



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 th /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

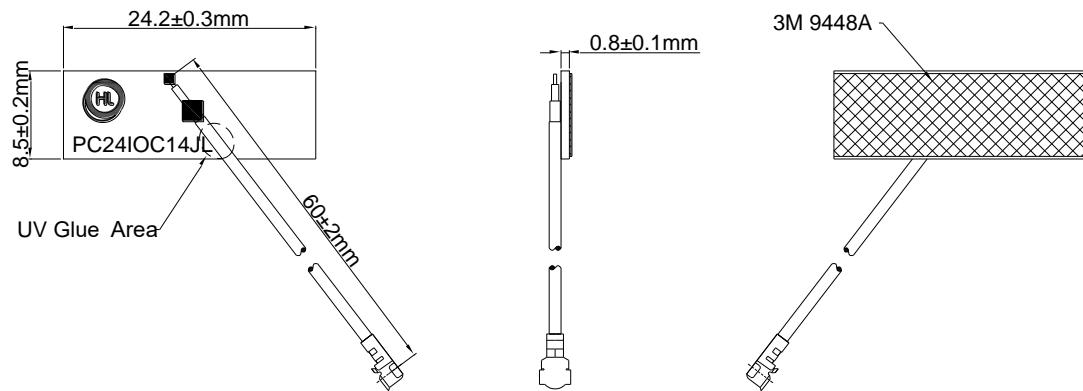
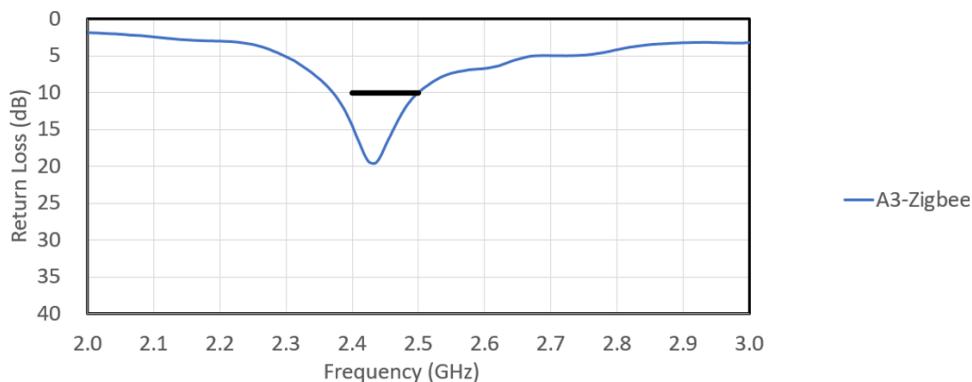


Figure 2. Basic dimensions and tolerances of PC24IOC14JL-P3M48A-W60FC1 antenna.



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.

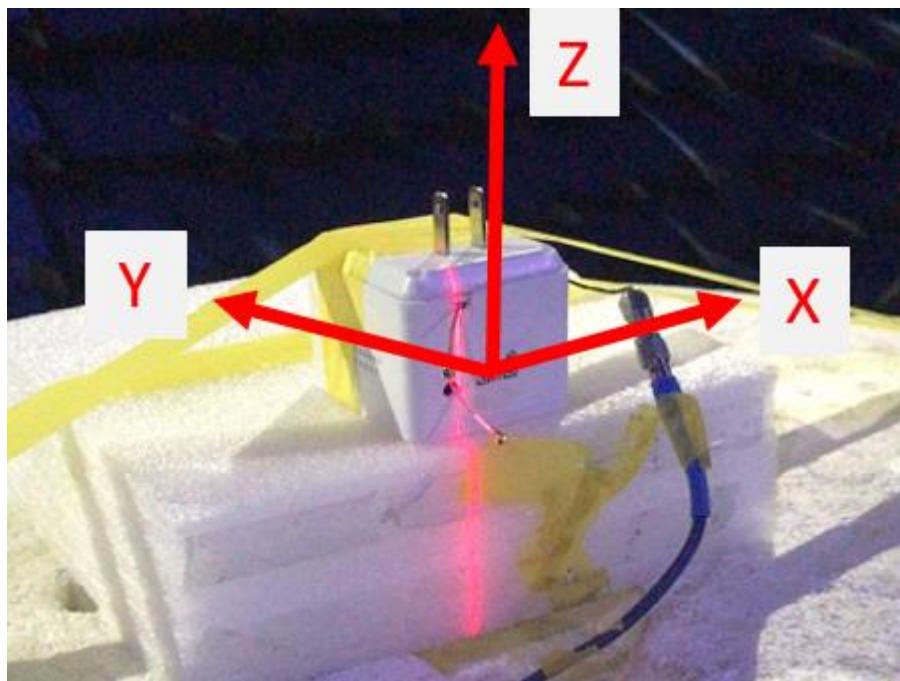
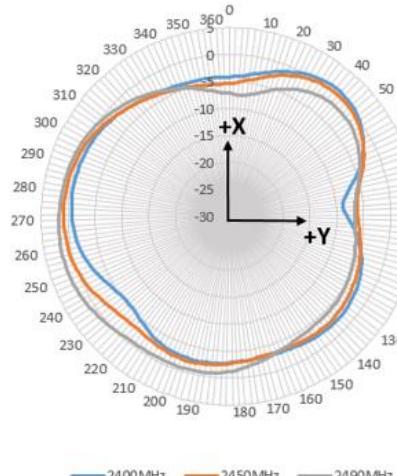


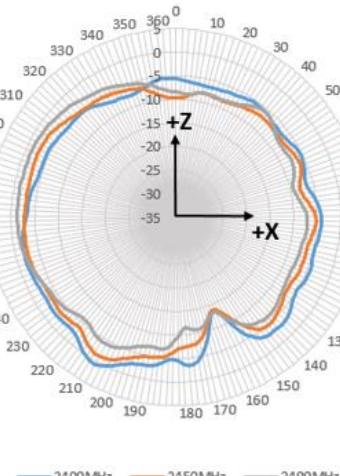
Figure 4. PC24IOC14JL-P3M48A-W60FC1 antenna for radiation pattern measurements. Coordinate system used for radiation pattern visualization.



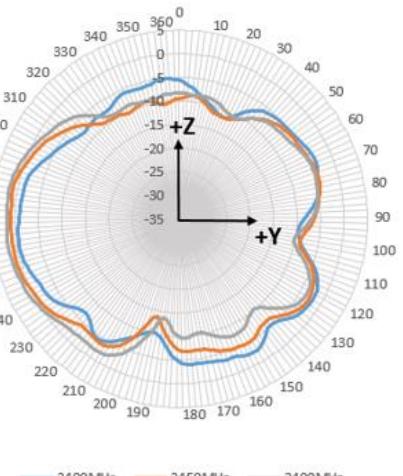
A3_Azimuth (XY)



A3_Side to Side (XZ)



A3_Front to Back (YZ)

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



8. Realized Efficiency and Peak Realized Gain

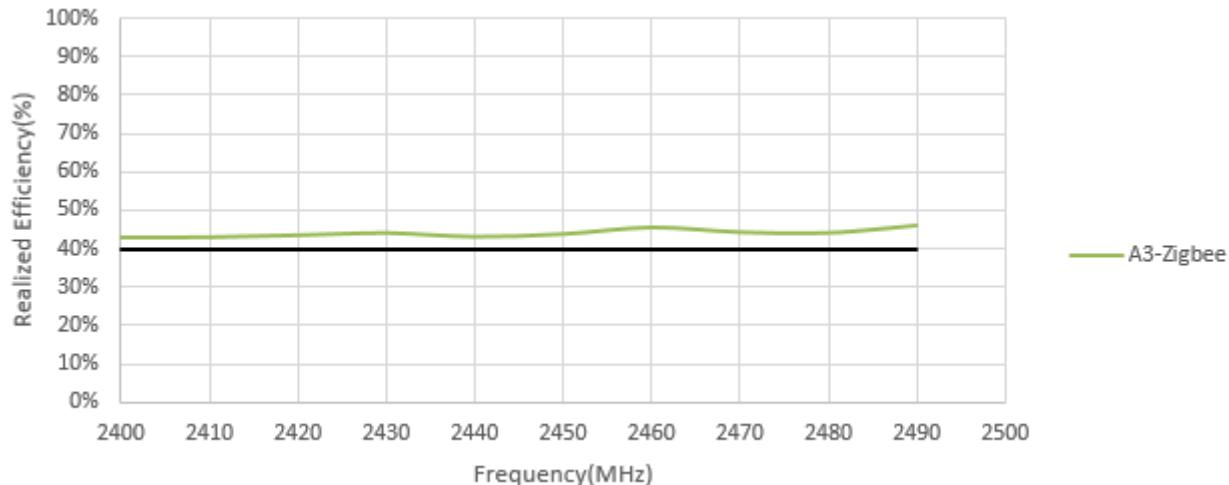


Figure 6. Measured Realized Efficiency over frequency

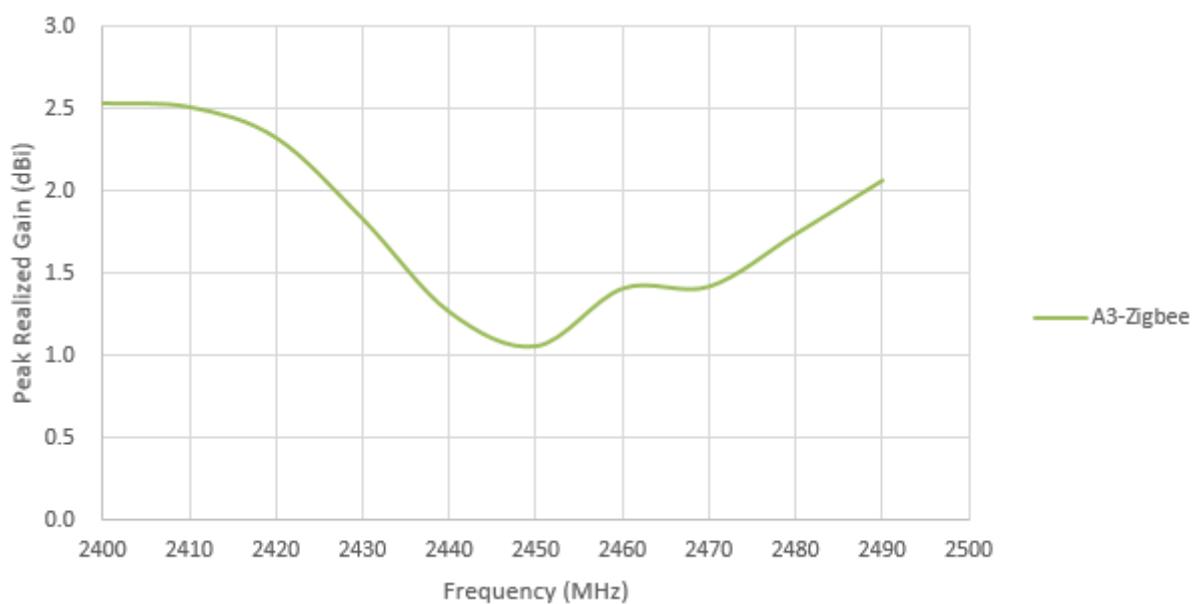


Figure 7. Measured Peak Realized gain over frequency.



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
Average	44%	1.8

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



9. Assembly Drawing

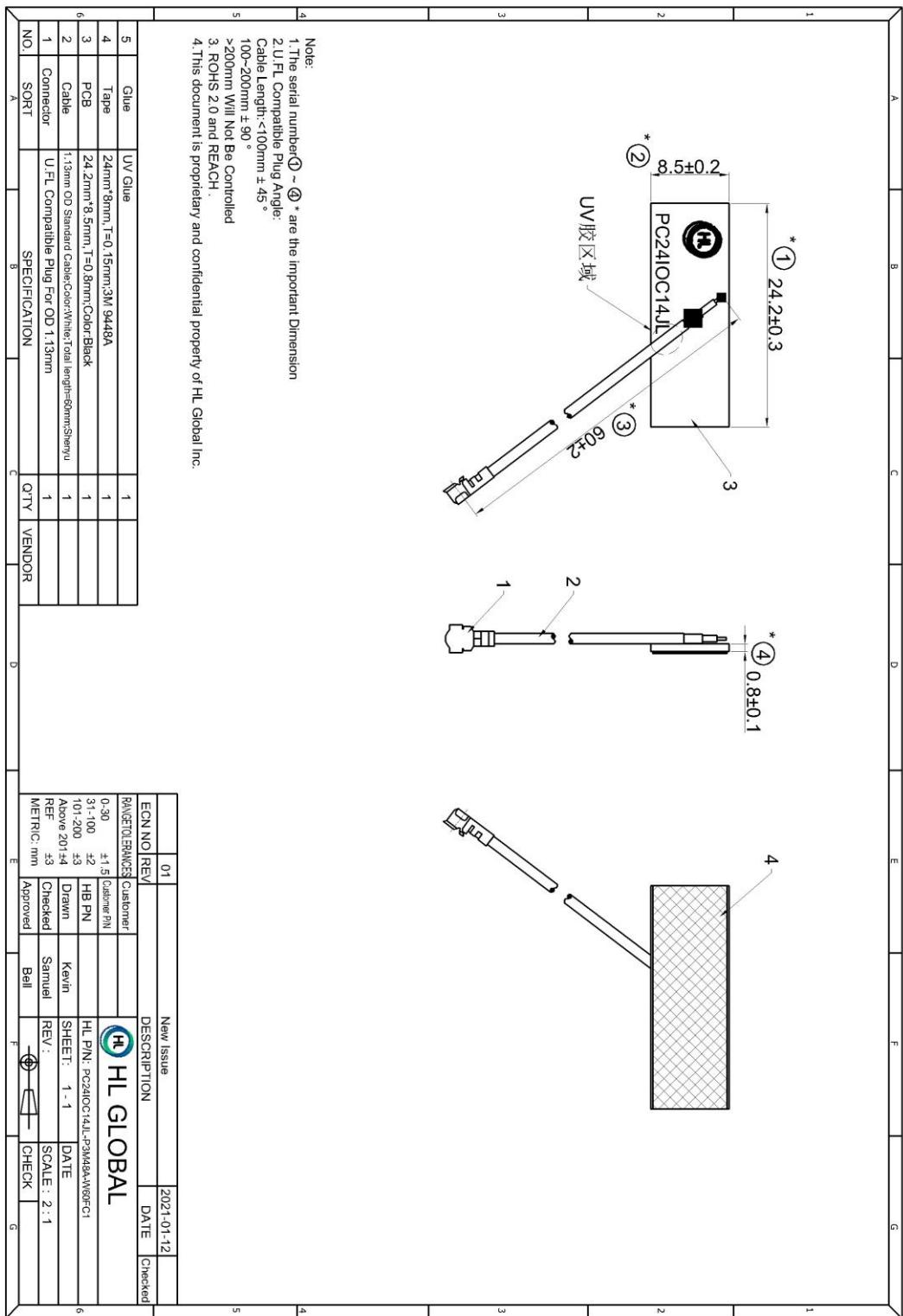


Figure 8. Assembly Drawing.