

Antenna Datasheet

GPM External Patch Antenna

Model:

BWGPMWX115-22L1000J

Description:

GPM External Patch Antenna with SMA Male Jack RG174 1000mm Length

Features:

800-2200 mHz Frequency Range

SMA Male Jack (Inner Thread, Inner Pin)

360° Omnidirectional Radiation

Cable Type: RG174

Cable Length: 1000mm

Dimensions: 116mm x 21.6mm

Compliant with RoHS & REACH Regulations

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BWGPWX115-22L100J

Part Number Explanation

BW	Company	Bat Wireless
GPM	Frequency	800-2200MHz
X	Name	Patch Antenna
W	Type	External
X	Constant	X
115-22	Dimensions	115-22mm
L	Length	Length
1000	Cable Length	1000mm
J	Connector	SMA Straight Male

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 **BWGPWX115-22L100J** is a high-performance omnidirectional external patch antenna specially designed for the GPM frequency band, integrating strong penetration, omnidirectional coverage and easy deployment; its antenna radiator is made of high-quality steel-carbon material, which ensures excellent signal transmitting and receiving performance and is suitable for long-term use in complex environments; the external patch base supports magnetic suction mode, allowing flexible and stable installation and quick deployment; its compact and lightweight design can further meet the needs of vehicle-mounted, industrial, outdoor and other scenarios, providing stable and low-loss connections for smart home, security monitoring and industrial Internet of Things (IoT) devices.

Typical Application Scenarios:

Industrial Internet of Things (IoT): Smart electricity/water meters, environmental monitoring devices

Vehicle-mounted & Mobile Communications: Logistics vehicle tracking, emergency communication vehicles

Smart Devices & Commercial Applications: Parcel lockers/vending machines, smart agriculture

Security Monitoring: Wireless data transmission for cameras and emergency communication equipment

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	External Patch Antenna		
Frequency Range	800-2200	MHz	
Input Impedence	50	Ω	
V.S.W.R	<1.5		
Gain	2	dBi	
Polarization Type	Vertical		
Power Capacity	50	W	
Lightning Protection	-		
DC Voltage	-	V	
Radiator	-		
Mechanical Characteristics			
Dimensions	116 x 21.6	mm	
Connector Type	SMA-J Male (Customizable)		
Cable Type	RG174		
Cable Length	1000	mm	
Mount way	Screw-on		
Color	Black		
Meterial	ABS		
Weight	26	g	
Environmental Characteristics			
Waterproof Rating	-		
ROHS Complaint	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	O/y				
6		PCB	100*18.5*0.8MM	1				
5		Heat Shrink Tubing	3.5 Heat Shrink Tubing White L=18MM	1				
4		3M Tape	4G Tape 115*21.6*5.8MM Black	1				
3		3M Red Tape	115*21.6MM	1				
2		SMA	Male	1				
1		Wire	RG174 Black L=1015MM	1				

Frequency: 800-2200MHz Gain: 2.4DBi VSWR: <2 Polarization: Vertical Impedance: 50Ω Operating Temperature: -45°C~85°C Storage Temperature: -45°C~85°C	ANGLE PROJECTION 	GENERAL TOLERANCES 100-200: ± 3.00 50-100: ± 2.00 25-50: ± 0.20 10-25: ± 0.15 1-10: ± 0.10
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PRODUCT NAME
Patch Antenna-800-2200MHz-SMA Male-L=1000MM

UNIT	MM	SIZE	FORNMT
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① RG174
② SMA

④

③

② Male

⑥

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.

5. Test Equipment



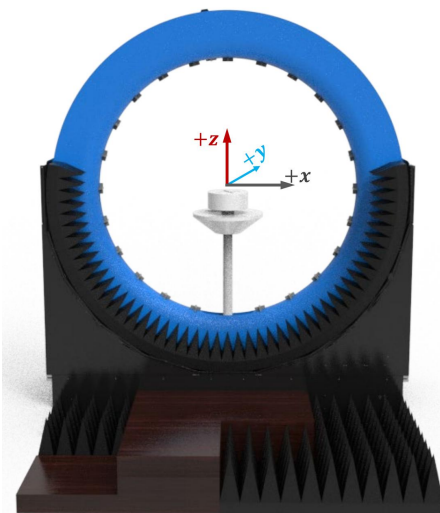
Keysight/E5071C Network Analyzer



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

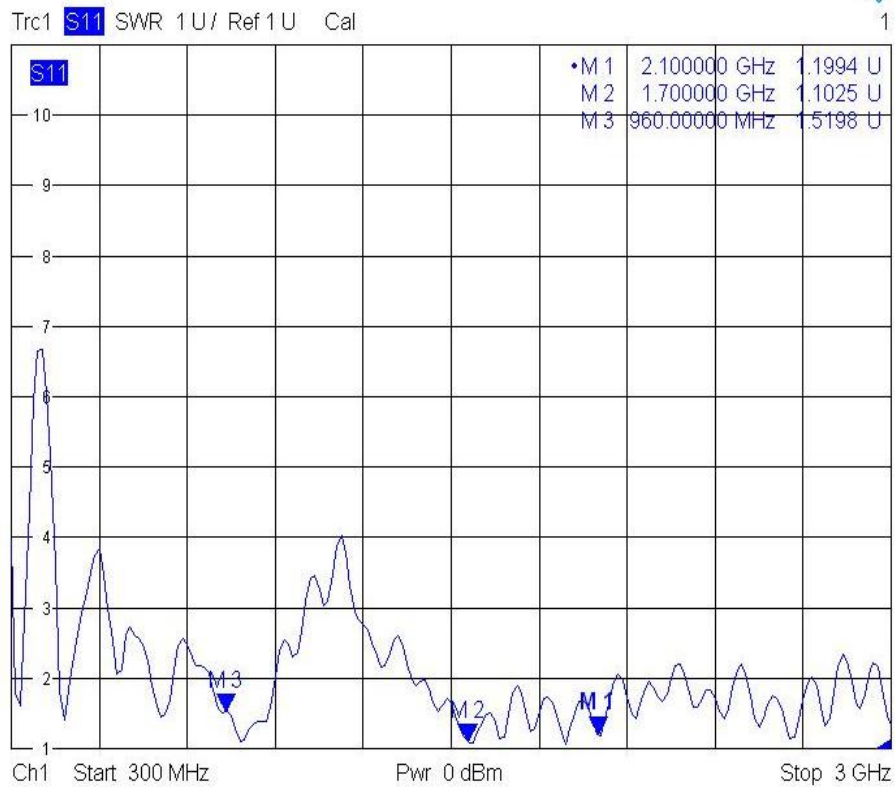


RF Link of Passive measurement

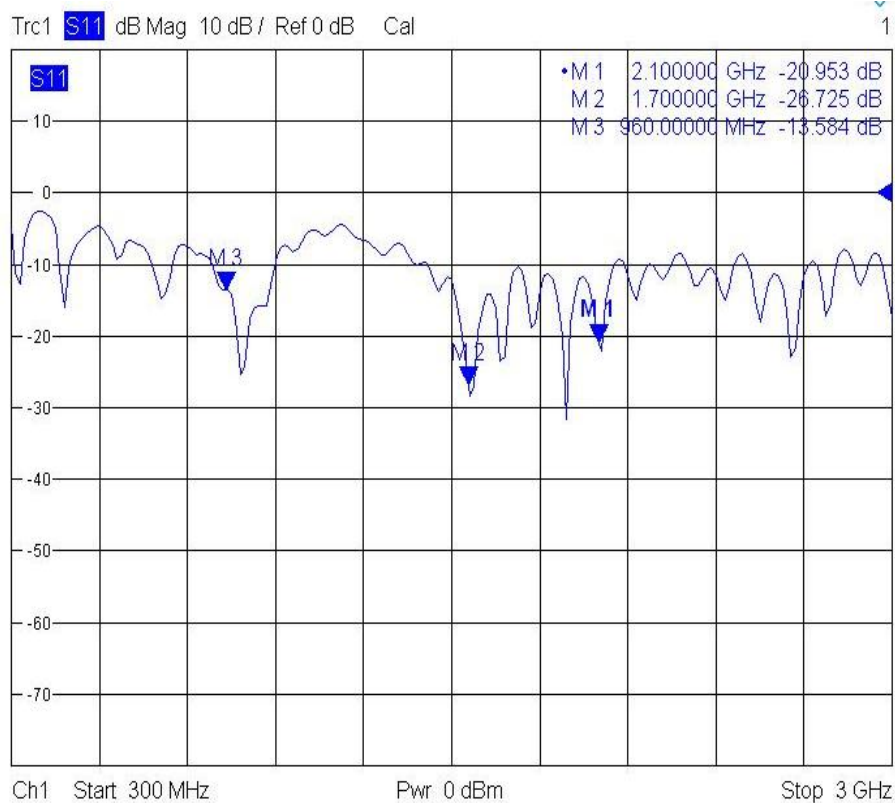


6. Performance Data

6.1 VSWR

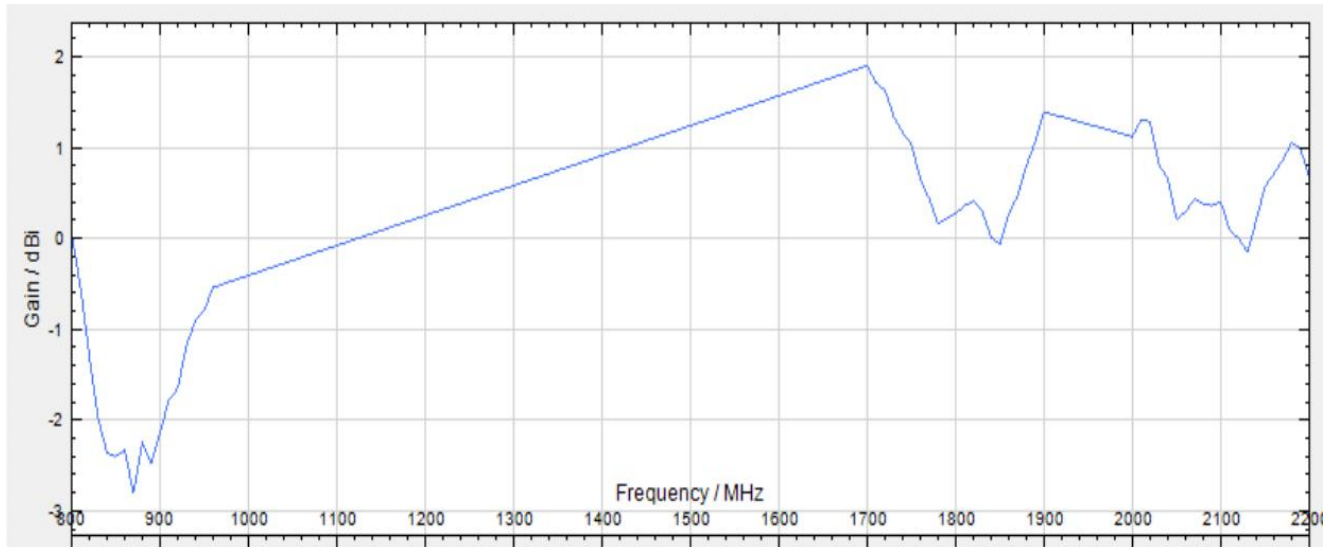


6.2 Return Loss

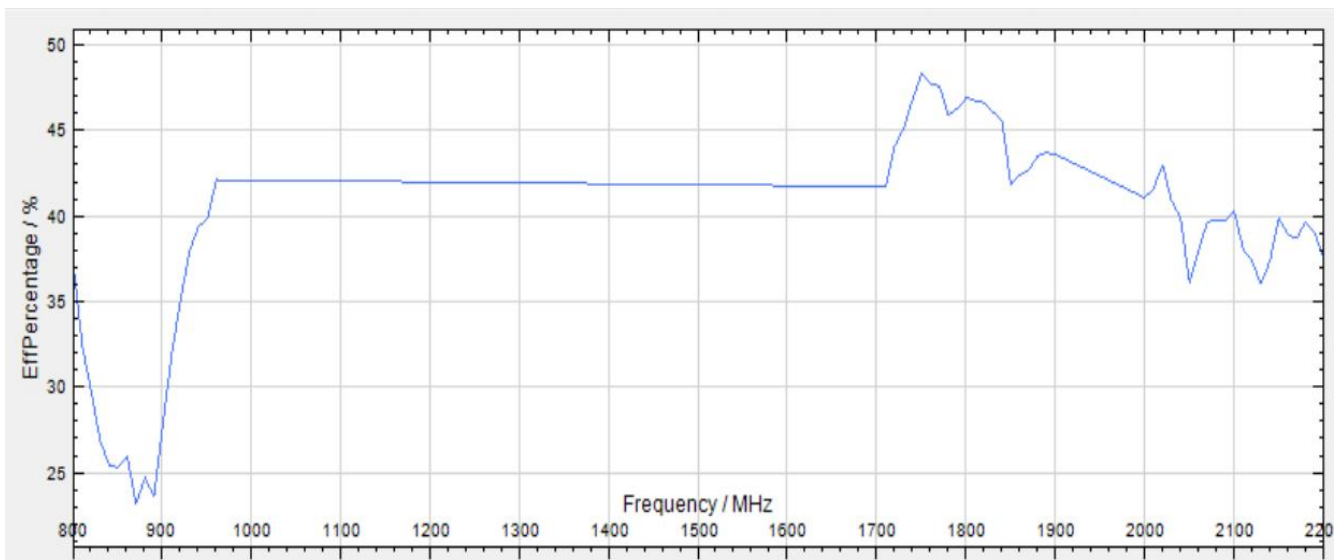


6. Performance Data

6.3 Gain



6.4 Efficiency

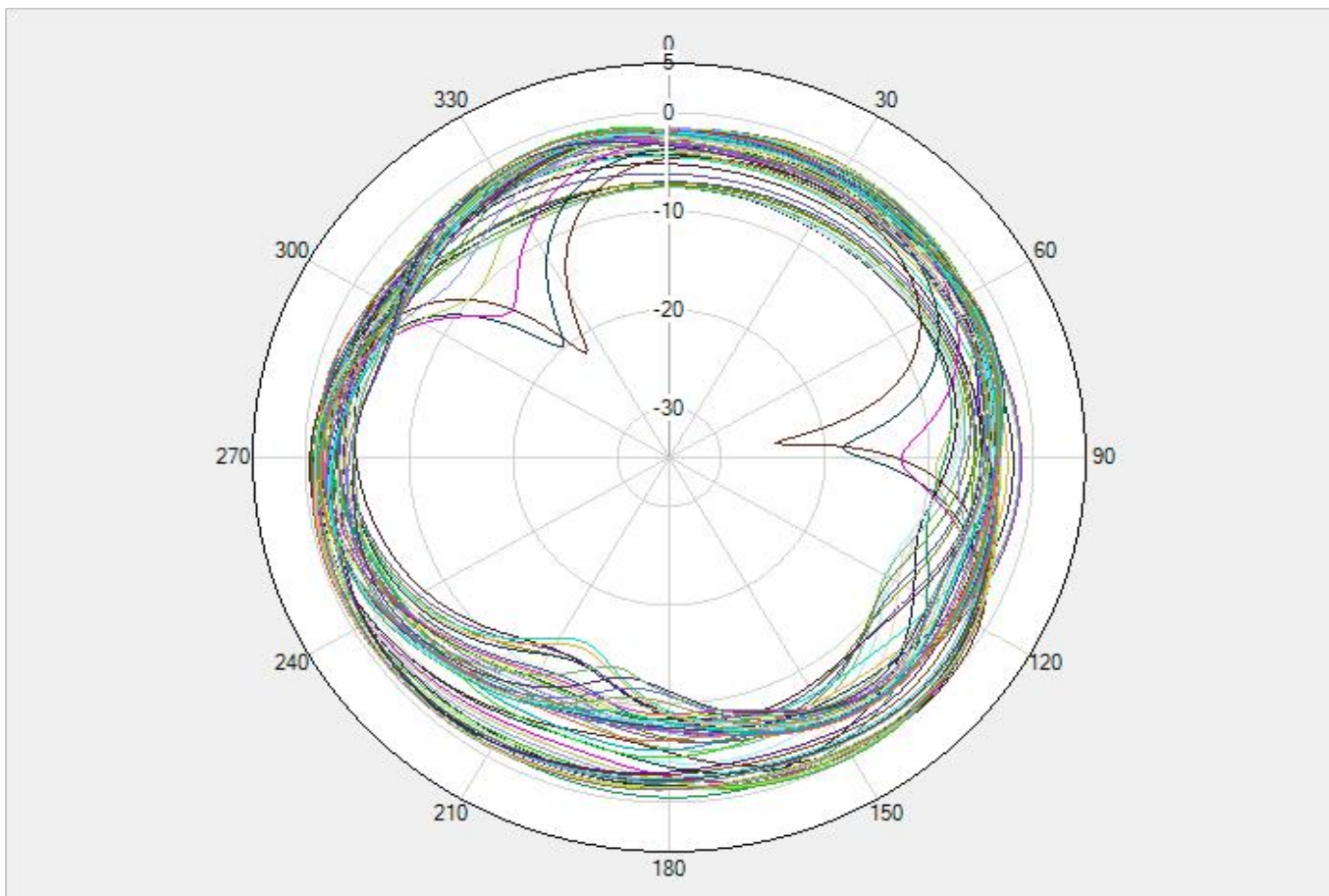


6.5 Gain and Efficiency

Frequency (MHz)	800-960	1700-2100	2100-2200
Gain (dBi)	0.06	1.91	1.32
Efficiency (%)	37.07	41.78	41.69

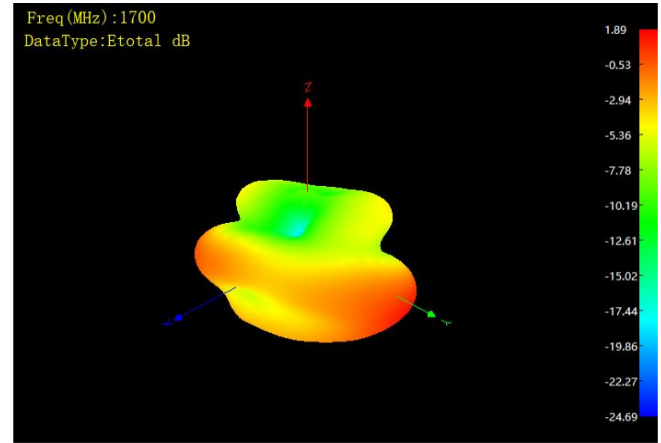
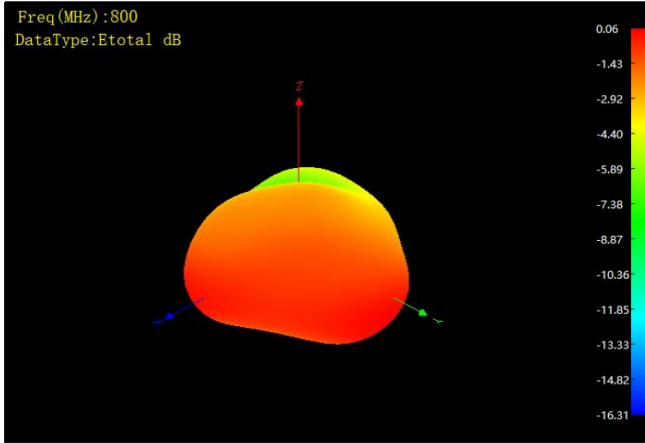
7. Radiation Patterns

7.1 2 D Radiation Patterns

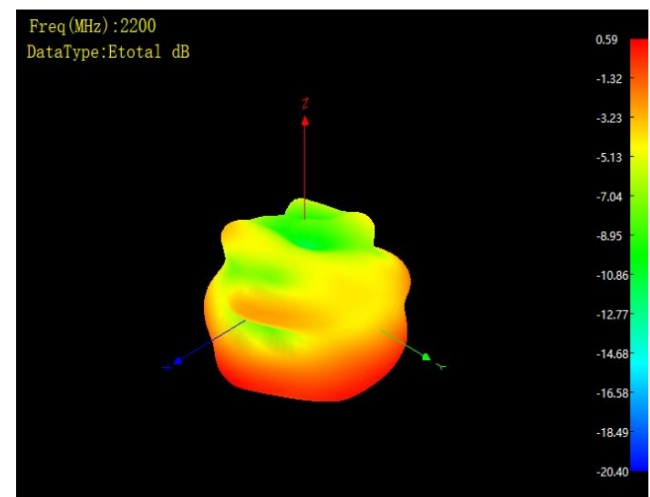
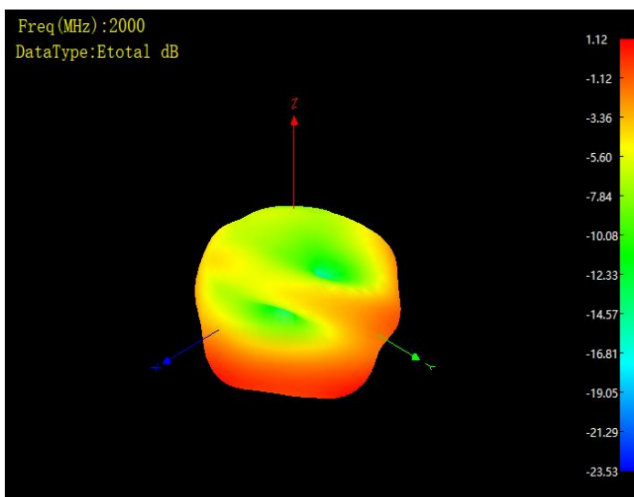




7.2 3D Radiation Patterns—800MHz、1700Mhz



7.2 3D Radiation Patterns—2000Mhz、2200MHz





DECLARATION:

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