

# 深圳市云顶通讯电子有限公司

Shenzhen Yunding Communication Electronics Co., LTD

TEL: +86 0755-23073599

FAX: +86 0755-23097189

E-mail:wht0809@163.com

## 承認書 APPROVAL SHEET

客 户

珠海市联源科技有限公司

品 名 规 格      2.4G 纽扣天线-转接线-SMA 弯母头公针-1.13-L60MM-IPEX1 代  
DESCRIPTION:

料      号  
PART   NO.:

客 户 料 号  
CUS PART NO.:

日      期                              2025-11-21  
D   A   T   E:

云顶呈样签章 (Yunding signature)

| 工   程<br>ENGINEERING DEPARTMENT | 品   保<br>Q C DEPARTMENT | 业   务<br>SALES DEPARTMENT |
|---------------------------------|-------------------------|---------------------------|
| Sean Zhang                      |                         |                           |

客户承认签章 (Customer signature )

| 工   程<br>ENGINEERING DEPARTMENT | 品   保<br>Q C DEPARTMENT | 采   购<br>PURCHASING DEPARTMENT |
|---------------------------------|-------------------------|--------------------------------|
|                                 |                         |                                |

联系电话 (TEL) : 0755 23073599

※ 承认书一式 三份, 惠蒙贵司承认签章

※ Approval in duplicate, please signed by your company.

地址: 深圳市宝安区航空路锦驰中心 3015

Address :3015, 3rd Floor, No. 1 Sanwei South Road, Bao 'an District, Shenzhen City, Guangdong Province

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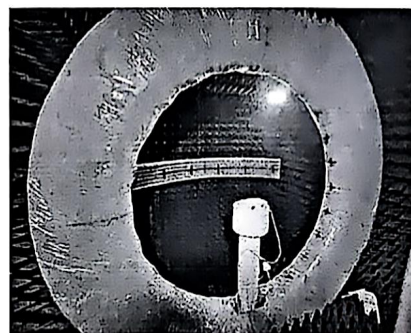
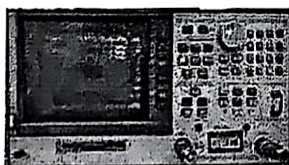
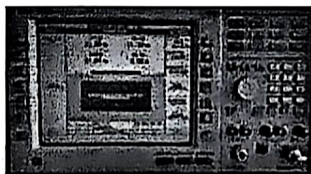
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### 1. 测项目与设备 (Test items and equipment) :

|                             | 测试项目 (Test items)                                                                  | 设备 (Equipment)                                                                                                                                                     |
|-----------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. S11 参 数<br>(S-parameter) | 1. 回波损耗 (Return Loss)<br>2. 电压驻波比 (VSWR)                                           | 网络分析仪 (network analyzer) : Agilent E5071B<br>HP 8753D                                                                                                              |
| 2. 有源测试 (Active )           | 1. 发射功率 (TRP)<br>Transmitting power<br><br>2. 接收灵敏度 (TIS)<br>Receiving sensitivity | 1. 暗室 (Darkroom) : ETS 7x4x3 m (3D) Chamber<br>ETS 5x3x3 m (3D) Chamber<br>2. 综合测试仪<br>(general-purpose teste) : Agilent 8960 E5515B x2<br>StarPoint SP6011 Cmw500 |
| 3. 无源测试<br>(Passive)        | 1. 天线增益 (Gain)<br><br>2. 天线效率 (Efficiency)                                         | 1. 暗室 (Darkroom) : ETS 7x4x3 m (3D) Chamber<br>ETS 5x3x3 m (3D) Chamber<br>2. 网络分析仪 (network analyzer) : Agilent E5071B<br>HP 8753D                                |



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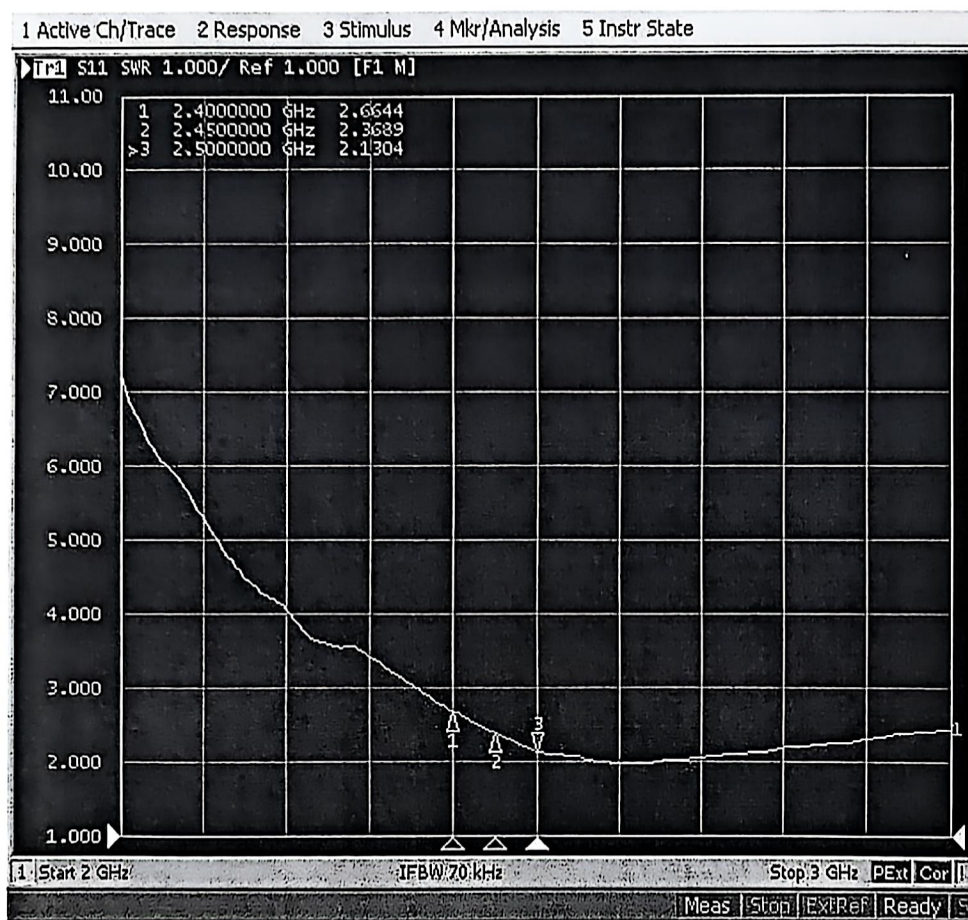
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### 2. 天线性能 SWR (Antenna performance SWR) :



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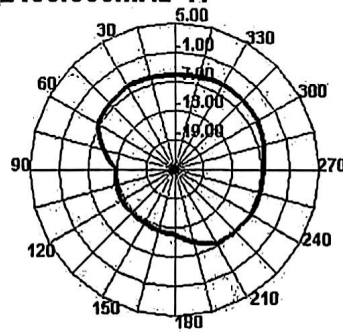
## 3. 天线效率与增益 (Antenna efficiency and gain) :

| Freq<br>(MHz) | Effi<br>(%) | Gain<br>(dBi) |
|---------------|-------------|---------------|
| 2400          | 31.38       | -0.96         |
| 2410          | 29.6        | -1.23         |
| 2420          | 30.63       | -1.05         |
| 2430          | 29.99       | -1.19         |
| 2440          | 31.06       | -1.06         |
| 2450          | 31.57       | -0.99         |
| 2460          | 32.83       | -0.8          |
| 2470          | 31          | -1.03         |
| 2480          | 32.74       | -0.79         |
| 2490          | 32.69       | -0.65         |
| 2500          | 28.43       | -1.14         |

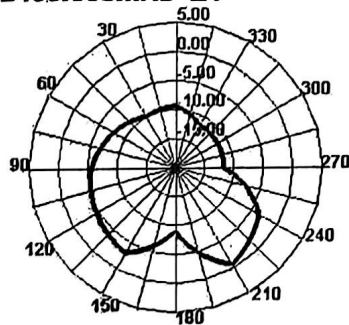
2400.000MHz



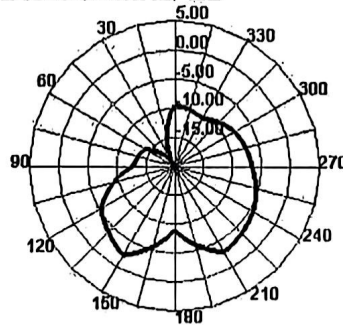
2400.000MHz H



2400.000MHz E1



2400.000MHz E2



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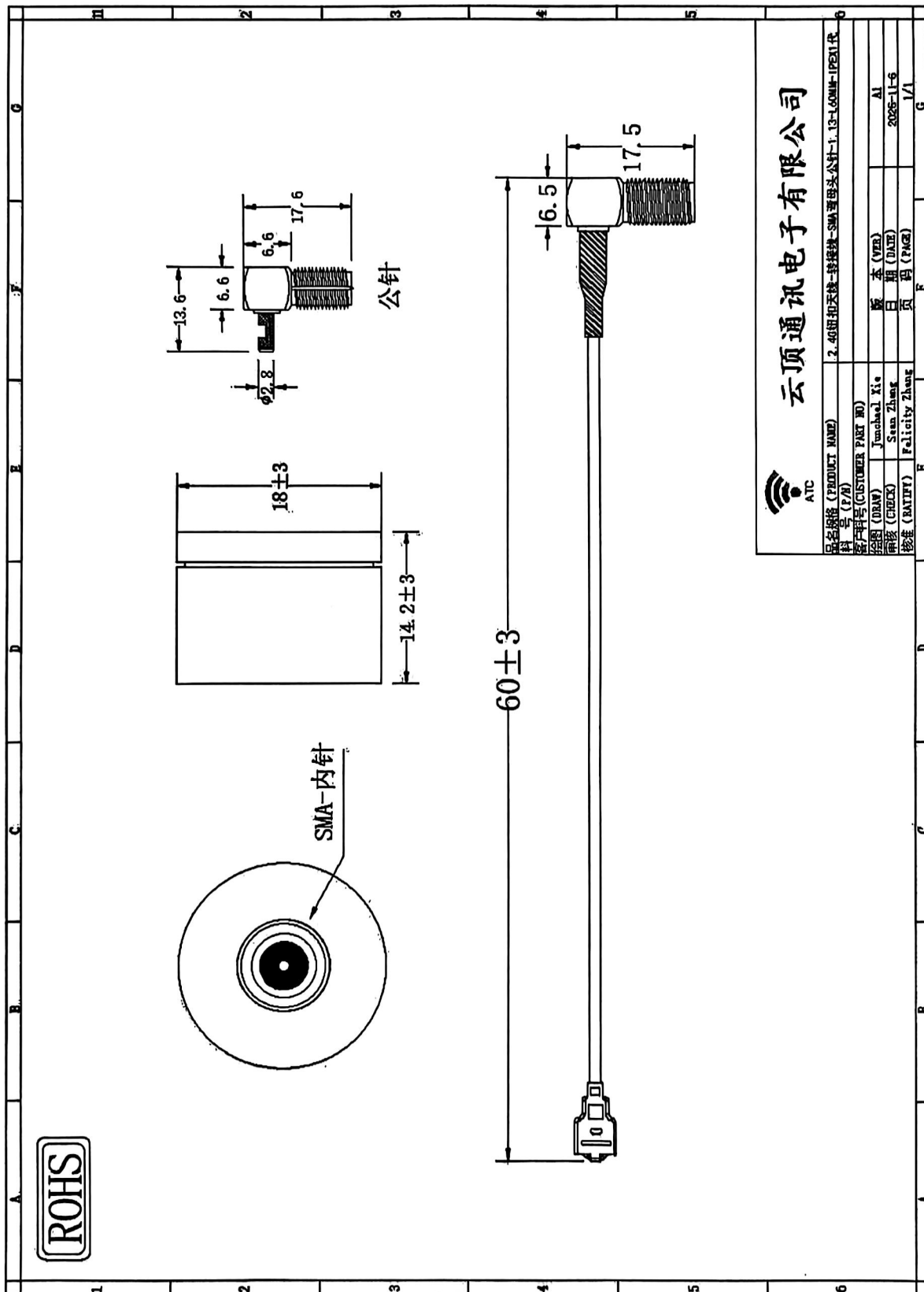
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### 4. 天线结构图 (Antenna structure diagram) :



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电器技术参数

| 电性能指标 |              | Electrical Specifications |              |
|-------|--------------|---------------------------|--------------|
| 频率范围  | 2400~2500MHz | Frequency Range           | 2400~2500MHz |
| 电压驻波比 | ≤3.0         | VSWR                      | ≤3.0         |
| 输入阻抗  | 50 Ω         | Input Impedance           | 50 Ω         |
| 增益    | -0.65 DBI    | Gain                      | -0.65 DBI    |
| 机械指标  |              | Mechanical Specifications |              |
| 天线颜色  | 黑色           | Antenna color             | Black        |
| 接口形式  | SMA          | Input connector           | SMA          |
| 天线线长  | 60MM         | Cable length              | 60MM         |
| 工作温度  | -40℃~+85℃    | Working Temperature       | -40℃~+85℃    |
| 工作湿度  | 20~80%       | Working Humidity          | 20~80%       |

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