"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, Propietary Protocol, ISM, Smart Energy, WiMax

Detail Specification: 5/24/2013

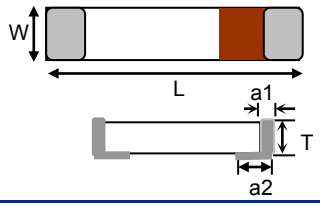
General Specifications

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
Recommneded Storage Conditions	+5 ~ +35 °C, Humidity 45~75%RH

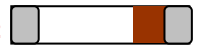
Mechanical Specifications

	In	mm
L	0.315 ± 0.008	8.00 ± 0.20
W	0.039 ± 0.008	1.00 ± 0.20
T	0.039 ± 0.008	1.00 ± 0.20
a	0.020 ± 0.008	0.50 ± 0.20
a2	0.039 ± 0.008	1.00 ± 0.20



Terminal Configuration

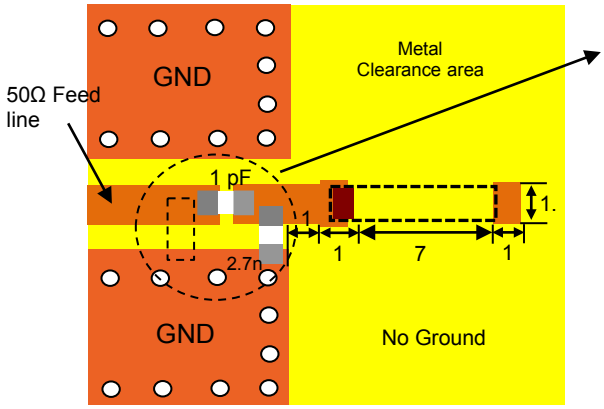
No.	Function
1	Feeding Point
2	NC



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 monted 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:

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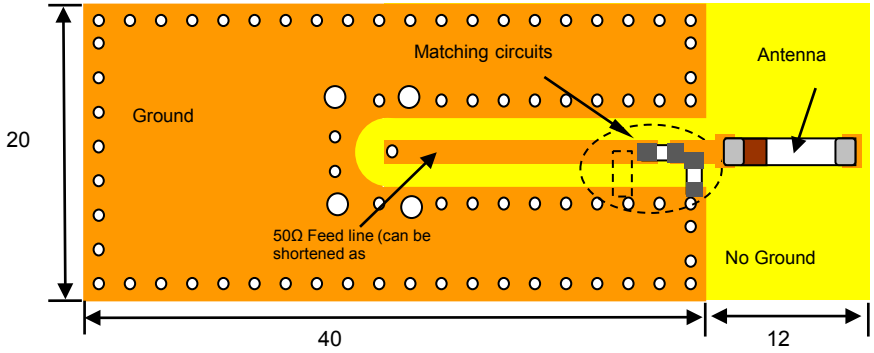
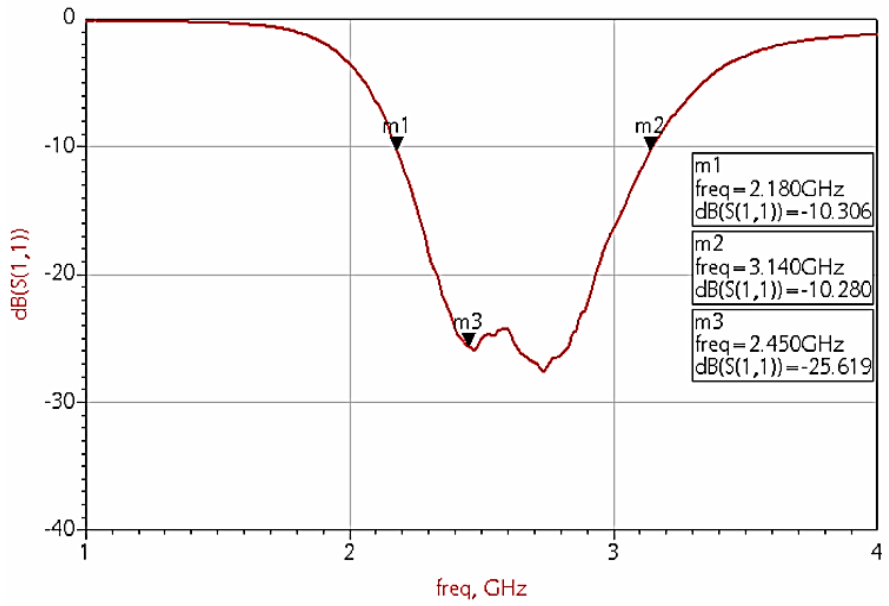
Layout #1 example (units in mm)



Orderable EVB p/n: 2500AT44M0400-EB1SMA

Return Loss - with Matching Circuits



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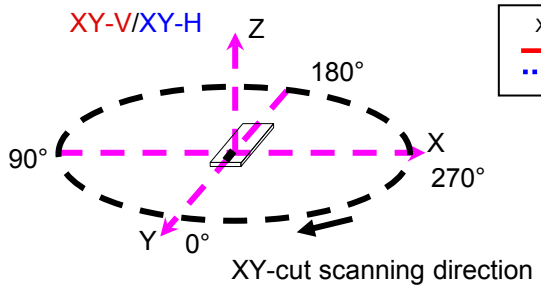
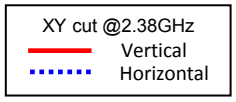
Detail Specification: 5/24/2013

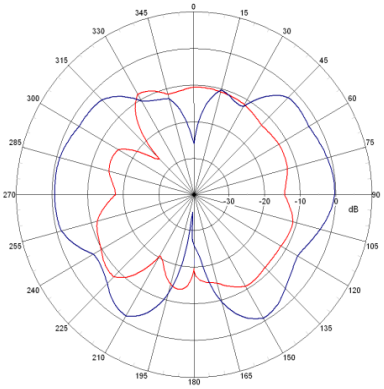
Typical Radiation Patterns @ 2.38GHz - Layout #1

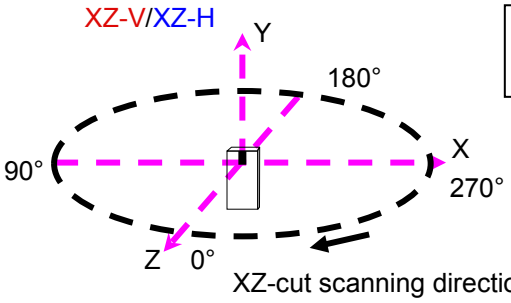
Typical Radiation Patterns - Layout #1



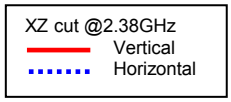
XY-cut scanning direction

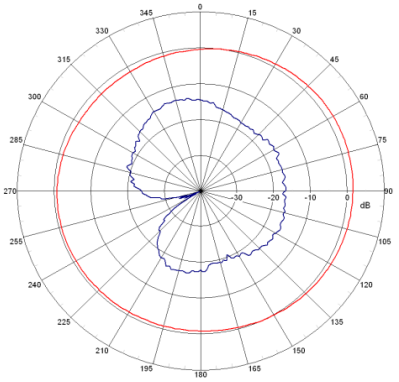


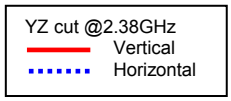


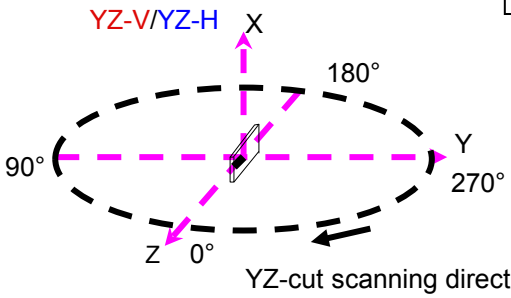


XZ-cut scanning direction

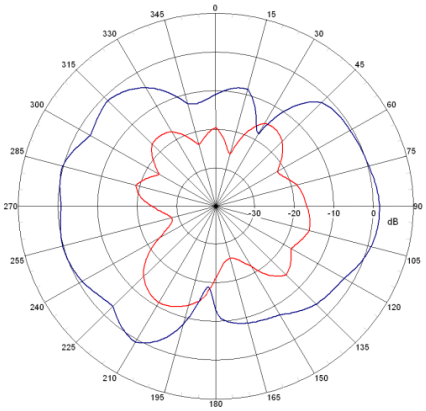








YZ-cut scanning direction



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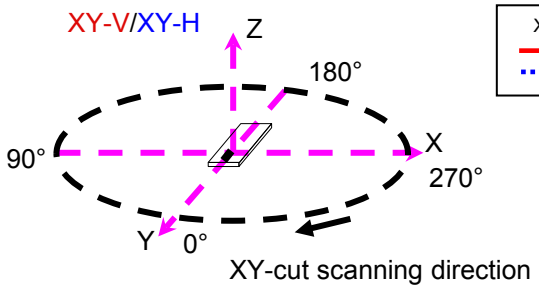
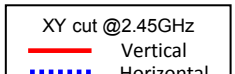
Detail Specification: 5/24/2013

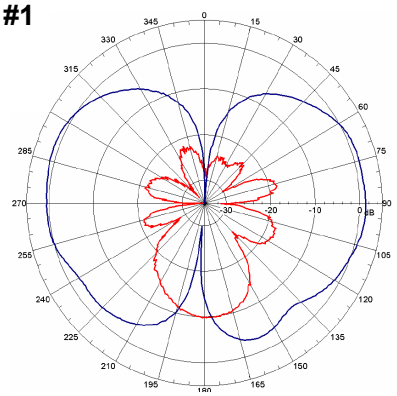
Typical Radiation Patterns @ 2.45GHz - Layout #1

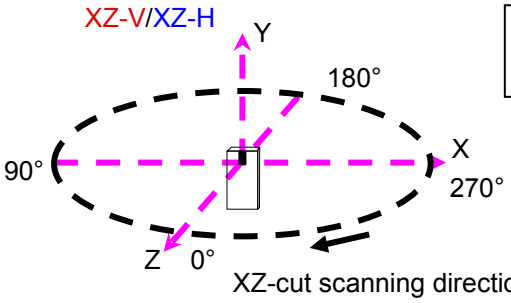
Typical Radiation Patterns - Layout #1



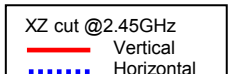
XY-cut scanning direction

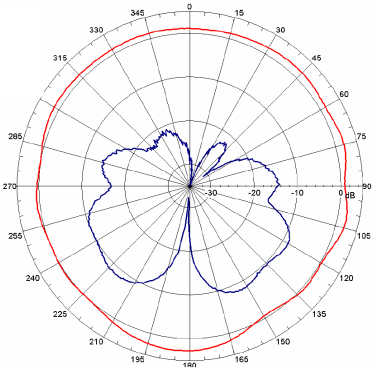


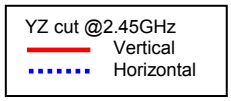


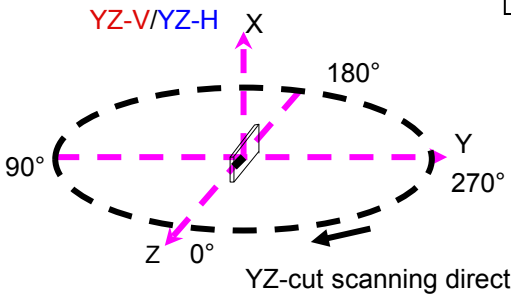


XZ-cut scanning direction

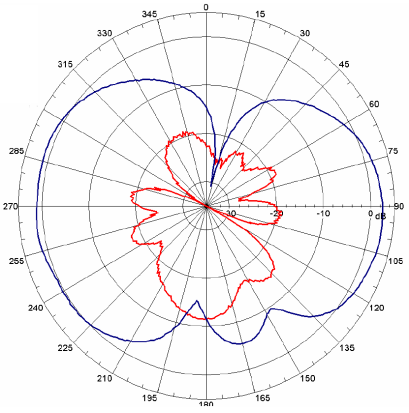








YZ-cut scanning direction



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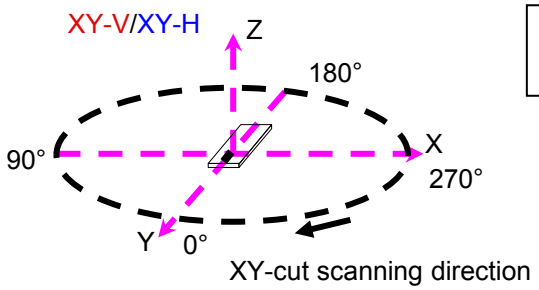
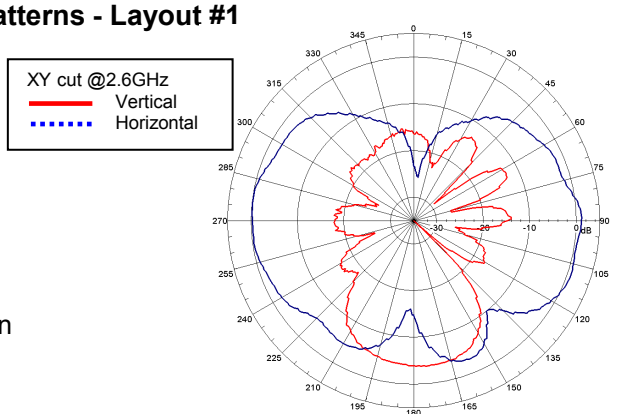
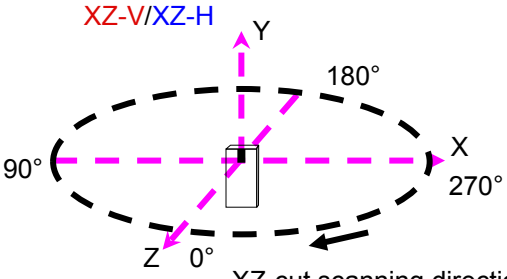
Typical Radiation Patterns @ 2.6GHz - Layout #1

Typical Radiation Patterns - Layout #1

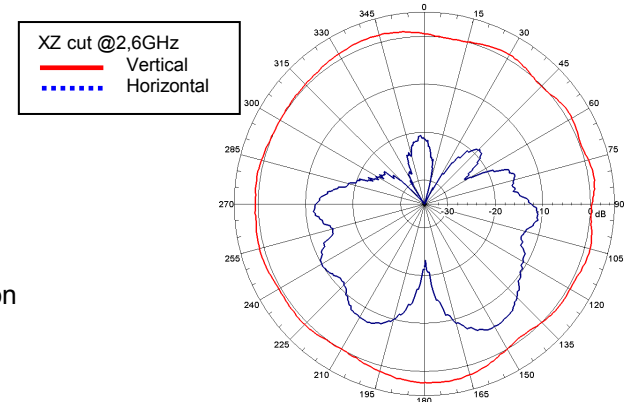


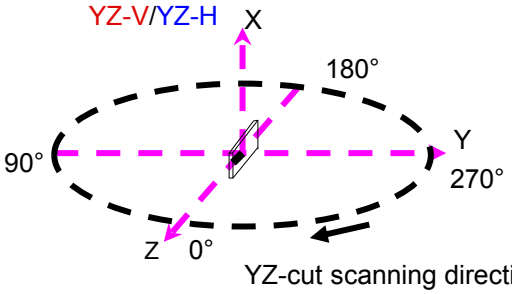
XY-cut scanning direction



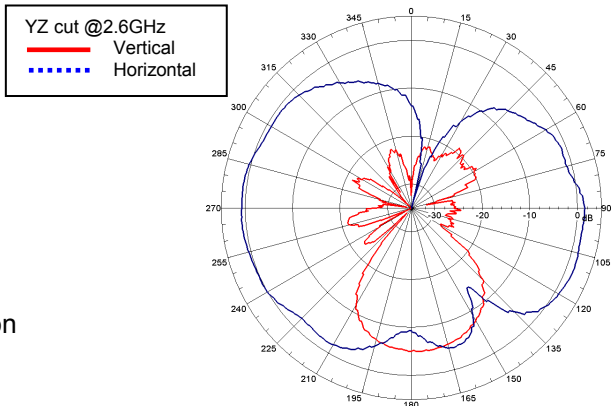


XZ-cut scanning direction





YZ-cut scanning direction



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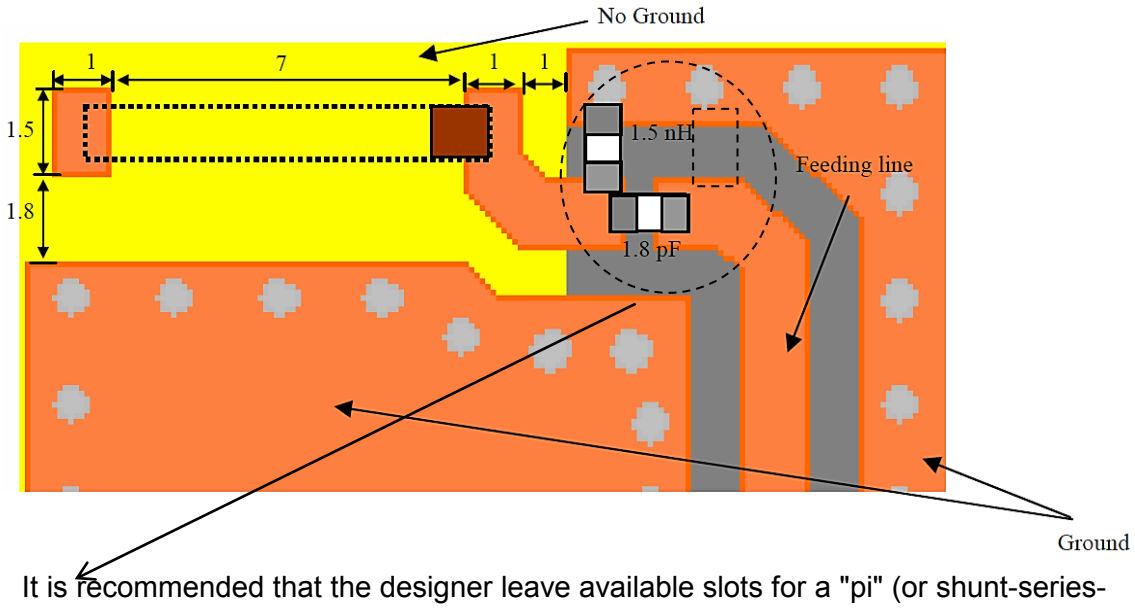
Alternate layout - Layout #2

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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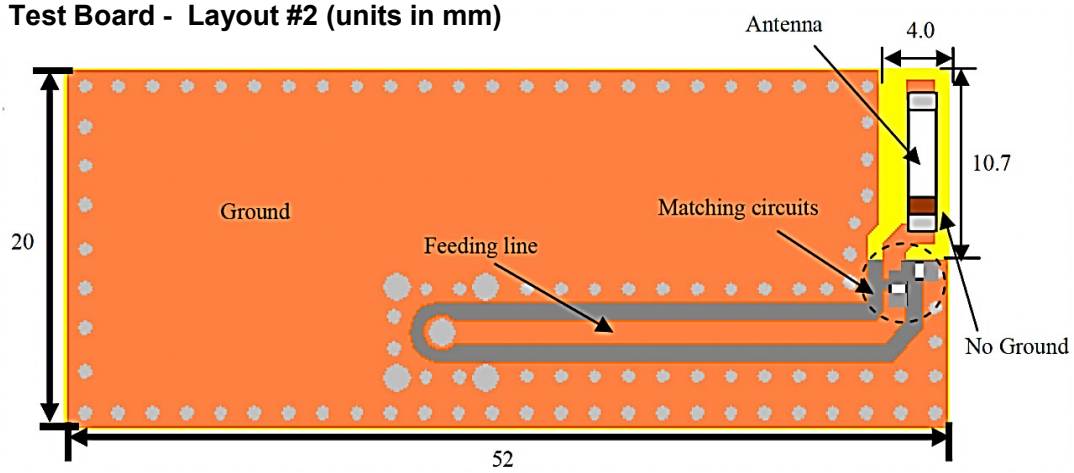
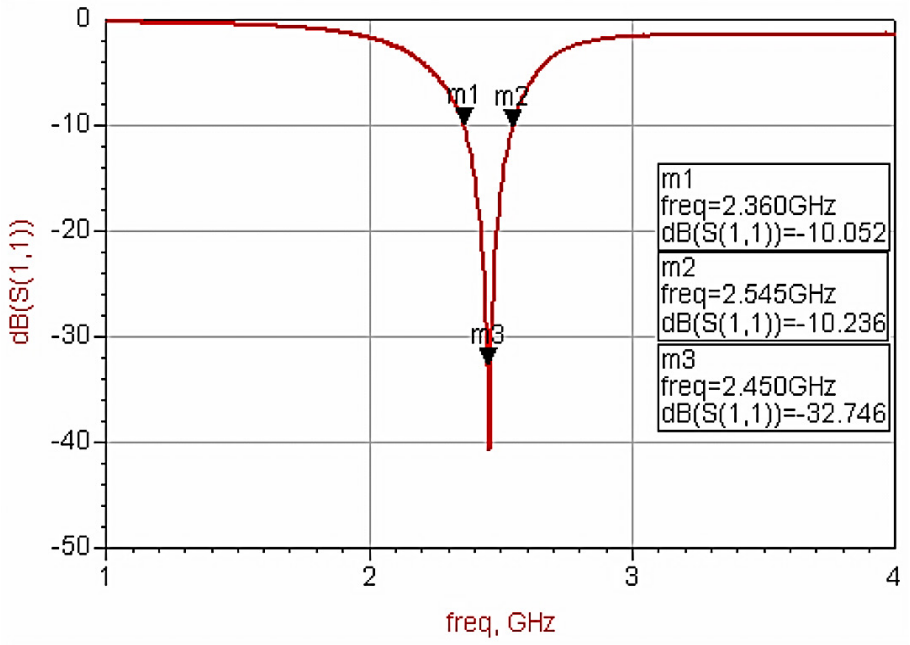
Detail Specification: 5/24/2013

Typical Electrical Characteristics (T=25 °C)

Test Board - Layout #2 (units in mm)



Return Loss - with Matching Circuits



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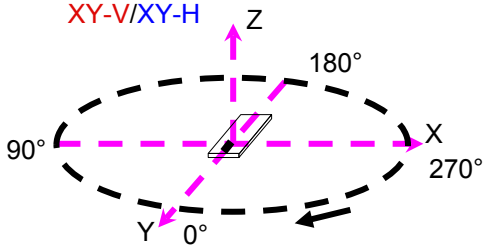
Typical Radiation Patterns @ 2.45GHz - Layout #2

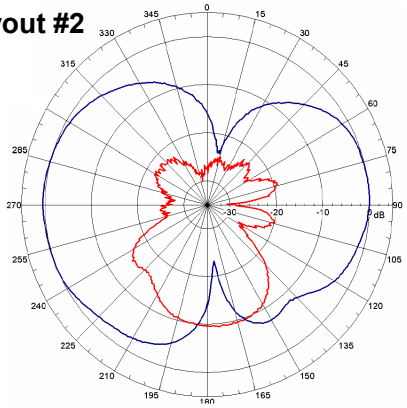
Typical Radiation Patterns - Layout #2

XY-V/XY-H

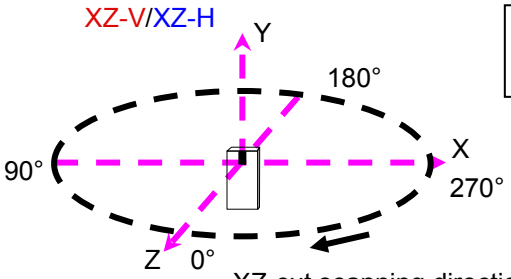


XY-cut scanning direction

XY cut @2.45GHz
Vertical
Horizontal

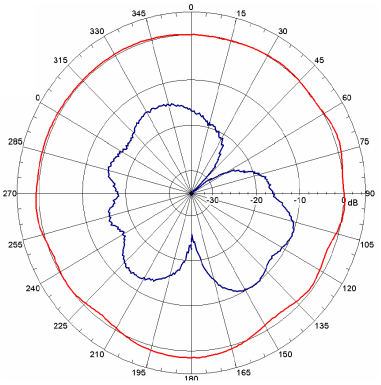


XZ-V/XZ-H

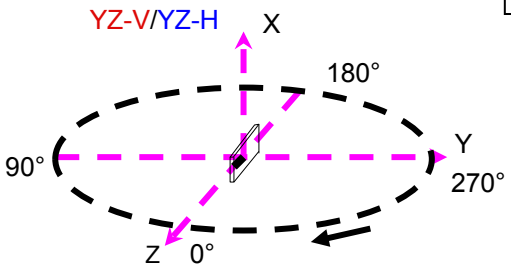


XZ-cut scanning direction

XZ cut @2.45GHz
Vertical
Horizontal

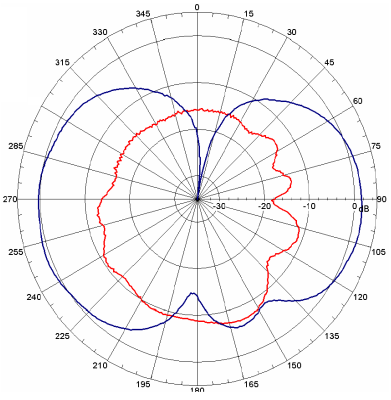


YZ-V/YZ-H



YZ-cut scanning direction

YZ cut @2.45GHz
Vertical
Horizontal



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