

Antenna Datasheet

3G Spring Antenna

Model:

BW3GRSNX32-5W9

Description:

3G Spring Antenna

Length Features:

700-2200MHz

360° Omnidirectional Radiation

Dimensions: 22mm x 5mm x 9mm

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



BW3GRSNX32-5W9

Part Number Explanation

BW	Company	Bat Wireless
3G	Frequency	700-2200MHz
S	Name	Spring Antenna
N	Type	Internal
X	Constant	X
32-5	Number	32-5
Z	Feature	Straight
9	Length	9

1. Description

Bat Wireless **BW3GRSNX32-5W9** is a compact antenna specifically designed for 3GHz wireless communication. Featuring a spring-like spiral structure, it combines mechanical flexibility with electrical performance, offering vibration resistance and bend tolerance, making it ideal for automotive or mobile devices. Its small size and light weight support PCB soldering, facilitating integration into smart home devices and wireless modules. The spiral design reduces multipath interference, enhancing signal stability in complex environments.

Typical Application Scenarios:

Vehicle & Mobile Devices: ETC terminals, in-car Wi-Fi, logistics trackers

IoT Terminals: Smart home sensors, industrial wireless modules

Intelligent Transportation: Rail contact network monitoring

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	Spring Antenna		
Frequency Range	700-2200	MHz	
Input Impedence	50	Ω	
V.S.W.R	2.8		
Gain	3.8	dBi	
Polarization Type	Vertical		
Power Capacity	50	W	
Lightning Protection	-		
DC Voltage	-	V	
Radiator	-		
Mechanical Characteristics			
Dimensions	22 x 5 x 9	mm	
Connector Type	-		
Cable Type	-		
Cable Length	-	mm	
Mount way	-		
Color	Golden yellow		
Meterial	-		
Weight	0.17	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

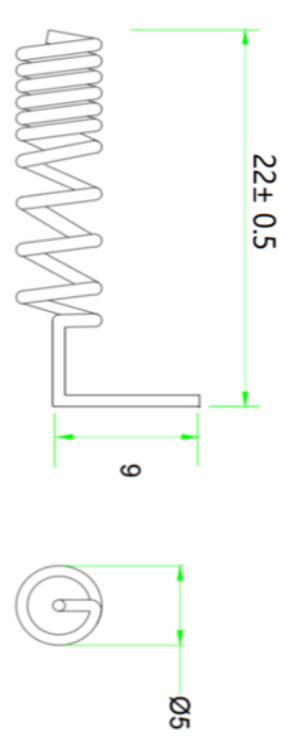


4. Mechanical Drawing



PARTS DRAWING			ROHS Compliant		
REV	PRODUCT NO.	DATE	NAME	DESCRIPTION	

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

Frequency	700-2200MHz	ANGLE PROJECTION	PRODUCT NAME Spring Antenna-700-2200MHz-L=22MM			
Gain	3.8DBI					
VSWR	< 3		UNIT	MM	SIZE	1:3
Polarization	Vertical	GENERAL TOLERANCE 100-200 : ± 3.00 50-100 : ± 2.00 25-50 : ± 0.20 10-25 : ± 0.15 1-10 : ± 0.10	PAGE	1 OF 1	FORMMT	A4
Impedance	50Ω					
Operating Temperature : -45°C~85°C						
Storage Temperature : -45°C~85°C						

5. Test Equipment



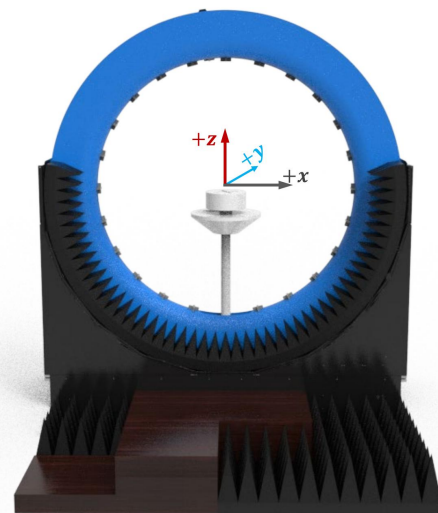
Keysight/E5071C Network Analyzer



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

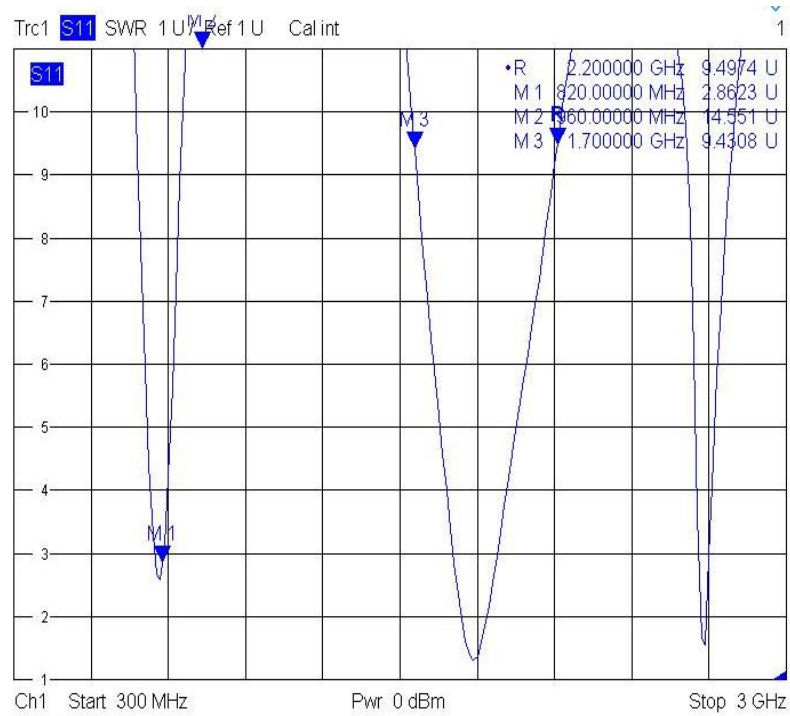


RF Link of Passive measurement

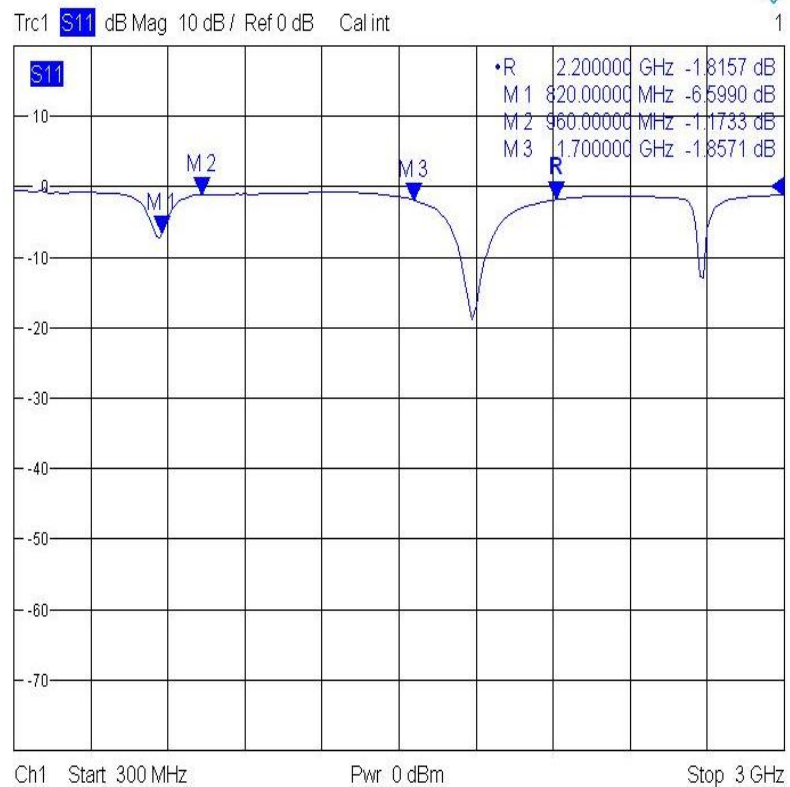


6. Performance Data

6.1 VSWR

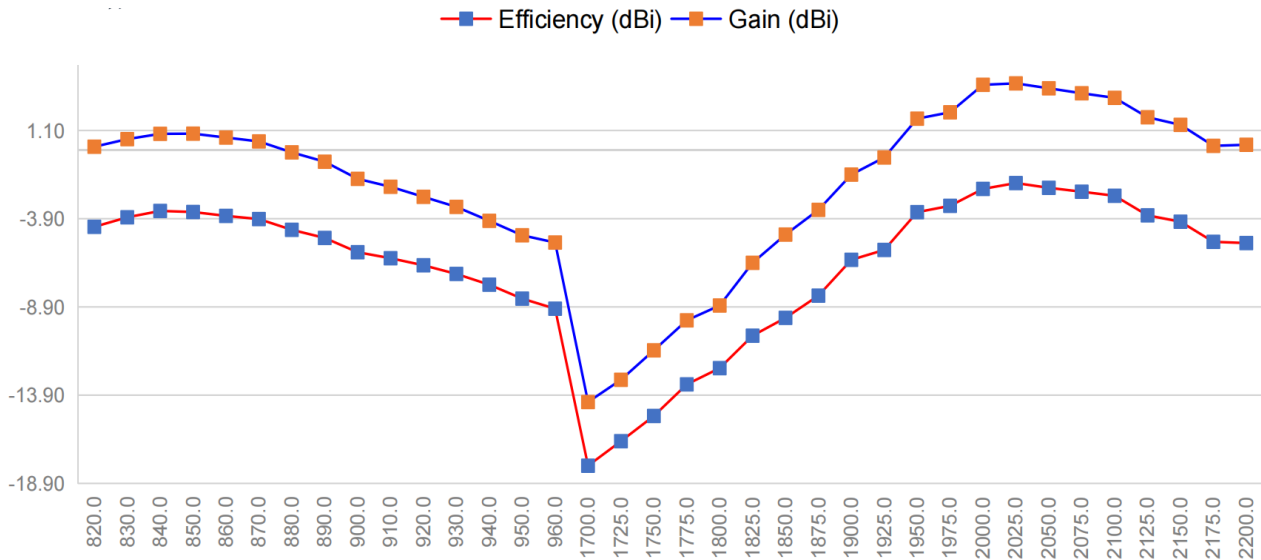


6.2 Return Loss

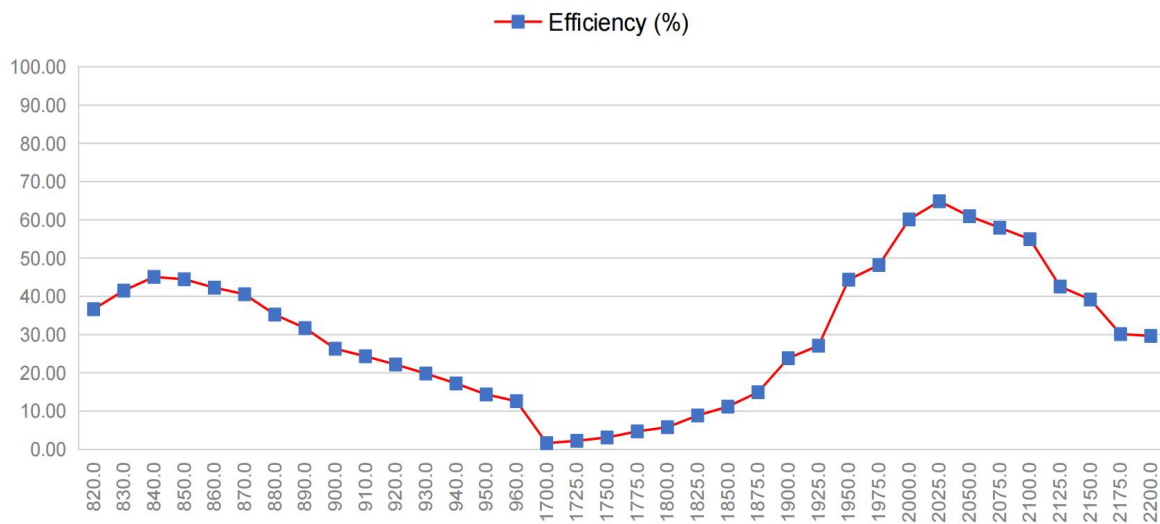


6. Performance Data

6.3 Gain



6.4 Efficiency

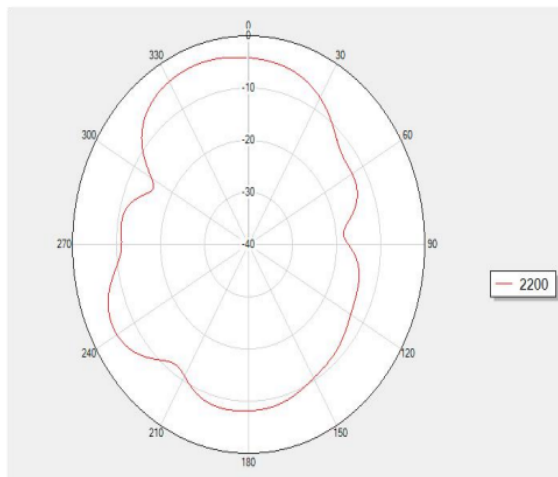
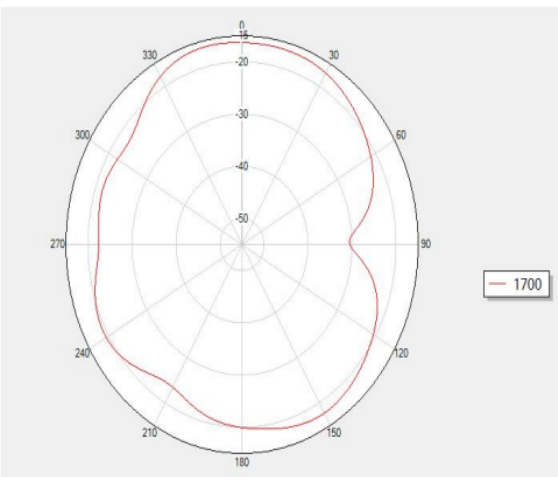
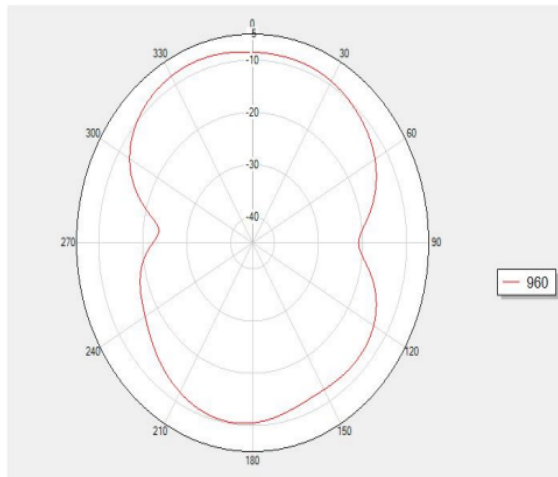
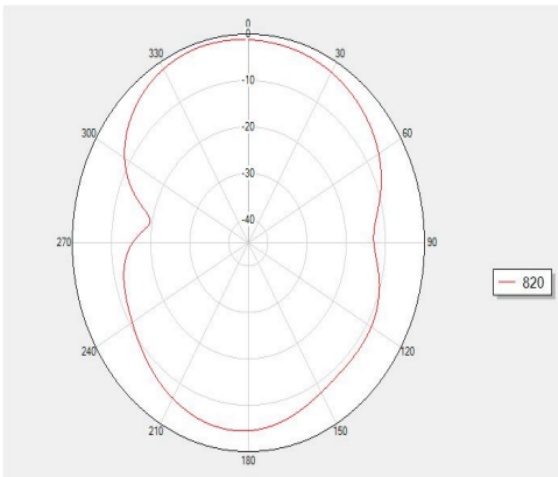


6.5 Gain and Efficiency

Frequency (MHz)	820-960	1700-2100	2100-2200
Gain (dBi)	0.92	3.77	2.95
Efficiency (%)	45.08	64.86	54.95

7. Radiation Patterns

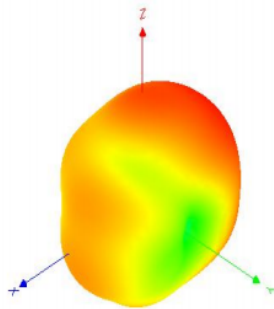
7.1 2 D Radiation Patterns



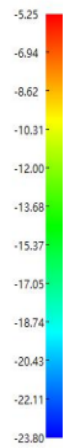
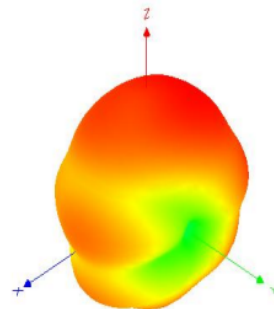


7.2 3D Radiation Patterns

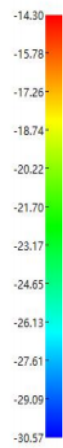
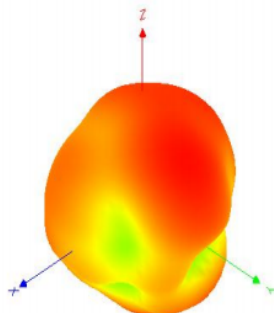
Frequency (MHz) : 820



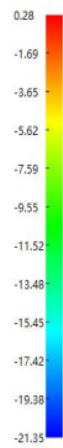
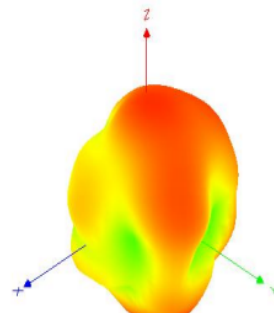
Frequency (MHz) : 960



Frequency (MHz) : 1700



Frequency (MHz) : 2200





DECLARATION:

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