

1 SCOPE

This specification shall cover the characteristics of the ceramic chip antenna with the type HDAG2400L502010XZB01-R0.

2 PART NO.

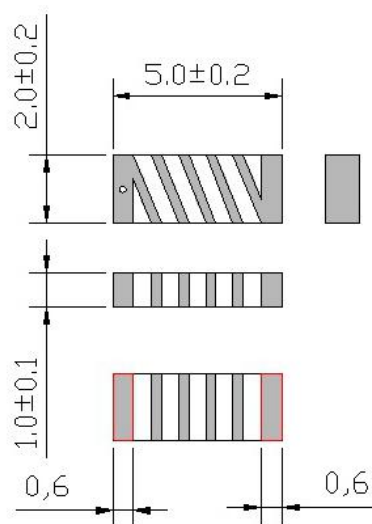
PART NUMBER	CUSTOMER PART NO	SPECIFICATION NO
HDAG2400L502010XZB01-R0		

3 OUTLINE DRAWING AND DIMENSIONS

3.1 Appearance: No visible damage and dirt.

3.2 The products conform to the RoHS directive and national environment protection law.

3.2 Dimensions



4 Features

- 4.1 Stable and reliable in performances
- 4.2 Low temperature coefficient of frequency
- 4.3 Low profile, compact size
- 4.4 RoHS compliance
- 4.5 SMT processes compatible

5 Applications

- 5.1 Bluetooth earphone systems
- 5.2 Hand-held devices when WiFi /Bluetooth functions are needed, e.g., Smart phone.
- 5.3 IEEE802.11 b/g/n
- 5.4 ZigBee
- 5.5 Wireless PCMCIA cards or USB dongle

6 ELECTRICAL SPECIFICATIONS

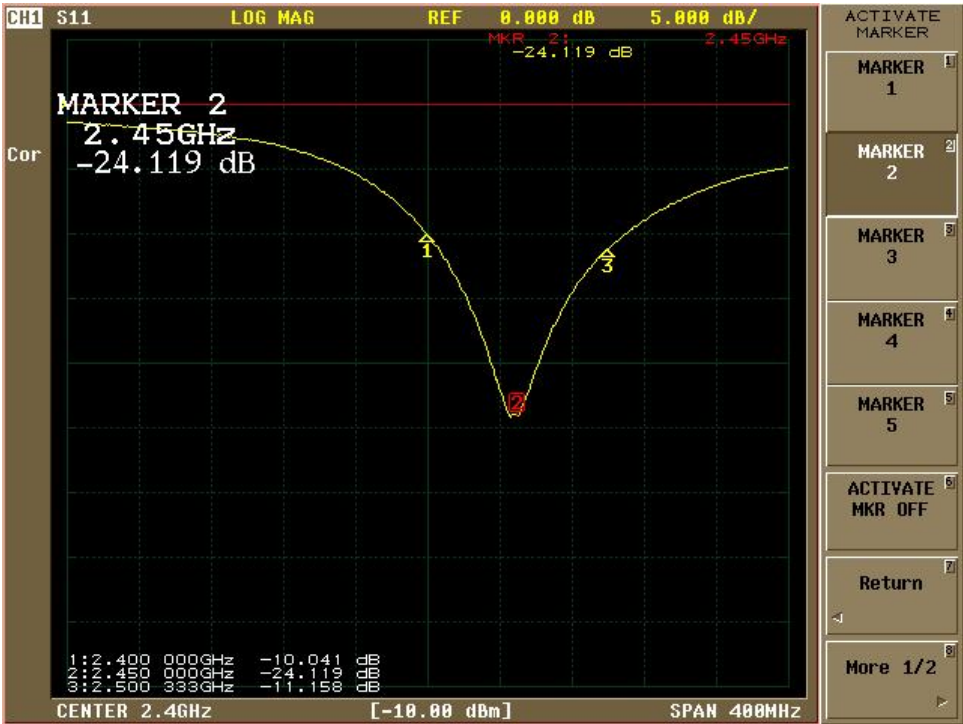
WIFI/BT Antenna

6.1 Performance Characteristics (40 ×40 mm2 ground plane)

Items	Content
Outline Dimensions	5.0×2.0×1.0mm
Working Frequency	2400~2500 MHz
VSWR	2 Max
Impedance	50 Ω
Maximum Input Power:	2W
Operating Temperature	-40 to 85 °C

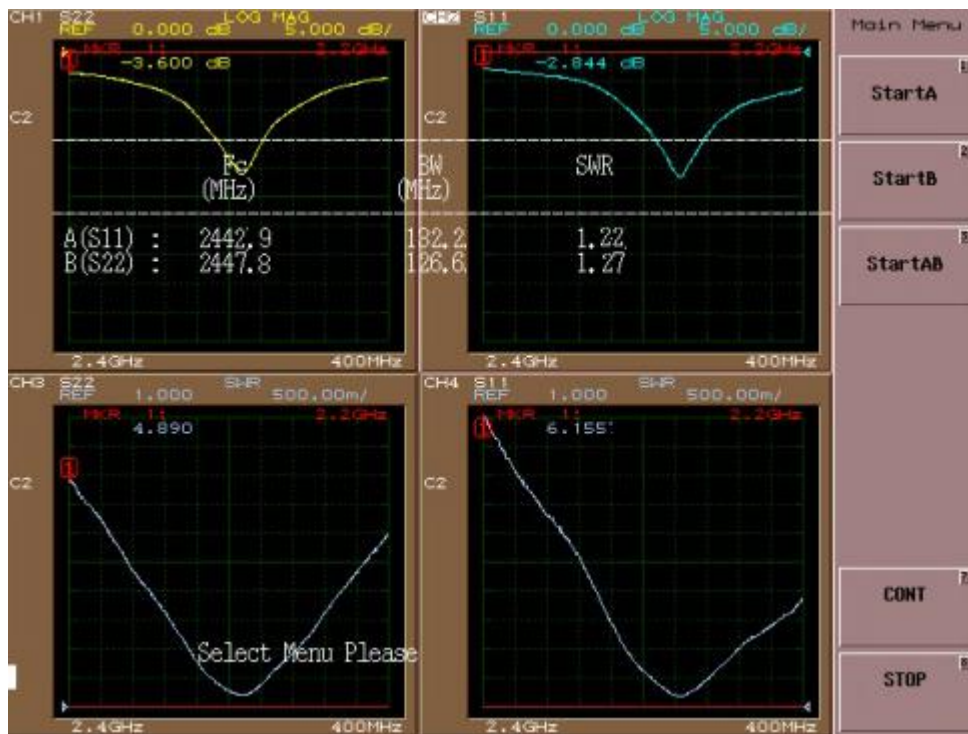
6.2 Characteristic

Return Loss



VSWR Antenna on Test Board

WIFI/BT Antenna

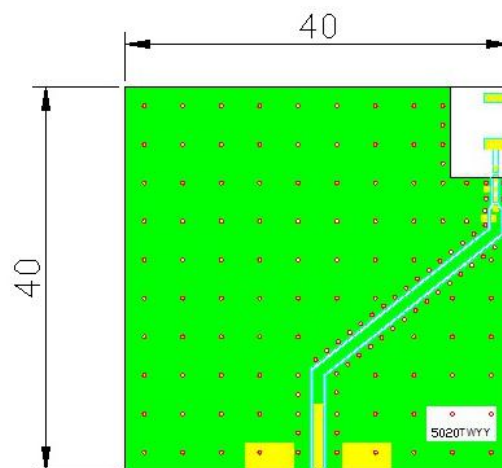


7 TEST

7.1 Test Conditions

Parts shall be measured under a condition (Temp.: $20^{\circ}\text{C}\pm 15^{\circ}\text{C}$, Humidity : $65\%\pm 20\%$ R.H.).

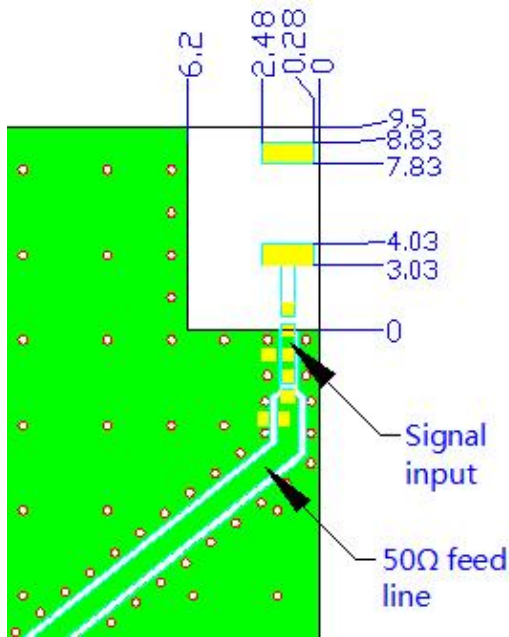
7.2 Test Board with A



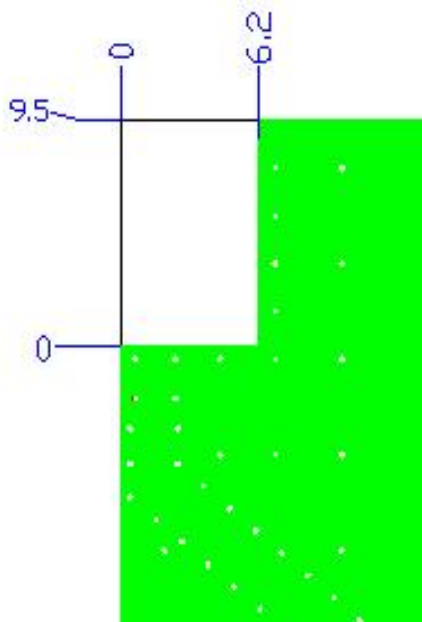
8 Layout Guide

8.1 Solder Land Pattern:

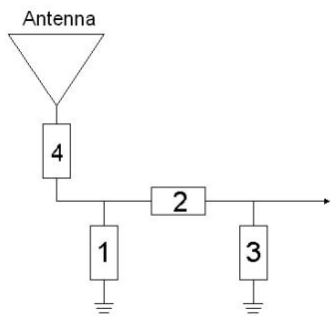
Land pattern for soldering is as shown below. Depending on Customer' s requirement, matching circuit as shown below is also recommended.



Top



Bottom

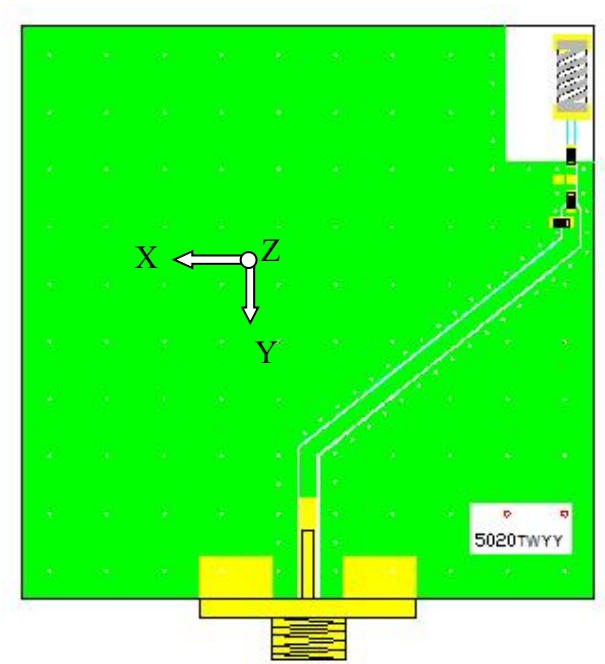


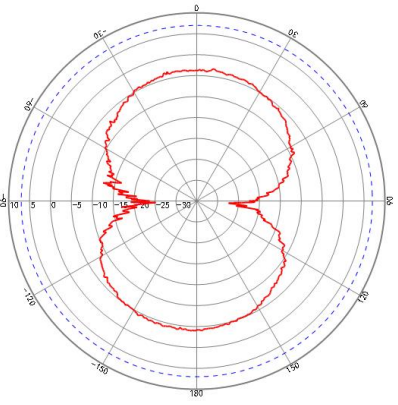
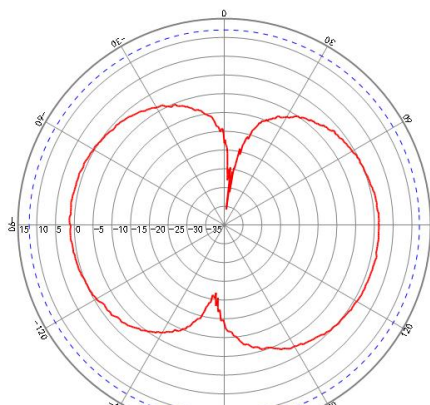
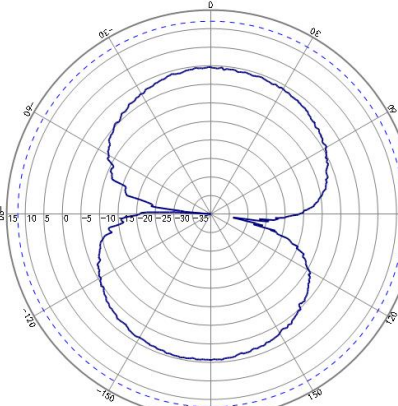
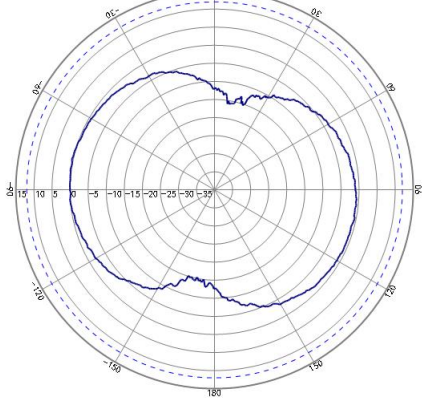
System Matching Circuit Component			
Location	Description	size	Tolerance
1	N/A	--	--
2	2.2nH	0402	0.1nH
3	1.5 pF	0402	0.1 pF
4	0 Ω		

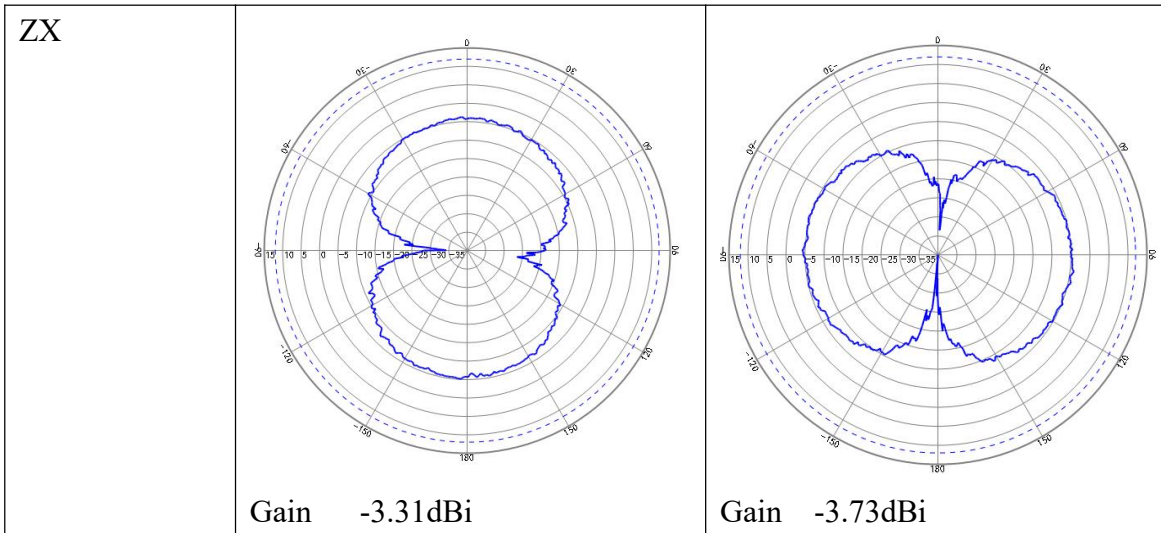
8.2 RADIATION PATTERN

Radiation Pattern and Gain were dependent on measurement board design. The specification of HDAG2400L321504XZB01-R0. antenna was measured based on the PCB size and installation position as shown in the below figure Test Board

WIFI/BT Antenna



	Vertical	Horizontal
XY	 Gain -3.16 dBi	 Gain 2.29dBi
YZ	 Gain -0.36dBi	 Gain 0.45dBi



9 ENVIRONMENTAL TEST

No.	Item	Test Condition	Remark
9.1	Humidity Test	The device is subjected to 90%~95% relative humidity $60^{\circ}\text{C}\pm 3^{\circ}\text{C}$ for 96h~98h, then dry out at $25^{\circ}\text{C}\pm 5^{\circ}\text{C}$ and less than 65% relative humidity for 2h~4h. After dry out the device shall satisfy the specification in table 1.	It shall fulfill the specifications in Table 1.
9.2	High Temperature Exposure	The device shall satisfy the specification in table 1 after leaving at 85°C for 96h~98h, provided it would be measured after 2h~4h leaving in $25^{\circ}\text{C}\pm 5^{\circ}\text{C}$ and less than 65% relative humidity.	It shall fulfill the specifications in Table 1.
9.3	Low Temperature	The device shall satisfy the specification in table 1 after leaving at -40°C for 96h~98h, provided it would be measured after 2h~4h leaving in $25^{\circ}\text{C}\pm 5^{\circ}\text{C}$ and less than 65% relative humidity.	It shall fulfill the specifications in Table 1.
9.4	Temperature Cycle	Subject the device to -40°C for 30 min. followed by a high temperature of 85°C for 30 min cycling shall be repeated 5 times. At the room temperature for 1h prior to the measurement.	It shall fulfill the specifications in Table 1.
9.5	Vibration	Subject the device to vibration for 2h each in x, y and z axis with the amplitude of 1.5mm, the frequency shall be varied uniformly between the limits of 10Hz~55Hz.	It shall fulfill the specifications in Table 1.

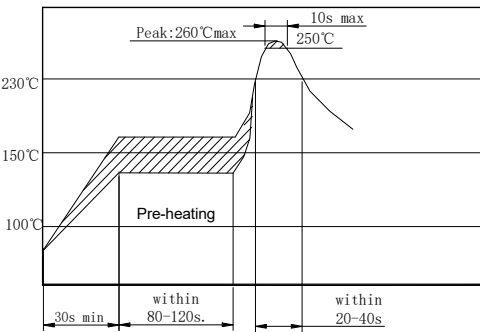
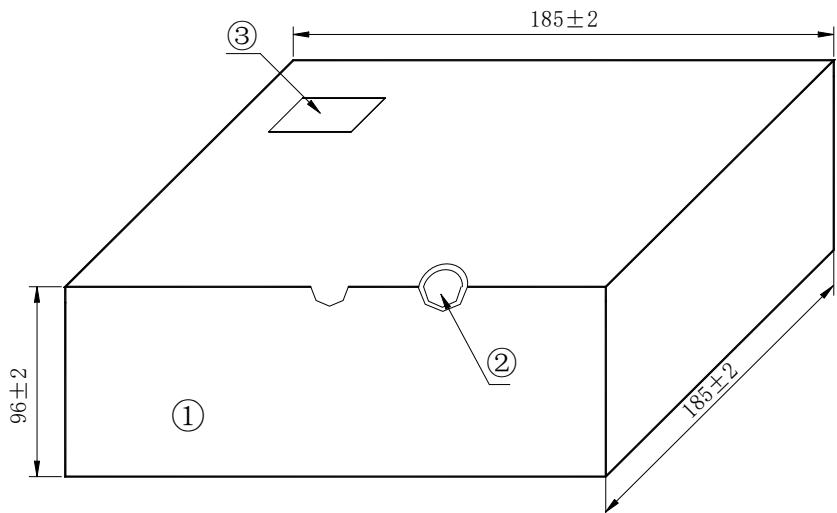
9.6	Soldering Test	Passed through the re-flow oven under the following condition and left at room temperature for 1h before measurement. 	It shall fulfill the specifications in Table 1.
9.7	Solder Ability	Dipped in 245°C±5°C solder bath for 3s±0.5 s with rosin flux (25wt% ethanol solution.)	The terminals shall be at least 95% covered by solder.

TABLE 1

Item	Specification After Test (MHz)
Center Frequency change	±5.0

10. PACKAGE

10.1 To protect the products in storage and transportation, it is necessary to pack them. 3000pcs/reel,5 reels/box. Box Dimensions:



NO.	Name	Quantity
①	Inner Box	1
②	QC Label	1

③	Label	1
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10.2 On reel pack, the following requirements are requested.

10.3 Reel Dimensions



ϕ A	ϕ B	W	T	Pieces per reel	Carrier tape size
180 $\pm$ 3	60min	12.4min	19.4max	3000typ.	12

11. OTHER

11.1 Caution of use

11.1.1 Please don't apply excess mechanical stress to the component and terminals at soldering.

11.1.2 The component may be damaged when an excess stress will be applied.

11.1.3 This specification mentions the quality of the component as a single unit. Please insure the component is thoroughly evaluated in your application circuit.

11.2 Notice

11.2.1 Please return one of these specifications after your signature of acceptance.

11.2.2 When something gets doubtful with this specification, we shall jointly work to get an agreement