

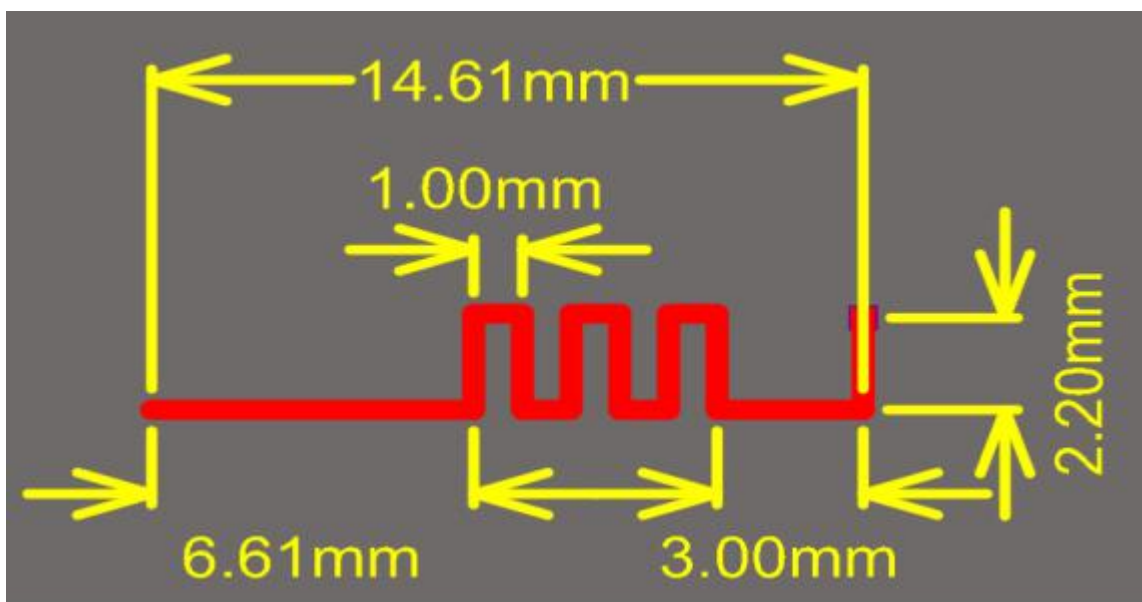
# Antenna Specification

## Specifications

### Summary

| ITEM                 | SPEC.                                                                                                               |                                 |
|----------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Antenna Type         | PCB Antenna                                                                                                         |                                 |
| Center Frequency     | 2402 MHz<br>2441 MHz<br>2480 MHz                                                                                    | 2.34 dBi<br>2.07dBi<br>1.45 dBi |
| MAX. GAIN            | 2.34dBi                                                                                                             |                                 |
| Polarization         | Horizontal                                                                                                          |                                 |
| Azimuth Beam Pattern | Omni-directional                                                                                                    |                                 |
| Impedance            | 50 $\Omega$                                                                                                         |                                 |
| Antenna Length       | 14.61 cm                                                                                                            |                                 |
| Model Name           | HD409                                                                                                               |                                 |
| manufacturer         | Shenzhen Hangshi<br>Eelectronic Technology<br>Co. , Ltd.                                                            |                                 |
| Address              | Hangshi Technology<br>Park, Democracy West<br>Industry Area, Shajing<br>Town, Bao' an<br>District, Shenzhen, China. |                                 |

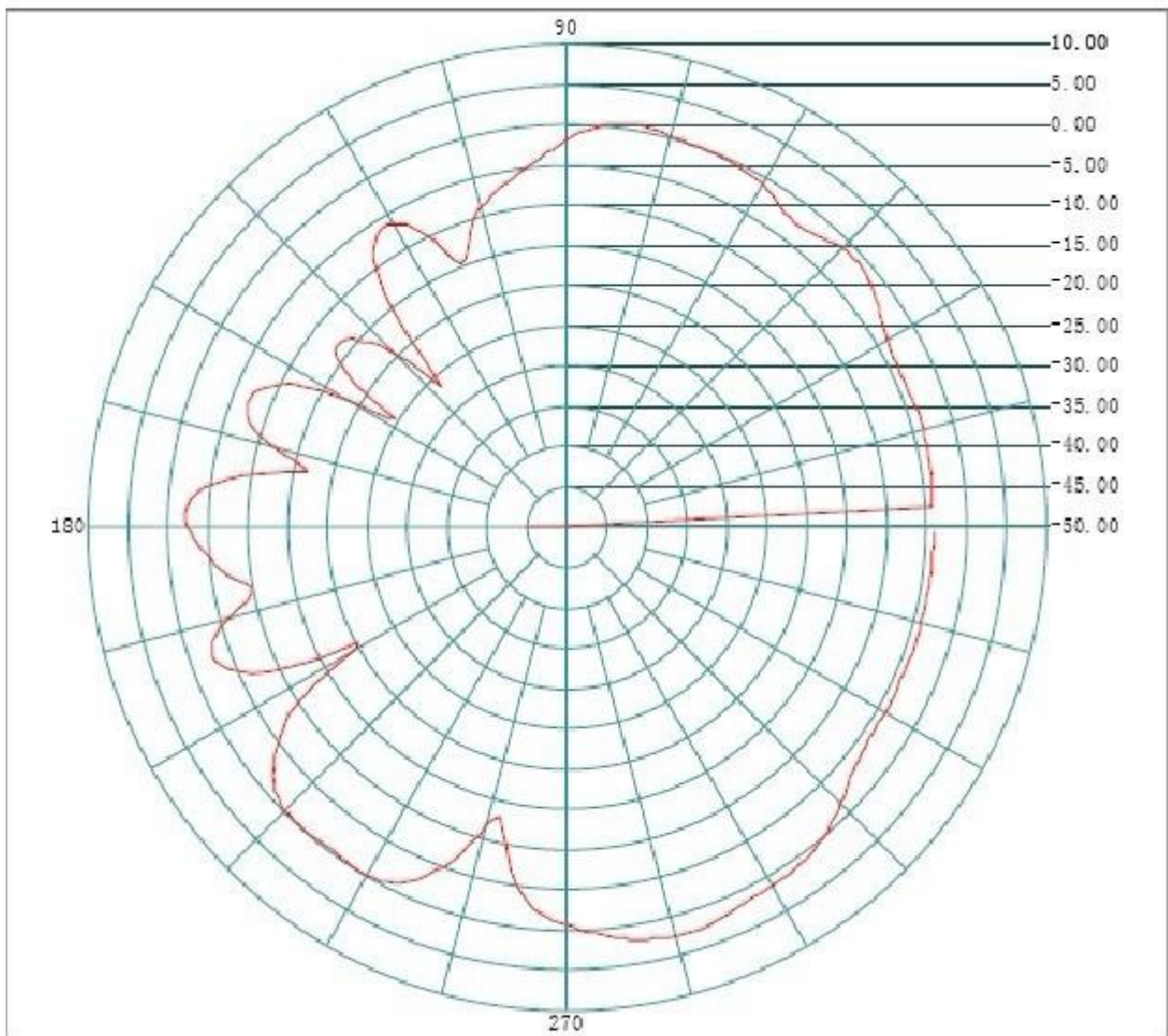
Antenna Photo & Length ( mm )



|                 |                                                                            |
|-----------------|----------------------------------------------------------------------------|
| Test Address    | 16 Tzu Chiang Road, Hsinchu Industrial District Hsinchu Hsien 303 , Taiwan |
| Test Date       | 2019-10-11                                                                 |
| Test Instrument | vector network analyzer - R&S ZVB20                                        |

## 1. Main antenna : 2402 MHz

### 1.1 Horizontal



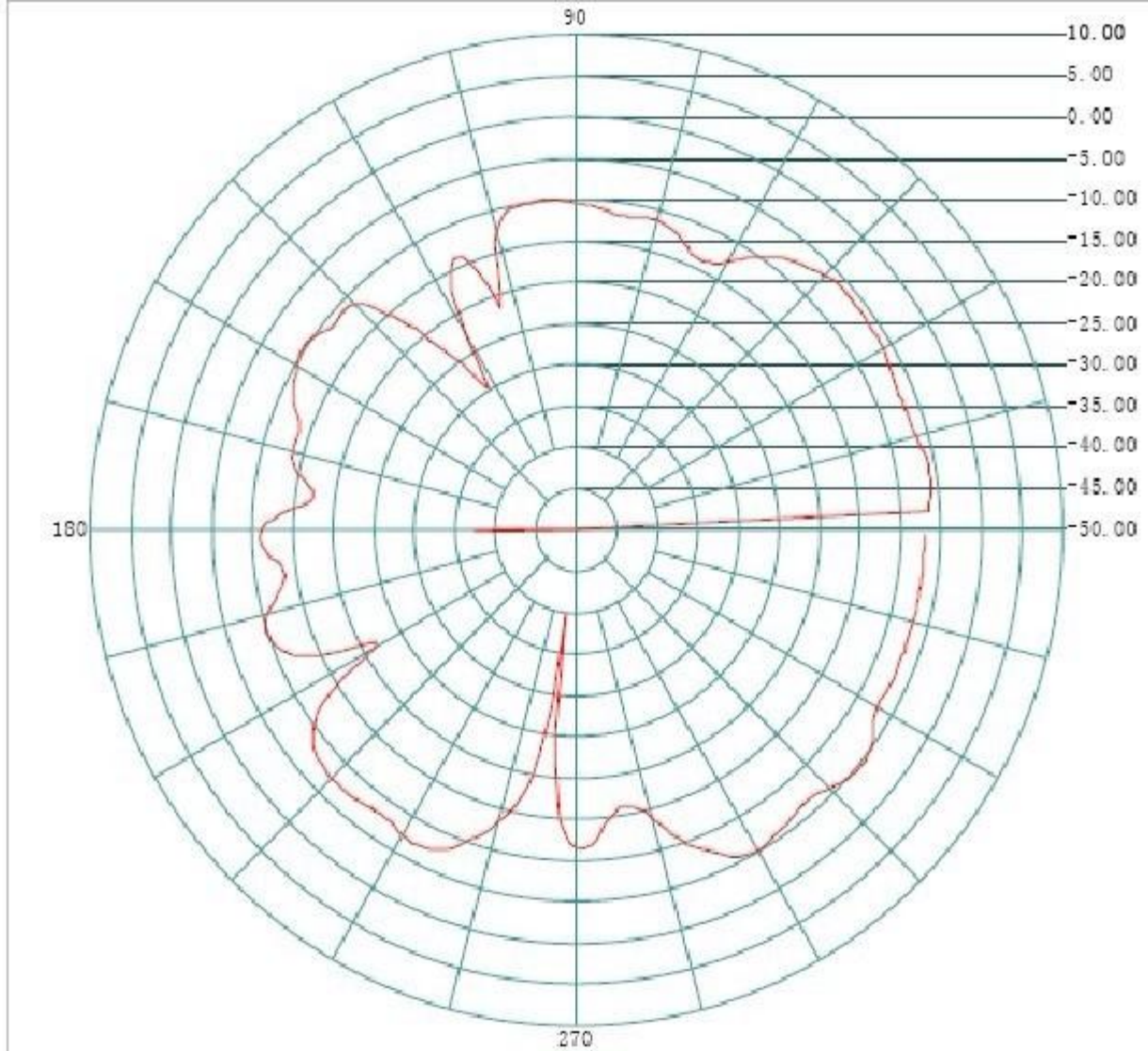
Frequency(MHZ): **2402** Antenna Polarity: **Horizontal**

Maximum Value(dBi): 2.34

Average Gain(dBi) : **-2.48**

Minimum Gain(dBi): **-55.18**

**1.2 Vertical**



Frequency(MHZ): **2402** Antenna Polarity: **Vertical**

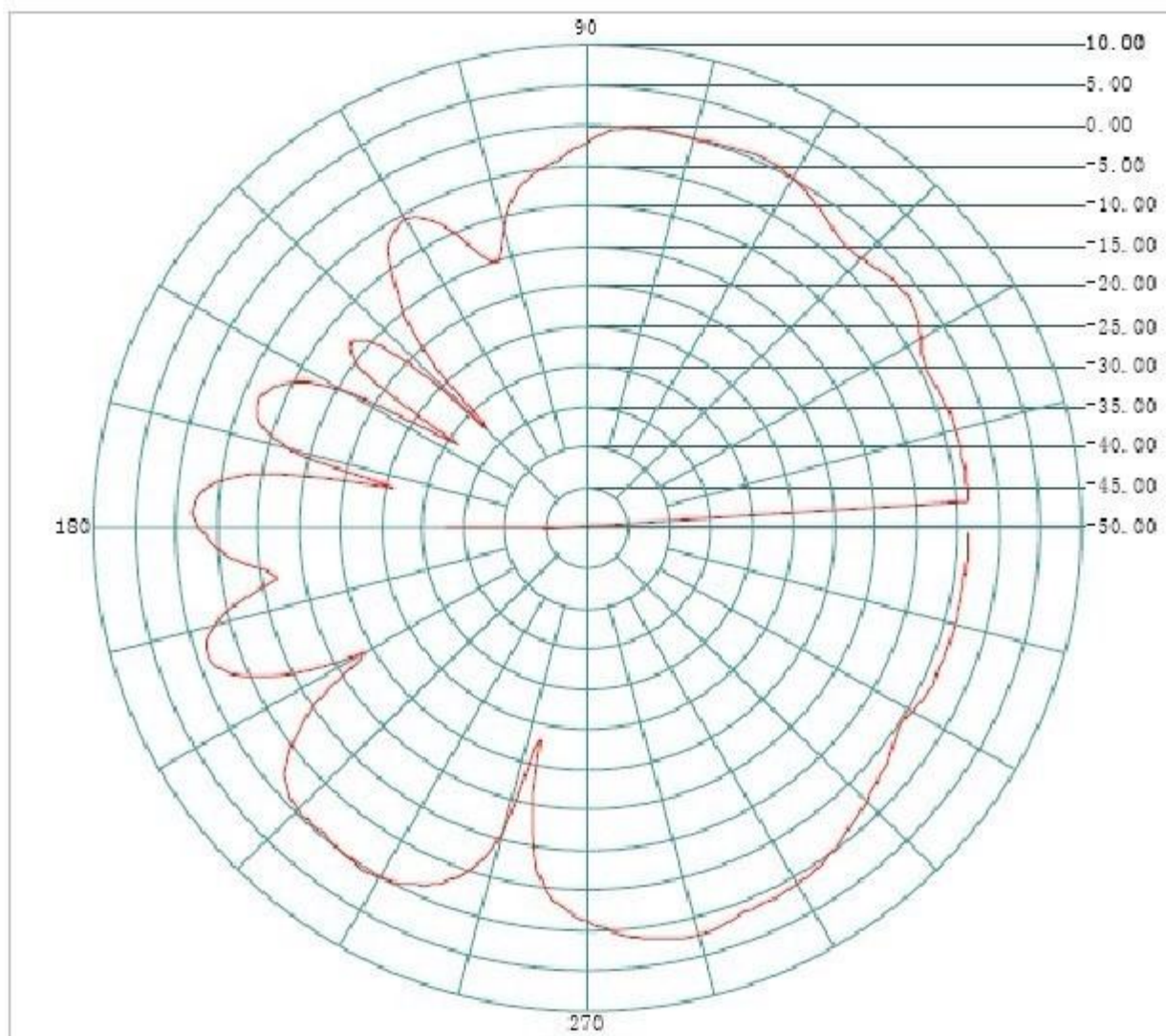
Maximum Value(dBi): **-4.51**

Average Gain(dBi) : **-8.98**

Minimum Gain(dBi): **-62.3**

**2. Main antenna : 2441 MHz**

**2.1 Horizontal**



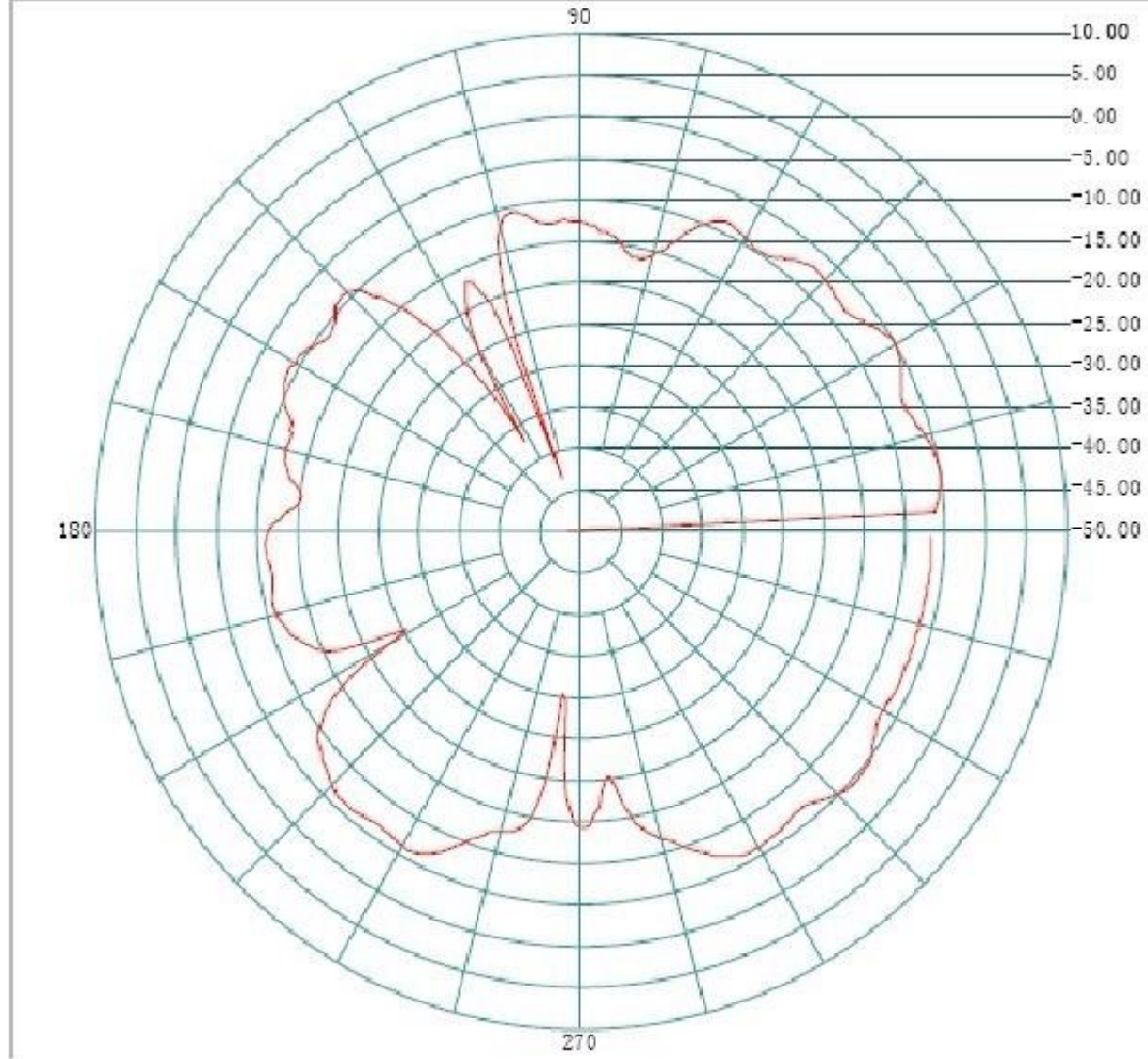
Frequency(MHZ): **2441** Antenna Polarity: **Horizontal**

Maximum Value(dBi): 2.07

Average Gain(dBi) : **-2.54**

Minimum Gain(dBi): **-66.98**

**2.2 Vertical**



Frequency(MHZ): **2441** Antenna Polarity: **Vertical**

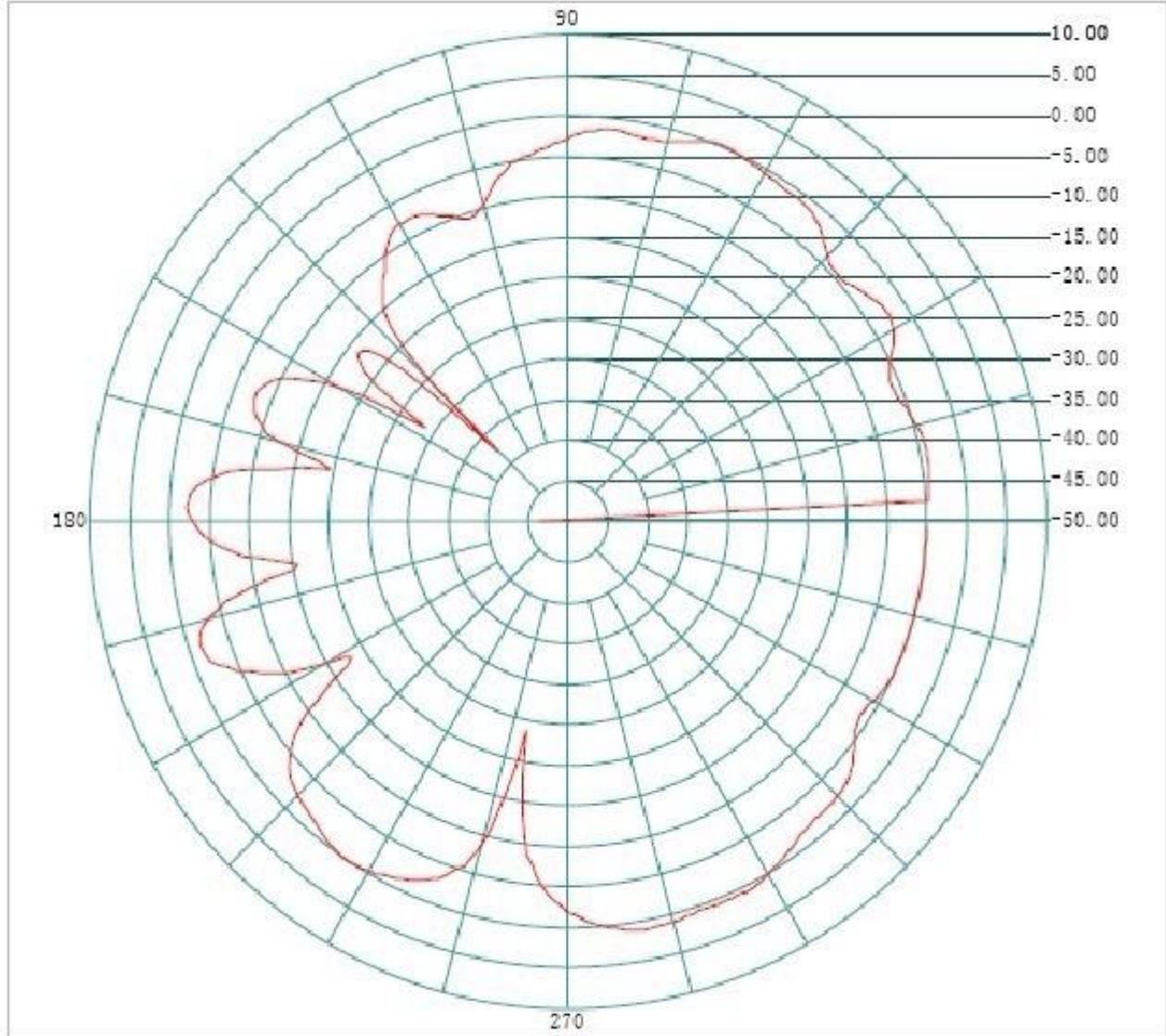
Maximum Value(dBi): **-4.29**

Average Gain(dBi) : **-8.81**

Minimum Gain(dBi): **-51.4**

**2. Main antenna : 2480 MHz**

**2.1 Horizontal**



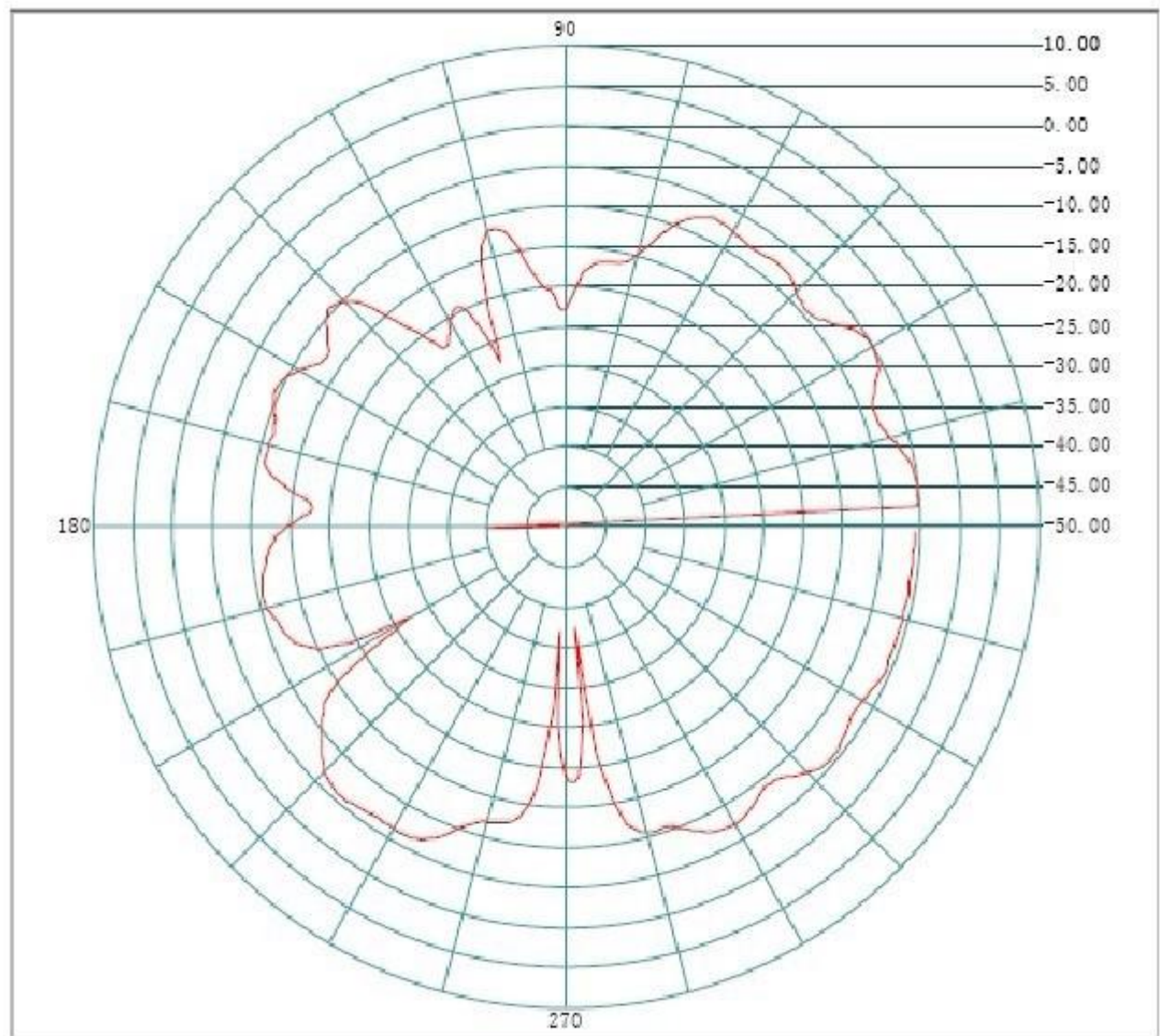
Frequency(MHZ): **2480** Antenna Polarity: **Horizontal**

Maximum Value(dBi): **1.45**

Average Gain(dBi) : **-3.34**

Minimum Gain(dBi): **-53.4**

**2.2 Vertical**



Frequency(MHZ): **2480** Antenna Polarity: **Vertical**

Maximum Value(dBi): **-4.95**

Average Gain(dBi) : **-9.06**

Minimum Gain(dBi): **-60.00**