規 格 承 認 書
Approval Sheet

客 戶 名 稱

Customer Name: 百一

產 品 名 稱

Product description: Ant1

產 品 型 號

Model Name: ADB-2682WF

泓 淋 料 號

Hong Lin P/N: 290-70464

客 戶 料 號

Customer P/N: 49031-01103-HB

版 別 日 期

Version: X2 Date: 2023.10.12

客戶承認簽印 CUSTOMER APPROVED BY	供應商承認簽印 VENDER APPROVED BY
Checked By:	**Checked By:** 李源泉
Approval By:	**Approval By:**严加星

工厂/Factory:

1.越南,北宁省,桂武县,扶梁社,桂武三工业区CN17A-2地块

Lot No. CN17A-2 Que Vo 3 Industrial Park - Phu Luong Commune - Que Vo District - Bac Ninh Province-VietNam.

2.江蘇省常熟市高新技術產業園柳州路 8 號

No.8 Liuzhou Road, Yushan Industrial Park, Hi-tech Development Zone, Changshu, Jiangsu, China

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一、 规格表

1.1 Electrical Properties

1.1.1 Frequency Range---------- 2402-2484MHz
---------- 5150 -5850MHz
---------- 5935 -7115MHz

1.1.2 Impedance---------- 50Ω

1.1.3Return Loss---------- -10dB or Less

1.1.4 Peak Gain----------3.13dBi @2402-2484MHz

----------2.61dBi @5150-5250MHz

----------2.29dBi @5250-5350MHz

----------3.49dBi @5470-5725MHz

----------3.49dBi @5725-5875MHz

----------3.44dBi @5925-6425MHz

----------2.28dBi @6425-6525MHz

----------2.48dBi @6525-6875MHz

----------2.70dBi @6875-7125MHz

1.1.5Admitted Power---------- 1W

1.1.6 Cable----------Ø 1.13 LLS Cable

1.1.7 Antenna type---------- PCB

1.2 Physical Properties

1.2.1 Antenna Body---------- FR4

1.2.2 Operating Temp---------- -10℃~+60℃

1.2.3 Storage Temp---------- -10℃~+70℃

Antenna Evaluation Report for ADB-2682WF Project

- Passive measurement report -

Prepared by: Lay Cheng

Date: 4th of September, 2023

Version: V5.0

Version information

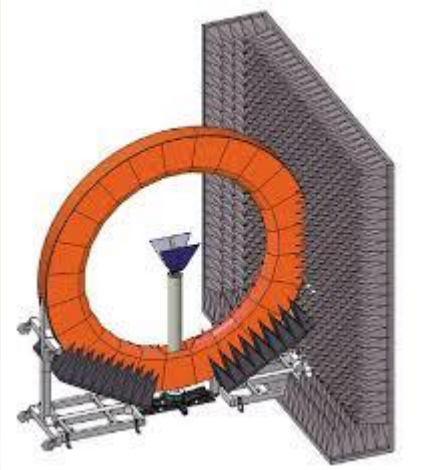
Version	Description	Date
V1.0	Simulation Evaluation	20230414
V2.0	Factory Sample Fine Tuning	20230510
V3.0	Ant1 and BT Location Change. Add Cable Routing.	20230510
V4.0	Horizontal Measurement.	20230710
V4.1	Vertical Measurement.	20230710
V5.0	Fine tuning	20230904

Executive Summary

- Test Environment and Equipment
- DUT Orientation Setting
- Testing Contents
  - Antenna Photo and Information
  - Measurement Results:
    - Return Loss & Isolation
    - Antenna Efficiency, Peak gain
    - Antenna 2D Radiation Patterns

Test Environment & Equipment

- SATIMO SG 24 Multi-Probe Antenna Measurement System
- Angle between probes: 15°
- Frequency range: 400 MHz – 8.5 GHz
- Chamber Room Size: 4.0 m L x 4.0 m W x 4.0 m H



VSWR were performed using an Agilent S-parameter Network Analyzer.

- ETS-Lindgren AMS-8500 Antenna Measurement System
- EM Quest EMQ-100 Software
- Model 3164-04 Diagonal Dual Polarized Horn antenna
- Frequency range: 700 MHz – 7.2 GHz
- Positioning Systems
- Chamber Room Size: 7.32 m L x 3.66 m W x 3.66 m H

Antenna Photo and Information

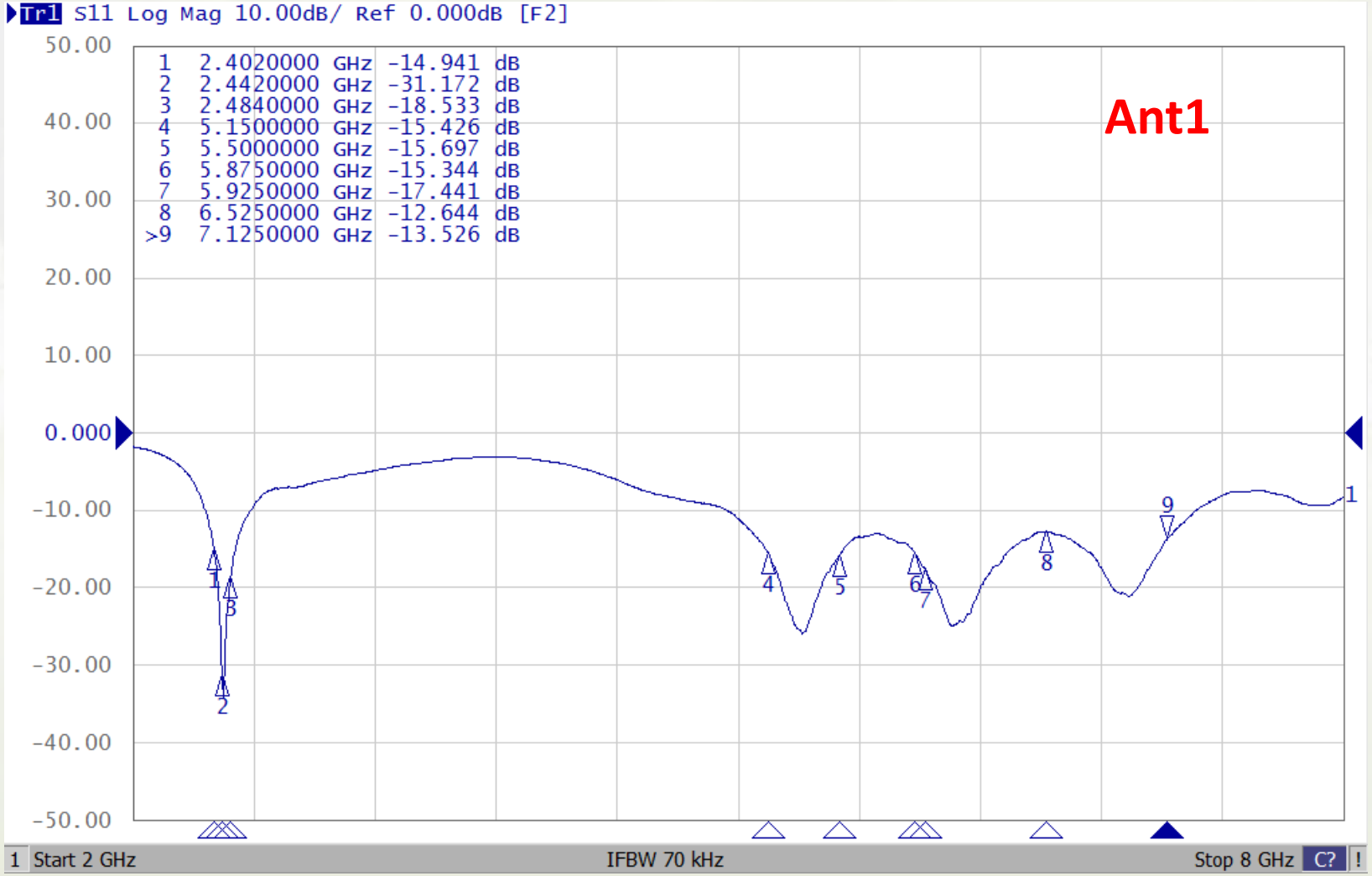
Antenna Photo and Information

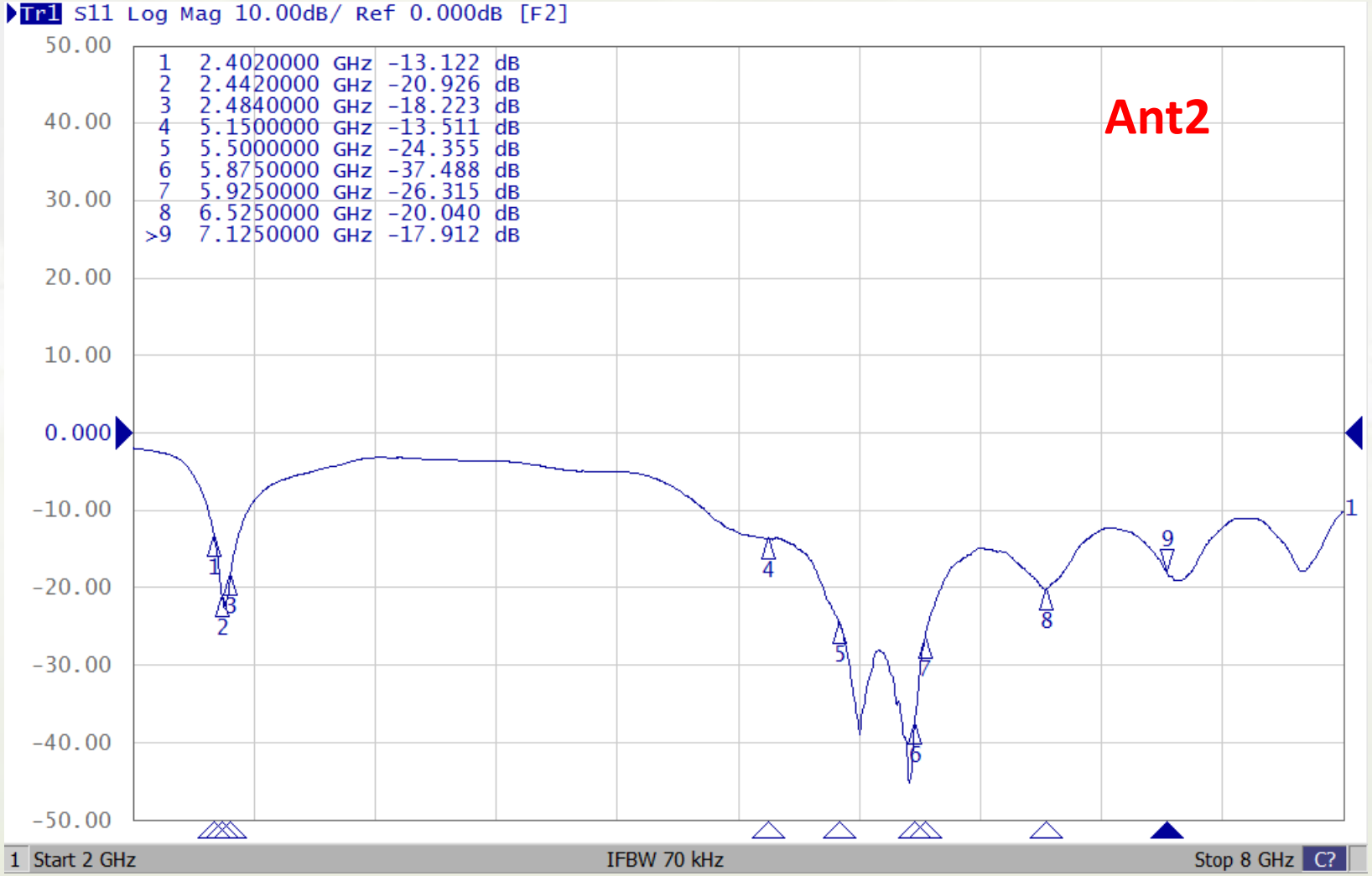
Designator	Frequency Range	Antenna Type	Dimension	Cable Length (Total)	Cable Color	Cable Type	Connector Type
Ant1	2402 -2484 MHz 5150 -5875 MHz 5925-7125 MHz	PCB Antenna	35x 20 x 0.6 mm	82mm	Black	Ø1.13 Low Loss	IPEX
Ant2	2402 -2484 MHz 5150 -5875 MHz 5925-7125 MHz	PCB Antenna	35x 20 x 0.6 mm	145mm	White	Ø1.13 Low Loss	IPEX
BT	2402 -2484 MHz	PCB Antenna	35x 20 x 0.6 mm	180mm	Gray	Ø1.13 Low Loss	IPEX

Measurement Results

- Return Loss & Isolation
- Antenna Efficiency, Peak Gain
- Antenna 2D Realized Gain Radiation Patterns @Total Polarization

Return Loss & Isolation

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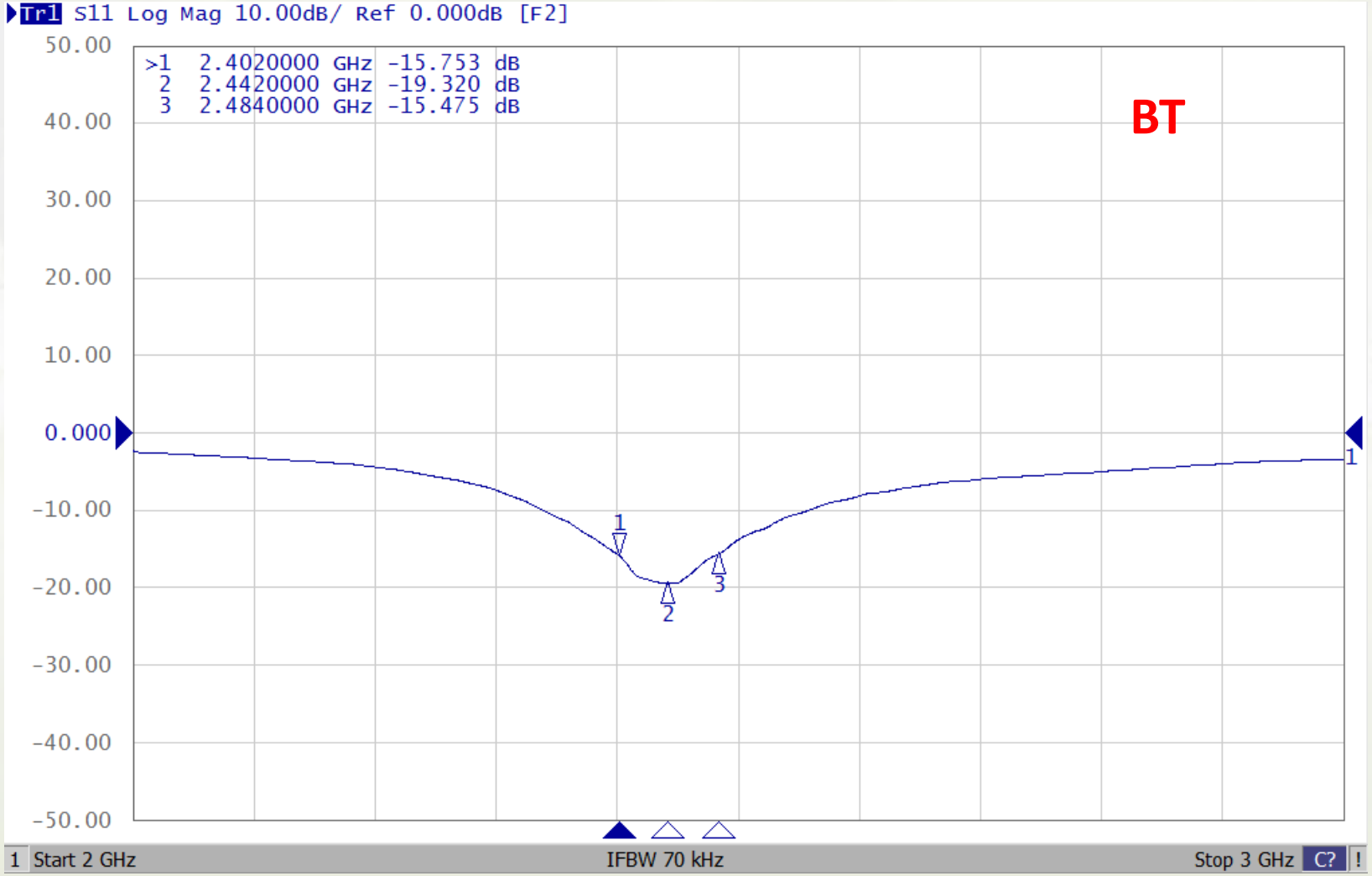
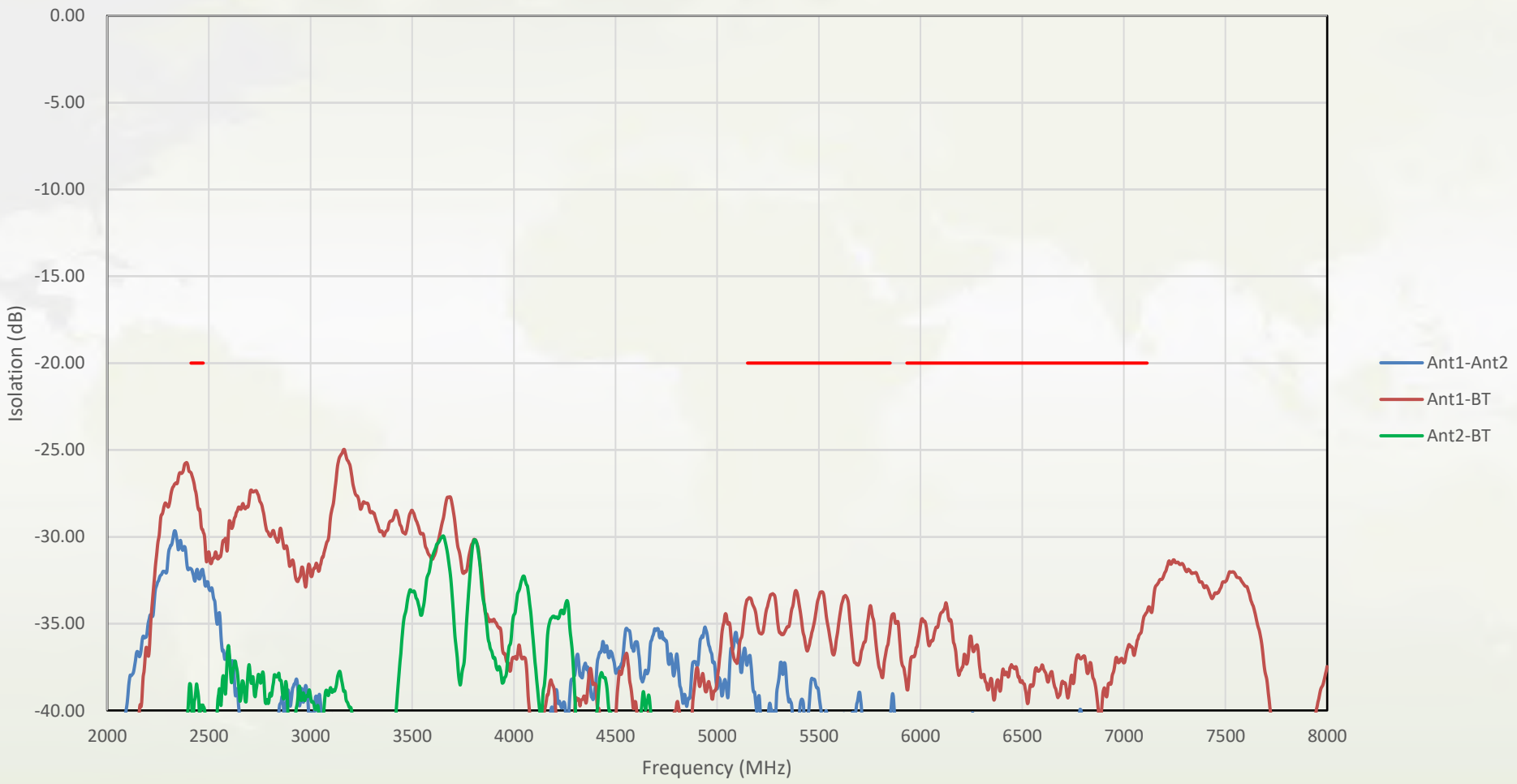
1 2.4020000 GHz -13.122 dB
2 2.4420000 GHz -20.926 dB
3 2.4840000 GHz -18.223 dB
4 5.1500000 GHz -13.511 dB
5 5.5000000 GHz -24.355 dB
6 5.8750000 GHz -37.488 dB
7 5.9250000 GHz -26.315 dB
8 6.5250000 GHz -20.040 dB
>9 7.1250000 GHz -17.912 dB
Ant2
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 2 GHz
IFBW 70 kHz
Stop 8 GHz
C?


Tr1 S11 Log Mag 10.00dB/ Ref 0.000dB [F2]
>1 2.4020000 GHz -15.753 dB
2 2.4420000 GHz -19.320 dB
3 2.4840000 GHz -15.475 dB
BT
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 2 GHz
IFBW 70 kHz
Stop 3 GHz
C?
!

Isolation Between Antennas



Antenna Efficiency & Peak Gain

Ant1								
Frequency (MHZ)	Efficiency (%)	Peak Gain (dBi)	Frequency (MHZ)	Efficiency (%)	Peak Gain (dBi)	Frequency (MHZ)	Efficiency (%)	Peak Gain (dBi)
2402	66	1.83	5150	68	2.61	5925	67	3.44
2412	66	1.88	5200	65	2.35	6095	66	2.97
2422	65	1.99	5250	65	2.13	6255	65	2.23
2432	66	2.24	5325	66	2.29	6425	64	2.28
2442	67	2.48	5400	66	2.52	6475	64	2.25
2452	68	2.61	5470	66	2.57	6525	65	2.27
2462	67	2.73	5500	67	2.90	6715	68	2.43
2472	66	2.83	5600	66	3.46	6735	64	2.14
2484	66	3.13	5725	65	3.49	6875	66	2.48
			5775	66	3.35	6975	66	2.59
			5825	67	3.15	7075	65	2.70
			5875	69	3.31	7125	64	2.27

Ant2

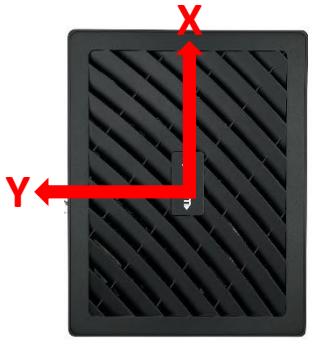
Frequency (MHZ)	Efficiency (%)	Peak Gain (dBi)
2402	56	2.41
2412	56	2.59
2422	57	2.69
2432	57	2.79
2442	59	3.00
2452	59	3.02
2462	58	3.01
2472	57	2.92
2484	58	2.95

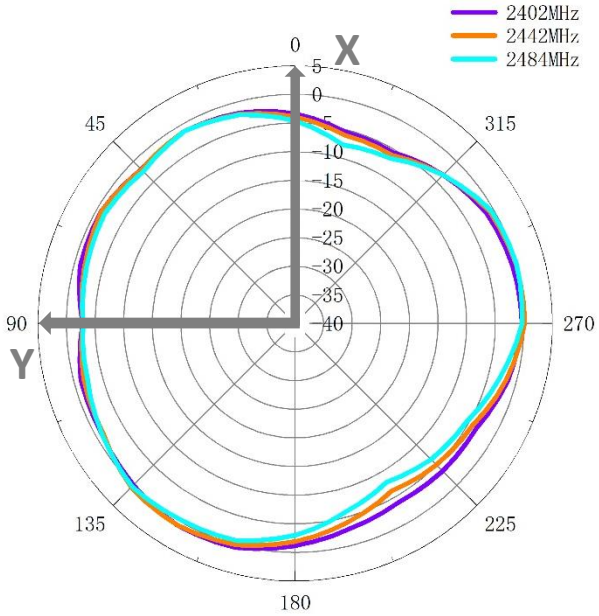
Frequency (MHZ)	Efficiency (%)	Peak Gain (dBi)
5150	63	2.05
5200	61	1.83
5250	61	2.02
5325	61	1.99
5400	64	2.21
5470	64	2.41
5500	66	2.71
5600	66	2.86
5725	64	2.54
5775	63	2.58
5825	64	2.86
5875	64	2.86

Frequency (MHZ)	Efficiency (%)	Peak Gain (dBi)
5925	65	2.86
6095	63	2.62
6255	62	3.06
6425	65	3.56
6475	63	3.34
6525	62	3.44
6715	63	3.39
6735	60	3.23
6875	61	3.19
6975	64	2.94
7075	62	2.62
7125	63	2.56

BT		
Frequency (MHZ)	Efficiency (%)	Peak Gain (dBi)
2402	68	3.70
2412	68	3.69
2422	68	3.64
2432	68	3.66
2442	70	3.80
2452	70	3.78
2462	69	3.69
2472	68	3.58
2484	68	3.76

2D Radiation Patterns Of Ant1 in 2G Band at XY Plan





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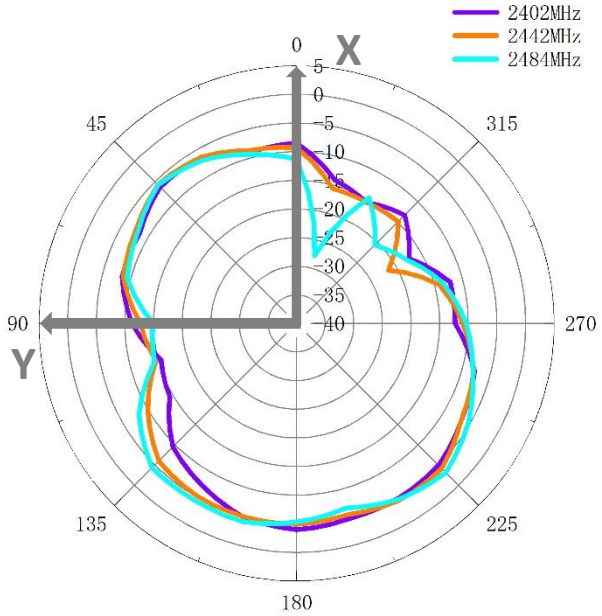

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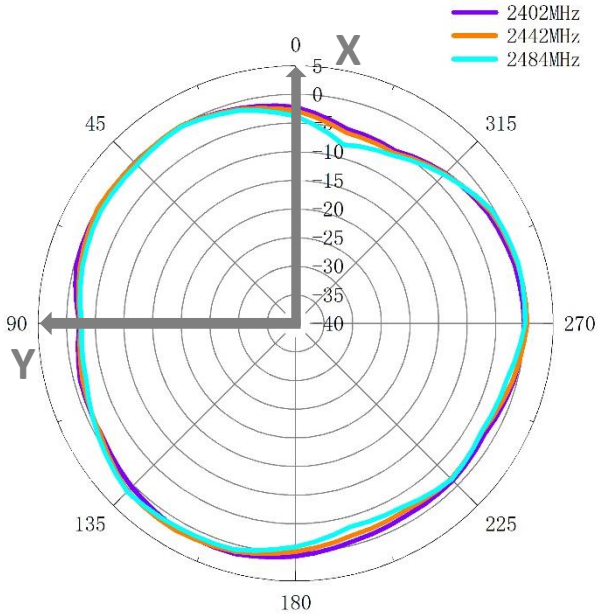
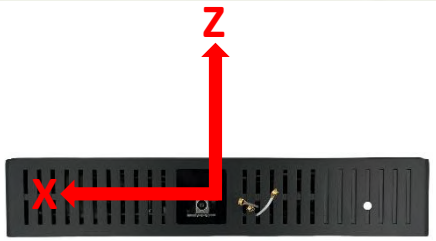
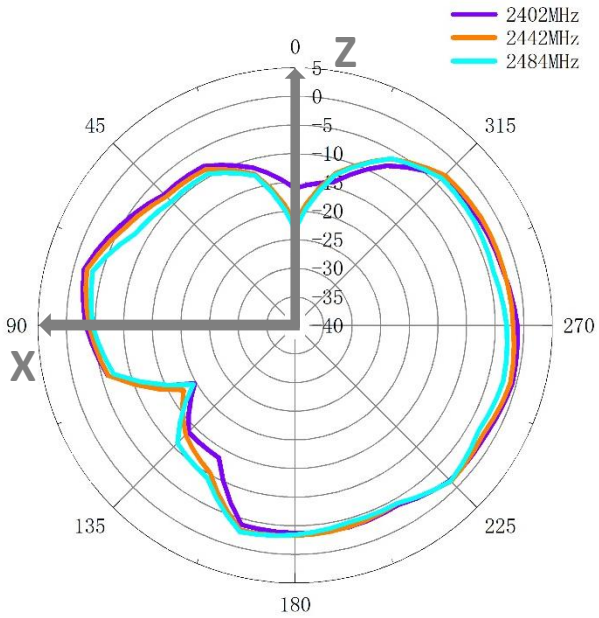


Gain Total

2D Radiation Patterns Of Ant1 in 2G Band at XZ Plan





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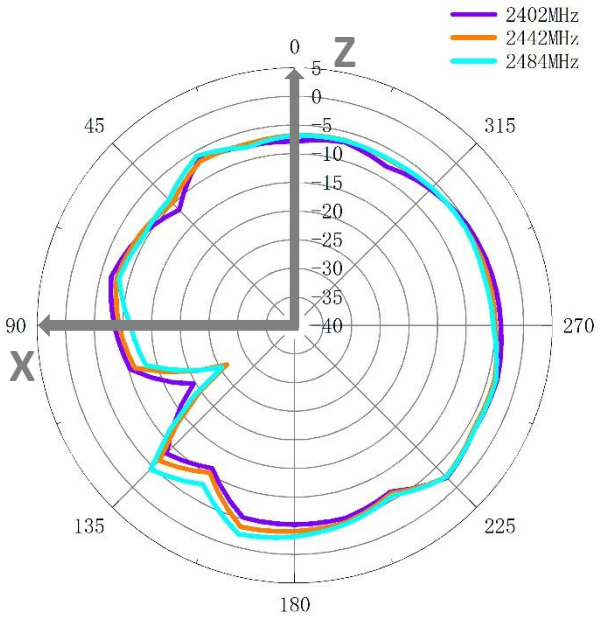

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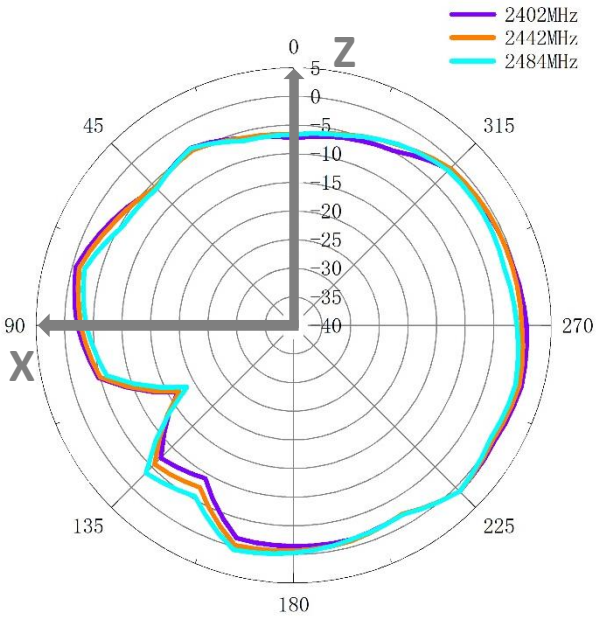
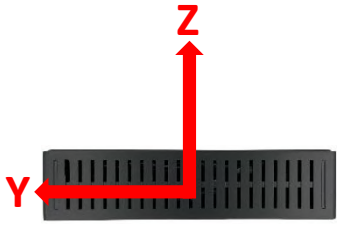
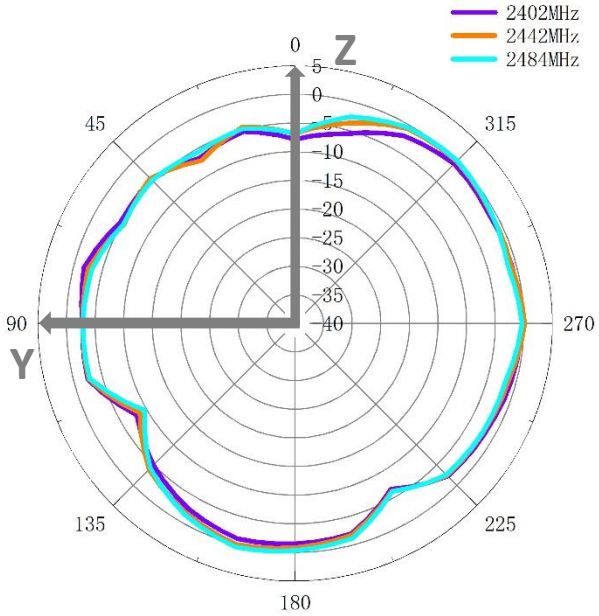


Gain Total

2D Radiation Patterns Of Ant1 in 2G Band at YZ Plan





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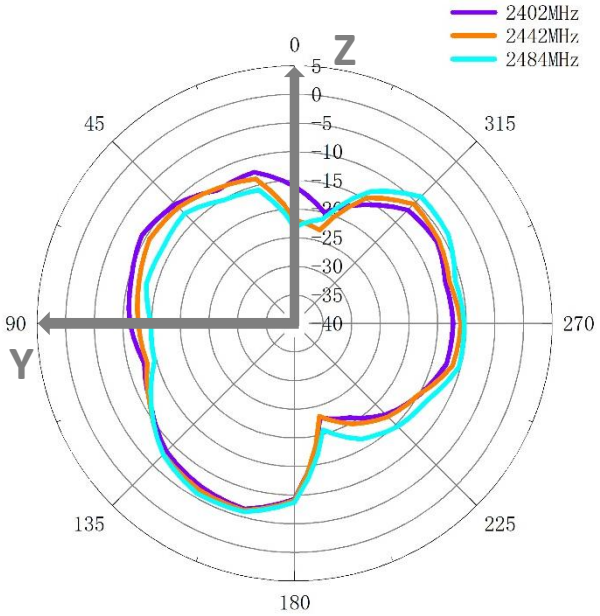

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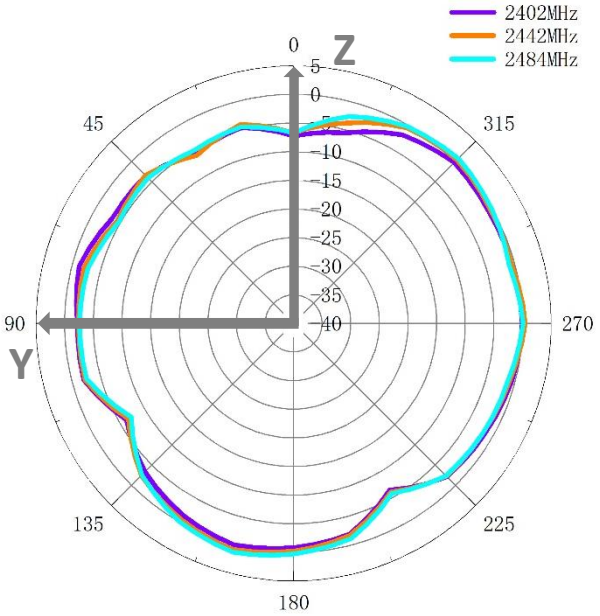
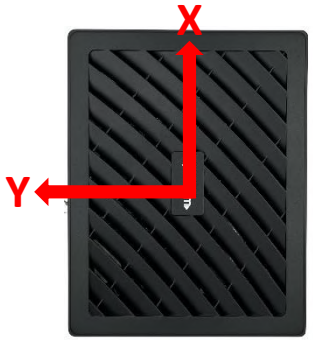
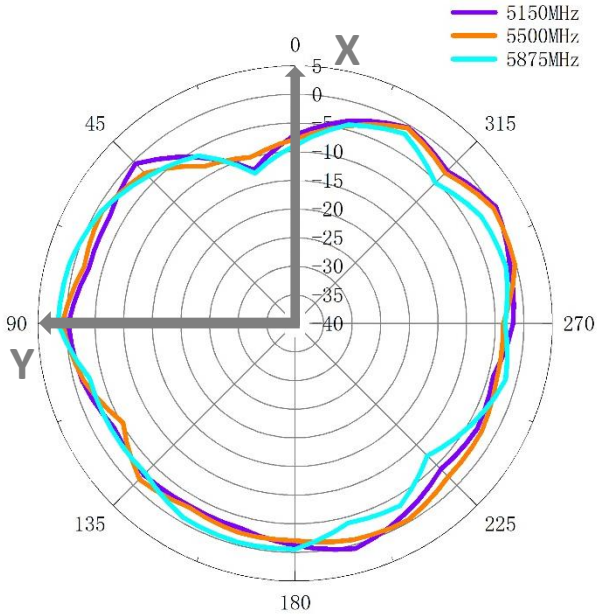


Gain Total

2D Radiation Patterns Of Ant1 in 5G Band at XY Plan





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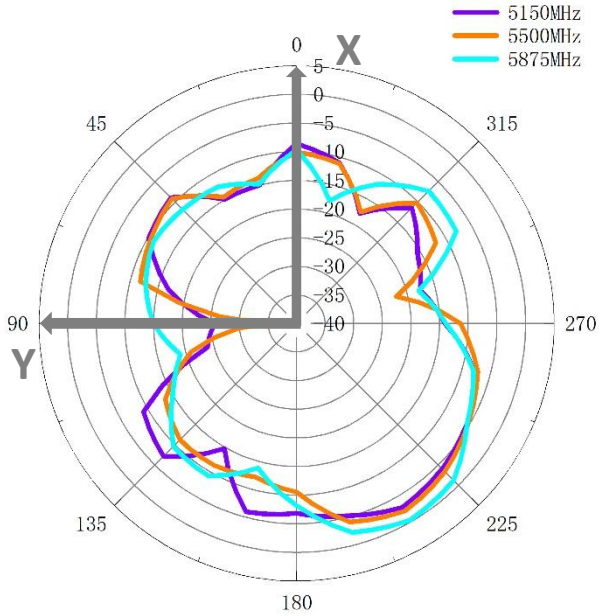

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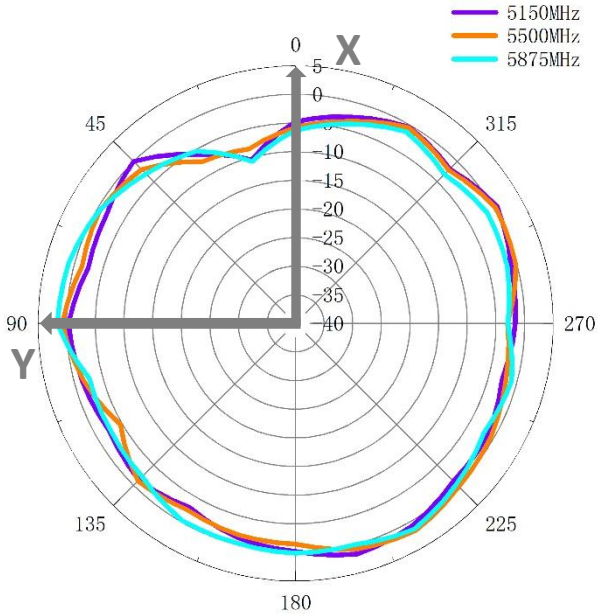
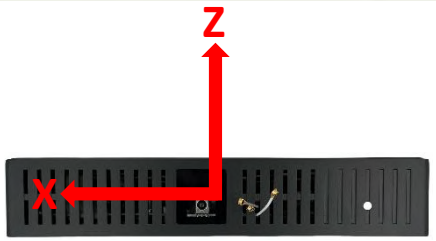
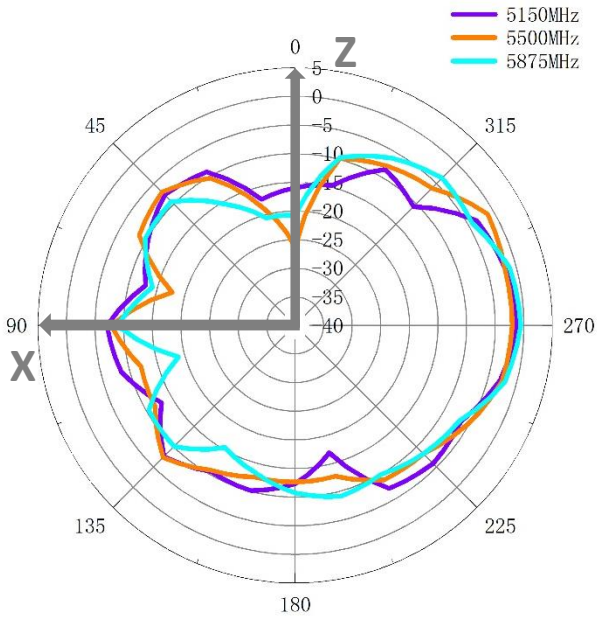


Gain Total

2D Radiation Patterns Of Ant1 in 5G Band at XZ Plan





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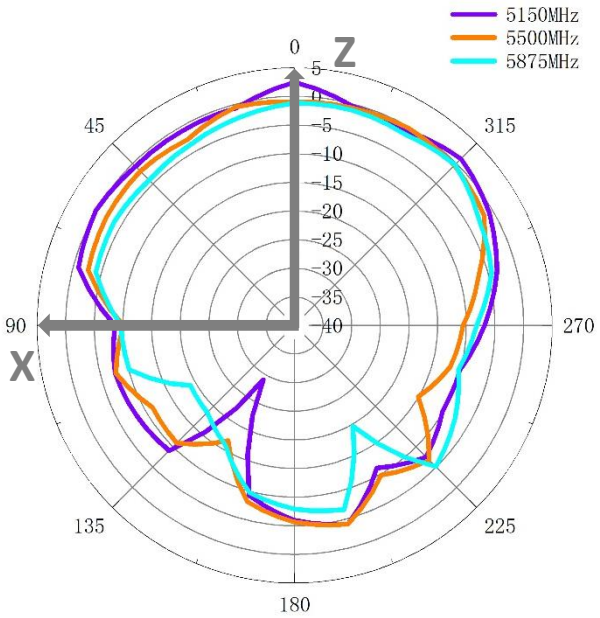

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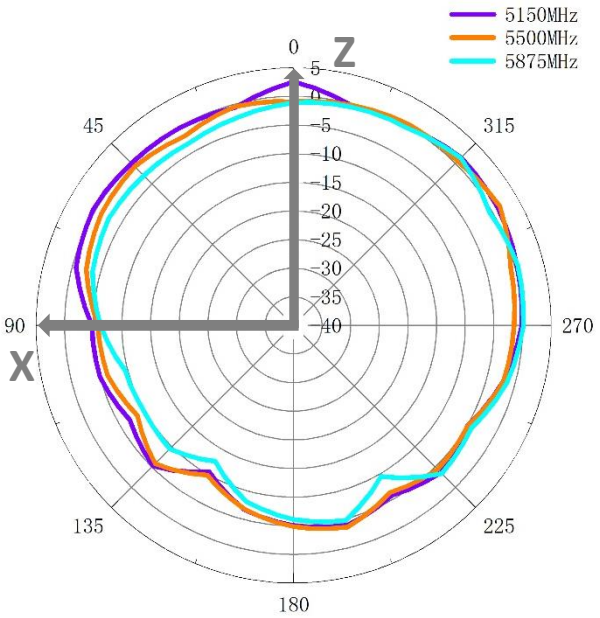
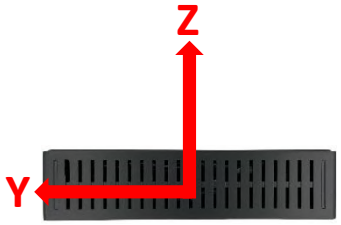
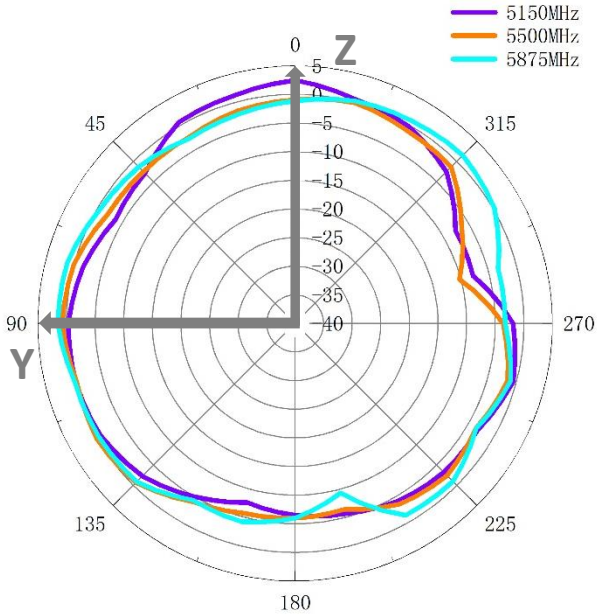


Gain Total

2D Radiation Patterns Of Ant1 in 5G Band at YZ Plan





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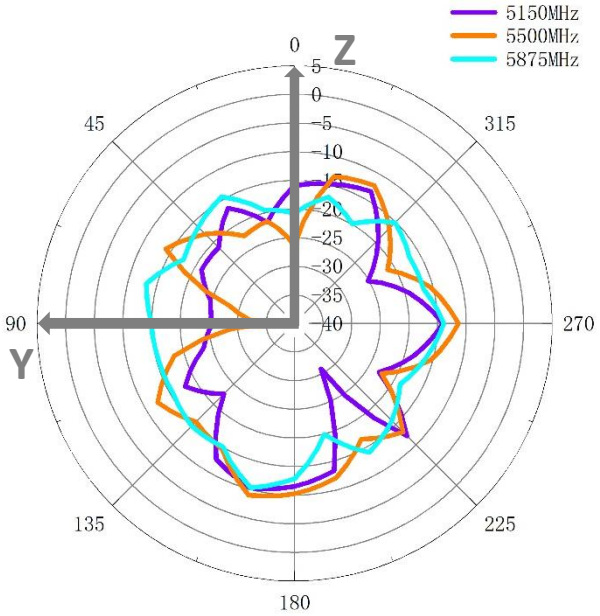

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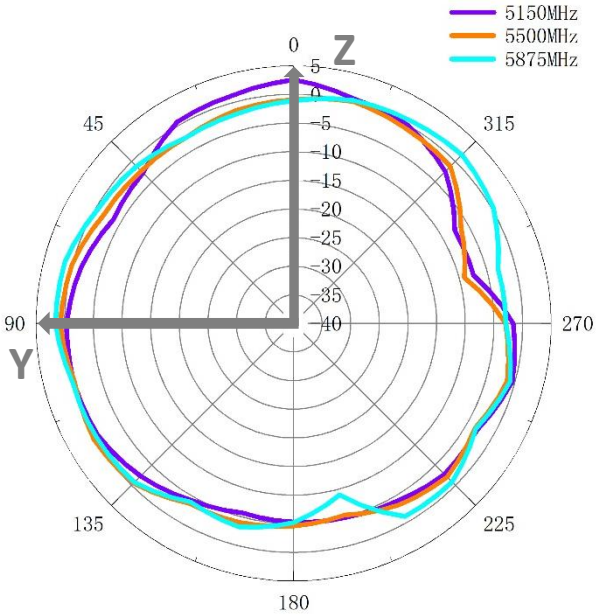
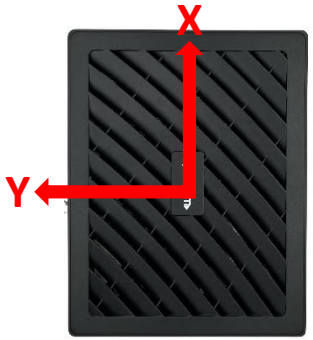
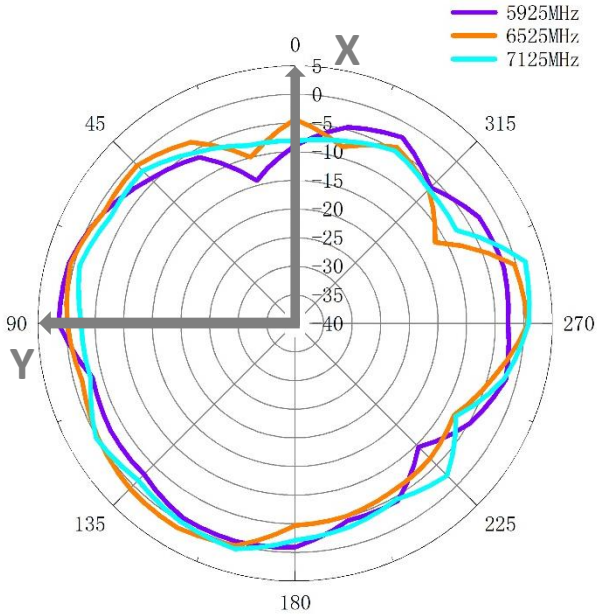


Gain Total

2D Radiation Patterns Of Ant1 in 6G Band at XY Plan





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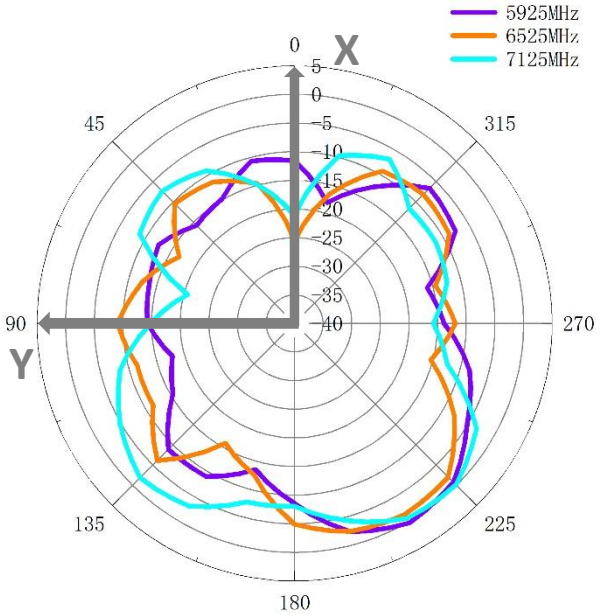

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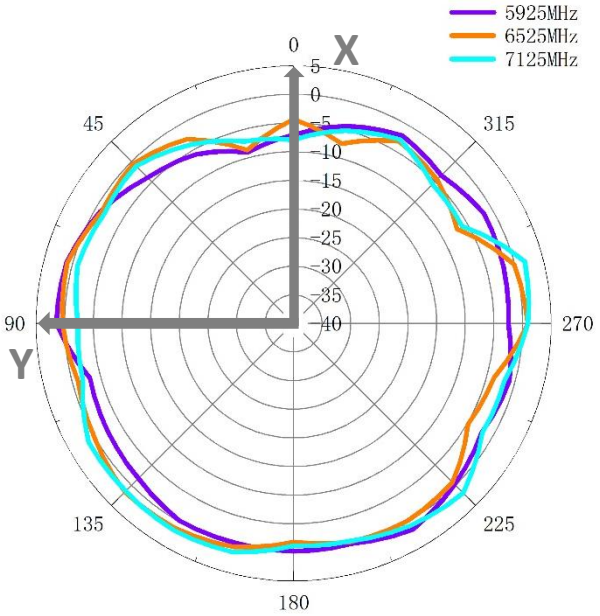
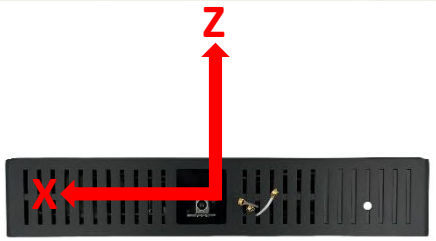
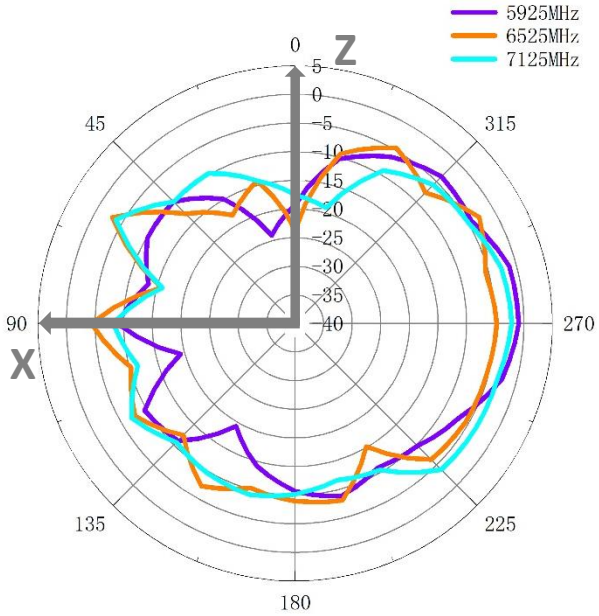


Gain Total

2D Radiation Patterns Of Ant1 in 6G Band at XZ Plan





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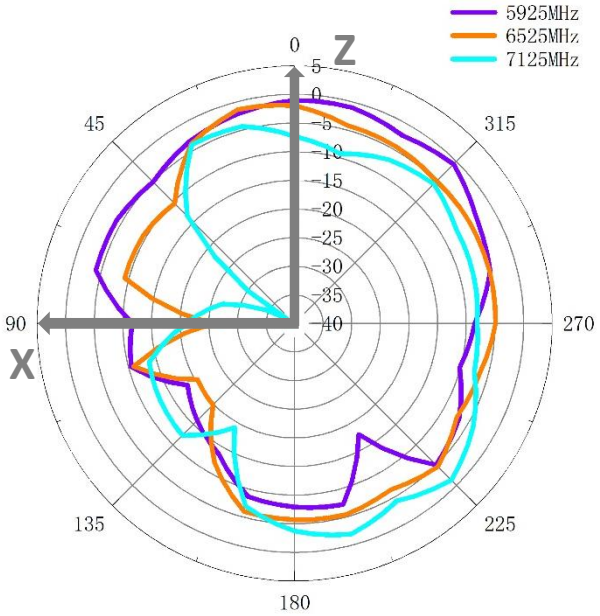
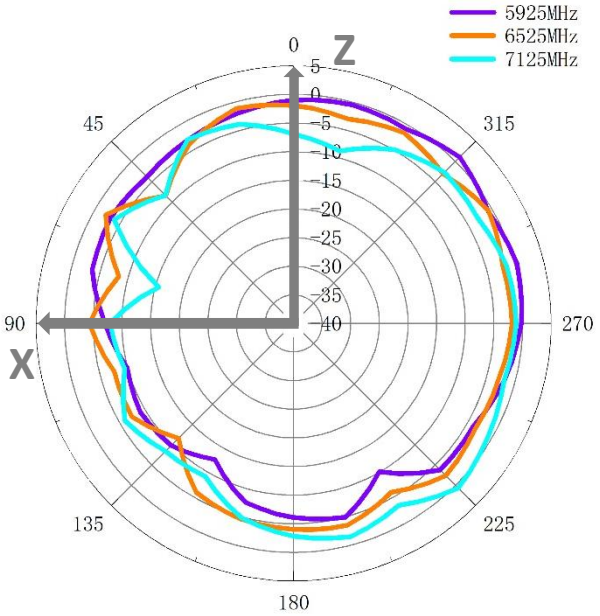
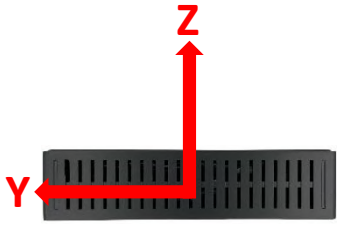


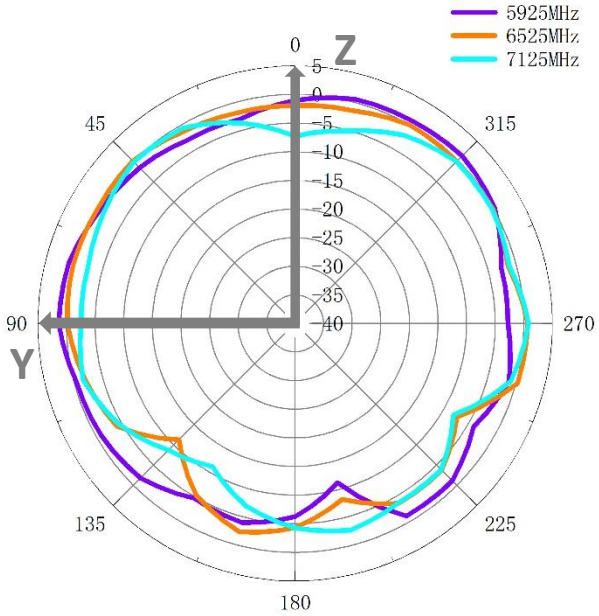
Gain Phi



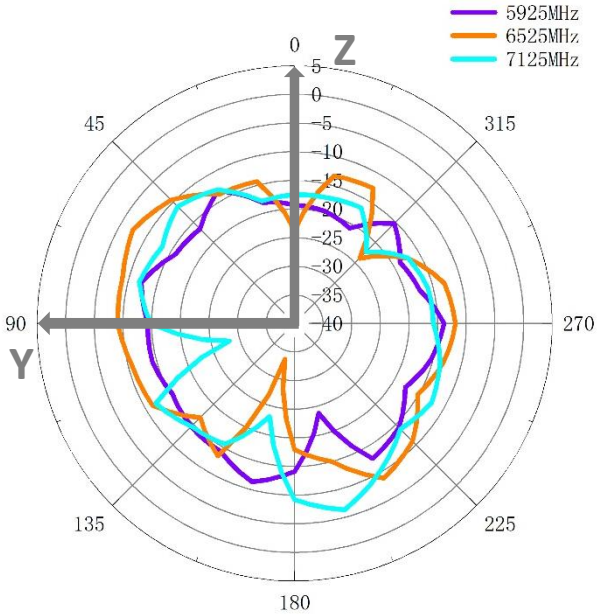
Gain Total

2D Radiation Patterns Of Ant1 in 6G Band at YZ Plan





Gain Theta



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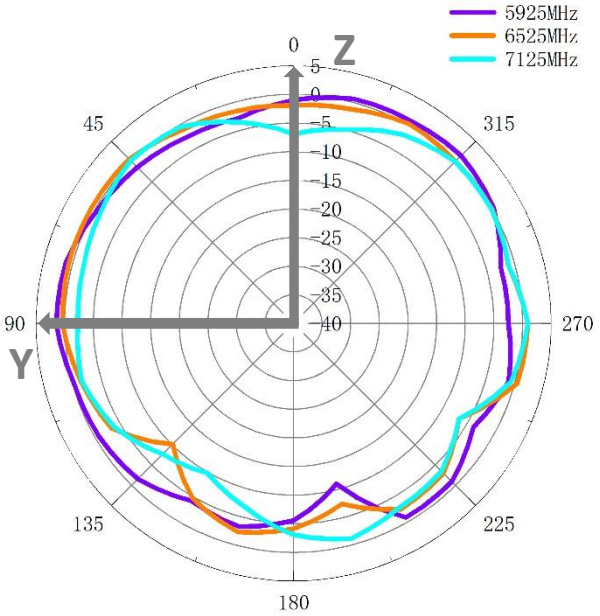
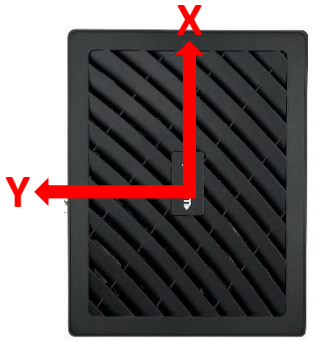
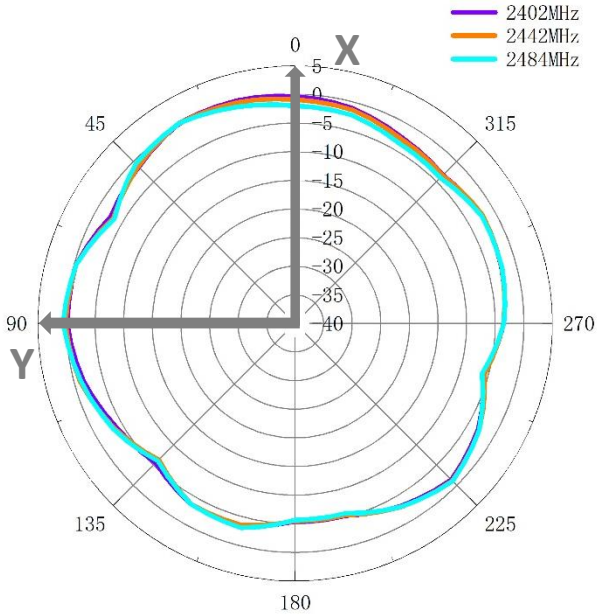


Gain Total

2D Radiation Patterns Of Ant2 in 2G Band at XY Plan





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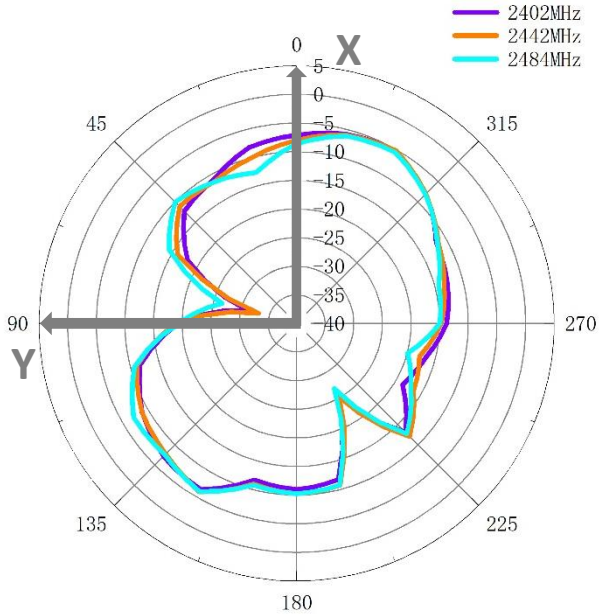

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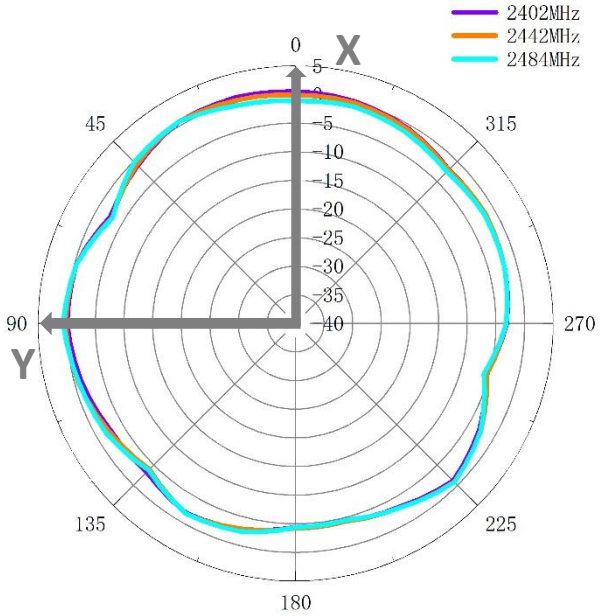
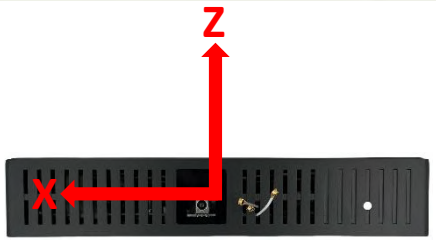
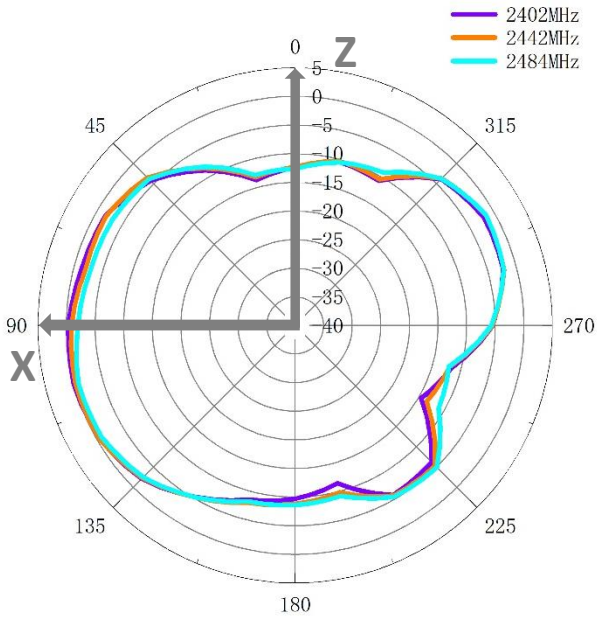


Gain Total

2D Radiation Patterns Of Ant2 in 2G Band at XZ Plan





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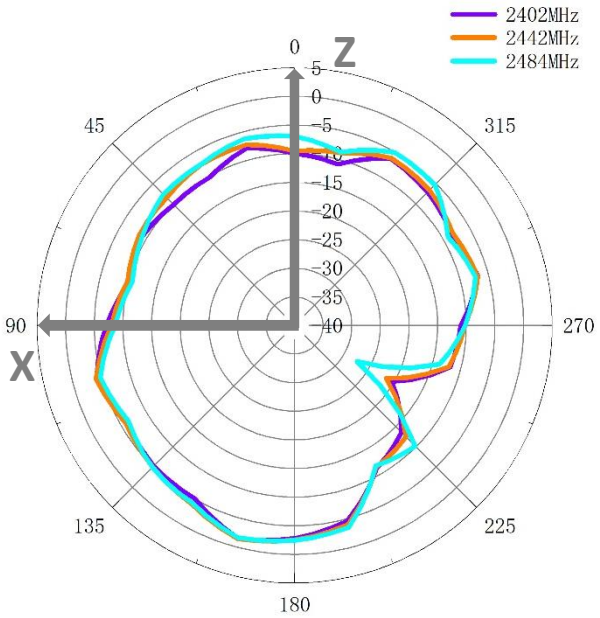

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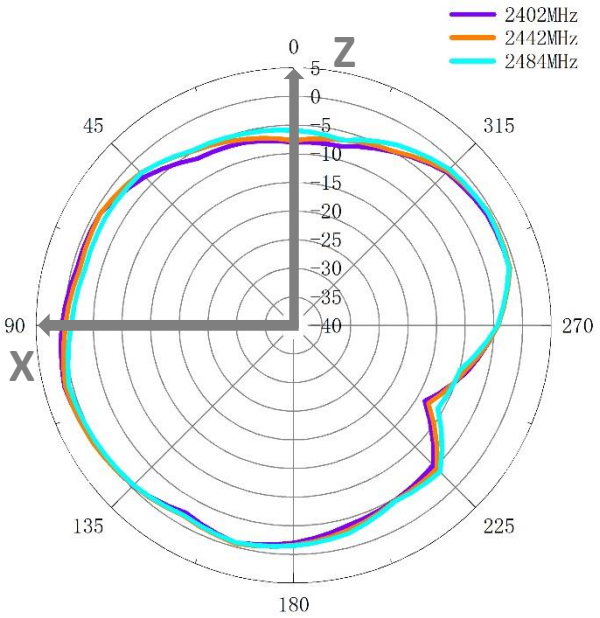
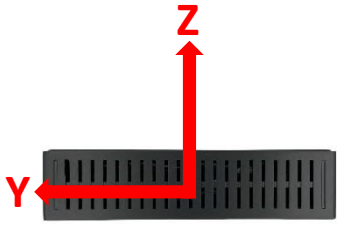
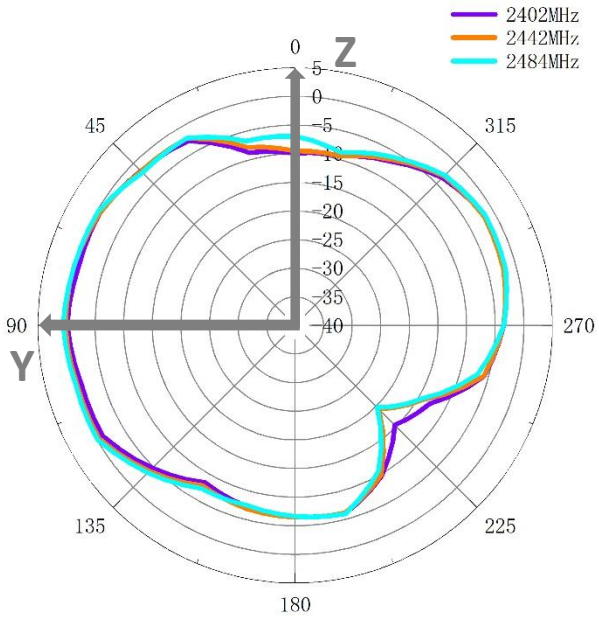


Gain Total

2D Radiation Patterns Of Ant2 in 2G Band at YZ Plan





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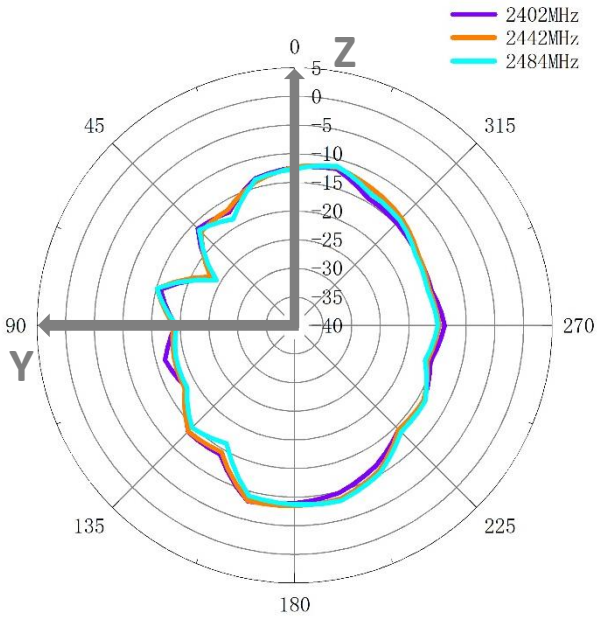

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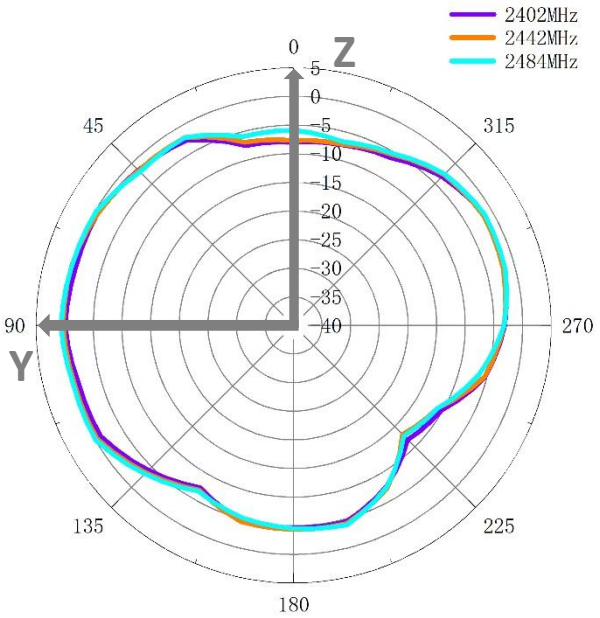
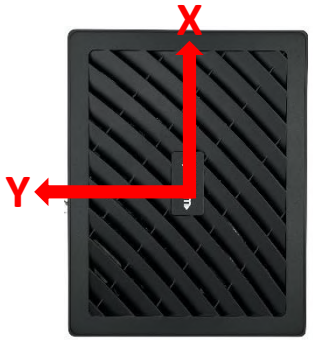
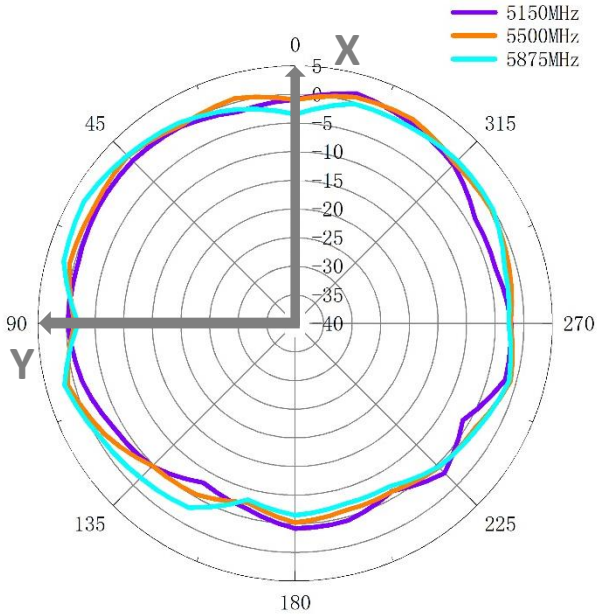


Gain Total

2D Radiation Patterns Of Ant2 in 5G Band at XY Plan





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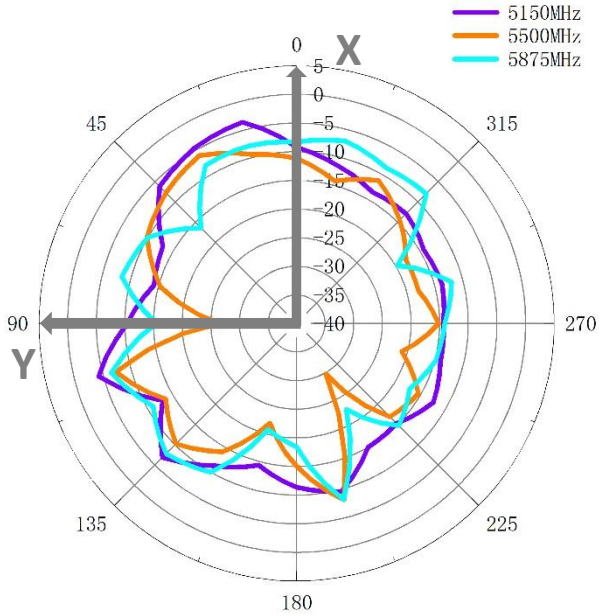

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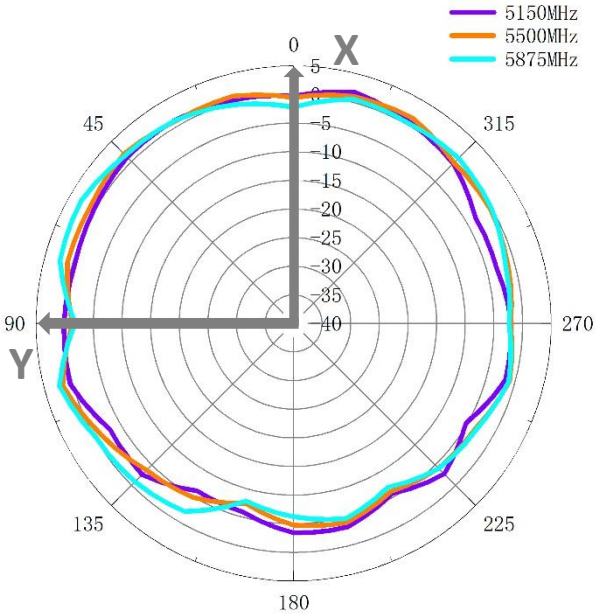
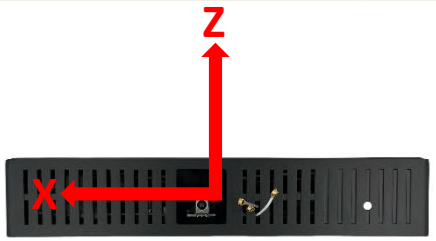
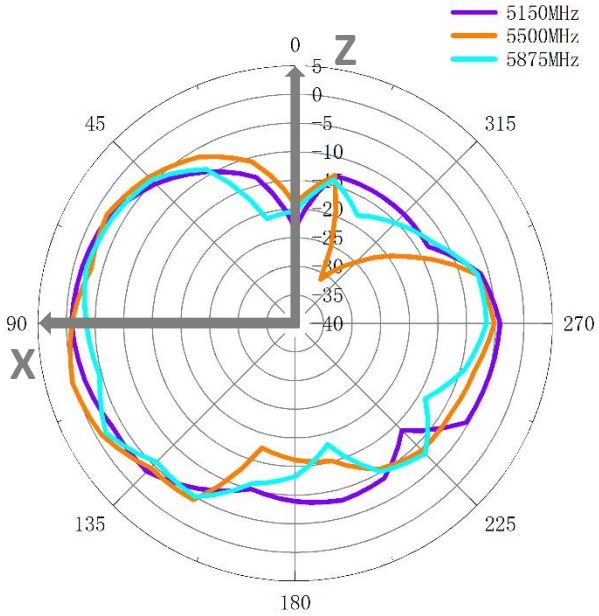


Gain Total

2D Radiation Patterns Of Ant2 in 5G Band at XZ Plan





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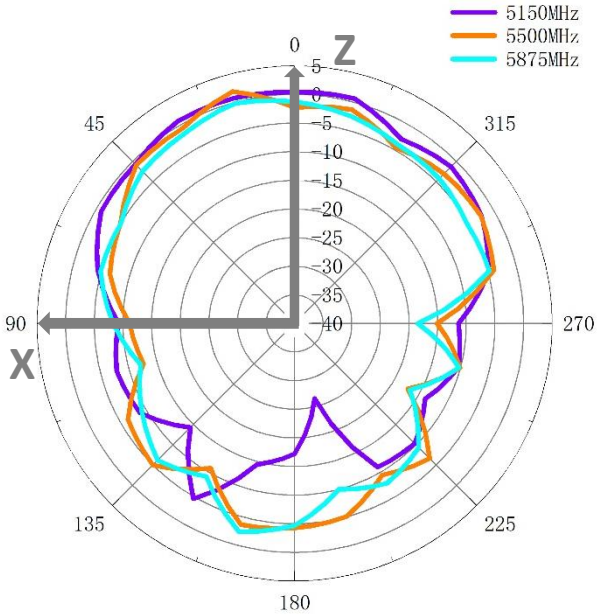

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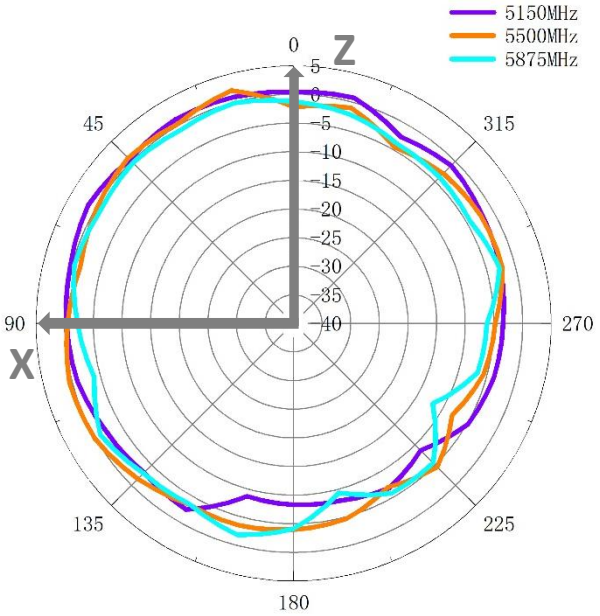
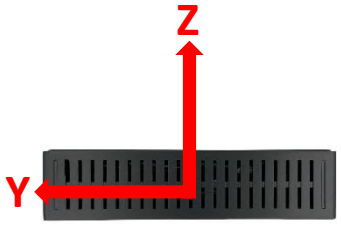
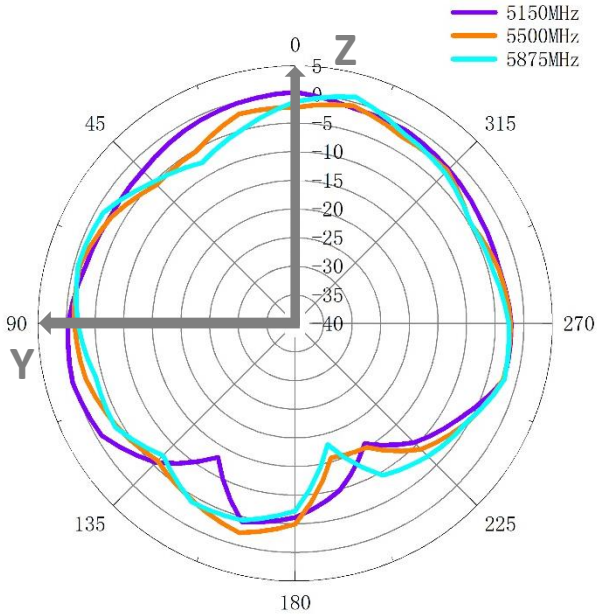


Gain Total

2D Radiation Patterns Of Ant2 in 5G Band at YZ Plan





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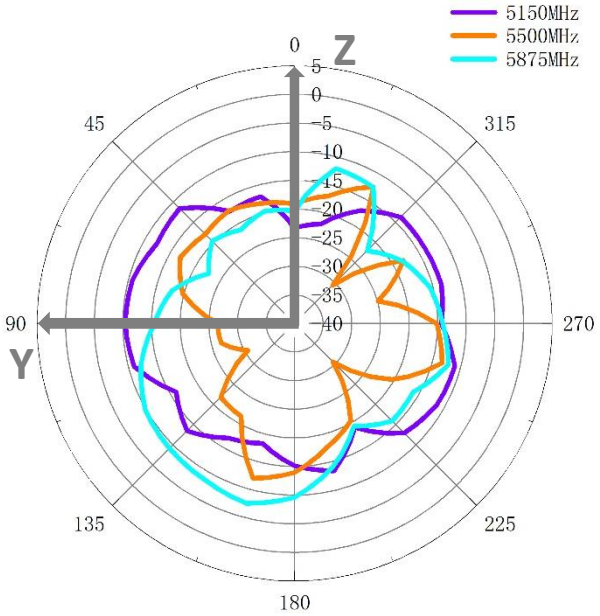

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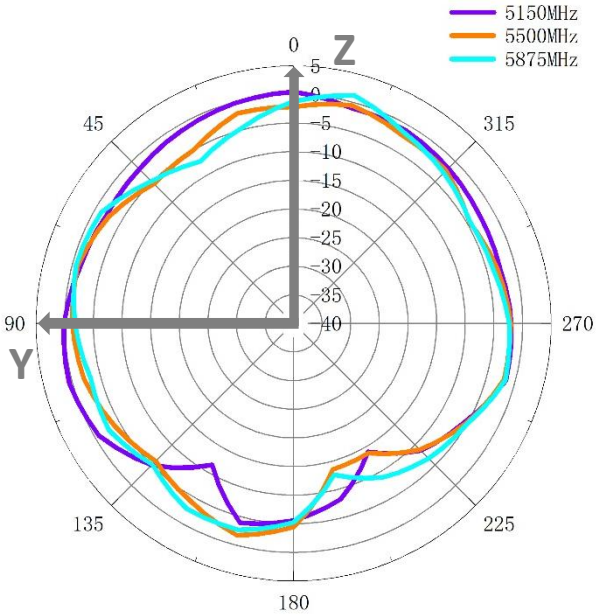
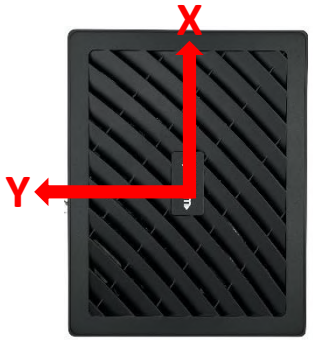
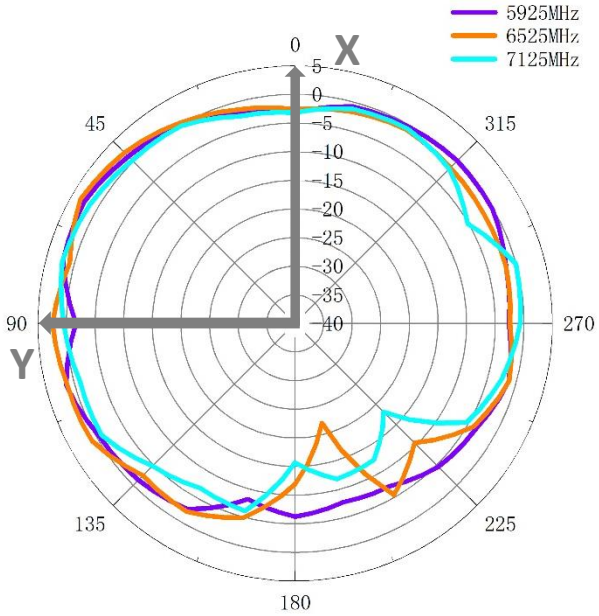


Gain Total

2D Radiation Patterns Of Ant2 in 6G Band at XY Plan





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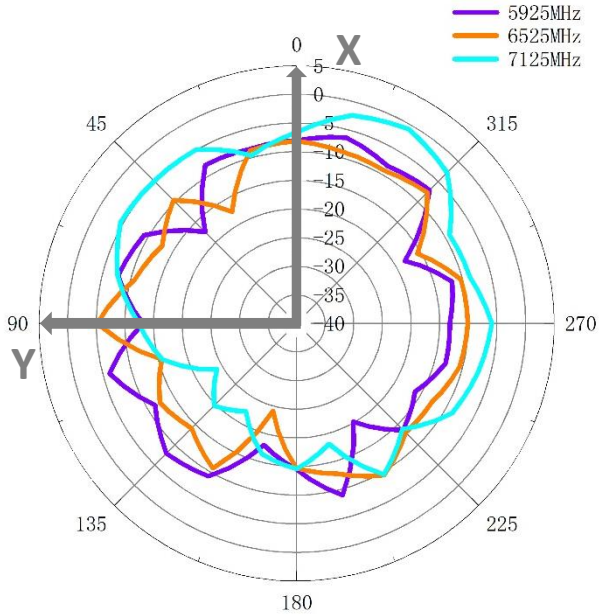

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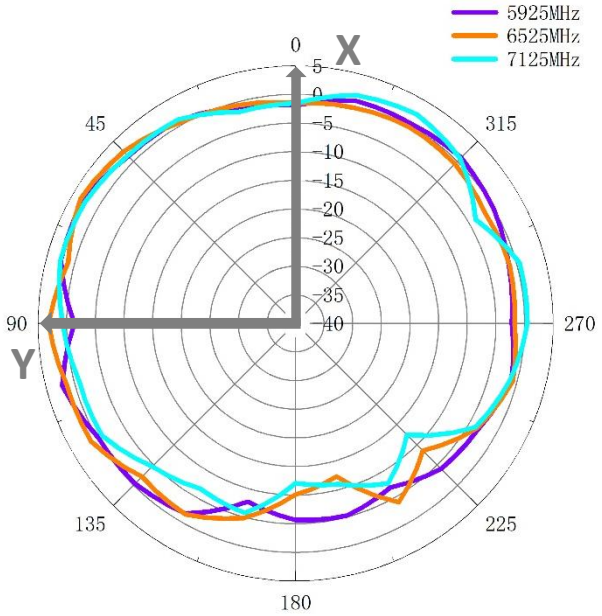
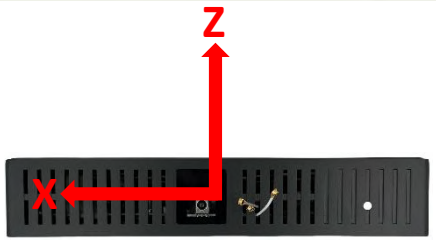
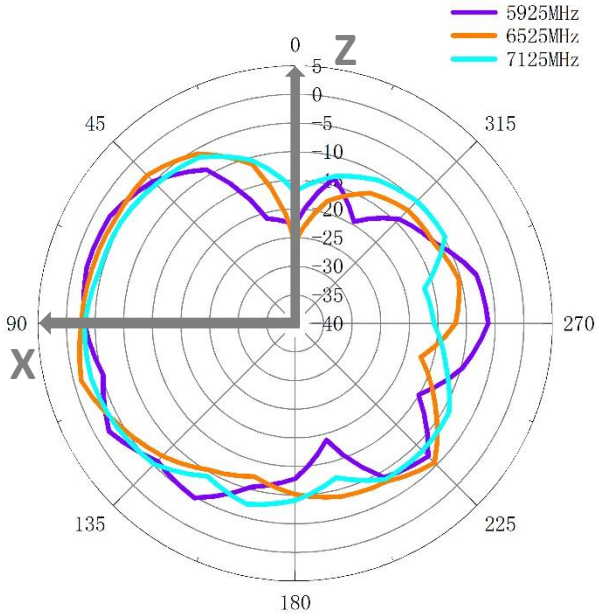


Gain Total

2D Radiation Patterns Of Ant2 in 6G Band at XZ Plan





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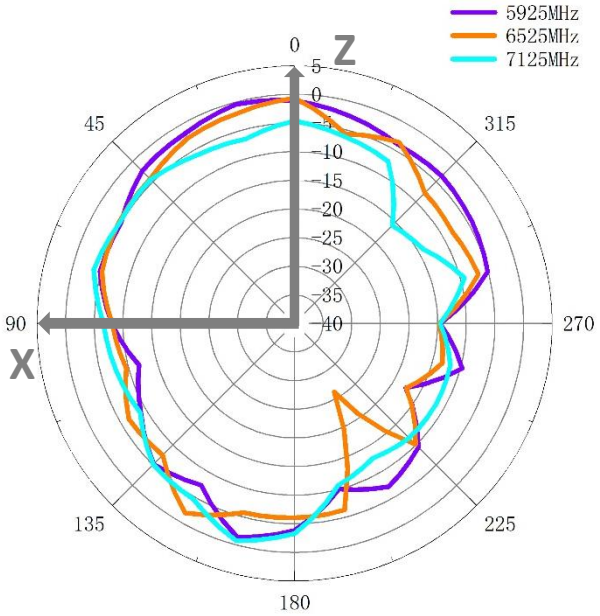

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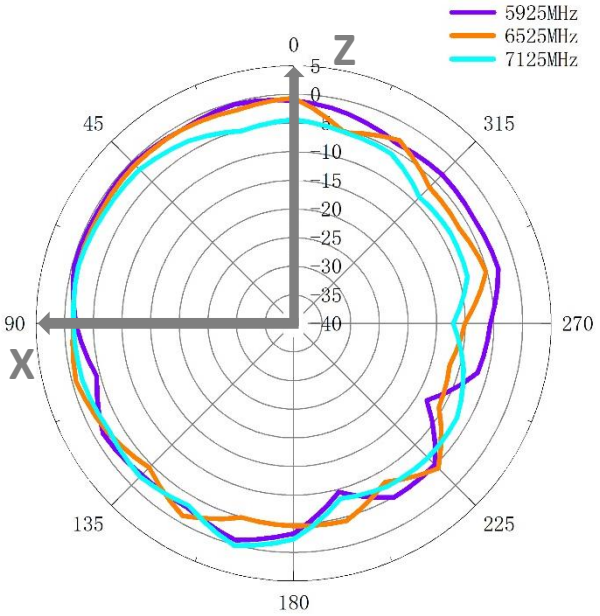
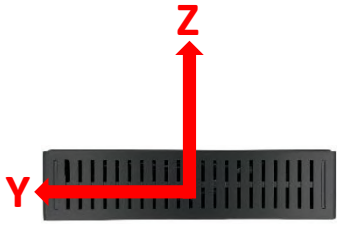
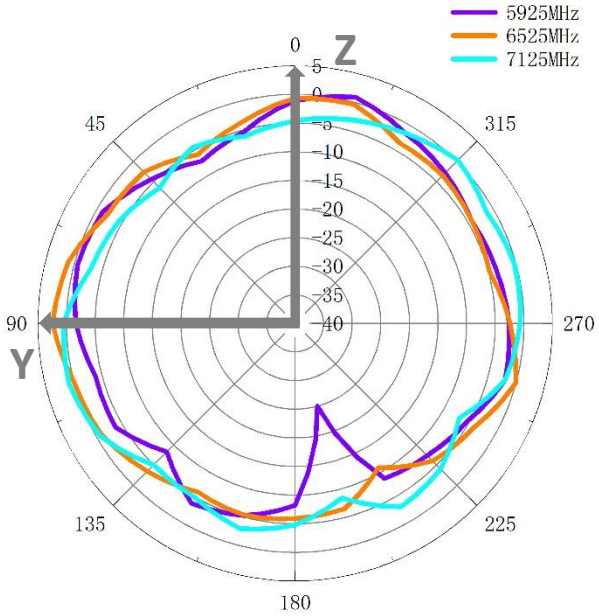


Gain Total

2D Radiation Patterns Of Ant2 in 6G Band at YZ Plan





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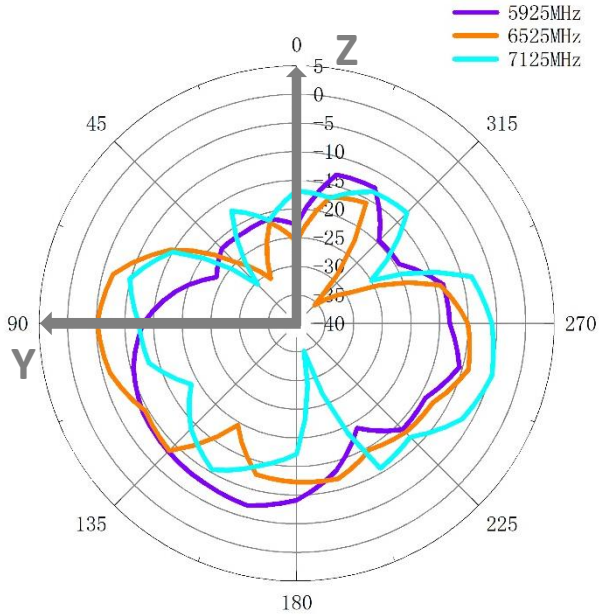

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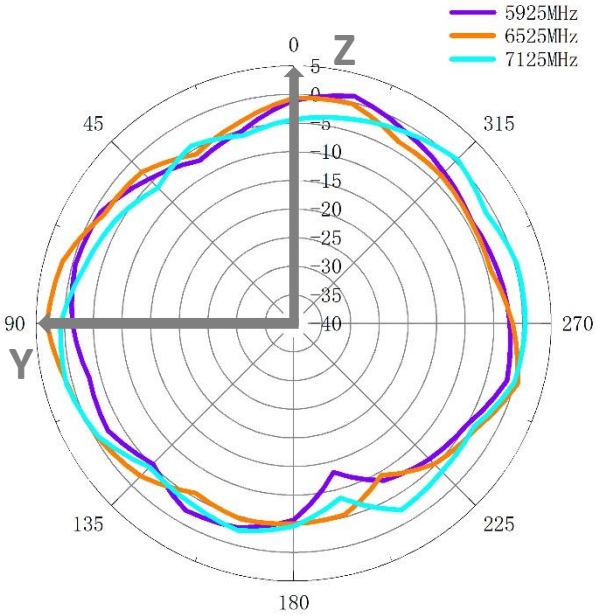
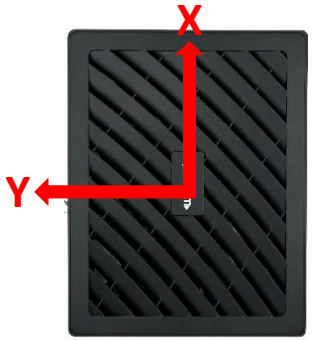
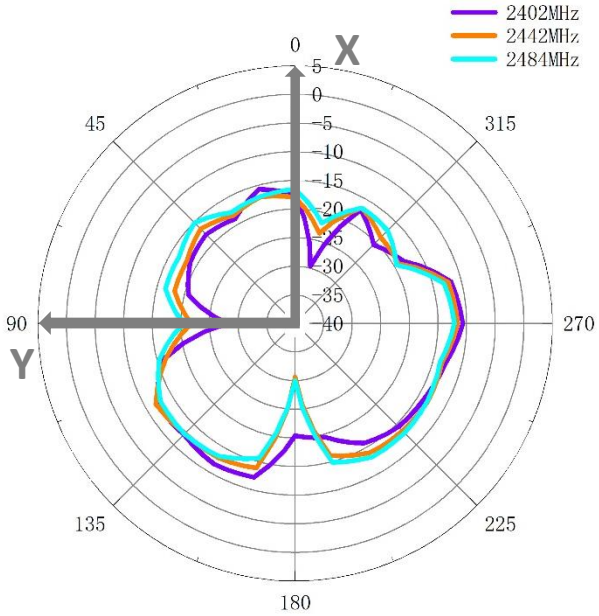


Gain Total

2D Radiation Patterns Of BT in 2G Band at XY Plan





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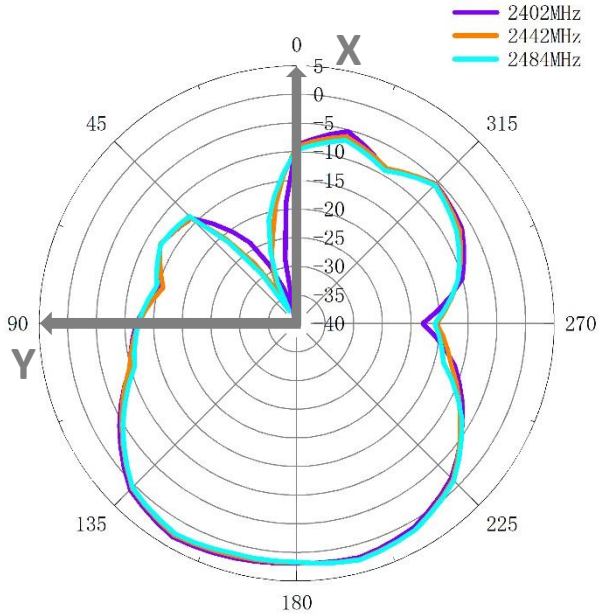

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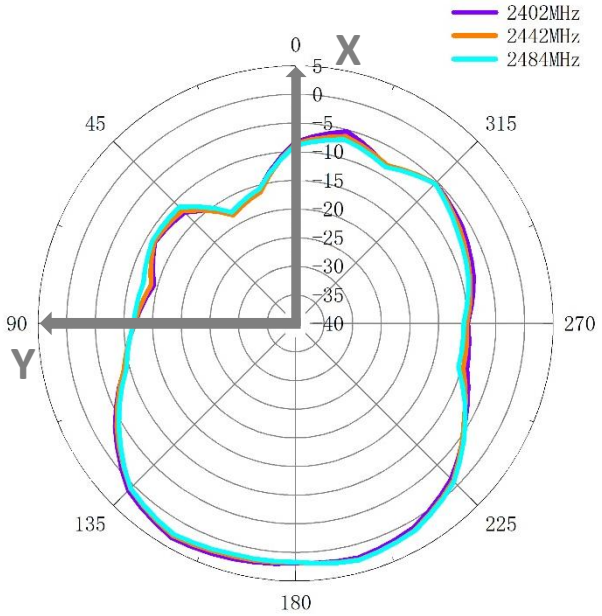
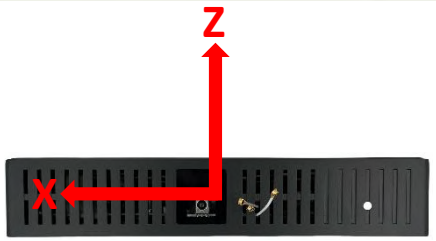
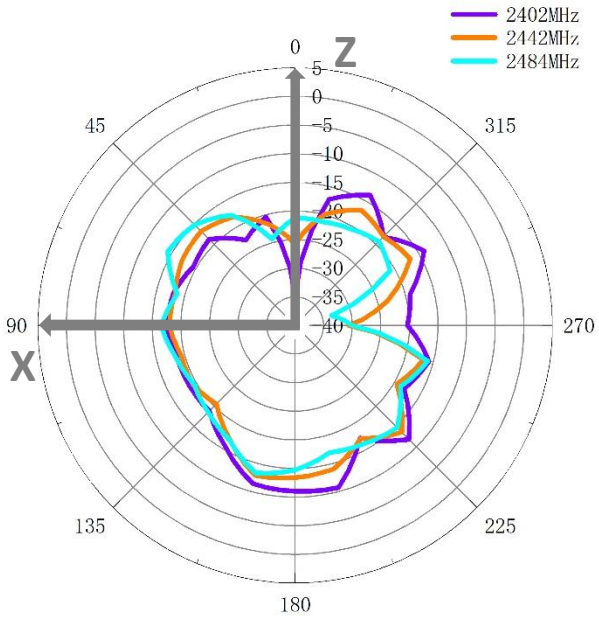


Gain Total

2D Radiation Patterns Of BT in 2G Band at XZ Plan





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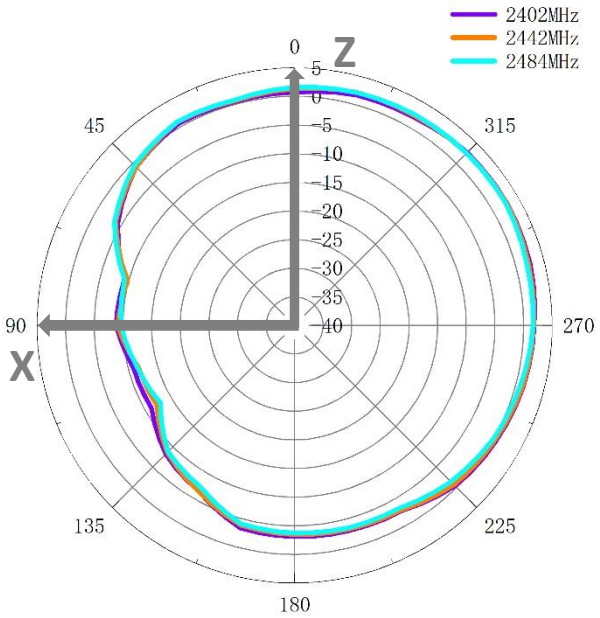

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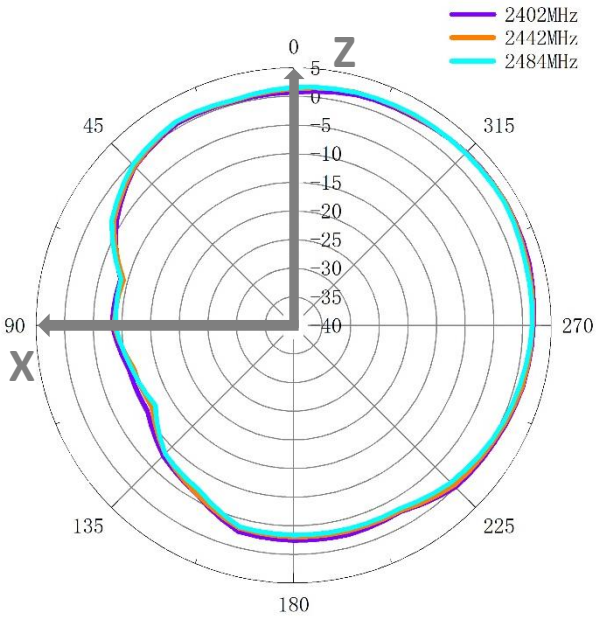
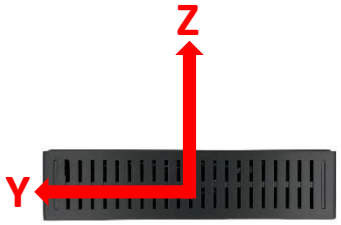
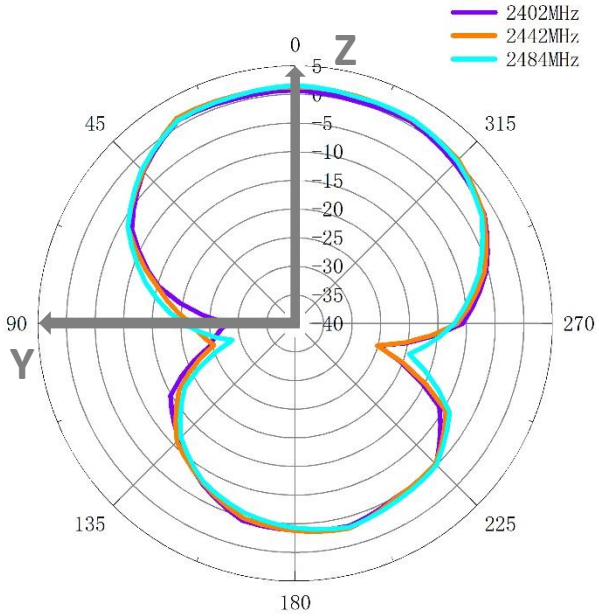


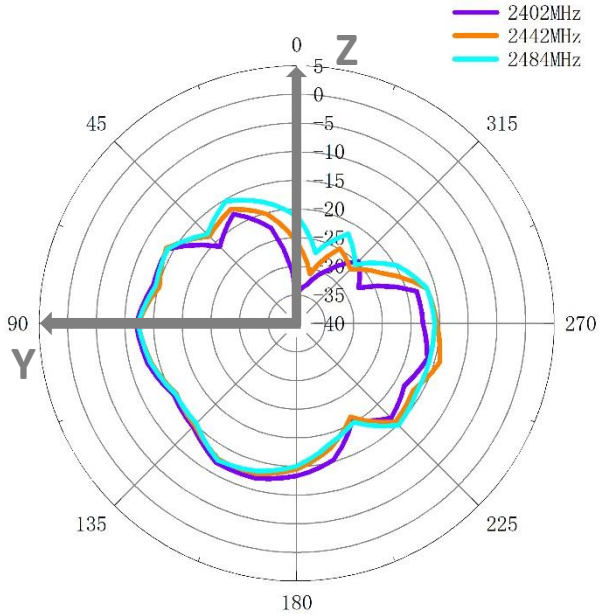
Gain Total

2D Radiation Patterns Of BT in 2G Band at YZ Plan





Gain Theta



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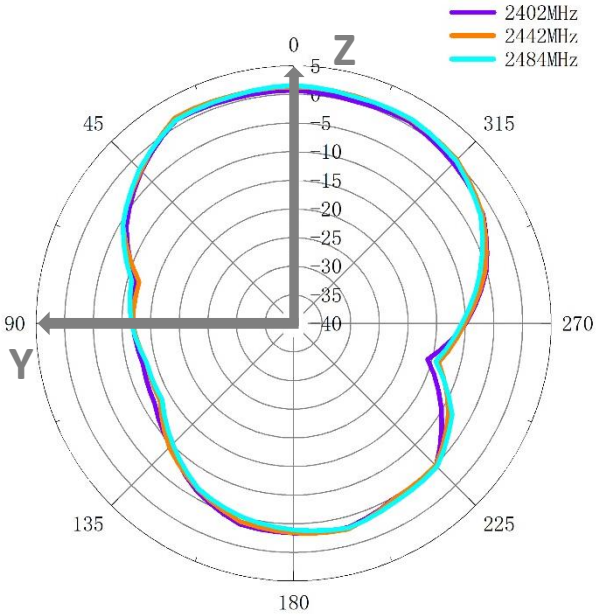
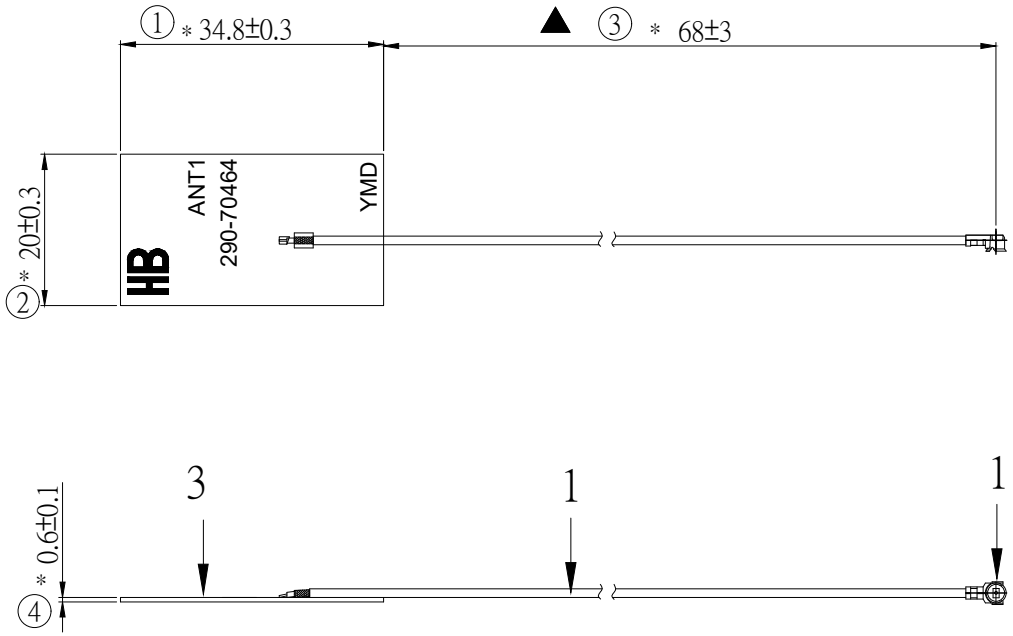
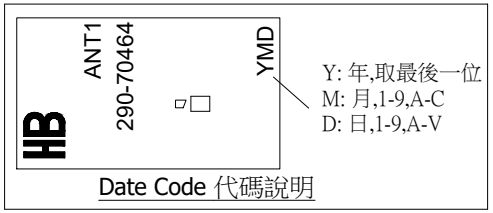


Gain Total

試產



標示① ~ ④ * 為重点管控尺寸,共4个
其他為全尺寸
IPEX方向 需與圖面一致
出線長度100以下 IPEX方向±45°
100~200 IPEX方向 ±90°
200以上 IPEX方向 不予以管控
所有物料需符合RoHS2.0+HF標準



3	PCB	ANT1_PCB ; T=0.6 ; 防焊綠漆 ; 單面板	1	
2	Cable	1.13 LL Cable; Color : Black ; L=82mm	1	
1	Connector	MHF Compatible Plug For OD 1.13mm	1	
NO.	SORT	SPECIFICATION	Q'TY	VENDOR

ECN NO	版次	变更内容	日期	确认
	X2	修改電路與線長	2023-06-17	
	X1	New Issue	2023-04-17	

RANGETOLERANCES	客户名称:	百一	常熟市泓博通讯技术股份有限公司 CHANGSHU HONGBO TELECOMMUNICATION TECHNOLOGY CO.,LTD
0-30 ±1.5 31-100 ± 2 101-200 ± 3 201以上 ± 4 REF ± 3 METRIC: mm	客户料号:	49031- 01103- HB	
	泓博料号:	290-70464	产品名称: ADB-2682WF_ANT1_PCB WITH CABLE
	制 图:	Alvin	页 次: 1 - 1 / 日 期:
	R&D 审核:	Eason	版 本: / 比 例: 1 : 1
	核 准:	Alex	校 对:

HLMH-Q3-E019 A/3