

AT9520 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 (XZ-V)	Average Gain (XZ-V)	VSWR	Impedance
AT9520-B2R4HAA_	2400~2500	3.0 dBi typ.	1.0 dBi typ.	2 max.	50 Ω

Q'ty/Reel (pcs) : 1000pcs
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : -40 ~ +85 °C
 Power Capacity : 3W max.

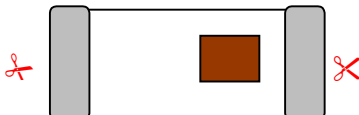
Part Number

AT **9520** - **B** **2R4** **HAA** 

✂ ✂ ✂ ✂ ✂ 

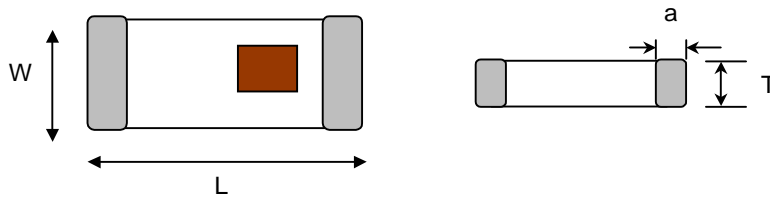
✂ Type	AT : Antenna	✂ Dimensions (L x W)	9.5x 2.0 mm
 Material Code	B	 Frequency Range	2R4=2400MHz
 Specification Code	HAA	 Packaging	T: Tape & Reel B: Bulk

Terminal Configuration

	No.	Terminal Name	No.	Terminal Name
	✂	Feeding Point	✂	NC

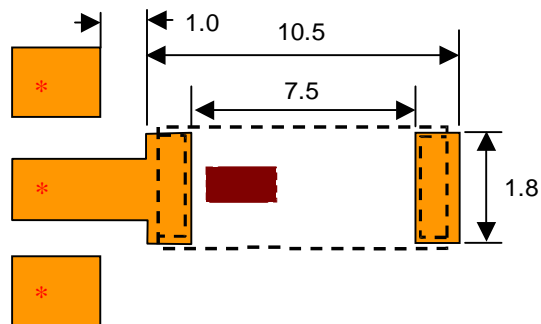
Dimensions and Recommended PC Board Pattern

Unit : mm

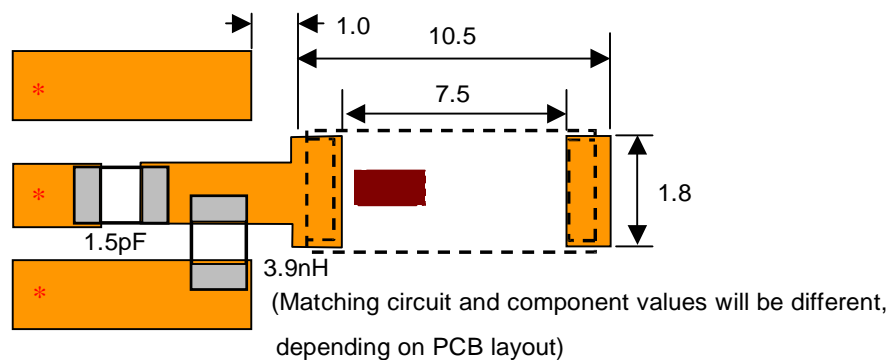


Mark	L	W	T	a
Dimensions	9.5±0.2	2.0±0.2	1.2+ 0.1/-0.2	0.5±0.3

(a) Without Matching Circuits (Moderate Bandwidth)



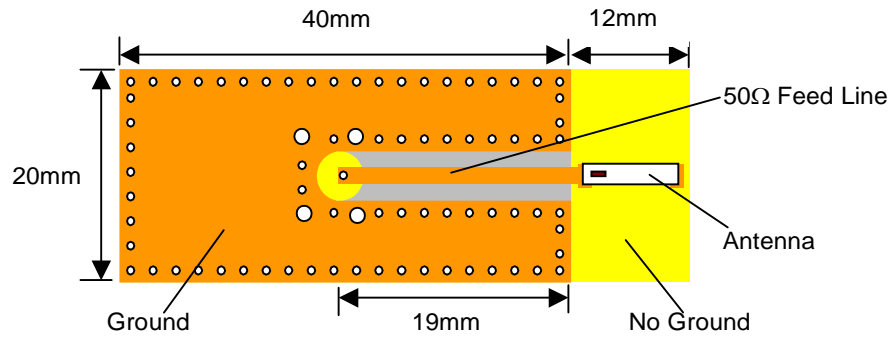
(b) With Matching Circuits (Wide Bandwidth)



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

Typical Electrical Characteristics (T=25°C)

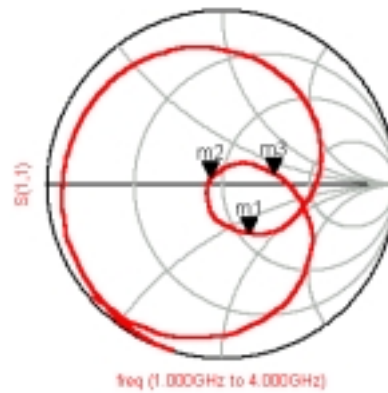
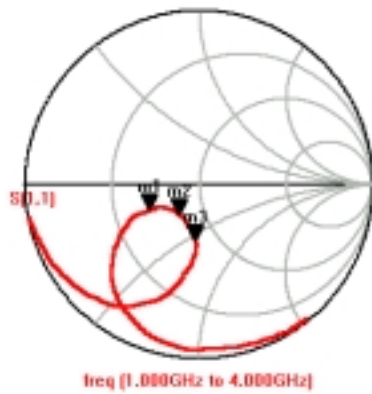
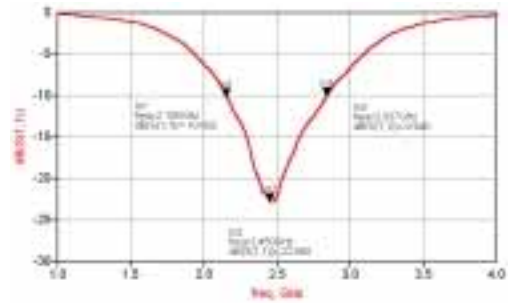
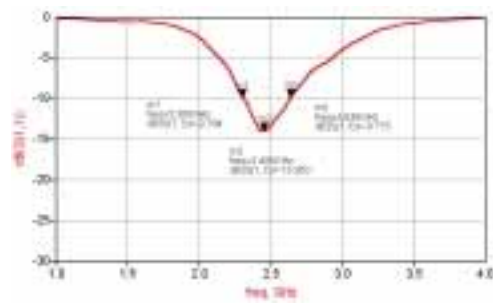
✎ Test Board



✎ Return Loss

(a) Without Matching Circuits

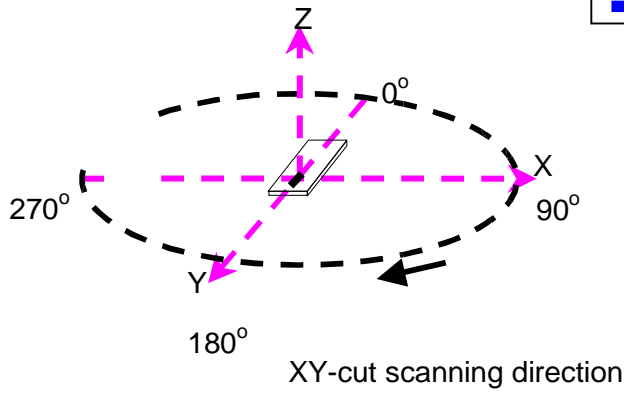
(b) With Matching Circuits



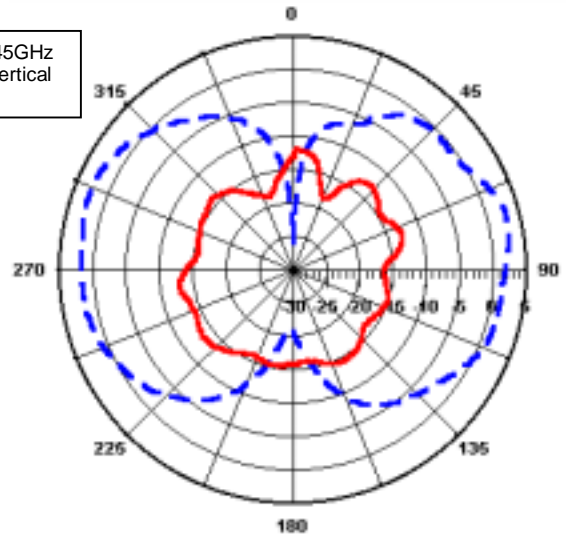
✎ Radiation Patterns



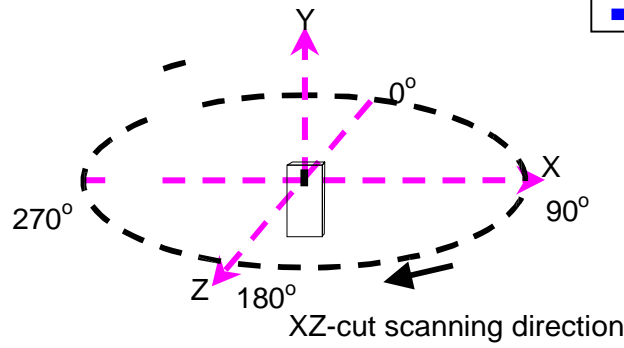
XY-V/XY-H



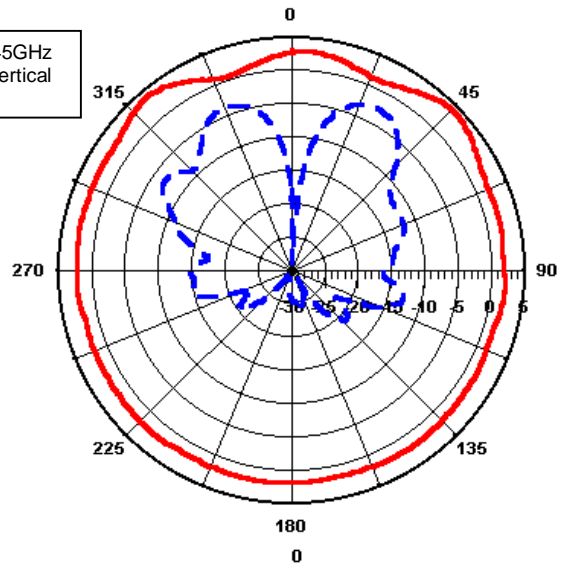
XY cut @2.45GHz
Vertical
Horizontal



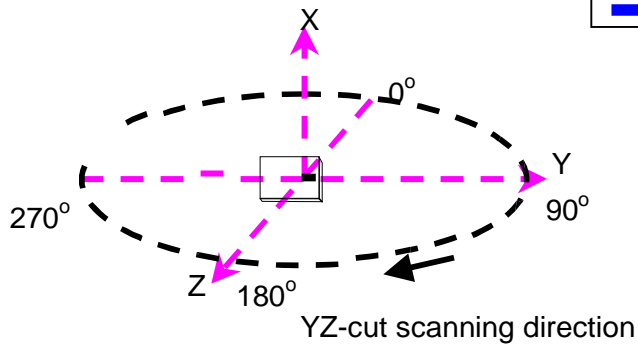
XZ-V/XZ-H



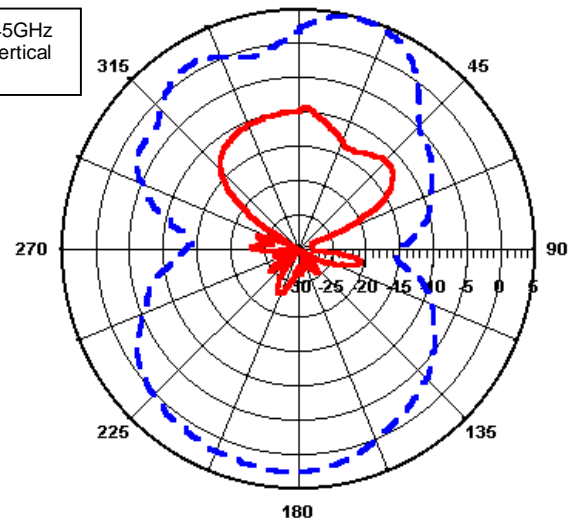
XZ cut @2.45GHz
Vertical
Horizontal



YZ-V/YZ-H



YZ cut @2.45GHz
Vertical
Horizontal



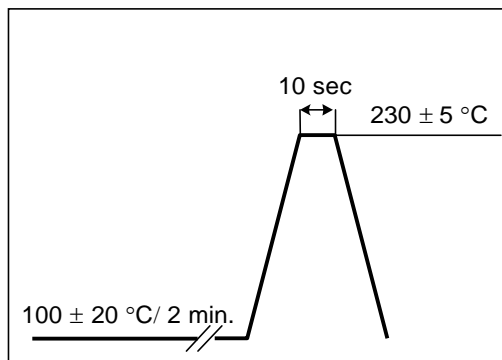
Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	<ol style="list-style-type: none"> No apparent damage More than 75% of the terminal electrode shall be covered with new solder 	<ol style="list-style-type: none"> Preheat: $120 \pm 5^\circ\text{C}$ Solder: $230 \pm 5^\circ\text{C}$ for 5 ± 1 sec
Thermal shock (Temperature Cycle)	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> One cycle/ step 1: $85 \pm 5^\circ\text{C}$ for 20sec step 2: $-40 \pm 3^\circ\text{C}$ for 20sec Cycle time: 30min No. of cycles: 100 Recovery: 1-2hrs
Heat Resistance	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> Temperature: $85 \pm 2^\circ\text{C}$ Duration: 24 ± 2hrs Recovery: 1-2hrs
Low Temperature Resistance	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> Temperature: $-40 \pm 5^\circ\text{C}$ Duration: 24 ± 2hrs Recovery: 1-2hrs
Humidity Resistance	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> Temperature: $85 \pm 2^\circ\text{C}$ Humidity: 80% ~ 85% RH Duration: 1000 ± 48hrs Recovery: 1-2hrs
Drop Shock	<ol style="list-style-type: none"> No apparent damage 	<ol style="list-style-type: none"> Dropped onto hard wood from height of 50 cm for 3 times ; each x,y and z direction except terminal direction

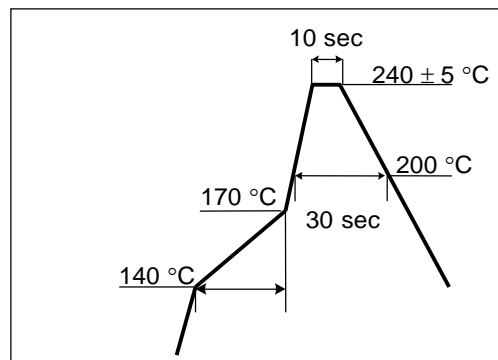
*Operating temperature range: $-40^\circ\text{C} \sim +85^\circ\text{C}$

Typical Soldering Profile

Flow Soldering :



Reflow Soldering :



The sample must be pre-heated before soldering .The temperature difference between preheating and soldering must be within 150°C .

Notes

The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

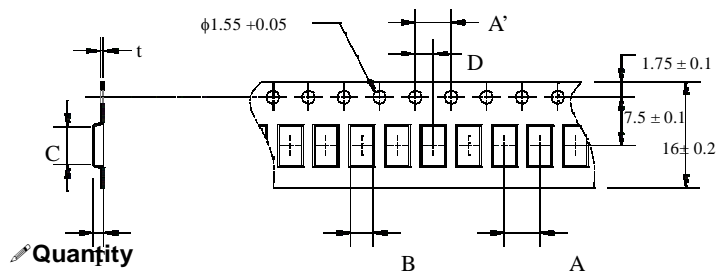
S.P.K. ELECTRONICS CO., LTD.

10F,NO.510,SEC.5,CHUNG HSIAO E. RD, TAIPEI,TAIWAN

<http://www.spkecl.com>

Taping Specifications

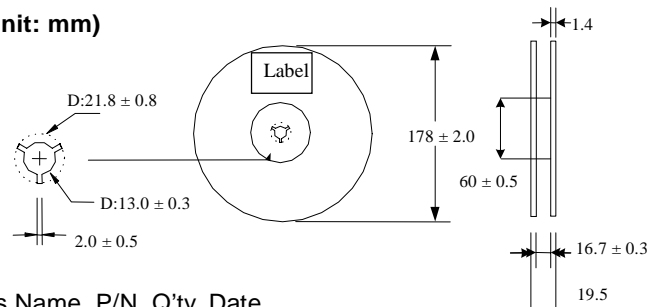
✂ Tape Dimensions (Unit: mm)



Type	A	A'	B	C	D	t	T
9520	4.0± 0.1	4.0± 0.1	2.3± 0.1	9.7± 0.1	2.0± 0.1	0.22± 0.05	Max. 1.45
R130 8.0± 0.1		4.0± 0.1	3.35± 0.1	10.35± 0.1	2.0± 0.1	0.25± 0.05	Max. 1.40

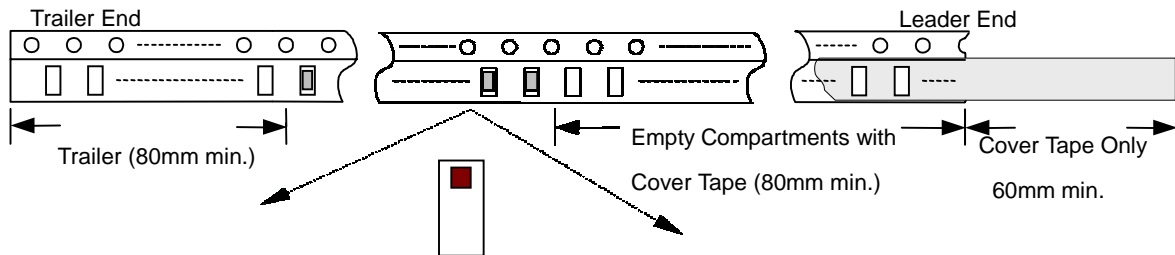
Type	9520	R130
Quantity/per reel	1,000 pcs	1,000 pcs

✂ Reel Dimensions (Unit: mm)

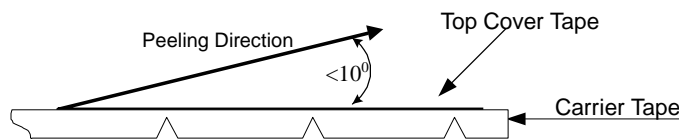


Label: Customer's Name, P/N, Q'ty, Date, .

✂ Leader and Trailer Tape (Plastic material)



✂ Peel-off Force



Peel-off force should be in the range of 0.1 – 0.6 N at a peel-off speed of 300±10 mm/min .

✂ Storage Conditions

- (1) Temperature: 15 ~35 °C, relative humidity (RH): 45~75%.
- (2) Non-corrosive environment
- (3) Products should be used within six months of receipt.

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