

# High Frequency Ceramic Solutions

## 2.45 GHz SMD Chip Antenna

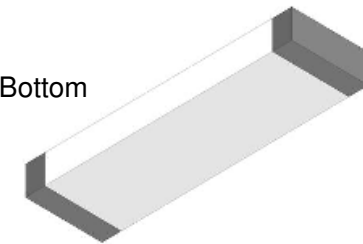
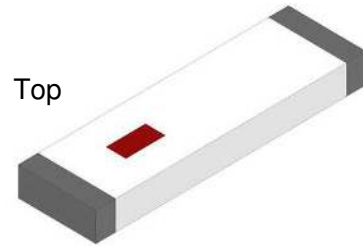
P/N 2450AT43A100

Detail Specification: 8/10/2022

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### General Specifications

Part Number	2450AT43A100	
Frequency Range (MHz)	2400 - 2500	
Mounting Style	Layout #1: Vertical	Layout #2: Horizontal
Peak Gain (dBi)	2.0 typ. (XZ-V)	2.0 typ. (XZ-V)
Average Gain (dBi)	0.5 typ. (XZ-V)	1.0 typ. (XZ-V)
Radiated Efficiency*	75% Average	86% Average
Return Loss (dB)	9.5 min.	
Impedance ( $\Omega$ )	50	
Input Power (W)	2 max. (CW)	
Operating Temperature	-40 to +85°C	
Recommended Storage Conditions and Period for unused T&R Product	+5 to +35°C Humidity 45 - 75% RH 18 months max.	
Reel Quantity (pcs/reel)	1,000	



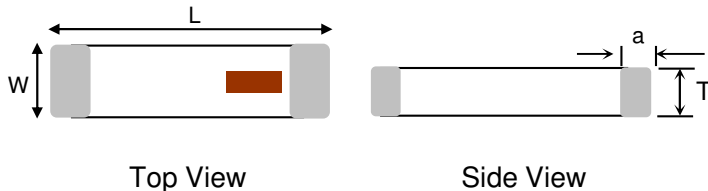
\*Efficiency measured on Johanson Evaluation Board

### Part Number Explanation

P/N Suffix	Packing Style	Bulk (loose pcs)	Suffix = S	e.g. 2450AT43A100S
		T & R	Suffix = E	e.g. 2450AT43A100E
		100% Tin	Suffix = None	e.g. 2450AT43A100(E or S)
Evaluation Board	Layout Recommendation #1: Vertical Mounting - 2450AT43A100-EB1SMA, see page 2			
	Layout Recommendation #2: Horizontal Mounting - 2450AT43A100-EB2SMA, see page 5			

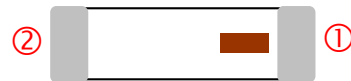
### Mechanical Dimensions

	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 +0.10 / -0.20
a	0.020 ± 0.012	0.50 ± 0.30



### Terminal Configuration

No.	Function
1	RF Feeding Point
2	NC



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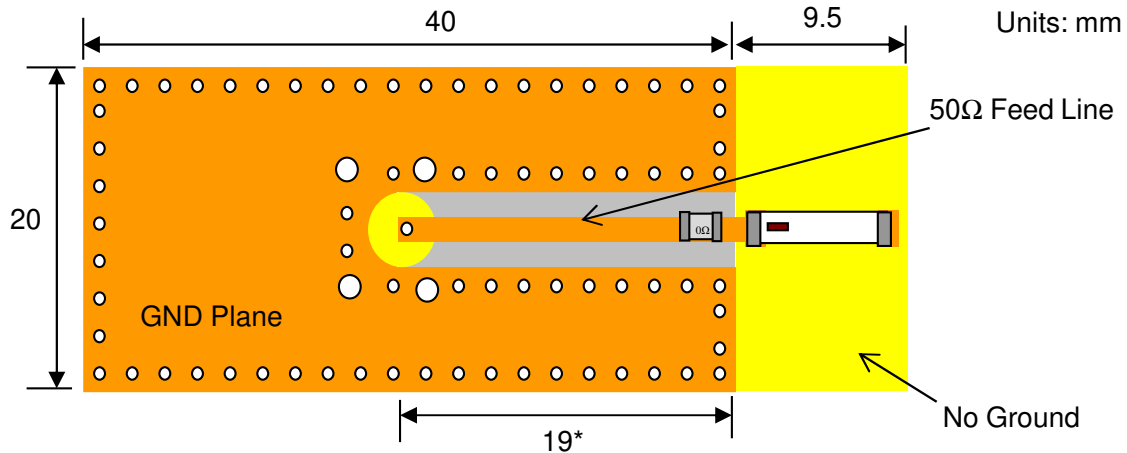
2.45 GHz SMD Chip Antenna

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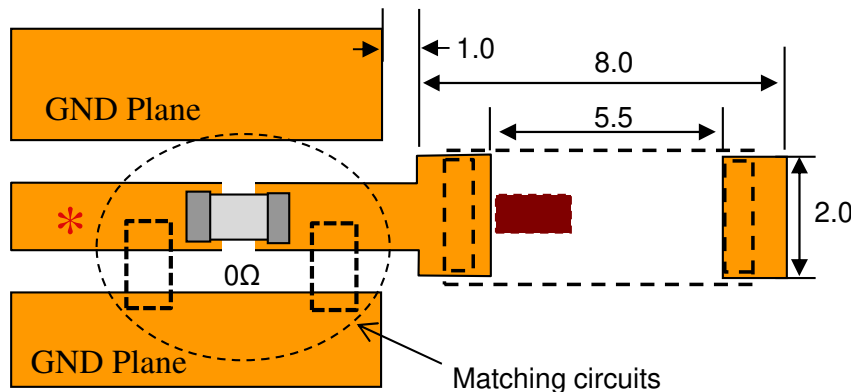
## Layout Recommendation #1: Vertical Mounting



\* This 50ohm trace to the antenna can be shorten (considerably) to suit your PCB space constraints

**Orderable EVB p/n: 2450AT43A100-EB1SMA**

Go to <https://www.johansontechnology.com/request-a-sample>



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

Note: 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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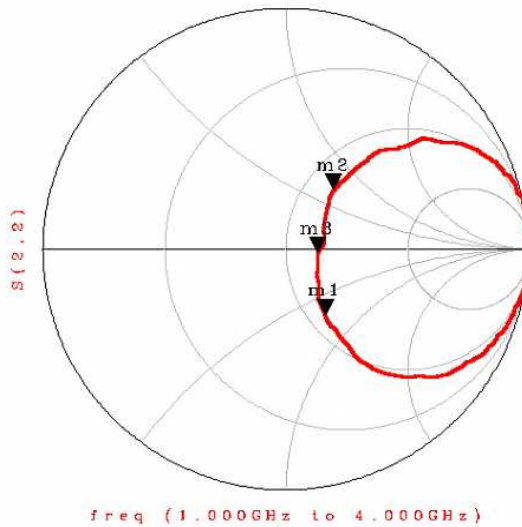
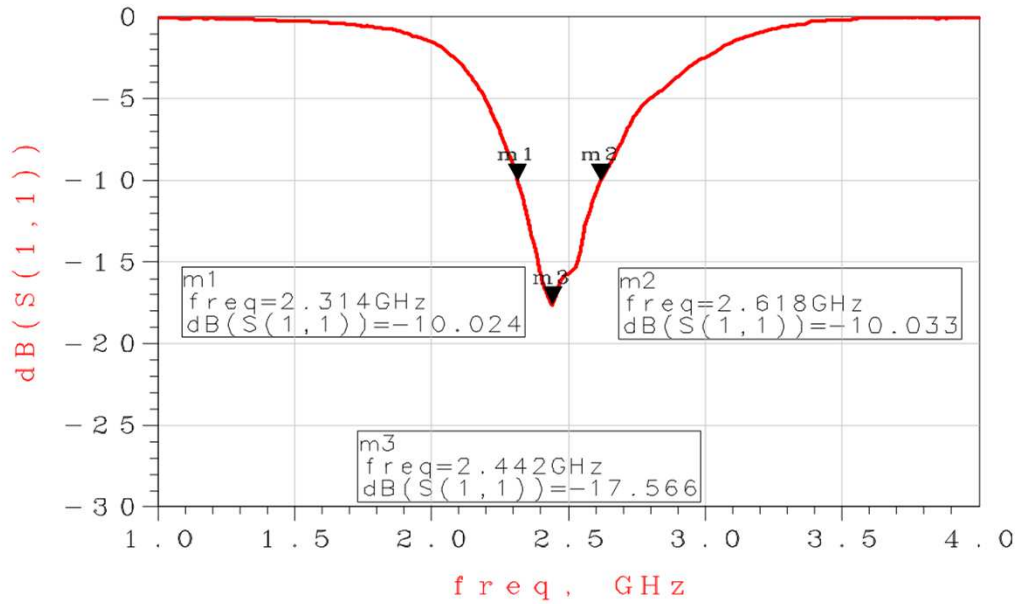
P/N 2450AT43A100

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## Typical Electrical Performance (T=25°C) on Layout Recommendation #1

### Return Loss



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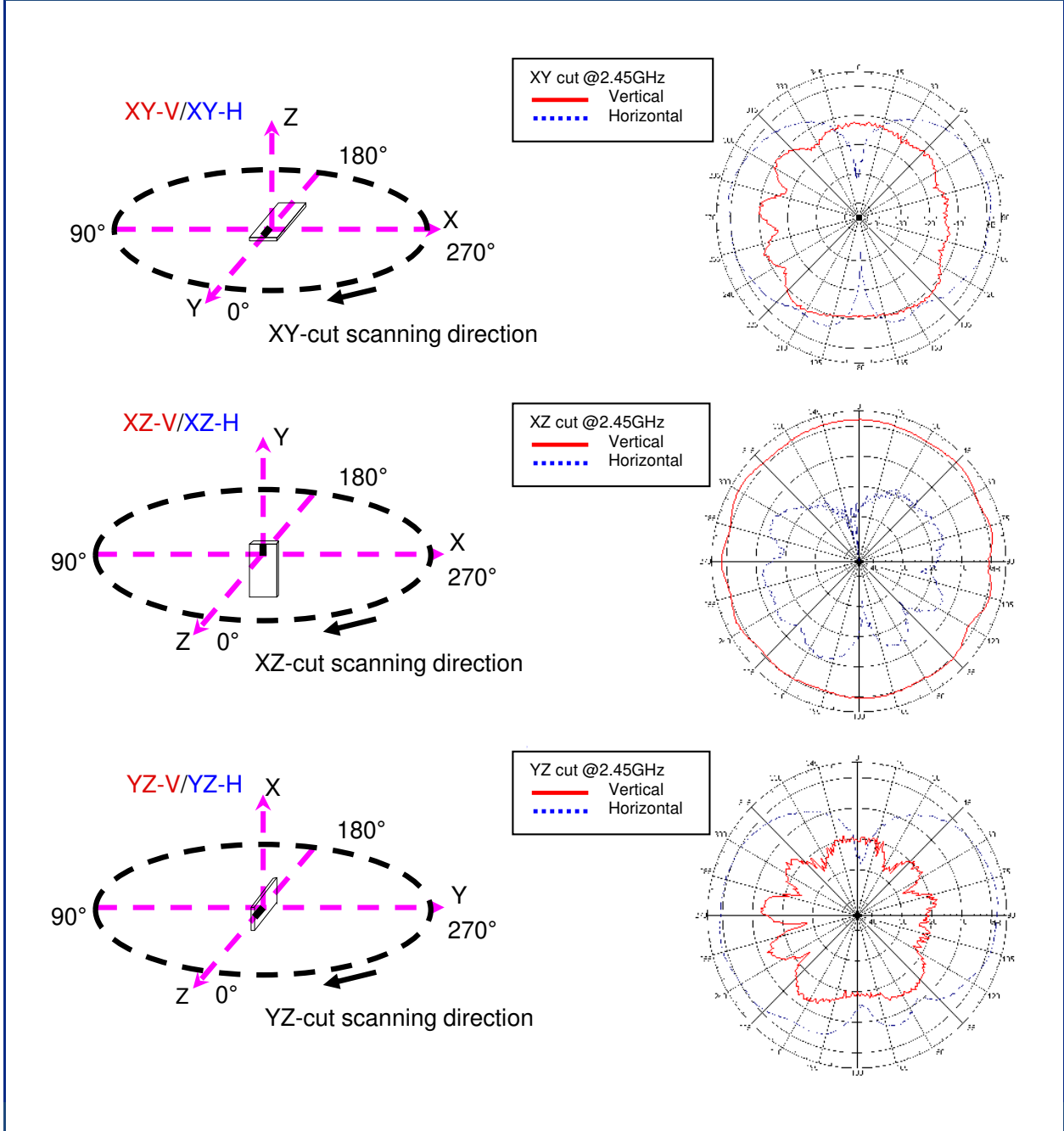
2.45 GHz SMD Chip Antenna

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## Typical Radiation Patterns (T=25°C) of Layout Recommendation #1



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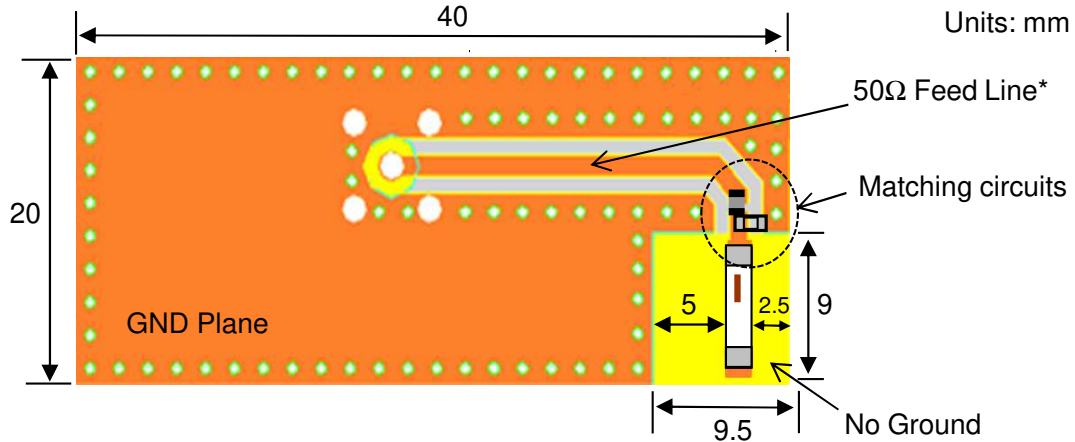
2.45 GHz SMD Chip Antenna

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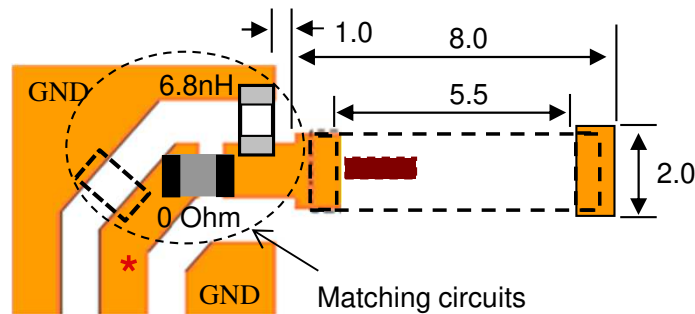
## Layout Recommendation #2: Horizontal Mounting



\* This 50ohm trace to the antenna can be shorten (considerably) to suit your PCB space constraints

Orderable EVB p/n: 2450AT43A100-EB2SMA

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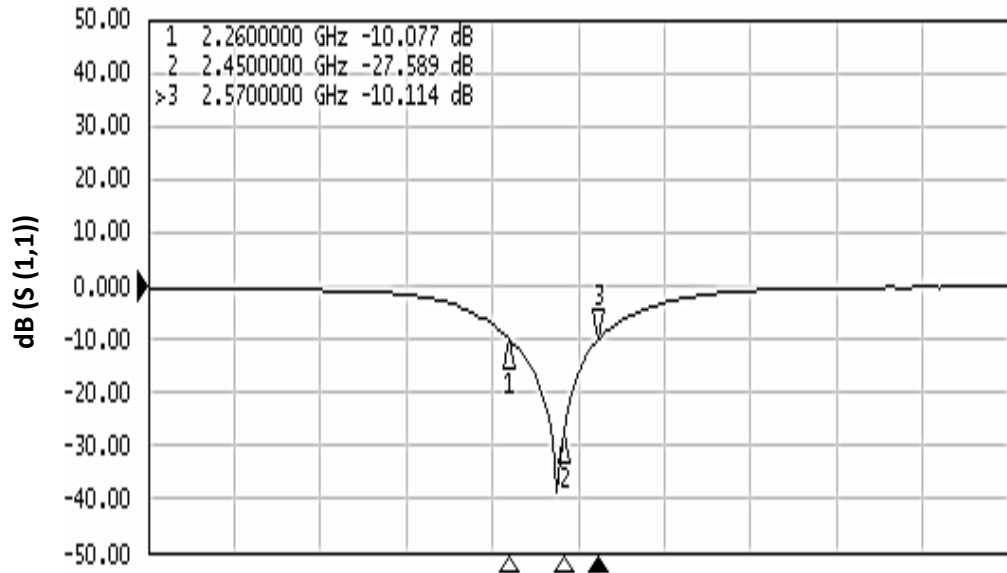
P/N 2450AT43A100

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## Typical Electrical Performance (T=25°C) on Layout Recommendation #2

### Return Loss (with matching)



Need help laying out the antenna, want us to review your antenna design (free!), or would like us to measure and derive the new tuning values of your PCB (fee may apply) go to:

<https://www.johansontechnology.com/ask-aquestion>

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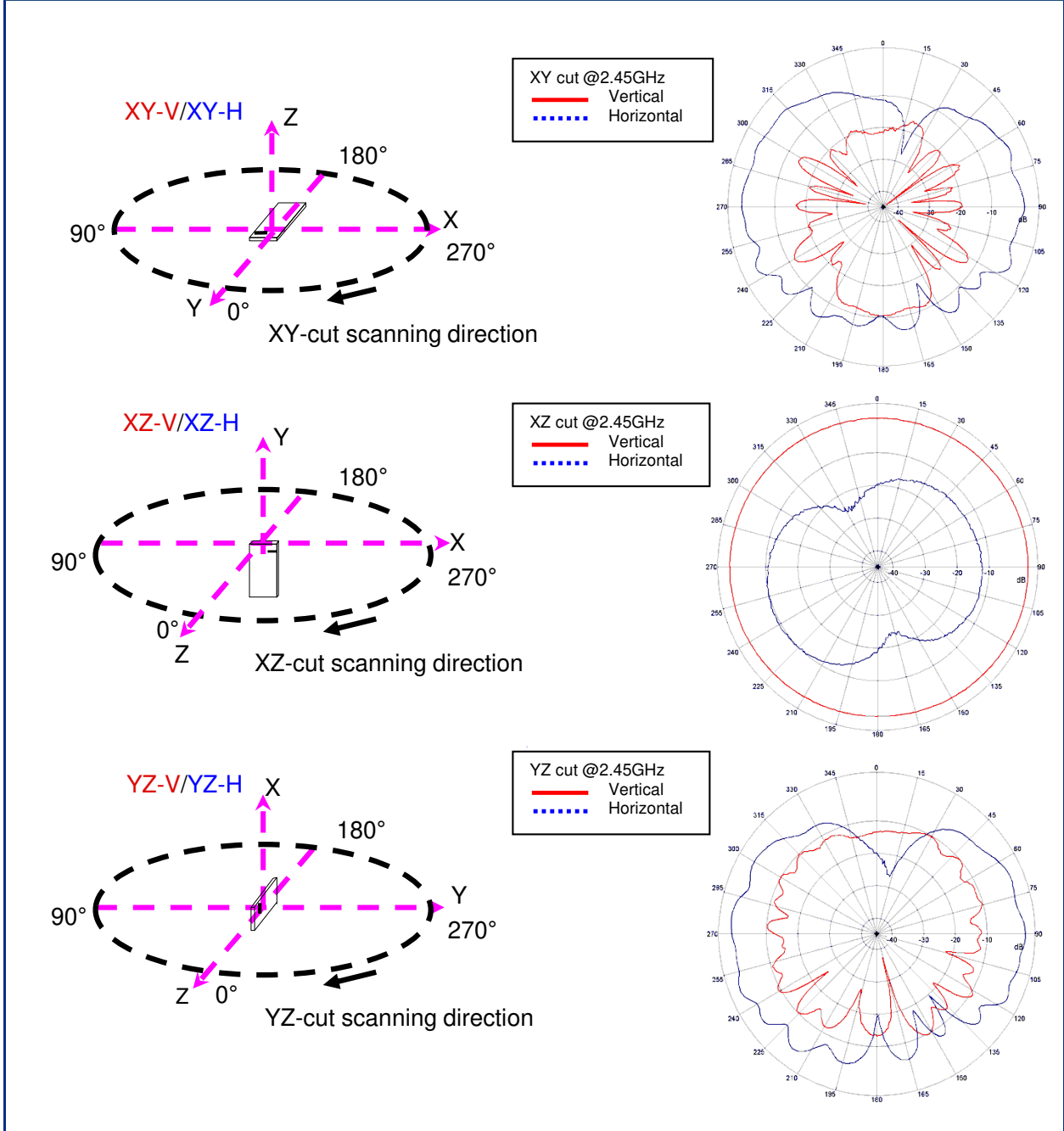
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## Typical Radiation Patterns (T=25°C) of Layout Recommendation #2



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**For more Antennas and to Download Measured S-parameters, go to:**

<https://www.johansontechnology.com/antennas>

**Antenna Tuning, Optimization, and Characterization Services**

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