



# Antenna Approval Sheet

## For **R6 Project**

|          |                         |         |            |
|----------|-------------------------|---------|------------|
| Customer | CONVERGE BEAUTY LIMITED | Project | R6         |
| Band     | WiFi 2.4G               |         |            |
| ZC PN    | T21-025                 |         |            |
| Version  | R:A                     | Data    | 2022-12-14 |

|              |  |
|--------------|--|
| RF           |  |
| Checked By   |  |
| Confirmed By |  |
| Cust Confirm |  |



## 1. Summary of the DUT

### R6 Picture



### Antenna Picture



## 2. Electrical Specification:

|                  |                              |
|------------------|------------------------------|
| Antenna types    | Built-in wifi 2.4GHZ antenna |
| Frequency        | 2400-2500 MHz                |
| Impedance        | 50 $\Omega$                  |
| VSWR             | < 2.0                        |
| Gain             | 2.99dBi                      |
| Efficiency       | >40%                         |
| Antenna Material | Copper tube + coaxial cable  |
| Connector Type   | 1.13 MHF-1-Plug              |



### 3. Test Condition

| 3.1               | Test items  | Test equipment and models   | Remark |
|-------------------|---|---|--------|
| 1.active test     | 1.TRP<br>2.TIS  | 1. 3D microwave darkroom (Satimo SG24)<br>2. Comprehensive test instrument (CMW500)<br>3. Agilent 8960 E5515C |        |
| 2.Passive testing | 1. Antenna Gain<br>2. S.W.R<br>3. Return Loss<br>4. Radiation Pattern | 1. Network analyzer (R&S ZVL6)<br>2. Network analyzer (HP 8753D)  |        |

**3.2 Matching Circuit** The matching circuit was Default

**3.3Antenna installation diagram:**



### 4. RF Performance

#### 4.1 Active test data

| Item | Standard  | Band         | Channel | Frequency | Max. power | Minimum sensitivity | TRP          | TIS           |
|------|-----------|--------------|---------|-----------|------------|---------------------|--------------|---------------|
| 1    | WIFI (AP) | WIFI_B (11M) | 1       | 2412      | 24.55      | -90.21              | <b>18.13</b> | <b>-83.79</b> |
| 2    | WIFI (AP) | WIFI_B (11M) | 6       | 2437      | 24.89      | -87.4               | <b>18.98</b> | <b>-81.46</b> |
| 3    | WIFI (AP) | WIFI_B (11M) | 11      | 2462      | 24.44      | -89.54              | <b>18.52</b> | <b>-83.57</b> |

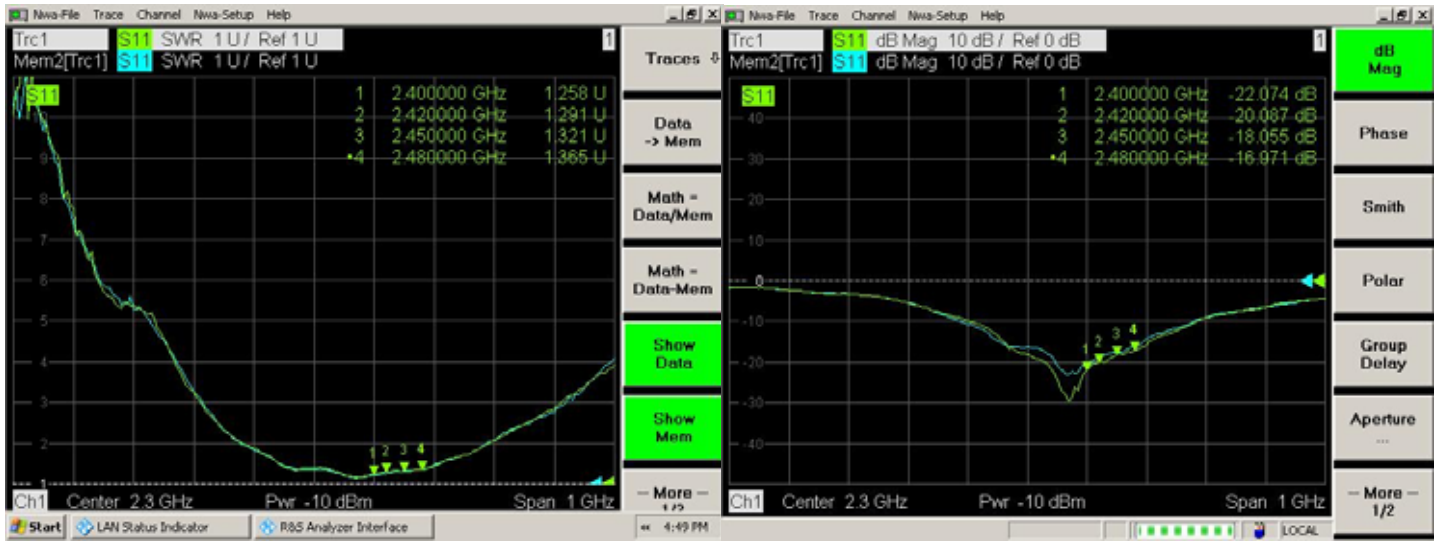


## 4.2 Passive parameters

|                    |      |      |      |      |      |      |      |      |      |      |      |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|
| <b>Freq. (MHz)</b> | 2400 | 2410 | 2420 | 2430 | 2440 | 2450 | 2460 | 2470 | 2480 | 2490 | 2500 |
| <b>Gain (dBi)</b>  | 2.63 | 2.68 | 2.71 | 2.99 | 2.6  | 2.23 | 2.6  | 2.49 | 1.96 | 1.77 | 1.7  |

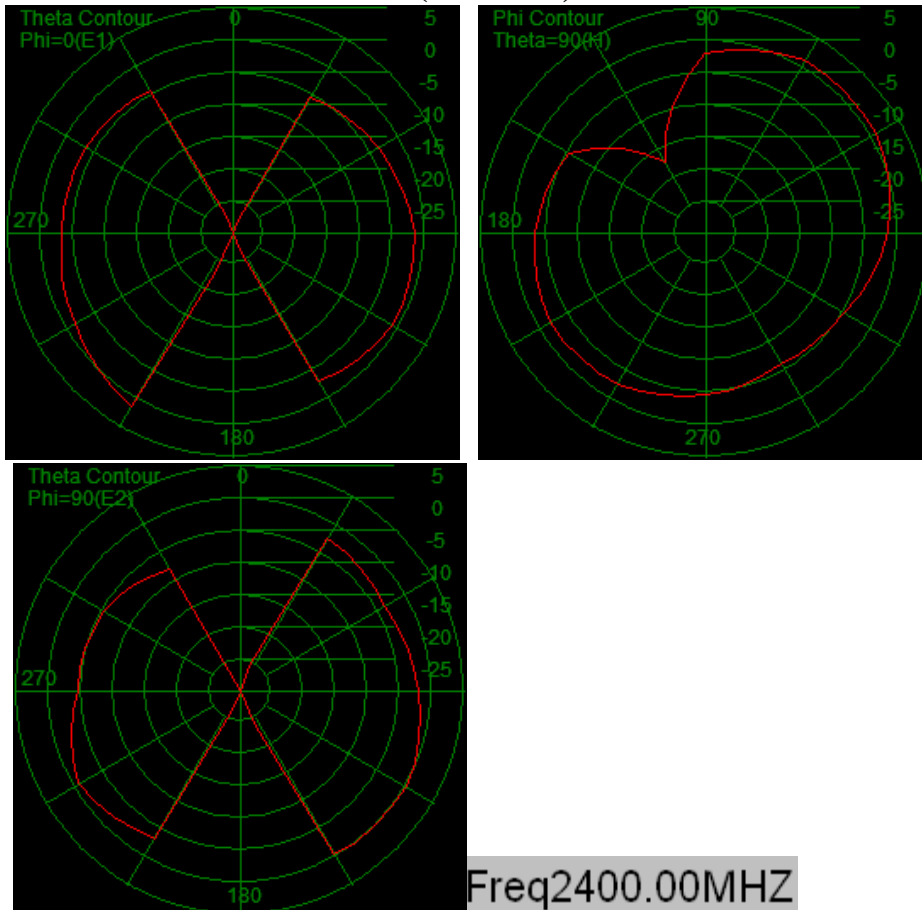
## 4.3 S Parameter

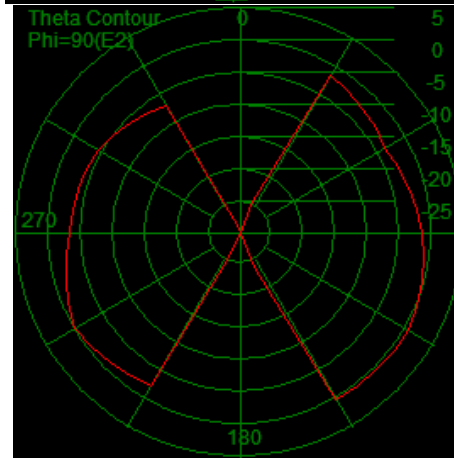
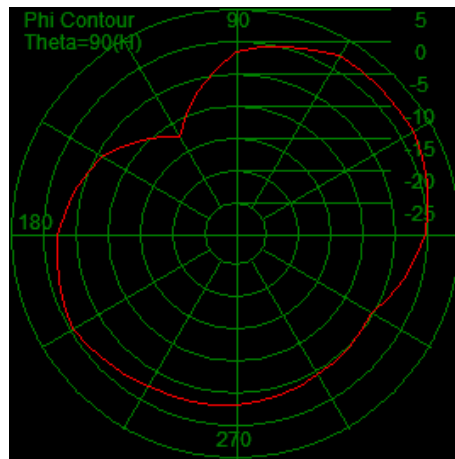
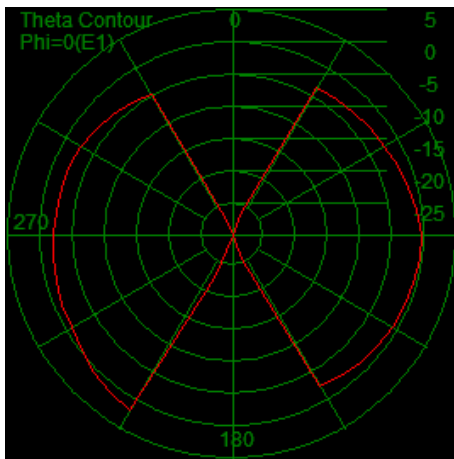
|                 |      |      |       |
|-----------------|------|------|-------|
| Frequency (MHz) | 2400 | 2450 | 2480  |
| Return Loss(dB) | -22  | -18  | -16.9 |
| VSWR            | 1.25 | 1.32 | 1.36  |



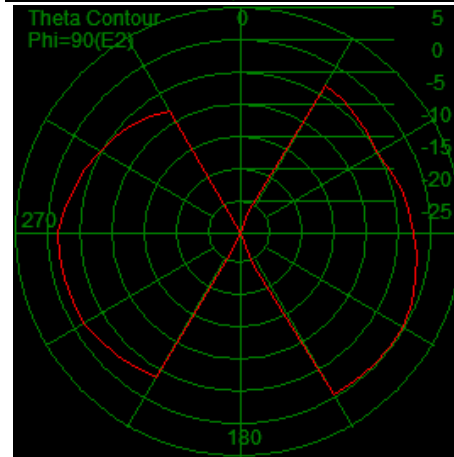
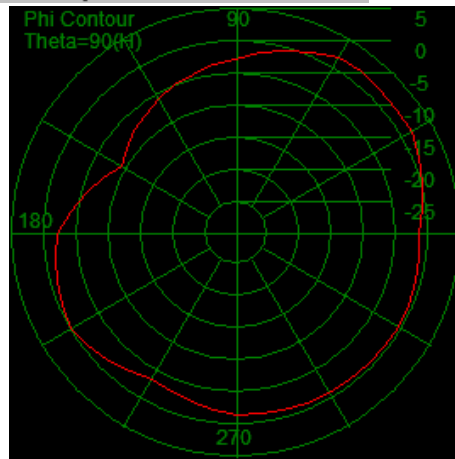
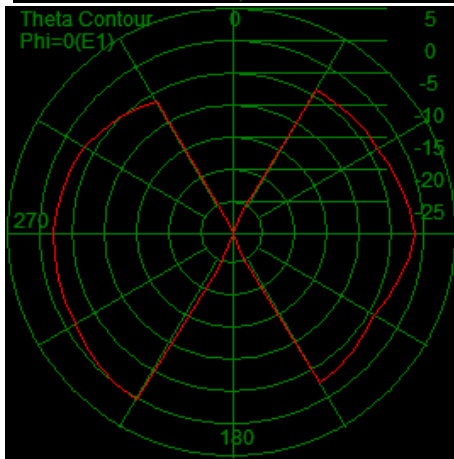
## 4.4 Radiation Pattern

### 4.4.1 Antenna 2D Radiation Pattern (Unit:dBi)





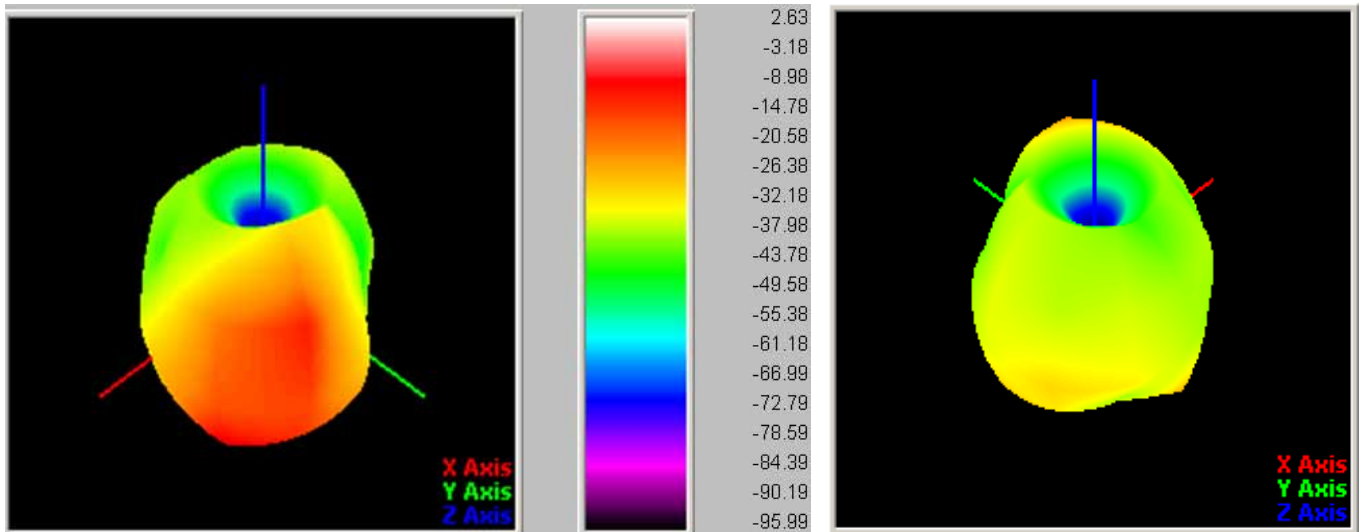
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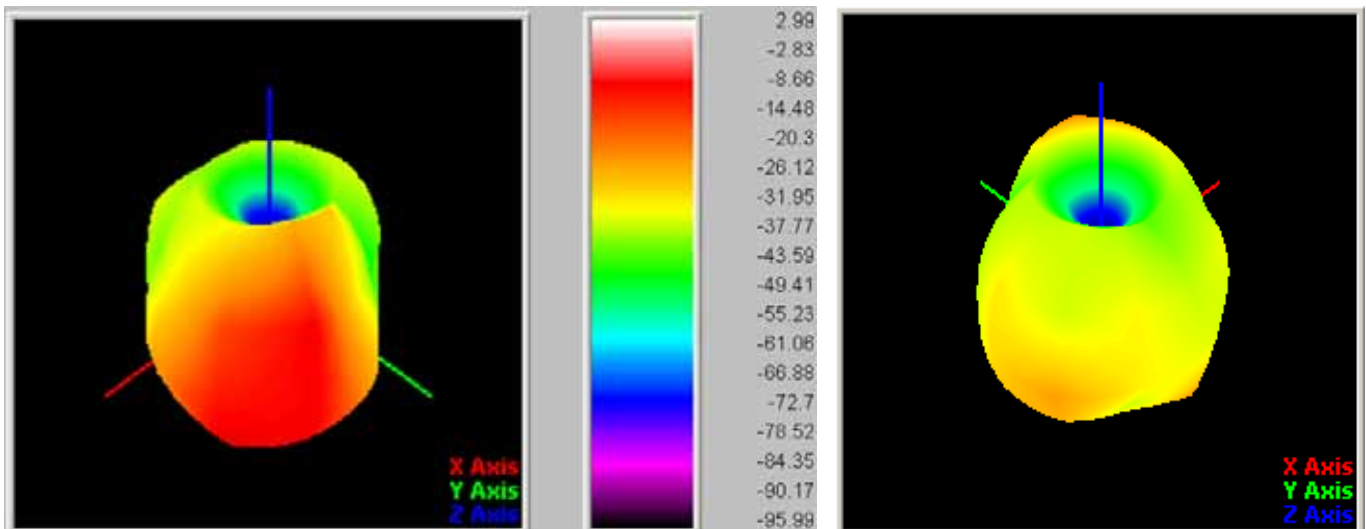
Freq2500.00MHZ



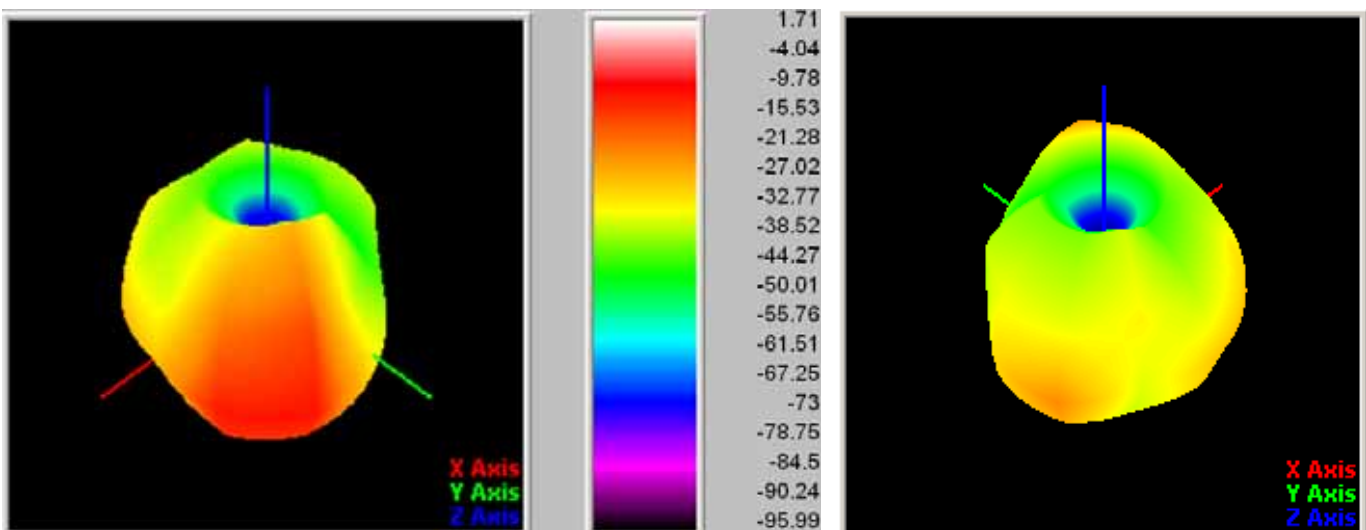
4.4.2 Antenna 3D Radiation Pattern (Unit:dbi)



Freq2400.00MHZ



Freq2430.00MHZ



Freq2500.00MHZ



## 4. ME Drawing for the antenna

