

# "High Frequency Ceramic Solutions"

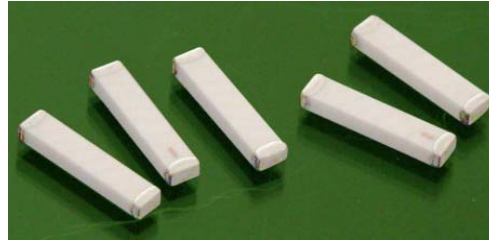
**868 and 915MHz dual (wideband) ISM band SMD chip antenna P/N 0900AT43A0070**

Detail Specification: 3/19/2015

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## General Specifications

Part Number	0900AT43A0070
Frequency (MHz)	858 - 928
Peak Gain (XZ-total)	-0.5 dBi typ.
Average Gain (XZ-total)	-2.5 dBi typ.
Radiated Efficiency	48% ave. <sup>1</sup>
Return Loss	-4 dB min.
impedance	50 Ω
Reel Quantity	1,000
Operating Temperature	-40 to +85°C
Storage Temperature	-40 to +85°C
Power Capacity	2W max. (CW)



Recommended Storage Conditions of unused product on T&R	+5 to +35°C, Humidity 45~75%RH
Storage Period	18 months max.

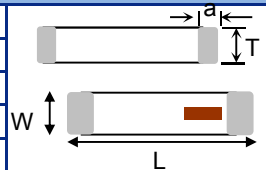
<sup>1</sup>On test board 0900AT43A0070-EB2SMA, Layout# 2, page 5

## Part Number Explanation

P/N Suffix	Packing Style	Bulk (loose)	Suffix = S	eg. 0900AT43A0070S
		T & R	Suffix = E	eg. 0900AT43A0070E
		100% Tin	Suffix = E or S	eg. 0900AT43A0070(E or S)

## Mechanical Dimensions

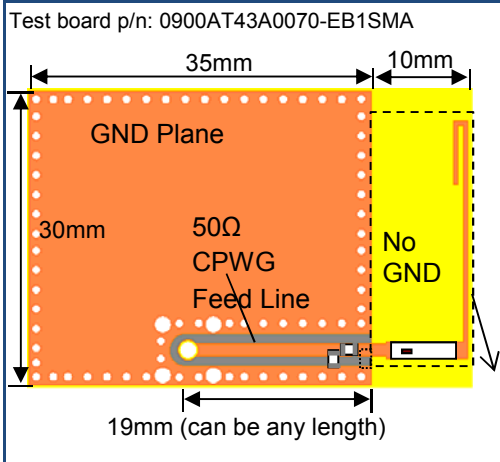
	In	mm
L	0.276 ± 0.008	7.00 ± 0.20
W	0.079 ± 0.008	2.00 ± 0.20
T	0.031 ± +.004/-0.008	0.80 ± +0.1/-0.2
a	0.020 ± 0.012	0.50 ± 0.30



## Terminal Configuration

No.	Function
1	RF Feed Point
2	To trace element

## Layout Recommendation #1



Test board p/n: 0900AT43A0070-EB1SMA

- Orderable EVB for evaluation, it comes with a female SMA connector. Go to: [www.johansontechnology.com/component/samplerrequest](http://www.johansontechnology.com/component/samplerrequest) and ask for p/n 0900AT43A0070-EB1SMA
- 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/component/techquestion/](http://www.johansontechnology.com/component/techquestion/)
- [www.johansontechnology.com/ipcantennaservices](http://www.johansontechnology.com/ipcantennaservices)
- The total antenna area usage for this EVB is approx. 25x10mm (due to trace element), but the trace can be re-shaped to reduce effective area and conform to the designer's PCB!



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

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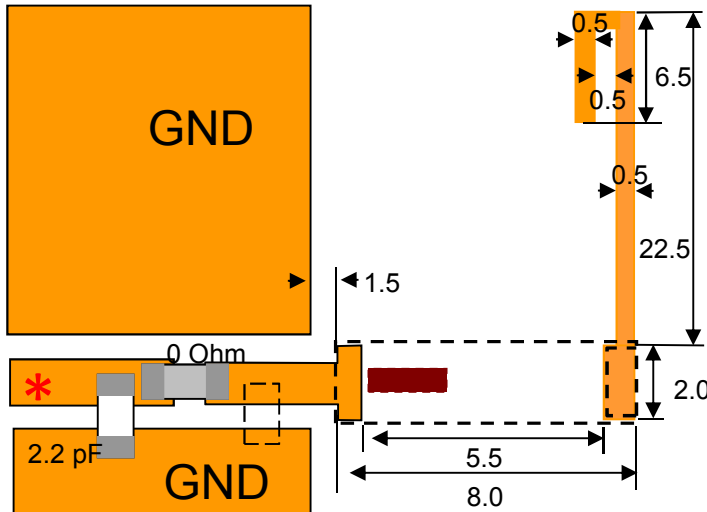
868 and 915MHz dual (wideband) ISM band SMD chip antenna P/N 0900AT43A0070

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Recommended Application ISM

## Layout Recommendation #1

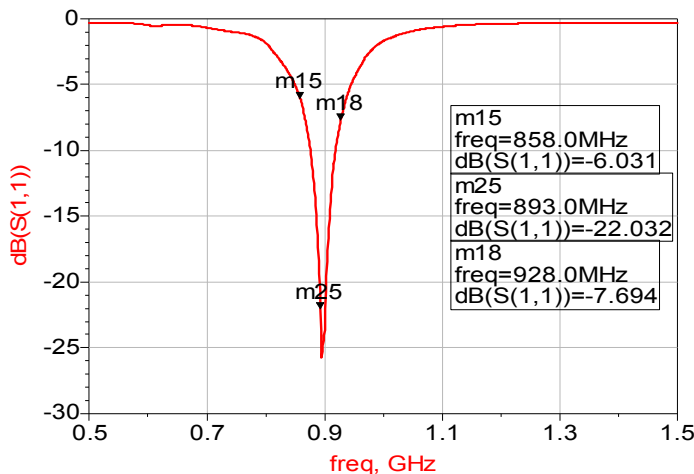


• Attention: Matching circuits and component values will be different on the client's design, depending on PCB layout, geometry, etc. It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values you see here are used when antenna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

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\* Line width should be designed to match 50ohm characteristic impedance, depending on your PCB material and thickness (distance to GND)

## Typical Electrical Characteristics S11 return loss (T=25 °C) on Layout #1



This antenna has about 20MHz of guard-band on each side

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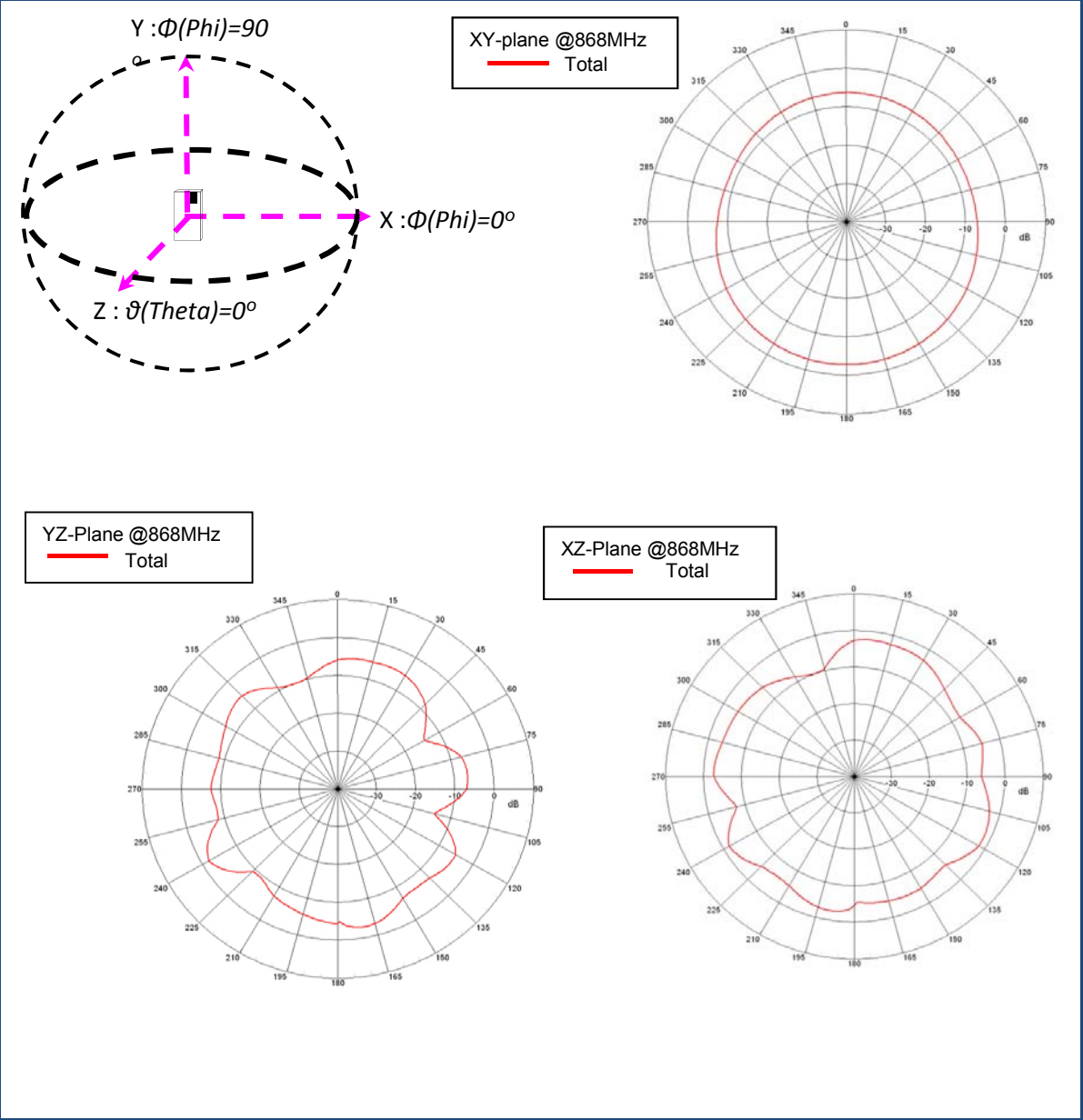
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**868 and 915MHz dual (wideband) ISM band SMD chip antenna P/N 0900AT43A0070**  
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Recommended Application ISM

## Typical Radiation Patterns (@25C) of Layout Recommendation #1



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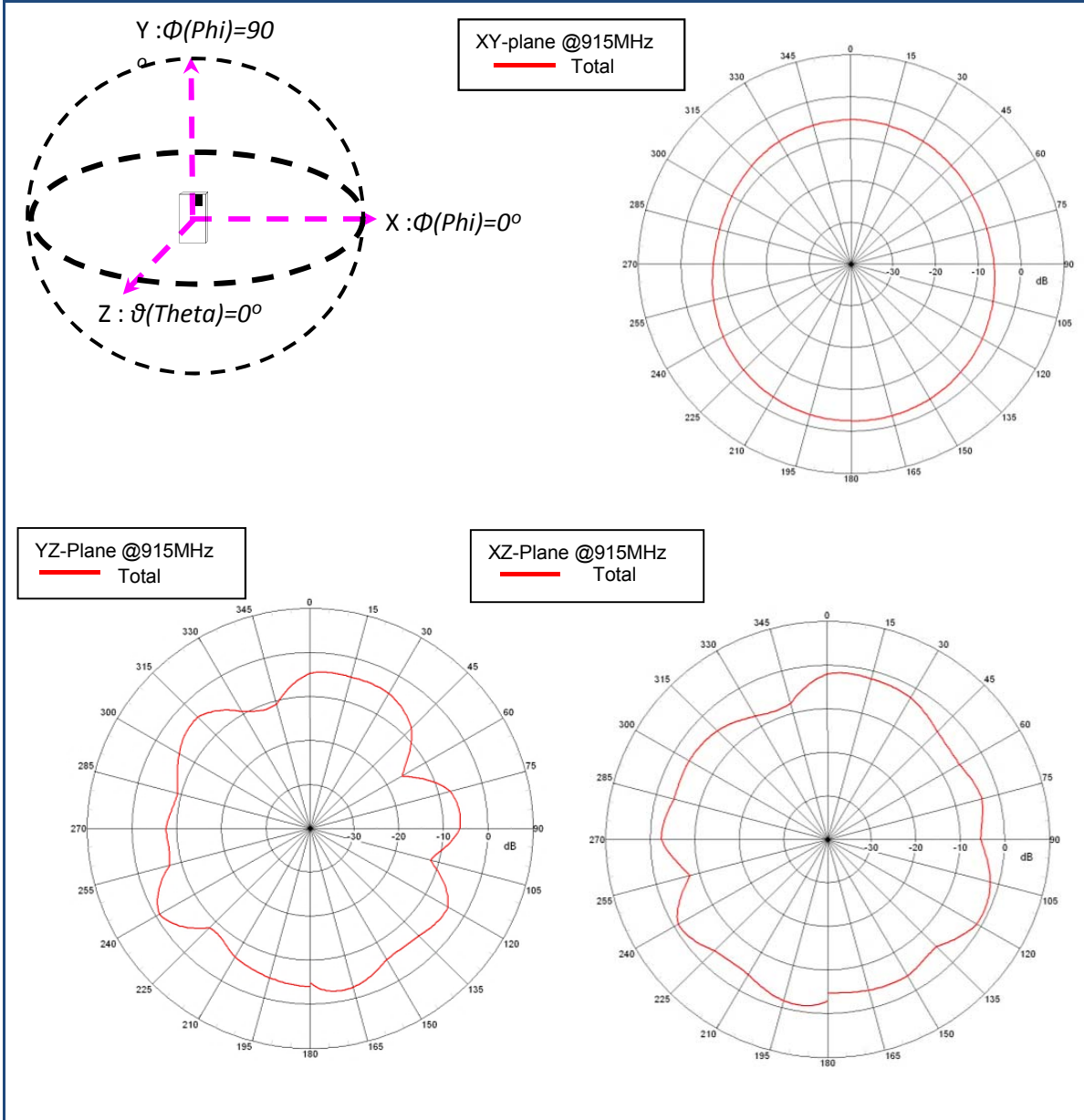
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Recommended Application ISM

## Typical Radiation Patterns (@25C) of Layout Recommendation #1



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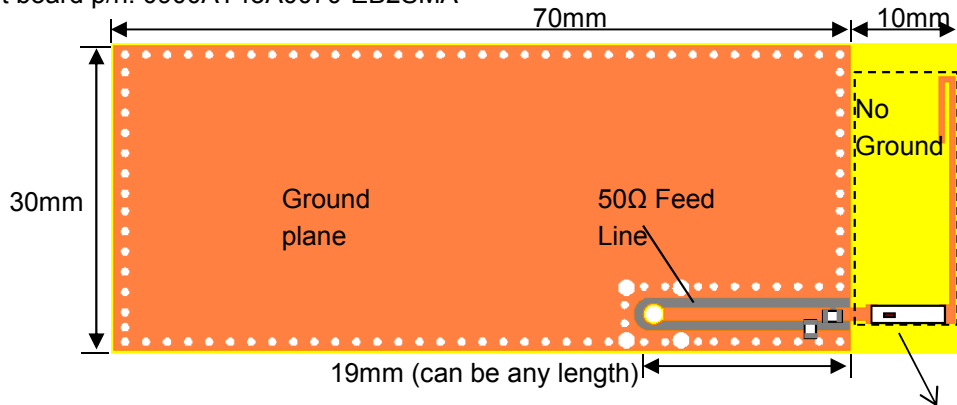
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Recommended Application ISM

## Layout Recommendation #2

Test board p/n: 0900AT43A0070-EB2SMA



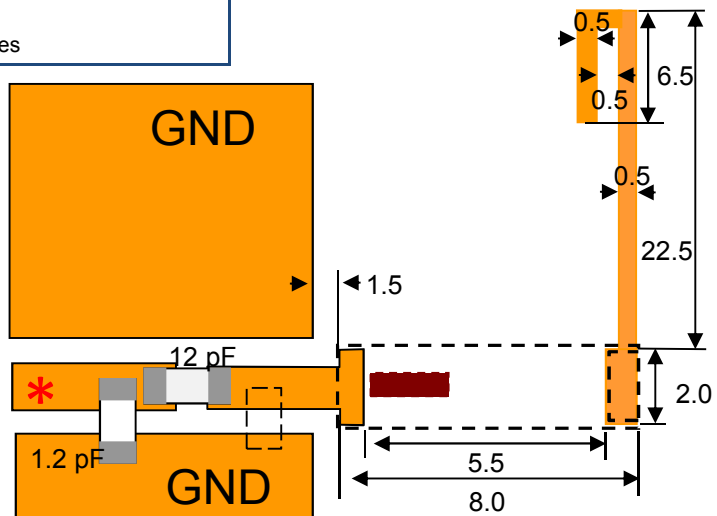
• Orderable EVB for evaluation, it comes with a female SMA connector. Go to: [www.johansontechnology.com/component/samplerrequest](http://www.johansontechnology.com/component/samplerrequest) and ask for p/n 0900AT43A0070-EB2SMA

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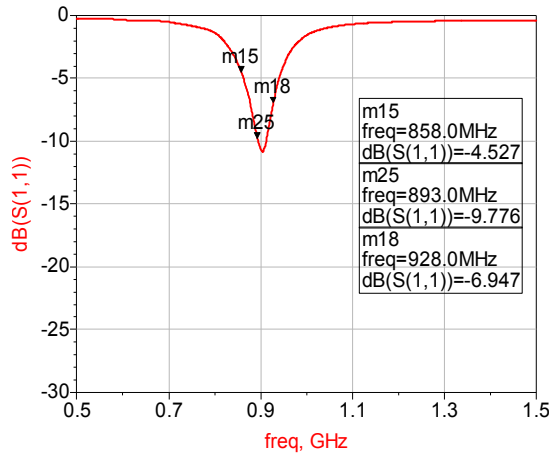
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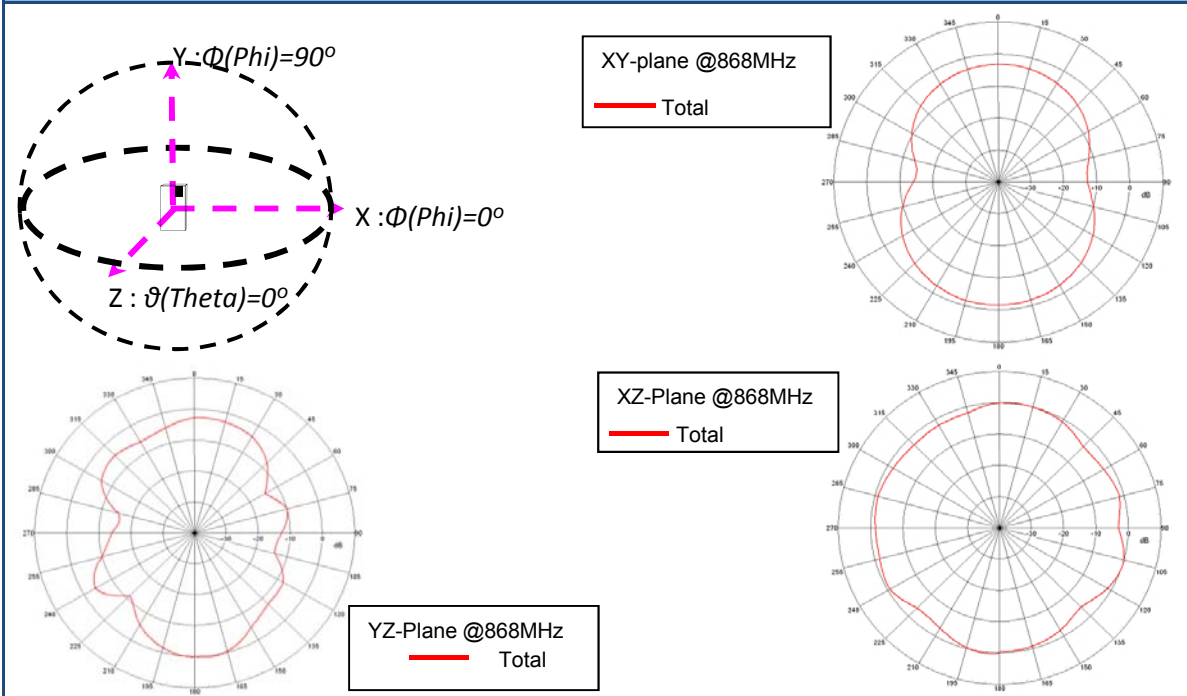
Recommended Application ISM

## Typical Electrical Characteristics S11 return loss (T=25 °C) on Layout #2



This antenna has about 20MHz of guard-band on each side

## Typical Radiation Patterns (@25C) of Layout Recommendation #2



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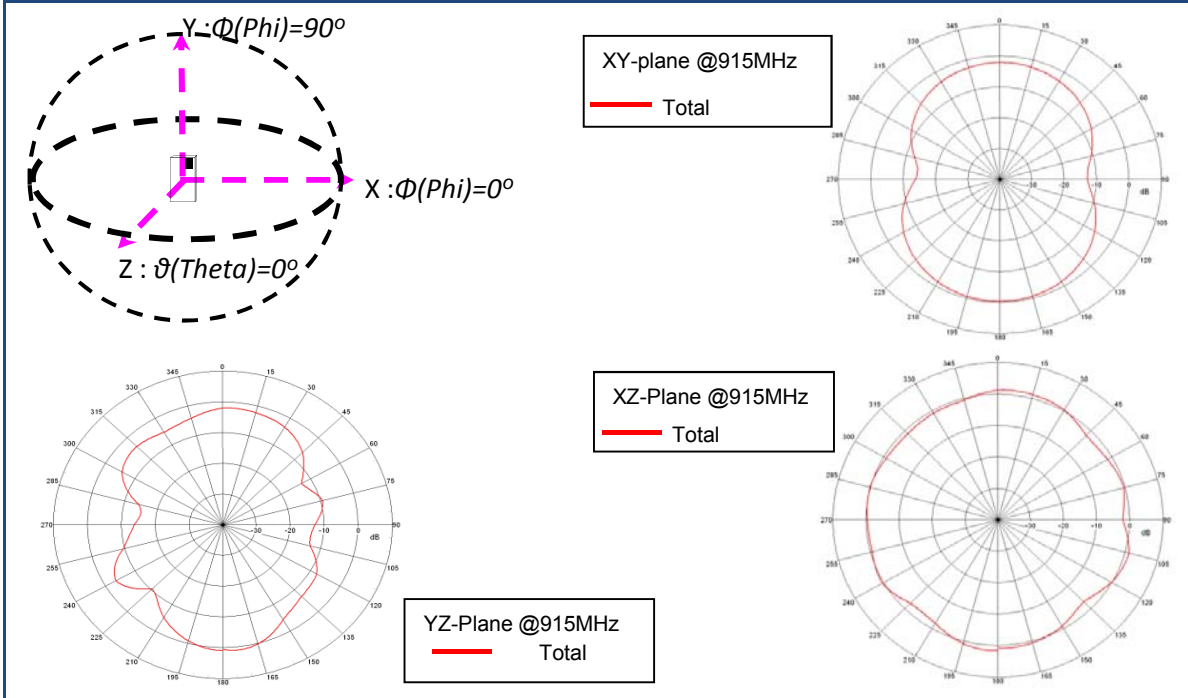
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## Typical Radiation Patterns (@25C) of Layout Recommendation #2



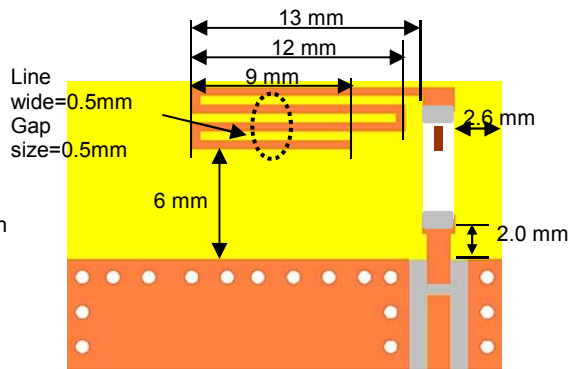
## Alternative layout with reduced effective area

No EVB available for this layout

Total radiated efficiency will be reduced by about 10%

Do you have more questions about this layout?  
 Contact our apps team at:

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



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Recommended Application ISM

## Antenna tuning, optimization, and validation 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)

## Soldering Information

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

## MSL Info

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

## Packaging information

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

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

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

## RoHS Compliance

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

## Recommended Storage Condition and Max Shelf Life

[www.johansontechnology.com/ipcstorage-shelflife](http://www.johansontechnology.com/ipcstorage-shelflife)

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