

DATASHEET

Coaxial Cable

Model No:

BWSMAJ-SMAK-RG178L500

Description:

SMA male to SMA female adapter cable

Features:

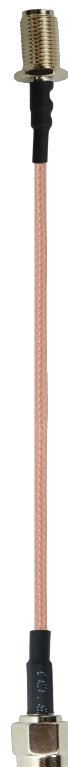
0-6000MHz

Structure:

Cable: RG178 x 500mm

Connector: SMA male to SMA Female

RoHS & REACH Complaint



CONTENTS

1.	Description	3
2.	Specifications	4
3.	Coaxial Cable Specifications	5
4.	Dimensions	6
4.1	Actual Picture	6
4.2	Parts Drawing	6
5.	Test Equipment	7-8



BWSMAJ-SMAK-RG178L500

Part Number Description

BW	Company	BAT WIRELESS
SMAJ	Connector	SMA male
-	Constant	Constant
SMAK	Connector	SMA Female
-	Constant	Constant
RG178	Cable	RG178
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	100mm	200mm	300mm	500mm	1000mm	1500mm	Customizable

1. Description

Bat Wireless BWSMAJ-SMAK-RG178L500 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 SMA 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

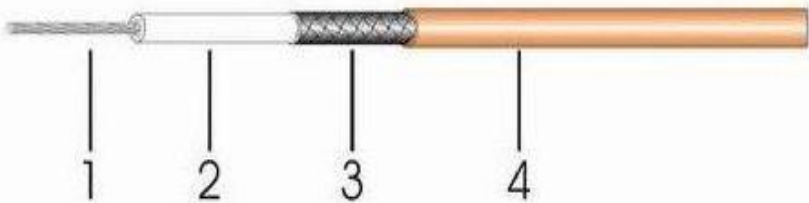
IoT terminals: Signal enhancement for smart homes, drones, and wearable devices

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.	Unites	Notes
Electrical Characteristics			
Product Type	Adapter Cable		
Frequency Range	0-6000	MHz	
Input Impendence	50	Ω	
Contact resistance	IC <3, OC < 2	M Ω	
Insulation resistance	>5000	M Ω	
InsertLoss	0.15	dB(6GHz)	
RF leakage	1000	V	
Durability	500	Cycles	
ID of Plug / OD of Jack	-	mm	
DCVoltage	-	V	
Mechanical Characteristics			
Connector Type	SMA Male(Customizable)		
Connector Type	SMA-Female(Customizable)		
Cable Type	RG178(Customizable)		
Cable Length	500(Customizable)	mm	
Mount way	Screw-on		
Color	-		
Meterial	Copper		
Weight	-	g	
Environmental Characteristics			
Waterproof Rating	-		
ROHS Complaint	Yes		
Operating Temperature	-45~ +85	$^{\circ}\text{C}$	
Storage Temperature	-45~ +85	$^{\circ}\text{C}$	

3. Specification

Parameters	Parameters	Typ.	Unites	Notes
Electrical Characteristics				
Inner Conductor	Material	Tinned Copper Wire		
	Construction	1/0.8±0.05	mm	
	Nom.Dia	0.306±0.02	mm	
Insulation	Material	FEP		
	Average Thickness	-	mm	
	Nom.Dia	0.88±0.05	mm	
Outer Conductor	Material	Tinned Copper Wire 16*3/0.10		
	Nom.Dia	1.30±0.05	mm	
	CoverageRatio	90±5	%	
Jacket	Material	FEP		
	Nom.Dia	1.80±0.05	mm	
Mechanical Characteristics				
Impedanc	-	50±2	Pf/m	
Capacitance	-	96	Ω	
20°C Max Attenuation	0.1GHz	0.70	dB/m	
	0.4GHz	1.50	dB/m	
	1GHz	1.90	dB/m	
	2GHz	2.80	dB/m	
	3GHz	3.70	dB/m	
	-	-	dB/m	
Structure Drawing				
				

4 . Dimensions

4.1 Actual Picture



* Product images are for reference only.

4.1 Parts Drawing

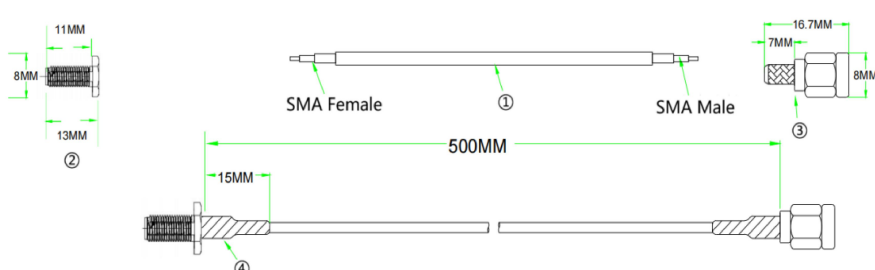
PARTS DRAWING

ROHS Compliant

REV	PRODUCT NO.	DATE	NAME	DESCRIPTION

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.



NO	Code	Name	Description	O'ty
4		Heat Shrink Tubing	3.5*15MM Black	2
3		SMA	Male	1
2		SMA	Female	1
1		Wire	RG316 L=500MM	1

Frequency	Gain	VSWR	Polarization	Impedance
Operating Temperature: -45°C~85°C				
Storage Temperature: -45°C~85°C				

ANGLE PROJECTION



PRODUCT NAME				
Connector-SMA Male-SMA Female-RG316-L=500MM				
UNIT	MM	SIZE	1:3	
PAGE	1 OF 1	FORNMT	A4	

GENERAL TOLERANCE

100~200 :	± 3.00
50~100 :	± 2.00
25~50 :	± 0.20
10~25 :	± 0.15
1~10 :	± 0.10

5 . Test Equipment



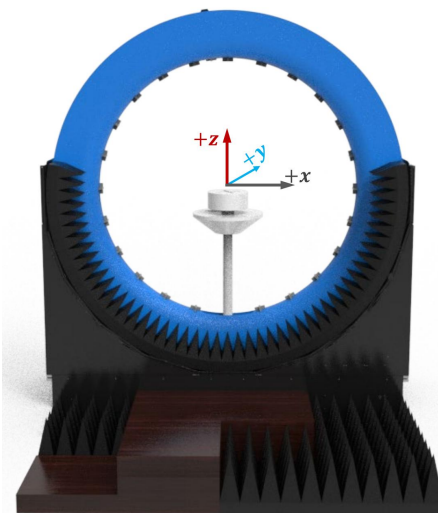
Keysight/E5071C Network Analyzer



R&S/CMW500 Comprehensive tester



R&S/SMBV100B Signal Source



DT-3500 Datasheet / System Specifications

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 :	≤40 kg

Testing Capability

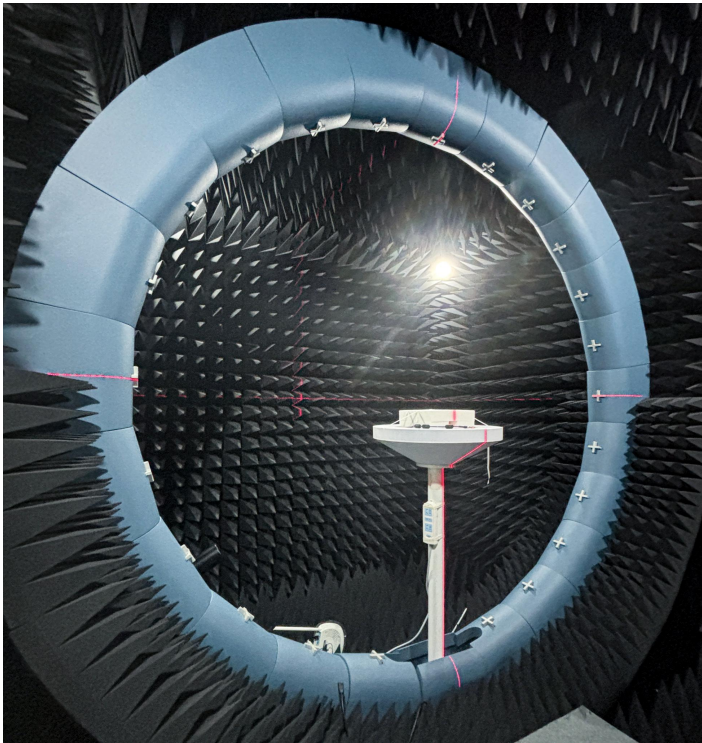
Description

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

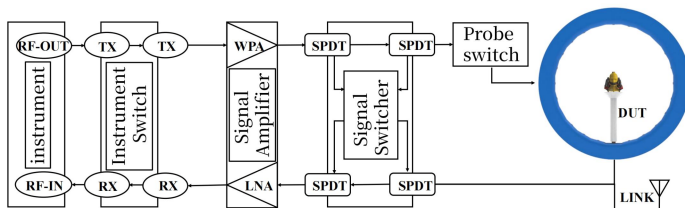
Passive measurement

Test category : Gain、Efficiency、2D pattern、3D pattern、Pattern roundness、Axial Ratio、ECC,Phase center,. etc
Polarization : Circular polarization, linear polarization, elliptical polarization

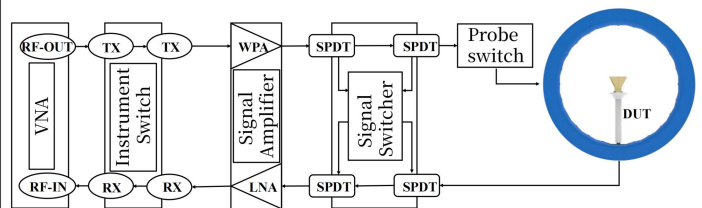


RF Link diagram of multi probe spherical near-field testing system

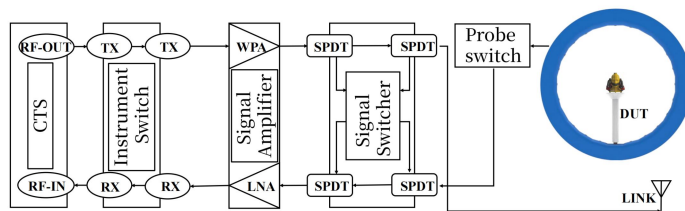
RF Link Overview



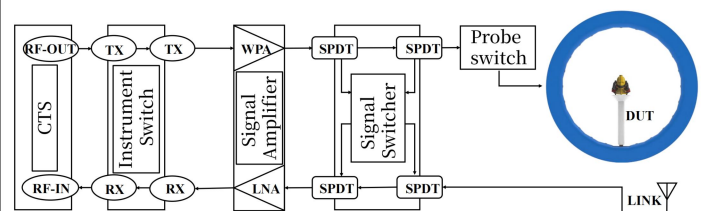
RF Link of Passivemeasurement



RF Link Overview



RF Link of Passivemeasurement





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:	Aug-21-2025-A01
Date:	2025-08-21
Note:	First released
Author:	Lisa / Cathy

Change Log
