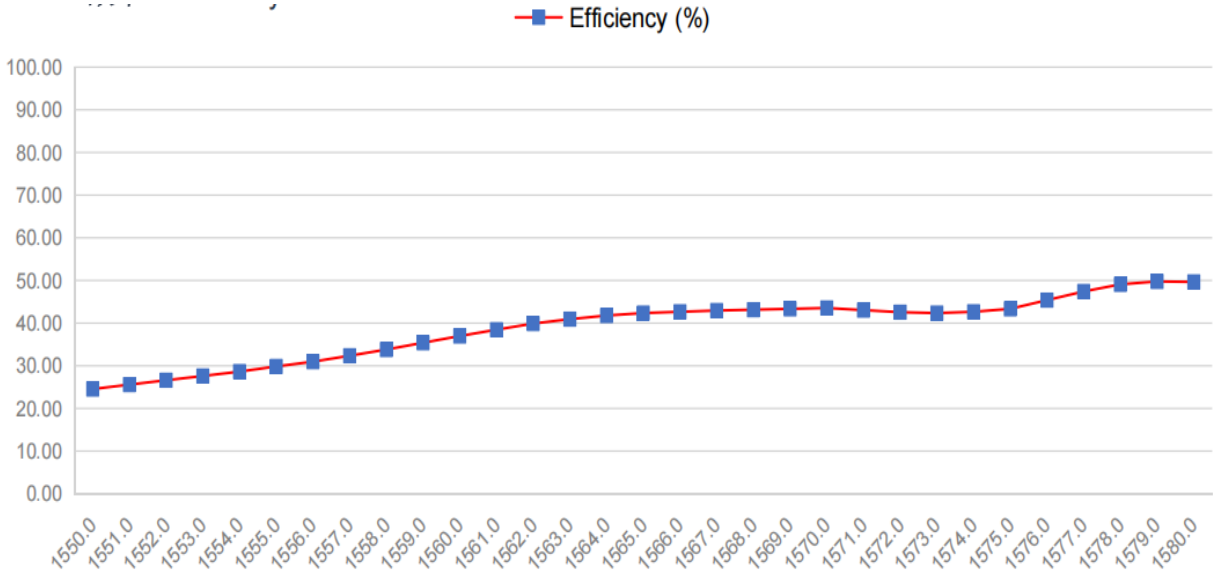


## 6. Performance Data

### 6.3 Gain




### 6.4 Efficiency

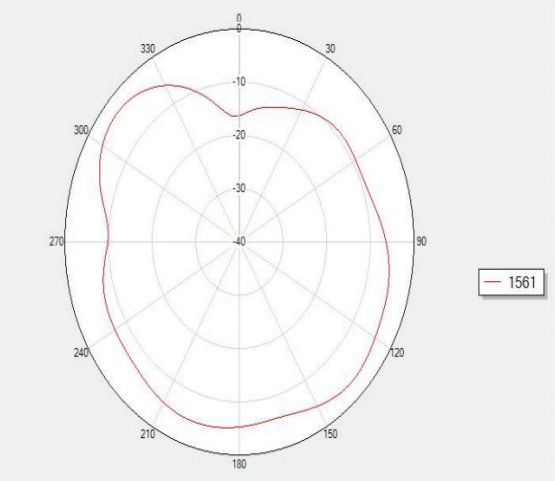


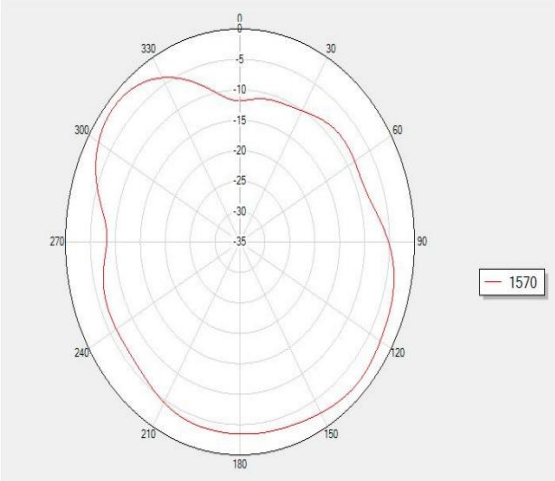

### 6.5 Gain and Efficiency

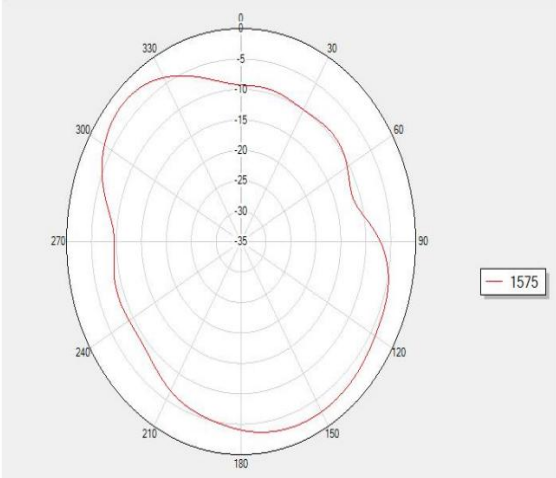
| Frequency (MHz) | 1561 | 1570 | 1575 | 1580 |
|---|---|---|---|---|
| Gain (dBi) | -0.4 | 0.80 | 0.17 | -1.13 |
| Efficiency (%) | 32.21 | 44.65 | 39.08 | 33.50 |

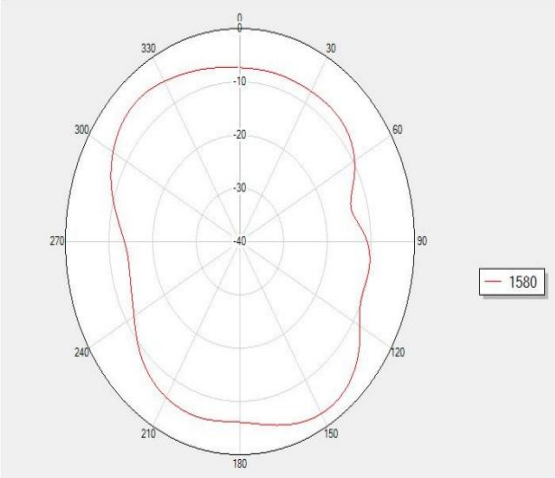
# 7. Radiation Patterns

## 7.1 2 D Radiation Patterns



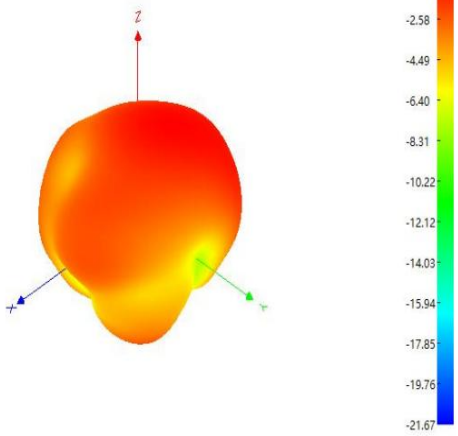



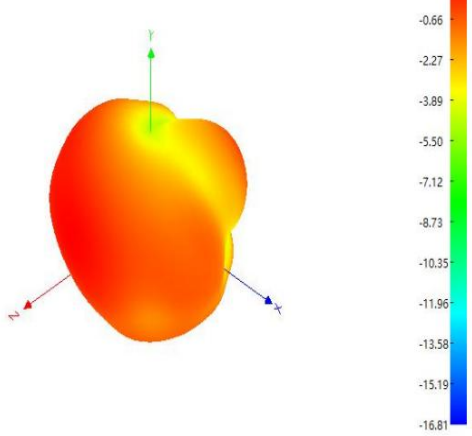



## 7.2 3D Radiation Patterns

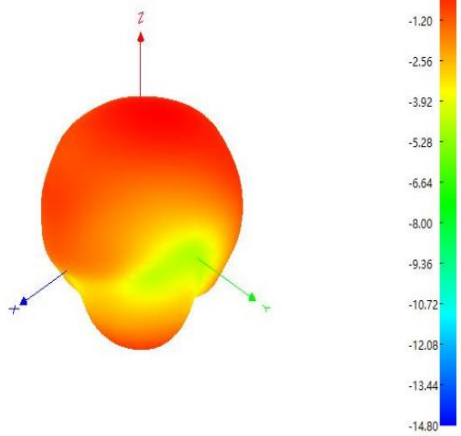
Frequency (MHz) : 1561



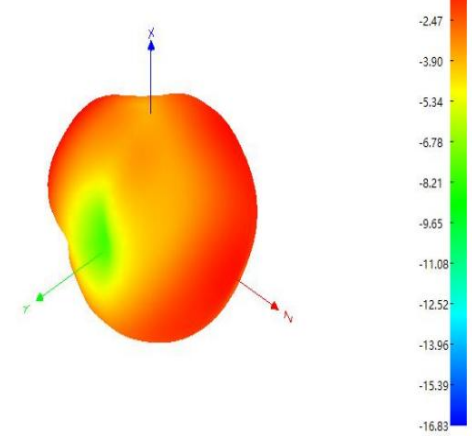

Frequency (MHz) : 1570




Frequency (MHz) : 1575




Frequency (MHz) : 1580



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**Shenzhen Bat Wireless Technology Co,.Ltd**

Office Add：Room 1301, 13th Floor, No. 8 Langhua Road, Xinshi Community, Dalang Street, Longhua District, Shenzhen

Email：marketing@batwireless.com

Tel：0755-21031236

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| Author: | Carly |

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