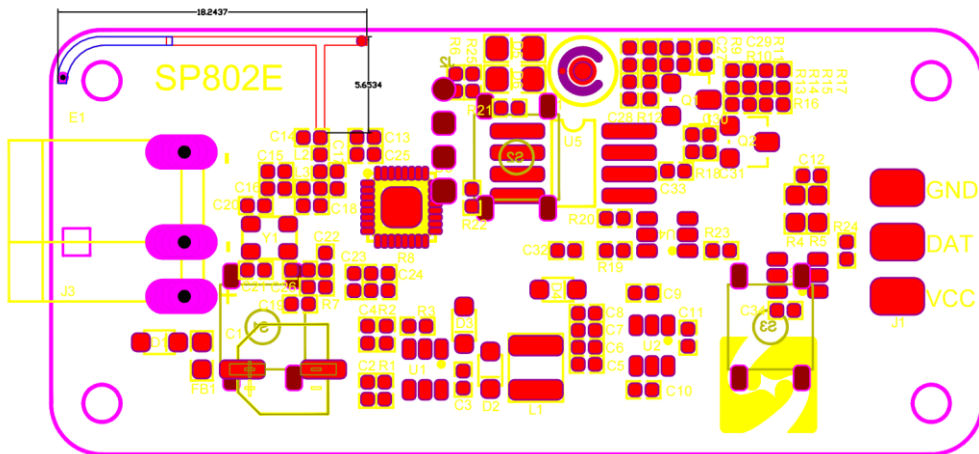


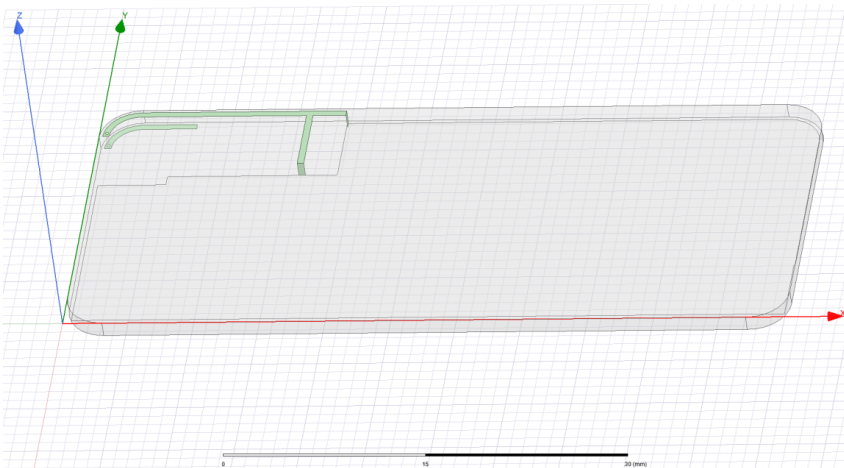
## SP80XE Antenna Specifications

**1. Antenna location and size (mm) :**

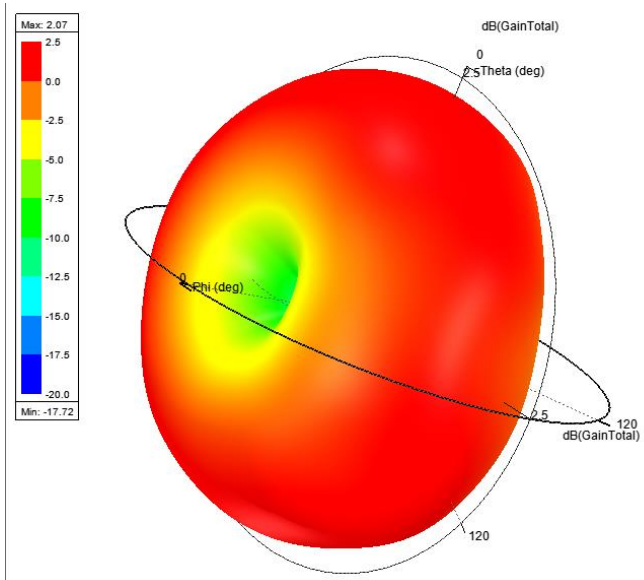


## 2. Antenna simulation Report:

### 1)Antenna Simulation Model :

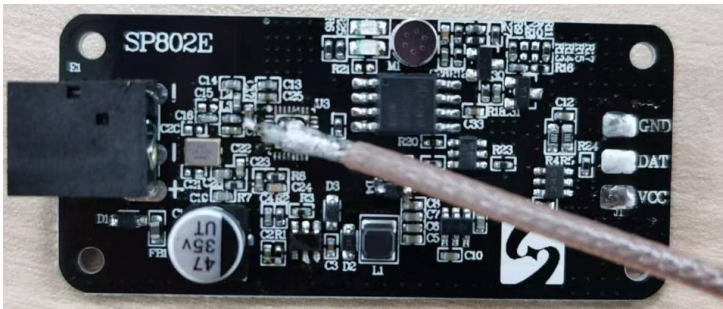


2) 3D Polar plot:

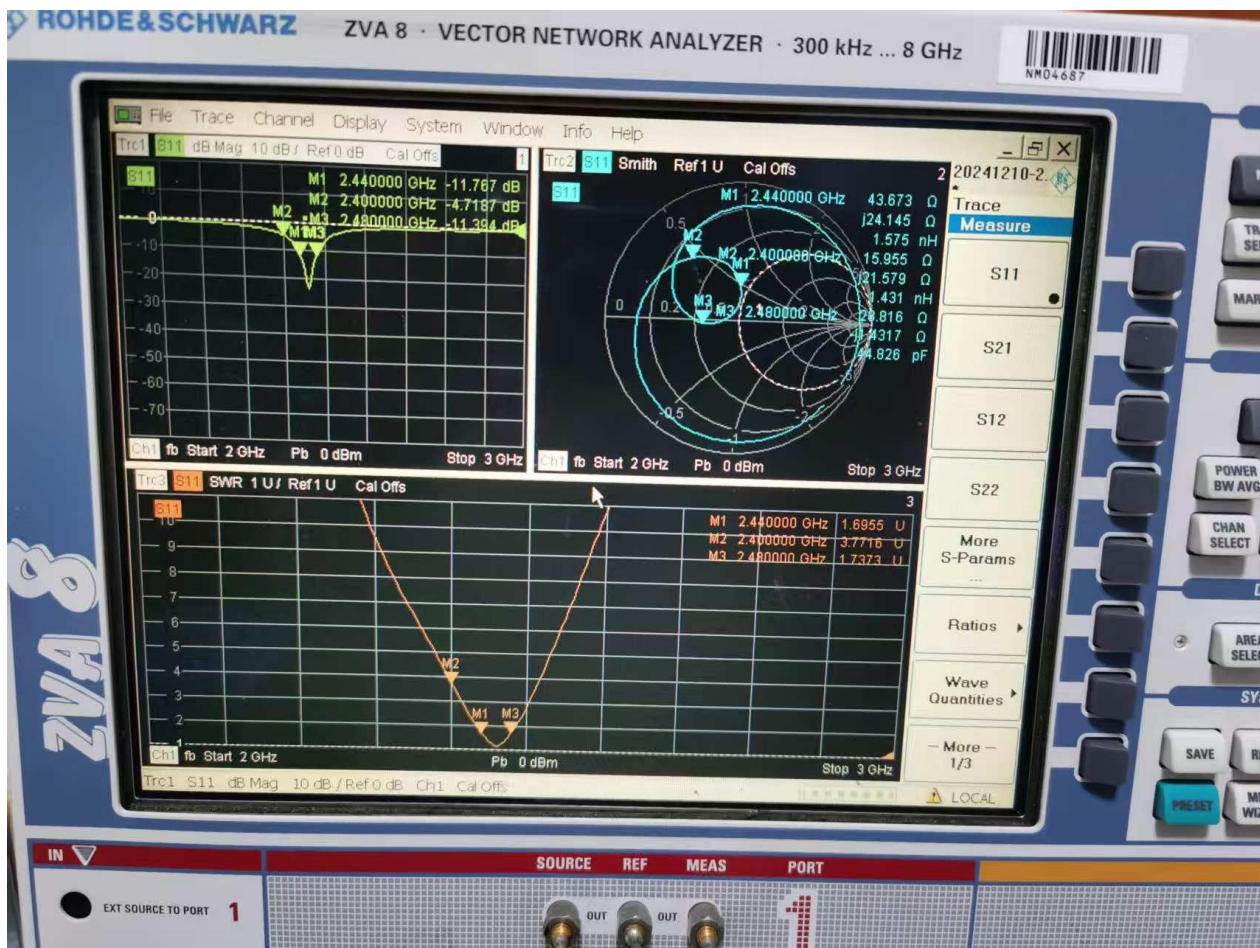


### 3. Test Report:

#### 1) Appearance :



#### 2) Antenna Smithchart ,VSWR and Return Loss:



### 4. Basic Characteristics:

#### A. Electrical Characteristics:

|              |                                                                                         |
|--------------|-----------------------------------------------------------------------------------------|
| Frequency    | 2400~2500 MHz                                                                           |
| S.W.R.       | $\leq 2.0$ @ around 2440 MHz, may rise to $\leq 2.8$ at the edges of the frequency band |
| Max.Gain     | 2.07 dBi @ around 2440 MHz, approximately 1.4 dBi at 2400 MHz and 2500 MHz              |
| Efficiency   | 45% - 52% @ around 2440 MHz, about 40% at 2400 MHz and 42% at 2500 MHz                  |
| Polarization | Linear                                                                                  |
| Impedance    | 50 Ohm                                                                                  |

|                                          |           |
|------------------------------------------|-----------|
| B.Material & Mechanical Characteristics: |           |
| Material of Radiator                     | PCB       |
| Cable Type                               | NONE      |
| Connector Type                           | NONE      |
| Pull Test                                | /         |
| C.Environmental:                         |           |
| Operation Temperature                    | -20℃~+60℃ |
| Storage Temperature                      | -40℃~+80℃ |

5.Gain and Efficiency:

|                |      |      |      |      |      |      |      |      |       |      |      |
|----------------|------|------|------|------|------|------|------|------|-------|------|------|
| frequency（GHz） | 2.4  | 2.41 | 2.42 | 2.43 | 2.44 | 2.45 | 2.46 | 2.47 | 2.48  | 2.49 | 2.5  |
| efficiency（%）  | 38.5 | 40.2 | 42.0 | 43.5 | 45.0 | 44.2 | 43.8 | 42.5 | 41.00 | 39.5 | 38.0 |
| Gain（dBi）      | 1.60 | 1.70 | 1.80 | 1.9  | 2.07 | 1.92 | 1.85 | 1.72 | 1.65  | 1.55 | 1.42 |