



ANTENNA DATASHEET

4G FPC Antenna

Model No:

BW4GFNX66-15B1L50

Description:

4G FPC Antenna IPEX-1 Connector with RG1.13 Cable & 50mm Length

Features:

700-2700MHz

IPEX-1 connector

Structure: 360° Omnidirectional Radiation

Cable Type : RG1.13

Cable Length: 50mm

Dimension:66mmx15mm

RoHS & REACH Complaint



CONTENTS

1.	Description	3
2.	Specifications	4
3.	Product Picture	5
4.	Mechanical Drawing	6
5.	Test Equipment	7-8
6.	Performance Data	9-10
6.1	VSWR	9
6.2	Return Loss	9
6.3	Gain	10
6.4	Efficiency	10
6.5	Gain &Efficiency	10
7.	Radiation Patterns	11-12
7.1	2D Radiation Patterns	11
7.2	3D Radiation Patterns	12



BW4GFNX66-15B1L50

Part Number Description

BW	Company	Bat Wireless
4G	Frequency	700-2700MHz
F	Name	FPC Antenna
N	Type	Internal
X	Constant	X
66-15	Approximate Dimensions	66-15mm
B1	Connector	IPEX1
L	Length	Length
50	Wire Length	50mm

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	RG1.13	RG1.13	RG0.81	RG0.81	RG0.81	RG316	Customizable

1. Description

Bat Wireless BW4GFNX66-15B1L50 is a widely used wireless communication device that employs flexible substrates, enabling it to be bent, folded, and adapted for installation on curved surfaces or in confined spaces. The flexible substrate (such as polyimide) enables the circuit to adapt to complex spatial layouts, making it suitable for wearable devices, foldable smartphones, and other applications. The thickness typically ranges from 0.1 to 0.3 mm, reducing device weight and enhancing portability. The 4G FPC boasts core advantages in high-frequency performance, flexibility, and high integration, making it a critical component for the miniaturisation and high-performance of wireless devices.

Classic application scenarios:

Consumer electronics: smartphones, tablets, laptops

IoT devices: in-vehicle T-Boxes, smart meters, drones

Industrial field: routers, surveillance equipment, industrial control terminals

Bat Wireless provides customized services to optimize your device, 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	FPC Antenna		
Frequency Range	700-2700	MHz	
Input Impedence	50	Ω	
V.S.W.R	<2		
Gain	1.8	dBi	
Polarization Type	Vertical		
Power Capacity	50	W	
Lightning Protection	-		
DC Voltage	-	V	
Radiator	-		
Mechanical Characteristics			
Dimensions	66 x 15	mm	
Connector Type	IPEX-1 (Customizable)		
Cable Type	RG1.13 (Customizable)		
Cable Length	50 (Customizable)	mm	
Mount way	Crimp Connection		
Color	Black		
Material	FPC		
Weight	0.17	g	
Environmental Characteristics			
Waterproof Rating	-		
ROHS Compliant	Conform		
Operating Temperature	-45~ +85	$^{\circ}\text{C}$	
Storage Temperature	-45~ +85	$^{\circ}\text{C}$	

*Note: The above data is for reference only. Since the antenna function is relatively sensitive, please inform us for evaluation if there are any changes to the structural components around the main body of the antenna.



3. Product Picture



* Product images are for reference only.



4. Mechanical Drawing

PARTS DRAWING	ROHS Compliant					
		REV	PRODUCT NO.	DATE	NAME	DESCRIPTION

Requirements:

1. The wire jacket shall be free from cuts or damage.
2. 100% continuity testing shall be performed, and all products must pass.
3. 100% full inspection is required, and all products must meet specifications.
4. Eco-friendly manufacturing processes shall be adopted, and finished products must comply with ROHS requirements.
5. Unless otherwise specified, general tolerances shall apply.

NO	Code	Name	Description	Qty
3		FPC	66*15 Black Solid or Mask Ink	1
2		Connector	IPEX-1	1
1		Cable	RG1.13 Black L=50MM	1

Frequency	700-2700MHz	ANGLE PROJECTION GENERAL TOLERANCE: 100~200: ± 3.00 50~100: ± 2.00 25~50: ± 0.50 10~25: ± 0.15 1~10: ± 0.10	PRODUCT NAME			
Gain	2DBi		FPC Antenna-700-2700MHz-IPEX-1-L=50MM			
VSWR	<1.8			UNIT	MM	SIZE
Polarization	Vertical			PAGE	1 OF 1	FORNMT
Impedance	50Ω					A4
Operating Temperature: -45°C~85°C						
Storage Temperature: -45°C~85°C						



5. Test Equipment



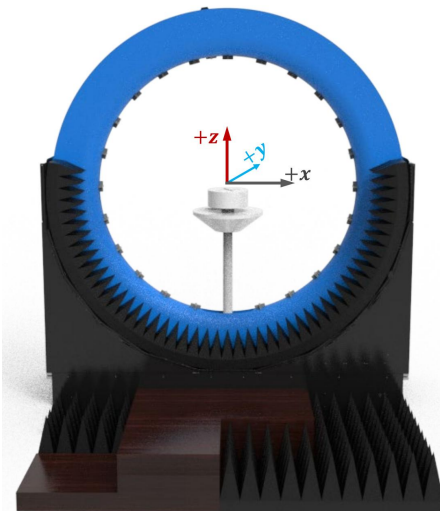
Keysight/E5071C Network Analyzer



R&S/CMW500 Comprehensive test equipment



R&S/SMBV100B Signal Source



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

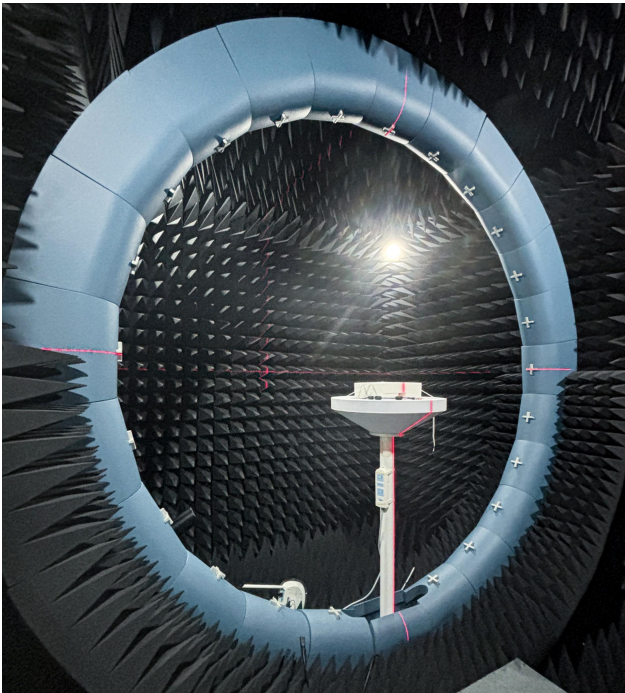
Description

Active measurement

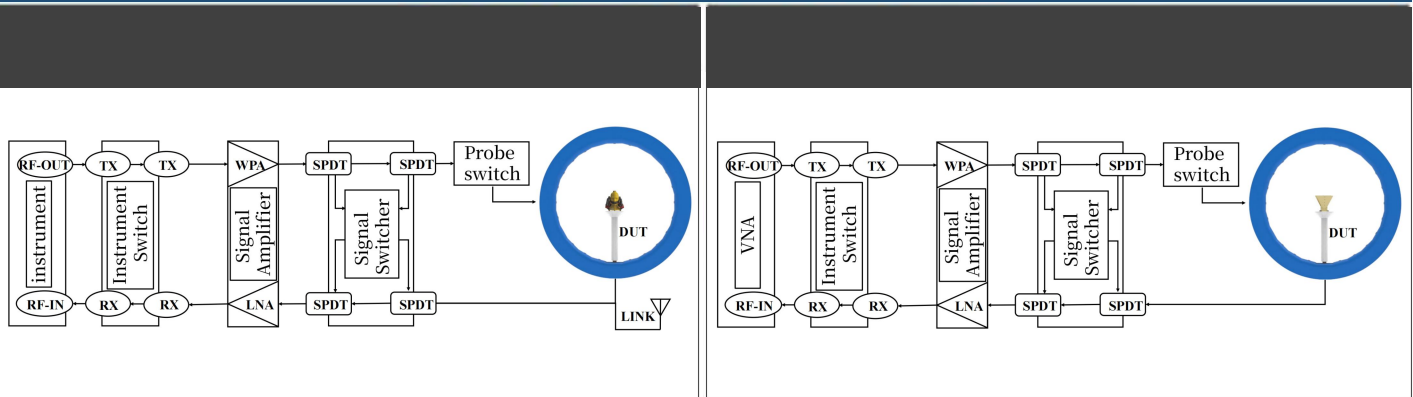
Capability : TRP、TIS、EIRP、EIS,. etc
Mode : 2G/3G/4G/5G、Wi-Fi b/g/n/a/ac/ax、BT、NB-IOT、Cat-M (eMTC)、GPS/BEIDOU/GLONASS、ZigBee、LoRa(Non-Signaling),.etc

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

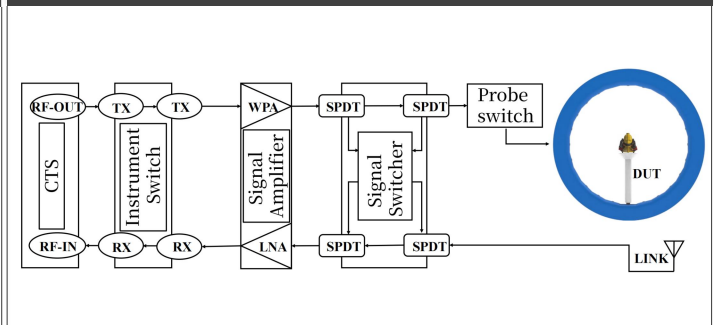
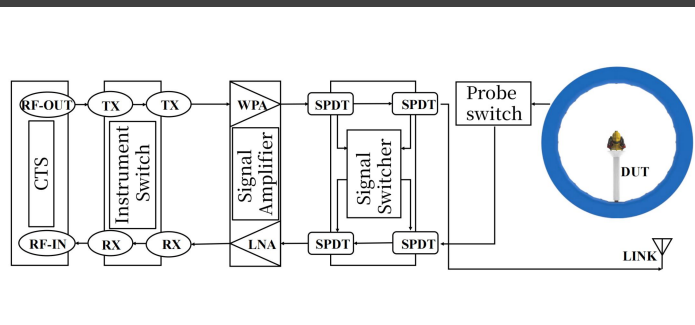


RF Link diaram of multi probe spherical near-field testing system



RF Link Overview

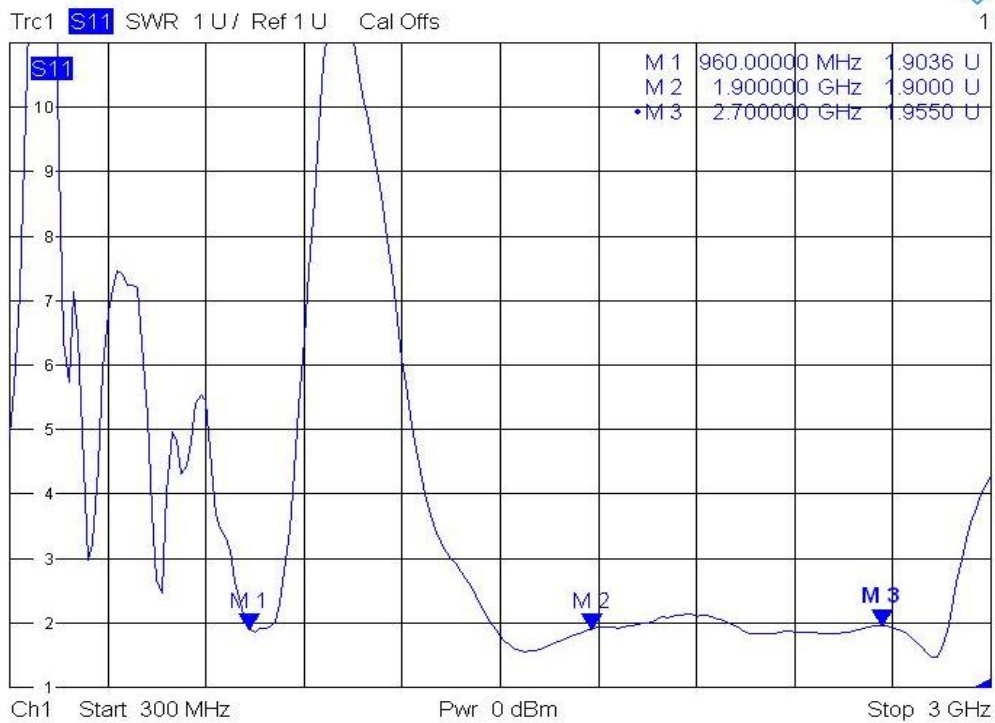
RF Link of Passive measurement



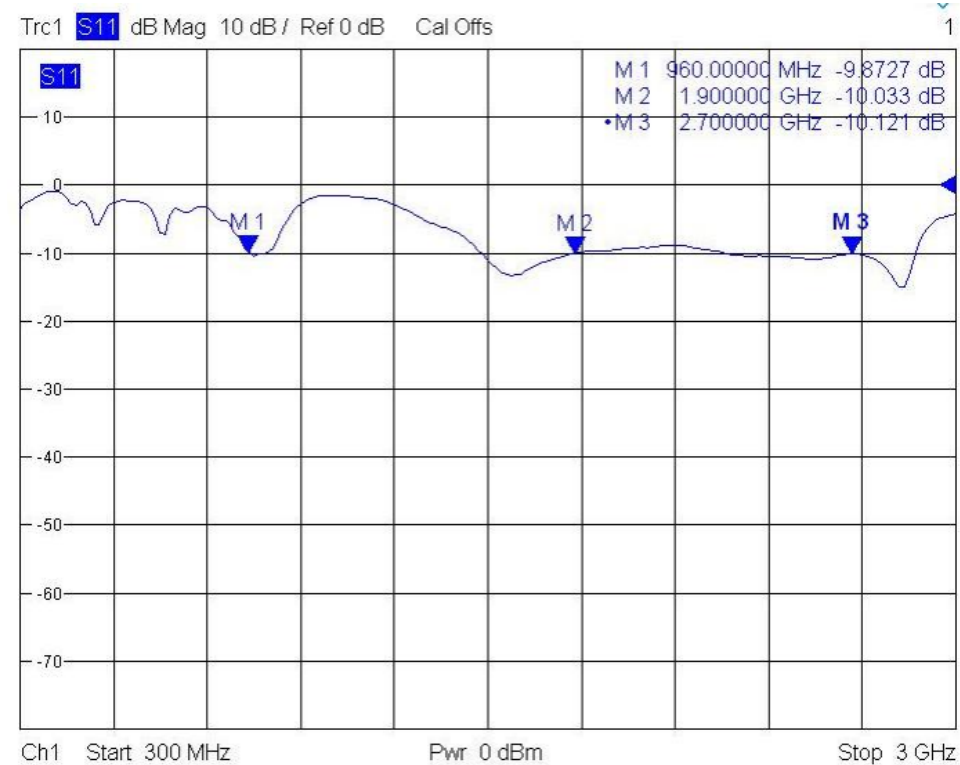


6. Performance Data

6.1 VSWR



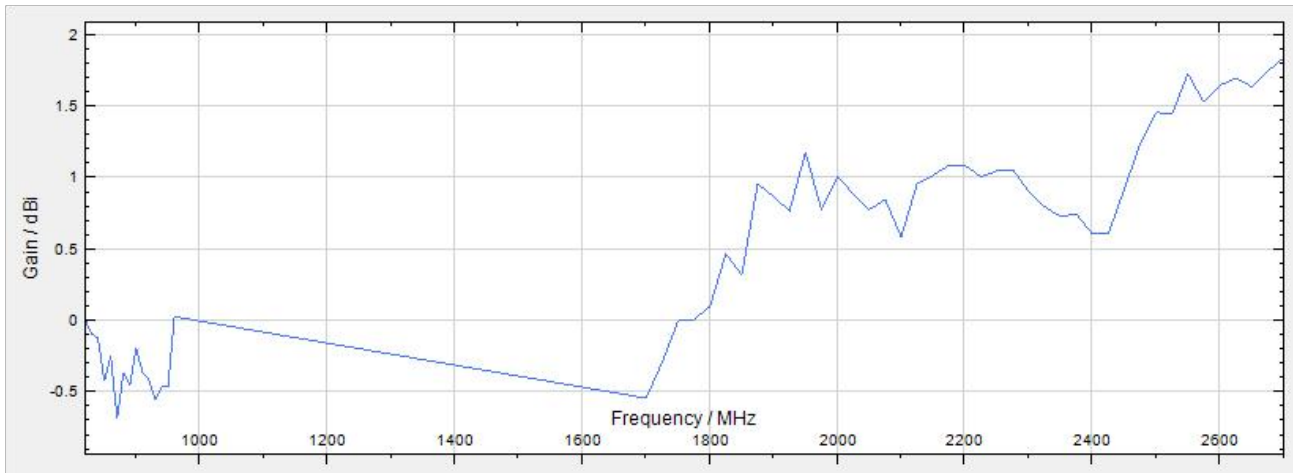
6.2 Return Loss



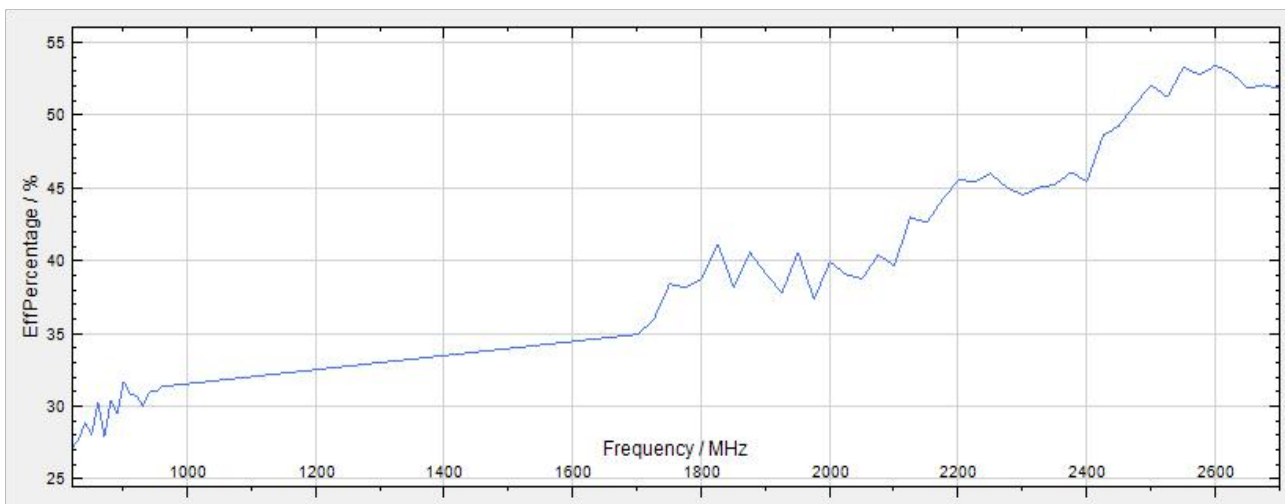


6. Performance Data

6.3 Gain



6.4 Efficiency



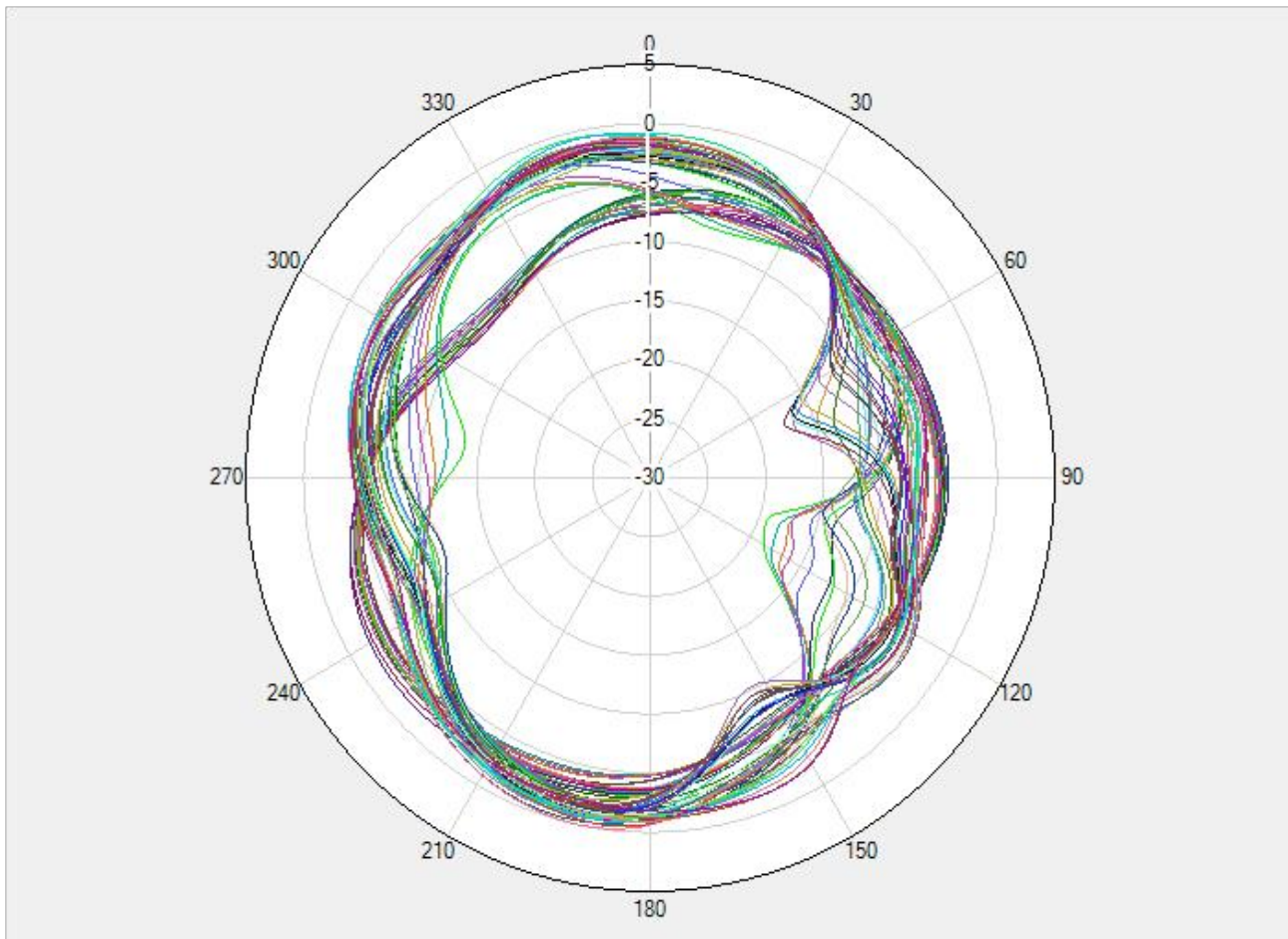
6.5 Antenna Gain & Efficiency

Frequency (MHz)	824-960	1710-2170	2300-2400	2500-2700
Gain (dBi)	0.03	1.18	0.91	1.46
Efficiency (%)	31.41	40.64	44.57	52.12



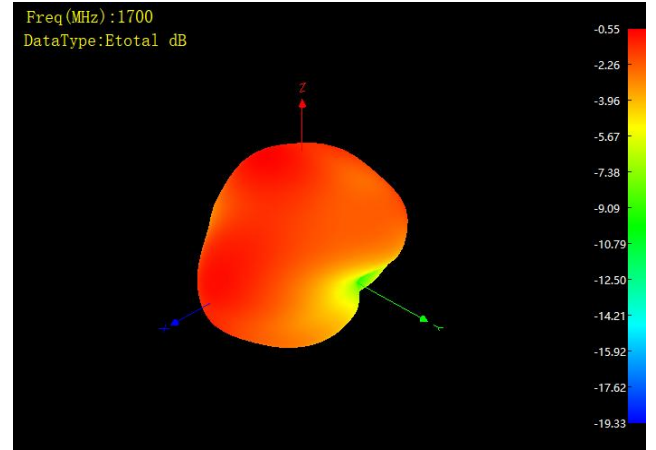
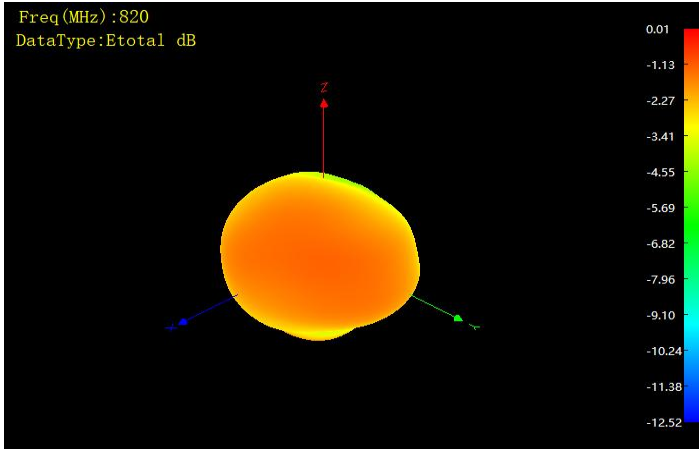
7. Radiation Patterns

7.1 2D Radiation Patterns

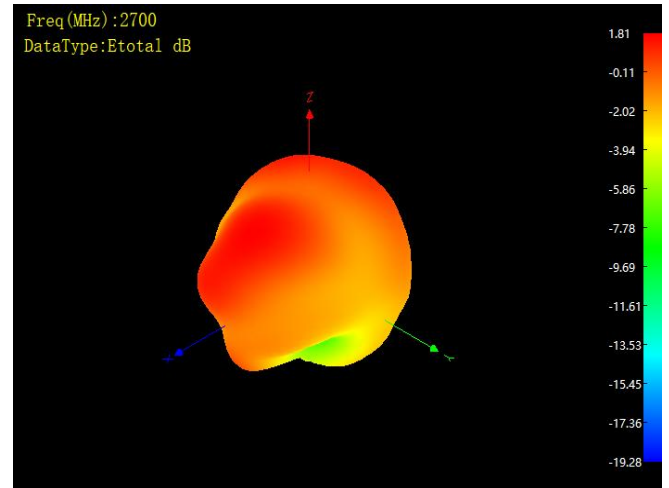
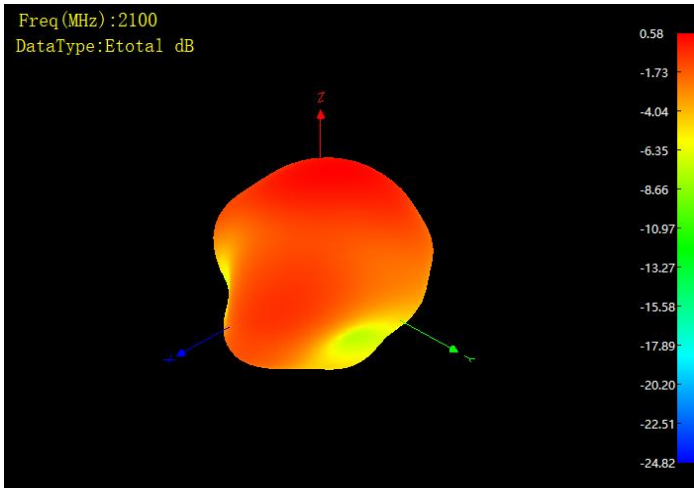




7.2 3D Radiation Patterns—820MHz、 1700MHz



7.2 3D Radiation Patterns—2100MHz、 2700MHz





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

Tel: 0755-21031236



Documentation

Version:	April-14-2025-A01
Date:	2025-4-14
Remark:	First update
Author:	Carly

Change Log
