

ANTENNA TEST REPORT

Applicant	TTS-Group Ltd
Address	BUILDING 1 HEYWORTH ROAD HUCKNALL NOTTINGHAM United Kingdom NG15 6XJ

Manufacturer or Supplier	SILVERLIT TOYS MANUFACTORY LTD
Address	Rm1701-03, World Trade Centre, 280 Gloucester Road, Causeway Bay, Hong Kong
Product	Antenna
Brand Name	silverlit
Model	87754
Max. Peak Gain	-0.49 dBi
Date of tests	Dec. 13, 2022

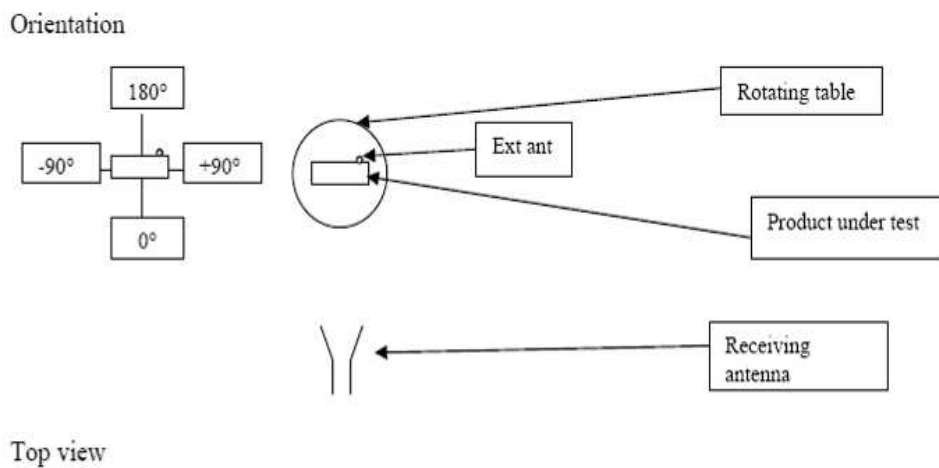
Tested by Andy Zhu Supervisor / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	 Date: Jan. 06, 2023

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1. MEASUREMENTS SETUP



2. SIZE OF THE ANTENNA

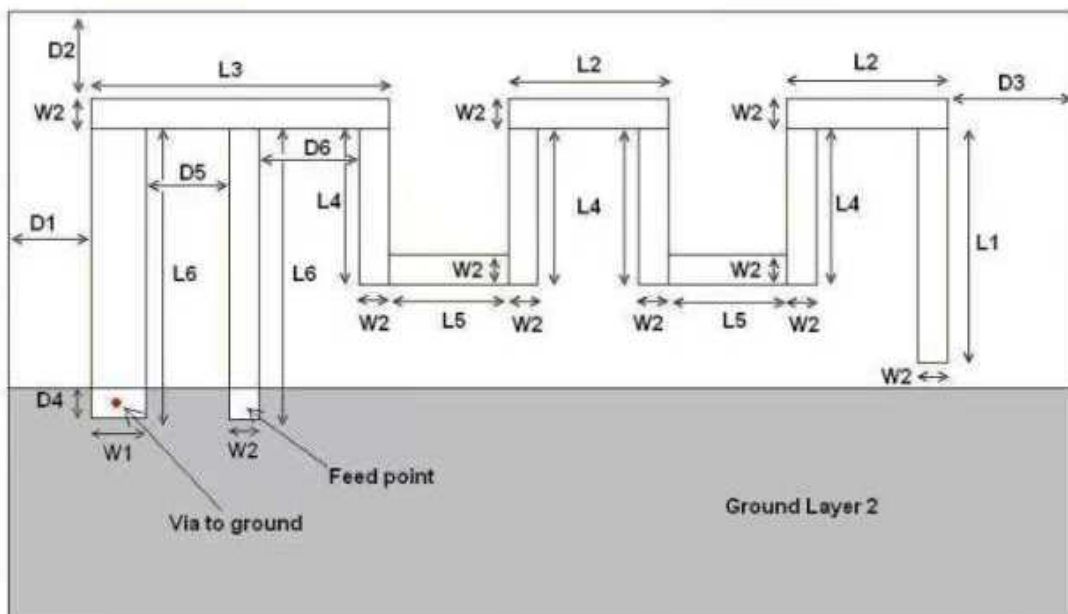


Figure 3: Antenna Dimensions

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

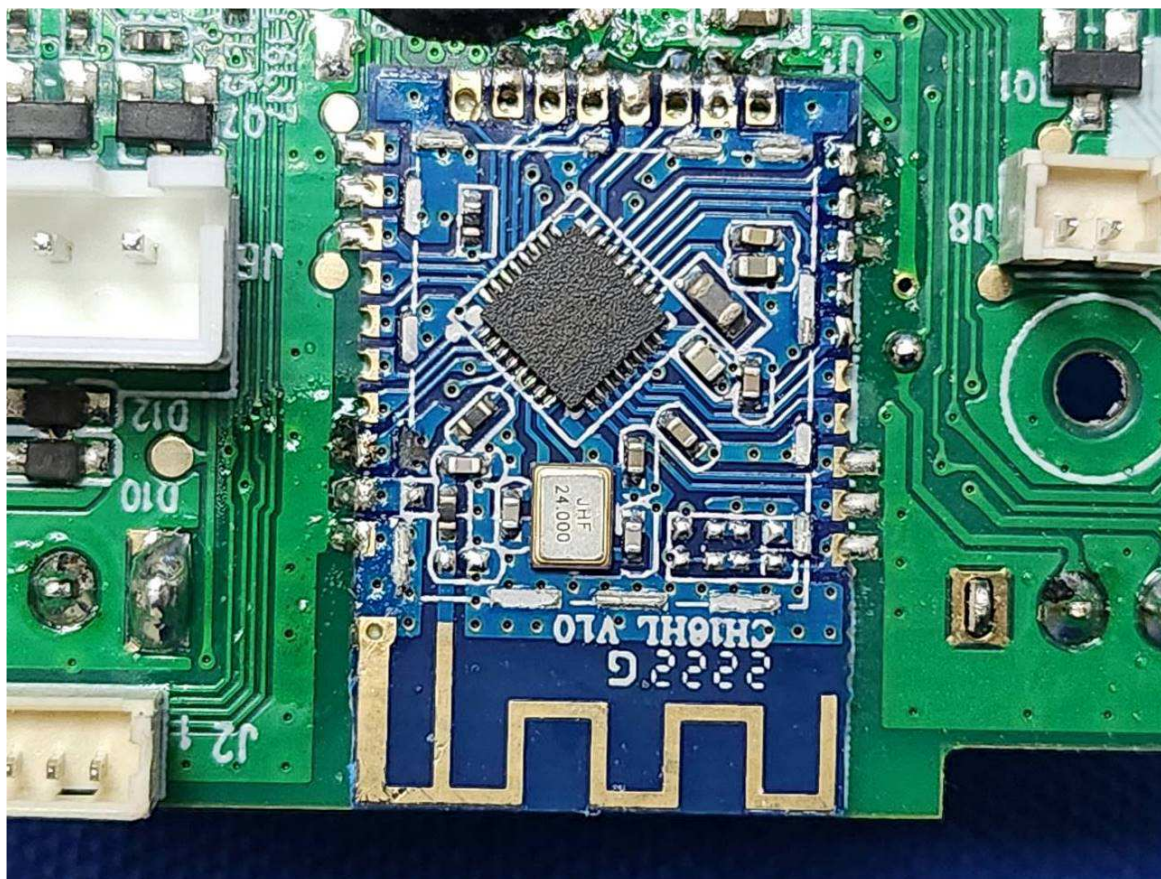
3. TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Signal Generator	Agilent	N5183A	MY50140980	Jul. 20, 23
Spectrum Analyzer	Rohde&Schwarz	FSV40	101003	Jan. 16, 23
Broad-Band Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1247	Apr. 23, 23
Broad-Band Horn Antenna	SCHWARZBECK	BBHA 9120 B	00740	Jul. 20, 23
Turn Table	MF	MF-7802	MF780208191	N/A
Controller	MF	MF-7802	MF780208243	N/A
Test Software	BV ADT	BV ADT Antenna Pattern	V6.2	N/A

NOTE: 1. The test was performed in Fully Anechoic Room.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

4. TEST RESULTS

ANTENNA	FREQUENCY (MHz)	ANTENNA POLARITY	MAX. PEAK GAIN (dBi)
PCB	2402	Horizontal	-1.20
		Vertical	-1.09
	2440	Horizontal	-1.48
		Vertical	-0.71
	2480	Horizontal	-0.75
		Vertical	-0.49

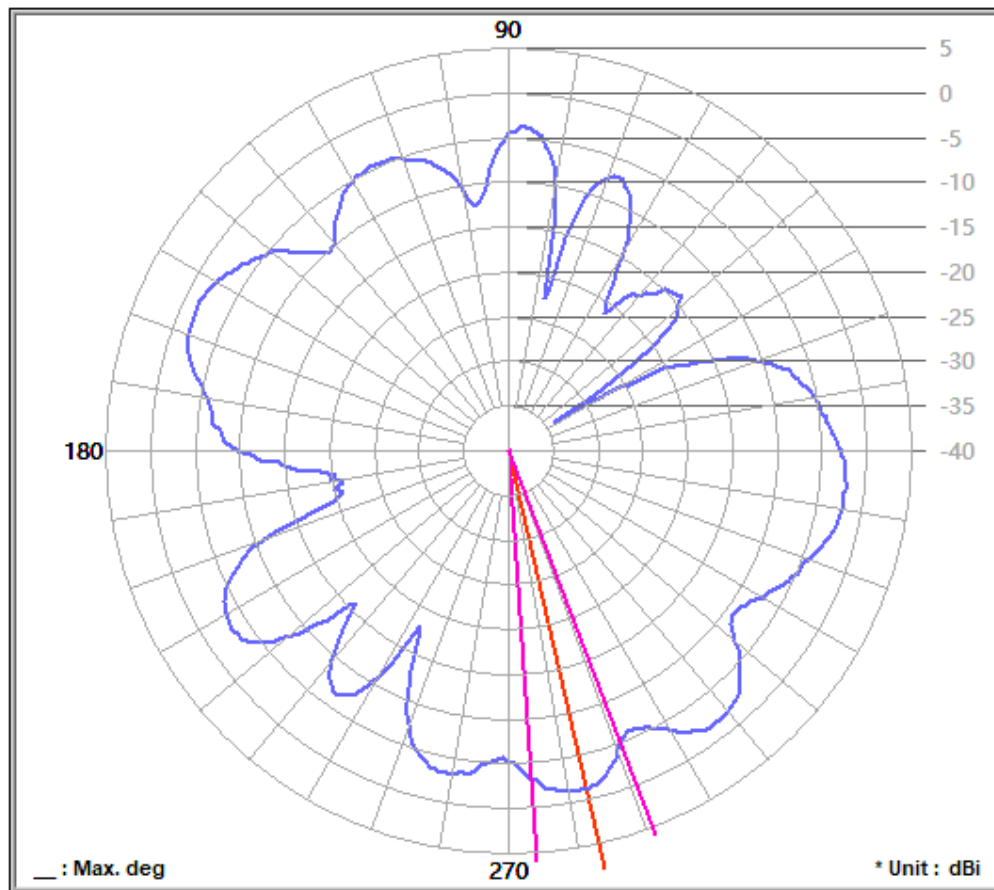


Frequency: 2402 MHz (Horizontal)

Location : RF Chamber

Date: 2022/12/13

Time: 18:52:31



Frequency (MHz) : 2402.00

Polarity : Horizontal

Average Gain (dB) : -5.70

Max. Gain (dB) : -1.20

Max. Gain (degree) : 283

Beamwidth Degree : 17

Mini. Gain (dB) : -33.99

Mini. Gain (degree) : 32

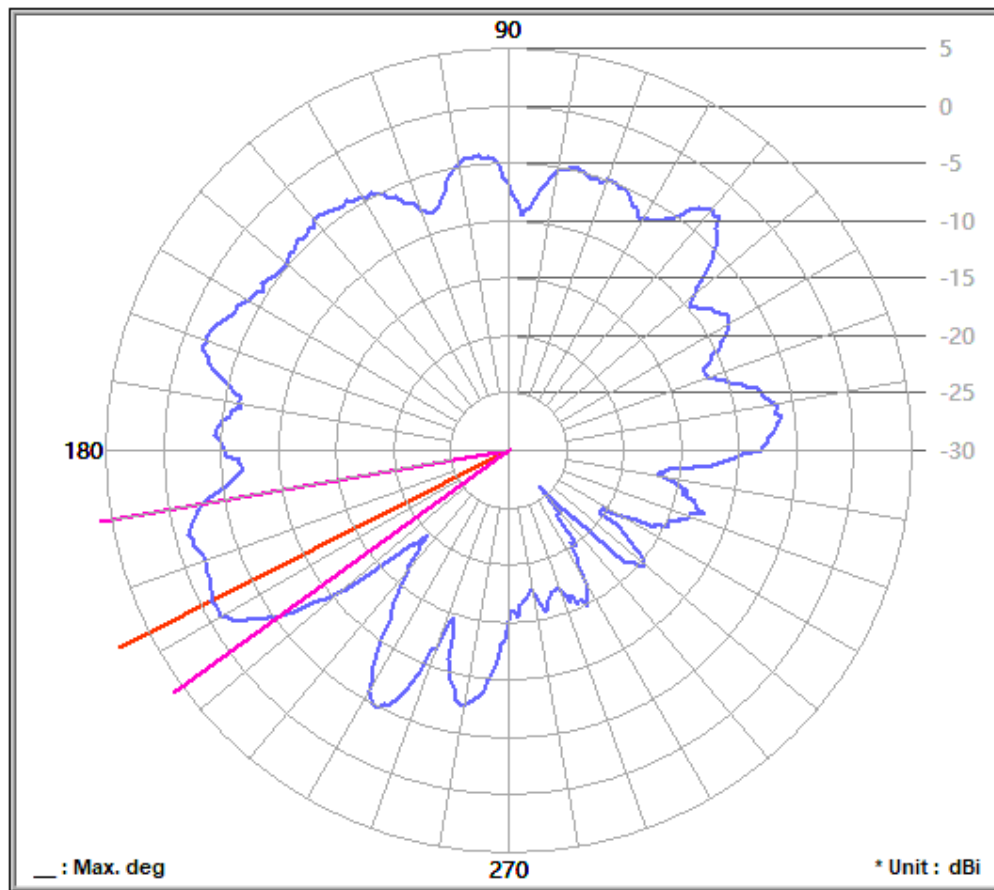
(at the 3 dB down)

Frequency: 2402 MHz (Vertical)

Location : RF Chamber

Date: 2022/12/13

Time: 19:15:01



Frequency (MHz) : 2402.00

Polarity : Vertical

Average Gain (dB) : -6.49

Max. Gain (dB) : -1.09

Max. Gain (degree) : 207

Beamwidth Degree : 26

Mini. Gain (dB) : -25.95

Mini. Gain (degree) : 311

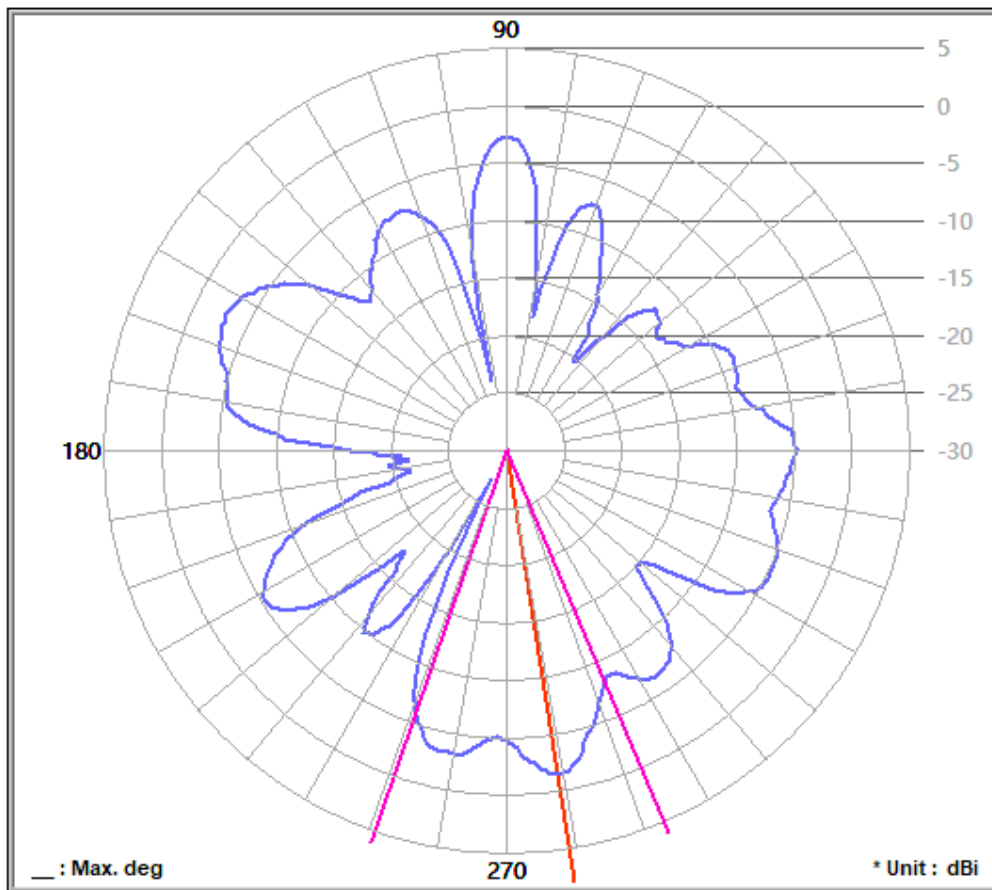
(at the 3 dB down)

Frequency: 2440 MHz (Horizontal)

Location : RF Chamber

Date: 2022/12/13

Time: 18:46:26



Frequency (MHz) : **2440.00**

Polarity : **Horizontal**

Average Gain (dB) : **-7.15**

Max. Gain (dB) : **-1.48**

Max. Gain (degree) : **279**

Beamwidth Degree : **42**

Mini. Gain (dB) : **-27.26**

Mini. Gain (degree) : **242**

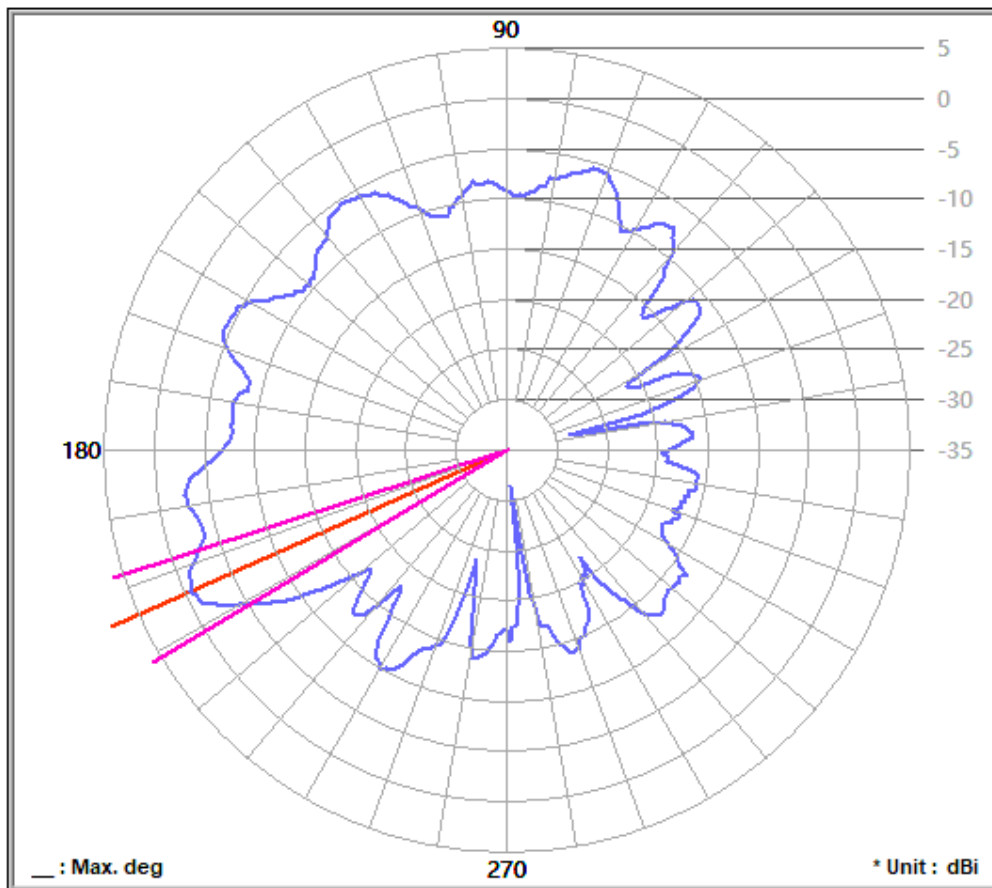
(at the 3 dB down)

Frequency: 2440 MHz (Vertical)

Location : RF Chamber

Date: 2022/12/13

Time: 19:04:37



Frequency (MHz) : 2440.00

Polarity : Vertical

Average Gain (dB) : -8.91

Max. Gain (dB) : -0.71

Max. Gain (degree) : 204

Beamwidth Degree : 13

Mini. Gain (dB) : -31.40

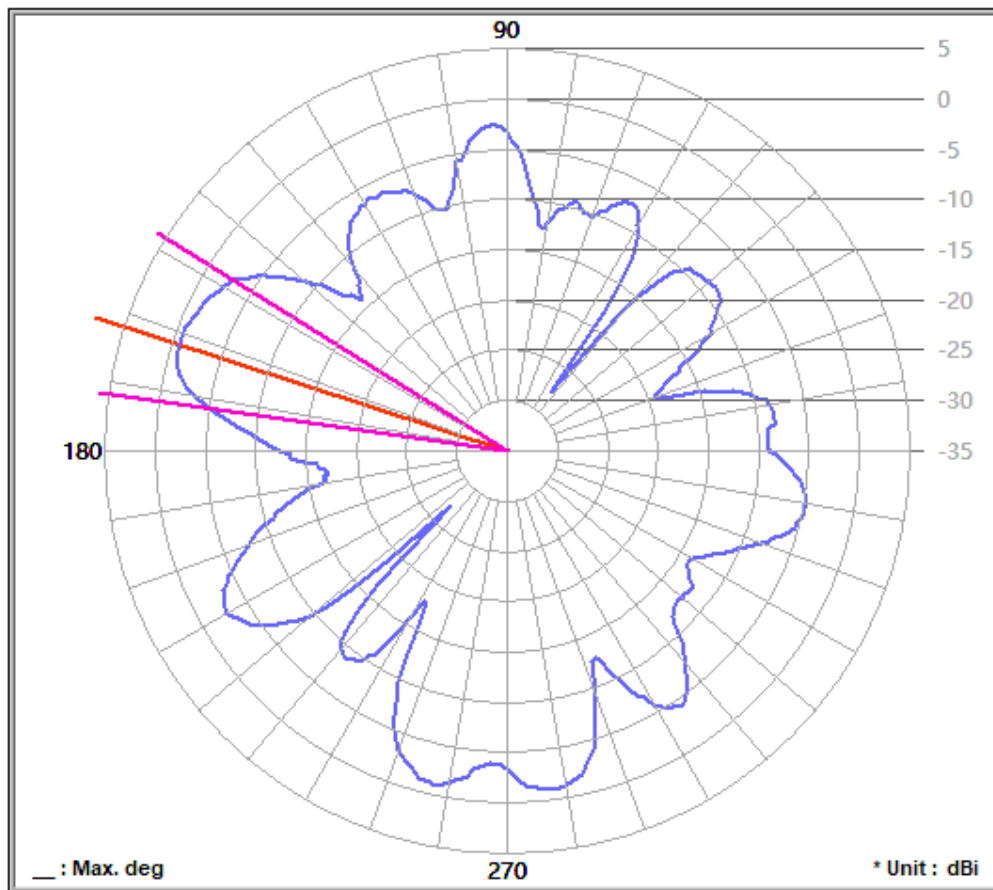
Mini. Gain (degree) : 277

(at the 3 dB down)

Frequency: 2480 MHz (Horizontal)

Location : RF Chamber

Date: 2022/12/13 Time: 18:54:53



Frequency (MHz) : 2480.00

Polarity : Horizontal

Average Gain (dB) : -6.30

Max. Gain (dB) : -0.75

Max. Gain (degree) : 162

Beamwidth Degree : 24

Mini. Gain (dB) : -27.71

Mini. Gain (degree) : 53

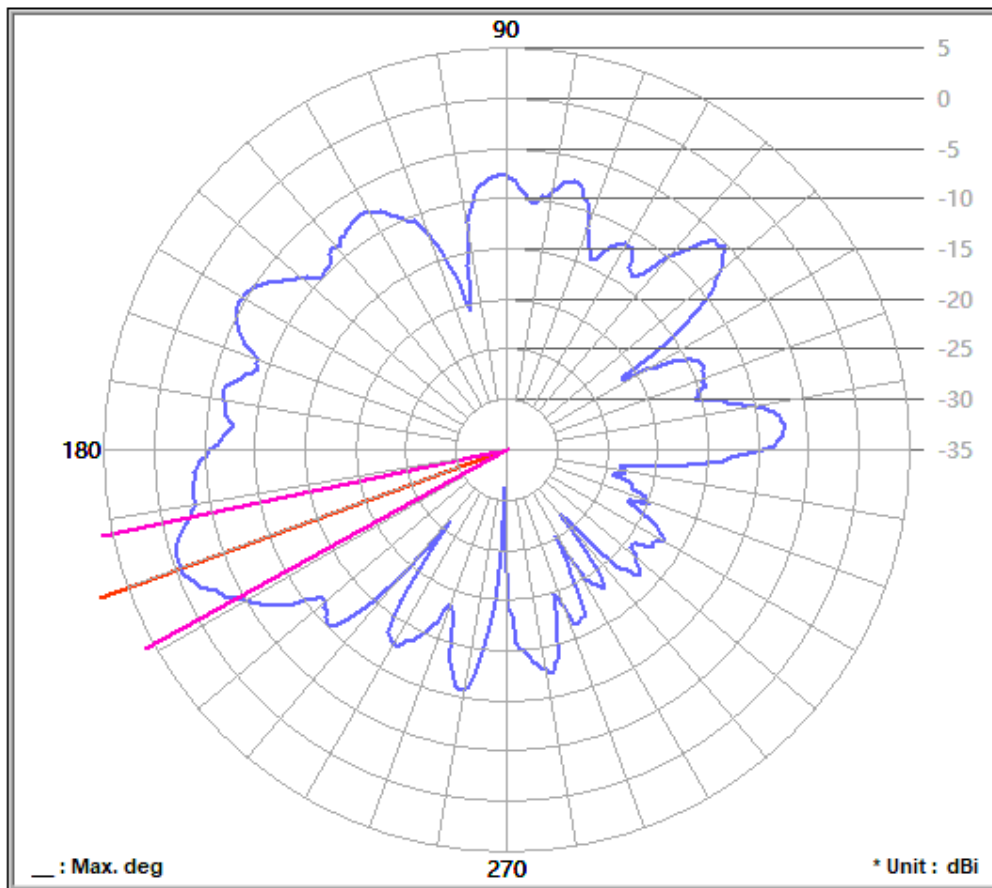
(at the 3 dB down)

Frequency: 2480 MHz (Vertical)

Location : RF Chamber

Date: 2022/12/13

Time: 18:59:56



Frequency (MHz) : 2480.00

Polarity : Vertical

Average Gain (dB) : -8.97

Max. Gain (dB) : -0.49

Max. Gain (degree) : 200

Beamwidth Degree : 17

Mini. Gain (dB) : -31.17

Mini. Gain (degree) : 268

(at the 3 dB down)

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

