

# "High Frequency Ceramic Solutions"

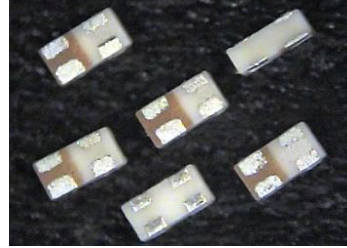
5.1 to 5.9 GHz, micro antenna optimized for PCB edge mount. Great for WiFi P/N 5500AT07A0900 and V2V (Vehicle to Vehicle communications)

Detail Specification: 10/30/2014

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## General Specifications

<b>Part Number</b>	5500AT07A0900*			
<b>Frequency (MHz)</b>	5150 ~ 5850	5350 ~ 5900		
<b>Peak Gain (dBi typ.)</b>	0.0 (YZ-Total)	1.0 (YZ-Total)		
<b>Average Gain (dBi typ.)</b>	-3.0 (YZ-Total)	-1.5 (YZ-Total)		
<b>Return Loss</b>	6.0 dB max.	3.0 dB max.		
<b>Power Capacity</b>	2W max. (CW)			
<b>Operating Temperature</b>	-40 ~ +85 °C		<b>Unused product (on T&amp;R)</b>	+5 ~ +35 °C, Humidity
<b>Storage Temperature</b>	-40 ~ +85 °C		<b>recommended storage conditions</b>	45~75%RH
<b>Q'ty/Reel (pcs)</b>	10,000 pcs		<b>Storage Period</b>	18 months max.



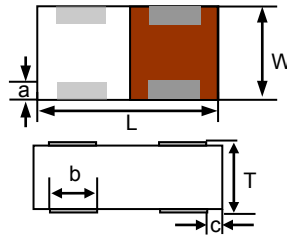
\*AEC-Q200 qualifiable component.

## Part Number Explanation

<b>P/N Suffix</b>	<b>Packaging Style</b>	Bulk (loose)	Suffix = S	Eg. 5500AT07A0900S
		T & R <small>(10000pcs)</small>	Suffix = T	Eg. 5500AT07A0900T
	<b>Termination</b>	100% Tin	Suffix = None	Eg. 5500AT07A0900(T or S)
	<b>Evaluation Board</b>	5500AT07A0900-EB1SMA (pre-tuned 50ohms with female SMA connector)		

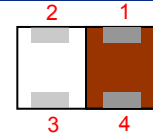
## Mechanical Dimensions

	In	mm
<b>L</b>	0.039 ± 0.004	1.00 ± 0.10
<b>W</b>	0.020 ± 0.004	0.50 ± 0.10
<b>T</b>	0.014 Max.	0.37 Max.
<b>a</b>	0.006 +.004/-0.006	0.15 +0.1/-0.05
<b>b</b>	0.010 +.004/-0.006	0.25 +0.1/-0.05
<b>c</b>	0.003 +.004/-0.006	0.08 +0.1/-0.05

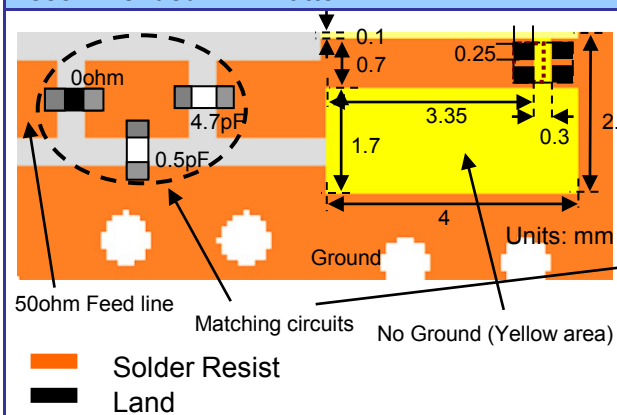


## Terminal Configuration

No.	Function	No.	Function
<b>1</b>	Feed	<b>3</b>	GND
<b>2</b>	GND	<b>4</b>	Feed



## Recommended PCB Pattern



•Attention: Matching circuits and component values will be different on the client's design, depending on PCB layout, geometry, etc. It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values you see here are used when antenna is mounted on Johanson's evaluation board.

• Need help laying out the antenna, want us to review the design (free!), require the Gerber files for this EVB, or would like us to obtain the new tuning values of your PCB (fee may apply)? Go to: [www.johansontechnology.com/component/techquestion](http://www.johansontechnology.com/component/techquestion)

• More antenna support info at: [www.johansontechnology.com/ipcantennaservices](http://www.johansontechnology.com/ipcantennaservices)

Johanson Technology, Inc. reserves the right to make design changes without notice.

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[www.johansontechnology.com](http://www.johansontechnology.com)

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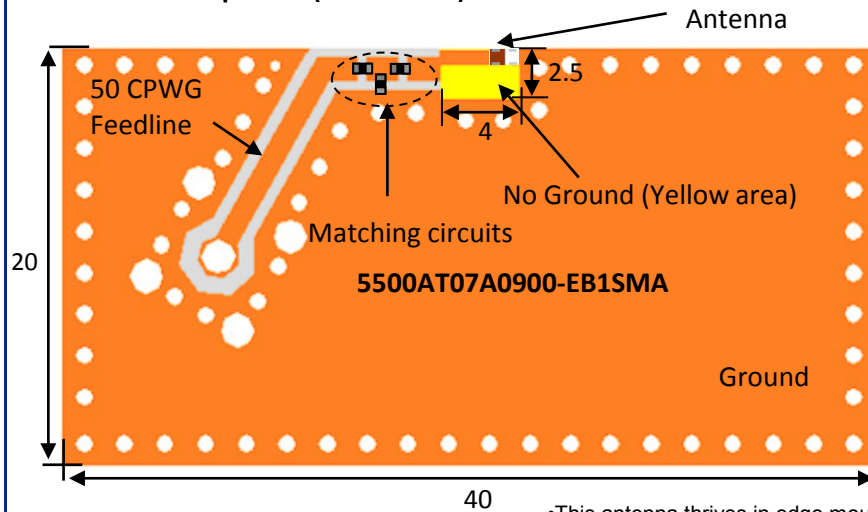
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## Johanson Evaluation Board Dimension and Characteristics of the antenna design

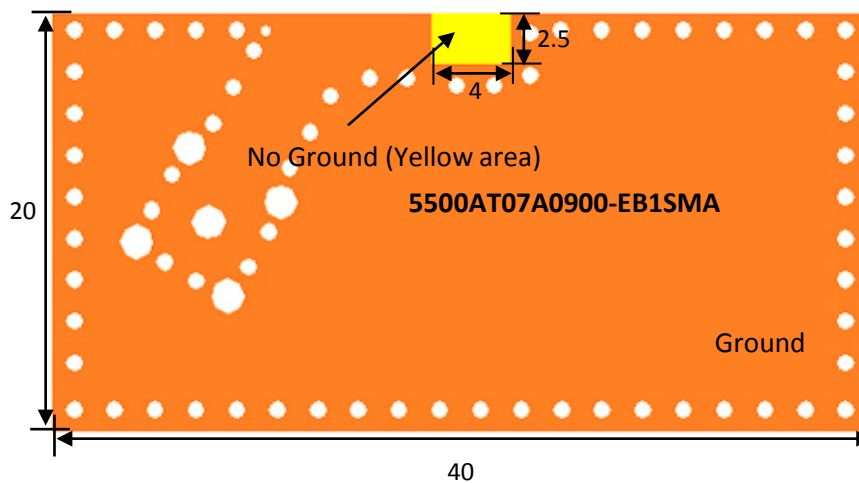
### Test Board-Top View (Unit in mm)



EVB Orderable p/n:  
5500AT07A0900-EB1SMA

•This antenna thrives in edge mount, middle of the PCB placements. It may also be placed at corners, the operation won't be at its full potential though. We have corner-specific 5GHz antennas here: [www.johansontechnology.com/antennas](http://www.johansontechnology.com/antennas)

### Test Board-Bottom View (Units in mm)



EVB Orderable p/n:  
5500AT07A0900-EB1SMA

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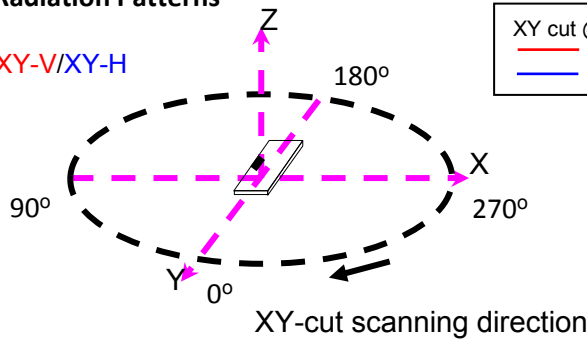
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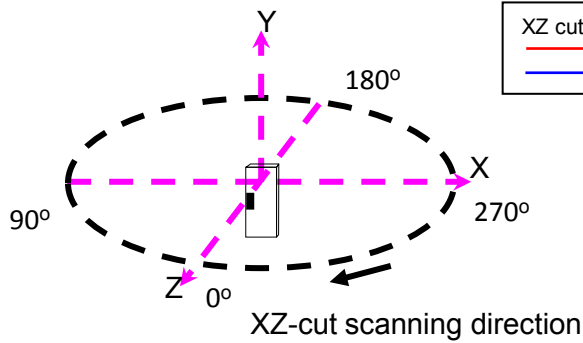
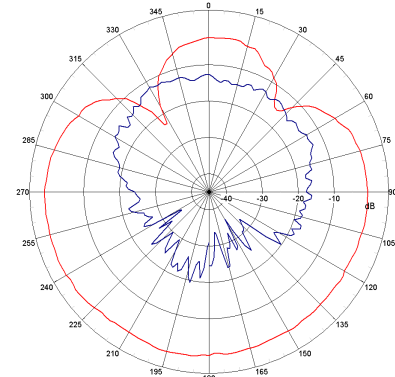
## Typical Radiation Patterns @25°C

### Radiation Patterns

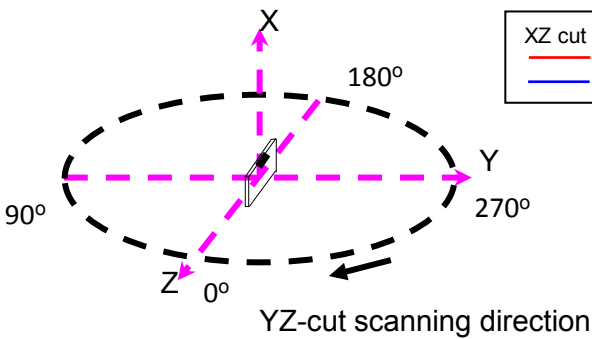
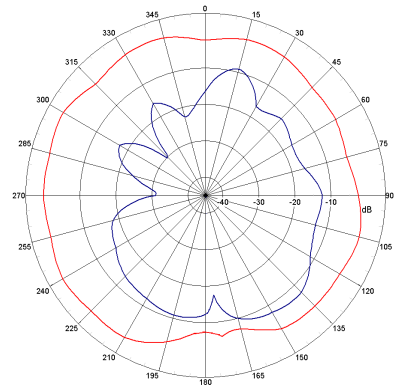
XY-V/XY-H



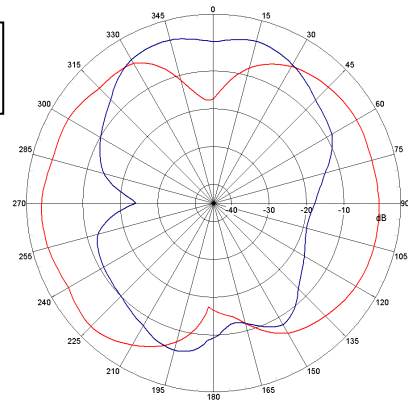
XY cut @5.5GHz  
 — Vertical  
 — Horizontal



XZ cut @5.5GHz  
 — Vertical  
 — Horizontal



XZ cut @5.5GHz  
 — Vertical  
 — Horizontal



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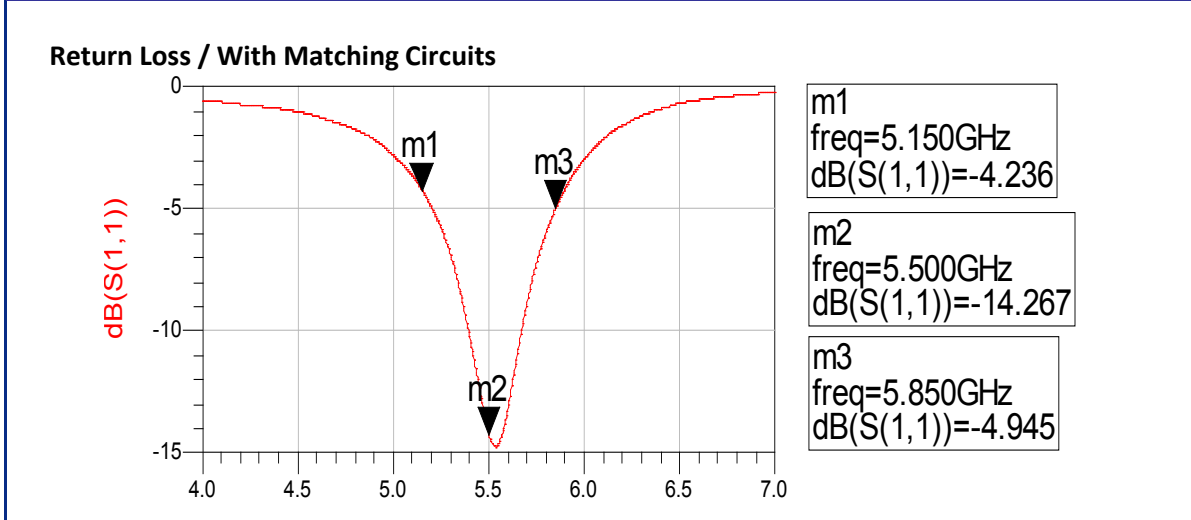
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## Typical Electrical Performance (T=25°C)



## Packaging information

[www.johansontechnology.com/ipcpackaging.html](http://www.johansontechnology.com/ipcpackaging.html)

## Soldering Information

[www.johansontechnology.com/ipcsoldering-profile](http://www.johansontechnology.com/ipcsoldering-profile)

## Antenna layout and tuning techniques (How to obtain the new antenna matching values)

[www.johansontechnology.com/tuning](http://www.johansontechnology.com/tuning)

## Antenna layout review, tuning, and characterization services

[www.johansontechnology.com/ipcantennaservices](http://www.johansontechnology.com/ipcantennaservices)

## For layout review contact our Applications Team at:

[www.johansontechnology.com/component/techquestion](http://www.johansontechnology.com/component/techquestion)

## RoHS Compliance

[www.johansontechnology.com/technical-notes/rohs-compliance.html](http://www.johansontechnology.com/technical-notes/rohs-compliance.html)

## MSL Info

[www.johansontechnology.com/technical-notes/msl-rating.html](http://www.johansontechnology.com/technical-notes/msl-rating.html)

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