

Excellent Integrated System Limited

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[Johanson Technology Inc.](#)
[2450AD46A5400E](#)

For any questions, you can email us directly:

sales@integrated-circuit.com

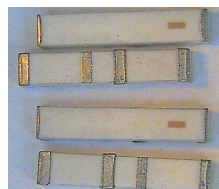
"High Frequency Ceramic Solutions"

802.11 a/c Dual Band 2.45/5.40 GHz Mini Chip Antenna **P/N 2450AD46A5400**
 Detail Specification: 2/4/2016 Page 1 of 8

AEC-Q200 qualification available.

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

General Specifications	
Part Number	2450AD46A5400
Frequency (MHz)	2400 - 2500 4900 - 5900
Return Loss (dB)	8.5 min. 8.5 min.
Peak Gain (dBi typ.)	1.0 dBi typ. (XZ-V) -1.5 dBi typ. (YZ-V)
Average Gain (dBi typ.)	-2.5 dBi typ. (XZ-V) -2.5 dBi typ. (YZ-V)
Total Measured Radiated Efficiency	76% (measured on 20x47mm EVB) 85% (measured on 20x47mm EVB)



Input Power	3 Watts max.
Impedance	50 Ω
Operating Temperature	-40 to +85°C
Reel Quantity	1,000

Part Number Explanation			
P/N Suffix	Packing Style	Bulk (loose)	Suffix = S e.g.. 2450AD46A5400S
		T & R	Suffix = E e.g.. 2450AD46A5400E
		100% Tin	Suffix = E or S e.g.. 2450AD46A5400(E or S)
	Evaluation Board	2450AD46A5400-EB1SMA (To order, click here: www.johansontechnology.com/request-a-sample)	

Mechanical Dimensions		
	In	mm
L	0.335 ± 0.008	8.50 ± 0.20
W	0.063 ± 0.008	1.60 ± 0.20
T	0.047 +.004 /-.008	1.20 +0.1 / -0.2
a	0.020 ± 0.006	0.51 ± 0.15
b	0.104 ± 0.006	2.64 ± 0.15
c	0.046 ± 0.006	1.18 ± 0.15

(top view) and (bottom view) diagrams showing dimensions L, W, T, a, b, c.

Terminal Configuration	
No.	Function
1	5G Band Feed
2	2.4G Band Feed
3	NC
4	NC

Terminal configuration diagram showing pins 1, 2, 3, 4 with callouts 1, 2, 3, 4.

Find out more about our antenna design assistance services at:
www.johansontechnology.com/ipc-antenna-services

¹Make sure to have Pins 3 & 4 soldered to its PCB land pad but not connected to GND or input, they must be NC (or floating). If unsoldered, it may affect improper antenna resonance and drop-shock resistance.

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 Detail Specification: 2/4/2016 Page 2 of 8

Mounting Considerations 1: Single, combined feed (2&5G on the same trace)

Mount these devices with brown mark facing up

PCB Layout

Solder Resist

Land

Would you like the layout file? Request it by clicking here: www.johansontechnology.com/ask-a-question

Units in mm

*50ohm trace recommended to be a grounded CPWG (<http://chemandy.com/calculators/coplanar-waveguide-with-ground-calculator.htm>)

Mounting Consideration 1: Evaluation Board

Matching circuits and component values will be different on the client's design, depending on PCB layout, geometry, etc.

Need help laying out the antenna, want us to review your antenna design (free!), require the Gerber files for this EVB, or would like us to validate the new tuning values of your PCB (fee may apply) go to: www.johansontechnology.com/ask-a-question Orderable EVB for evaluation, it comes with a female SMA connector. To order, click here: www.johansontechnology.com/request-a-sample and ask for p/n: 2450AD46A5400-EB1SMA

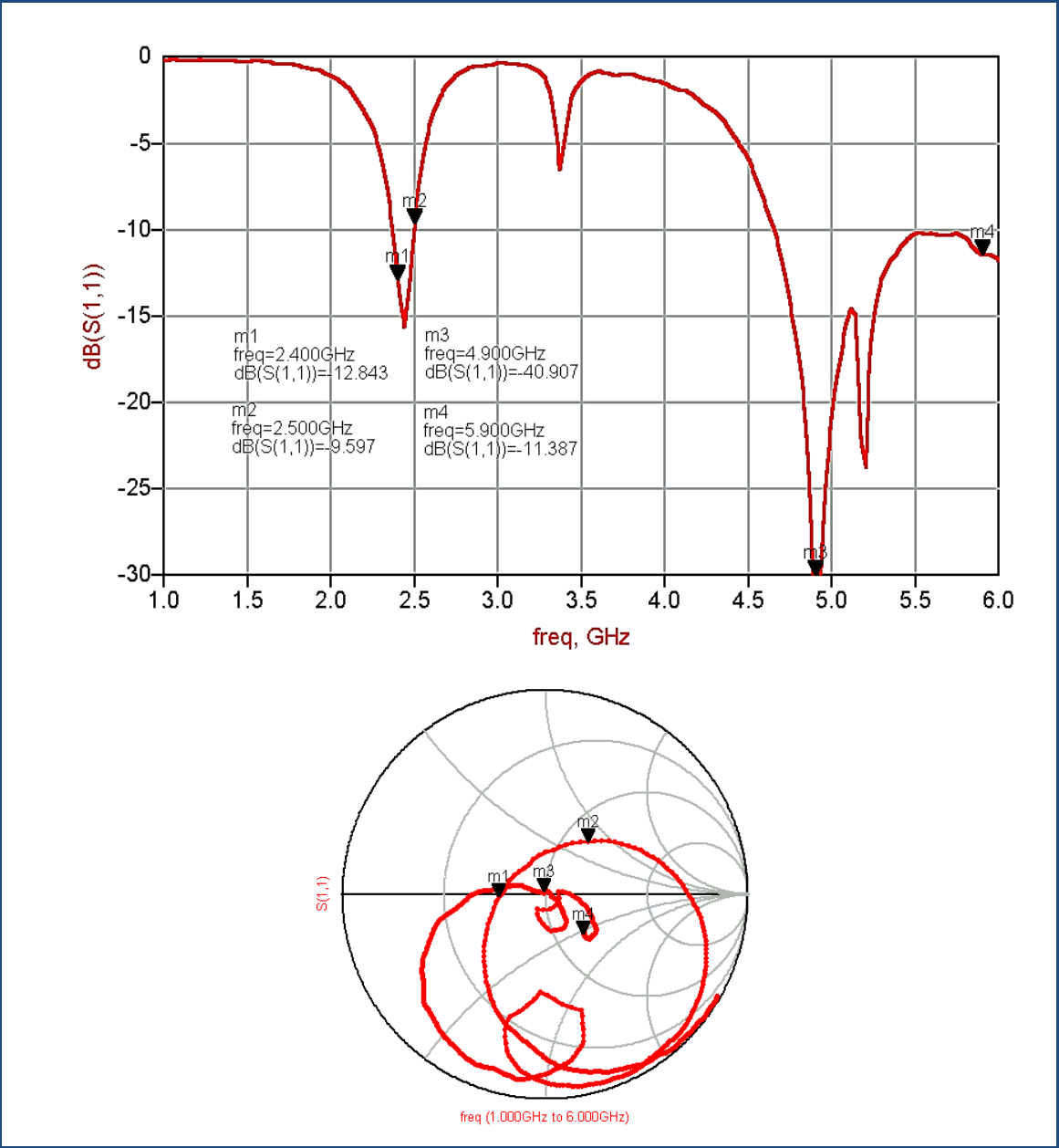
Would you like the layout file of the above? Have antenna tuning issues? Contact our applications engineers at: www.johansontechnology.com/ask-a-question

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 Detail Specification: 2/4/2016 Page 3 of 8

Mounting Consideration 1: Typical Return Loss (S11) Electrical Performance (T=25°C)

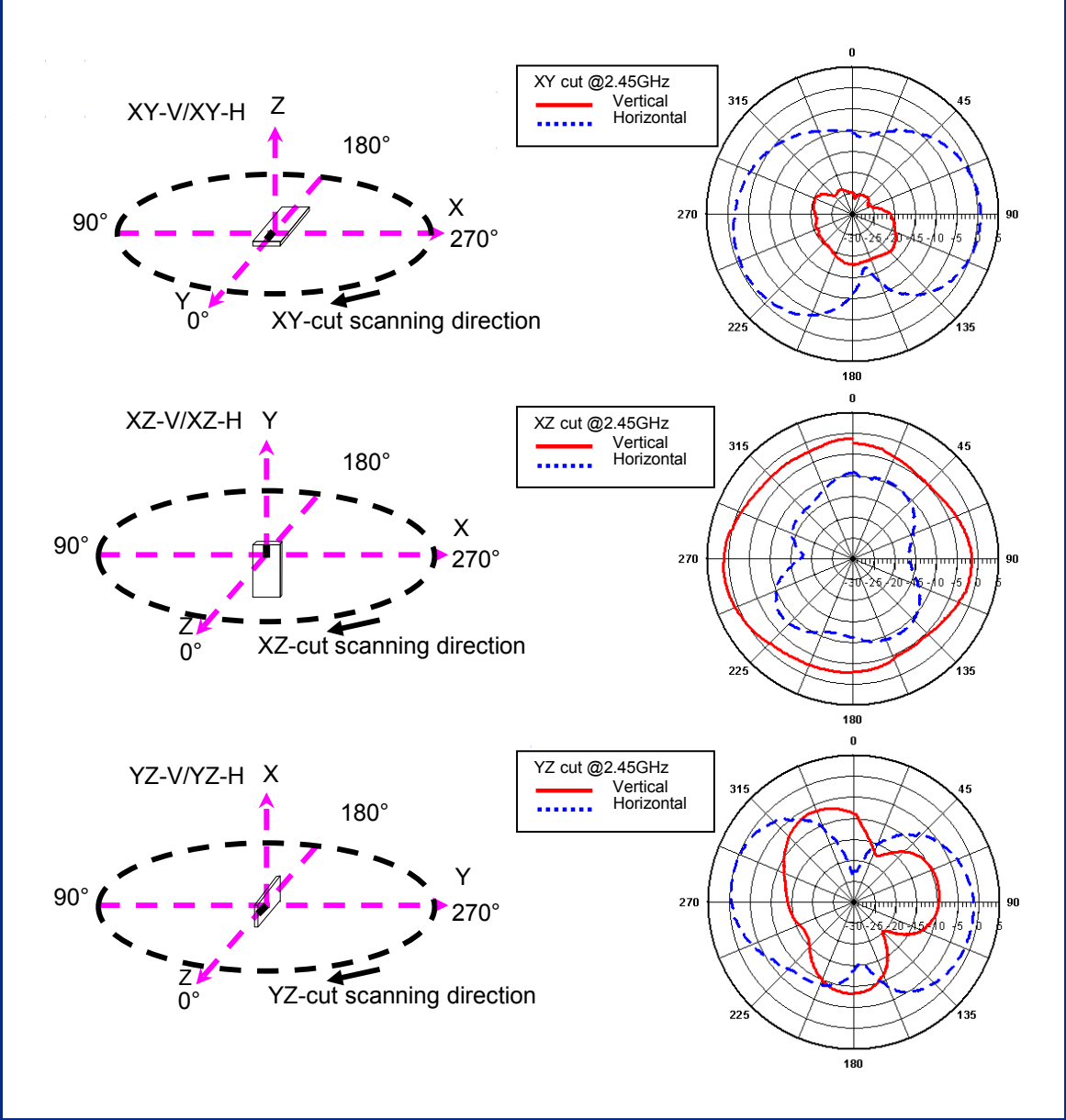


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802.11 a/c Dual Band 2.45/5.40 GHz Mini Chip Antenna **P/N 2450AD46A5400**
 Detail Specification: 2/4/2016 Page 4 of 8

Mounting Consideration 1: Typical EM Radiation Performance @ 2.45GHz (T=25°C)

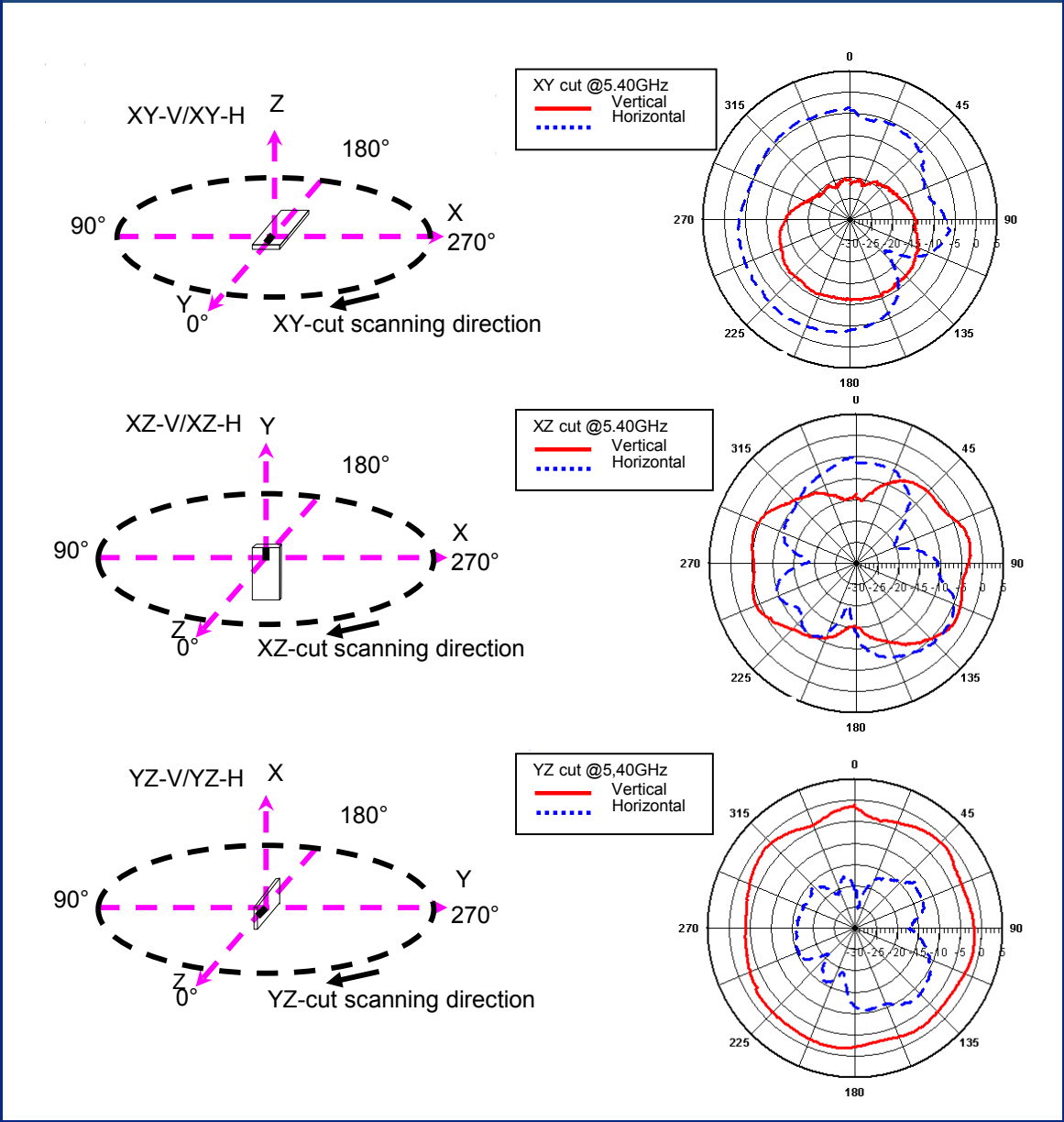


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 Detail Specification: 2/4/2016 Page 5 of 8

Mounting Consideration 1: Typical EM Radiation Performance @ 5.40 GHz (T=25°C)

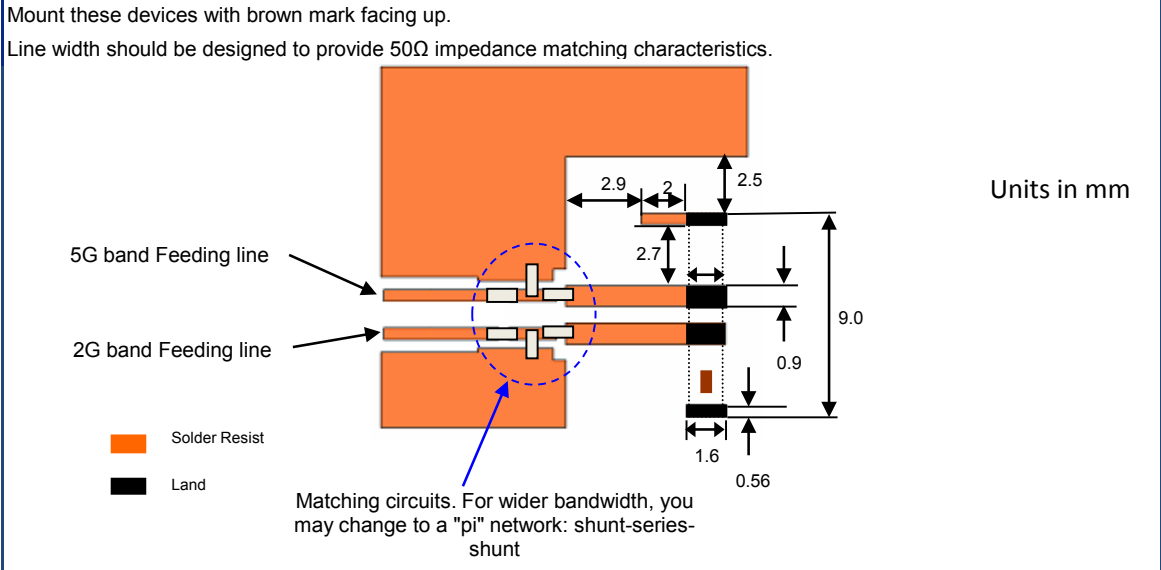


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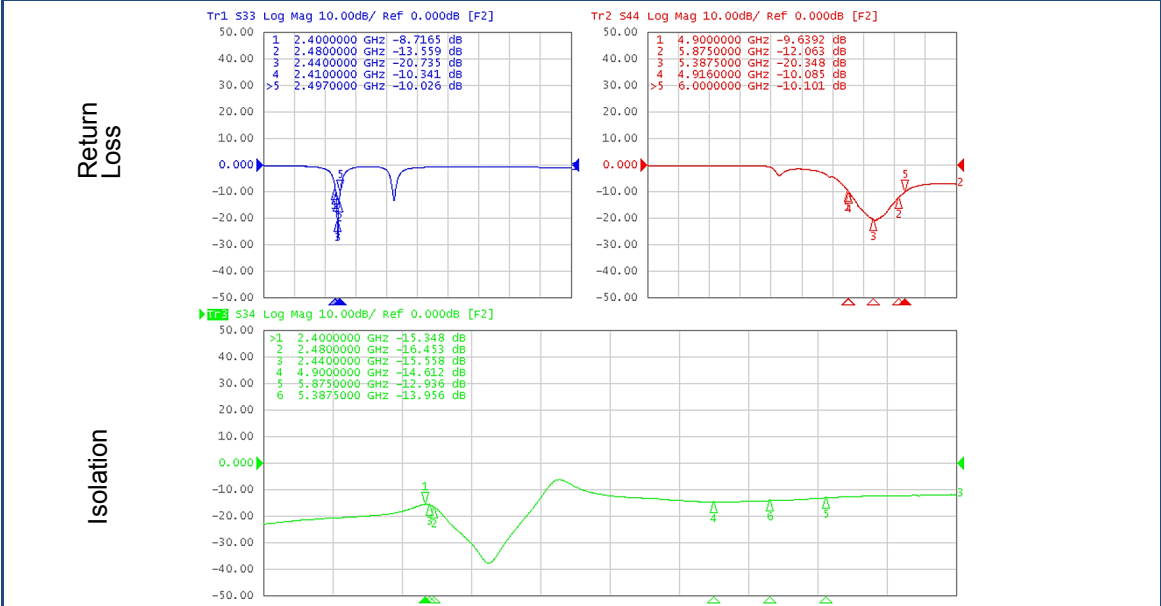
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802.11 a/c Dual Band 2.45/5.40 GHz Mini Chip Antenna **P/N 2450AD46A5400**
 Detail Specification: 2/4/2016 Page 6 of 8

Mounting Considerations 2: Two Separate Feeds



Mounting Consideration 2: Typical Return Loss and Isolation between the 2G & 5G feeds. Electrical Performance (T=25°C)



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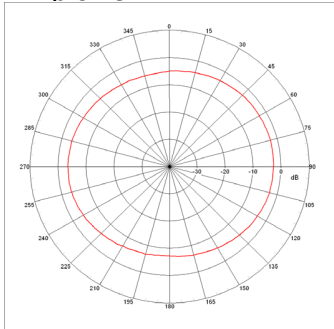
802.11 a/c Dual Band 2.45/5.40 GHz Mini Chip Antenna **P/N 2450AD46A5400**
 Detail Specification: 2/4/2016 Page 7 of 8

Mounting Consideration 2: Typical EM Radiation Performance (T=25°C)

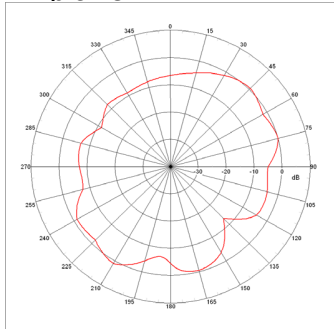
Unit in dBi @2400 ~ 5950 MHz	XY-plane		XZ-plane		YZ-plane		Total Meas. Rad. Efficiency
	Peak	Average	Peak	Average	Peak	Average	
2440 MHz	0.9	-4.1	0.2	-2.6	-2.7	-4.5	52.00%
5387.5 MHz	2.3	-1.1	2	-3.1	0.1	-1.6	70.00%

2440 MHz

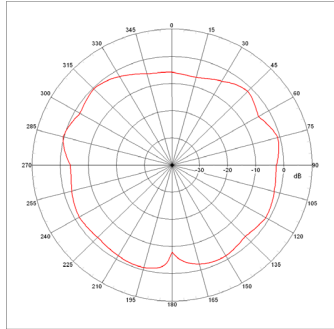
XY-plane



XZ-plane

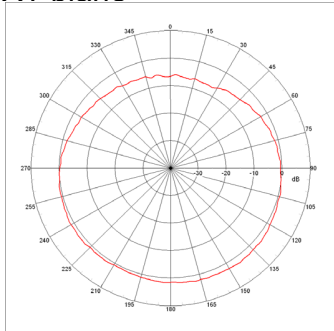


YZ-plane

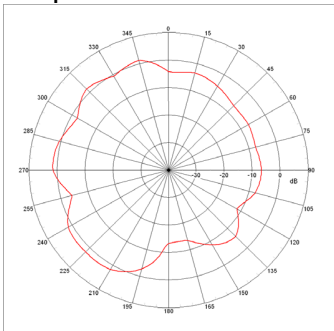


5387.5 MHz

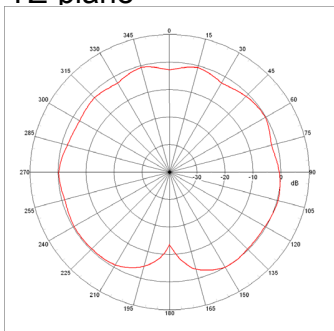
XY-plane



XZ-plane



YZ-plane



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2.45 GHz SMD Antenna, EIA 1210, Detuning resilient, Edge Mount Design

P/N 2450AD46A5400

802.11 a/c Dual Band 2/4/2016

Page 8 of 8

Antenna tuning, optimization, and validation services:

www.johansontechnology.com/ipc-antenna-services

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

www.johansontechnology.com/antennas

Soldering Information

www.johansontechnology.com/ipcsoldering-profile

MSL Info

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

Packaging information

www.johansontechnology.com/tape-reel-packaging

For layout review contact our Applications Team at:

www.johansontechnology.com/ask-a-question

RoHS Compliance

www.johansontechnology.com/rohs-compliance

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