

# Antenna Datasheet

## 470Mhz Rubber Antenna

Model:

BW470JWX110-10KJ

Description:

470Mhz Rubber Antenna with SMA Male Jack

Features:

470Mhz Frequency Range

SMA Male Jack (Inner Thread, Inner Pin) Connector

Structure: Foldable

360° Omnidirectional Radiation

Dimensions: 110mm x 10mm

Compliant with RoHS & REACH Regulations



# Contents

1.	Description	3
2.	Specifications	4
3.	Product Picture	5
4.	Mechanical Drawing	6
5.	Testing Equipment	7-8
6.	Performance Data	9-10
6.1	V.S.W.R	9
6.2	Return Loss	9
6.3	Gain	10
6.4	Efficiency	10
6.5	Antenna Gain and Efficiency	10
7.	Radiation Patterns	11-12
7.1	2D Radiation Patterns	11
7.2	3D Radiation Patterns	12



## BW470JWX110-10KJ

### Part Number Explanation

BW	Company	Bat Wireless
470	Frequency	470Mhz
J	Name	Rubber Antenna
W	Type	Enternal
X	Constant	X
110-10	Dimensions	110-10mm
K	Feature	Foldable
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 **BW470JWX110-10KJ** 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 Straight 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
<b>Electrical Characteristics</b>			
Antenna Type	Rubber Antenna		
Frequency Range	470	MHz	
Input Impedence	50	$\Omega$	
V.S.W.R	<2.1		
Gain	-2.4	dBi	
Polarization Type	Vertical		
Power Capacity	50	W	
Lightning Protection	-		
DC Voltage	-	V	
Radiator	-		
<b>Mechanical Characteristics</b>			
Dimensions	110 x 10	mm	
Connector Type	SMA-J Male (Customizable)		
Cable Type	-		
Cable Length	-	mm	
Mount way	Screw-on		
Color	Black		
Meterial	ABS		
Weight	7.38	g	
<b>Environmental Characteristics</b>			
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				
8		Foam	18*10*1 Black	1				
7		SMA	Male Black	1				
6		Spring	44.2*12.5*90.8*Ø4.4MM Brass 32.25N	1				
5		Heat Shrink Tubing	Black L=19MM	1				
4		Down Base	12*9.3MM Black	1				
3		Up Base	20*9.3MM Black	1				
2		Rubber Shell	67.4*9.3MM Black	1				
1		Wire	RG178 Double-Si Plated Wire Brown L=53MM	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 specifications.
- Eco-friendly manufacturing processes shall be adopted, and finished products must comply with ROHS requirements.
- Unless otherwise specified, general tolerances shall apply.

Frequency	Gain	VSWR	Polarization	Impedance	Operating Temperature	Storage Temperature
470MHz	-2.4DBI	<2.1	Vertical	50Ω	-45°C~85°C	-45°C~85°C

PRODUCT NAME			
Rubber Antenna-470MHz-SMA Male-L=108MM			
UNIT	MM	SIZE	1:3
PAGE	1 OF 1	FORNMT	A4

ANGLE PROJECTION	
100-200 :	± 3.00
50-100 :	± 2.00
25-50 :	± 0.20
10-25 :	± 0.15
1-10 :	± 0.10

## 5. Test Equipment



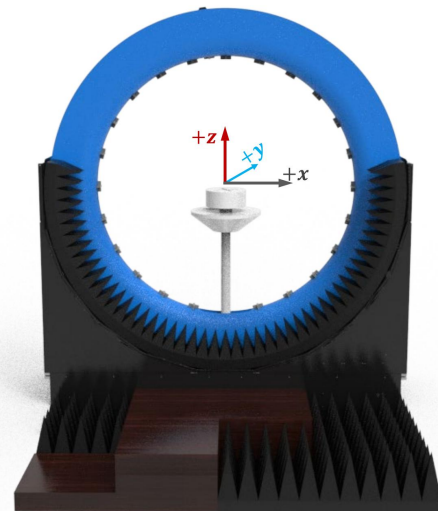
Keysight/E5071C Network Analyzer



R&amp;S/CMW500 Comprehensive Tester



R&amp;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

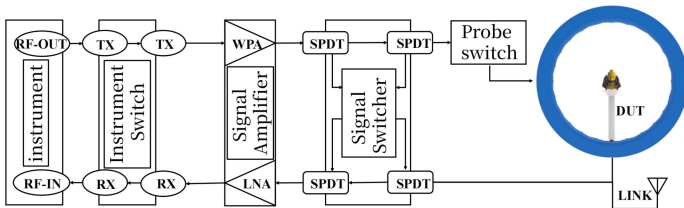
##### Passive measurement

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

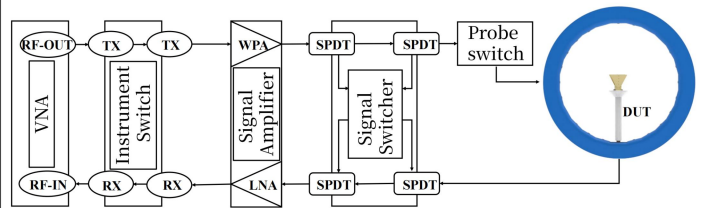


## RF Link diaram of multi probe spherical near-field testing system

RF Link Overview



RF Link of Passive measurement



RF Link Overview

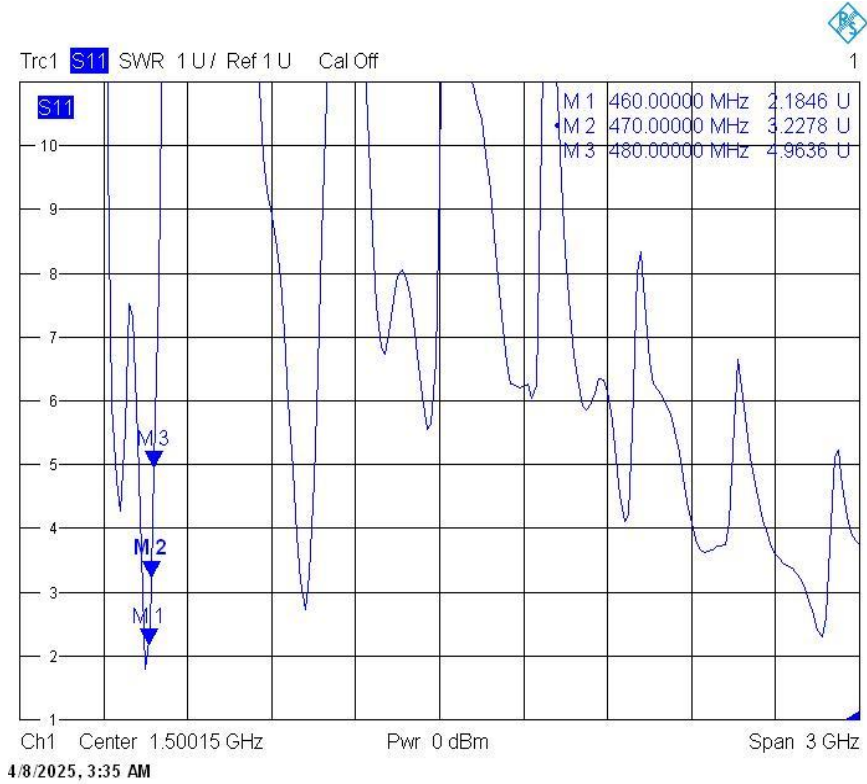


RF Link of Passive measurement

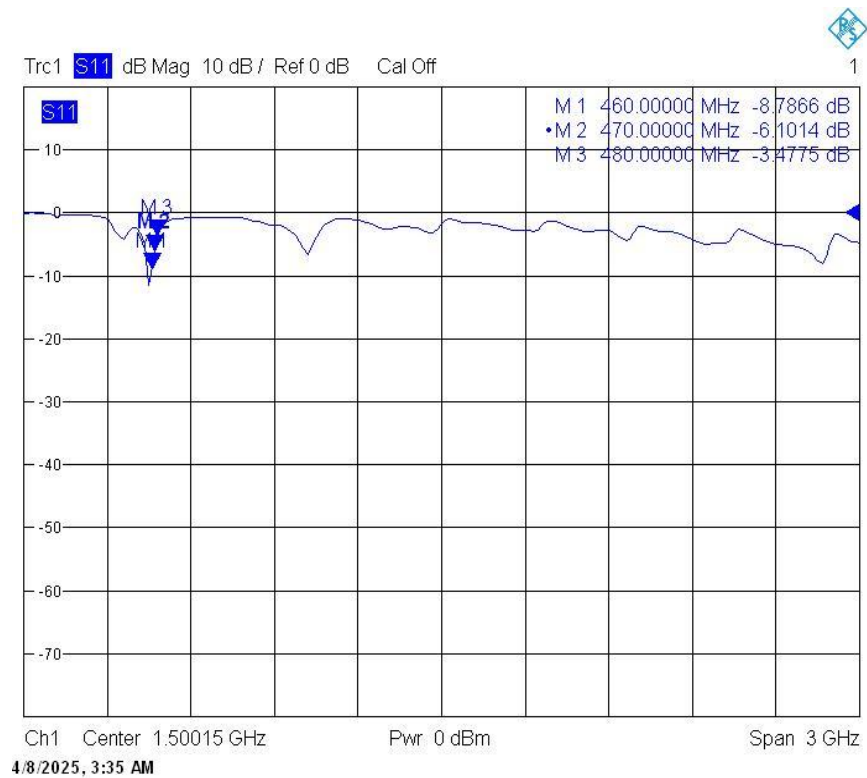


## 6. Performance Data

### 6.1 VSWR

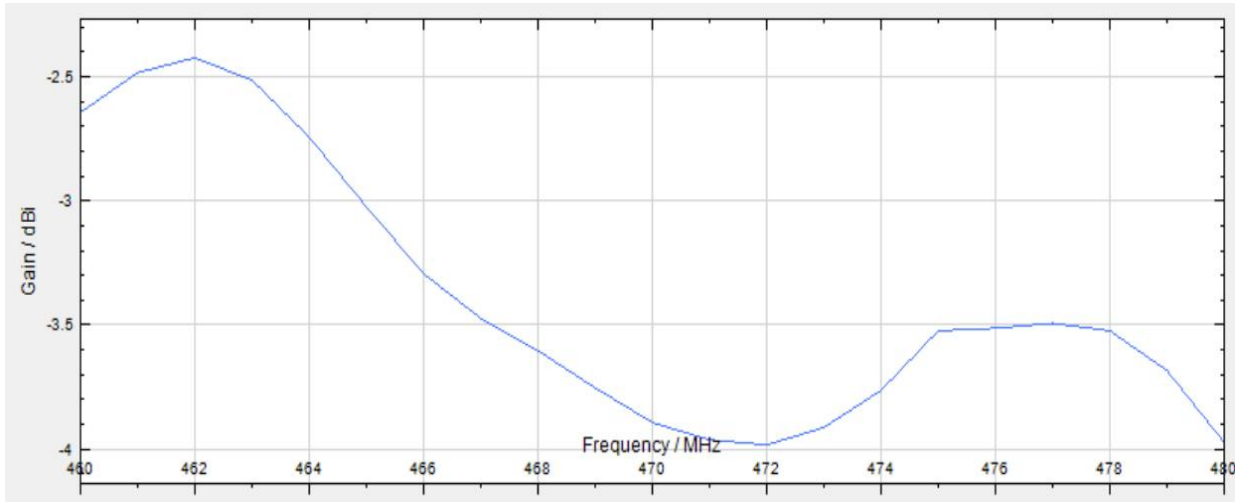


### 6.2 Return Loss

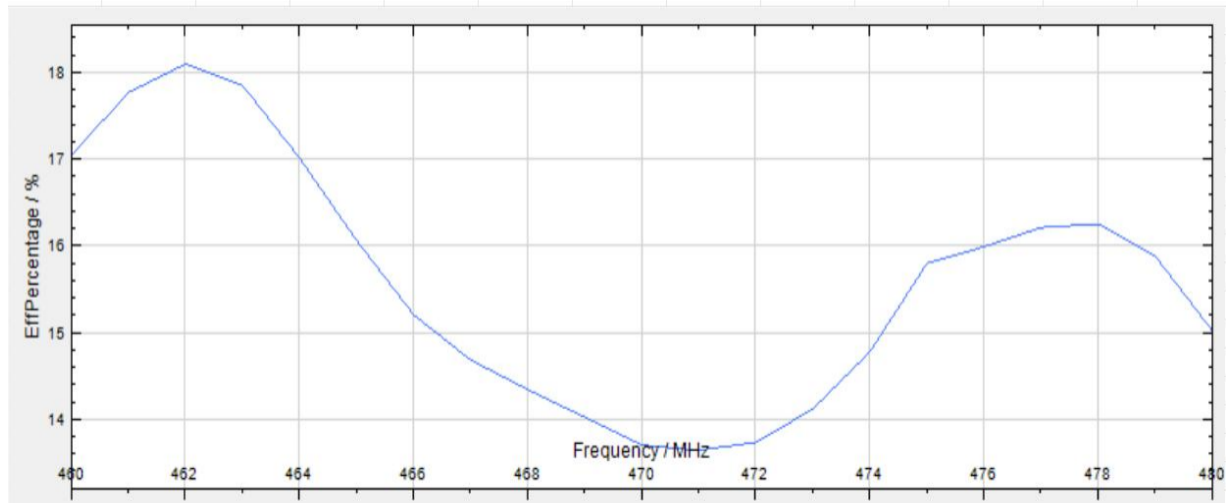


## 6. Performance Data

### 6.3 Gain



### 6.4 Efficiency

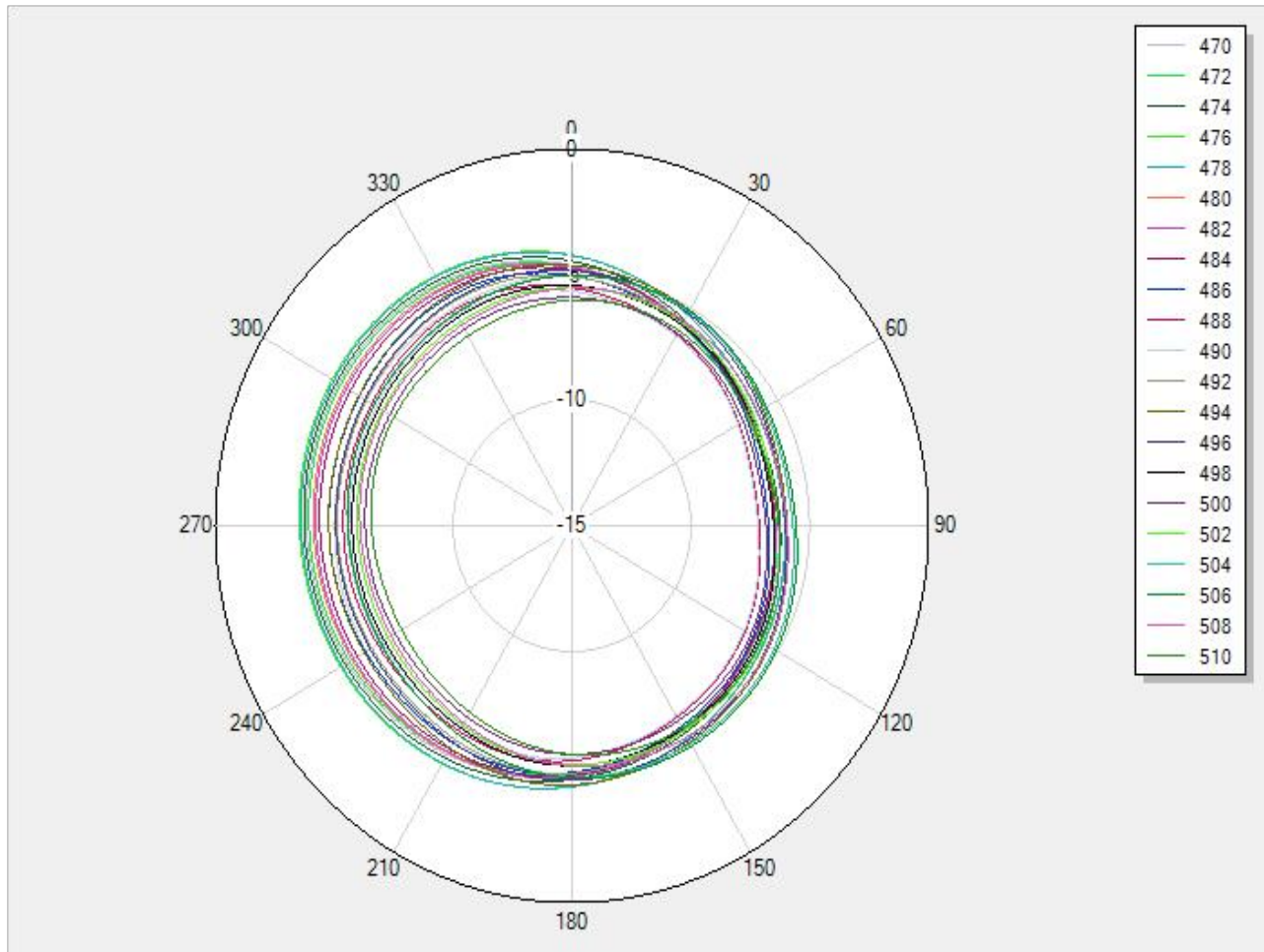


### 6.5 Gain and Efficiency

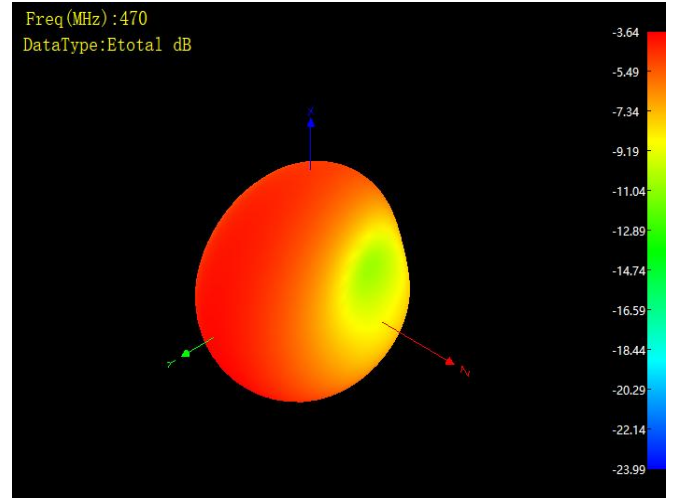
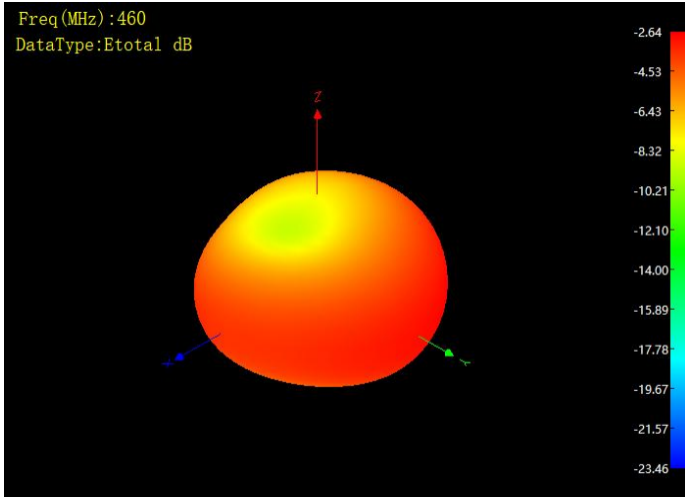
Frequency (MHz)	460	470	480
Gain (dBi)	-2.64	-3.89	-3.97
Efficiency (%)	17.07	13.71	15.03

## 7. Radiation Patterns

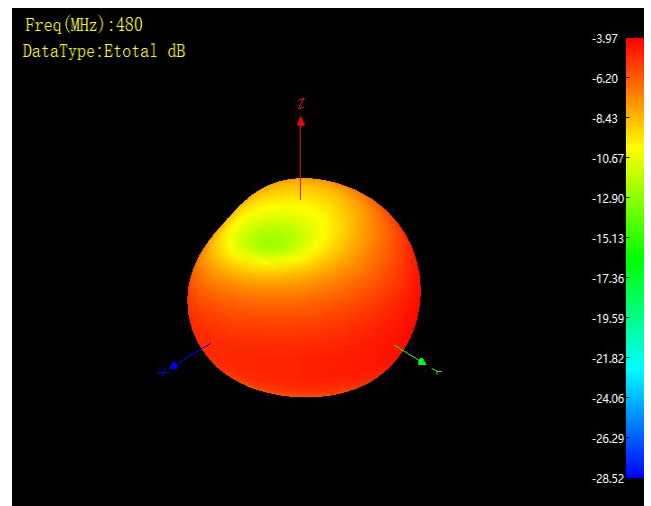
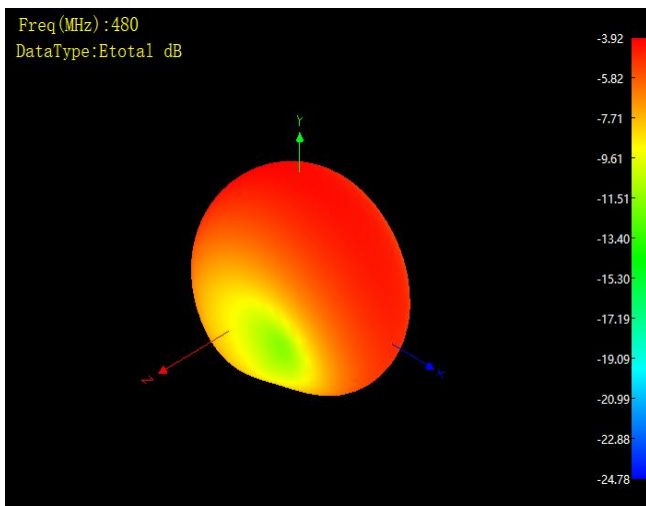
### 7.1 2 D Radiation Patterns



7.2 3D Radiation Patterns—460MHz、470Mhz



7.2 3D Radiation Patterns—480MHz





## DECLARATION:

**Legal Notice:** In order to provide users with better service, Shenzhen Bat Wireless Technology Co., Ltd. (hereinafter referred to as ' Bat Wireless' ) will endeavour to present users with detailed and accurate product information in this manual. However, due to the time-sensitive nature of the content in this manual, Bat Wireless cannot guarantee the timeliness and applicability of this document at all times. Bat Wireless reserves the right to update the content of this manual without prior notice. To obtain the latest information, we kindly request users to regularly visit the Bat Wireless official website or contact Bat Wireless staff. Thank you for your understanding and support!

**Copyright Notice:** All content in this product manual (including text, charts, logos, and designs) is protected by copyright law and international copyright treaties. No entity or individual may reproduce, modify, distribute, or use any part or all of this manual in any form (including electronic, mechanical, photocopying, etc.) without prior written authorisation from our company. Infringers will be held legally liable. All rights reserved.

**Trademark Notice:** All product names and corporate logos of Bat Wireless mentioned in this manual are the lawful property of our company (including affiliated companies). Unauthorised use, reproduction, or imitation is strictly prohibited. Third-party trademarks referenced in this manual are the property of their respective owners, and their use is solely for illustrative purposes and does not imply any commercial affiliation or authorisation. Our company reserves all rights to pursue legal action against any infringement.

**Disclaimer:** The product information contained in this manual is for reference only. Actual product performance may vary depending on the usage environment and configuration differences. Our company makes no express or implied warranties regarding the accuracy, completeness, or applicability of the content of this manual and shall not be liable for any direct or indirect losses arising from the use or inability to use the content of this manual. Users should assess the applicability of the product and follow actual operating procedures. The final interpretation of this manual is reserved by our company.

## 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](mailto:marketing@batwireless.com)

Tel: 0755-21031236



Documentation

Version :	August-20-2025-A01
Date :	2025-8-20
Remarks :	First update
Author:	Carly

Change Log
