



環德電子工業股份有限公司
Advanced Ceramic X Corp.

Features & Achievable SPEC.

• Features

Application Band: 2400~2500MHz

Polarization: Linear

Size: 3.2x1.6x1.2 mm

Fully SMD Compatible

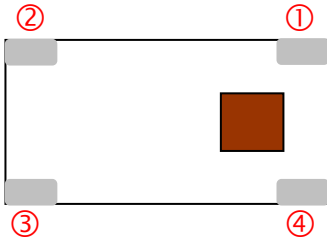
• Achievable SPEC.

Part Number	Frequency Range (MHz)	Peak Gain (dBi typ.)	Average Gain (dBi typ.)	VSWR	Impedance
AT3216 -T2R4PAA_	2400~2500	1.5 (XZ-total)	-2.0 (XZ-total)	2.0 max.	50 Ω



Termination and Dimensions

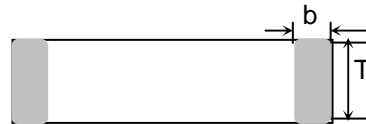
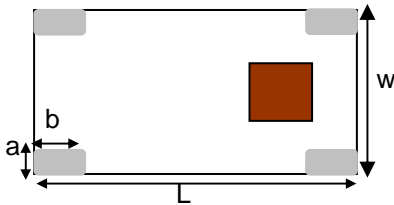
• Terminal Configuration



No.	Terminal Name	No.	Terminal Name
①	Feeding Point	②	GND
③	GND	④	GND

• Dimensions

Unit : mm

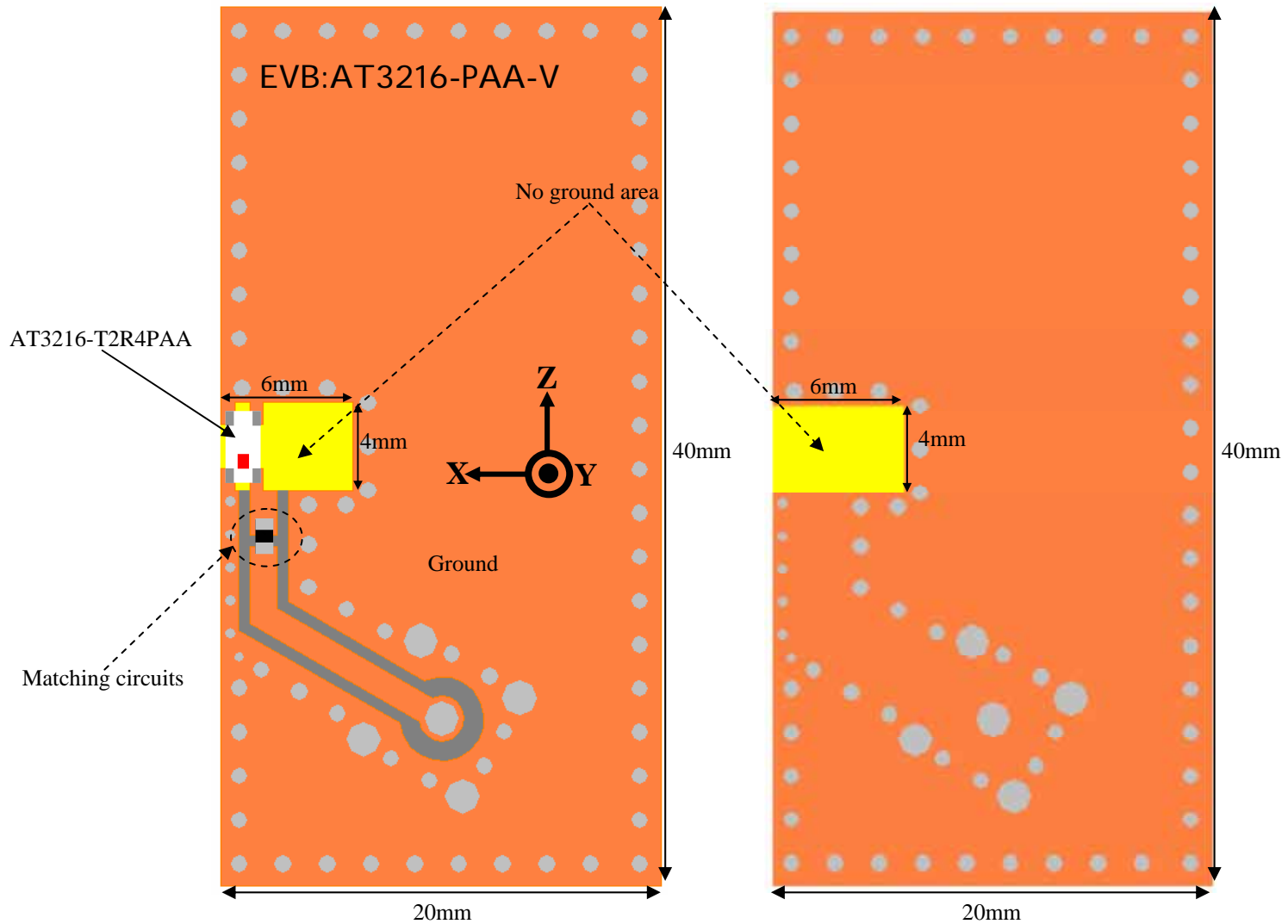


Mark	L	W	T	a	b
Dimensions	3.2±0.2	1.6±0.2	1.2±0.2	0.3+0.1 /-0.2	0.5±0.2



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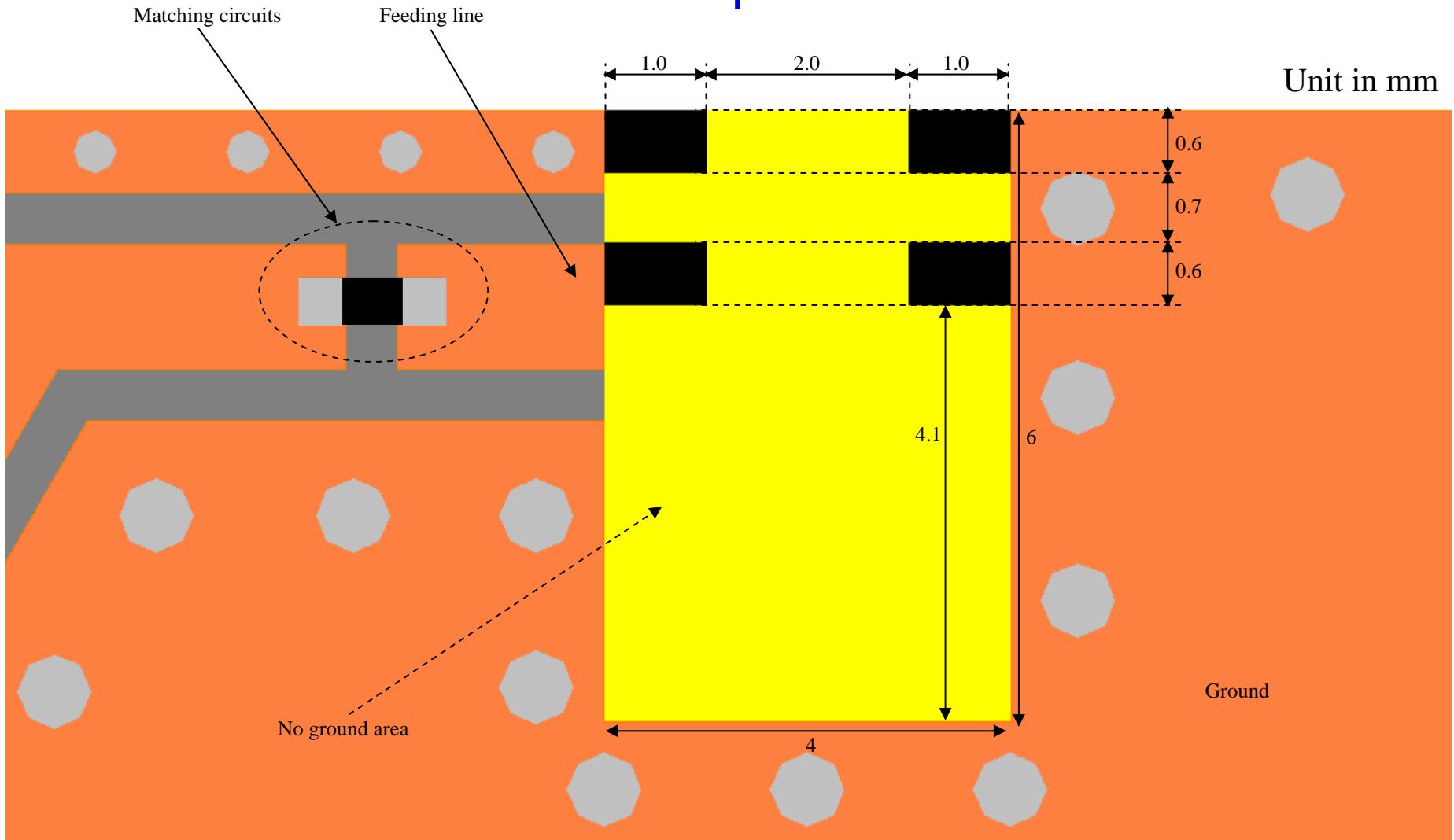
Recommended EVB





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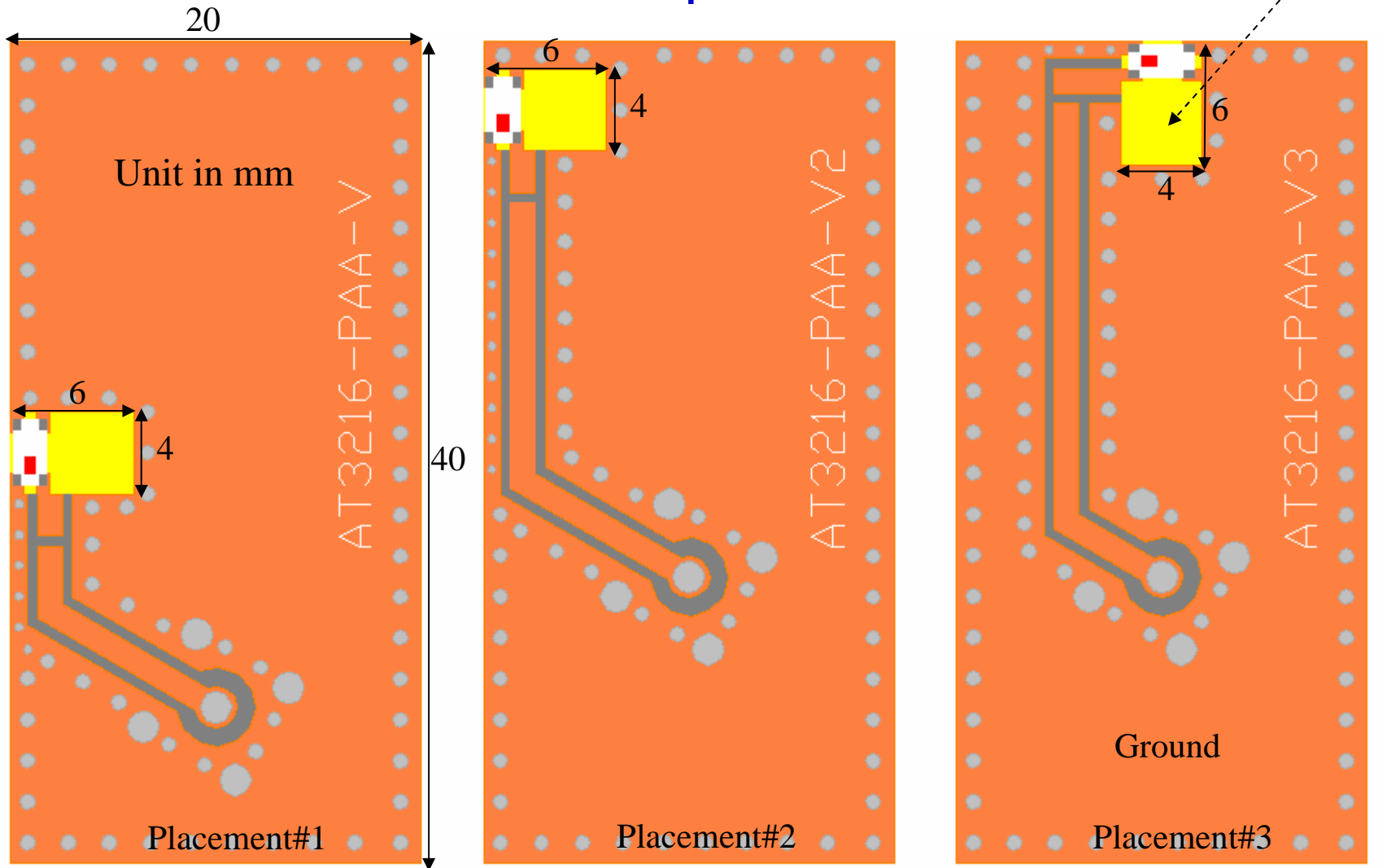
Footprint





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Antenna placement



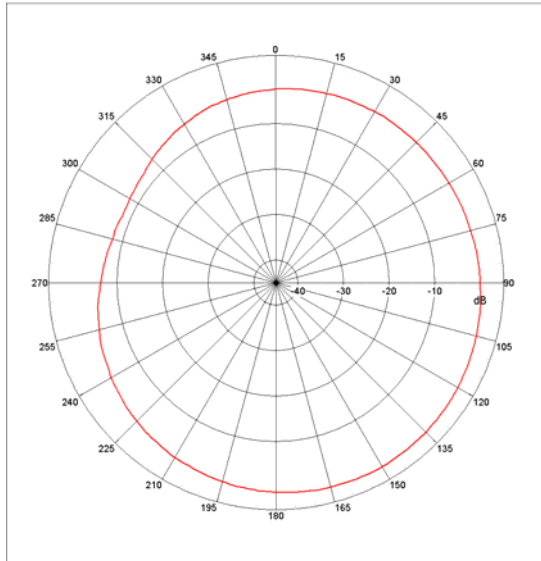


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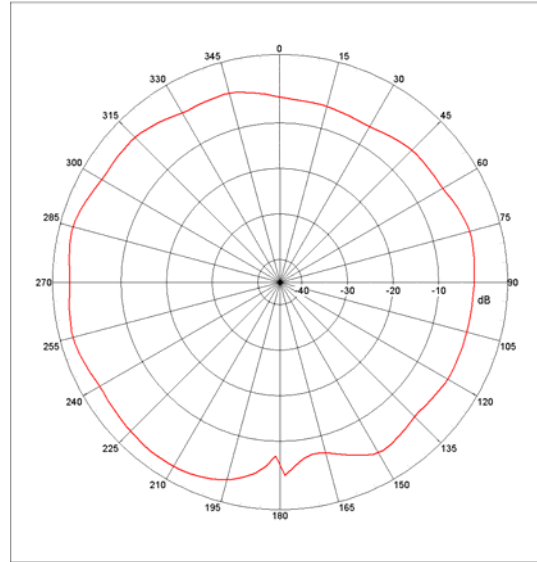
2D Gain Pattern @ 2450MHz Placement #1

AT3216-T2R4PAA for EVB:AT3216-PAA-V

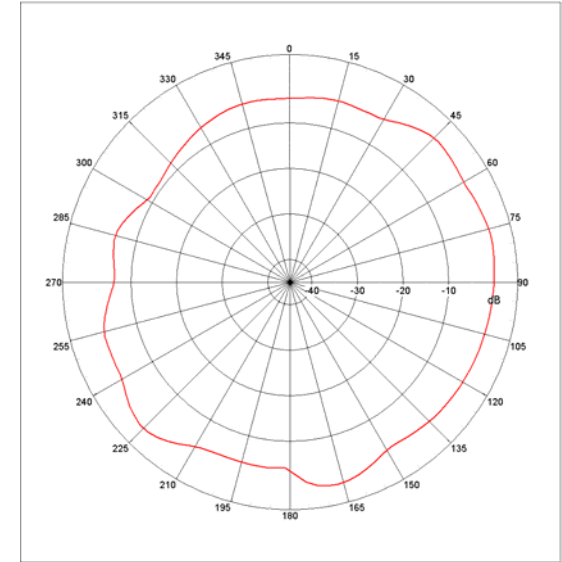
Far-field Power Distribution on X-Y Plane
Gain= 2.43 dBi; Total Radiating Efficiency: 73.61% @2.45000 GHz



Far-field Power Distribution on X-Z Plane
Gain= 2.43 dBi; Total Radiating Efficiency: 73.61% @2.45000 GHz



Far-field Power Distribution on Y-Z Plane
Gain= 2.43 dBi; Total Radiating Efficiency: 73.61% @2.45000 GHz



Unit in dBi

XY-plane	Peak	Avg.
Total	1.69	-1.60

XZ-plane	Peak	Avg.
Total	2.01	-1.50

YZ-plane	Peak	Avg.
Total	0.56	-2.70



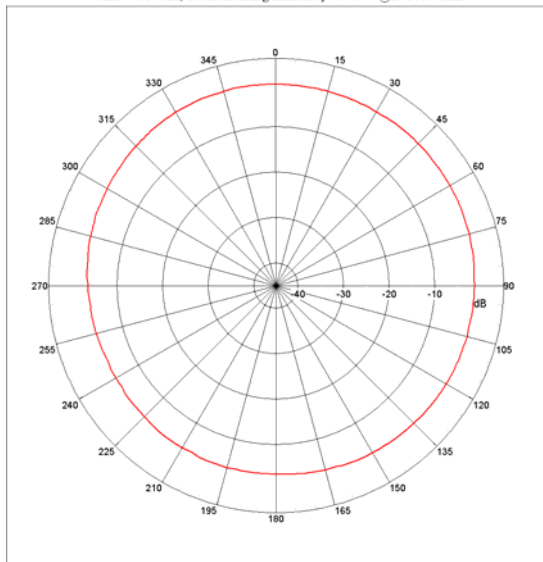
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2D Gain Pattern @ 2450MHz Placement #2

AT3216-T2R4PAA for EVB:AT3216-PAA-V2

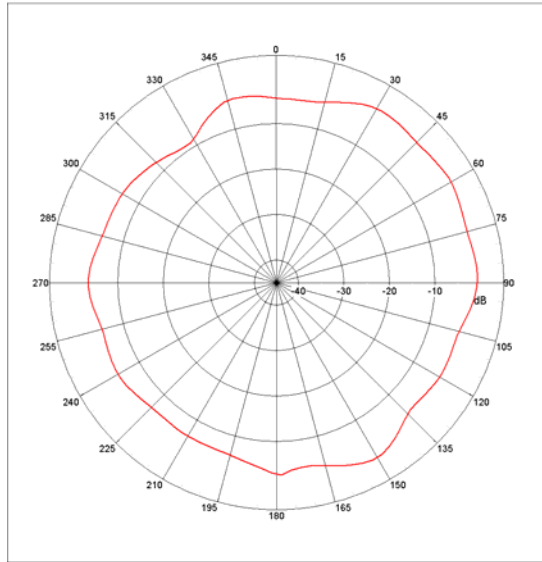
Far-field Power Distribution on X-Y Plane

Gain= -0.17 dBi; Total Radiating Efficiency: 45.86% @2.45000 GHz



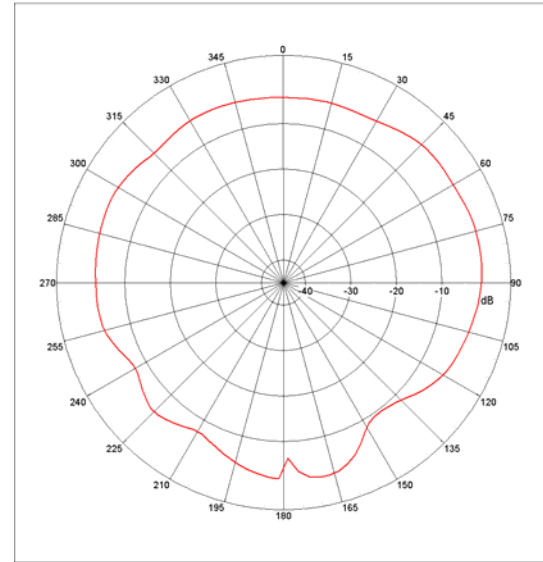
Far-field Power Distribution on X-Z Plane

Gain= -0.17 dBi; Total Radiating Efficiency: 45.86% @2.45000 GHz



Far-field Power Distribution on Y-Z Plane

Gain= -0.17 dBi; Total Radiating Efficiency: 45.86% @2.45000 GHz



Unit in dBi

XY-plane	Peak	Avg.
Total	-0.67	-2.17

XZ-plane	Peak	Avg.
Total	-0.59	-3.69

YZ-plane	Peak	Avg.
Total	-1.18	-3.89

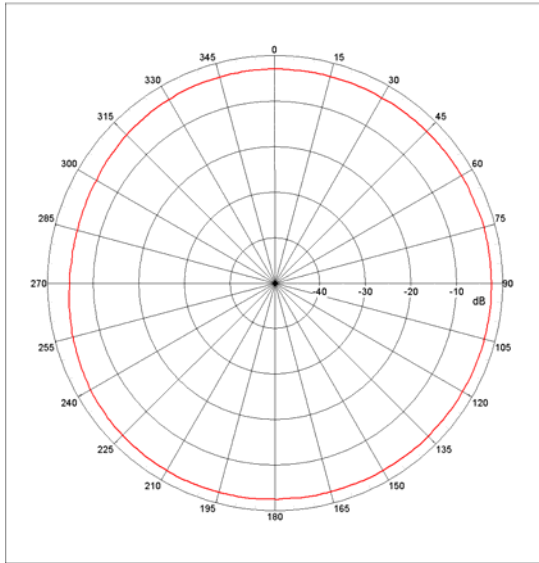


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2D Gain Pattern @ 2450MHz Placement #3

AT3216-T2R4PAA for EVB:AT3216-PAA-V3

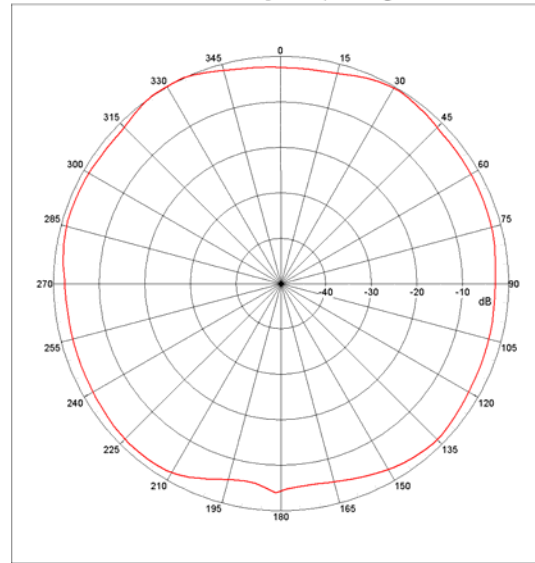
Far-field Power Distribution on X-Y Plane
Gain= 0.57 dBi; Total Radiating Efficiency: 59.47% @2.45000 GHz



Unit in dBi

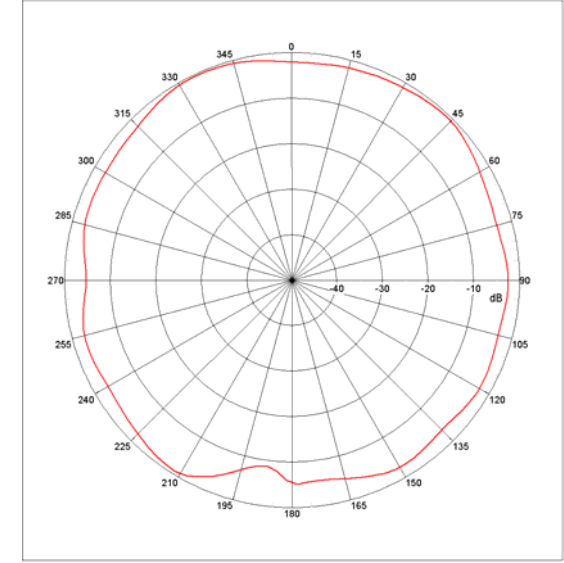
XY-plane	Peak	Avg.
Total	-2.38	-3.10

Far-field Power Distribution on X-Z Plane
Gain= 0.57 dBi; Total Radiating Efficiency: 59.47% @2.45000 GHz



XZ-plane	Peak	Avg.
Total	0.21	-2.19

Far-field Power Distribution on Y-Z Plane
Gain= 0.57 dBi; Total Radiating Efficiency: 59.47% @2.45000 GHz



YZ-plane	Peak	Avg.
Total	-0.47	-2.72



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Comparison

Unit in dBi@2.45GHz	XY-plane		XZ-plane		YZ-plane		Efficiency
	Peak	Avg.	Peak	Avg.	Peak	Avg.	
Placement#1 (EVB:AT3216-PAA-V)	1.69	-1.60	2.01	-1.50	0.56	-2.70	73.61%
Placement#2 (EVB:AT3216-PAA-V2)	-0.67	-2.17	-0.59	-3.69	-1.18	-3.89	45.86%
Placement#3 (EVB:AT3216-PAA-V3)	-2.38	-3.10	0.21	-2.19	-0.47	-2.72	59.47%

Summary:

The Placement#1 is recommended due to the highest antenna efficiency.

Therefore, AT3216-T2R4PAA has to be as close to the middle of PCBA's long-side as possible.