

# Antenna specification

**Customer : Anona**

**Project Name : SL2001**

**Report Number:000920913**

**Manufacturer: Anona Security Technology Limited.**

**Address: 8 The Green,Ste A Dover DE 19901, America**

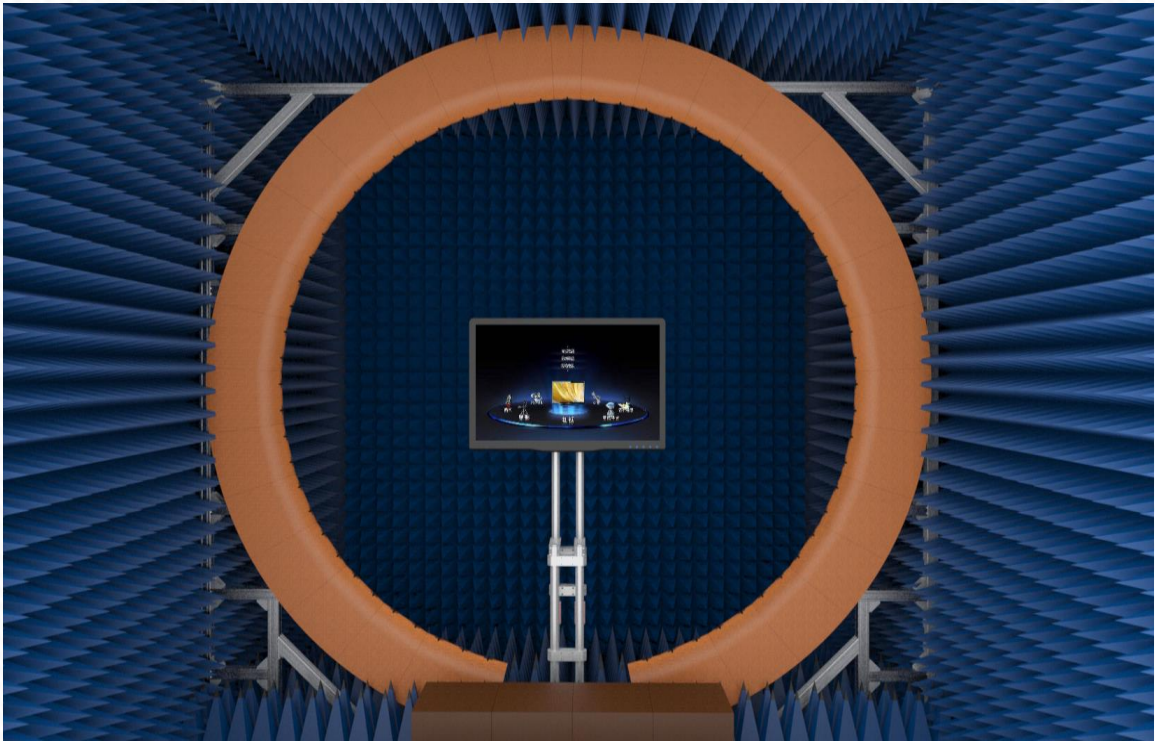
**Report version: Sep. 11th, 2023 A0**

**Author: liubin**

| Version | Report date | Remark                |
|---------|-------------|-----------------------|
| A0      | 2023.9.11   | Antenna specification |
| A1      |             |                       |
| A2      |             |                       |
| A3      |             |                       |
| A4      |             |                       |
| A5      |             |                       |
| A6      |             |                       |
| A7      |             |                       |
| A8      |             |                       |
| A9      |             |                       |

|                                              |    |
|----------------------------------------------|----|
| <b>1. Project Overview</b>                   | 1  |
| <b>2. Equipment List</b>                     | 2  |
| <b>3. Project picture and Testing Device</b> | 3  |
| <b>4. Test equipment</b>                     | 4  |
| <b>5. Test program</b>                       | 5  |
| <b>6. Test program</b>                       | 6  |
| <b>7. Passive parameters</b>                 | 7  |
| <b>8. Efficiency and Gain</b>                | 8  |
| <b>9. Active parameters</b>                  | 9  |
| <b>10. Contents</b>                          | 10 |
| <b>11. Thank You</b>                         | 11 |

|                        |                   |
|------------------------|-------------------|
| Prototype status       | Debugging machine |
| Device type            | Door lock         |
| Number of antennas     | WiFi/BT antenna   |
| Frequency band         | 2.4G WiFi         |
|                        | Bluetooth         |
|                        |                   |
| Structural style       | FPC+cable         |
| Environment adjustment | No change         |
| Matching modification  | No change         |



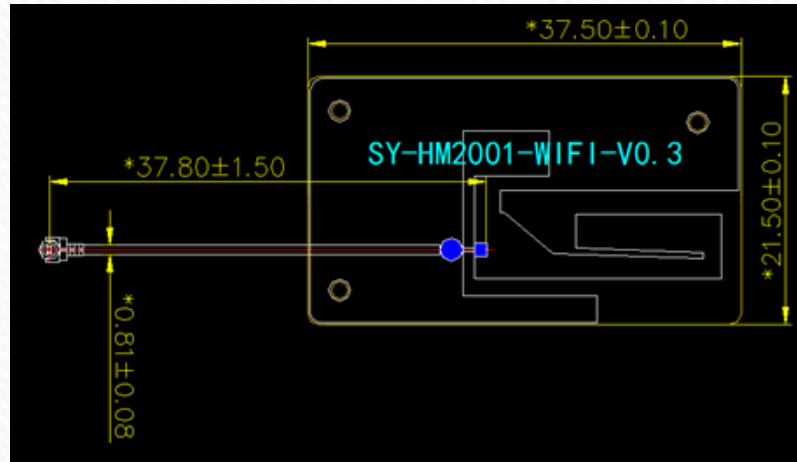
The industry's top 64 sensors OTA chamber

Frequency range: 400MHz-11GHz

Device Llimitation: 2M

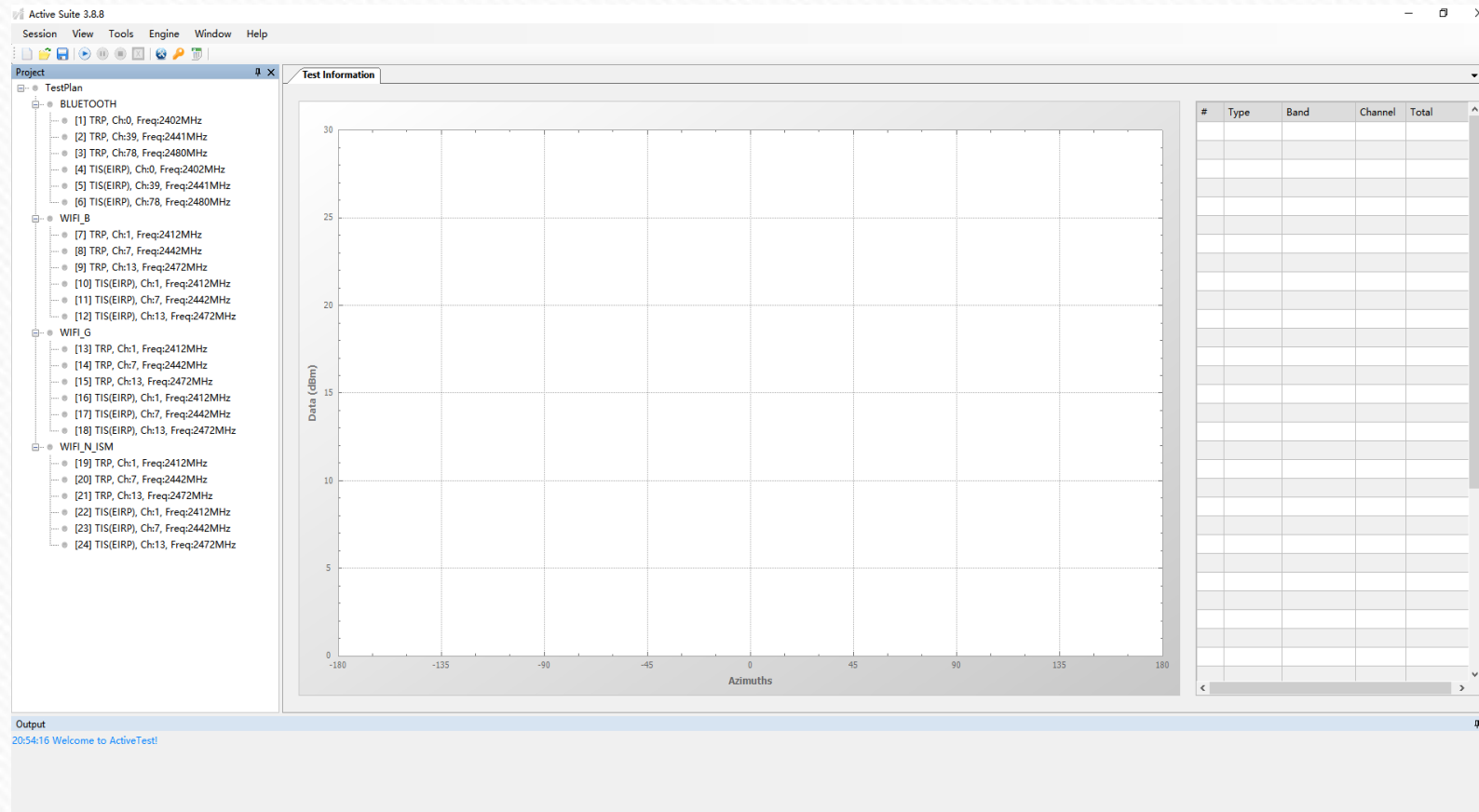
Load-bearing limitation:100KG

| Equipments Items                          | Total Quantity | Quantity for Shanghai R&D | Quantity for Shenzhen R&D | Quantity for ChongQing R&D |
|-------------------------------------------|----------------|---------------------------|---------------------------|----------------------------|
| OTA chamber                               | 10             | 4                         | 5                         | 1                          |
| 5G Tester (SP9500-CTS)                    | 3              | 1                         | 1                         | 1                          |
| R&S Tester (high configuration CMW500)    | 6              | 3                         | 2                         | 1                          |
| Japan Anritsu Tester (Dual Channel 8820)  | 4              | 2                         | 2                         | --                         |
| NB-IoT Tester (SP8315)                    | 3              | 1                         | 1                         | 1                          |
| Agilent Tester (8960)                     | 9              | 4                         | 4                         | --                         |
| Agilent Network Analyzer (E5062A)         | 7              | 3                         | 3                         | 1                          |
| Agilent Network Analyzer (E5071C 8.5GHZ ) | 11             | 5                         | 5                         | 1                          |
| Agilent Network Analyzer (E5071B 8.5GHZ ) | 7              | 3                         | 3                         | 1                          |
| R&S Network Analyzer (ZND)                | 9              | 4                         | 4                         | 1                          |
| R&S Network Analyzer (ZVB)                | 3              | 1                         | 1                         | 1                          |
| OTA head hand / ear hand / arm hand       | 5              | 2                         | 2                         | 1                          |
| GPS/WIFI active test equipment            | 5              | 2                         | 2                         | 1                          |



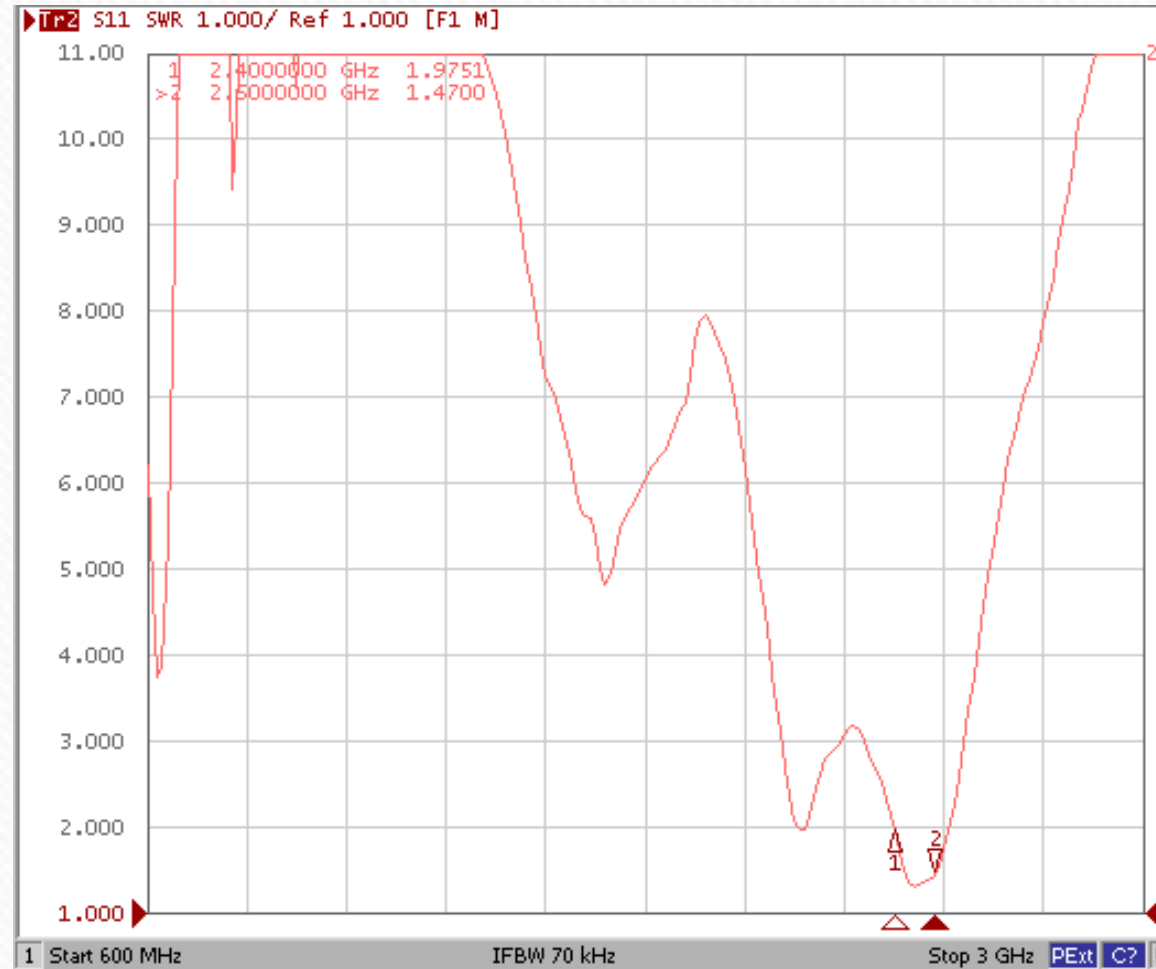


WiFi/Bluetooth test equipment:  
ROHDE&SCHWARZ CMW-500



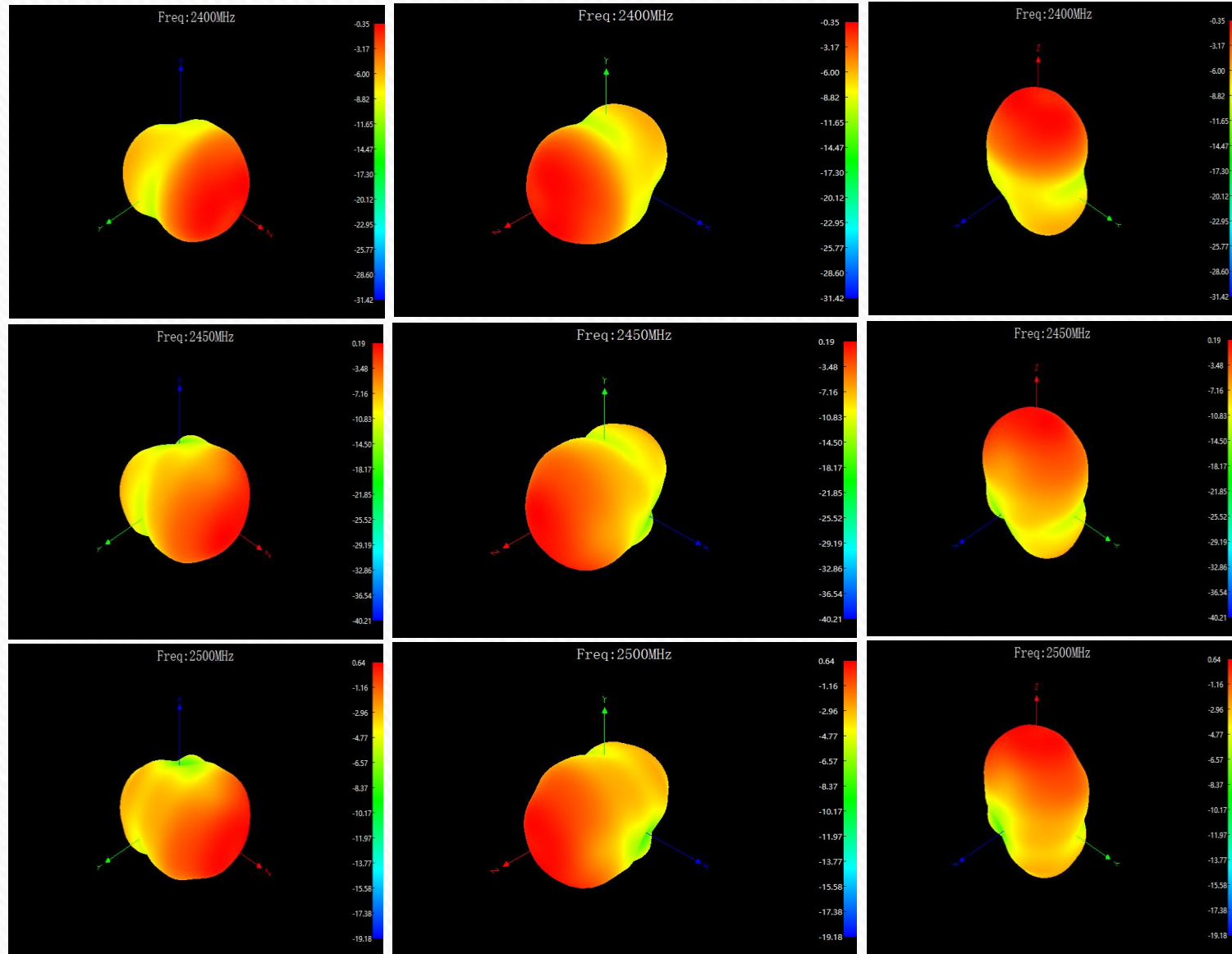
Using the darkroom testing software, add WiFi and Bluetooth frequency bands to the testing software, select the corresponding comprehensive tester, set the testing mode, angle, and rate, and connect the tested object to the hot spot emitted by the comprehensive tester before measurement

S11



| Freq.<br>(MHz) | Effi<br>(%) | Effi<br>(dB) | MaxGain<br>dBi |
|----------------|-------------|--------------|----------------|
| 2400           | 38.64       | -4.13        | -0.35          |
| 2410           | 39.12       | -4.08        | -0.46          |
| 2420           | 40.75       | -3.90        | -0.32          |
| 2430           | 41.48       | -3.82        | 0.31           |
| 2440           | 42.55       | -3.71        | 0.15           |
| 2450           | 41.93       | -3.77        | 0.19           |
| 2460           | 42.36       | -3.73        | 1.01           |
| 2470           | 41.4        | -3.83        | 1.09           |
| 2480           | 40.83       | -3.89        | 0.36           |
| 2490           | 40.27       | -3.95        | 1.27           |
| 2500           | 39.54       | -4.03        | 0.64           |

| Band             | Channel | Conducted (dBm) |        |
|------------------|---------|-----------------|--------|
|                  |         | TRP             | TIS    |
| 2.4G<br>802.11B- | 1       | 19.16           | -83.13 |
|                  | 7       | 19.44           | -83.55 |
|                  | 13      | 18.36           | -82.51 |



# Thank You

**Shanghai R&D Center:** 1F, Building 4, No.99, Lane 215, Gaoguang Road, Qingpu District, Shanghai, 201799, PRC

**Shenzhen R&D Center:** Room 405, Jinke Building, No.8, Qiongyu Road, Nanshan District, Shenzhen, 518057, PRC

**ChongQing R&D Center:** 1F, ARM Ecological Industrial Park, 19 East Datugu Road, Xiantao, Yubei District, Chongqing, 401120, PRC

**Huizhou Factory:** 4-5F, No.1, Central Village Road, Longhu Industrial Zone, Shuikou Town, Huicheng District, Huizhou, 516255, PRC

TEL: 021-60835368      E-mail: [sales@sunnyway-iot.com](mailto:sales@sunnyway-iot.com)

[www.sunnyway-iot.com](http://www.sunnyway-iot.com)

