



深圳市凯普深通讯科技有限公司  
Shenzhen cape deep communication technology co.,LTD

# Antenna Debugging Report

test report

客 户：上海易景  
项 目：CL1013(OSW-803N)  
射 频：姚工  
日 期：2023. 11. 20  
版 本： 01



## Description of the change record

| Time | Version description |
|------|---------------------|
|      |                     |
|      |                     |
|      |                     |
|      |                     |



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## Laboratory test environment and equipment



| Test items                              | Test equipment                 |
|-----------------------------------------|--------------------------------|
| S11、S12、VSWR、LOSS                       | Network analyzer E5071B、E5062A |
| Efficiency、Gain<br>3D Radiation Pattern | Satimo SG16暗室、GP7*4*3暗室、E5071B |

TRP、TIS

Satimo SG16暗室、GP7\*4\*3暗室、8960、  
CMW500、MT8820C、E4438C、



## A Brief Introduction to debugging the project

|                                             |                |                            |                     |
|---------------------------------------------|----------------|----------------------------|---------------------|
| Machine type                                | Watch          |                            |                     |
|                                             |                | Frequency band information | <b>Antenna form</b> |
| Antenna type and frequency band information | <b>Antenna</b> | BT                         | Unipolar            |
| <b>Antenna material</b>                     | Wires          |                            |                     |



# BT Antenna matching circuit

RF Module                      E4                      E2                      Antenna

| E3               |           |         | E1 |
|------------------|-----------|---------|----|
| The main antenna | Element   | Value   |    |
|                  | E1 (0201) | 改为2.4PF |    |
|                  | E2 (0201) |         |    |
|                  | E3 (0201) |         |    |



# BT Antenna passive standing wave





# BT Passive efficiency of antenna

Freedom

| Freg<br>(MHz) | Effi<br>(%) | Effi<br>(dB) | Gain<br>(dBi) |
|---------------|-------------|--------------|---------------|
| 2400          | 15.27       | -8.16        | -2.15         |
| 2410          | 14.4        | -8.42        | -2.4          |
| 2420          | 14.59       | -8.36        | -2.24         |
| 2430          | 14.76       | -8.31        | -2.06         |
| 2440          | 15.83       | -8           | -1.61         |
| 2450          | 15.71       | -8.04        | -1.65         |
| 2460          | 15.22       | -8.17        | -1.89         |
| 2470          | 14.51       | -8.38        | -2.22         |
| 2480          | 15.9        | -7.99        | -1.92         |
| 2490          | 17.74       | -7.51        | -1.42         |
| 2500          | 18.41       | -7.35        | -1.22         |

Hand  
mode  
I

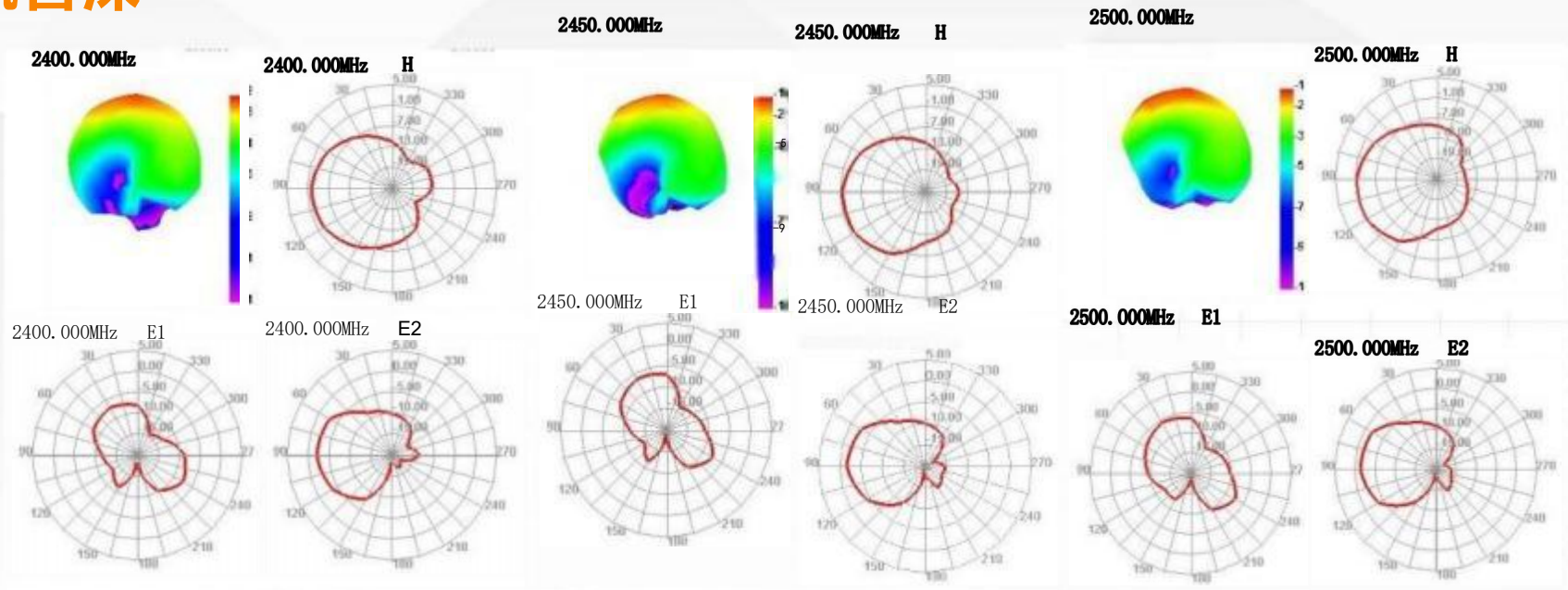
| Freg<br>(MHz) | Effi<br>(%) | Effi<br>(dB) | Gain<br>(dBi) |
|---------------|-------------|--------------|---------------|
| 2400          | 7.04        | -11.52       | -3.73         |
| 2410          | 7.03        | -11.53       | -3.87         |
| 2420          | 6.95        | -11.58       | -3.89         |
| 2430          | 7.13        | -11.47       | -3.53         |
| 2440          | 7.12        | -11.48       | -3.38         |
| 2450          | 7.5         | -11.25       | -2.96         |
| 2460          | 8.2         | -10.86       | -2.73         |
| 2470          | 8.85        | -10.53       | -2.63         |
| 2480          | 9.06        | -10.43       | -2.82         |
| 2490          | 9.19        | -10.37       | -2.93         |
| 2500          | 9.17        | -10.38       | -2.92         |





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# BT Passive efficiency of antenna

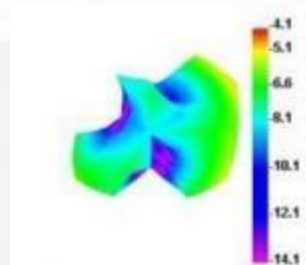




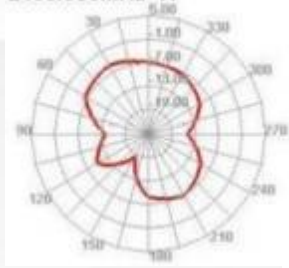
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# BT Passive pattern of antenna

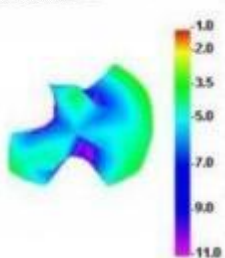
2400.000MHz



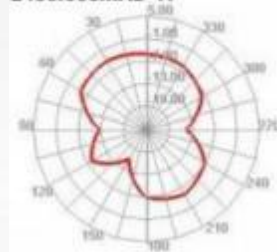
2400.000MHz H



150.000MHz



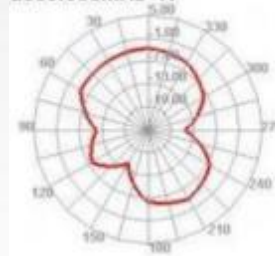
2450.000MHz H



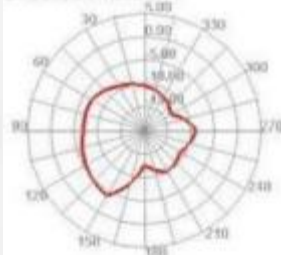
2500.000MHz



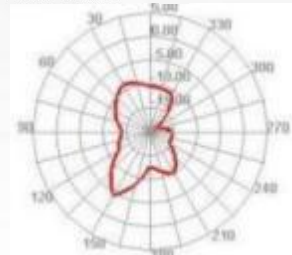
2500.000MHz H



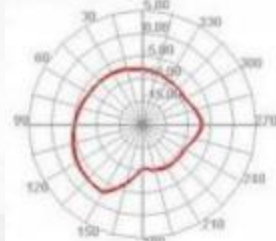
2400.000MHz E1



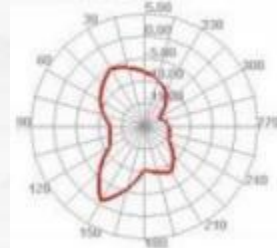
2400.000MHz E2



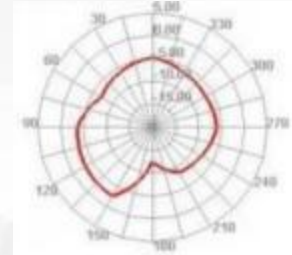
2450.000MHz E1



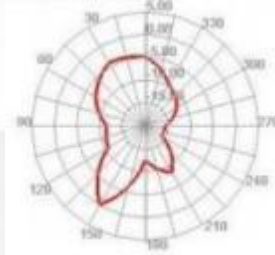
2450.000MHz E2



2500.000MHz E1



2500.000MHz E2





# Environmental treatment

Installation picture,  
no environmental processing





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# thanks !