



# **HL GLOBAL**

## **PRELIMINARY ENGINEERING DATASHEET**

### **PC24IOC14JL-P3M48A-W60FC1**

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**INFORMATION:**



## Datasheet Revision History

Revision	Date	Change Log
PC24IOC14JL-P3M48A-W60FC1 / Rev.01	12 <sup>th</sup> /Jan /2021	Preliminary Datasheet 1.0

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## 1. Antenna Product Description

PC24IOC14JL-P3M48A-W60FC1 Embedded Antenna features provides a high performance, off-board and cable feeding antenna solution. It was designed for 2.4GHz band applications including WLAN 802.11 b/g/n.

## 2. Features Overview

PC24IOC14JL-P3M48A-W60FC1 Embedded Antenna features

- Covering 2.4GHz-2.49GHz freq
- Superior performance
- Off-board, low profile design
- 2.5dBi @2.4GHz
- Low Cost, High performance



### 3. Product Photographs



**Figure 1.** Photo of HL Technologies antenna PC24IOC14JL-P3M48A-W60FC1.



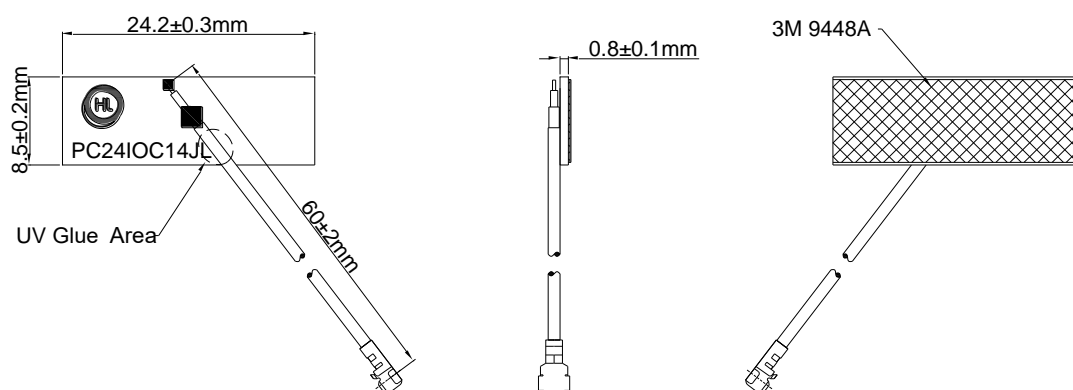
## 4. Antenna Specification Summary

Wireless Standard	IEEE 802.11 b/g/n
Frequency Range	From 2.40GHz to 2.49GHz
Peak Realized Gain(Max)	2.5dBi @2.4GHz
Realized Efficiency	43% @ 2.4GHz
Return Loss	< -10dB
Polarization	Linear Polarization
Axial Ratio	/
Radiation Pattern	Omni-directional
Feed Impedance	50Ω
Power Handling	30dBm
Antenna Structure	PCB
Feeding Description	Cable Feeding
Antenna Dimensions	24.2*8.5*0.8 (mm)
Weight	0.63g
Temperature Range	Operating temperature: -40° C to +75° C (-40° F to +167° F) Storage temperature: -40° C to +85° C (-40° F to +185° F)

**Table 1.** PC24IOC14JL-P3M48A-W60FC1 antenna specification summary.



## 5. Principal Dimensions

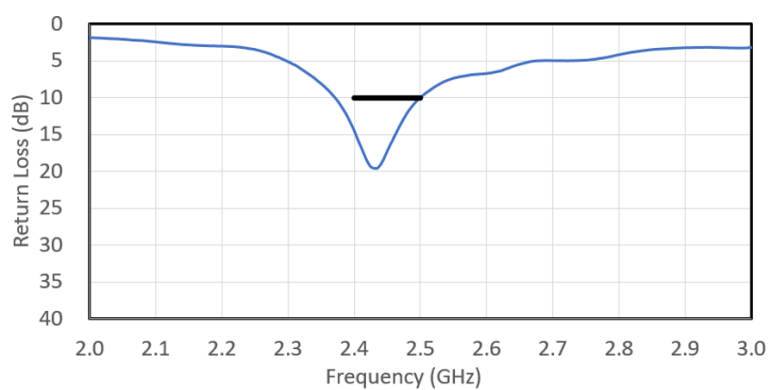


**Figure 2.** Basic dimensions and tolerances of PC24IOC14JL-P3M48A-W60FC1 antenna.



## 6. Return Loss

Return Loss (RL) were measured using Keysight E5071B Vector Network Analyzer (VNA).



Frequency (MHz)	Return loss (dB)
2400	12.4
2450	19.3
2490	12.2

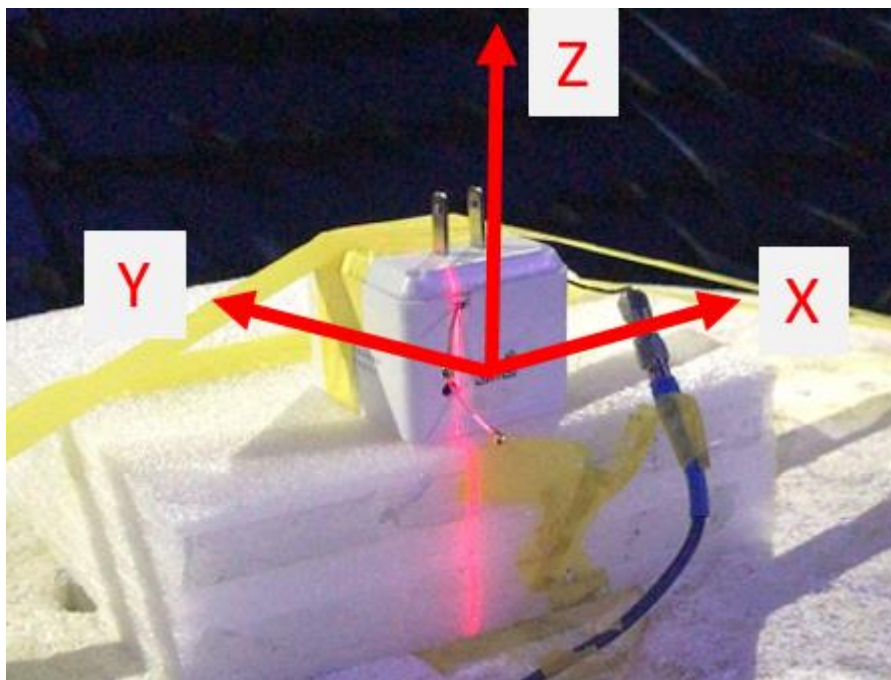
**Figure 3.** Measured Return Loss of PC24IOC14JL-P3M48A-W60FC1.



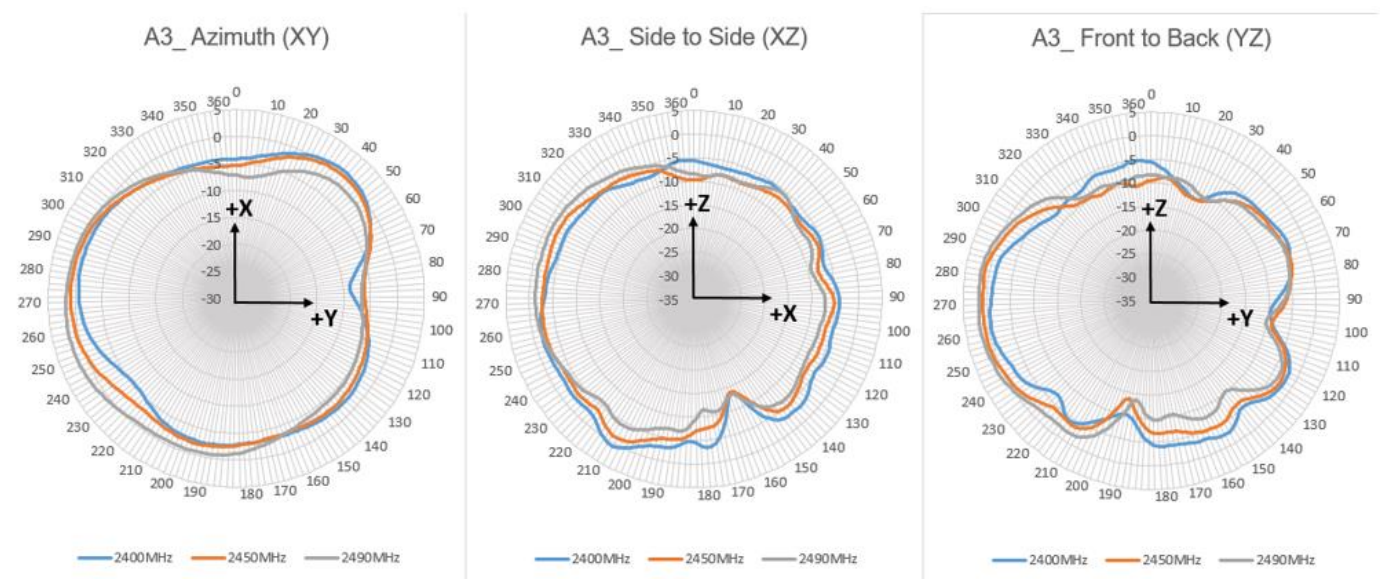


## 7. Radiation Pattern Characteristics

Radiation characteristics for PC24IOC14JL-P3M48A-W60FC1 were measured in customer housing Satimo SG24L anechoic chamber.



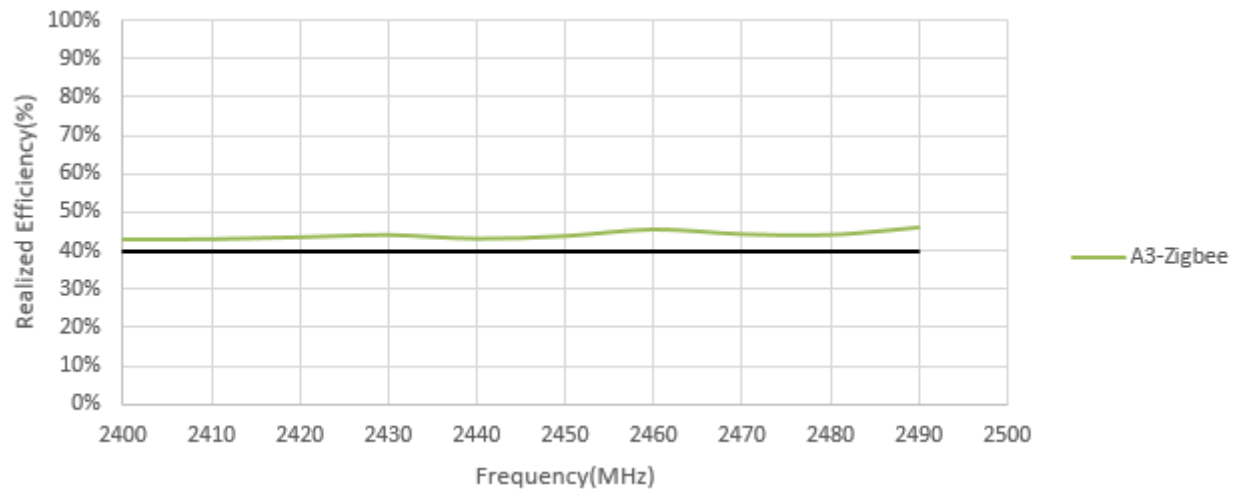
**Figure 4.** PC24IOC14JL-P3M48A-W60FC1 antenna for radiation pattern measurements. Coordinate system used for radiation pattern visualization.



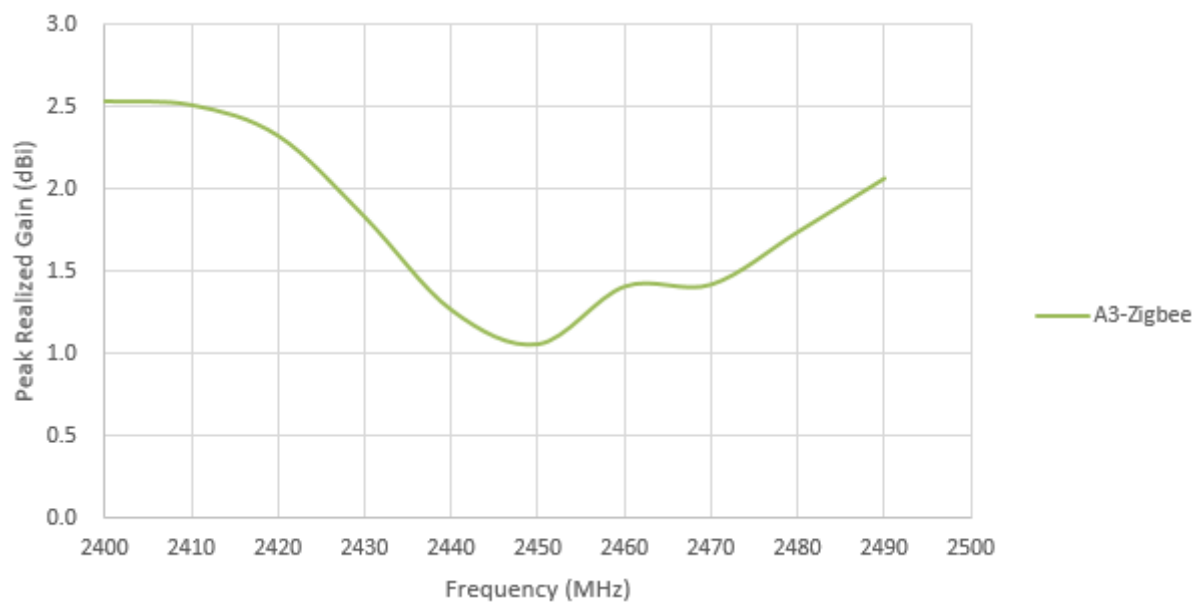
**Figure 5.** Measured radiation pattern characteristics in principal planes at 2GHz.



## 8. Realized Efficiency and Peak Realized Gain



**Figure 6.** Measured Realized Efficiency over frequency



**Figure7.** Measured Peak Realized gain over frequency.



Frequency(MHz)	Realized Efficiency(%)	Peak Realized Gain(dBi)
2400	43%	2.5
2410	43%	2.5
2420	44%	2.3
2430	44%	1.8
2440	43%	1.3
2450	44%	1.1
2460	45%	1.4
2470	44%	1.4
2480	44%	1.7
2490	46%	2.1
<b>Average</b>	<b>44%</b>	<b>1.8</b>

**Table 2.** Summary of Peak Realized Gain and Realized Efficiency results.



## 9. Assembly Drawing

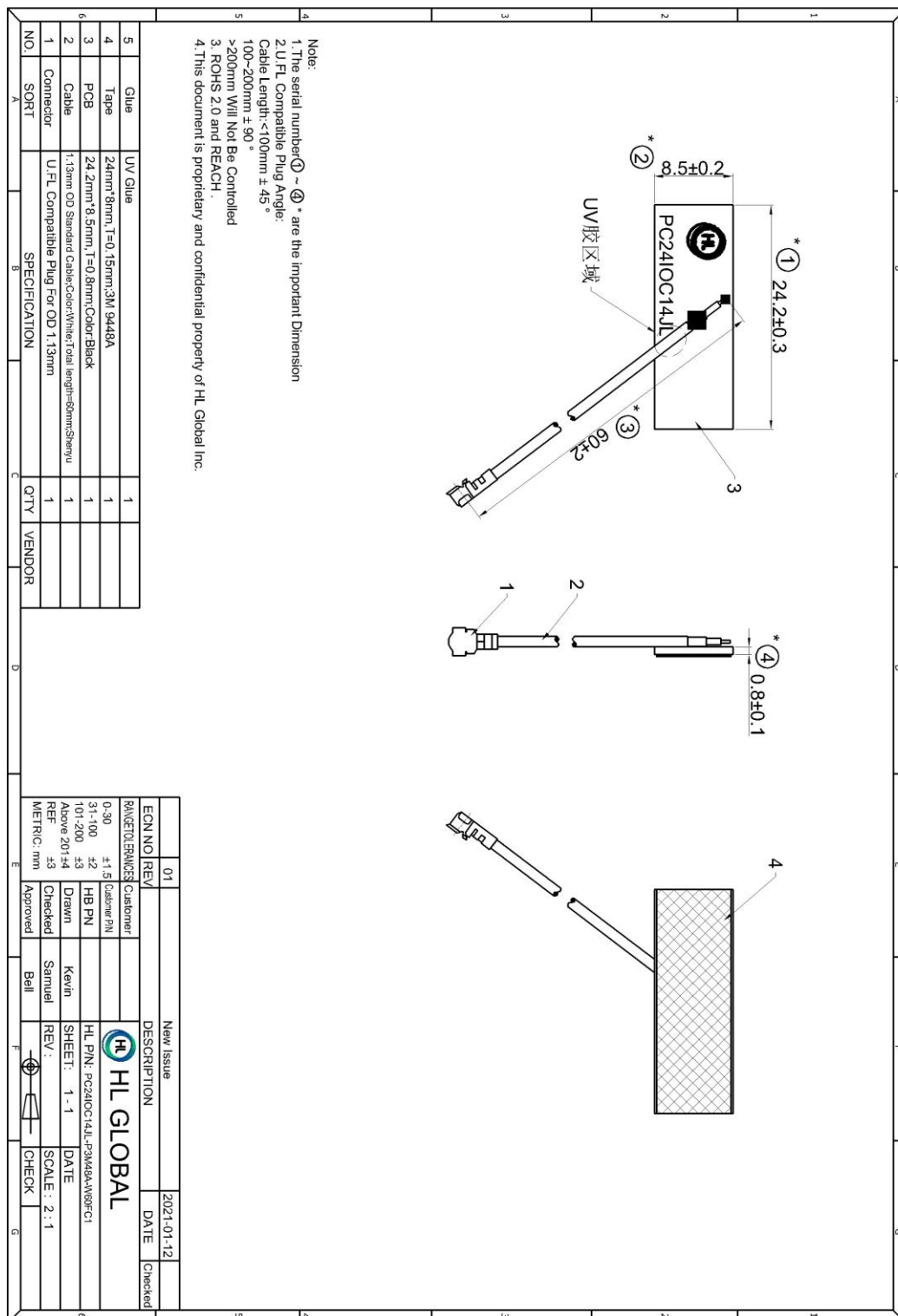


Figure 8. Assembly Drawing.