# APPROVAL SHEET

Supplier name: Guangzhou Vision enthalpy Technology Co., LTD /Room 202,Building B,238 Fuguang East Road,Huangpu District, Guangzhou

Supplier material name: External antenna

Supplier specifications and model: External antenna Black-2.4G 5.8G 7.12G-SMA-J L=109mm

CVTE Item number: 004.032.0052703

Drawing version number (no drawing): A0

Admission edition: A0

| Supplier acknowledgement column | | |
|---|---|---|
| lay down | examine and verify | ratify |
| Jack | Lucy | |

Supplier Address:

telephone: portraiture:

Note: Supplier commitment and confirmation, Suppliers to Guangzhou bin electronic technology Co., Ltd., and its affiliated companies (including but not limited to Guangzhou visual source electronic Technology Co., Ltd., Guangzhou electronic Technology Co., Ltd., Guangzhou into information technology Co., Ltd., Guangzhou, medical equipment technology Co., Ltd., Guangzhou yi intelligent electronic technology Co., Ltd., Guangzhou farce ear acoustic technology Co., Ltd., Guangzhou rui xin electronic Technology Co., Ltd., Qingdao source dynamic wisdom sports technology Co., Ltd., Guangzhou radium morning automatic control technology Co., Ltd., Guangzhou Liuhuan Information Technology Co., Ltd.) (known as "CVTE") supply of materials, Are able to meet the standards stipulated in this admission, Without the supplier. The scanned copy, photocopy and faxed copy of this admission letter shall have the same legal effect as the original copy.

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| Document revision resume form | | | | |
|---|---|---|---|---|
| Edition | Date | Develop / Modify / Repeal content | Lay Down | Approval |
| A/0 | 2023-1-11 | New Edition | Yue Ting | Feng Xianqiang |
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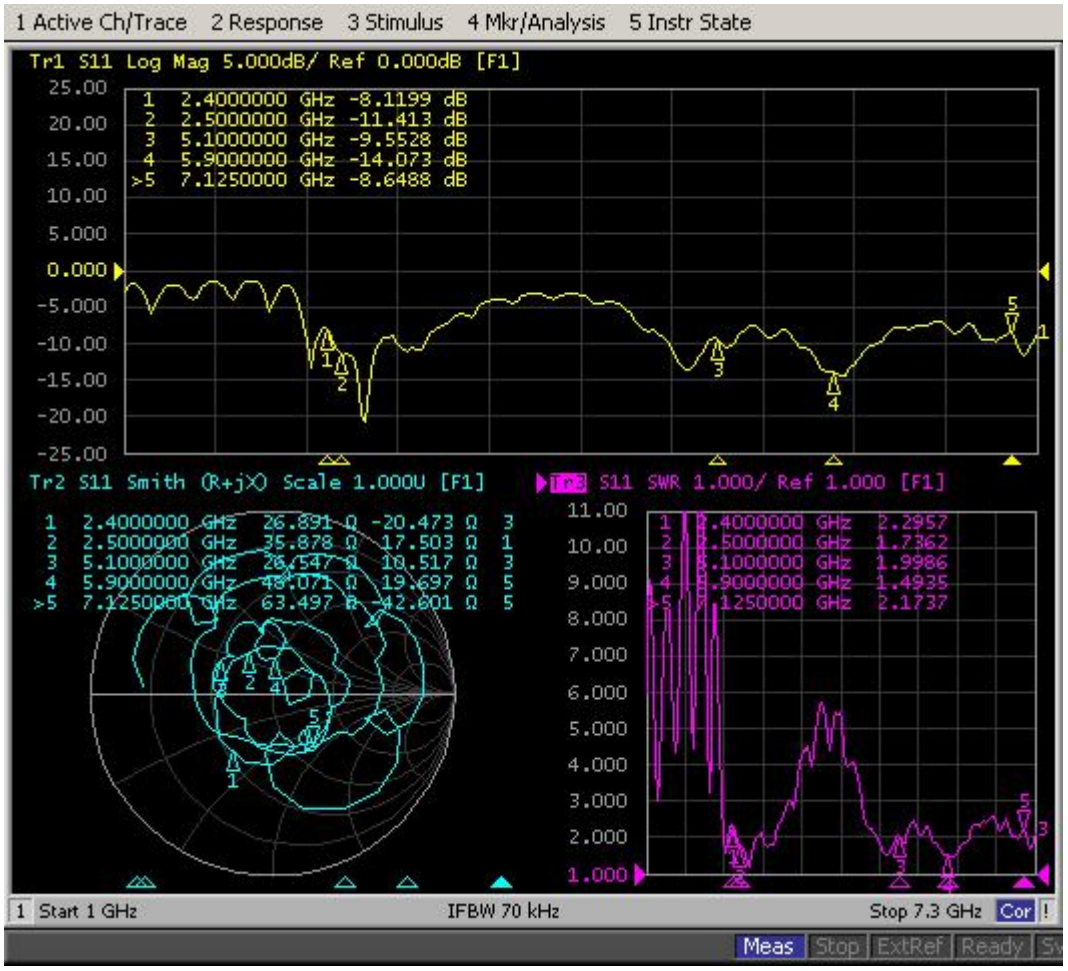
# 3. performance Parameter

## 3-1 Performance Parameters

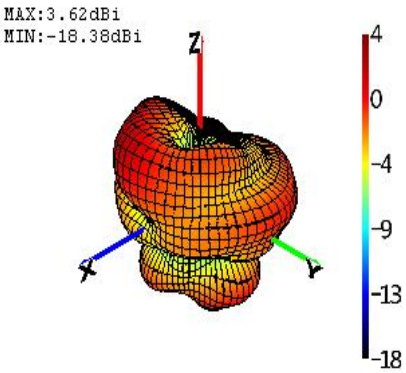
| Electrical Parameters | |
|---|---|
| Frequency Range | 2.4-2.5GHz 5.1-5.9GHz 7.12Ghz |
| Input Impedence | 50Ω |
| Standing-wave Ratio | ≤3.0 |
| Gain | 3dBi |
| Power Capacity | / |
| Through The Test | Thoroughfare |
| Polarization Mode | Linear |
| Radiation Direction | / |
| Connector Model | SMA |
| Mechanical Parameters | |
| Terminal Maintenance Force | / |
| Antenna Material | Cu |
| Coax | GR178 |
| Salt Spray Test | 24H |
| Enviromental Parameter | |
| Working Temperature | -30℃~65℃ |

## 3-2Performance Test

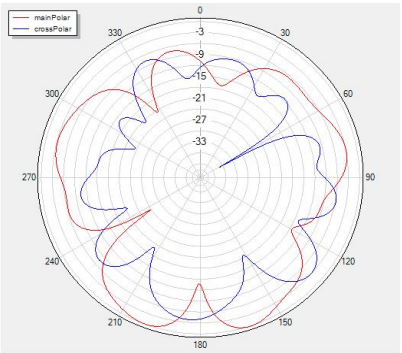
S11&SWR



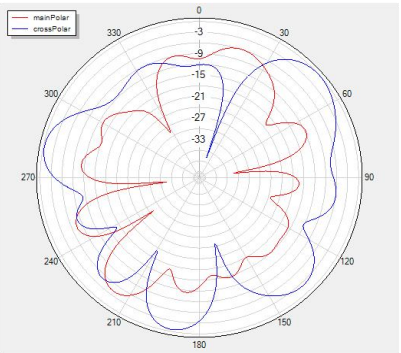

2400 MHz



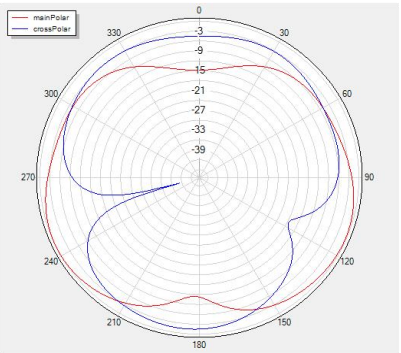

Phi=90 freq=2400MHz



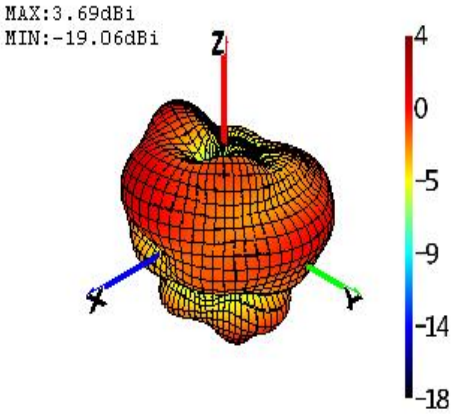

Phi=0 freq=2400MHz



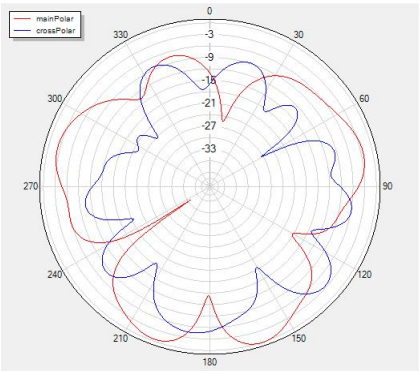

Theta=90 freq=2400MHz



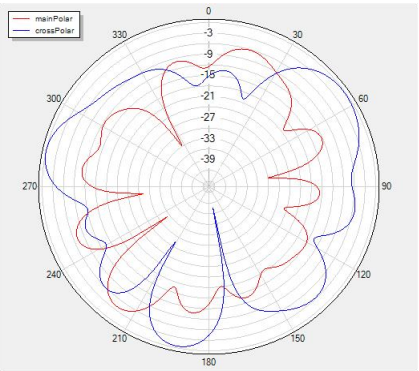
## 2440 MHz




**Phi=90 freq=2440MHz**




**Phi=0 freq=2440MHz**

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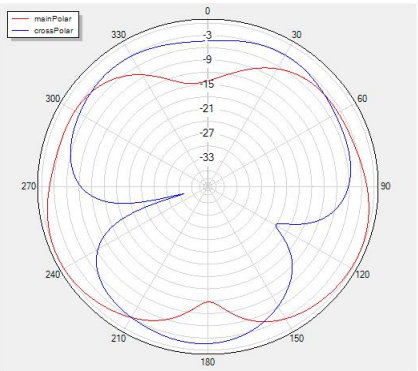
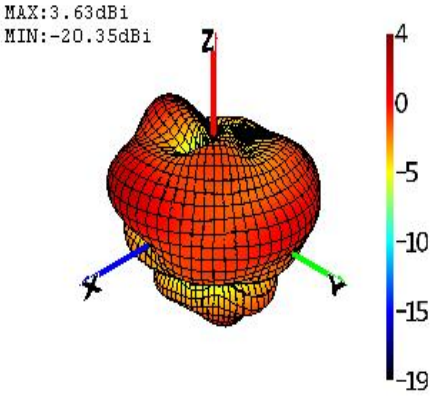
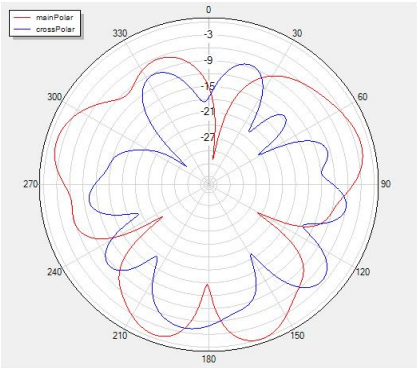



## 2480 MHz




**Phi=90 freq=2480MHz**

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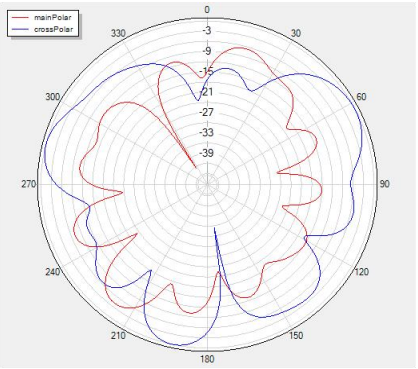
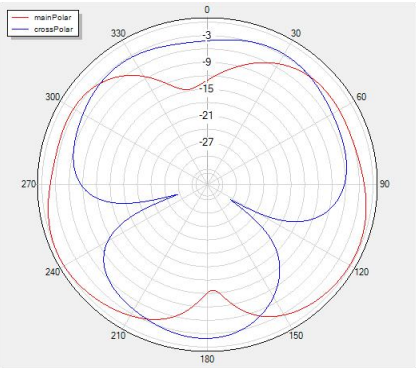
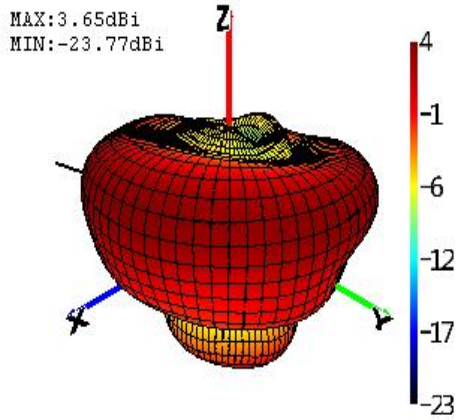


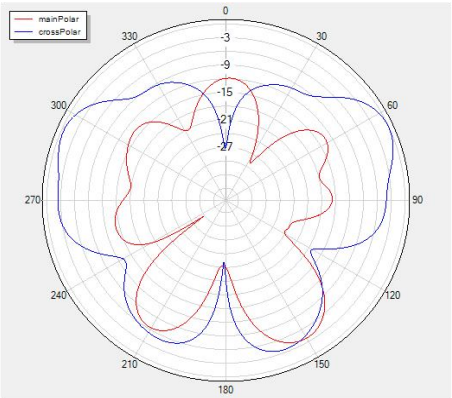

**Theta=90 freq=2480MHz**



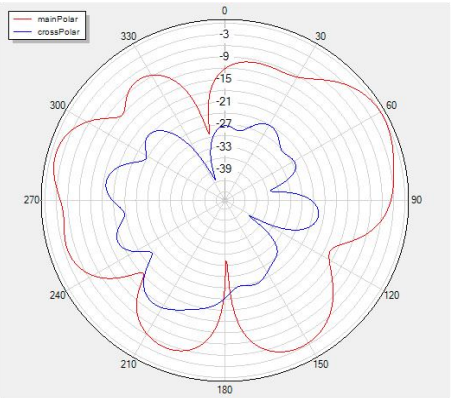
## 5100 MHz



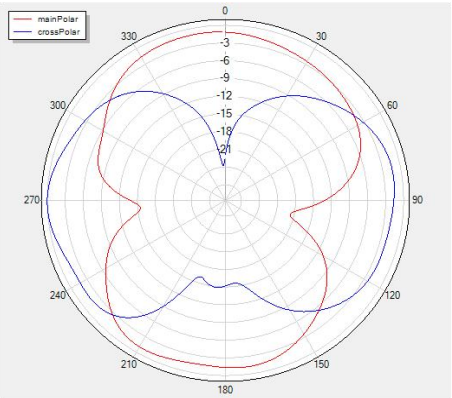

**Phi=90 freq=5100MHz**



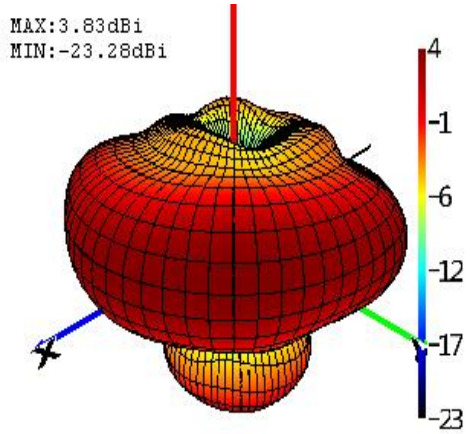

**Phi=0 freq=5100MHz**



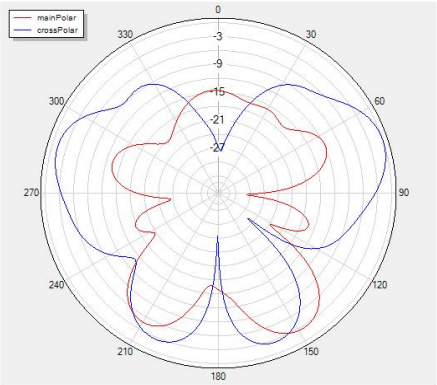

**Theta=90 freq=5100MHz**



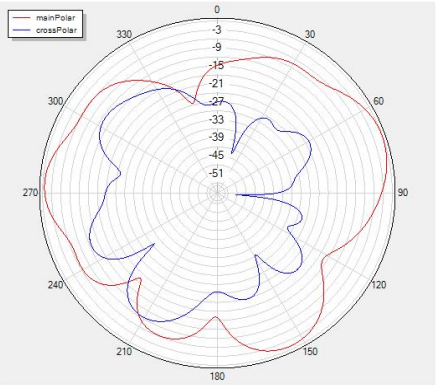

## 5450 MHz



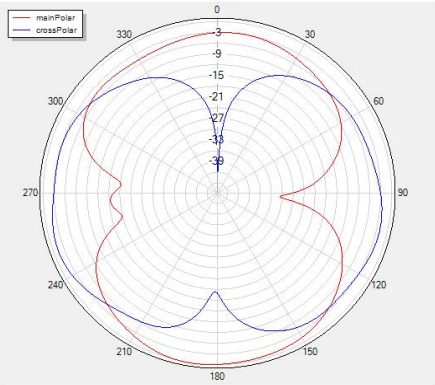

**Phi=90 freq=5450MHz**



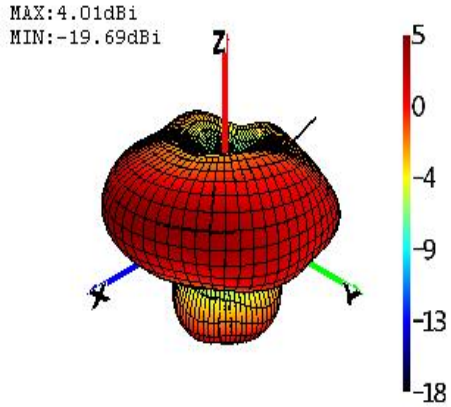

**Phi=0 freq=5450MHz**



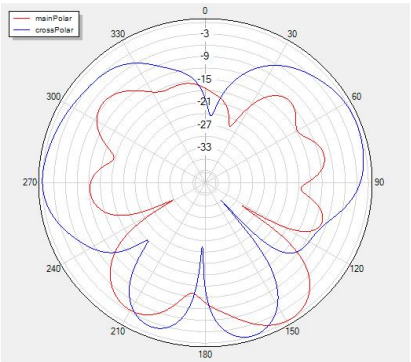

**Theta=90 freq=5450MHz**



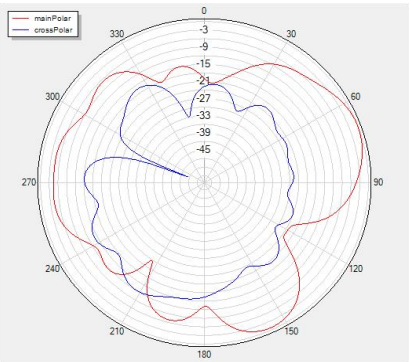
## 5900 MHz



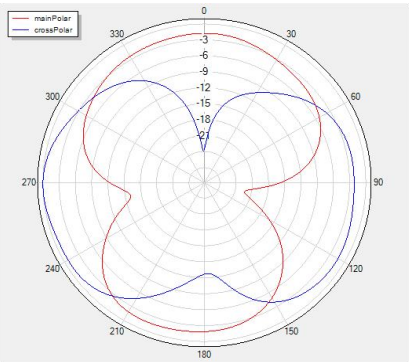

Phi=90 freq=5900MHz



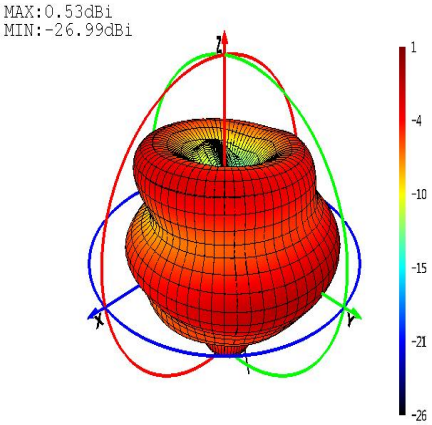

Phi=0 freq=5900MHz



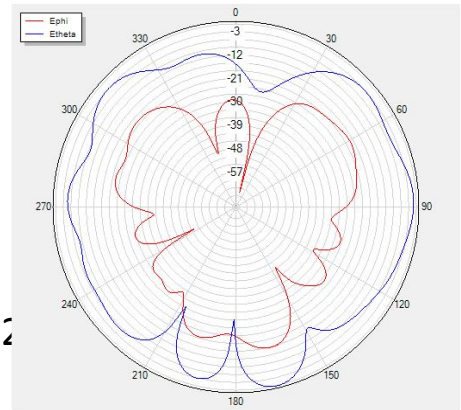

Theta=90 freq=5900MHz



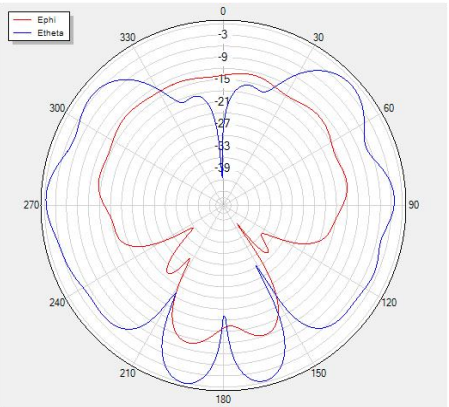

## 7150Mhz



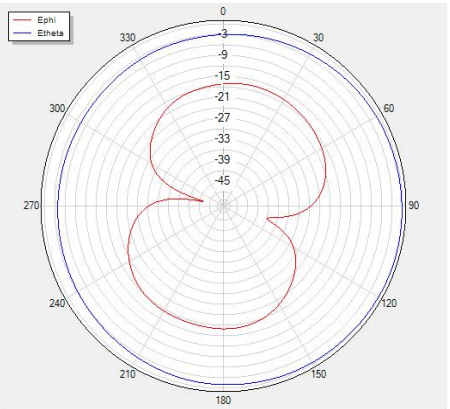

Phi=90 freq=7150MHz

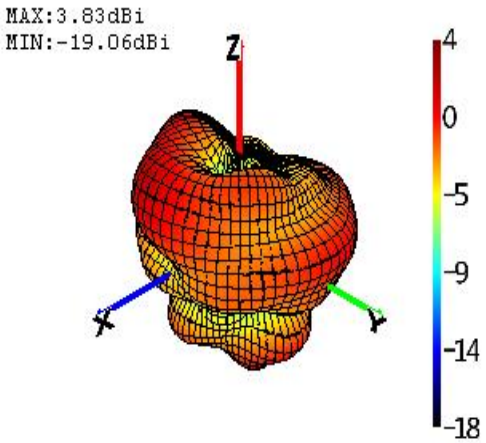


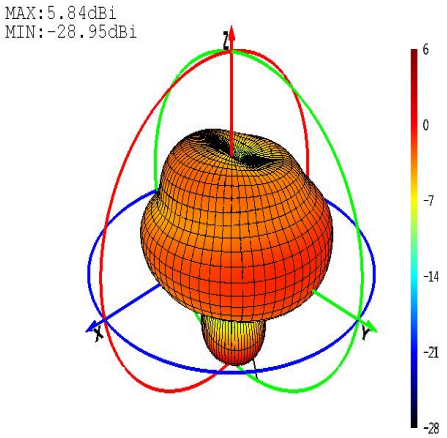

Phi=0 freq=7150MHz




Theta=90 freq=7150MHz




MAX:3.83dBi
MIN:-19.06dBi
Z
X
Y
4
0
-5
-9
-14
-18


MAX:5.84dBi
MIN:-28.95dBi
Z
X
Y
6
0
-7
-14
-21
-28

## 3-3 Antenna Efficiency

| frequency (MHz) | gain (dBi) | efficiency (dB) | efficiency (%) |
|---|---|---|---|
| 2400 | 3.62 | -2.48 | 56.53 |
| 2410 | 3.72 | -2.41 | 57.46 |
| 2420 | 3.83 | -2.08 | 61.98 |
| 2430 | 3.79 | -1.92 | 64.2 |
| 2440 | 3.69 | -2.17 | 60.66 |
| 2450 | 3.53 | -2.05 | 62.32 |
| 2460 | 3.43 | -1.77 | 66.45 |
| 2470 | 3.61 | -1.73 | 67.09 |
| 2480 | 3.63 | -1.7 | 67.53 |
| 2490 | 3.53 | -1.91 | 64.42 |
| 2500 | 3.75 | -1.7 | 67.58 |

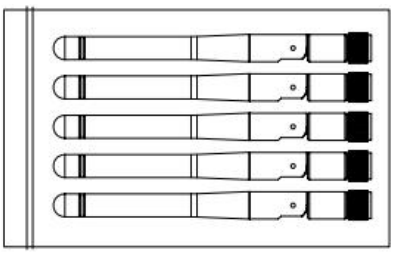
| frequency (MHz) | gain (dBi) | efficiency (dB) | efficiency (%) |
|---|---|---|---|
| 5000 | 2.97 | -1.32 | 73.79 |
| 5050 | 3.02 | -1.38 | 72.78 |
| 5100 | 3.65 | -1.19 | 76.01 |
| 5150 | 4.36 | -0.58 | 87.47 |
| 5200 | 4.58 | -0.75 | 84.17 |
| 5250 | 4.09 | -0.78 | 83.63 |
| 5300 | 4.6 | -1.03 | 78.83 |
| 5350 | 4.65 | -0.99 | 79.7 |
| 5400 | 4.39 | -1.02 | 79.14 |
| 5450 | 3.83 | -0.93 | 80.69 |
| 5500 | 3.31 | -1.32 | 73.82 |
| 5550 | 3.03 | -1.5 | 70.79 |
| 5600 | 2.95 | -1.65 | 68.37 |
| 5650 | 3.18 | -1.4 | 72.39 |
| 5700 | 3.05 | -1.34 | 73.38 |
| 5750 | 3.45 | -1.53 | 70.28 |
| 5800 | 3.47 | -1.88 | 64.81 |
| 5850 | 3.55 | -1.73 | 67.13 |
| 5900 | 4.01 | -1.61 | 68.97 |
| 6000 | 4.36 | -2.32 | 58.63 |
| 6100 | 5.39 | -2.38 | 57.81 |
| 6200 | 5.84 | -2.52 | 55.94 |
| 6300 | 5.66 | -2.84 | 51.96 |
| 6400 | 5.47 | -3.11 | 48.82 |
| 6500 | 5.2 | -3.25 | 47.36 |
| 6600 | 4.86 | -3.4 | 45.67 |
| 6700 | 4.22 | -3.57 | 43.99 |
| 6800 | 3.57 | -3.81 | 41.64 |
| 6900 | 2.82 | -3.98 | 40.02 |
| 7000 | 2.13 | -4.09 | 38.96 |
| 7150 | 1.35 | -4.2 | 38.03 |

# 4. Packaging Standard

Product Material No.: 004.032.0052703

Product specification: External antenna Black-2.4G 5.8G 7.12G-SMA-J L=109mm

Ii. Packaging requirements and operation instructions:



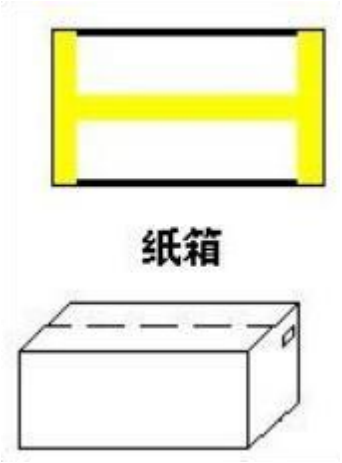
1. Internal packaging:

Product 2 PCS into the small PE bag

Product 25 PCS small Pe bag into the big PE bag

2. Packaging:

Quantity / box according to the actual packing




matters need attention:

1. Whether to add a partition board, pearl cotton;

2. Attachment of labels, such as ROHS;

# 5. Reliability test report

## 5-1. Reliability test standards

| test item | | test method | acceptance standard | Judgment results |
|---|---|---|---|---|
| 1 | V .S .W . R | Set the network analyzer parameters for testing | According to the specifications to be tested | **P ASS** |
| 2 | Plug in damage | Set the network analyzer parameters for testing | According to the specifications to be tested | **P ASS** |
| 3 | salt atmosphere | Temperature 35° C humidity 95% saline concentration 5%; test for 24 hours | After 2H, there was no obvious bad appearance: frequency offset of 5% | **P ASS** |
| 4 | constant temperature and humidity | Temperature 80° C test 12H to-40° C Test 12H: Humidity 90%: Test 24 hours | After 2H, there was no obvious bad appearance: frequency offset of 5% | **P ASS** |
| 5 | strain relief test | Tometer test product connector and terminal tension greater than; 1 Kgf | Visual inspection / measurement meets SOP requirements, no shedding, poor contact | **PASS** |

## 6.Disabled Material Guarantee

**禁用物质保证(Certification of Restricted Substance)**

我方保证所提供的物料，完全遵守签核的广州视源电子科技股份有限公司/或其子公司的质量和环保协议中的各项条款，物料中禁用物含量，符合最新版《有害物质管理规范》中的各项标准.

We hereby certify that all the Material fully conform to the requirements of the ShiRuan/or its affiliated companies Declaration of Conformity that had been signed, and the maximum concentration value of restricted substance in Materials comply with the latest 《Regulations on the management of hazardous substances.》

公司盖章