

# Shenzhen Yishengbang Technology Co., LTD

## SPECIFICATION FOR APPROVAL

Company name (filled in by customer) : Guangzhou Commercial Science Information Co., LTD

Material code (fill in by customer) : \_\_\_\_\_

Gauge type number (filled in by customer) : T40PRO-T616 (自研主板)

Acceptance date (for customer): \_\_\_\_\_

Supplier Name: Shenzhen Yishengbang Technology Co., LTD

Specification: WIFI+GPS:SLK-TD-3713A1 (W/B/G)

4G AUX:SLK-TD-2004-L-345IV-B      4G MAIN:SLK-TD-6113A1

WIFI+GPS 小板: SLK-TD-WBG-R-85IV-G    4G 小板: SLK-TD-4G-R-165IV-B (T616)

### APPROVAL SIGNATURE

| COMPANY Name |             |             | Guangzhou Commercial Science Information Co., LTD |       |          |
|--------------|-------------|-------------|---------------------------------------------------|-------|----------|
| ENGINEER     | QUALITY     | ME          | ENGINEER                                          | CHECK | APPROVAL |
| Chenshilian  | Chenjiexing | Liucailiang |                                                   |       |          |
| APPROVAL     |             | Lin Cai     | SIGNATURE                                         |       |          |
| DATE         | 2023-4-4    |             | DATE                                              |       |          |
| REMARK:      |             |             |                                                   |       |          |

Supplier: Shenzhen Yishengbang Technology Co., LTD

Supplier Address: 101, Building C, Shenzhen Qianwan Hard Technology Industrial Park, Bao 'an District, Shenzhen

Tel: 18525305599 Tel: 18666299104

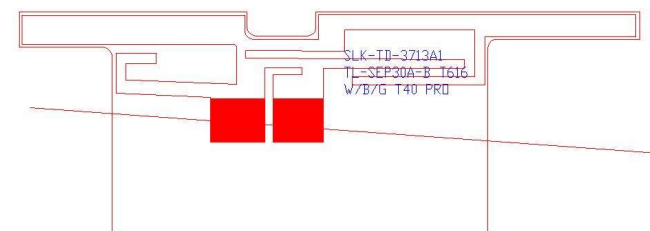
# WIFI+GPS Antenna (3713A1)

## 1. Explanation of Product number :

**S L K - T D - 3 7 1 3 A 1 ( W / B / G )**

**1**

**2**



Product Code:

(1) Customer:

TD: 台电

(2) Project:

3713A1: SLK-TD-3713A1(W/B/G) (WIFI+GPS antenna)

备注: 配套SLK-TD-WBG-R-85IV-G小板

## 2. Features

\*Stable and reliable in performances

\*Compact size

\*RoHS compliance

### 3. Applications

\* IEEE852.11 (a/b/g/n/ac/ax)

\* Hand-held devices when WIFI (852.11a/b/g/n/ac/ax)GPS functions are needed

### 4. Description

Holy bond's FPC antenna series are specially designed for WIFI (852.11 a/b/g/n/ac/ax) GPS applications. Based on Holy bond's proprietary design and processes, this FPC antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

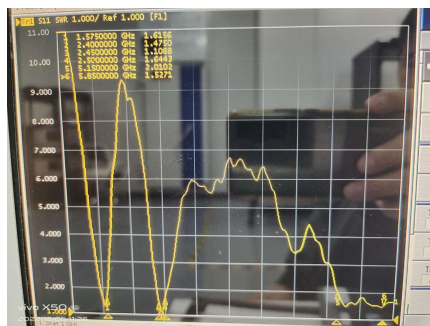
### 5. Electrical Specifications

#### 5-1

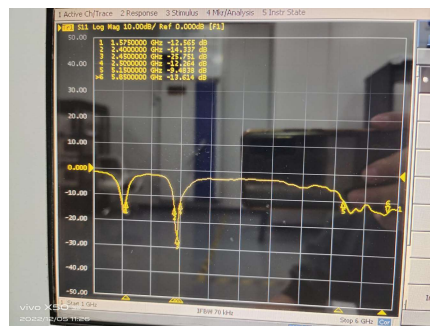
| Characteristics    | Specifications          | Unit |
|--------------------|-------------------------|------|
| Outline Dimensions | 36.97x 13.25x 0.12      | mm   |
| Center Frequency   | 1.585+2.4-2.5+5.15-5.85 | GHz  |
| VSWR               | 3max                    |      |

#### 5-2.

VSWR



S11



### 5-3.WIFI +GPS Antenna Gain/Efficiency/Radiation Pattern of 3D

| Frequency (MHz) | Efficiency (dBi) | Gain (dBi) | Efficiency (%) |
|-----------------|------------------|------------|----------------|
| 1570.0          | -4.56            | 0.80       | 34.98          |
| 1575.0          | -4.31            | 0.84       | 37.11          |
| 1580.0          | -4.48            | 0.66       | 35.68          |
| 2400.0          | -4.33            | 0.14       | 36.86          |
| 2410.0          | -4.34            | 0.12       | 36.78          |
| 2420.0          | -4.38            | -0.03      | 36.47          |
| 2430.0          | -4.10            | 0.20       | 38.91          |
| 2440.0          | -4.08            | 0.14       | 39.10          |
| 2450.0          | -4.25            | 0.00       | 37.56          |
| 2460.0          | -4.47            | -0.56      | 35.73          |
| 2470.0          | -4.43            | 0.01       | 36.03          |
| 2480.0          | -4.29            | 0.02       | 37.20          |
| 2490.0          | -4.22            | 0.08       | 37.81          |
| 2500.0          | -4.41            | -0.05      | 36.26          |
| 5150.0          | -4.54            | 1.34       | 35.16          |
| 5350.0          | -4.17            | 1.95       | 38.32          |
| 5550.0          | -4.33            | 1.30       | 36.89          |
| 5750.0          | -4.23            | 1.79       | 37.76          |
| 5850.0          | -3.95            | 1.91       | 40.26          |

#### WIFI 有源测试

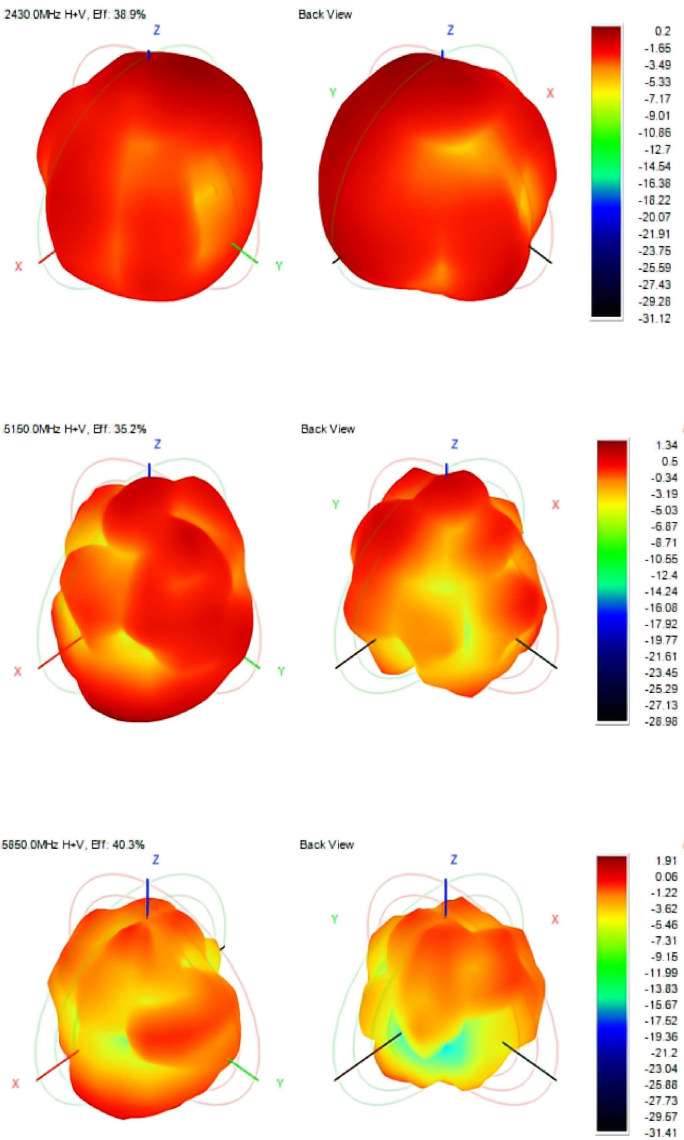
| 频段           | 1      | 6      | 11     |
|--------------|--------|--------|--------|
| B-TRP-11MBps | 13.56  | 12.51  | 12.91  |
| B-TIS-11MBps | -80.79 | -80.99 | -79.72 |
| G-TRP-54MBps | 11.39  | 11.07  | 11.35  |
| G-TIS-54MBps | -71.25 | -71.17 | -69.77 |
| N-TRP-MCS7   | 11.41  | 11.06  | 11.44  |
| N-TIS-MCS7   | -65.94 | -64.46 | -64.01 |
| 频段           | 36     | 149    | 165    |
| A-TRP-54MBps | 8.77   | 9.13   | 9.04   |
| A-TIS-54MBps | -71.25 | -71.36 | -70.71 |

#### 传导测试没加线损

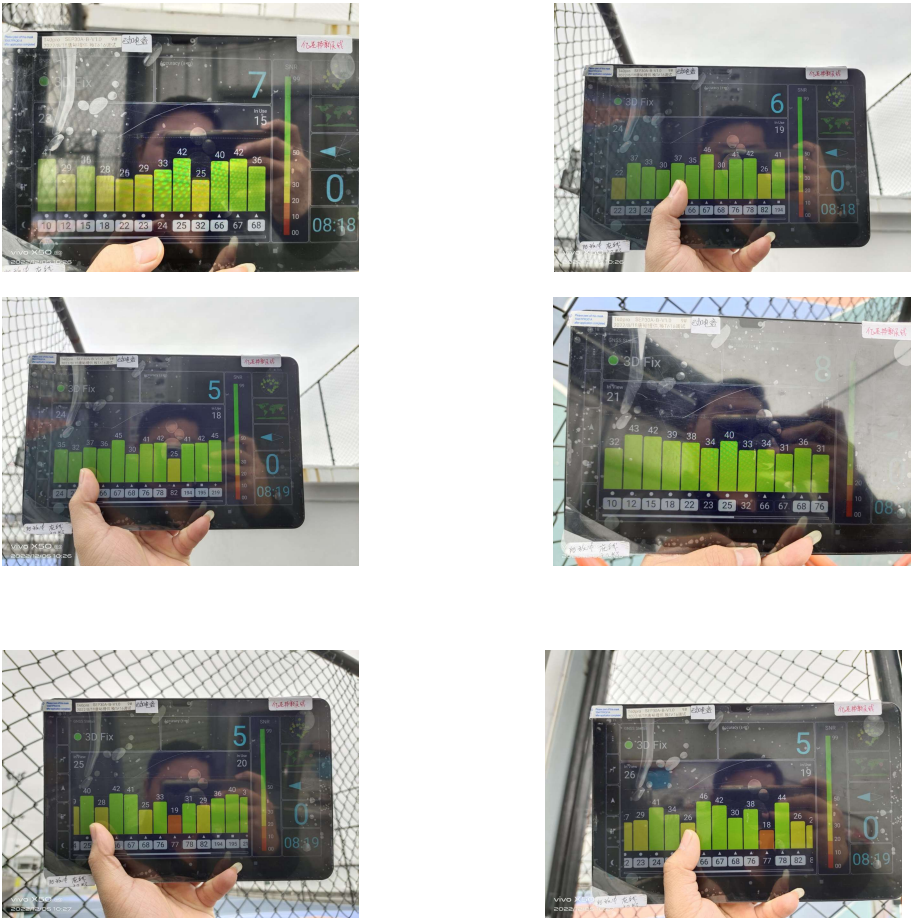
#### WIFI 有源传导测试

| 频段           | 1     | 6     | 11    |
|--------------|-------|-------|-------|
| B-TRP-11MBps | 16.41 | 15.7  | 16.03 |
| G-TRP-54MBps | 14.18 | 13.69 | 13.58 |
| N-TRP-MCS7   | 14.17 | 13.68 | 13.47 |
| 频段           | 36    | 149   | 165   |
| A-TRP-54MBps | 13.17 | 13.53 | 13.13 |

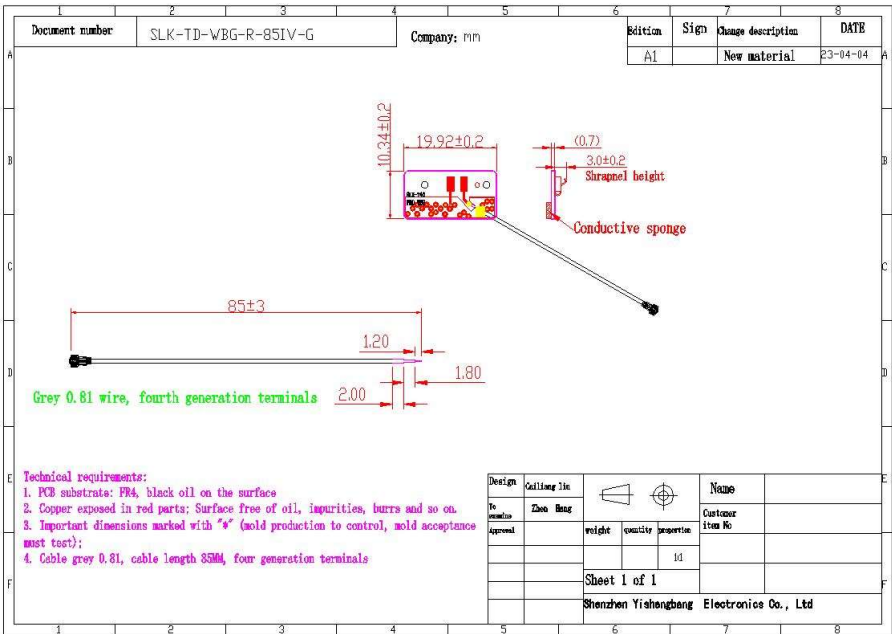
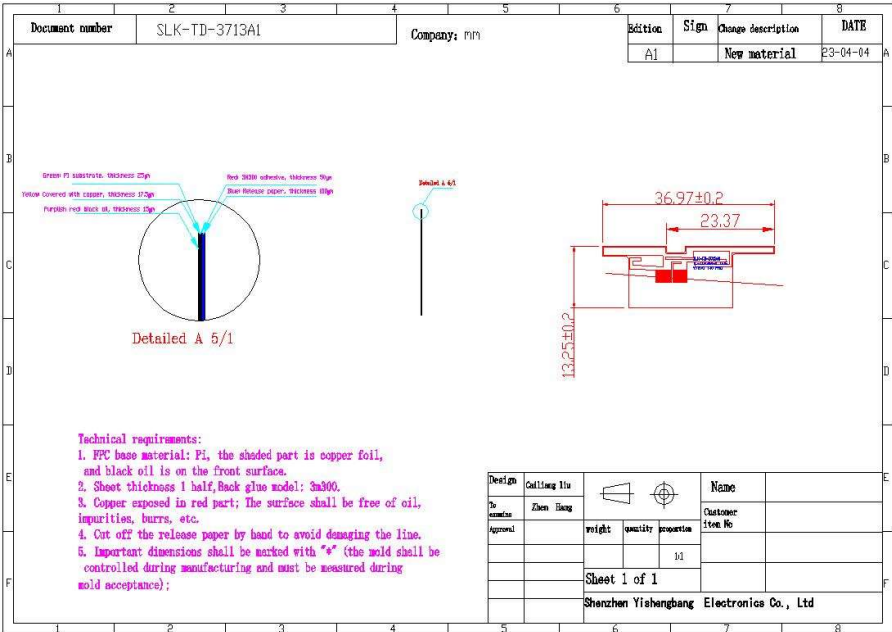
5-4.WIFI +GPS Antenna 2D



5.5 GPS Actual effec



6. Antenna Dimensions (unit: mm)



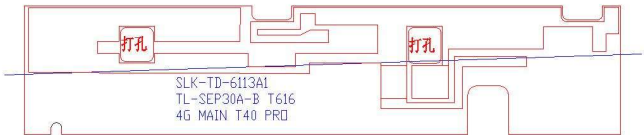
4G MAIN Antenna (6113A1)

1. Explanation of Product number :

SLK - TD - 6113A1

1

2



Product Code:

(1) Customer:

TD:台电

(2) Project:

6113A1: SLK-TD-6113A1 (4G MAIN antenna)

备注: 配套SLK-TD-4G-165IV-B小板(T616)

2. Features

- \*Stable and reliable in performances
- \*Compact size
- \*RoHS compliance

3. Description

Holy bond's FPC antenna series are specially designed for 4G applications. Based on Holy bond's proprietary design and processes, this FPC antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.



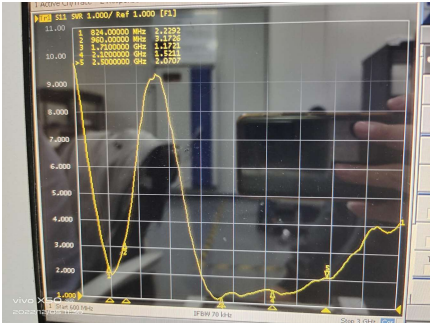
4. Electrical Specifications

4-1

| Characteristics    | Specifications      | Unit     |
|--------------------|---------------------|----------|
| Outline Dimensions | 61.24x 13.2 x 0.12  | mm       |
| VSWR               | 5max                |          |
| Impedance          | 50                  | $\Omega$ |
| Polarization       | Linear Polarization |          |

4-2

VSWR



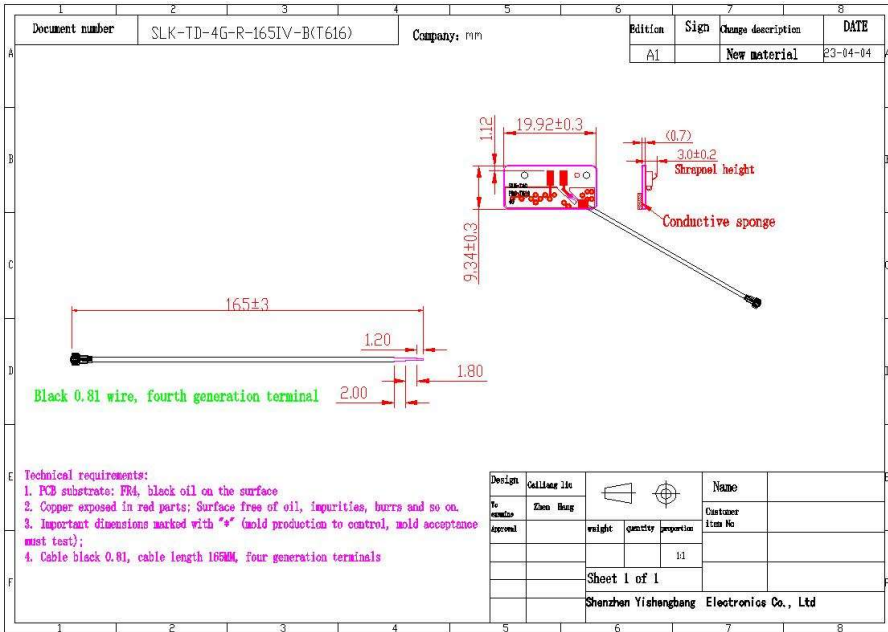
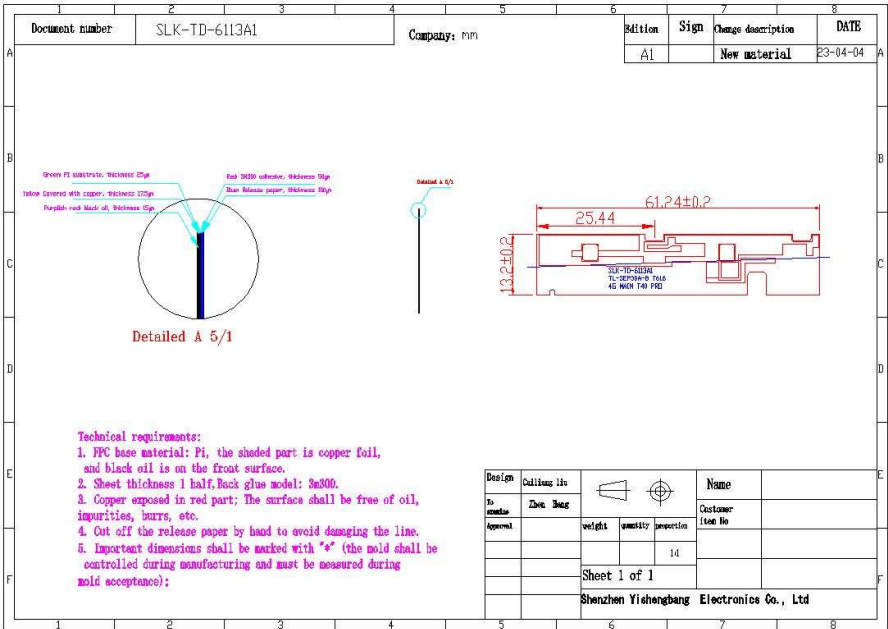
S11



4-3. 2G/3G/4G Antenna TRP/TIS

| 2G 频段    | LTE-L | LTE-M | LTE-R | TIS     |
|----------|-------|-------|-------|---------|
| GSM850   | 25.74 | 26.34 | 26.69 | -102.24 |
| GSM900   | 26.49 | 26.28 | 26.04 | -102.18 |
| GSM1800  | 23.87 | 24.21 | 24.45 | -102.27 |
| GSM1900  | 24.32 | 24.09 | 23.67 | -102.12 |
| 3G 频段    | LTE-L | LTE-M | LTE-R | TIS     |
| WCDMA-B1 | 17.13 | 17.02 | 17.43 | -103.18 |
| WCDMA-B5 | 16.26 | 16.64 | 17.13 | -102.48 |
| WCDMA-B8 | 16.61 | 16.37 | 16.24 | -102.29 |
| 4G 频段    | LTE-L | LTE-M | LTE-R | TIS     |
| LTE-1    | 17.28 | 17.47 | 17.61 | -92.64  |
| LTE-3    | 16.48 | 16.79 | 16.69 | -91.02  |
| LTE-5    | 16.08 | 16.34 | 16.57 | -88.18  |
| LTE-7    | 17.34 | 17.08 | 16.89 | -88.29  |
| LTE-8    | 16.23 | 16.45 | 16.67 | -88.53  |
| LTE-20   | 16.46 | 16.57 | 16.68 | -88.22  |
| LTE-34   | 16.16 | 16.37 | 16.54 | -91.02  |
| LTE-38   | 16.09 | 16.49 | 16.72 | -90.34  |
| LTE-39   | 17.23 | 16.79 | 16.59 | -88.25  |
| LTE-40   | 17.46 | 16.89 | 16.55 | -90.87  |
| LTE-41   | 16.49 | 16.34 | 16.29 | -90.16  |

5. Antenna Dimensions (unit: mm)

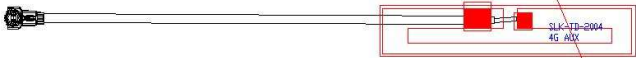


4G AUX Antenna (2004)

1. Explanation of Product number:

SLK - TD - 2004 - L - 345IV - B

1 2 3 4 5



- Product Code:
- (1) Customer:  
TD: 台电
- (2) Project:  
2004: SLK-2004 (4G AUX antenna)
- (3) Welding Position  
L: Left
- (4) Cable Length:  
345IV: 345\*0.81MM 四代端子
- (5) Cable Color  
B: Black

2. Features

- \*Stable and reliable in performances
- \*Compact size
- \*RoHS compliance

3. Description

Holy bond’s FPC antenna series are specially designed for 4G applications. Based on Holy bond’s proprietary design and processes, this FPC antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

4. Electrical Specifications

4-1

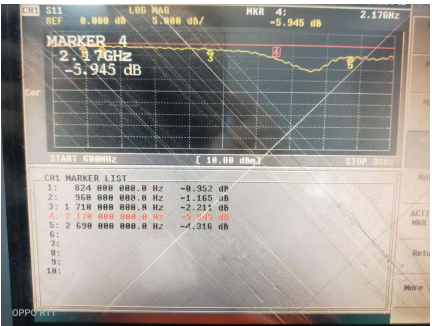
| Characteristics                   | Specifications | Unit |
|-----------------------------------|----------------|------|
| Outline Dimensions                | 20.02x 4x 0.12 | mm   |
| Bandwidth(under-10dB return loss) | 130min         | MHz  |
| VSWR                              | 5max           |      |

4-2

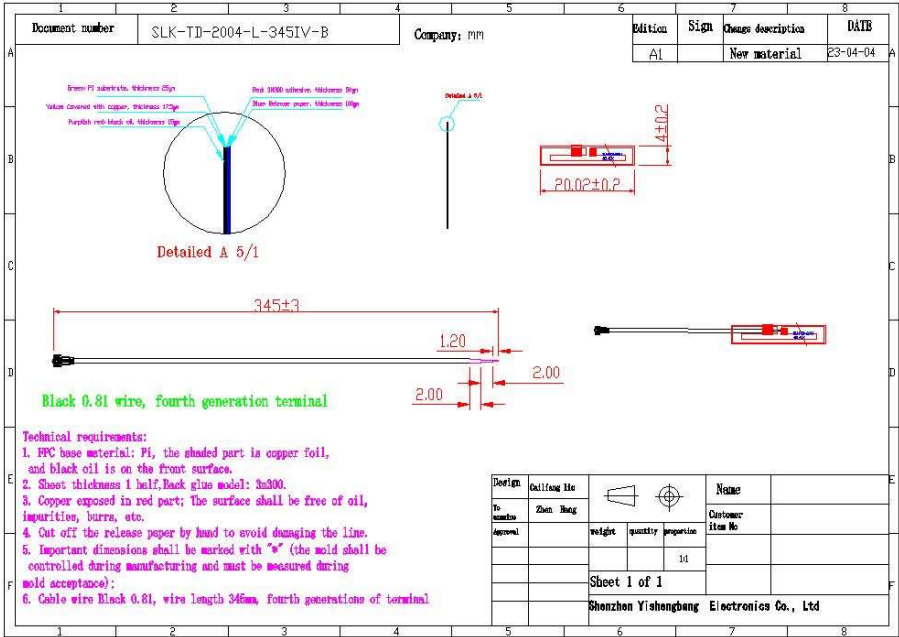
VSWR



S11

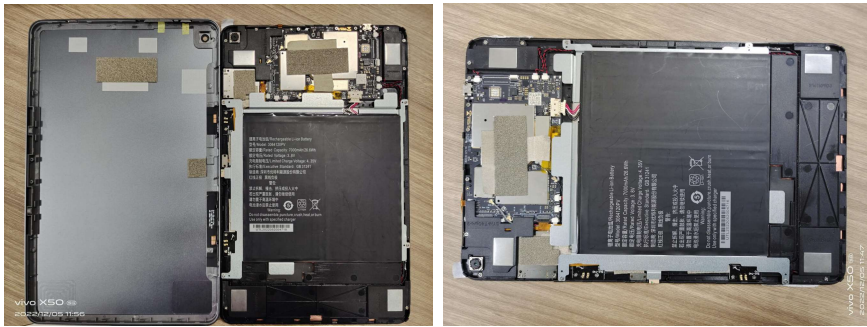


5. Antenna Dimensions (unit: mm)



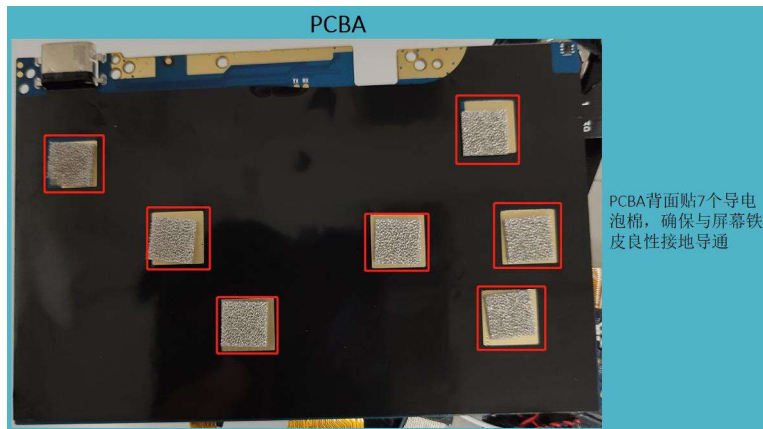


## 6. Antenna Picture



As shown in the picture:

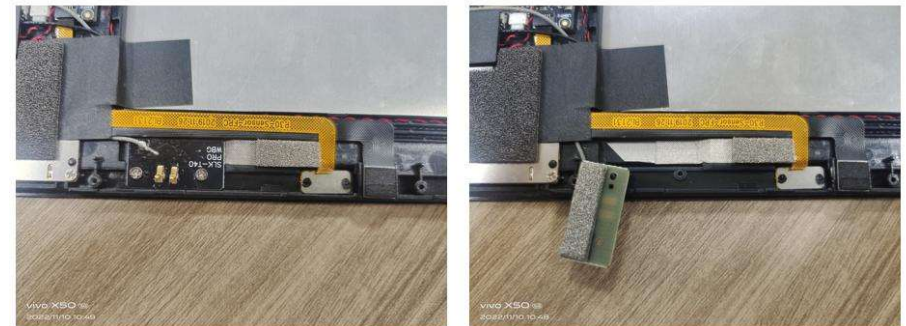
1. Attach a conductive sponge to the copper leakage area of the back cover for contact treatment with the motherboard shield, then attach a conductive cloth to the Cato position for ground treatment of the screen, and then a conductive sponge on the top for contact treatment with the back cover.
2. The copper leakage area at the bottom of the motherboard remains unchanged, and the copper leakage area is treated according to the customer's original environment.



如图所示:

- 1.在4G小板底部漏铜区贴一块导电布再顶一块导电海绵接地处理

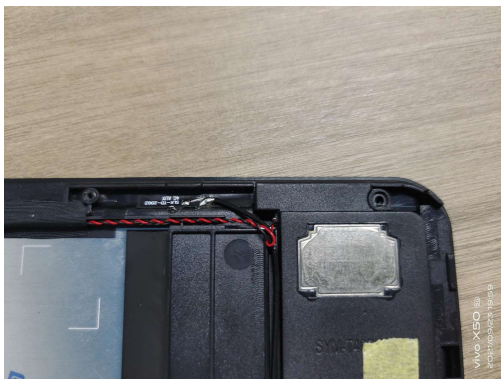
Note: The name of 4GPCB small board for sealing sample has been changed. The current one is not added. The name of bulk cargo is T616 with silk screen printing.



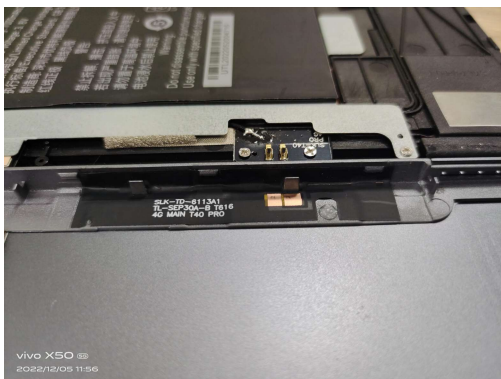
如图所示:

- 1.在WIFI小板底部漏铜区贴一块导电布再顶一块导电海绵接地处理





**4G axu antenna**



**4G main antenna**



**WIFI/GPS antenna**