

# High Frequency Ceramic Solutions

868 MHz Antenna for small form factor applications

P/N 0868AT43A0020

Detail Specification: 9/7/2016

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## General Specifications

Part Number	0868AT43A0020	Input Power	3W max. (CW)
Frequency Range	858 - 878 Mhz	Impedance	50 $\Omega$
Peak Gain	-1.0 dBi typ. (XZ-total)	Operating Temperature	-40 to +85°C
Average Gain	-4.0 dBi typ. (XZ-total)	Reel Quantity	1,000
Return Loss	9.5 dB min.	MSL	1

## Part Number Explanation

P/N Suffix	Packing Style	Bulk	Suffix = S	eg. 0868AT43A0020S
		T & R	Suffix = E	eg. 0868AT43A0020E
	Termination style	100% Tin	Suffix = None	eg. 0868AT43A0020 (E or S)
		Tin / Lead	Please Consult Factory	

## Mechanical Dimensions

	In	mm
L	0.276 $\pm$ 0.008	7.00 $\pm$ 0.20
W	0.079 $\pm$ 0.008	2.00 $\pm$ 0.20
T	0.031 + .004/-0.008	0.80 + 0.1/-0.2
a	0.020 $\pm$ 0.012	0.50 $\pm$ 0.30

## Terminal Configuration

No.	Function
1	Feeding Point
2	NC

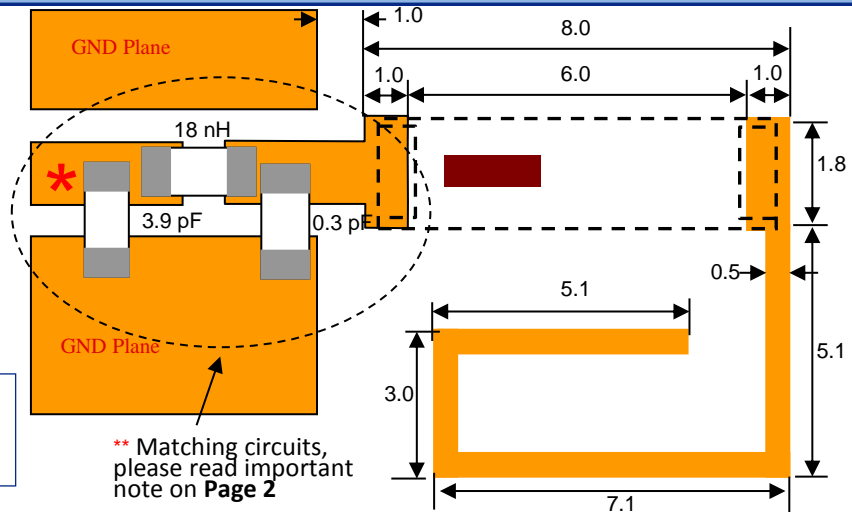
## Mounting Considerations I

Mount these devices with brown mark facing up. Units: mm

\* Line width should be designed to provide 50  $\Omega$  impedance matching characteristics.

With Matching Circuit

JTI P/Na for Matching Circuit: \*\*  
 Cap (0.3pF): 500R07S0R3BV4T  
 Cap (3.9pF): 500R07S3R9BV4T  
 Inductor (18nH): L-07C18NJV6T



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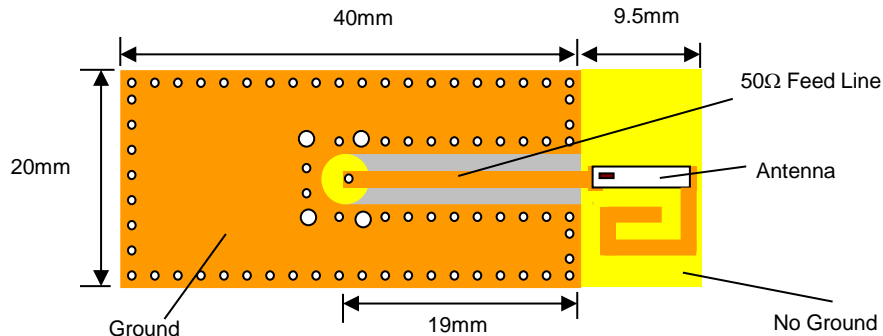
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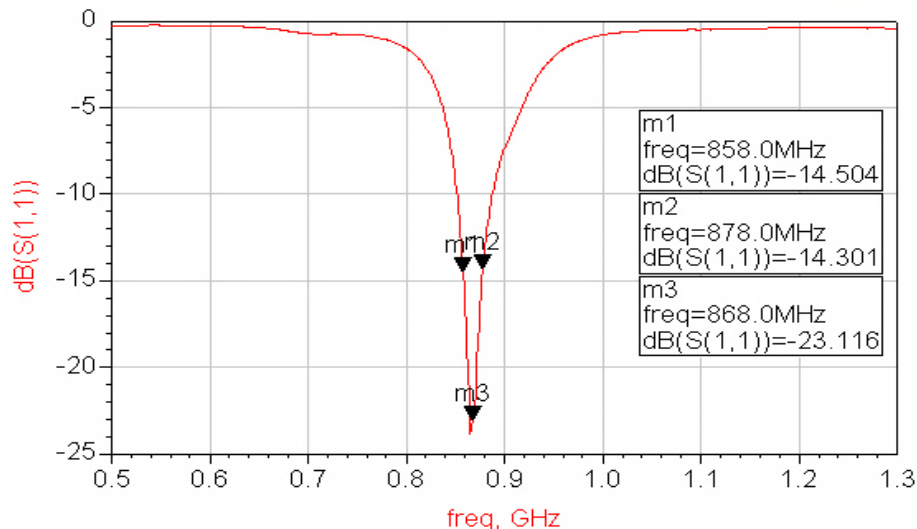
## Mounting Considerations I

Test Board used orderable p/n: 0868AT43A0020-EB1SMA (comes with SMA connector)



Note: It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values above are used when antenna is mounted on Johanson's evaluation board. The matching values on clinet's PCB will be different. Go to: [www.johansontechnology.com/tuning](http://www.johansontechnology.com/tuning) and see how to obtain the new values. If you need further help, contact our RF Applications Eng Team at: [www.johansontechnology.com/ask-a-question](http://www.johansontechnology.com/ask-a-question)

### Return Loss (with matching)



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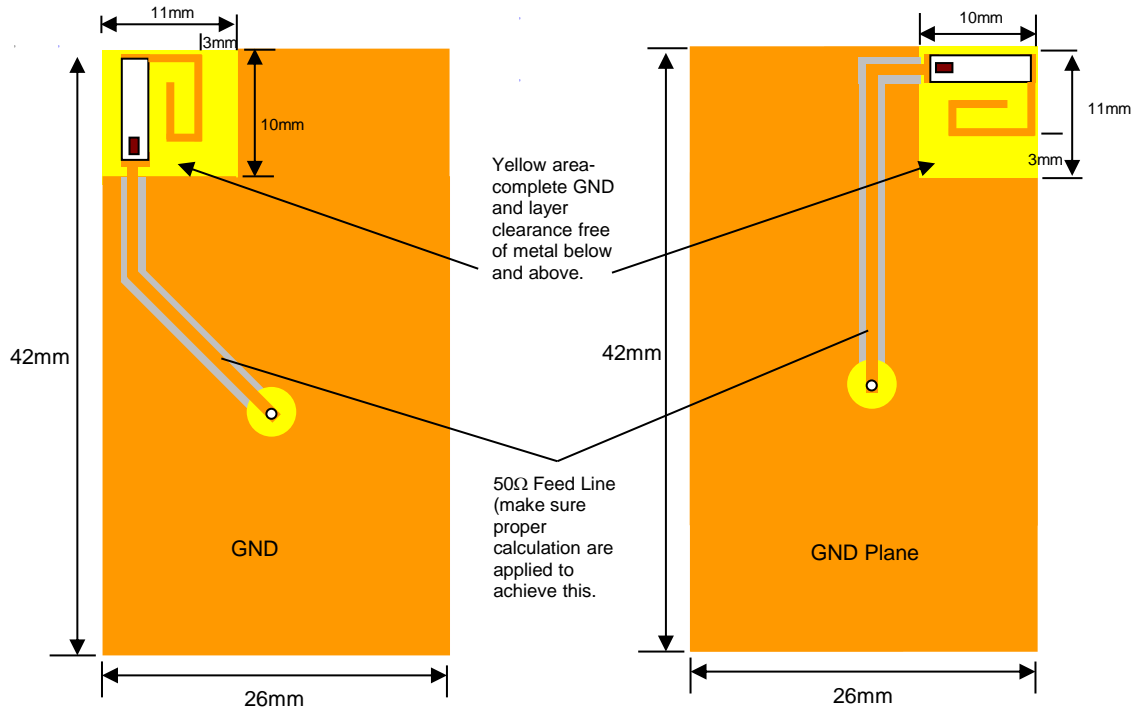
P/N 0868AT43A0020

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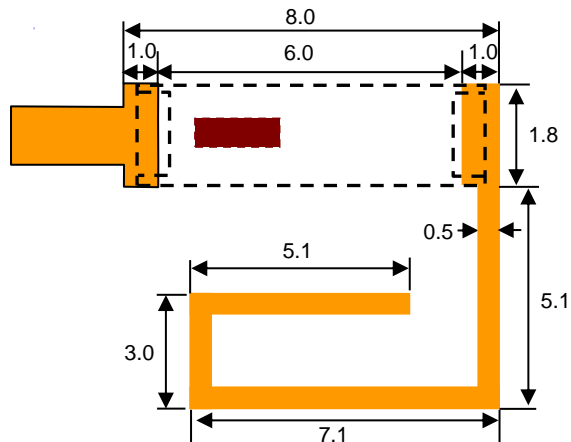
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## Mounting Considerations II

We have conducted internal studies to show that the following corner placements provide antenna efficiency results with minimal detrimental effects.



**Note:** It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values above are used when antenna is mounted on Johanson's evaluation board. The matching values on client's PCB will be different. Go to: [www.johansontechnology.com/tuning](http://www.johansontechnology.com/tuning) and see how to obtain the new values. If you need further help, such as needing the layout file of the above, contact our RF Applications Eng. Team at: [www.johansontechnology.com/ask-a-question](http://www.johansontechnology.com/ask-a-question)



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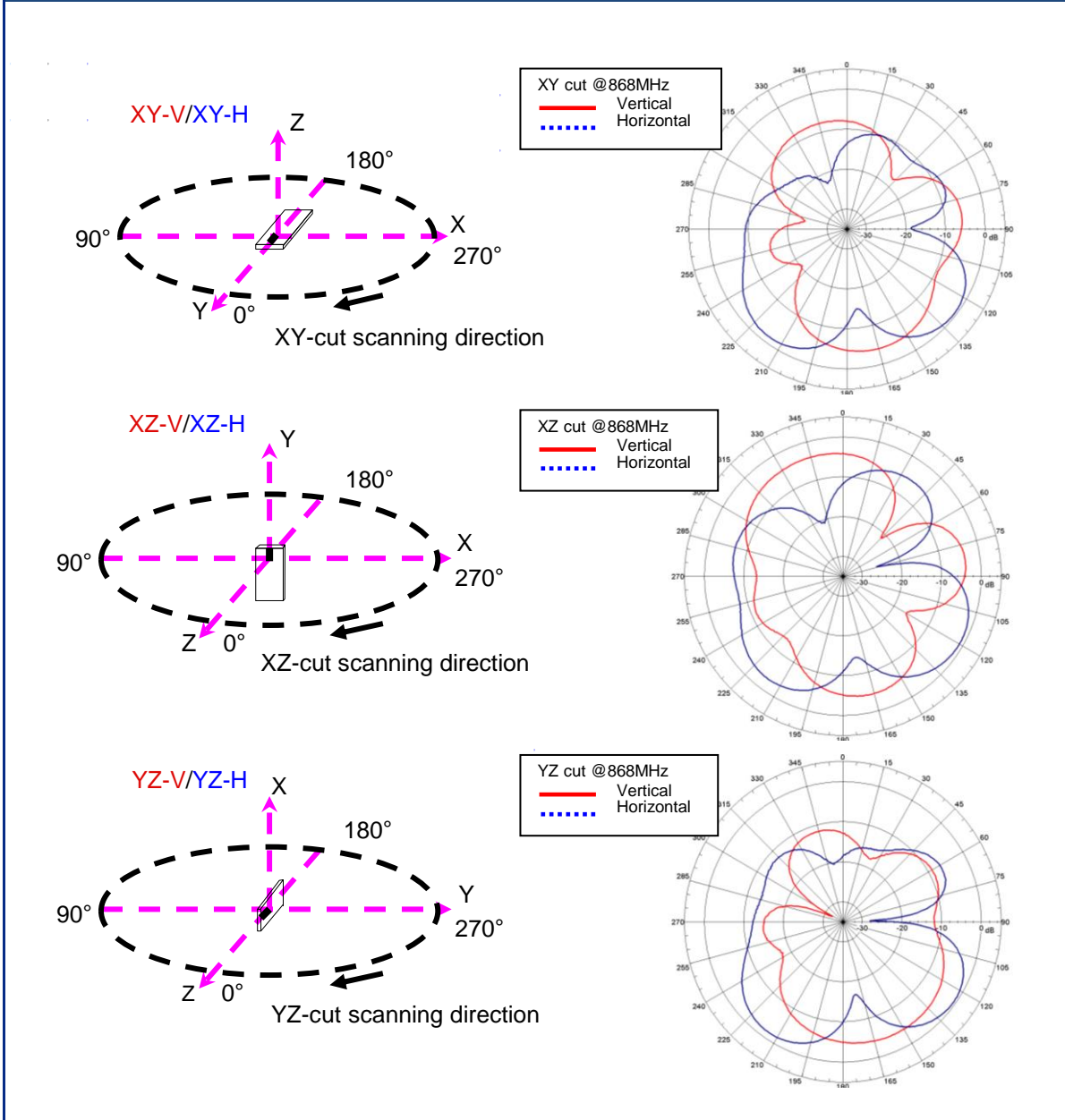
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## Typical Radiation Performance @ 25° C using 0868AT43A0020-EB1SMA



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[www.johansontechnology.com/tape-reel-packaging](http://www.johansontechnology.com/tape-reel-packaging)

**Soldering Information**

[www.johansontechnology.com/typical-soldering-profile](http://www.johansontechnology.com/typical-soldering-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/ipc-antenna-services](http://www.johansontechnology.com/ipc-antenna-services)

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