

DATE : 2008/07/09

CUSTOMER : Wistron CORP.

TEST REPORT

MODEL	GC411
DESCRIPTION	PIFA For BLUETOOTH Antenna 2.4~2.5GHZ
SUPPLIER P/N	DMHP108-3001
CUSTOMER P/N	25.90720.071
FILE P/N	

SPEEDTECH			CUSTOMER	
Manager	Supervisor	Engineer		
Y.J	Y.J	LUN		



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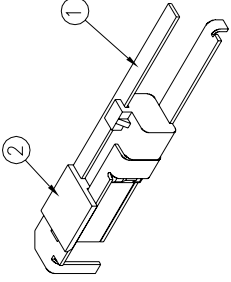
<http://www.speedtech.com.tw>

1. Drawing

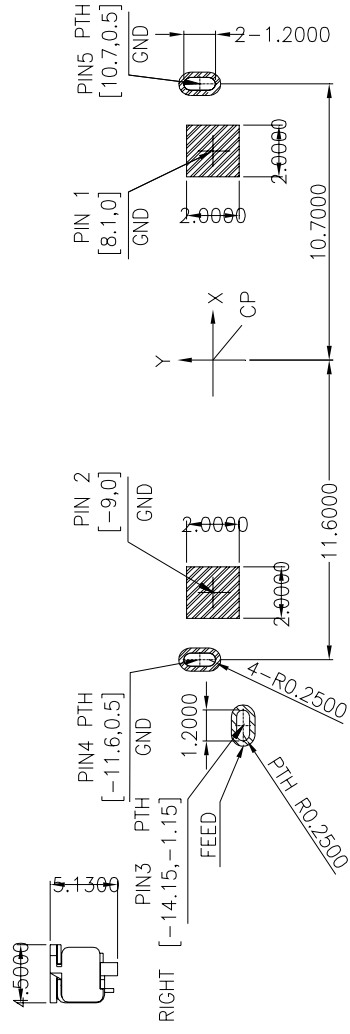
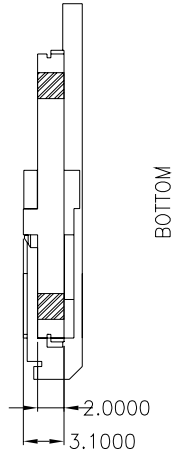
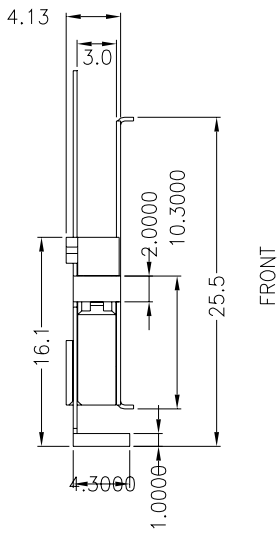
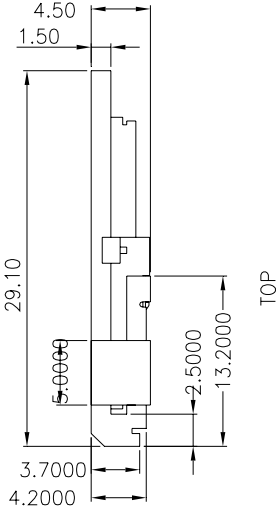
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1 2 3 4 5 6 7 8

DCS ISSUE	REV	MODIFICATION	DATE	DRAW	APPROVE
	XD1	EN	19-MAY-08	DYLAN	Y.J.
	XD2	EN	20-MAY-08	DYLAN	Y.J.
	XD3	EN	18-JUN-08	DYLAN	Y.J.



- NOTES:
- 1.MATERIAL:C7521 H + LCP
 - 2.THICKNESS:0.30±0.02mm
 - 3.出貨方式:使用Tape Reel出貨
 4. FEED POINT
 5. GND POINT
 - 6.Customer P/N: XXXXXXXXXXXX
 - 7.Vendor P/N: DMHP108-3001



DIMENSION IN mm [inch]		PROD. SPEC.	SPEED TECH CORP.		
TOLERANCE UNLESS OTHERWISE SPECIFIED			FILE NO.	DMH-108	
.X±	0.3	X.°±	5°		
.XX±	0.2	.X°±	3°		
.XXX±					
TITLE		CUSTOMER DRAWING			
APPROVE	Y.J.	CHECK	LUN	DRAW	DYLAN
PROL.		SCALE	2:1	SIZE	A4
SHEET	1	REV		XD3	

2	G500B LCP	1	Color:Black
1	G500B PIFA	1	
ITEM	PART NAME	Q'TY	MATERIAL

1 2 3 4 5 6 7 8 8F-04-R11 REV:2

2. Antenna Spec. For BLUETOOTH

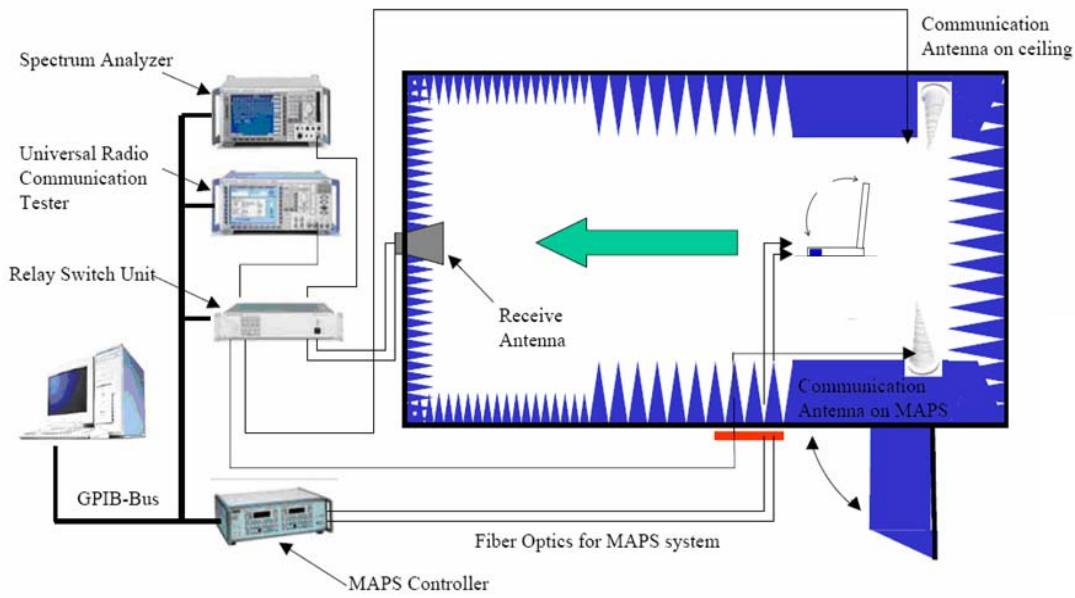
1. BLUETOOTH Spec.

- a. Frequency range : 2.4 ~ 2.5GHz (Nominal)
- b. Impedance : 50Ω
- c. LCD Panel : Open (100°) / Close (0°).
- d. System Plane : XY plane
- e. VSWR : ≤ 2
- f. Return Loss : $\leq -10\text{dB}$
- g. Band Width : $\geq 130\text{MHz}$ ($2450\text{MHz} \pm 65\text{MHz}$ at least).
- h. Diversity Sum : $\geq -2.5\text{dBi}$
- i. Any 30° angle range can't has null depth.
- j. Average gain & Peak gain

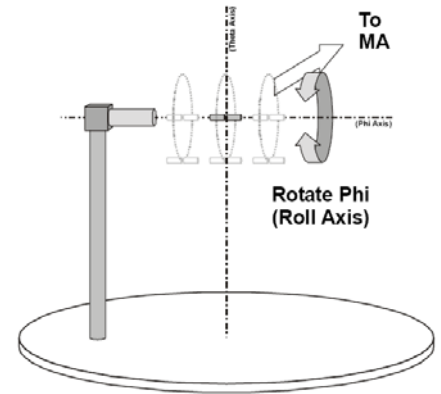
Antenna	Peak Gain (dBi)			Average Gain (dBi)		
	Frequency			Frequency		
	2.4GHz	2.45GHz	2.5GHz	2.4GHz	2.45GHz	2.5GHz
BLUETOOTH	≤ 3	≤ 3	≤ 3	≥ -4	≥ -4	≥ -4

3. Antenna Testing Conditions

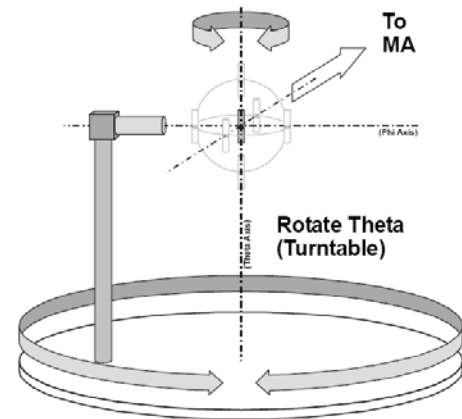
Test Configuration:



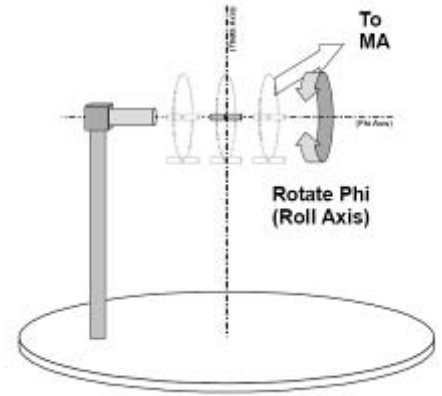
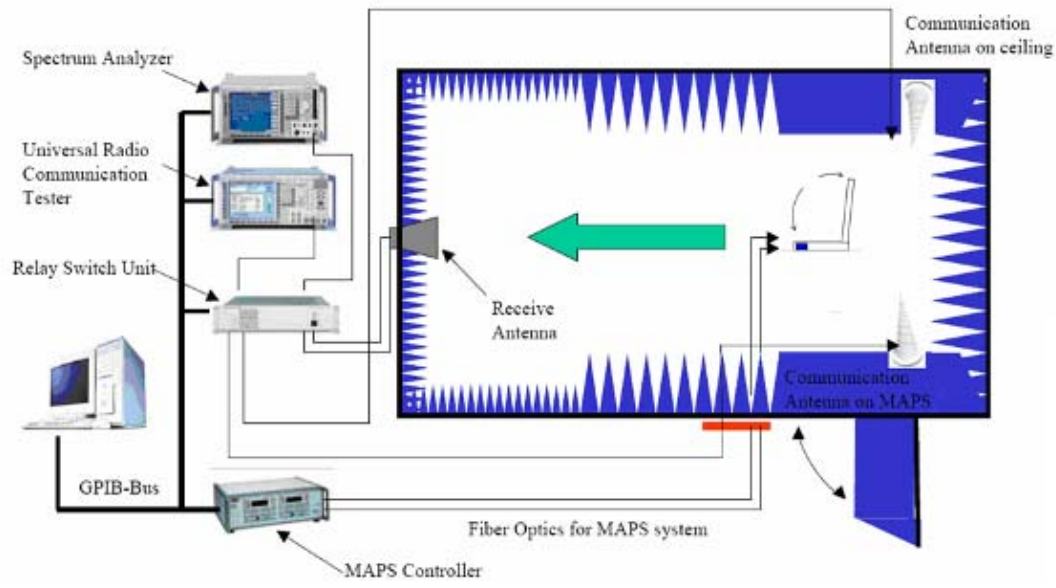
(Testing by 2D anechoic chamber)



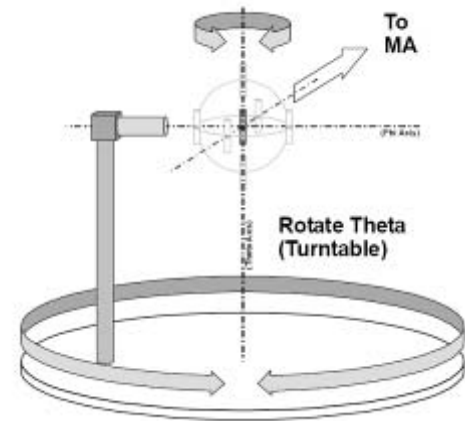
Phi axis test



Theta axis test



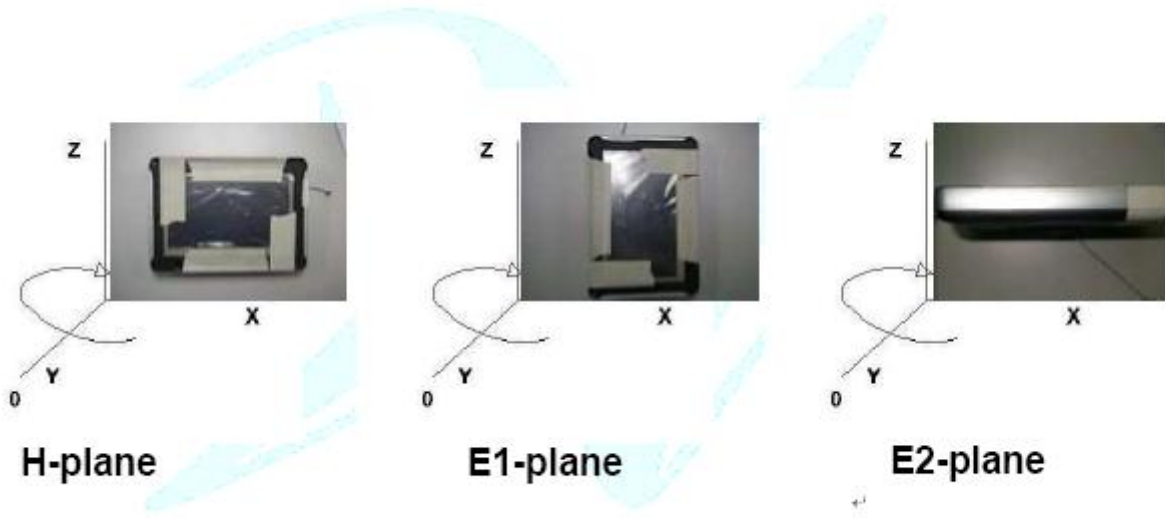
Phi axis test



Theta axis test

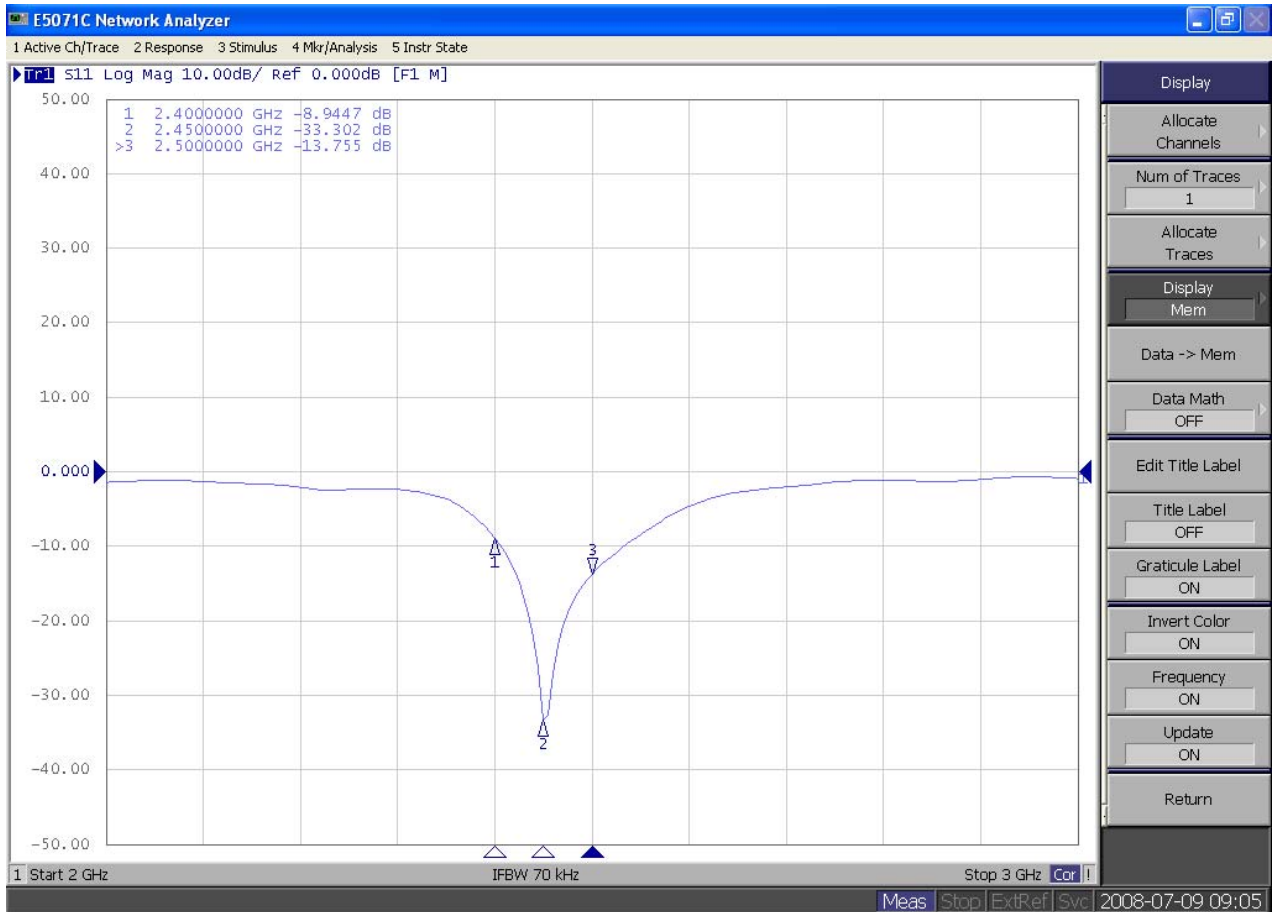
(Testing by 3D anechoic chamber)

4.Plane Definition

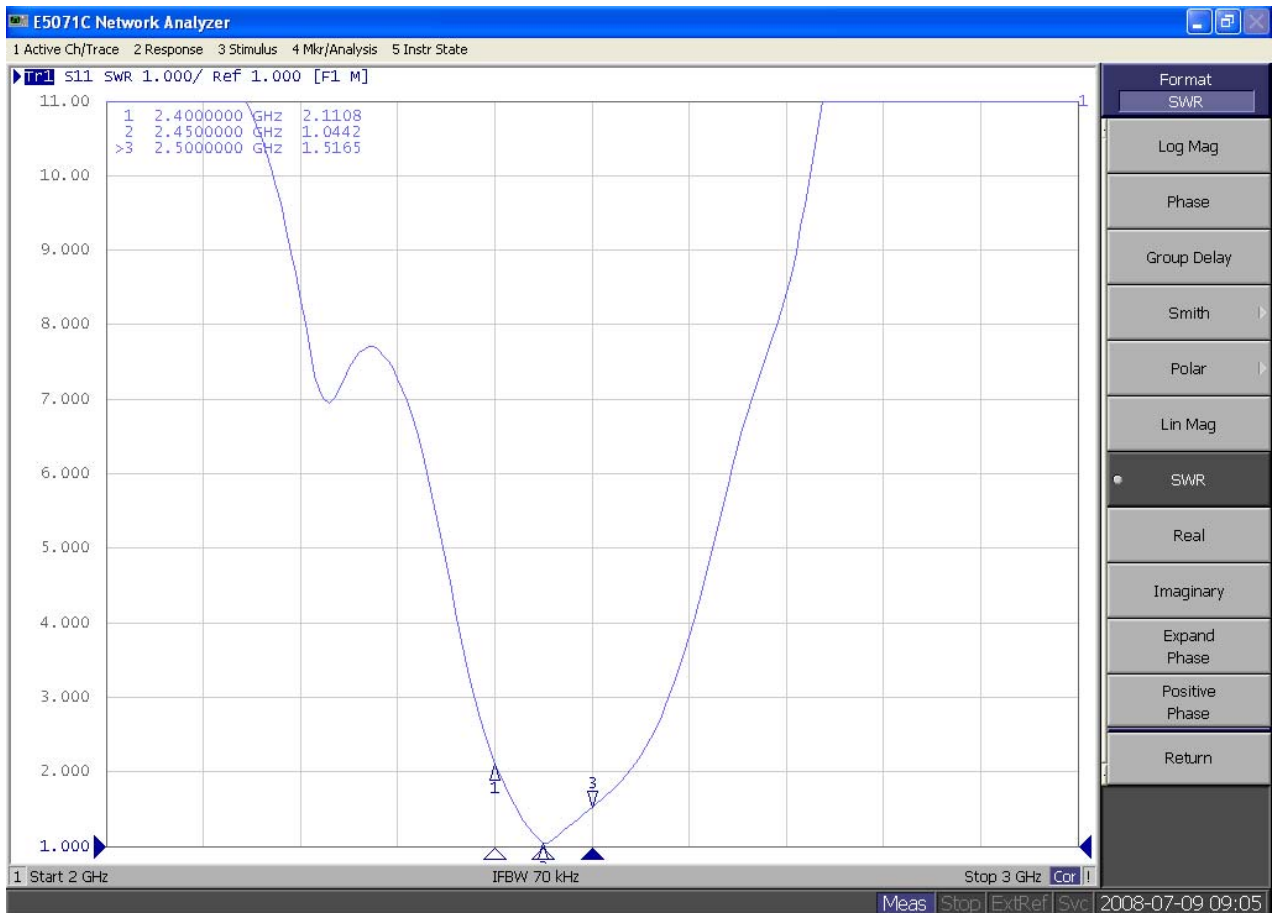


5. BLUETOOTH Ant.

2.4~2.5GHZ / Return Loss



2.4~2.5GHZ/VSWR

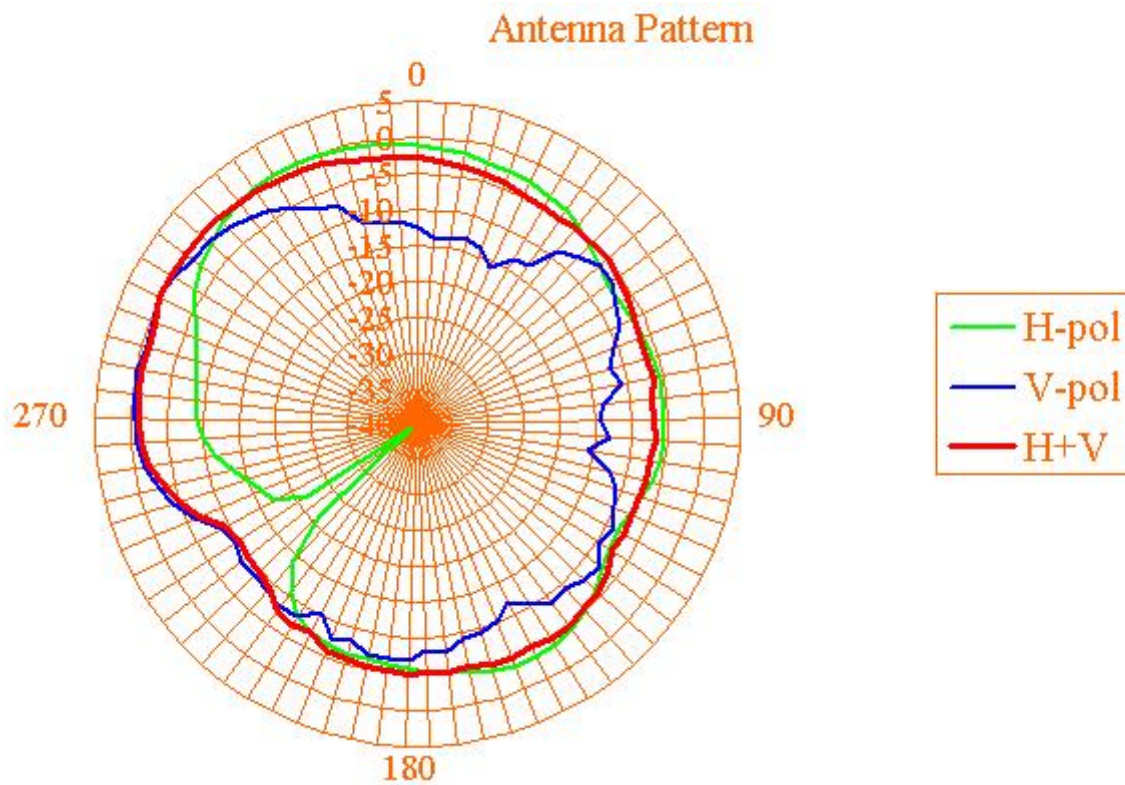


6.Gain & Pattern –H-PLANE PATTERN

a. 2.4GHz



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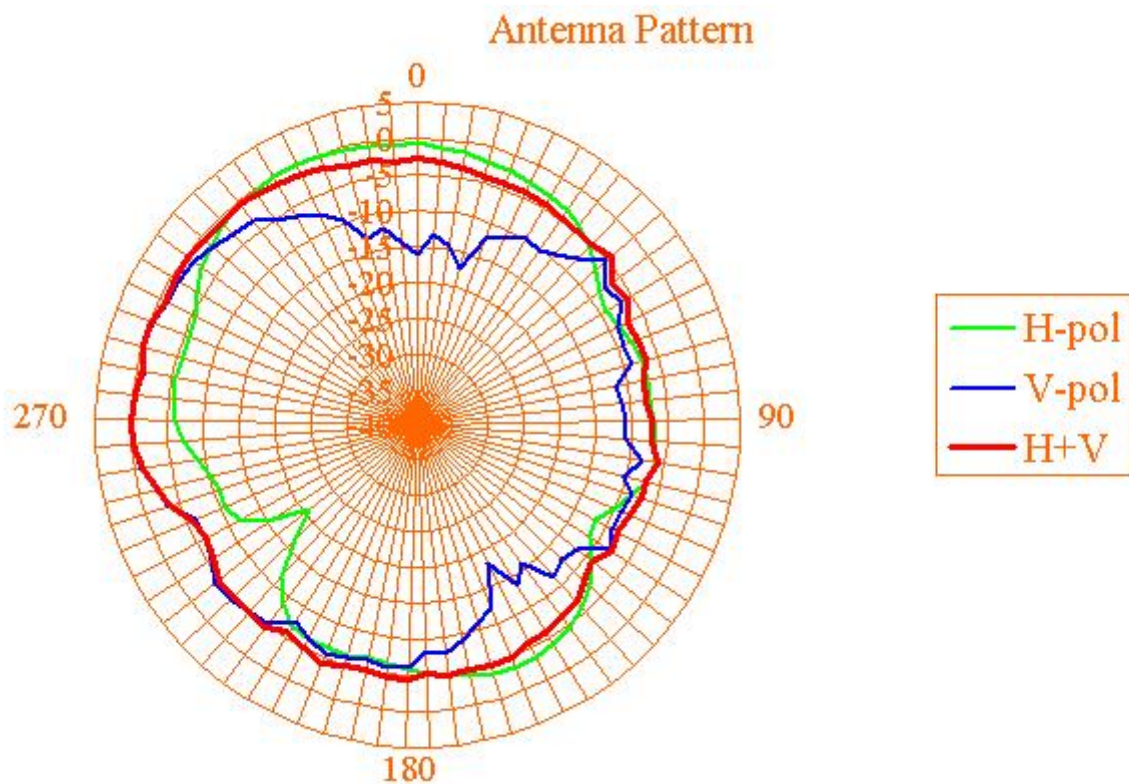


Frequency	2400
Maximum (dBi)	0.09975
Minimum (dBi)	-10.3838
Average (dBi)	-3.71935

b. 2.45GHz



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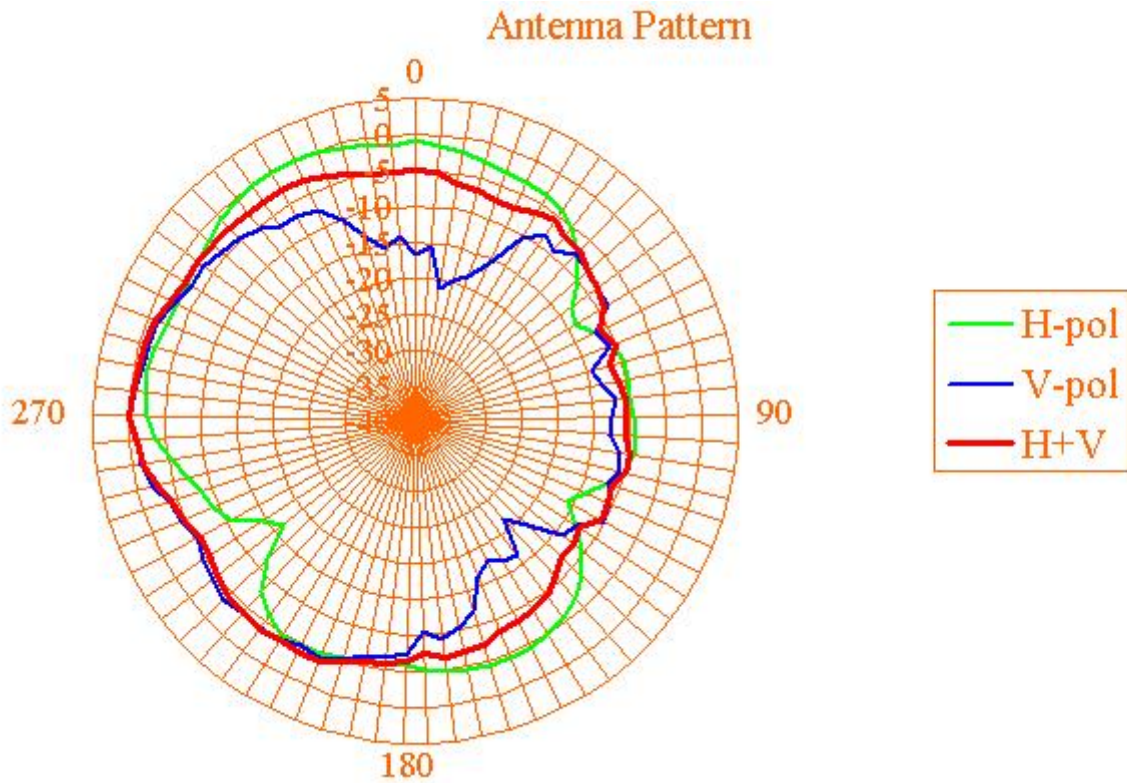


Frequency	2450
Maximum (dBi)	0.18372
Minimum (dBi)	-8.7517
Average (dBi)	-3.49906

c. 2.5GHz



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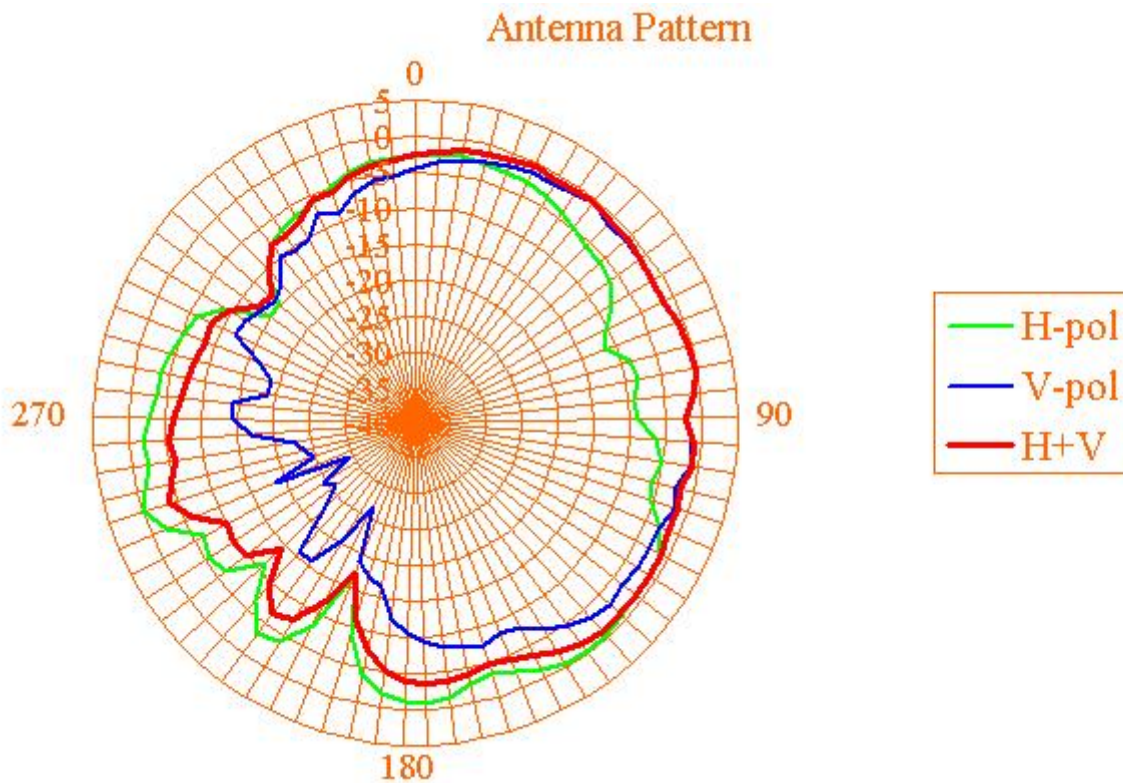
Frequency	2500
Maximum (dBi)	1.03046
Minimum (dBi)	-11.6143
Average (dBi)	-3.97172

7.Gain & Pattern –E1-PLANE PATTERN

d. 2.4GHz



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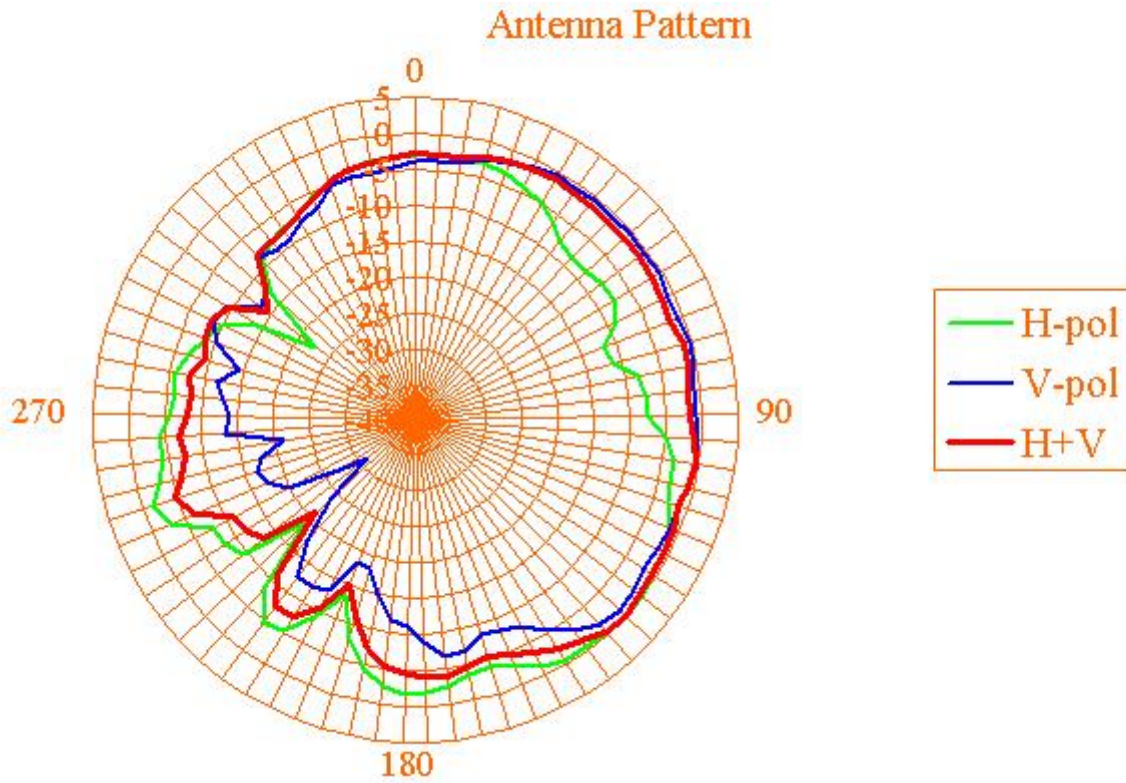


Frequency	2400
Maximum (dBi)	-0.37901
Minimum (dBi)	-17.7332
Average (dBi)	-3.79349

e. 2.45GHz



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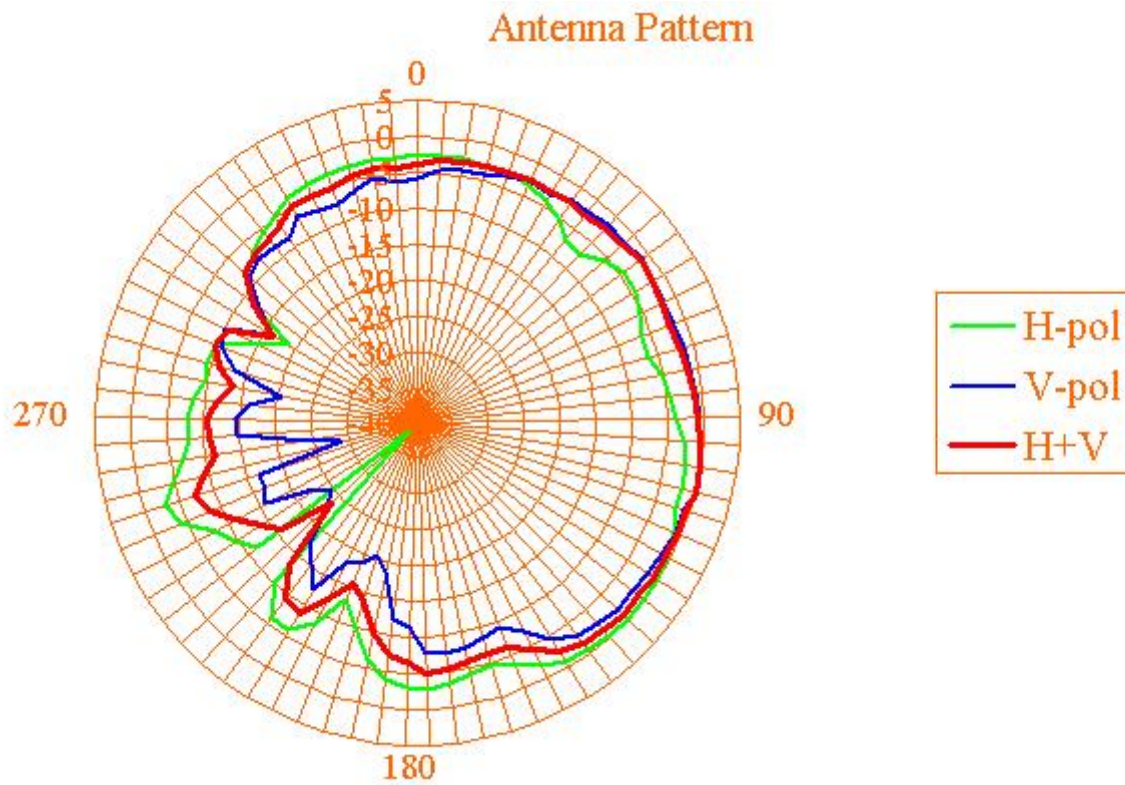


Frequency	2450
Maximum (dBi)	0.27656
Minimum (dBi)	-20.617
Average (dBi)	-3.35351

f. 2.5GHz



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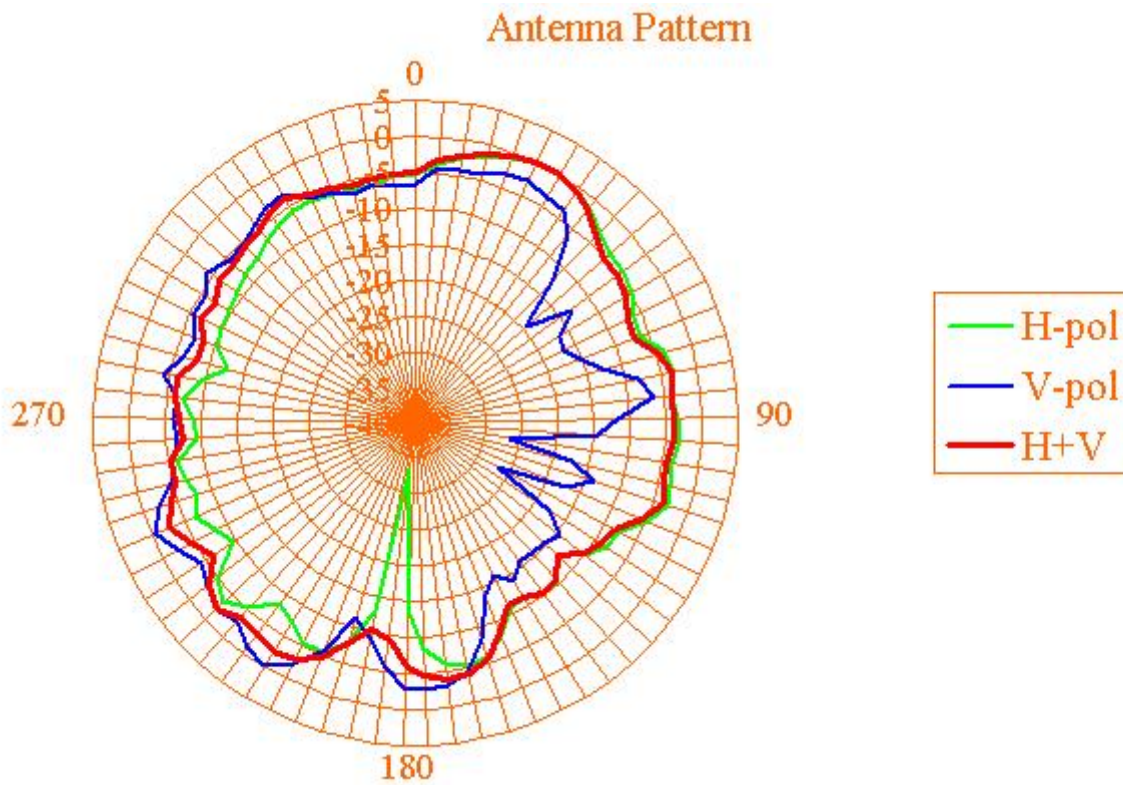
Frequency	2500
Maximum (dBi)	0.39366
Minimum (dBi)	-23.222
Average (dBi)	-3.75033

8.Gain & Pattern –E2-PLANE PATTERN

g. 2.4GHz



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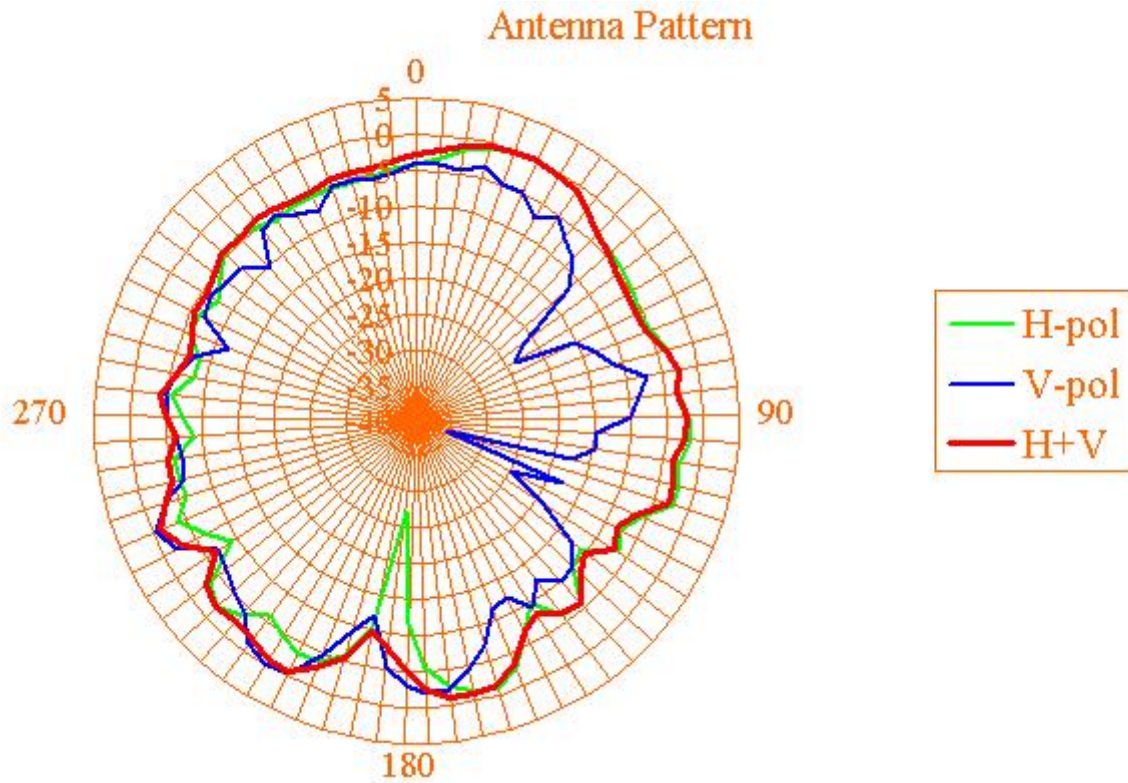


Frequency	2400
Maximum (dBi)	1.014589
Minimum (dBi)	-11.8113
Average (dBi)	-3.64314

h. 2.45GHz



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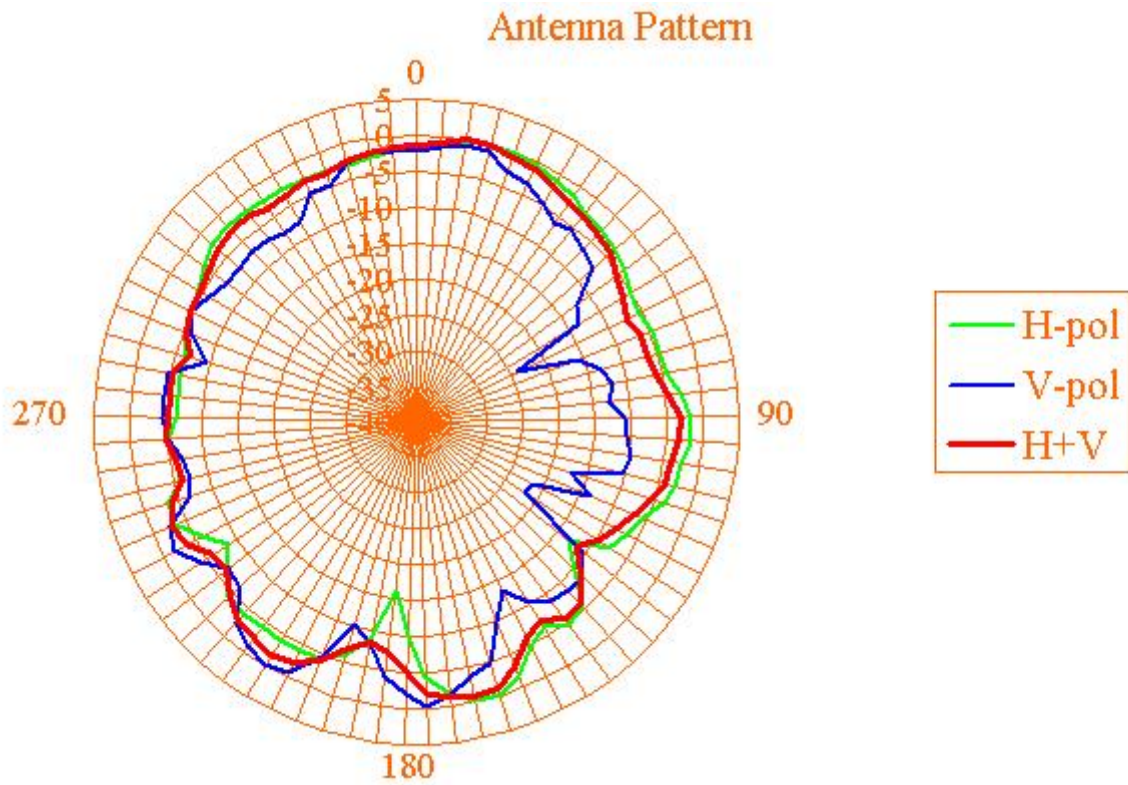


Frequency	2450
Maximum (dBi)	-0.04022
Minimum (dBi)	-10.1069
Average (dBi)	-3.59436

i. 2.5GHz



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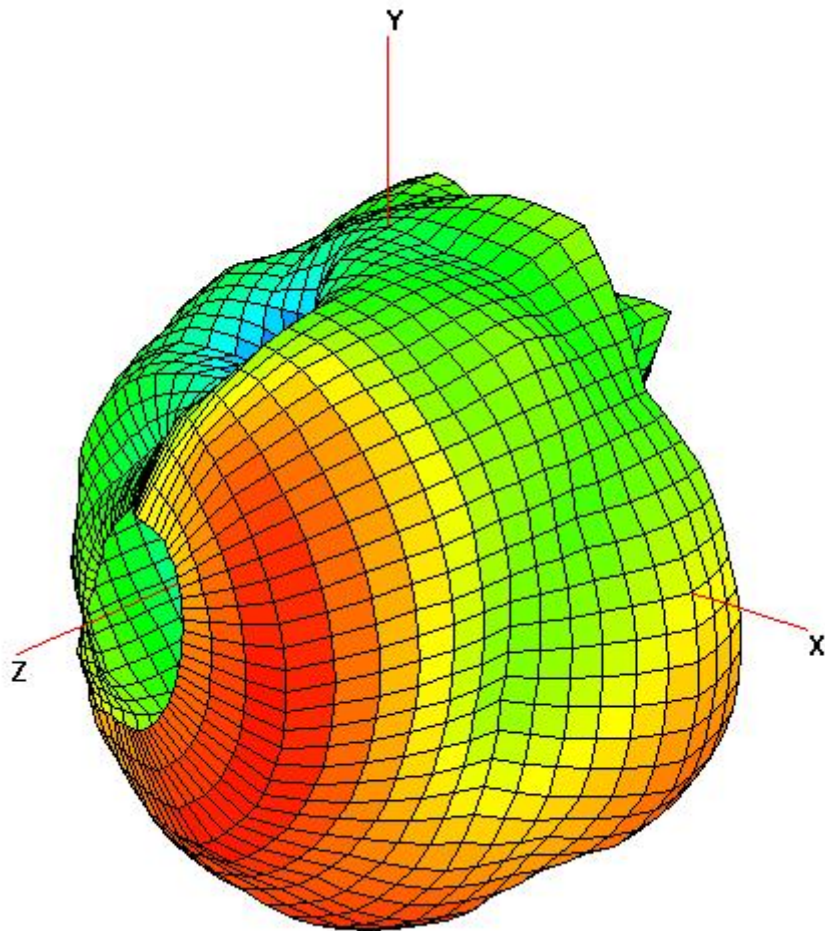
Frequency	2500
Maximum (dBi)	-0.06132
Minimum (dBi)	-11.7432
Average (dBi)	-3.78518

9.Gain & Pattern –3D PATTERN

j. 2.4GHz



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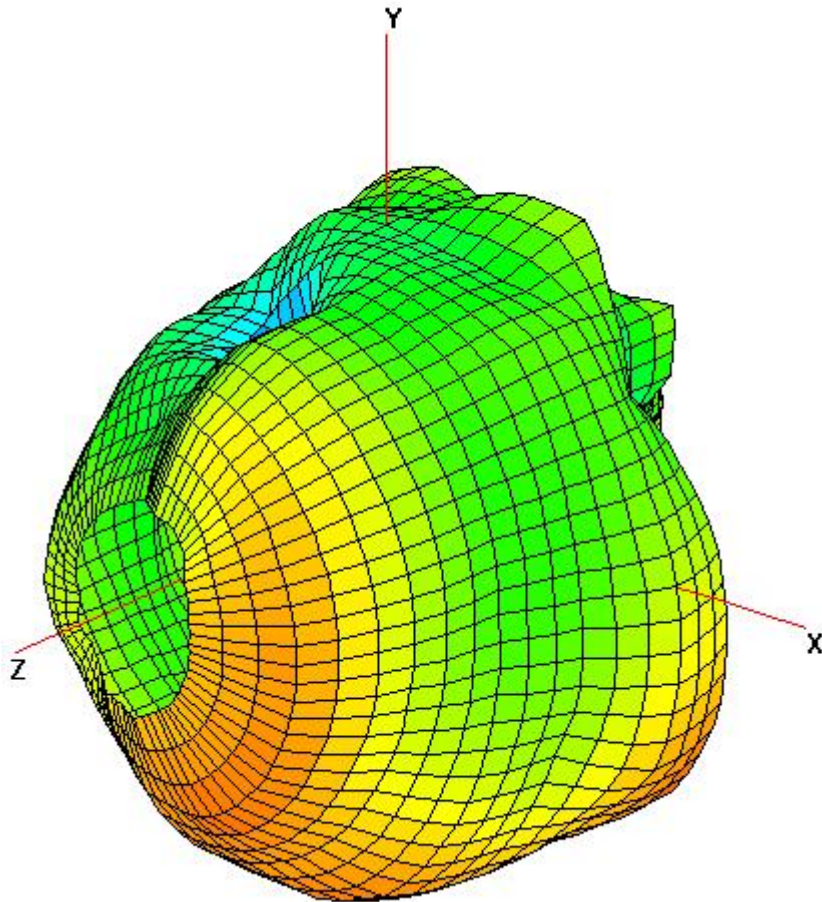


Frequency	Average Gain	Peak Gain	Efficiency
2.4GHz	-3.85 dBi	0.70 dBi	41.16%

k. 2.45GHz



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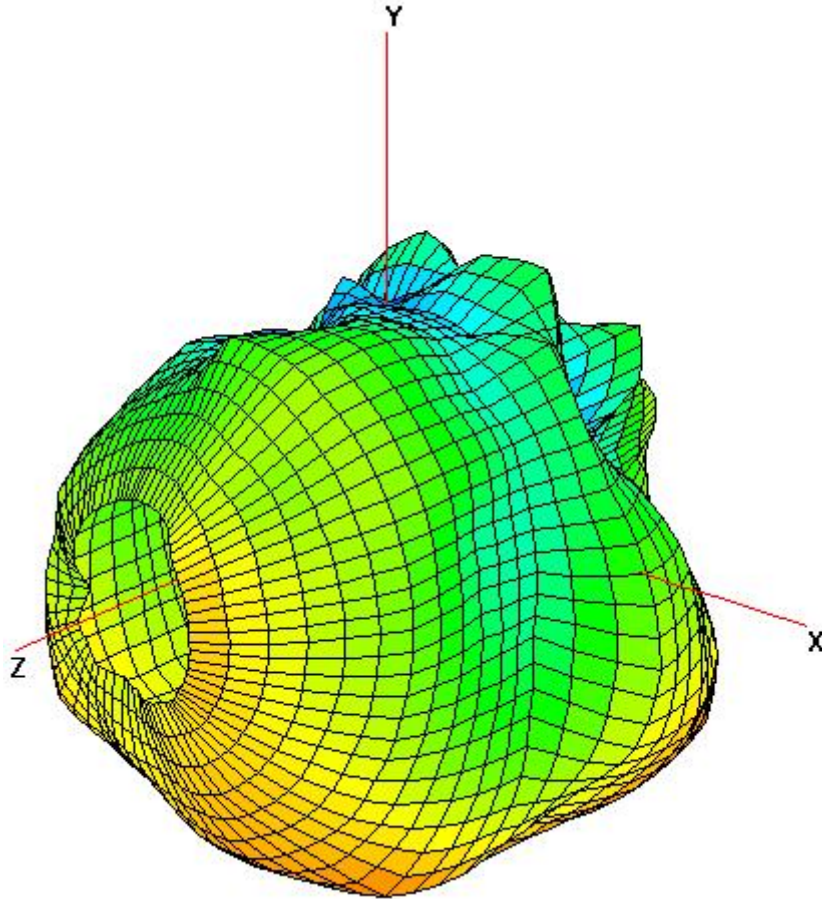


Frequency	Average Gain	Peak Gain	Efficiency
2.45GHz	-3.49 dBi	2.07 dBi	44.74%

1. 2.5GHz



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Frequency	Average Gain	Peak Gain	Efficiency
2.5GHz	-3.97 dBi	1.35 dBi	40.07%