

產品承認書

SPECIFICATION FOR APPROVAL

客戶：	中文	盟訊實業股份有限公司
CUSTOMER	英文	UNICATION CO., LTD

客戶料號：

**CUSTOMER
PART NO.**

S72G12440H1-R

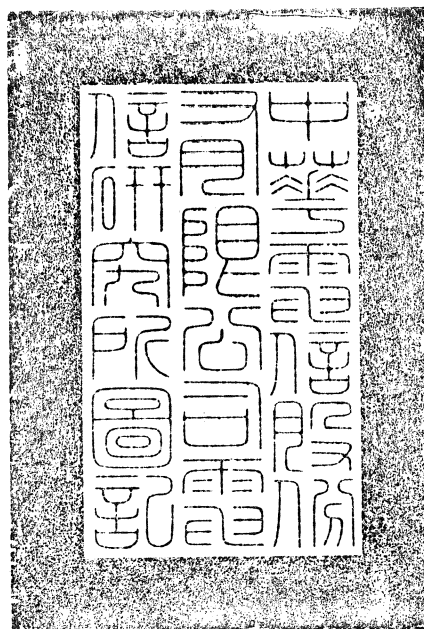
零件料號：

PART NO.

CAD01042440H11K

承認者章：

SIGNATURE of SALES



業務：廖昌倫

中華電信研究所

CHUNGHWA TELECOM. LABORATORIES

桃園縣楊梅市民族路 5 段 551 巷 12 號

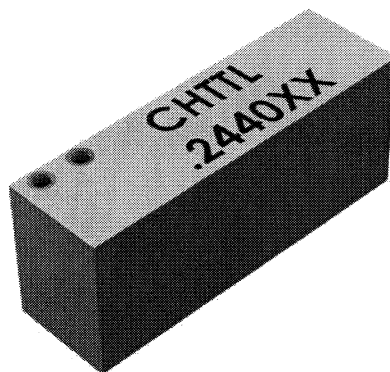
12, LANE 551, MIN-TSU ROAD SEC. 5 YANG-MEI, TAOYUAN, TAIWAN, ROC

TEL : 03-4244951 FAX : 03-4244920

2.4GHz ISM Band Chip Antenna

Part No. CAD01042440HX1K

Product Specification



**1003 2.4GHz W/O Empty Area Chip Antenna
For Bluetooth/WLAN/Zigbee Application**

Revision History

Ver.	Date	Description
1.1	2011.10.21	Initial version of specification

Product Name : 2.4GHz W/O Empty Area Chip Antenna

Part No. : CAD01042440HX1K	Page : 8
Approval by C. L. Liao	Ver. : 1.1
E-mail : cliao@cht.com.tw	Date : 2011.10.21

◆ Description

The CAD01042440HX1K is one of the world's high-performance 2.4GHz chip antennas which is not needed ground clearance. The CAD01042440HX1K is for all 2.4GHz application including Bluetooth, Zigbee, IEEE802.11b/g, etc. This chip antenna comprises a radiating structure of innovative meandered conducting strips which are formed on a tiny piece of Printed Circuit Board (PCB). The 10(L)x3(W)x4(H)mm³ compact surface mountable chip antenna is fully compatible with handmade and reflow attachment processes. This antenna is highly stable with variation in temperature and humidity, and also it is very cost-effective to have superior performance for applications in 2.4GHz ISM band.

◆ Feature

- Omni-directional Radiation Pattern
- High Radiation Efficiency
- Compact Size LxWxH(10x3x4mm³)
- 50 Ω Characteristic Impedance
- No Need Ground Clearance
- Wide Bandwidth
- Satisfy Lead Free Process
- Fully Surface Mount Compatible
- Tape and Reel Packing

◆ Application

- Bluetooth, WLAN, Zigbee
- 2.4GHz ISM Band Systems
- Mobile Phone
- Navigation Product
- AP Router

◆ **Electrical Specification**

Antenna Band	2.4-2.5GHz
Peak Gain (typical)	1dBi
Average Radiation Efficiency	>50%
Bandwidth	>100MHz
Central Frequency	2.45GHz
VSWR	2.0(max.)
Return Loss	-10dB(max.)
Impedance	50Ω
Pattern	Omni-directional
Polarization	Linear

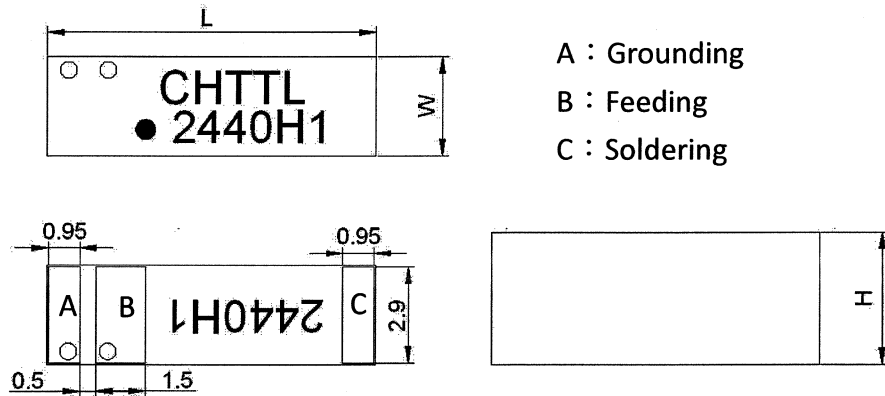
◆ **Mechanical Specification**

Antenna Dimension	10(L)x3.0(W)x4.0(H)mm ³
Antenna Weight	0.3g
Connection Type	Surface Mount Technology
Packaging	Tape Reel

Note : Above mention the all characteristics to base on CHTTL reference board.

◆ Antenna Dimension (unit : mm)

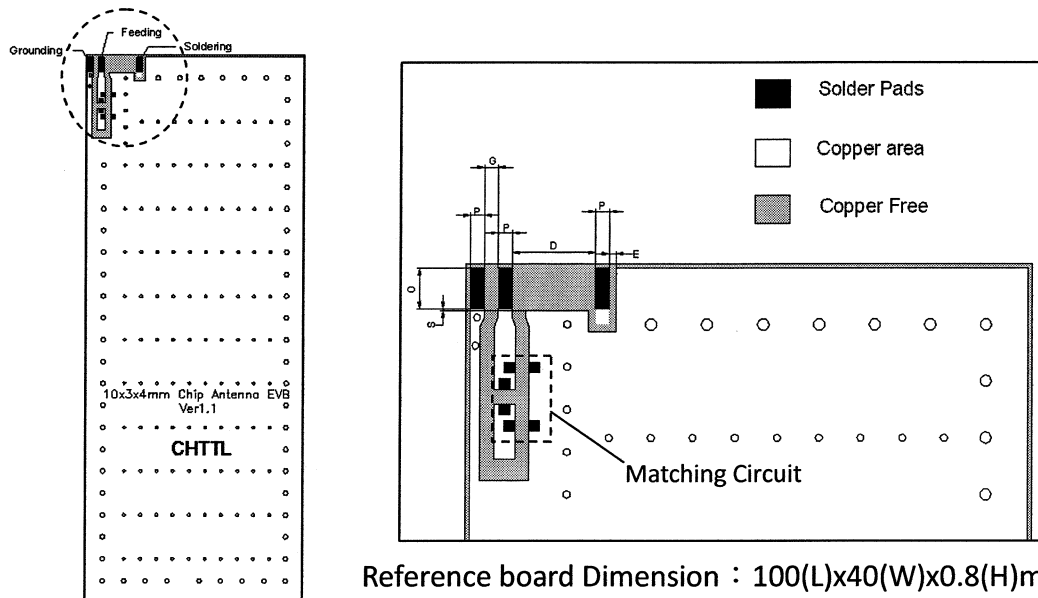
Antenna pad include grounding, feeding and soldering. The total dimension of antenna construct was described in detail as follows :



L	W	H
Length	Width	Height
10.0±0.1	3.0±0.1	4.0±0.1

◆ Antenna Footprint(unit : mm)

The antenna footprint of reference board was defined in detail as follows, Ground clearance area under antenna needn't be removed from all PCB layer. Transmission line should be designed to have a 50 ohm characteristic impedance, depending on substrate material and thickness. And then matching circuit also should be implemented in order can adjust central frequency of antenna.

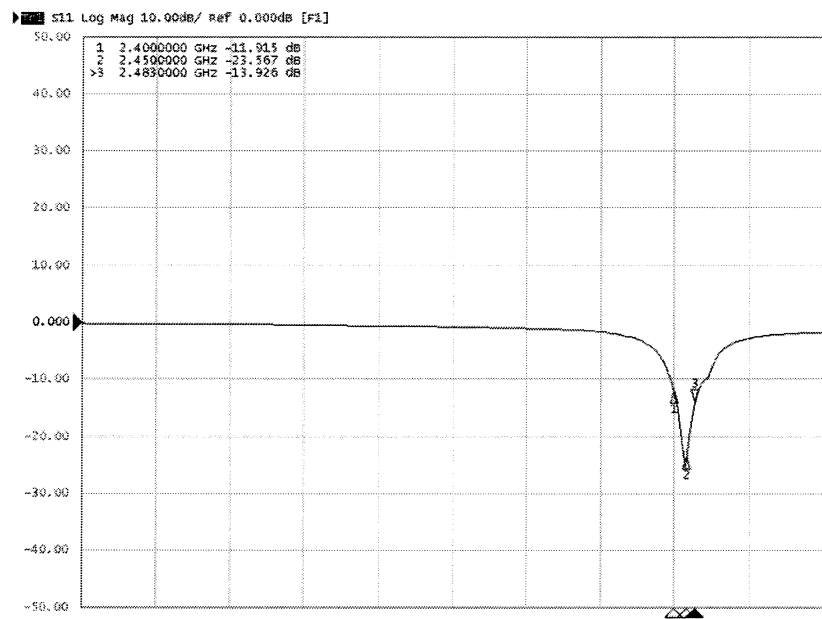


Reference board Dimension : 100(L)x40(W)x0.8(H)mm³

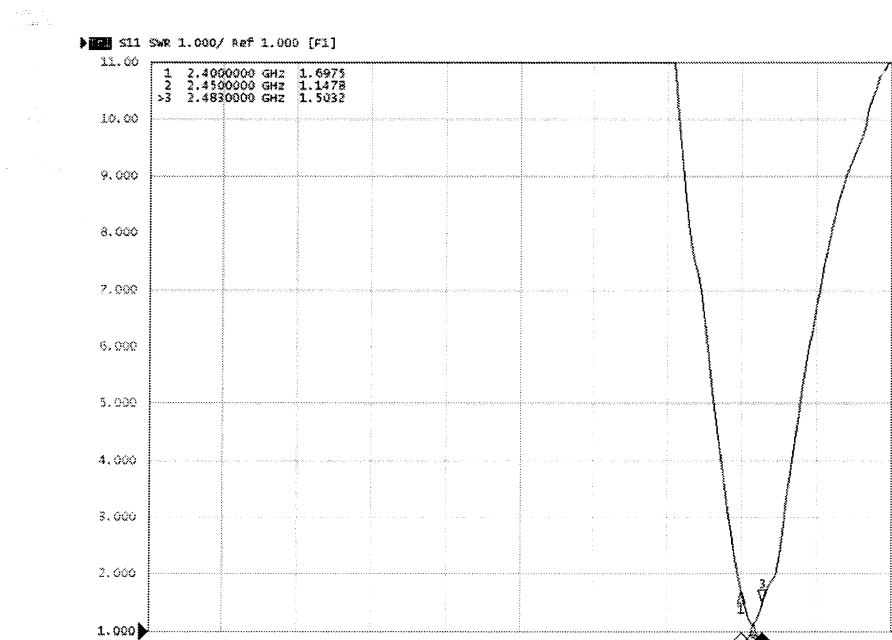
O	P	S	D	E	G
2.9±0.1	1±0.1	0.1±0.1	6±0.1	0.5±0.1	1±0.1

◆ Antenna Return Loss(S11) & VSWR

Return Loss (S11)

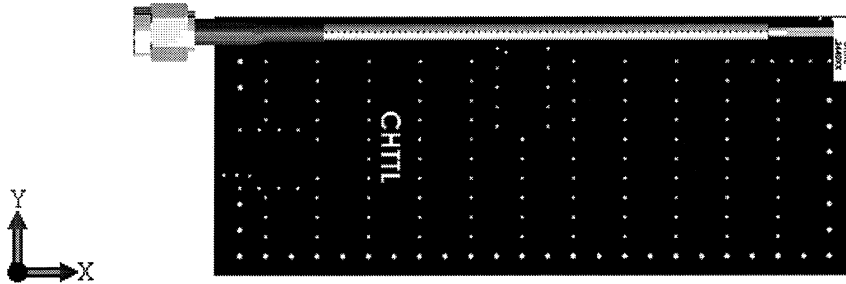


VSWR



◆ Antenna Radiation Pattern

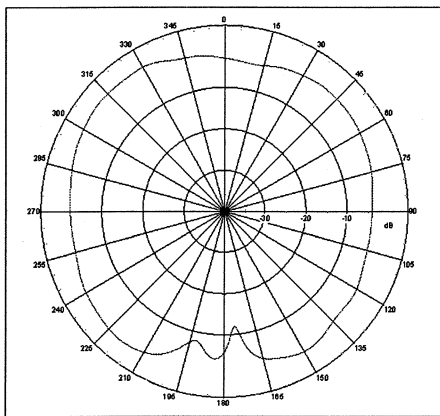
Top view



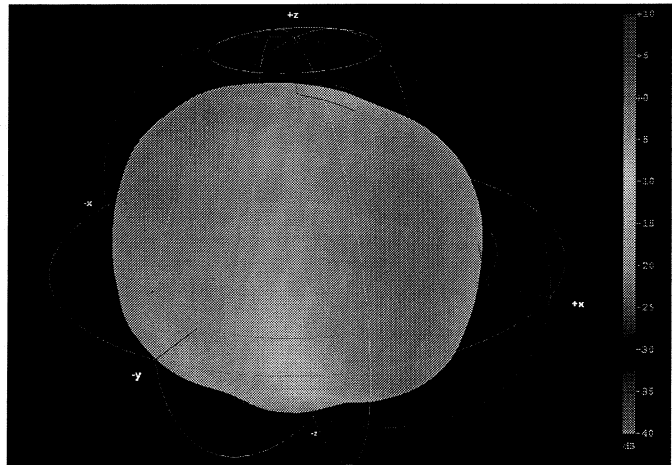
Side view



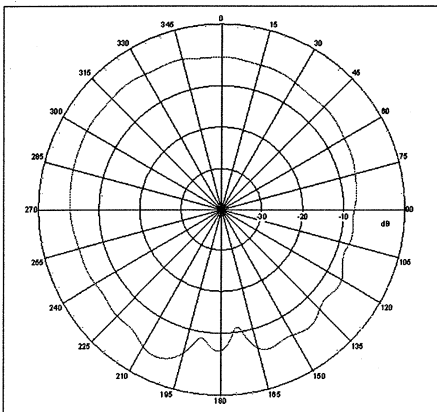
X-Z plane at 2.45GHz



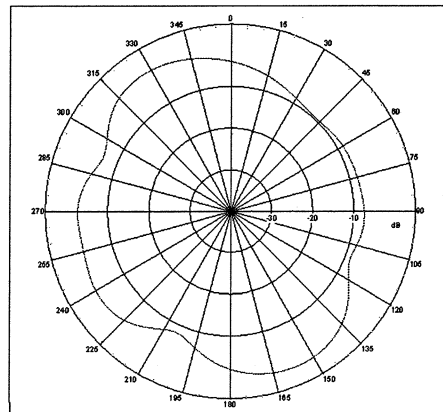
3D radiation power pattern at 2.45GHz



Y-Z plane at 2.45GHz



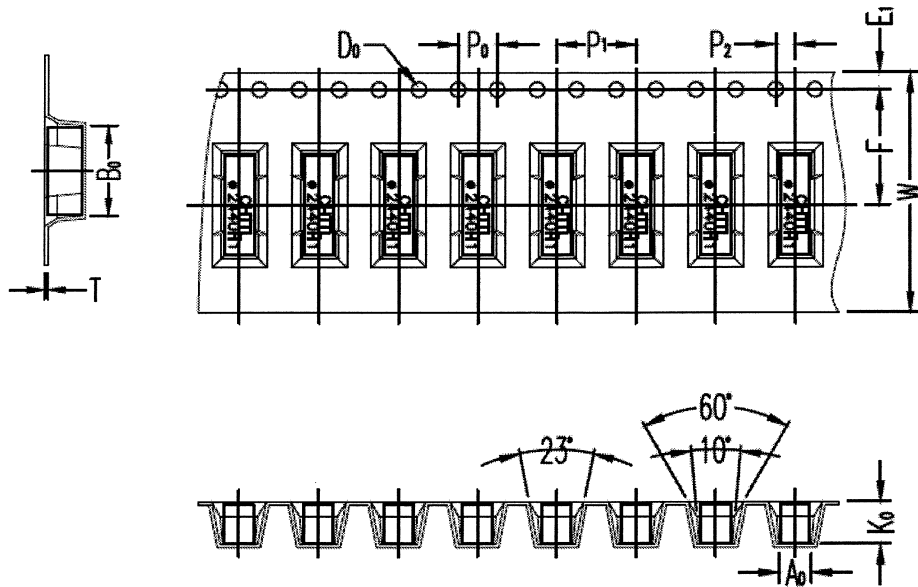
X-Y plane at 2.45GHz



- Note : 1. Above X-Z, Y-Z, X-Y plane radiation pattern indicate power pattern.
2. Above all measured data and characteristic were based on CHTTL reference board at 2.45GHz central frequency.

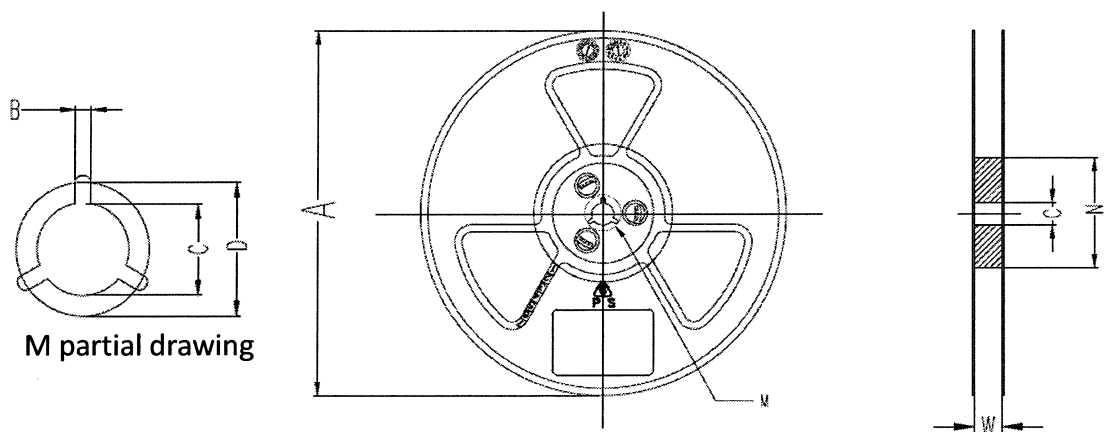
◆ Packing

Plastic Tape Specification (unit : mm)



W	F	E ₁	P ₀	P ₁	P ₂	A ₀	B ₀	K ₀	T	D ₀
24±0.3	11.5±0.1	1.75±0.1	4.0±0.1	8.0±0.1	2.0±0.1	3.3±0.1	10.3±0.1	4.3±0.1	0.35±0.05	Φ1.5 ^{+0.1} ₋₀

◆ Reel Dimension (unit : mm)



A	B	C	D	N	W
330±2.0 (13")	1.5 ^{+1.5} ₋₀	13 ^{+0.5} _{-0.2}	20.2 ₋₀	100±0.2	24.4 ^{+0.2} ₋₀

◆ Ordering Information :

This product can be ordered by the below ordering code. The ordering code was determined in detail as follows :

CA D01 04 2440 HX 1K

1

2

3

4

5

6

1. Antenna Type Code :

CA=Chip antenna

2. Size Code :

D01=10x3mm

3. Thickness Code :

04=4mm

4. Working Band Code :

2440=2.4GHz

5. Central Frequency Code :

H1=2.45GHz

H2>2.45GHz

6. Packing Type Code :

1K=1000pcs for 13" tape reel

此元件為中華電信研究所專利產品，應用廠商不得複製。