

"High Frequency Ceramic Solutions"

2.38GHz / 2.45GHz / 2.6GHz Wideband SMD Chip Antenna P/N 2500AT44M0400

Designed for: BAN, Bluetooth, 802.11, WLAN, Zigbee, Proprietary Protocol, ISM, Smart Energy, WiMax

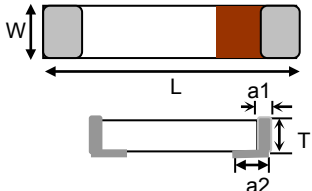
Detail Specification: 5/24/2013

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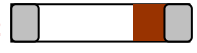
General Specifications

Part Number	2500AT44M0400		
Operating Frequency (MHz)	2300 - 2700		
Impedance	50 Ω		
Operating Temperature	-40 to +85°C		
Return Loss (2.3-2.7GHz)	9.5 dB min.		
Peak Gain @ 2.38GHz	2.0 dBi typ. (XZ-V)		
Average Gain @ 2.38GHz	0.0 dBi typ. (XZ-V)		
Peak Gain @ 2.45GHz	2.5 dBi typ. (XZ-V)		
Average Gain @ 2.45GHz	0.5 dBi typ. (XZ-V)		
Peak Gain @ 2.60GHz	2.0 dBi typ. (XZ-V)		
Average Gain @ 2.60GHz	0.0 dBi typ. (XZ-V)		
		Quantity per Reel	1,000
		Recommended Storage Conditions	+5 ~ +35 °C, Humidity 45~75%RH

Mechanical Specifications

	In	mm	
L	0.315 $\pm$ 0.008	8.00 $\pm$ 0.20	
W	0.039 $\pm$ 0.008	1.00 $\pm$ 0.20	
T	0.039 $\pm$ 0.008	1.00 $\pm$ 0.20	
a	0.020 $\pm$ 0.008	0.50 $\pm$ 0.20	
a2	0.039 $\pm$ 0.008	1.00 $\pm$ 0.20	

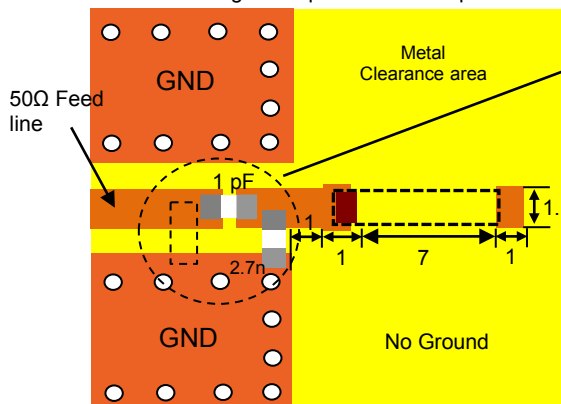
Terminal Configuration

No.	Function
1	Feeding Point
2	NC
	

Mounting Considerations - Layout #1

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

*Line width should be designed to provide 50 Ω impedance matching characteristics.



It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values are used when antenna is mounted on Johanson's evaluation board. The matching values on clinet's PCB will be different. Go to: <http://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/en/ask-a-technical-question.html

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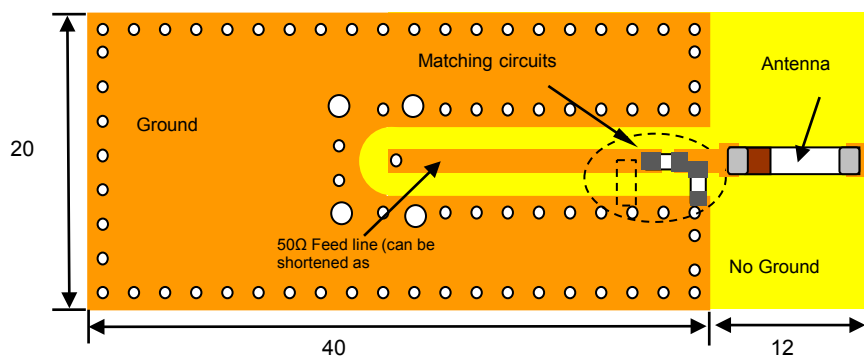
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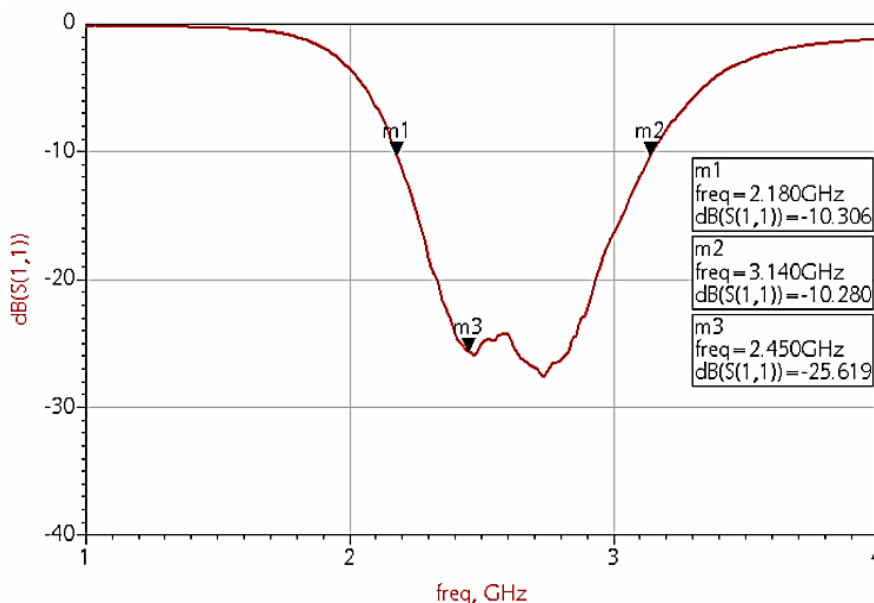
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Layout #1 example (units in mm)



Orderable EVB p/n: 2500AT44M0400-EB1SMA

Return Loss - with Matching Circuits



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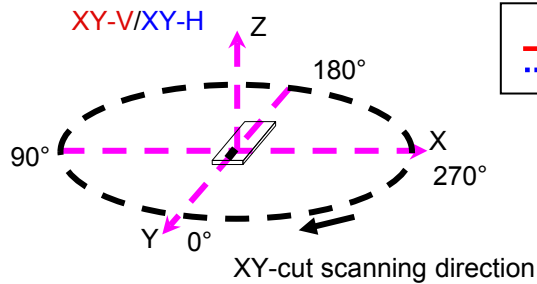
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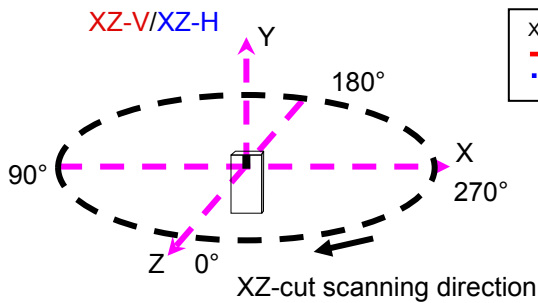
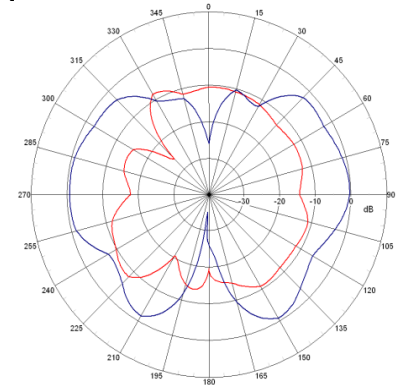
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Typical Radiation Patterns @ 2.38GHz - Layout #1

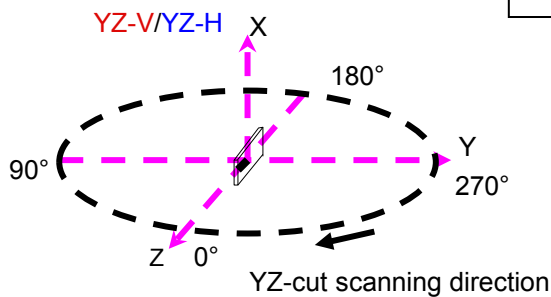
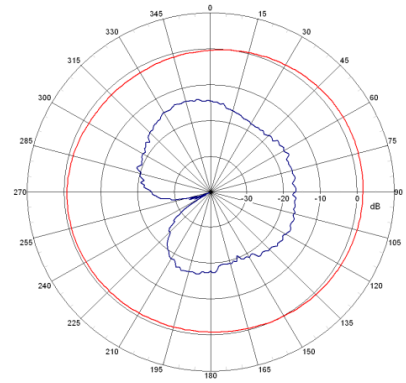
Typical Radiation Patterns - Layout #1



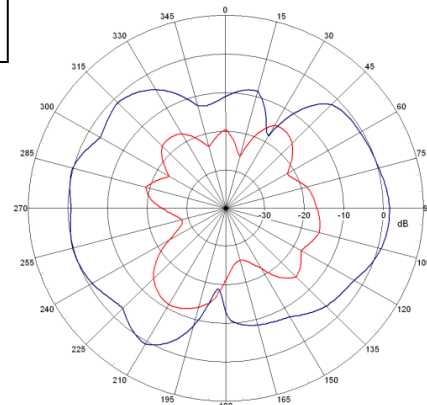
XY cut @2.38GHz
 — Vertical
 Horizontal



XZ cut @2.38GHz
 — Vertical
 Horizontal



YZ cut @2.38GHz
 — Vertical
 Horizontal



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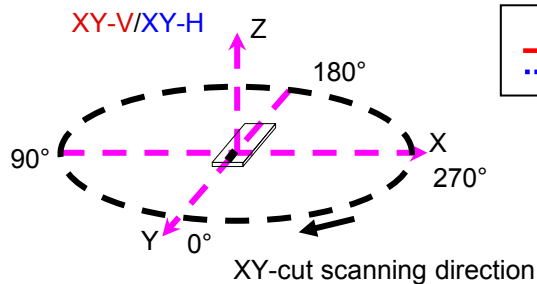
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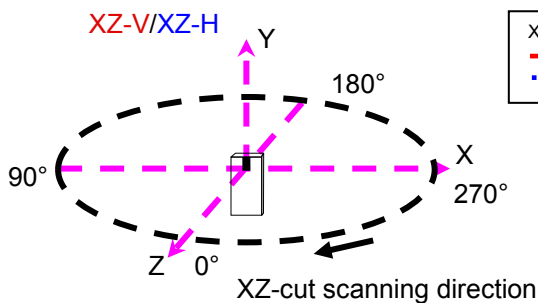
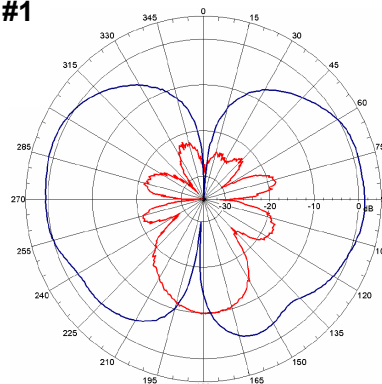
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Typical Radiation Patterns @ 2.45GHz - Layout #1

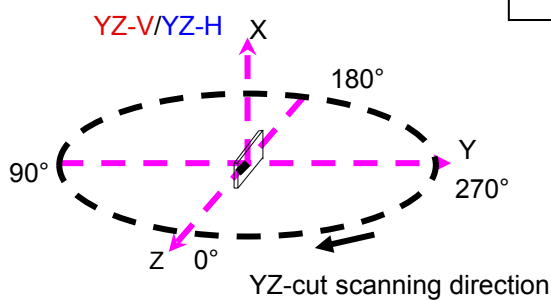
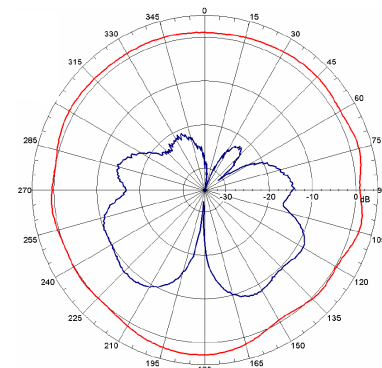
Typical Radiation Patterns - Layout #1



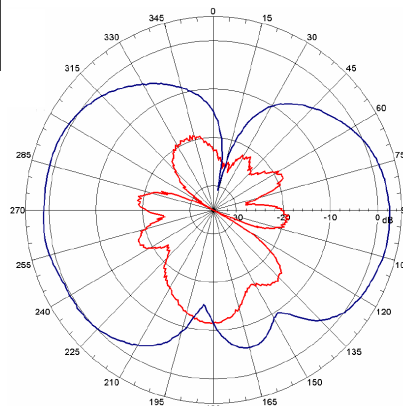
XY cut @2.45GHz
— Vertical
... Horizontal



XZ cut @2.45GHz
— Vertical
... Horizontal



YZ cut @2.45GHz
— Vertical
... Horizontal



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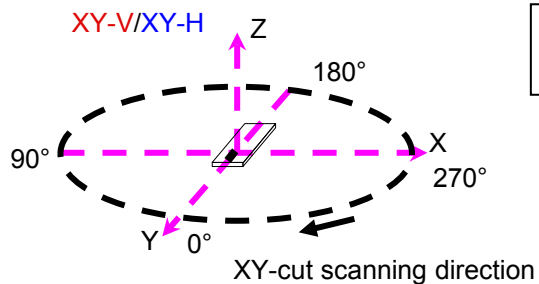
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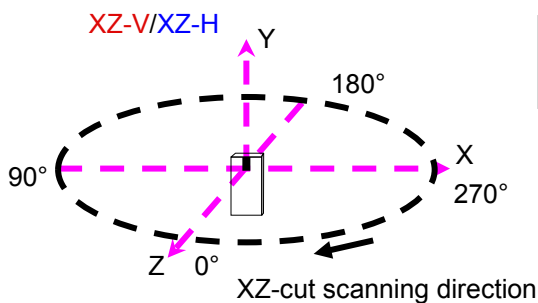
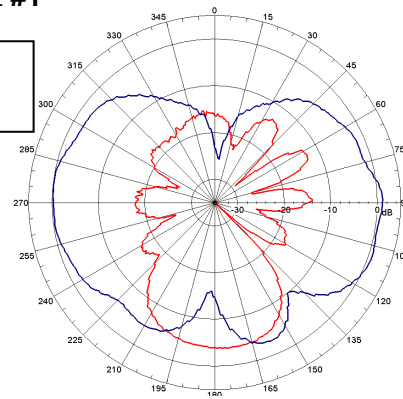
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Typical Radiation Patterns @ 2.6GHz - Layout #1

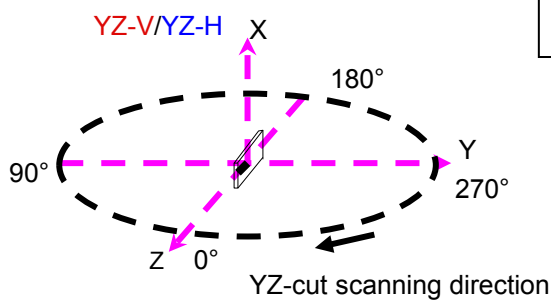
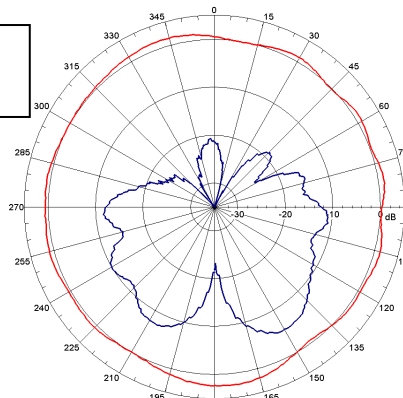
Typical Radiation Patterns - Layout #1



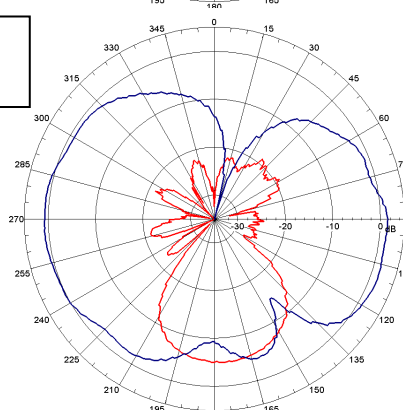
XY cut @2.6GHz
 — Vertical
 Horizontal



XZ cut @2.6GHz
 — Vertical
 Horizontal



YZ cut @2.6GHz
 — Vertical
 Horizontal



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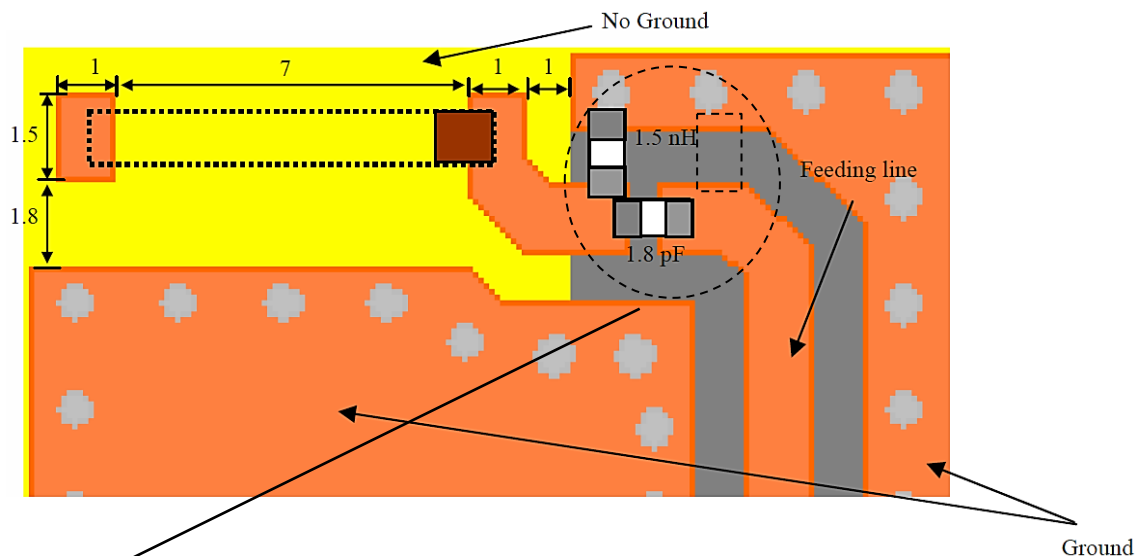
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Alternate layout - Layout #2

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

*Line width should be designed to provide 50 Ω impedance matching characteristics.

Layout #2 example (units in mm)**



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**Bandwidth is about 190MHz in this configuration

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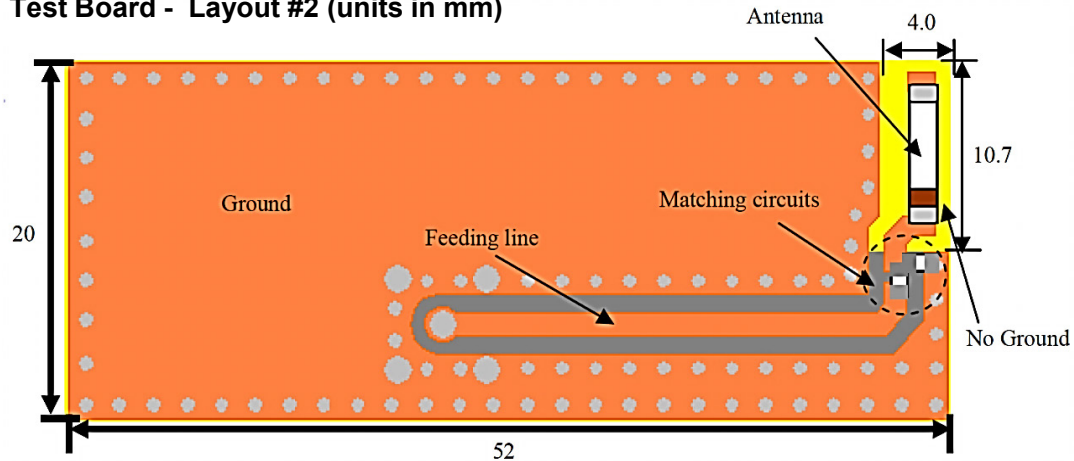
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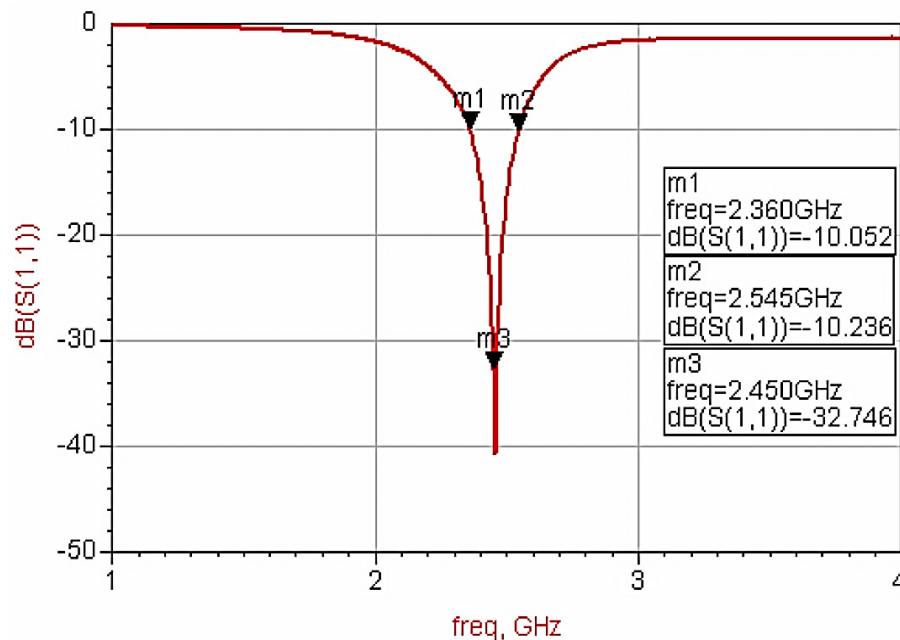
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Typical Electrical Characteristics (T=25 °C)

Test Board - Layout #2 (units in mm)



Return Loss - with Matching Circuits



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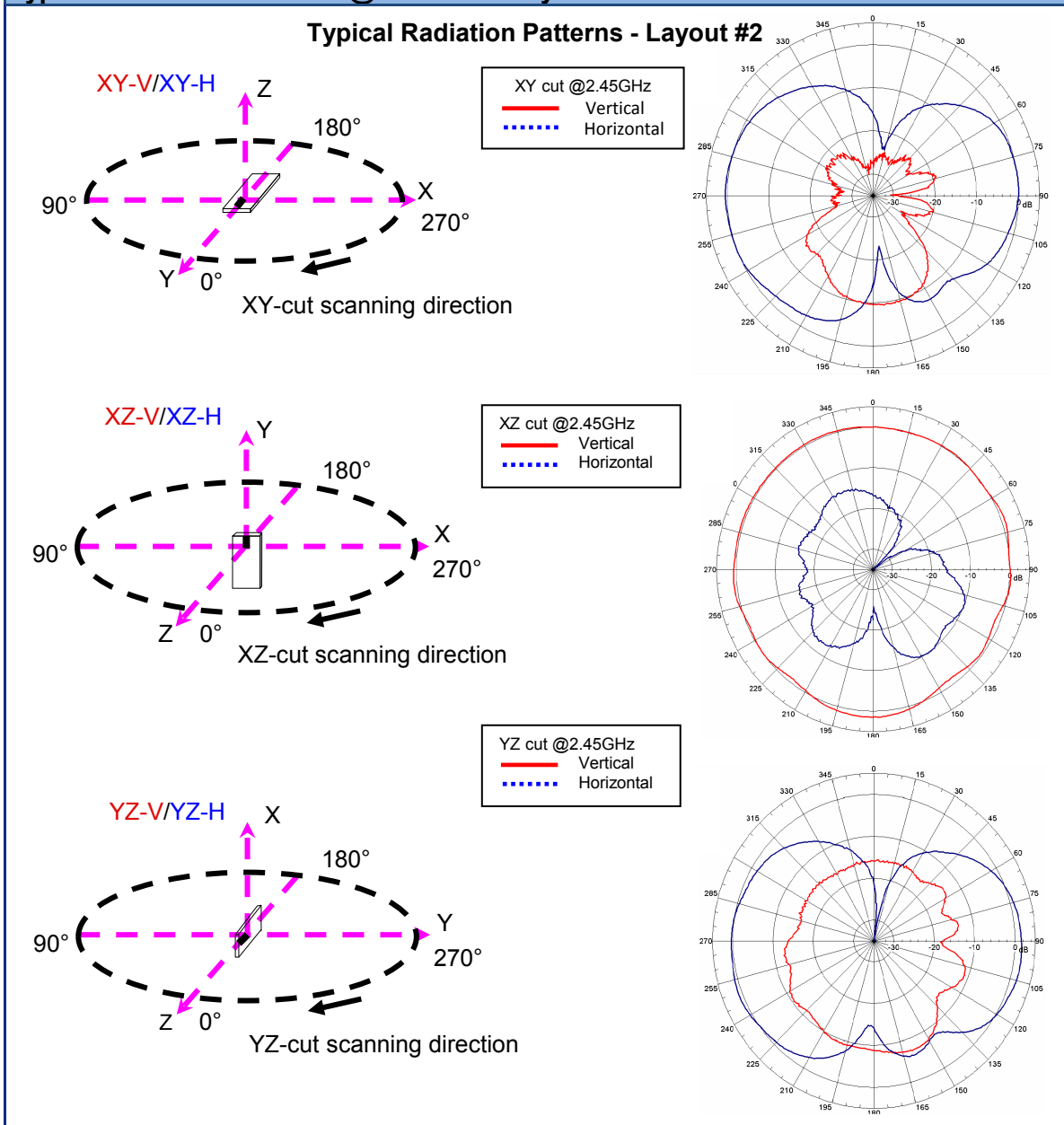
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Typical Radiation Patterns @ 2.45GHz - Layout #2



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Additional Info

Part Number Explanation

P/N Suffix	Packing Style	Bulk	Suffix = S	eg. 2500AT44M0400S
		T & R	Suffix = T	eg. 2500AT44M0400E
	Evaluation Board	SMA	Suffix = -EB1SMA	eg. 2500AT44M0400-EB1SMA

Tape & Reel Specifications

<http://www.johansontechnology.com/ipcpackaging.html>

Soldering Profile

<http://johansontechnology.com/ipcsoldering-profile>

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