



ASUS– E-Box Antenna Data Sheet

Part Number: 2023840-1

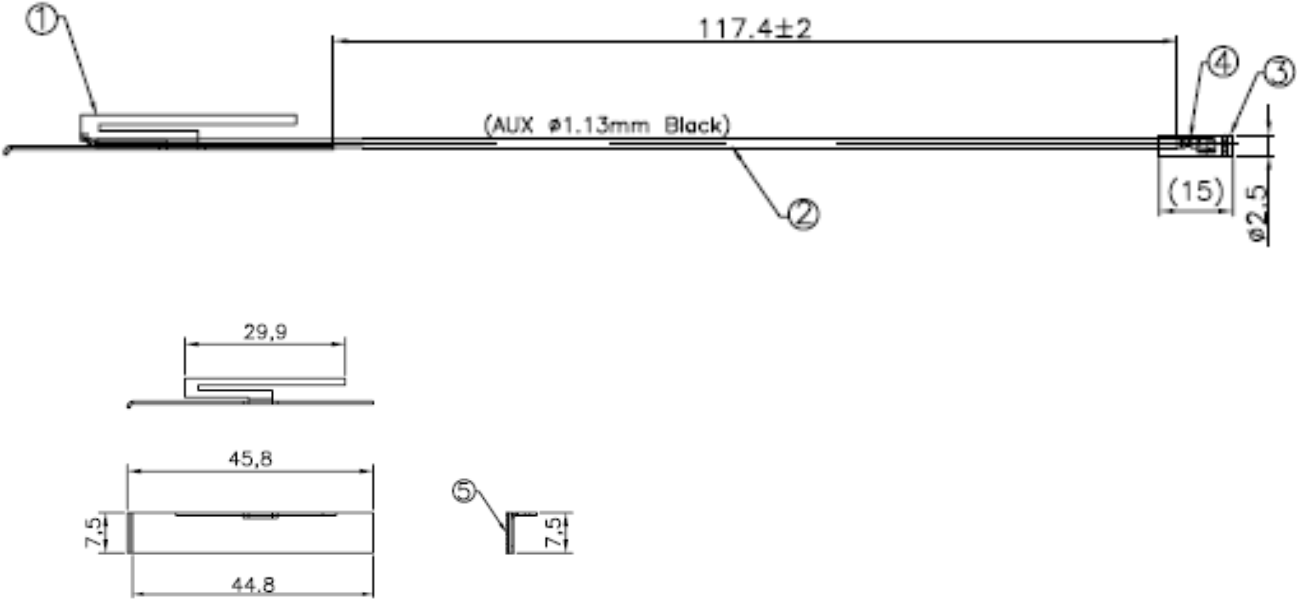
2023901-1

2008/6/30

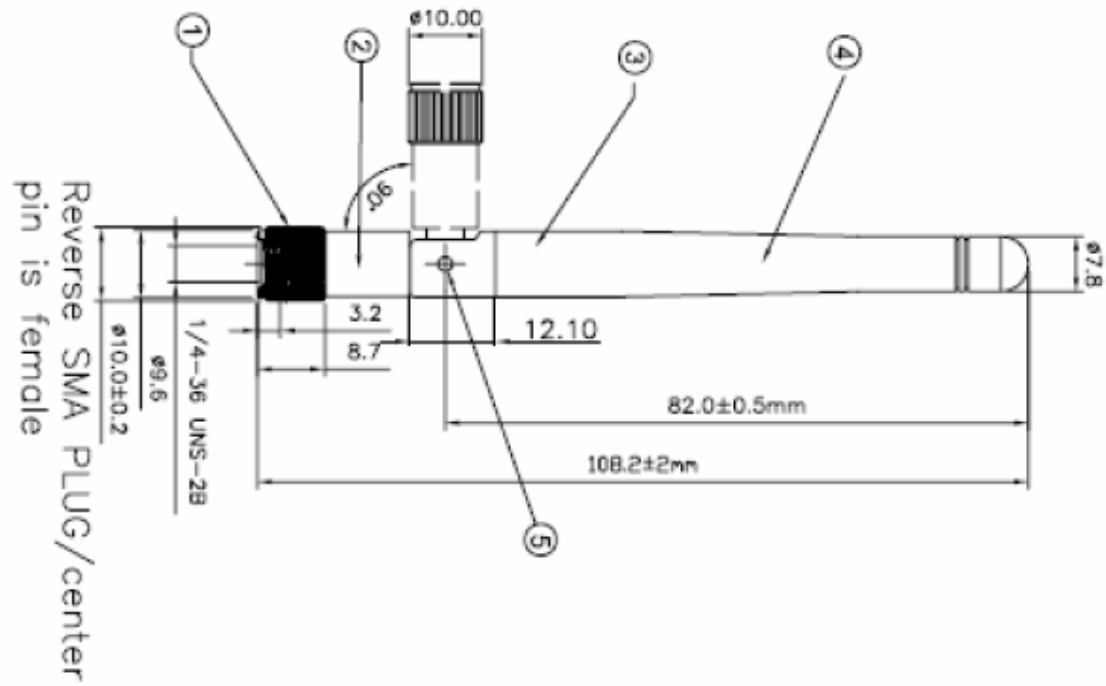
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2. Outline Drawing- Embedded Antenna



External Antenna



3. Antenna Photo





Antenna Photo



4. Antenna Related Data

Frequency Range:

WLAN Antenna : 2400~2500MHz

Peak Gain: ≤ 3.0 dBi @ 2400~2500MHz

V.S.W.R: ≤ 2.85 @ 2400~2500 MHz

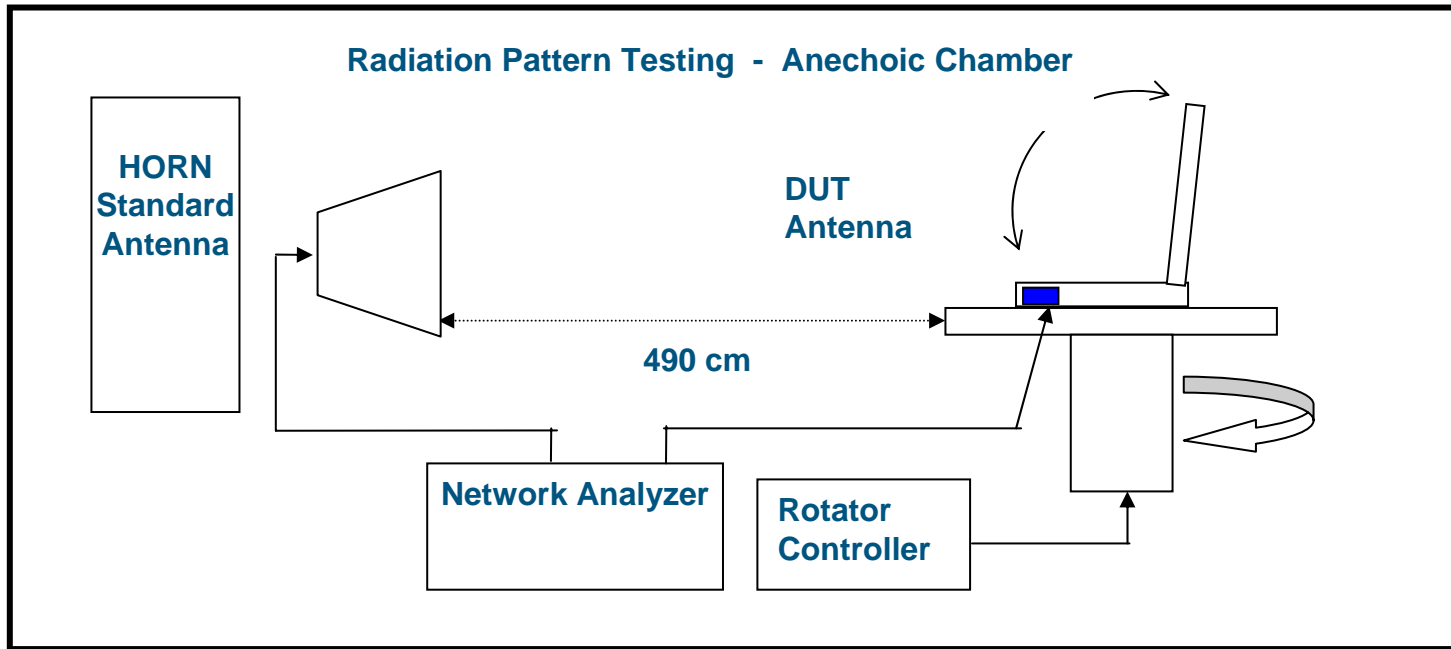
Average Gain: ≥ -5 dBi

Polarization: Linear for Embedded WLAN
Vertical, Linear for External WLAN

Impedance: 50Ω

5. Antenna Testing Conditions

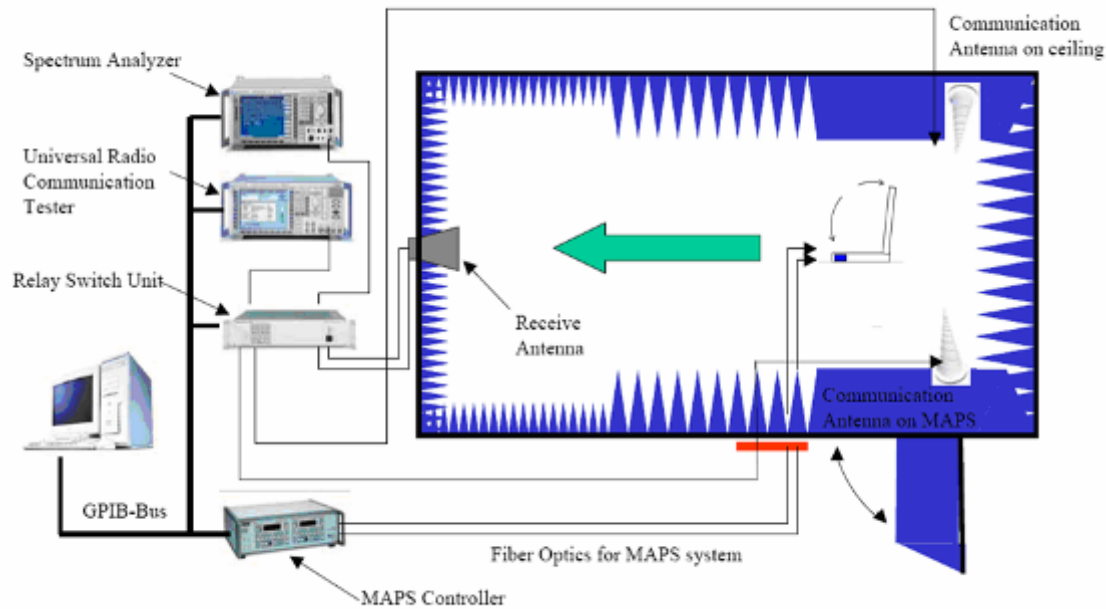
Test Configuration



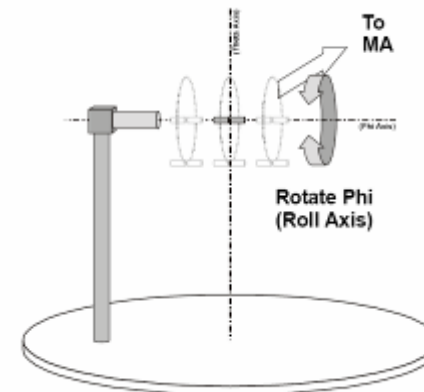
(Testing by 2D anechoic chamber)

Antenna Testing Conditions

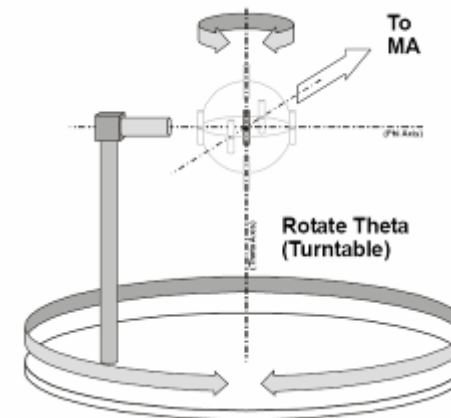
Test Configuration (3D)



(Testing by 3D anechoic chamber)



Phi axis test



Theta axis test

6. Test Result v.S.W.R

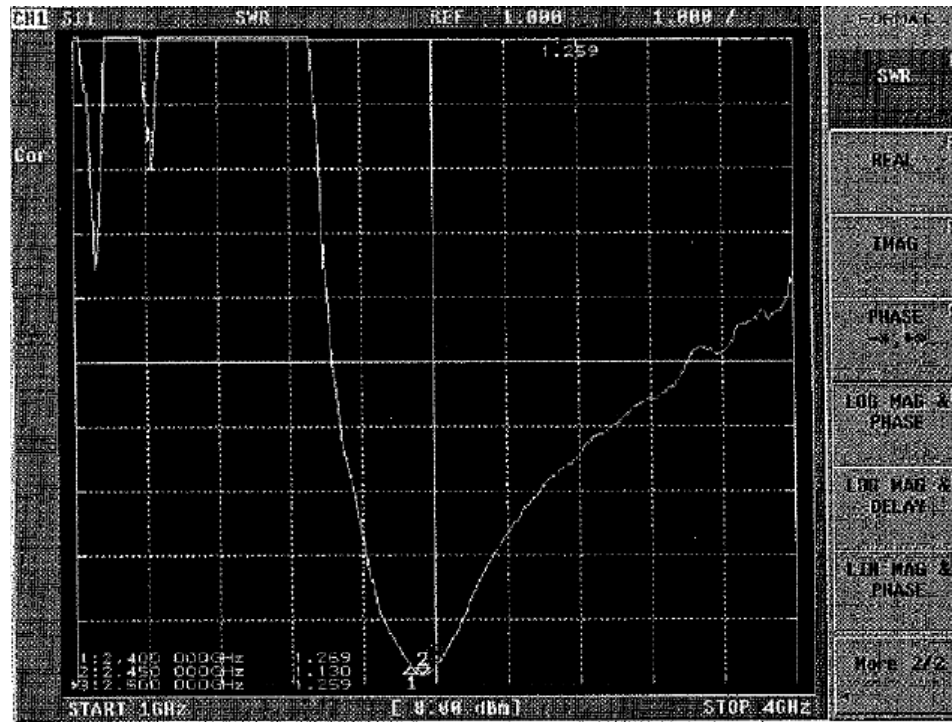
Metal TOP

Frequency (GHz)	2.4	2.45	2.5
Embedded WLAN	2.06	1.14	1.69



External WLAN

Frequency (GHz)	2.4	2.45	2.5
R2	1.269	1.130	1.259



Gain value (Testing by 2D anechoic chamber)

Gain List – WLAN-TOP (Metal)

Freq. (MHz)	TOP Antenna X-Y (Peak)			TOP Antenna X-Y (Avg.)		
	H	V	H + V	H	V	H + V
	dBi	dBi	dBi	dBi	dBi	dBi
2400	-0.31	-1.11	0.66	-7.15	-5.27	-3.10
2450	0.53	-1.29	1.28	-6.12	-5.16	-2.61
2500	-0.4	-0.8	0.45	-6.16	-5.40	-2.75
Freq. (MHz)	TOP Antenna X-Z (Peak)			TOP Antenna X-Z (Avg.)		
	H	V	H + V	H	V	H + V
	dBi	dBi	dBi	dBi	dBi	dBi
2400	-6.41	-3.28	-1.79	-11.23	-7.62	-5.85
2450	-4.66	-3.27	-1.31	-10.97	-6.81	-5.40
2500	-4.35	-3.22	-0.85	-9.87	-6.42	-4.80

Gain value (Testing by 2D anechoic chamber)

Gain List – WLAN - Front (Metal)

Freq. (MHz)	Front Antenna X-Y (Peak)			Front Antenna X-Y (Avg.)		
	H	V	H + V	H	V	H + V
	dBi	dBi	dBi	dBi	dBi	dBi
2400	-3.43	-3.23	-1.61	-10.04	-7.96	-5.87
2450	-3.21	-1.55	0.1	-8.80	-5.76	-4.01
2500	-4.72	-0.43	-0.22	-9.30	-5.43	-3.94
Freq. (MHz)	Front Antenna X-Z (Peak)			Front Antenna X-Z (Avg.)		
	H	V	H + V	H	V	H + V
	dBi	dBi	dBi	dBi	dBi	dBi
2400	-4.2	-1.29	0.2	-6.82	-6.37	-3.58
2450	-3.52	-1.15	0.39	-6.20	-4.85	-2.46
2500	-3.96	-0.64	0.18	-7.30	-4.94	-2.95

Gain List – WLAN - Front (External)

E-Plane

	Peak Gain (dBi)			AVG . Gain (dBd)		
Freq.(GHz)	2.400	2.450	2.500	2.400	2.450	2.500
R2	1.33	1.2	1.59	-2.58	-2.23	-2.21

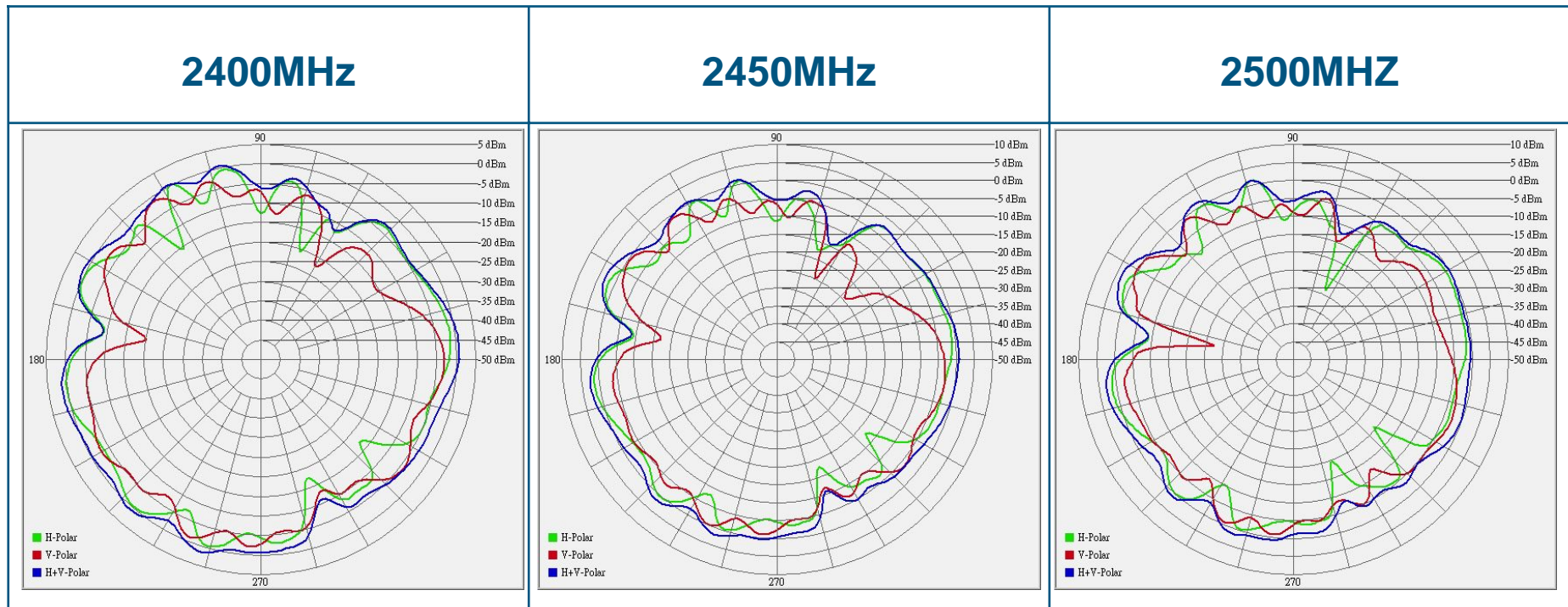
H-Plane

	Peak Gain (dBi)			AVG . Gain (dBi)		
Freq.(GHz)	2.400	2.450	2.500	2.400	2.450	2.500
R2	1.36	1.43	1.23	-0.14	-0.19	0.18

Radiation Pattern (Testing by 2D anechoic chamber)

ANTENNA (WLAN-TOP PCB X-Y)

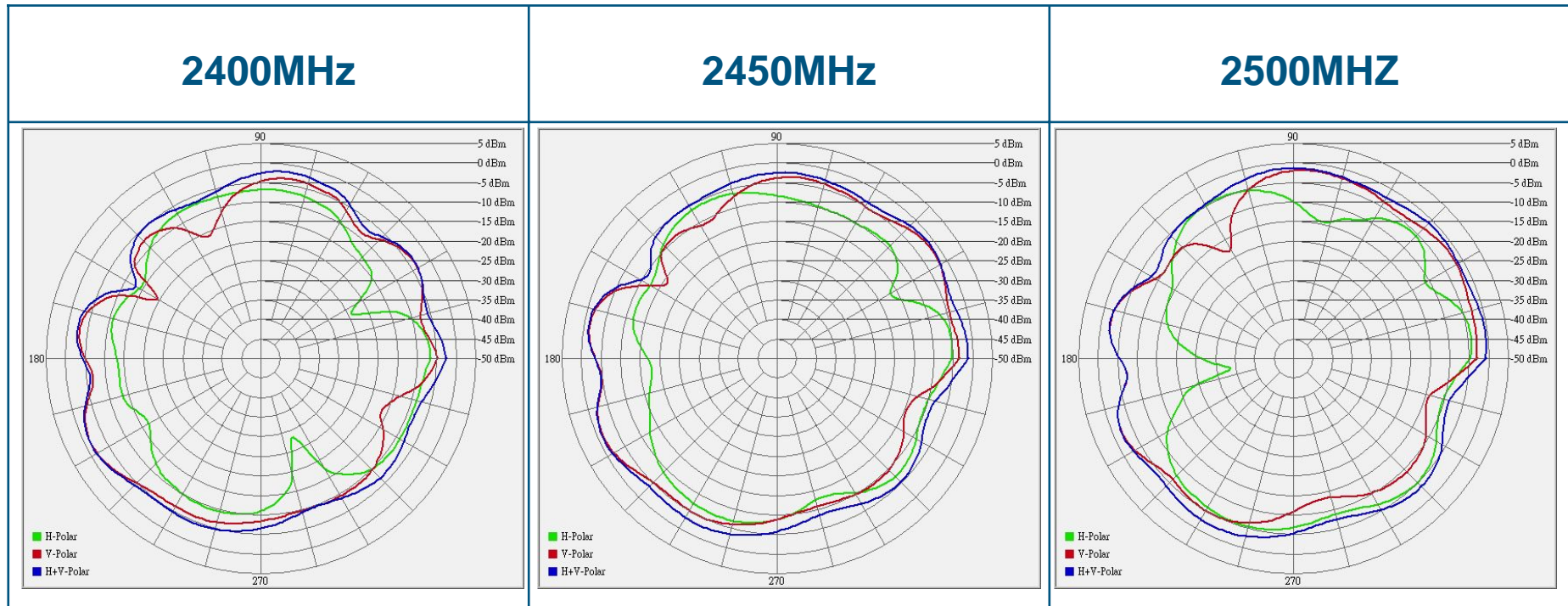
Radiation Pattern (2.4~2.5GHz)



Radiation Pattern (Testing by 2D anechoic chamber)

ANTENNA (WLAN-TOP PCB X-Z)

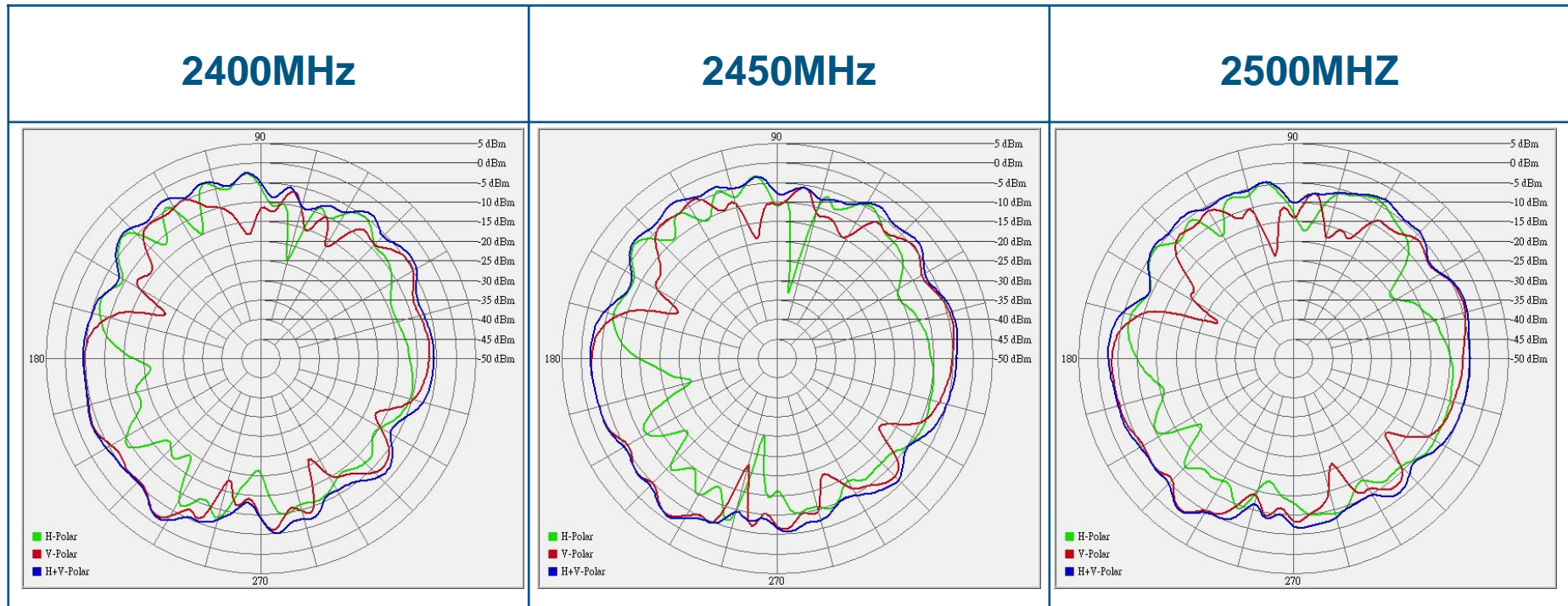
Radiation Pattern (2.4~2.5GHz)



Radiation Pattern (Testing by 2D anechoic chamber)

ANTENNA (WLAN - Front PCB X-Y)

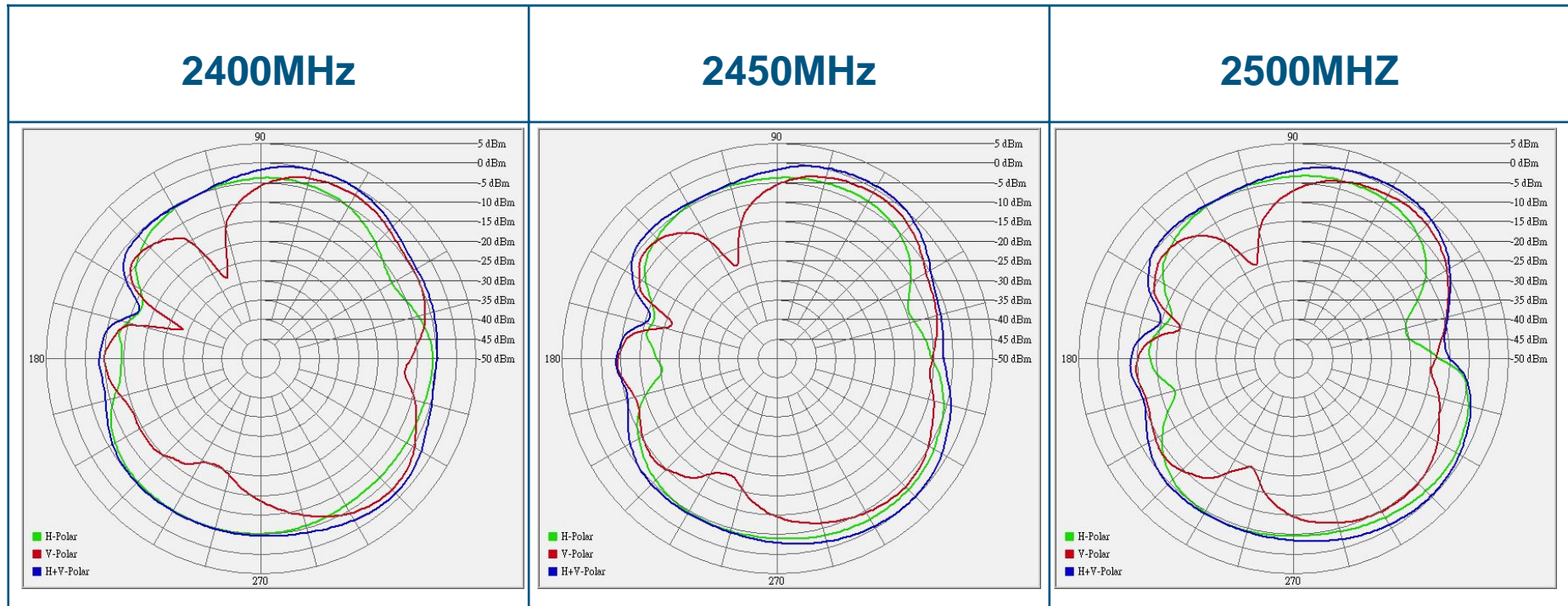
Radiation Pattern (2.4~2.5GHz)



Radiation Pattern (Testing by 2D anechoic chamber)

ANTENNA (WLAN - Front PCB X-Z)

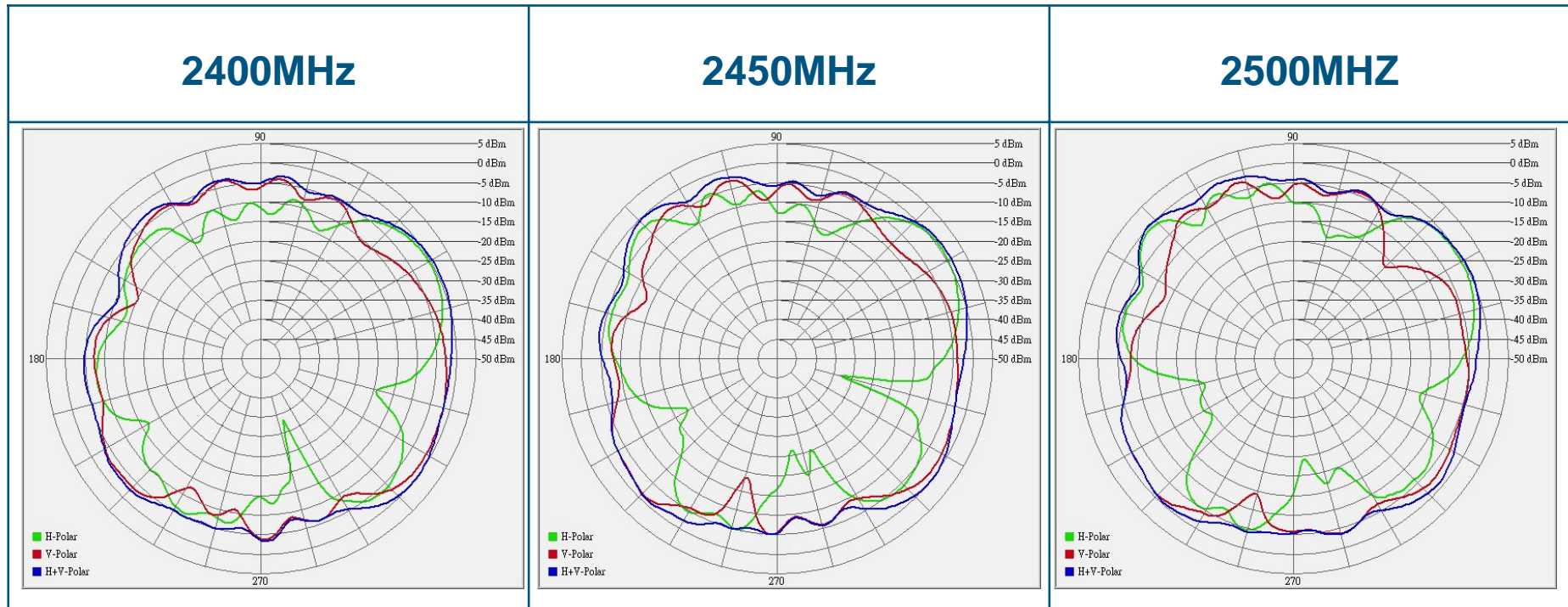
Radiation Pattern (2.4~2.5GHz)



Radiation Pattern (Testing by 2D anechoic chamber)

ANTENNA (WLAN-TOP Metal X-Y)

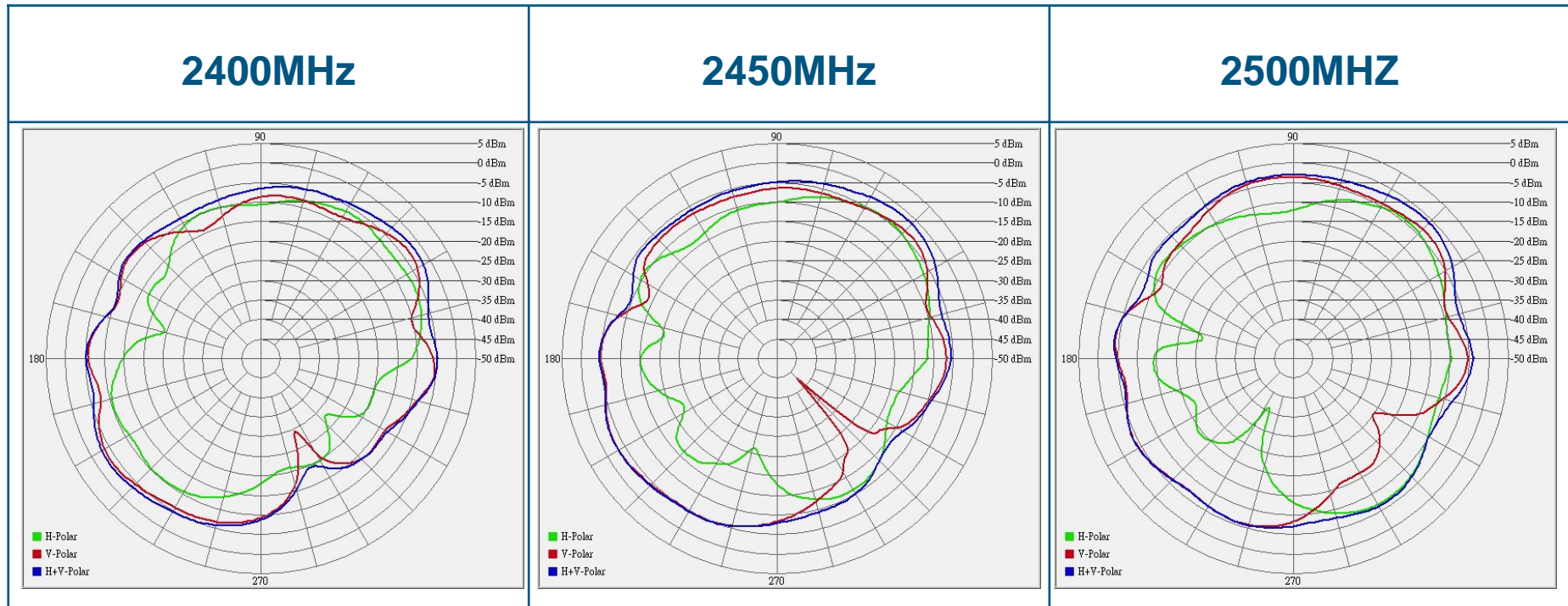
Radiation Pattern (2.4~2.5GHz)



Radiation Pattern (Testing by 2D anechoic chamber)

ANTENNA (WLAN-TOP Metal X-Z)

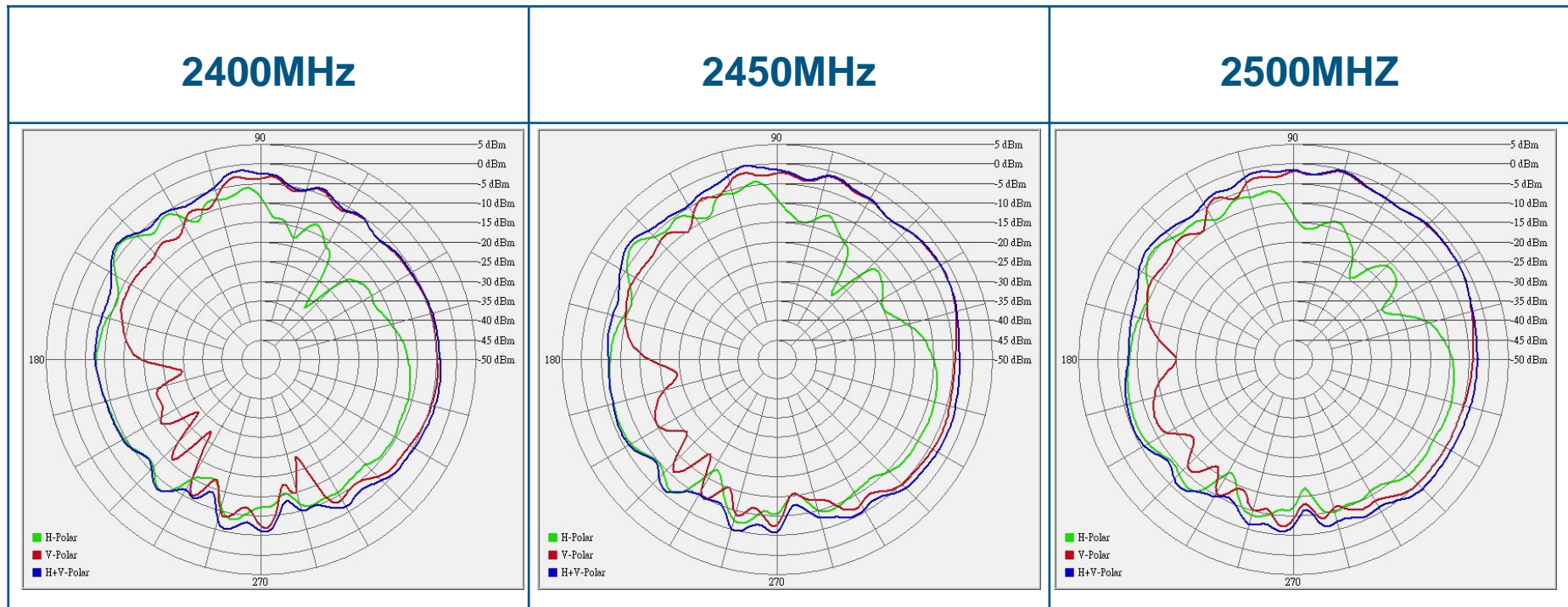
Radiation Pattern (2.4~2.5GHz)



Radiation Pattern (Testing by 2D anechoic chamber)

ANTENNA (WLAN - Front Metal X-Y)

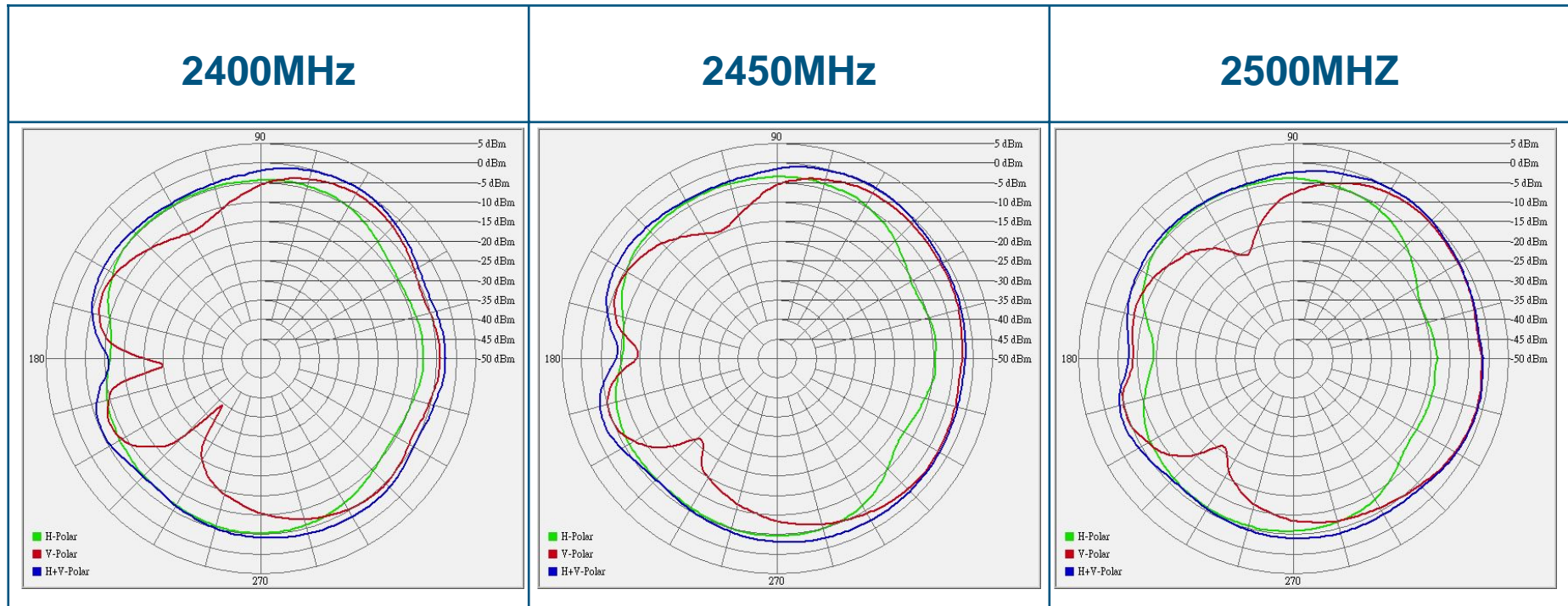
Radiation Pattern (2.4~2.5GHz)



Radiation Pattern (Testing by 2D anechoic chamber)

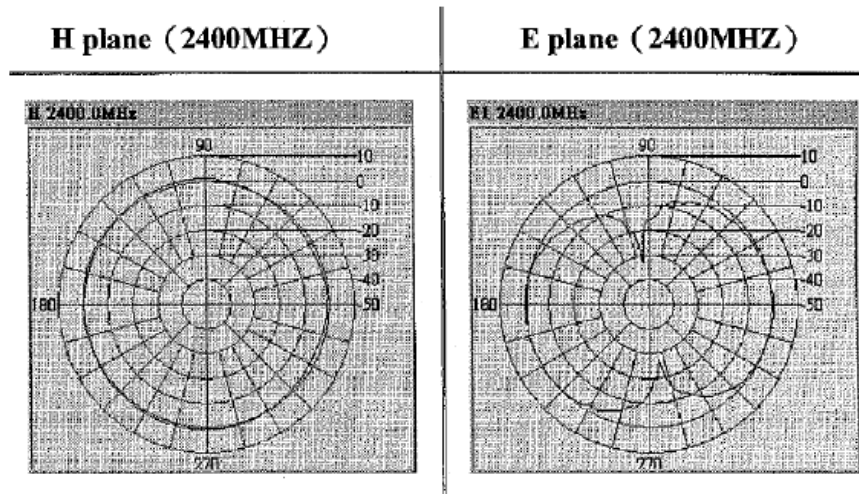
ANTENNA (WLAN - Front Metal X-Z)

Radiation Pattern (2.4~2.5GHz)



ANTENNA (WLAN - Front External)

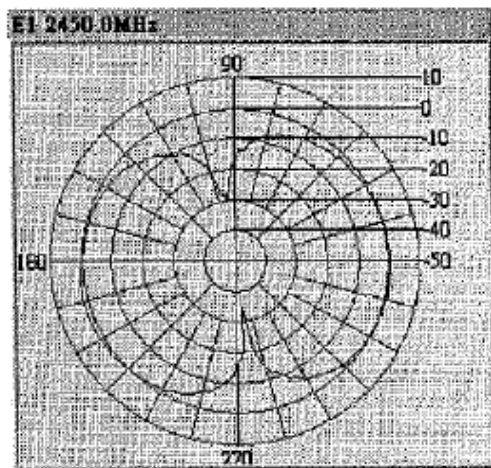
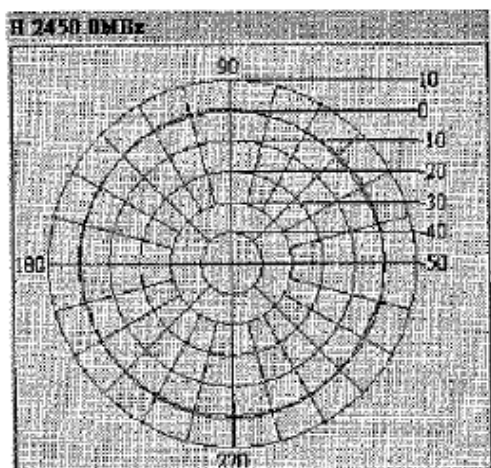
Radiation Pattern (2.4~2.5GHz)



	H	E1
Max Gain	1.36	1.33
Max Gain@Angle	99	355
Min Gain	-1.95	-33.13
Min Gain@Angle	330	97
Average Gain	-0.14	-2.58
3dB Angle A		
3db Angle B		
HPB		

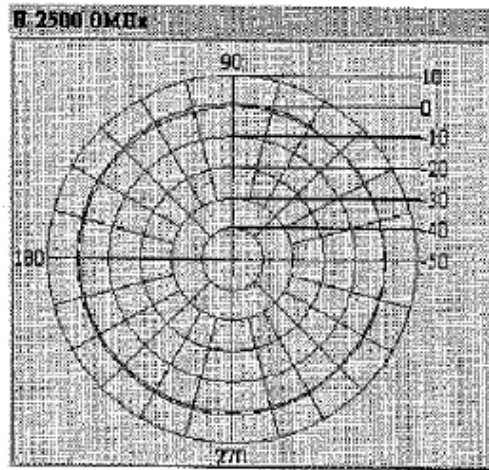
H plane (2450MHZ)

E plane (2450MHZ)

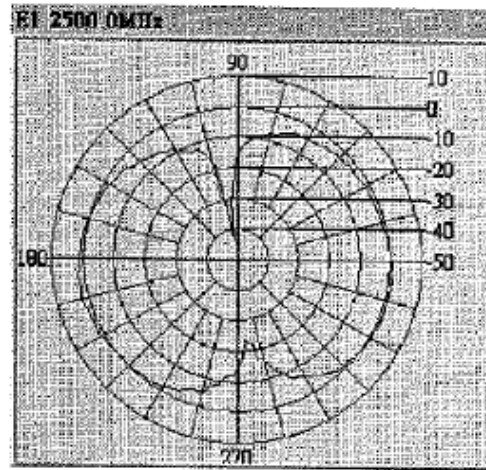


	H	E1
Max Gain	1.43	1.2
Max Gain@ Angle	275	198
Min Gain	-1.39	-34.33
Min Gain@ Angle	30	277
Average Gain	-0.19	-2.23
-3dB Angle A		
-3db Angle B		
HPB		

H plane (2500MHZ)



E plane (2500MHZ)



	H	E1
Max Gain	1.23	1.59
Max Gain@Angle	99	196
Min Gain	-1	-43.71
Min Gain@Angle	332	99
Average Gain	0.18	-2.21
-3dB Angle A		
-3dB Angle B		
HPB		