Antenna specification

Antenna type: PCB

Antenna model: LCT550

Antenna manufacturer: Hubei Shiwei Communication Co., LTD

Address: No. 218, Xingguo Road, Xingguo Town, Yangxin County

1、Antenna size

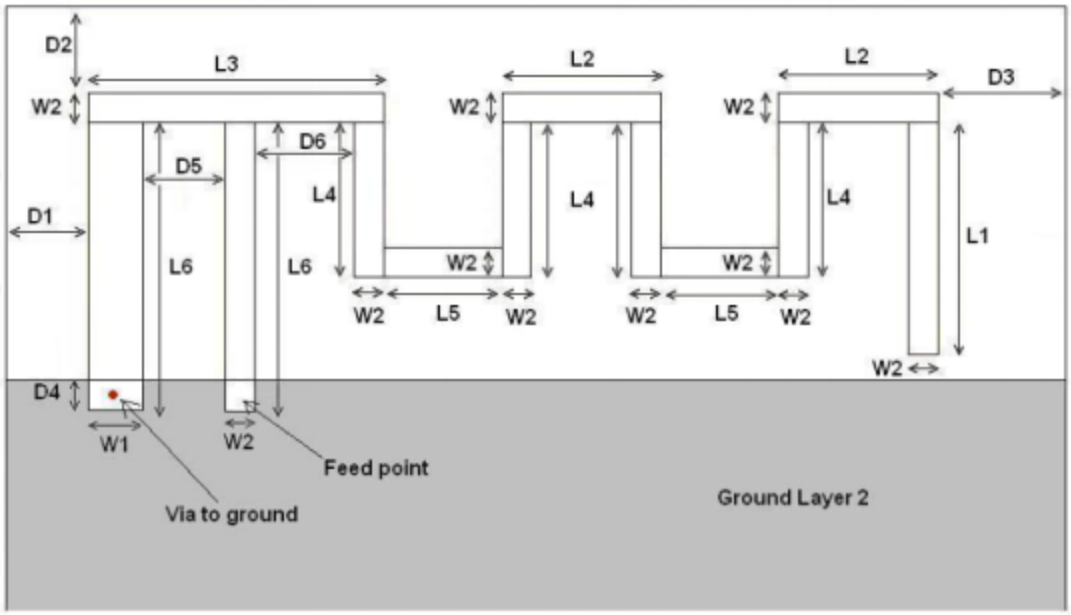
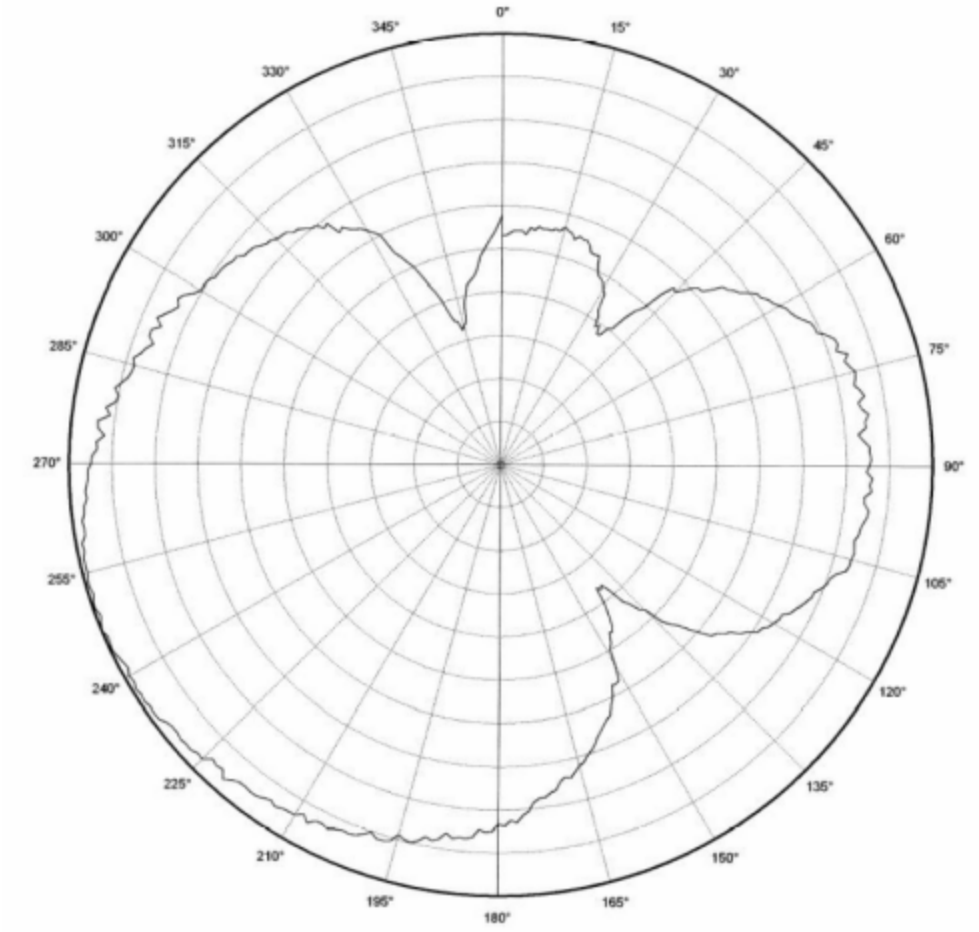


Figure 3: Antenna Dimensions

L1	3.94 mm
L2	2.70 mm
L3	5.00 mm
L4	2.64 mm
L5	2.00 mm
L6	4.90 mm
W1	0.90 mm
W2	0.50 mm
D1	0.50 mm
D2	0.30 mm
D3	0.30 mm
D4	0.50 mm
D5	1.40mm
D6	1.70 mm

Table 1: Antenna Dimensions

2、Gain pattern

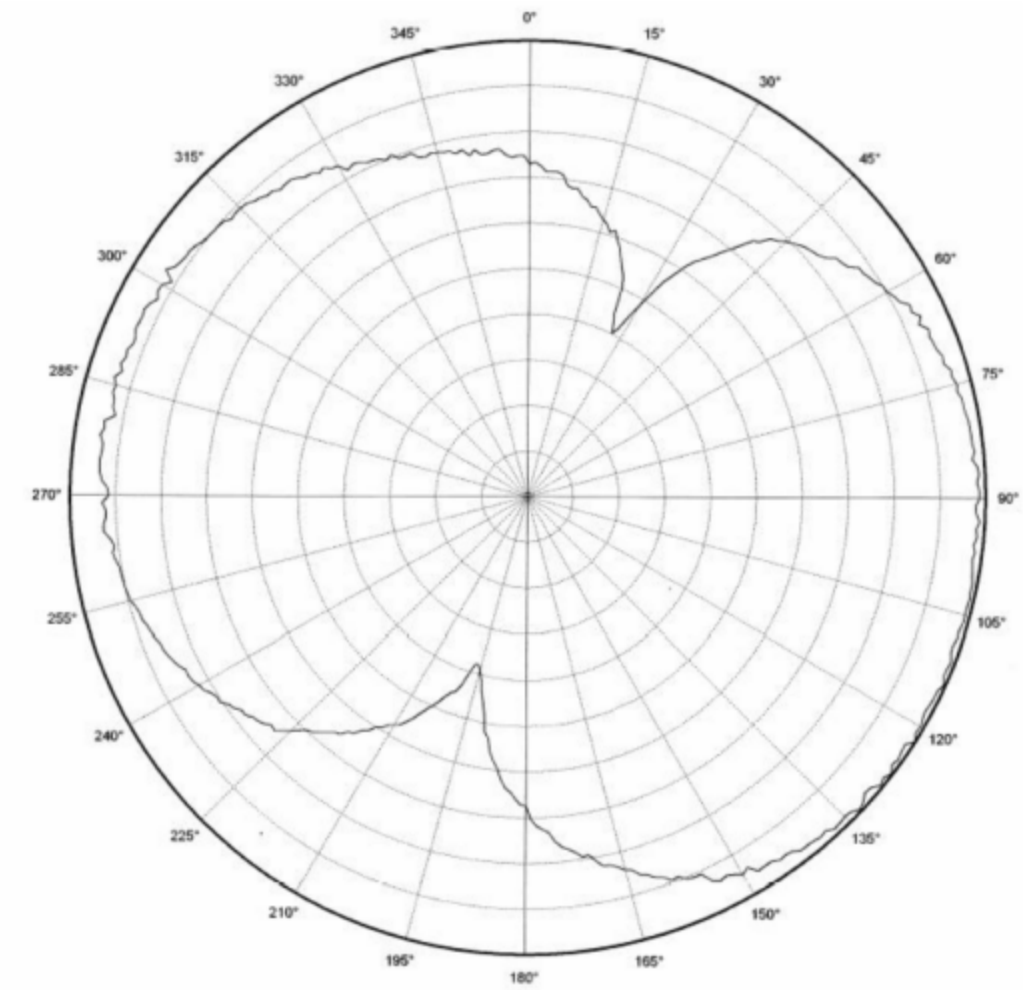


Vertical Polarization

usb XY

CF 2450.000 MHz
4 dB/ div
Ref Lev: -2,5 **dBm**

-8.4 dBi

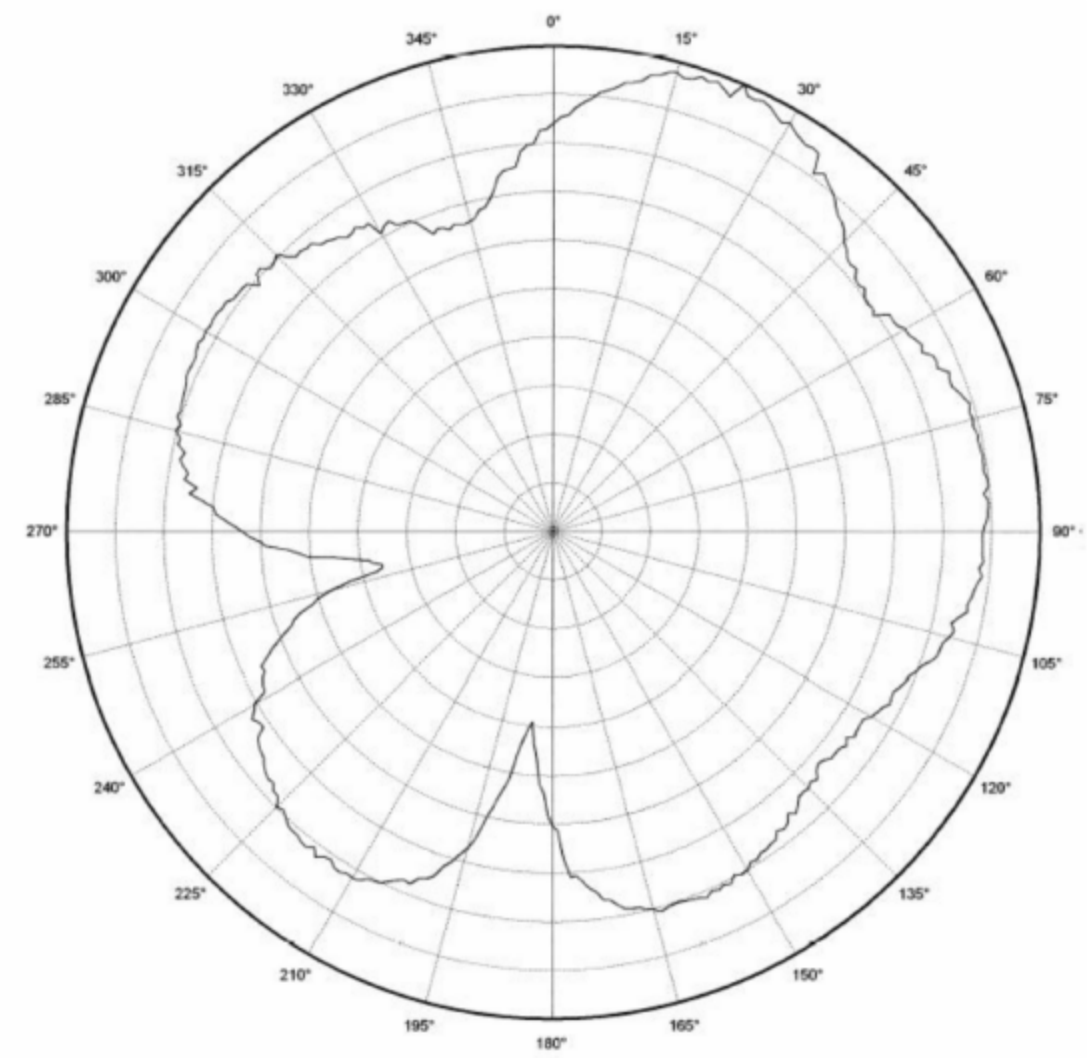


Horisontal Polarization

usb XY

CF 2450.000 MHz
5 dB/ div
Ref Lev: 4.5 **dBm**

-8.4 dBi



Vertical Polarization

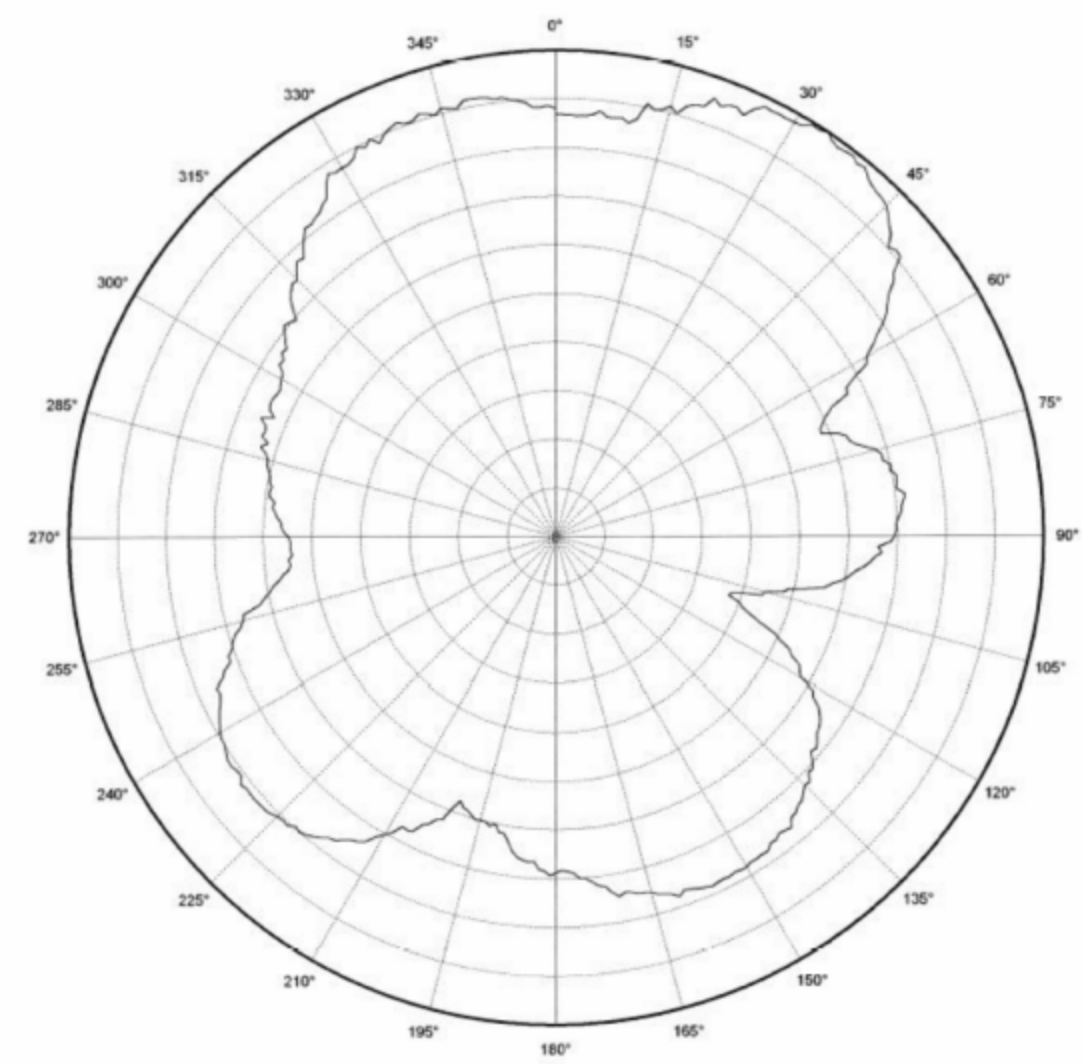
usb XZ

CF 2450.000 MHz

4 dB/ div

Ref Lev: 2.2 **dBm**

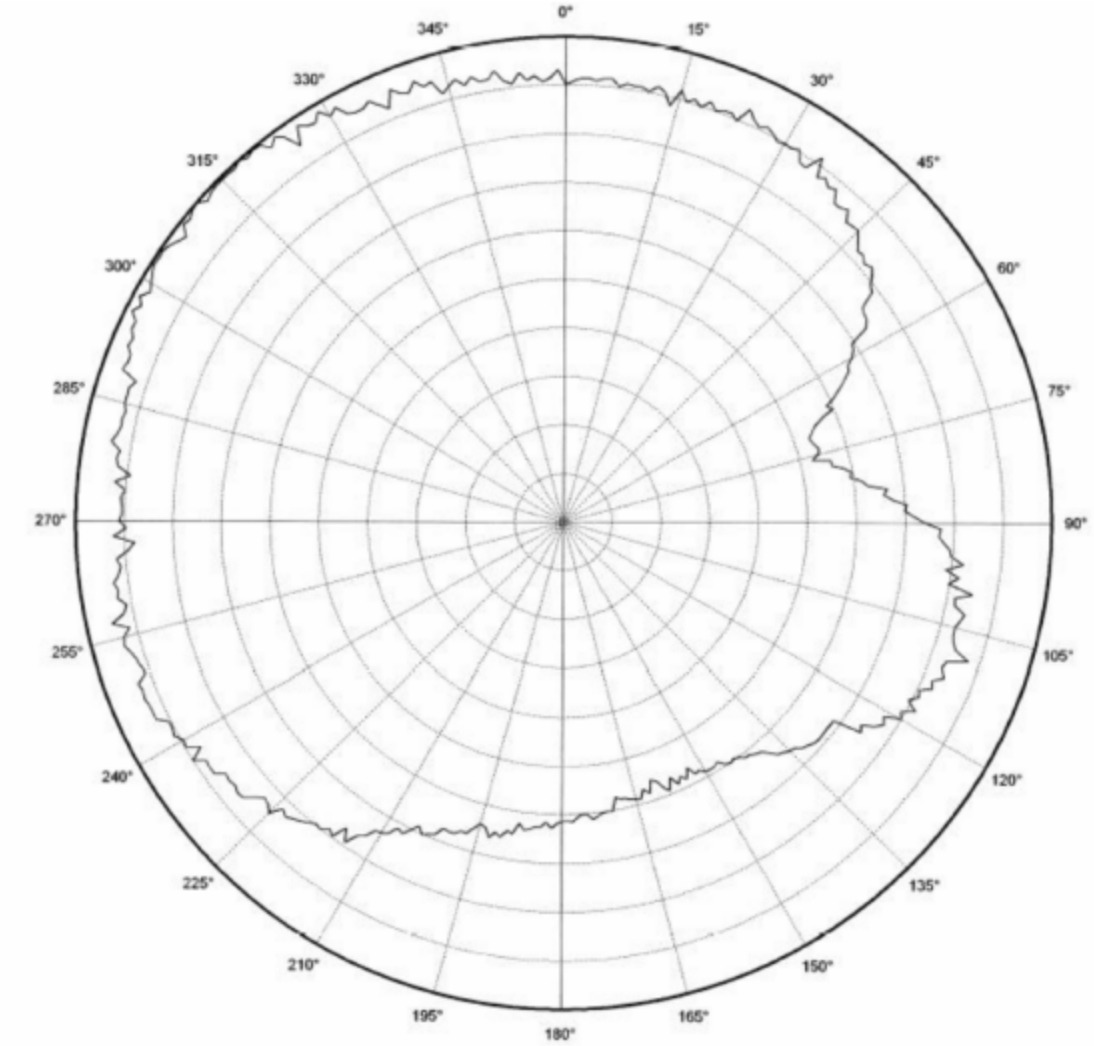
-8.4 dBi



Horisontal Polarization

usb XZ

CF 2450.000 MHz
4 dB/ div
Ref Lev: 5.3 **dBm**
-8.4 dBi

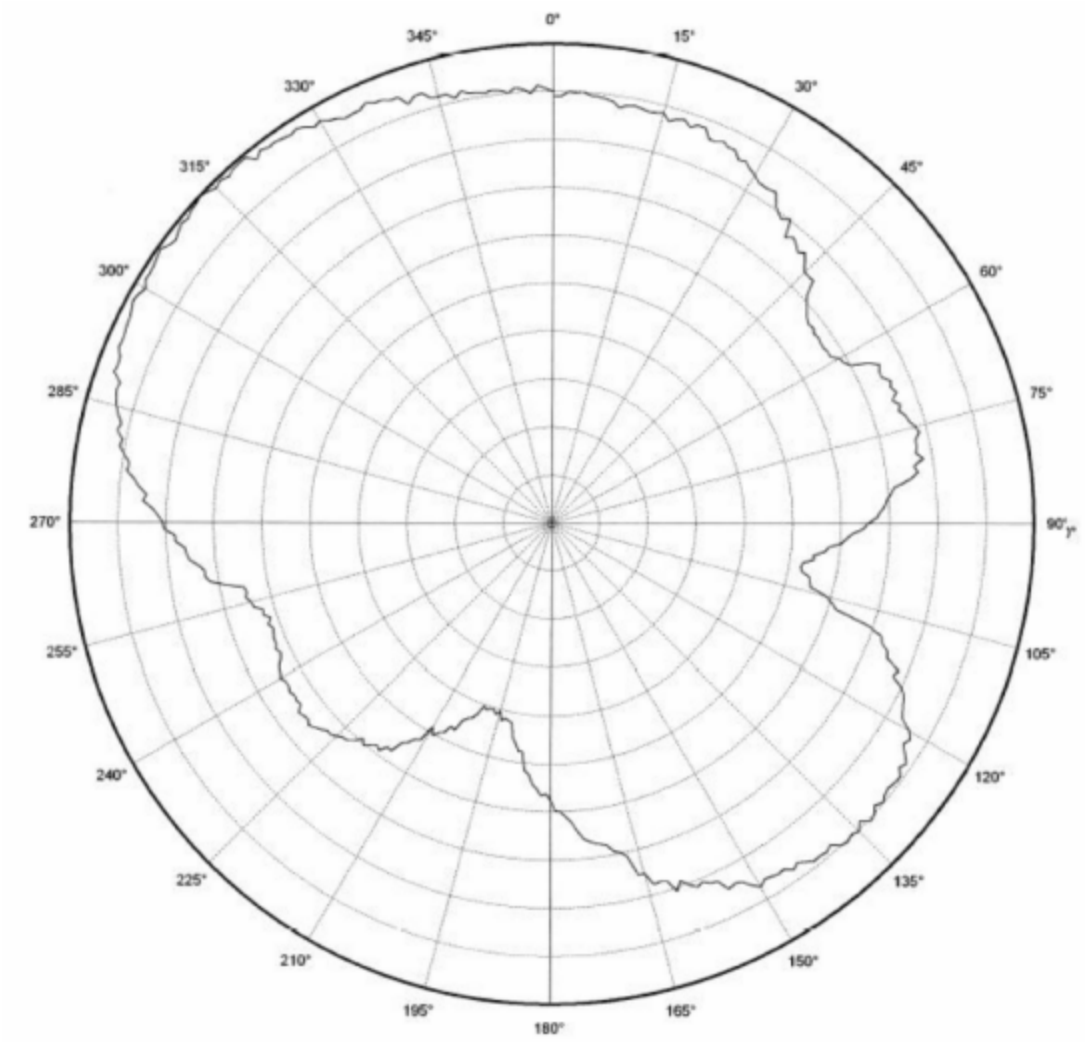


Vertical Polarization

usb YZ

CF 2450.000 MHz
2 dB/ div
Ref Lev: +5,3 dBm

-8.4 dBi

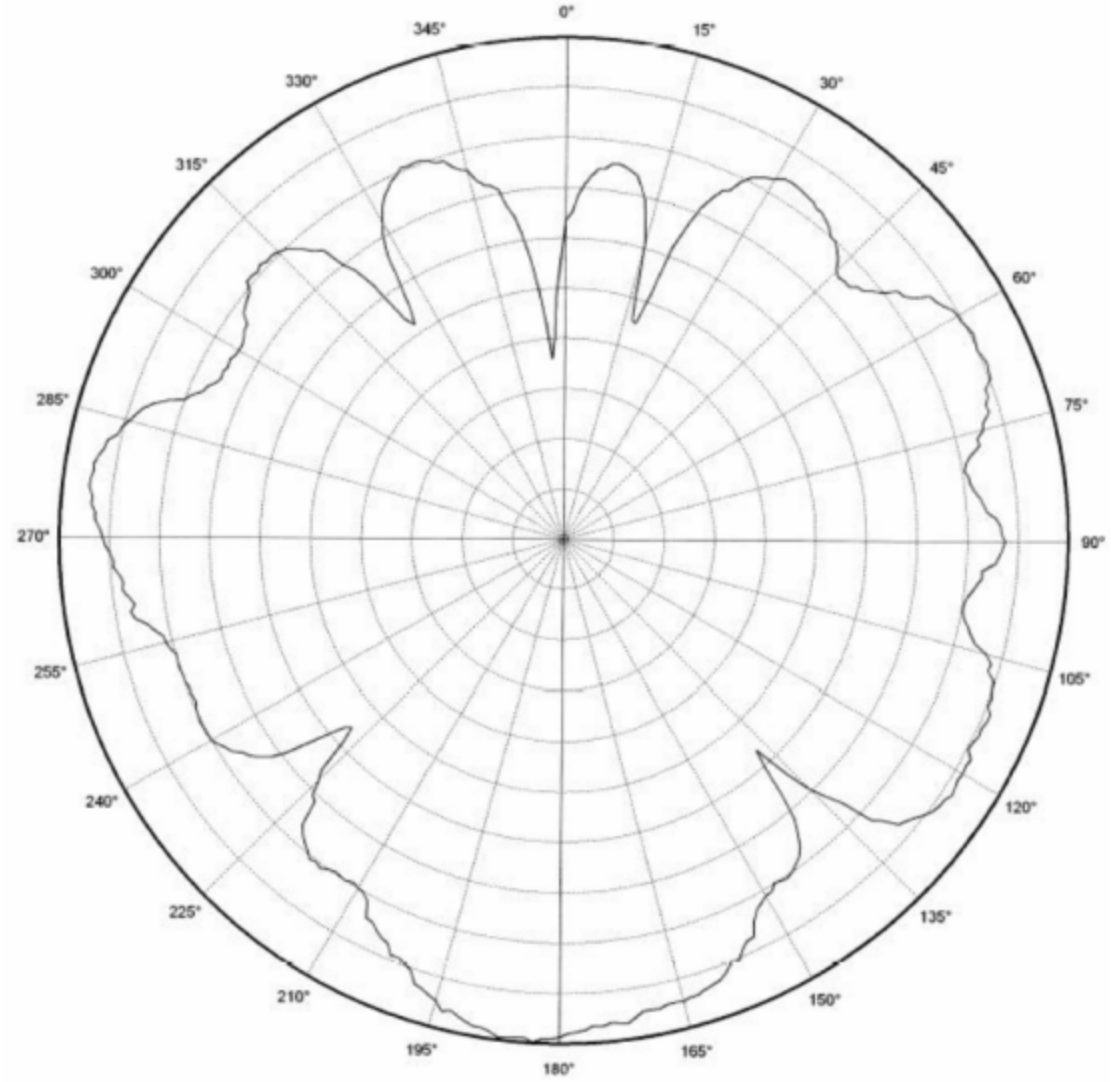


Horisontal Polarization

usb YZ

CF 2450.000 MHz
3 dB/ div
Ref Lev: -1,2 ..... **dBm**

-8.4 dBi

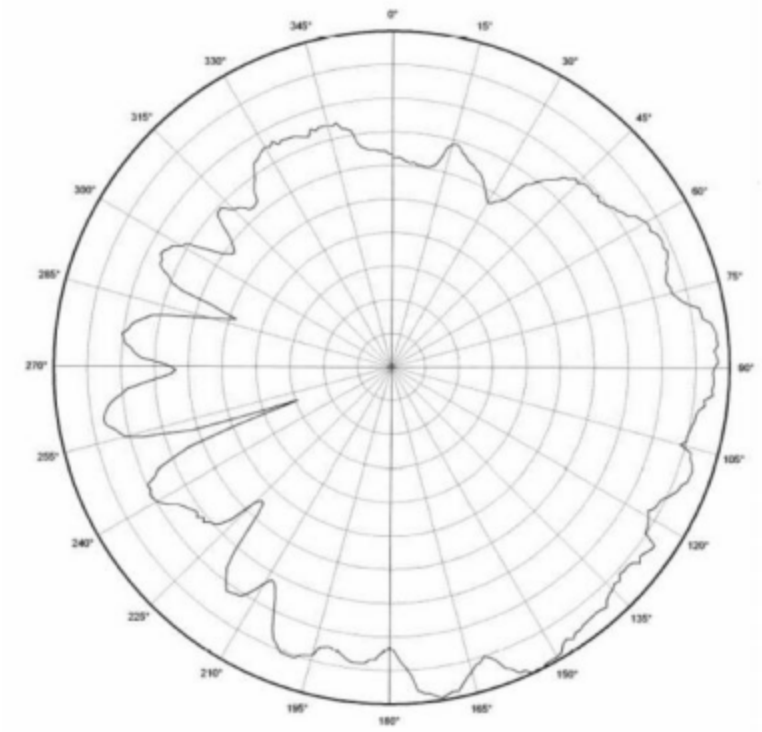


'ertical Polarization

aptop USB XY

CF 2450.000 MHz
5 dB/ div
Ref Lev: −2.0 dBm

-8.4 dBi



Horisontal Polarization

Laptop USB XY

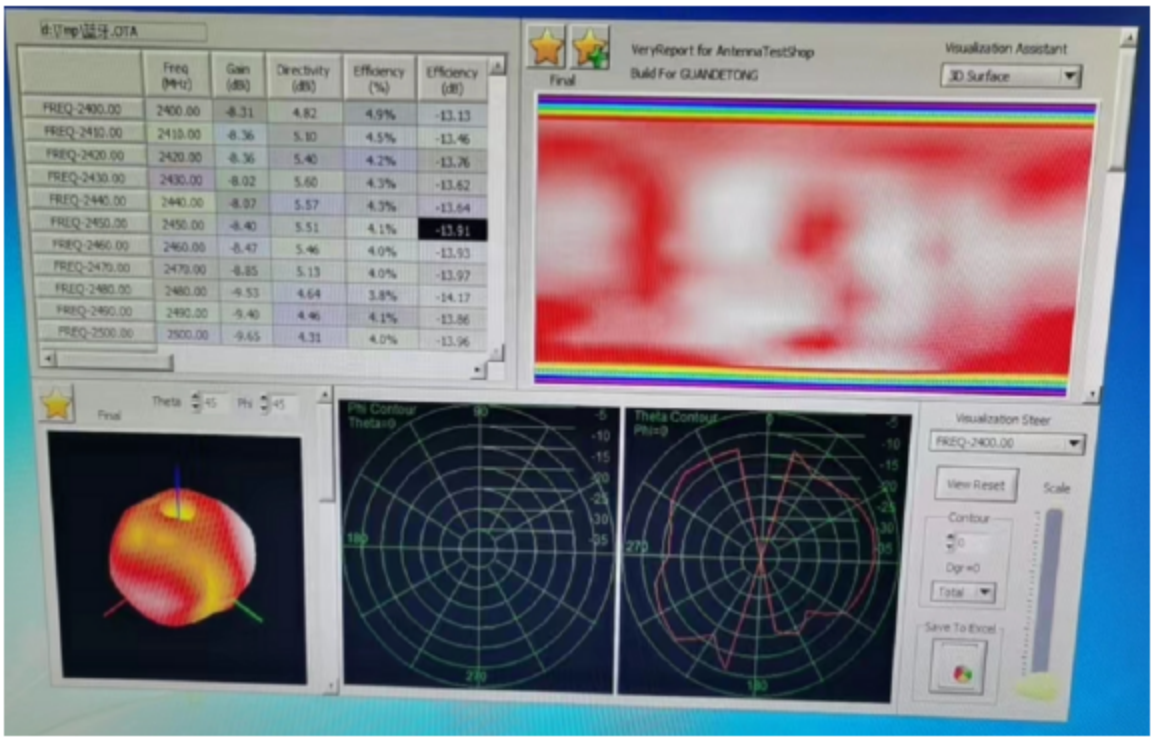
CF 2450.000 MHz
4 dB/ div

Ref Lev: 3.3 dBm

-8.4 dBi

3、Efficiency&Gain

FEITUKEJI											
Frequency ID	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Frequency (MHz)	**2400.0**	**2410.0**	**2420.0**	**2430.0**	**2440.0**	**2450.0**	**2460.0**	**2470.0**	**2480.0**	**2490.0**	**2500.0**
Point Values											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	**-13.13**	**-13.46**	**-13.76**	**-13.62**	**-13.64**	**-13.91**	**-13.93**	**-13.97**	**-14.17**	**-13.86**	**-13.96**
Peak EIRP (dBm)	**-8.31**	**-8.36**	**-8.36**	**-8.02**	**-8.07**	**-8.40**	**-8.47**	**-8.85**	**-9.53**	**-9.40**	**-9.65**
Directivity (dBi)	4.82	5.10	5.40	5.60	5.57	5.51	5.46	5.13	4.64	4.46	4.31
Efficiency (dB)	**-13.13**	**-13.46**	**-13.76**	**-13.62**	**-13.64**	**-13.91**	**-13.93**	**-13.97**	**-14.17**	**-13.86**	**-13.96**
Efficiency (%)	**4.90**	**4.50**	**4.20**	**4.30**	**4.30**	**4.10**	**4.00**	**4.00**	**3.80**	**4.10**	**4.00**
Gain (dBi)	-8.31	-8.36	-8.36	-8.02	-8.07	-8.40	-8.47	-8.85	-9.53	-9.40	-9.65
NHPRP ±Pi/4 (dBm)	-13.75	-13.84	-13.88	-13.57	-13.64	-13.91	-13.94	-14.18	-14.75	-14.51	-14.66
NHPRP ±Pi/6 (dBm)	-15.05	-15.12	-15.14	-14.83	-14.91	-15.18	-15.22	-15.46	-16.04	-15.79	-15.94
NHPRP ±Pi/8 (dBm)	-16.03	-16.08	-16.10	-15.80	-15.90	-16.19	-16.24	-16.49	-17.07	-16.80	-16.94
Upper Hem. PRP (dBm)	-15.88	-16.18	-16.45	-16.27	-16.25	-16.50	-16.49	-16.53	-16.71	-16.37	-16.45
Lower Hem. PRP (dBm)	-16.42	-16.78	-17.12	-17.03	-17.10	-17.39	-17.45	-17.49	-17.70	-17.43	-17.56
Upper Hem. PRP (%)	2.59	2.41	2.27	2.36	2.37	2.24	2.24	2.22	2.13	2.31	2.26
Lower Hem. PRP (%)	2.28	2.10	1.94	1.98	1.95	1.83	1.80	1.78	1.70	1.81	1.76



	Freq (MHz)	Gain (dBi)	Directivity (dBi)	Efficiency (%)	Efficiency (dB)
FREQ-2400.00	2400.00	-8.31	4.82	4.9%	-13.13
FREQ-2410.00	2410.00	-8.36	5.10	4.5%	-13.46
FREQ-2420.00	2420.00	-8.36	5.40	4.2%	-13.76
FREQ-2430.00	2430.00	-8.02	5.60	4.3%	-13.62
FREQ-2440.00	2440.00	-8.07	5.57	4.3%	-13.64
FREQ-2450.00	2450.00	-8.40	5.51	4.1%	-13.91
FREQ-2460.00	2460.00	-8.47	5.46	4.0%	-13.93
FREQ-2470.00	2470.00	-8.85	5.13	4.0%	-13.97
FREQ-2480.00	2480.00	-9.53	4.64	3.8%	-14.17
FREQ-2490.00	2490.00	-9.40	4.46	4.1%	-13.86
FREQ-2500.00	2500.00	-9.65	4.31	4.0%	-13.96

4、Convert from dBm to dBi

To convert TRP (Total Radiated Power) from dBm to dBi：

1、TRP is measured in dBm, which denotes power.

2、dBi is a unit of gain relative to an isotropic antenna (an ideal omnidirectional antenna).

3、dB is a logarithmic unit, representing relative values

The conversion formula from TRP (in dBm) to dBi is:

$$\mathrm{dBi} = \mathrm{TRP}(\mathrm{dBm}) - G_{\mathrm{ref}}$$

- dBi is the total radiated power in dBi.
- $\mathrm{TRP(dBm)}$ is the total radiated power in dBm.
- G_{ref} is the gain of the reference antenna. For an ideal isotropic antenna, G_{ref} is typically 0 dBi, but if a different reference antenna with specific gain is used, this value should be adjusted accordingly.

So, to convert TRP from dBm to dBi, need to subtract the gain of the reference antenna (usually 0 dBi for an isotropic antenna) from the TRP value in dBm.