

# DATASHEET

## Coaxial Cable

**Model No:**

BWSMAJ-BNCK-RG316L500

**Description:**

SMA Male to BNC Female adapter cable

**Features:**

0-6000MHz

**Structure:**

Cable: RG316 x 500mm

Connector: SMA Male to BNC Female

**RoHS & REACH Complaint**





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## BWSMAJ-BNCK-RG316L500

### Part Number Description

BW	Company	BAT WIRELESS
SMAJ	Connector	SMA-J
-	Constant	Constant
BNCK	Connector	BNC-K
-	Constant	Constant
RG316	Cable	RG316
L	Long	Length
500	Cable Length	500mm

### Selection Table

Connector	SMA	N	TNC	BNC	SMB	MCX	Customizable
Cable Type	RG174	RG178	RG316	RG58			Customizable
Cable Length	1000mm	1500mm	2000mm	2500mm	1000mm	1500mm	Customizable

### 1. Description

Bat Wireless BWSMAJ-BNCK-RG316L500 is a high-performance RF coaxial adapter cable, typically operating in the 0-6 GHz frequency range. Designed specifically for wireless communication devices, it connects various interfaces and ensures stable, low-loss signal transmission. It is suitable for use in applications such as Wi-Fi modules, 4G/5G devices, GPS antennas, drones, and IoT terminals, resolving compatibility issues between different interfaces. It can connect to both SMA and BNC interfaces device ports. High-purity coaxial cable minimizes signal attenuation, and optimized processing and coaxial structure ensure low insertion loss.

Classic application scenarios:

Wireless communication modules: GPS/Beidou positioning terminals, 4G/5G modules, Wi-Fi/Bluetooth modules

Test and measurement equipment: RF test probe connection ports, spectrum analyzers, signal generator antenna ports

IoT terminals: Signal enhancement for smart homes, drones, and wearable devices

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. Specifications

Parameters	Typ.	Units	Notes
Electrical Characteristics			
Product Type	Adapter Cable		
Frequency Range	0-6000	MHz	
Input Impedance	50	Ω	
Contact resistance	IC < 3, OC < 2	MΩ	
Insulation resistance	>5000	MΩ	
Insert Loss	0.15	dB(6GHz)	
RF leakage	1000	V	
Durability	500	Cycles	
ID of Plug / OD of Jack	-	mm	
DC Voltage	-	V	
Mechanical Characteristics			
Connector Type	SMA-J(Customizable)		
Connector Type	BNC-K(Customizable)		
Cable Type	RG316(Customizable)		
Cable Length	500(Customizable)	mm	
Mount way	SMA Screw-on/BNC Bayonet Mount		
Color	-		
Material	Copper		
Weight	-	g	
Environmental Characteristics			
Waterproof Rating	-		
ROHS Complaint	Yes		
Operating Temperature	-45~ +85	°C	
Storage Temperature	-45~ +85	°C	



### 3. Specification

Parameters	Parameters	Typ.	Units	Notes
<b>Electrical Characteristics</b>				
Inner Conductor	Material	Silver-plated copper wire		
	Construction	7/0.17	mm	
	Nom.Dia	0.51±0.02	mm	
Insulation	Material	FEP		
	Average Thickness	-	mm	
	Nom.Dia	1.52±0.05	mm	
Outer Conductor	Material	Tinned wire 16*5/0.10		
	Nom.Dia	1.95±0.05	mm	
	Coverage Ratio	90±5	%	
Jacket	Material	FEP		
	Nom.Dia	2.50±0.10	mm	
<b>Mechanical Characteristics</b>				
Impedanc	-	50±2	Pf/m	
Capacitance	-	95	Ω	
20°C Attenuation	0.1GHz	0.262	dB/m	
	0.4GHz	0.531	dB/m	
	1GHz	0.860	dB/m	
	3GHz	1.650	dB/m	
	-	-	dB/m	
	-	-	dB/m	
	-	-	dB/m	
<b>Structure Drawing</b>				

## 4 . Demensions

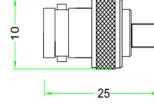
### 4.1 Actual Picture



\* Product images are for reference only.

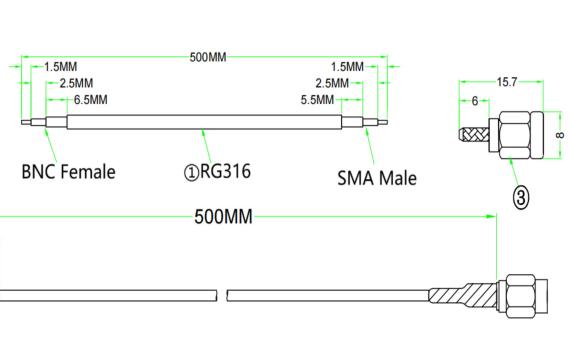
### 4.1 Parts Drawing

PARTS DRAWING		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	O'ty	Frequency	Gain	ANGLE PROJECTION	PRODUCT NAME			
								Connector-SMA Male-BNC Female-RG316-L=500MM			
4	Heat Shrink Tubing	3.5*15MM Black		2							
3	BNC	Female		1							
2	SMA	Male		1							
1	Wire	RG316 L=500MM		1							

GENERAL TOLERANCE	UNIT	MM	SIZE	1:3
100~200 : ± 3.00				
50~100 : ± 2.00				
20~50 : ± 1.20				
10~25 : ± 0.15				
1~10 : ± 0.10				

Operating Temperature: -45°C~85°C  
Storage Temperature: -45°C~85°C

## 5 . Test Equipment



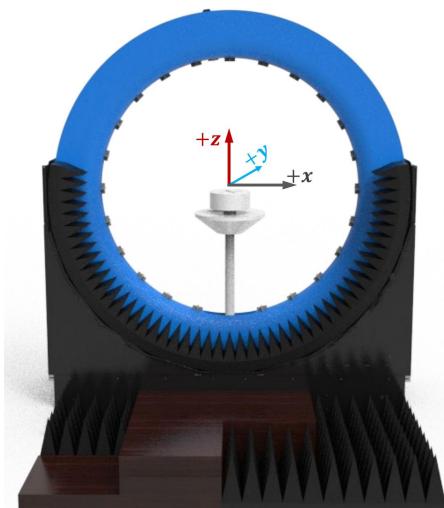
Keysight/E5071C Network Analyzer



R&amp;S/CMW500 Comprehensive tester



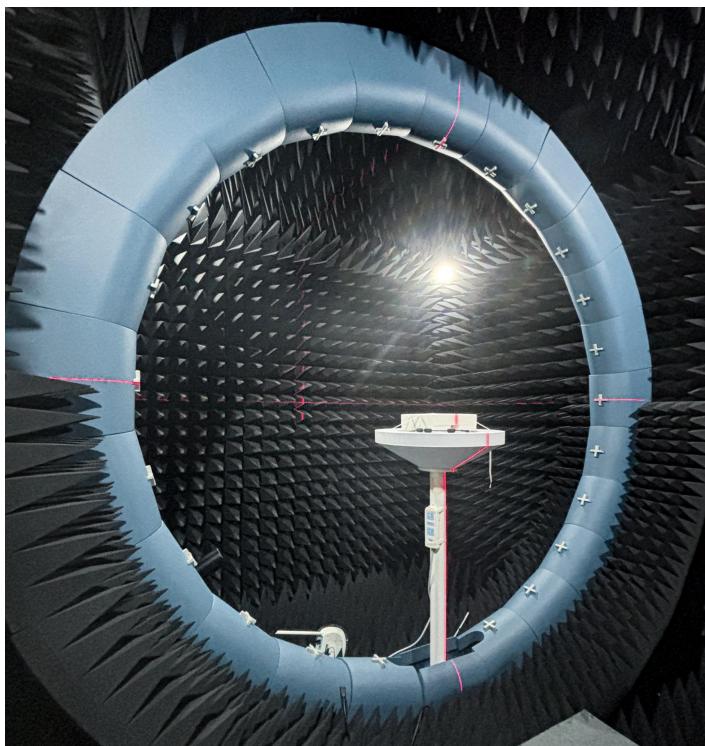
R&amp;S/SMBV100B Signal Source



### DT-3500 Datasheet / System Specifications

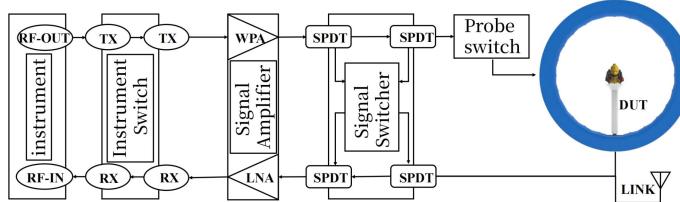
Specification:	Description
Test Frequency :	400MHz-8.5GHz
System Size :	$L \times W \times H = 4 \times 3.5 \times 3.5\text{m}$
Number of Probes :	23 (Probe) + 1 (link)
Interval Angle :	15°
Sampling Diameter :	2200mm
Carring Capacity :	$\leq 40\text{kg}$

Testing Capability	Description
Active measurement	<b>Capability :</b> TRP、TIS、EIRP、EIS,. etc <b>Mode :</b> 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
Pasive measurement	<b>Test category :</b> Gain、Efficiency、2D pattern、3D pattern、Pattern roundness、Axial Ratio, ECC, Phase center,. etc <b>Polarization :</b> Circular polarization, linear polarization, elliptical polarization

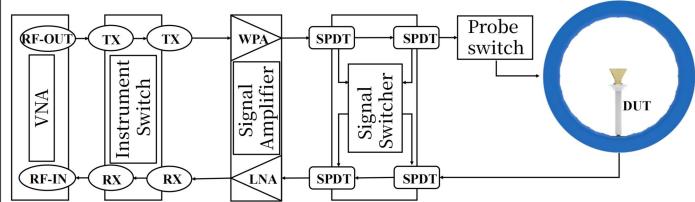


## RF Link diagram of multi probe spherical near-field testing system

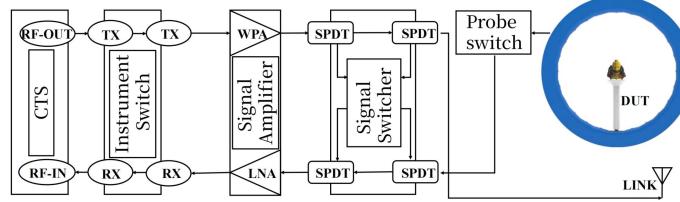
RF Link Overview



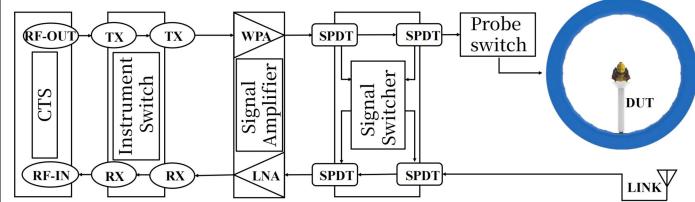
RF Link of Passivemeasurement



RF Link Overview



RF Link of Passivemeasurement





## DECLARATION:

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