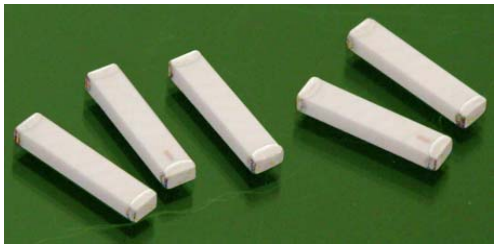
"High Frequency Ceramic Solutions"

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

Detail Specification: 3/19/2015

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.[1]
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)

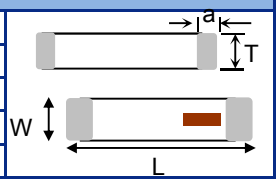


Recommended Storage Conditions of unused product on T&R	+5 to +35°C, Humidity 45~75%RH
Storage Period	18 months max.

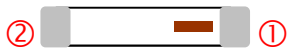
[1]On test board 0900AT43A0070-EB2SMA, Layout# 2, page 5

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/-.008	0.80 ± +0.1/-0.2
a	0.020 ± 0.012	0.50 ± 0.30

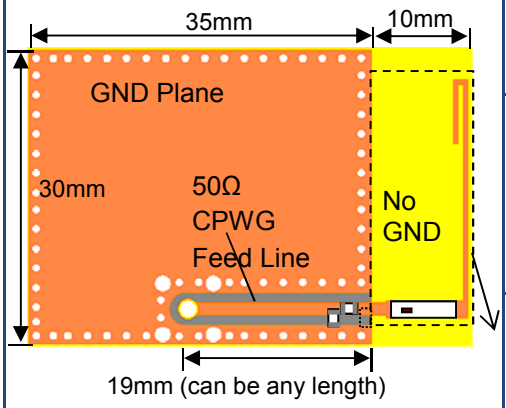


Terminal Configuration	
No.	**Function**
1	RF Feed Point
2	To trace element



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/samplerequest 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/

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!

JOHANSON TECHNOLOGY

www.johansontechnology.com

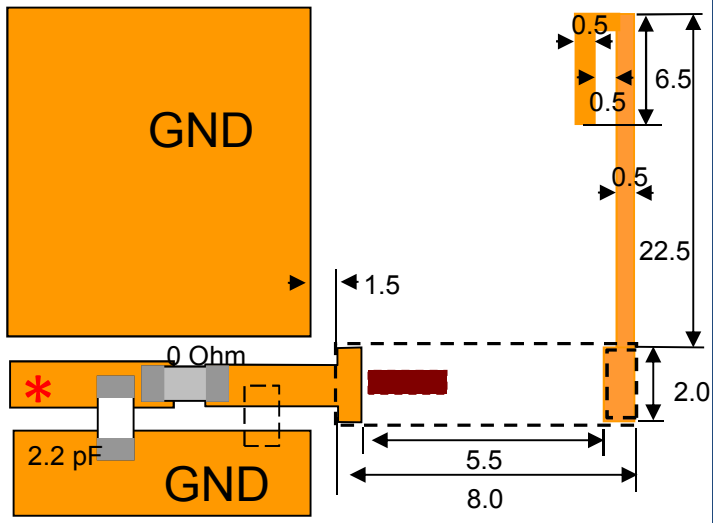
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

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

Detail Specification: 3/19/2015

Recommended Application ISM

Layout Recommendation #1

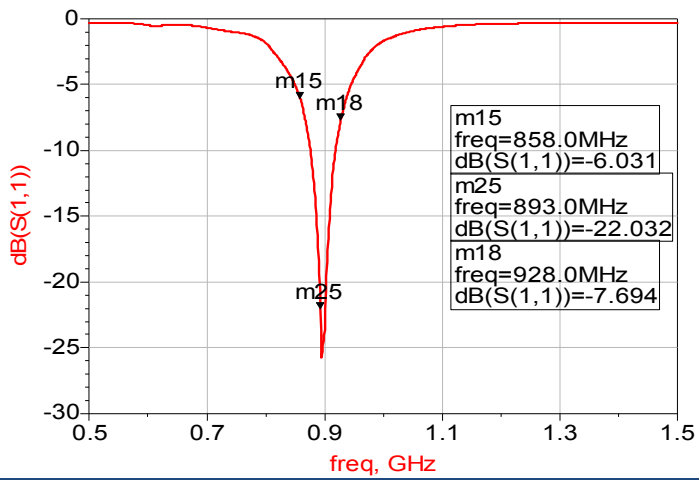


* Line width should be designed to match 50ohm characteristic impedance, depending on your PCB material and thickness (distance to GND)

• 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 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

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



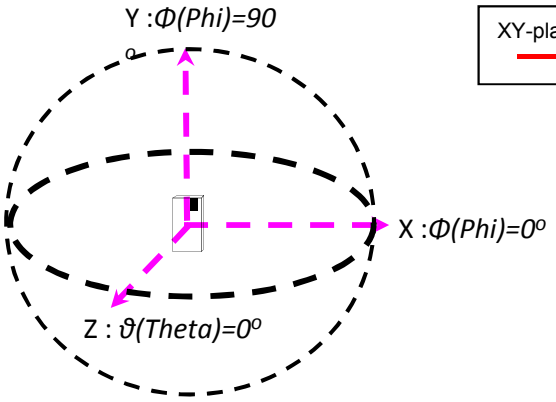
This antenna has about 20MHz of guard-band on each side

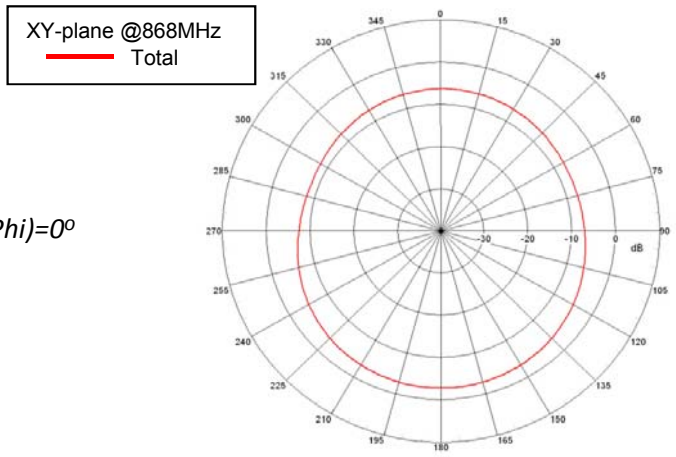
JOHANSON TECHNOLOGY

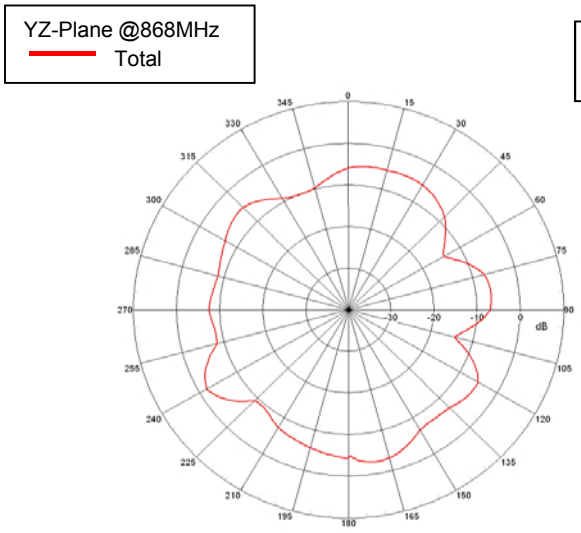
www.johansontechnology.com

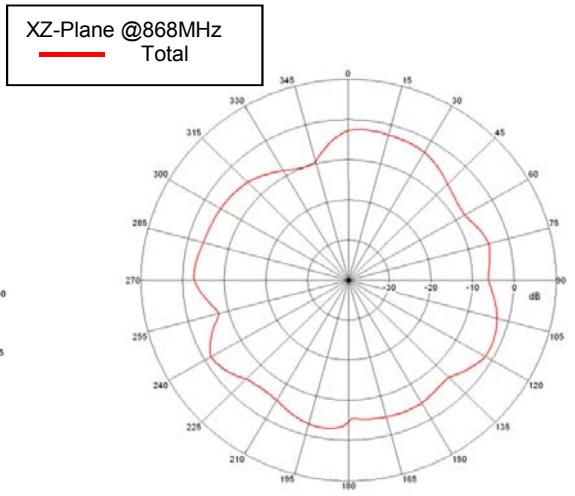
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

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





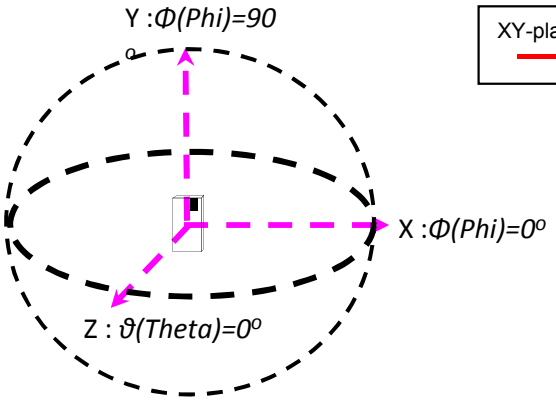


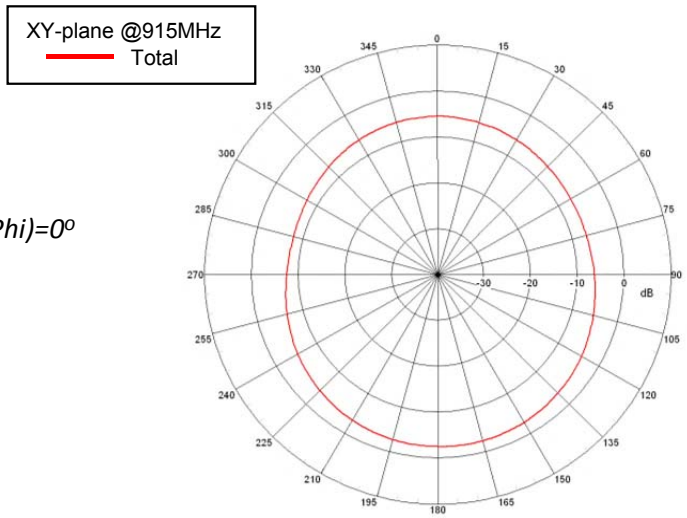


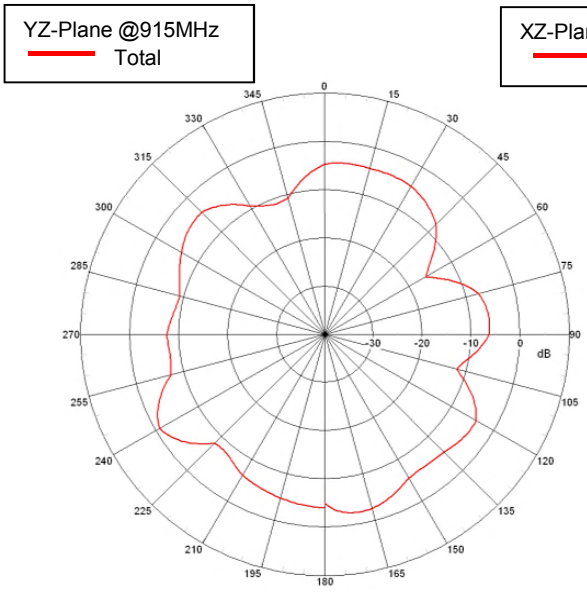
JOHANSON TECHNOLOGY

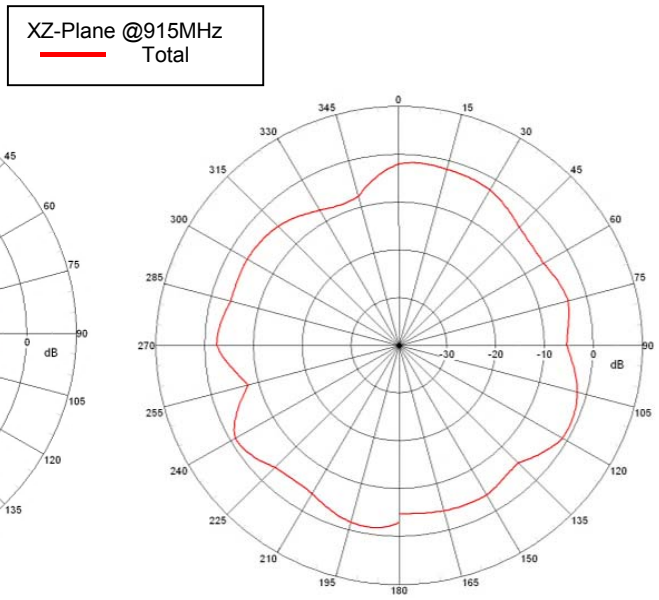
www.johansontechnology.com
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

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







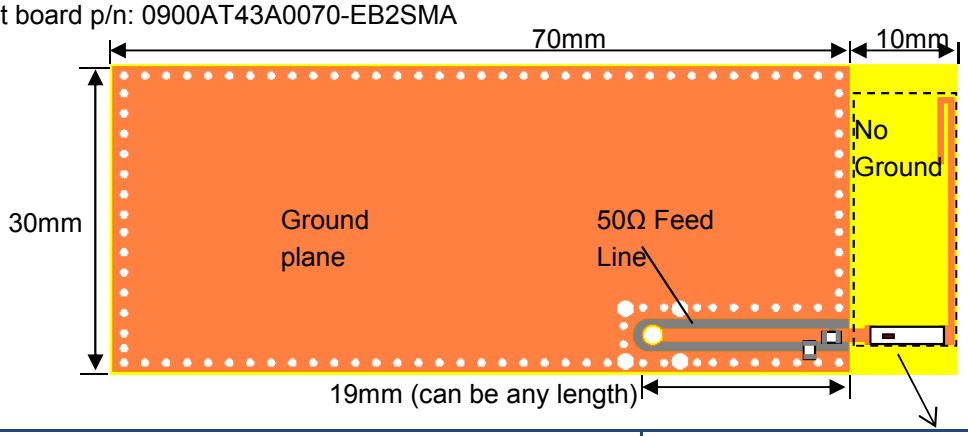


JOHANSON TECHNOLOGY

www.johansontechnology.com
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Layout Recommendation #2

Test board p/n: 0900AT43A0070-EB2SMA



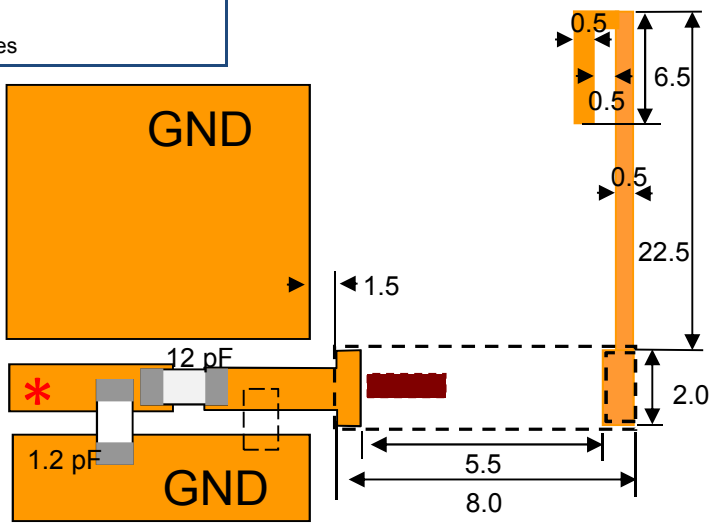
• Orderable EVB for evaluation, it comes with a female SMA connector. Go to: www.johansontechnology.com/component/samplerequest and ask for p/n 0900AT43A0070-EB2SMA

• 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!

• 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 validate the new tuning values of your PCB (fee may apply) go to: www.johansontechnology.com/component/techquestion/

www.johansontechnology.com/ipcantennaservices

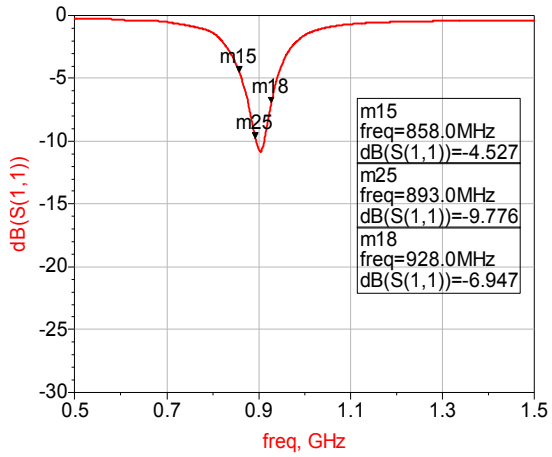
* Line width should be designed to match 50ohm characteristic impedance, depending on your PCB material and thickness (dist to GND)



JOHANSON TECHNOLOGY

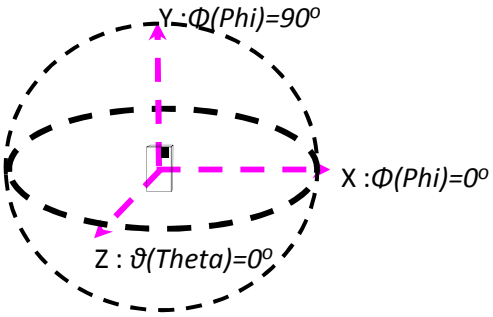
www.johansontechnology.com
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

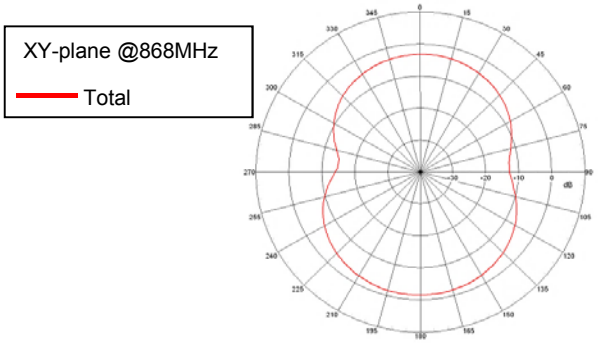
Typical Electrical Characteristics S11 return loss (T=25 °C) on Layout #2

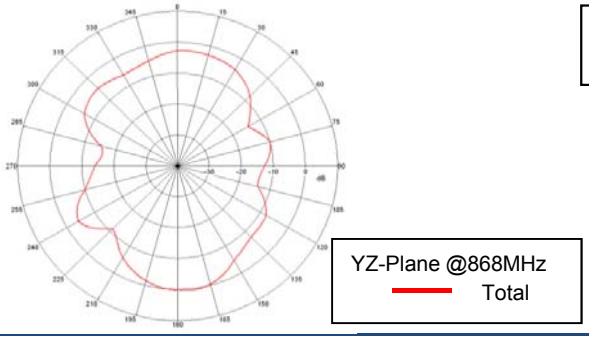


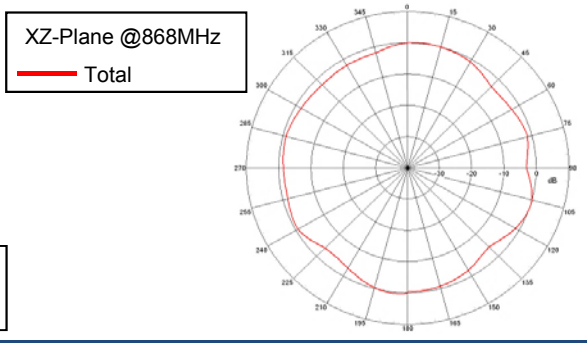
This antenna has about 20MHz of guard-band on each side

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

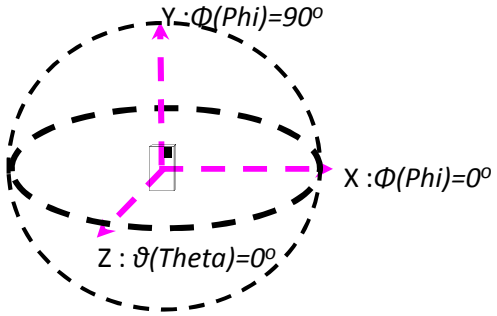


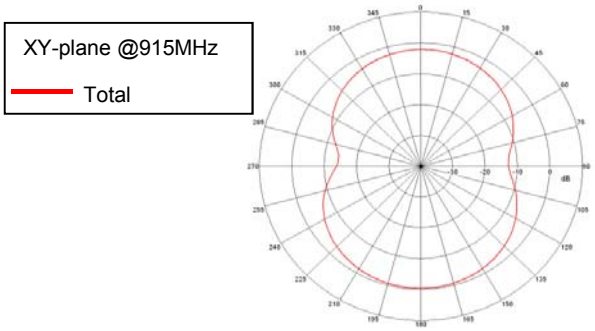


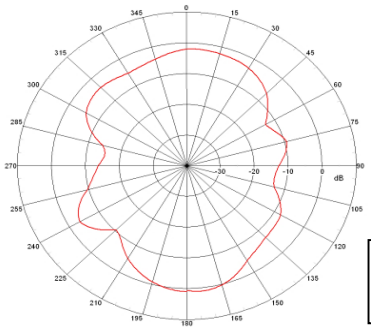


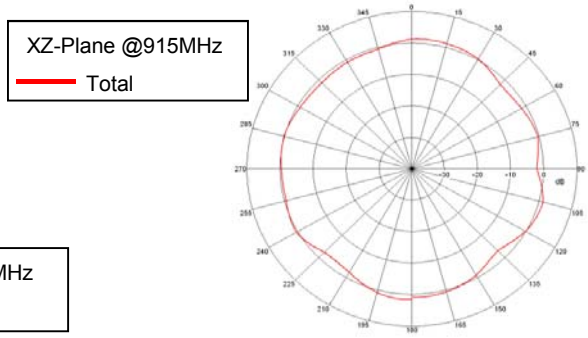


Typical Radiation Patterns (@25C) of Layout Recommendation #2









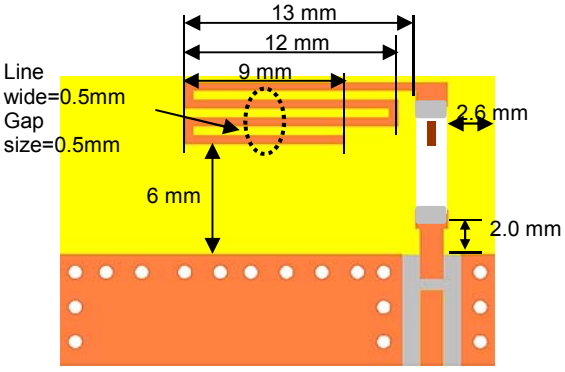
Alternative layout with reduced effective area

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



Recommended Application ISM

Antenna tuning, optimization, and validation services::
www.johansontechnology.com/ipcantennaservices
For layout review contact our Applications Team at:
www.johansontechnology.com/component/techquestion
Soldering Information
www.johansontechnology.com/ipcsoldering-profile
MSL Info
www.johansontechnology.com/technical-notes/msl-rating.html
Packaging information
www.johansontechnology.com/ipcpackaging.html
For more antennas and download measured S-parameters, go to:
www.johansontechnology.com/antennas
RoHS Compliance
www.johansontechnology.com/technical-notes/rohs-compliance.html
Recommended Storage Condition and Max Shelf Life
www.johansontechnology.com/ipcstorage-shelflife

JOHANSON TECHNOLOGY

www.johansontechnology.com

4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821