

# AT5020 Series

## 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
<b>AT5020-E3R0HBAN_</b>	2400~2500	0dBi (XZ-V)	-1.5dBi (XZ-V)	2 max.	50 Ω

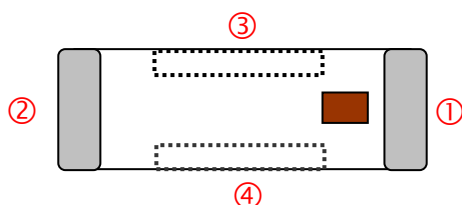
Q'ty/Reel (pcs) : 2,000 pcs  
 Operating Temperature Range : -40 ~ +85 °C  
 Storage Temperature Range : +5 ~ +35 °C, Humidity 45~75%RH  
 Storage Period : 12 months max.  
 Power Capacity : 3W max.

### Part Number

AT   5020   -   E   3R0   HBAN   □   □  
 ①   ②   ③   ④   ⑤   ⑥   ⑦

① Type	AT : Antenna	② Dimensions ( L × W )	5.0× 2.0 mm
③ Material Code	E	④ Frequency Range	3R0=3000MHz
⑤ Specification Code	HBAN	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	=lead-containing /LF=lead-free		

### Terminal Configuration

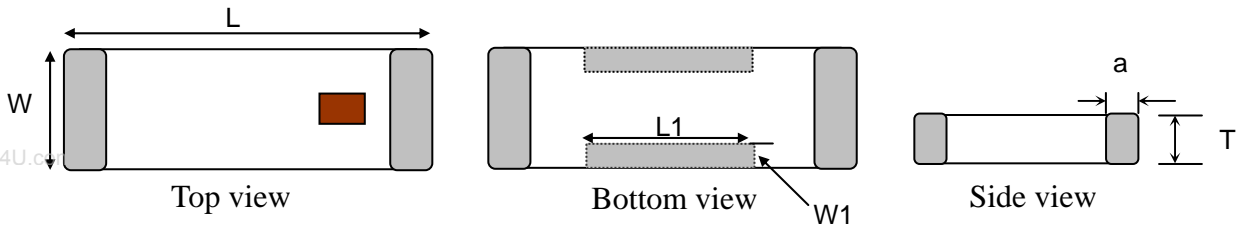


No.	Terminal Name	No.	Terminal Name
①	Feeding Point	③	NC

②	NC	④	NC
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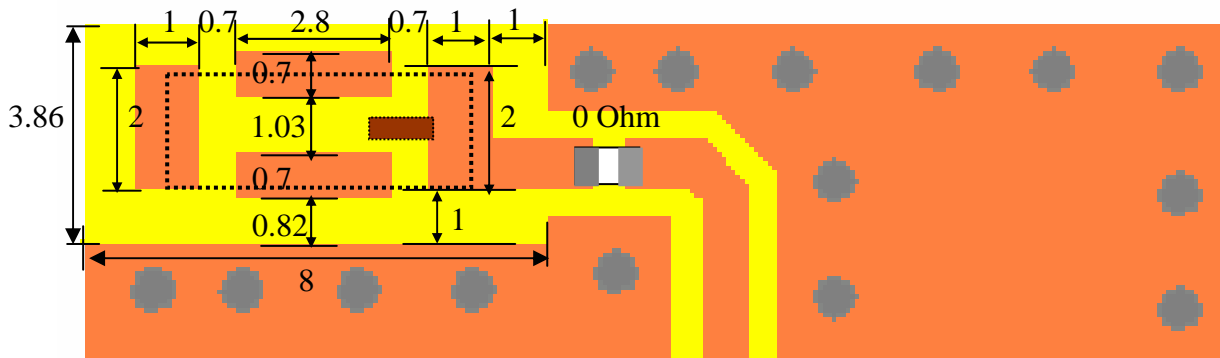
**Dimensions and Recommended PC Board Pattern**

Unit : mm

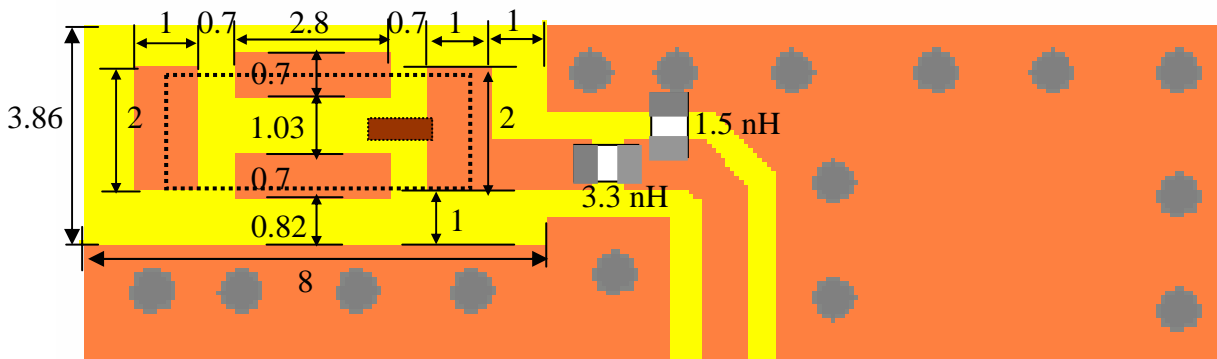


Mark	L	W	L1	W1	T	a
Dimensions	$5.0 \pm 0.2$	$2.0 \pm 0.2$	$2.6 \pm 0.2$	$0.5 \pm 0.2$	$2.0 + 0.1 / -0.2$	$0.5 \pm 0.3$

(a) Without Matching Circuits (Unit in mm)



(b) With Matching Circuits

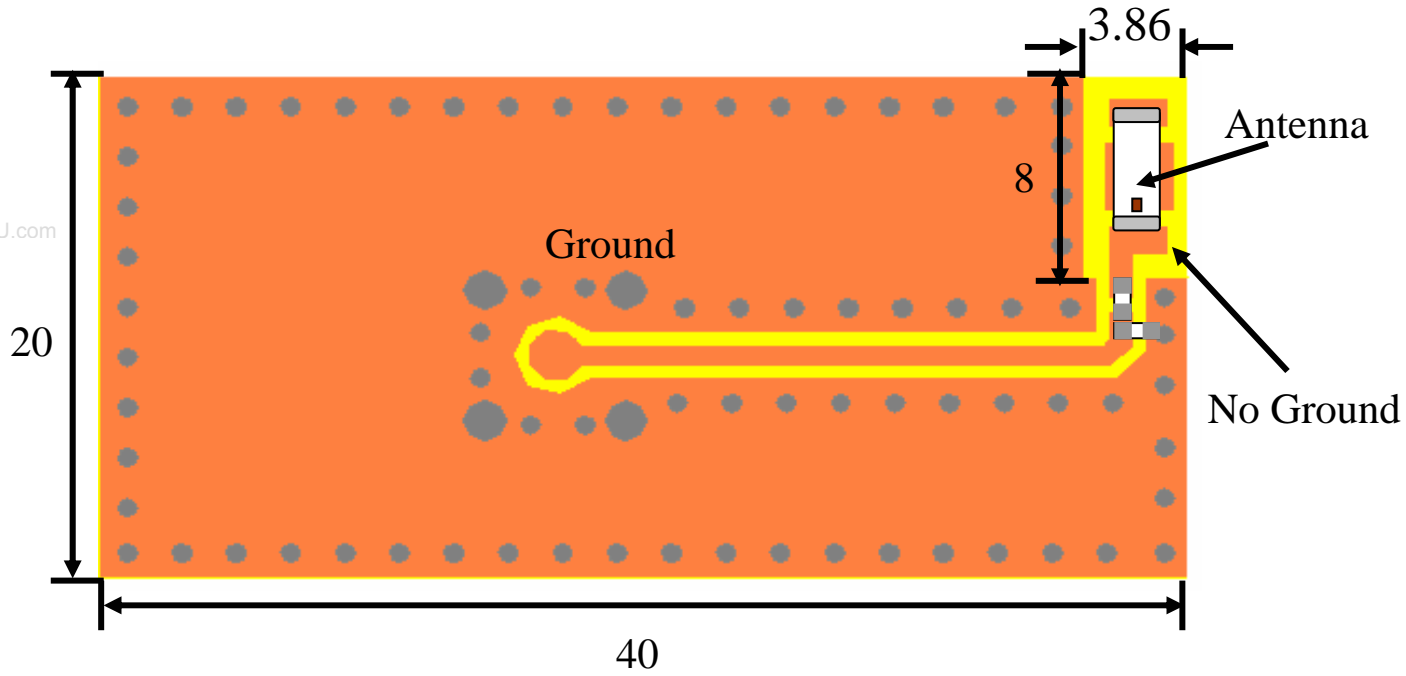


(Matching circuit and component values will be different, depending on PCB layout)

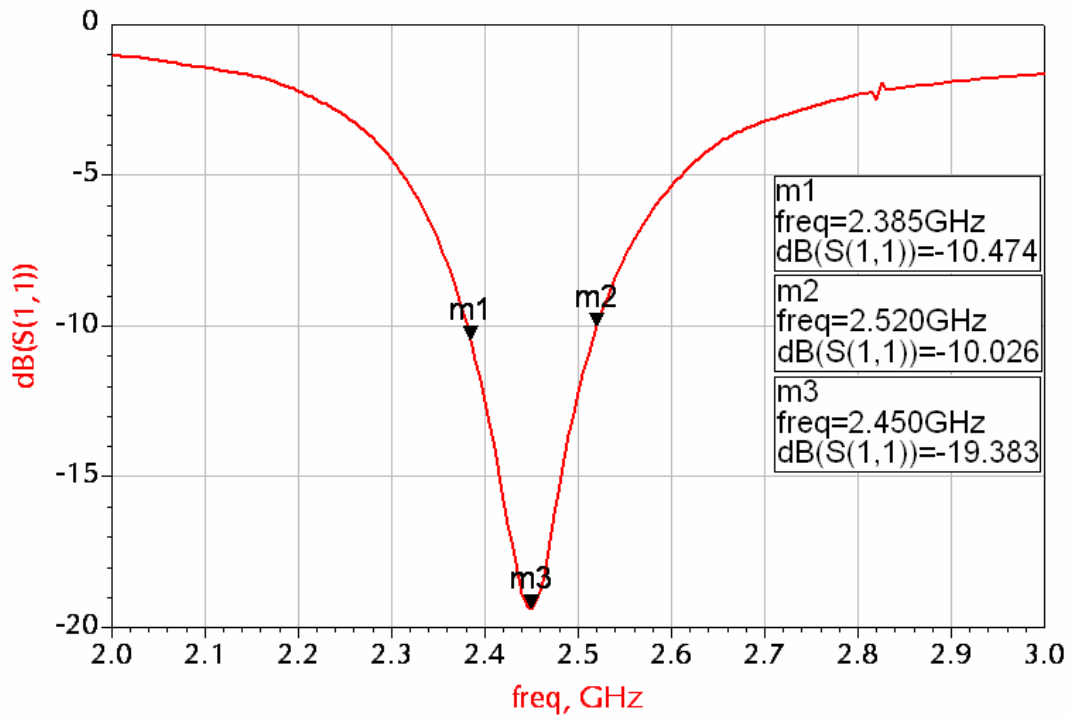
\*Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

**Typical Electrical Characteristics (T=25°C)**

❖ Test Board (Unit in mm)



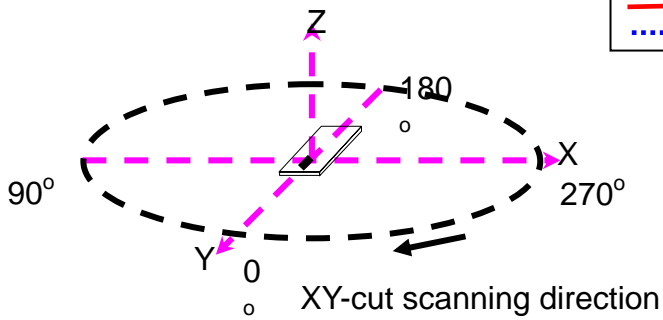
❖ Return Loss(with matching)



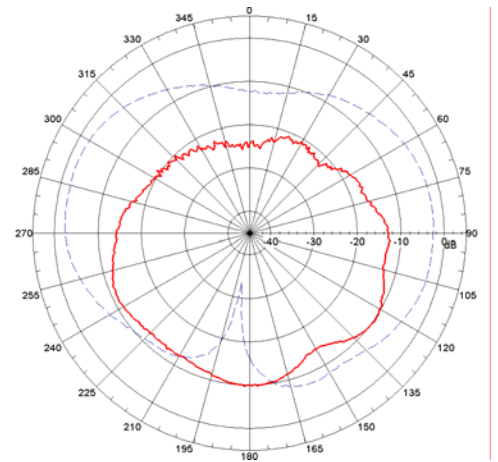
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❖ Radiation Patterns

XY-V/XY-H

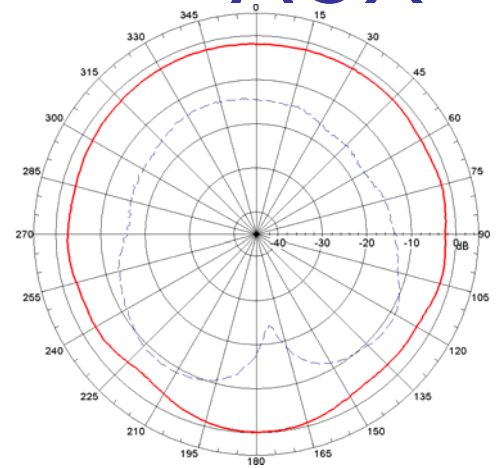
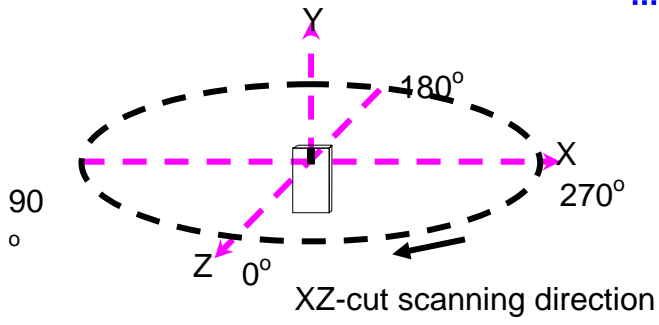


XY cut @2.45GHz  
 — Vertical  
 ..... Horizontal



XZ-V/XZ-H

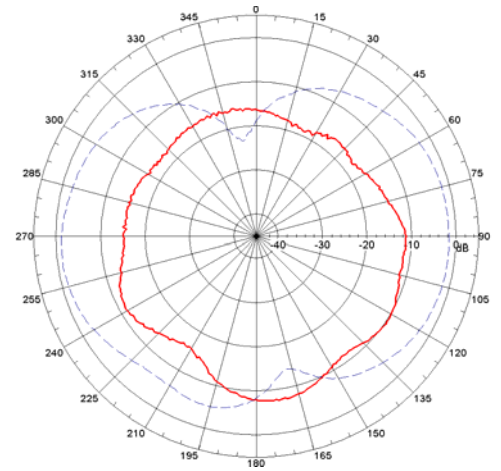
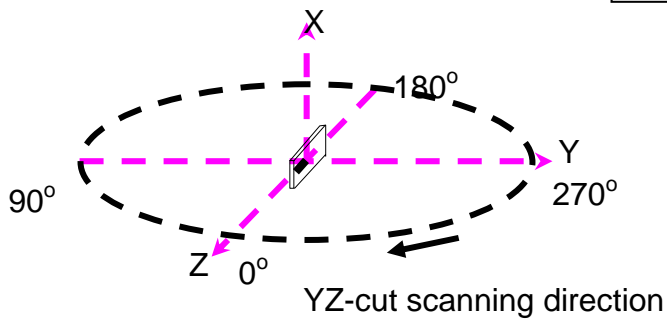
XZ cut @2.45GHz  
 — Vertical  
 ..... Horizontal



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YZ-V/YZ-H

YZ cut @2.45GHz  
 — Vertical  
 ..... Horizontal



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