# 产品规格承认书

Product specifications
acknowledgment



承认厂商：_____

(Recognized manufacturers)

制 造 厂 商 ： 深圳市蝙蝠无线技术有限公司

（Manufacturer）

产 品 名 称 ： 多星多频螺旋天线

（Description）

## 产品选型表：

（Product Type）

| 型号 | 说明 | 备注 |
|---|---|---|
| BWL1L5GNX56-23SJ | SMA 内螺内针 | 可选配 |
| | | |
| | | |

| 供应商承认签栏 | | |
|---|---|---|
| **制表者** | **审核者** | **核准者** |
| | | |

| 客户承认栏 | |
|---|---|
| **审核者** | **核准者** |
| | |

## 产品描述

BWL1L5GNX56-23SJ GNSS 天线，采用多臂耦合和四馈点馈电技术，支持北斗二代、GPS、GLONASS 和 GALILEO 系统的 L1 和 L5 双频段卫星导航信号接收，内置低噪声放大器，采用两级滤波器，带外抑制好，抗干扰能力强，保证在恶劣电磁环境下正常工作。满足目前多系统兼容和高精度测量的需求。

## 产品应用

适用于对体积和重量有要求的场合，比如无人机、微型 RTK、亚米级手持机/平板等便携式设备。

## 技术特点

- 天线采用多臂螺旋技术，保证了右旋圆极化和相位中心性能，降低测量误差的影响；
- 天线单元具有增益高、增益滚降小特点，对低仰角卫星信号接收效果好；
- 精巧的低噪声、高增益放大和出色的带外抑制；
- 静电防护：15KV（空气放电）；
- 体积小，重量轻，便于携带安装。

## 主要技术指标（典型）

| | |
|---|---|
| **天线特性 ANTENNA** | |
| 天线结构<br>Patch Architecture | 四臂螺旋结构（Quadrifilar Helix） |
| 支持卫星信号<br>Supported positioning signal bands | 北斗：B1/B2a；<br>GPS：L1/L5；<br>Galileo：El/E5a<br>GLONASS：L1 |
| 最大增益 Peak Gain* | ≥1.5 dBi |
| 极化方式 Polarization | 右旋圆极化（RHCP） |
| 天线轴比@天顶<br>Axial Ratio@zenith | ≤1.5dB |
| 水平面覆盖角度<br>Azimuth Coverage | 360° |
| 特性阻抗<br>Impedance | 50 ohm |
| **低噪声放大器特性 LNA** | |
| 工作频段 Frequency Range | 1176.45±10.23MHz<br>1559MHz~1606MHz |
| 低噪放增益 LNA Gain* | 25±3.0dB （Typ. @25°C） |
| 噪声系数 Noise Figure* | ≤1.5 dB@25°C , Typ. |
| 输出驻波比 Output VSWR | ≤1.8:1 typ. 2.0:1max |
| 工作电压 Operation Voltage | 3.0~12V DC |
| 工作电流 Operation Current | ≤45mA |
| **机械结构与环境特性<br>MECHANICALS & ENVIRONMENTAL** | |
| 天线尺寸 Dimension | 见附图 |
| 射频输出接口 Connector | SMA-J（内螺纹内针） |
| 天线外壳 Radome | ABS+PC |
| 产品重量 Weight | ≤16g |
| 安装方式 Attachment Method | 通过连接器 |
| 工作温度 Operating Temp | －40℃～＋85℃ |
| 储存温度 Storage Temp | －55℃～＋85℃ |

| | |
|---|---|
| 湿度 Humidity | 95% No-condensing |
| 防水性能 Waterproof | IP67 |

说明：密封圈需要与天线支撑平面良好压合，是达到 IP67 防护等级的首要条件。



## 1.2 Antenna Picture

**上图型号：**BWL1L5GNX56-23SJ

**（可定制）**

***注：** **因天线功能较为敏感，主体周边机构有变更请通知我们评估。**

# 2. Electrical Specification

## 2.1 Test Equipment

A. VSWR and input impedance: Agilent 8753/E5071 Network Analyzer

B. Antenna gain and efficiency: ETS three-dimensional anechoic chamber

## 2.2 Test Setup

### 2.2.1 Frequency Range

### 2.2.2 VSWR

Step 1: The antenna is arranged on the customer provided test fixture.

Step 2: The VSWR of the antenna is measured via Agilent 8720/8753 Network Analyzer (see figure. 1).

**Figure.1**

### 2.2.3 Radiation pattern and Gain

A. The 3D chamber provides less than -40dB reflectivity from 800MHz to 6GHz and a 40cm diameter spherical quiet zone. The measurement results are calibrated using both dipoles and standard gain horns (see figure. 2).

B. The antenna under tested is arranged in the turned table and a decoupling sleeve is used to reduce feed line radiation (see figure. 3).

C. The measured results of the radiation patterns and antenna gain are obtained from the control system and showed on the monitor (see figure. 4 and 5).

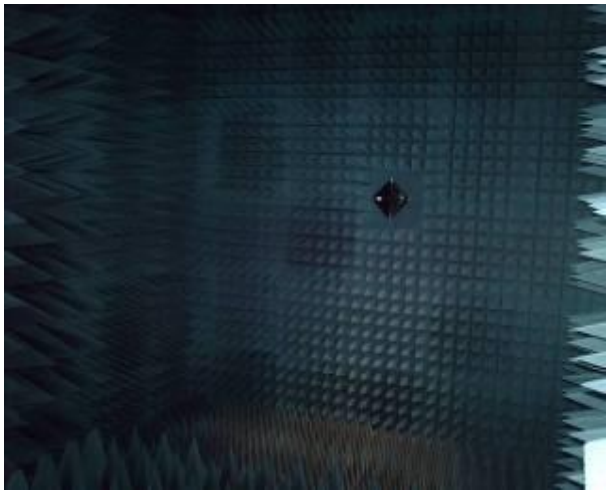


Figure.2

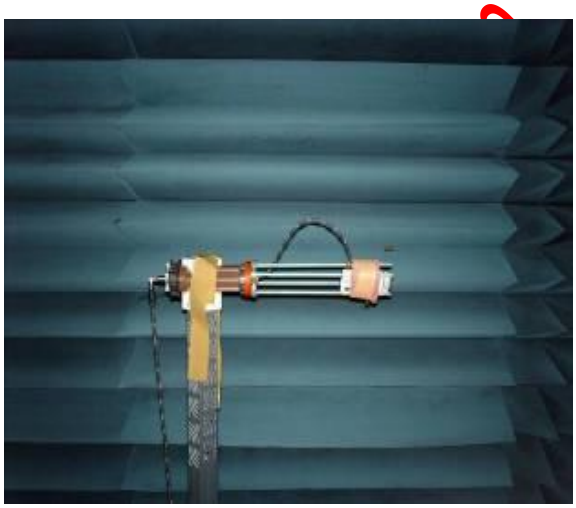


Figure.3

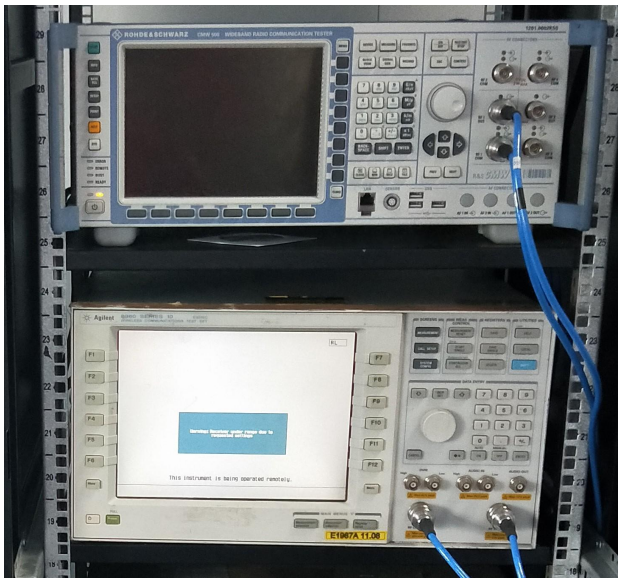



Figure.4

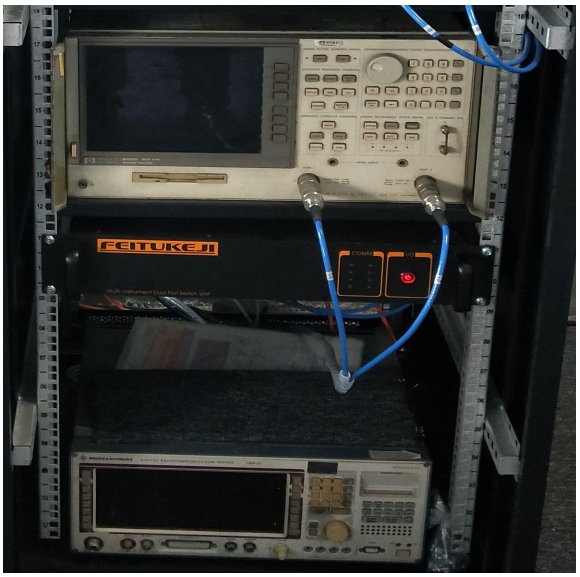
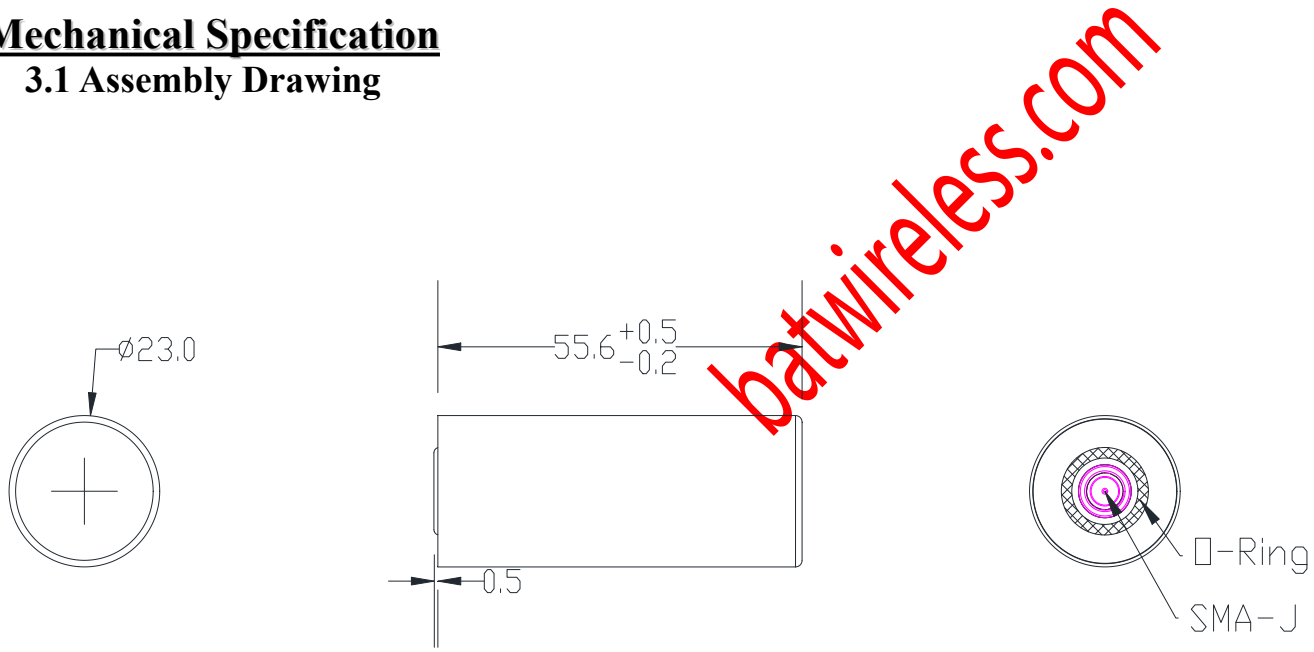



Figure.5

# 3.Mechanical Specification

## 3.1 Assembly Drawing



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