

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

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, Width140.0mm	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℃ ~ +65℃

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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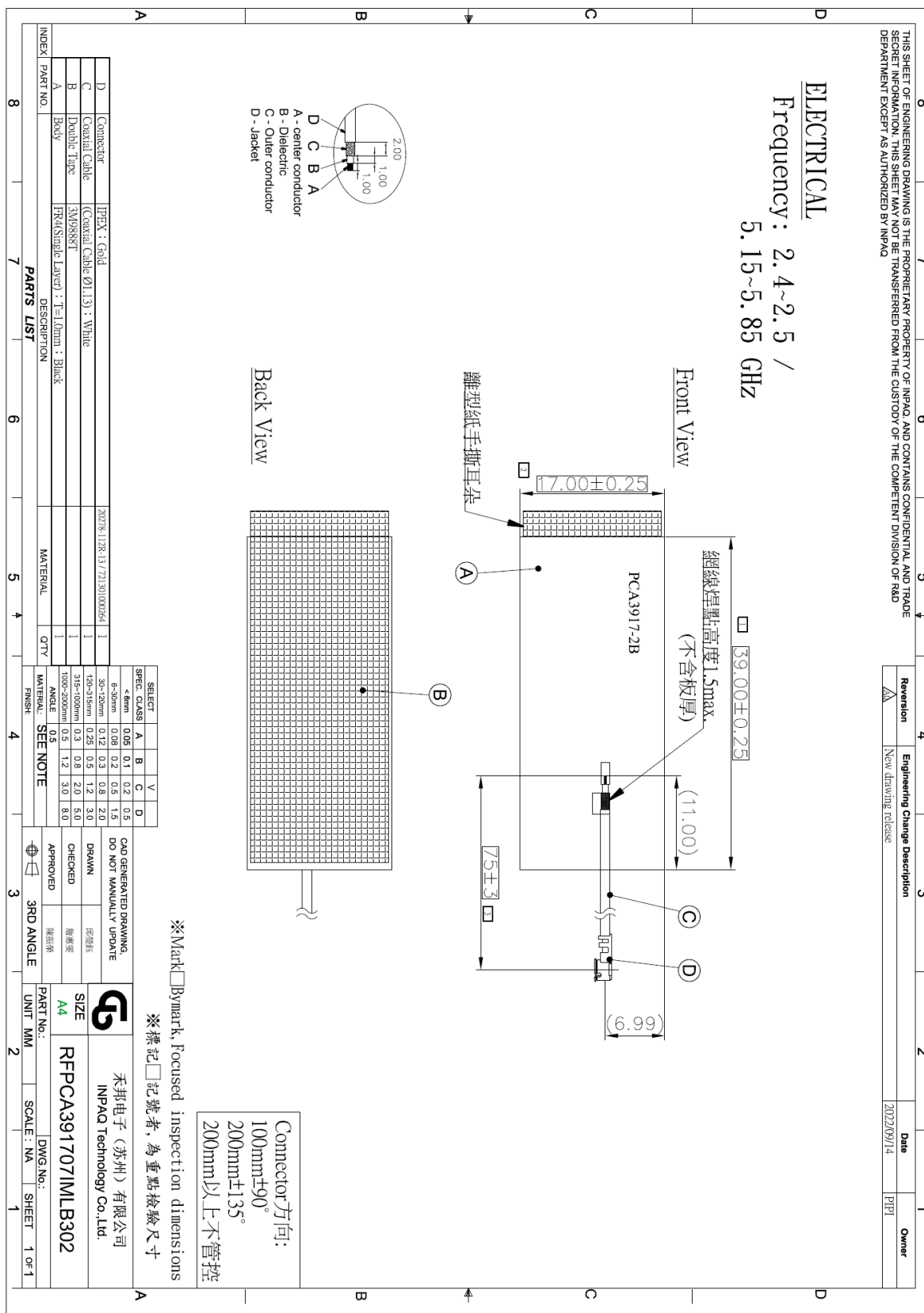
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DOCUMENT NO.

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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

SCALE : N/A

UNIT : mm

DRAWN BY : 邱發鈺

CHECKED BY : 詹惠愛

DESIGNED BY : 蕭鴻章

APPROVED BY : 陳振榮

TITLE : RFPCA391707IMLB302



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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.

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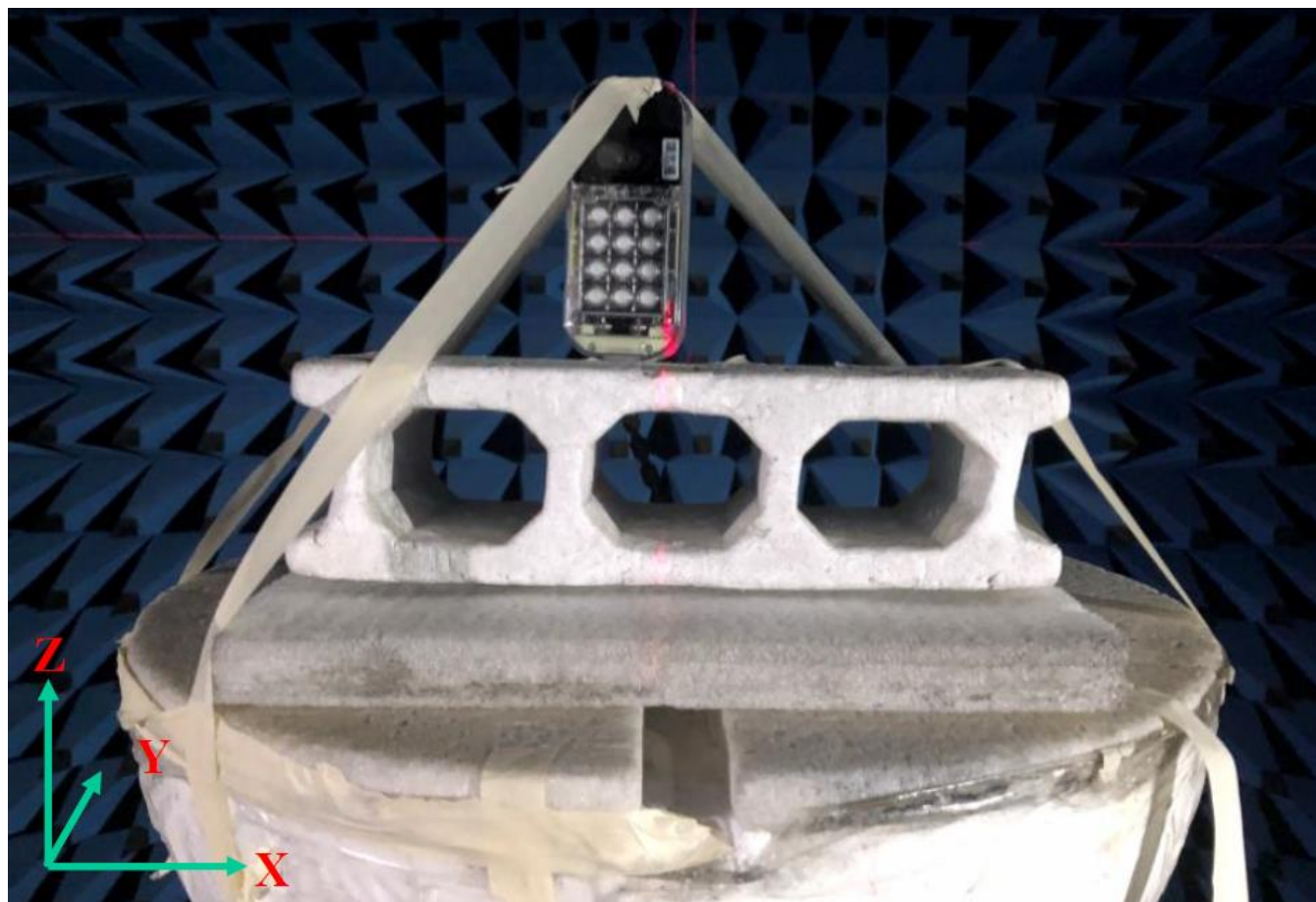
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■ Experimental Setup



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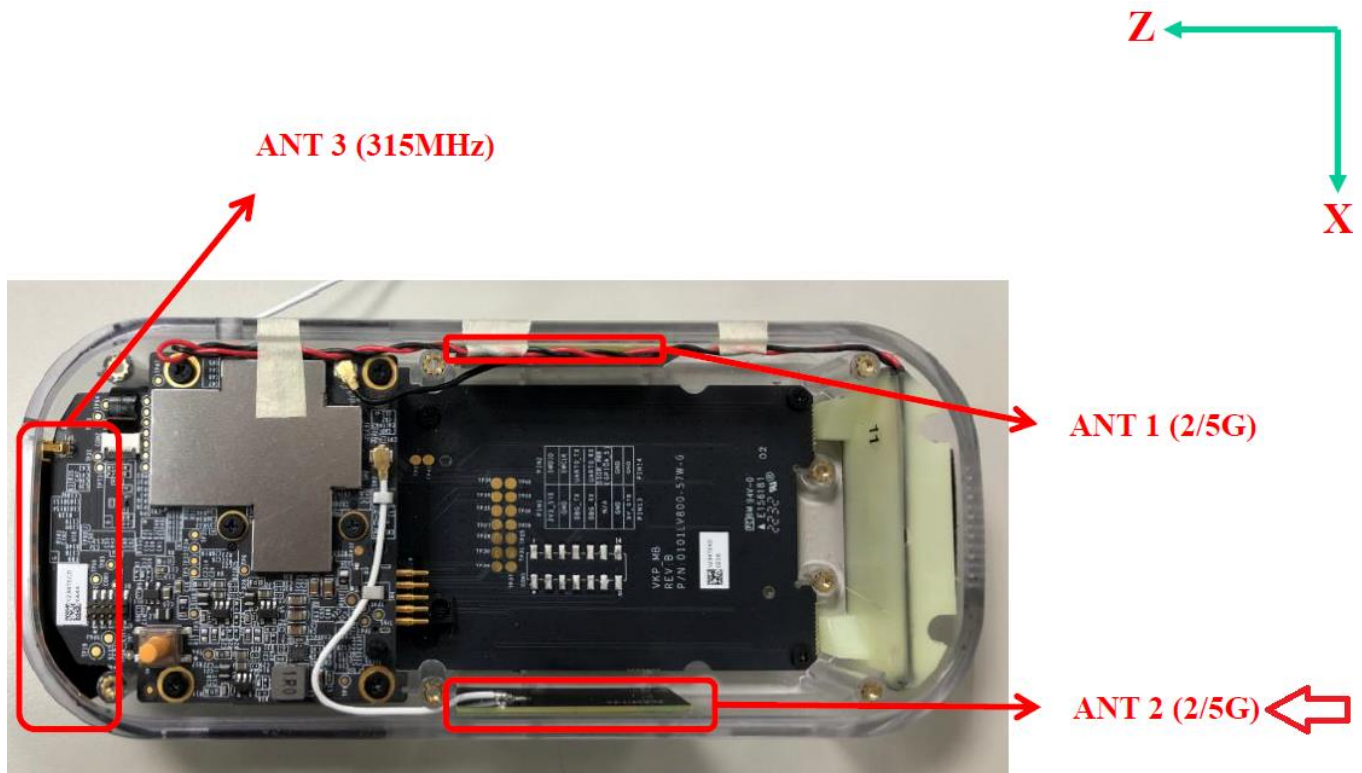
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Antenna Solution Detail



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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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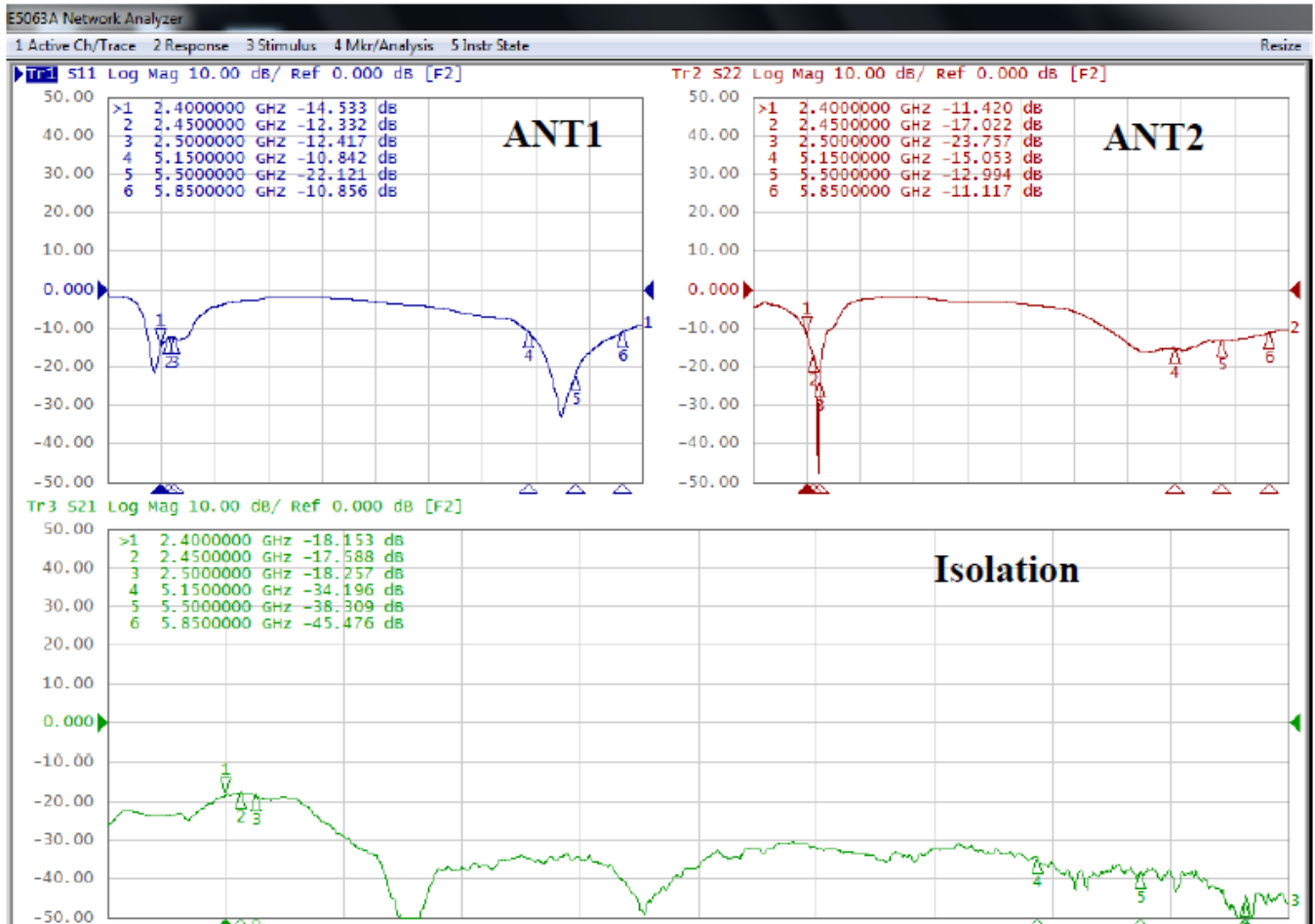
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A1

ELECTRICAL CHARACTERISTICS

Return Loss



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



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SCALE : N/A

UNIT : mm

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CHECKED BY : 詹惠雯

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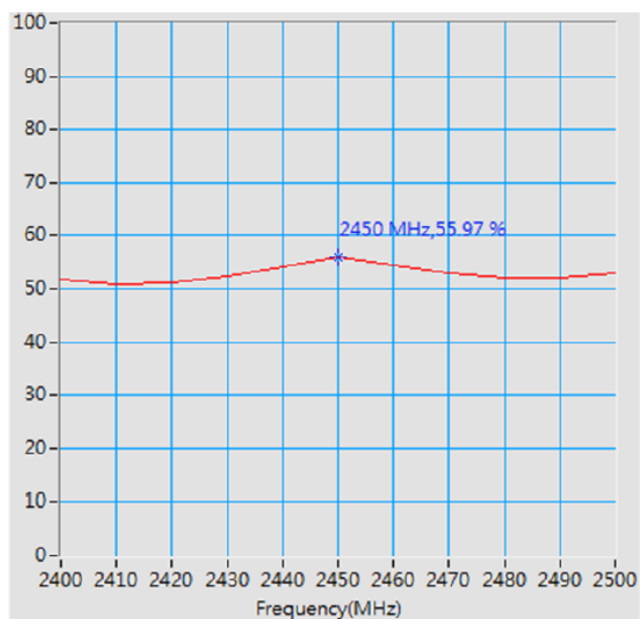
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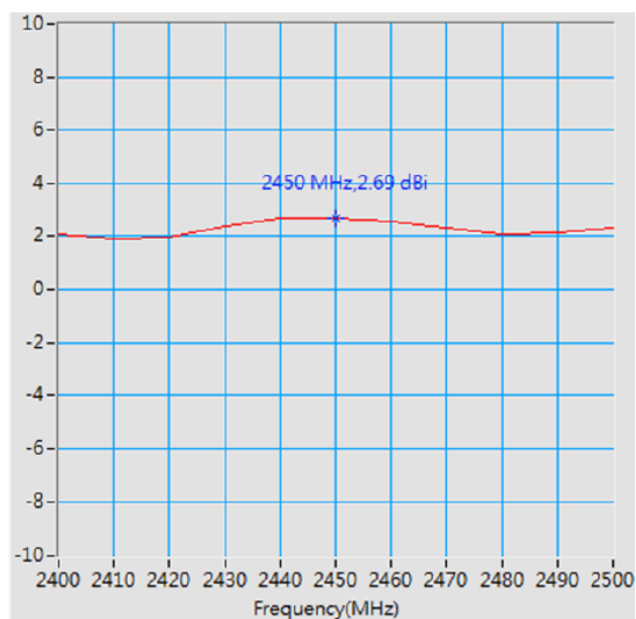
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SPEC REV.
A1

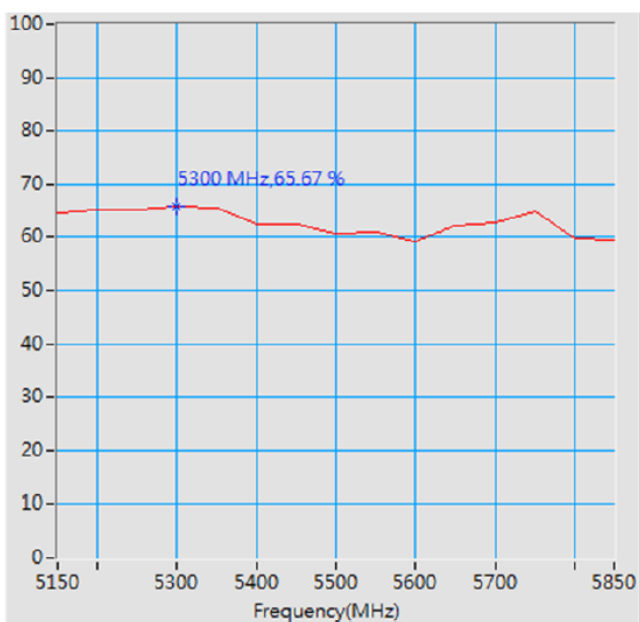
Antenna Efficiency and Peak Gain



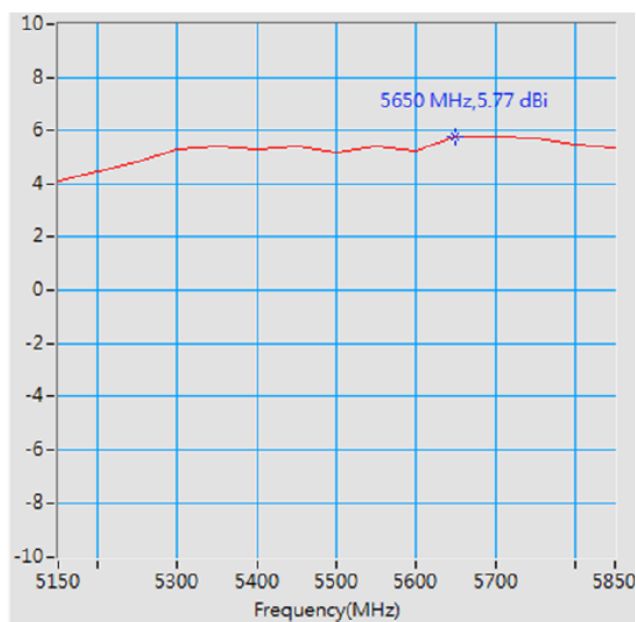
Maximum Efficiency at 2450 MHz : 55.97 %



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

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 ANGLES = N/A HOLEDIA = N/A



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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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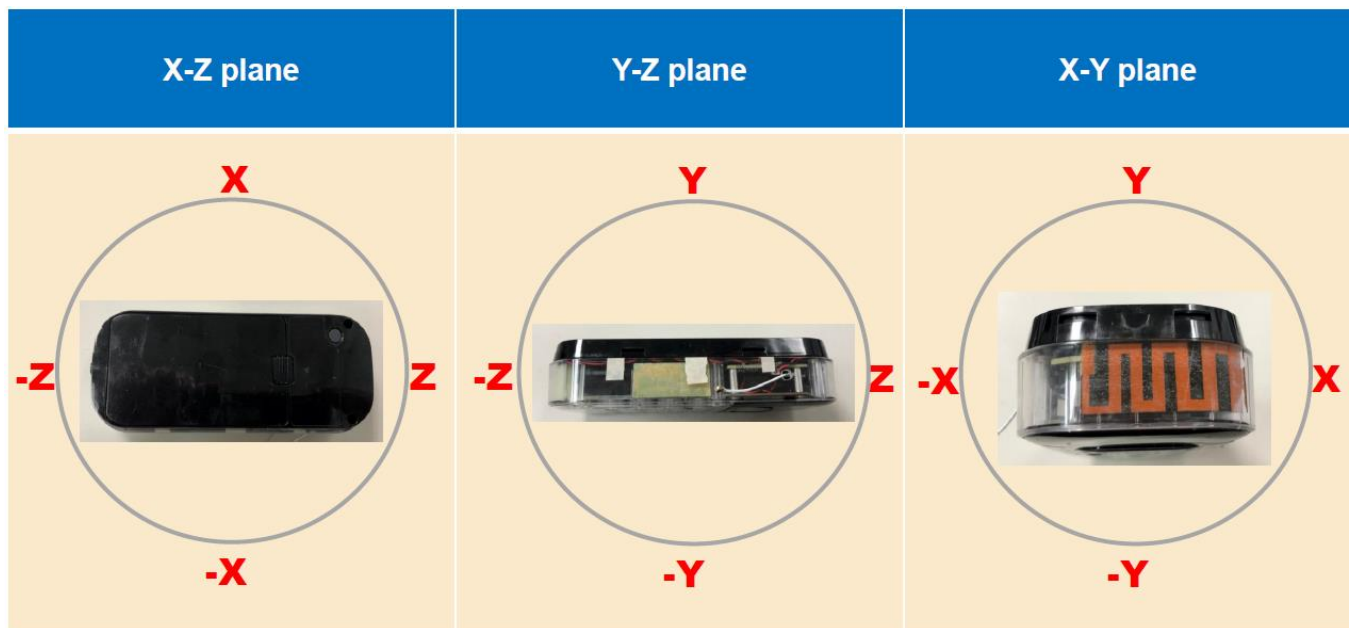
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	ANT 2	
Frequency (MHz)	Efficiency (%)	Peakgain (dBi)
2400	51.72	2.09
2450	55.97	2.69
2500	53.10	2.34
5150	64.69	4.12
5500	60.67	5.15
5850	59.65	5.35

*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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DESIGNED BY : 蕭鴻章	APPROVED BY : 陳振榮	
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		SPEC REV. A1

■ 3 Views of antenna



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A1

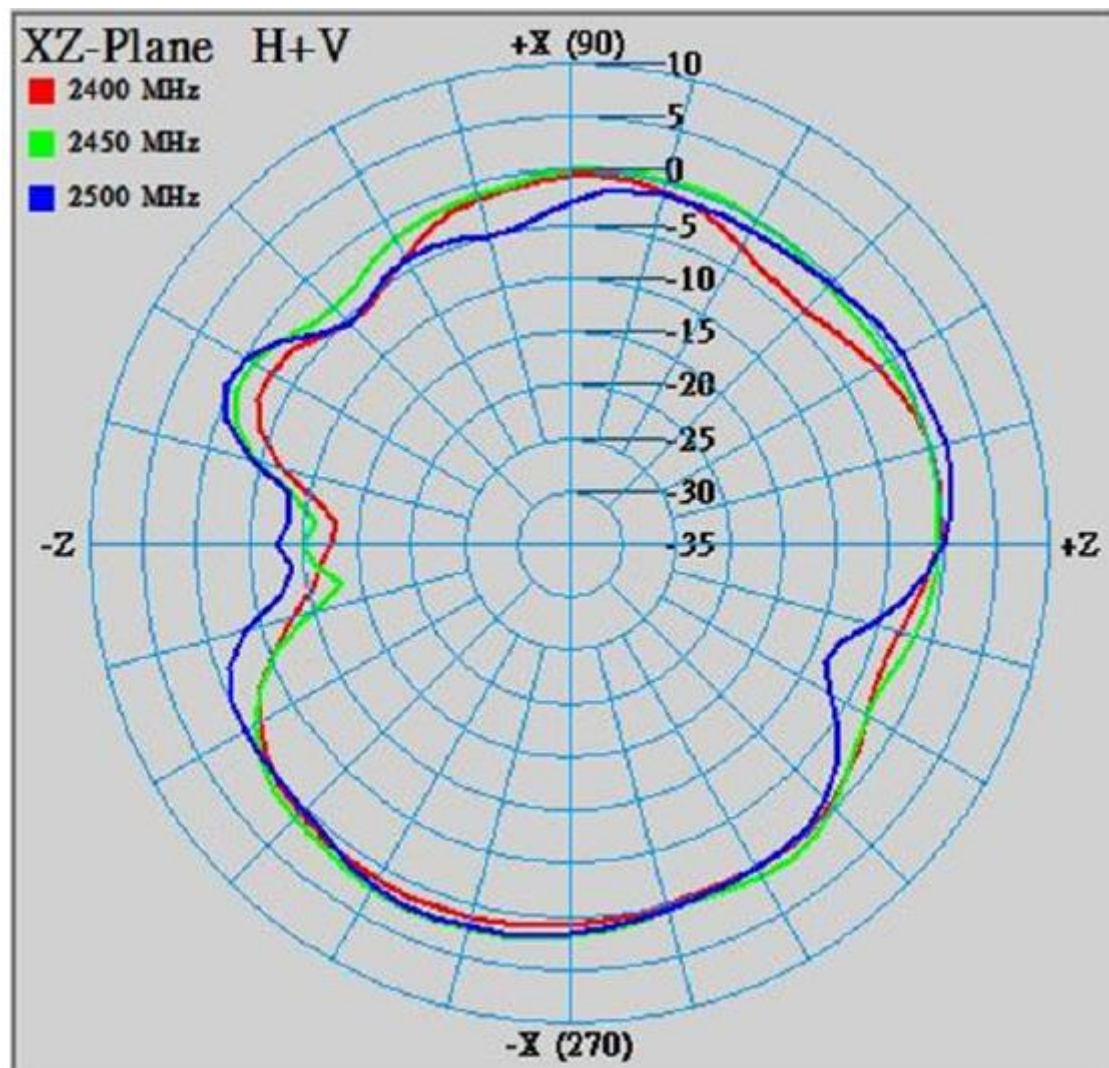
2D RADIATION PATTERN

(2G)

X-Z Plane

Phi=0.00deg

Gain . dB



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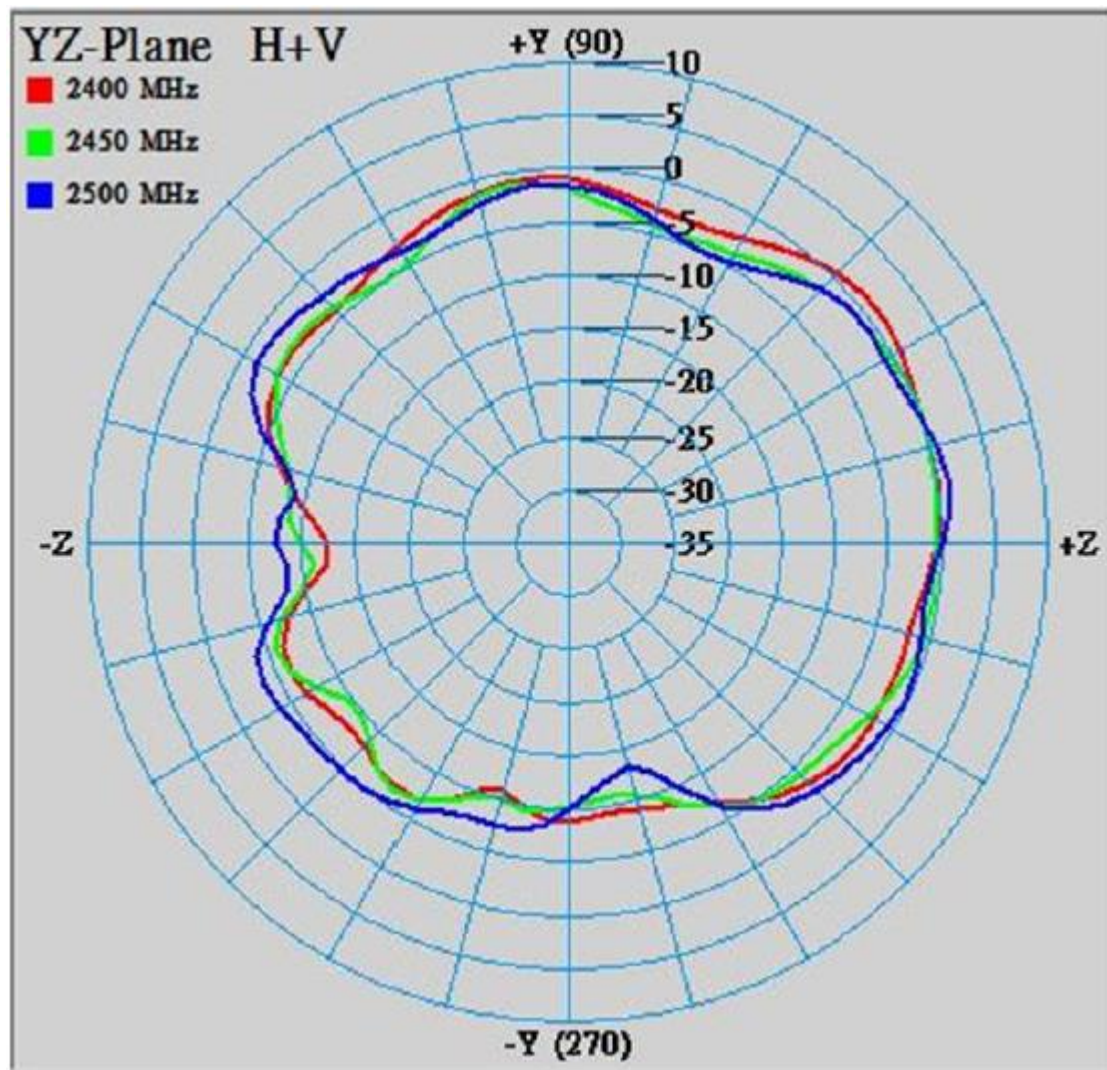
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SPEC REV.
A1

Y-Z Plane

Phi=90.00deg

Gain . dB



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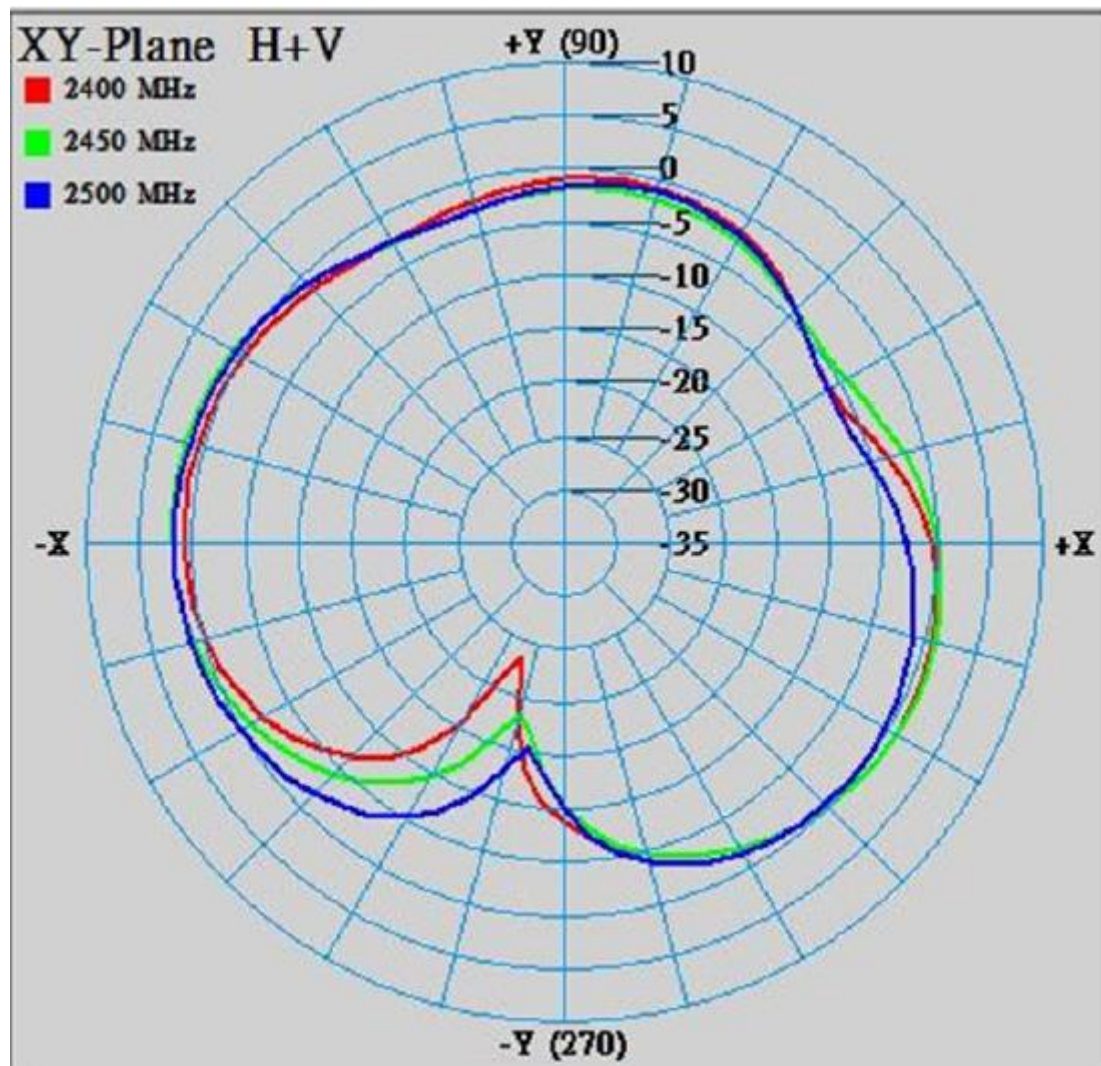
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A1

X-Y Plane

Theta=90.00deg

Gain . dB



	ZX plane		ZY plane		XY plane	
Frequency [MHz]	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 :
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 ANGLES = N/A HOLEDIA = N/A



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SCALE : N/A

UNIT : mm

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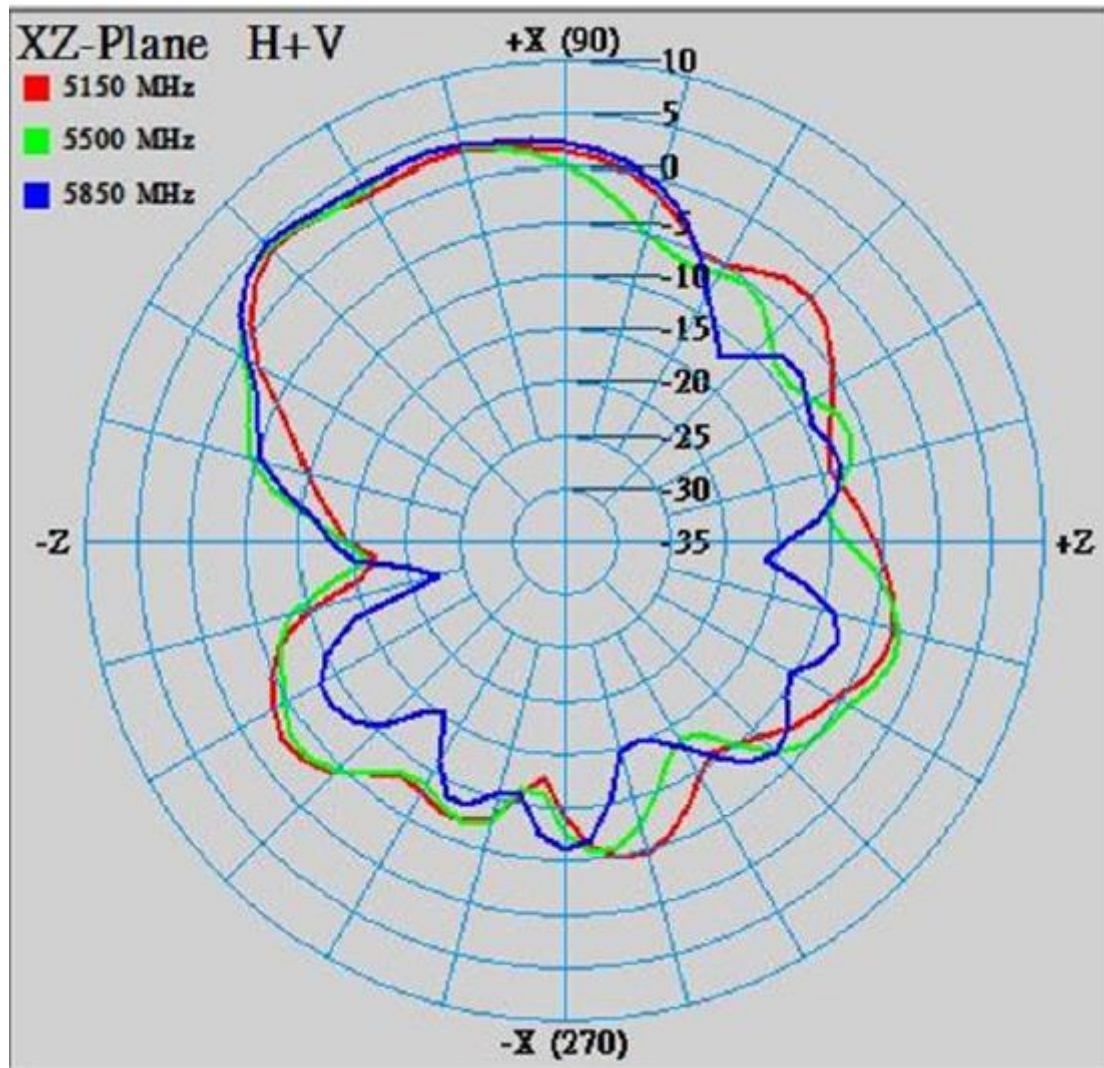
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SPEC REV.
A1

(5G)

X-Z Plane
Phi=0.00deg

Gain . dB



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 ANGLES = N/A HOLEDIA = N/A



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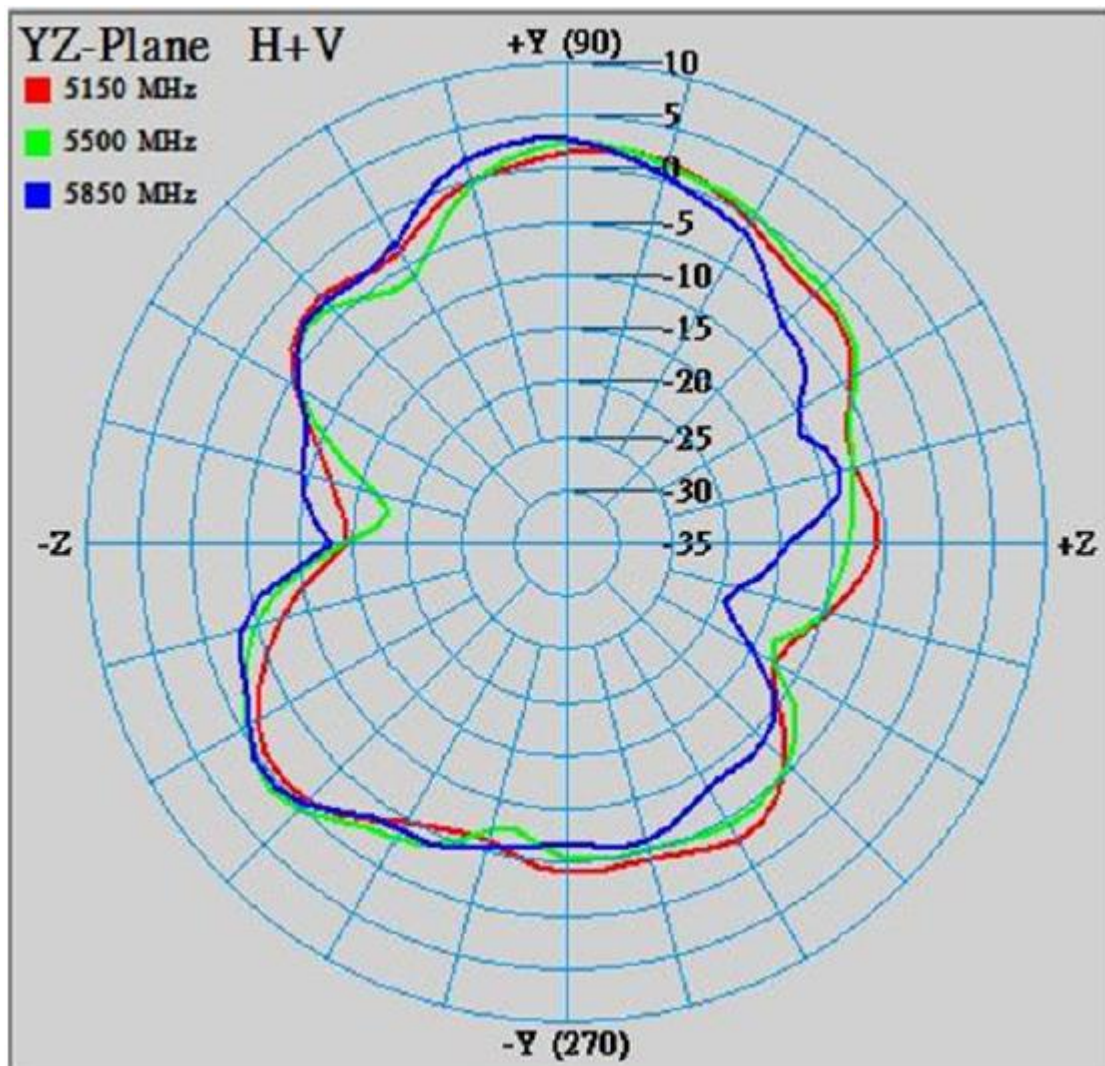
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SPEC REV.
A1

Y-Z Plane
Phi=90.00deg

Gain . dB



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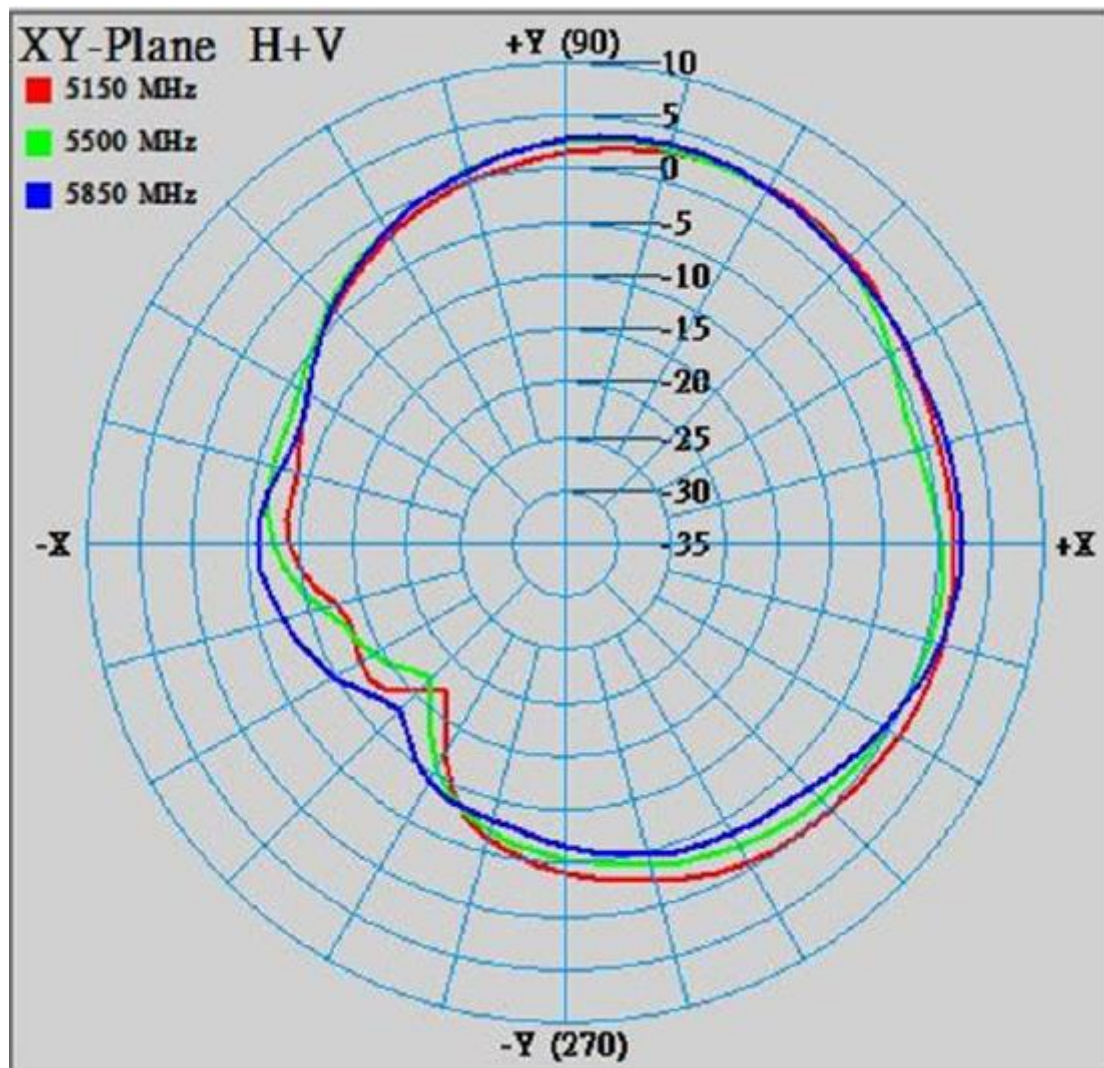
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SPEC REV.
A1

X-Y Plane

Theta=90.00deg

Gain . dB



	ZX plane		ZY plane		XY plane	
Frequency [MHz]	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 :
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