THE DATASHEET OF

2450AD46A5400E

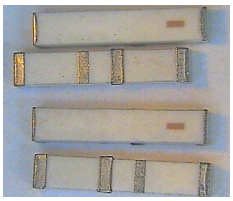
"High Frequency Ceramic Solutions"

802.11 a/c Dual Band 2.45/5.40 GHz Mini Chip Antenna — P/N 2450AD46A5400

Detail Specification: 2/4/2016

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)

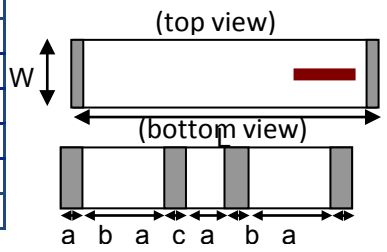
Input Power	3 Watts max.
Impedance	50 Ω
Operating Temperature	-40 to +85°C
Reel Quantity	1,000

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)		

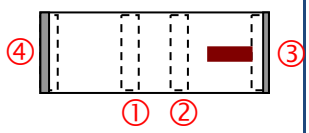
Mechanical Dimensions

	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



Terminal Configuration

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



[1]Make 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.

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

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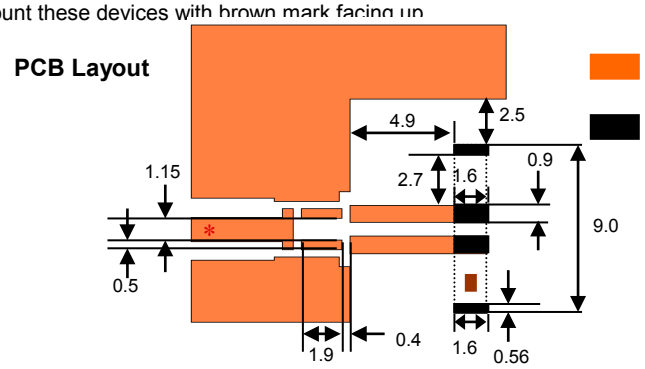
Mounting Considerations 1: Single, combined feed (2&5G on the same trace)

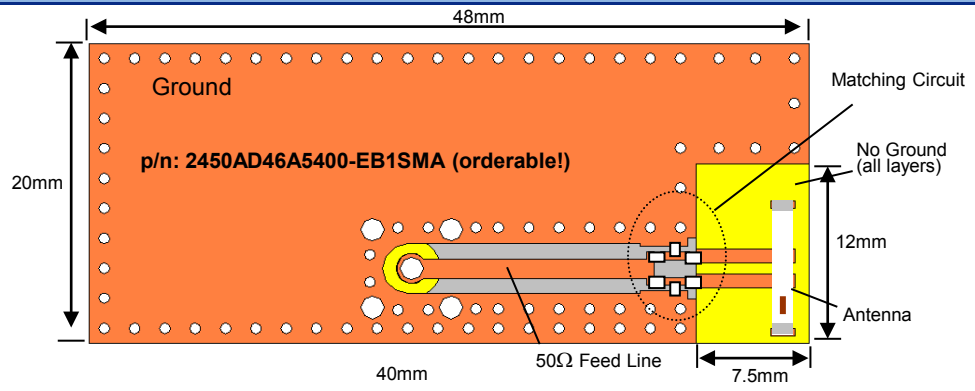
Mount these devices with brown mark facing up



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

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

Mounting Consideration 1: Evaluation Board

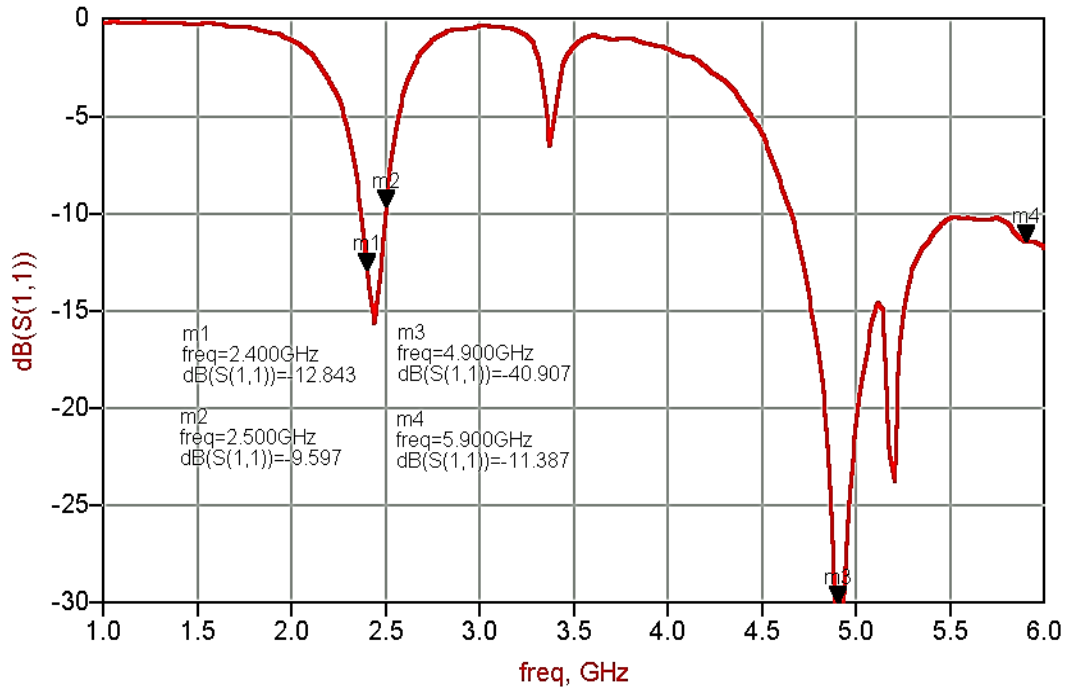


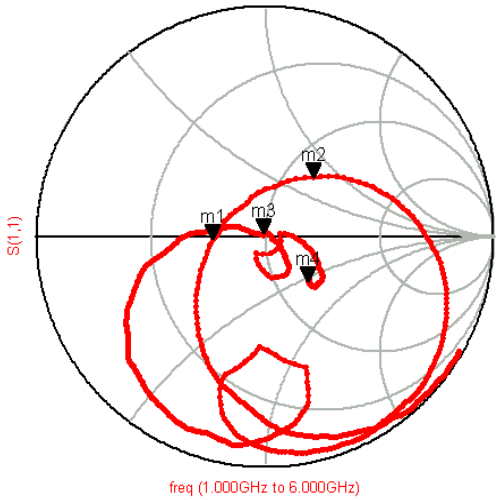
Matching circuits and component values will be different on the client's design, depending on PCB layout, geometry, etc.

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

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

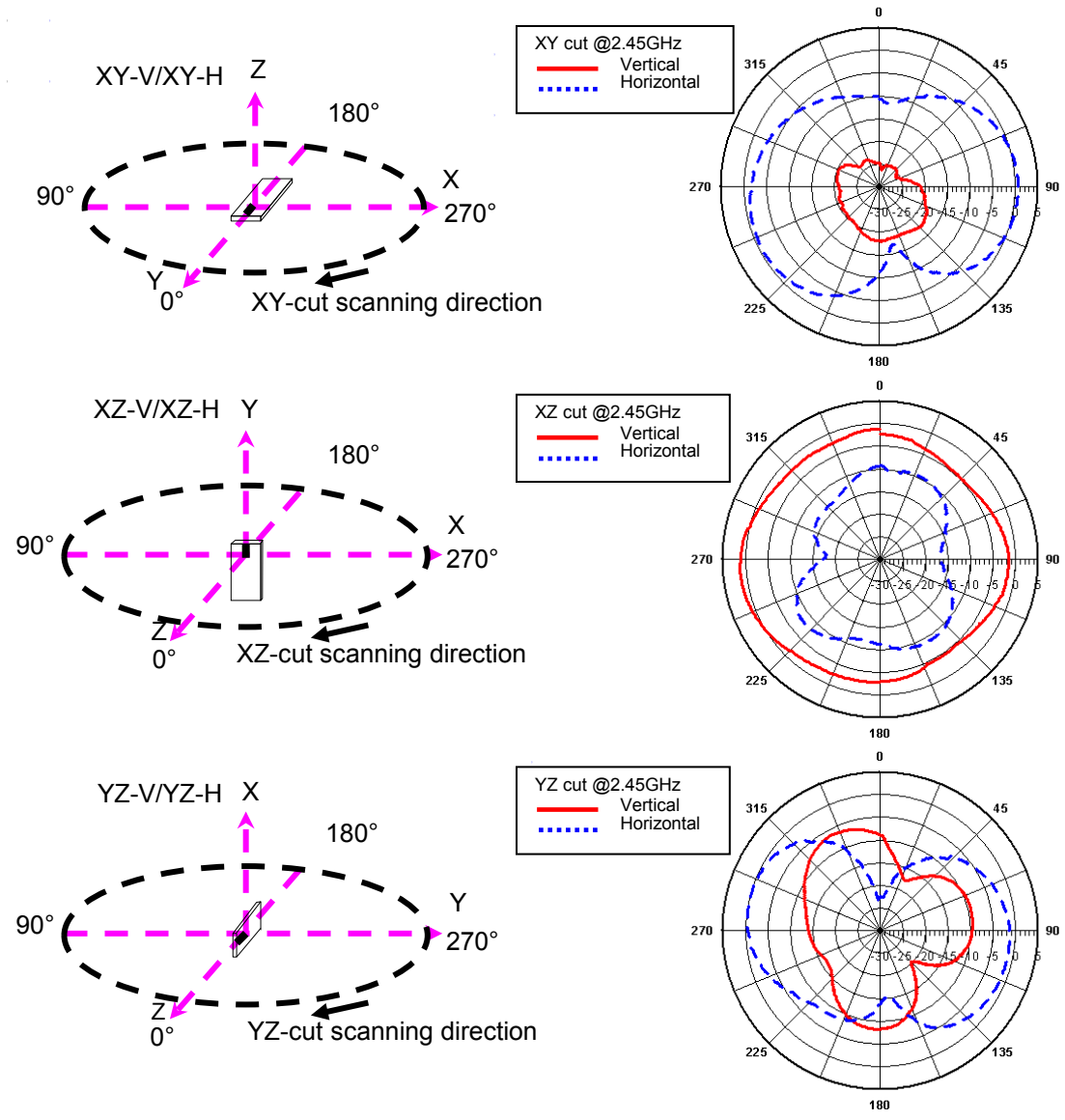




802.11 a/c Dual Band 2.45/5.40 GHz Mini Chip Antenna **P/N 2450AD46A5400**

Detail Specification: 2/4/2016

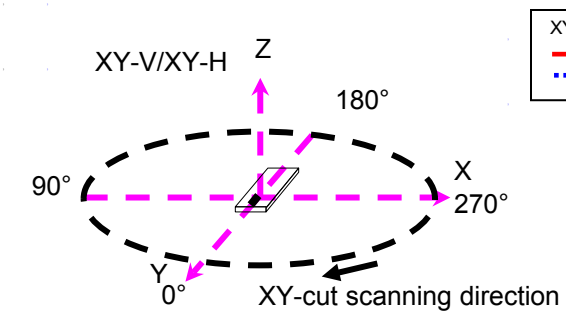
Mounting Consideration 1: Typical EM Radiation Performance @ 2.45GHz (T=25°C)

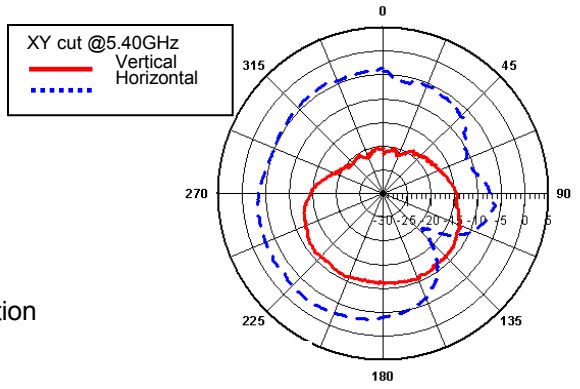


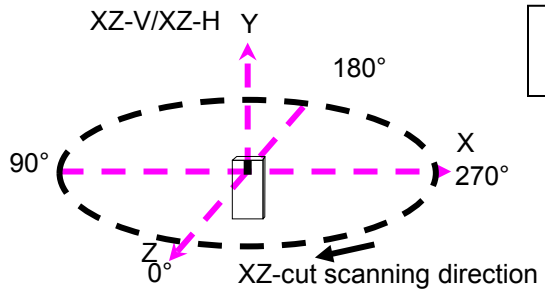
802.11 a/c Dual Band 2.45/5.40 GHz Mini Chip Antenna **P/N 2450AD46A5400**

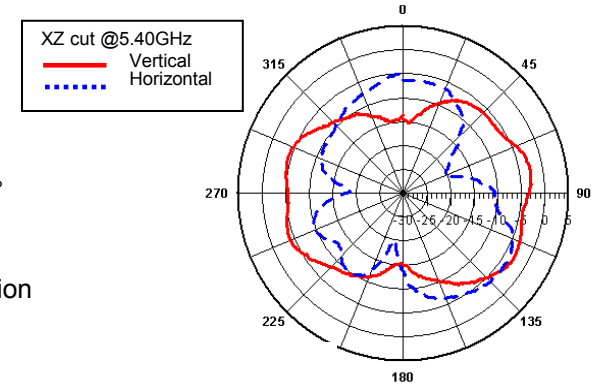
Detail Specification: 2/4/2016

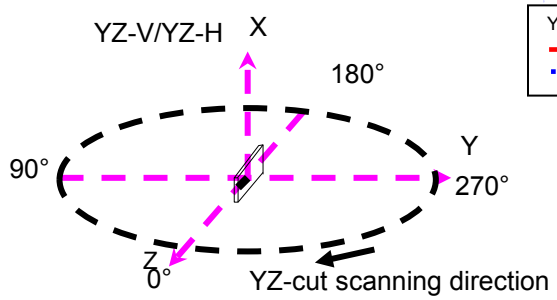
Mounting Consideration 1: Typical EM Radiation Performance @ 5.40 GHz (T=25°C)

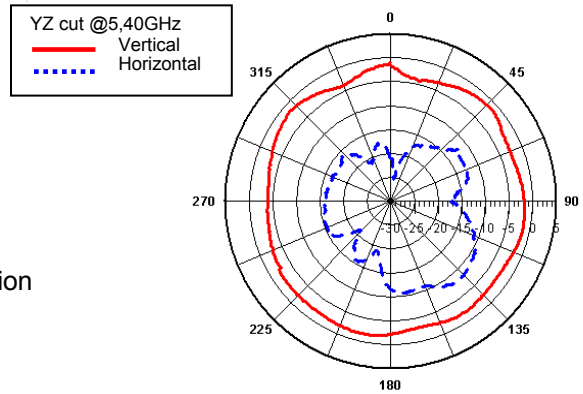








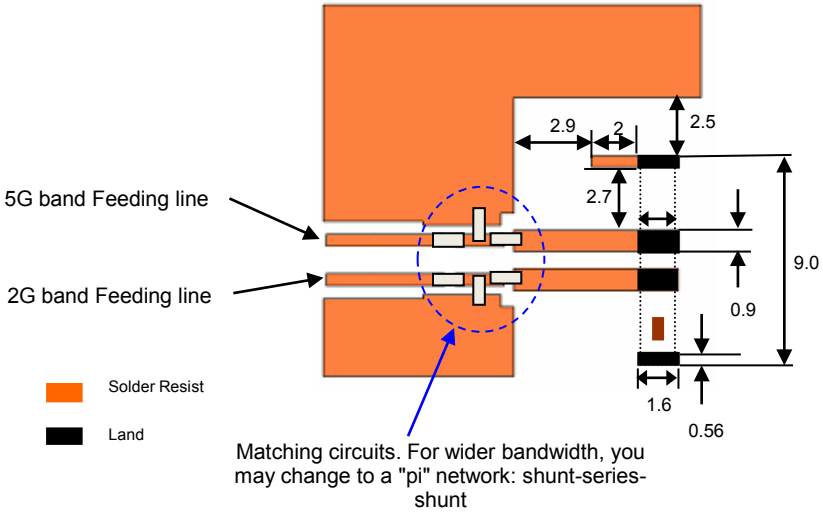




Mounting Considerations 2: Two Separate Feeds

Mount these devices with brown mark facing up.

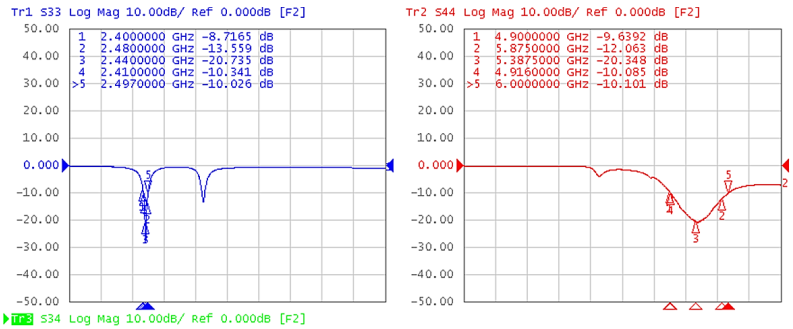
Line width should be designed to provide 50Ω impedance matching characteristics.



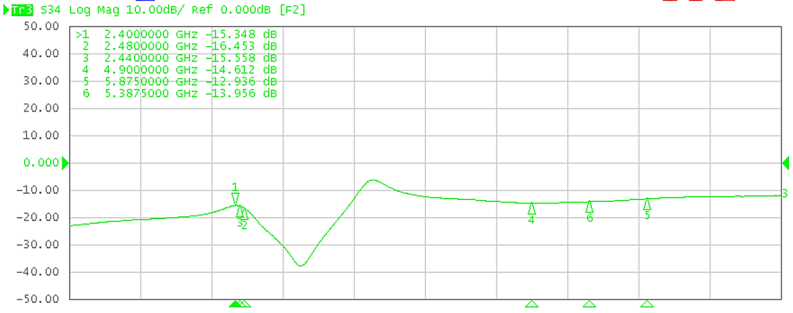
Units in mm

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

Return Loss



Isolation

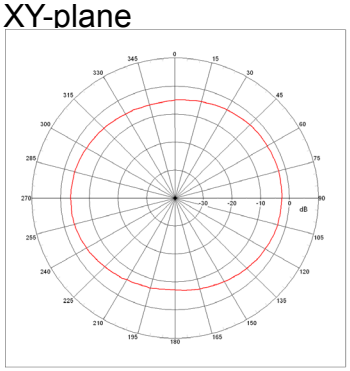


Mounting Consideration 2: Typical EM Radiation Performance (T=25°C)

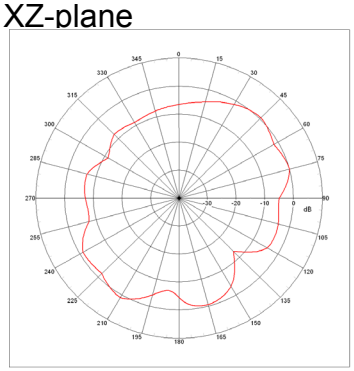
Unit in dBi @2400 ~ 5950 MHz	XY-plane		XZ-plane		YZ-plane		Total Meas. Rad. Efficiency
	Peak	Average	Peak	Average	Peak	Average	
2440 MHz	0.9	-4.1	0.2	-2.6	-2.7	-4.5	52.00%
5387.5 MHz	2.3	-1.1	2	-3.1	0.1	-1.6	70.00%

2440 MHz

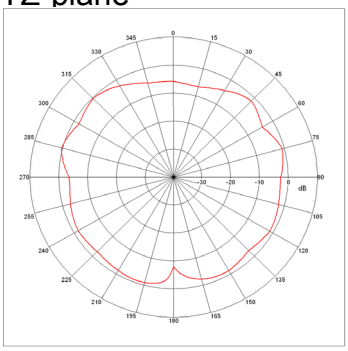
XY-plane



XZ-plane

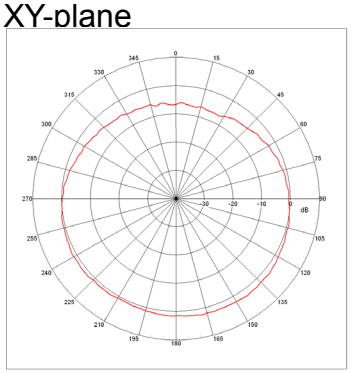


YZ-plane

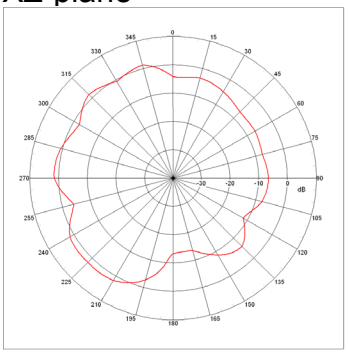


5387.5 MHz

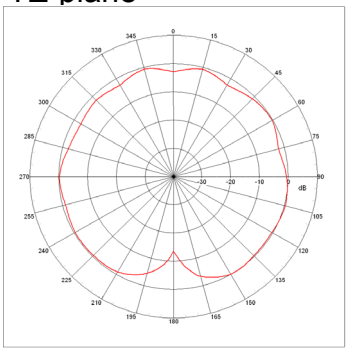
XY-plane



XZ-plane



YZ-plane



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