

APPROVAL SHEET

PCB Antenna

2.4~2.5 / 5.15~5.85 GHz Working Frequency

P/N: RFPCA391707IMLB302

Customer : GOLDTek TECHNOLOGY CO., Ltd.,

Customer 's Part No. : 790206M00-092-G ANT2

Issue Date : 2023/03/16



品名：RFPCA391707IMLB302

History List

版本 REV.	修訂者 EDITOR	修訂頁次 PAGE	修訂內容 ITEMS OF CHANGE	申請日期 DATE	生效日期 VALID DATE	ECN 編號 ECN NO.
A0	邱瑩鈺	ALL	New drawing release	2022/09/13	According to the date of PLM Release	N/A
A1	邱瑩鈺	ALL	New drawing release	2023/03/16	According to the date of PLM Release	N/A


品名：RFPCA391707IMLB302

1. Explanation of part number :

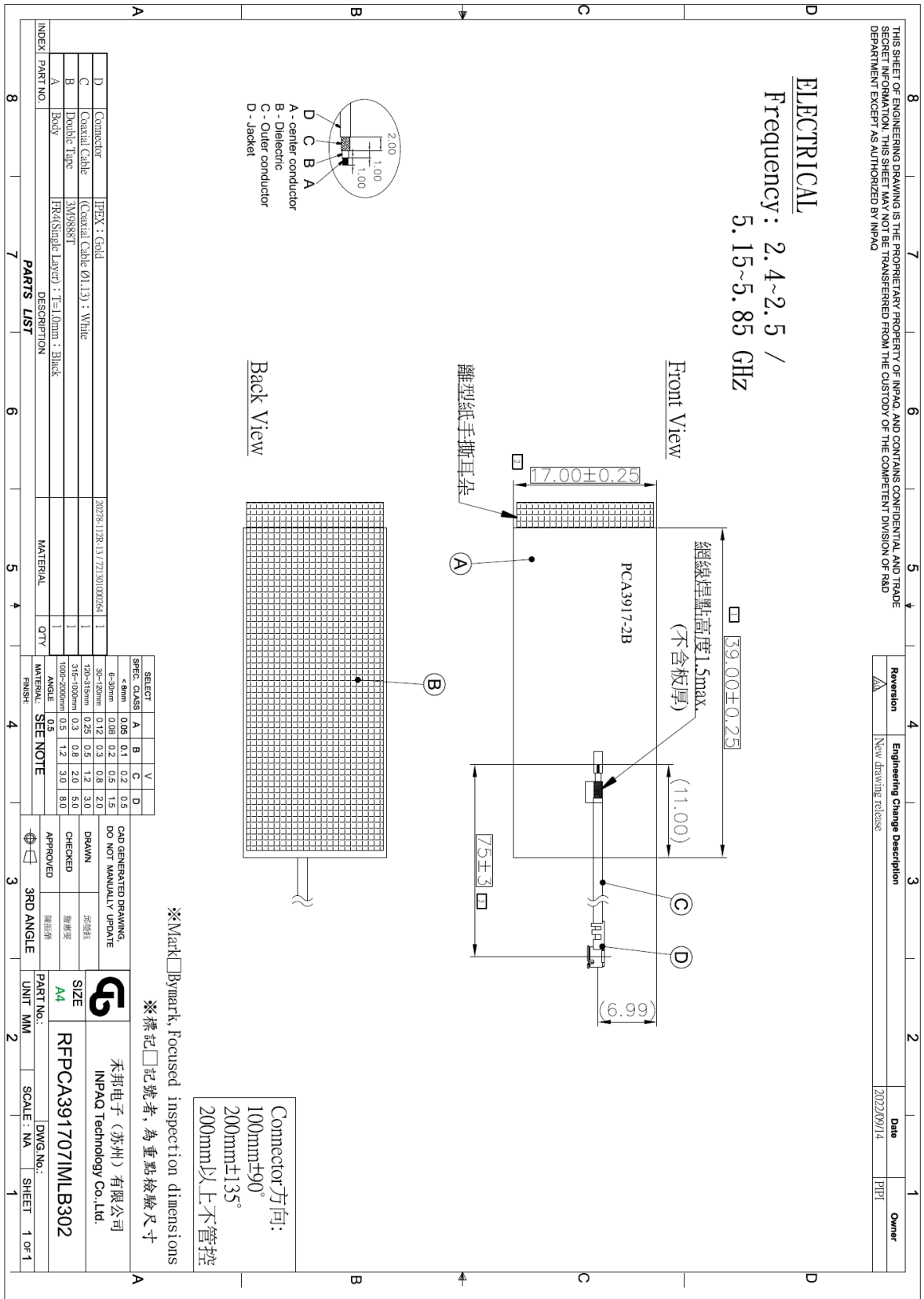
RF	PCA	3917	07	I	M	L	B	3	02
Type Code	Product Code	PCB Dimension (Unit: mm)	Cable Length (unit: cm)	Connector Brand	Type of Connector	Application	Project status	Wire Diameter	Project
RF Device	PCB Antenna	Per 2 digits of length, width e.g.: 1614 Length 160.0mm, Width 140.0mm	2 digits for cable length e.g.:20 5G1 : Length 17.5cm 5G2 : Length 17.5cm 2G1 : Length 20.0cm 2G2 : Length 13.0cm BT : Length 7.0cm	A: N C:MCX D:IPEX III E: IPEX IV F: IPEX A13 H: Hirose I: IPEX M: MMCX S: SMA T: TNC U:MURATA N: None	A: Reverse Female B: Reverse Male F: Female M: Male N: None	0: 0GHz 3: 3GHz 6: 6GHz 5: 5GHz A: 2.4GHz ISM band B: GSM 900/1800 dual band G: GPS band L: 2.4/5.X GHz tri-band N: NFC T: LTE band W: WCDMA band	B: MP T:During Test X: Pile Run	0:None 1:∅ 0.81 2:∅ 1.32 3:∅ 1.13 4:Low Loss ∅ 1.13 5:∅ 0.5 6:RG316 7: ∅ 1.37 8:RG178 9:Low Loss ∅ 1.37	01~99 series number

2. Electrical Specification :

Item	Specification
Working Frequency Range	2.4~2.5 / 5.18~5.85 GHz
Gain	2.4~2.5 GHz @ 2.69 dBi 5.18~5.85 GHz @ 5.77 dBi
Return Loss	-10dB(Max)
VSWR	2 max.
Polarization	Linear
Radiation Pattern	Omni-directional
Impedance	50Ω
Operation Temperature	-20°C ~ +65°C

UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A X.X=N/A X.XX=N/A ANGLES=N/A HOLEDIA=N/A			INPAQ TECHNOLOGY CO., LTD.
SCALE : N/A	UNIT : mm		
DRAWN BY : 邱瑩鈺	CHECKED BY : 詹惠雯	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
DESIGNED BY : 蕭鴻章	APPROVED BY : 陳振榮		
TITLE : RFPCA391707IMLB302		DOCUMENT NO.	ENS070027120-000803514928
			SPEC REV. A1

3. Drawing :



UNLESS OTHER SPECIFIED TOLERANCES ON :
X=N/A X.X=N/A X.XX=N/A
ANGLES=N/A HOLEDIA=N/A



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A
DRAWN BY : 邱騰鈺
DESIGNED BY : 蕭鴻章

UNIT : mm
CHECKED BY : 詹惠愛
APPROVED BY : 陳振榮

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4. Performance Report :

Test Report


Equipment	Brand and test program	Calibrated Equipment	Calibration date
Reflection Coefficient Measurement	Keysight Network Analyzer	Keysight Network 85033E	2022/4/13
Pattern Measurement	Satimo Test Program: SPM V15	Satimo SD2450 (2G) SD5150 (5G) SD5450 (5G)	2022/11/29

Tested date : 2022/08/30

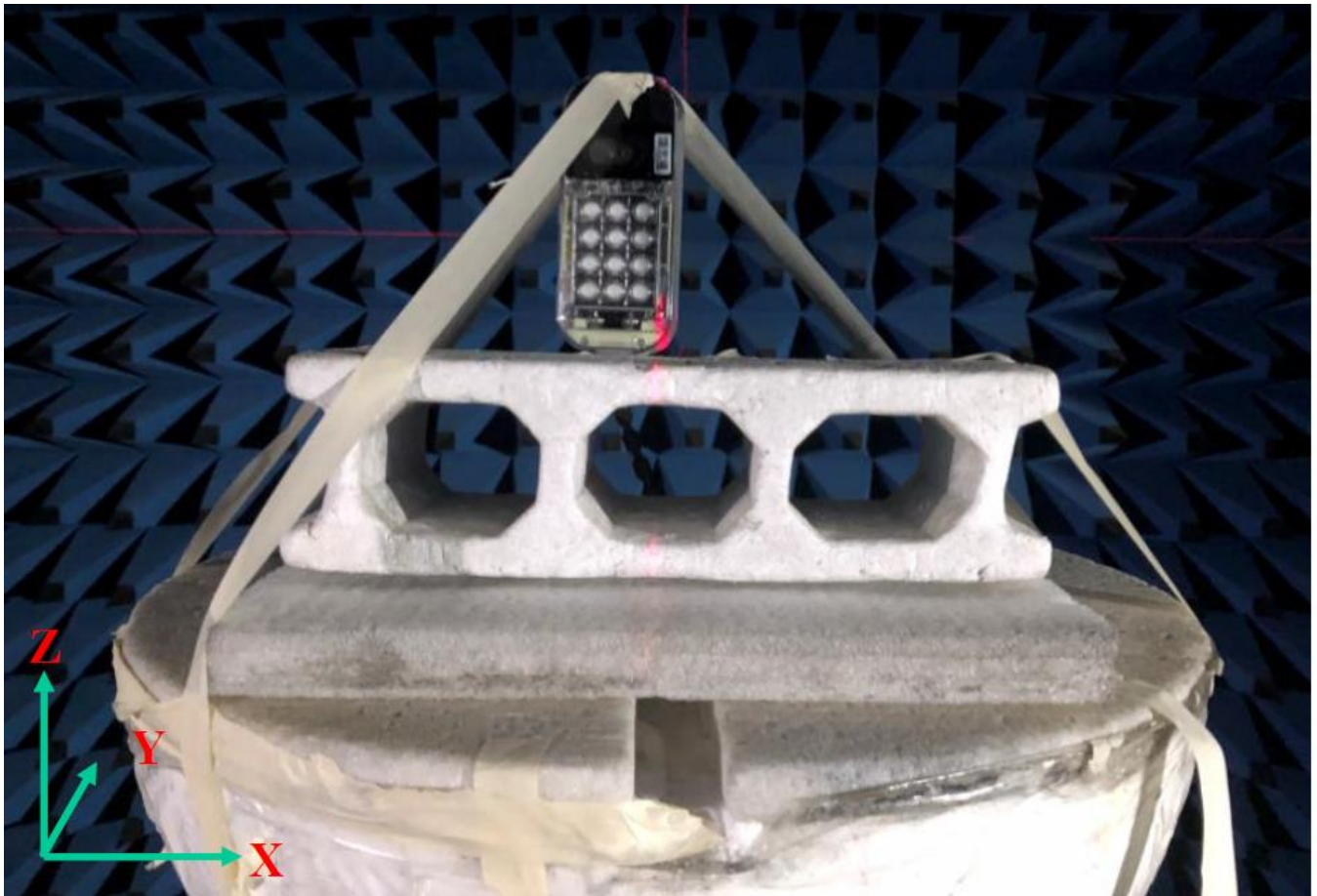
Test personnel : Kerry Wu


Operating instructions:

- 1.Place the DUT at the center of the turntable,
- 2.Connecting the test cable to the DUT, and use the SPM software for passive measurement.
- 3.During the measured process, SATIMO SG24 will conduct radiation testing with the DUT through 23 probes by a vertical 360- degree; then the turntable will rotate a horizontal 180- degree.
4. After, a complete measurement of spherical 3D is completed.

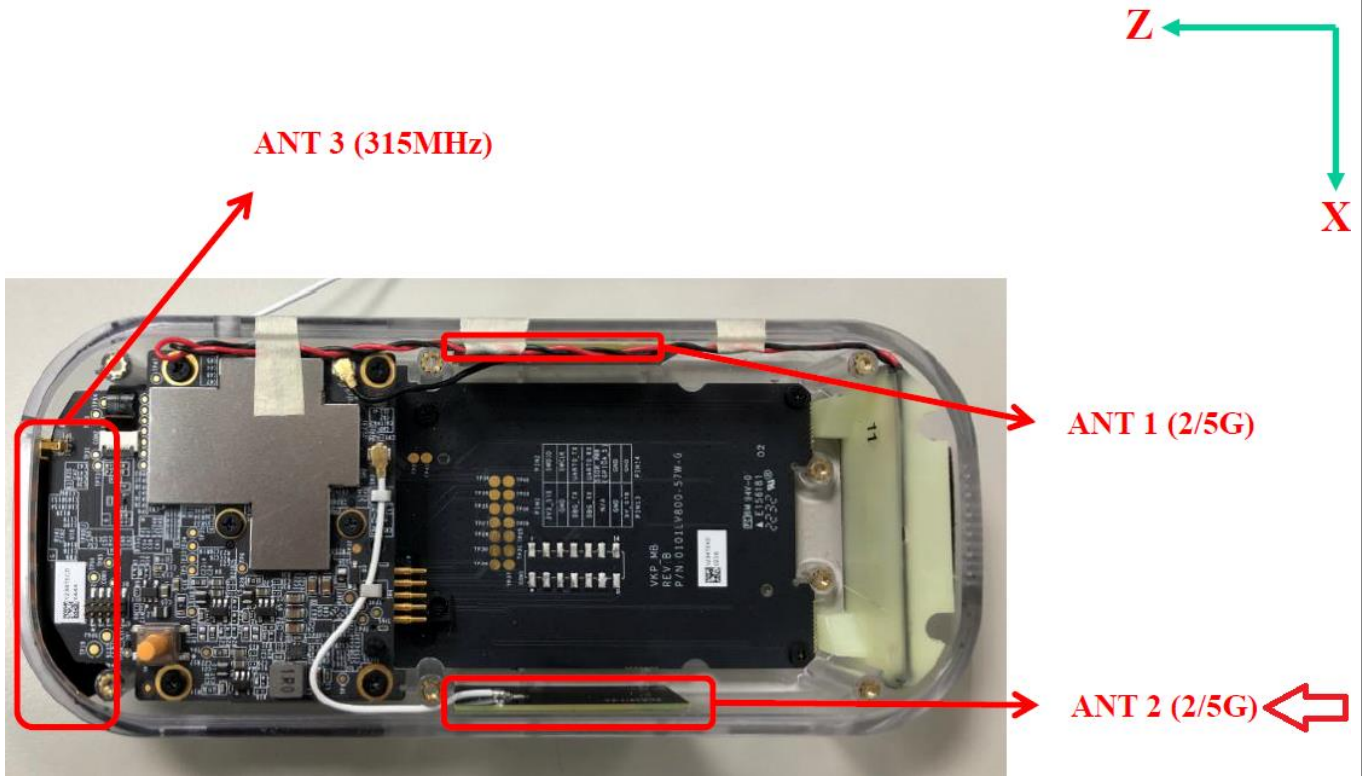
UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A X.X=N/A X.XX=N/A ANGLES=N/A HOLEDIA=N/A			INPAQ TECHNOLOGY CO., LTD.
SCALE : N/A	UNIT : mm		
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Experimental Setup



UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A X.X=N/A X.XX=N/A ANGLES=N/A HOLEDIA=N/A		 INPAQ TECHNOLOGY CO., LTD.	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
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DRAWN BY : 邱瑩鈺	CHECKED BY : 詹惠雯		
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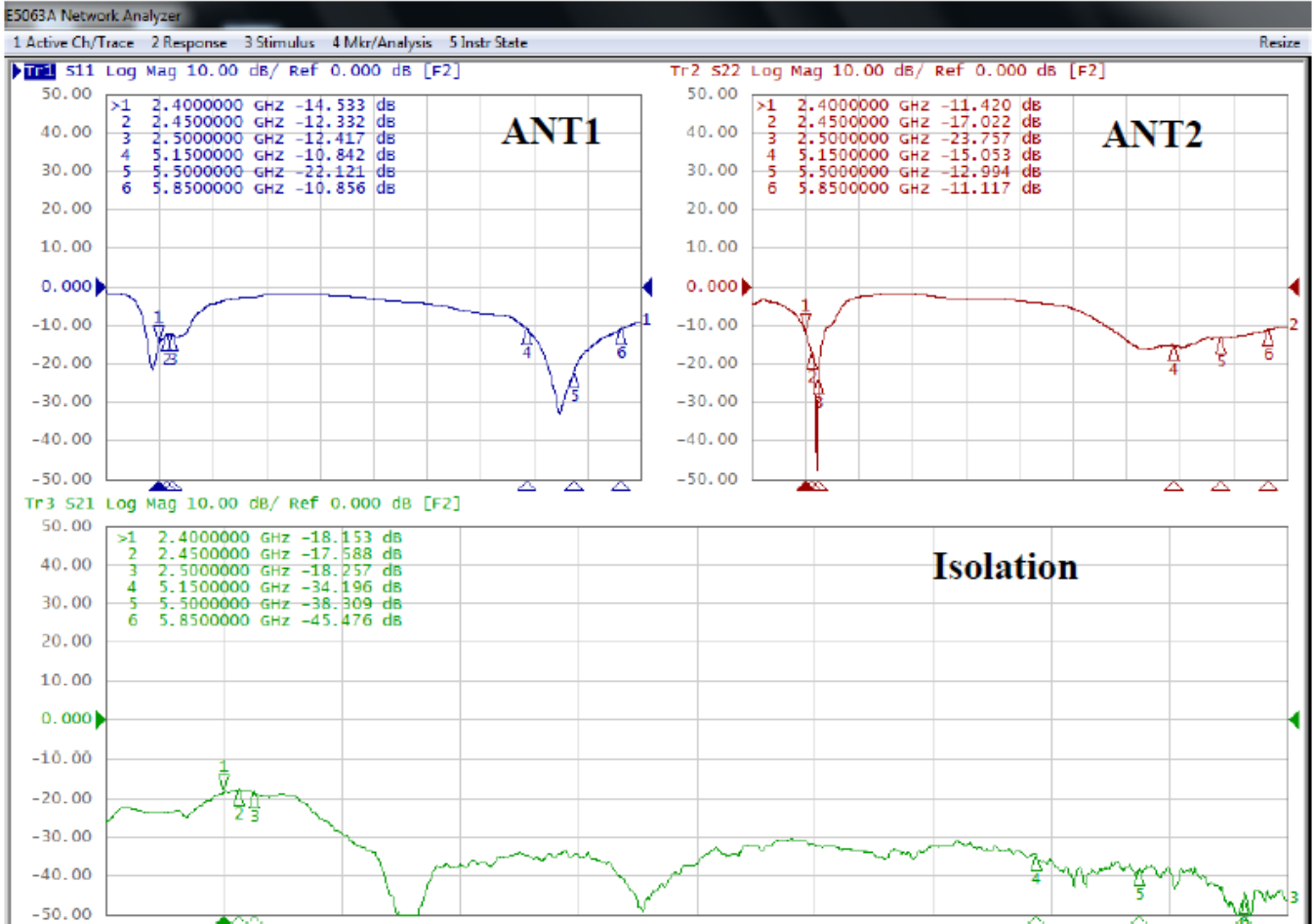
Antenna Solution Detail




UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A X.X=N/A X.XX=N/A ANGLES=N/A HOLEDIA=N/A		 INPAQ TECHNOLOGY CO., LTD.
SCALE : N/A	UNIT : mm	
DRAWN BY : 邱瑩鈺	CHECKED BY : 詹惠雯	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
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		SPEC REV. A1

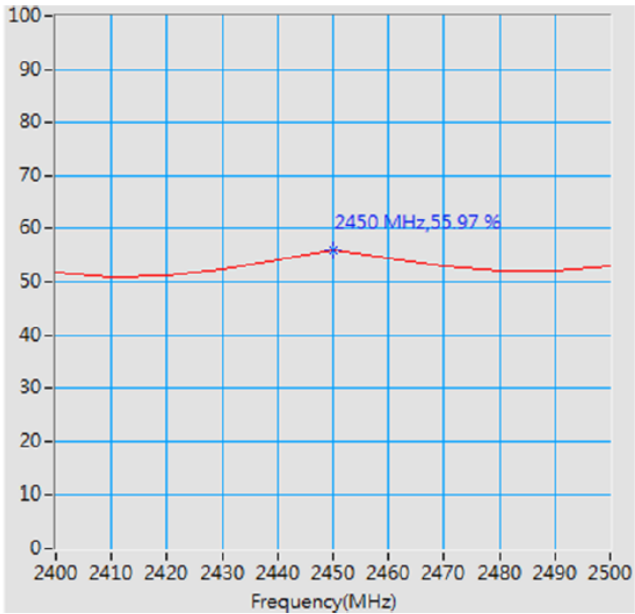
ELECTRICAL CHARACTERISTICS

Return Loss

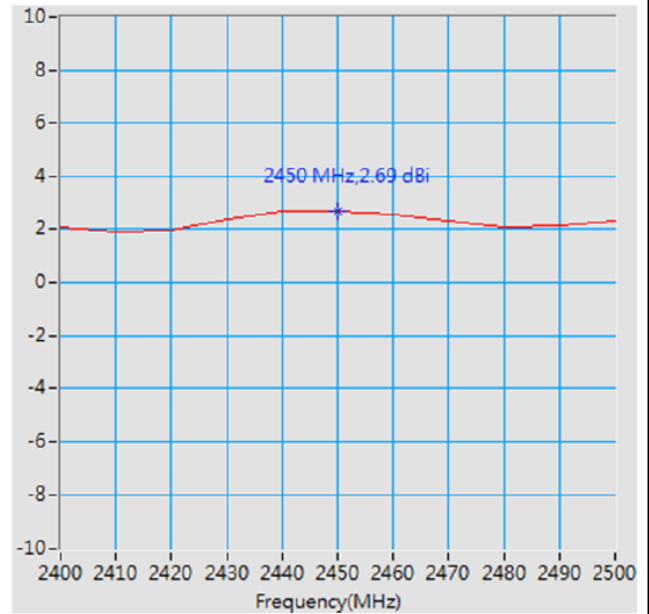


UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A X.X=N/A X.XX=N/A ANGLES=N/A HOLEDIA=N/A		 INPAQ TECHNOLOGY CO., LTD.
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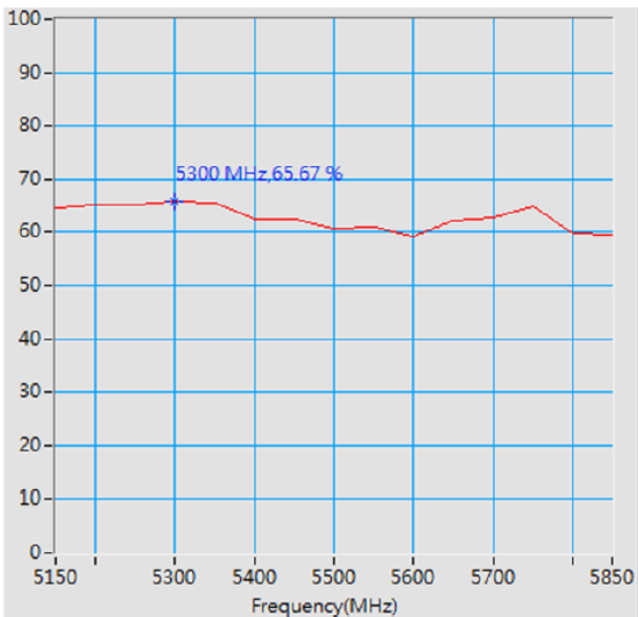
Antenna Efficiency and Peak Gain



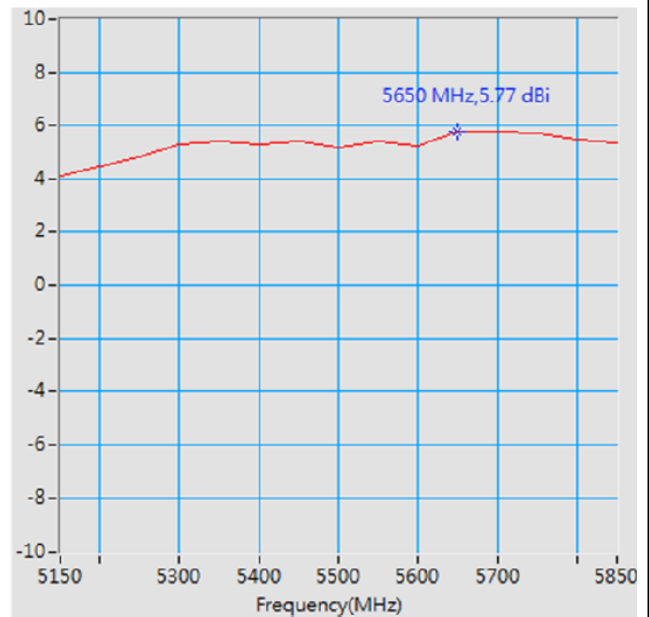
Maximum Efficiency at 2450 MHz : 55.97 %




Maximum Peak Gain at 2450 MHz : 2.69 dBi



Maximum Efficiency at 5300 MHz : 65.67 %




Maximum Peak Gain at 5650 MHz : 5.77 dBi

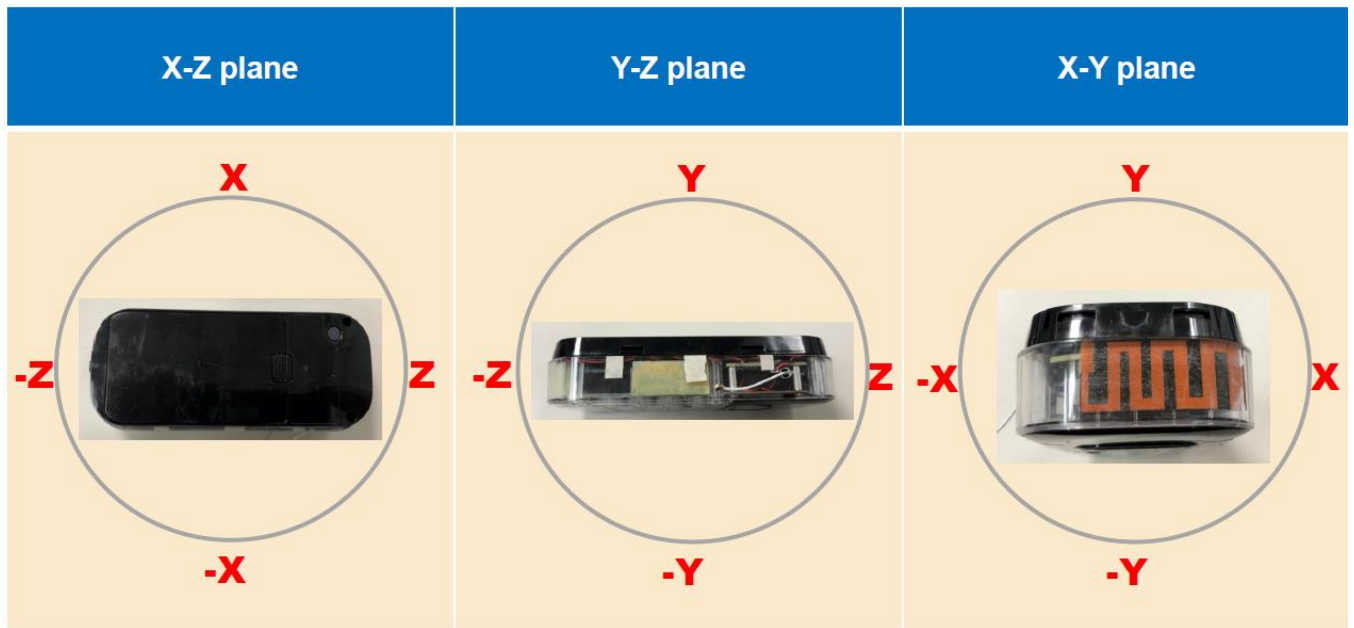
UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A X.X=N/A X.XX=N/A ANGLES=N/A HOLEDIA=N/A		 INPAQ TECHNOLOGY CO., LTD.
SCALE : N/A	UNIT : mm	
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ANT 2		
Frequency (MHz)	Efficiency (%)	Peakgain (dBi)
2400	51.72	2.09
2450	55.97	2.69
2500	53.10	2.34
5150	64.69	4.12
5500	60.67	5.15
5850	59.65	5.35

*The Peak gain listed here are from 3D radiation pattern.

UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A X.X=N/A X.XX=N/A ANGLES=N/A HOLEDIA=N/A			INPAQ TECHNOLOGY CO., LTD.
SCALE : N/A	UNIT : mm		
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3 Views of antenna



UNLESS OTHER SPECIFIED TOLERANCES ON : X = N/A X.X = N/A X.XX = N/A ANGLES = N/A HOLEDIA = N/A		 INPAQ TECHNOLOGY CO., LTD.	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
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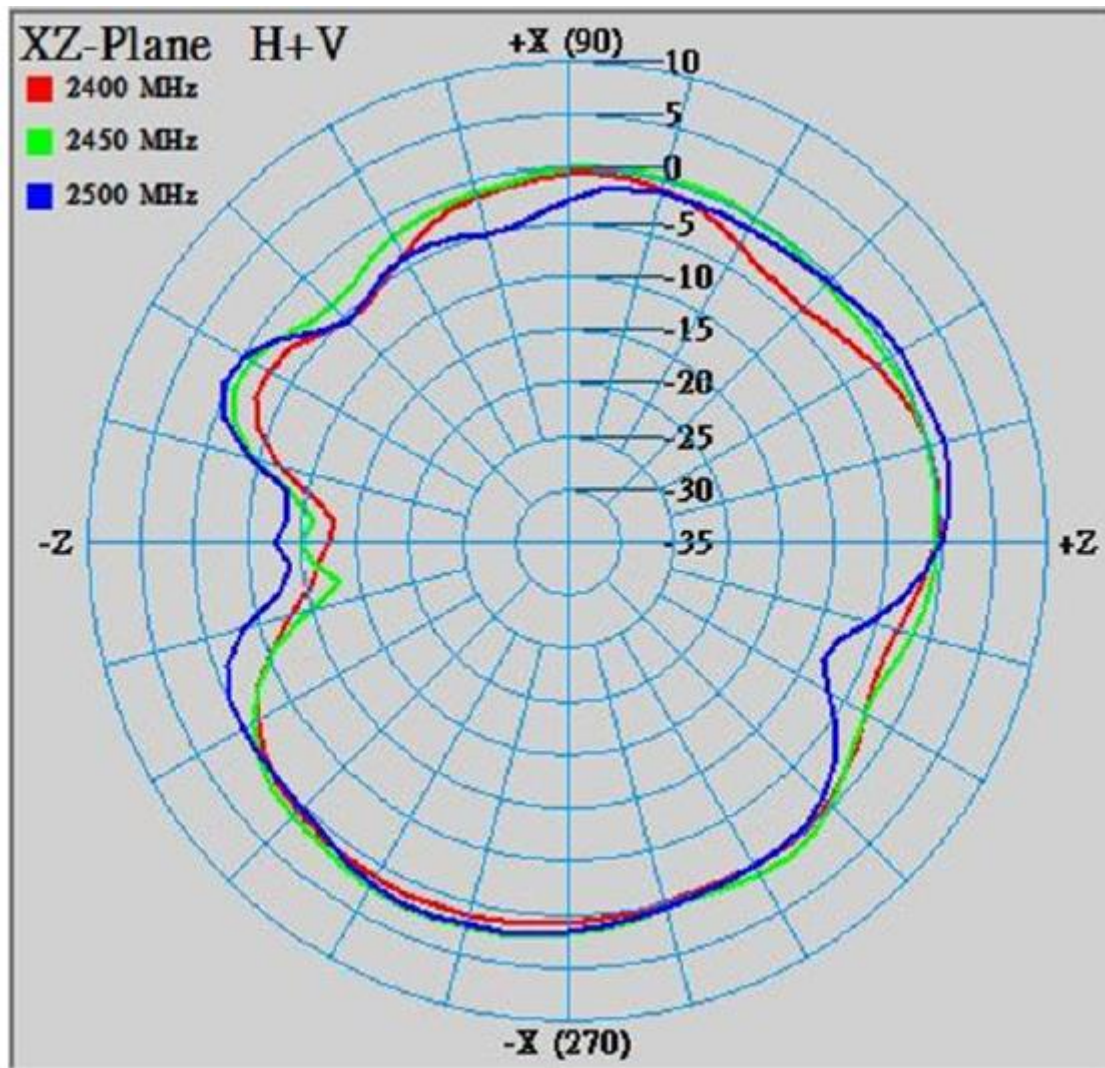
2D RADIATION PATTERN


(2G)

X-Z Plane

Phi=0.00deg

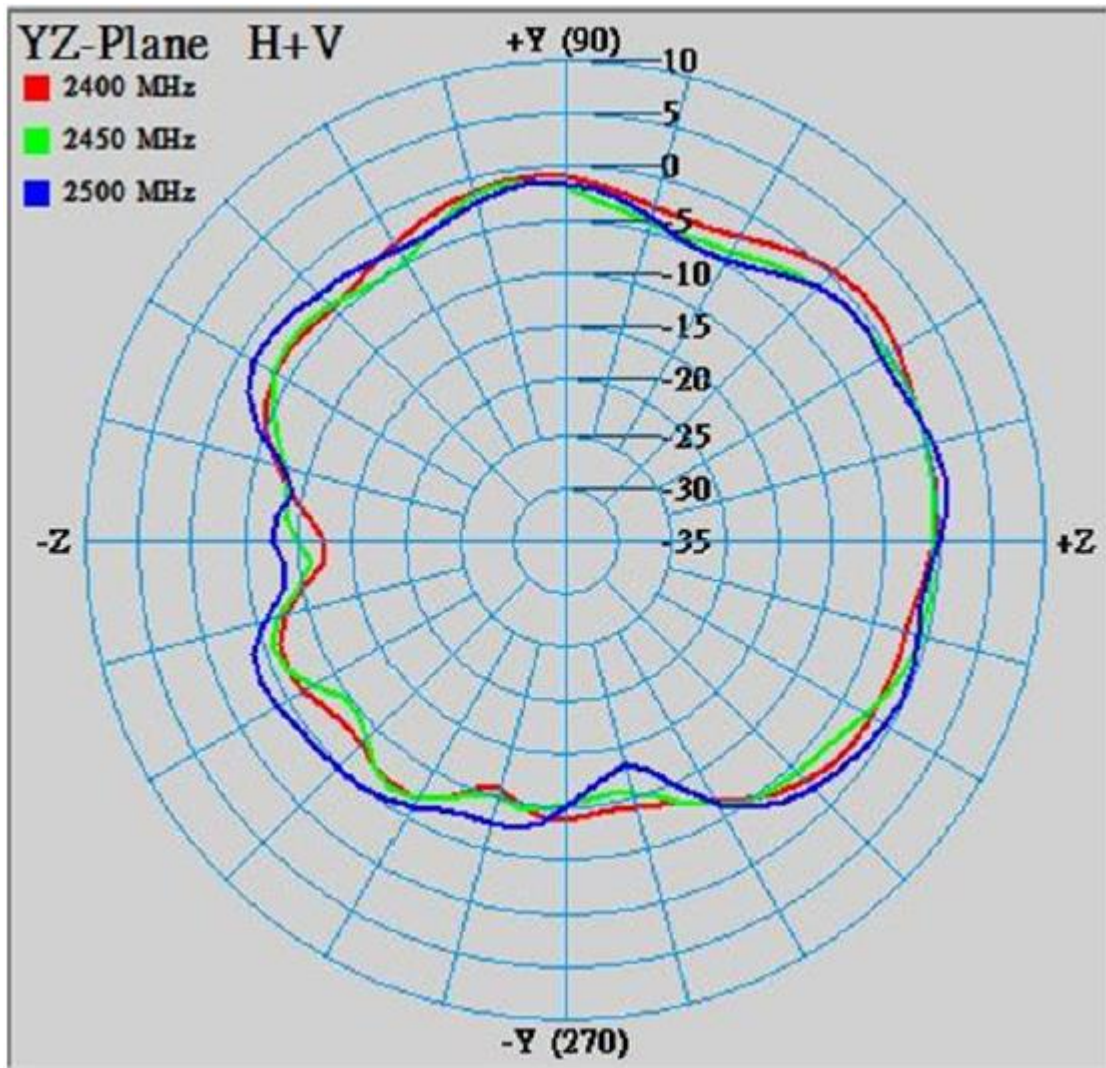
Gain . dB




UNLESS OTHER SPECIFIED TOLERANCES ON :			INPAQ TECHNOLOGY CO., LTD.
X=N/A	X.X=N/A		
ANGLES=N/A		HOLEDIA=N/A	
SCALE : N/A	UNIT : mm		
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Y-Z Plane
Phi=90.00deg

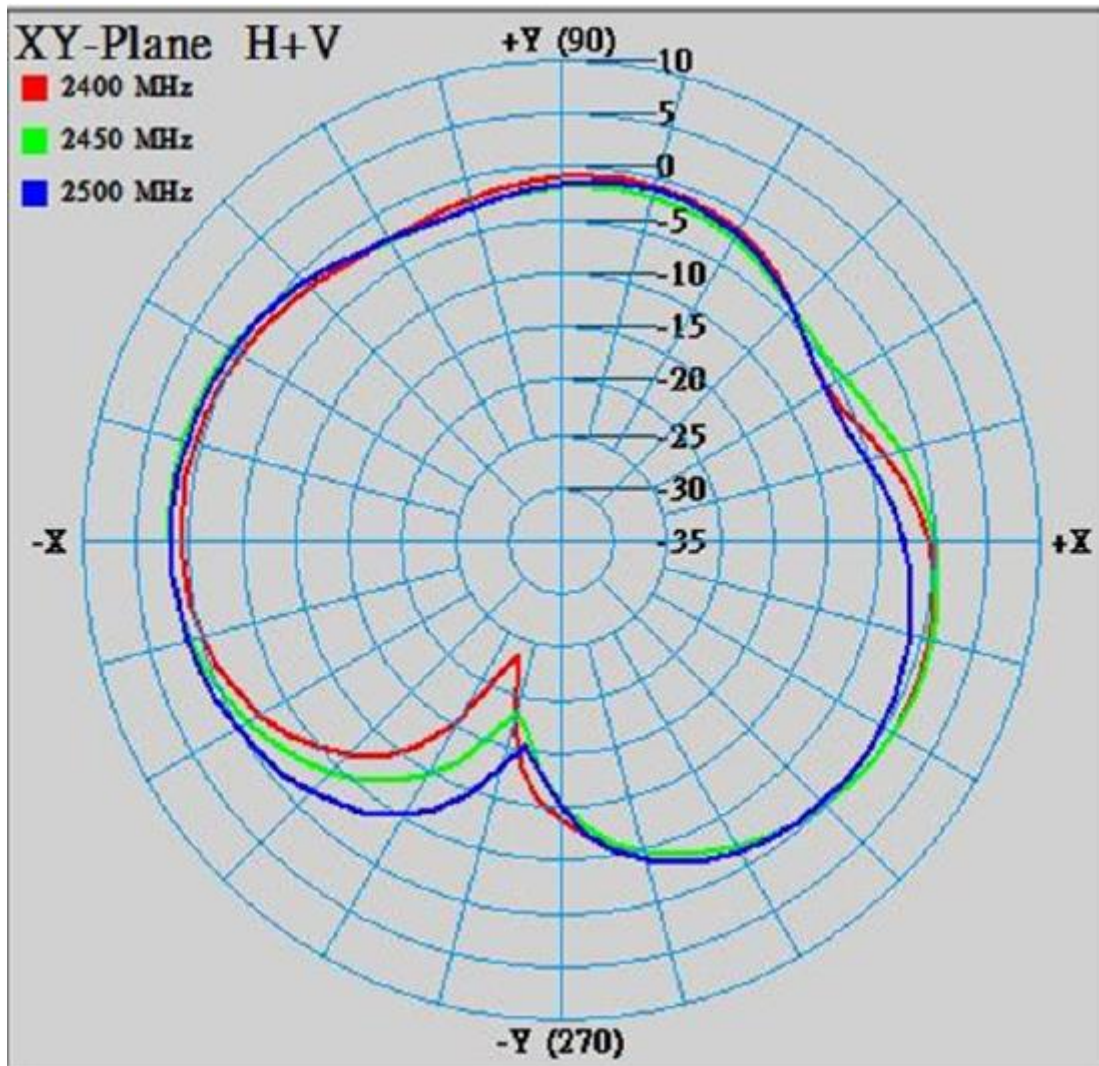
Gain . dB



UNLESS OTHER SPECIFIED TOLERANCES ON :			INPAQ TECHNOLOGY CO., LTD.
X=N/A	X.X=N/A		
ANGLES=N/A		HOLEDIA=N/A	
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X-Y Plane
Theta=90.00deg

Gain . dB



Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
2400	1.47	-1.36	1.25	-3.13	1.12	-1.75
2450	2.56	-0.37	0.16	-3.69	2.02	-1.31
2500	2.30	-0.79	1.14	-3.01	1.69	-1.53

UNLESS OTHER SPECIFIED TOLERANCES ON :
 X = N/A X.X = N/A X.XX = N/A
 ANGLES = N/A HOLEDIA = N/A



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A UNIT : mm
 DRAWN BY : 邱瑩鈺 CHECKED BY : 詹惠雯
 DESIGNED BY : 蕭鴻章 APPROVED BY : 陳振榮

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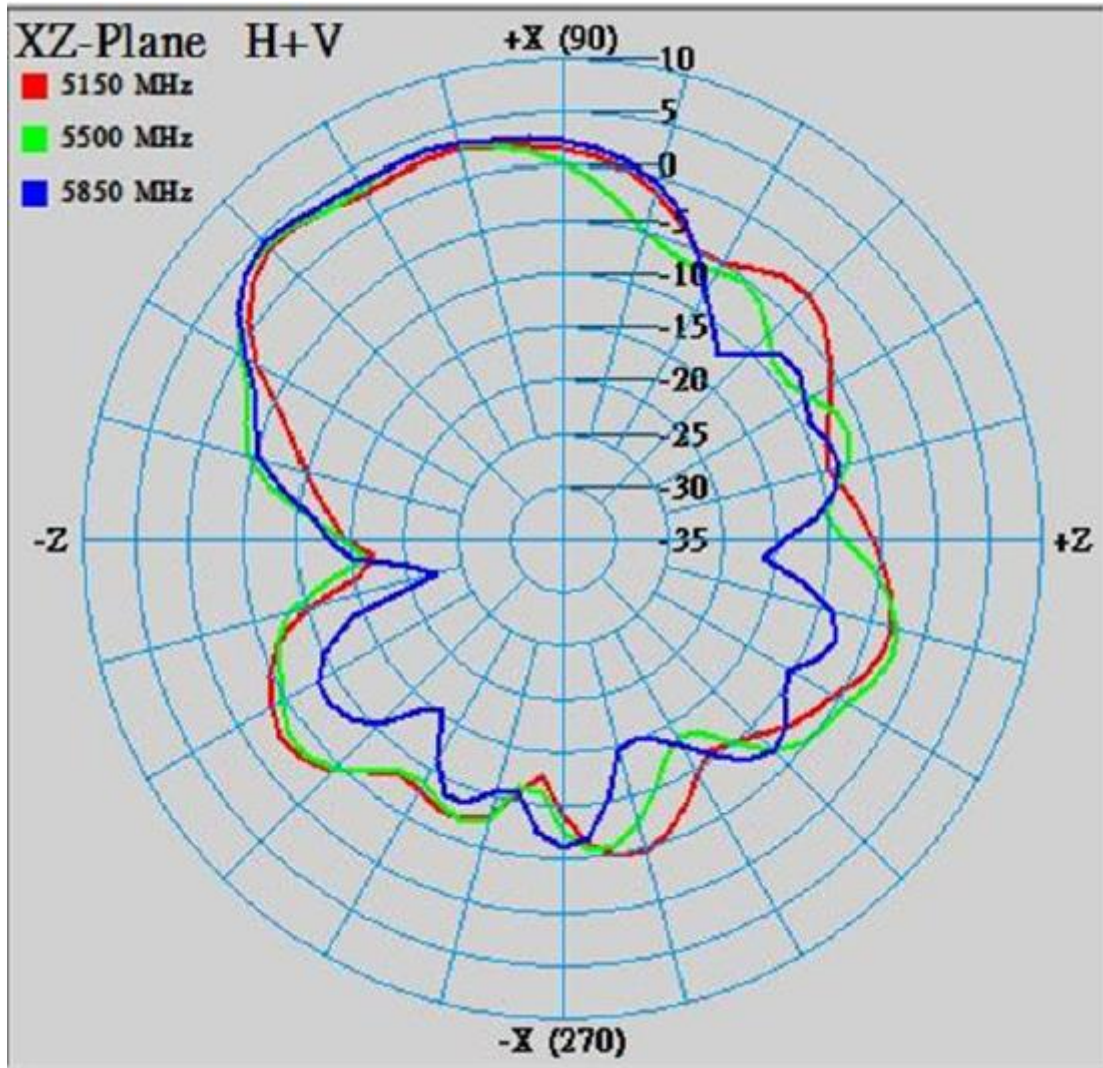
DOCUMENT NO. ENS070027120-000803514928


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(5G)

X-Z Plane
Phi=0.00deg

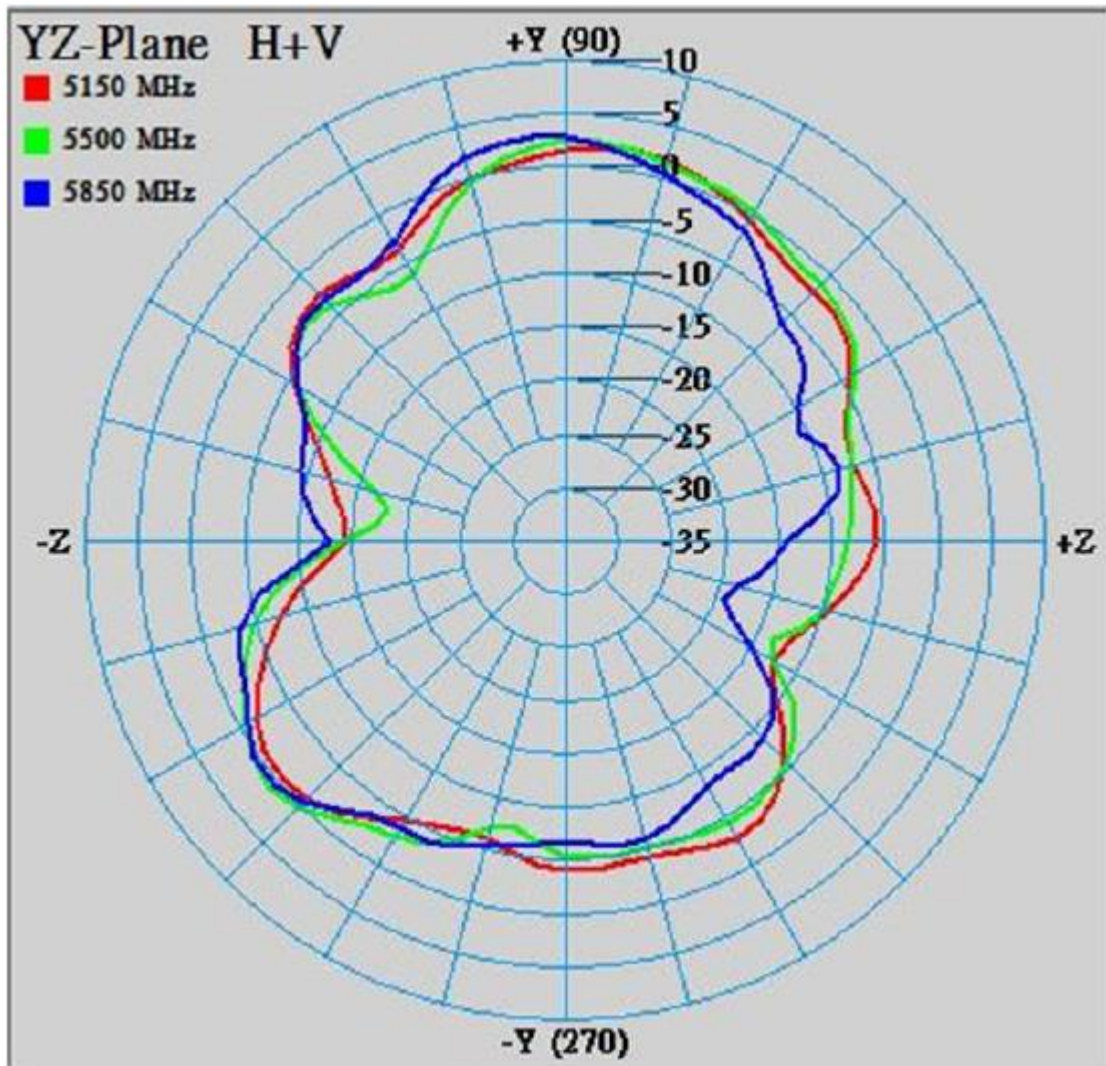
Gain . dB




UNLESS OTHER SPECIFIED TOLERANCES ON :			INPAQ TECHNOLOGY CO., LTD.
X=N/A	X.X=N/A X.XX=N/A		
ANGLES=N/A		HOLEDIA=N/A	
SCALE : N/A	UNIT : mm	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
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Y-Z Plane
Phi=90.00deg

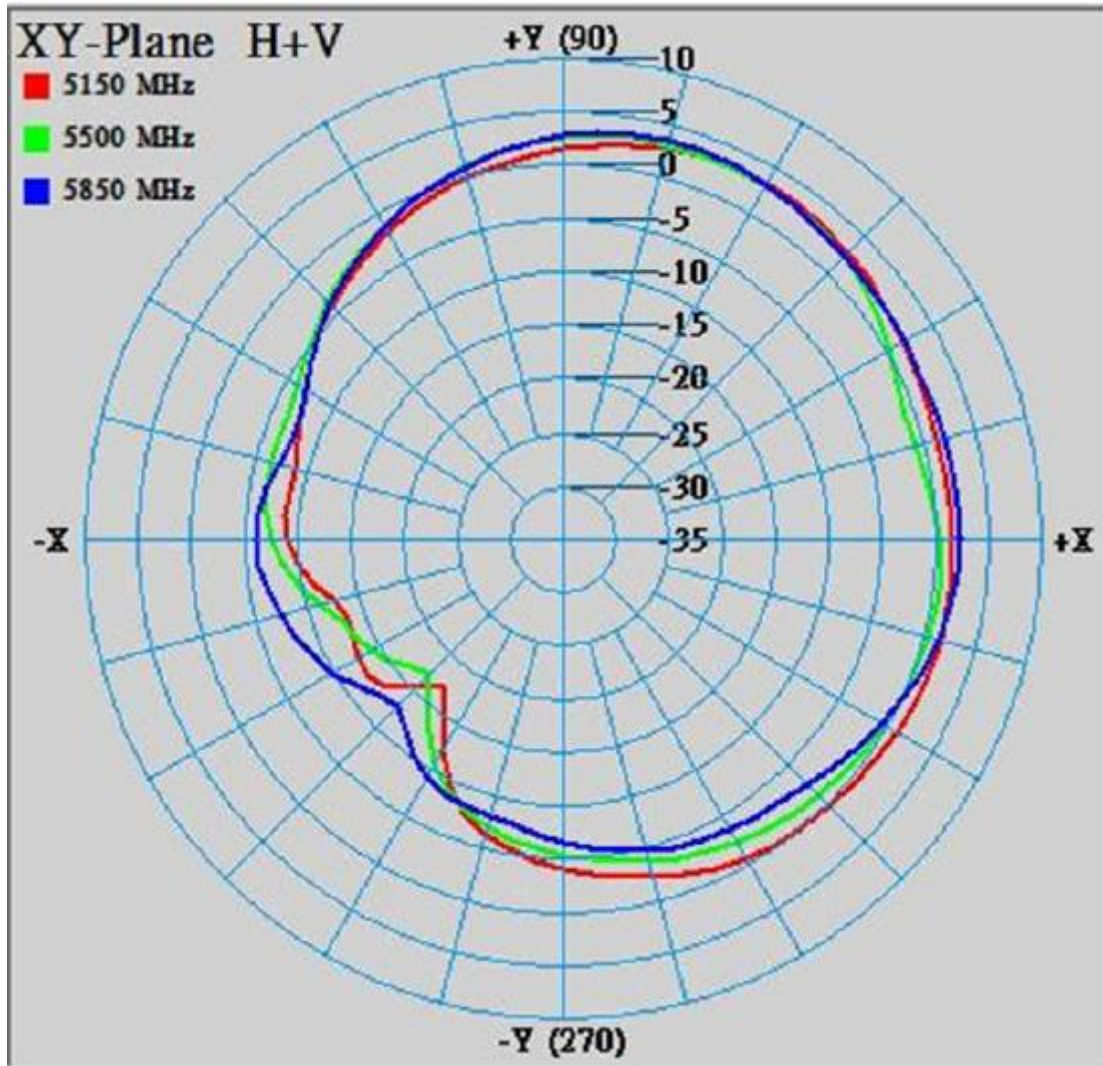
Gain . dB



UNLESS OTHER SPECIFIED TOLERANCES ON :		 INPAQ TECHNOLOGY CO., LTD.
X=N/A	X.X=N/A X.XX=N/A	
ANGLES=N/A		THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
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X-Y Plane
Theta=90.00deg

Gain . dB



Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
5150	3.70	-2.61	2.13	-3.13	3.35	-0.69
5500	4.14	-2.62	2.64	-2.96	3.24	-1.12
5850	4.39	-2.78	2.85	-3.39	3.60	-0.71

UNLESS OTHER SPECIFIED TOLERANCES ON :
 X=N/A X.X=N/A X.XX=N/A
 ANGLES=N/A HOLEDIA=N/A



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A UNIT : mm
 DRAWN BY : 邱瑩鈺 CHECKED BY : 詹惠雯
 DESIGNED BY : 蕭鴻章 APPROVED BY : 陳振榮

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