

Antenna Datasheet

2.4G Spring Antenna

Model:

BW2.4SNX14-3W5

Description:

2.4G Spring Antenna

Length Features:

2400-2500MHz

360° Omnidirectional Radiation

Dimensions: 14mm x 3mm x 5mm

Compliant with RoHS & REACH Regulations

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BW2.4SNX14-3W5

Part Number Explanation

BW	Company	Bat Wireless
2.4	Frequency	2400-2500MHz
S	Name	Spring Antenna
N	Type	Internal
X	Constant	X
14-3	Dimensions	14-3mm
Z	Feature	Straight
5	Length	5

1. Description

Bat Wireless **BW2.4SNX14-3W5** is a compact antenna specifically designed for 2.4GHz 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	2400-2500	MHz	
Input Impedence	50	Ω	
V.S.W.R	<1.4		
Gain	3	dBi	
Polarization Type	Vertical		
Power Capacity	50	W	
Lightning Protection	-		
DC Voltage	-	V	
Radiator	-		
Mechanical Characteristics			
Dimensions	12 x 3 x 5	mm	
Connector Type	-		
Cable Type	-		
Cable Length	-	mm	
Mount way	-		
Color	Copper color		
Meterial	-		
Weight	0.136	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



5. Test Equipment



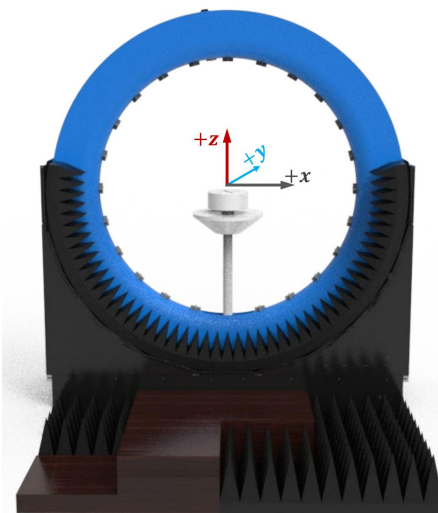
Keysight/E5071C Network Analyzer



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

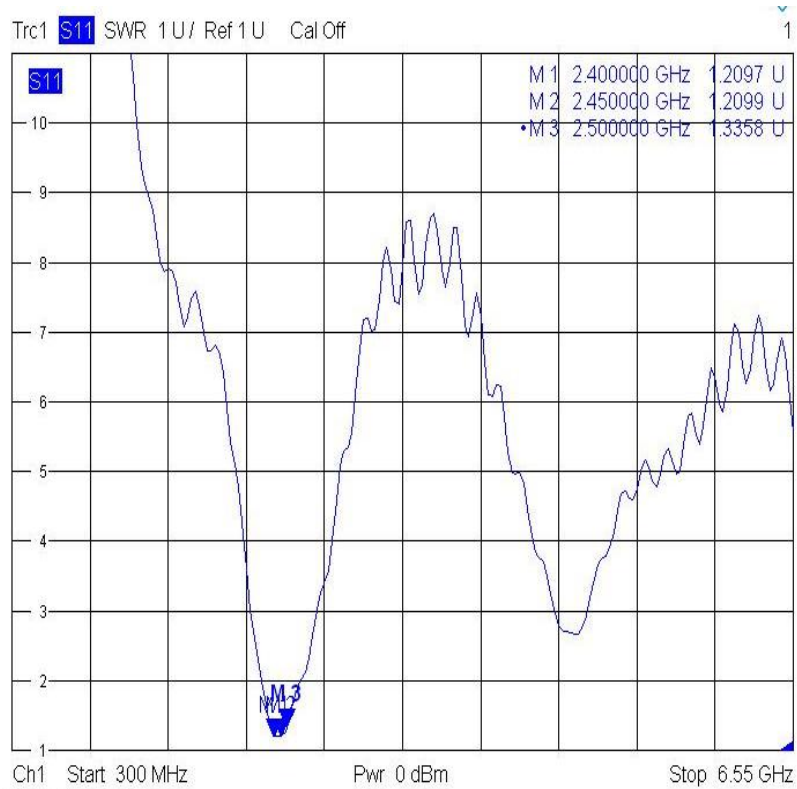


RF Link of Passive measurement

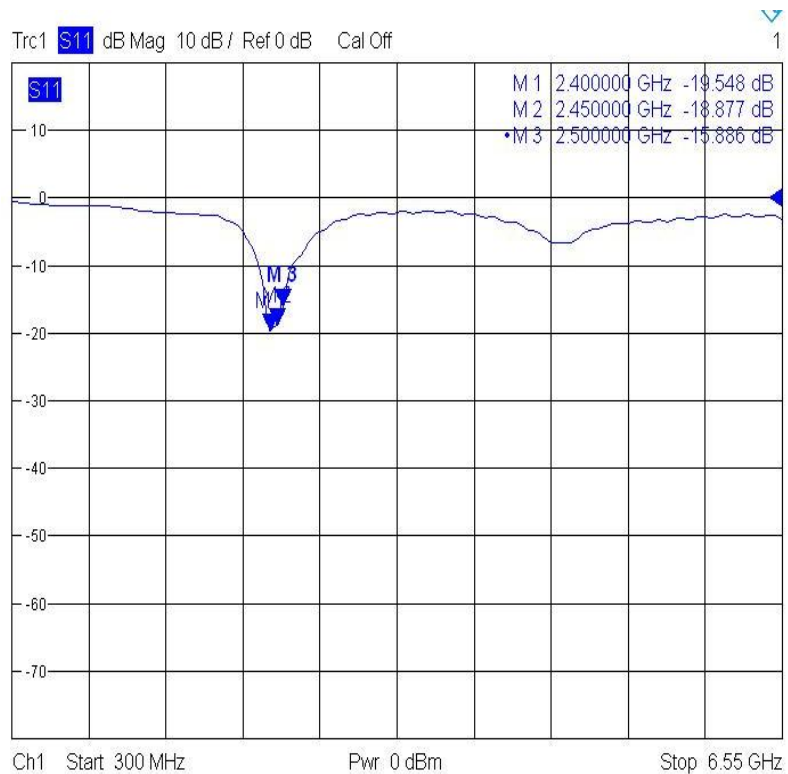


6. Performance Data

6.1 VSWR

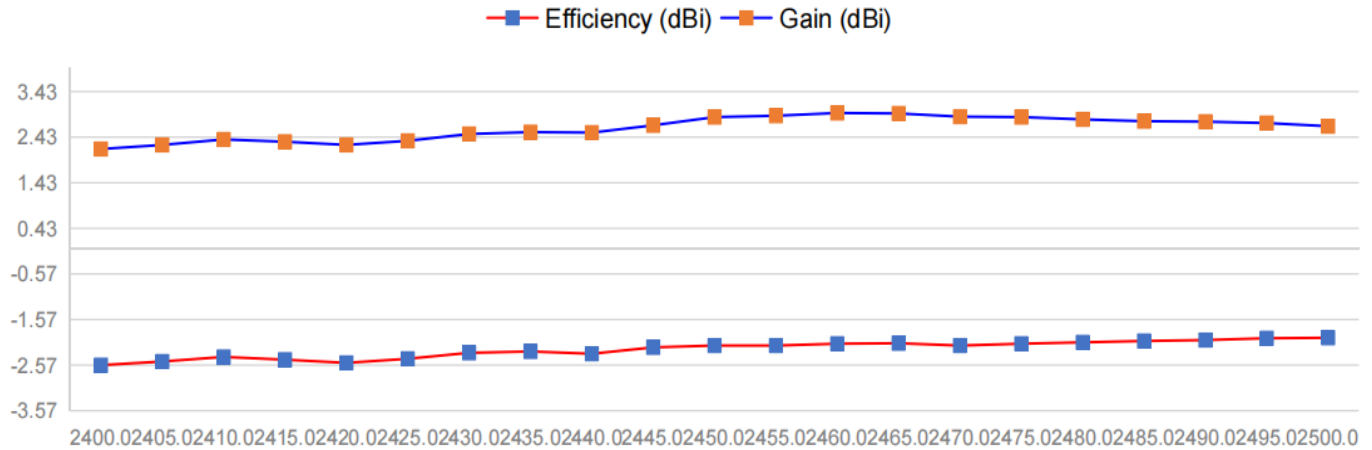


6.2 Return Loss

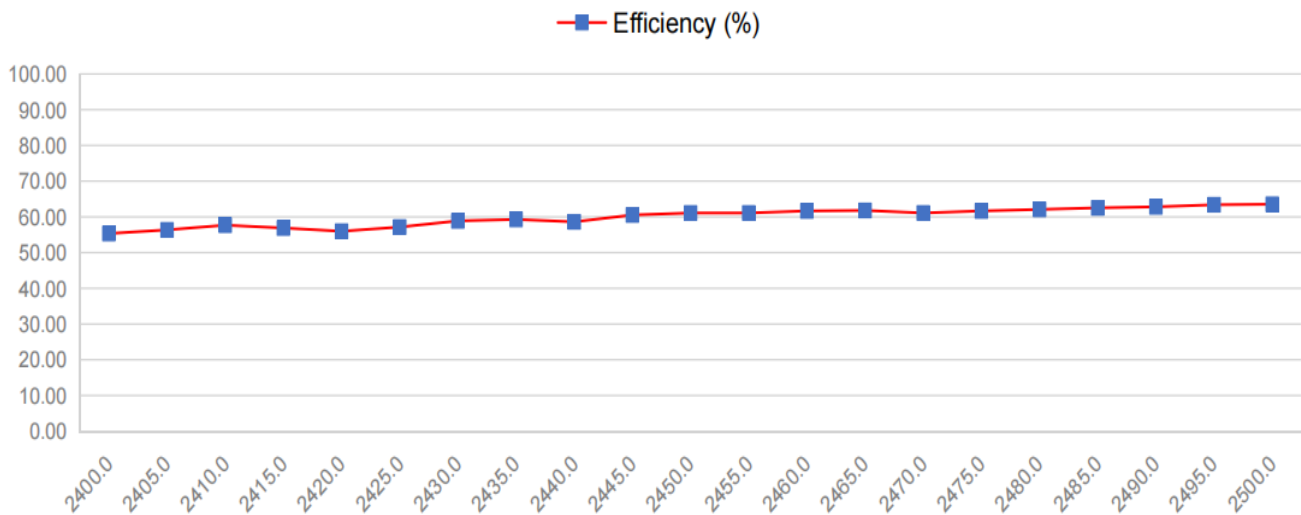


6. Performance Data

6.3 Gain



6.4 Efficiency



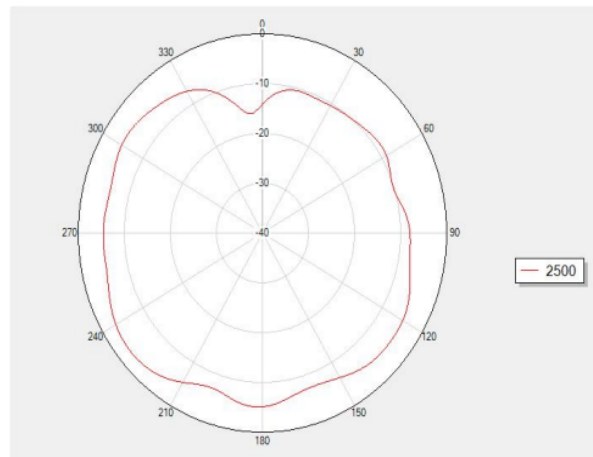
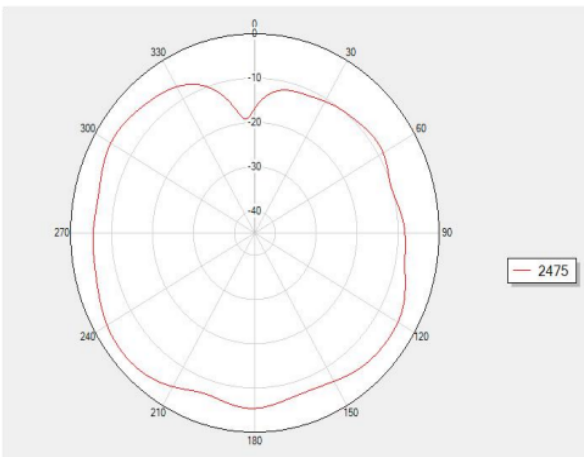
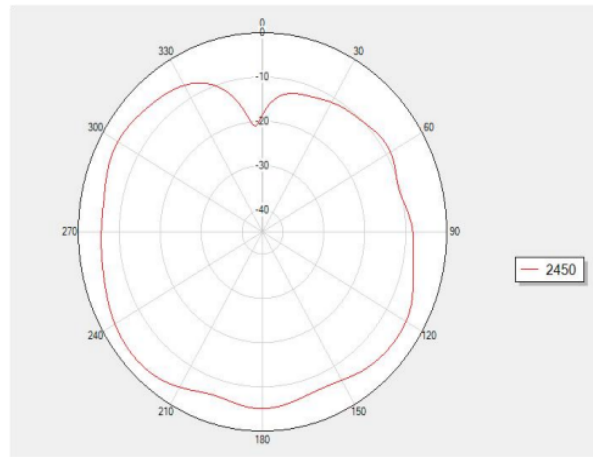
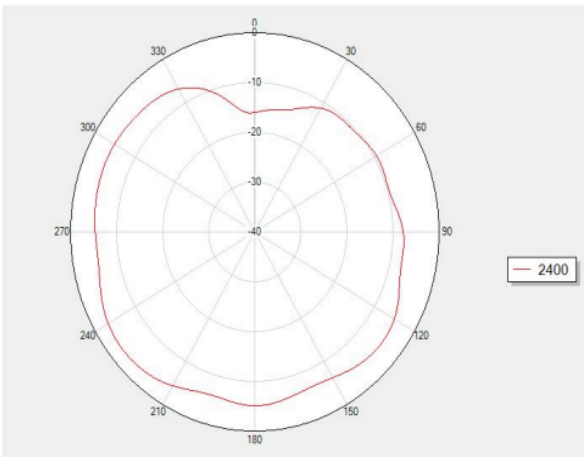
6.5 Gain and Efficiency

Frequency (MHz)	2400	2450	2500
Gain (dBi)	2.17	2.87	2.67
Efficiency (%)	55.34	61.09	63.53



7. Radiation Patterns

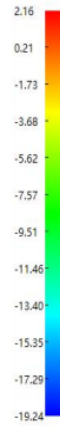
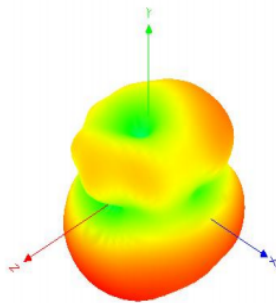
7.1 2 D Radiation Patterns



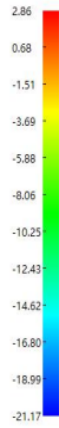
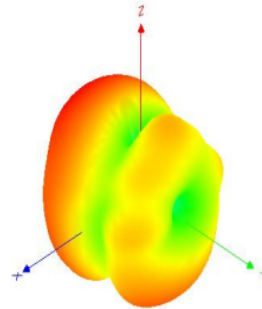


7.2 3D Radiation Patterns

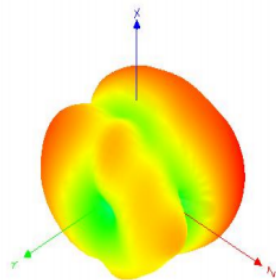
Frequency (MHz) : 2400



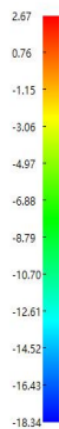
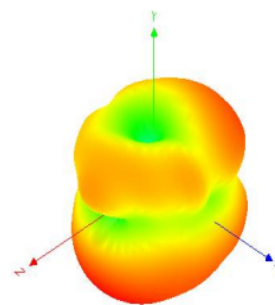
Frequency (MHz) : 2450



Frequency (MHz) : 2475



Frequency (MHz) : 2500





DECLARATION:

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