



---

ISM Band Planar Chip Antenna  
Bluetooth, WLAN IEEE802.11b/g  
2.4GHz ISM Bands

---

# *Approval*

## *Sheet*

**2.4GHz ISM Band Chip Antenna**



**920D01E13115013**

**Ver. 1.01**

**2005/8/10**

**CHANT SINCERE CO.,LTD.**

## DESCRIPTIONS

The exciting **920D01E13115013** is one of the world's high-performance 2.4GHz small chip antennas. It is for all 2.4GHz applications, including Bluetooth, IEEE802.11b/g, home RF, ZigBee and other popular and emerging standards. This chip antenna comprises a radiating structure of multiple meandered conducting strips, which are developed on a tiny piece of Printed Circuit Board (PCB) and packed with a Liquid Crystal Polymer (LCP) dielectric composite material to achieve size, performance characteristics and cost effectiveness superior to other designs. The incredibly compact surface mountable package measures a merely 8mm (L) x 5mm (W) in dimensions and is fully compatible with hand- and reflow-attachment processes. Also, no additional impedance-matching circuit is required so that the occupied length for using this antenna on PCB is just 8mm. The antenna's favorable electrical specifications, stability and cost-effectiveness make it the logical choice for a wide variety of applications in the 2.4GHz ISM band.

## FEATURES

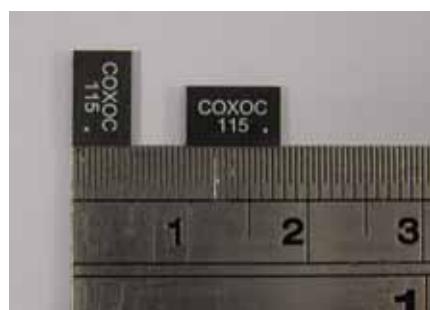
- Low Profile, Ultra-Thin, Light Weight (0.05g)
- Miniaturized Size (**8×5mm<sup>2</sup>**)
- Omni-Directional Antenna Patterns
- Low Loss (Gain > 1 dBi)
- 50Ω Characteristic Impedance
- Impedance-Matching Free
- Wide Bandwidth
- Favorable Linear Polarization
- Fully Manual and Surface Mount Compatible
- Incredibly Compact SMD Package
- Highly Stable with Variations in Temperature and Humidity
- LCP Insert Molding Technology
- Cost-Effective

## APPLICATIONS

- Bluetooth
- IEEE802.11b/g
- Wireless PCMCIA Cards
- Telemetry
- Data Collection
- Industrial Process Monitoring
- Compact Wireless Products
- External Antenna Elimination
- ZigBee

## SPECIFICATIONS

### ■ 920D01E13115013



### KEY FEATURES:

- Low Profile, Ultra-Thin, Light Weight (0.05g)
- Miniaturized Size ( $8 \times 5\text{mm}^2$ )
- Impedance-Matching Free
- SMD Type
- Cost-Effective

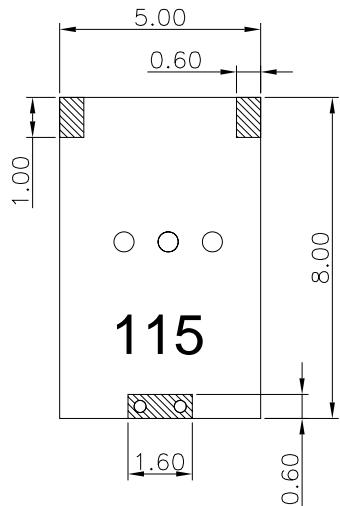
### MAIN APPLICATIONS:

- Wireless communications in 2.4GHz ISM Band

	Single-Band Planar Chip Antenna
Dimension ( $\text{mm}^2$ )	$8 \times 5$
Central Frequency (GHz)	2.45
Bandwidth (MHz)	>230
Gain (dBi) (Typical)	0
VSWR	2.0 (max.)
Return Loss (dB)	-10 (max.)
Polarization	Linear
Pattern	Omni-Directional
Impedance ( )	50
Operating Temperature ( )	-25 ~ +85
Construction	LCP Insert Molding

## CHARACTERISTICS

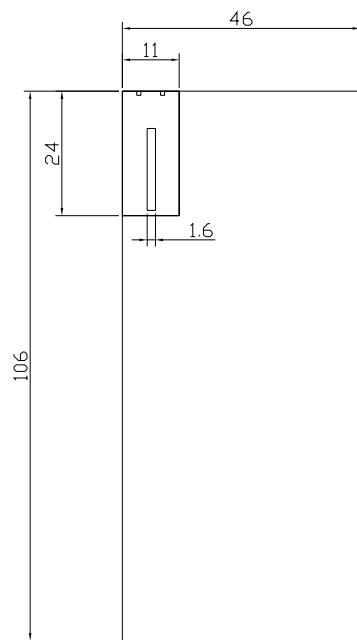
### Pad Layout (unit: mm)



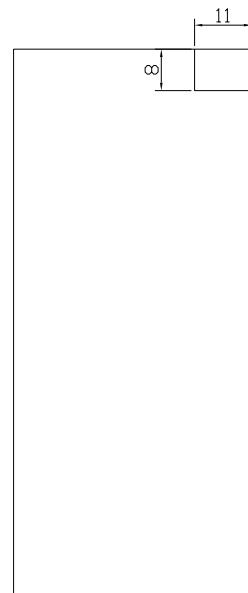
### Land Pattern (unit: mm)

For best results, the chip antenna 920D01E13115013 should be mounted on one corner of 0.8mm thick FR4 PCB with  $8.0 \times 11\text{mm}^2$  empty area and 50 microstrip-line input, as shown below.

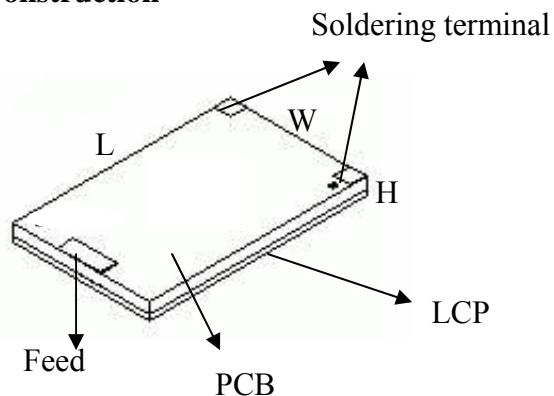
Top view



Bottom view

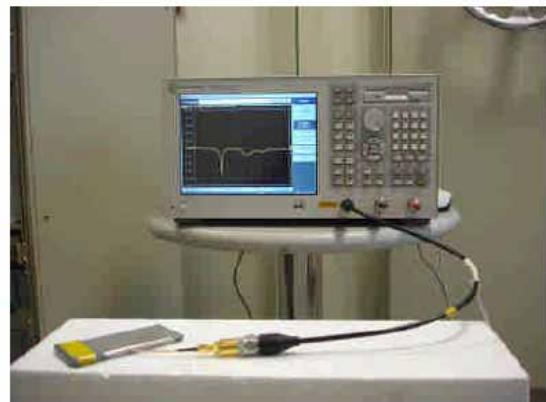
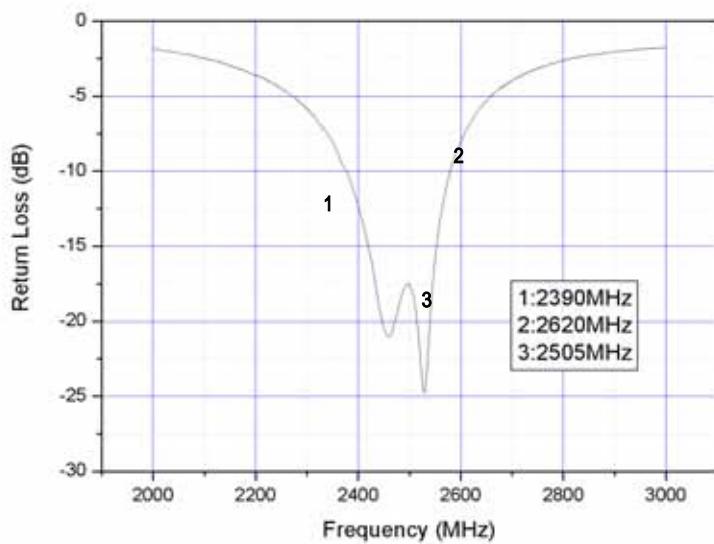


## Construction

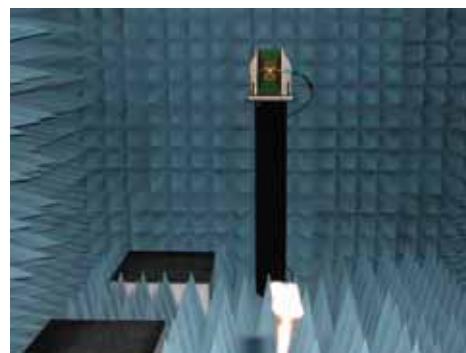
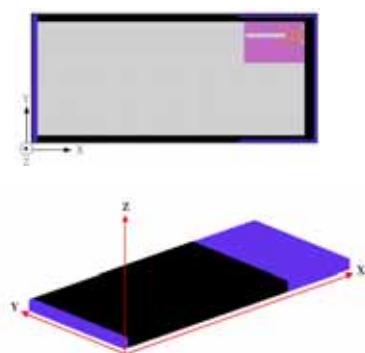


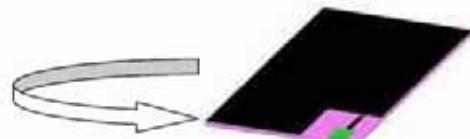
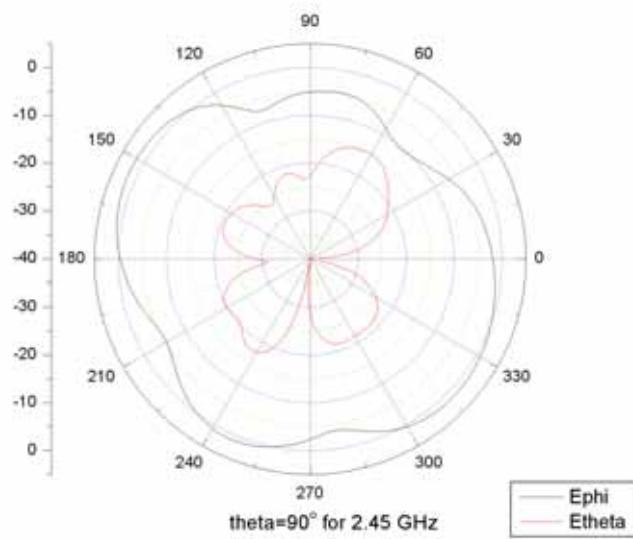
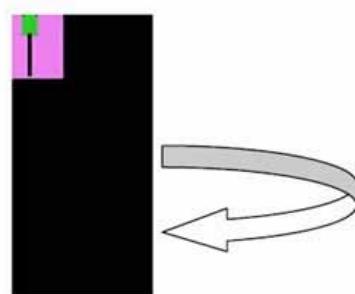
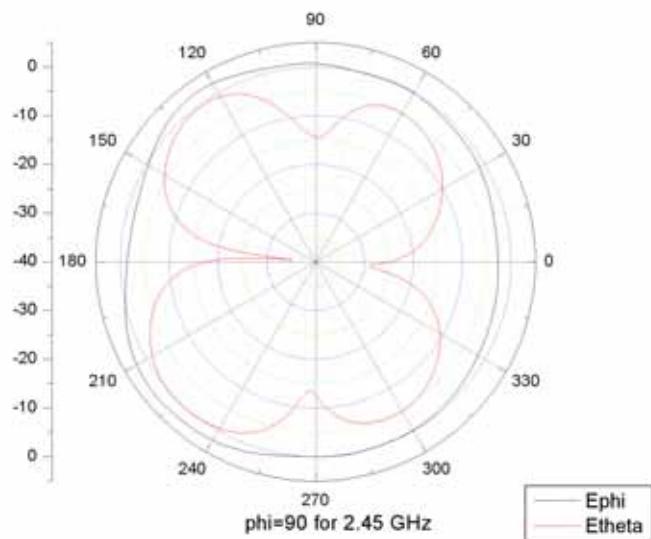
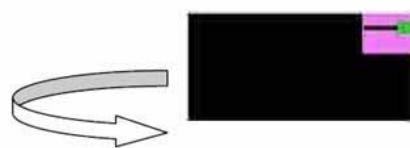
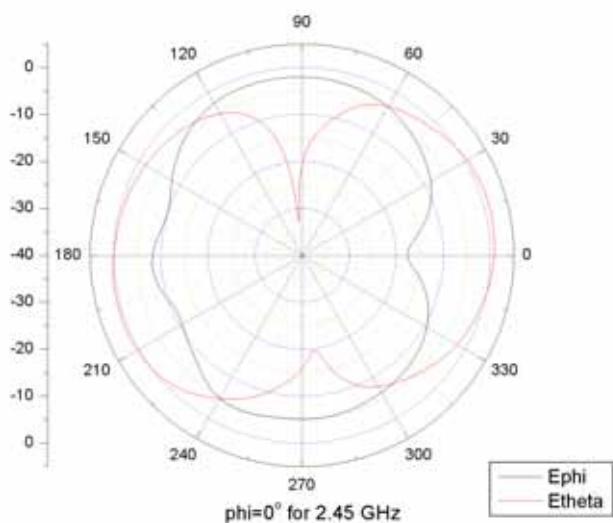
Antenna size: 8mm(L)×5mm(W)

## Return Loss and Bandwidth



## Radiation Pattern (unit: dBi)





## HOW TO ORDER

**920 D01 E 13 115 0 1 3**

1            2            3            4            5

### 1. SERIES NO.

**920=Chip Antenna**

### 2. TYPE:

**D01=SMD TYPE (5X8mm)**

### 3. ENVIRONMENT PROTECTION   MATERIAL:

**E=RoHS**

### 4. THICKNESS:

**13=1.3mm**

### 5. CENTRE FREQUENCY:

**115 = 2.4 GHz**

**Change:**

**Add the no. of centre frequency on LCP molding in  
order to recognize.**

CHANT SINCERE CO., LTD.  
7F.-2, No.188, Datong Rd., Sec. 3  
Sijhih City, Taipei County 221, Taiwan  
TEL : 886-2-8647-1251  
FAX : 886-2-8647-1872, 886-2-8647-2962  
E-MAIL : aaron.hu@coxoc.com.tw  
[www.coxoc.com.tw](http://www.coxoc.com.tw)