

APPROVAL SHEET

PCB ANTENNA

2.4/5.x GHz Working Frequency

Halogens Free Product

P/N: RFPCA381425IMLB301

Customer : _____
Customer 's Part No. : _____
Approval No. : _____
Issue Date : _____

*Contents in this sheet are subject to change without prior notice.

Version	Date	Description	Author
V01	2020 Jun.	New Release	SHLEE
V02	2020 Aug.	Change the line length to 250mm from the edge of the board 、 change the measurement report	SHLEE

ELECTRICAL CHARACTERISTICS

Item	Specification
Working Frequency Range	2.4 ~ 2.5 / 5.15 ~ 5.85 GHz(Note-1)
Return Loss	-10 dB(Max)
Gain(peak)	2.21 dBi@2.4~2.5 GHz 3.94 dBi@5.15~5.85 GHz
VSWR	< 2.0
Impedance	50 Ohm Nominal
Radiation	Omni-directional
Polarization	Linear Vertical
Operation Temperature	-20°C ~ +65°C

*Note 1. Central Frequency should be defined after customers' application approval.

MATERIAL TABLE

Items	Description
Antenna	PCB FR4 T=0.8mm(Black)
Double Tape	EVA+3M9448,T=1.0mm
Cable	Ø1.13 Cable (Black)
Connector	IPEX Compatible(Gold)

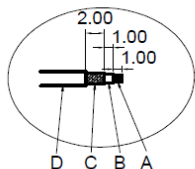
ORDERING RULE

RF	PCA	3814	25	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
Walsin RF Device	PCB Antenna	Per 2 digits of length, width e.g.: 3814 Length 38mm, Width 14mm	2 digits for cable length e.g.: 25 Length 25cm	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 5: 5GHz 6: 6GHz A: 2.4GHz ISM band B: GSM 900/1800 dual band G: GPS band L: 2.4/5.2/5.8 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

Dimensions

ELECTRICAL

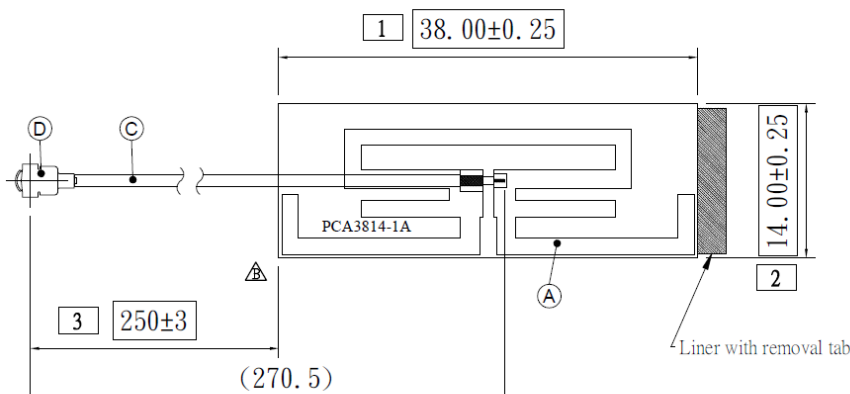
Frequency :
2.4~2.5/5.15~5.85 GHz



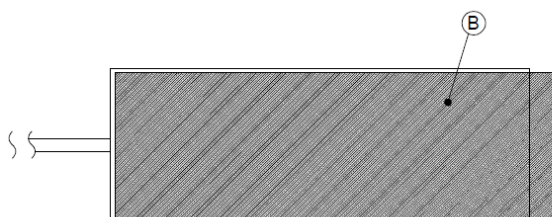
A - center conductor
B - Dielectric
C - Outer conductor
D - Jacket

NO	DESCRIPTION	Color	QTY
A	Body	PCB FR4(Single Layer),T=0.8mm	Black 1
B	Sponge+Double Tape	EVA+3M9448,T=1.0mm	— 1
C	Coaxial cable	(ϕ 1.13)	Black 1
D	Connector	IPEX Compatible(2130800037)	Gold 1

Front



Back



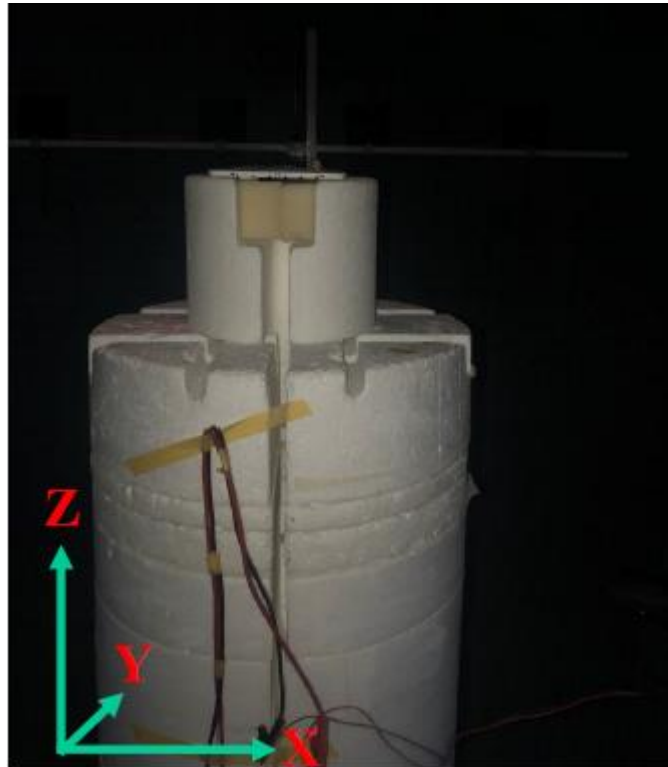
IPEX direction :
100mm : $\pm 90^\circ$
200mm : $\pm 135^\circ$
Over 200mm : Not defined

※ □ Sign is inspection dimensions.

		設計 DR.	SHLEE	2020.06.23	品名	版本 REV.
		核准 APP.	MARCO		ARTICLE	B
△	Change the line length to 250mm from the edge of the board	2020.08.07	SHLEE	容許公差 TOLERANCE		
LTR	DESCRIPTION	DATE	REQ. BY	RFPCA381425IMLB301		
PSA 華新科技股份有限公司 WALSIN TECHNOLOGY CORPORATION				單位 UNIT	比例 SCALE	張數 SHEET
				mm	****	1

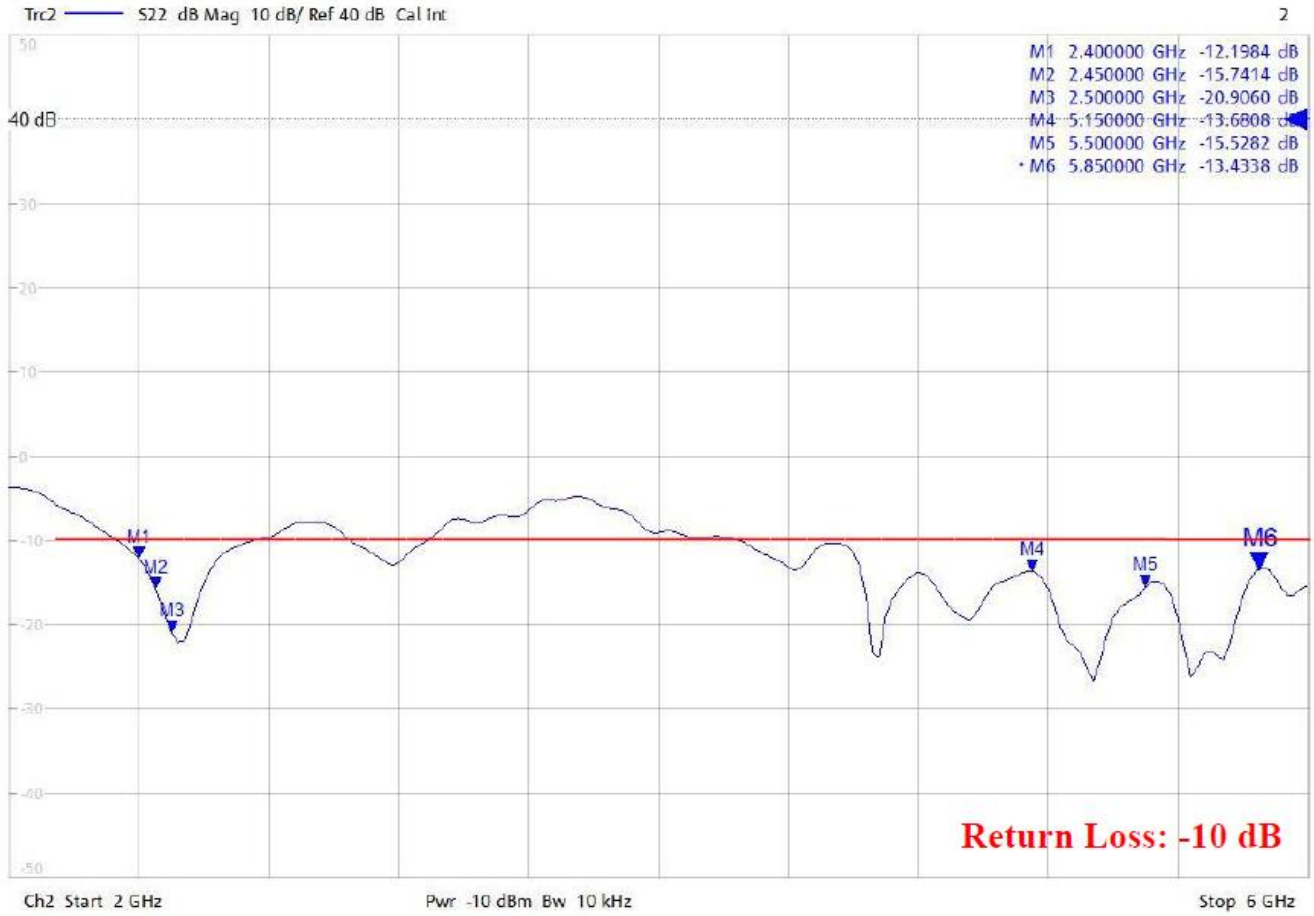
Test Report

■ Experimental Setup

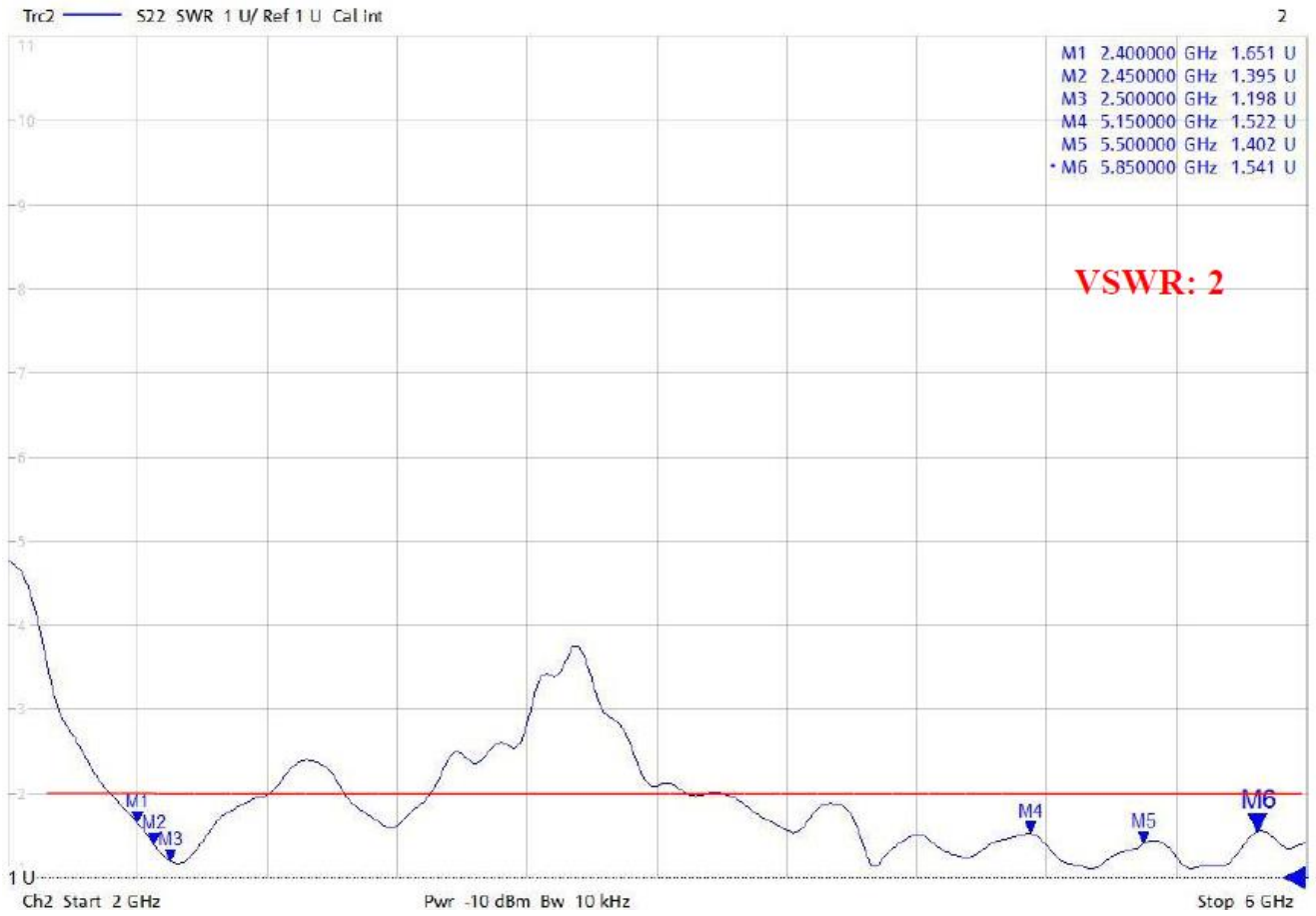


ELECTRICAL CHARACTERISTICS

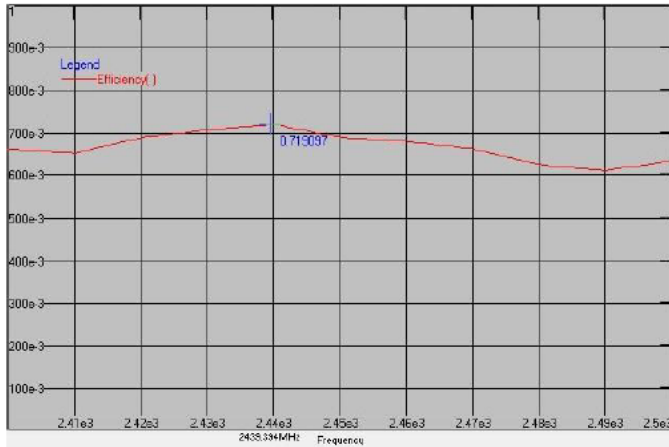
Return Loss



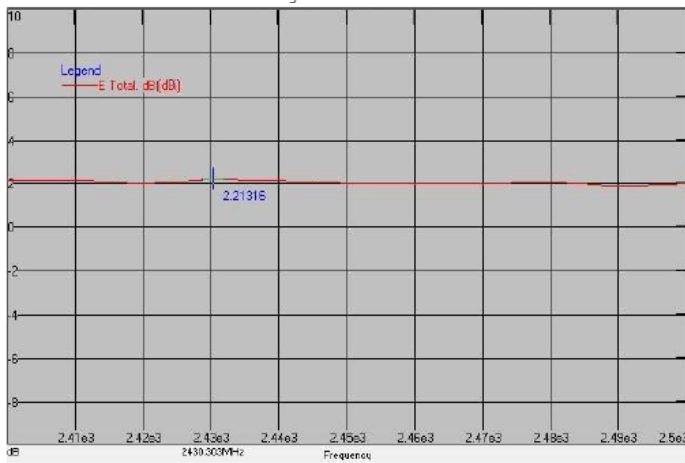
VSWR



Antenna Efficiency & Peak Gain 2400~2500 MHz

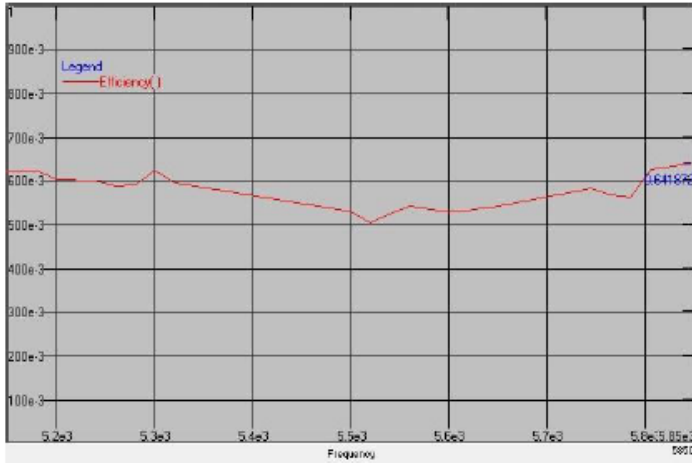


Maximum Efficiency at 2439 MHz : 71.91 %

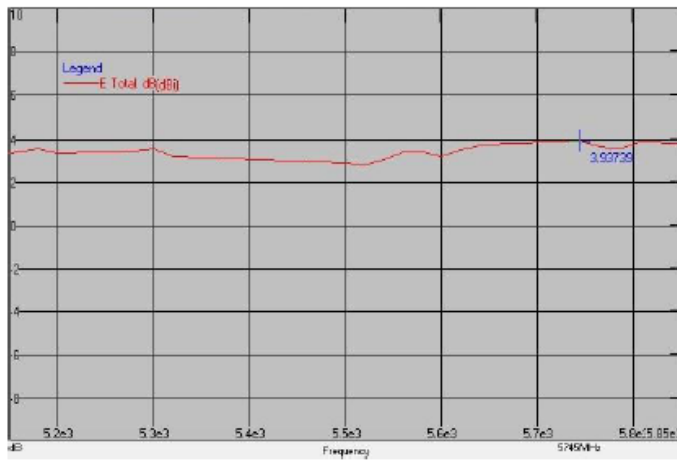


Maximum Peak Gain at 2430 MHz : 2.21 dBi

5150~5850 MHz



Maximum Efficiency at 5850 MHz : 64.19 %



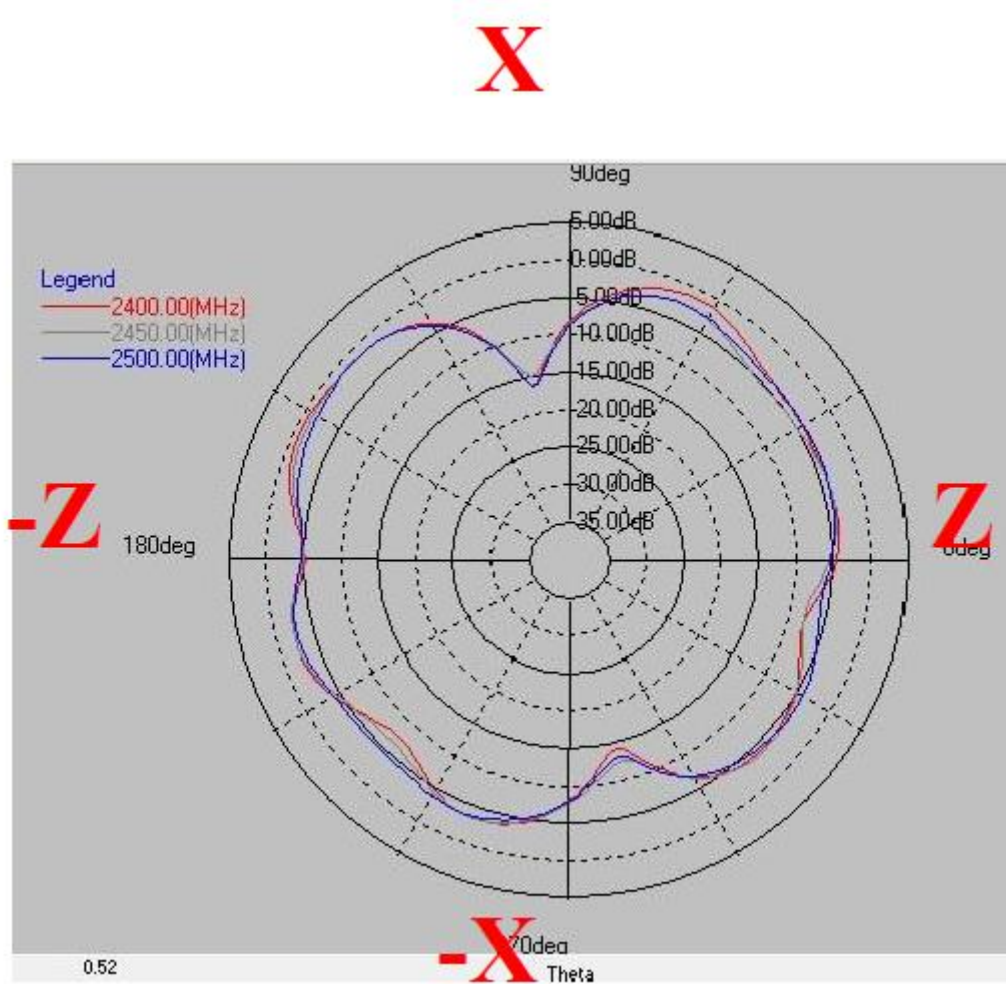
Maximum Peak Gain at 5745 MHz : 3.94dBi

RADIATION PATTERN

2400~2500 MHz

Phi=0.00deg

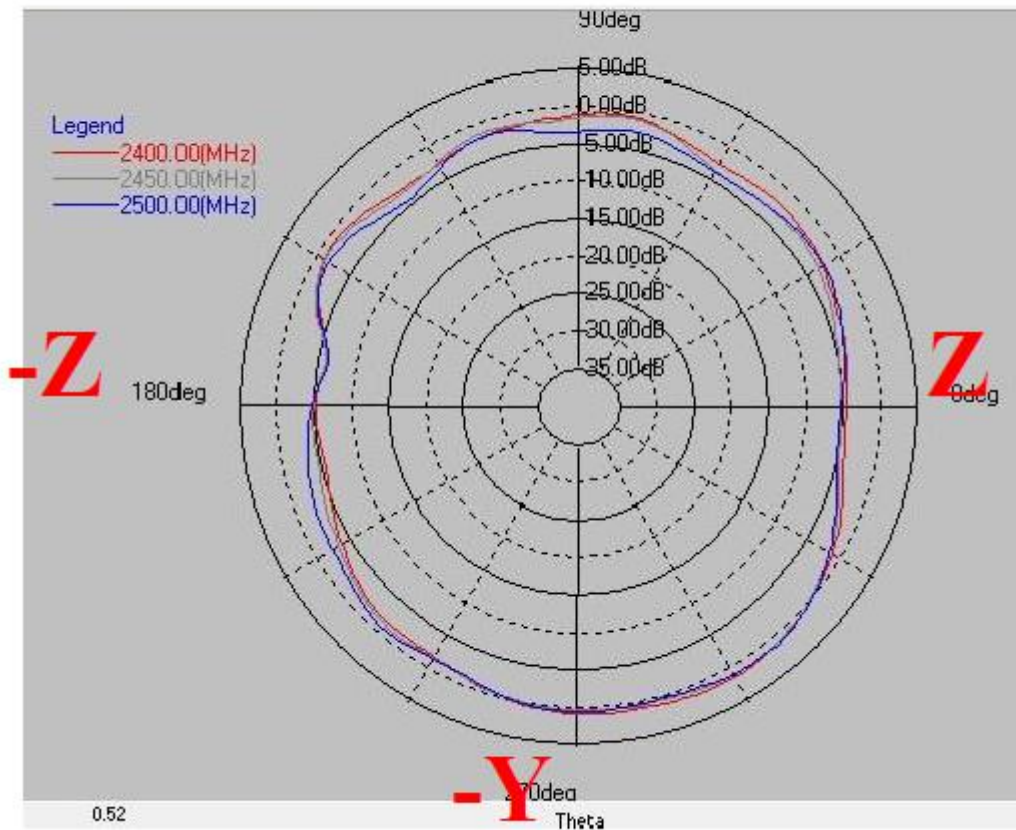
Gain . dB



Phi=90.00deg

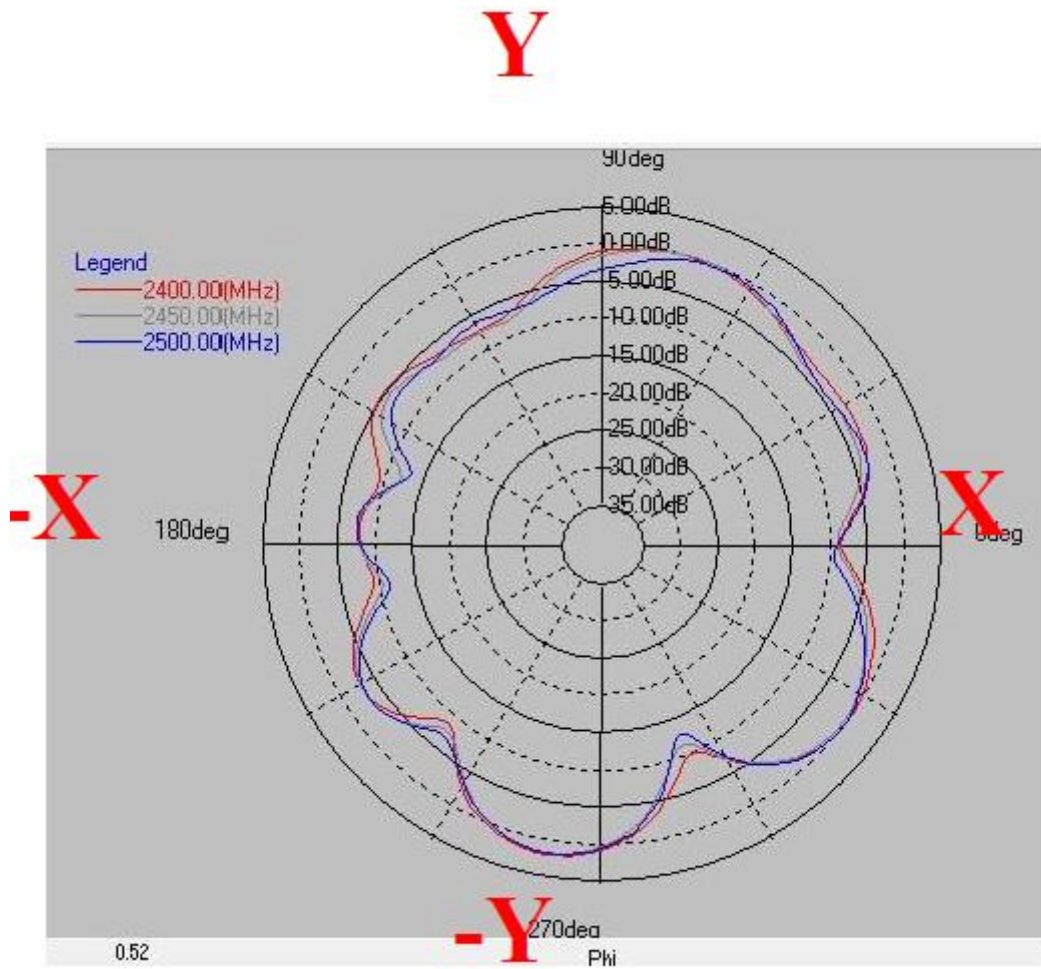
Gain . dB

Y



Theta=90.00deg

Gain . dB



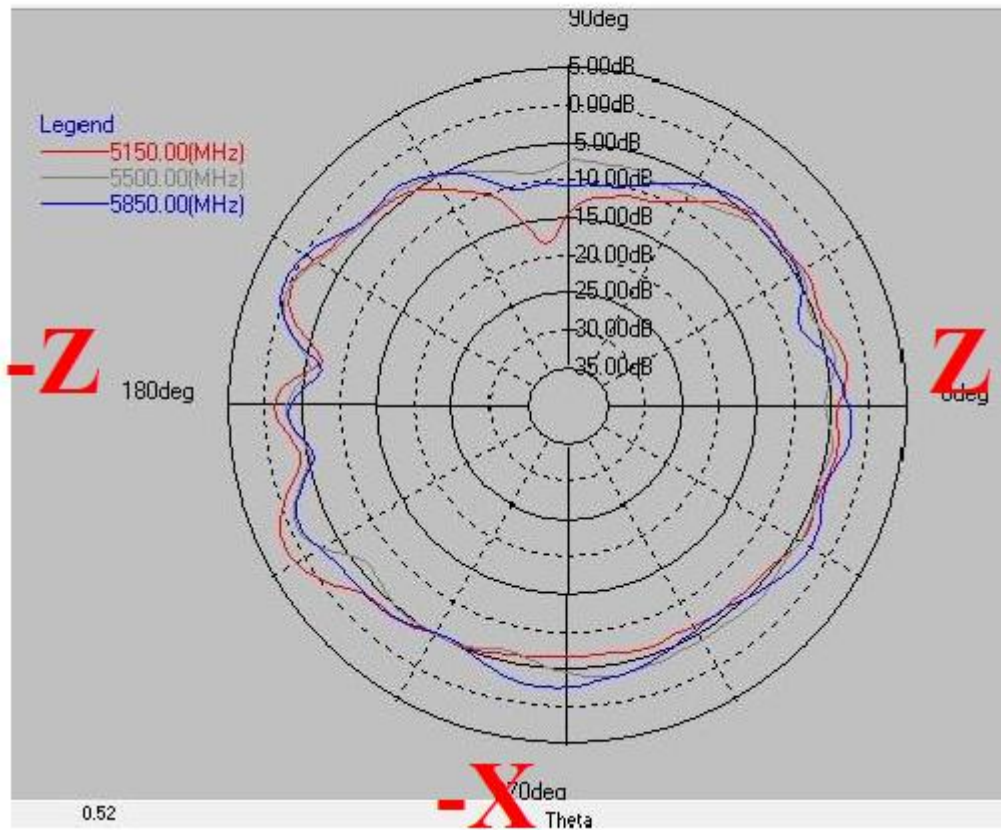
Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
2400	-0.70	-4.28	1.32	-1.78	1.71	-3.04
2450	-1.24	-4.58	1.04	-2.02	1.49	-3.49
2500	-1.36	-4.50	1.12	-2.11	1.48	-3.56

5150~5850 MHz

Phi=0.00deg

Gain . dB

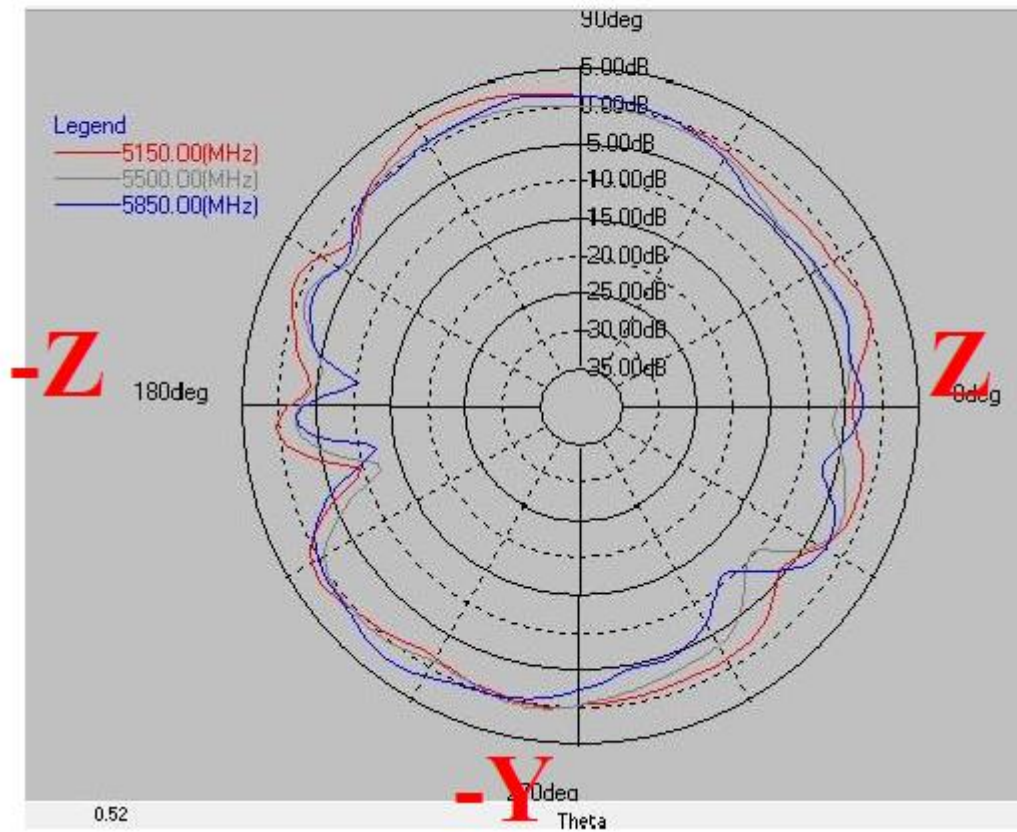
X



Phi=90.00deg

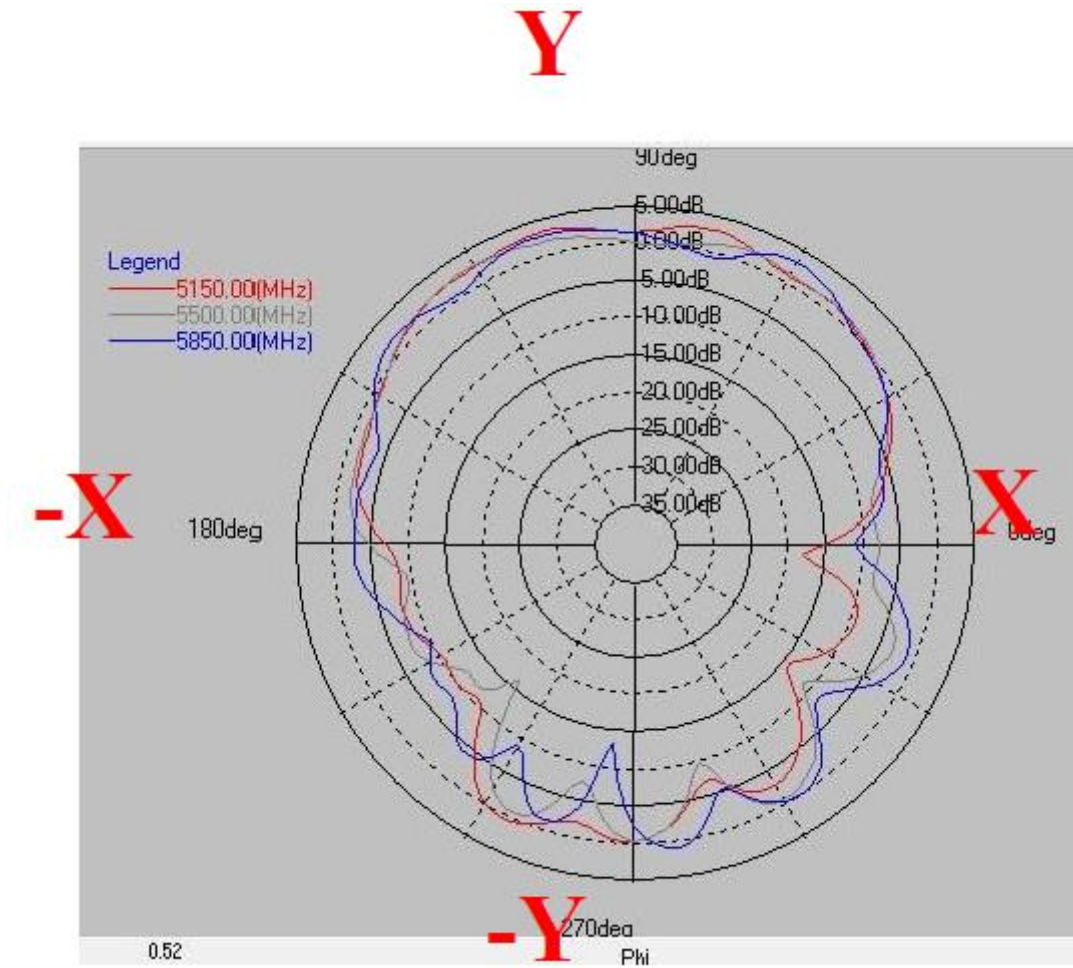
Gain . dB

Y



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	1.79	-4.25	2.79	-0.59	3.00	-1.47
5500	-0.07	-4.56	0.63	-1.93	2.58	-1.74
5850	0.73	-4.06	2.09	-1.73	2.85	-1.41