

Specification

Part No.	:	CA.14
Model	:	2.4GHz High Efficiency Ultra-Small Chip Antenna
Description	:	2400MHz to 2500MHz WLAN/WIFI/Bluetooth/Zigbee
Features	:	3*3*1mm Smallest size Peak Gain 1dBi 50 Ohm Impedance

RoHS ✓



1. Introduction

The CA.14 2.4GHz chip antenna is developed for mobile devices and modules for very small space requirements for WLAN, Zigbee and Bluetooth applications. At 3mm*3mm*1mm it is one of the smallest antennas available worldwide.

2.0 Key Performance Indicators

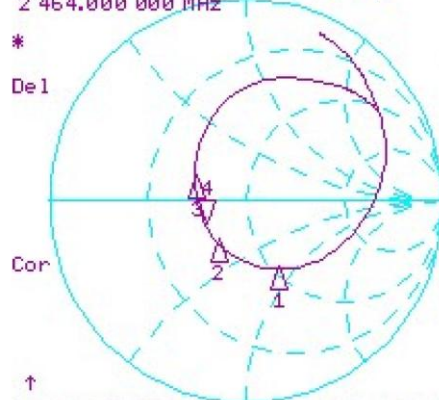
CA.14 is designed to mount at the edge of an evaluation board of 45*45mm, as shown in the photo. The antenna performance was measured with the CA.14 mounted on the evaluation board with SMA connector.



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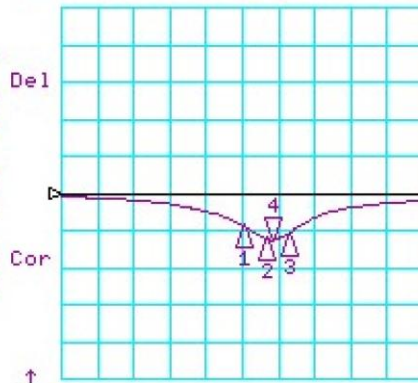
CH1 RFL 1 U FS
 4: 31.969 Ω -7.6172 Ω 8.4798 pF
 2 464.000 000 MHz

CH3 LOG 10 dB/ REF 0 dB
 RFL 4: -12.478 dB 2 464.000 000 MHz



CH1 Markers

1: 52.713 Ω
 -40.775 Ω
 2.40000 GHz
 2: 34.373 Ω
 -14.170 Ω
 2.45000 GHz
 3: 28.635 Ω
 7.1855 Ω
 2.50000 GHz



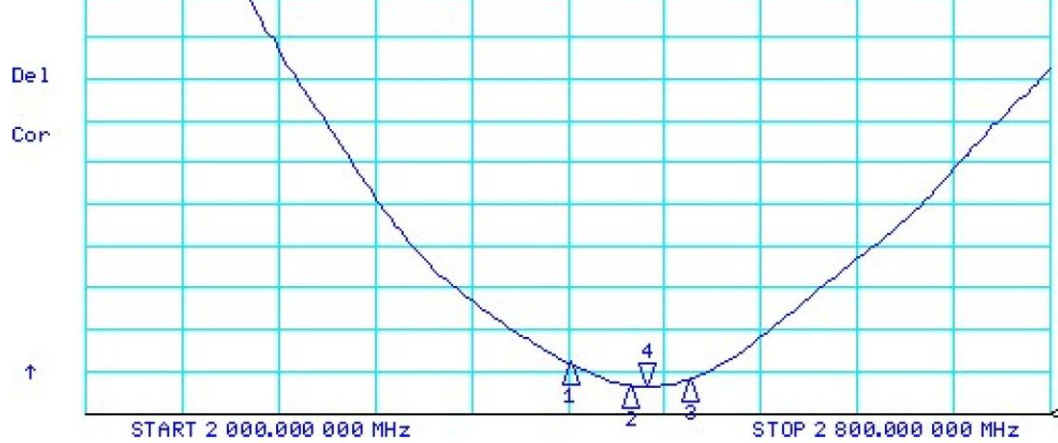
CH3 Markers

1: -8.6411 dB
 2.40000 GHz
 2: -12.148 dB
 2.45000 GHz
 3: -10.890 dB
 2.50000 GHz

START 2000.000 MHz STOP 2800.000 MHz

START 2000.000 MHz STOP 2800.000 MHz

CH2 RFL SWR 1 / REF 1 4: 1.6238 2 464.000 000 MHz



CH2 Markers

Min
 1: 2.1735
 2.40000 GHz
 2: 1.6559
 2.45000 GHz
 3: 1.7988
 2.50000 GHz

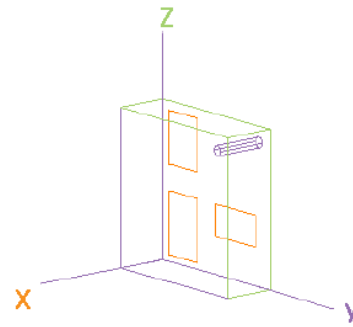
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START 2 000.000 000 MHz

STOP 2 800.000 000 MHz

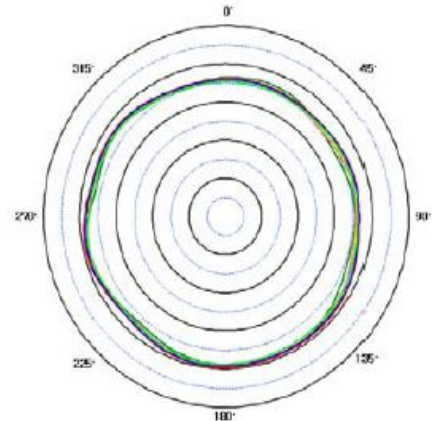
2D Passive chamber data

- H Plan : XY
- E1 Plan : XZ
- E2 Plan : ZY



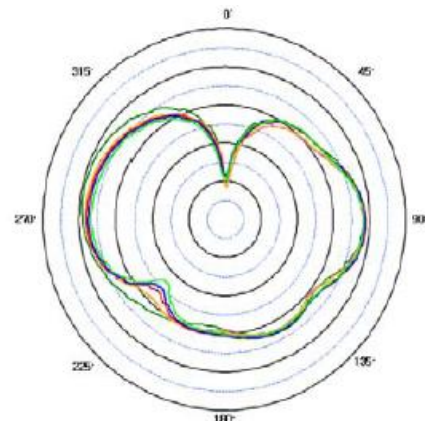
- H Plan

Frequency	Max(dBi)	Avg(dBi)	Beam Peak
2400Mhz	-0.88	-2.92	162'
2445Mhz	-1.05	-2.78	256'
2447MHz	-0.92	-2.63	258'
2475Mhz	-0.46	-2.06	184'
2484Mhz	-0.75	-2.35	186'
2500Mhz	-1.3	-2.91	186'



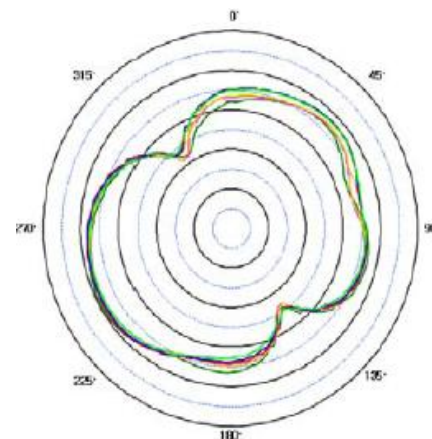
- E1 Plan

Frequency	Max(dBi)	Avg(dBi)	Beam Peak
2400Mhz	-0.54	-5.18	284'
2445Mhz	-1.68	-6.18	276'
2447MHz	-1.62	-6.11	92'
2475Mhz	-1.05	-5.95	92'
2484Mhz	-1.21	-6.2	94'
2500Mhz	-1.61	-6.79	94'



- E2 Plan

Frequency	Max(dBi)	Avg(dBi)	Beam Peak
2400Mhz	-0.39	-4.71	240'
2445Mhz	-1.18	-5.02	236'
2447MHz	-1.09	-4.89	236'
2475Mhz	-0.97	-4.25	240'
2484Mhz	-1.25	-4.39	242'
2500Mhz	-1.74	-4.75	248'



3D Passive chamber data

Frequency	Eff. (%)	Avg Gain (dBi)	Peak Gain (dBi)	Directivity (dBi)
2400Mhz	56	-2.51	1.07	3.58
2445Mhz	53	-2.74	0.94	3.68
2447MHz	55	-2.58	1.05	3.63
2475Mhz	64	-1.94	1.29	3.23
2484Mhz	62	-2.11	0.99	3.10
2500Mhz	56	-2.54	0.46	3.00

Antenna Dimensions

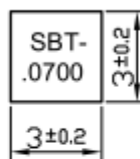
3D View



Left View



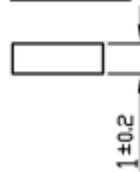
Top View



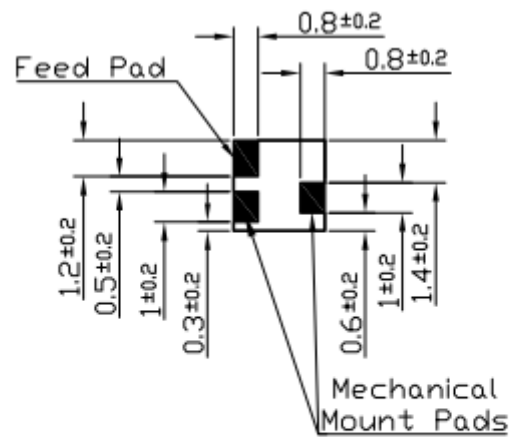
Right View





Side View



Bottom View



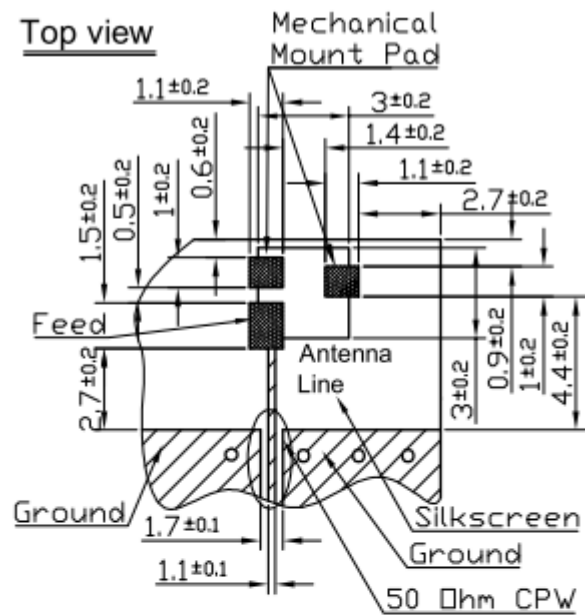
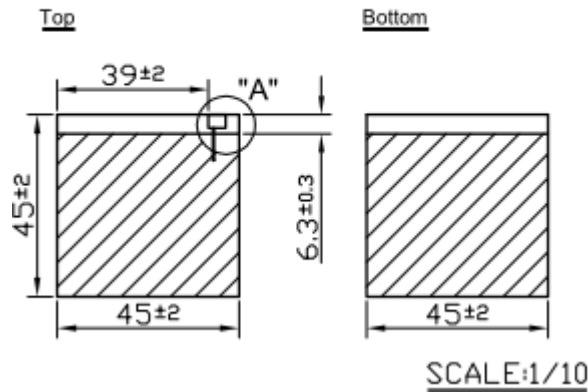
NOTES:

- 1. Gold Area 
- 2. Clearance Area 
- 3. Copper Area 
- 4. Soldered Area 

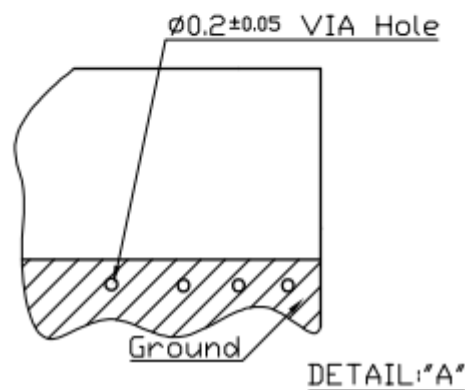
Feeding Method

Reference Footprint

(Actual Depends On Specific Customer Board Environment)



Bottom view



FR4 Thickness 0.8 mm