

AT5020 Series 【Preliminary】

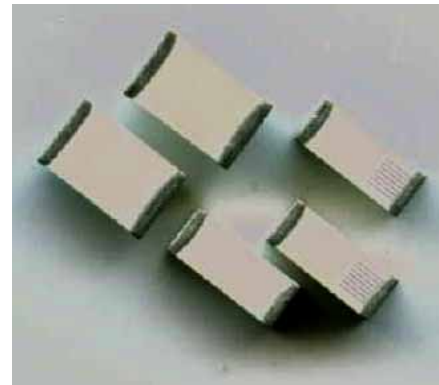
Multilayer Chip Antenna

Features

- ❖ Monolithic SMD with small, low-profile and light-weight type.
- ❖ Wide bandwidth

Applications

- ❖ 2.4GHz WLAN, Home RF, Bluetooth Modules, etc.



Specifications

Part Number	Frequency Range (MHz)	Peak Gain (dBi typ.)	Average Gain (dBi typ.)	VSWR	Impedance
AT5020-E2R4HAA_	2400~2500	0.5dBi (XZ-V)	-2.0dBi (XZ-V)	3.0 max.	50 Ω

Q'ty/Reel (pcs) : 2,000 pcs
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : +5 ~ +35 °C, Humidity 45~75%RH
 Storage Period : 12 months max.
 Power Capacity : 2W max.

Part Number

AT **5020** - **E** **2R4** **HAA** **□** **□**
 ① ② ③ ④ ⑤ ⑥ ⑦

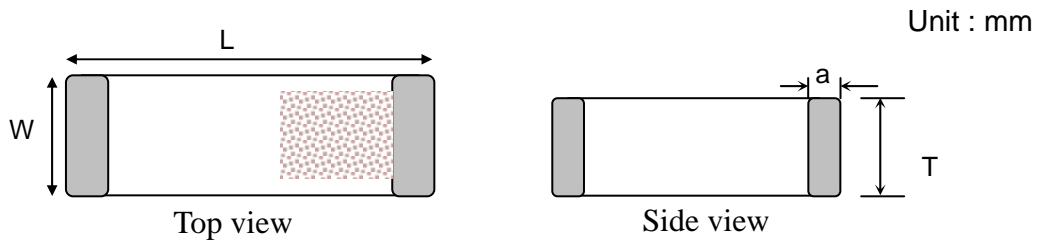
① Type	AT : Antenna	② Dimensions (L x W)	5.0x 2.0 mm
③ Material Code	E	④ Frequency Range	2R4=2400MHz
⑤ Specification Code	HAA	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	=lead-containing /LF=lead-free		

Terminal Configuration



No.	Terminal Name	No.	Terminal Name
①	Feeding Point	②	NC

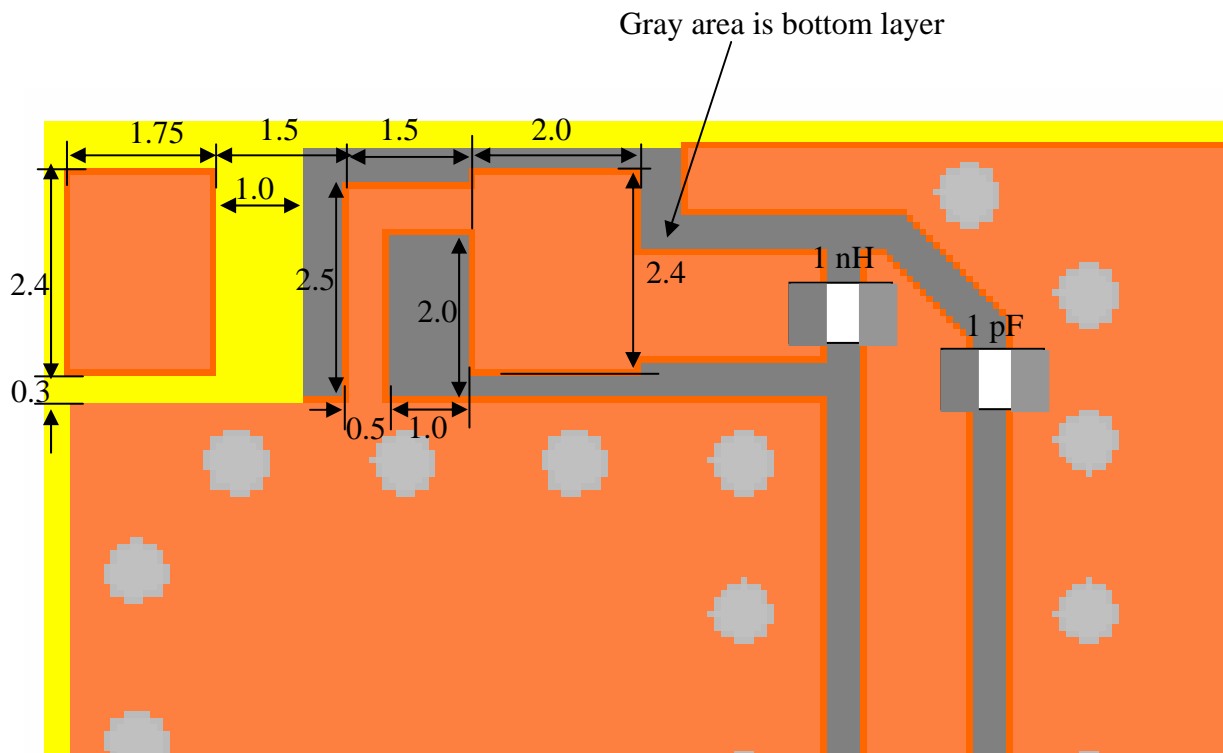
Dimensions and Recommended PC Board Pattern



Mark	L	W	T	a
Dimensions	5.0±0.2	2.0±0.2	3.0+ 0.1/-0.2	0.5±0.2

The Recommended PC Board layout – Type A

❖With Matching Circuits (Unit in mm)

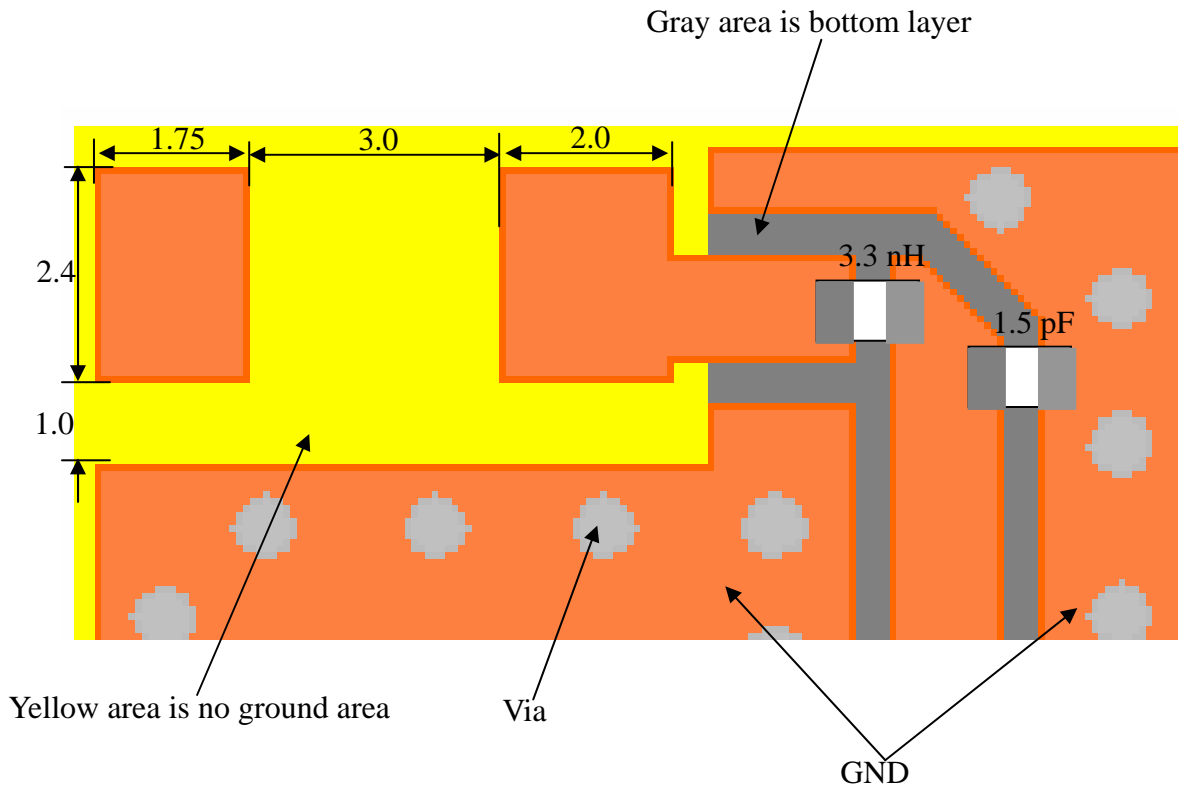


(Matching circuit and component values will be different, depending on PCB

*Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

The Recommended PC Board layout – Type B

❖ With Matching Circuits (Unit in mm)



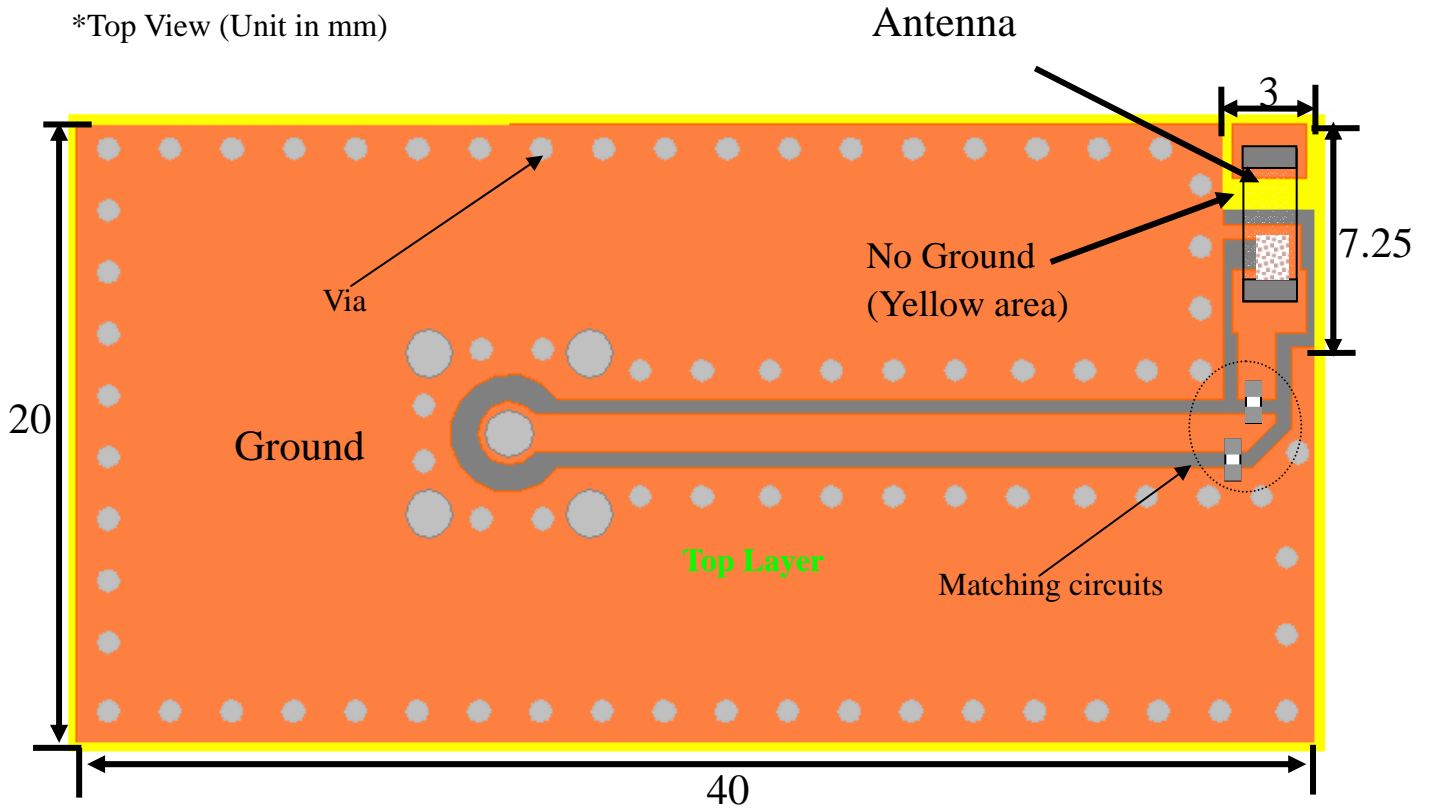
(Matching circuit and component values will be different, depending on PCB layout)

*Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

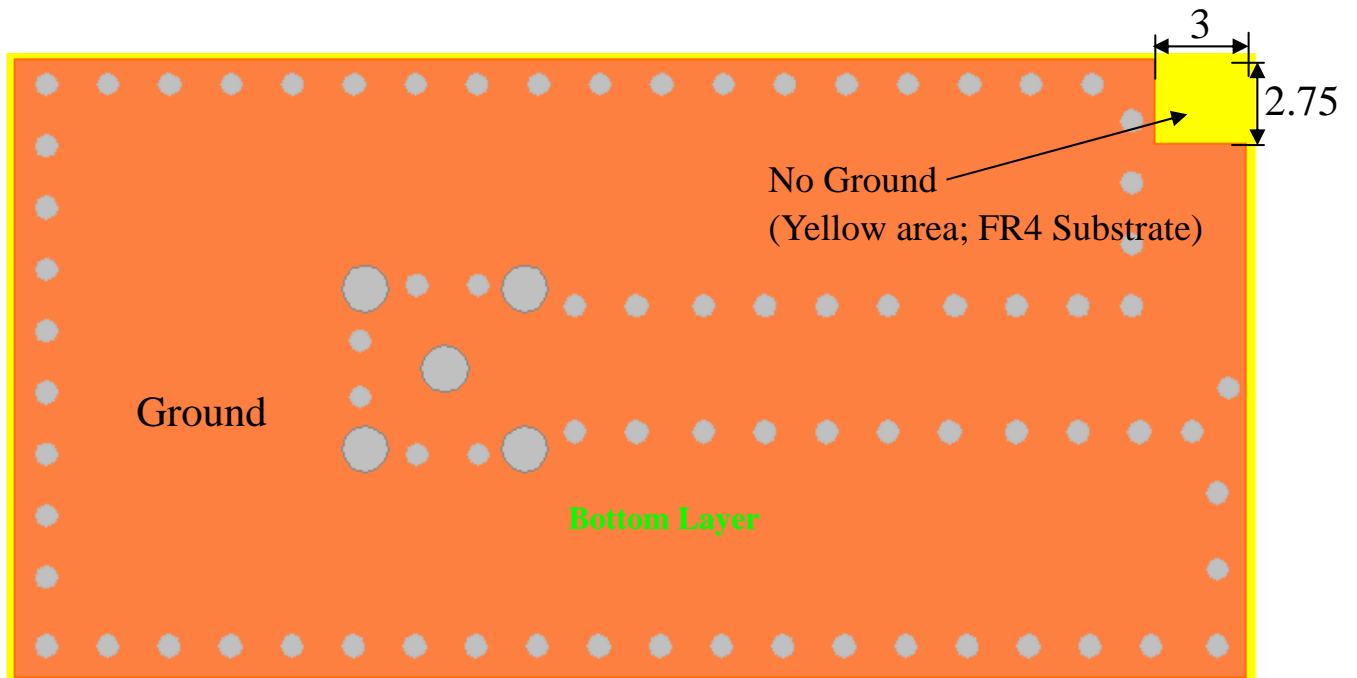
Typical Electrical Characteristics (T=25°C)

❖ Test Board – Type A- Two layer board

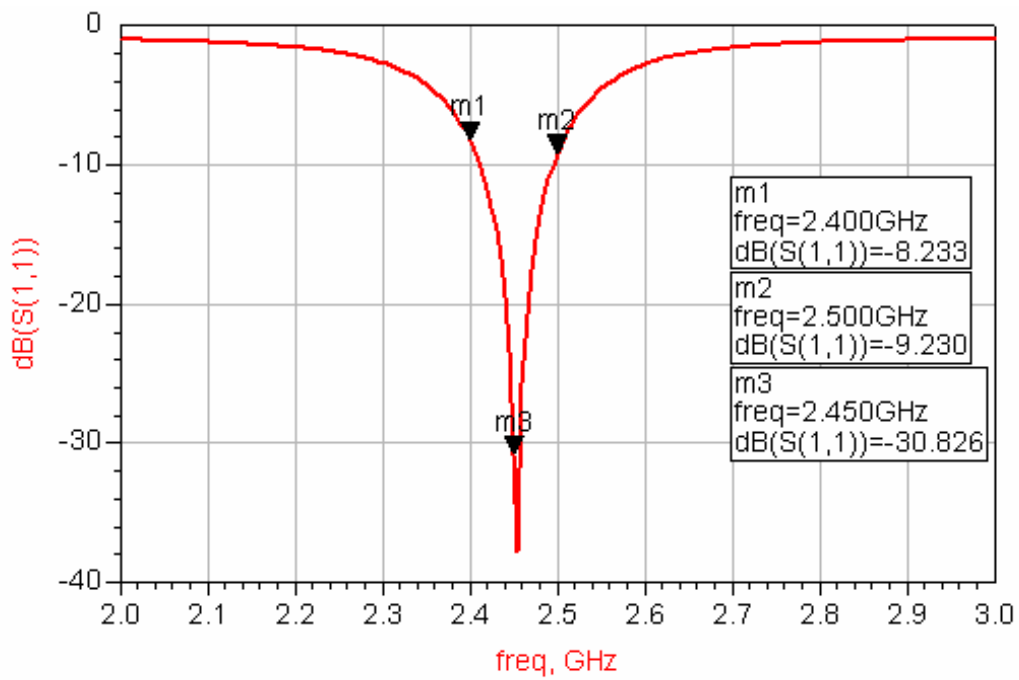
*Top View (Unit in mm)



*Bottom View



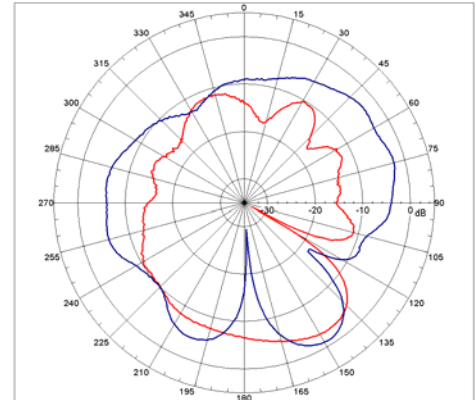
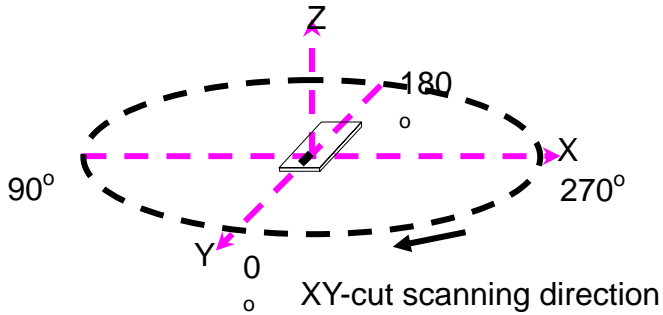
❖ Return Loss/With Matching Circuits (Test Board – Type A)



❖ Radiation Patterns (Test Board – Type A)

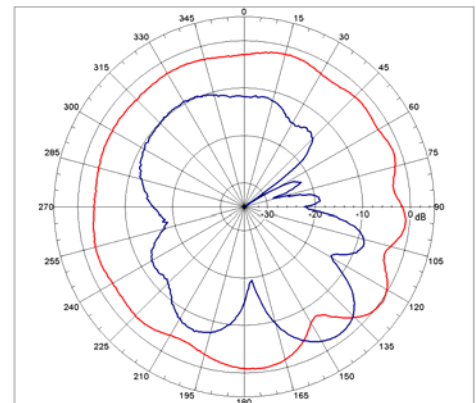
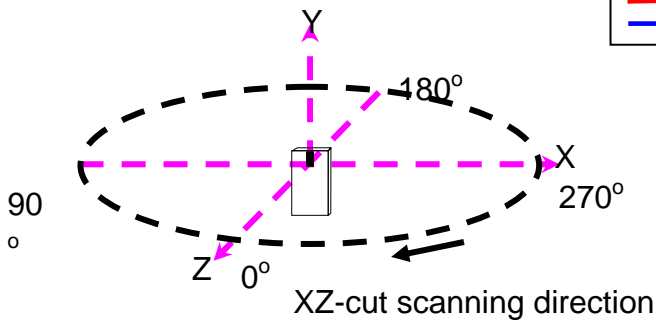
XY-V/XY-H

XY cut @2.45GHz
— Vertical
— Horizontal



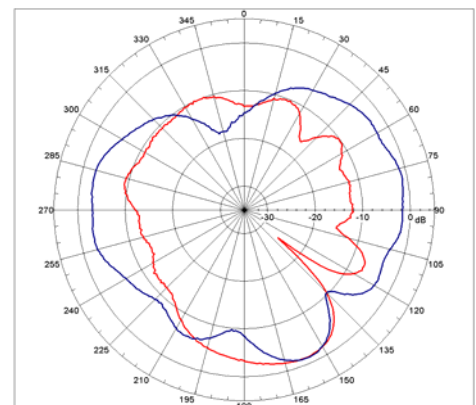
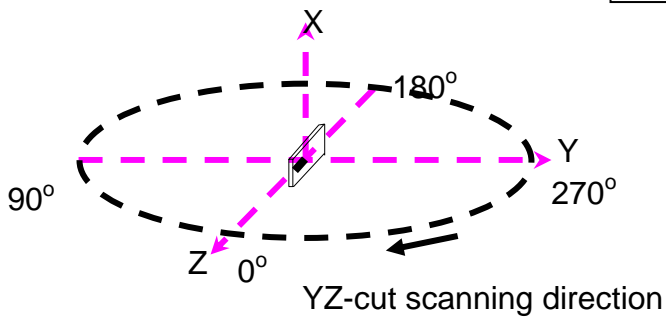
XZ-V/XZ-H

XZ cut @2.45GHz
— Vertical
— Horizontal



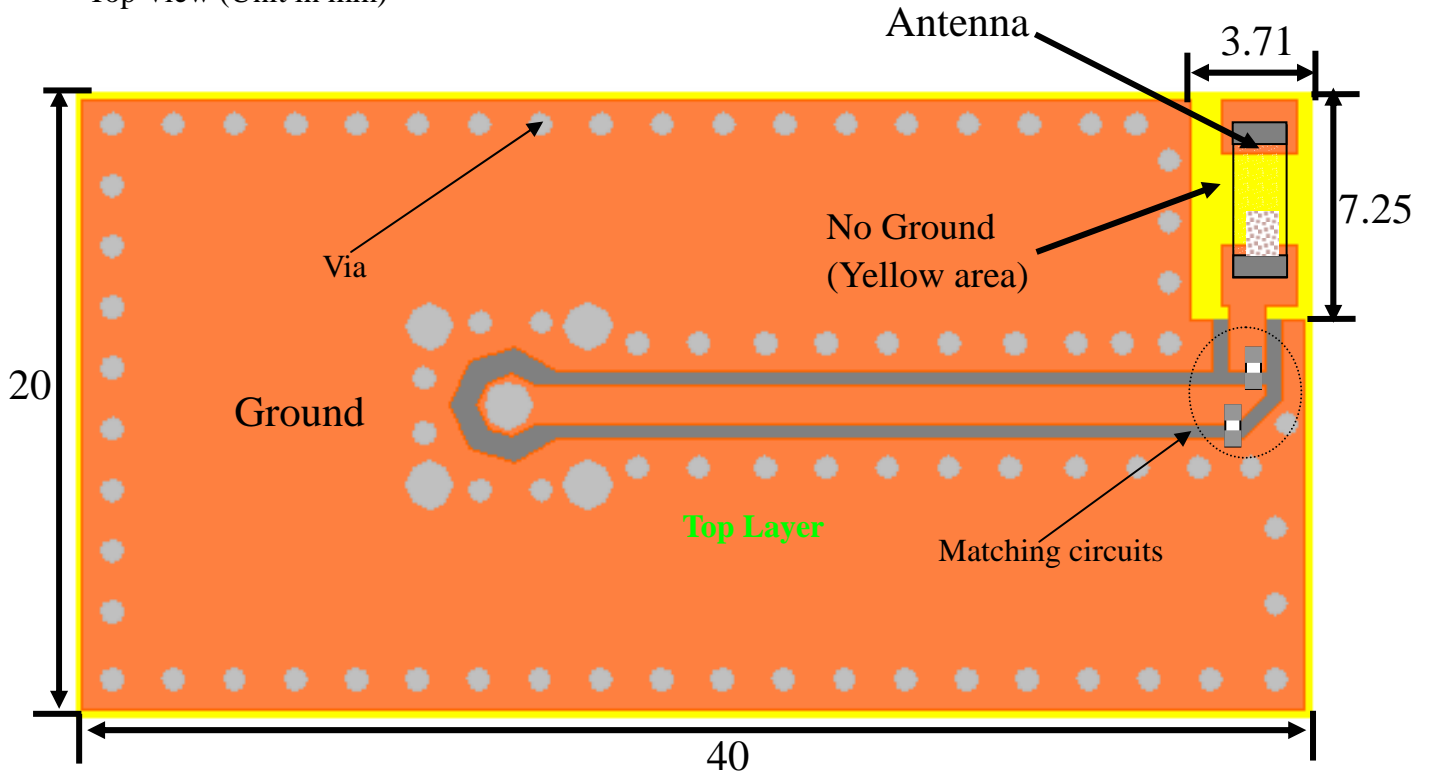
YZ-V/YZ-H

YZ cut @2.45GHz
— Vertical
— Horizontal

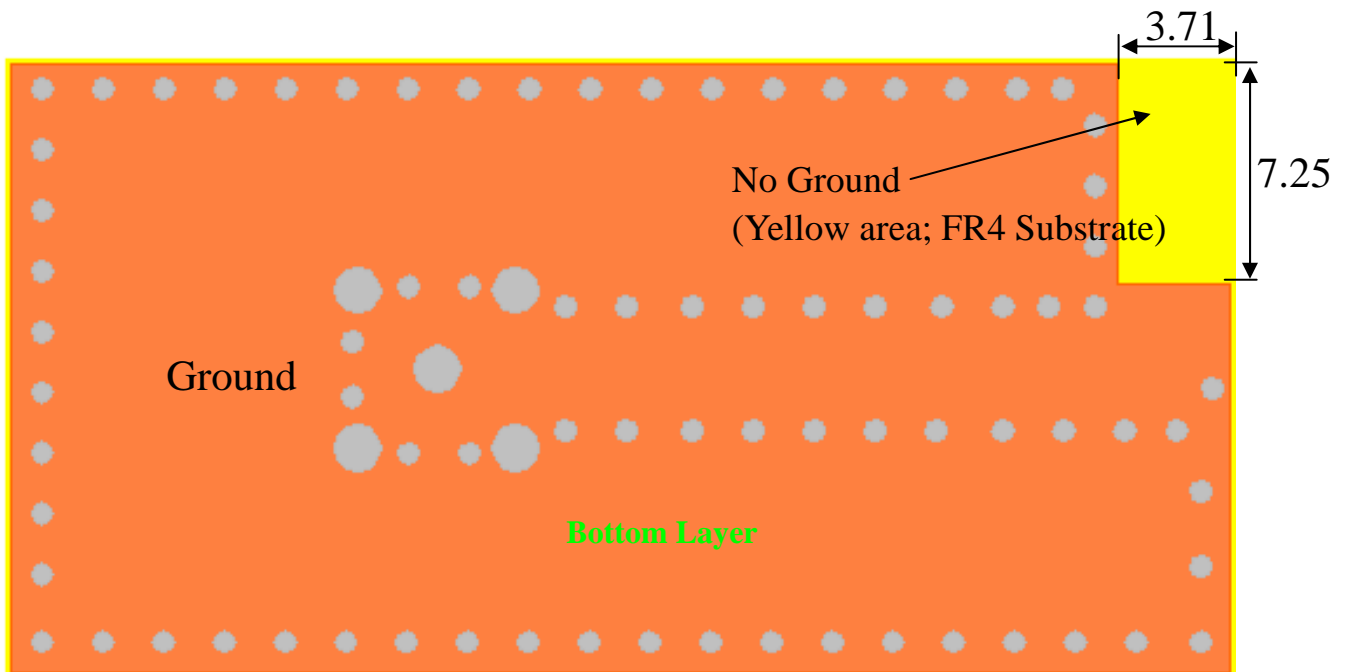


❖ Test Board – Type B- Two layer board

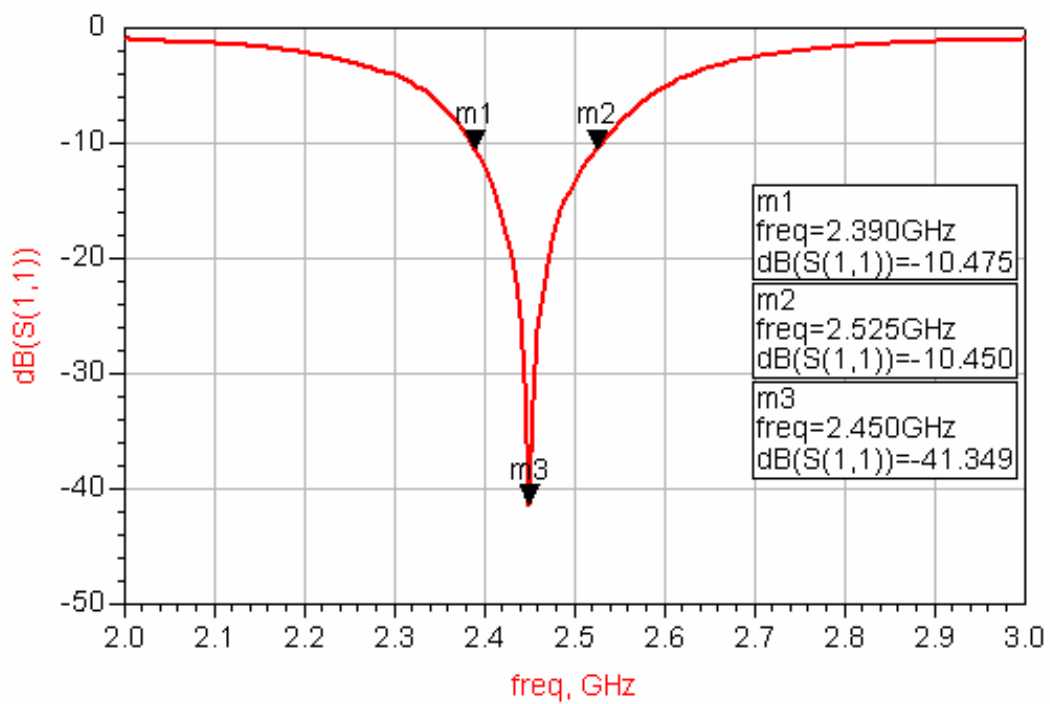
*Top View (Unit in mm)



*Bottom View



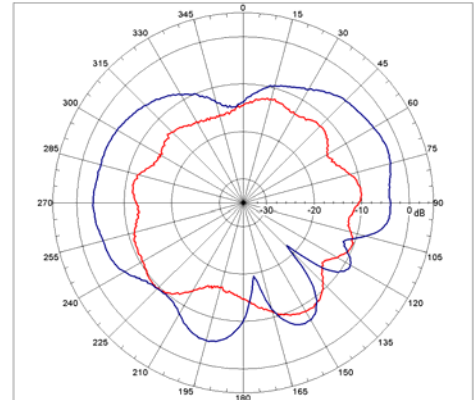
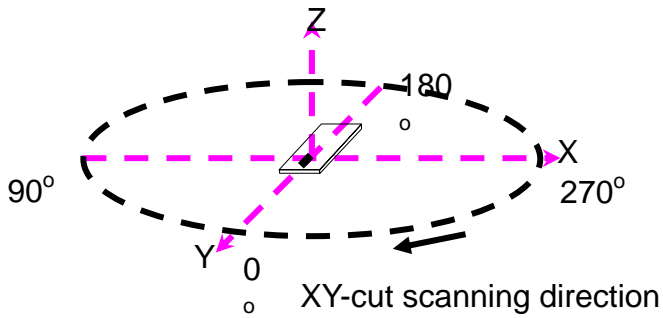
❖ Return Loss/With Matching Circuits (Test Board – Type B)



❖ Radiation Patterns (Test Board – Type B)

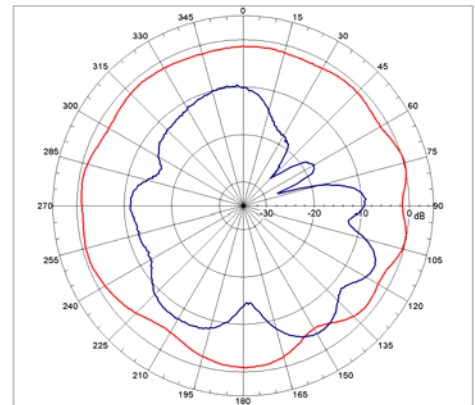
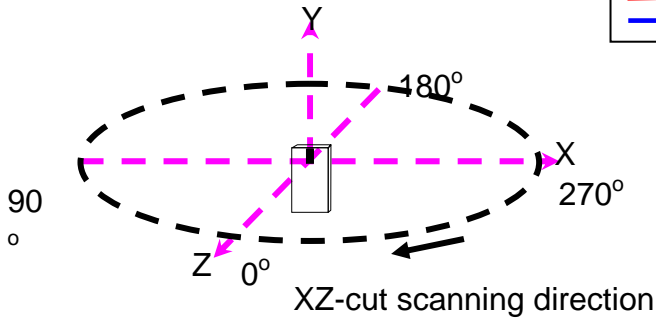
XY-V/XY-H

XY cut @2.45GHz
— Vertical
— Horizontal



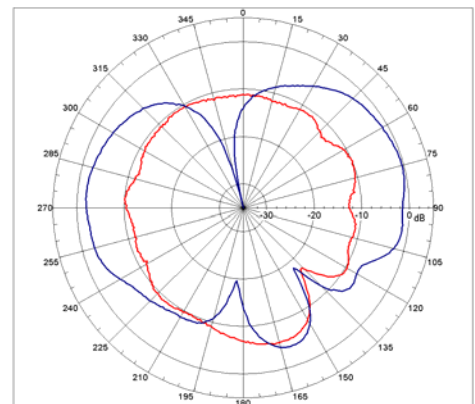
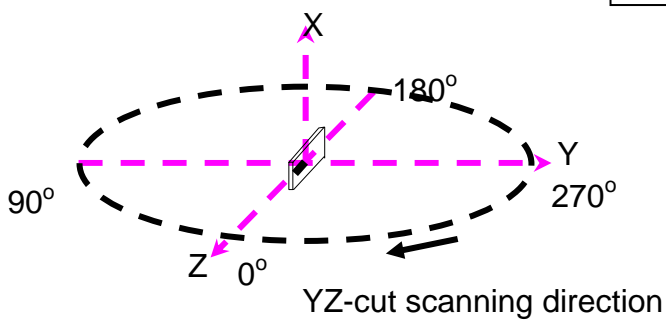
XZ-V/XZ-H

XZ cut @2.45GHz
— Vertical
— Horizontal



YZ-V/YZ-H

YZ cut @2.45GHz
— Vertical
— Horizontal



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