



ShenZhen Huaxinwei communication technology  
Co.,Ltd.

## Antenna test report

Customer Name: Hua Yue Shi Tong

Project Name: L5507A

Designer: Liu Chun Yun

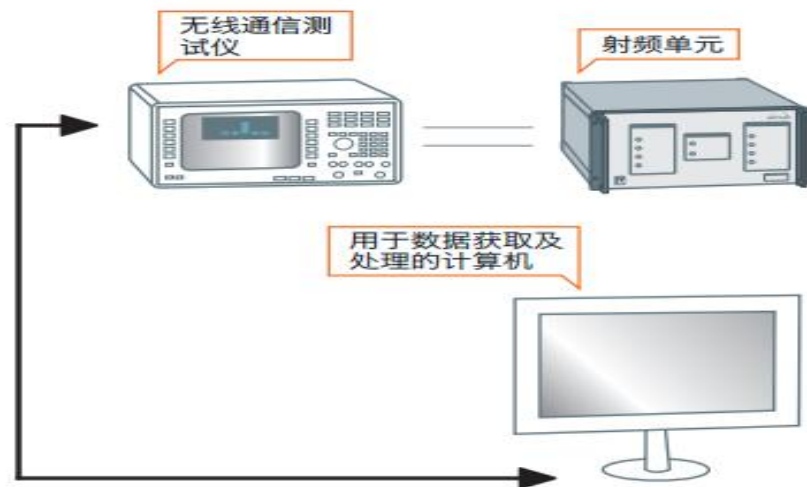
Date: 2022/11/23



|                   |                             |                     |              |                   |
|-------------------|-----------------------------|---------------------|--------------|-------------------|
| The customer name |                             | Hua Yue Shi Tong    | Project Name | L5507A            |
| NO.               | project                     | Detailed above      |              |                   |
| 1                 | spectrum                    | BT                  |              |                   |
| 2                 | Project type                | The mobile phone    |              |                   |
| 3                 | Antenna space area          |                     |              |                   |
| 4                 | Feed point type             |                     |              |                   |
| 5                 | The sensitivity             |                     |              |                   |
| 6                 | Type of antenna             |                     |              |                   |
| 7                 | The length of the PCB board |                     |              |                   |
| 8                 | note                        | Debugging prototype |              |                   |
| RF                |                             | Liu Chun Yun        | 15112340864  | hxw_lcy@sz-hxw.cn |

## 1、Test system and test equipment

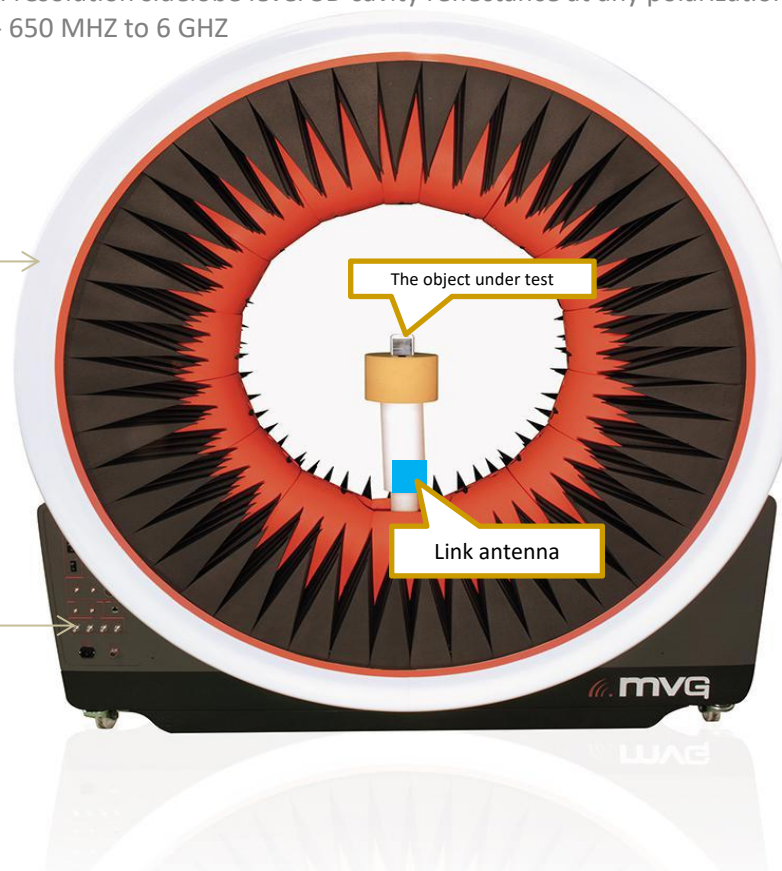
System Brand: MVG(SATIMO) measurement features: gain • pattern beamwidth cross polarization resolution sidelobe level 3D cavity reflectance at any polarization cavity reflectance (line or arc) antenna efficiency TRP, TIS, EIRP and EIS. Frequency band: StarLab 6 GHZ - 650 MHZ to 6 GHZ



**TIS预计测量时间** (一个信道每隔30° 取样)

| 灵敏度算法 \ 标准       | GSM<br>GPRS<br>EDGE | CDMA<br>1 x RTT<br>1 x EvDO | WCDMA<br>HSDPA<br>LTE FDD/TDD | Wi-Fi<br>802.11<br>a/b/g/n | CTIA<br>批准方法   |
|------------------|---------------------|-----------------------------|-------------------------------|----------------------------|----------------|
| RSSI模式+线性化+TIS补偿 | 8 min               |                             | 10 min                        |                            | 是              |
| EIS模式+TIS补偿      |                     | 5 min                       |                               | 5 min                      | 是 <sup>2</sup> |
| 快速CDMA           |                     | 8 min                       |                               |                            | No             |
| EIRP模式+TIS补偿     |                     |                             |                               | 10 min                     | No             |

1、根据RTC  
2、根据协议



TIS 3D方位切割强度图



TRP 3D方位切割强度图

# Test Equipment



## Antenna position

main antenna



diversity antenna



GPS/WIFI/BT antenna

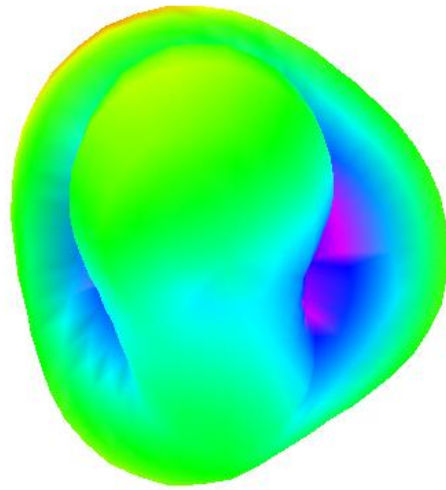
Efficient

| PEAK GAIN |                 |         |
|-----------|-----------------|---------|
| 2G        | Frequency range | dbi     |
| GSM850    | 824~894Mhz      | -0.68db |
| GSM900    | 880~960Mhz      | -0.72db |
| DCS1800   | 1710~1880Mhz    | +0.92db |
| PCS1900   | 1850~1990Mhz    | +0.97db |
| 3G        |                 |         |
| W1        | 1920~2170Mhz    | +1.03db |
| W2        | 1850~1990Mhz    | +0.97db |
| W5        | 824~894Mhz      | -0.68db |
| W8        | 880~960Mhz      | -0.72db |
| 4G        |                 |         |
| LTE-B2    | 1851~1985Mhz    | +0.97db |
| LTE-B3    | 1710~1880Mhz    | +0.92db |
| LTE-B4    | 1712~2152Mhz    | +0.95db |
| LTE-B7    | 2500~2690Mhz    | +0.81db |
| LTE-B12   | 699~743Mhz      | -0.64db |
| LTE-B17   | 705~741Mhz      | -0.64db |
| LTE-B28   | 708~798Mhz      | -1.24db |
|           |                 |         |
|           |                 |         |
| WIFI      | 2400~2500Mhz    | +1.01db |
| BT        | 2400~2500Mhz    | +1.01db |

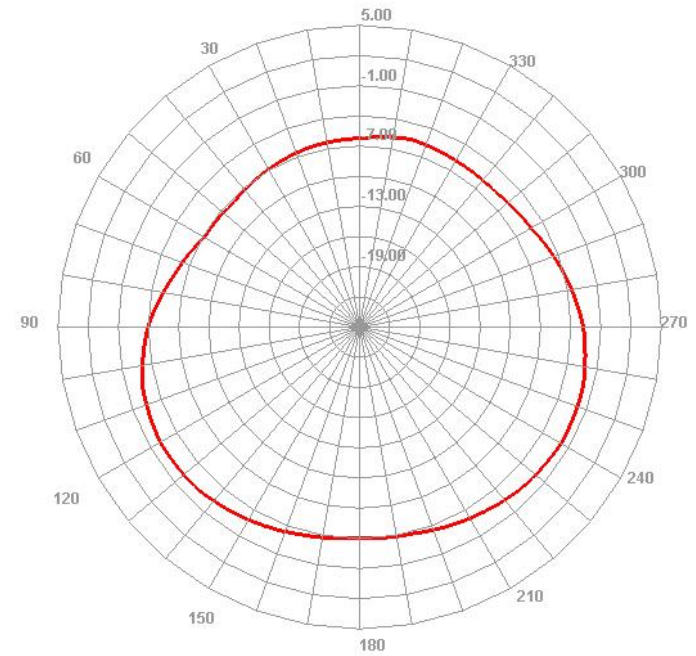
# Efficient (GSM850+W5+LTE.B5 824~894Mhz)

# Lower antenna

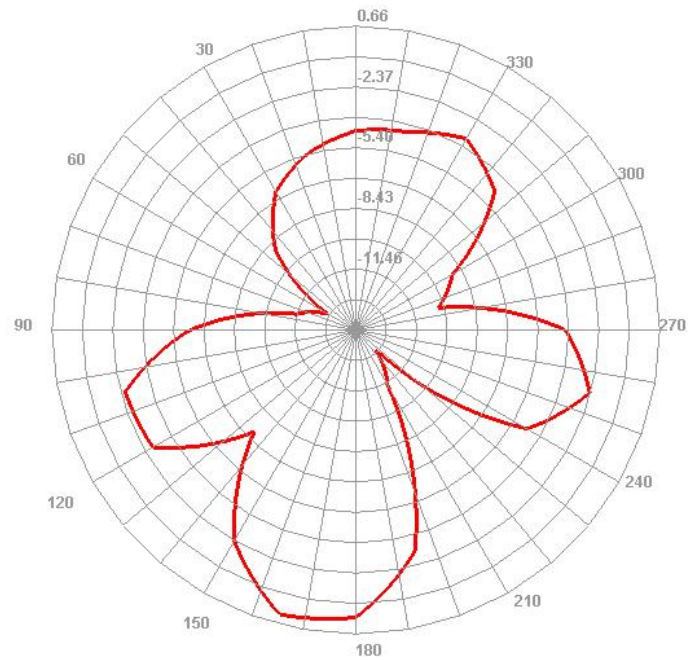
840.000MHz



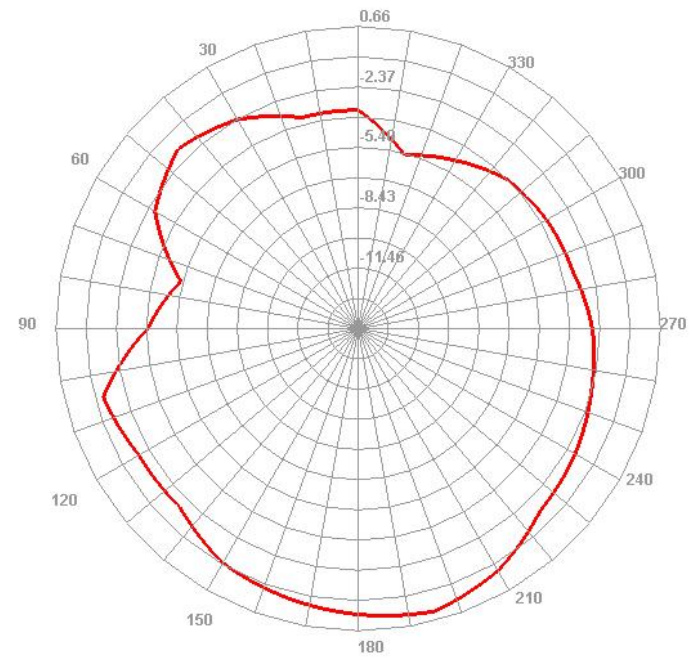
840.000MHz H



840.000MHz E1



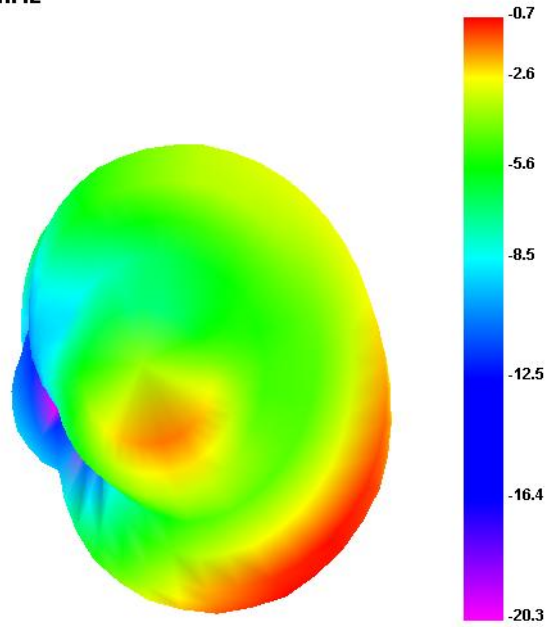
840.000MHz E2



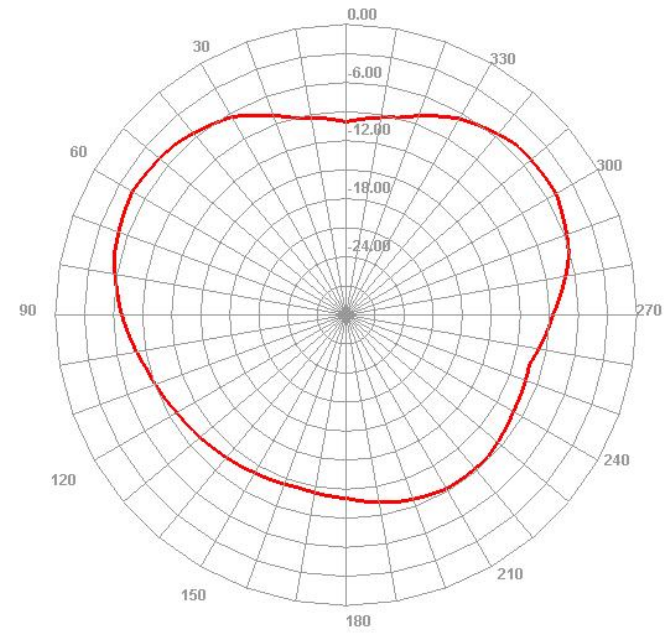
# Efficient (GSM900+W8 880~960Mhz)

# Lower antenna

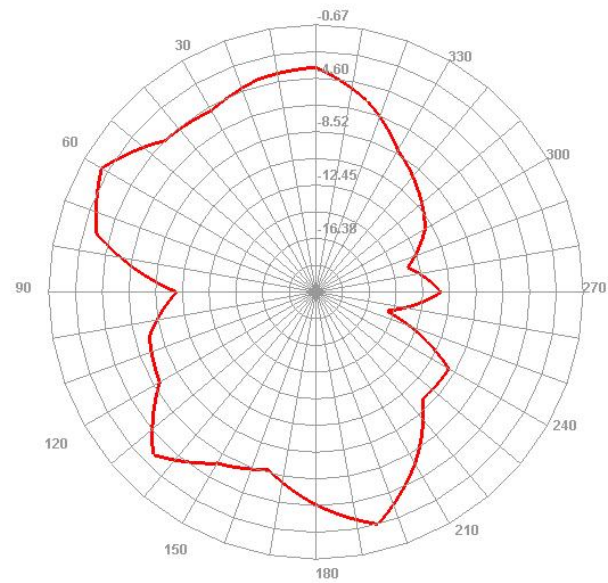
950.000MHz



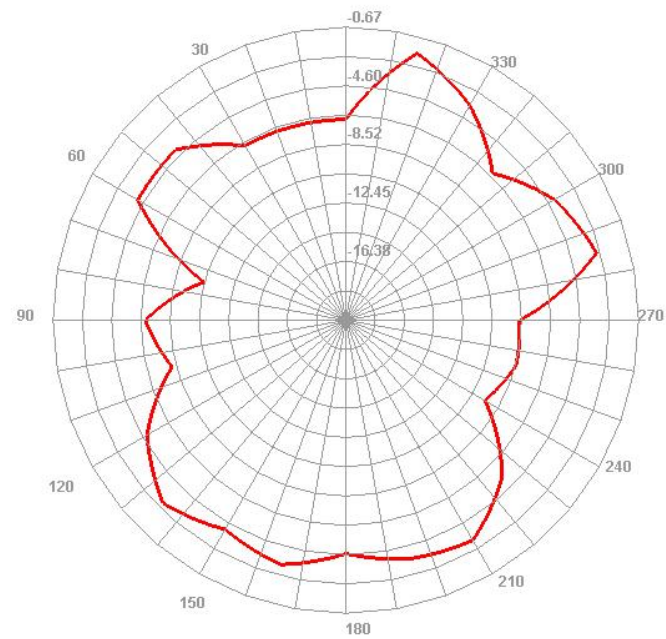
950.000MHz H



950.000MHz E1



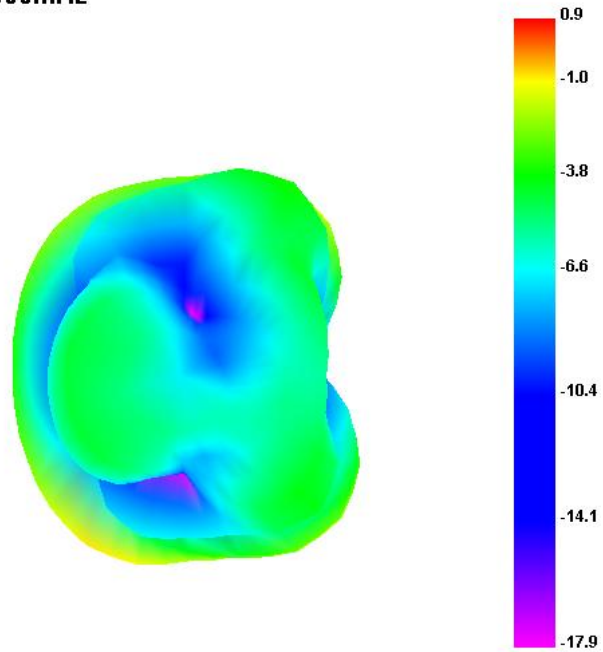
950.000MHz E2



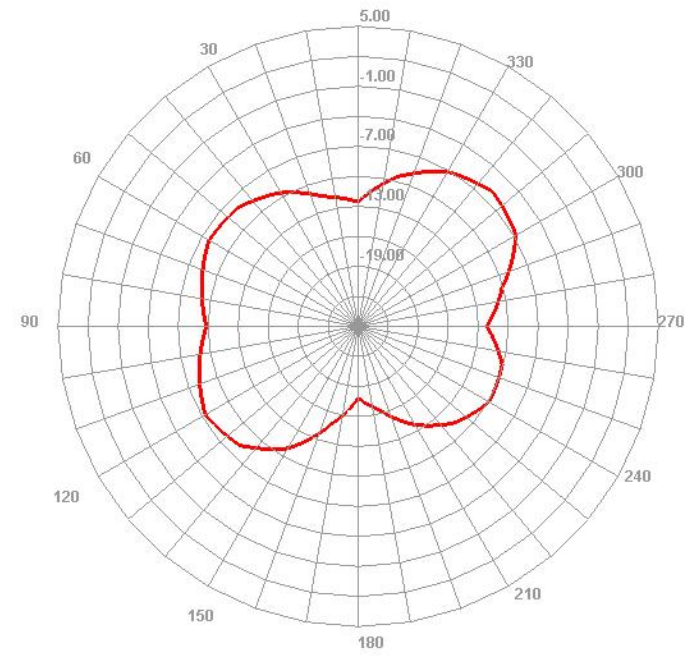
# Efficient (GSM1800+LTE.B3 1710~1880MHz)

# Lower antenna

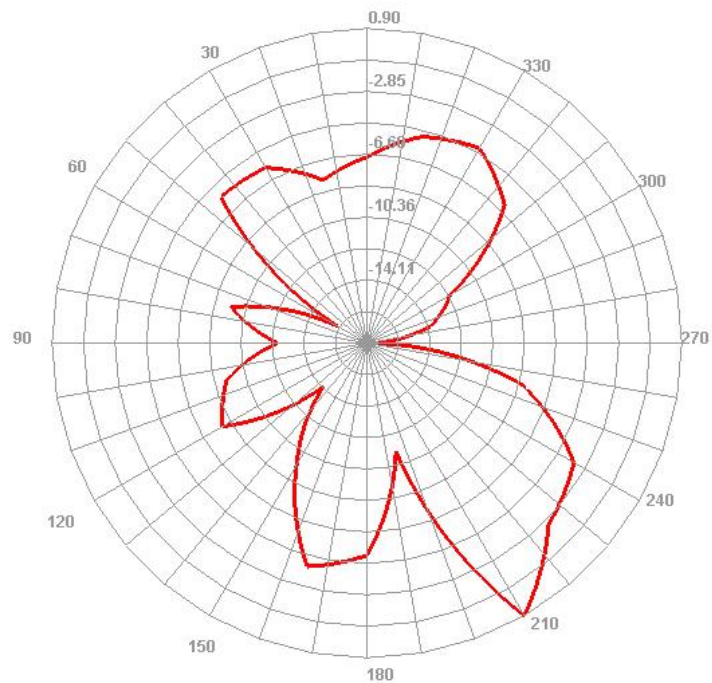
1720.000MHz



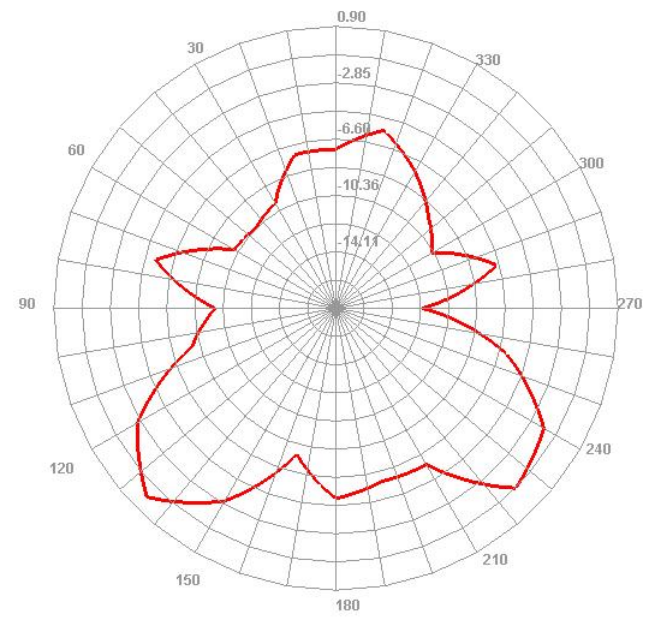
1720.000MHz H



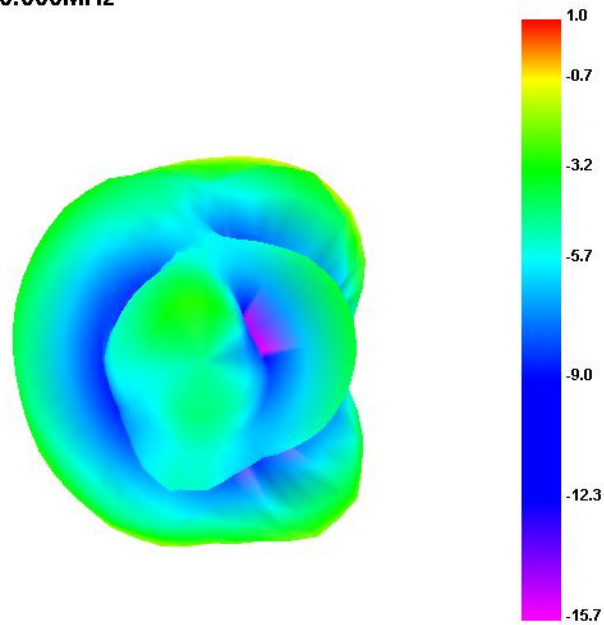
1720.000MHz E1



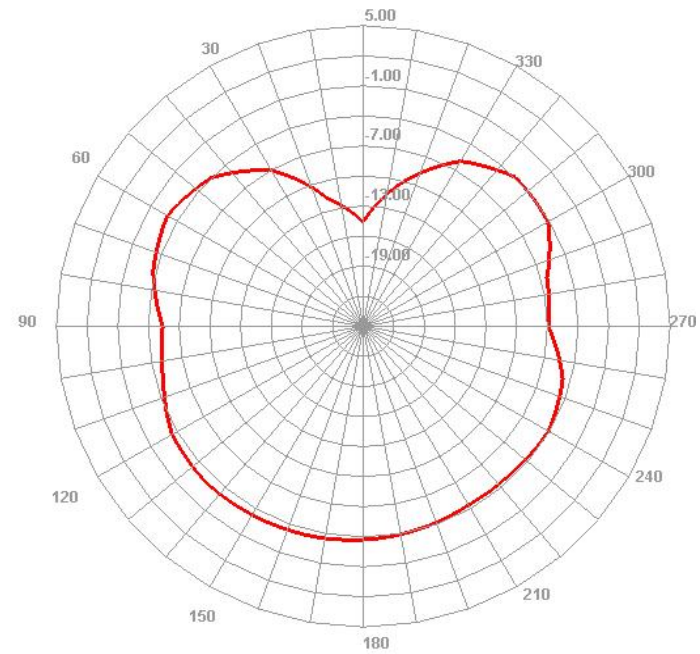
1720.000MHz E2



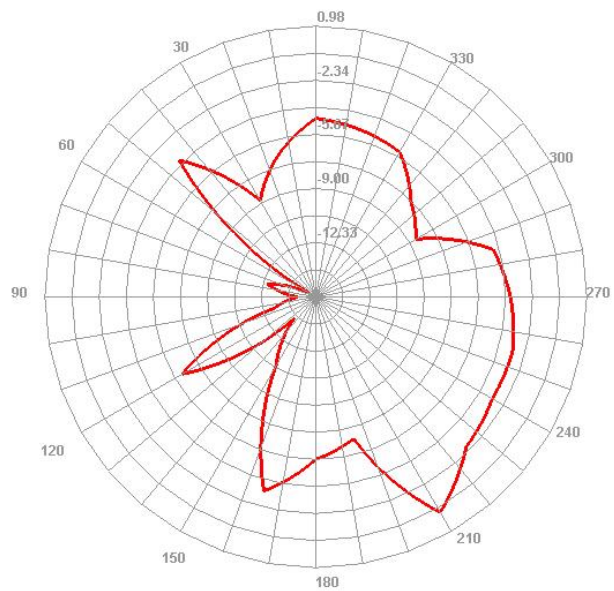
1910.000MHz



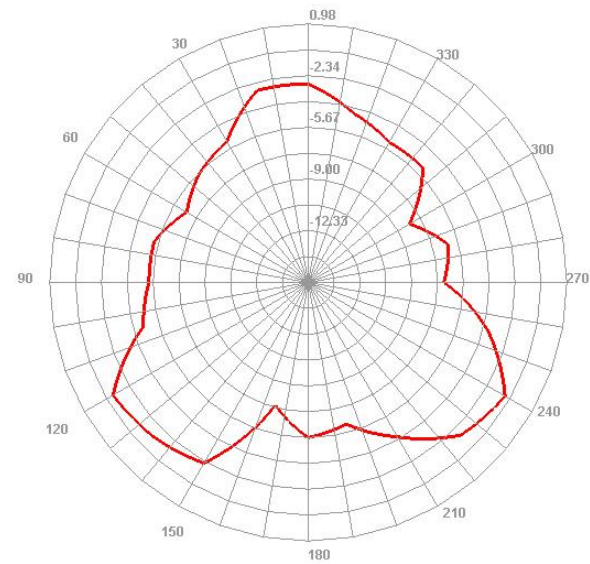
1910.000MHz H



1910.000MHz E1



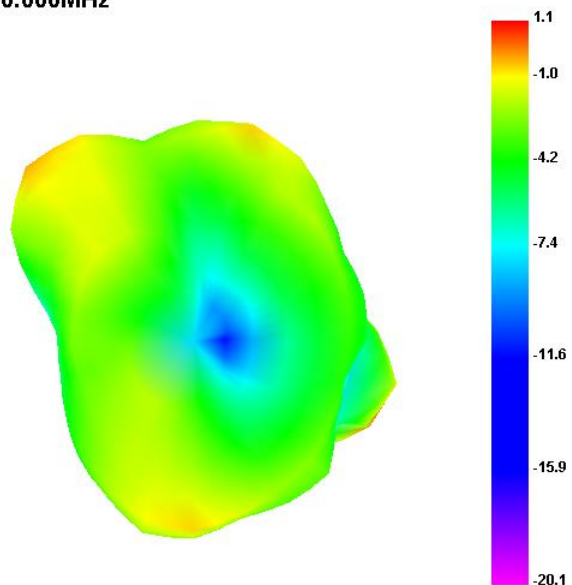
1910.000MHz E2



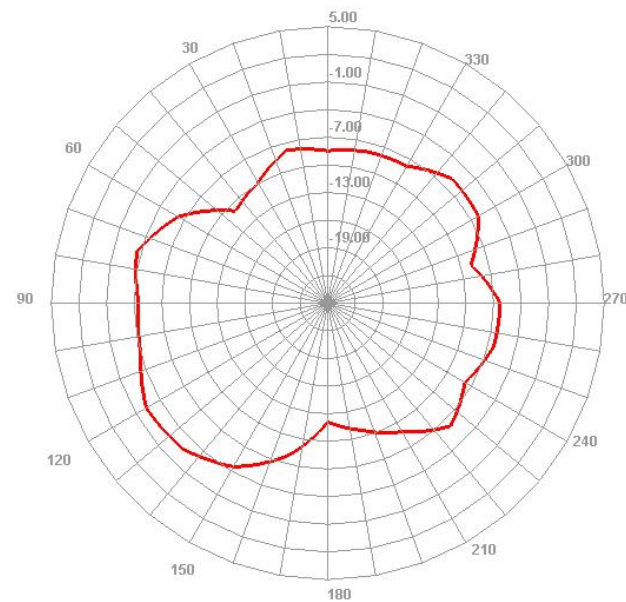
# Efficient (W1 1920~2170MHz)

# Lower antenna

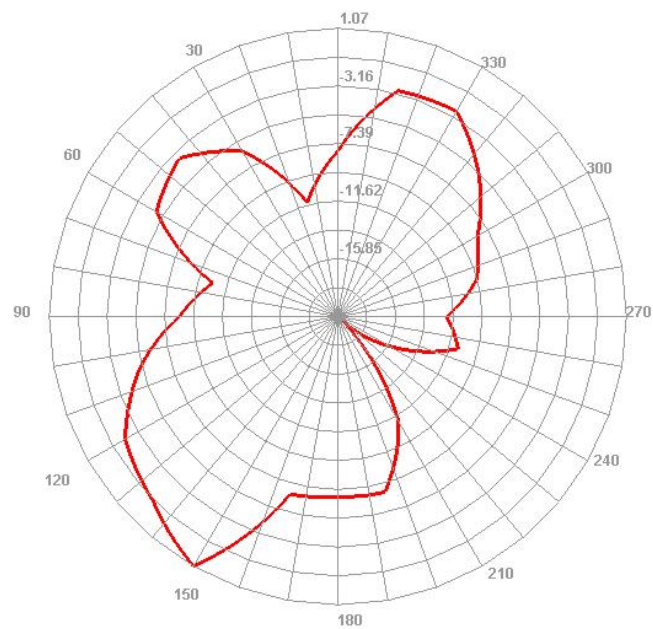
2010.000MHz



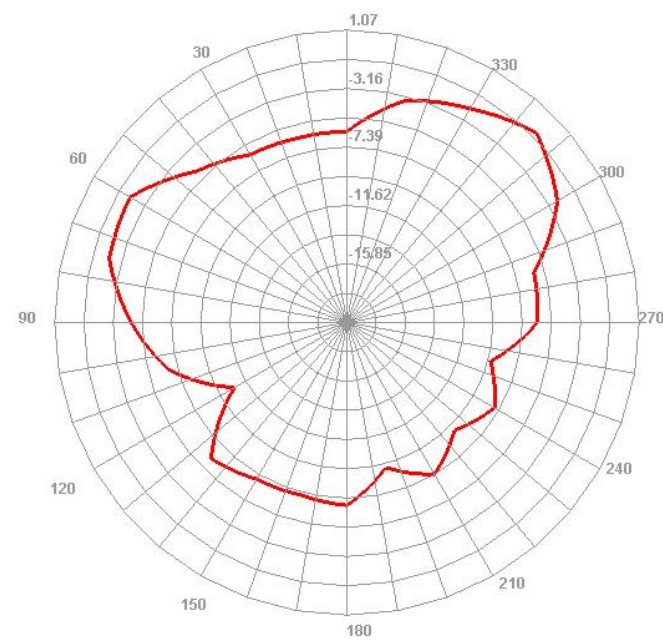
2010.000MHz H



2010.000MHz E1

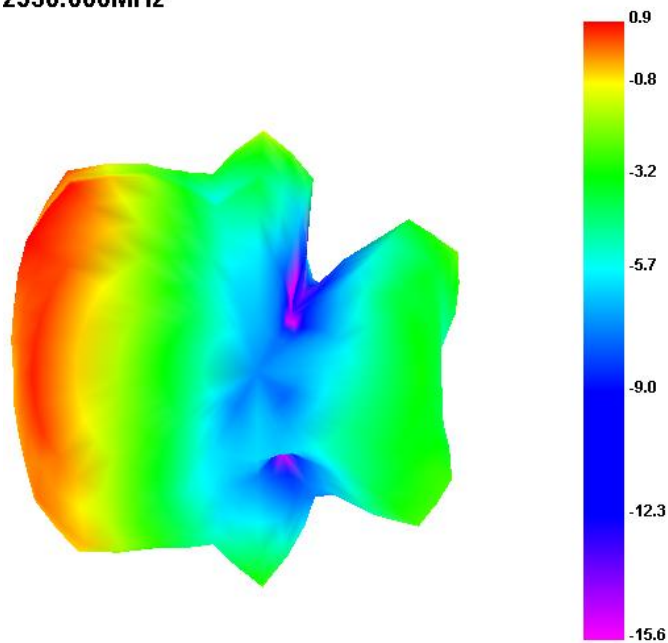


2010.000MHz E2



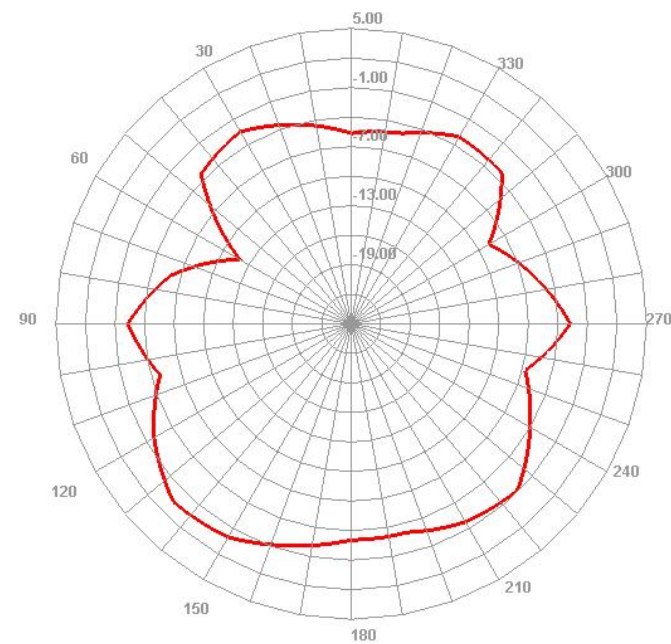
# Efficient (LTE.B7 2500~2690Mhz)

2530.000MHz

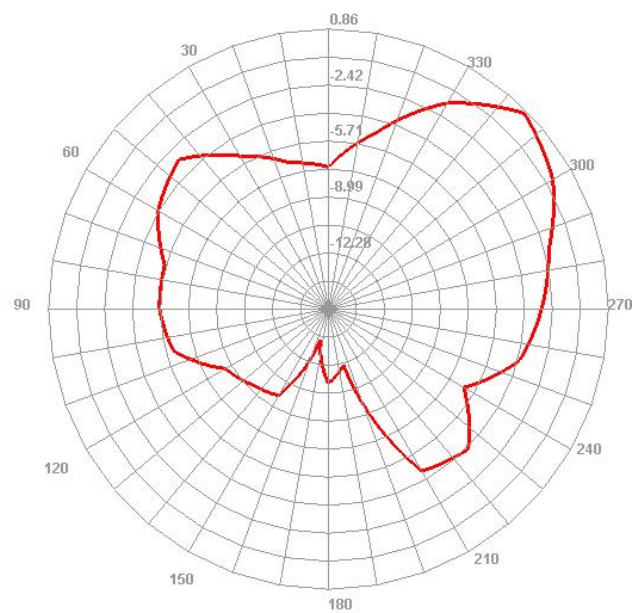


# Lower antenna

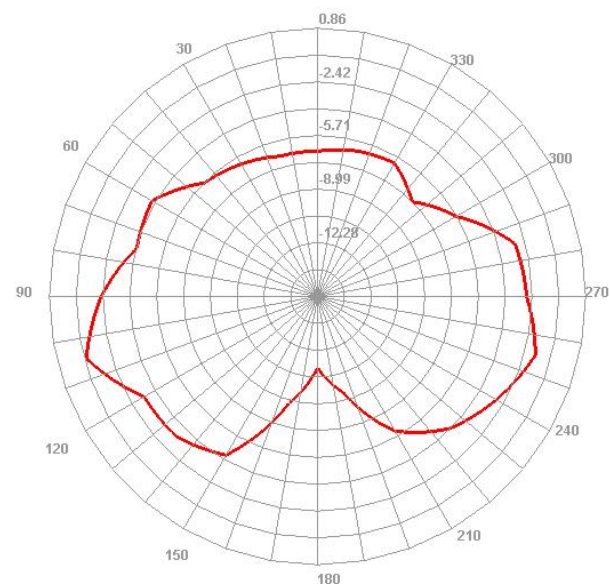
2530.000MHz H



2530.000MHz E1

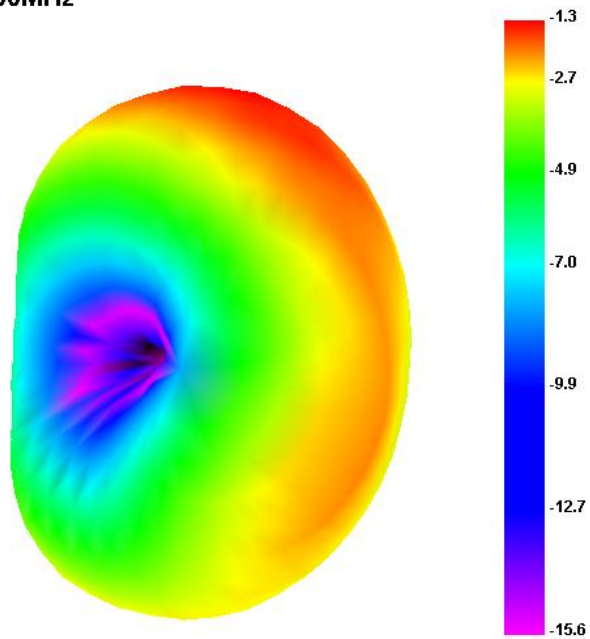


2530.000MHz E2

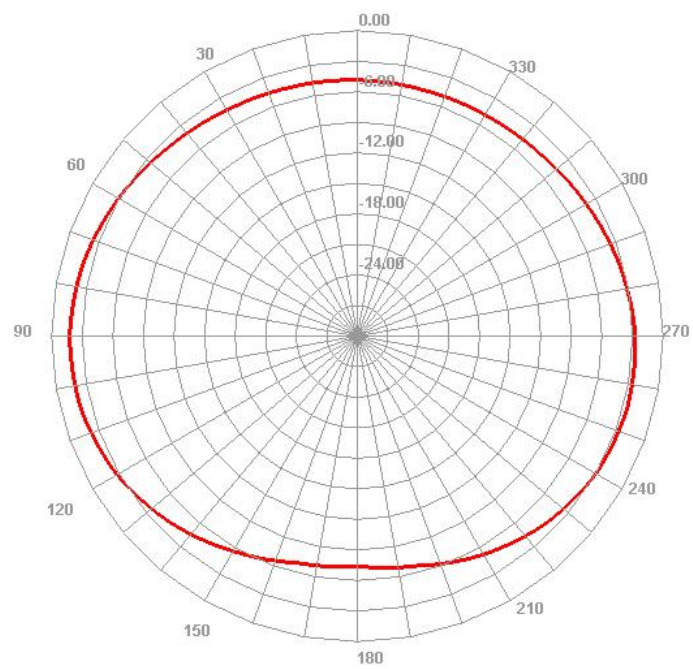


# Efficient (LTE:B28 708~798Mhz )

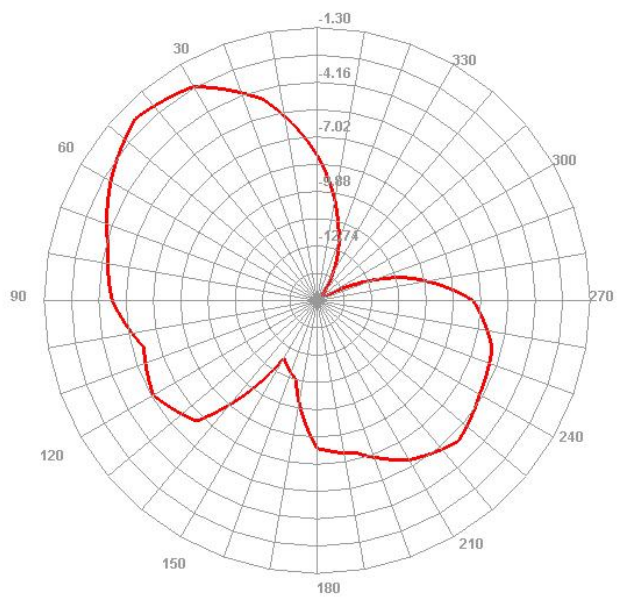
790.000MHz



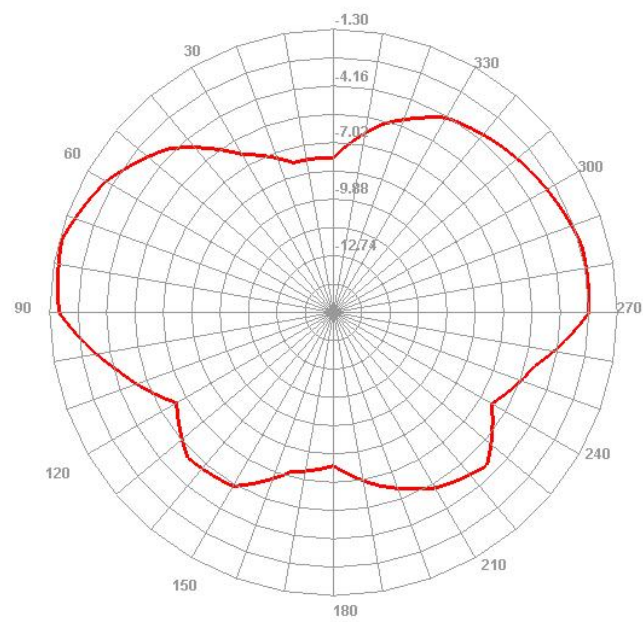
790.000MHz H



790.000MHz E1

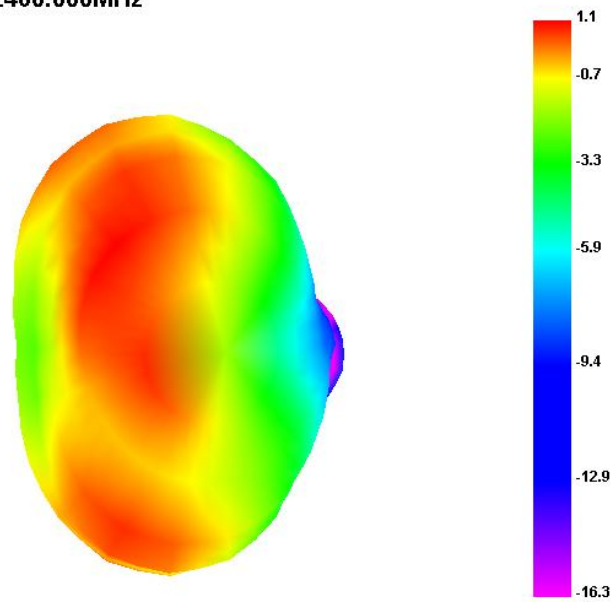


790.000MHz E2

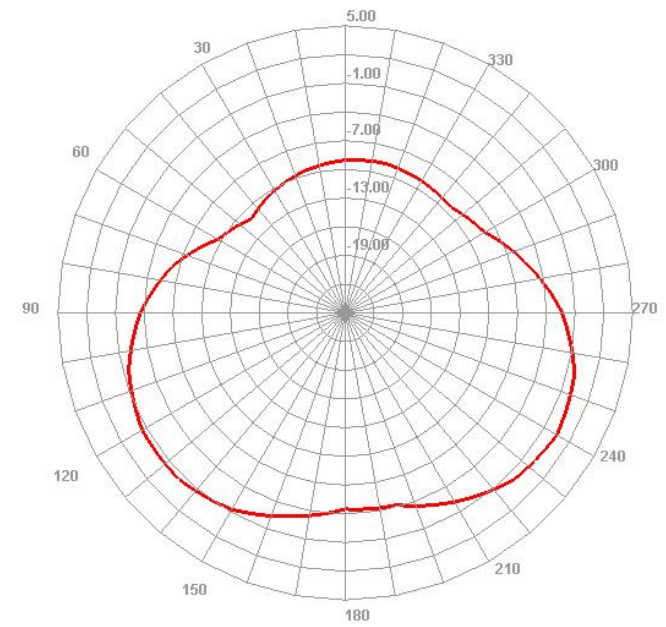


# Efficient (2.4GWIFI/BT)

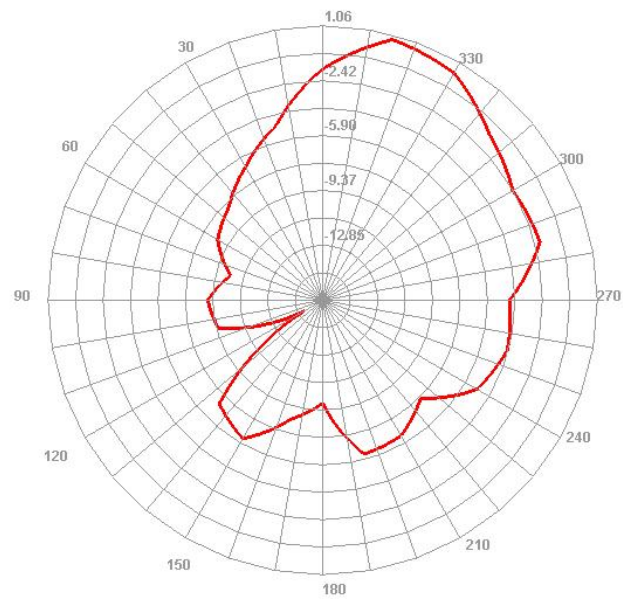
2460.000MHz



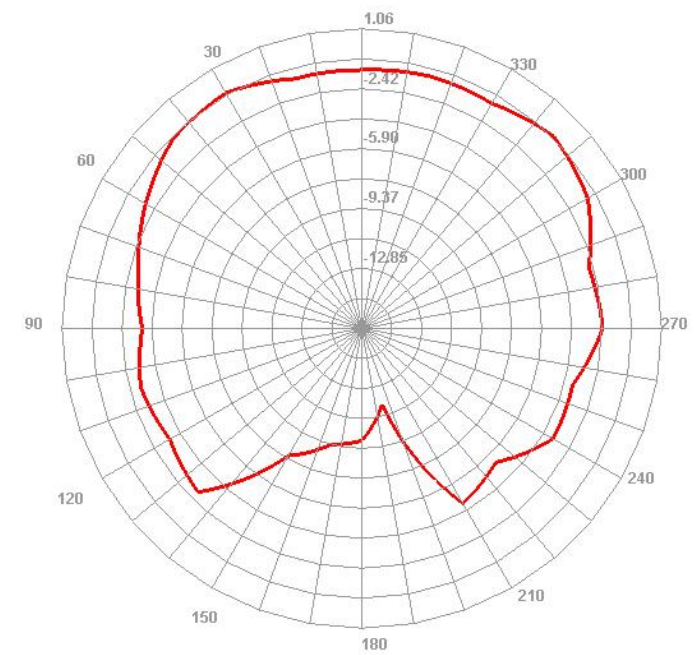
2460.000MHz H



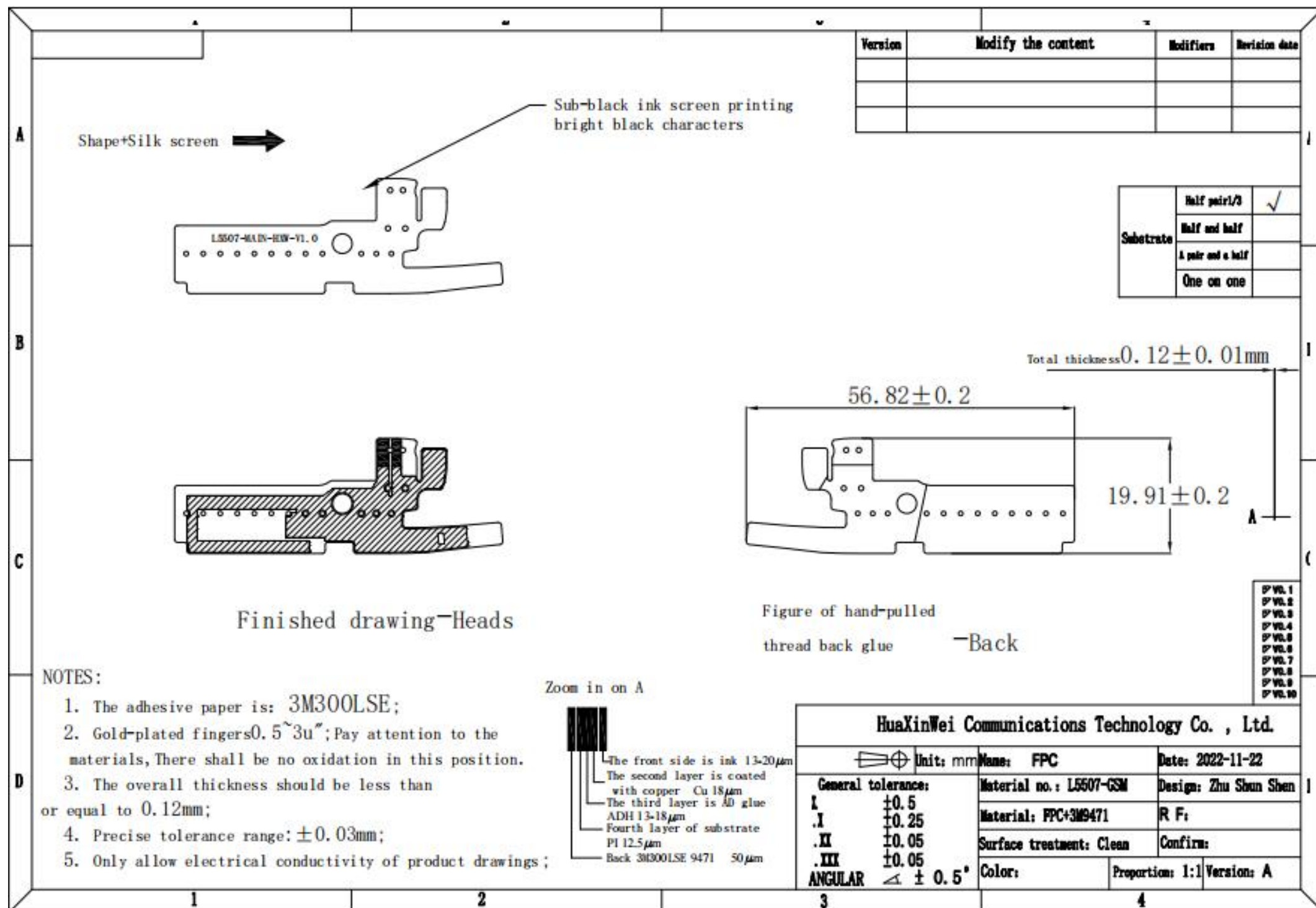
2460.000MHz E1



2460.000MHz E2



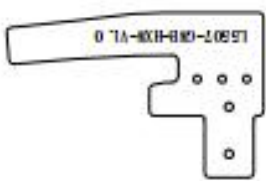
# Master antenna specifications



A

Shape+Silk screen

Sub-black ink screen printing  
bright black characters



B

|           |                   |   |
|-----------|-------------------|---|
| Substrate | Half pair1/3      | ✓ |
|           | Half and half     |   |
|           | A pair and a half |   |
|           | One on one        |   |

Total thickness  $0.12 \pm 0.01$ mm

C

Finished drawing-Heads

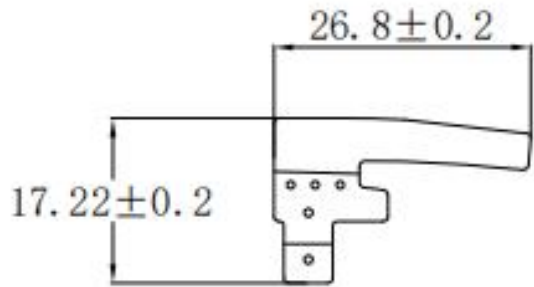


Figure of hand-pulled  
thread back glue -Back

D

NOTES:

- 1. The adhesive paper is: 3M300LSE;
- 2. Gold-plated fingers  $0.5 \sim 3 \mu$ ”; Pay attention to the materials, There shall be no oxidation in this position.
- 3. The overall thickness should be less than or equal to 0.12mm;
- 4. Precise tolerance range:  $\pm 0.03$ mm;
- 5. Only allow electrical conductivity of product drawings;

Zoom in on A

The front side is ink 13-20 $\mu$ m  
The second layer is coated with copper Cu 18 $\mu$ m  
The third layer is AD glue ADH 13-18 $\mu$ m  
Fourth layer of substrate PI 12.5 $\mu$ m  
Back 3M300LSE 9471 50 $\mu$ m

- 07 VOL. 1
- 07 VOL. 2
- 07 VOL. 3
- 07 VOL. 4
- 07 VOL. 5
- 07 VOL. 6
- 07 VOL. 7
- 07 VOL. 8
- 07 VOL. 9
- 07 VOL. 10

| HuaXinWei Communications Technology Co. , Ltd. |                        |                          |                       |            |
|------------------------------------------------|------------------------|--------------------------|-----------------------|------------|
|                                                | Unit: mm               | Name: FPC                | Date: 2022-11-22      |            |
| General tolerance:                             |                        | Material no.: L5507-GWB  | Design: Zhu Shun Shen |            |
| I                                              | $\pm 0.5$              | Material: FPC+3M9471     | R F:                  |            |
| .I                                             | $\pm 0.25$             | Surface treatment: Clean | Confirm:              |            |
| .II                                            | $\pm 0.05$             | Color:                   | Proportion: 1:1       | Version: A |
| .III                                           | $\pm 0.05$             |                          |                       |            |
| ANGULAR                                        | $\angle \pm 0.5^\circ$ |                          |                       |            |

| Version | Modify the content | Modifiers | Revision date |
|---------|--------------------|-----------|---------------|
|         |                    |           |               |
|         |                    |           |               |
|         |                    |           |               |

Shape+Silk screen →

Sub-black ink screen printing  
bright black characters



| Substrate         | Half pair/3 | ✓ |
|-------------------|-------------|---|
| Half and half     |             |   |
| A pair and a half |             |   |
| One on one        |             |   |



Total thickness  $0.12 \pm 0.01 \text{ mm}$

$19.44 \pm 0.2$

$18.36 \pm 0.2$

A

Finished drawing-Heads

NOTES:

1. The adhesive paper is: 3M300LSE;
2. Gold-plated fingers  $0.5 \sim 3 \mu\text{m}$ ; Pay attention to the materials, There shall be no oxidation in this position.
3. The overall thickness should be less than or equal to  $0.12 \text{ mm}$ ;
4. Precise tolerance range:  $\pm 0.03 \text{ mm}$ ;
5. Only allow electrical conductivity of product drawings;

Zoom in on A



The front side is ink  $13 \sim 20 \mu\text{m}$   
 The second layer is coated with copper  $\text{Cu } 18 \mu\text{m}$   
 The third layer is AD glue ADH  $13 \sim 18 \mu\text{m}$   
 Fourth layer of substrate PI  $12.5 \mu\text{m}$   
 Back 3M300LSE 9471  $50 \mu\text{m}$

| HuaXinWei Communications Technology Co., Ltd.                                         |                        |                          |                       |
|---------------------------------------------------------------------------------------|------------------------|--------------------------|-----------------------|
|  | Unit: mm               | Name: FPC                | Date: 2022-11-22      |
| General tolerance:                                                                    |                        | Material no.: L5507-DIV  | Design: Zhu Shun Shen |
| I                                                                                     | $\pm 0.5$              | Material: FPC+3M9471     | R F:                  |
| .I                                                                                    | $\pm 0.25$             | Surface treatment: Clean | Confirm:              |
| .II                                                                                   | $\pm 0.05$             | Color:                   | Proportion: 1:1       |
| .III                                                                                  | $\pm 0.05$             | Version: A               |                       |
| ANGULAR                                                                               | $\angle \pm 0.5^\circ$ |                          |                       |

□ VL 1  
 □ VL 2  
 □ VL 3  
 □ VL 4  
 □ VL 5  
 □ VL 6  
 □ VL 7  
 □ VL 8  
 □ VL 9  
 □ VL 10