



REPORT No.: SZ22020215E01

TEST REPORT

APPLICANT : Guangzhou Universal Electronics Service Co.,Ltd.

PRODUCT NAME : Cove Relay Pack 230VAC 277VAC 2021

MODEL NAME : i

TRADE NAME : N/A

BRAND NAME : N/A

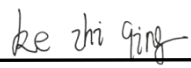
STANDARD(S) : ANSI/IEEE Std 149-2008

RECEIPT DATE : 2022-02-21

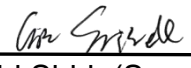
TEST DATE : 2022-02-21

ISSUE DATE : 2022-02-25

Edited by:


Ke Zhiqing(Rapporteur)

Approved by:


Chi Shide(Supervisor)

NOTE: This document is issued by Shenzhen Morlab Communications Technology Co., Ltd., the test report shall not be reproduced except in full without prior written permission of the company. The test results apply only to the particular sample(s) tested and to the specific tests carried out which is available on request for validation and information confirmed at our website.



Shenzhen Morlab Communications Technology Co., Ltd., FL1-3, Building A,
FeiYang Science Park, No.8 LongChang Road,Block67, BaoAn District,
ShenZhen , GuangDong Province, P. R. China

Tel: 86-755-36698555
Http://www.morlab.cn

Fax: 86-755-36698525
E-mail: service@morlab.cn





DIRECTORY

1. Technical Information.....	3
1.1. Applicant and Manufacturer Information.....	3
1.2. Equipment Under Test (EUT) Description.....	3
2. Test Results.....	4
2.1. Applied Reference Documents.....	4
2.2. Test Conditions.....	4
2.3. Test Results lists.....	4
Annex A Photographs.....	6
Annex B Figures.....	7
1. 2D Radiation Pattern.....	7
2. 3D Radiation Pattern.....	17
Annex C Photographs.....	23
Annex D General Information.....	32
1.1 Identification of the Responsible Testing Laboratory.....	32
1.2 Identification of the Responsible Testing Location.....	32
1.3 Test Equipments Utilized.....	32

Change History		
Version	Date	Reason for change
1.0	2022-02-25	First edition



1. Technical Information

Note: Provide by manufacturer.

1.1. Applicant and Manufacturer Information

Applicant:	Guangzhou Universal Electronics Service Co.,Ltd.
Applicant Address:	18th Floor, Building No.1 of Tower 4, Hailunbao Creative Park, Yushan Road, Shatou Street, Panyu District, Guangzhou
Manufacturer:	N/A
Manufacturer Address:	N/A

1.2. Equipment Under Test (EUT) Description

Wireless Type	Bluetooth
Frequency	2402MHz-2480MHz
IMEI	N/A
Sample No.	1#&2#

2. Test Results

2.1. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	ANSI/IEEE Std 149-2008	IEEE Standard Test Procedures for Antennas

2.2. Test Conditions

Test Environment Conditions:

Relative Humidity:	25 ... 75 %
Temperature:	+10 °C to +30 °C

2.3. Test Results lists

2.3.1. Gain and Efficiency

Frequency(MHz)	Gain(dBi)		Efficiency(%)		Efficiency(dB)	
	1#_ANT1	1#_ANT2	1#_ANT1	1#_ANT2	1#_ANT1	1#_ANT2
2400	2.34	1.89	65.80	56.30	-1.82	-2.49
2402	2.38	1.89	66.39	56.83	-1.78	-2.45
2405	2.39	1.91	66.63	56.93	-1.76	-2.45
2410	2.37	1.86	65.91	56.24	-1.81	-2.50
2415	2.23	1.76	63.81	54.52	-1.95	-2.63
2420	2.29	1.79	64.43	54.95	-1.91	-2.60
2425	2.29	1.82	64.12	54.75	-1.93	-2.62
2430	2.35	1.84	63.95	54.85	-1.94	-2.61
2435	2.50	1.97	64.68	55.53	-1.89	-2.55
2440	2.70	2.08	66.21	57.08	-1.79	-2.44
2445	2.78	2.09	66.57	57.56	-1.77	-2.40
2450	2.90	2.20	67.61	58.74	-1.70	-2.31
2455	3.03	2.20	68.66	59.64	-1.63	-2.24
2460	3.07	2.19	68.85	59.83	-1.62	-2.23
2465	3.05	2.12	68.57	59.71	-1.64	-2.24

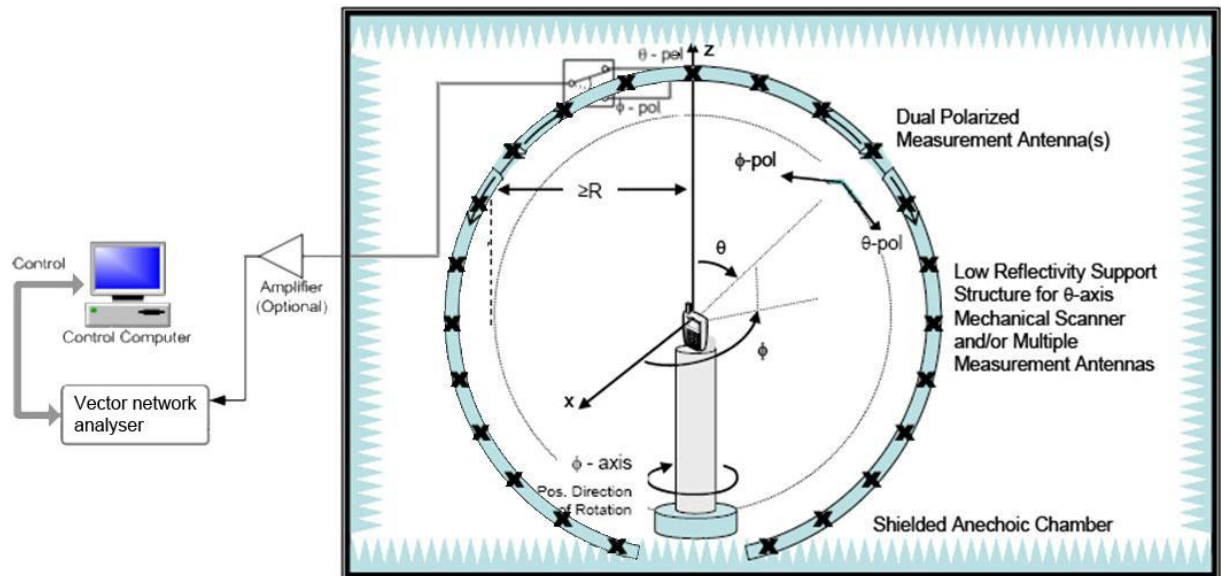


2470	3.03	2.07	67.90	59.07	-1.68	-2.29
2475	3.04	2.05	68.12	59.40	-1.67	-2.26
2480	2.98	1.94	67.36	58.69	-1.72	-2.31
2485	2.96	1.92	66.47	58.04	-1.77	-2.36
2490	3.06	1.96	67.12	58.82	-1.73	-2.30
2495	3.09	1.93	67.47	59.26	-1.71	-2.27
2500	3.17	2.04	68.52	60.61	-1.64	-2.17

Frequency(MHz)	Gain(dBi)		Efficiency(%)		Efficiency(dB)	
	2#_ANT1	2#_ANT2	2#_ANT1	2#_ANT2	2#_ANT1	2#_ANT2
2400	1.95	1.60	63.20	60.14	-1.99	-2.21
2402	1.99	1.63	63.84	60.62	-1.95	-2.17
2405	1.93	1.64	64.05	60.68	-1.94	-2.17
2410	1.87	1.59	63.43	59.82	-1.98	-2.23
2415	1.76	1.44	61.55	57.88	-2.11	-2.37
2420	1.84	1.54	62.29	58.21	-2.06	-2.35
2425	1.87	1.59	62.19	57.74	-2.06	-2.39
2430	1.97	1.64	62.20	57.64	-2.06	-2.39
2435	2.09	1.77	63.08	58.15	-2.00	-2.35
2440	2.29	1.89	64.76	59.48	-1.89	-2.26
2445	2.39	1.94	65.33	59.83	-1.85	-2.23
2450	2.58	2.03	66.58	60.87	-1.77	-2.16
2455	2.63	2.08	67.81	61.71	-1.69	-2.10
2460	2.66	2.06	68.15	61.84	-1.67	-2.09
2465	2.77	1.96	68.09	61.63	-1.67	-2.10
2470	2.66	1.90	67.64	61.00	-1.70	-2.15
2475	2.69	1.87	68.01	61.23	-1.67	-2.13
2480	2.73	1.79	67.35	60.48	-1.72	-2.18
2485	2.66	1.75	66.56	59.80	-1.77	-2.23
2490	2.73	1.80	67.29	60.59	-1.72	-2.18
2495	2.81	1.79	67.55	61.08	-1.70	-2.14
2500	2.96	1.89	68.59	62.56	-1.64	-2.04

Annex A Photographs

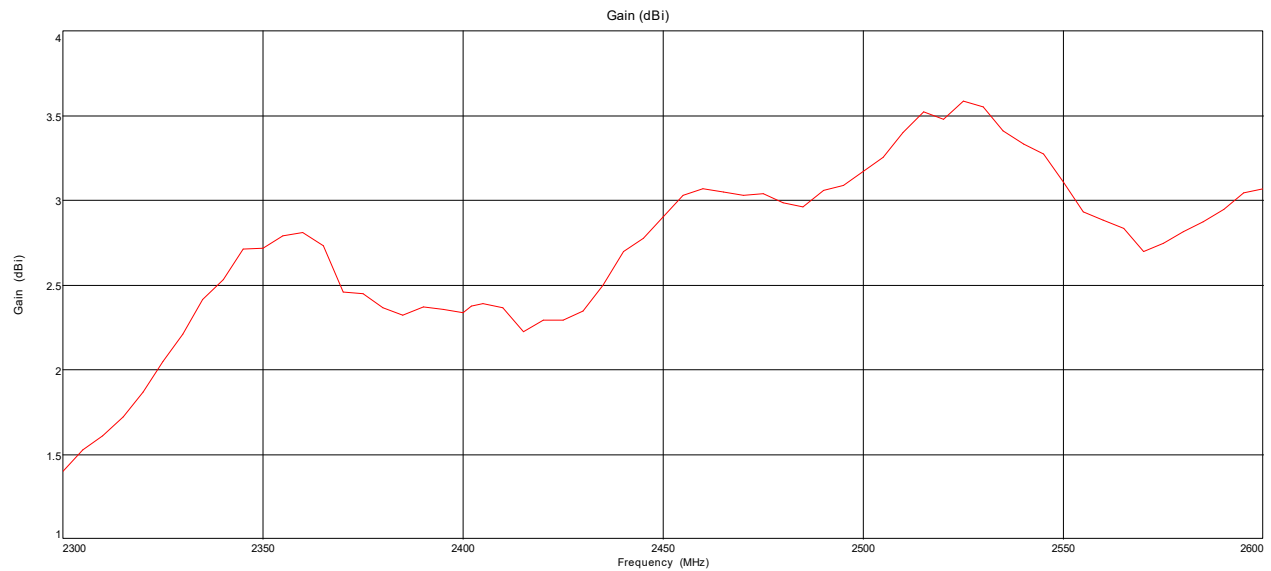
1. Test Setup



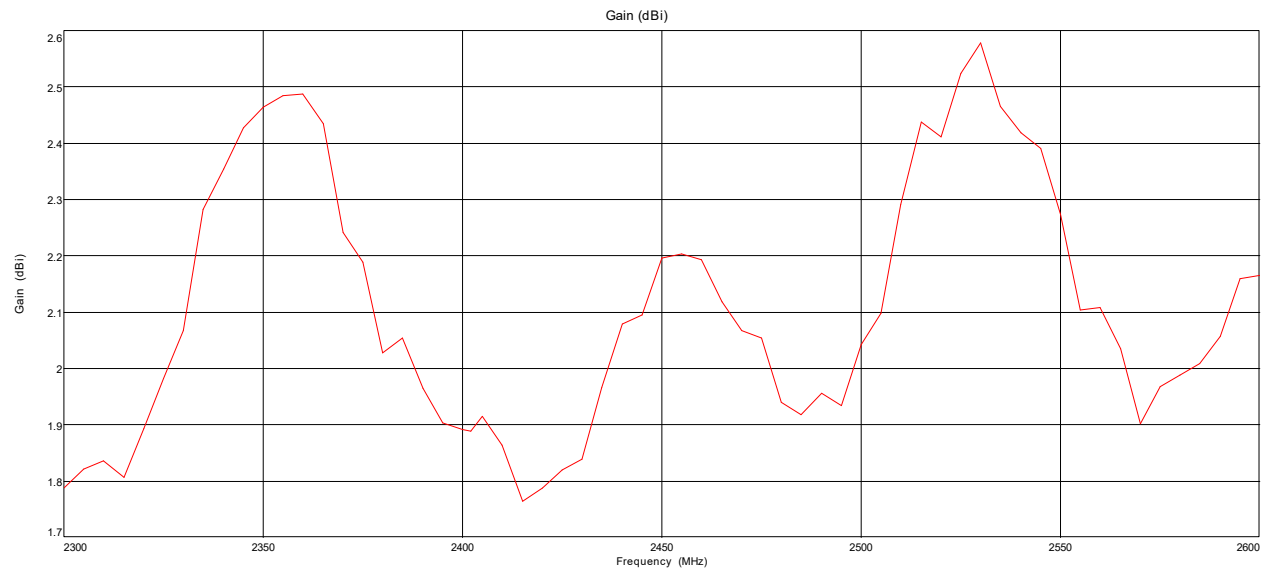
Annex B Figures

1. 2D Radiation Pattern

Gain



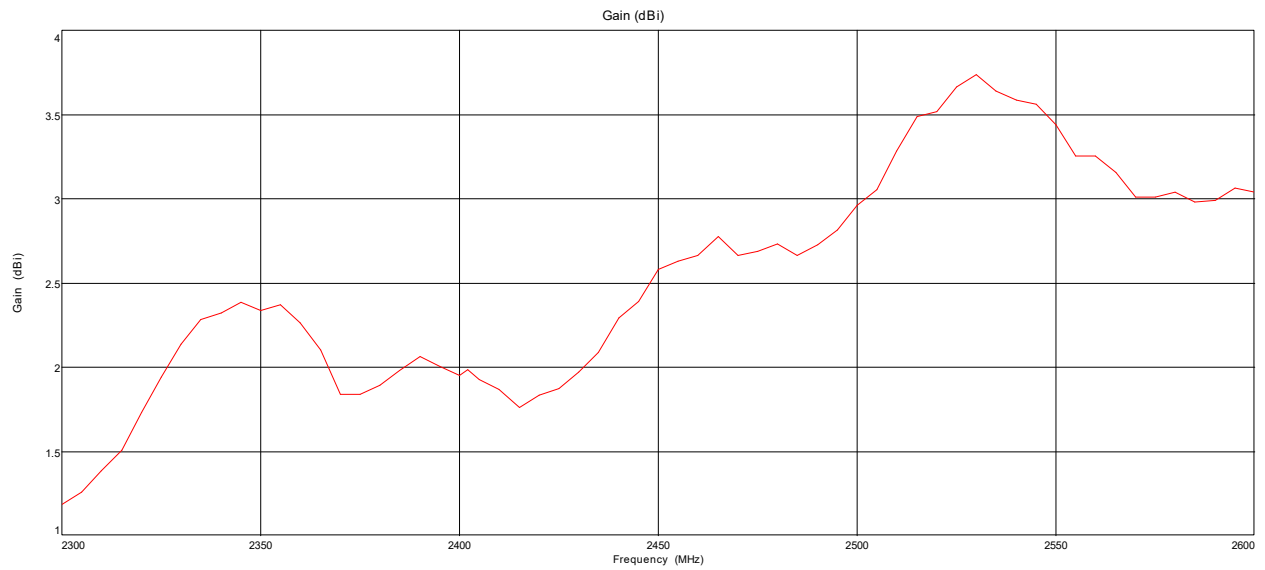
1#_ANT1



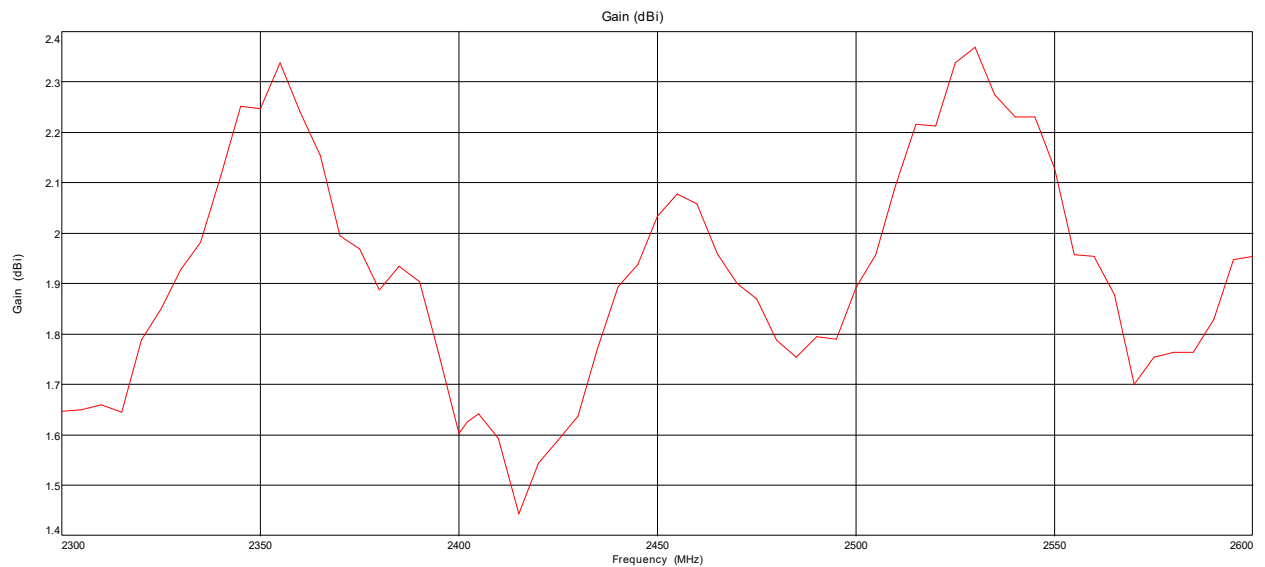
1#_ANT2



REPORT No.: SZ22020215E01



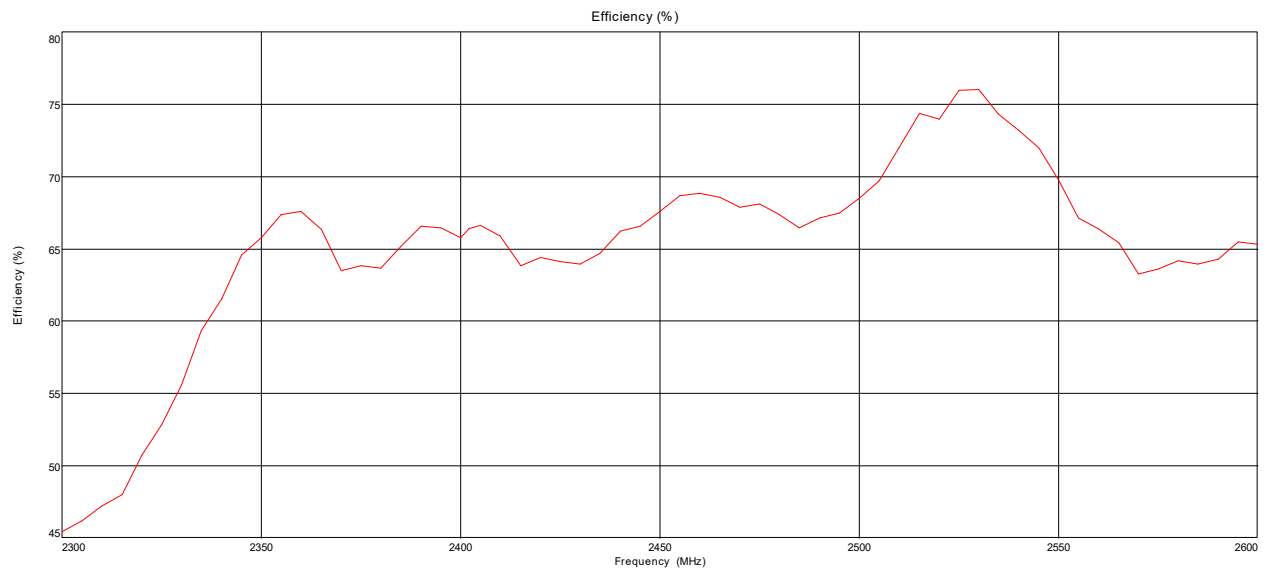
2#_ANT1



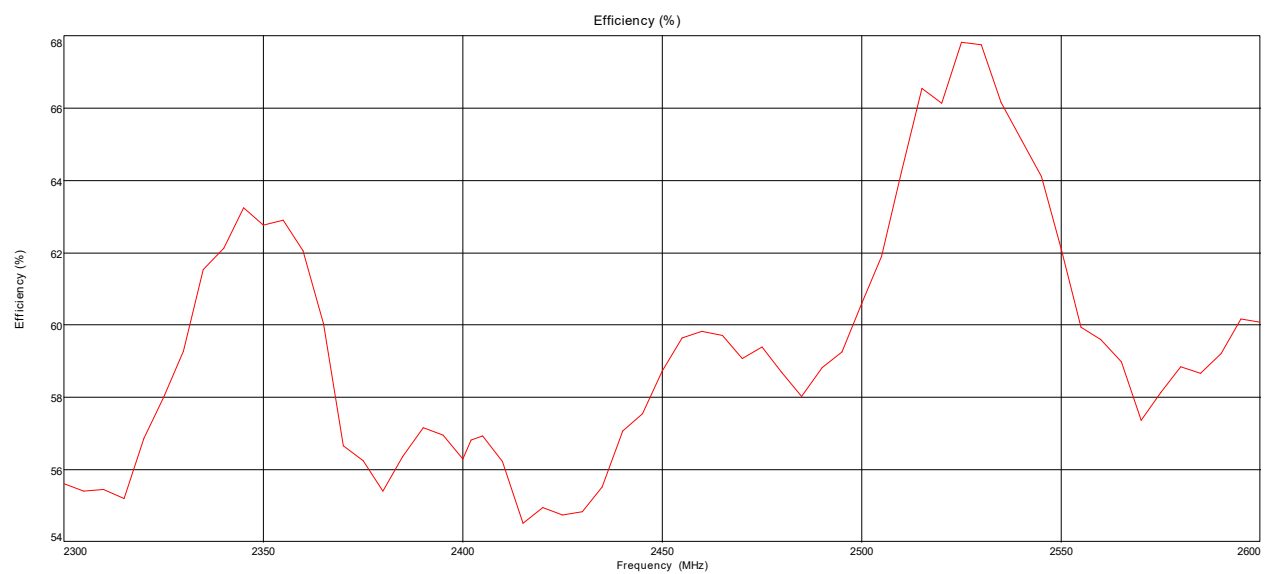
2#_ANT2



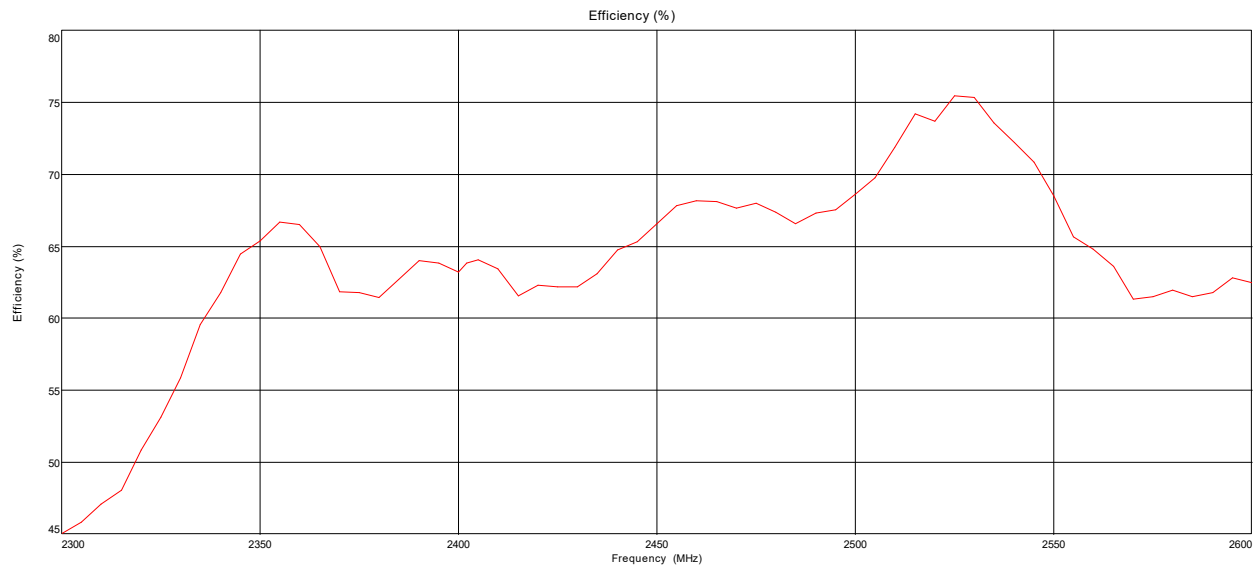
Efficiency



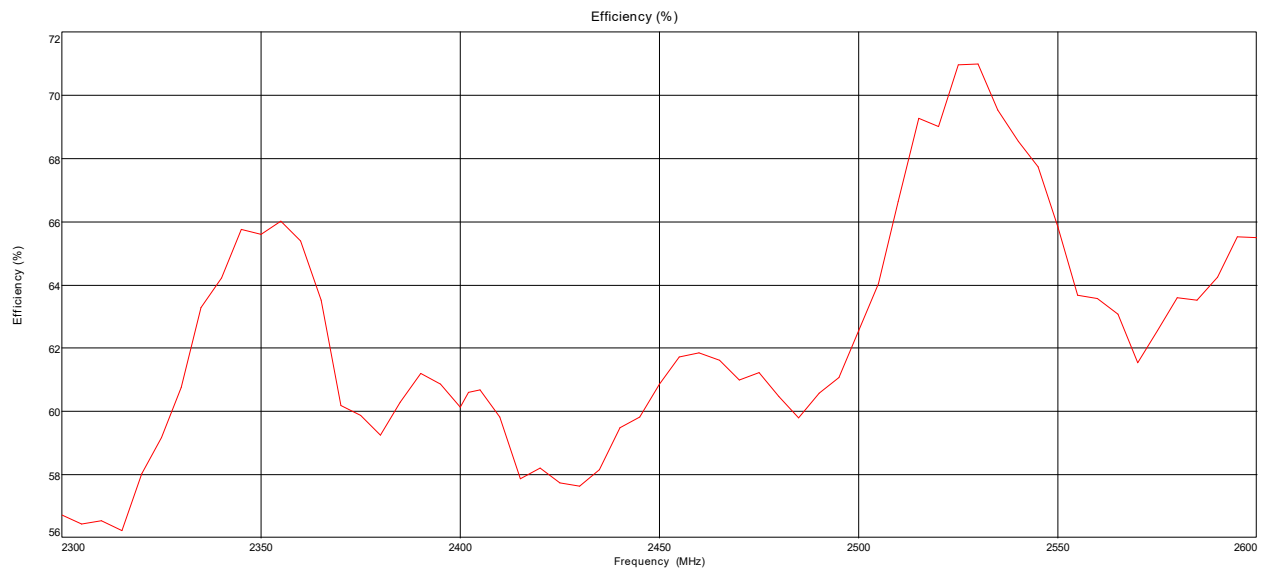
1#_ANT1



1#_ANT2



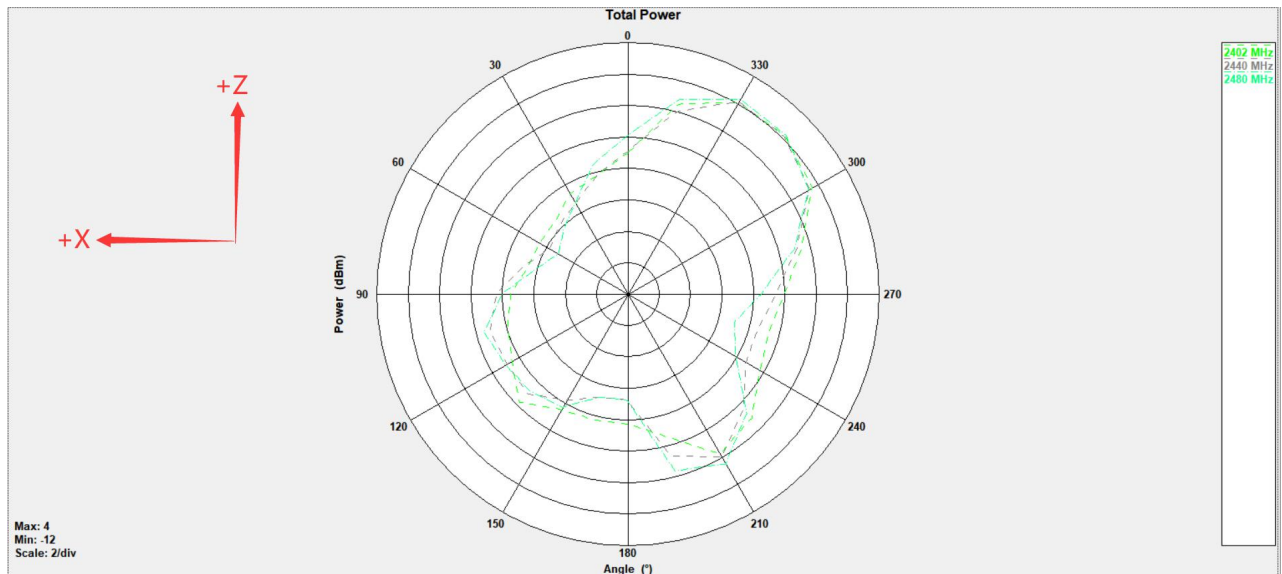
2#_ANT1



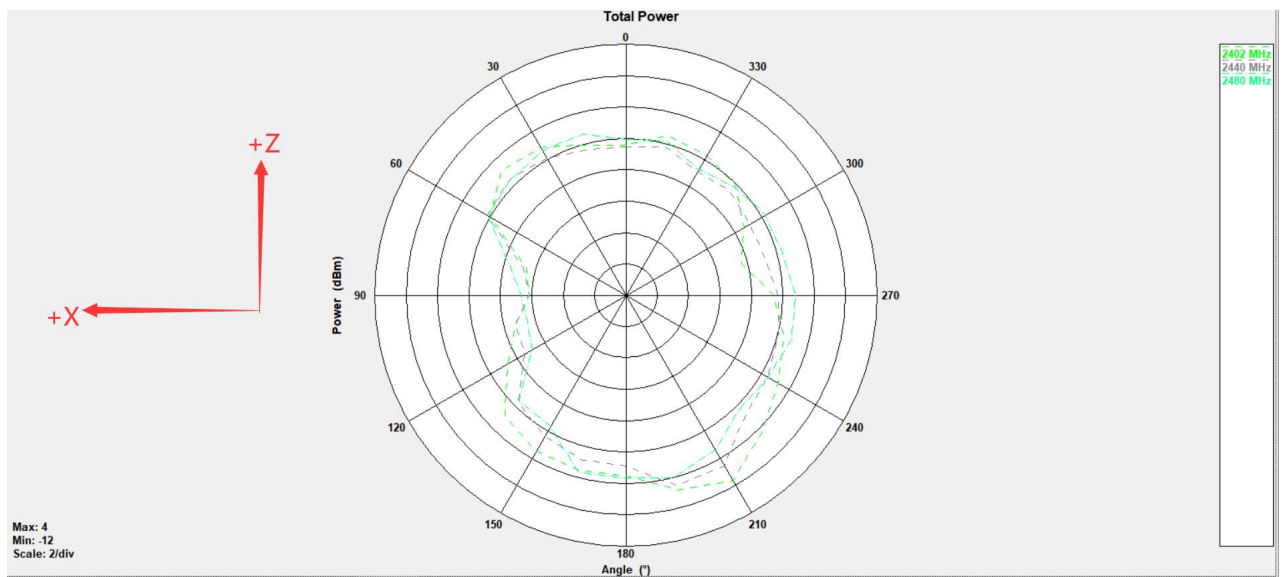
2#_ANT2



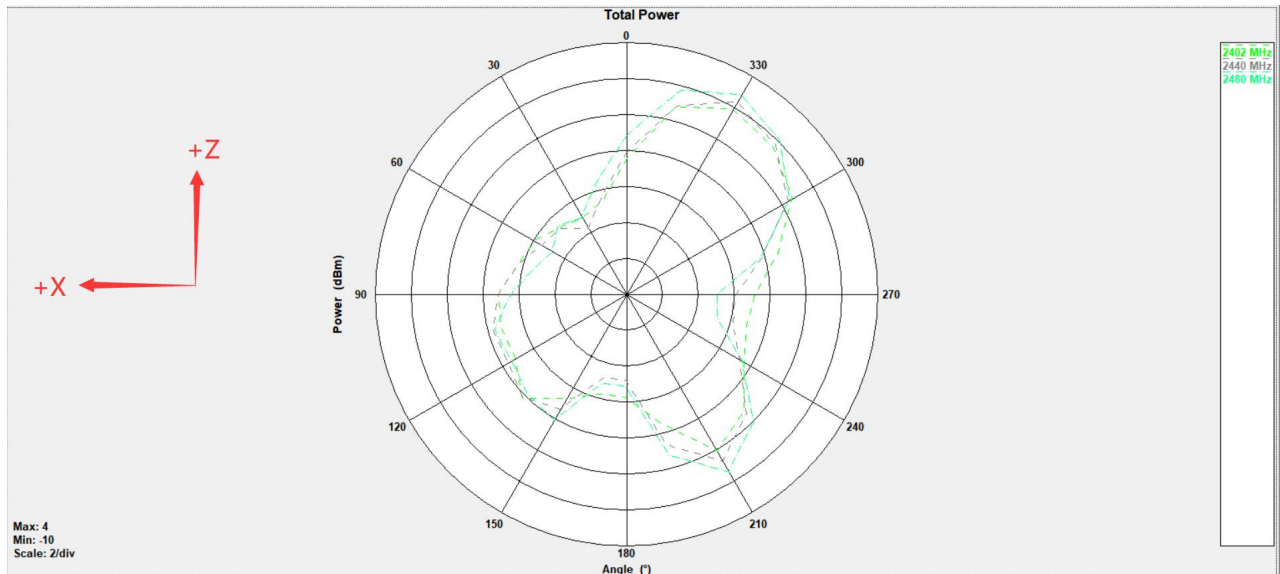
Phi=0°



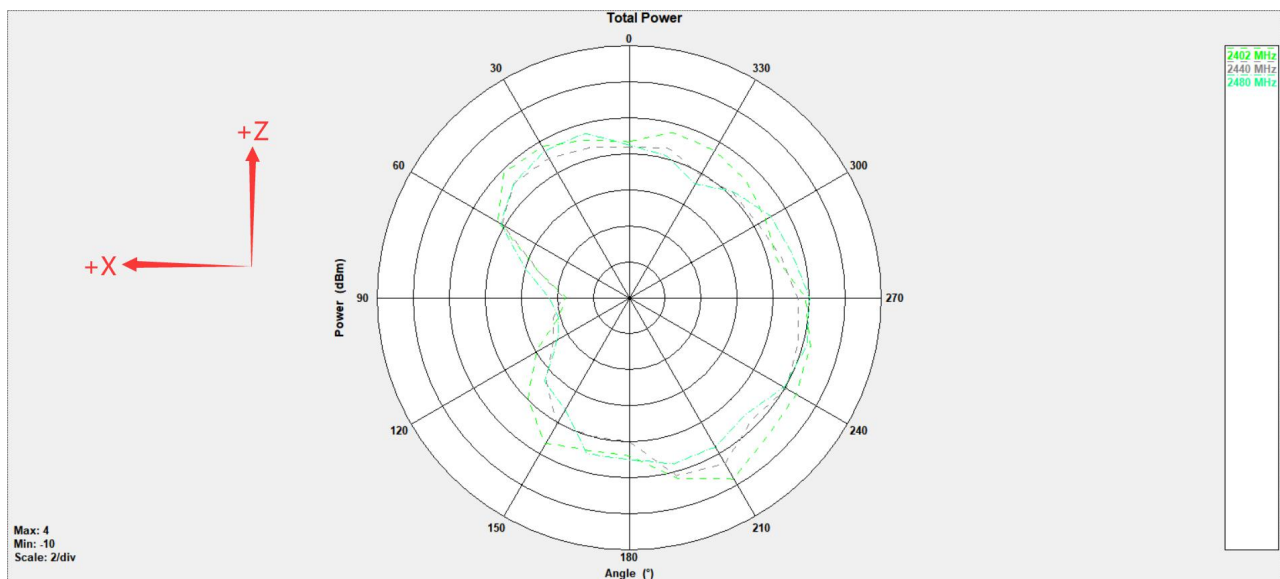
1#_ANT1



1#_ANT2



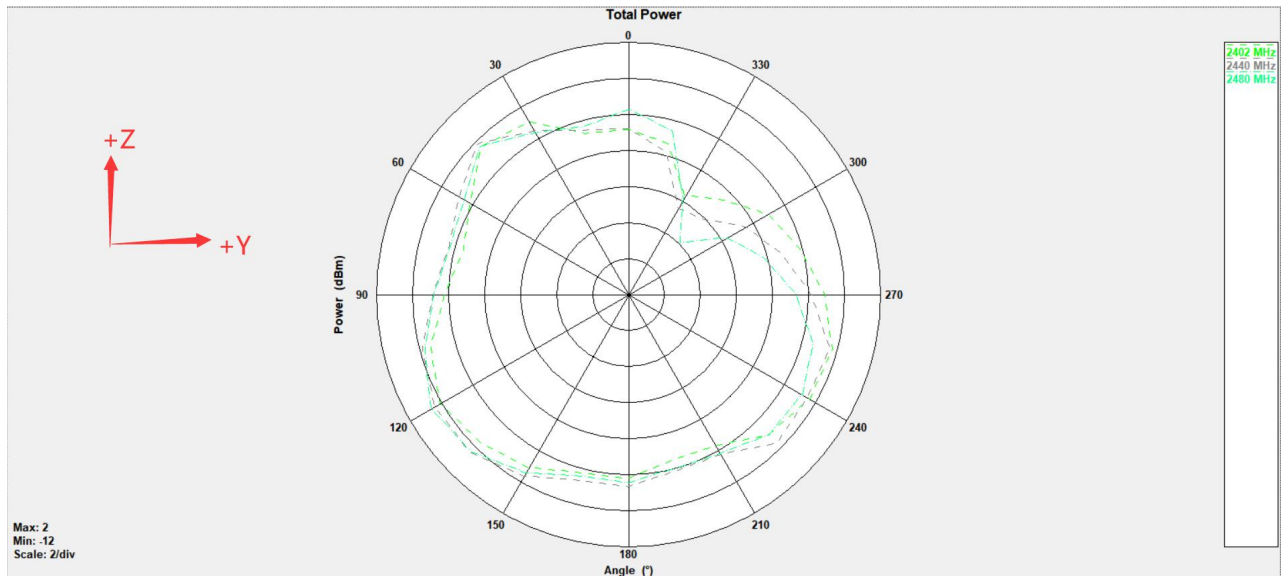
2#_ANT1



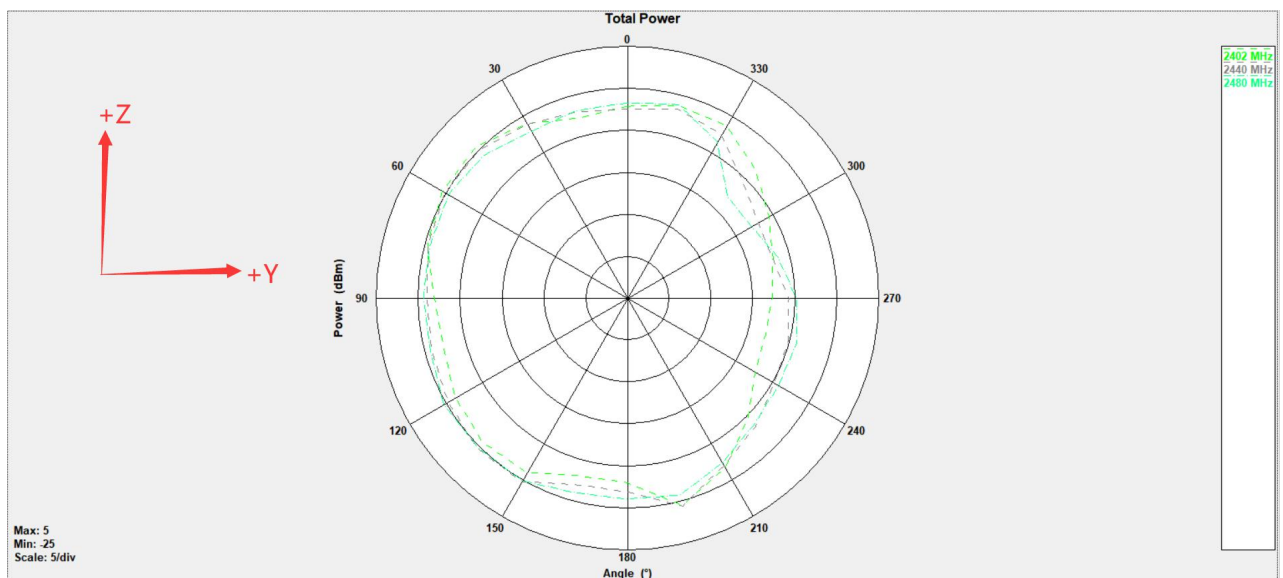
2#_ANT2



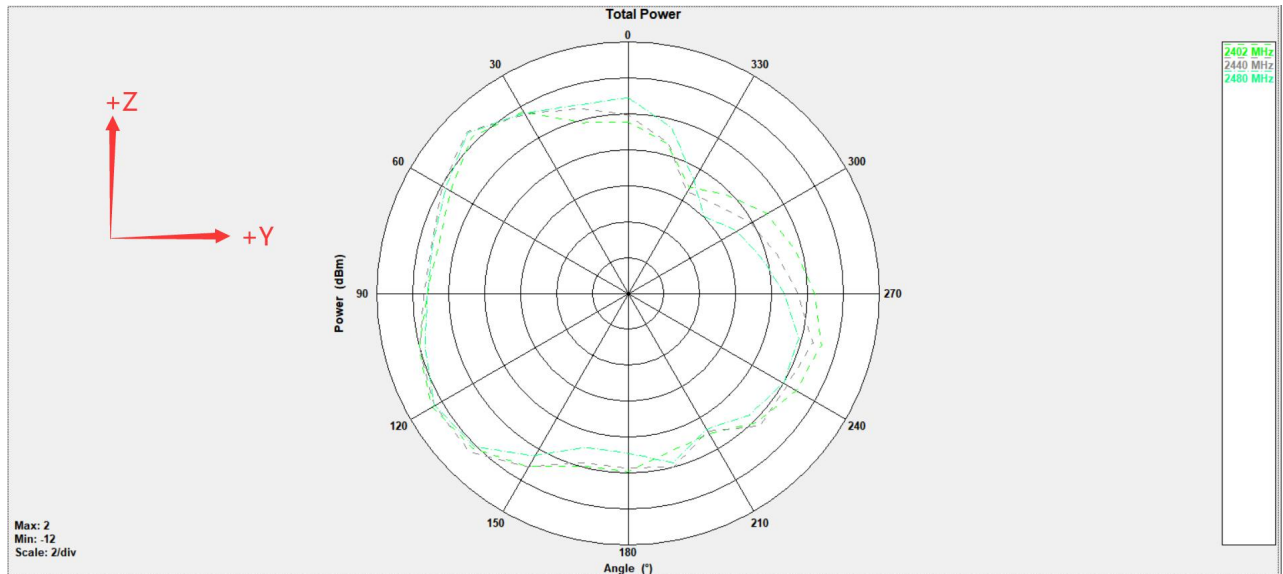
Phi=90°



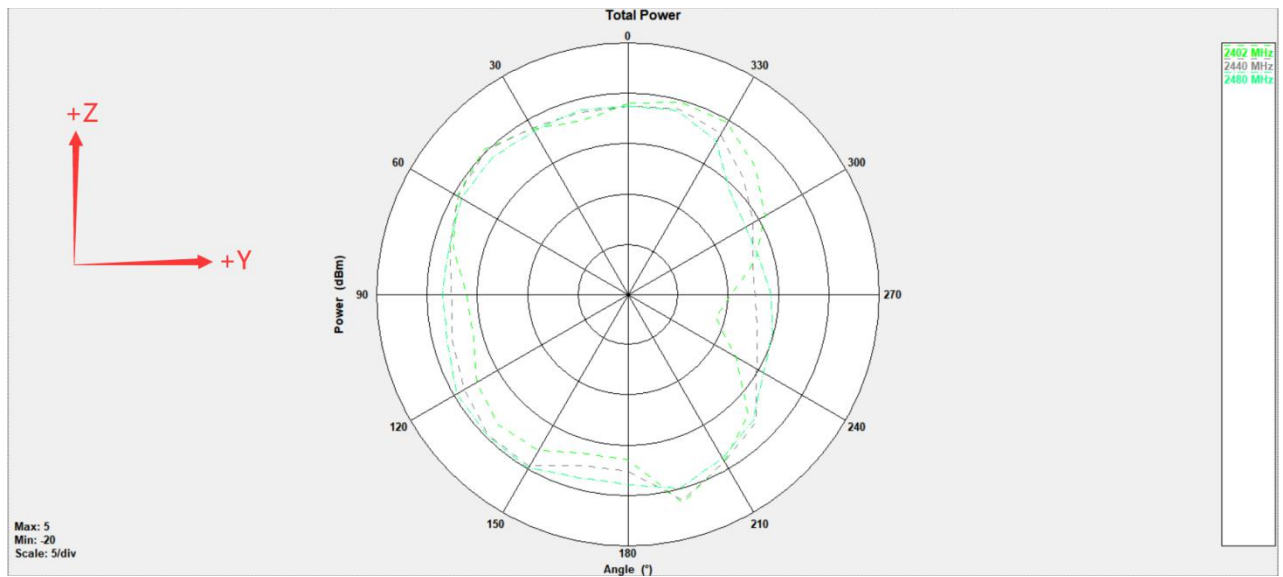
1#_ANT1



1#_ANT2

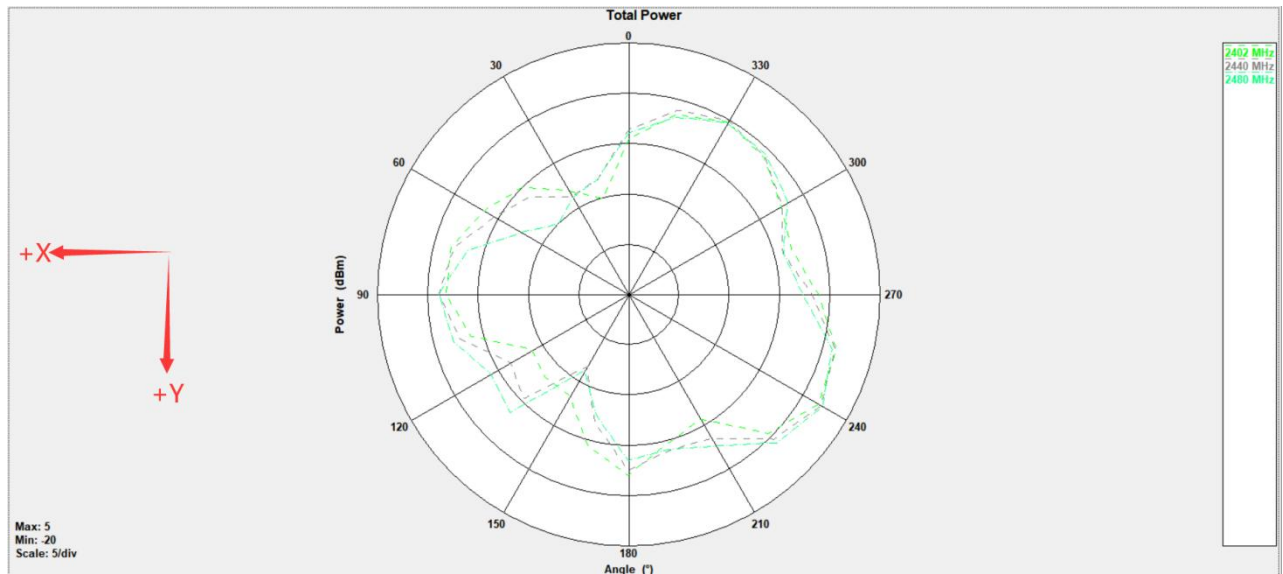


2#_ANT1

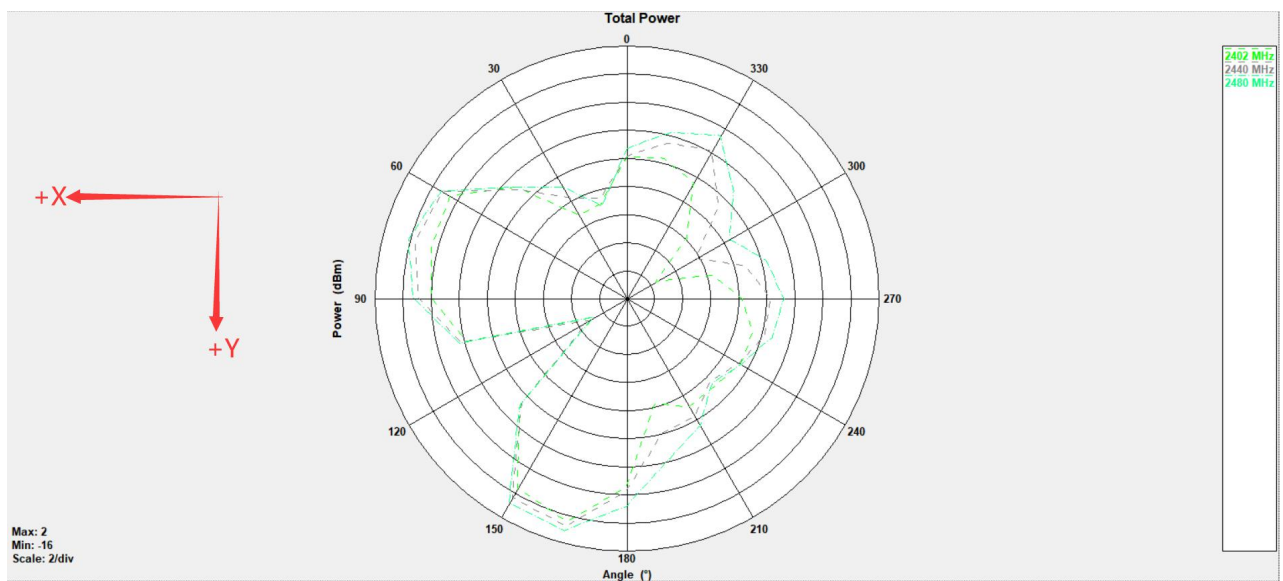


2#_ANT2

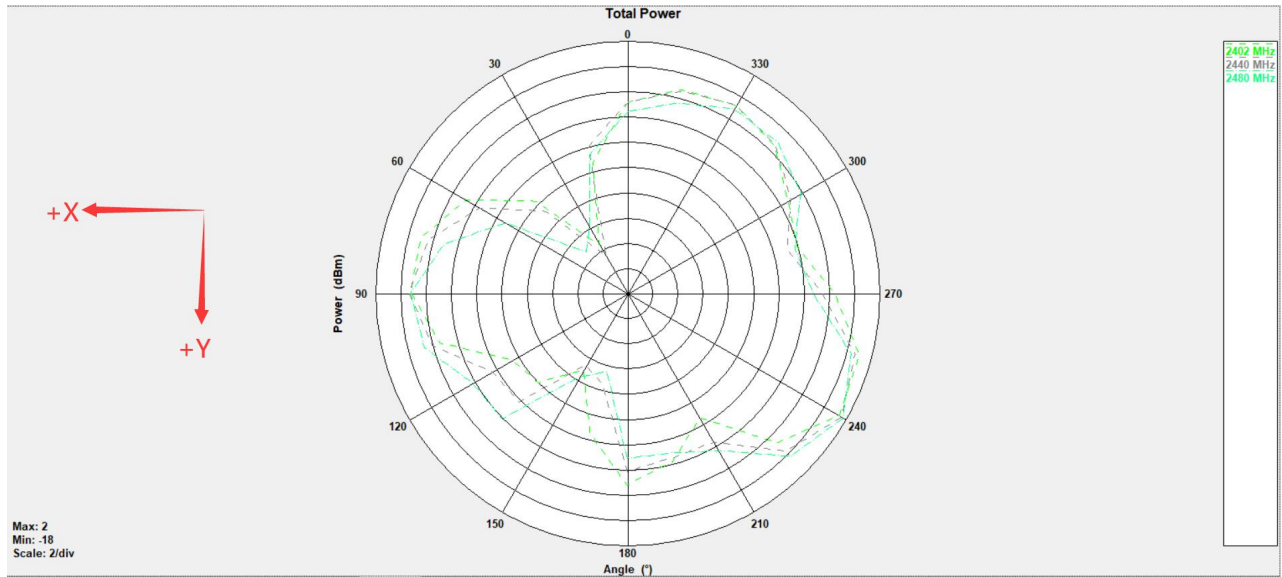
Theta=90°



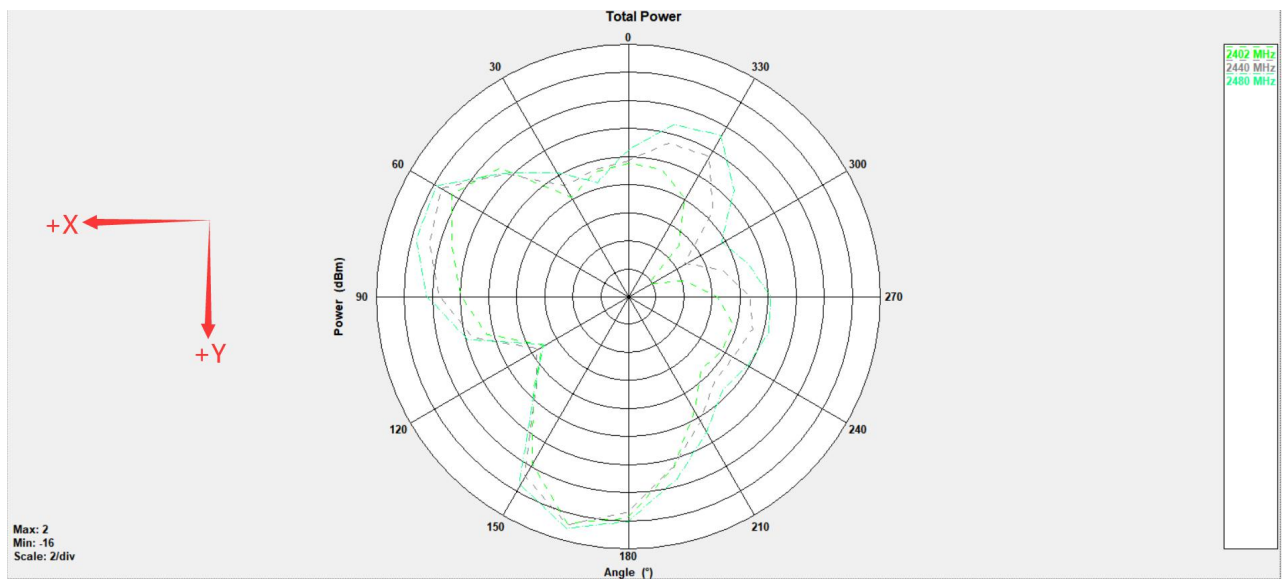
1#_ANT1



1#_ANT2

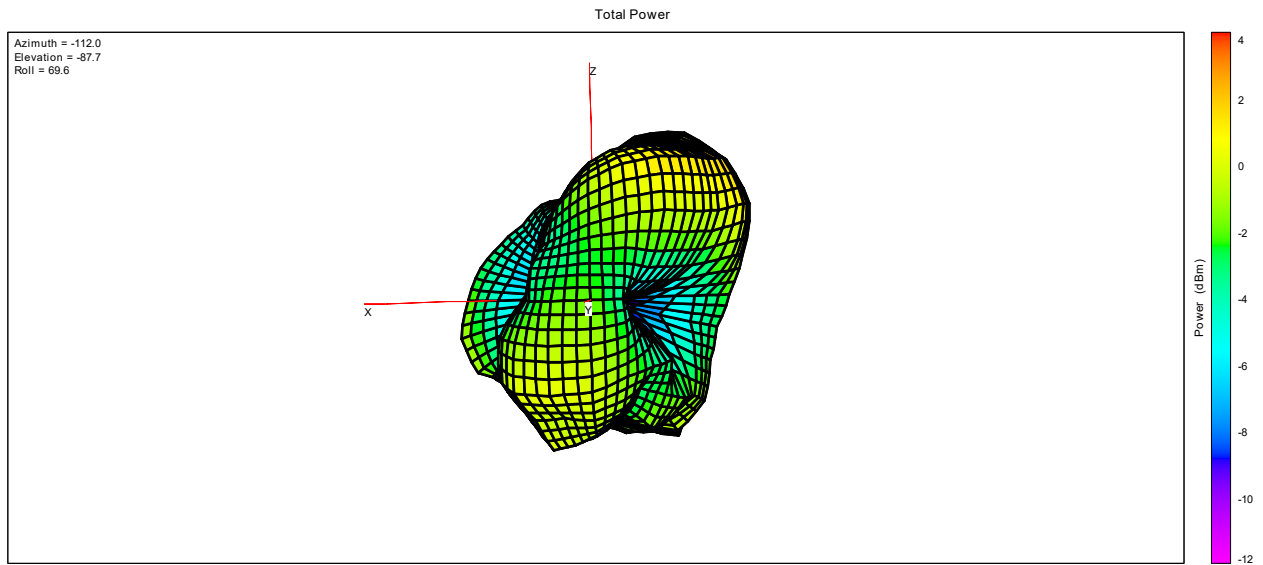


2#_ANT1

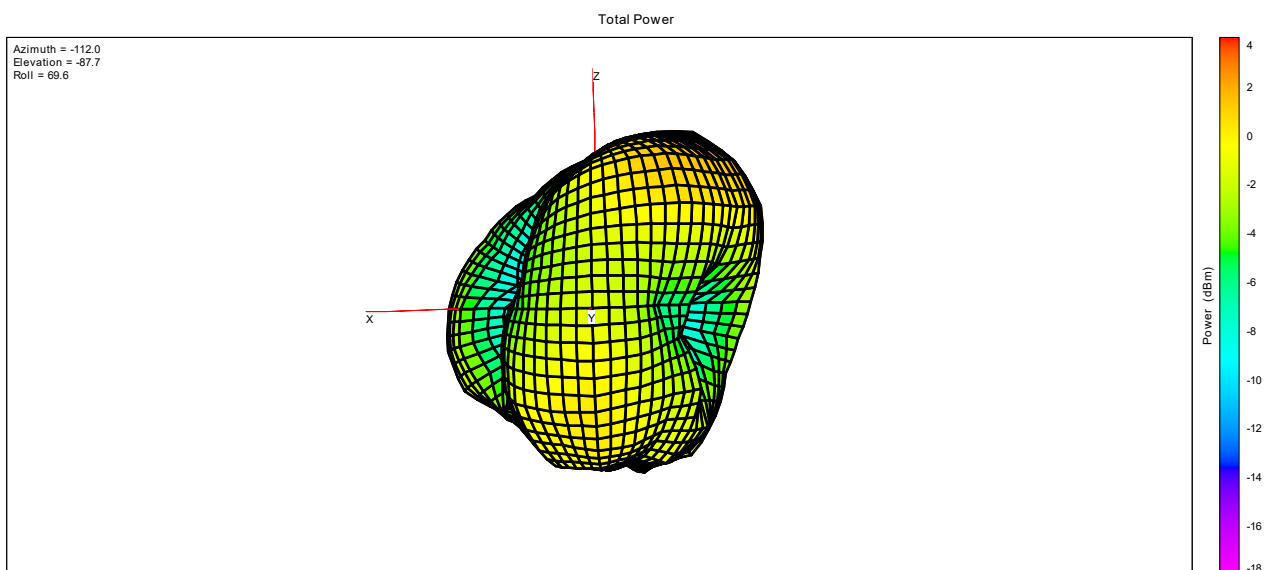


2#_ANT2

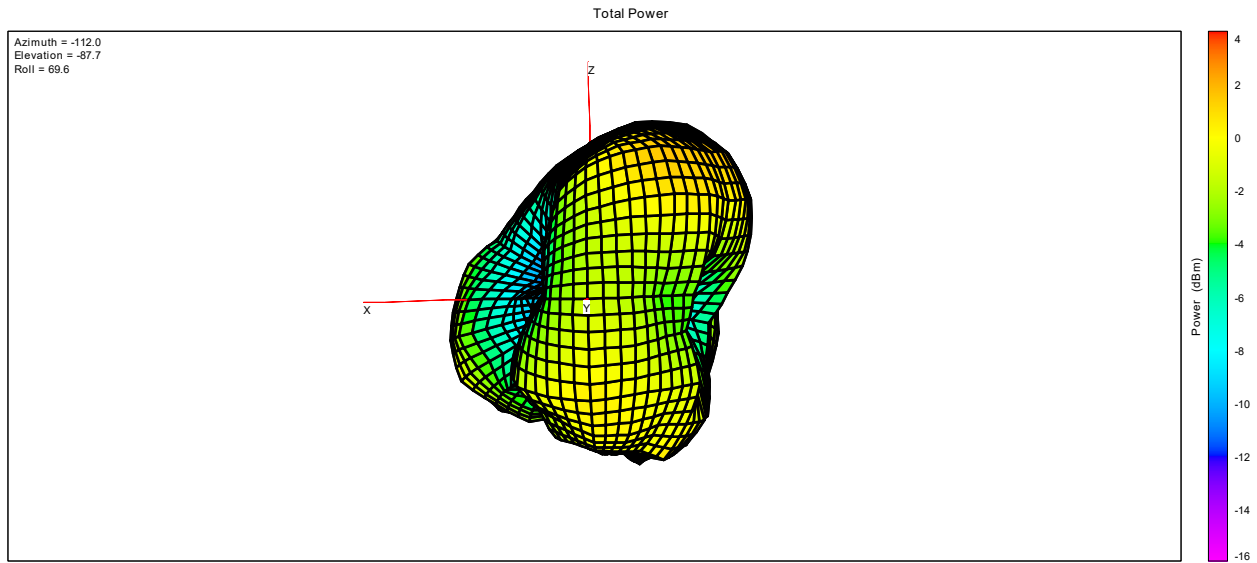
2. 3D Radiation Pattern



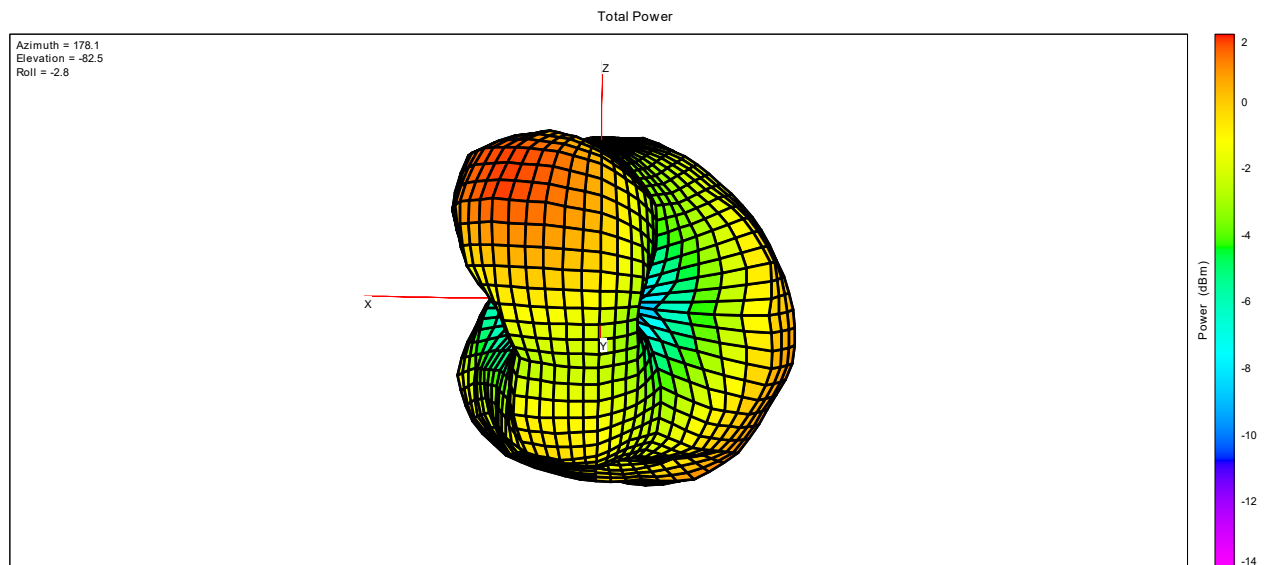
2402MHz_1#_ANT1



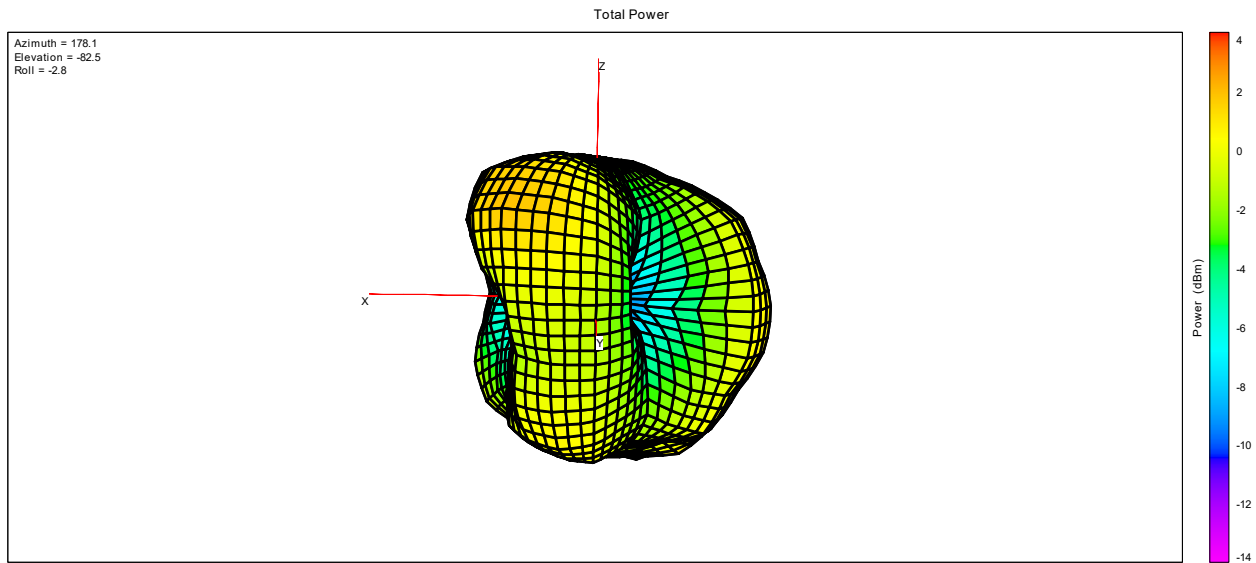
2440MHz_1#_ANT1



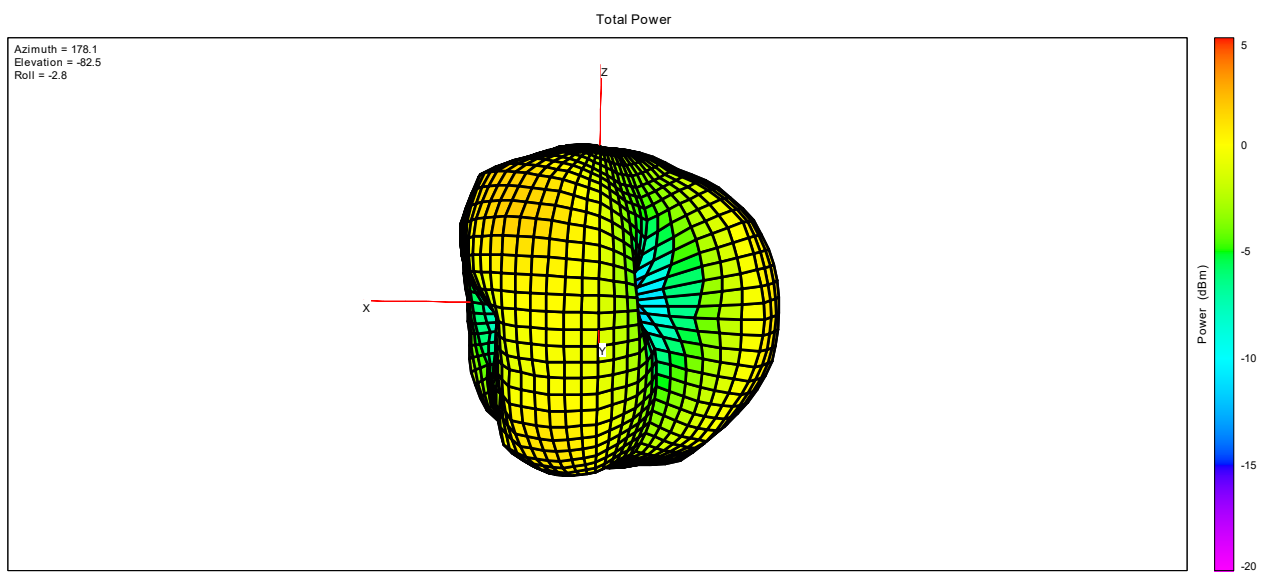
2480MHz_1#_ANT1



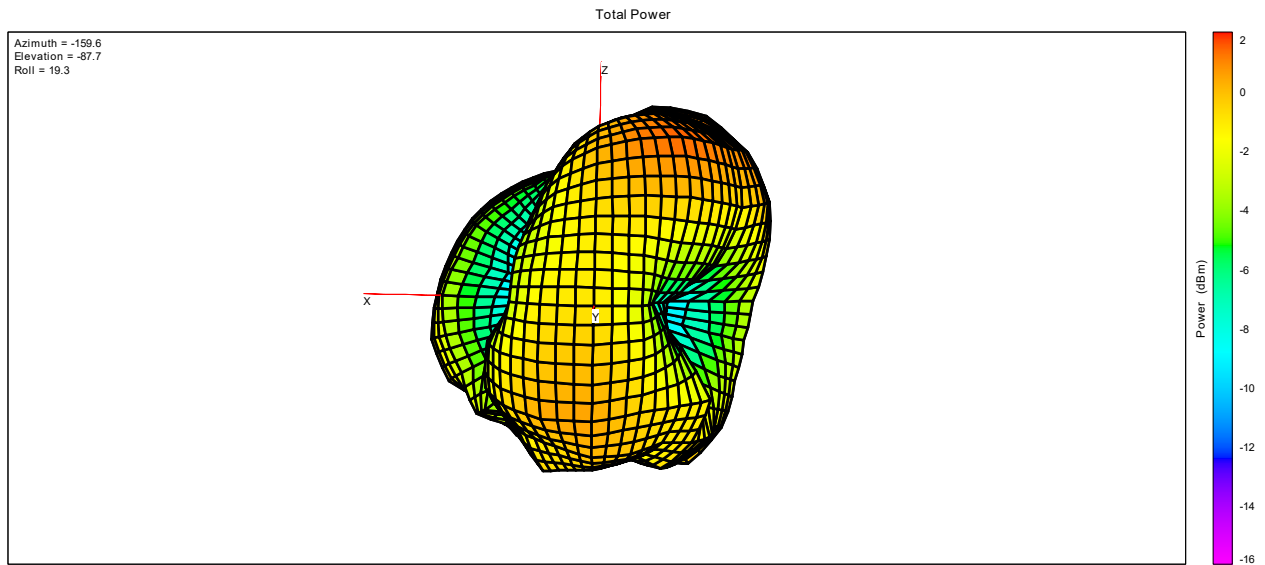
2402MHz_1#_ANT2



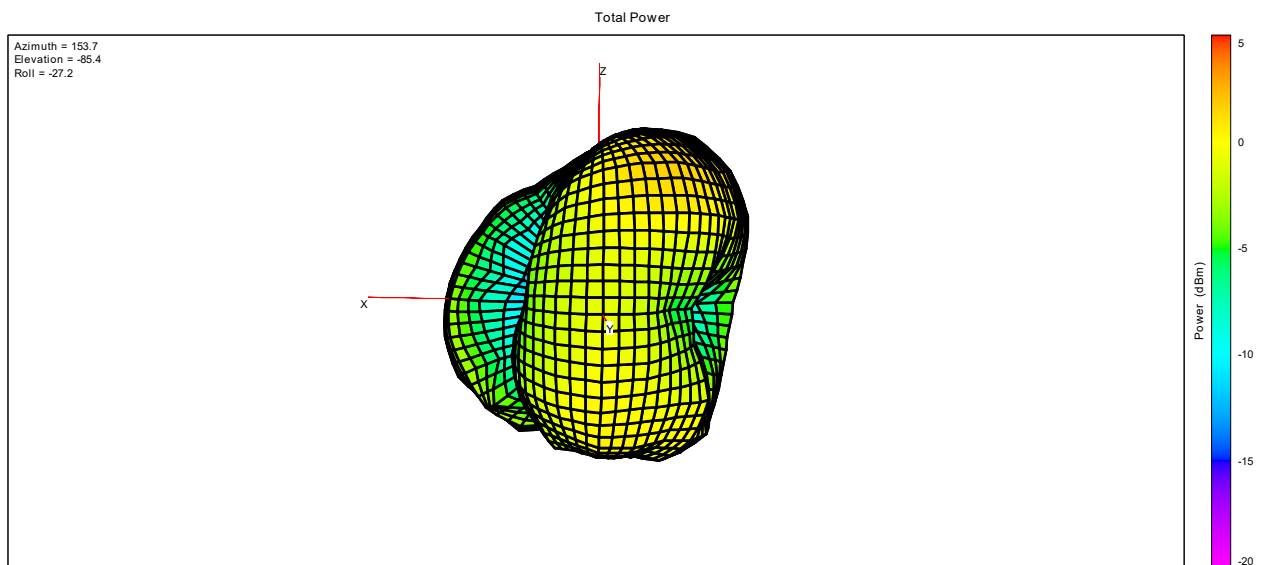
2440MHz_1#_ANT2



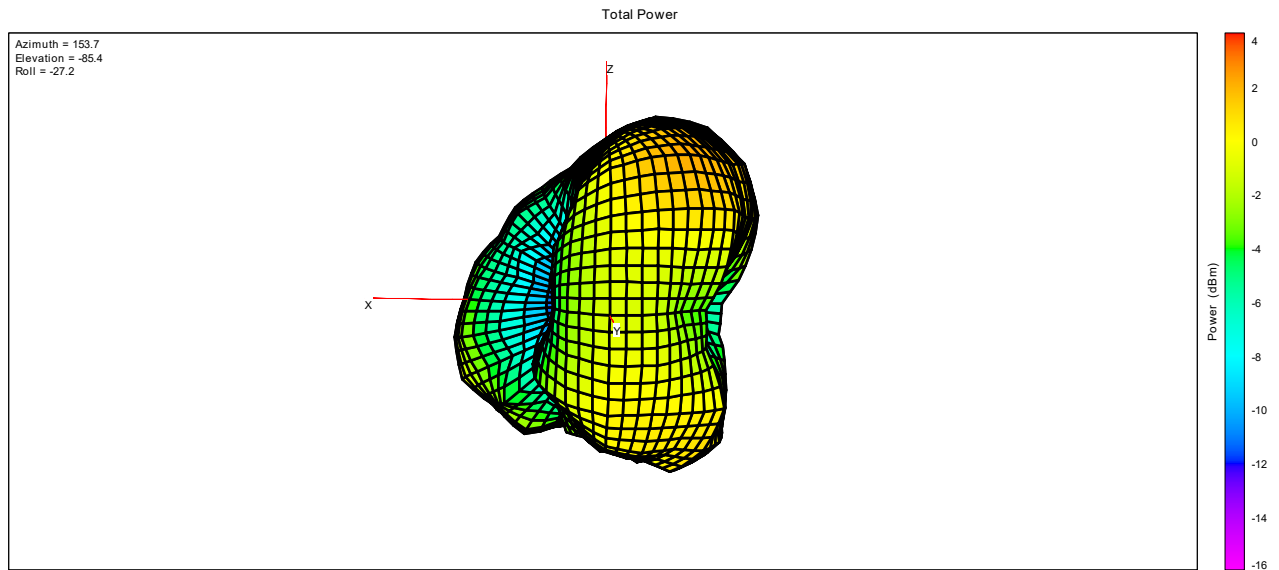
2480MHz_1#_ANT2



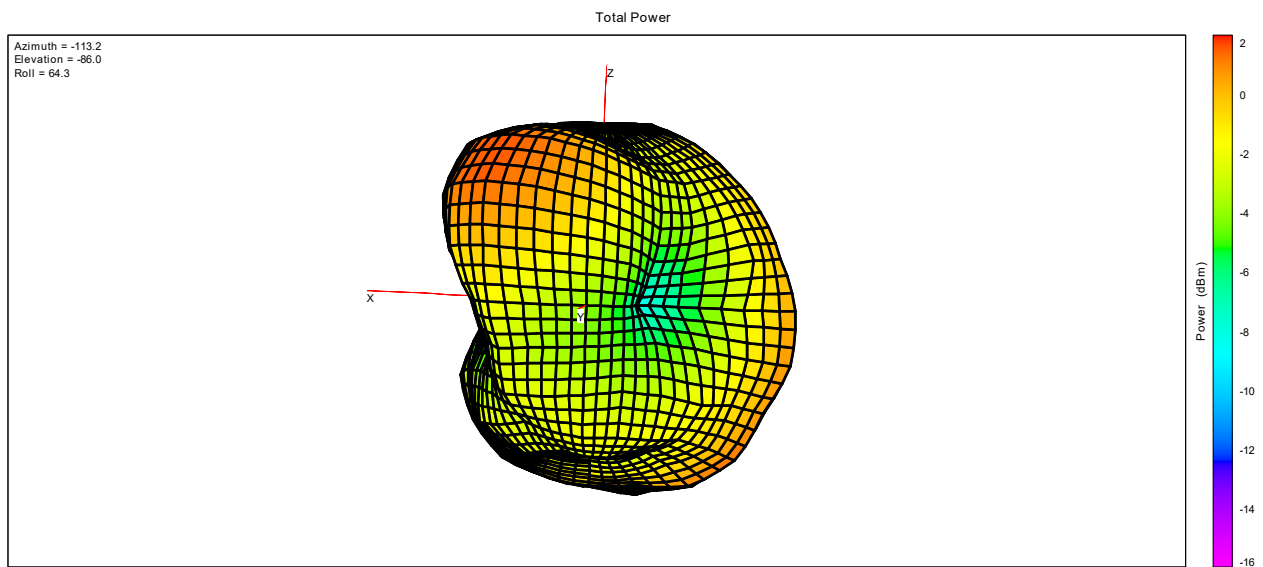
2402MHz_2#_ANT1



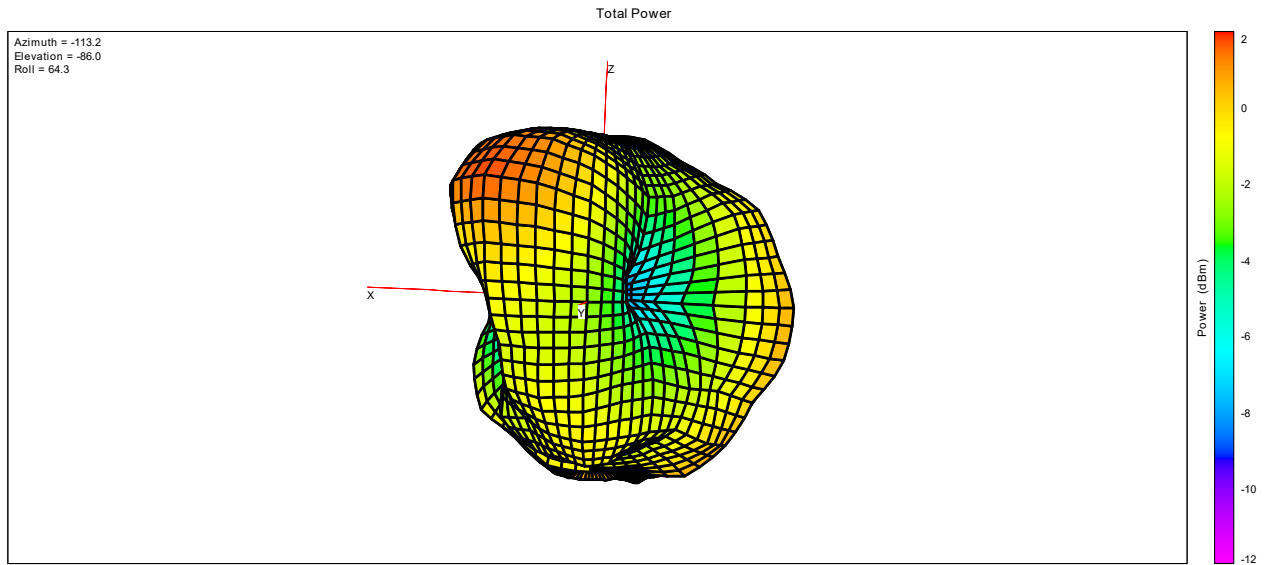
2440MHz_2#_ANT1



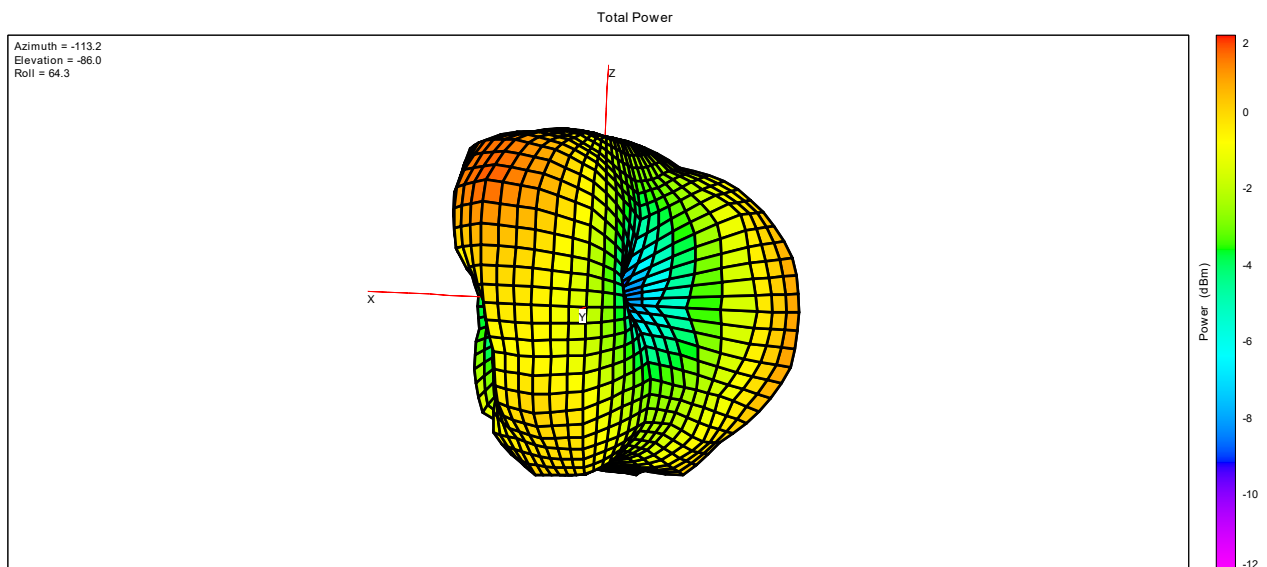
2480MHz_2#_ANT1



2402MHz_2#_ANT2



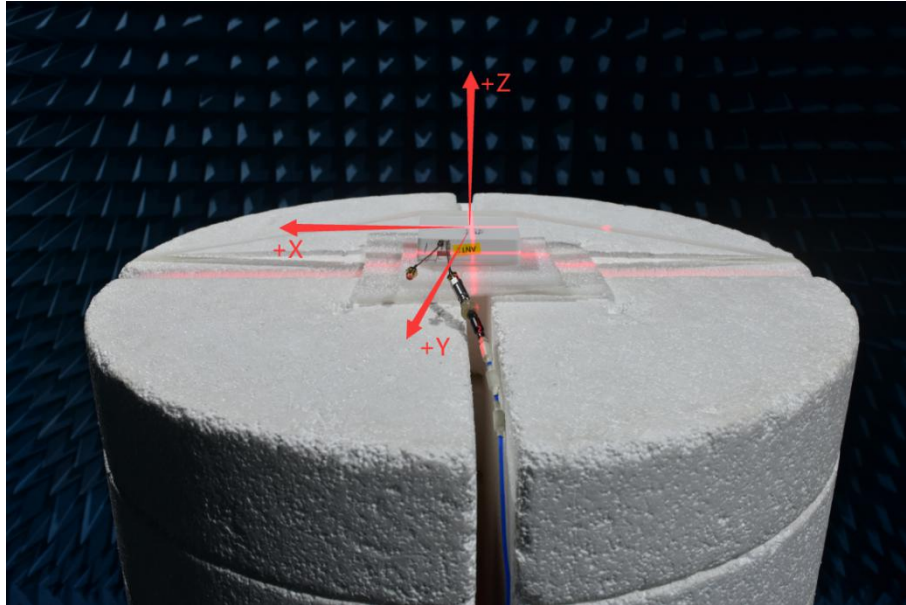
2440MHz_2#_ANT2



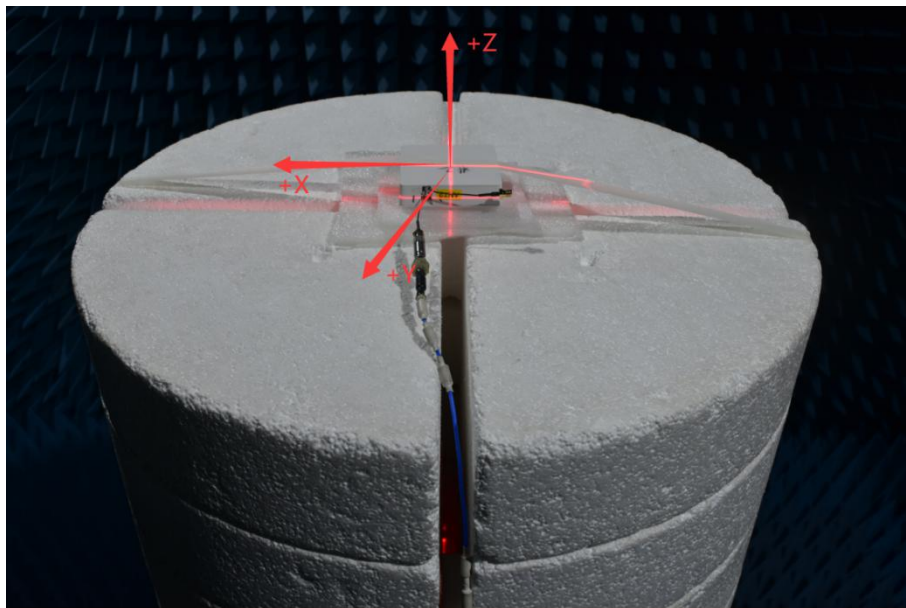
2480MHz_2#_ANT2

Annex C Photographs

1. Test environment

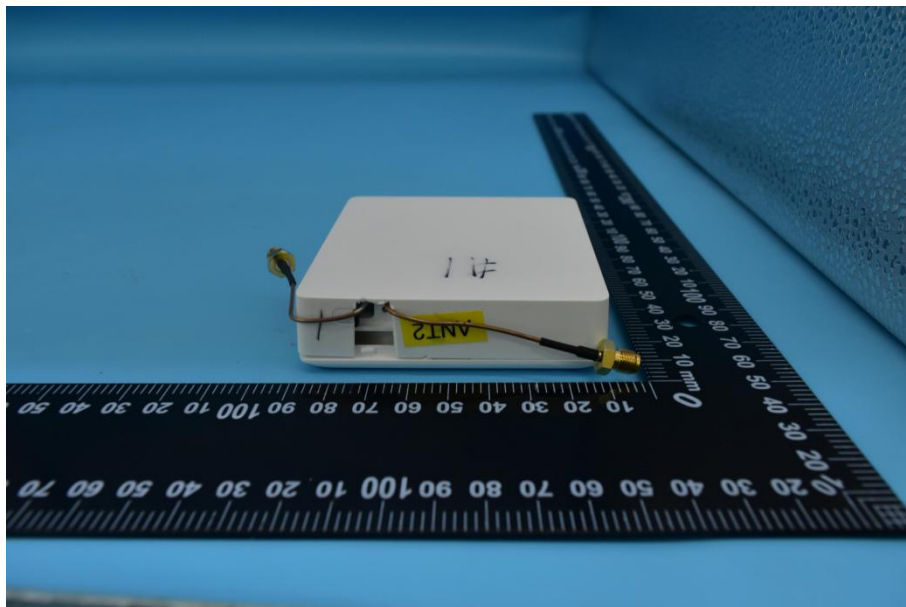
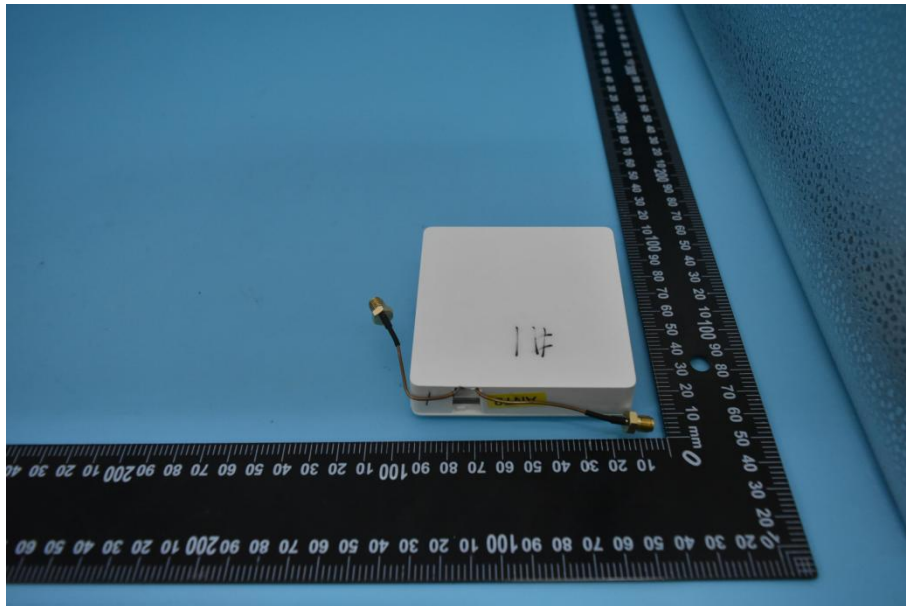


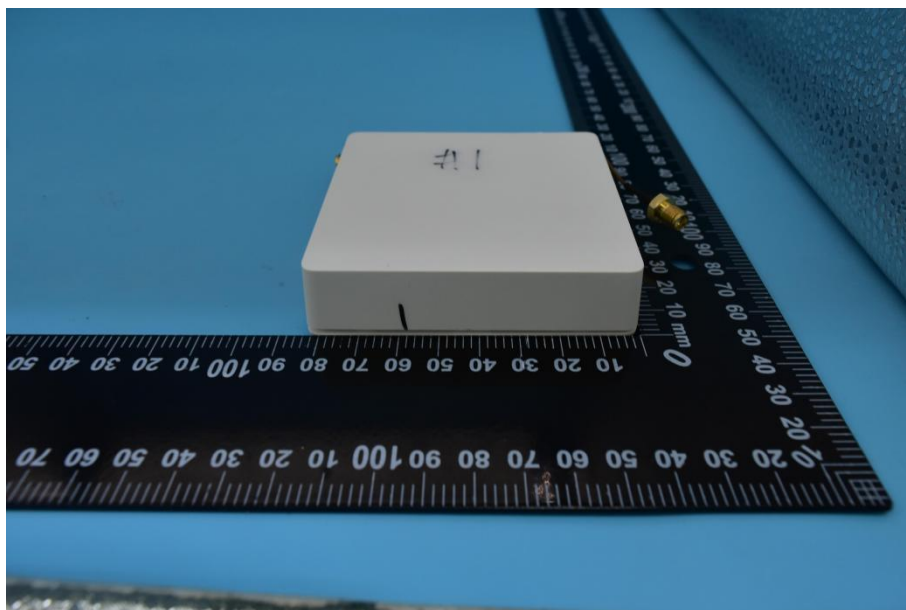
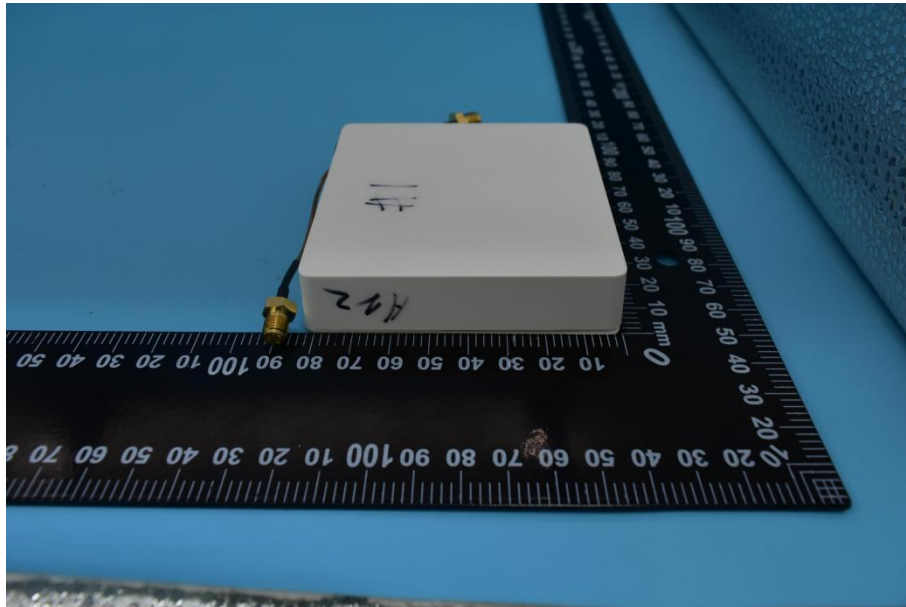
1#

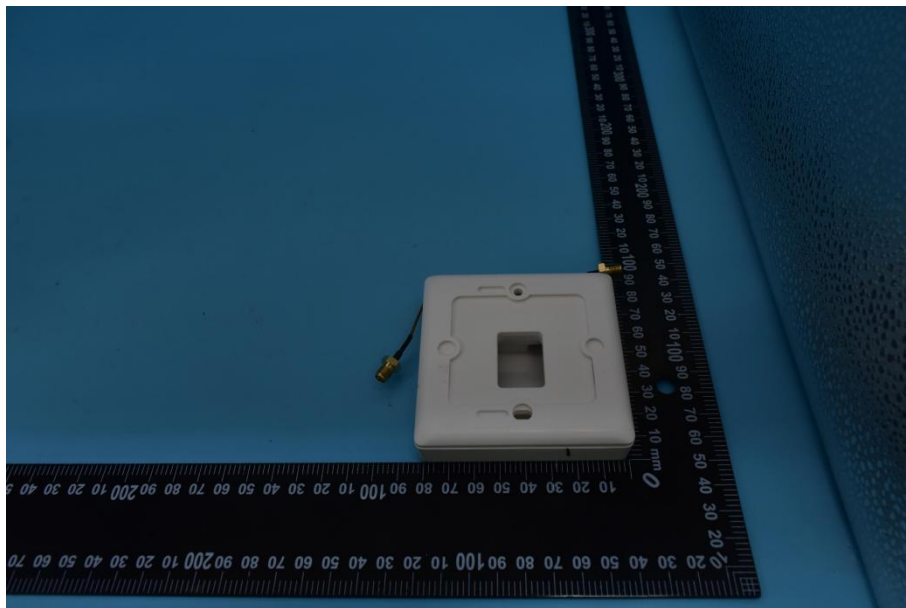
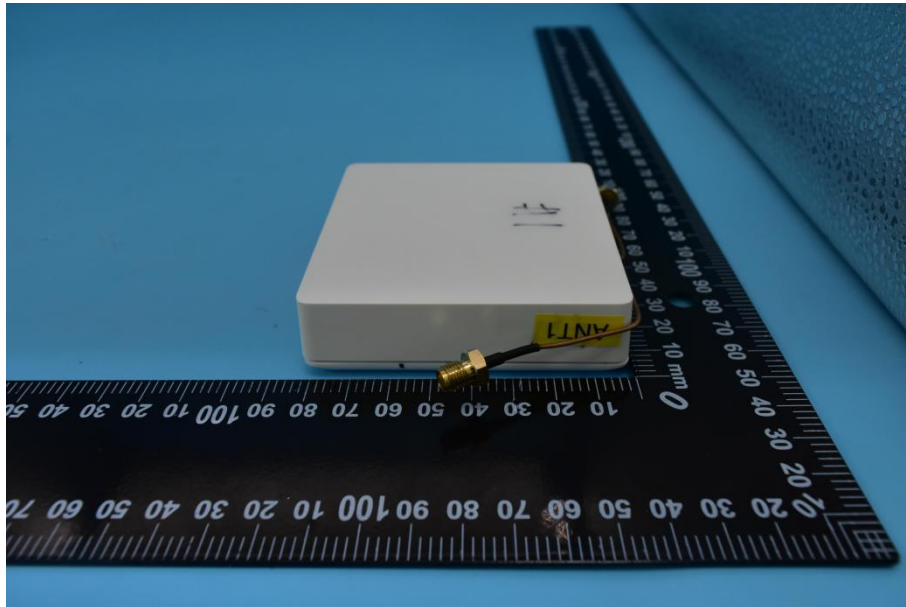


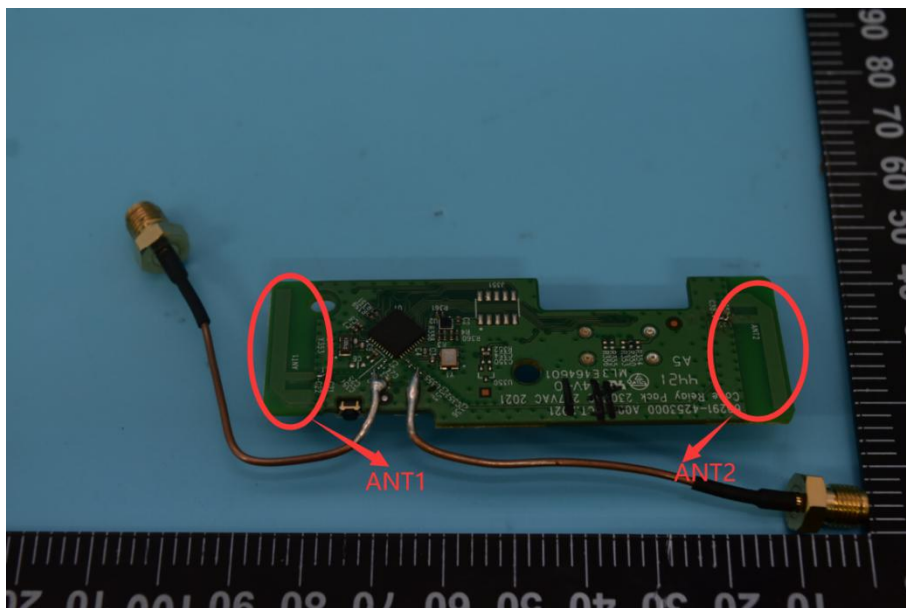
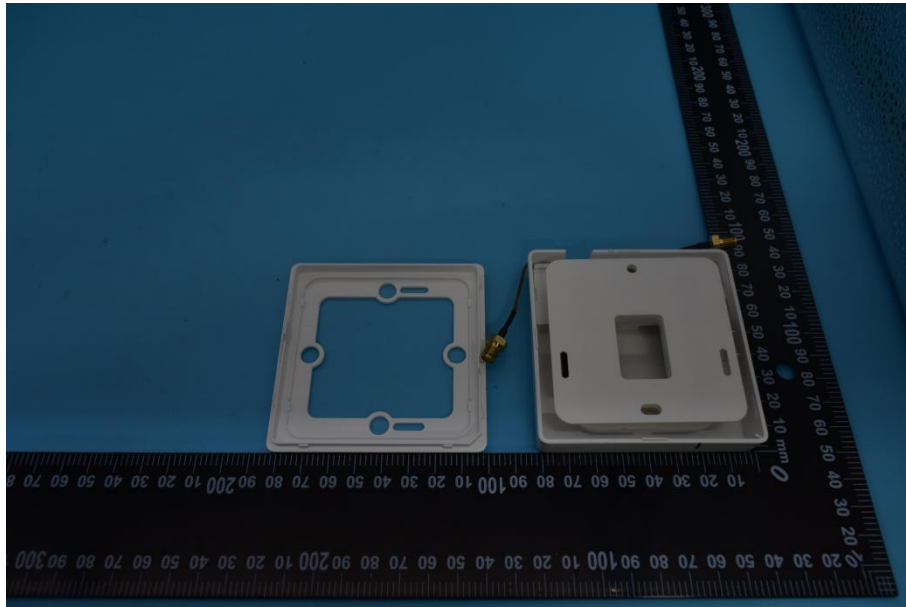
2#

2. EUT

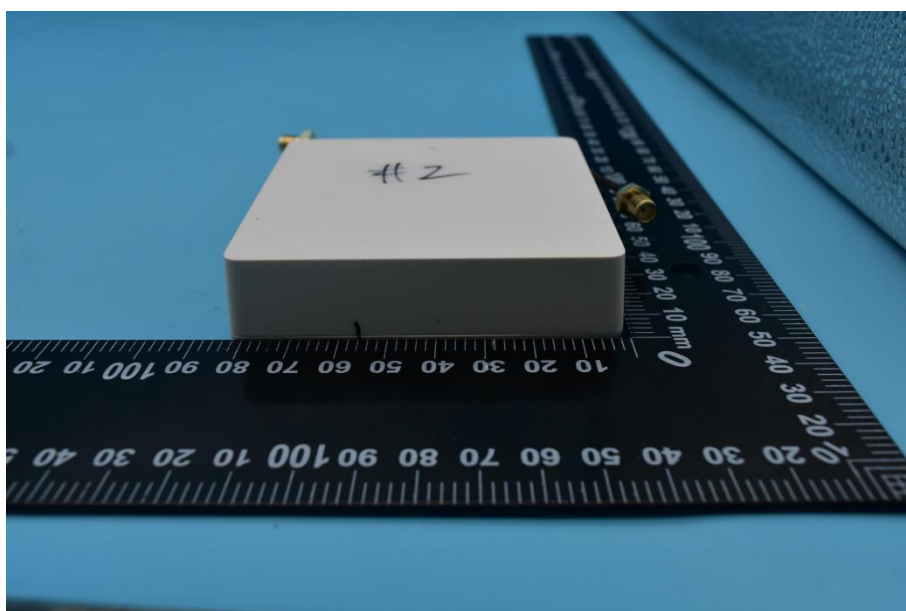
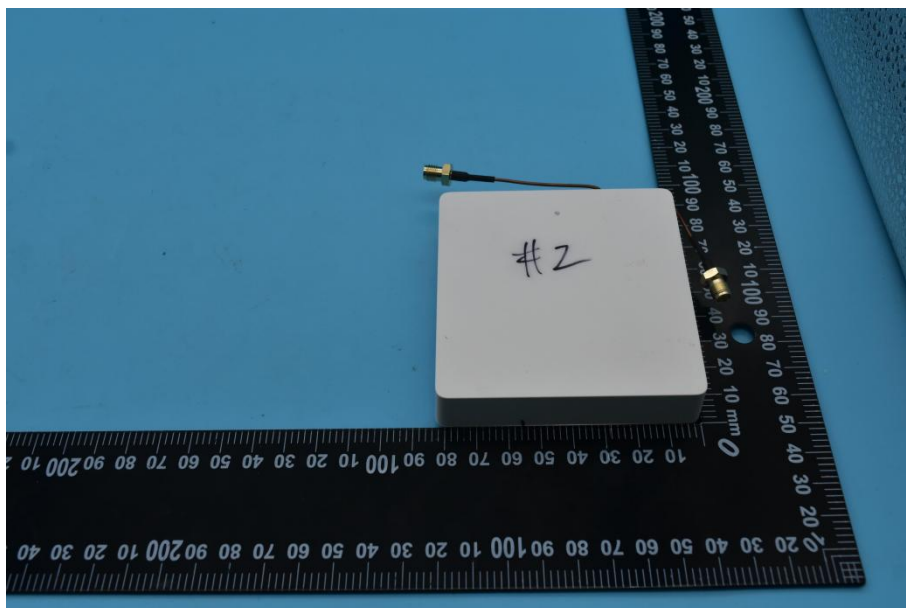


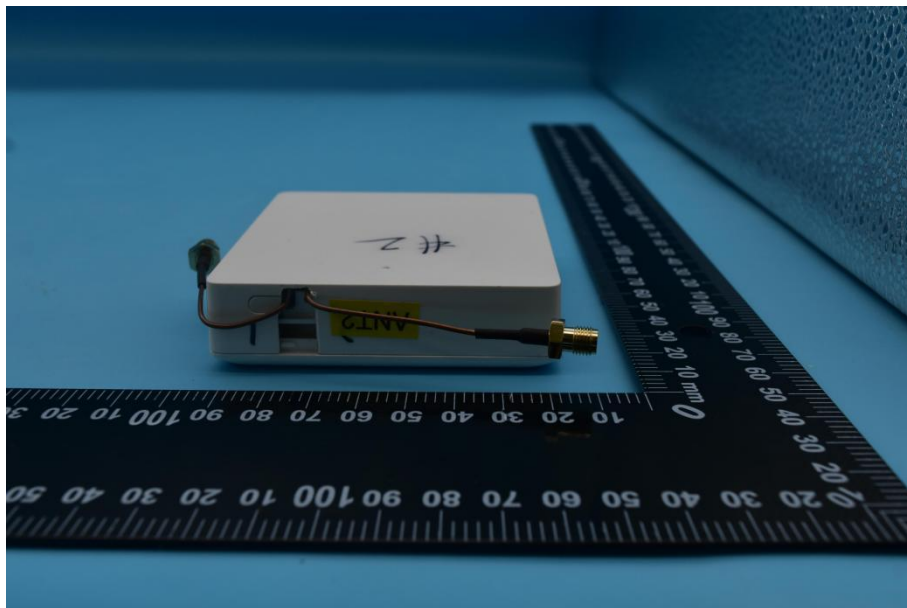
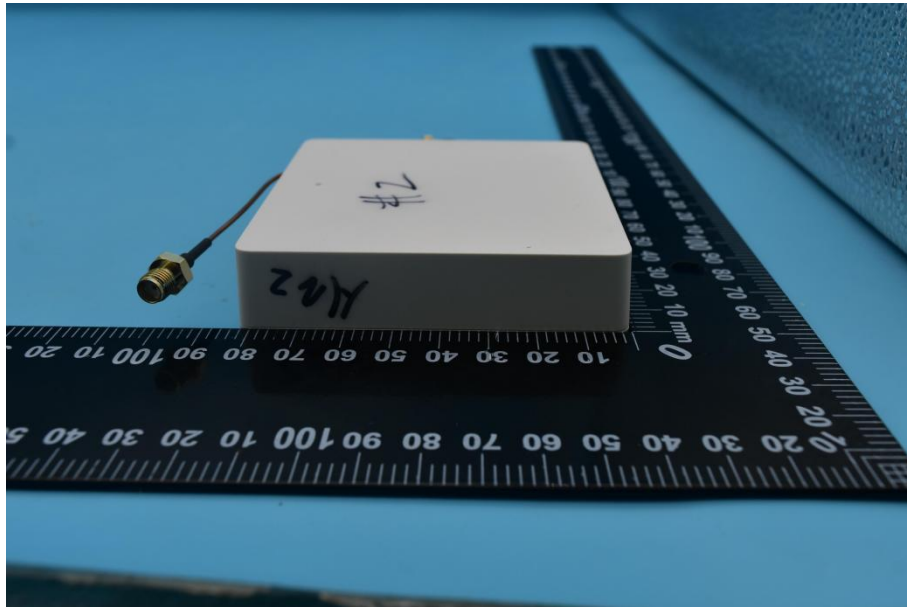


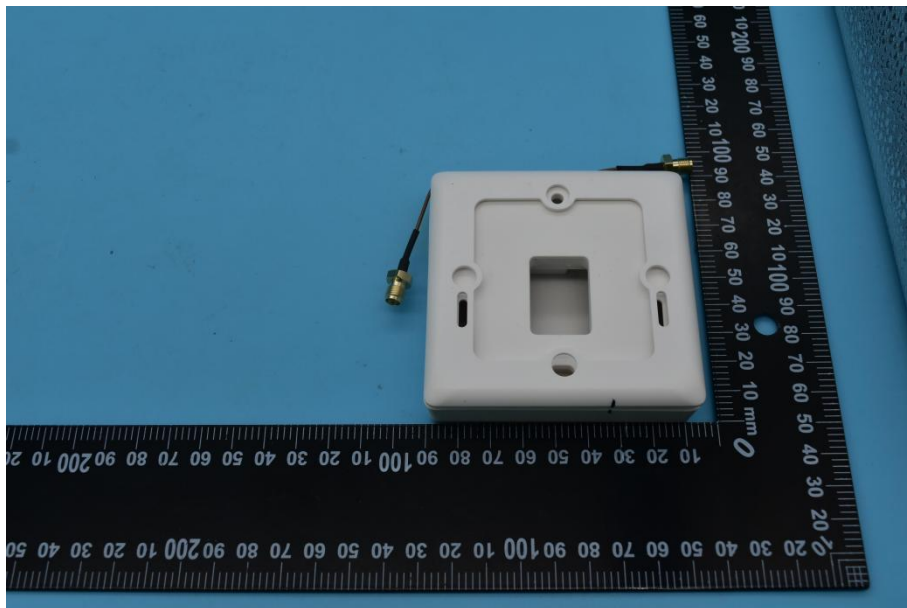
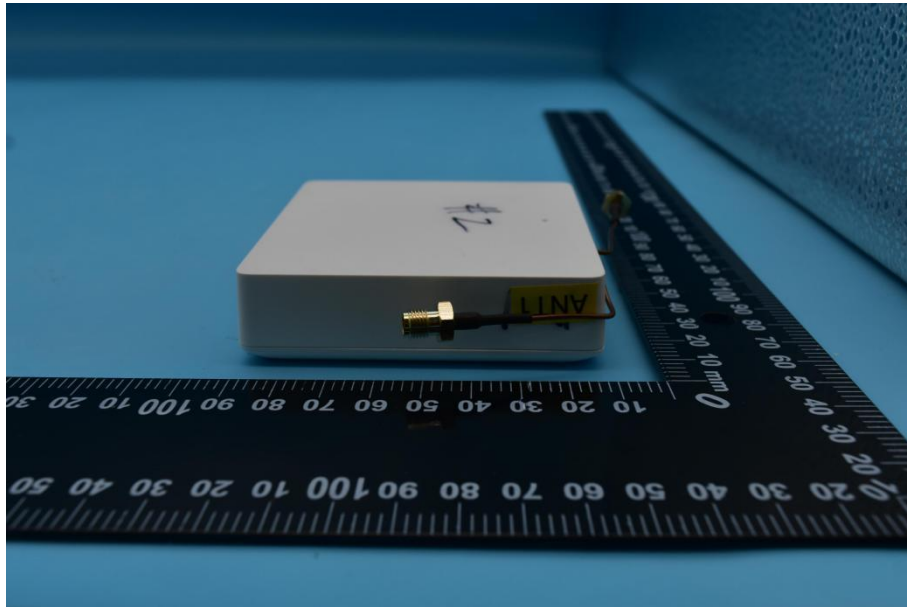


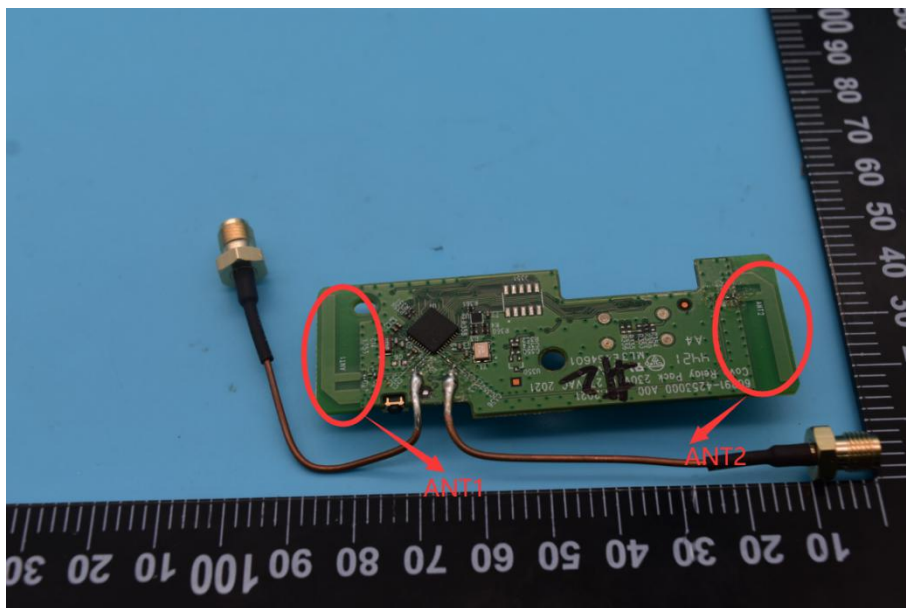
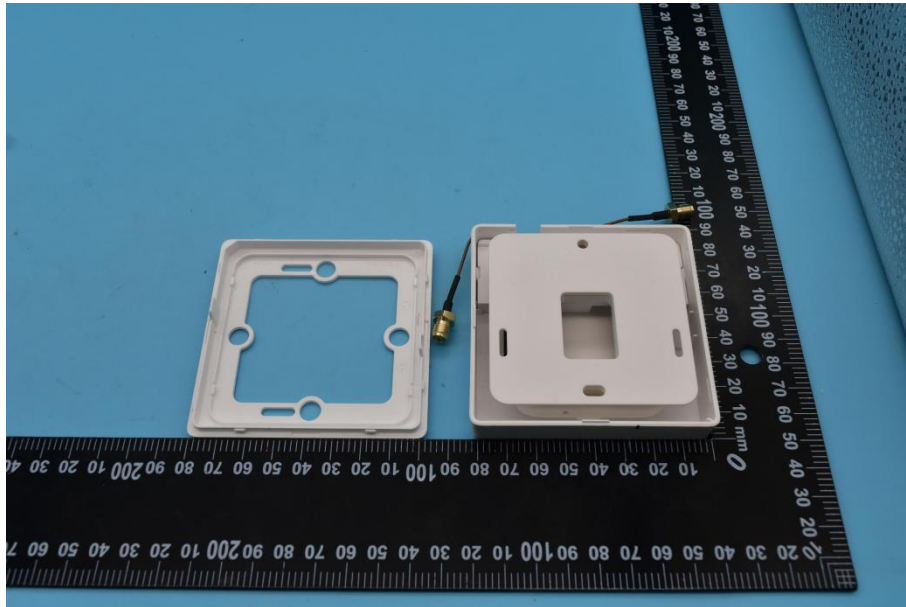


1#









2#



Annex D General Information

1.1 Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

1.2 Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

1.3 Test Equipments Utilized

No.	Equipement Name	Serial No.	Type	Manufa cturer	Cal.Date	Cal.Due Date
1	Network Analyzer	MY46110140	E5071C	Agilent	2021.07.26	2022.07.25
2	OTA Chamber	TJ2235-Q17 93	AMS-8923-1 50	ETS	2020.01.06	2023.01.05
3	Antenna Measurement System	1685	EMQuest EMQ-100 V 1.13 Build 21267	ETS	N/A	N/A

END OF REPORT