

規格承認書

Approval Sheet

客戶名稱

Customer Name: 百一

產品名稱

Product description: A n t 1

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----- 50 Ω

1.1.3 Return 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

1.1.5 Admitted 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

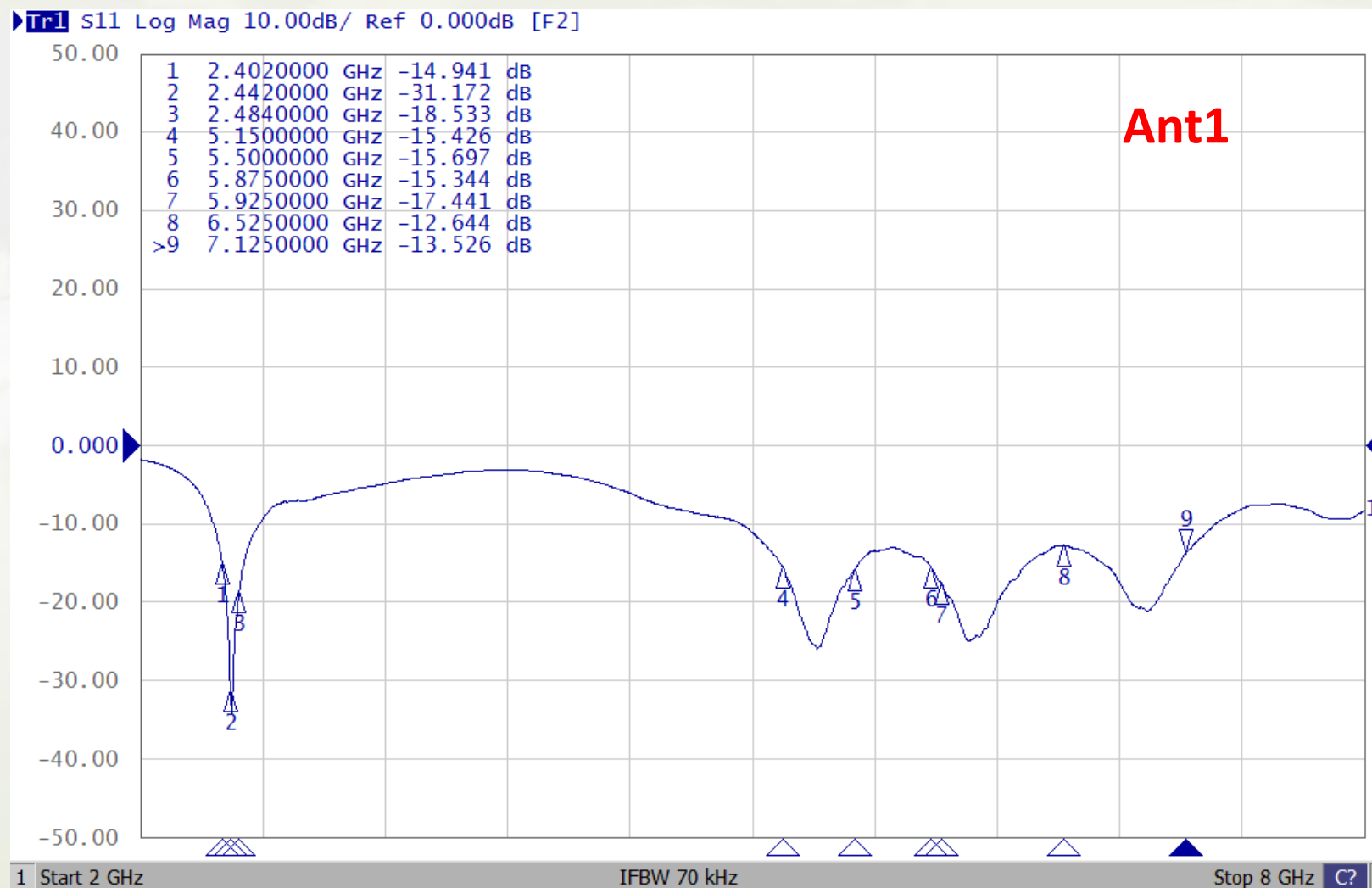


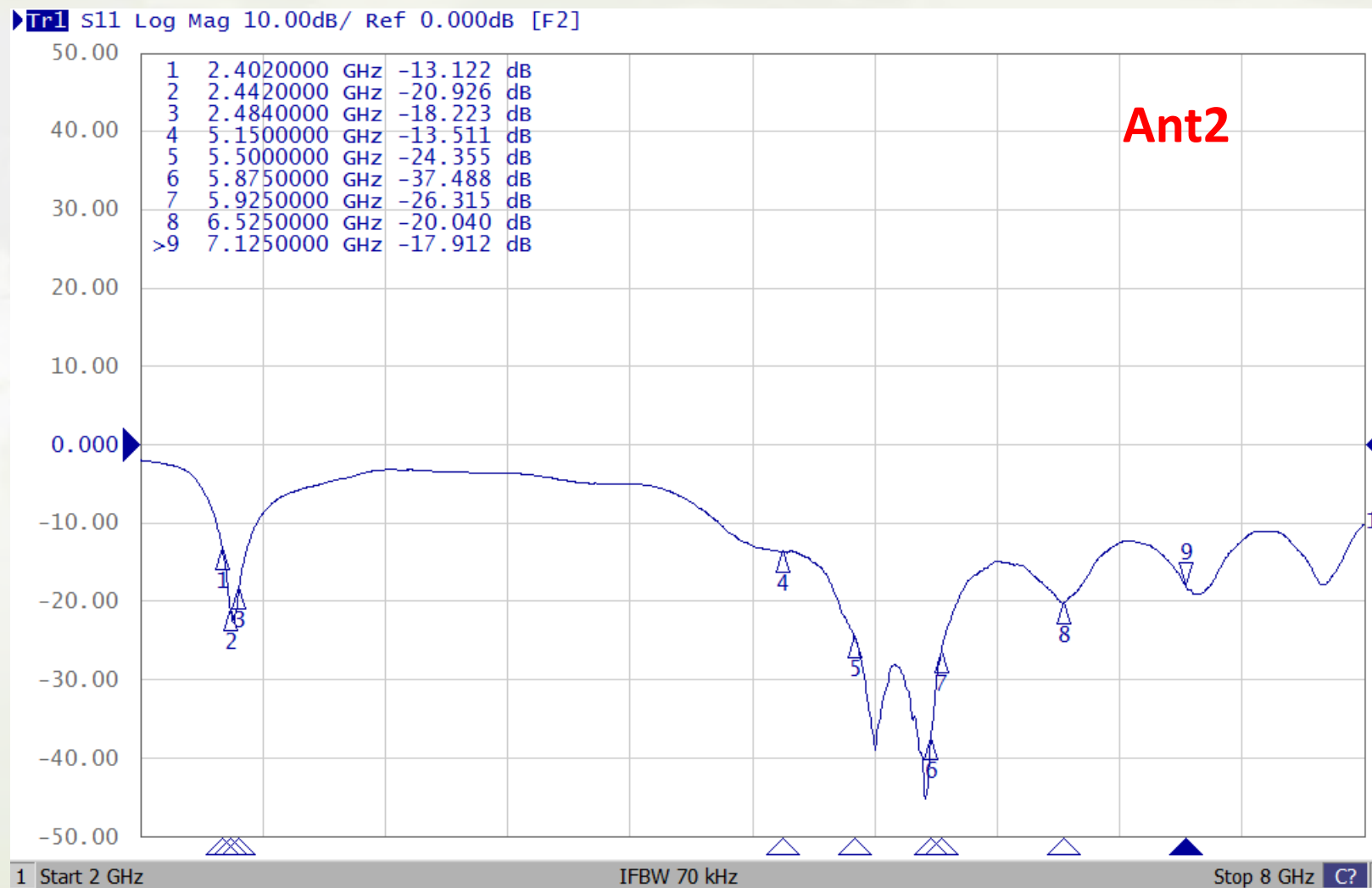
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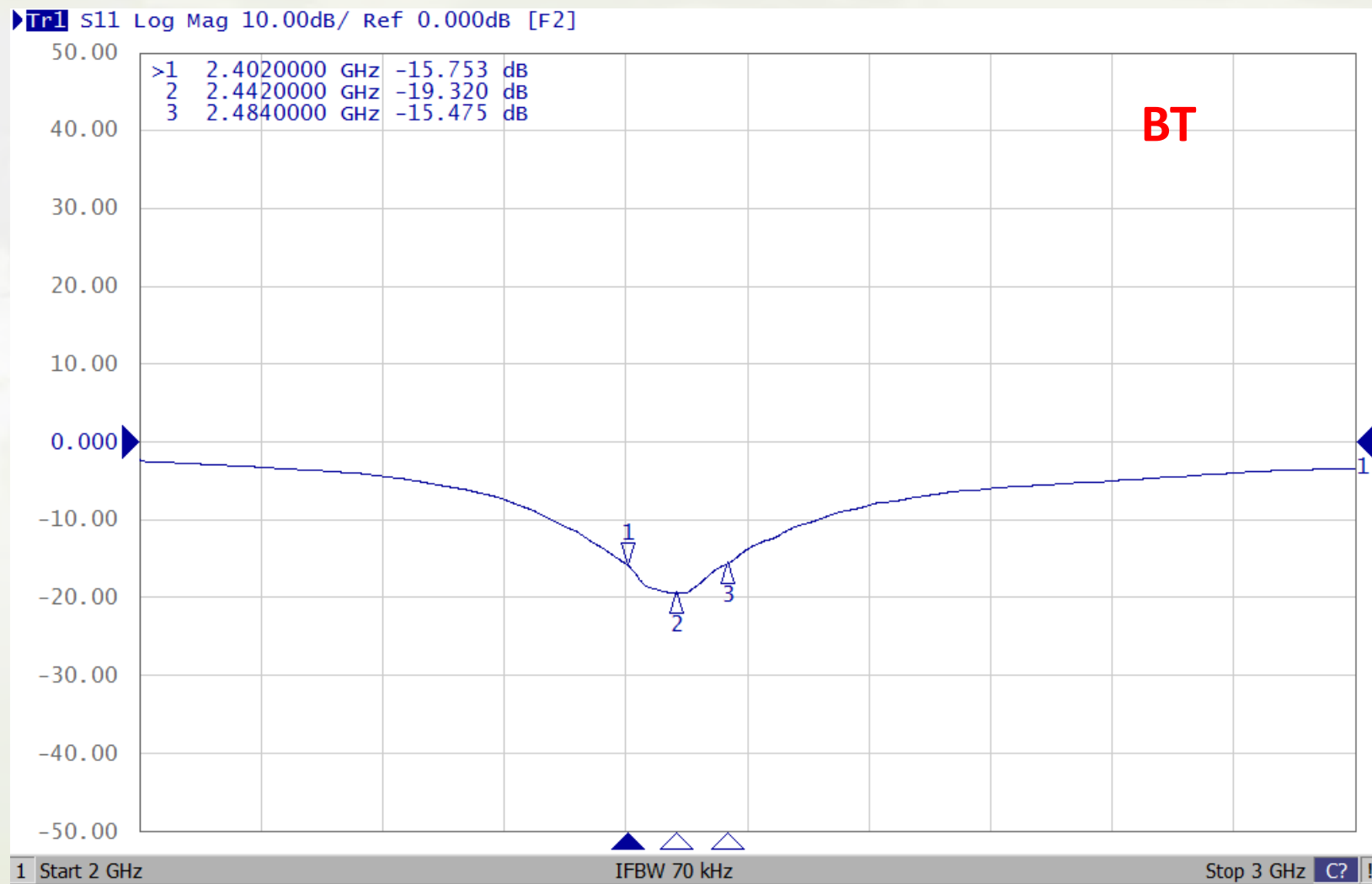
- Return Loss & Isolation
- Antenna Efficiency, Peak Gain
- Antenna 2D Realized Gain Radiation Patterns @Total Polarization



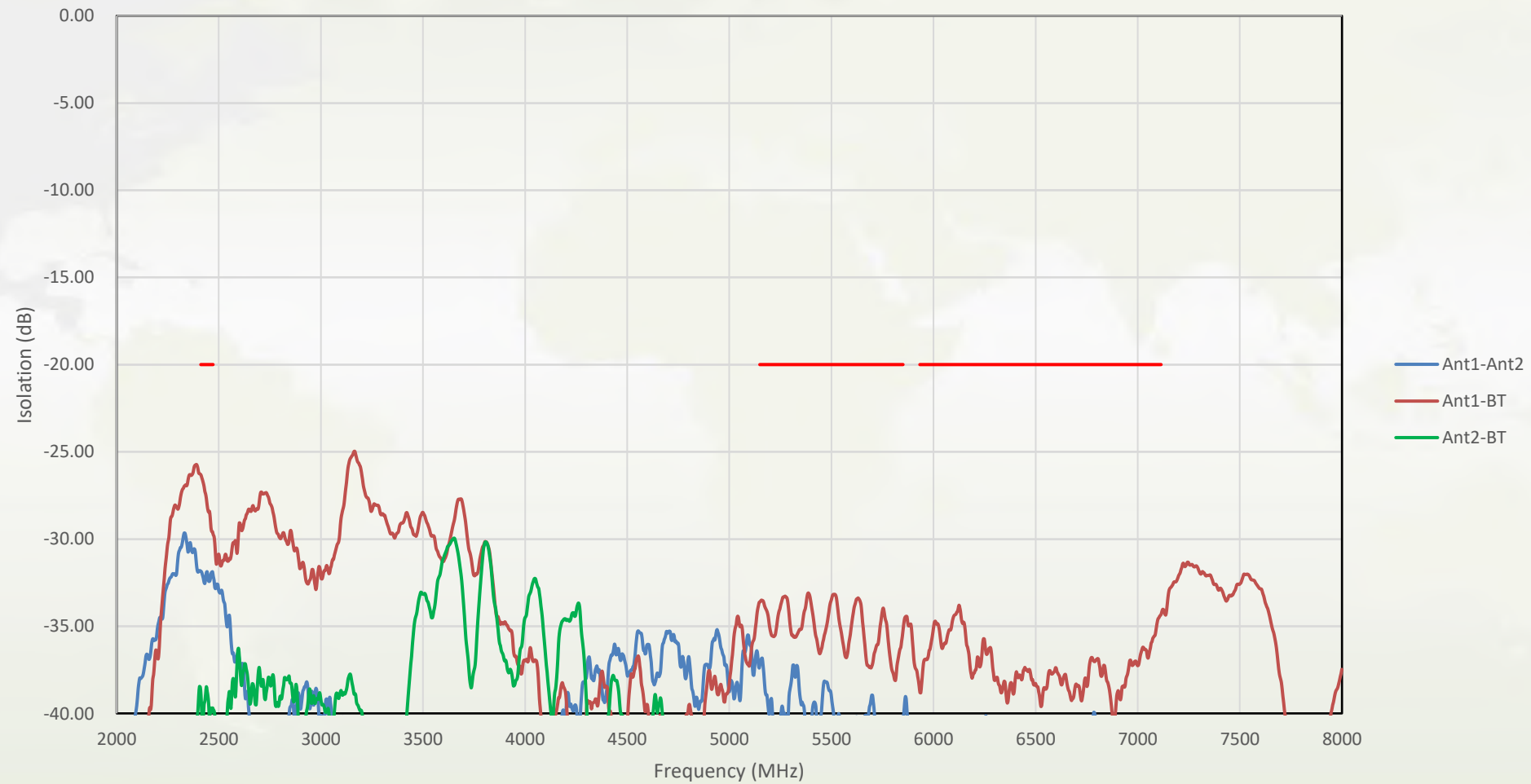
Return Loss & Isolation







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

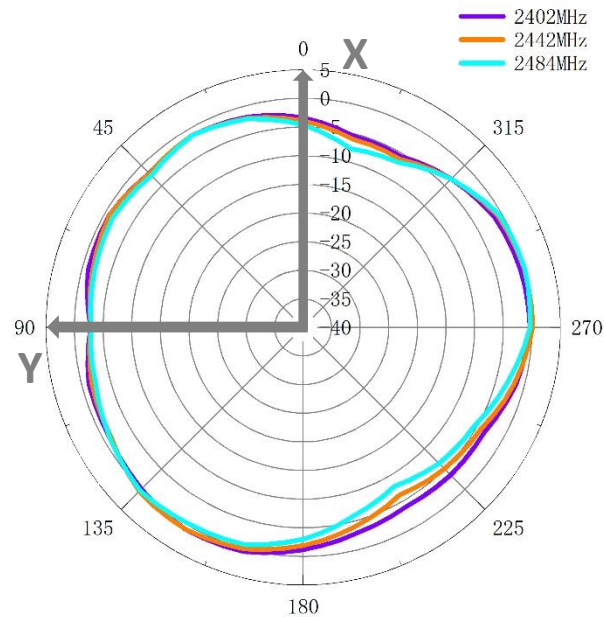
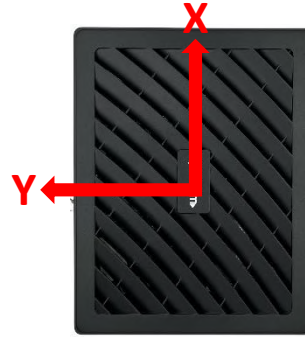
Frequency (MHZ)	Efficiency (%)	Peak Gain (dBi)	Frequency (MHZ)	Efficiency (%)	Peak Gain (dBi)	Frequency (MHZ)	Efficiency (%)	Peak Gain (dBi)
2402	56	2.41	5150	63	2.05	5925	65	2.86
2412	56	2.59	5200	61	1.83	6095	63	2.62
2422	57	2.69	5250	61	2.02	6255	62	3.06
2432	57	2.79	5325	61	1.99	6425	65	3.56
2442	59	3.00	5400	64	2.21	6475	63	3.34
2452	59	3.02	5470	64	2.41	6525	62	3.44
2462	58	3.01	5500	66	2.71	6715	63	3.39
2472	57	2.92	5600	66	2.86	6735	60	3.23
2484	58	2.95	5725	64	2.54	6875	61	3.19
			5775	63	2.58	6975	64	2.94
			5825	64	2.86	7075	62	2.62
			5875	64	2.86	7125	63	2.56



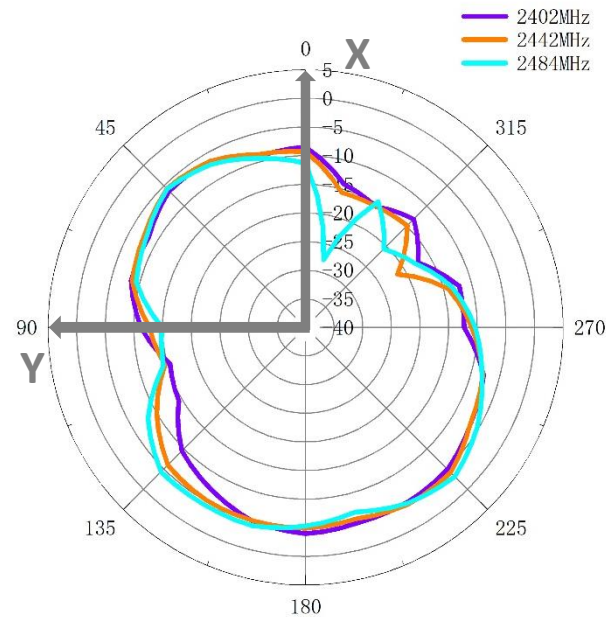
BT		
Frequency (MHZ)	Efficiency (%)	Peak Gain (dBi)
2402	68	3.70
2412	68	3.69
2422	68	3.64
2432	68	3.66
2442	70	3.80
2452	70	3.78
2462	69	3.69
2472	68	3.58
2484	68	3.76



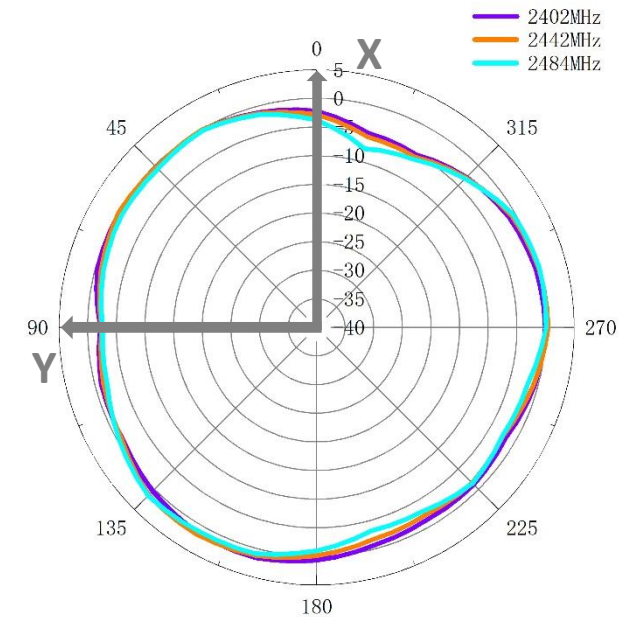
2D Radiation Patterns Of Ant1 in 2G Band at XY Plan



Gain Theta



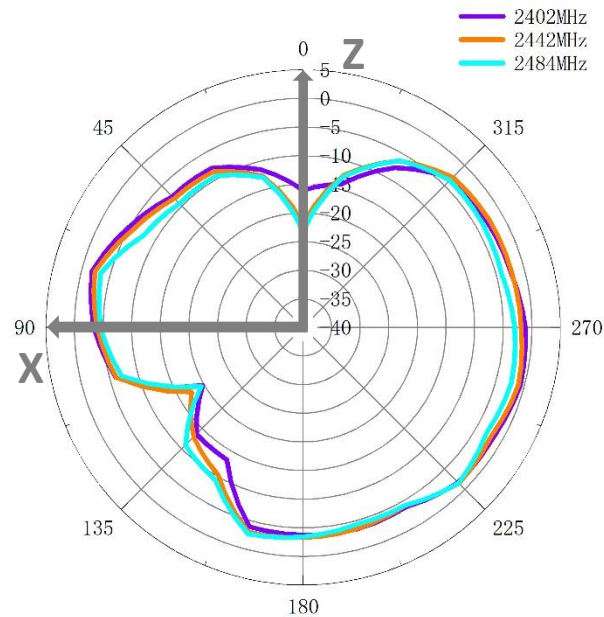
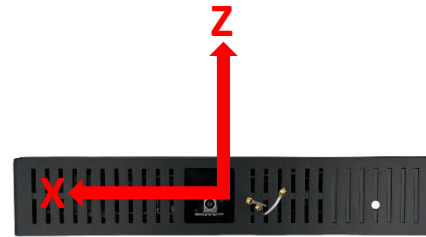
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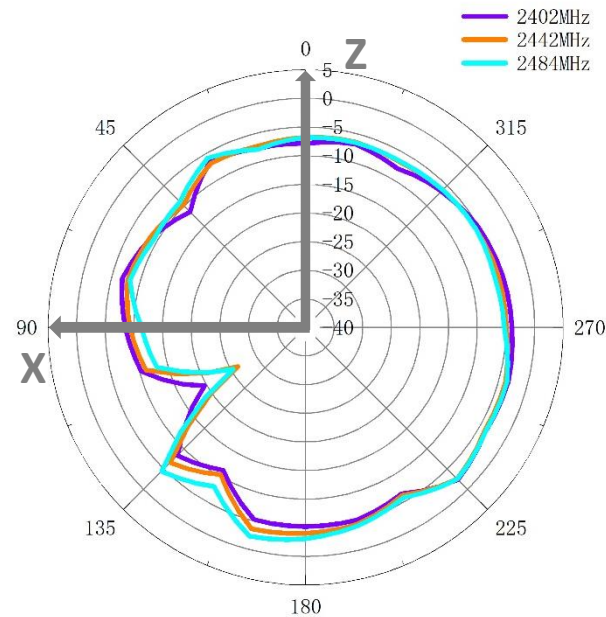
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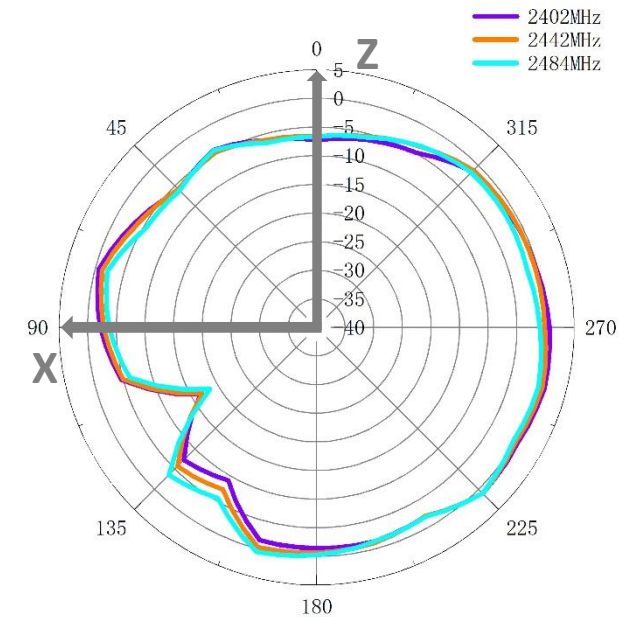
2D Radiation Patterns Of Ant1 in 2G Band at XZ Plan



Gain Theta



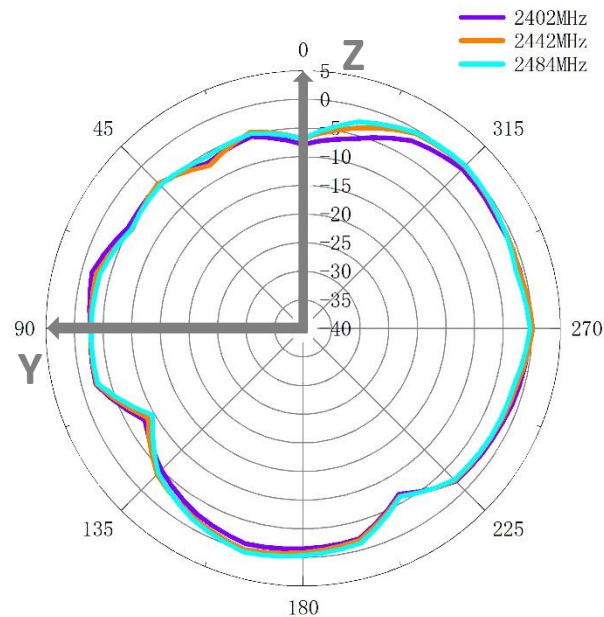
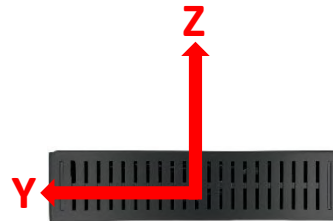
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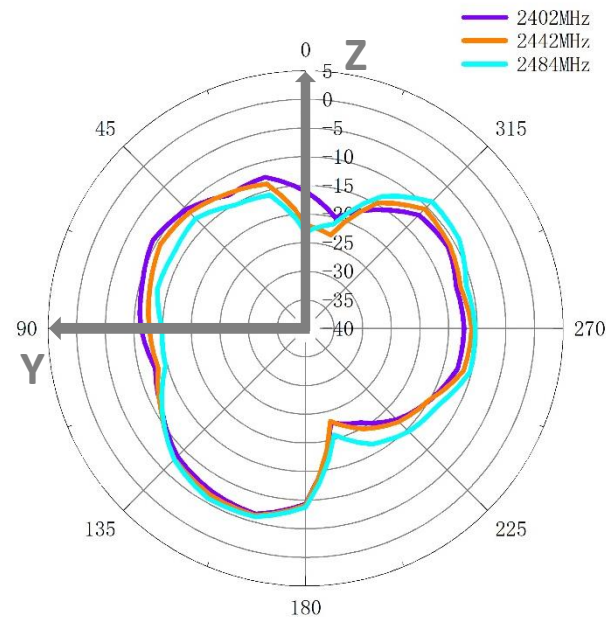
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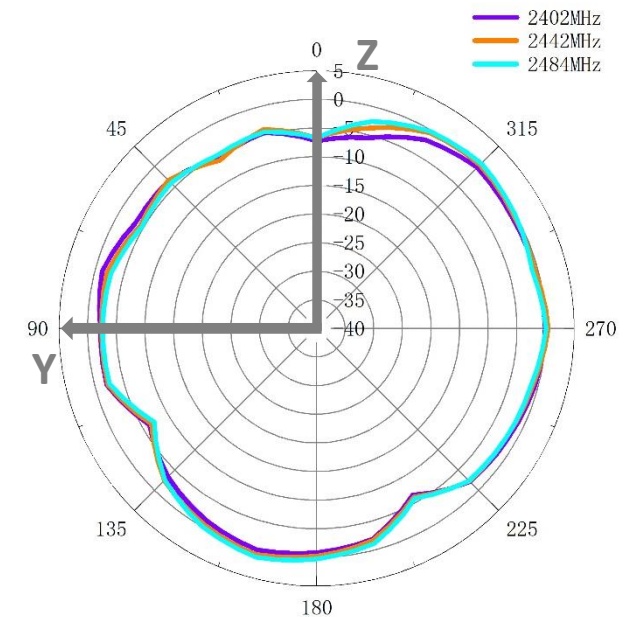
2D Radiation Patterns Of Ant1 in 2G Band at YZ Plan



Gain Theta



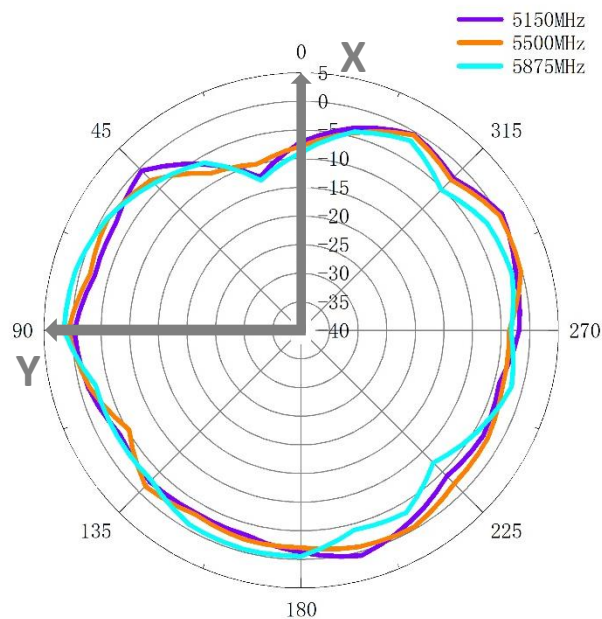
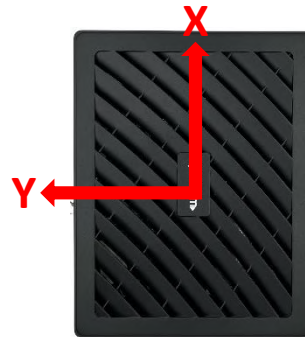
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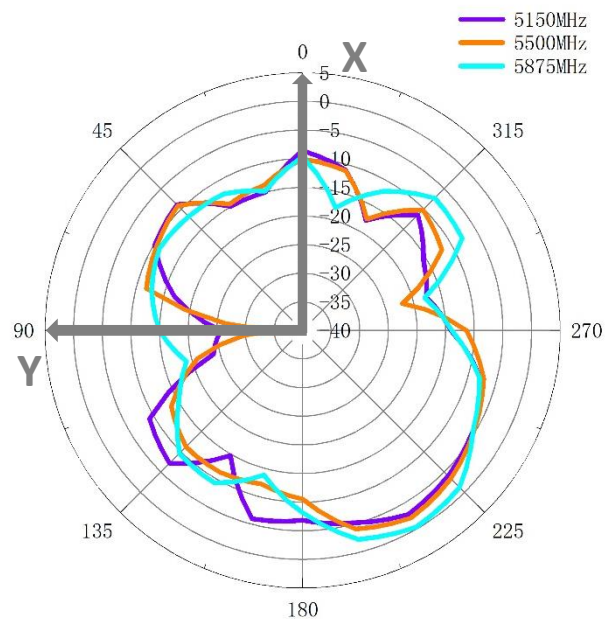
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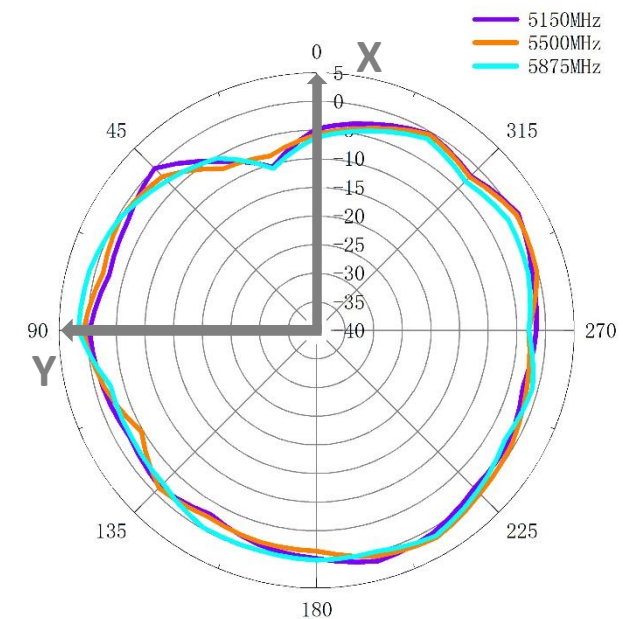
2D Radiation Patterns Of Ant1 in 5G Band at XY Plan



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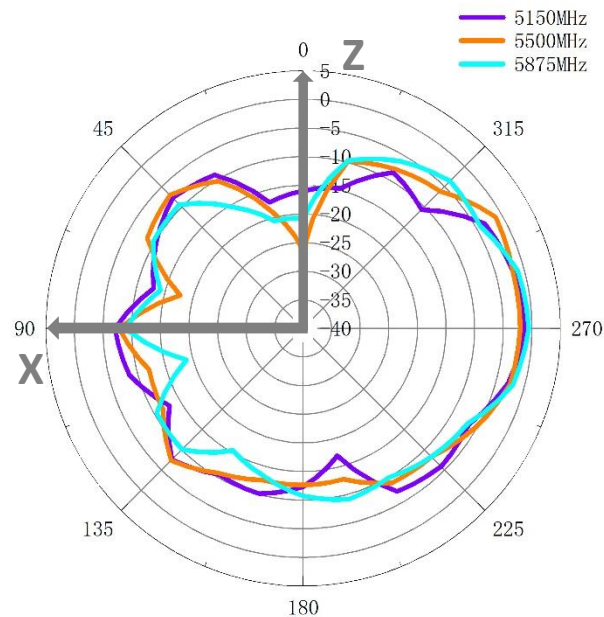
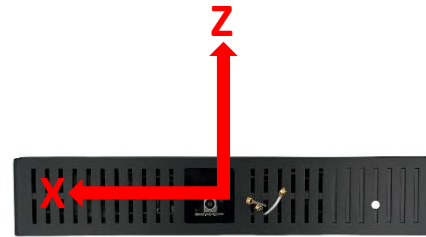
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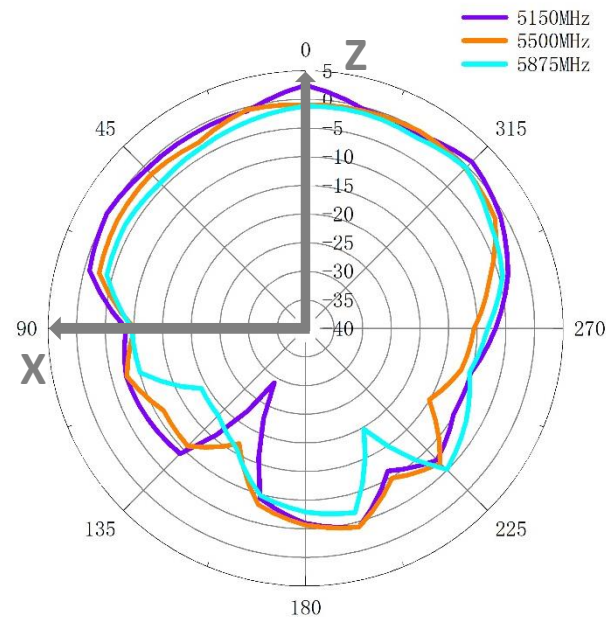
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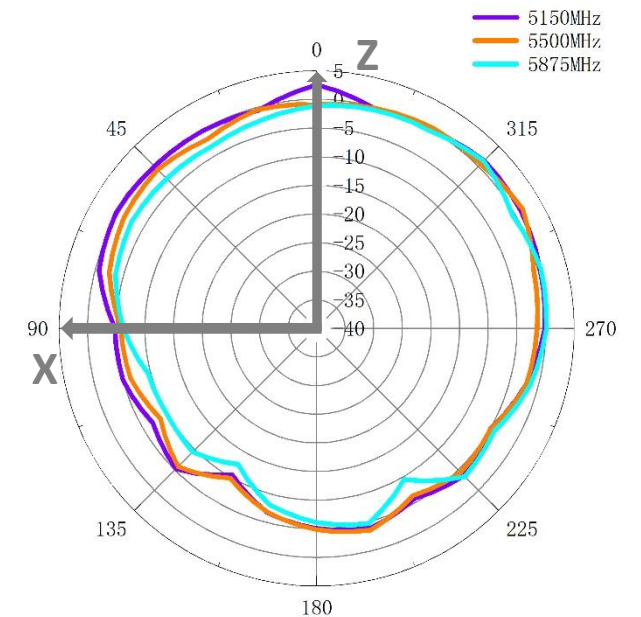
2D Radiation Patterns Of Ant1 in 5G Band at XZ Plan



Gain Theta



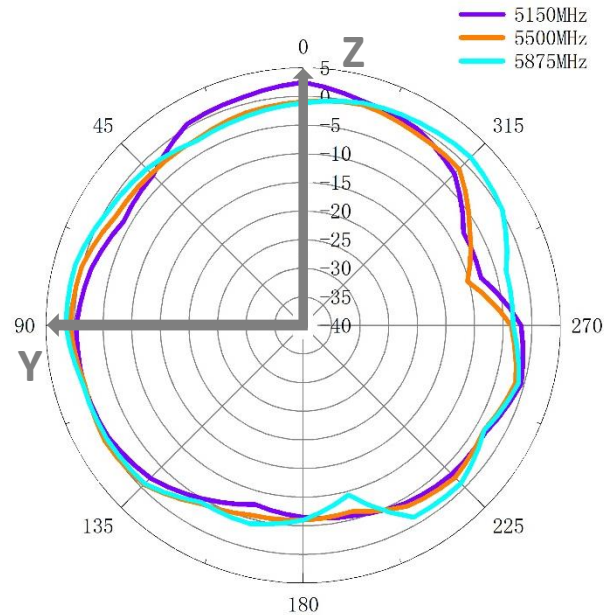
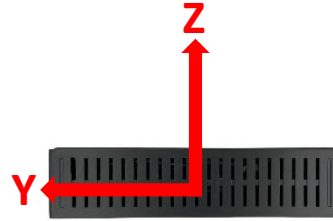
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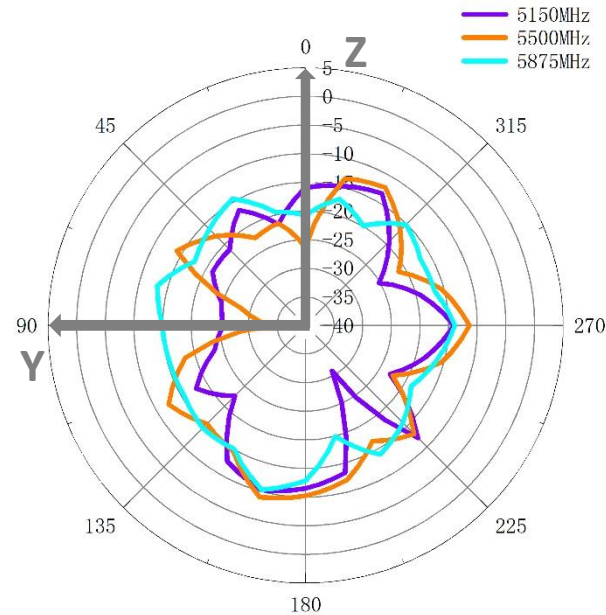
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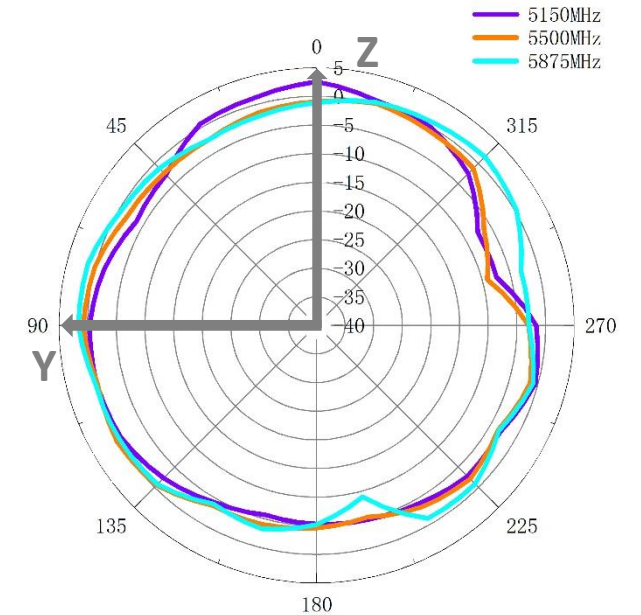
2D Radiation Patterns Of Ant1 in 5G Band at YZ Plan



Gain Theta



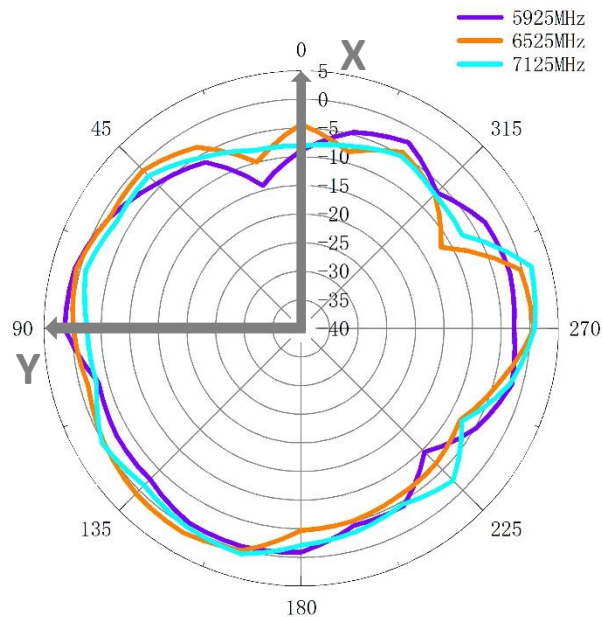
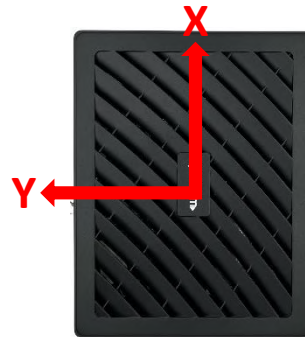
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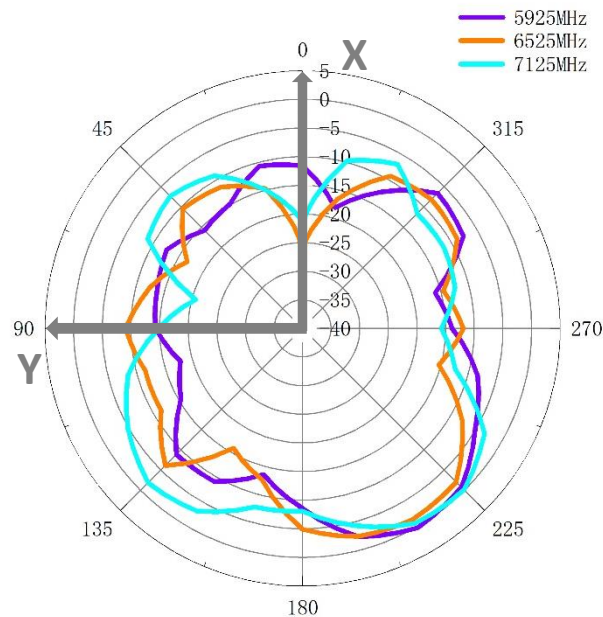
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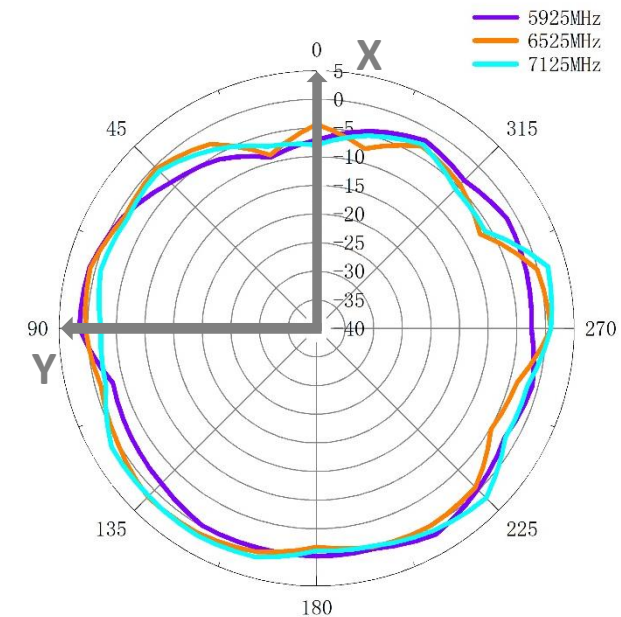
2D Radiation Patterns Of Ant1 in 6G Band at XY Plan



Gain Theta



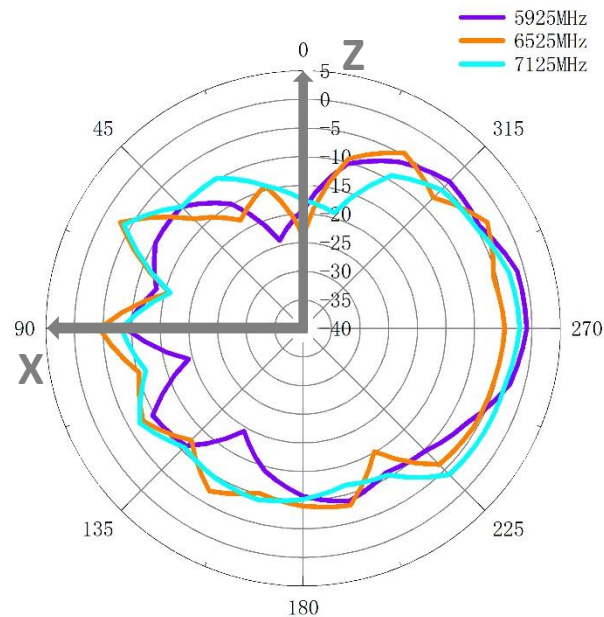
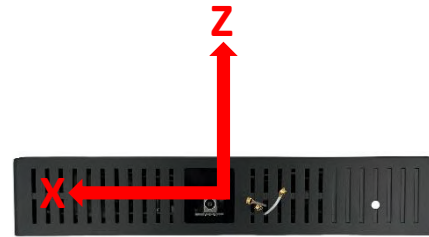
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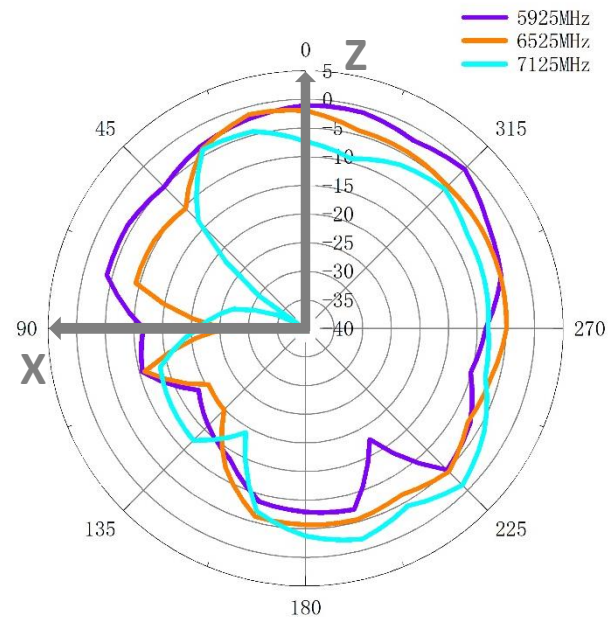
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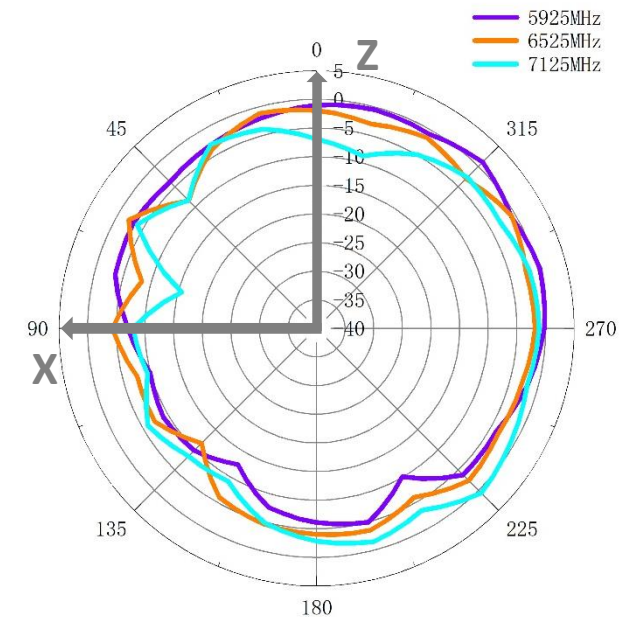
2D Radiation Patterns Of Ant1 in 6G Band at XZ Plan



Gain Theta



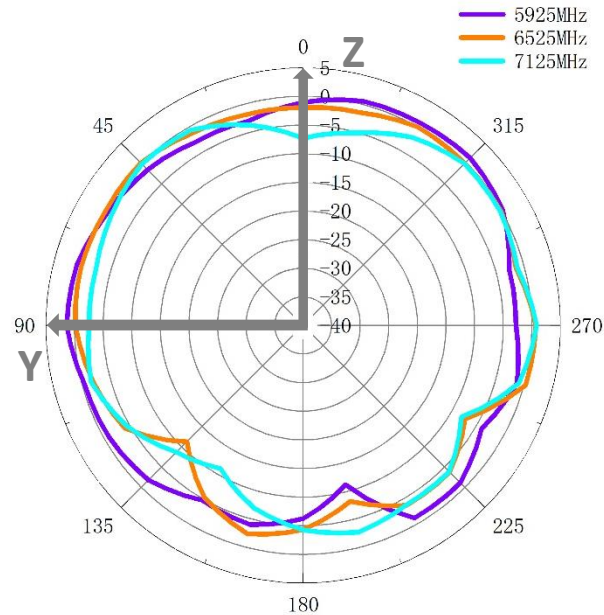
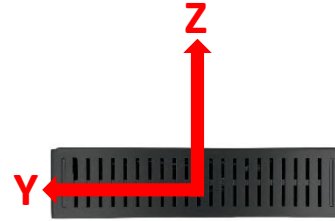
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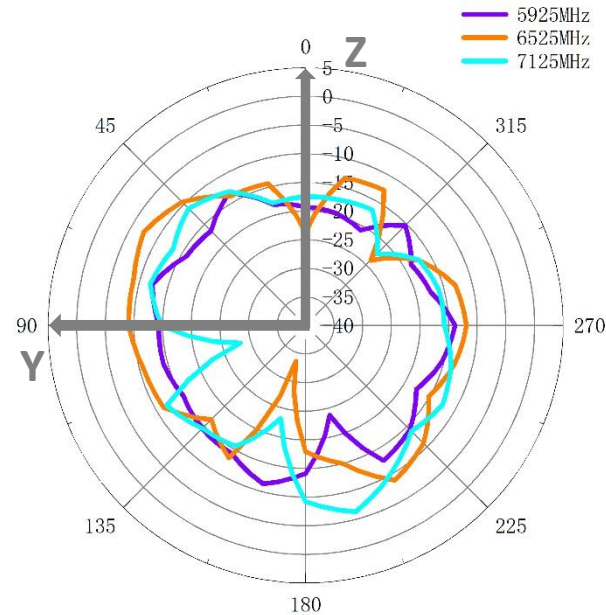
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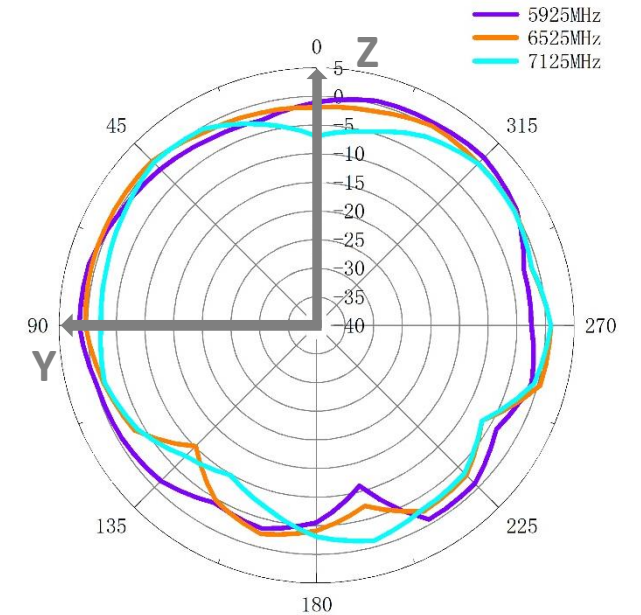
2D Radiation Patterns Of Ant1 in 6G Band at YZ Plan



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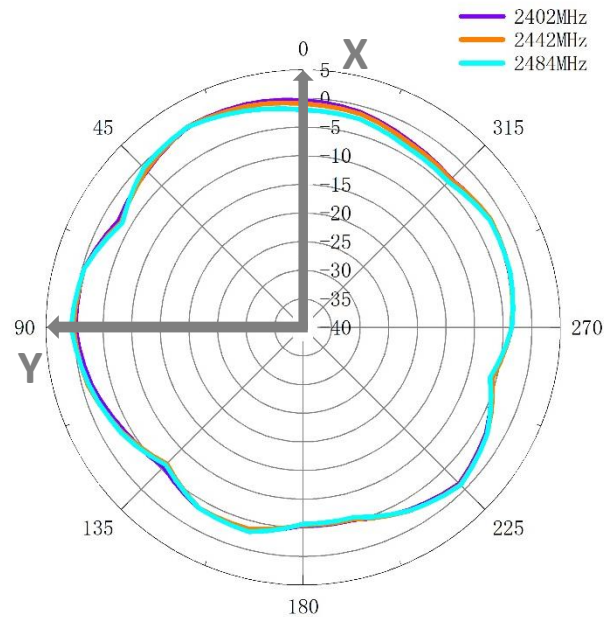
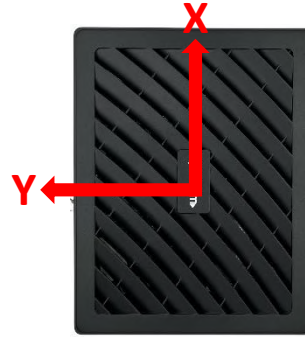
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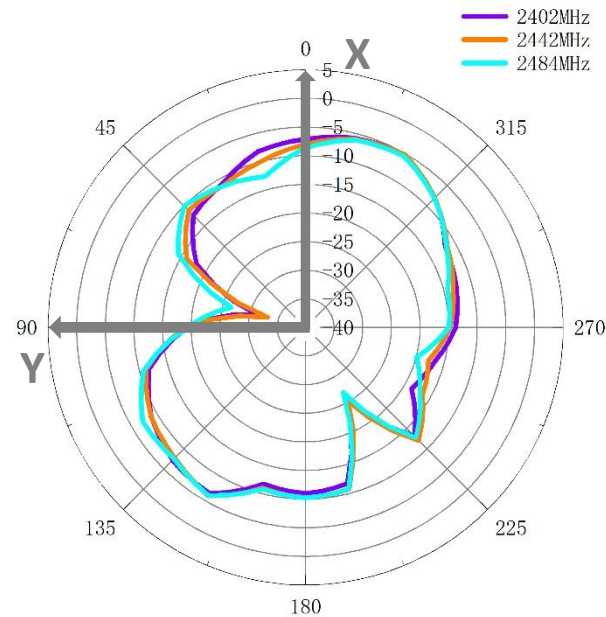
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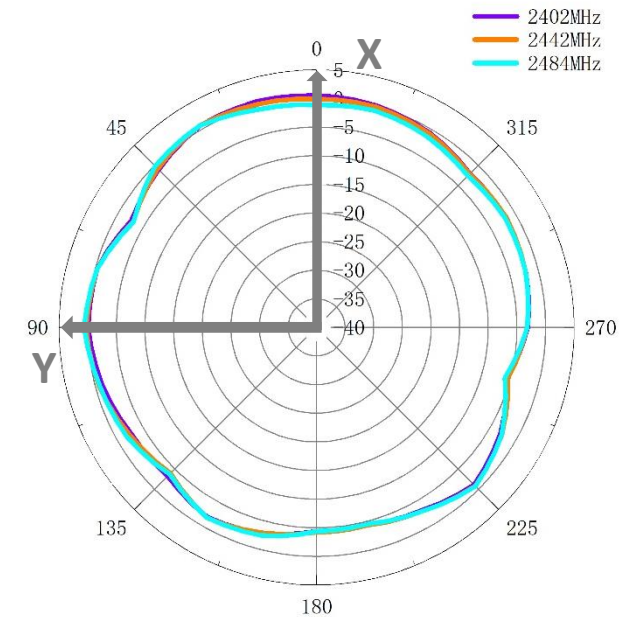
2D Radiation Patterns Of Ant2 in 2G Band at XY Plan



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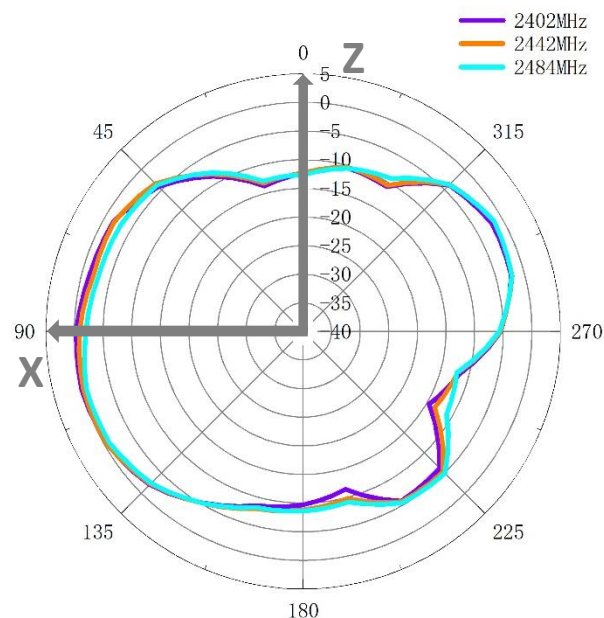
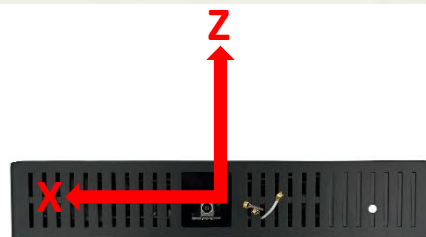
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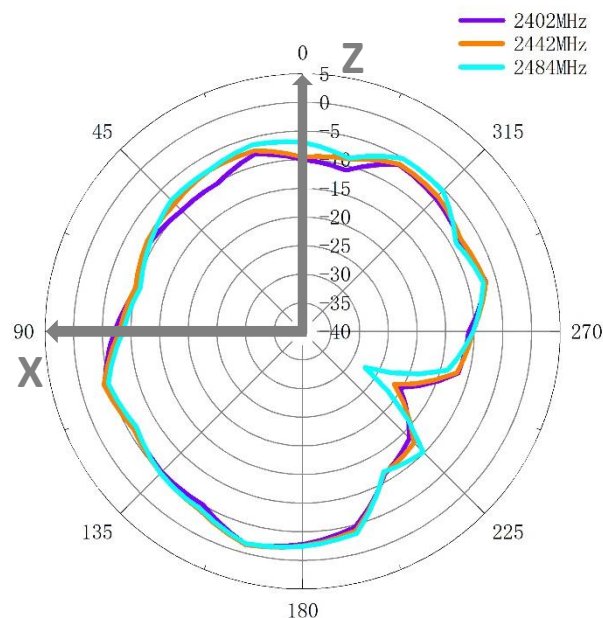
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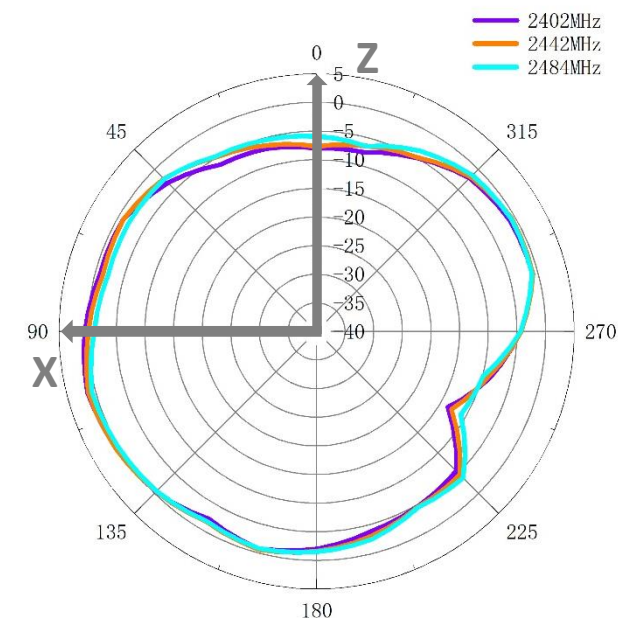
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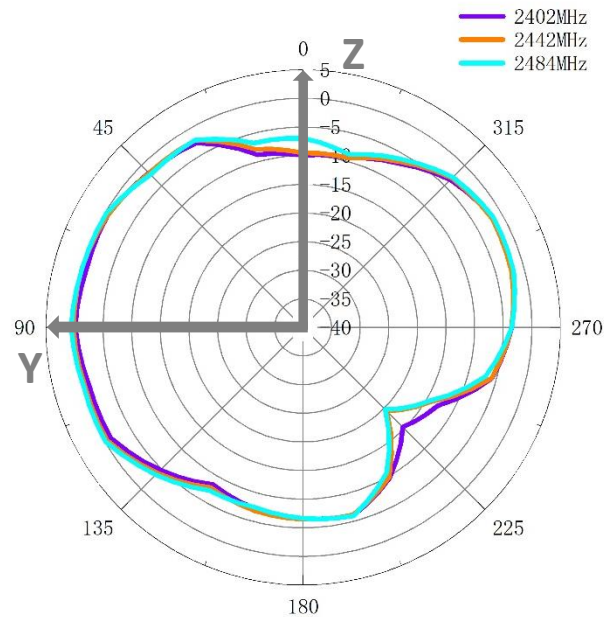
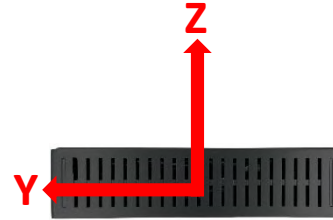
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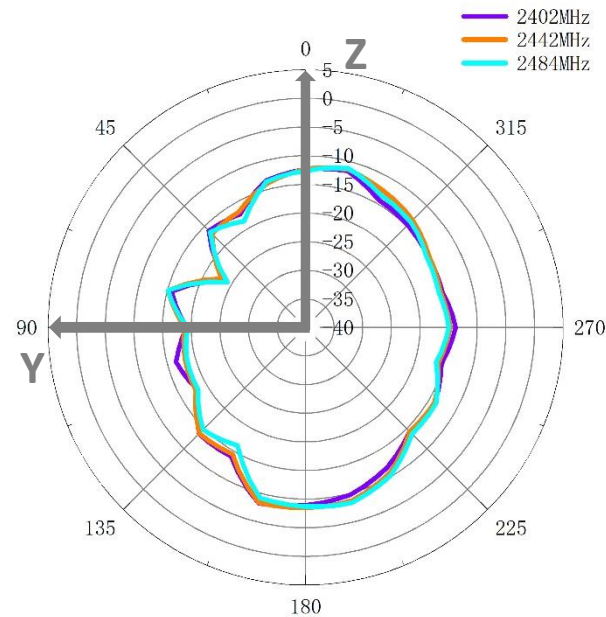
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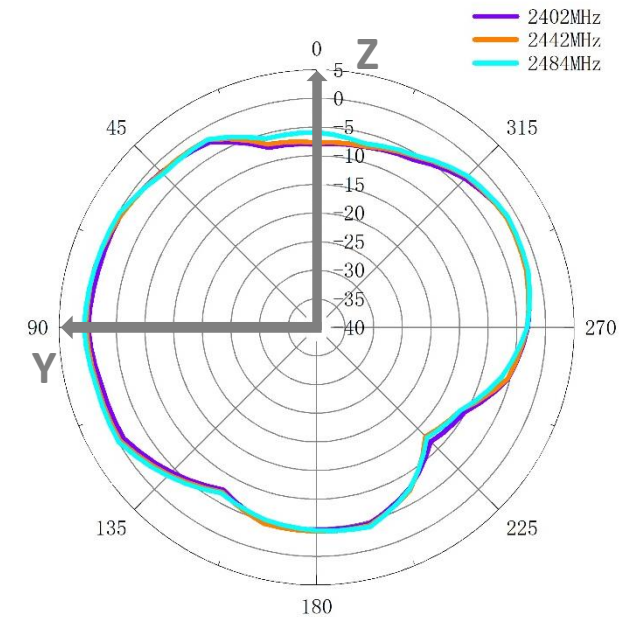
2D Radiation Patterns Of Ant2 in 2G Band at YZ Plan



Gain Theta



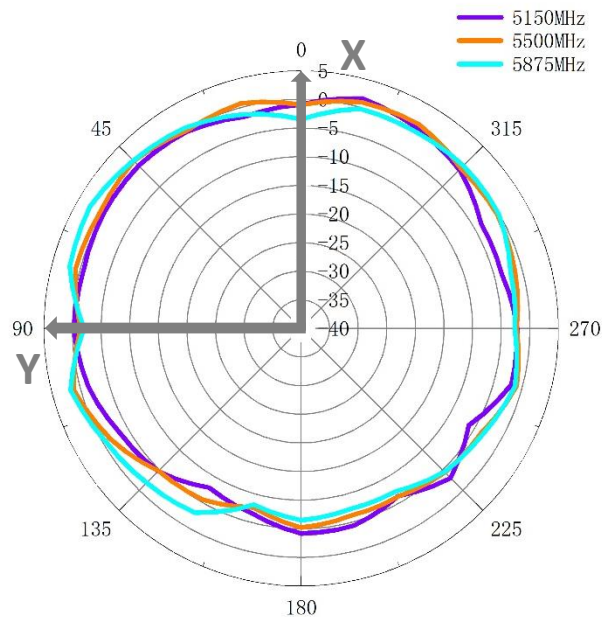
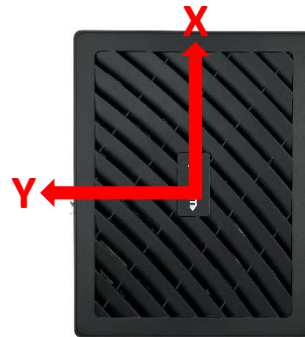
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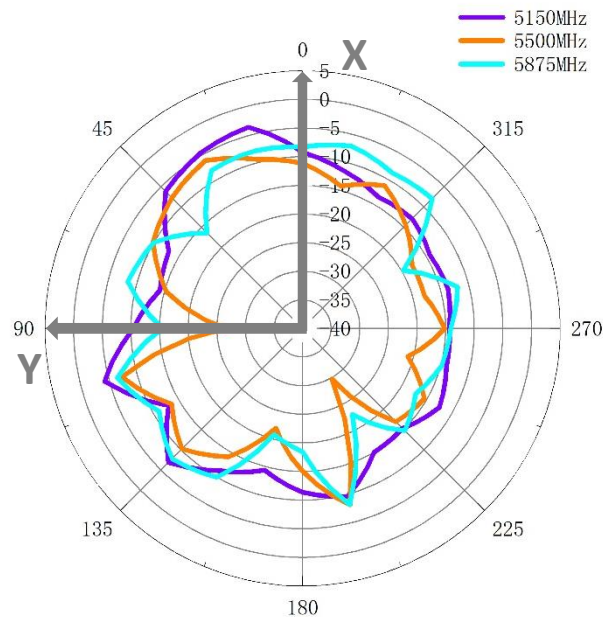
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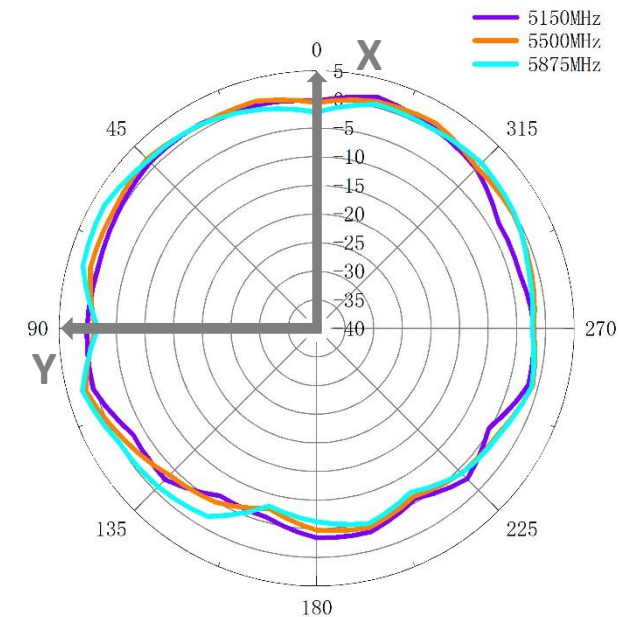
2D Radiation Patterns Of Ant2 in 5G Band at XY Plan



Gain Theta



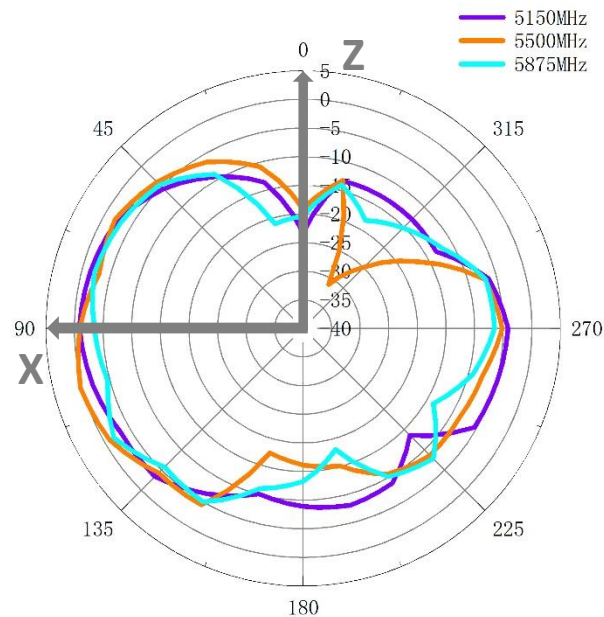
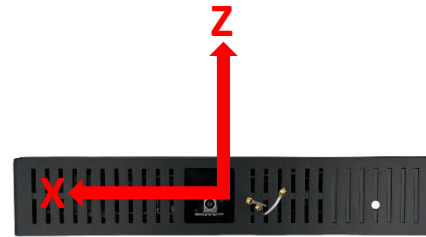
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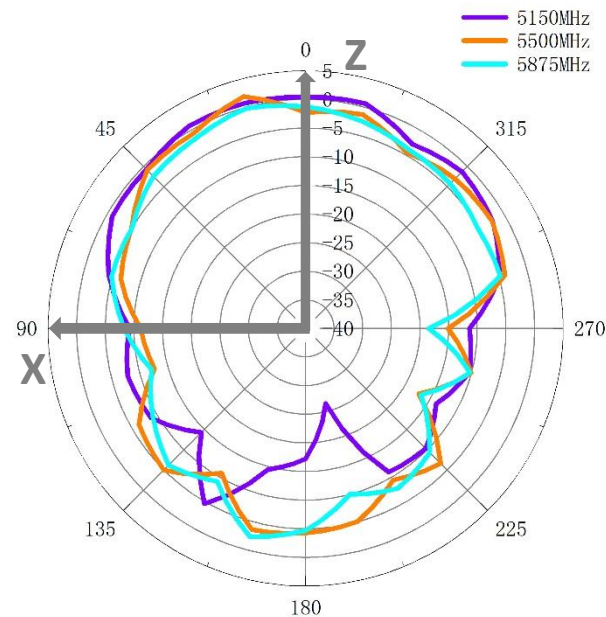
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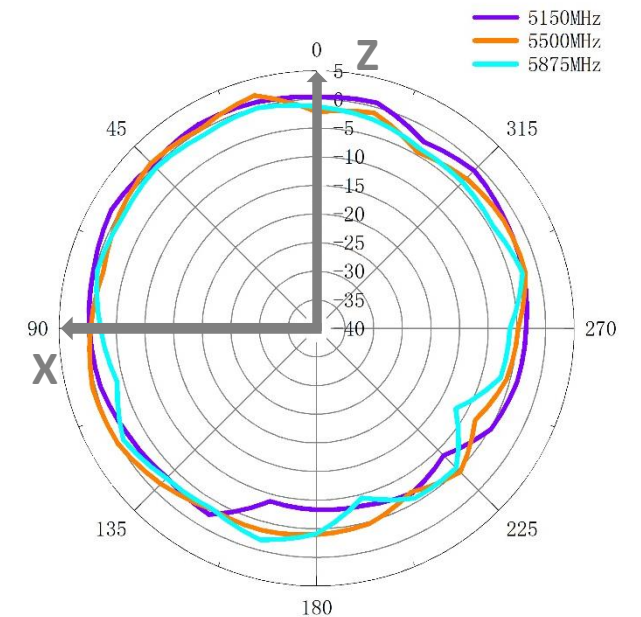
2D Radiation Patterns Of Ant2 in 5G Band at XZ Plan



Gain Theta



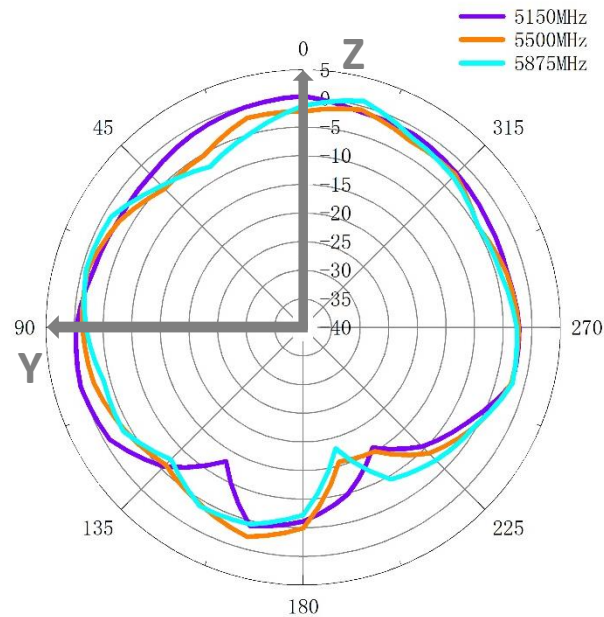
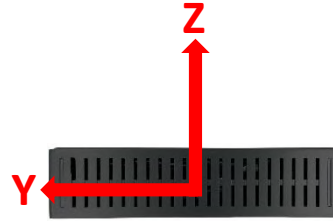
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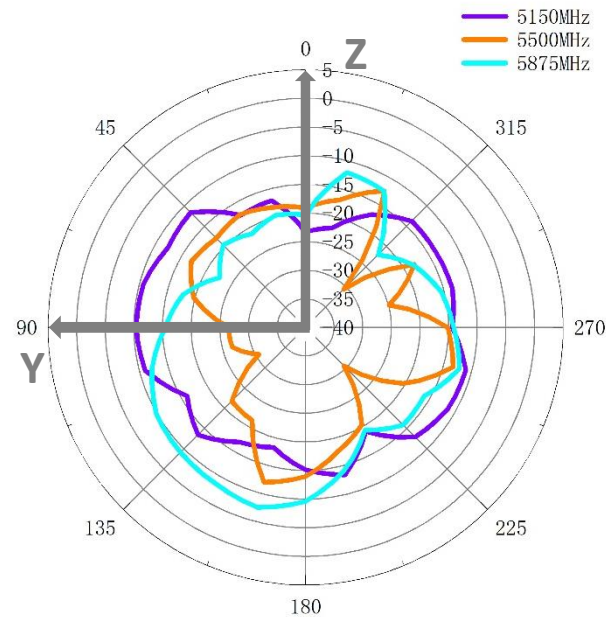
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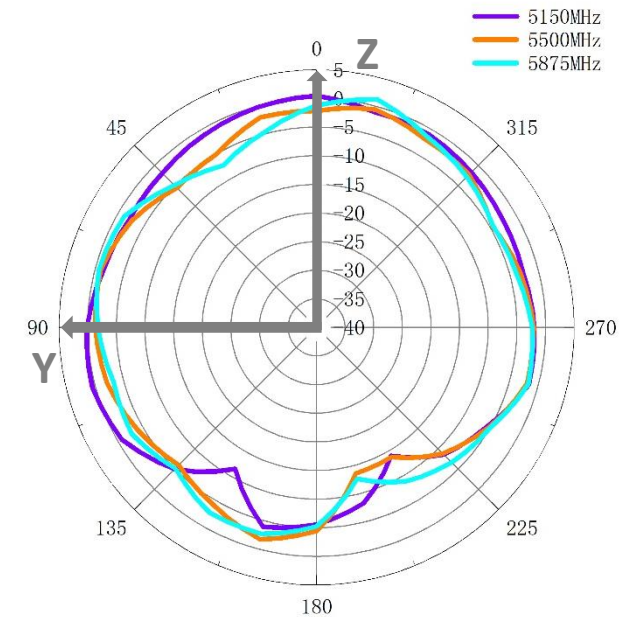
2D Radiation Patterns Of Ant2 in 5G Band at YZ Plan



Gain Theta



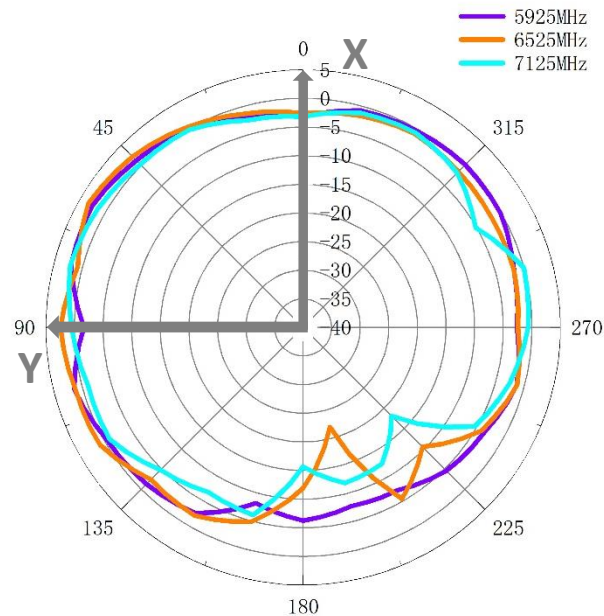
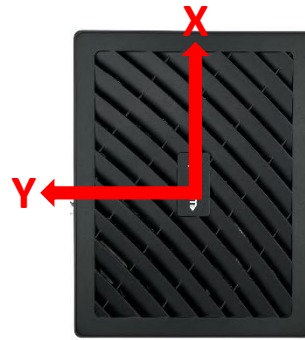
Gain Phi



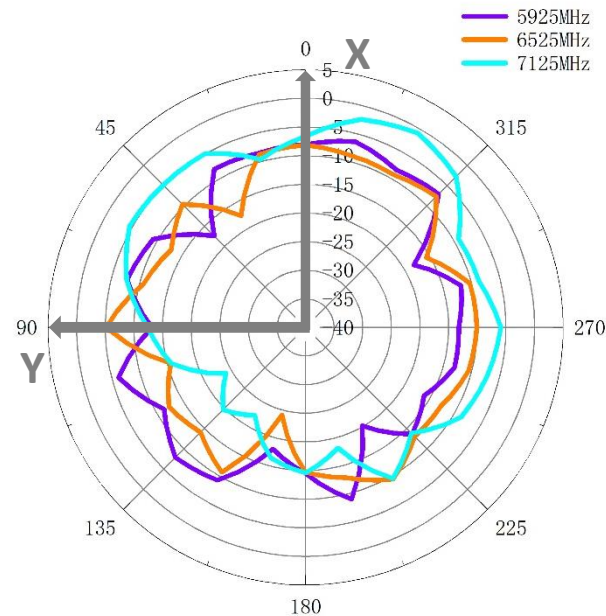
Gain Total



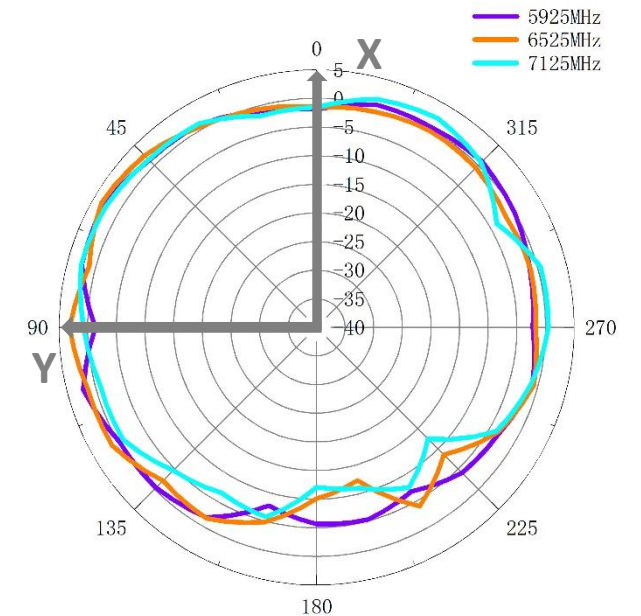
2D Radiation Patterns Of Ant2 in 6G Band at XY Plan



Gain Theta



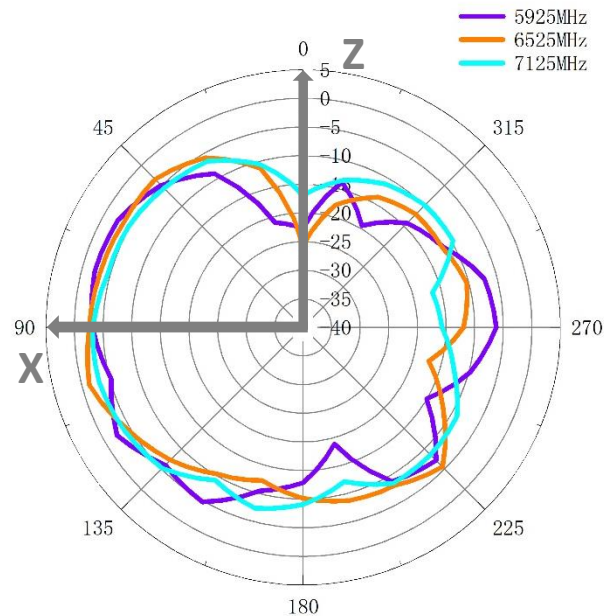
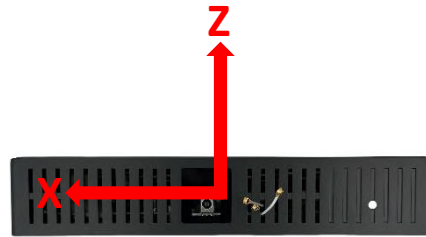
Gain Phi



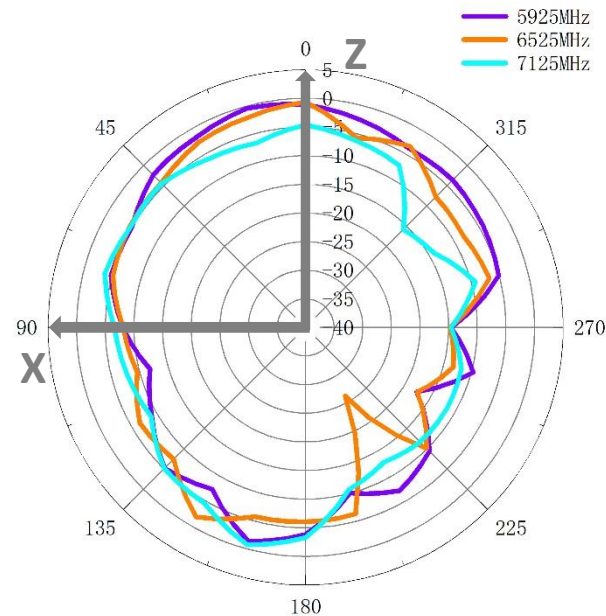
Gain Total



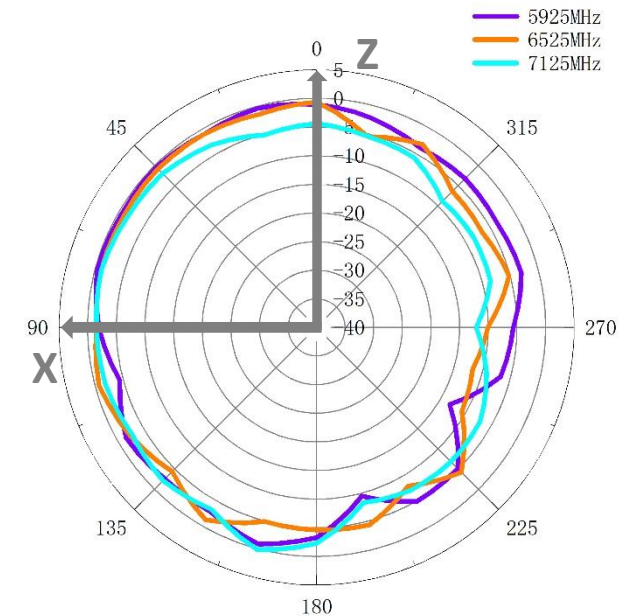
2D Radiation Patterns Of Ant2 in 6G Band at XZ Plan



Gain Theta



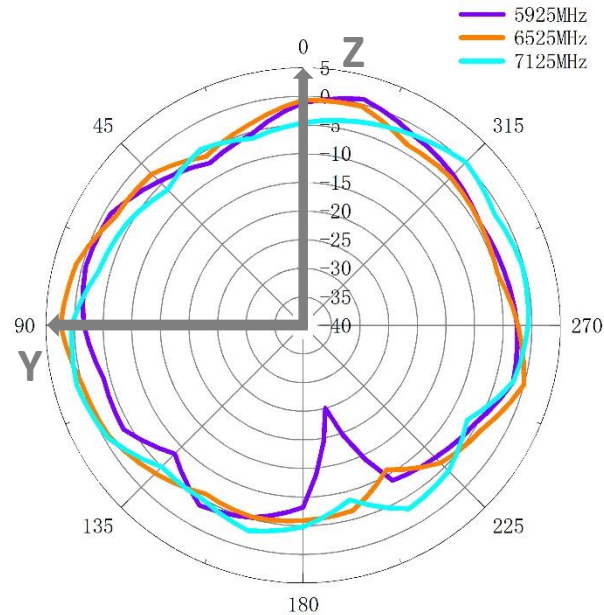
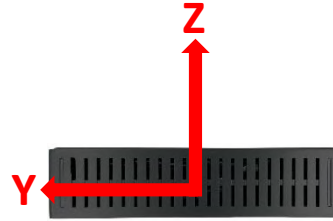
Gain Phi



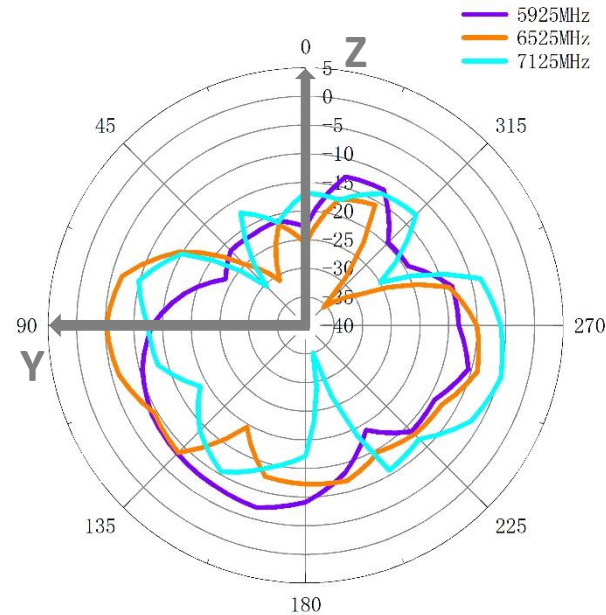
Gain Total



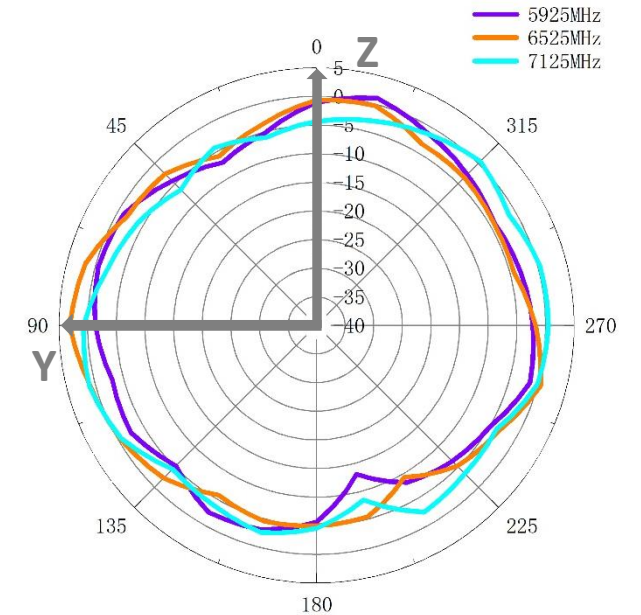
2D Radiation Patterns Of Ant2 in 6G Band at YZ Plan



Gain Theta



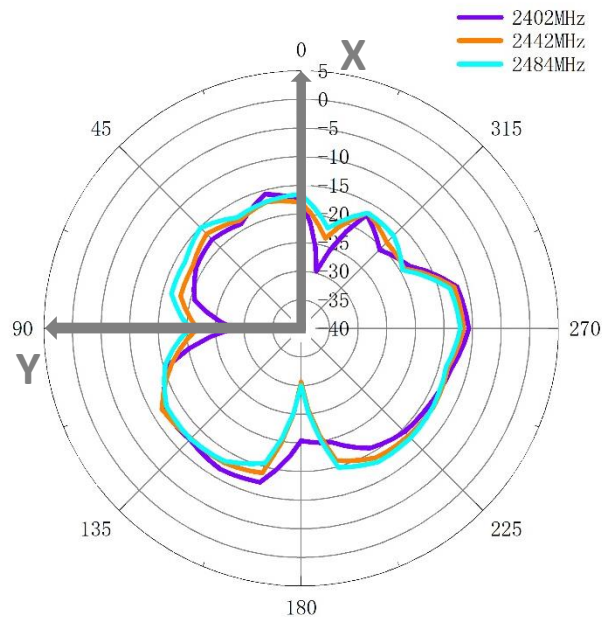
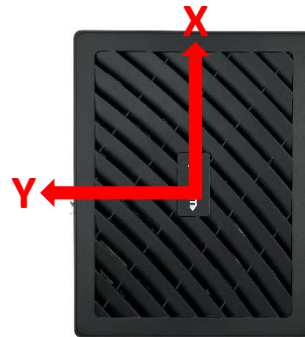
Gain Phi



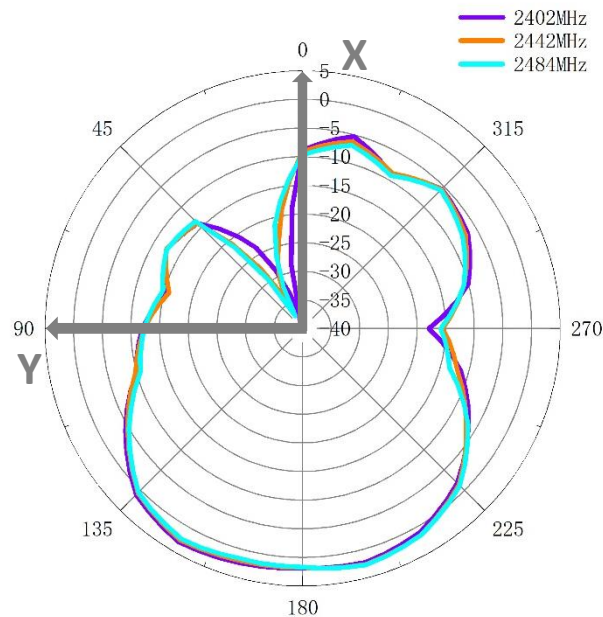
Gain Total



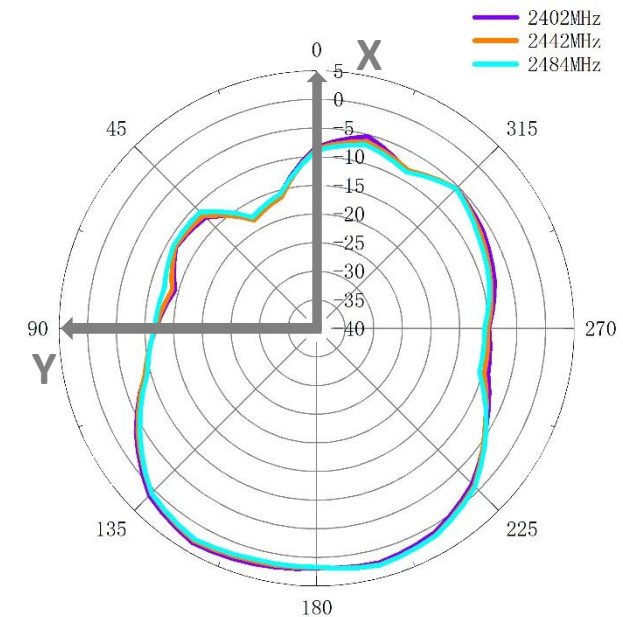
2D Radiation Patterns Of BT in 2G Band at XY Plan



Gain Theta



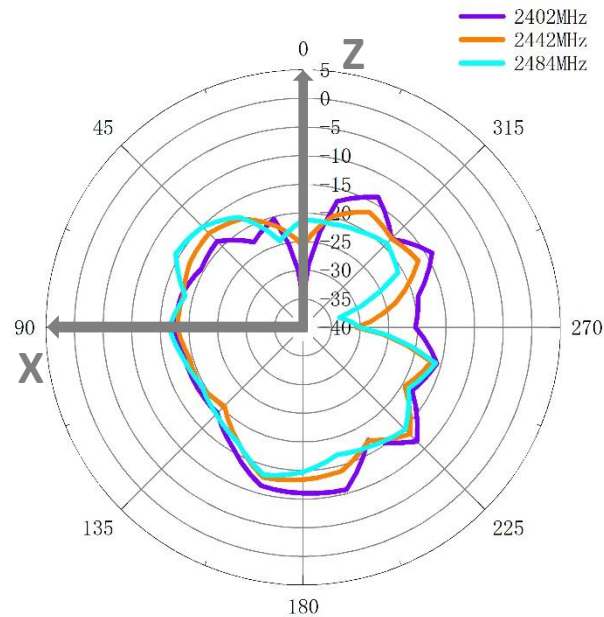
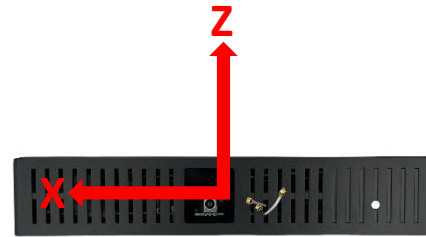
Gain Phi



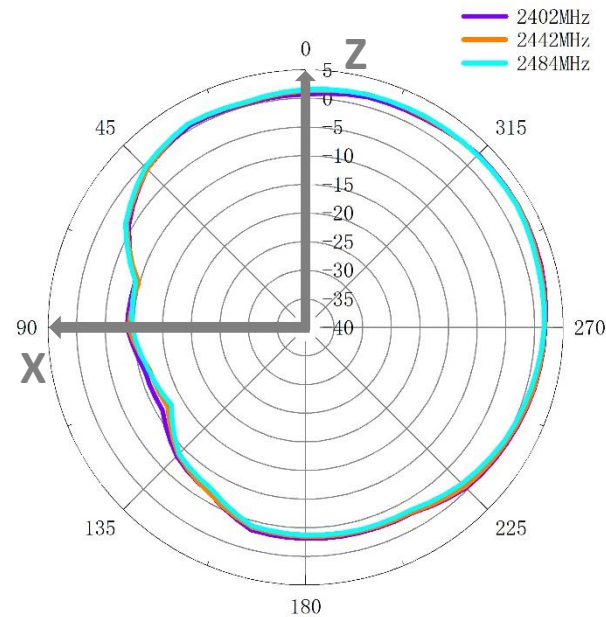
Gain Total



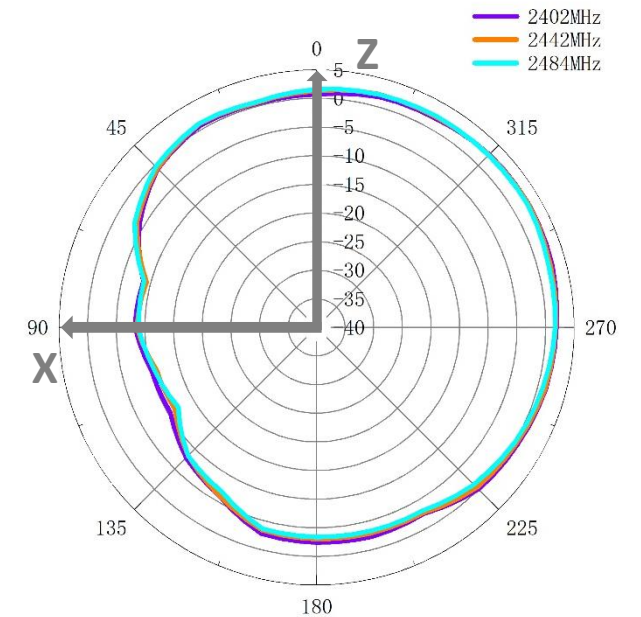
2D Radiation Patterns Of BT in 2G Band at XZ Plan



Gain Theta



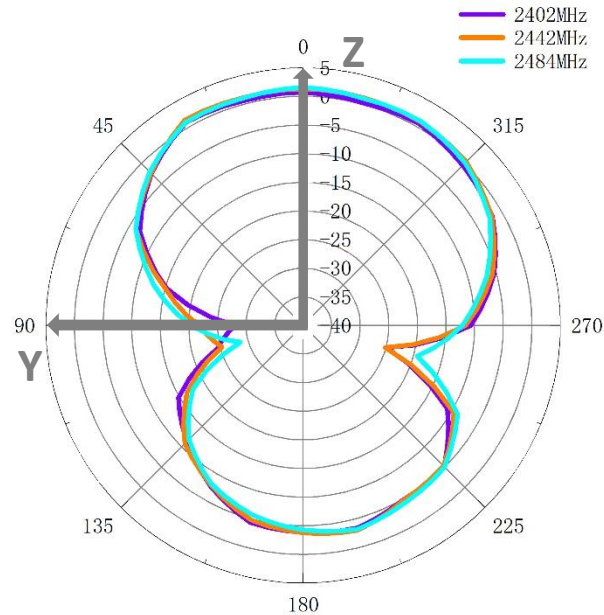
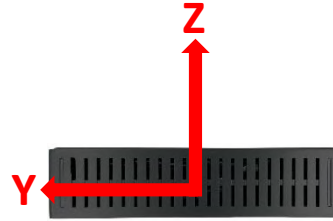
Gain Phi



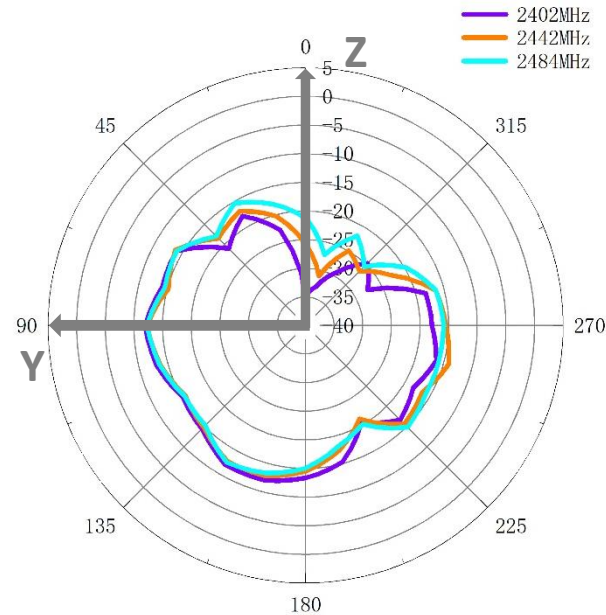
Gain Total



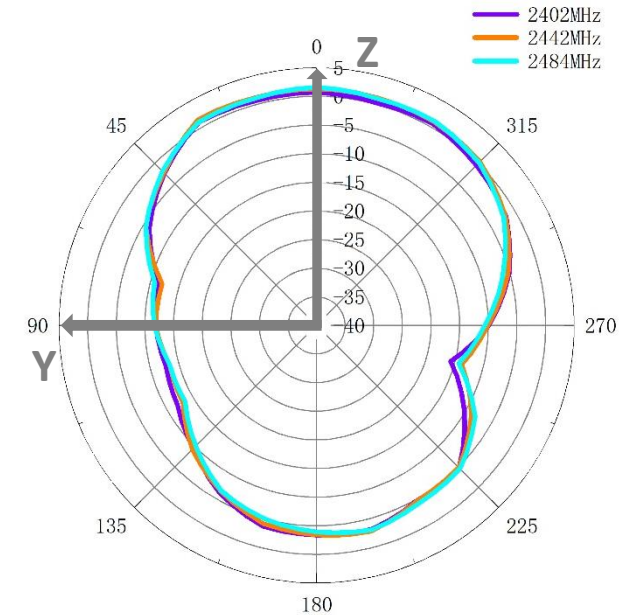
2D Radiation Patterns Of BT in 2G Band at YZ Plan



Gain Theta



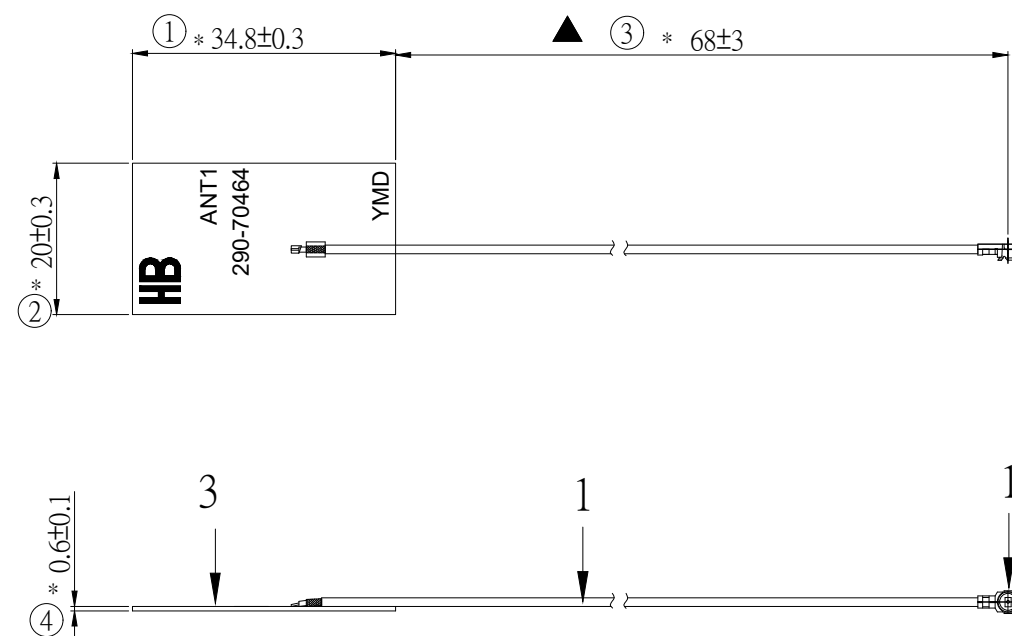
Gain Phi



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 $\pm 45^\circ$
100~200 IPEX方向 $\pm 90^\circ$
200以上 IPEX方向 不予以管控
所有物料需符合RoHS2.0+HF標準

HB

ANT1

290-70464

YMD

Y: 年,取最後一位
M: 月,1-9,A-C
D: 日,1-9,A-V

Date Code 代碼說明

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

	X2	修改電路與線長		2023-06-17	
	X1	New Issue		2023-04-17	
ECN NO	版次	變更內容		日期	确认
RANG	TOLERANCES	客戶名稱:	百一	 常熟市泓博通訊技術股份有限公司 CHANGSHU HONGBO TELECOMMUNICATION TECHNOLOGY CO.,LTD	
0-30	± 1.5	客戶料号:	49031-01103- HB	產品名稱:	ADB-2682WF_ANT1_PCB WITH CABLE
31-100	± 2	泓博料号:	290-70464	頁 次:	1 - 1
101-200	± 3	制 图:	Alvin	日 期:	
201以上	± 4	R&D 审核:	Eason	版 本:	比 例: 1 : 1
REF	± 3	核 准:	Alex	校 对:	
	METRIC: mm				