

# 承 认 书

## APPROVAL SHEET

客 户 名 称

CUSTOMER NAME: Zhuhai Raysharp Technology Co.,Ltd.

产 品 名 称

PRODUCT NAME: External Antenna 900-930MHZ Large SMA Male  
Female Needle Dragon Yuan Sword White Antenna

客 户 料 号

CUSTOMER P/N: 1015020020

优比电子料号

Youbi P/N: UB02S177W3D113aA REV: A

|              |                                                                                     |                       |
|--------------|-------------------------------------------------------------------------------------|-----------------------|
|              | MANUFACTURER<br>SIGNATURE                                                           | CUSTOMER<br>SIGNATURE |
| CHECKED BY:  |  |                       |
| APPROVED BY: | Changxing.Liu                                                                       |                       |
| DATE:        | 2023/7/26                                                                           |                       |

Modification History

| Version | Content Revision | Issued by | Date      |
|---------|------------------|-----------|-----------|
| A       | Original version | lina      | 2023-7-26 |
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## ***Content***

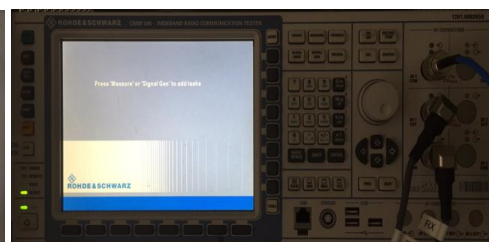
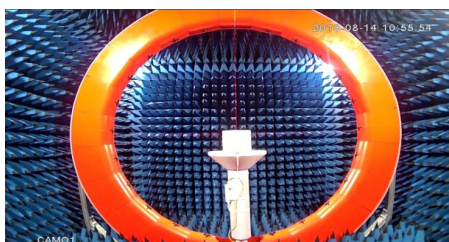
| <i><b>Item</b></i> | <i><b>Description</b></i> |
|--------------------|---------------------------|
| 1.-----            | Electrical Specification  |
| 2.-----            | Test Items and Equipment  |
| 3.-----            | S Parameter               |
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| 5.-----            | Radiation Pattern         |
| 6.-----            | Mechanical Specification  |

## 1.Electrical Specification

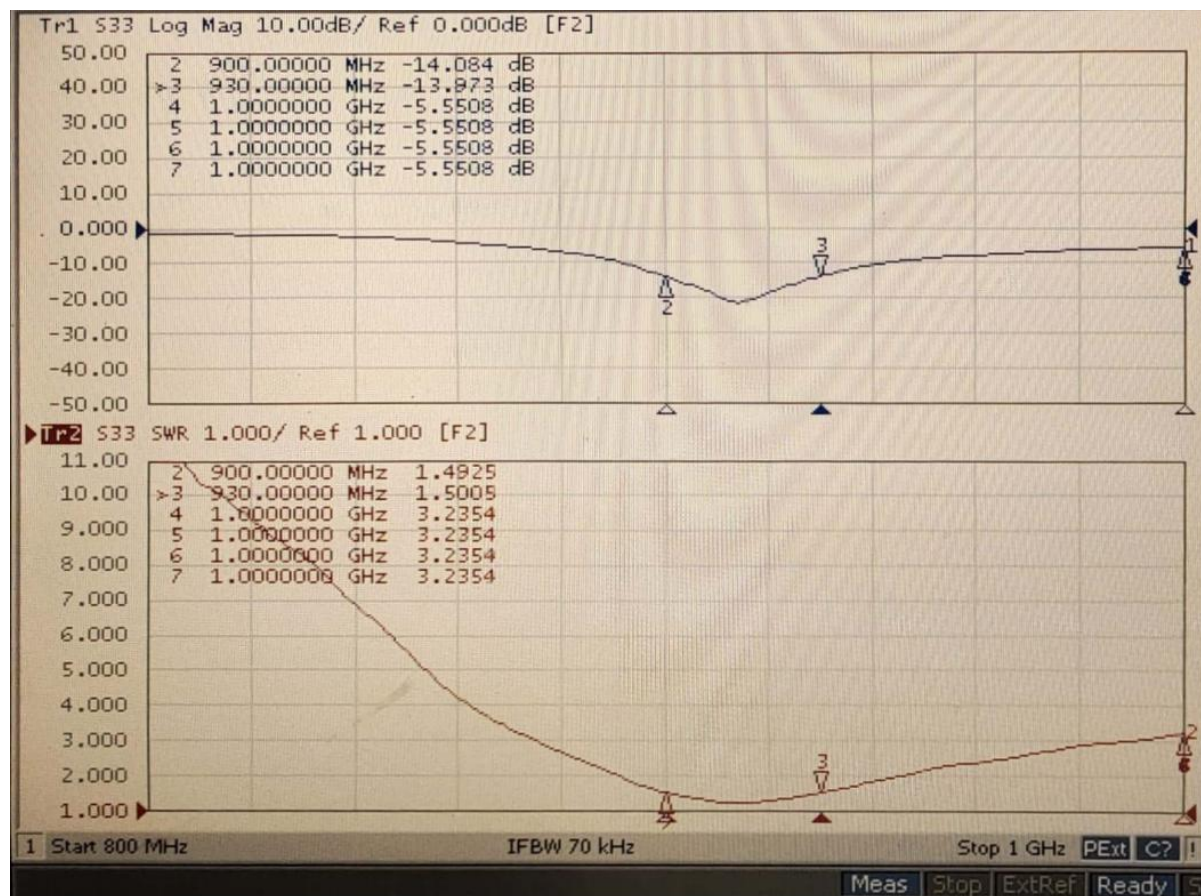
| Characteristics       | Specifications        | Unit |
|-----------------------|-----------------------|------|
| Outline Dimensions    | Ø12.89x200            | mm   |
| Frequency             | 900-930               | MHz  |
| Impedance             | 50                    | Ω    |
| VSWR                  | ≤ 1.92                |      |
| Polarization          | Linear Polarization   |      |
| Gain                  | 2±0.5                 | dBi  |
| Efficiency            | ≥ 60                  | %    |
| Connector Type        | SMA Male (center pin) |      |
| Operating temperature | -20℃~+85℃             |      |
| Storage Temp          | -20℃~+50℃             |      |

## 2.Test Items and Equipment

|                                            | Test items                                      | Test equipment                                                                       |
|--------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------|
| S Parameter                                | 1.Return Loss<br>2.VSWR                         | Network analyzer<br>(Agilent E5071B)                                                 |
| The whole machine of<br>Passive parameters | 1.Frequency<br>2.Gain<br>3.Radiation<br>Pattern | 1.3D microwave darkroom<br>(5m*5m*5m)<br>2.Network analyzer<br>(Agilent E5071B)      |
| The whole machine of<br>Active parameters  | 1.TRP<br>2.TIS                                  | 1.3D microwave darkroom<br>(5m*5m*5m)<br>2.Comprehensive test instrument<br>(CMW500) |

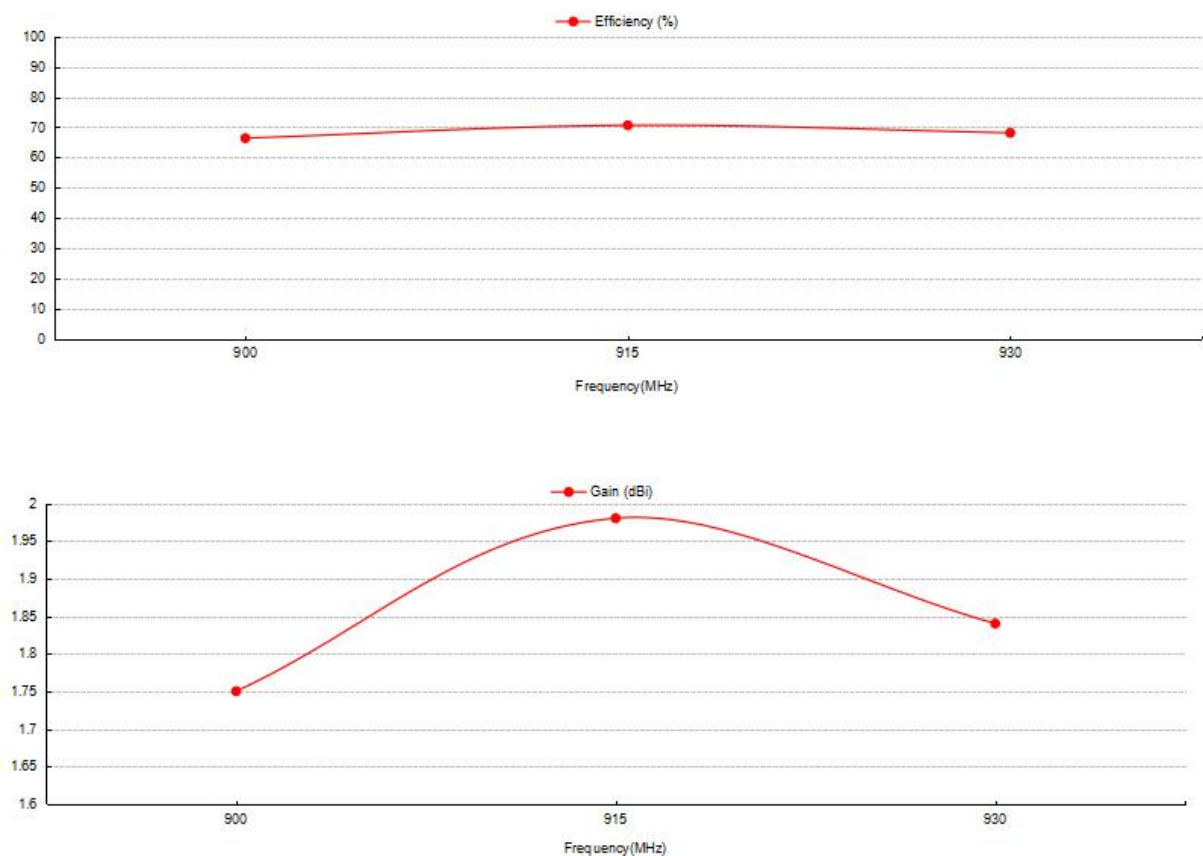


### 3. S Parameter



| Frequency (MHz) | Return Loss (dB) | VSWR  |
|-----------------|------------------|-------|
| 900             | -14.084          | 1.492 |
| 930             | -13.973          | 1.500 |

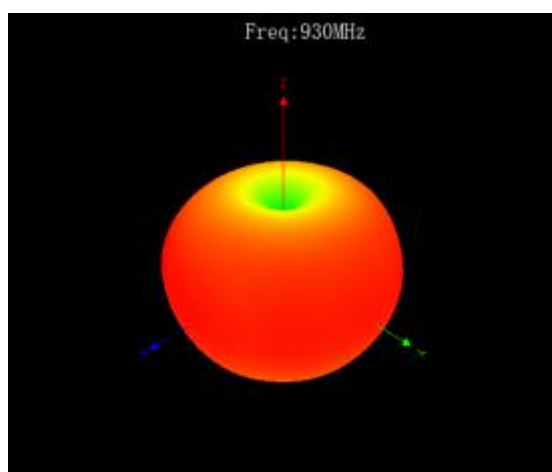
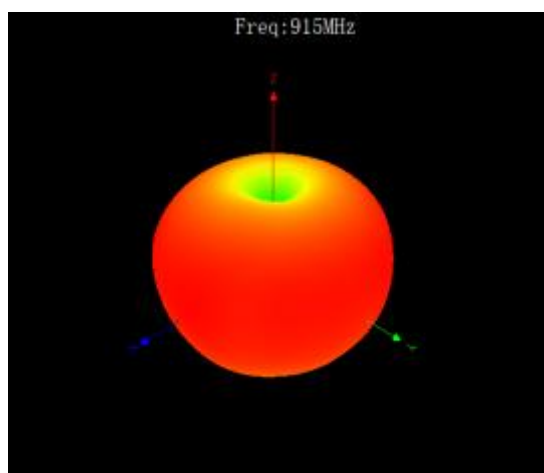
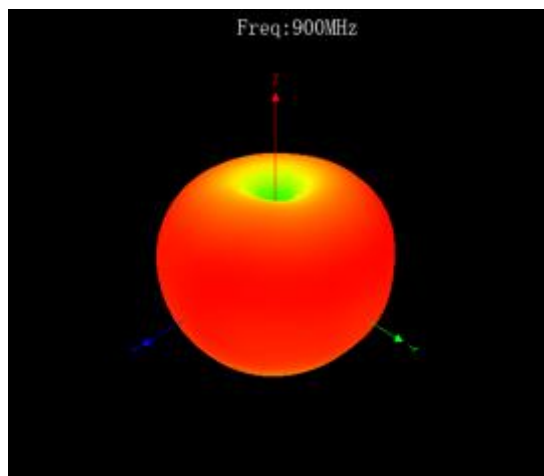
#### 4. Efficiency and Gain



| Frequency (MHz) | 900   | 915   | 930   |
|-----------------|-------|-------|-------|
| Gain (dBi)      | 1.75  | 1.98  | 1.84  |
| Efficiency (%)  | 66.37 | 70.63 | 68.13 |

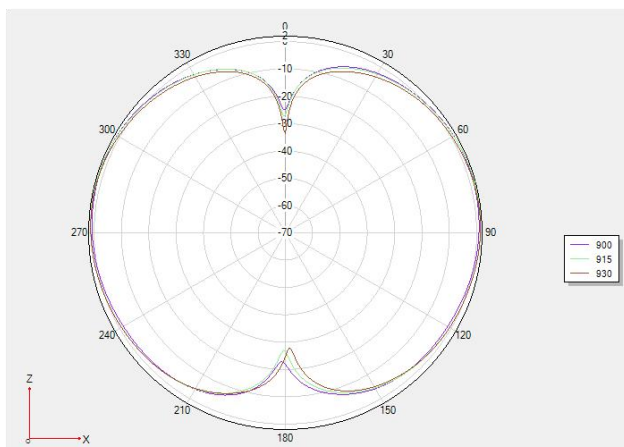
## 5. Radiation Pattern

5-1 Antenna 3D Radiation Pattern

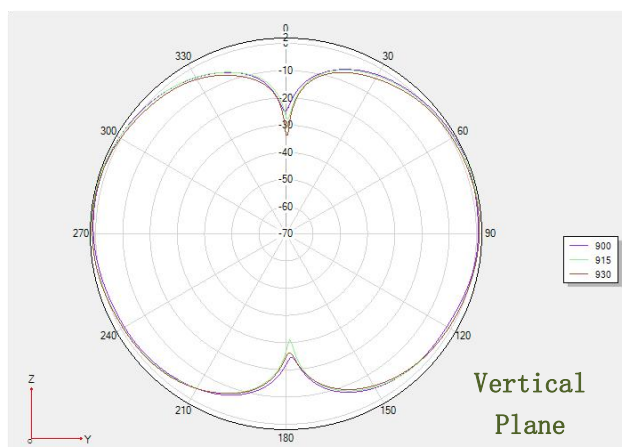




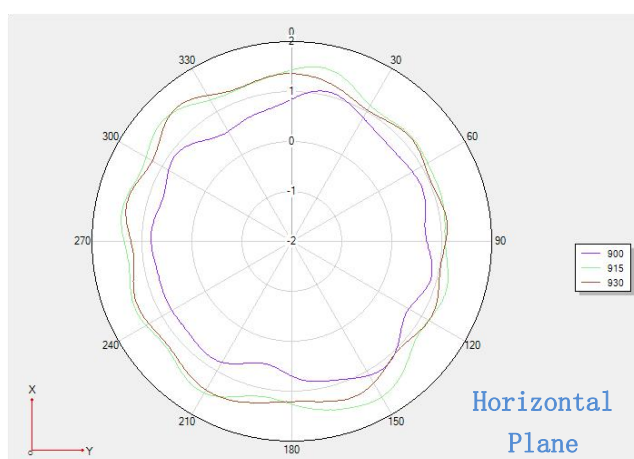
## 5-2 Antenna 2D Radiation Pattern



Phi 0 2D 图



Phi 90 2D 图



Theta 90 2D 图



6. Mechanical Specification

