

High Frequency Ceramic Solutions

2.4GHz Mini Antenna, SMT

P/N 2450AT18B100

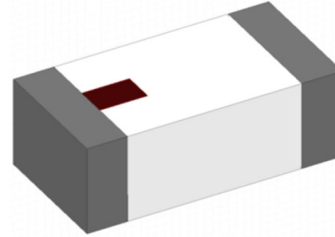
Detail Specification: 11/5/2018

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Let us help you with the antenna design, optimization, and tuning!

General Specifications

Part Number	2450AT18B100		
Frequency (MHz)	2400 - 2500		
Avg. Rad Efficiency*	76%		
Peak Gain (dBi typ.)	2.5		
Average Gain (dBi typ.)	-0.5	Storage Temperature	-45 to +125°C
		Operating Temperature	-45 to +125°C
Return Loss (dB)	9.5 min.	Recommended Storage Conditions of unused product on T&R and period.	+5 to +35°C Humidity 45~75%RH 18 months max.
Impedance	50 Ω		
Input Power	2 Watts max. (CW)	Reel Quantity	3000pcs



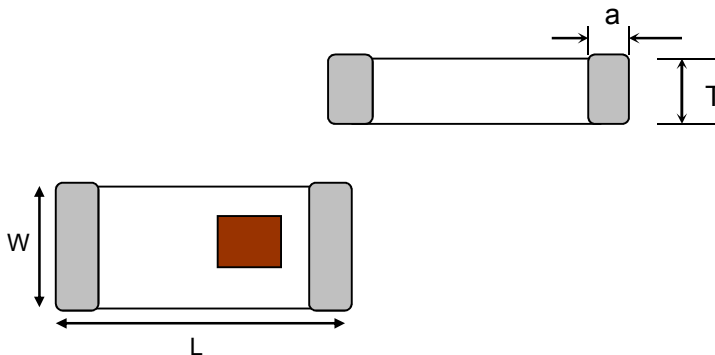
*Efficiency based on Johanson's standard evaluation board

Part Number Explanation

P/N Suffix	Packing Style	Bulk (loose)	Suffix = S	e.g. 2450AT18B100S
		T & R	Suffix = E	e.g. 2450AT18B100E
		100% Tin	Suffix = E or S	e.g. 2450AT18B100(E or S)
	Evaluation Board	2450AT18B100-EB1SMA (see page 2&3 for details)		

Mechanical Dimensions

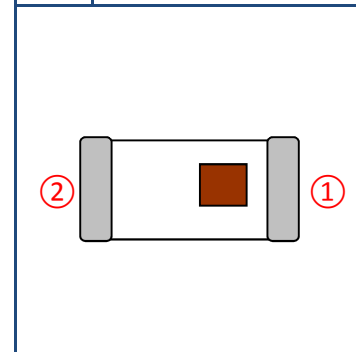
	In	mm
L	0.126 ± 0.008	3.20 ± 0.2
W	0.063 ± 0.008	1.60 ± 0.2
T	0.051 +.004/-.008	1.30 +0.1/-0.2
a	0.020 ± 0.008	0.50 ± 0.2



Want the layout file? Request it at: <https://www.johansontechnology.com/ask-a-question>

Terminal Configuration

No.	Function
1	FEED
2	NC



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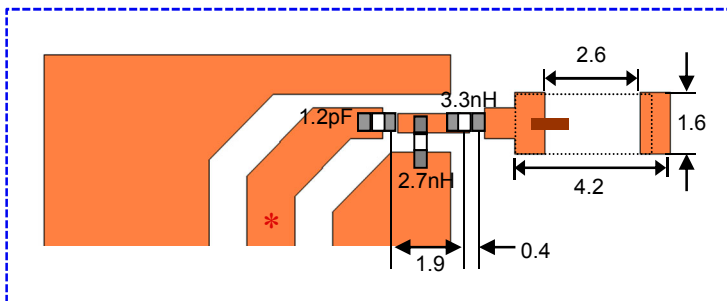
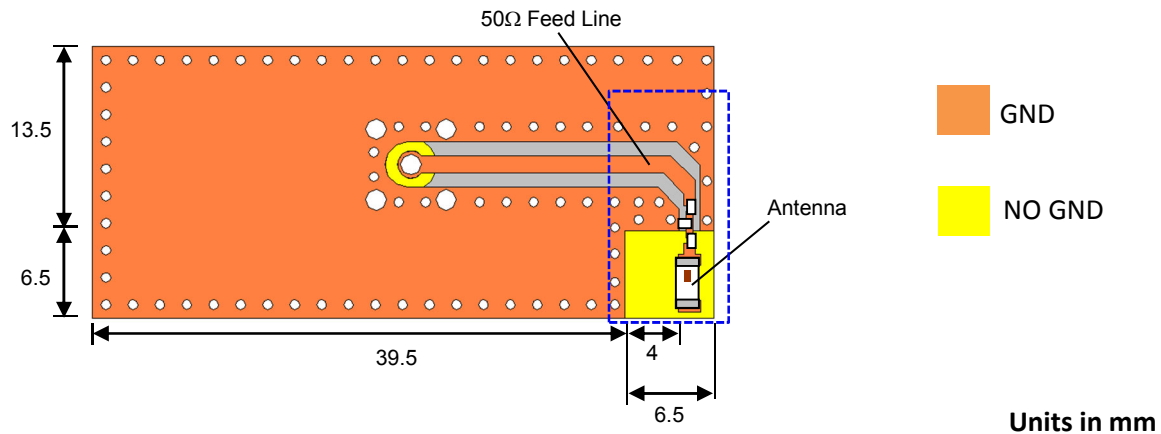
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Mounting Considerations 1: Evaluation Board



JTI P/N for Matching Circuit:
Capacitor (1.2pF): 500R07S1R2BV4T
Inductor (2.7nH): L-07C2N7SV6T
Inductor (3.3nH): L-07C3N3SV6T

*Line width should be designed to provide 50Ω impedance

To order a pre-tuned 50Ω EVB with a female SMA connector click here: <https://www.johansontechnology.com/request-a-sample>
Reference p/n: 2450AT18B100-EB1SMA

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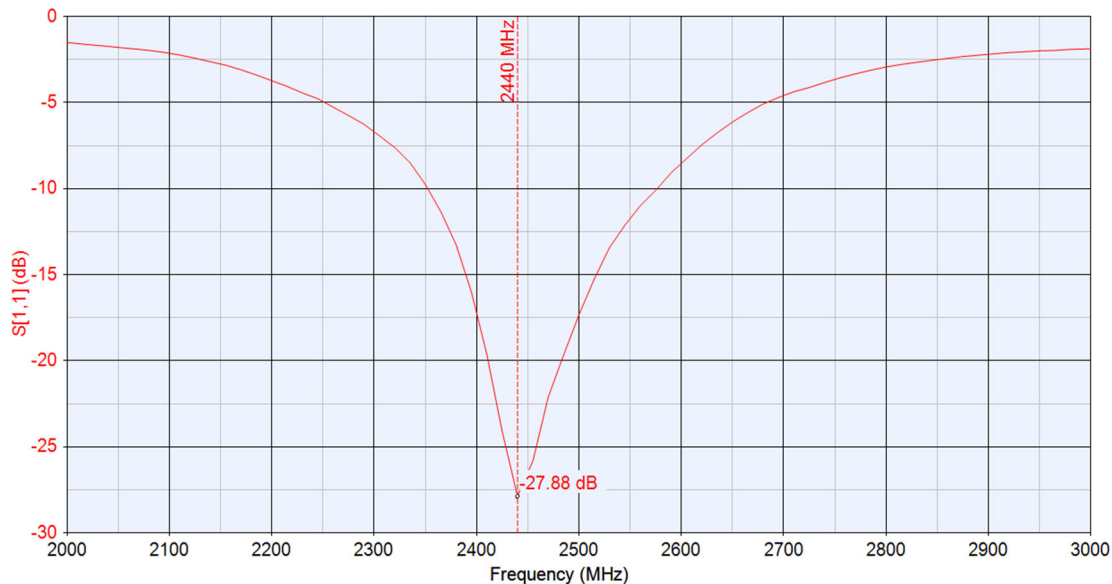
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Mounting Considerations 1: Typical Electrical Performance (T=25°C)



Would you like the antenna layout? Have antenna tuning issues?
Please contact us if you have any questions regarding the
implementation of this antenna in your PCB's layout. We'll be happy to
guide you to maximize the antenna's performance.

Contact our applications engineers at:

<https://www.johansontechnology.com/ask-a-question>

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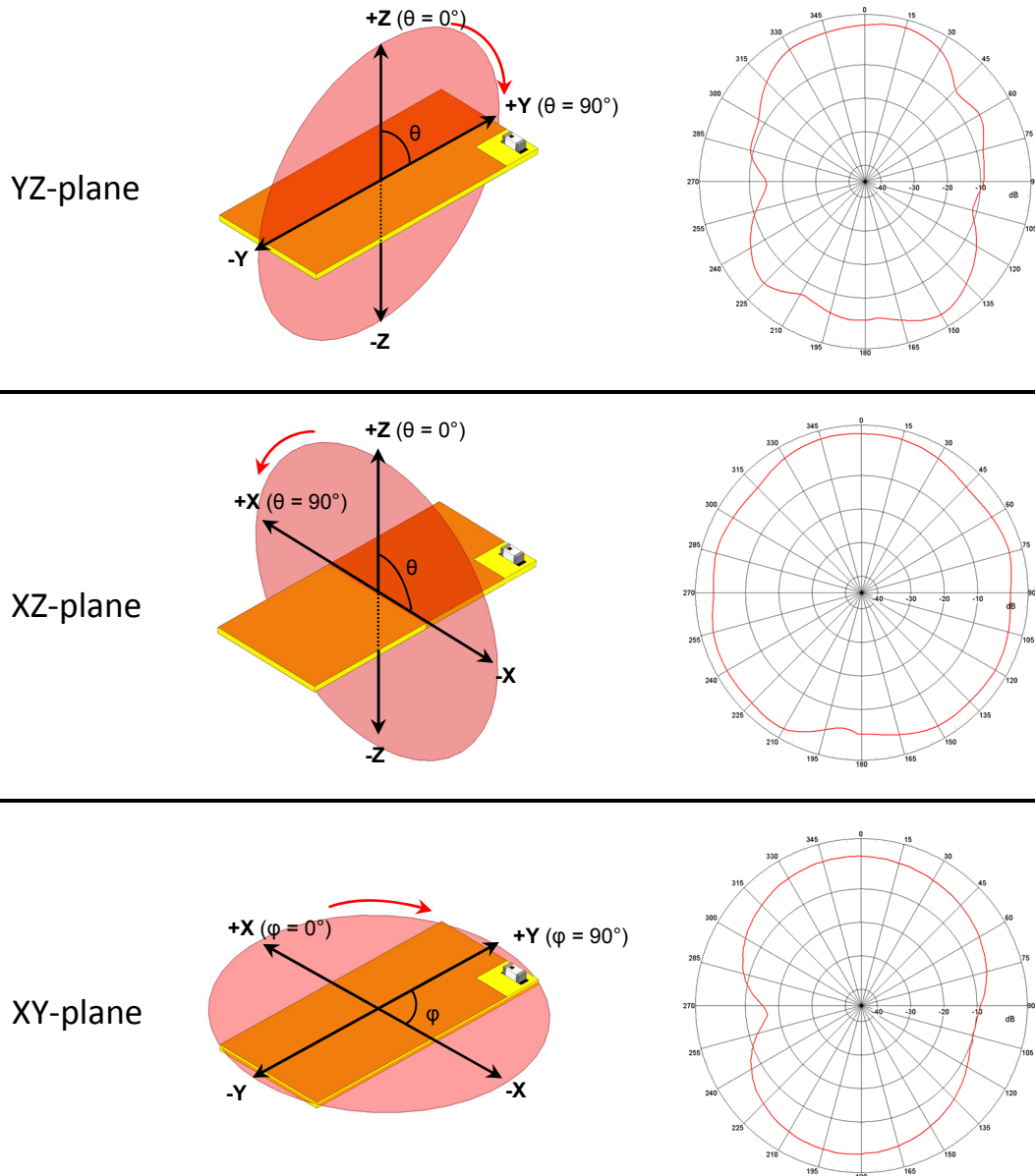
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Mounting Considerations 1: Antenna Performance

Typical 2D radiation patterns @ 2.44GHz



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Antenna tuning, optimization, and validation services:

<https://www.johansontechnology.com/ipc-antenna-services>

For more antennas and to download measured S-parameters, go to:

<https://www.johansontechnology.com/antennas>

Soldering Information

<https://www.johansontechnology.com/ipcsoldering-profile>

MSL Info

<https://www.johansontechnology.com/msl-rating>

Packaging information

<https://www.johansontechnology.com/tape-reel-packaging>

For layout review contact our Applications Team at:

<https://www.johansontechnology.com/ask-a-question>

RoHS Compliance

<https://www.johansontechnology.com/rohs-compliance>

Need help designing the antenna in? Use our antenna design services!

<https://www.johansontechnology.com/ipc-antenna-services>

We provide 2 free layout reviews and if you need us to tune and characterize the antenna on your product (inside our anechoic chamber) we can do that too. Small lab fee may apply.

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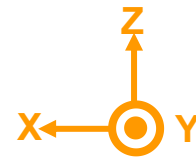
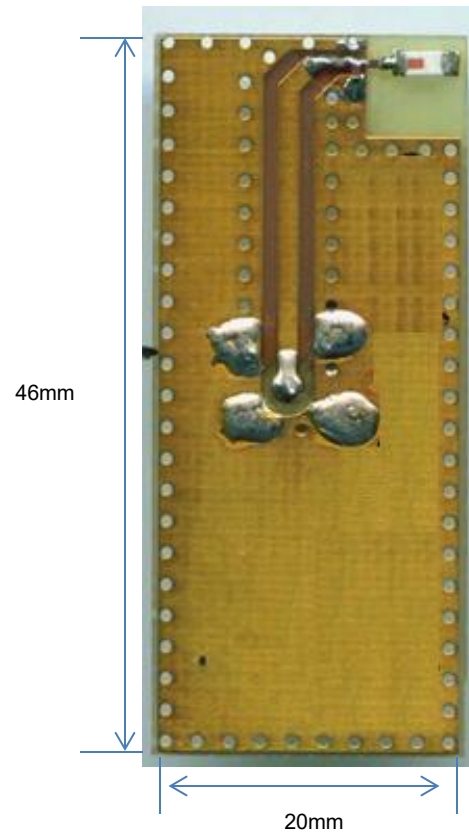
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2450AT18B100

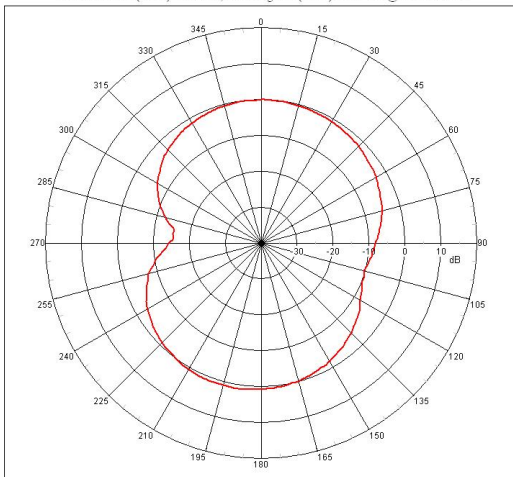


Return Loss measurement of 2450AT18B100

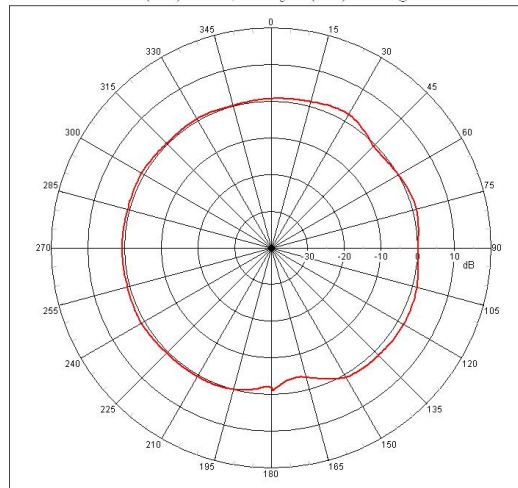


2450AT18B100_2D Gain Pattern @ 2.402GHz

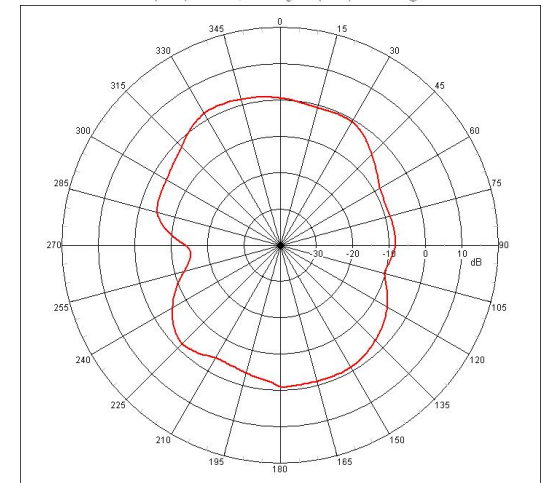
Far-field Power Distribution(Total) on X-Y Plane
Plot Peak Gain(Total)= 1.0 dBi; Plot AvgGain(Total)= -3.1dBi @2.40200 GHz



Far-field Power Distribution(Total) on X-Z Plane
Plot Peak Gain(Total)= 2.1 dBi; Plot AvgGain(Total)= 0.4dBi @2.40200 GHz



Far-field Power Distribution(Total) on Y-Z Plane
Plot Peak Gain(Total)= 2.1 dBi; Plot AvgGain(Total)= -3.5dBi @2.40200 GHz



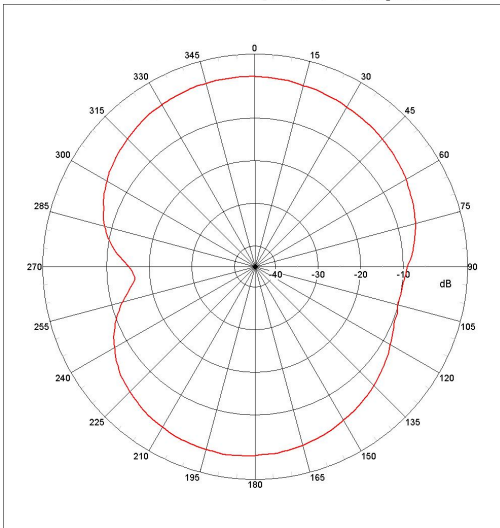
	Peak gain	Avg. gain
XY-plane	1.0	-3.1

	Peak gain	Avg. gain
XZ-plane	2.1	0.4

	Peak gain	Avg. gain
YZ-plane	2.1	-3.5

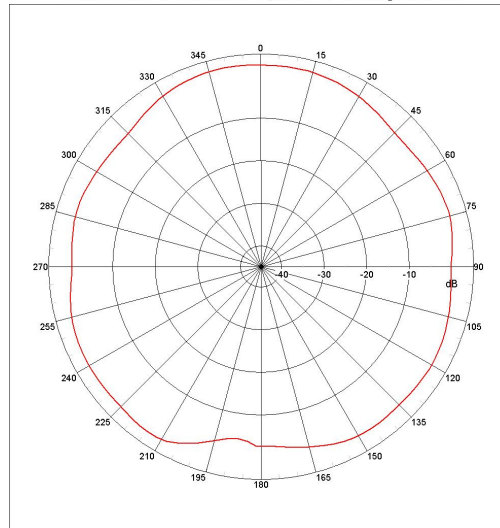
2450AT18B100_2D Gain Pattern @ 2.45GHz

Far-field Power Distribution(H+V) on X-Y Plane
Plot Peak Gain(H+V)= -0.24 dBi; Plot AvgGain(H+V)= -3.84dBi @2.45000 GHz



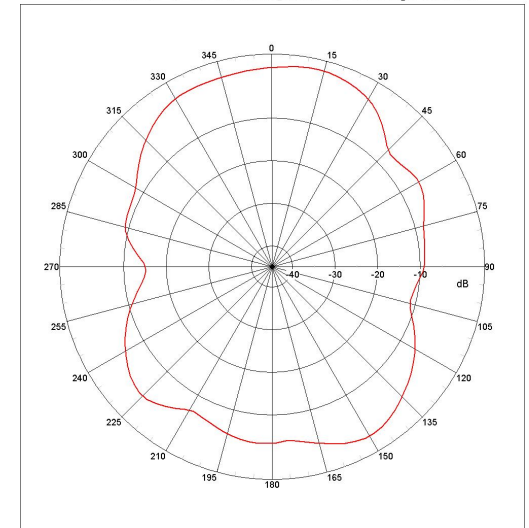
	Peak gain	Avg. gain
XY-plane	-0.2	-3.8

Far-field Power Distribution(H+V) on X-Z Plane
Plot Peak Gain(H+V)= 2.47 dBi; Plot AvgGain(H+V)= 0.53dBi @2.45000 GHz



	Peak gain	Avg. gain
XZ-plane	2.5	0.5

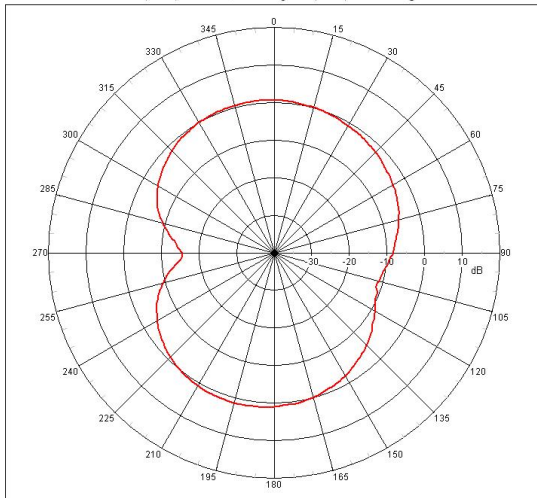
Far-field Power Distribution(H+V) on Y-Z Plane
Plot Peak Gain(H+V)= 2.52 dBi; Plot AvgGain(H+V)= -3.51dBi @2.45000 GHz



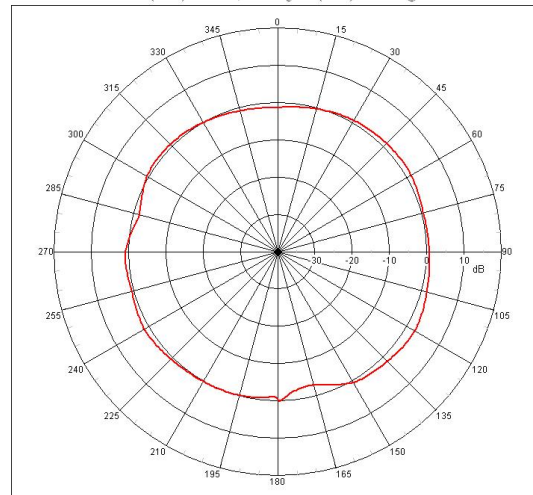
	Peak gain	Avg. gain
YZ-plane	2.5	-3.5

2450AT18B100_2D Gain Pattern @ 2.48GHz

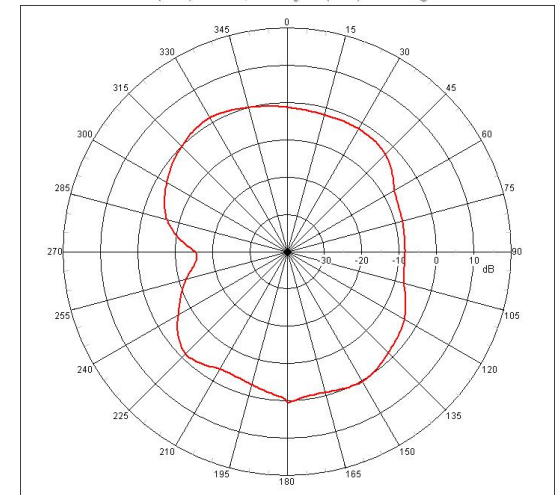
Far-field Power Distribution(Total) on X-Y Plane
Plot Peak Gain(Total)= 1.2 dBi; Plot AvgGain(Total)= -2.8dBi @2.48000 GHz



Far-field Power Distribution(Total) on X-Z Plane
Plot Peak Gain(Total)= 2.2 dBi; Plot AvgGain(Total)= 0.3dBi @2.48000 GHz



Far-field Power Distribution(Total) on Y-Z Plane
Plot Peak Gain(Total)= 1.5 dBi; Plot AvgGain(Total)= -3.2dBi @2.48000 GHz



	Peak gain	Avg. gain
XY-plane	1.2	-2.8

	Peak gain	Avg. gain
XZ-plane	2.2	0.3

	Peak gain	Avg. gain
YZ-plane	1.5	-3.2