

联雅

# 样品承认书

## Parts Approval Sheet

生产供应商: 国质信

物料名称: BT 天线

Supplier

Parts Name

适用项目: BP69

NQI 料号: NQI-BP69-BT-FB-V0

Type/Spec

Parts No

品 牌: NQI

客户料号:

Brand

Quantity

送样日期: 2023/08/31

文件编号: NQI-RD-SPEC-20230849

Send out Date

Document No

承认日期:

样品版本: V0

Approve Date

Version

| Supplier    |             | Customer         |              |
|-------------|-------------|------------------|--------------|
| Approved By | Prepared By | Engineering Dept | Quality Dept |
|             |             |                  |              |

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(Resume)

[illegible]



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## 一. 电气参数说明:

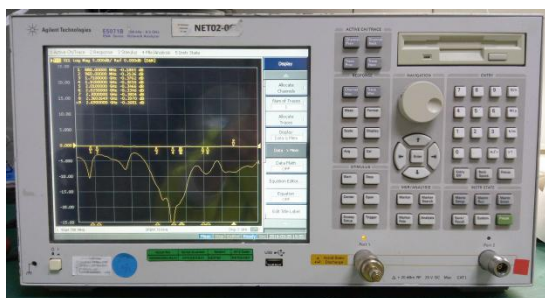
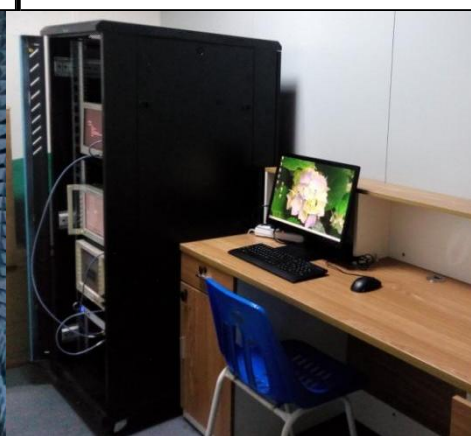
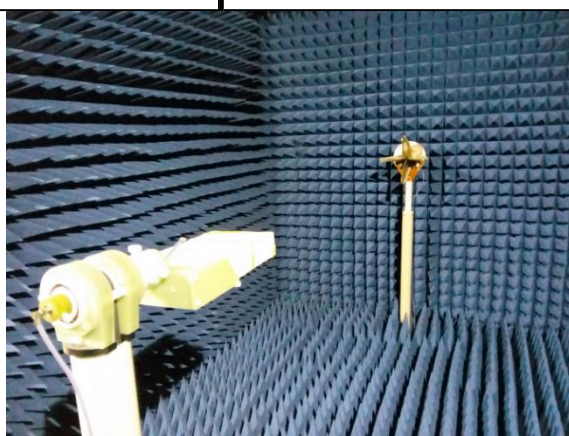
| 电气参数说明 (Electrical Specifications)    |                |
|---------------------------------------|----------------|
| 频率范围 (Frequency range)                | (2400-2500)MHz |
| 特性阻抗 (impedance)                      | 50 ohm         |
| 电压驻波比 (VSWR)                          | $\leq 3.57$    |
| 峰值增益 (Gain)                           | 1.79dBi        |
| 极化形式 (Polarization)                   | 水平             |
| 辐射方向 (Radiation direction)            | 全向             |
| 连接方式说明 (Connection Mode Description)  |                |
| 连接器 (connector)                       | /              |
| 线缆规格 (Cable specifications)           | /              |
| 工作/储存温度 (Working/Storage temperature) |                |
| 工作温度 (Working temperature)            | -30°C ~ 65°C   |
| 储存温度 (Storage temperature)            | -30°C ~ 75°C   |

## 二. 测试设备及项目 (Test equipment and items) :

| 类别 (Class)                 | 测试项目 (Test item)                                                   | 设备 (Equipment)                                                                                                        |
|----------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| 1. S parameter             | 1. 回波损耗(RL)<br>2. 驻波比 (VSWR)<br>3. 史密斯原图 (Smith chart)             | 网分 (VNA) : Agilent E5071B<br><br>R&S ZVB8<br><br>Protek A333                                                          |
| 2. 耦合测试 (Coupling testing) | 1. 发射功率 (MAX Power)<br>2. 接收灵敏度 (MIN Sens)                         | 1. 2G/3G Tester: Agilent 8960<br>2. The coupling box: TESCOM TC-5060A<br>3. 3D Chamber: ETS 3D Chamber (5x3x3)        |
| 3. 3D 无源测试 (Passive Test)  | 1. 效率 (Effeciency)<br>2. 增益 (Gain)<br>3. 辐射方向图 (Radiation pattern) | 1. 3D Chamber: TEM24 3D Chamber (5x5x5)<br><br>ETS 3D Chamber (5x3x3)<br>2. 网分 (VNA) : Agilent E5071B<br><br>R&S ZVB8 |

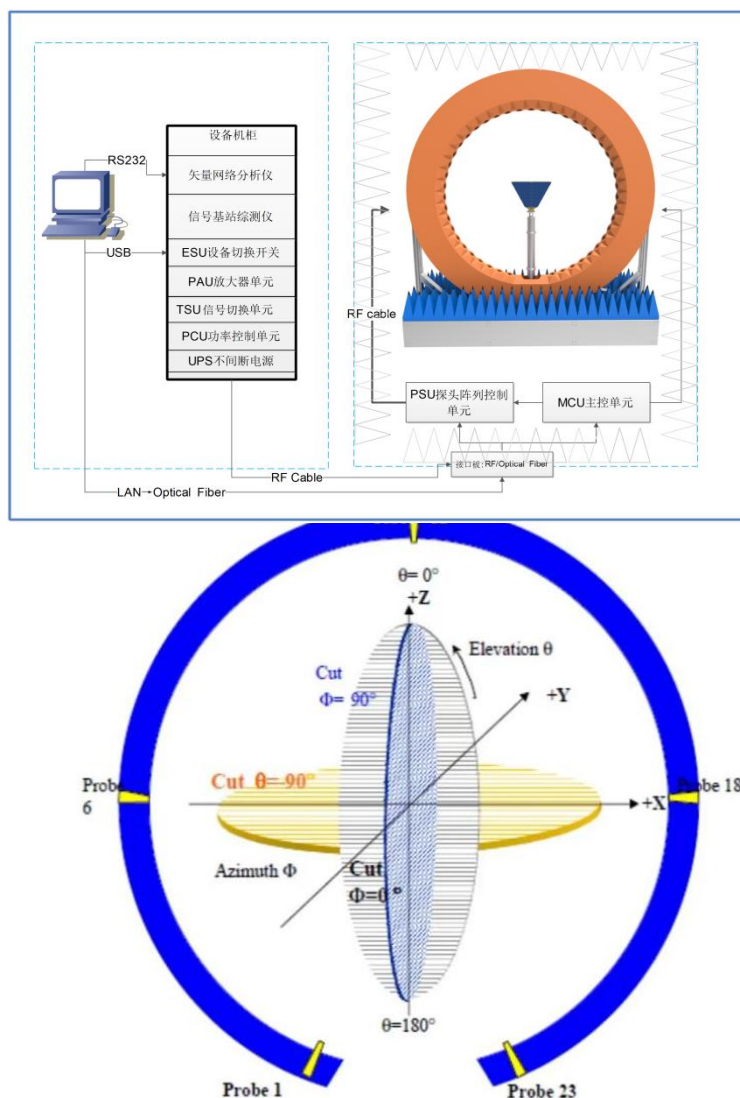


|                                    |                                                                        |                                                                                                                                                                                                                                             |
|------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>4.3D 有源测试<br/>(Active Test)</p> | <p>1. 3D 功率 (TRP)<br/>2. 3D 灵敏度 (TIS)<br/>3. 吞吐率 (Throughput rate)</p> | <p>1. 3D Chamber: TEM24 3D Chamber (5x5x5)<br/>ETS 3D Chamber (5x3x3)<br/>2.2G/3G Tester: Agilent 8960<br/>3.4G Tester: MT8820C/CMW500<br/>4.WIFI/BT/NB-iot Tester: CMW500<br/>5. 5G Tester: SP9500-CTS<br/>6.Head: HEAD-P10 (FACE-P10)</p> |
|------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

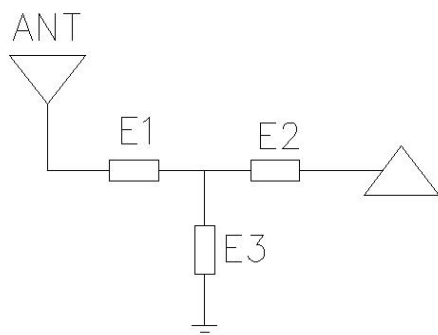




### 三. 暗室连接及坐标 (Chamber connection and coordinates) :



### 四. 天线匹配网络 (Antenna matching network) :



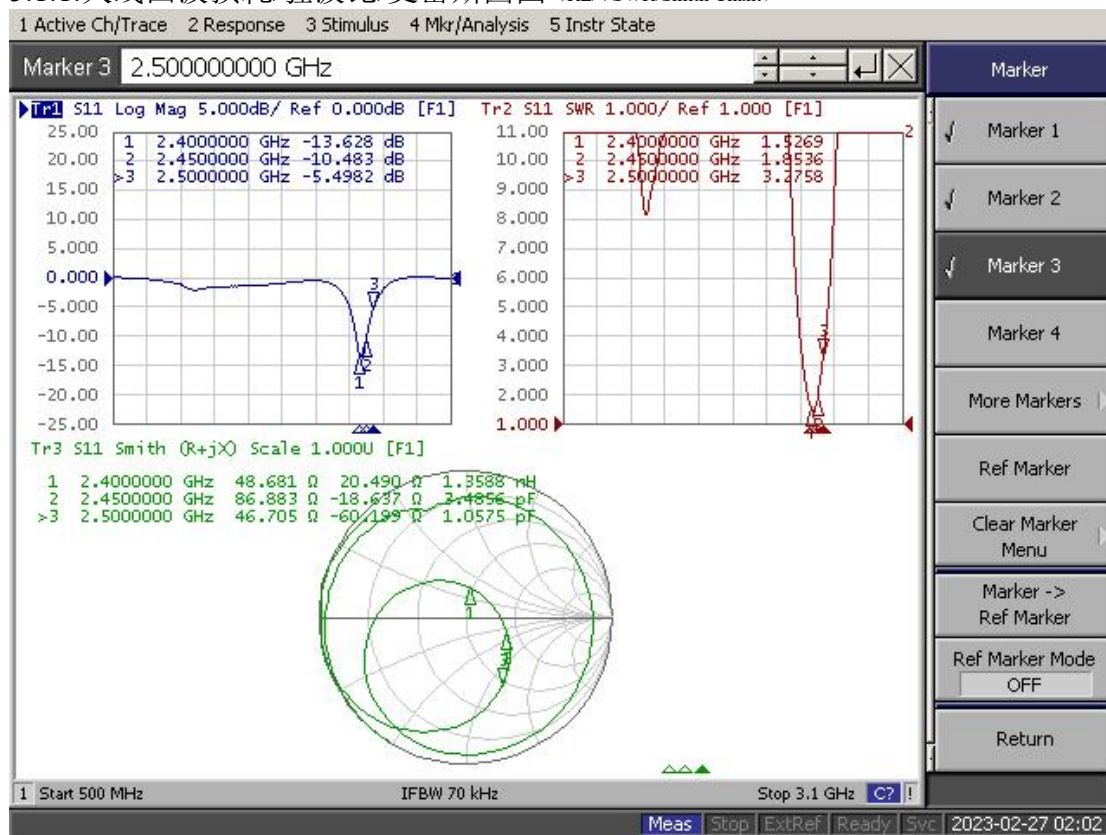
| Element  |       |
|----------|-------|
| E1(0201) | 0 Ω   |
| E2(0201) | 0 Ω   |
| E3(0201) | 1.5PF |



## 五. 天线电性能测试数据 (Antenna electrical performance test data) :

### 5. 1. 天线无源参数 (Antenna passive parameters)

#### 5.1.1. 天线回波损耗/驻波比/史密斯圆图 (RL/VSWR/Smith Chant)



#### 5. 1. 2. 天线效率/增益 (Effeciency/Gain)

| Freq (MHz) | Effi (%) | Gain (dBi) |
|------------|----------|------------|
| 2400       | 28.64    | 1.33       |
| 2410       | 28.25    | 1.3        |
| 2420       | 30.41    | 1.79       |
| 2430       | 29.99    | 1.34       |
| 2440       | 32.51    | 1.51       |
| 2450       | 32.06    | 1.03       |
| 2460       | 29.31    | 0.83       |
| 2470       | 28.25    | 0.7        |
| 2480       | 26.18    | 0.44       |
| 2490       | 25.88    | 0.37       |
| 2500       | 22.23    | -0.49      |



## 六. 天线结构图纸 (Antenna structure drawing) :

