

# JMGO Sample Confirmation Letter

Supplier Name: SHENZHEN YINGJIACHUANG TECHNOLOGY ELECTRONIC CO. LTD

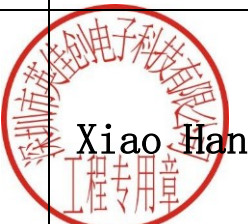
Material Name: WiFi1 2.4G/5.8G Black FPC built-in Antenna (C62A)

Material No.: 23040330&YJC-6N084-B02

Material Description: \_\_\_\_\_ / \_\_\_\_\_

Version: A0

Drawing Version: A0

|                                                                                                                              |              |                                                                                             |                           |     |                     |                               |
|------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------|---------------------------|-----|---------------------|-------------------------------|
| Supplier Approved<br><b>This needs to be stamped, and each acknowledgment letter needs to be stamped with a riding seal.</b> |              |                                                                                             | Shenzhen Holatek Approved |     |                     |                               |
| R&D/Engineering                                                                                                              | Quality      | Approved                                                                                    | Product Center            | R&D | Supply-Chain Center | Quality Management Department |
| Yin FeiJie                                                                                                                   | Yang YunGang |  Xiao Han |                           |     |                     |                               |

Address: Building C, Hongyu Guangming Valley, No. 11, Shiwei Community, Matian Office, Guangming District, Shenzhen

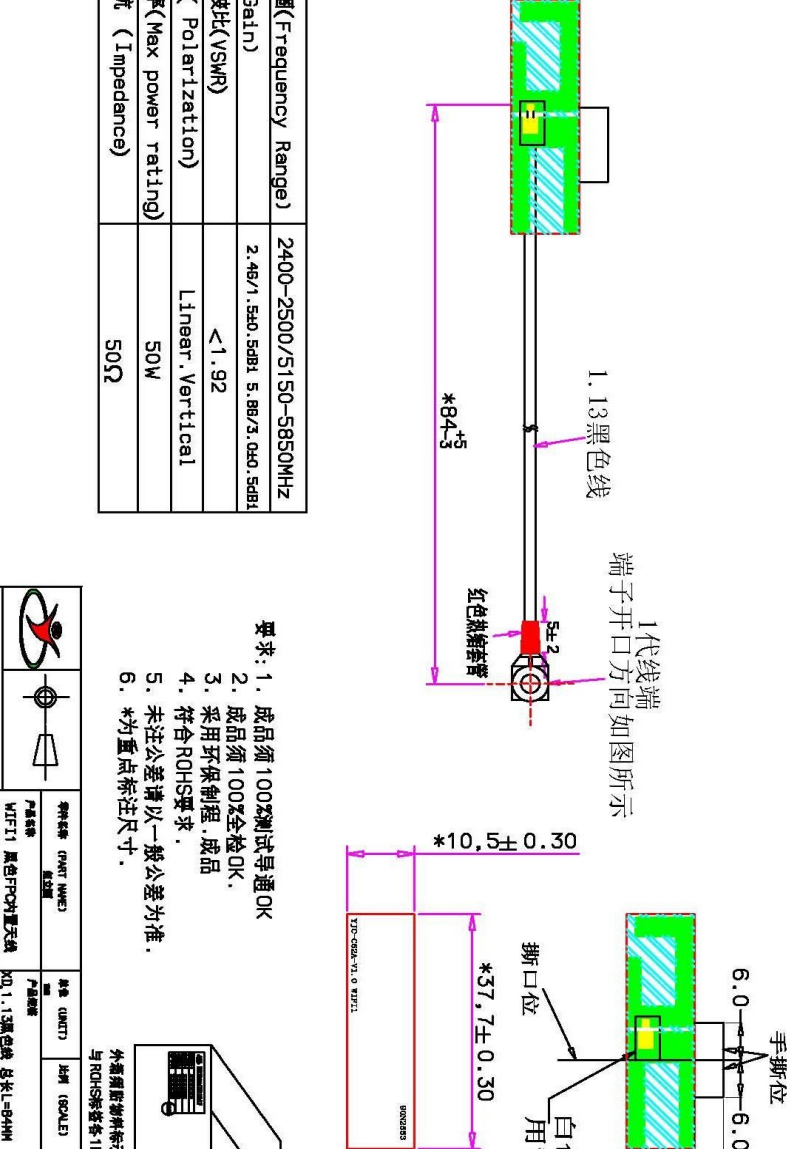
Phone: +86-755-27810060/23192199

Fax: +86-0755-27810057

---

| JMGO                      Directory |                                                       |
|-------------------------------------|-------------------------------------------------------|
| Page                                | Content                                               |
| 1                                   | Cover                                                 |
| 2                                   | Directory                                             |
| 3                                   | Product drawings                                      |
| 4                                   | Specification                                         |
| 5                                   | Process Flow Diagram                                  |
| 6                                   | BOM list                                              |
| 7                                   | Performance testing reports                           |
| 8                                   | SGS Environmental Protection Report for Raw Materials |
|                                     |                                                       |

Product drawings:

| A                                                                                   |  | B |  | C |  | D |  | E |  | F   |  | G          |             |      |
|-------------------------------------------------------------------------------------|--|---|--|---|--|---|--|---|--|-----|--|------------|-------------|------|
|                                                                                     |  |   |  |   |  |   |  |   |  | REV |  | DATE       | DESCRIPTION | NAME |
|                                                                                     |  |   |  |   |  |   |  |   |  | A0  |  | 2025-03-05 | 新版发行        | 殷飞杰  |
|                                                                                     |  |   |  |   |  |   |  |   |  | AI  |  |            |             |      |
| RoHS                                                                                |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
|  |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 1. 13黑色线                                                                            |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 2. 端子开口方向如图所示                                                                       |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 3. 红色热熔套管                                                                           |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 4. 背面                                                                               |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 5. 正面                                                                               |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 6. 撕口位                                                                              |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 7. 白色框内不用背胶                                                                         |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 8. 手撕位                                                                              |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 9. 6.0                                                                              |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 10. 6.0                                                                             |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 11. 4.5                                                                             |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 12. *10.5±0.30                                                                      |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 13. *37.7±0.30                                                                      |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 14. TYP-0204-V1.0 WFL1                                                              |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 15. 背面                                                                              |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 16. 频率范围(Frequency Range)                                                           |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 17. 增益 (Gain)                                                                       |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 18. 电压驻波比(VSWR)                                                                     |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 19. 极化 (Polarization)                                                               |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 20. 最大功率(Max power rating)                                                          |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 21. 特性阻抗 (Impedance)                                                                |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 22. 要求: 1. 成品须100%测试导通OK                                                            |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 23. 2. 成品须100%全检OK.                                                                 |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 24. 3. 采用环保制程,成品                                                                    |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 25. 4. 符合ROHS要求.                                                                    |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 26. 5. 未注公差请以一般公差为准.                                                                |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 27. 6. *为重点标注尺寸.                                                                    |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 28. 外观数据物料标示卡                                                                       |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 29. 与ROHS标签各1PCS                                                                    |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 30. 物料名称 (PART NAME)                                                                |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 31. 规格                                                                              |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 32. 产地                                                                              |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 33. 品牌                                                                              |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 34. 型号                                                                              |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 35. 数量                                                                              |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 36. 日期                                                                              |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 37. 备注                                                                              |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 38. 深圳市英佳创电子科技有限公司                                                                  |  |   |  |   |  |   |  |   |  |     |  |            |             |      |
| 39. SHENZHEN YINGJIAKUANG TECHNOLOGY ELECTRONIC CO.,LTD                             |  |   |  |   |  |   |  |   |  |     |  |            |             |      |

---

## Specification:

| Electrical Specifications |                        |
|---------------------------|------------------------|
| Frequency Range           | 2400-2500/5150-5850MHz |
| VSWR                      | <1.92                  |
| Input Impedance           | 50 $\Omega$            |
| Direction                 | All                    |
| Gain(2.4G)                | 1.7 dBi                |
| Gain(5.1G)                | 3.2 dBi                |
| Gain(5.8G)                | 3.1 dBi                |
| Mechanical Specifications |                        |
| Cable Color               | Black                  |
| Input connector           | XD                     |
| Cable length              | 84mm (Total Length)    |
| Working Temperature       | -20℃~+70℃              |
| Working Humidity          | 20%~80%                |

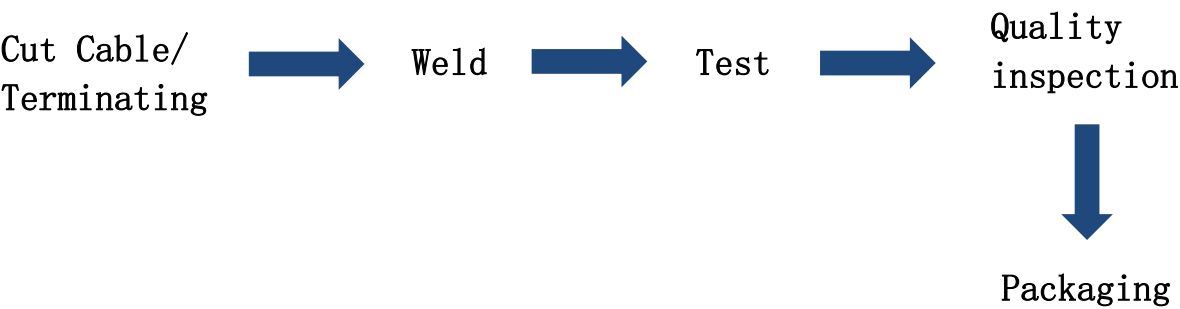
## Environmental performance test:

| Project                               | Test condition                                                                                                                                                                                                            | Standard                                                                                                       |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Storage Conditions                    | In the absence of specified test temperature, humidity, air pressure is as follows:<br>1.Temperature is - 20 ℃ ~ + 70 ℃<br>2.Relative humidity of 45% to 85%<br>3.Air pressure is 86 kpa to 106 kpa                       | Electrical and mechanical properties is normal                                                                 |
| High and low temperature test         | Between 70 ℃ and -20 ℃ for 5 loops, then 1-2 h under normal conditions, check the appearance quality.                                                                                                                     | Size should meet the requirements and should satisfy the content with the electrical and mechanical properties |
| Constant damp and hot resistance test | 95 + / - 3% relative humidity, temperature test: 40 ℃. Lasts 2 h after, try to take out the determination of electrical properties, within 5 min after try 1-2 h under article normal thing, check the appearance quality | Size should meet the requirements and should satisfy the content with the electrical and mechanical properties |
| vibration test                        | Vibration frequency range: 10-55 Hz, vibration frequency range of displacement amplitude: 0.35 MM, acceleration amplitude: 50.0 M/S, sweep cycles: 30 times                                                               | Electrical and mechanical properties is normal                                                                 |
| Fall down test                        | 1 m high altitude in accordance with the perpendicular axis free drop 3 times                                                                                                                                             | Electrical and mechanical properties is normal                                                                 |



---

Process Flow Diagram



BOM list

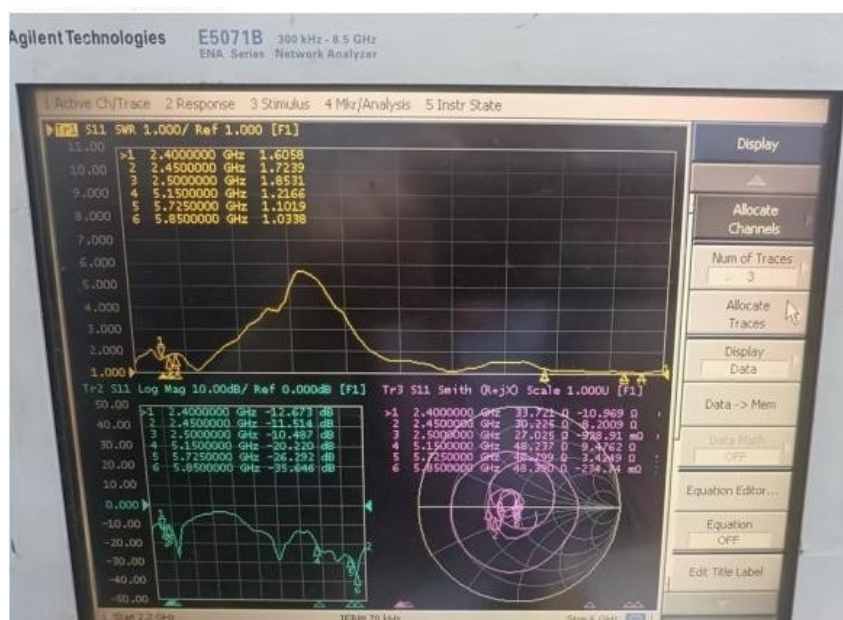
FPC、Cable、Terminal、PE packaging bag、Carton

Performance testing reports:

Antenna physical image:



Antenna performance test chart:



|                 |      |      |      |      |      |      |
|-----------------|------|------|------|------|------|------|
| Frequency (MHZ) | 2400 | 2450 | 2500 | 5150 | 5725 | 5850 |
| VSWR (dB)       | 1.60 | 1.72 | 1.85 | 1.21 | 1.10 | 1.03 |



## WIFI 1 and WIFI 2 isolation test diagram



## WIFI 1 and BT isolation test diagram

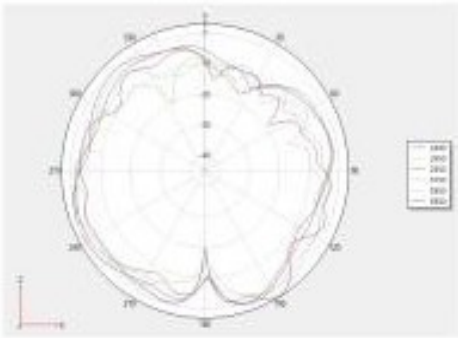


| Frequency (MHz)                | 2400 | 2450 | 2500 | 5150 | 5725 | 5850 |
|--------------------------------|------|------|------|------|------|------|
| WIFI1 and BT isolation (dB)    | -23  | -26  | -36  | -27  | -26  | -28  |
| WIFI1 and WIFI2 isolation (dB) | -22  | -22  | -22  | -41  | -25  | -25  |

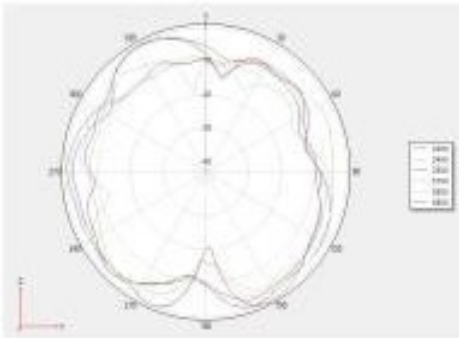
2D、3D test data (WIFI 1):

| Frequency | Efficiency (%) | Gain. (dBi) |
|-----------|----------------|-------------|
| 2400MHz   | 44.89          | 1.70        |
| 2410MHz   | 48.21          | 1.70        |
| 2420MHz   | 48.95          | 1.70        |
| 2430MHz   | 41.56          | 1.61        |
| 2440MHz   | 46.76          | 1.54        |
| 2450MHz   | 48.7           | 1.4         |
| 2460MHz   | 46.05          | 1.58        |
| 2470MHz   | 43.75          | 1.43        |
| 2480MHz   | 45.23          | 1.35        |
| 2490MHz   | 44.77          | 1.33        |
| 2500MHz   | 45.35          | 1.22        |
| 5150MHz   | 35.32          | 3.04        |
| 5250MHz   | 36.64          | 3.10        |
| 5350MHz   | 37.81          | 2.93        |
| 5450MHz   | 39.55          | 3.16        |
| 5550MHz   | 39.54          | 3.20        |
| 5650MHz   | 39.26          | 3.08        |
| 5750MHz   | 37.24          | 3.10        |
| 5850MHz   | 39.11          | 3.10        |

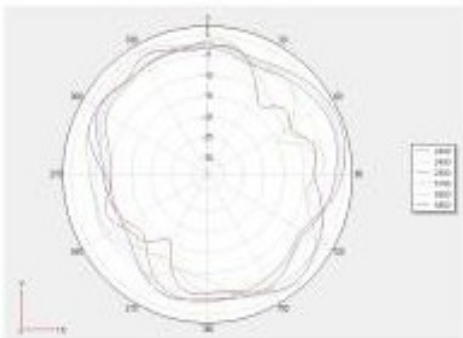
Phi 0 2D :



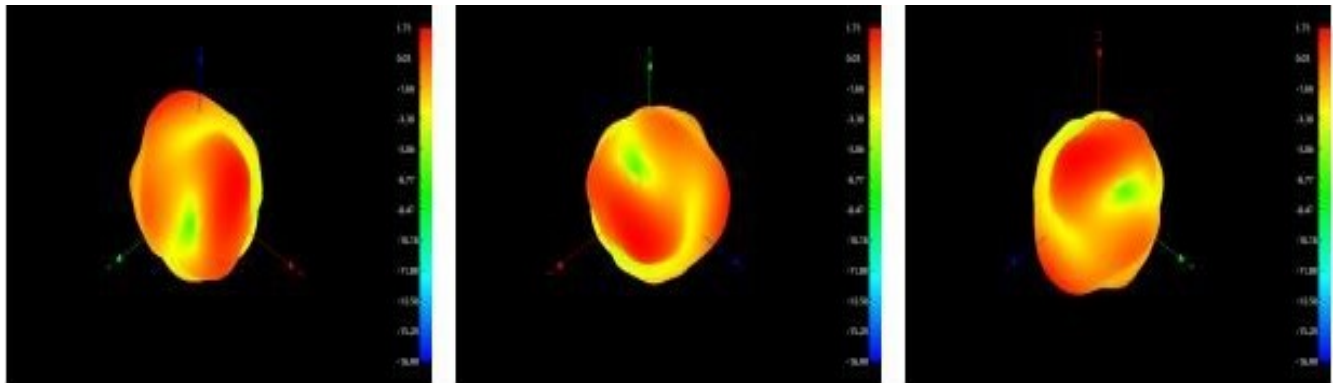
Phi 90 2D



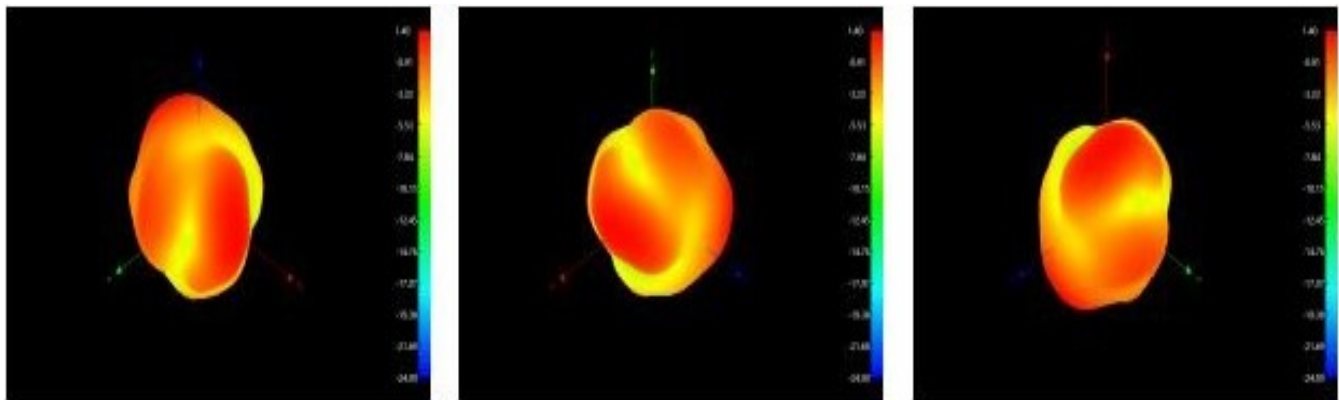
Theta 90 2D



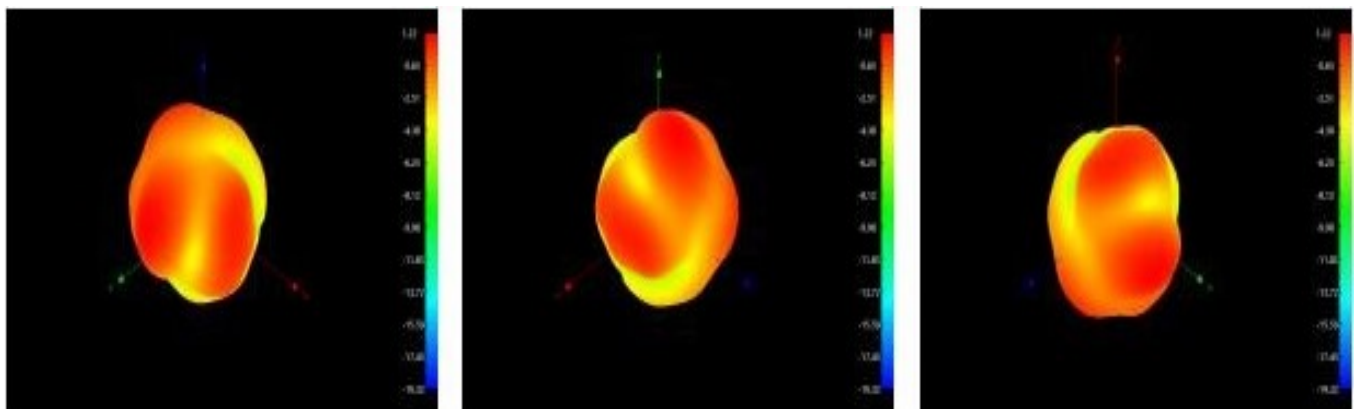
3D 2400:



3D 2450:

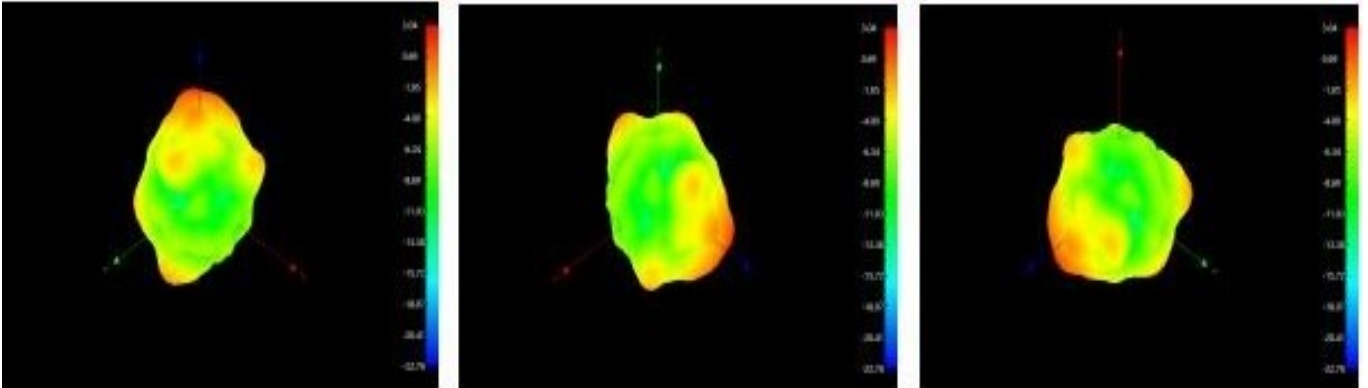


3D 2500:

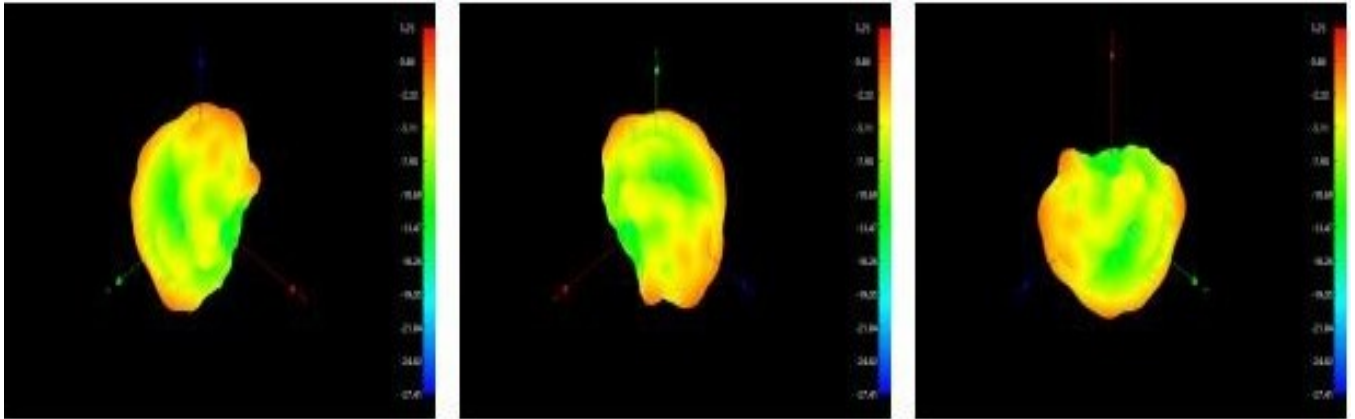


---

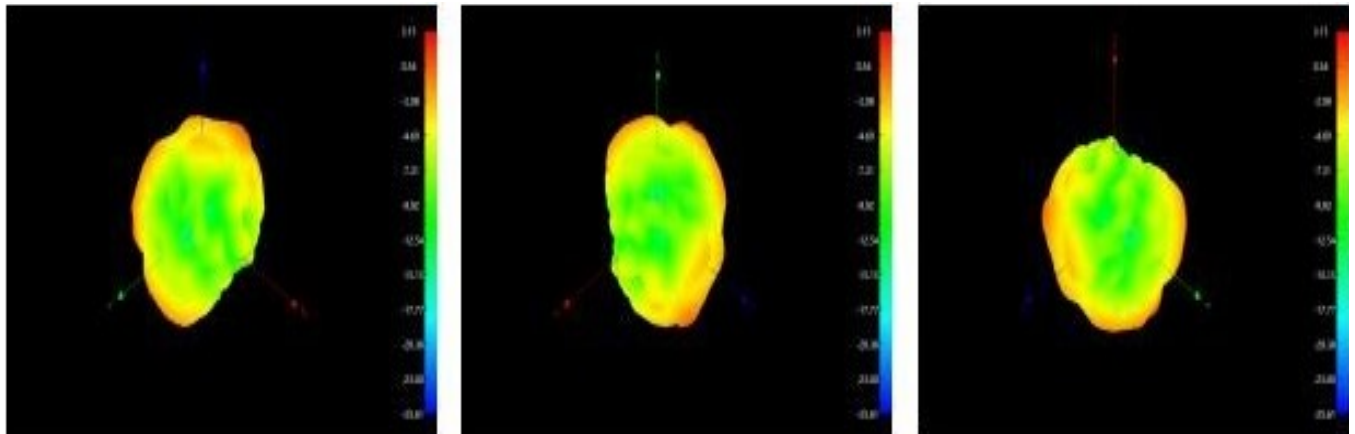
3D 5150:



3D 5500:



3D 5850:



---

OTA active test data:

| Item | Measurement | Band             | Channel | Frequency | Total  |
|------|-------------|------------------|---------|-----------|--------|
| 1    | TRP         | WIFI_B (11M)     | 1       | 2412      | 15.22  |
| 2    | TRP         | WIFI_B (11M)     | 6       | 2437      | 14.83  |
| 3    | TRP         | WIFI_B (11M)     | 11      | 2462      | 15.41  |
| 4    | TIS(EIRP)   | WIFI_B (11M)     | 1       | 2412      | -81.43 |
| 5    | TIS(EIRP)   | WIFI_B (11M)     | 6       | 2437      | -81.11 |
| 6    | TIS(EIRP)   | WIFI_B (11M)     | 11      | 2462      | -80.55 |
| 7    | TRP         | WIFI_G (54M)     | 1       | 2412      | 13.83  |
| 8    | TRP         | WIFI_G (54M)     | 6       | 2437      | 13.61  |
| 9    | TRP         | WIFI_G (54M)     | 11      | 2462      | 14.52  |
| 10   | TIS(EIRP)   | WIFI_G (54M)     | 1       | 2412      | -70.05 |
| 11   | TIS(EIRP)   | WIFI_G (54M)     | 6       | 2437      | -73.06 |
| 12   | TIS(EIRP)   | WIFI_G (54M)     | 11      | 2462      | -71.41 |
| 13   | TRP         | WIFI_N_ISM (65M) | 1       | 2412      | 15.08  |
| 14   | TRP         | WIFI_N_ISM (65M) | 6       | 2437      | 15.24  |
| 15   | TRP         | WIFI_N_ISM (65M) | 11      | 2462      | 16.06  |
| 16   | TIS(EIRP)   | WIFI_N_ISM (65M) | 1       | 2412      | -67.21 |
| 17   | TIS(EIRP)   | WIFI_N_ISM (65M) | 6       | 2437      | -67.78 |
| 18   | TIS(EIRP)   | WIFI_N_ISM (65M) | 11      | 2462      | -67.75 |
| 19   | TRP         | WIFI_A (54M)     | 36      | 5180      | 15.87  |
| 20   | TRP         | WIFI_A (54M)     | 149     | 5745      | 16.17  |
| 21   | TRP         | WIFI_A (54M)     | 165     | 5825      | 16.31  |
| 22   | TIS(EIRP)   | WIFI_A (54M)     | 36      | 5180      | -75.04 |
| 23   | TIS(EIRP)   | WIFI_A (54M)     | 149     | 5745      | -76.39 |
| 24   | TIS(EIRP)   | WIFI_A (54M)     | 165     | 5825      | -76.51 |

Material RoHS conformity declaration form

This is to certify that the delivery to your company's components, raw materials, auxiliary materials used and the additives in the production engine      ord  
with RoHS environmental requirements of the restrictions on the use of hazardous substances directive (RoHS directive 2011/65 / EC)

About components used raw materials, packaging materials, auxiliary materials and additives used in the production process such  
as composition of the report is as follows:

| Component<br>/Part Name                     | Material<br>Composition                     | ICP report #       | Test<br>Org. | Test Date | Content of harmful substances (ppm) |    |    |                  |     |      | PASS? |
|---------------------------------------------|---------------------------------------------|--------------------|--------------|-----------|-------------------------------------|----|----|------------------|-----|------|-------|
|                                             |                                             |                    |              |           | Cd                                  | Pb | Hg | Cr <sup>6+</sup> | PBB | PBDE | PASS  |
| FPC                                         | Ink                                         | ETR24902229M01     | SGS          | 24/09/23  | ND                                  | ND | ND | ND               | ND  | ND   | PASS  |
|                                             | Copper                                      | SHAEC24028809006   | SGS          | 24/12/20  | ND                                  | ND | ND | ND               | ND  | ND   | PASS  |
|                                             | FPC                                         | SHAEC24027480901   | SGS          | 24/12/06  | ND                                  | ND | ND | ND               | ND  | ND   | PASS  |
| Wire                                        | Series<br>Coaxial<br>Cables                 | NGBPC24007471212   | SGS          | 24/12/23  | ND                                  | ND | ND | ND               | ND  | ND   | PASS  |
| Tube                                        | Tube                                        | CANEC24010420806   | SGS          | 24/05/24  | ND                                  | ND | ND | ND               | ND  | ND   | PASS  |
| Terminal                                    | Copper                                      | CANEC24029407216   | SGS          | 25/01/08  | ND                                  | 4  | ND | ND               | ND  | ND   | PASS  |
|                                             | Au plating                                  | A2240410234101001E | CTI          | 24/07/16  | ND                                  | ND | ND | ND               | ND  | ND   | PASS  |
|                                             | Rubber core                                 | A2240126395101003E | CTI          | 24/03/16  | ND                                  | ND | ND | ND               | ND  | ND   | PASS  |
| Environm<br>entally<br>friendly<br>Tin wire | Environmen<br>tally<br>friendly<br>Tin wire | SHAEC24006459102   | SGS          | 24/04/10  | ND                                  | 78 | ND | ND               | ND  | ND   | PASS  |

