



# **HL GLOBAL**

## **PRELIMINARY ENGINEERING DATASHEET**

### **PC24WOC14JL-P3M48A-G60FC3**

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**INFORMATION:**

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## Datasheet Revision History

| Revision                           | Date                        | Change Log                |
|------------------------------------|-----------------------------|---------------------------|
| PC24WOC14JL-P3M48A-G60FC3 / Rev.01 | 12 <sup>th</sup> /Jan /2021 | Preliminary Datasheet 1.0 |
|                                    |                             |                           |
|                                    |                             |                           |

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## 1. Antenna Product Description

PC24WOC14JL-P3M48A-G60FC3 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

PC24WOC14JL-P3M48A-G60FC3 Embedded Antenna features

- Covering 2.4GHz-2.49GHz freq
- Superior performance
- Off-board, low profile design
- 3.3dBi @2.44GHz
- Low Cost, High performance



### 3. Product Photographs



**Figure 1.** Photo of HL Technologies antenna PC24WOC14JL-P3M48A-G60FC3.



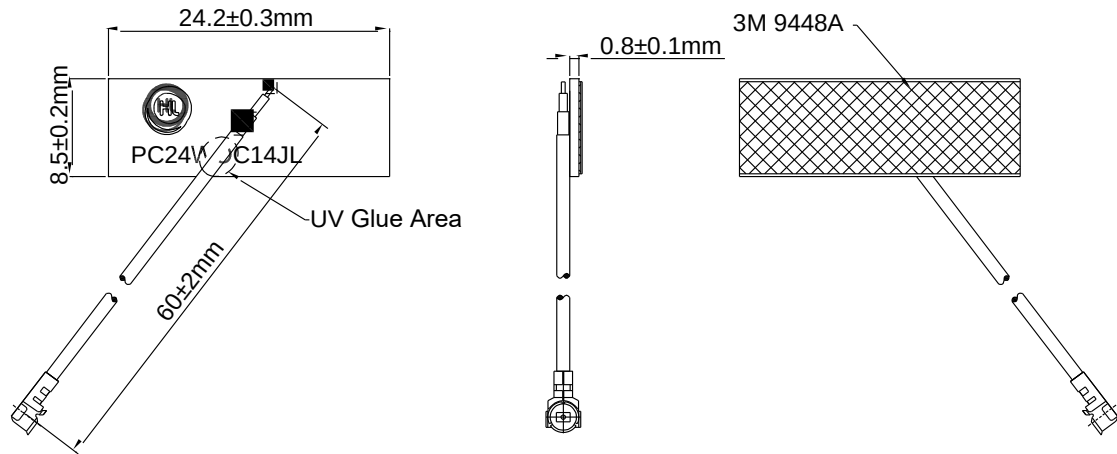
## 4. Antenna Specification Summary

|                         |                                                                                                                          |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Wireless Standard       | IEEE 802.11 b/g/n                                                                                                        |
| Frequency Range         | From 2.40GHz to 2.49GHz                                                                                                  |
| Peak Realized Gain(Max) | 3.3dBi @2.44GHz                                                                                                          |
| Realized Efficiency     | 63% @2.44 GHz                                                                                                            |
| 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)<br>Storage temperature: -40° C to +85° C (-40° F to +185° F) |

Table 1.PC24WOC14JL-P3M48A-G60FC3 antenna specification summary.



## 5. Principal Dimensions

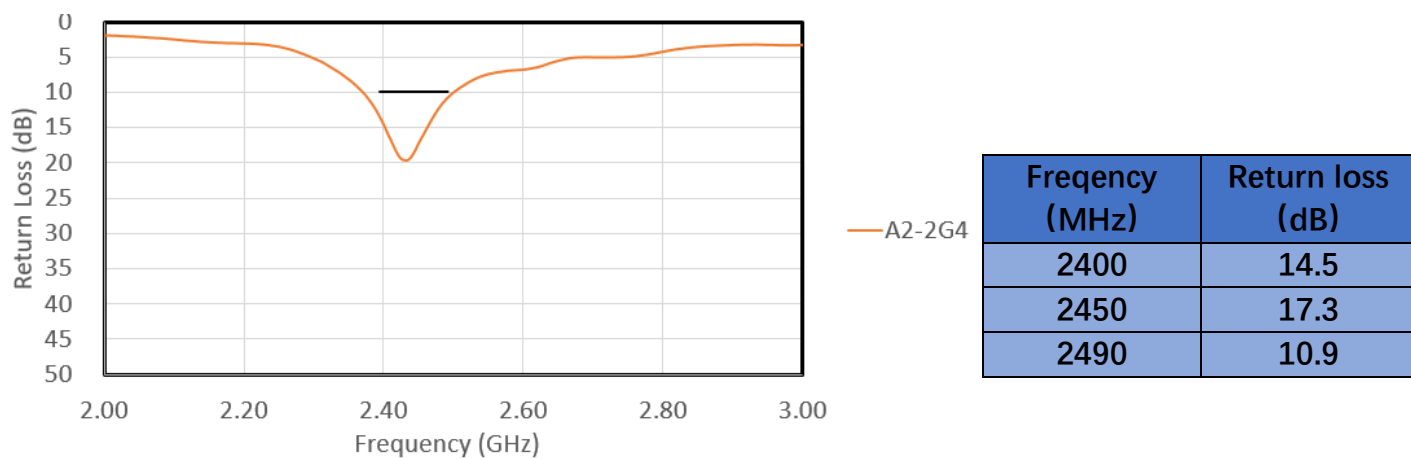


**Figure 2.** Basic dimensions and tolerances of PC24WOC14JL-P3M48A-G60FC3 antenna.



## 6. Return Loss

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



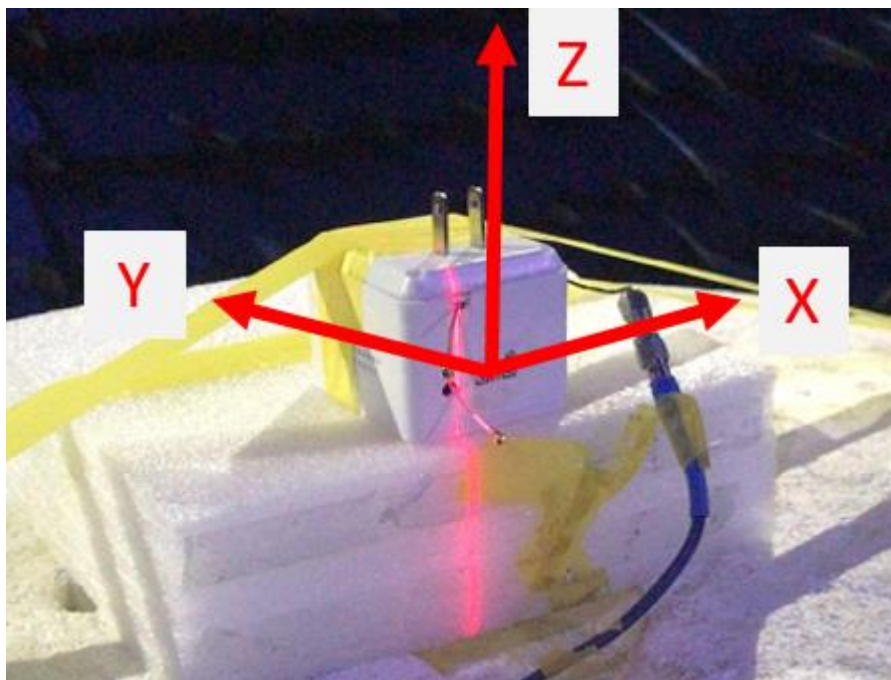
**Figure 3.** Measured Return Loss of PC24WOC14JL-P3M48A-G60FC3.



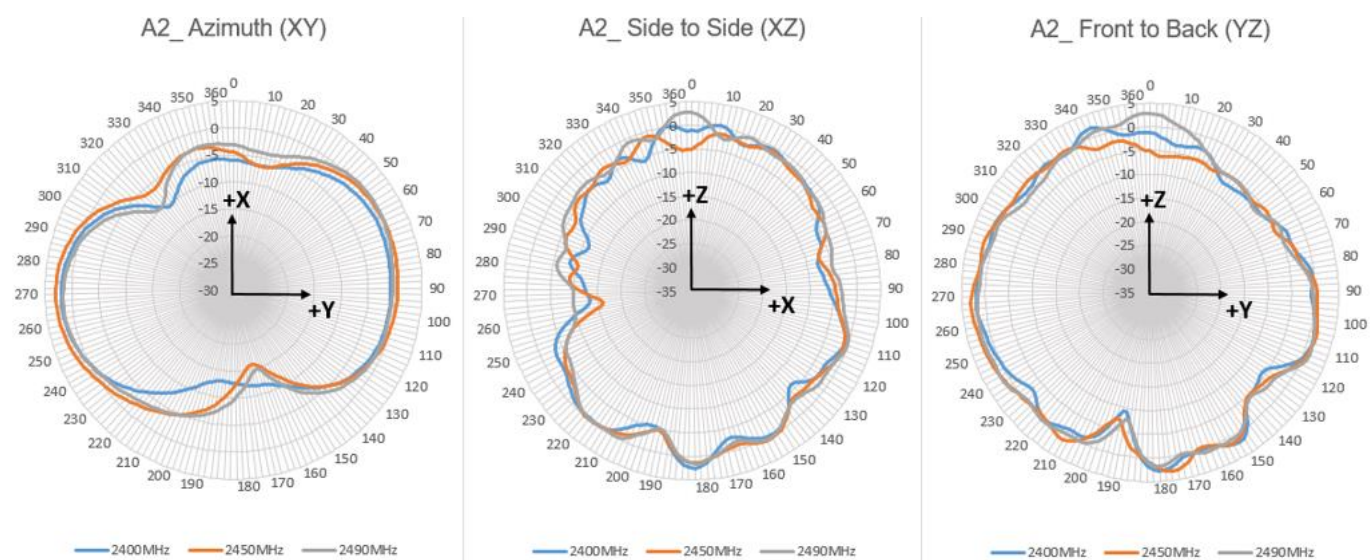


## 7. Radiation Pattern Characteristics

Radiation characteristics for PC24WOC14JL-P3M48A-G60FC3 were measured in customer housing Satimo SG24L anechoic chamber.



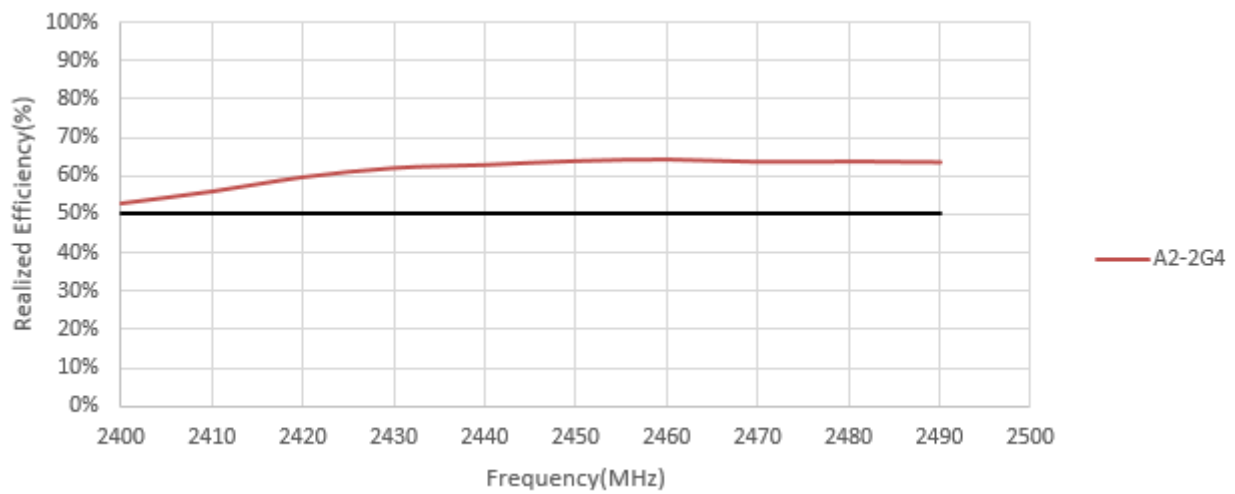
**Figure 4.** PC24WOC14JL-P3M48A-G60FC3 antenna for radiation pattern measurements. Coordinate system used for radiation pattern visualization.



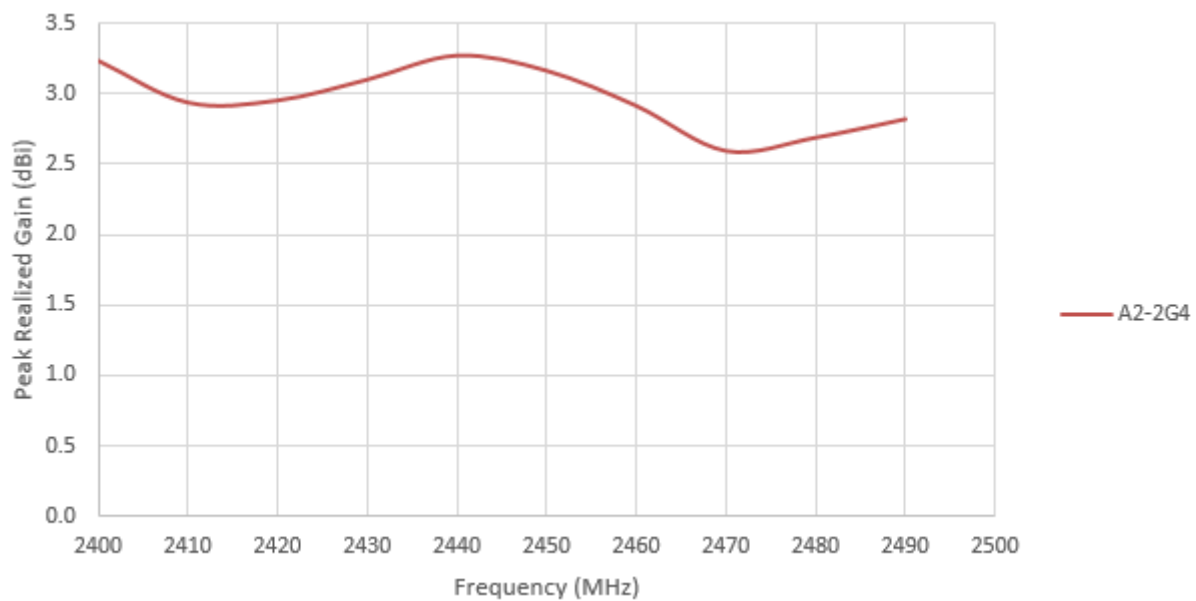
**Figure 5.** Measured radiation pattern characteristics in principal planes at 2GHz.



## 8. Realized Efficiency and Peak Realized Gain



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



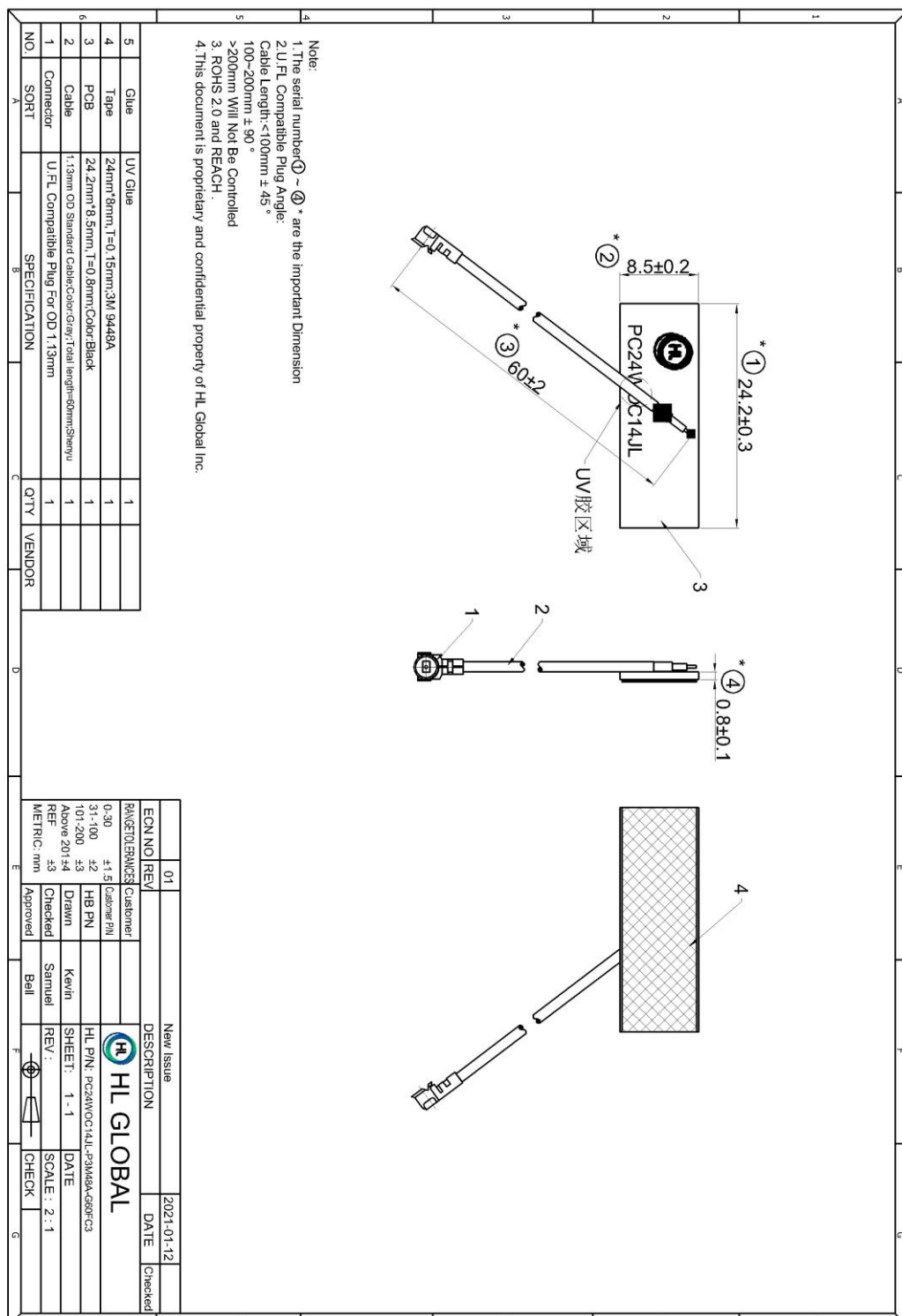
**Figure7.** Measured Peak Realized gain over frequency.



| Frequency(MHz) | Realized Efficiency(%) | Peak Realized Gain(dBi) |
|----------------|------------------------|-------------------------|
| 2400           | 53%                    | 3.2                     |
| 2410           | 56%                    | 2.9                     |
| 2420           | 60%                    | 2.9                     |
| 2430           | 62%                    | 3.1                     |
| 2440           | 63%                    | 3.3                     |
| 2450           | 64%                    | 3.2                     |
| 2460           | 64%                    | 2.9                     |
| 2470           | 64%                    | 2.6                     |
| 2480           | 64%                    | 2.7                     |
| 2490           | 64%                    | 2.8                     |
| <b>Average</b> | <b>61%</b>             | <b>3.0</b>              |

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

## 9. Assembly Drawing



**Figure 8. Assembly Drawing.**