# SPECIFICATION

for

## CB101 2.4G-5.8G WIFI FPC Antenna

**Customer No.**

**Product No.**

LS-CB101 2.4G-5.8G-FPC-60MM

Author：XiaofengZeng Review：Liming

Release Date： 2024.06.01

**ShenZhen Shuodian Electronic Technology Co., Ltd**

**Room 201, Building 2, Nantaiyun Innovation Valley Park, Tangwei Community, Fenghuang Street, Guangming District, Shenzhen, Guangdong**

**E-mail：sz_shuodian@163.com**

**Tel: 0755-86006322**

**Fax: 0755-86006323**

# Contents

SPECIFICATION ..... 1

SHENZHEN SHUODIAN ELECTRONIC TECHNOLOGY CO., LTD ..... 1

CONTENTS ..... 2

1. BILATERAL CONFIRMATION PAGE ..... 3

2. GENERAL ..... 4

3. GENERAL PRODUCT SPECIFICATIONS ..... 4

4. SPECIFICATION DETIALS ..... 5

4.1 MECHANICAL PROPERTIES ..... 5

4. 2 ELECTRIC PERFORMANCE ..... 7

5. PRODUCT PACKAGING ..... 12

6. DOCUMENT RESUME ..... 12

# 1. Bilateral Confirmation page

## 1.1 Customer signature

**Customer：**

| Separtment/post | Sign | Date |
|---|---|---|
| Hardware Engineer/RD | | |
| Mechanical/MD | | |
| Project Manager/PM | | |
| Commercial/Puchasing | | |
| Checker | | |

## 1.2 Signature of ShuoDian Technology company

| Separtment/post | Sign | Date |
|---|---|---|
| Antenna Engineer/RD | | |
| Mechanical/MD | | |
| Project Manager/PM | | |
| QA | | |
| Checker | | |

# 2. General

## 2.1 Scope of application

CB101 2.4G-5.8G WIFI antenna

## 2.2 Operating temperature range

Temperature range of this product: -20 ~ +65 ℃

## 2.3 Storage temperature range:

This product is stored at - 30 ~ + 75 ℃

# 3. General product specifications

| NO. | ITEMS | DETAILS |
|---|---|---|
| 1 | Type | **CB101 2.4G-5.8G WIFI** |
| 2 | Operating Frequency Band | **2400-2500MHZ 5100-5900MHZ** |
| 3 | VSWR | **≤2.0** |
| 4 | Gain | **2.0dBi** |
| 5 | Radiation Efficiency | **≥50%** |
| 6 | Impedance | **50Ω** |
| 7 | Antenna Type | PIFA |
| 8 | Antenna composition | **FPC+CABLE** |
| 9 | Entity Picture | |

# 4. Specification Detials

## 4.1 Mechanical Properties

### 4.11 Product Composition：

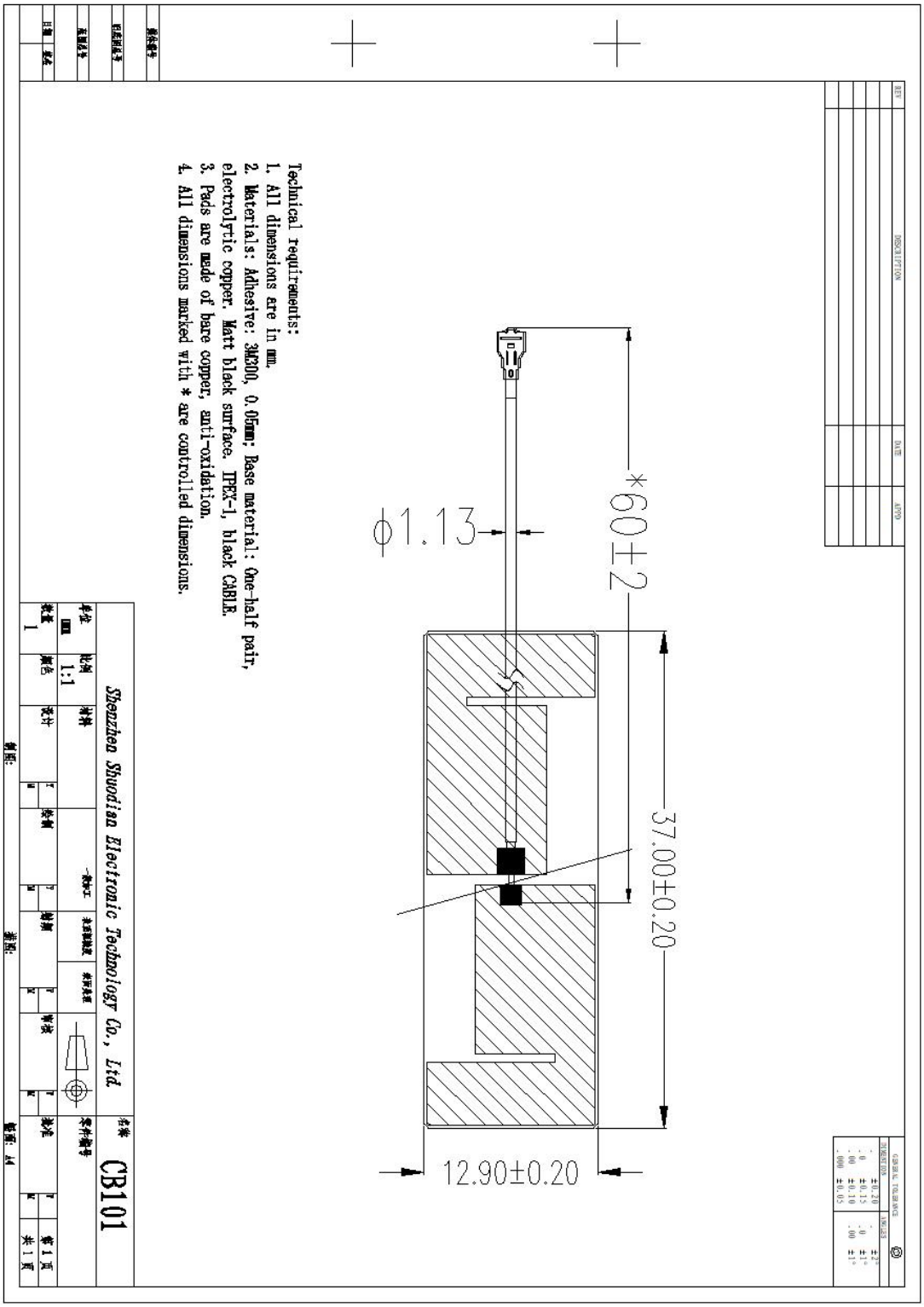
| No. | Material | Size (MM) |
|---|---|---|
| 1 | FPC | 37*12.9 BLACK |
| 2 | CABLE | IPEX-1 Ø1.13 60MM BLACK |

### 4.12 Apperance

Good appearance without scars 、dirts、protuberances, etc.

### 4.13 Antenna Picture and Structure Dimension

**Product drawings:**


Technical requirements:
1. All dimensions are in mm.
2. Materials: Adhesive: 3M200, 0.05mm; Base material: One-half pair, electrolytic copper. Matt black surface. TPEX-1, black CABLE.
3. Pads are made of bare copper, anti-oxidation.
4. All dimensions marked with * are controlled dimensions.
ϕ1.13
*60±2
37.00±0.20
12.90±0.20
Shenzhen Shuodian Electronic Technology Co., Ltd
CB101

## 4. 2 Electric Performance

### 4. 21 Test condition

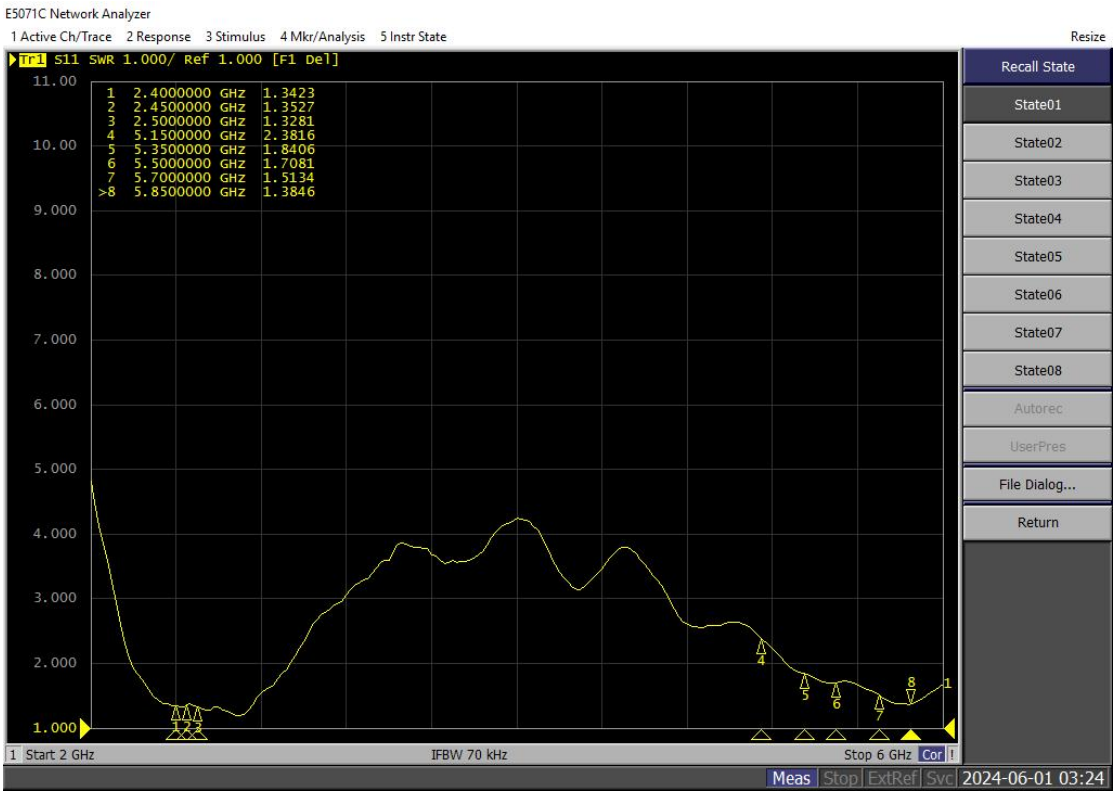
| | |
|---|---|
| Environment:<br>Temperature: 10℃——+30℃<br>Humidity: ≤80%（+40℃）<br>Atmospher: 750mmkg±30mmkg | Equipment:<br>Network Analyzer: KEYSIGHT E5071C<br>Anechior Chamber:Multi-probe Microwave Anechoic Chamber |

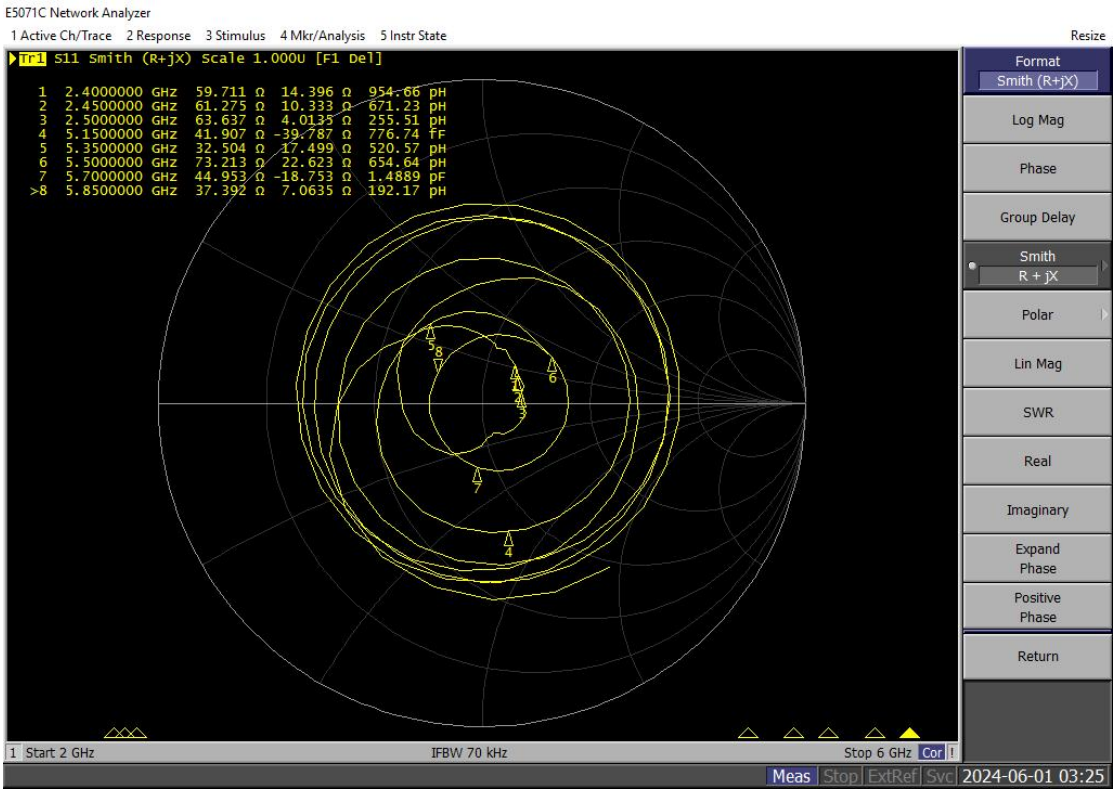
### 4. 22 Test Data for Electrical Performance:

#### 4.22.1 S11 of the Antenna:

| Marker(MHZ) | 2400 | 2450 | 2500 | 5150 | 5350 | 5500 | 5700 | 5850 |
|---|---|---|---|---|---|---|---|---|
| Returnloss | -16.16 | -17.15 | -17.98 | -7.81 | -10.72 | -11.55 | -13.98 | -15.60 |
| VSWR | 1.34 | 1.35 | 1.32 | 2.38 | 1.84 | 1.70 | 1.51 | 1.38 |


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Resize
Tr1 S11 Log Mag 10.00dB/ Ref 0.000dB [F1 Del]
1 2.4000000 GHz -16.165 dB
2 2.4500000 GHz -17.156 dB
3 2.5000000 GHz -17.986 dB
4 5.1500000 GHz -7.8177 dB
5 5.3500000 GHz -10.729 dB
6 5.5000000 GHz -11.555 dB
7 5.7000000 GHz -13.983 dB
>8 5.8500000 GHz -15.604 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 2 GHz
IFBW 70 kHz
Stop 6 GHz
Cor
Meas Stop ExtRef Svc 2024-06-01 03:25
System
Print
Invert Image ON
Dump Screen Image...
Multiport Test Set Setup
Misc Setup
Backlight ON
Firmware Revision
Service Menu
Help
Return

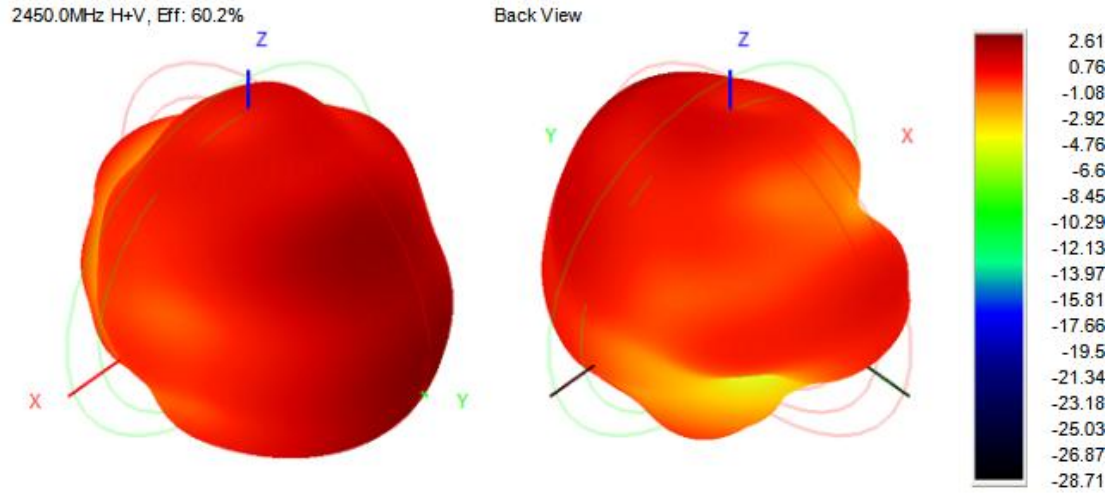

E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Resize
Tr1 S11 SWR 1.000/ Ref 1.000 [F1 Del]
1 2.4000000 GHz 1.3423
2 2.4500000 GHz 1.3527
3 2.5000000 GHz 1.3281
4 5.1500000 GHz 2.3816
5 5.3500000 GHz 1.8406
6 5.5000000 GHz 1.7081
7 5.7000000 GHz 1.5134
>8 5.8500000 GHz 1.3846
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 2 GHz
IFBW 70 kHz
Stop 6 GHz
Cor
Meas Stop ExtRef Svc 2024-06-01 03:24
Recall State
State01
State02
State03
State04
State05
State06
State07
State08
Autorec
UserPres
File Dialog...
Return

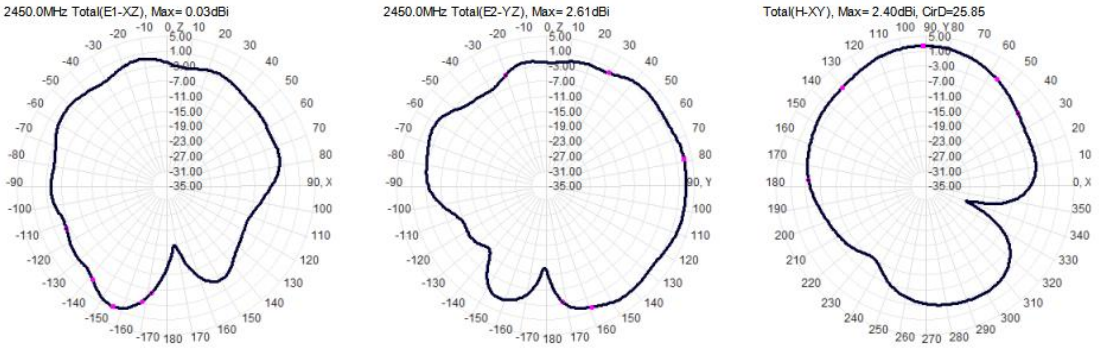



## 4. 22. 2 Passive gain、 efficiency and Radiation Pattern:

| Marker （MHz） | 2400 | 2450 | 2500 | 5150 | 5350 | 5500 | 5700 | 5850 |
|---|---|---|---|---|---|---|---|---|
| Gain（dBi） | 3.16 | 2.61 | 3.21 | 1.79 | 2.40 | 2.80 | 3.47 | 2.58 |
| Efficiency （%） | 57.21 | 60.24 | 57.66 | 38.53 | 41.00 | 45.45 | 51.45 | 45.06 |

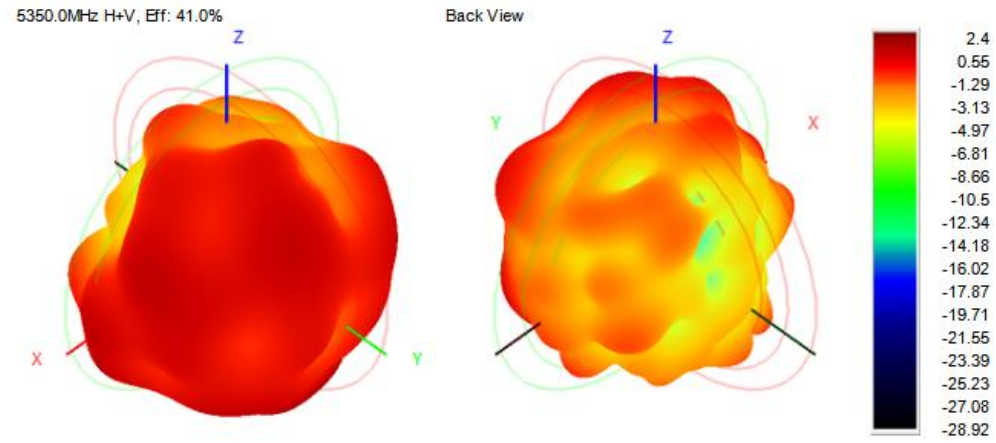
2450 MHz：

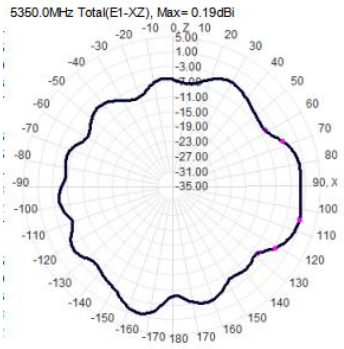


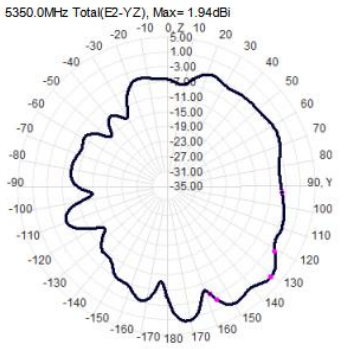



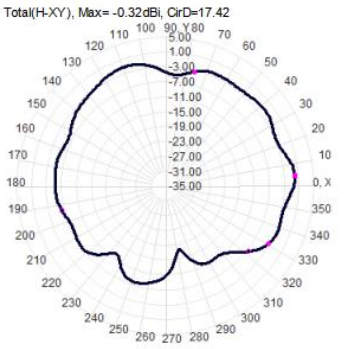

.

5350 MHz：

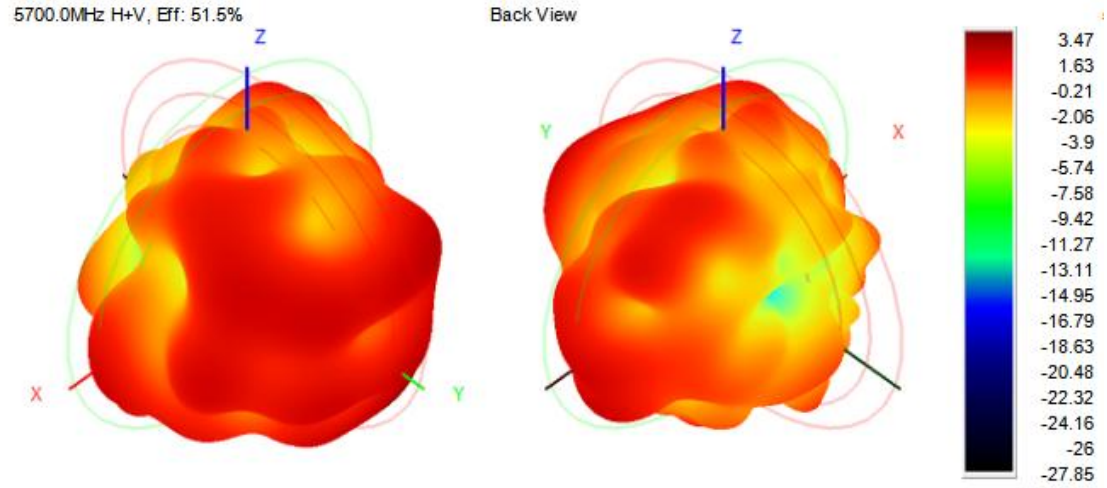


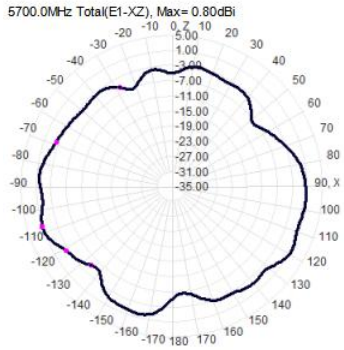

5350.0MHz Total(E1-XZ), Max= 0.19dBi

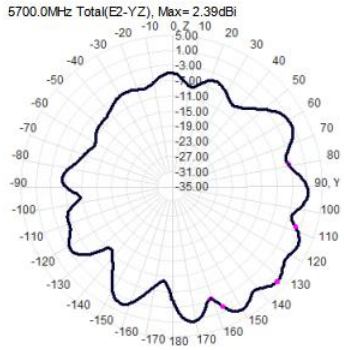

5350.0MHz Total(E2-YZ), Max= 1.94dBi

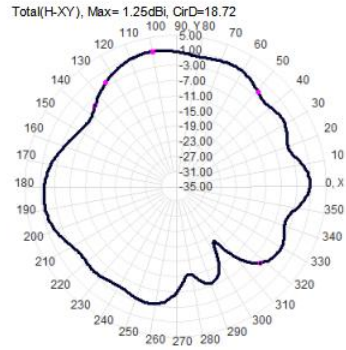

Total(H-XY), Max= -0.32dBi, CirD=17.42

5700 MHz：


5700.0MHz H+V, Eff: 51.5%
Back View
Z
X
Y
3.47
1.63
-0.21
-2.06
-3.9
-5.74
-7.58
-9.42
-11.27
-13.11
-14.95
-16.79
-18.63
-20.48
-22.32
-24.16
-26
-27.85


5700.0MHz Total(E1-XZ), Max= 0.80dBi


5700.0MHz Total(E2-YZ), Max= 2.39dBi


Total(H-XY), Max= 1.25dBi, CirD=18.72

# 5. Product Packaging

| |
|---|
| Manner of packing**:**<br>Packed in self sealed bags, 200 pcs each. |

# 6. Document Resume

| | |
|---|---|
| Document No. | |
| Release Date | 2024/06/01 |
| Author | XiofengZeng |
| Review | LiMing |

## Revised History

| Date | Version | Revised Record |
|---|---|---|
| 2024/06/01 | 1.00 | New Project |
| | | |