

# High Frequency Ceramic Solutions

Sub-GHz / 2.4GHz Dual-band Antenna, Single Feed

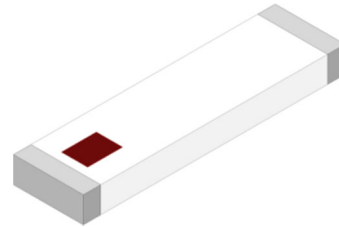
P/N: 0900AD54B2450

Detail Specification: 12/7/2018

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## General Specifications

Part Number	0900AD54B2450	
Frequency (MHz)	868 - 928	2400 - 2480
Return Loss (dB)	6.5 typ.	6.5 typ.
Peak Gain (dBi)*	1.1 typ.	1.7 typ.
Average Gain (dBi)*	-2.4 typ.	-1.5 typ.
Efficiency*	51%	62%
Power Capacity (W)	3 max. (CW)	
Quantity/Reel	500 pcs	
Operating Temperature	-40°C to +85°C (may be expanded, ask us how)	
Storage Conditions for unused product on T&R and max shelf period	+5 to +35 °C Humidity 45 - 75%RH 18 months max	



Need help with the antenna layout or performance?  
We offer 2 free layout/optimization reviews!  
Contact our applications engineers at:  
<https://www.johansontechnology.com/ask-a-question>

\*Performance based on antenna evaluation board illustrated on page 2

For more antennas, go to:

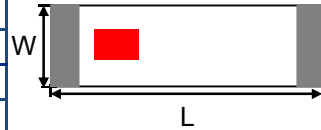
<https://www.johansontechnology.com/antennas>

## Part Number Explanation

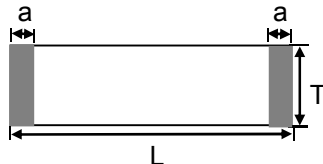
P/N Suffix	Packing Style	Bulk	Suffix = S	eg. 0900AD54B2450S
		T & R	Suffix = E	eg. 0900AD54B2450E
		100% Tin	Suffix = None	eg. 0900AD54B2450(E or S)
	Evaluation Boards	0900AD54B2450-EB1SMA		

## Mechanical Dimensions

	In	mm
L	0.591 ± 0.008	15.00 ± 0.2
W	0.157 ± 0.008	4.00 ± 0.2
T	0.059 ± 0.008	1.50 ± 0.2
a	0.039 ± 0.012	1.00 ± 0.3



Top View



Side View



Bottom View

## Terminal Configuration

No.	Function
1	FEED
2	NC



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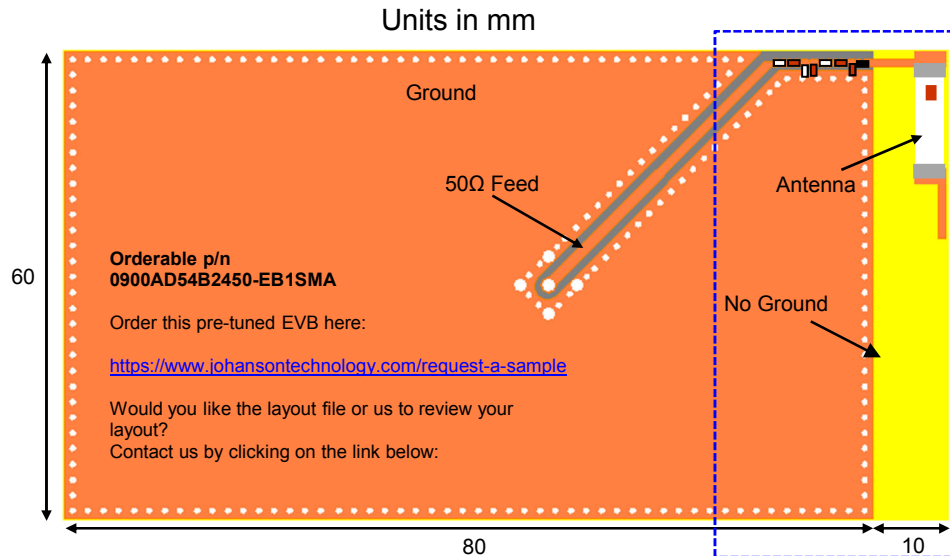
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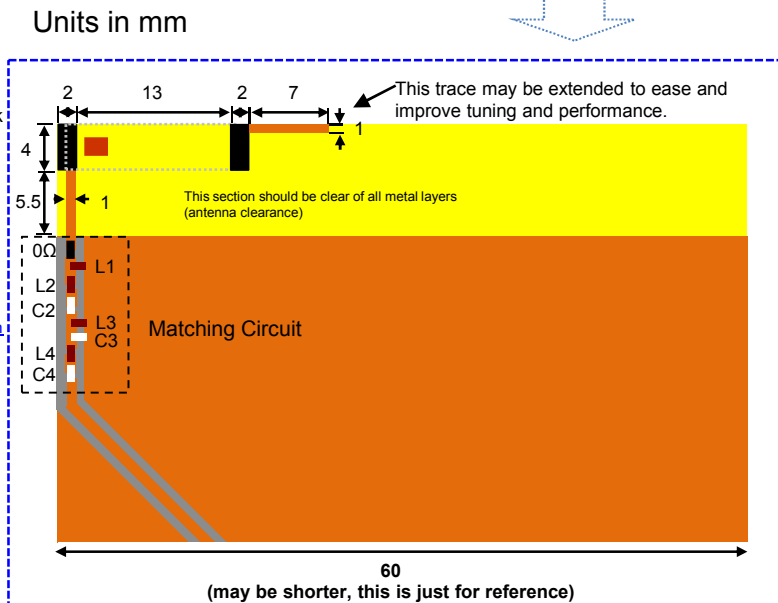
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## Mounting Style, Small



It is recommended that the designer leave available slots for the topology of the network to the right. These particular antenna matching values are used when the antenna is mounted on Johanson's evaluation board. The matching values on other PCBs will be different. We recommend to leave them unpopulated until final assembly to tune.

Want us to tune it for you and need layout optimization? Contact us here:  
<https://www.johansontechnology.com/ask-a-question>



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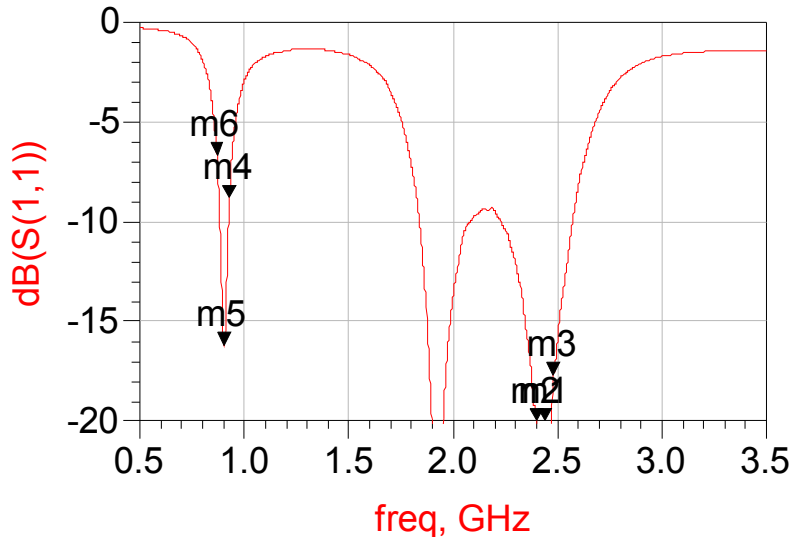
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## Typical Electrical Characteristics (T=25°C)

### Evaluation Board p/n: 0900AD54B2450-EB1SMA



m6  
freq=868.0MHz  
 $\text{dB}(S(1,1))=-6.722$

m5  
freq=900.0MHz  
 $\text{dB}(S(1,1))=-16.237$

m4  
freq=928.0MHz  
 $\text{dB}(S(1,1))=-8.819$

m2  
freq=2.400GHz  
 $\text{dB}(S(1,1))=-20.252$

m1  
freq=2.440GHz  
 $\text{dB}(S(1,1))=-23.639$

m3  
freq=2.480GHz  
 $\text{dB}(S(1,1))=-17.712$

To order a pre-tuned 50Ω EVB with a female SMA connector  
go here: <https://www.johansontechnology.com/request-a-sample>  
Reference p/n: **0900AD54B2450-EB1SMA**

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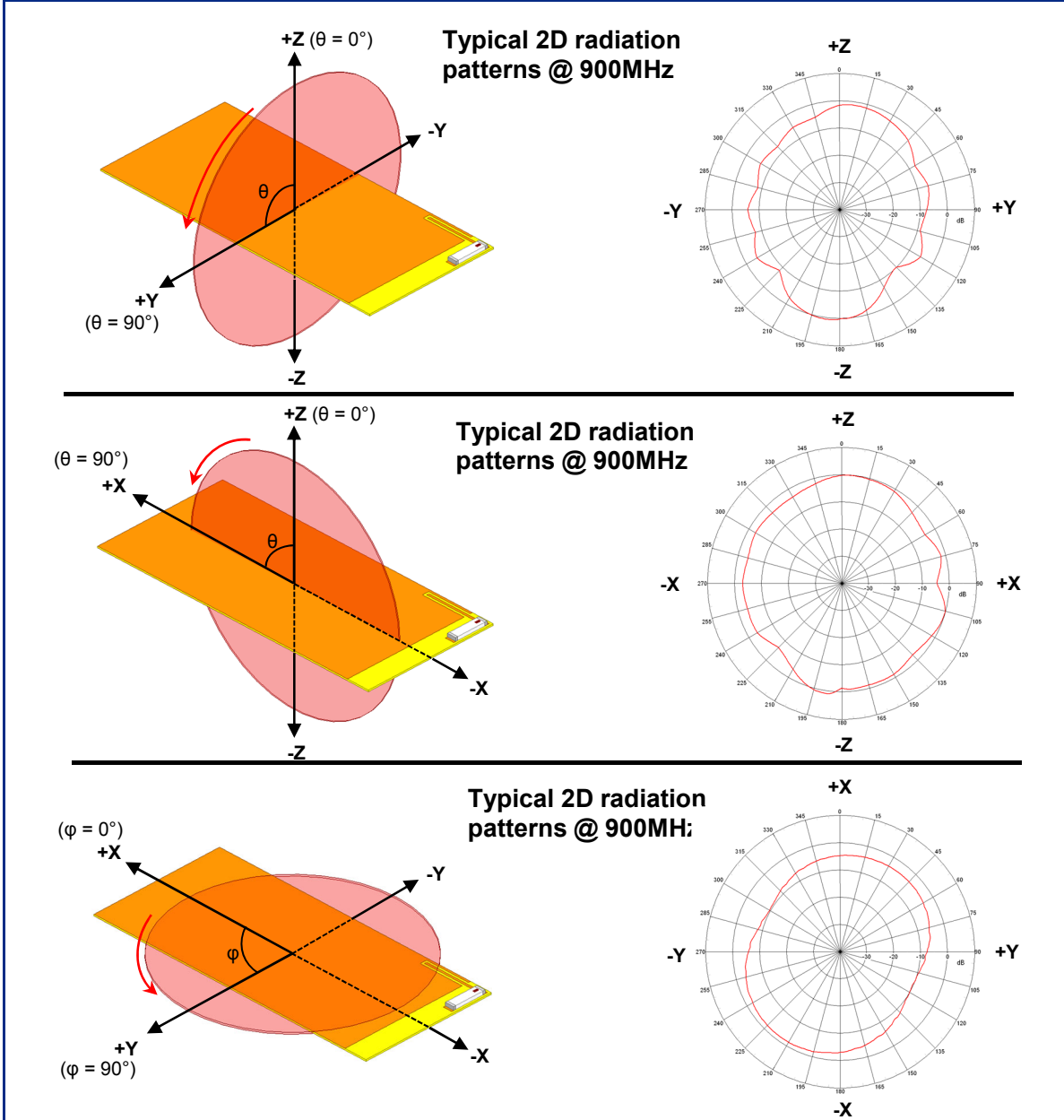
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## Radiation pattern and gain for P/N 0900AD54B2450-EB1SMA (Low Band)



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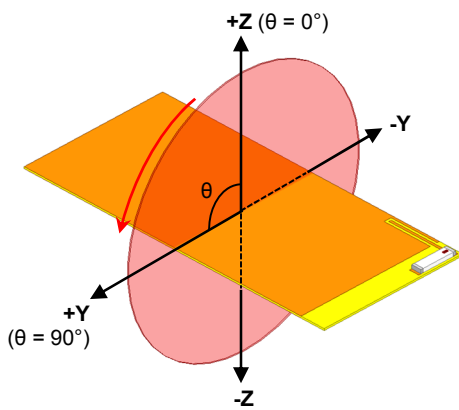
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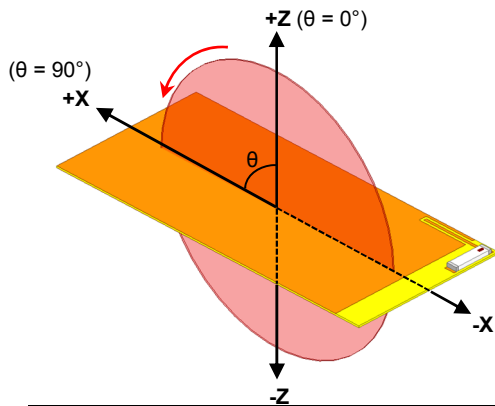
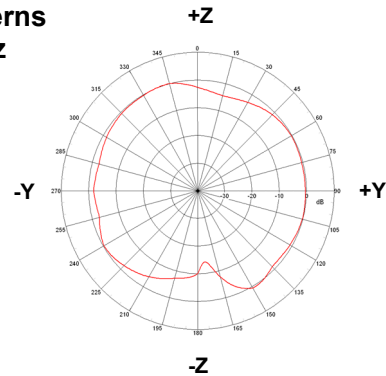
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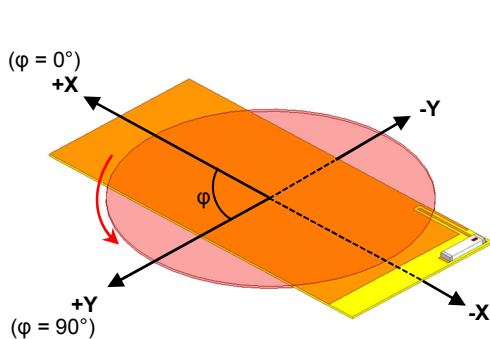
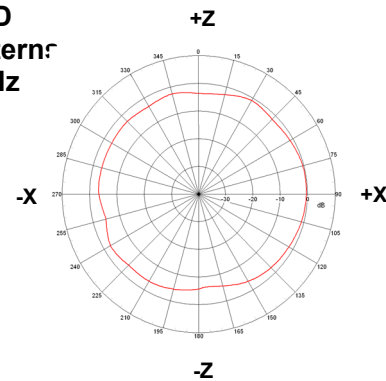
## Radiation pattern and gain for P/N 0900AD54B2450-EB1SMA (High Band)



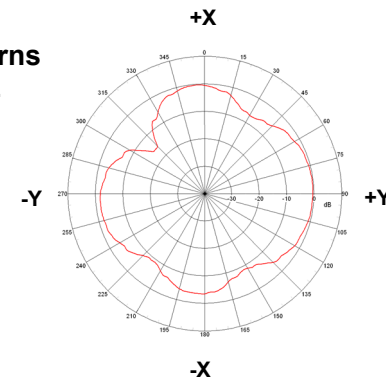
Typical 2D  
radiation patterns  
@ 2440MHz



Typical 2D  
radiation patterns  
@ 2440MHz



Typical 2D  
radiation patterns  
@ 2440MHz



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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>

Would you like us to review your layout for free? Need an embedded antenna recommendation for your application?

Contact us at:

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