

APPROVAL SHEET

PCB Antenna

2.4~2.5 / 5.15~5.85 GHz Working Frequency

P/N: RFPCA391704IMLB301

Customer : GOLDTek TECHNOLOGY CO., Ltd.,

Customer 's Part No. : 790206K00-092-G ANT1

Issue Date : 2023/03/16

品名：RFPCA391704IMLB301

1. Explanation of part number：

RF	PCA	3917	04	I	M	L	B	3	01
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 @ 2.54 dBi 5.18~5.85 GHz @ 5.69 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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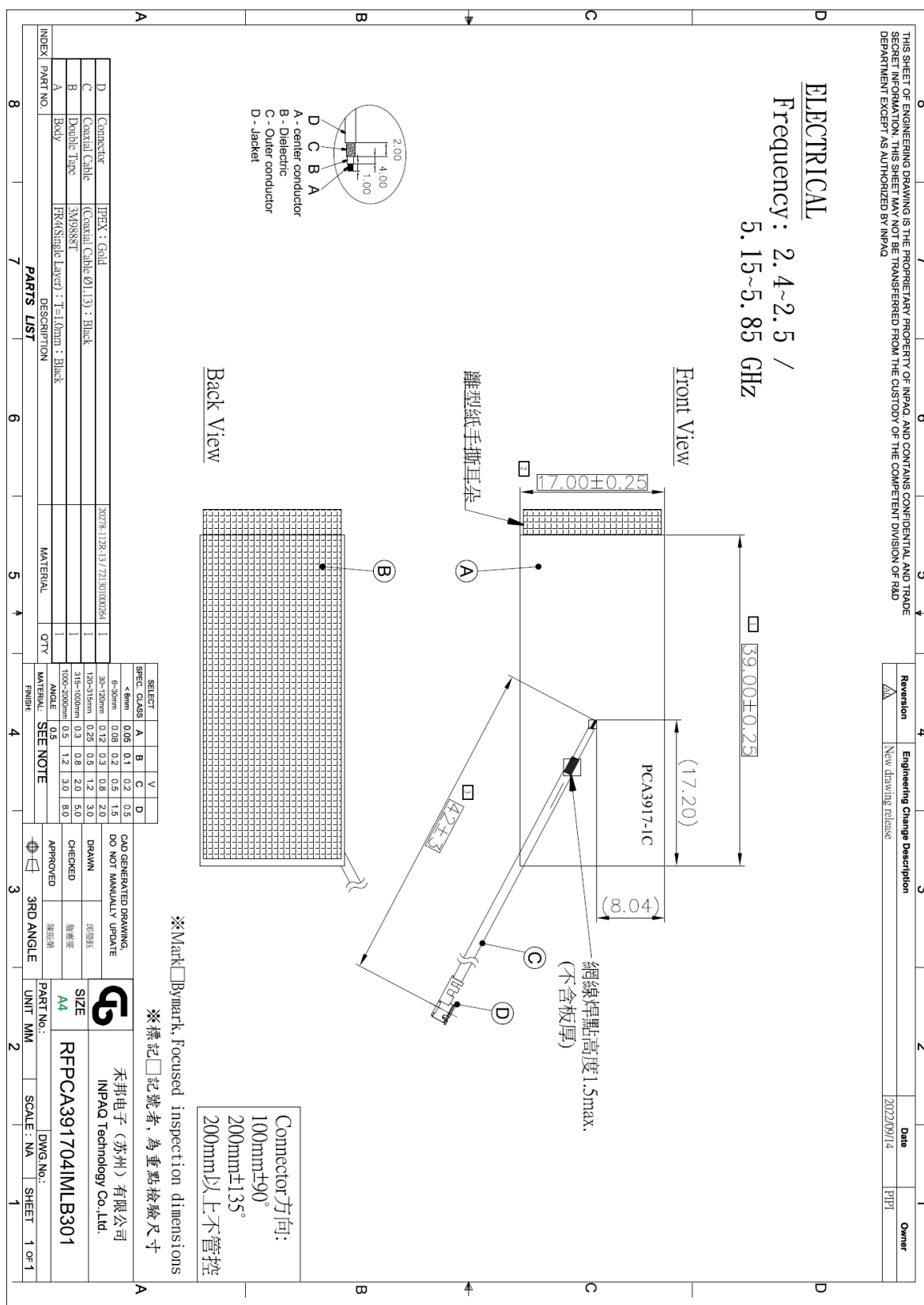
TITLE：RFPCA391704IMLB301

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SPEC REV.
A1

3. Drawing :



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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SPEC	REV.
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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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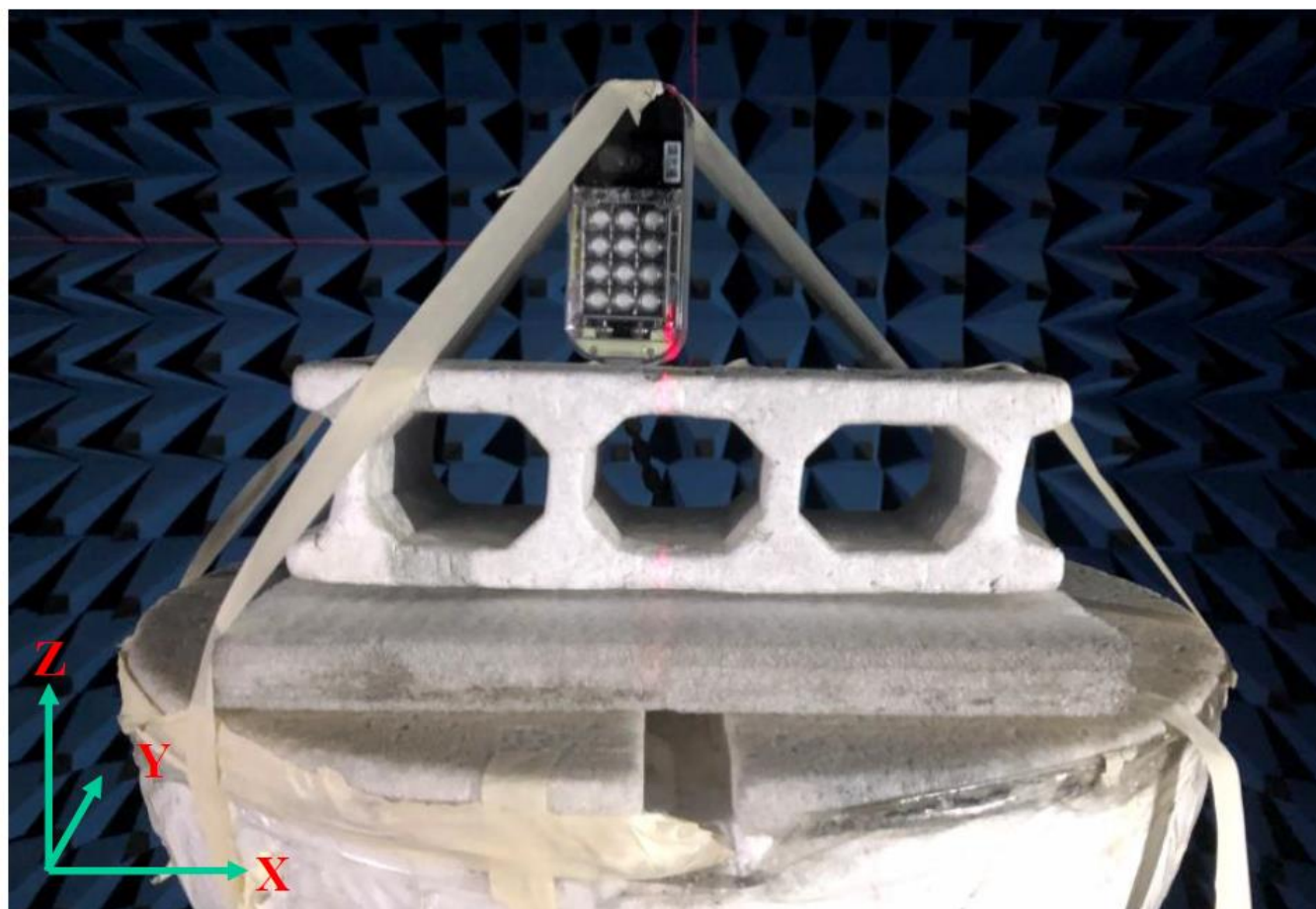
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Experimental Setup



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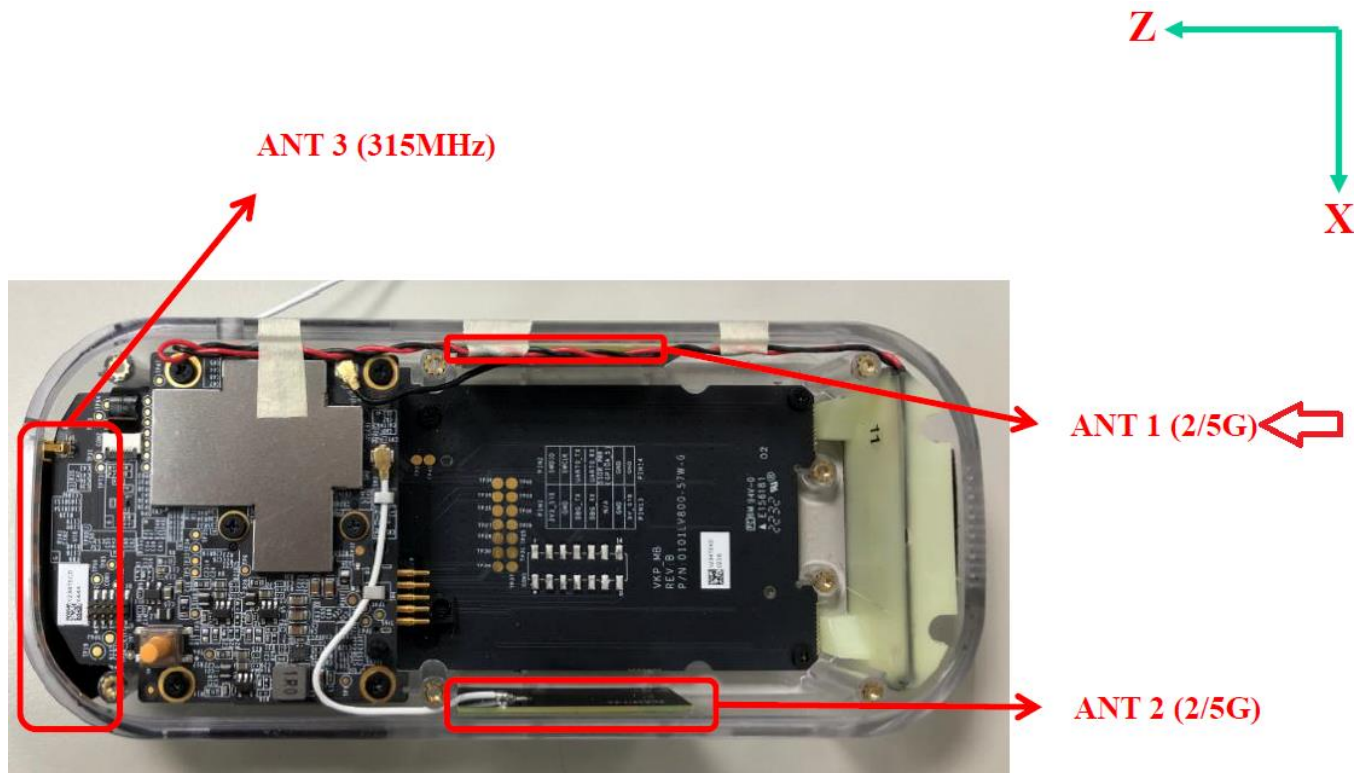
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Antenna Solution Detail



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ANGLES = N/A HOLEDIA = N/A



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SCALE : N/A

UNIT : mm

DRAWN BY : 邱瑩鈺

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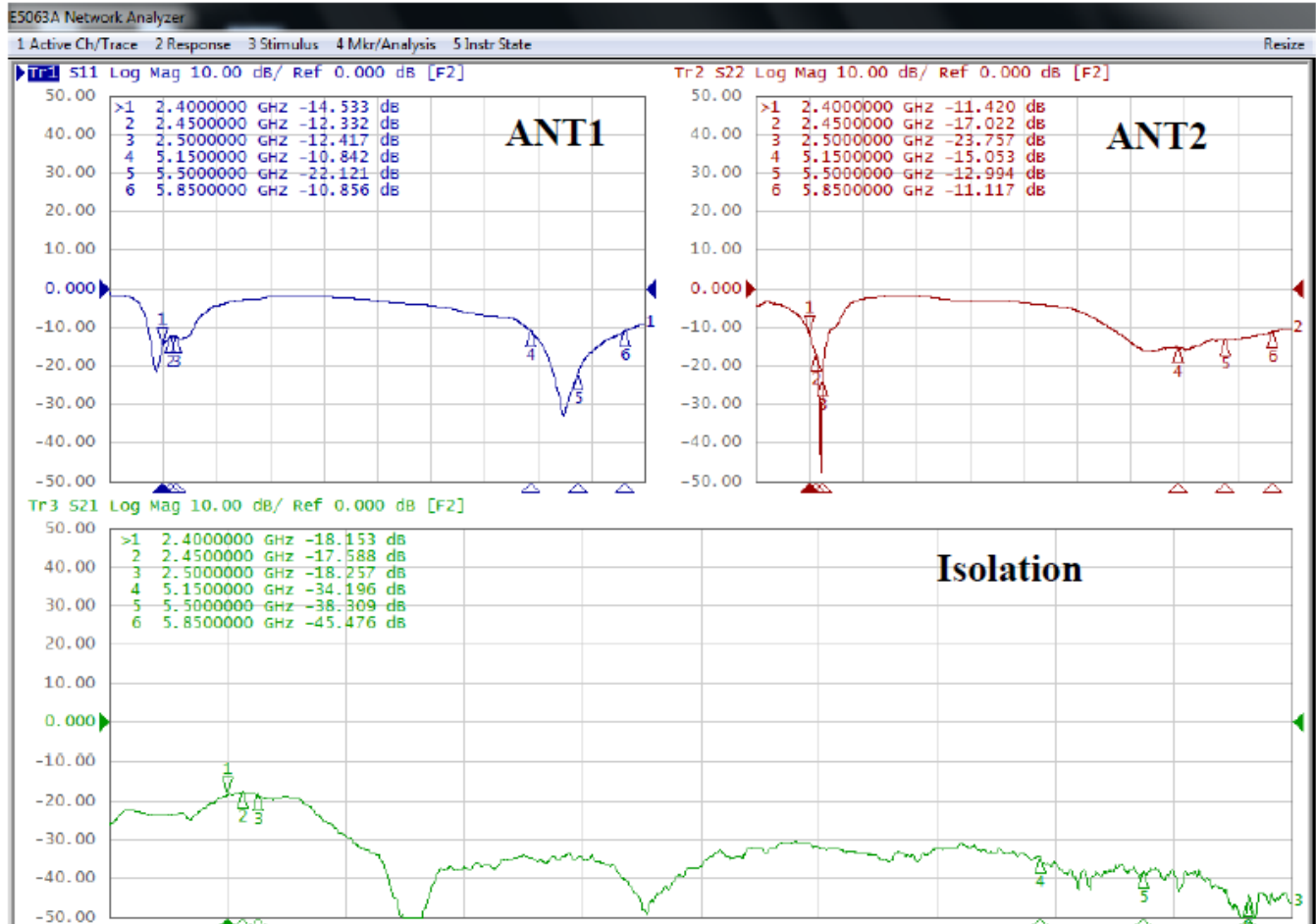
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ELECTRICAL CHARACTERISTICS

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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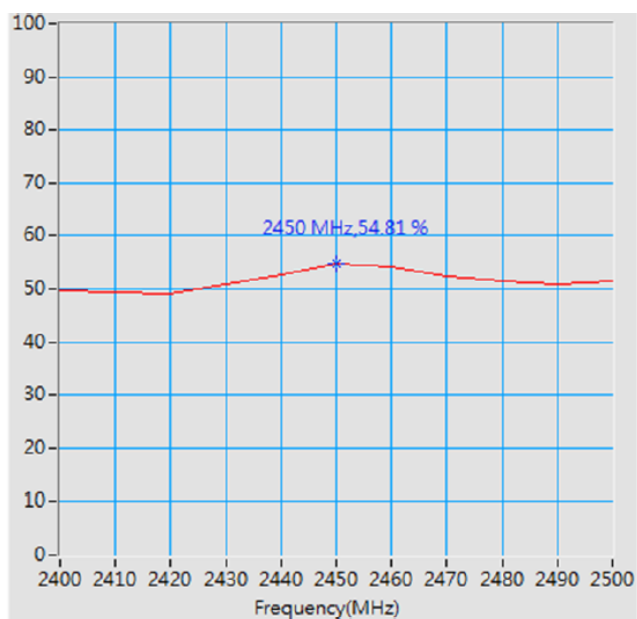
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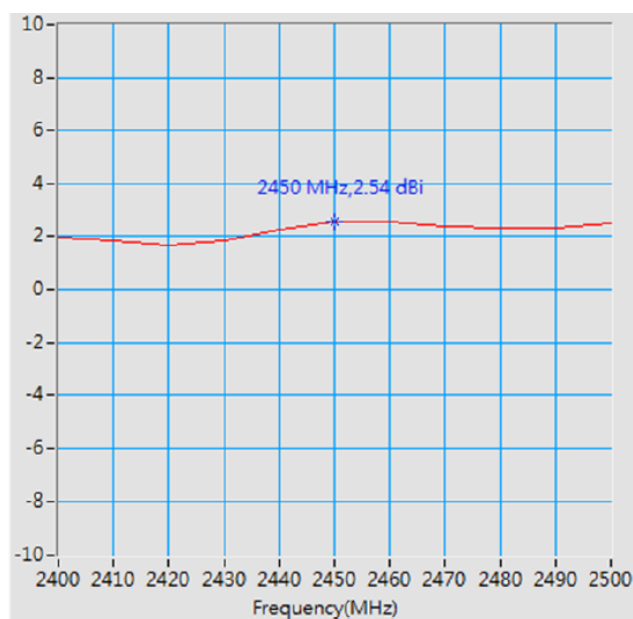
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SPEC REV.
A1

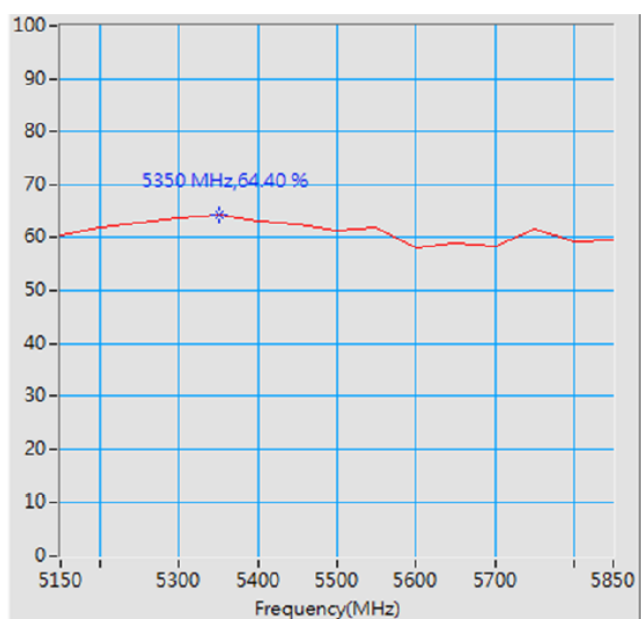
Antenna Efficiency and Peak Gain



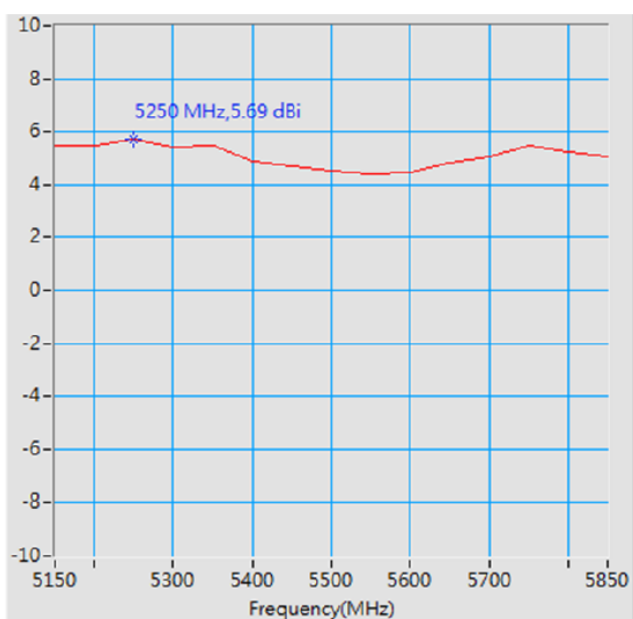
Maximum Efficiency at 2450 MHz : 54.81 %



Maximum Peak Gain at 2450 MHz : 2.54 dBi



Maximum Efficiency at 5350 MHz : 64.40 %



Maximum Peak Gain at 5250 MHz : 5.69 dBi

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 ANGLES = N/A HOLEDIA = N/A



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UNIT : mm

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A1

	ANT 1	
Frequency (MHz)	Efficiency (%)	Peakgain (dBi)
2400	49.68	1.99
2450	54.81	2.54
2500	51.54	2.52
5150	60.47	5.46
5500	61.28	4.51
5850	59.48	5.08

*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

DRAWN BY : 邱瑩鈺

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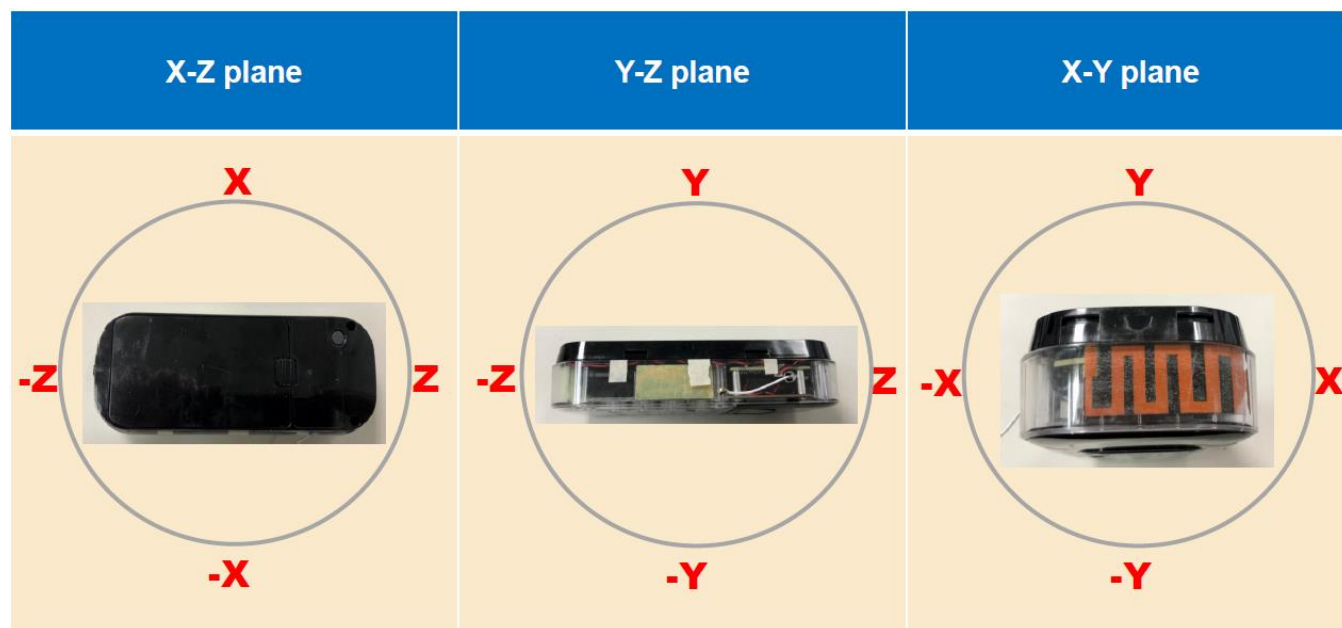
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SPEC REV.
A1

■ 3 Views of antenna



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 ANGLES = N/A HOLEDIA = N/A



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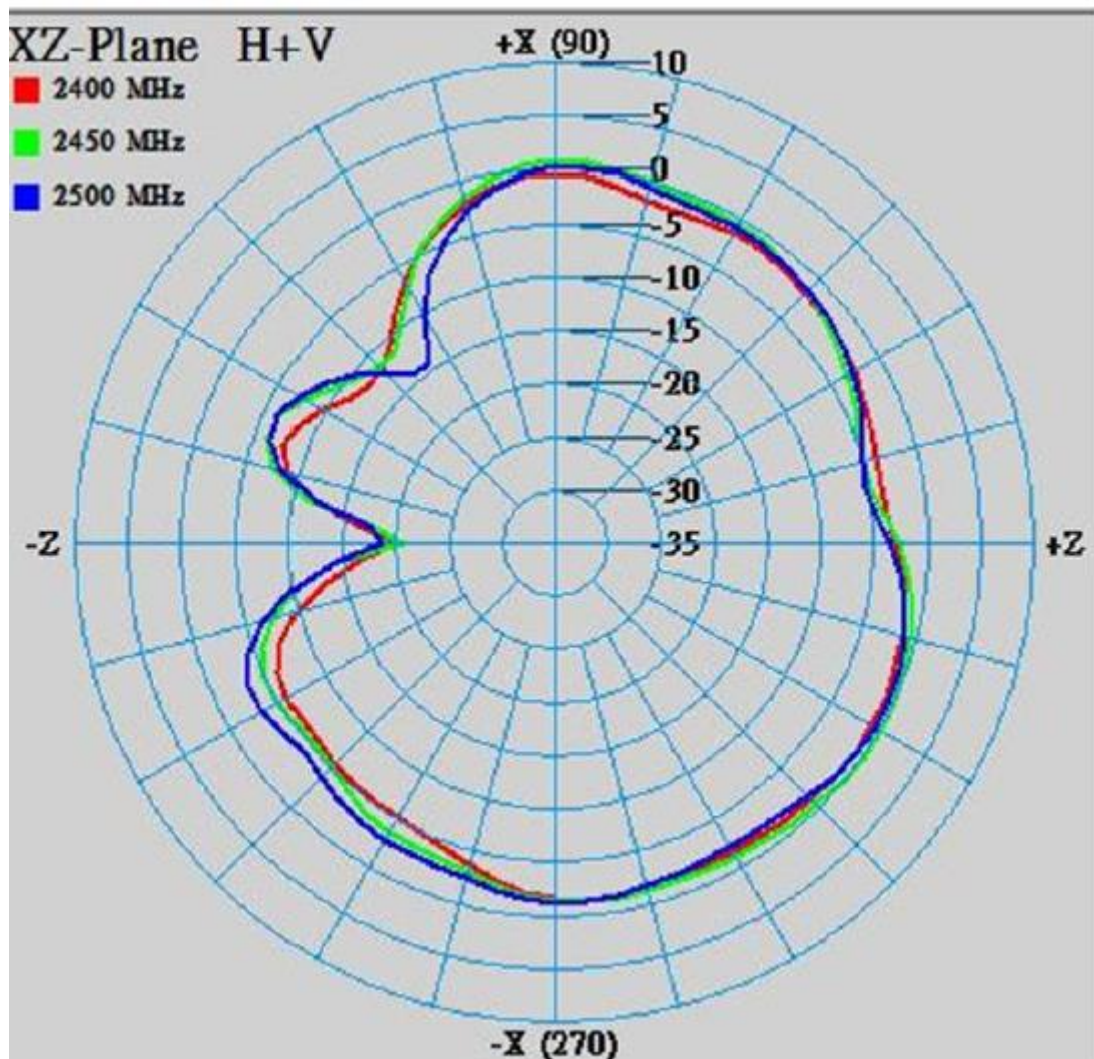
2D RADIATION PATTERN

(2G)

X-Z Plane

Phi=0.00deg

Gain . dB



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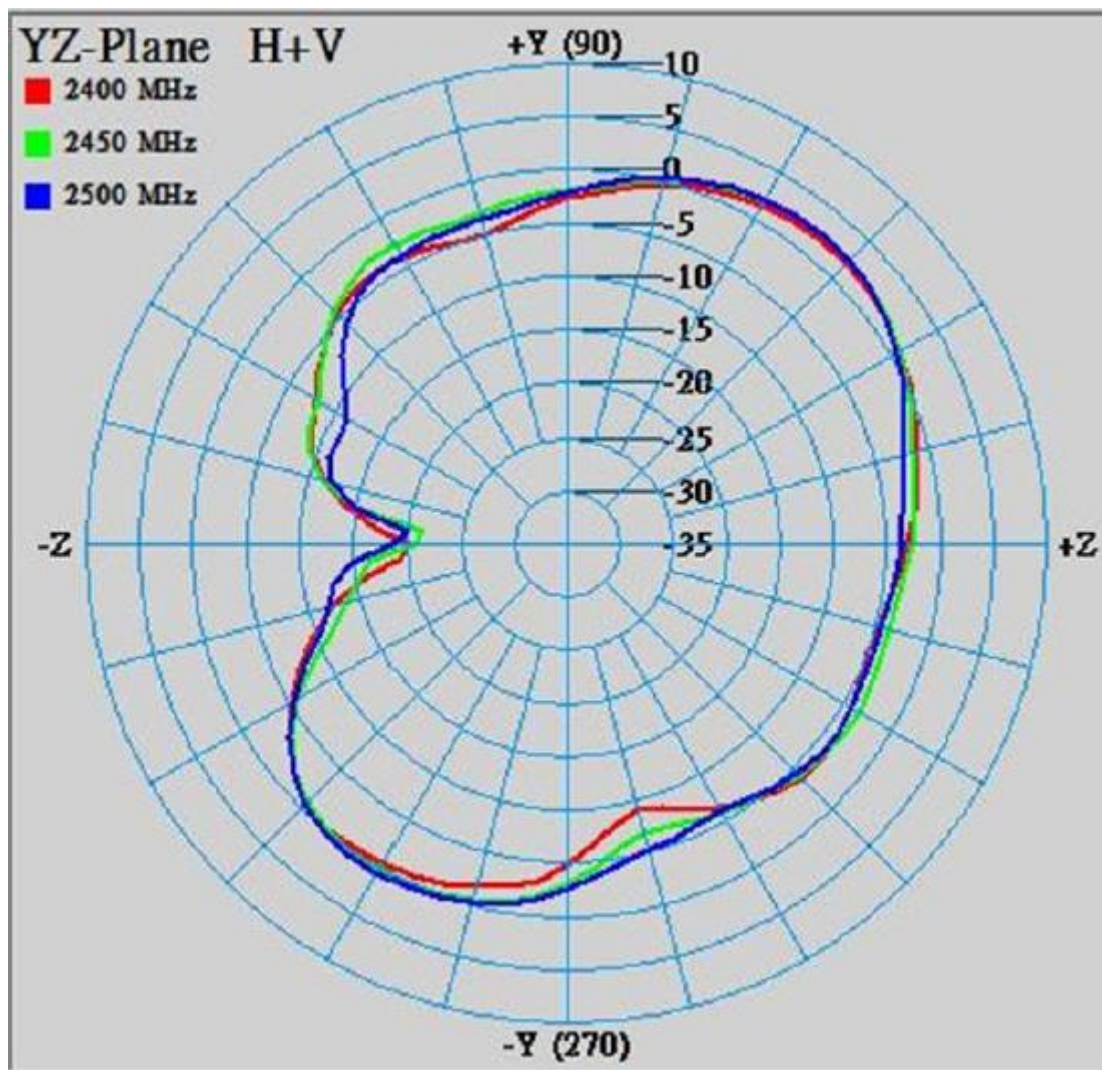
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A1

Y-Z Plane
Phi=90.00deg

Gain . dB



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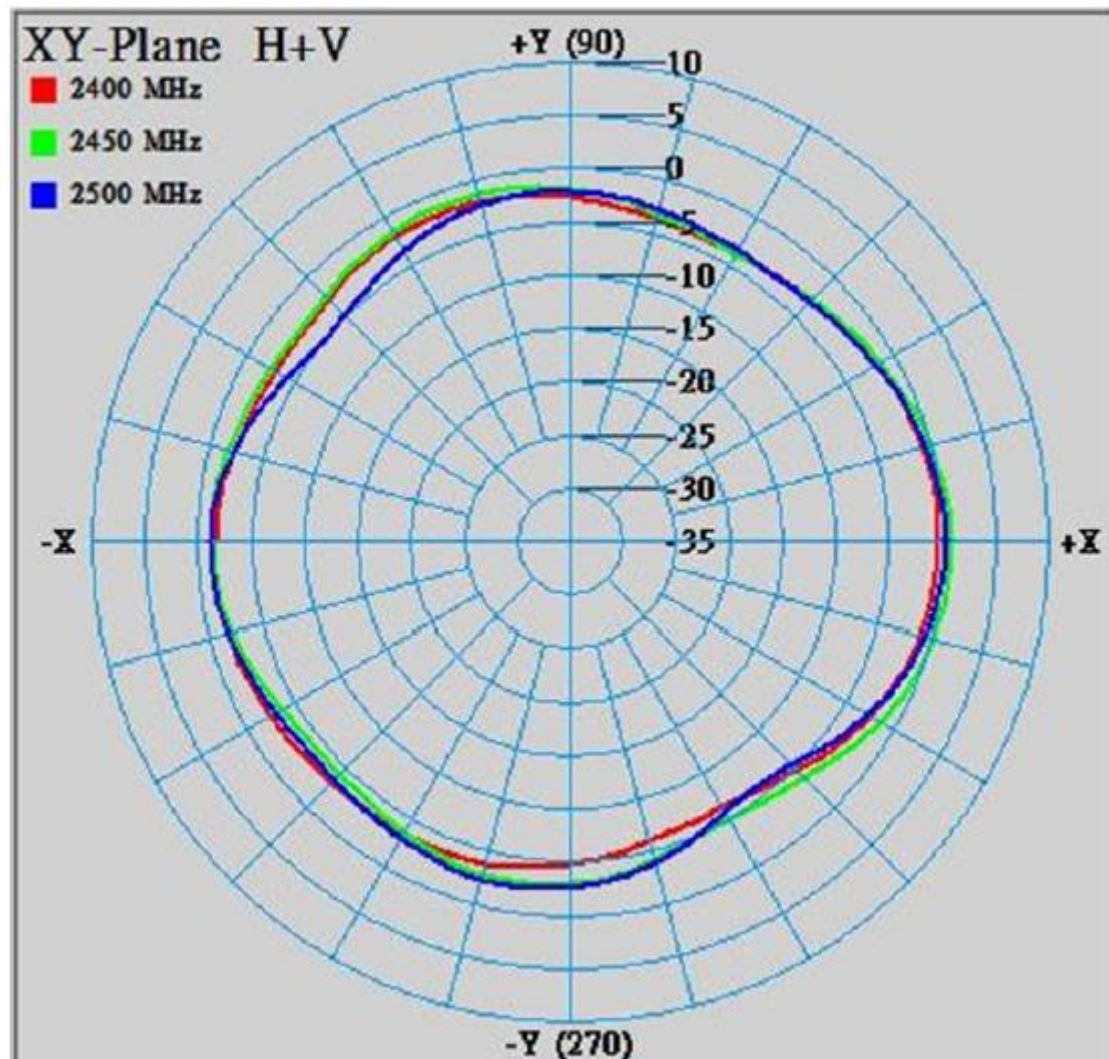
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SPEC REV.
A1

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]
2400	-0.32	-3.20	1.99	-2.67	-0.31	-2.64
2450	0.87	-2.53	2.53	-2.16	0.87	-2.08
2500	0.35	-2.82	2.52	-2.27	0.25	-2.51

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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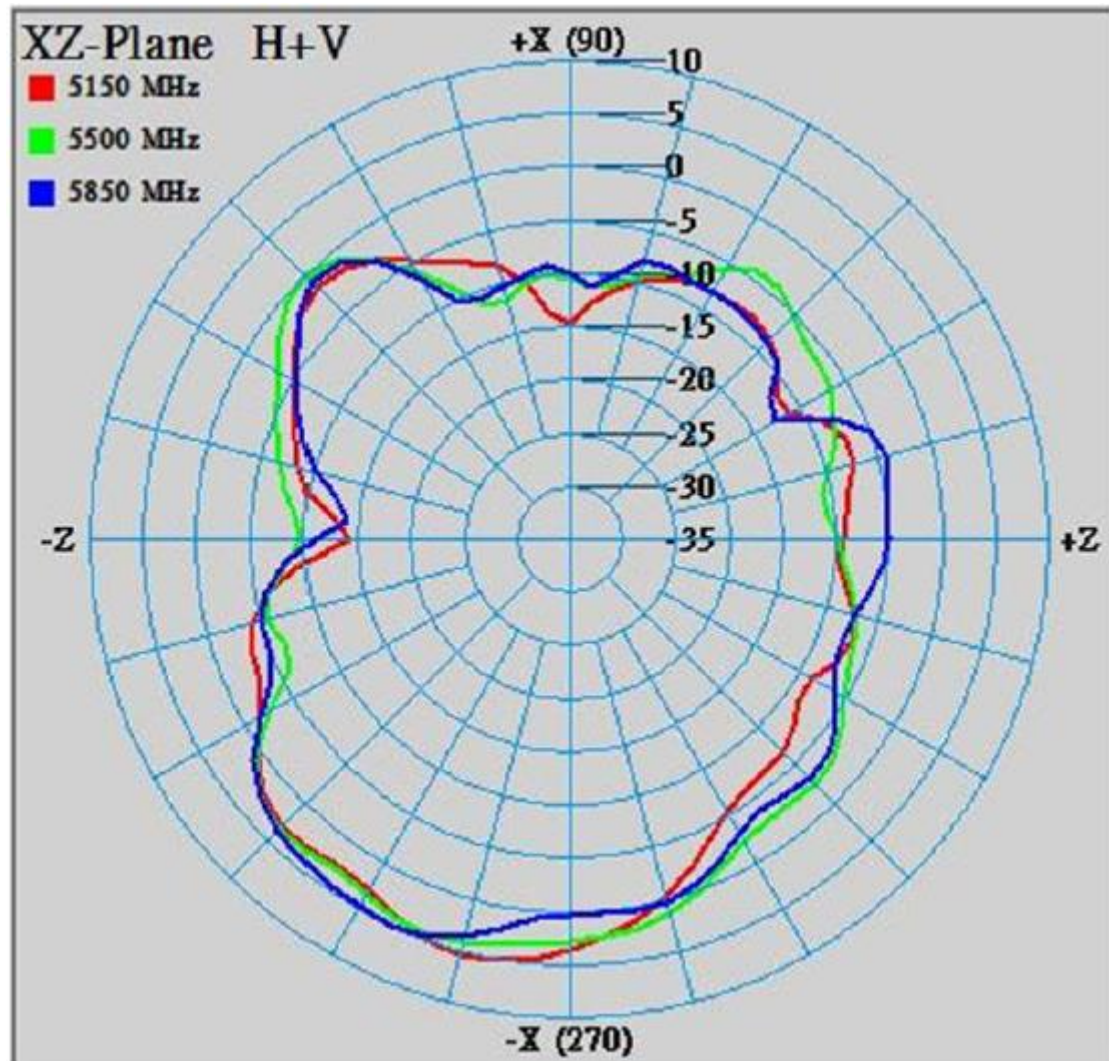
SPEC REV.
A1

(5G)

X-Z Plane

Phi=0.00deg

Gain . dB



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 ANGLES = N/A HOLEDIA = N/A



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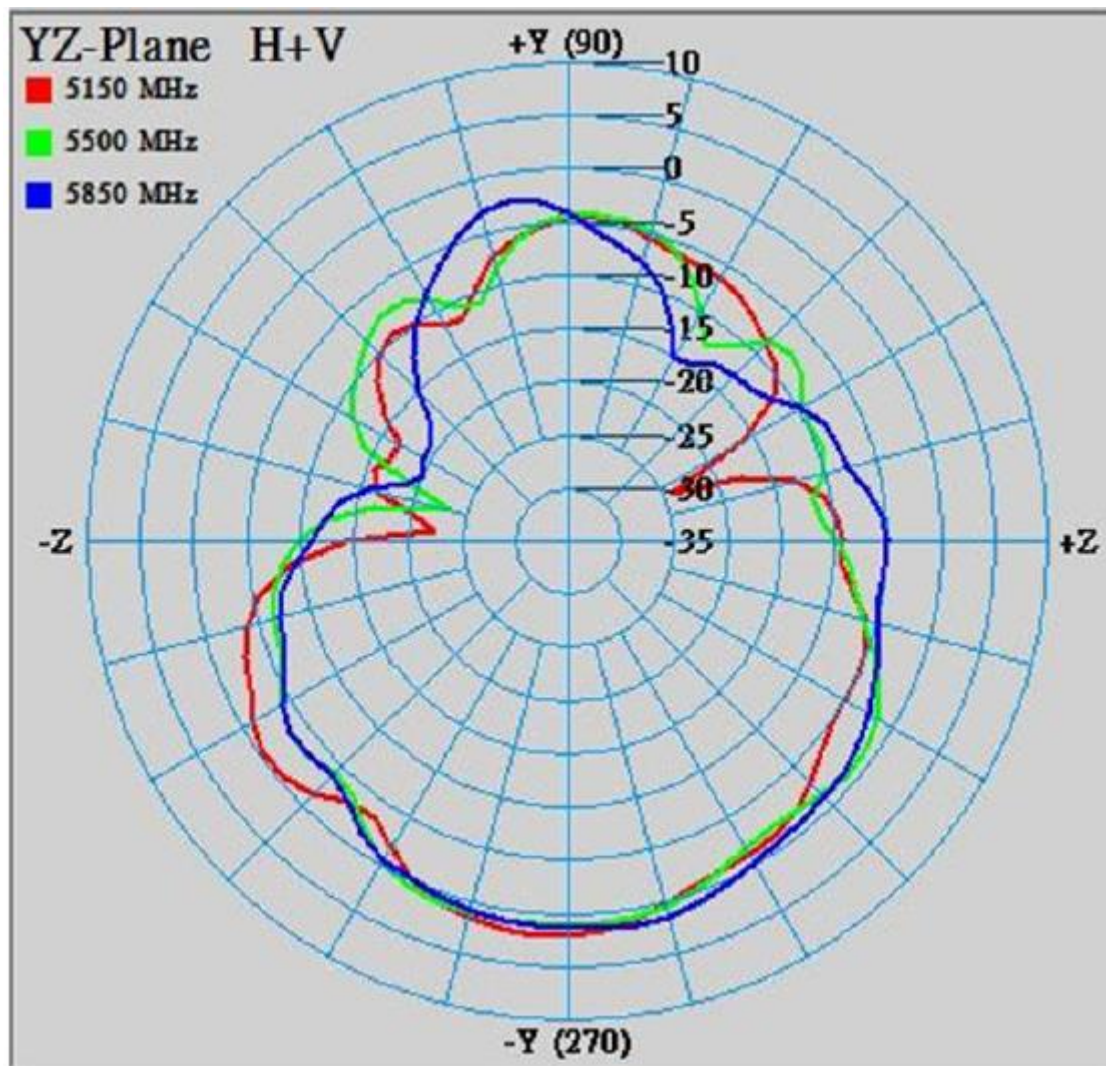
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SPEC REV.
A1

Y-Z Plane
Phi=90.00deg

Gain . dB



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ANGLES = N/A HOLEDIA = N/A



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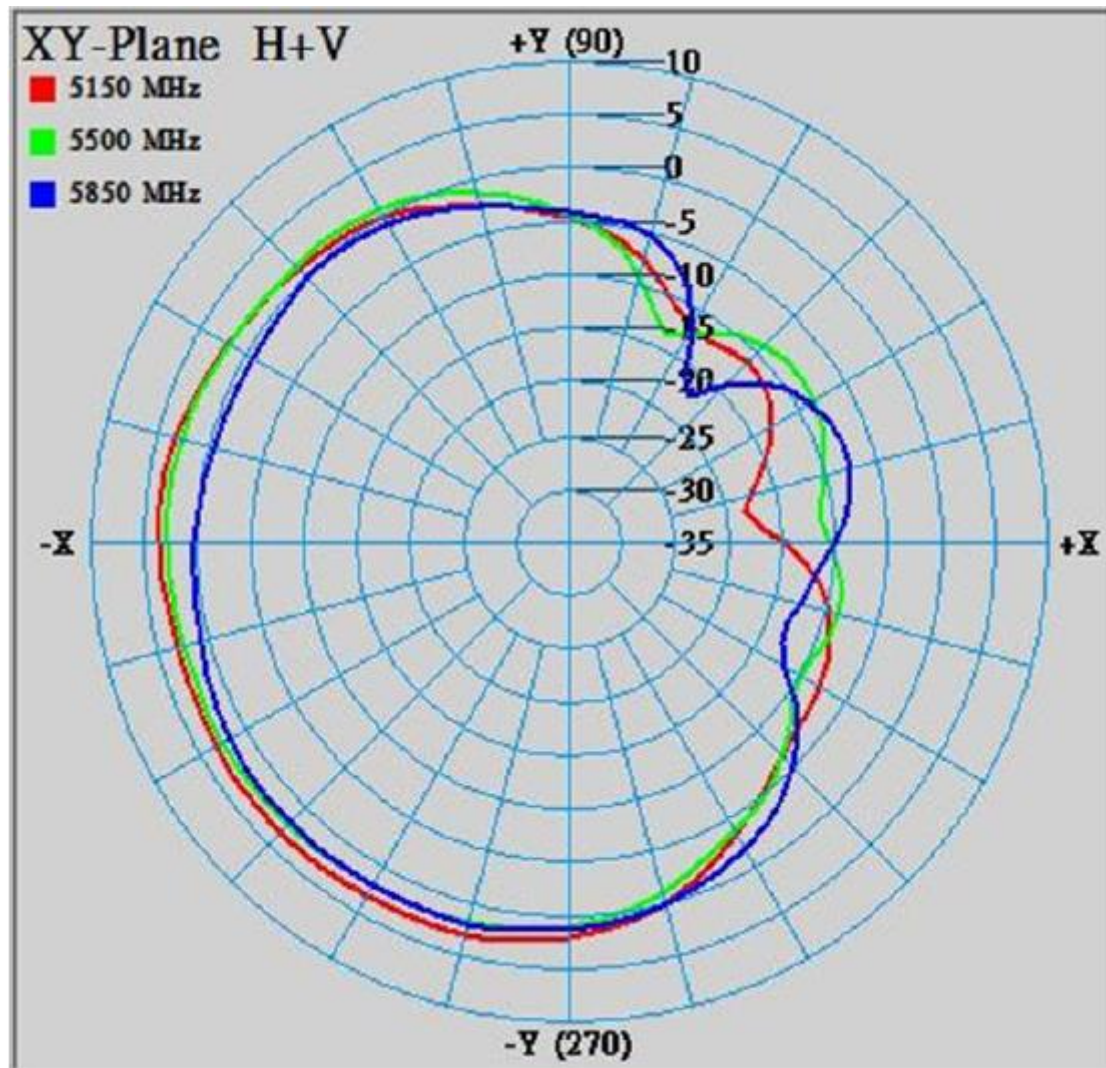
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A1

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]
5150	5.45	-2.02	2.16	-3.73	3.62	-0.02
5500	4.49	-1.68	1.14	-3.87	2.96	-0.52
5850	5.07	-1.99	1.62	-3.56	2.27	-1.35

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