



WIFI/BT 2.4 GHz CHIP ANTENNA

Part Name: CH-M-W-3216050

Part Number: XXXXXXXXXX

I. Introduction:

An internal chip antenna is designed in the frequency band 2.4-2.483 GHz MHz. It is a multi-layer type with a small size of 3.2mm*1.6mm*0.52mm and to be placed on the PCB by surface mounting technology. Although it small size, it also own good antenna performance like antenna gain and efficiency.

Features:

1. Light weight and compact
2. Good antenna efficiency up to 70%.
3. Good input impedance bandwidth and antenna gain.
4. Multi-layer structure and low cost.
5. Matching circuit with PI model is needed to obtain good efficiency.



II. Antenna Specifications:

Frequency Range	2400-2483 MHz
Impedance	50 Ohm
VSWR	< 2
Antenna Gain	2 dBi typ.
Polarization	Linear (Vertical)
Max. Power	1 Watt
Dimensions	3.2 mm* 1.6 mm * 0.5 mm
Operating Temp	-40°C ~ +85°C

III. Measured Results:

1. Reflection Coefficient:

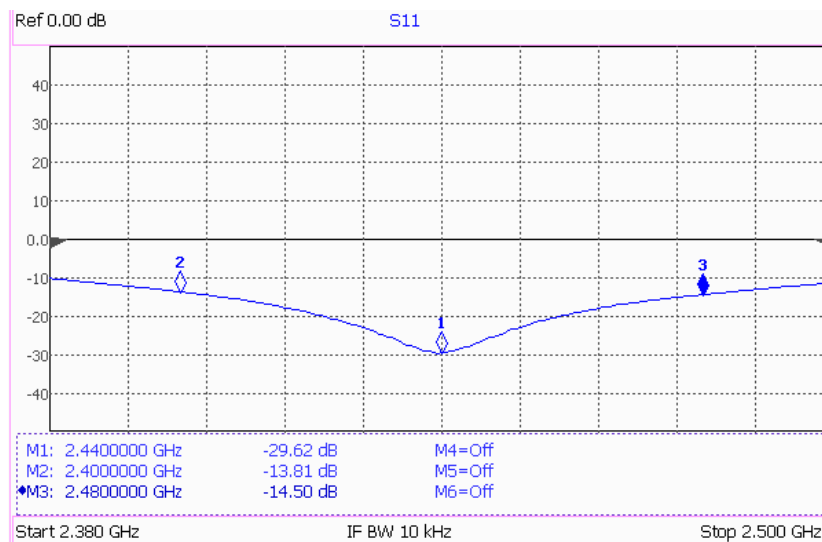


Fig. 3-1. Reflection coefficient of Chip Antenna

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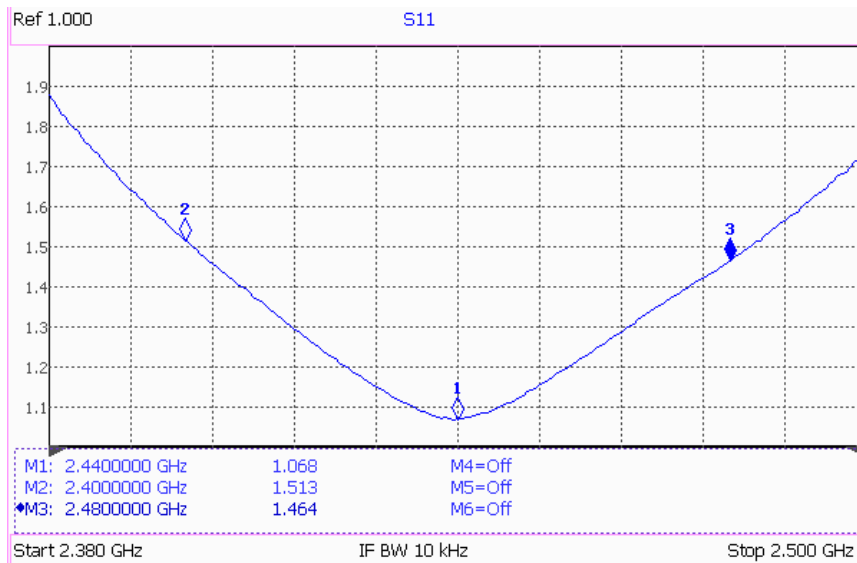


Fig. 3-12. VSWR of Chip Antenna

2. Radiation Patterns and Gains:

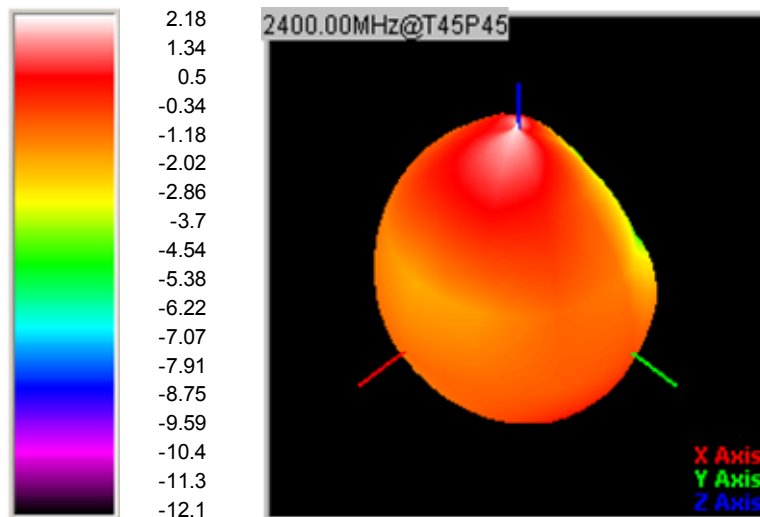


Fig. 3-3. 3D pattern at 2400 MHz.

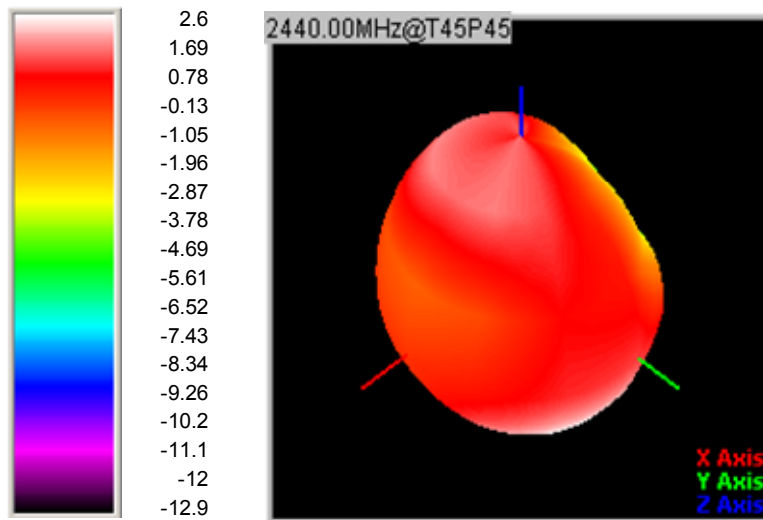


Fig. 3-4. 3D pattern at 2440 MHz.

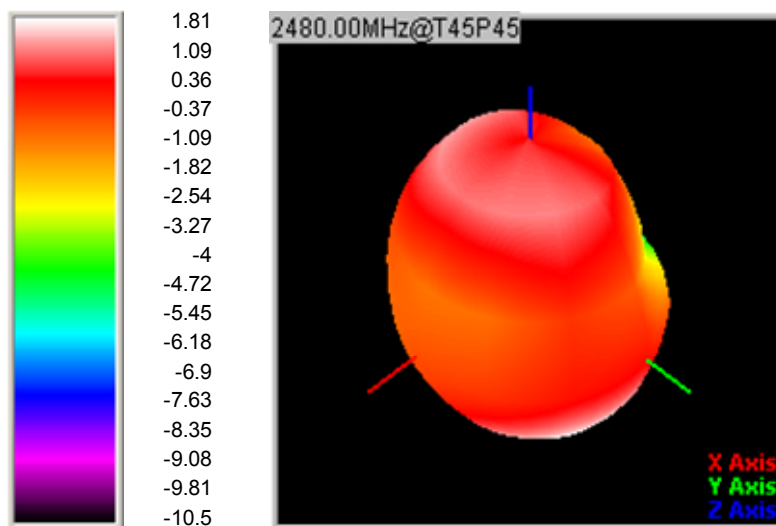
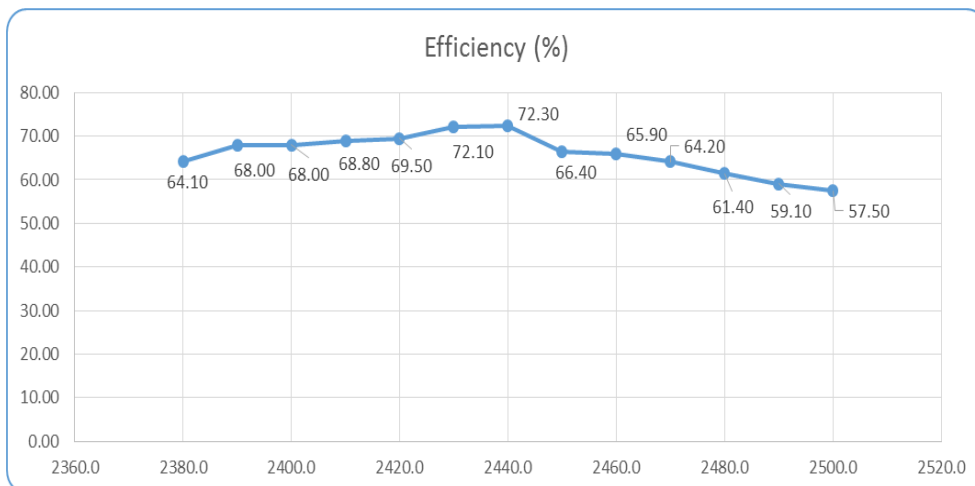
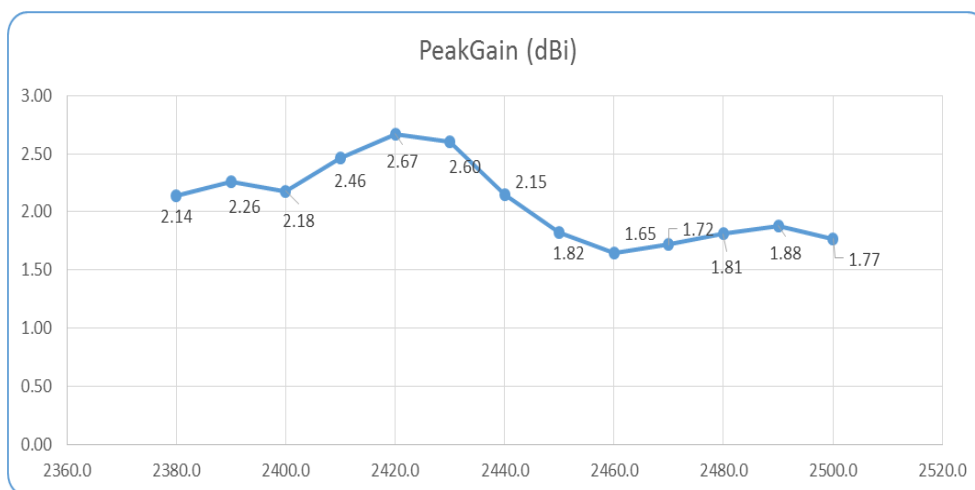
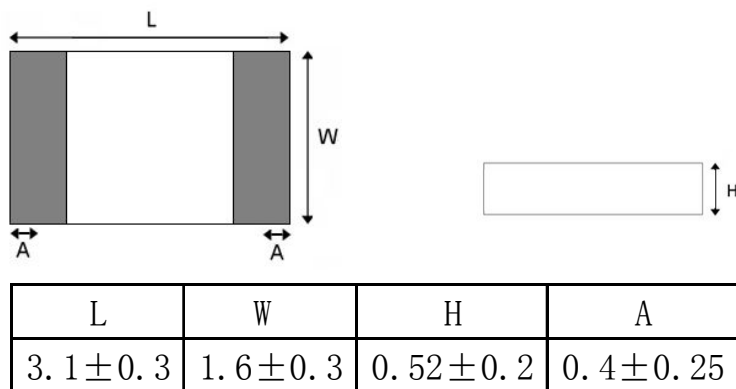


Fig. 3-5. 3D pattern at 2483 MHz.

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Fig. 3-6. Efficiency of Chip Antenna.

Fig. 3-7. Peak Gain of Chip Antenna.
IV. Appearance: unit: mm

Fig. 4-1. Configuration of antenna.

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Host PCB layout

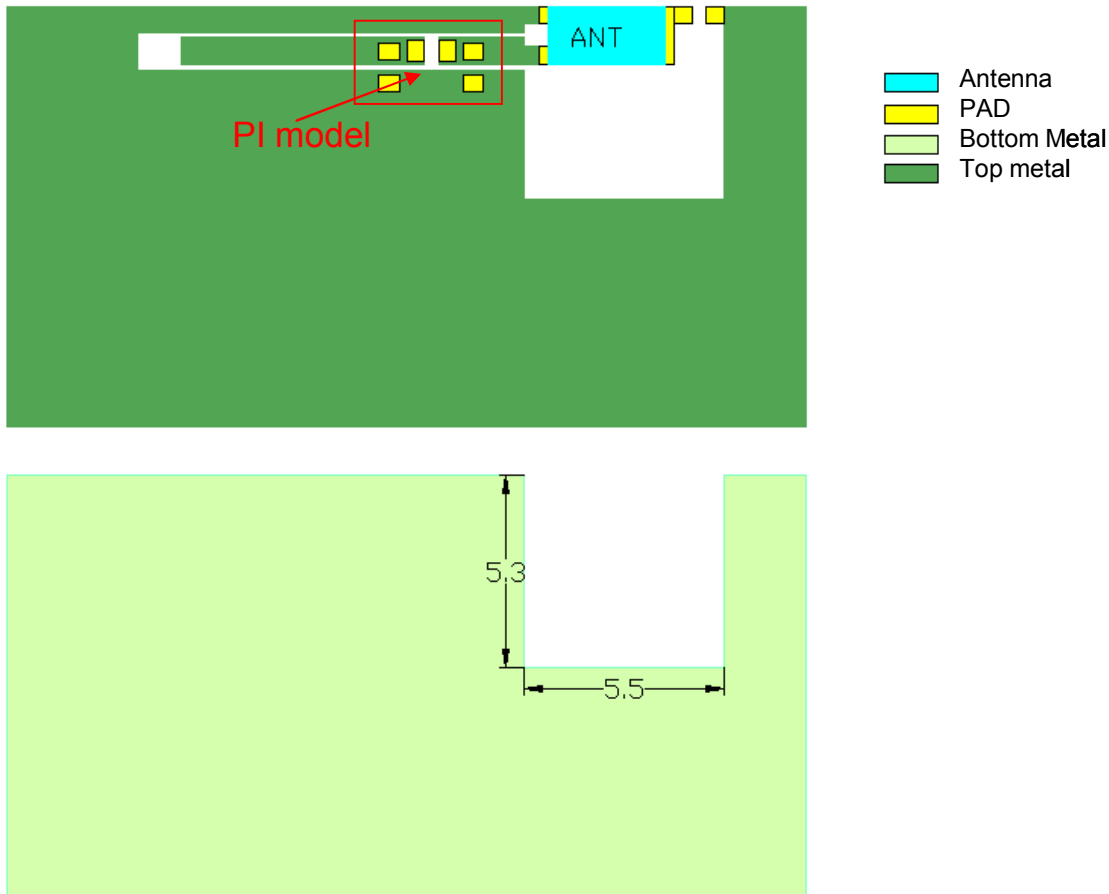


Fig. 4-2. Host PCB of Chip antenna

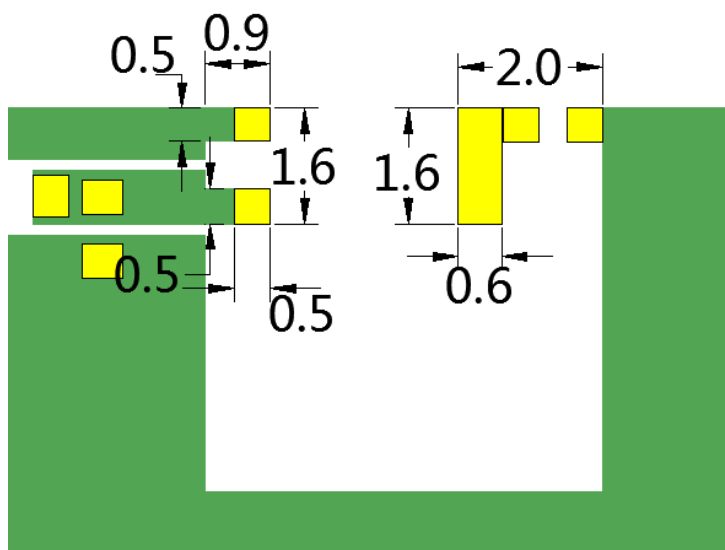


Fig. 4-3. Layout of Chip antenna



V. Reflow Condition:

Recommended Reflow Temperature Profile:

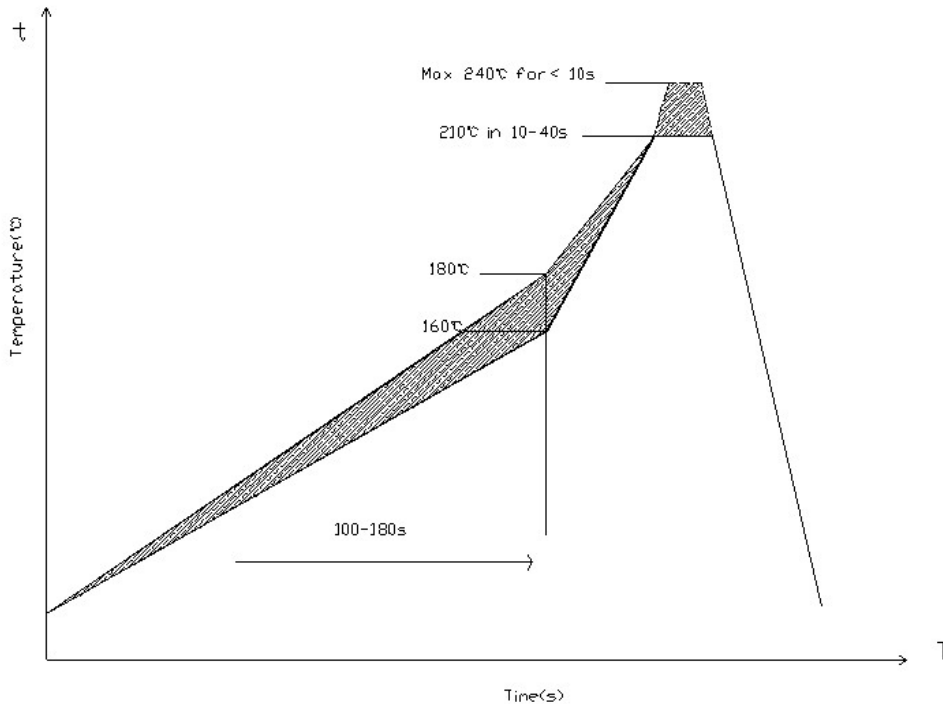


Fig. 5-1. Recommended reflow temperature profile.

※General attention to soldering:

- High soldering temperatures and long soldering times can cause leaching of the termination, decrease in adherence strength, and the change of characteristic may occur.
- For soldering, please refer to the soldering curves above. However, please keep exposure to temperatures exceeding 200°C to under 50 seconds.
- Please use a mild flux (containing less than 0.2wt% Cl). Also, if the flux is water soluble, be sure to wash thoroughly to remove any residue from the underside of components that could affect resistance.

※Cleaning:

When using ultrasonic cleaning, the board may resonate if the output power is too high. Since this vibration can cause cracking or a decrease in the adherence of the termination, we recommend that you use the conditions below.

Frequency: 40 kHz max.

Output power: 20W/liter

Cleaning time: 5minutes max.

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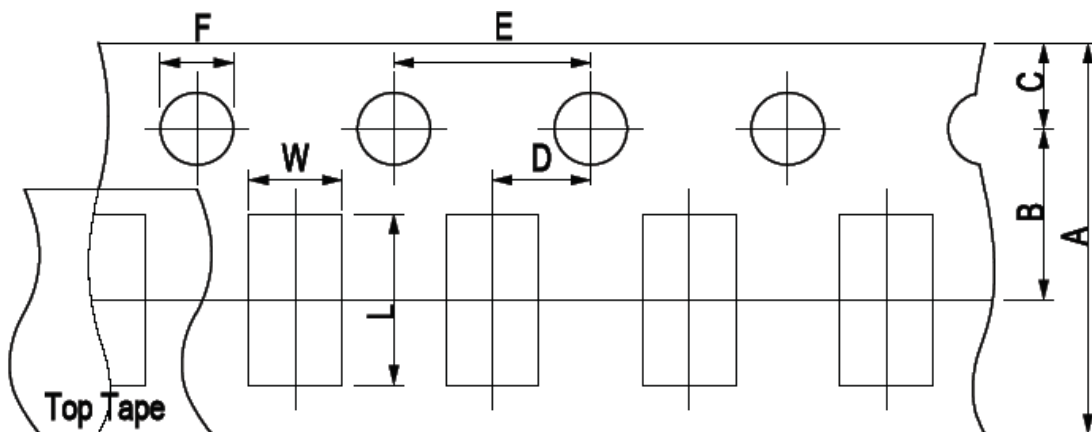
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VI. Taping Package and Label Marking: (unit: mm)

(1) Quantity/Reel: 3000pcs/Reel

(2) Carrier tape dimensions



Type	A	B	C	D	E	F	L	W
2450-21	8.00 ± 0.3	3.50 ± 0.05	1.75 ± 0.1	2.00 ± 0.05	4.00 ± 0.1	1.50 ± 0.1	2.30 ± 0.1	1.55 ± 0.1