

GainForce Technology Co.,Ltd

嘉光科技股份有限公司

承認書

APPROVAL SHEET

品 名： Chip Antennas

MODEL NAME _____

料 號： **60-0480003-10LF**

PART NUMBER **AT9520-B2R4HAAT/LF** _____

客戶名稱： 鼎翰科技股份有限公司

CUSTOMER _____

供 應 商： 嘉光科技股份有限公司

VENDOR _____

使用機種： _____

MODEL _____

聯 絡 人： 高妍希 Joanna _____

聯絡電話： +886-960-119-101 _____

附 件：

ACCESSORIES ☒ 規格書

SPECIFICATION

☒ 樣品

SAMPLE

☒ 圖樣

DRAWING

☐ 檢驗報告

TEST REPORT

認可狀況：

(APPROVED STATUS)



樣品版次: **A**

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	Operating Frequency (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

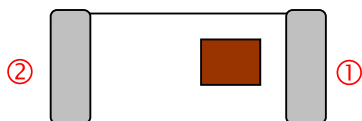
Q'ty/Reel (pcs) : 1000pcs
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : +5 ~ +35 °C, Humidity 45~75%RH
 Storage Period : 12 months max.
 Power Capacity : 2W max.

Part Number

AT 9520 - B 2R4 HAA □
 ① ② ③ ④ ⑤ ⑥

① Type	AT : Antenna	② Dimensions (L × W)	9.5× 2.0 mm
③ Material Code	B	④ Initial center frequency	2R4=2400MHz
⑤ Specification Code	HAA	⑥ Packaging	T: Tape & Reel B: Bulk

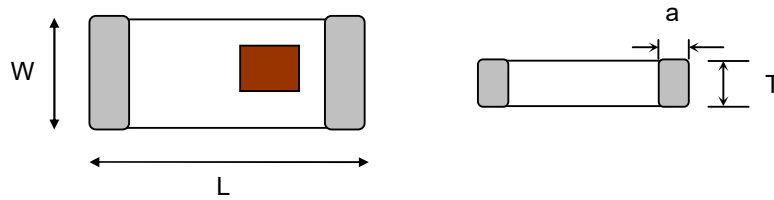
Terminal Configuration



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

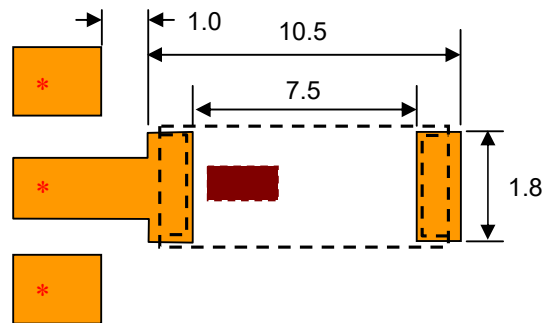
Dimensions and Recommended PC Board Pattern

Unit : mm

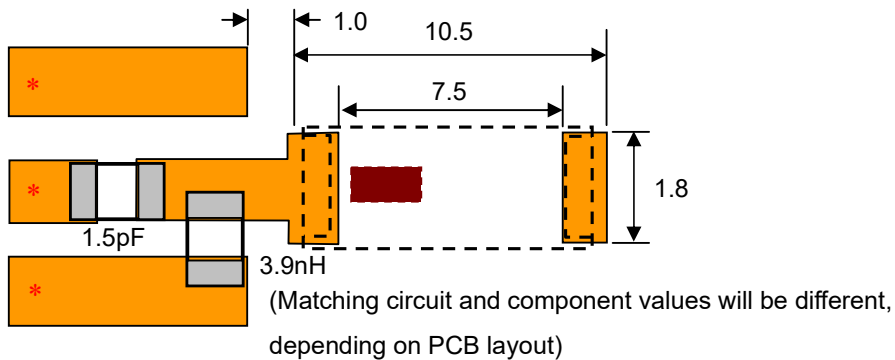


Mark	L	W	T	a
Dimensions	9.5±0.2	2.0±0.2	1.2+ 0.1/-0.2	0.5±0.3

(a) Without Matching Circuits (Moderate Bandwidth)



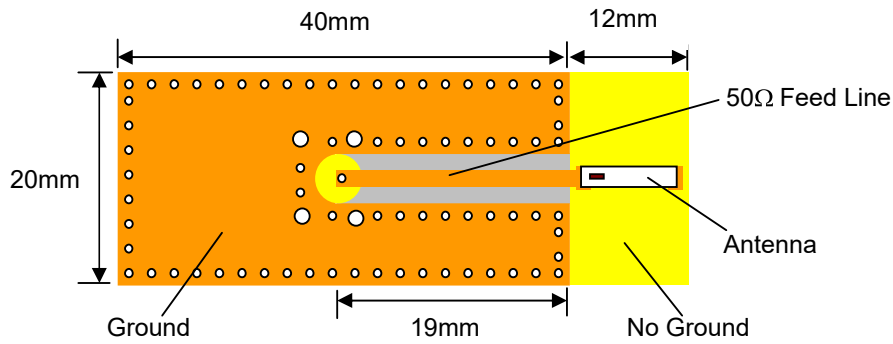
(b) With Matching Circuits (Wide Bandwidth)



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

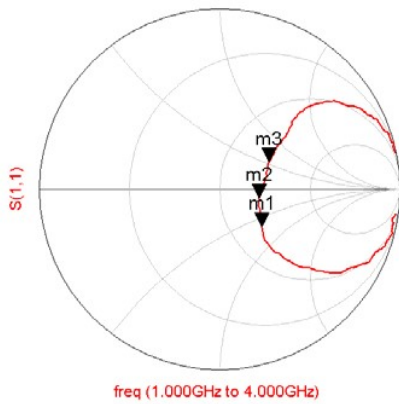
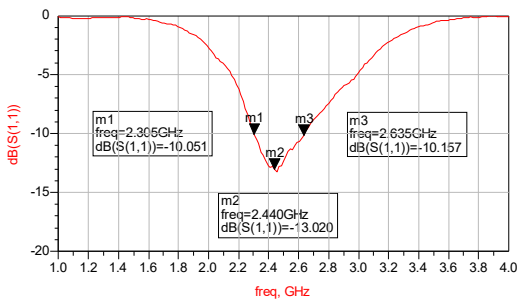
Typical Electrical Characteristics (T=25°C)

❖ Test Board

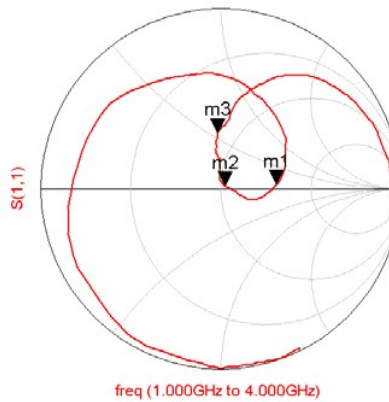
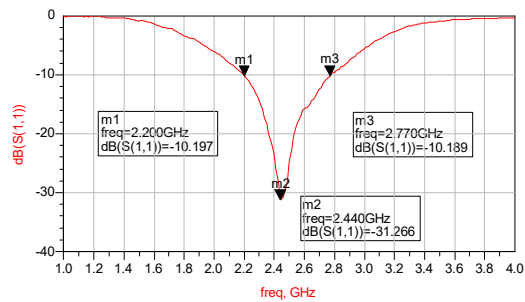


❖ Return Loss

(a) Without Matching Circuits

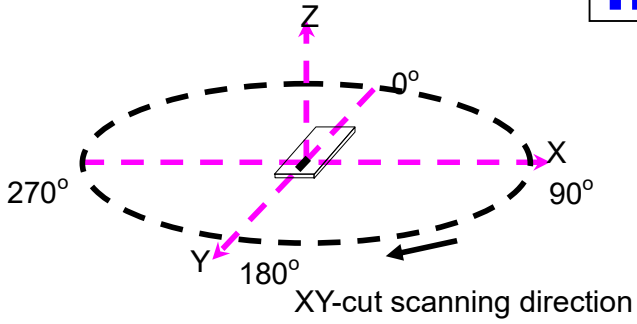


(b) With Matching Circuits

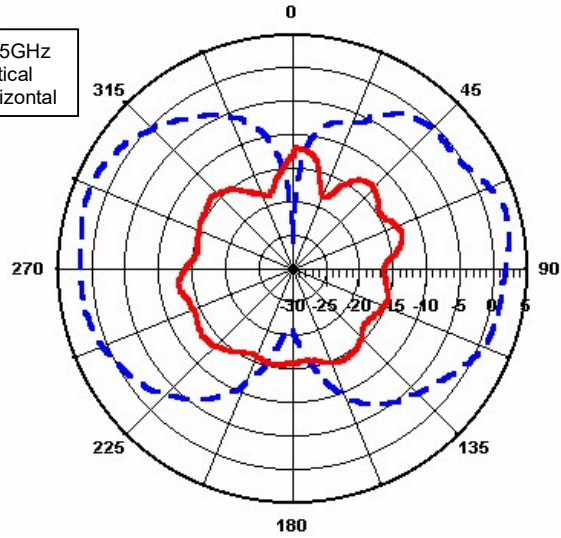


❖ Radiation Patterns

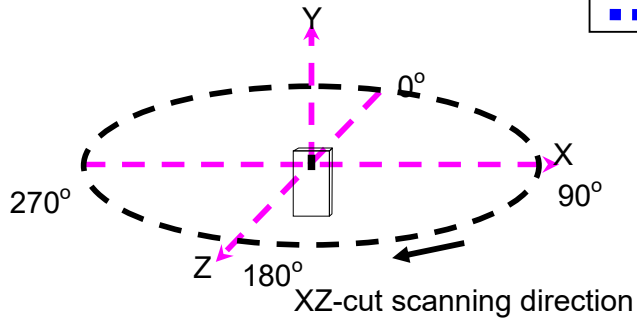
XY-V/XY-H



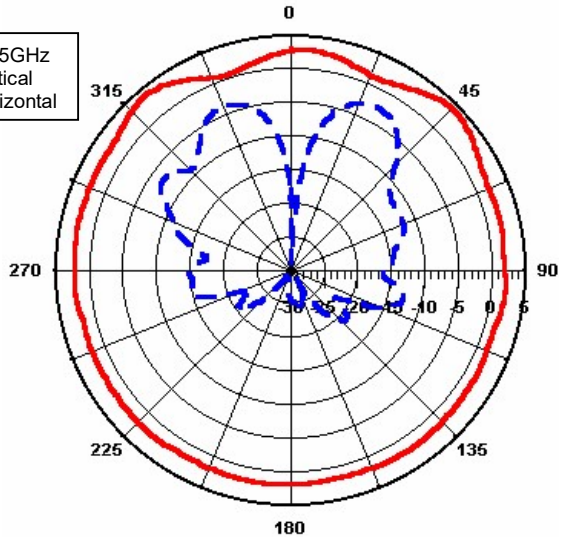
XY cut @2.45GHz
— Vertical
- - - Horizontal



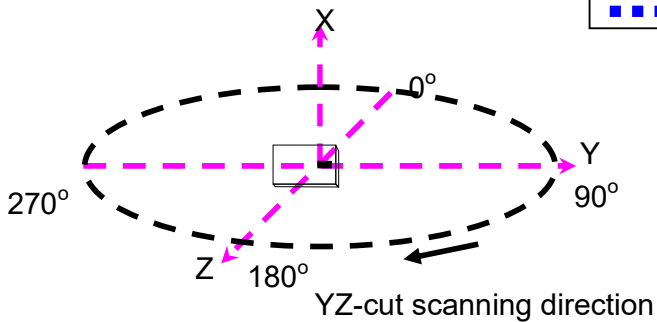
XZ-V/XZ-H



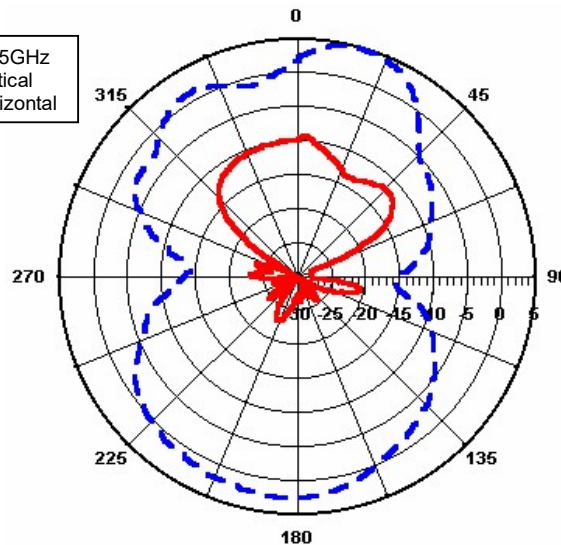
XZ cut @2.45GHz
— Vertical
- - - Horizontal



YZ-V/YZ-H

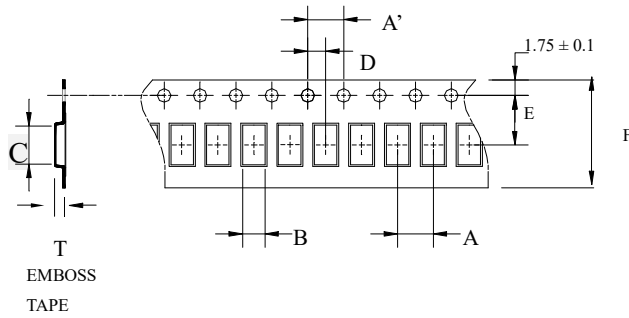


YZ cut @2.45GHz
— Vertical
- - - Horizontal



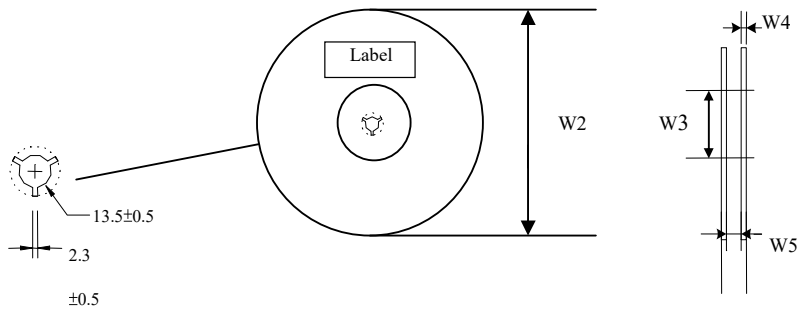
Taping Specifications

❖ Tape & Reel Dimensions (Unit: mm) vs. Quantity (pcs)



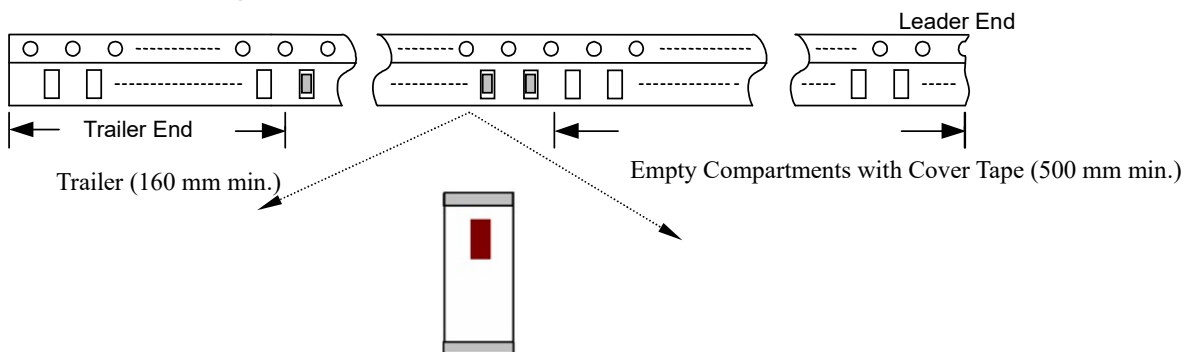
Type	A	A'	B	C	D	E	F	T	Quantity/per reel	Tape material
AT9520	4.0±0.1	4.0±0.1	2.35±0.1	9.7±0.1	2.0±0.05	7.5±0.1	16.0±0.1	1.40±0.1	1,000pcs	Plastic (Embossed)

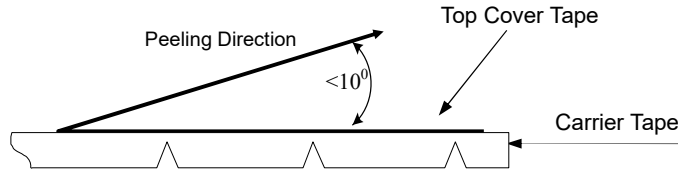
❖ Reel Dimensions (Unit: mm)



Type	W2	W3	W4	W5
AT9520	178±1	60±1	1.4±0.2	17±0.5

❖ Leader and Trailer Tape



❖ 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 .

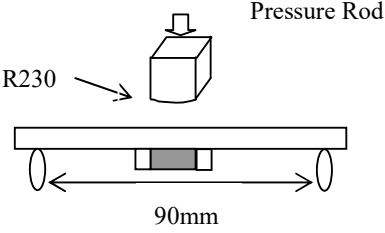
❖ Storage Conditions

- (1) Temperature: 15 ~35°C , relative humidity (RH): 45~75%.
- (2) Non-corrosive environment

Notes

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

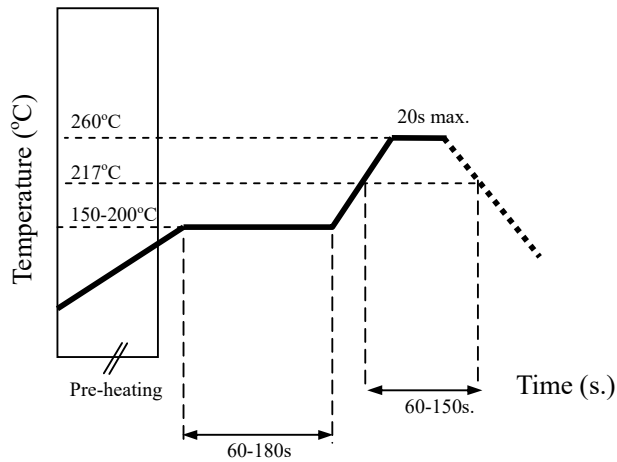
Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	1. No apparent damage 2. More than 95% of the terminal electrode shall be covered with new solder	1. Preheat: $120 \pm 5^{\circ}\text{C}$ 2. Solder: $245 \pm 5^{\circ}\text{C}$ for 5 ± 1 sec
Soldering strength (Termination Adhesion)	1. 1kg minimum	1. Solder specimen onto test jig. 2. Apply push force at 0.5mm/s until electrode pads are peeled off or ceramic are broken. Pushing force is applied to longitude direction
Deflection (Substrate Bending)	1. No apparent damage	1. Solder specimen onto test jig (FR4, 0.8mm) using the recommend soldering profile. 2. Apply a bending force of 1mm deflection 
Heat/Humidity Resistance	1. No apparent damage 2. Fulfill the electrical specification after test	1. Temperature: $85 \pm 2^{\circ}\text{C}$ 2. Humidity: 90% ~ 95% RH 3. Duration: 1000 ± 48hrs 4. Recovery: 1-2hrs
Thermal shock (Temperature Cycle)	1. No apparent damage 2. Fulfill the electrical specification after test	1. One cycle/step 1 : $125 \pm 5^{\circ}\text{C}$ for 30 min step 2 : $-40 \pm 5^{\circ}\text{C}$ for 30 min 2. No of cycles : 100 3. Recovery: 1-2 hrs
Low Temperature Resistance	1. No apparent damage 2. Fulfill the electrical specification after test	1. Temperature: $-40 \pm 5^{\circ}\text{C}$ 2. Duration: 500 ± 24hrs 3. Recovery: 1-2hrs

Soldering Conditions

❖ Typical Soldering Profile for Lead-free Process

Reflow Soldering :



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Advanced Ceramic X Corp.

16 Tzu Chiang Road, Hsinchu Industrial District Hsinchu Hsien 303, Taiwan

TEL:886-3-5987008 FAX:886-3-5987001

E-mail: acx@acxc.com.tw

<http://www.acxc.com.tw>