

Specification

Part No.	:	WLA.01
Model	:	2.4GHz High Efficiency Loop Antenna
Description	:	2.5dBi 2400MHz to 2500MHz WLAN/WIFI/Bluetooth/Zigbee
Features	:	3.2*1.6*0.5mm Low Profile Peak gain 2.5dBi 50 Ohm Impedance RoHS ✓



1. Introduction

The WLA.01 2.4GHz Loop antenna is a high efficiency, miniature SMD, edge mounted ceramic antenna for very small space requirements for Wi-Fi, WLAN, Zigbee, Bluetooth, and 802.11 applications. The WLA.01 uses the main PCB as its ground plane, thereby increasing Antenna Efficiency. It is tuned for different PCB sizes by simply changing the value of the matching circuit. At 3.2mm*1.6mm*0.5mm, the WLA.01 is one of the smallest antennas available worldwide. This antenna is delivered on tape and Reel.

1.1 Applications

- *Bluetooth earphone systems
- *Hand-held devices when Bluetooth/Wi-Fi functions are needed, e.g., Smart phone.
- *IEEE802.11 b/g
- *ZigBee
- *Wireless PCMCIA cards or USB dongle

2. Specifications

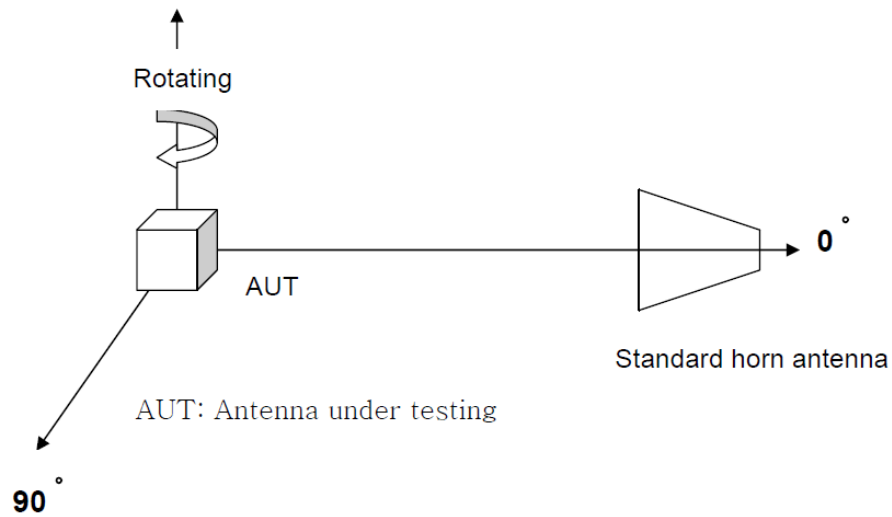
The WLA.01 is designed to mount at the center of the edge of an evaluation board of 80 x 40mm. The antenna performance was measured with the WLA.01 mounted on the evaluation board with SMA(F) connector.

No	Parameter	Specification*
1	Center Frequency	2400-2500MHz
2	Dimensions	3.2*1.6*0.5mm
3	VSWR	2 max
4	Polarization	Linear
5	Bandwidth	100MHz min.
6	Gain	Peak 2.5dBi typ.
7	Efficiency	84% typ.
8	Impedance	50 Ω
Mechanical		
9	Dimensions	3.2*1.6*0.5mm
10	Material	Ceramic
Environmental		
11	Operating Temperature	-40°C~+85°C
12	Storage Temperature	-40°C~+105°C
13	Temperature Coefficient (τ_f)	0 \pm 20 ppm @-20°C to +80°C
14	Recommended Reel Storage	5°C to 40°C
	Condition	Relative Humidity 20% to 70%

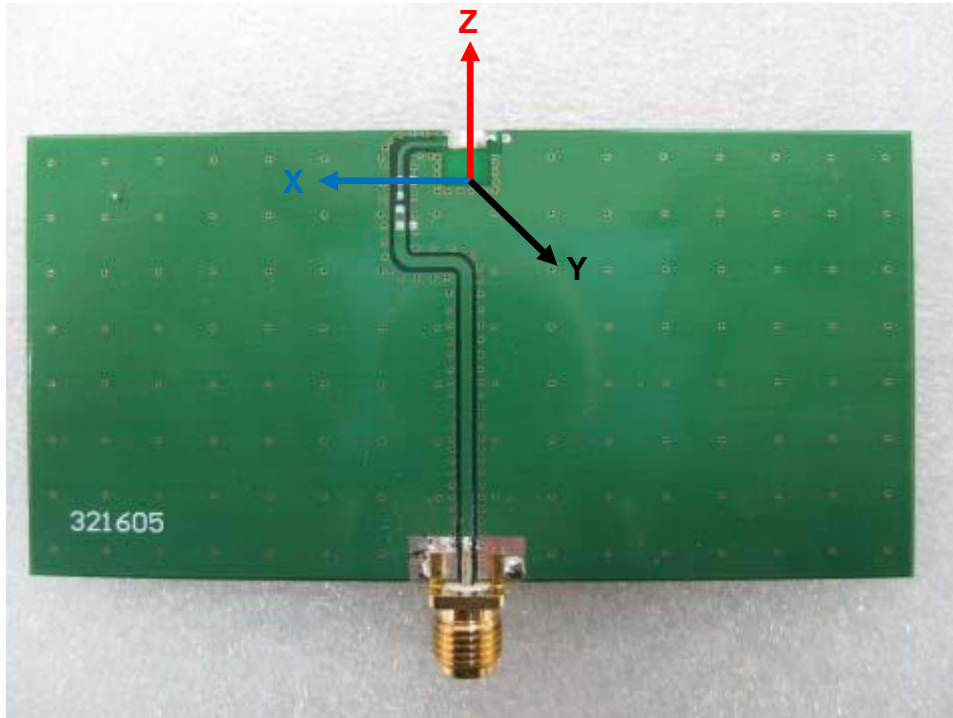
* The data was measured by a CTIA Authorized Test Lab.

** Center frequency will be offset to working frequency according to the conditions of user's Ground plane and radome.

4. Radiation Pattern (Customize Design)

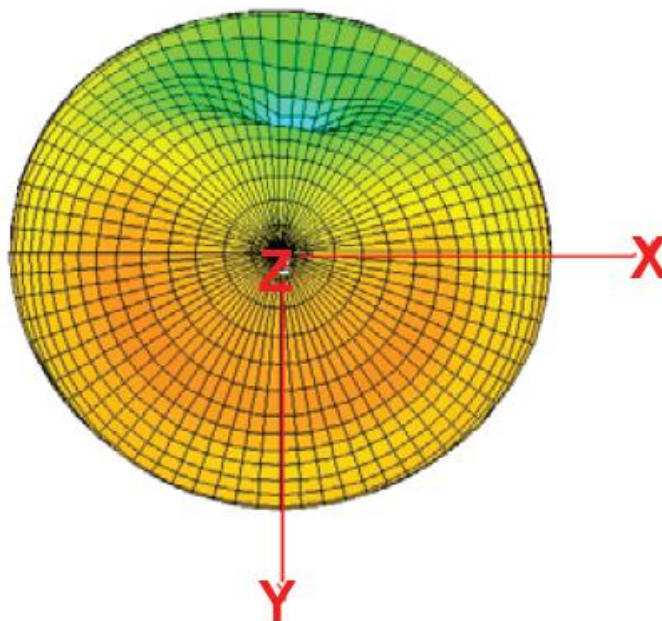


4.1 Radiation Pattern (80mmX40mm ground plane)

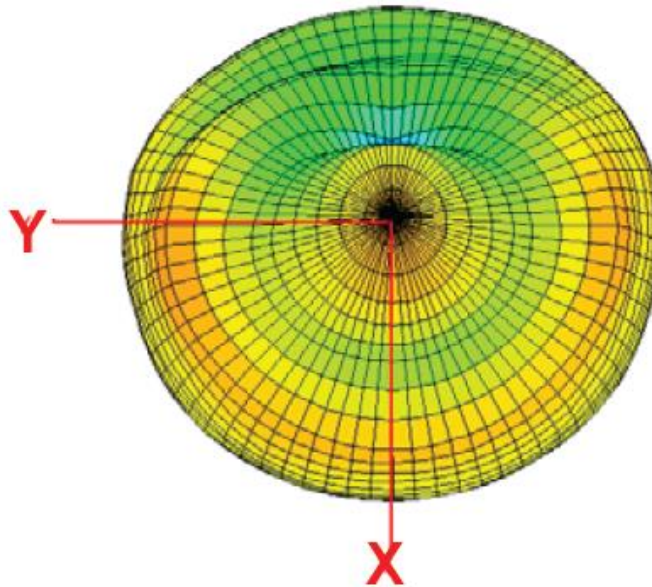


4.2 3D Gain pattern @2442MHz

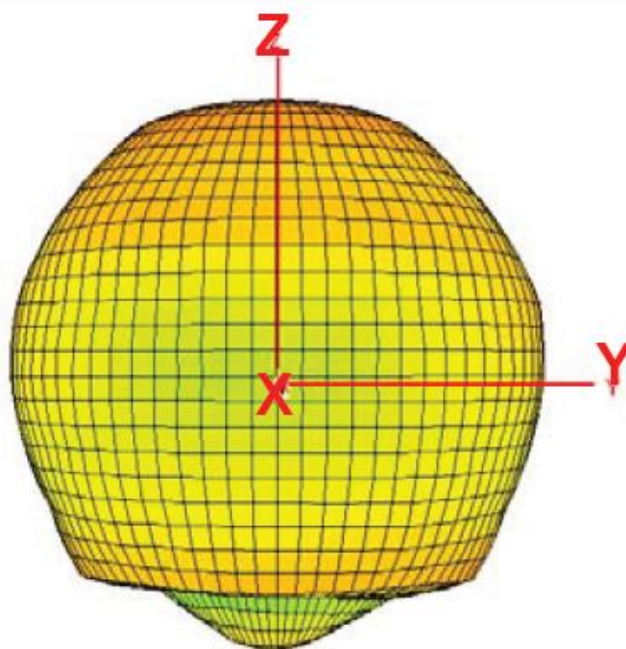
Azimuth = -180.0
Elevation = 0.0
Roll = 0.0



Azimuth = -180.0
Elevation = -5.1
Roll = 180.0



Azimuth = 0.0
Elevation = -90.0
Roll = 180.0



4.3 Efficiency Table

Frequency(MHz)	2400	2410	2420	2430	2442	2450	2460	2470	2480	2490	2500
Efficiency(dB)	-1.38	-1.04	-0.85	-0.74	-0.73	-0.76	-0.86	-1.05	-1.18	-1.27	-1.40
Efficiency(%)	72.83	78.71	82.27	84.39	84.53	84.04	82.00	78.60	76.14	74.64	72.50
Gain(dBi)	1.47	1.81	2.10	2.40	2.50	2.50	2.37	2.10	1.90	1.87	1.75

4.4 Efficiency vs Frequency

