



# ANTENNA TEST REPORT

Applicant	Twin-Star International Inc.
Address	12/F Taiwanese Trade Association Building, De Zheng Road, ChangAn Town, Dongguan City, China

Manufacturer or Supplier	Twin-Star International Inc.
Address	12/F Taiwanese Trade Association Building, De Zheng Road, ChangAn Town, Dongguan City, China
Product	Antenna
Brand Name	N/A
Model	PLAN-1
Max. Peak Gain	-1.95 dBi
Date of tests	Apr. 09, 2024

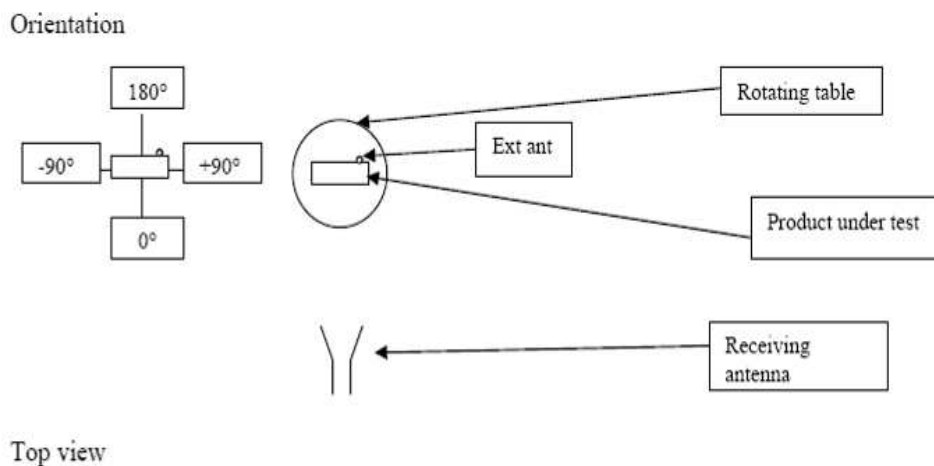
Tested by Andy Zhu Supervisor / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	 Date: Apr. 11, 2024

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## 1. MEASUREMENTS SETUP



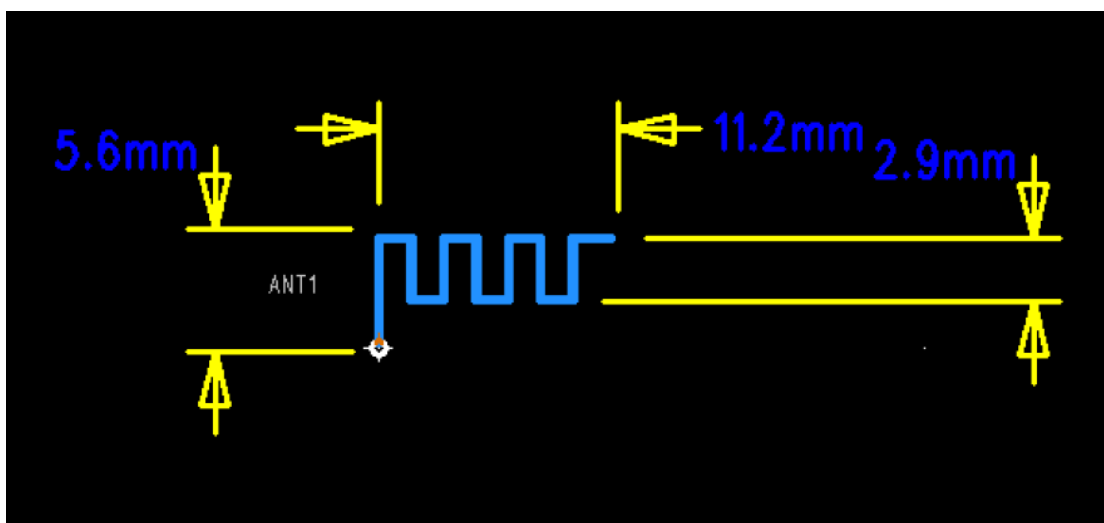
### 1.1 TEST PROCEDURE

- The EUT was placed on the rotating table 1.5 meters above the ground at a Fully Anechoic Room, the table was rotated 360 degrees.
- The EUT was set 3 meters away from the receiving antenna, which was mounted on the top of a antenna tower.
- The antenna is 1.5 meters above the ground. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position.

## 2. MEASUREMENT UNCERTAINTY

Expanded Uncertainty for Measurement (k=2 or 95% confidence level) at Passive antenna test over frequency range 1000MHz-6000MHz is +/- 1.86dB.

## 3. SIZE OF THE ANTENNA



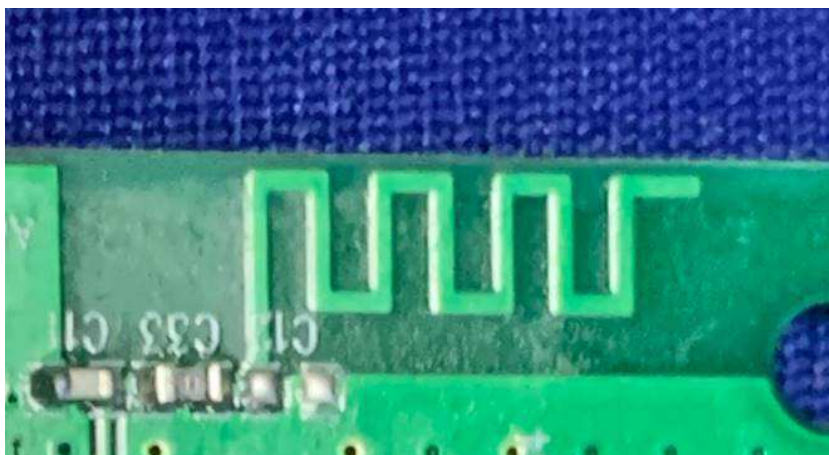
## 4. TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Signal Generator	Agilent	N5183A	MY50140980	Jul. 11, 24
Spectrum Analyzer	Rohde&Schwarz	FSV40	101003	Jan. 01, 25
Broad-Band Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1247	Apr. 02, 25
Broad-Band Horn Antenna	SCHWARZBECK	BBHA 9120 B	00740	Jul. 20, 24
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

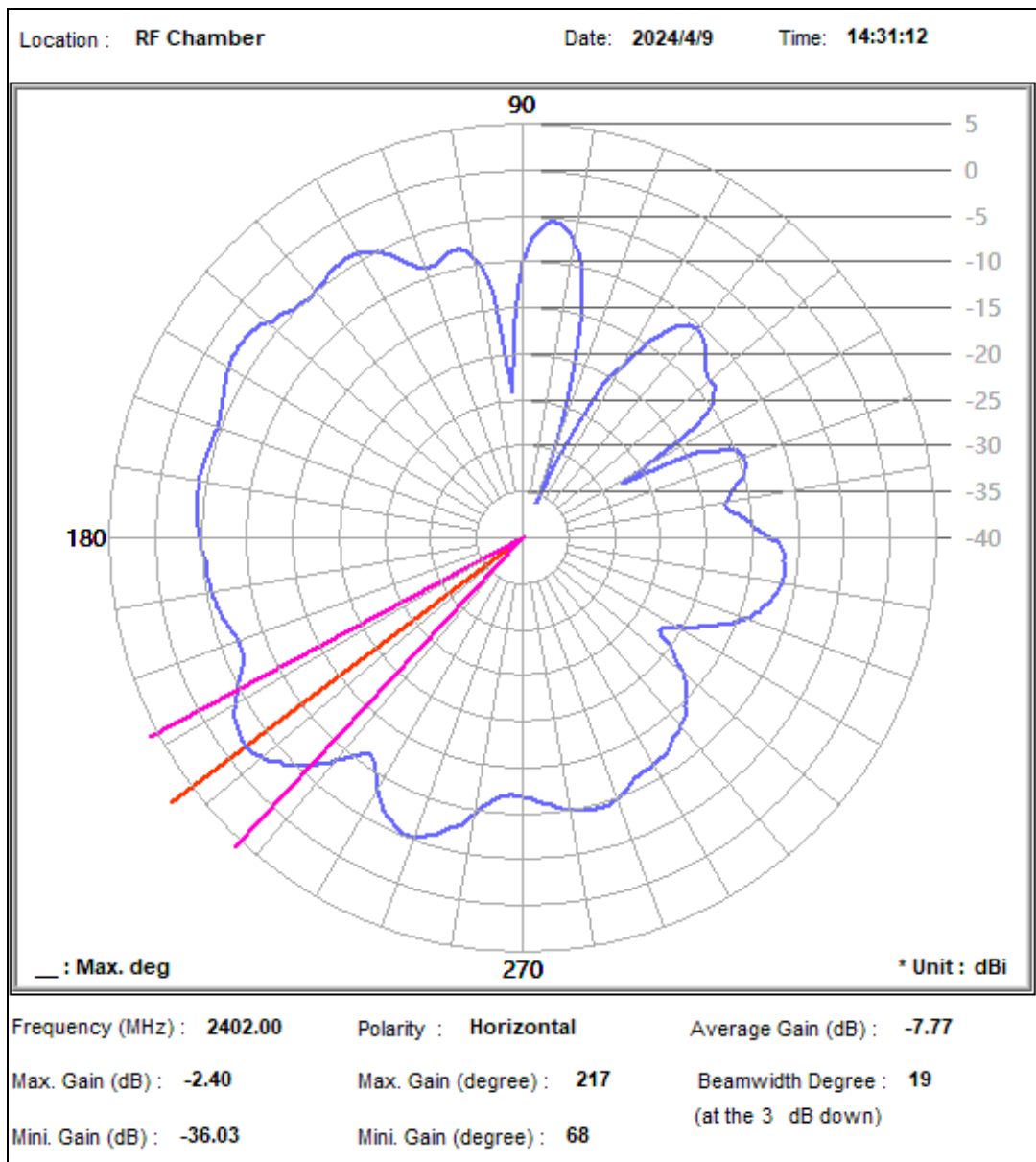
- NOTE:**
1. The test was performed in Fully Anechoic Room.
  2. Equipment are calibrated by calibration laboratory accredited to ISO/IEC 17025 by a mutually recognized Accreditation.
  3. Test Lab Address: No. 96, Guantai Road (Houjie Section), Houjie Town, Dongguan City, Guangdong Province. 523942. People's Republic of China.

## 5. TEST RESULTS

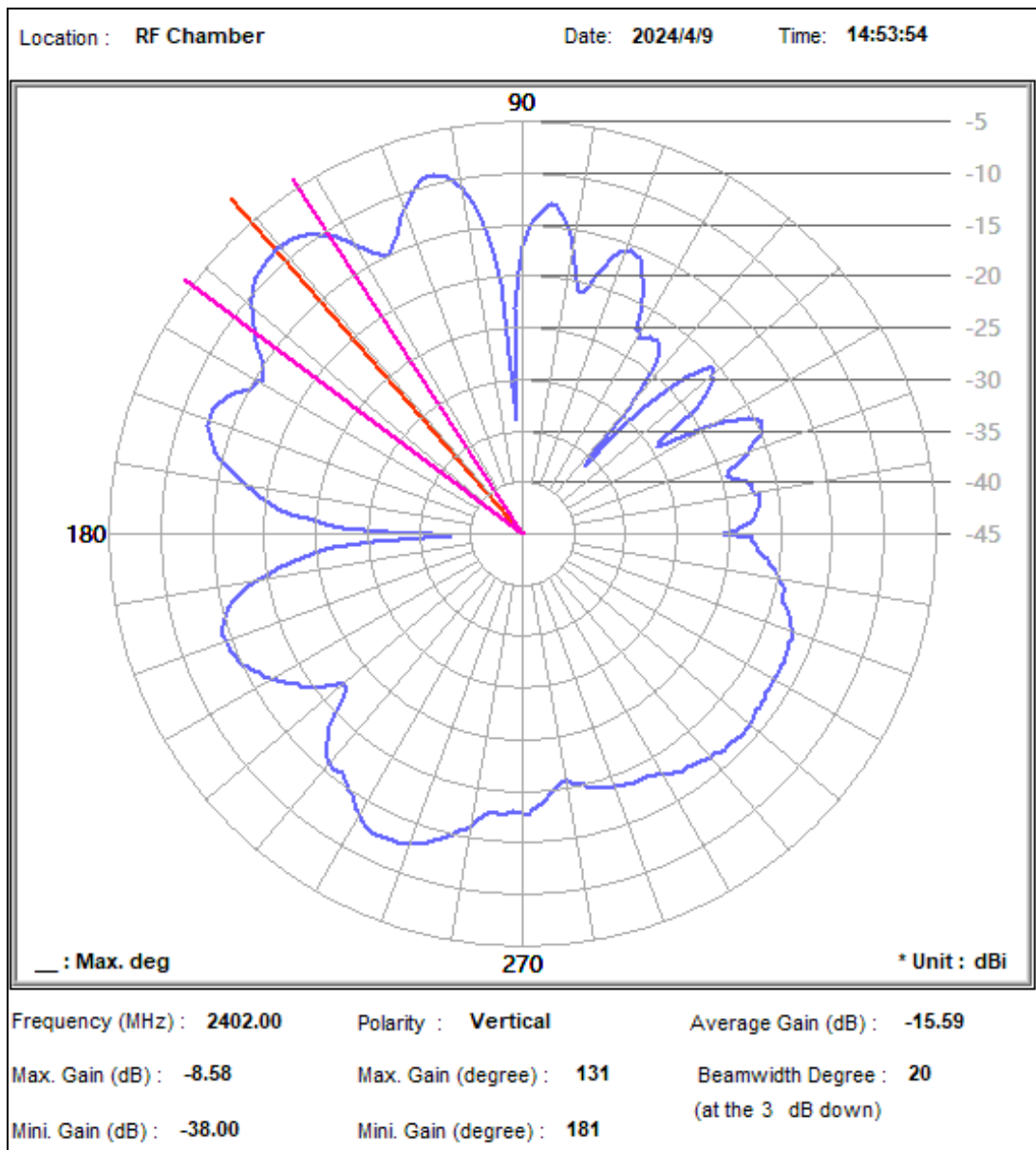
ANTENNA	FREQUENCY (MHz)	ANTENNA POLARITY	MAX. PEAK GAIN (dBi)
PCB	2402	Horizontal	-2.40
		Vertical	-8.58
	2440	Horizontal	<b>-1.95</b>
		Vertical	-7.54
	2480	Horizontal	-2.00
		Vertical	-7.68



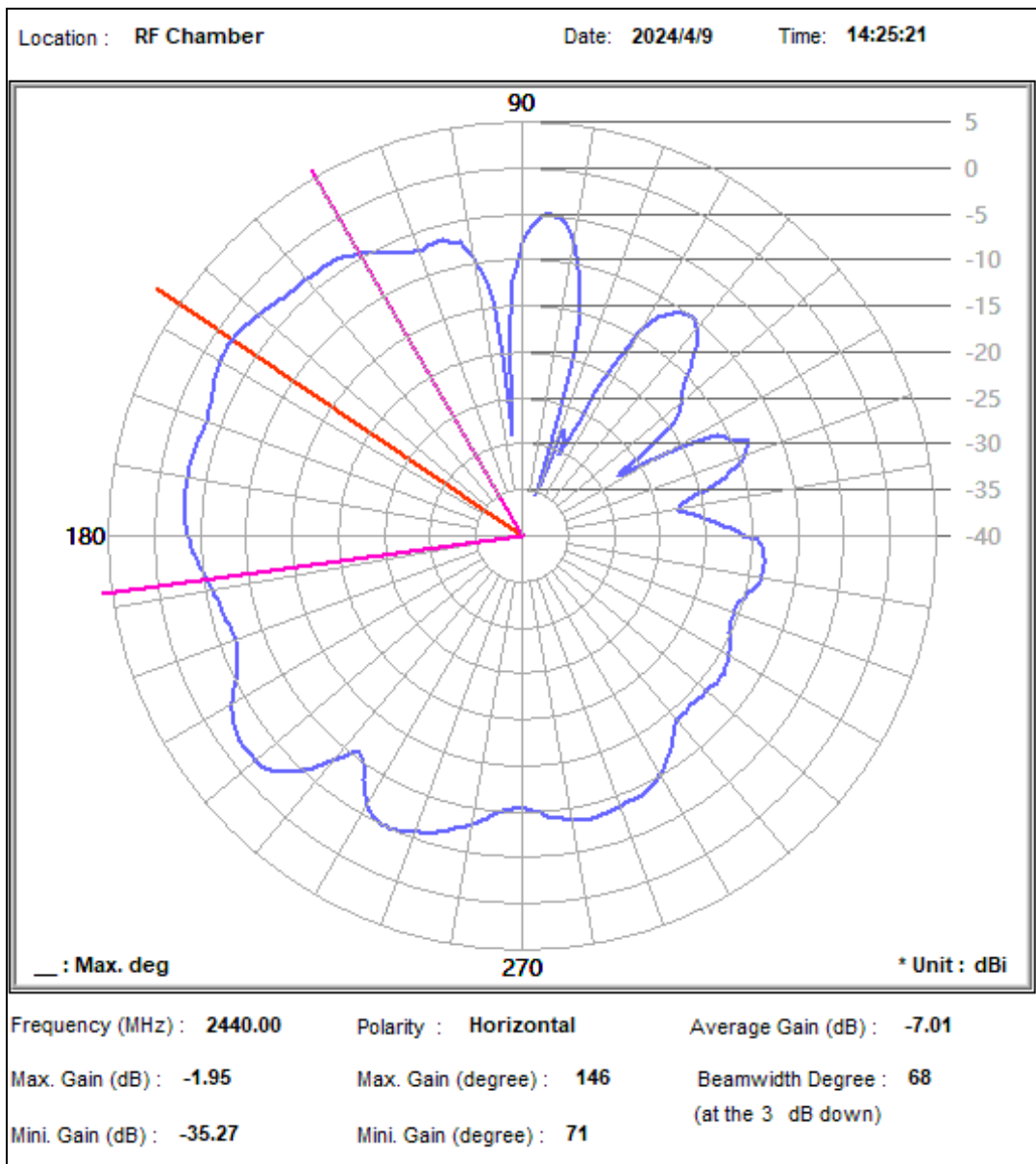
**Frequency: 2402 MHz (Horizontal)**



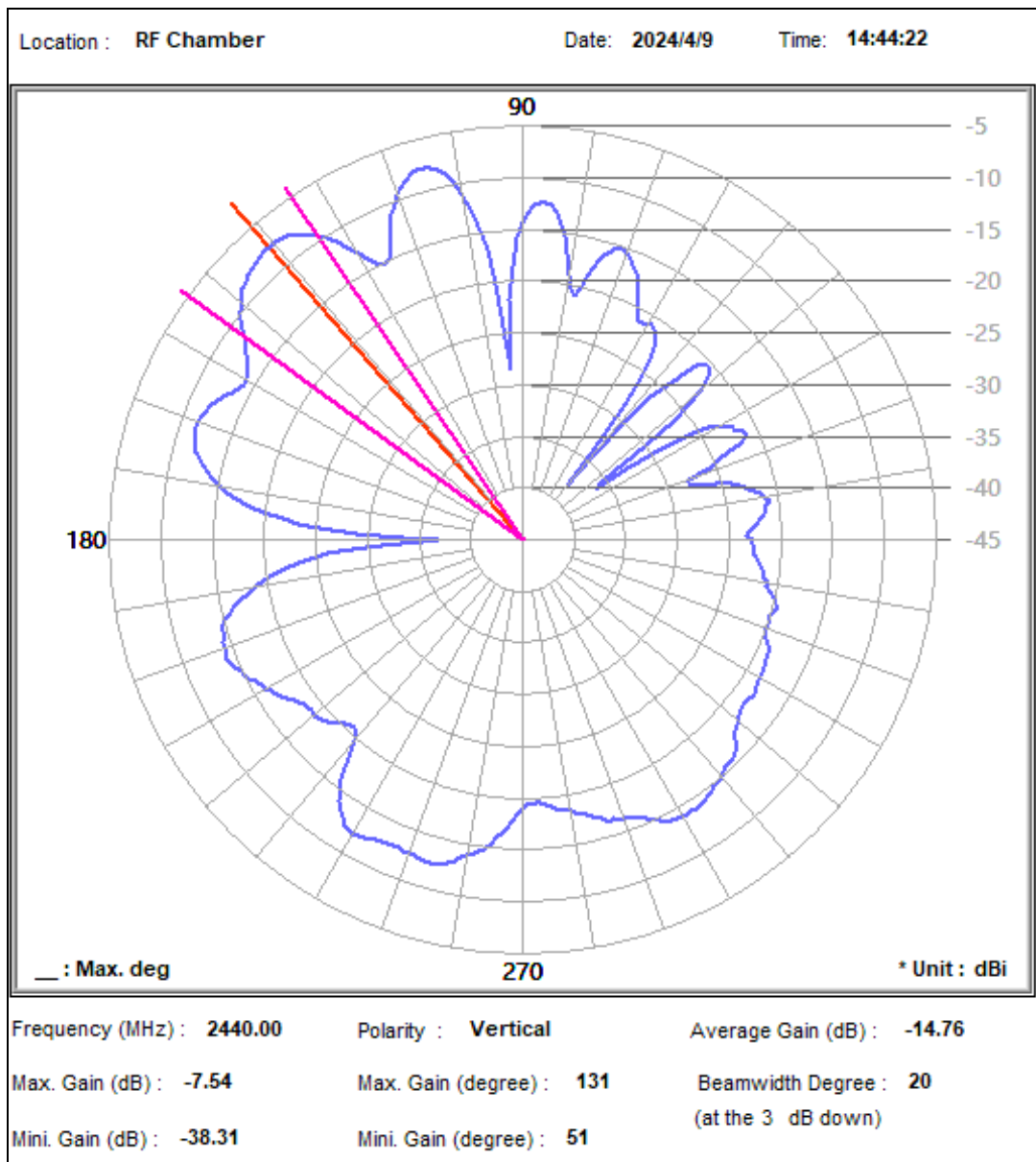
**Frequency: 2402 MHz (Vertical)**



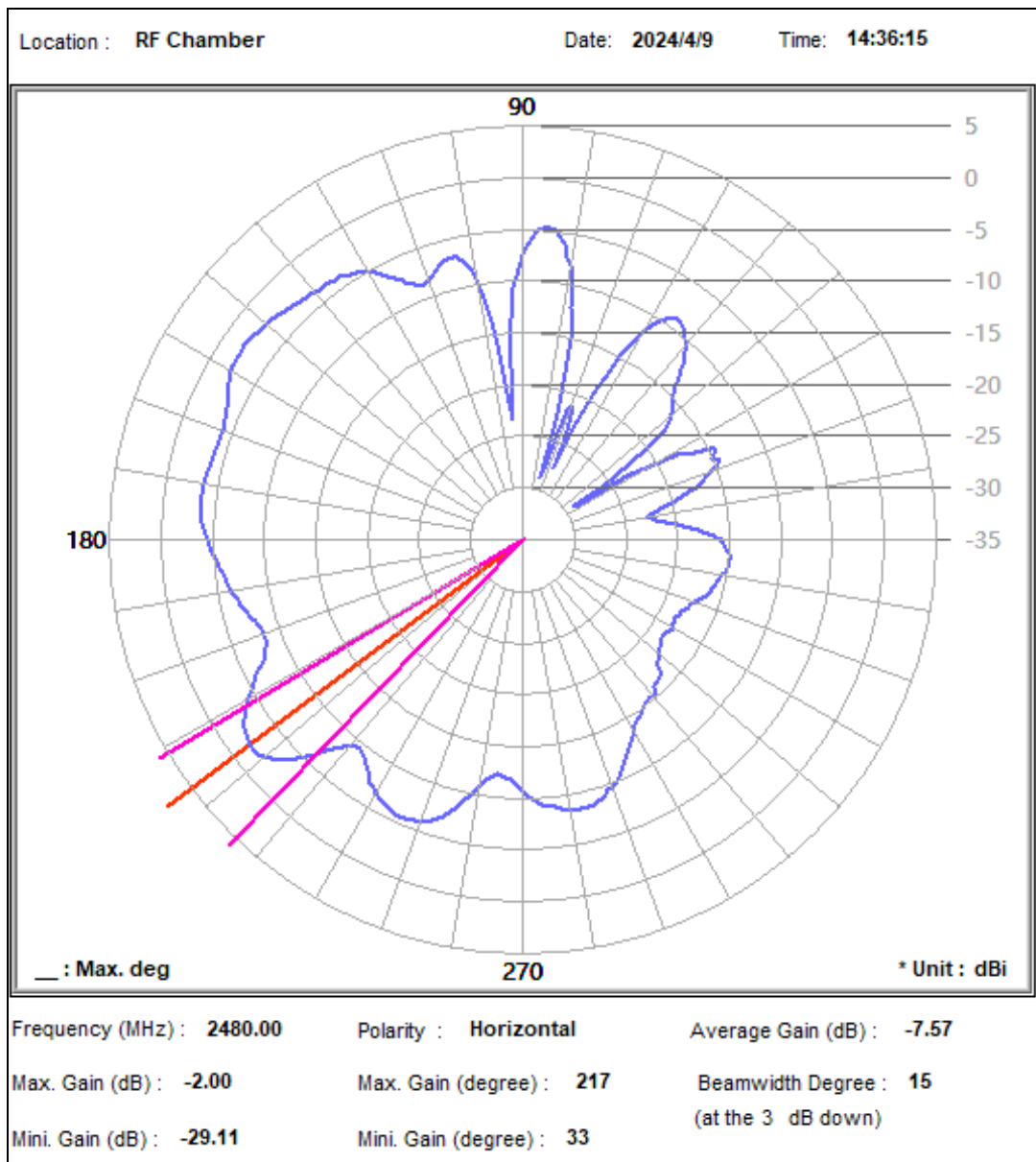
Frequency: 2440 MHz (Horizontal)



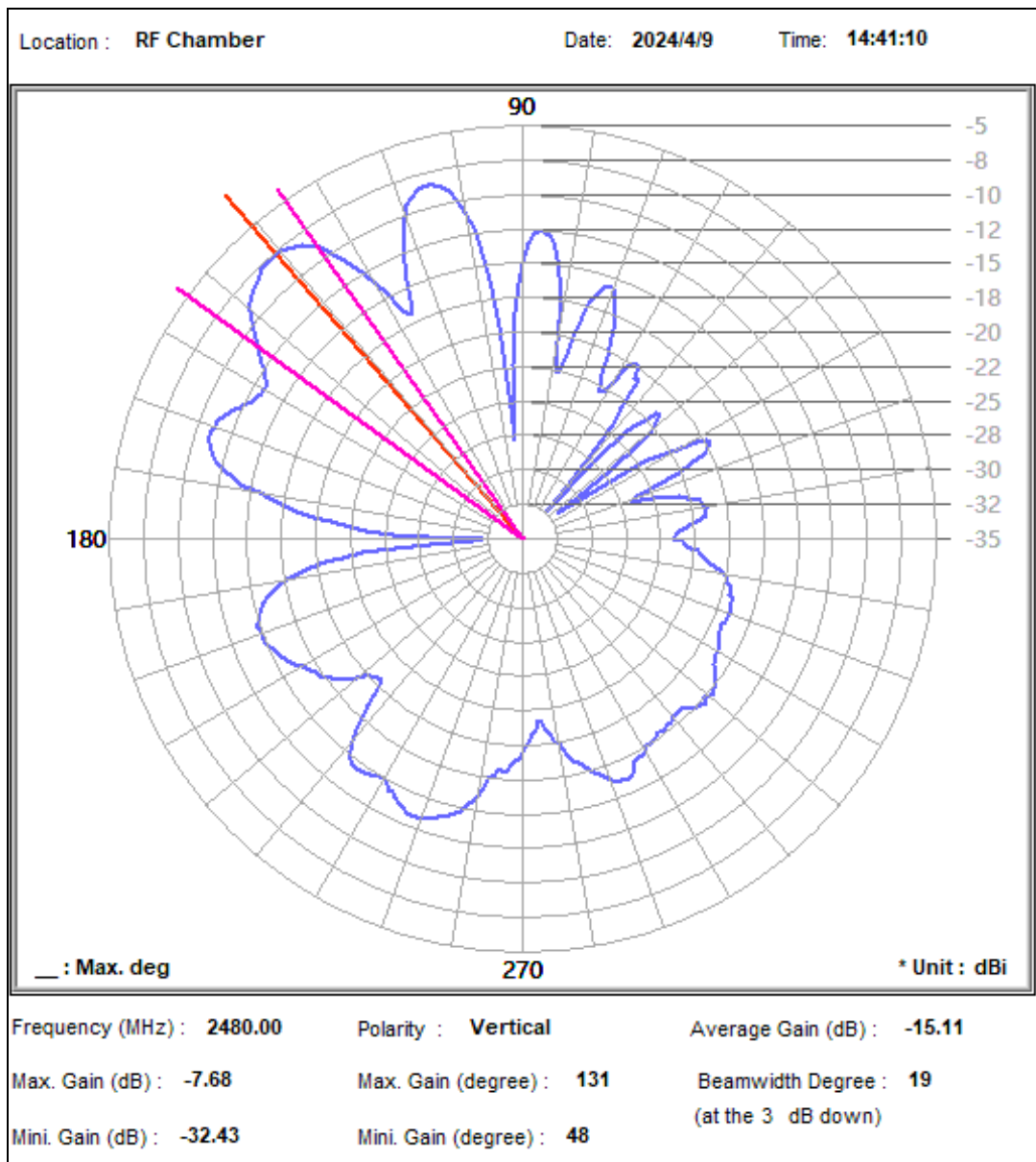
Frequency: 2440 MHz (Vertical)



Frequency: 2480 MHz (Horizontal)



Frequency: 2480 MHz (Vertical)



## 6. PHOTOGRAPHS OF THE TEST CONFIGURATION

