

# DATASHEET

## Coaxial Cable

**Model No:**

BWSMAJ-TNCK-RG316L500

**Description:**

SMA Male to TNC Female adapter cable

**Features:**

0-6000MHz

**Structure:**

Cable: RG316 x 500mm

Connector: SMA Male to TNC Female

RoHS & REACH Complaint



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## BWSMAJ-TNCK-RG316L500

### Part Number Description

|       |              |              |
|-------|--------------|--------------|
| BW    | Company      | BAT WIRELESS |
| SMAJ  | Connector    | SMA-J        |
| -     | Constant     | Constant     |
| TNCK  | Connector    | TNC-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-TNCK-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 TNC interface 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

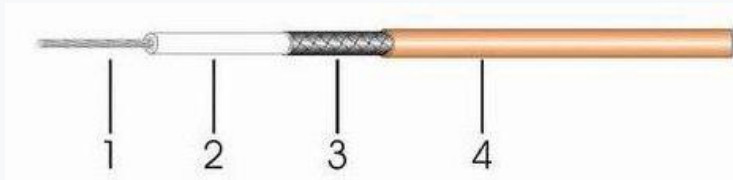
Bat Wireless provides customized services to optimize your device, we have a mature R&D team that can respond quickly to meet your needs. If you have any requirements, please contact our sales and FAE.

## 2. Specifications

| Parameters                    | Typ.                     | Unites     | Notes |
|-------------------------------|--------------------------|------------|-------|
| Electrical Characteristics    |                          |            |       |
| Product Type                  | Adapter Cable            |            |       |
| Frequency Range               | 0-6000                   | MHz        |       |
| Input Impedence               | 50                       | $\Omega$   |       |
| Contact resistance            | IC < 3,OC < 2            | M $\Omega$ |       |
| Insulation resistance         | >5000                    | M $\Omega$ |       |
| Insert Loss                   | 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                | TNC-Female(Customizable) |            |       |
| Cable Type                    | RG316(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                 | °C         |       |
| Storage Temperature           | -45~ +85                 | °C         |       |



### 3. Specification

| Parameters                                                                           | Parameters        | Typ.                      | Unites | Notes |
|--------------------------------------------------------------------------------------|-------------------|---------------------------|--------|-------|
| Electrical Characteristics                                                           |                   |                           |        |       |
| 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     |       |
| Mechanical Characteristics                                                           |                   |                           |        |       |
| 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   |       |
| Structure Drawing                                                                    |                   |                           |        |       |
|  |                   |                           |        |       |

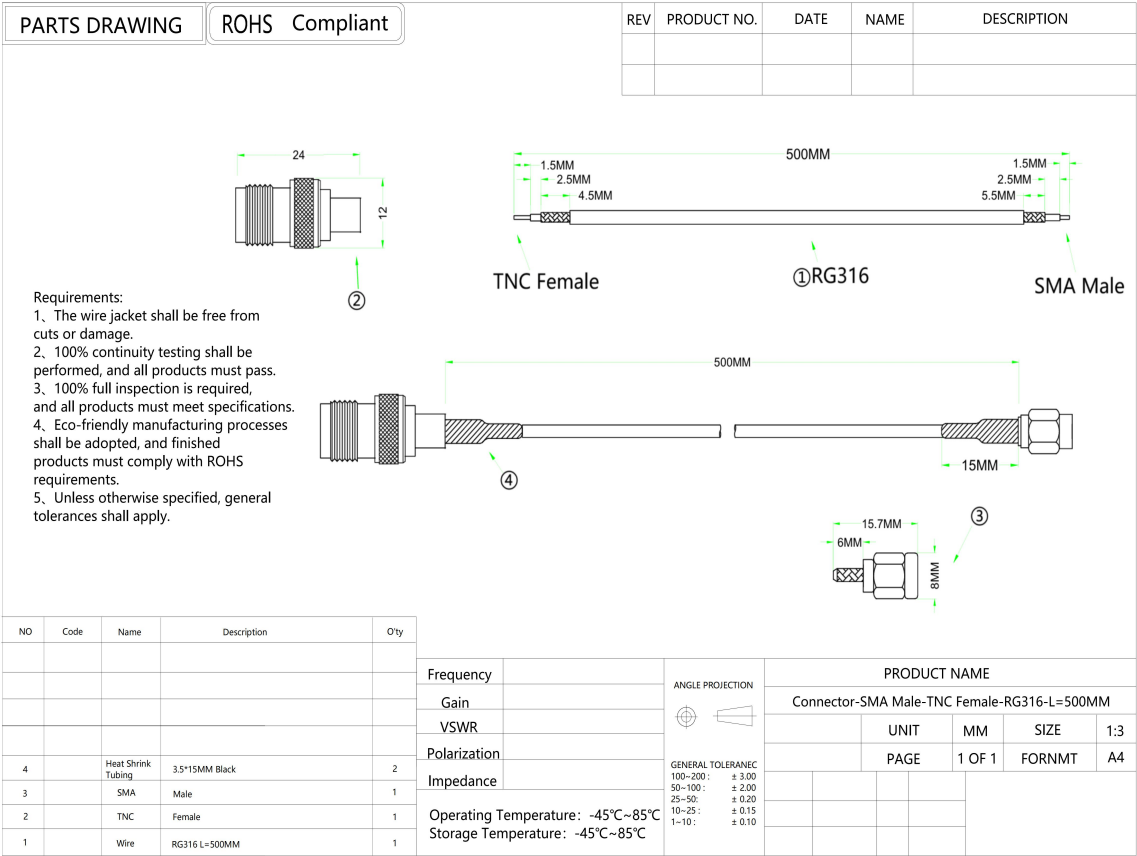
4 . Demensions

4.1 Actual Picture



\* Product images are for reference only.

4.1 Parts Drawing



## 5 . Test Equipment



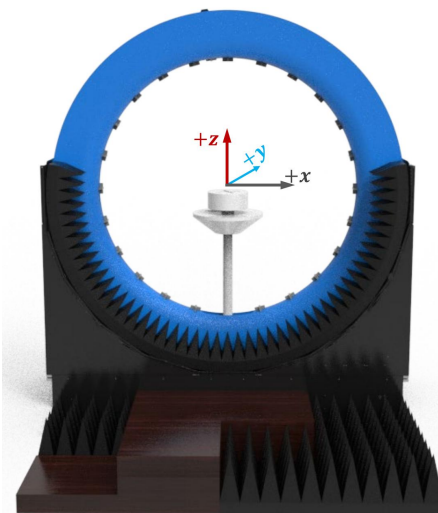
Keysight/E5071C Network Analyzer



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*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

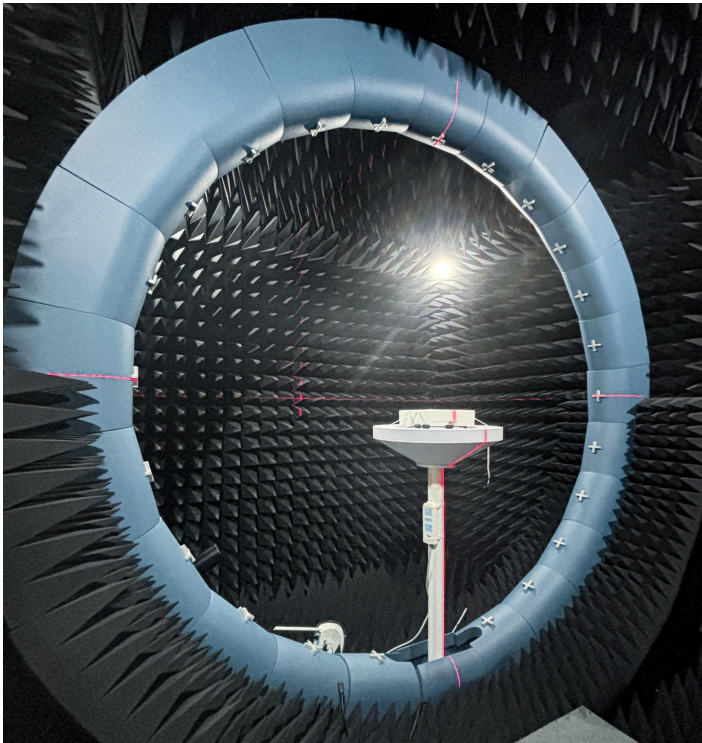
### Description

#### 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

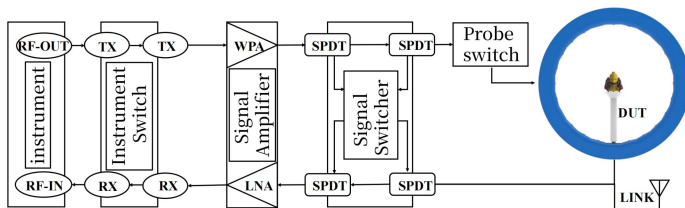
#### Passive measurement

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

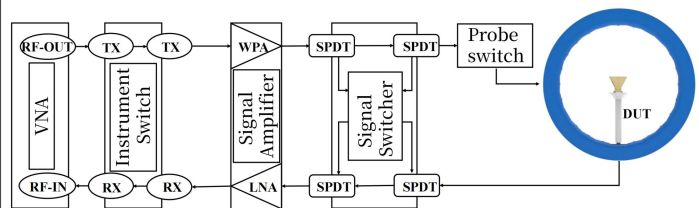


## RF Link diagram of multi probe spherical near-field testing system

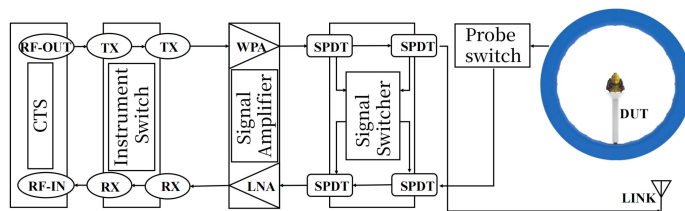
### RF Link Overview



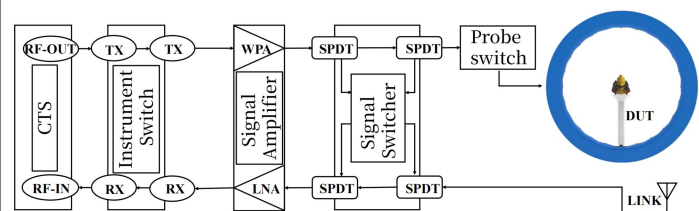
### RF Link of Passivemeasurement



### RF Link Overview



### RF Link of Passivemeasurement





## DECLARATION:

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