Chipsee

Industrial PC

# AIO-PX30-101

PN: CS12800PX101A

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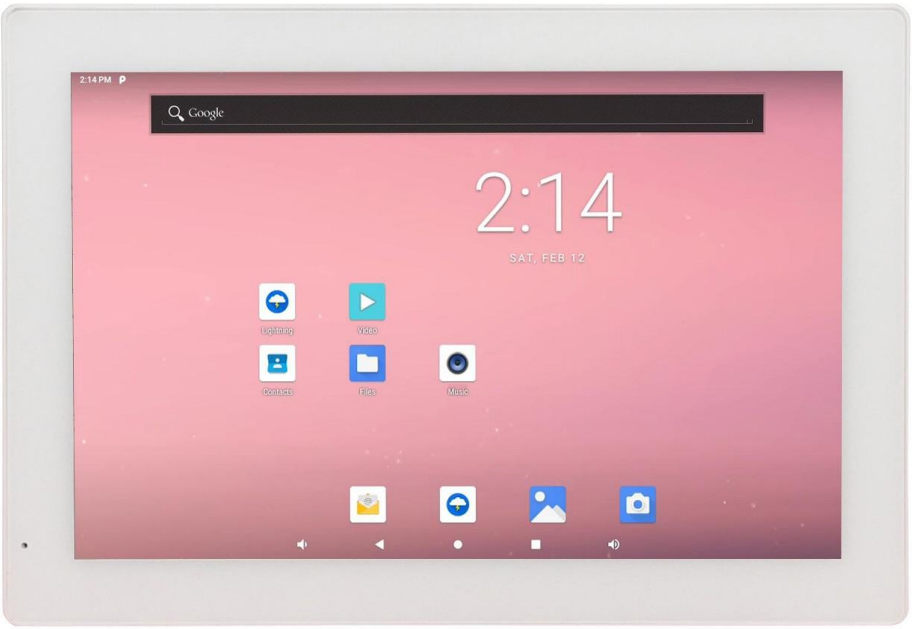
# Contents

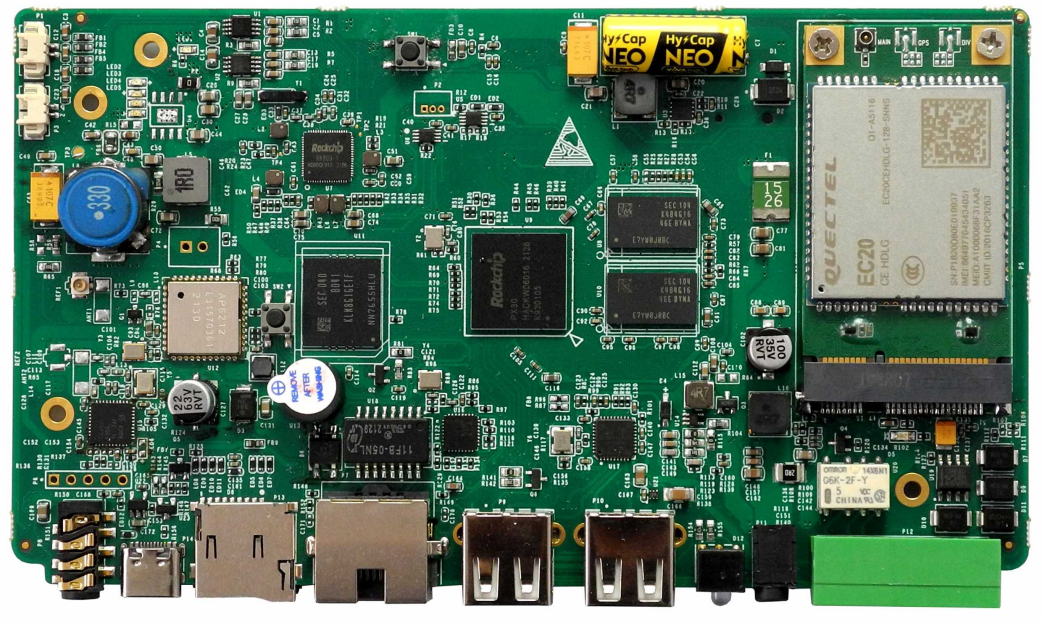

1. AIO-PX30-101 3
   1.1. Product Overview 4
   1.2. Ordering Options 5
      1.2.1. Operating System 5
      1.2.2. Optional Features 5
   1.3. Hardware Features 6
   1.4. Power Input 7
   1.5. Buttons and Status LED 7
      1.5.1. Status LED 7
      1.5.2. Buttons 8
   1.6. Connectivity 8
      1.6.1. USB HOST and USB OTG 8
      1.6.2. LAN Connectors 9
      1.6.3. TF Card and SIM Card Slots 9
      1.6.4. Audio In/Out Connector 10
      1.6.5. ZIGBEE Module 10
      1.6.6. RS232/RS485/CAN/Relay Connector 10
      1.6.7. Mic Input 11
   1.7. Mounting Procedure 12
   1.8. Mechanical Specifications 13
   1.9. Disclaimer 16
   1.10. Technical Support 16

# AIO-PX30-101

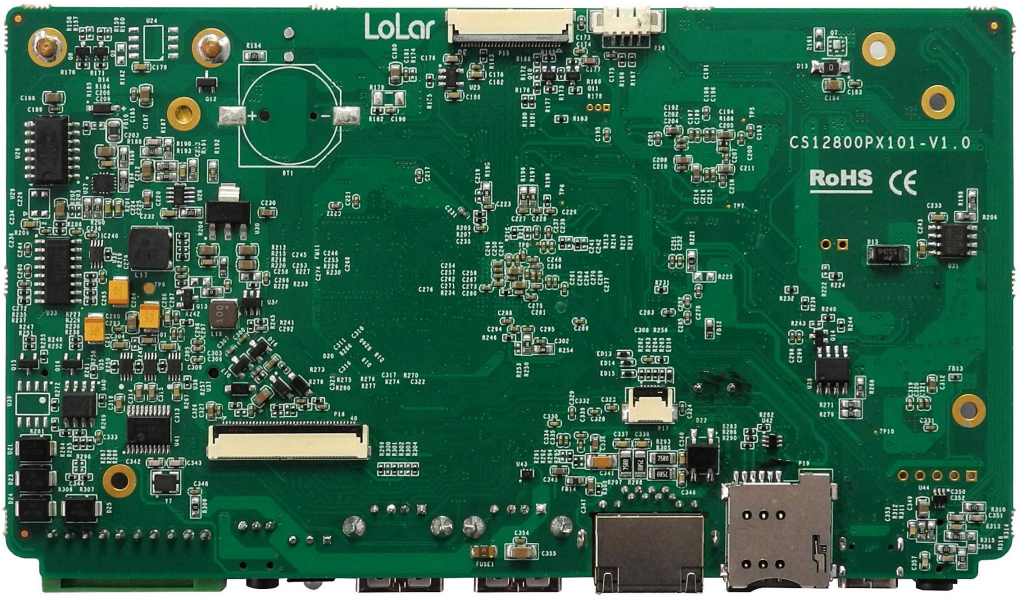



Front View

Rear View




Front View (Embedded Variant)




Rear View (Embedded Variant)

# Product Overview

The AIO-PX30-101 Industrial PC (PN: CS12800PX101A) is an all-in-one desktop computer based on Rockchip PX30. It features a 10.1” IPS display with a maximum brightness of 350 $cd/m^2$.

Key Applications

- Human Machine Interface  HMI
- Process Control

- Process Monitoring
- HMI
- IIoT node
- Environmental Monitoring
- PLC
- Automotive applications
- ATM...

# Ordering Options

Chipsee products can be customized during the ordering process. The product will be shipped with the pre-installed factory defaults if no extra requirements are specified. The table in the Hardware Features section provides information about the default options bundled with the product.

> **Note**
>
> You can order AIO-PX30-101 from the official Chipsee Store or from your nearest distributor.

## Operating System

This product comes with a pre-installed Android OS or Debian OS. Chipsee software engineers have created all the drivers, so every hardware feature is readily available for any standard development tool.

If your project requires a different OS, please **Contact us**, and we'll make a customized version that suits your needs.

## Optional Features

The AIO-PX30-101 Industrial PC does not include the 4G/LTE modules by default. These modules are optional and can be selected at the Chipsee store during the ordering process.

> **Warning**
>
> Installation, repair, and maintenance tasks should be performed by trained personnel only.
> Chipsee does not bear any responsibility for damage caused by inadequate handling of the product.

# Hardware Features

The AIO-PX30-101 Industrial PC offers a board range of performance and connectivity options for scalable integration, providing expandability according to future needs. Some of the key features are listed in the table below.

| AIO-PX30-101 | |
|---|---|
| **CPU** | Rockchip PX30, Quad Cortex-A35 at 1.5GHz |
| **Storage** | 1 x TF card slot designed for storage expansion |
| **RAM** | 1GB DDR |
| **eMMC** | 8GB |
| **Display** | 10.1” IPS LCD, 1280 x 800 resolution px, brightness 350 cd/$m^2$ |
| **Touch** | 10-point capacitive touch with 1.0mm Armored Glass |
| **USB** | 2 x USB 2.0 Host, 1 x mini USB OTG |
| **LAN** | 1 x Channel 100Mbps LAN |
| **Audio** | Mic input on the front panel, 2W internal stereo speaker, 3.5mm audio In/Out connector |
| **Buzzer** | Internal Buzzer |
| **RTC** | Yes, High accuracy internal RTC (keep track of time one week after power off) |
| **RS232** | 1 x RS232 default, 2 Channels at most. |
| **RS485** | 1 x RS485 default, 2 Channels at most. The RS485 circuit automatically controls the Input and Output direction (no need for software control) |
| **CAN** | 1 x CAN Bus. |
| **Relay** | 1 x relay with “Normally Connected” and “Normally Open” output |
| **WiFi/BT** | WiFi/BT module |
| **ZIGBEE** | Internal Zigbee supported, not mounted by default |
| **4G/LTE** | Internal 4G/LTE module supported, not mounted by default |
| **Power Input** | 12V DC |
| **Current at 12V** | 500mA Max |
| **Power Consumption** | 6W Typical |
| **Working Temperature** | From 0°C to +50°C |
| **OS** | Android, Debian |
| **Dimensions** | 260.54 x 178.54 x 26.9mm |
| **Weight** | 620g |

| AIO-PX30-101 | |
|---|---|
| **Plastic Case Color** | Black, White |
| **Certification** | CE, ROHS |

Table 222 Key Features

# Power Input

The AIO-PX30-101 Industrial PC can be powered by a wide range of input voltages: 12V DC. The total power consumption is typically about 6W. The power input connector is a 3.4/1.7mm DC connector. For a proper DC power adapter, refer to the figure below. We also provide a customzied power cable of 3.4/1.7mm to 5.5/2.1mm for customer.

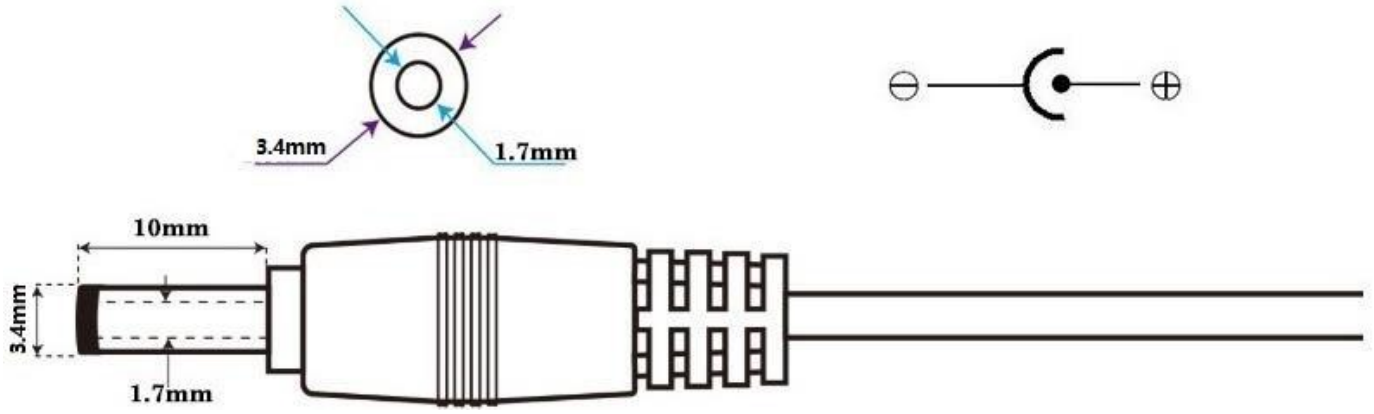



Figure 791: *Power Adapter*

# Buttons and Status LED

## Status LED

This product has an LED status indicator on the backside, as the figure below shows. The LED turns GREEN when the device is turned on and flashes YELLOW when the CPU is working.

Figure 792: *Status LED*

### Buttons

There are three (3) buttons on the backside of the case: Volume +, Volume -, and Power, as the figure below shows.

Figure 793: *Buttons*

The AIO-PX30-101 Industrial PC will boot automaticlly after power on, don't need to press Power button. After system booted, we can use Power button to sleep and awake system.

## Connectivity

There are many connectivity options available on the AIO-PX30-101 industrial PC. It has 2 x USB 2.0 Host, 1 x mini USB OTG, 1 x Channel 100Mbps LAN (RJ45) Ethernet connector supporting up to 100Mbps, and RS232+RS485+CAN+Relay connector.

### USB HOST and USB OTG

There are 2 x Type A **USB HOST connectors** and 1 x **USB-OTG Connector** onboard, as shown on the figures below.

Figure 794: *USB HOST and USB OTG Connectors*

**Note**

- External USB peripherals like a USB disk or USB mouse or keyboard can connect to the USB HOST.
- You can download software to the eMMC using the USB OTG.

## LAN Connectors

**LAN (RJ45) connector** provides Ethernet connectivity over standardized Ethernet cables as shown the figure below. The integrated Ethernet interface supports up to 100Mbps data throughput.

Figure 795: *RJ45 LAN Connectors*

**Note**

Use CAT5 or better cables to achieve full data throughput over maximum distance defined by the 1000BASE-T standard (100m).

## TF Card and SIM Card Slots

The AIO-PX30-101 Industrial PC features 1 x **TF Card (micro SD) slot** and 1 x **SIM Card slot**. You can use the SIM card slot when you mount the 4G/LTE module.

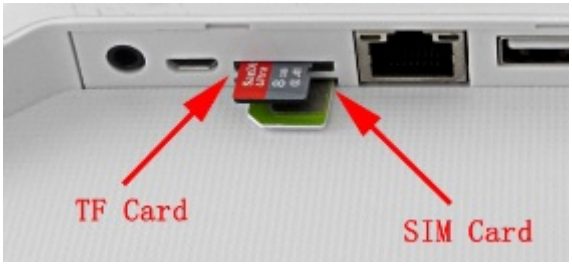



Figure 796: *TF Card Slot (upper) and SIM Card Slot (lower)*

**Note**

1. The product does not come shipped with the TF Card and the SIM Card by default.

## Audio In/Out Connector

The product features audio In/Out connector as shown on the figure below.

Figure 797: *Audio IO Connector*

## ZIGBEE Module

The AIO-PX30-101 Industrial PC supports an onboard Zigbee module. The Zigbee controller is TI CC2531, and the Raspberry Pi forum supports it.

> **Attention**
>
> The product does not come with the Zigbee module by default.

## RS232/RS485/CAN/Relay Connector

The serial communication interfaces (RS485, RS232, CAN and Relay) are routed to a **10-pin 2.5mm connector**, as illustrated on the figure below.

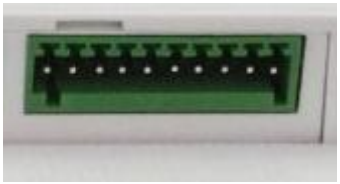


Figure 798: *RS232/RS485/CAN/Relay Connector*

The table below offers more detailed description of every pin and its definition:

| **RS232 / RS485 / CAN / Relay Pin Definition:** | | |
|---|---|---|
| **Pin Number** | **Definition** | **Description** |
| Pin 1 | GND | System Ground |
| Pin 2 | RS232_1_RXD | CPU UART3, RS232 RXD signal |
| Pin 3 | RS232_1_TXD | CPU UART3, RS232 TXD signal |
| Pin 4 | RS485_1+ | CPU UART5, RS485 +(A) signal |
| Pin 5 | RS485_1- | CPU UART5, RS485 –(B) signal |
| Pin 6 | CAN1_H | CPU CAN Channel 1 H signal |
| Pin 7 | CAN1_L | CPU CAN Channel 1 L signal |
| Pin 8 | Relay NO | Relay Normally Open |

| RS232 / RS485 / CAN / Relay Pin Definition: | | |
|---|---|---|
| Pin 9 | Relay COM | Relay Common |
| Pin 10 | Relay NC | Relay Normally Connected |

Table 223 RS232/RS485/CAN/Relay Connector

**Attention**

1. The RS232_1 can be set as the RS485 signal. If you need it to work as RS485, please **Contact us** before shipping.
2. The RS485_1 can be set as the RS232 signal. If you need it to work as RS232, please **Contact us** before shipping.
3. RS485 automatically controls input/output direction. It does not need software control.
4. The 120Ω match resistor for the RS485 is mounted by default.
5. The Relay Max switching voltage is 125VAC or 60VDC. The maximum switching current is 1A. Rated load is 0.3A at 125VAC and 1A at 30VDC.

## Mic Input

The AIO-PX30-101 Industrial PC has an integrated microphone on the front panel, as shown on the figure below.

Figure 799: *Microphone Input*

# Mounting Procedure

You can mount AIO-PX30-101 with the Vesa (75 x 75mm) and Stand mounting methods, as shown in the figures below.

Figure 800: *VESA mounting*

Figure 801: *Stand mounting*

> **Attention**
>
> Please make sure the display is not exposed to high pressure when mounting into an enclosure.

You can find detailed information about mounting in the Mount IPC Guide.

## Mechanical Specifications

The outer mechanical dimensions of AIO-PX30-101 are 260.54 x 178.54 x 26.9mm (W x L x H). Please refer to the technical drawing in the figures below for details related to the specific product measurements.

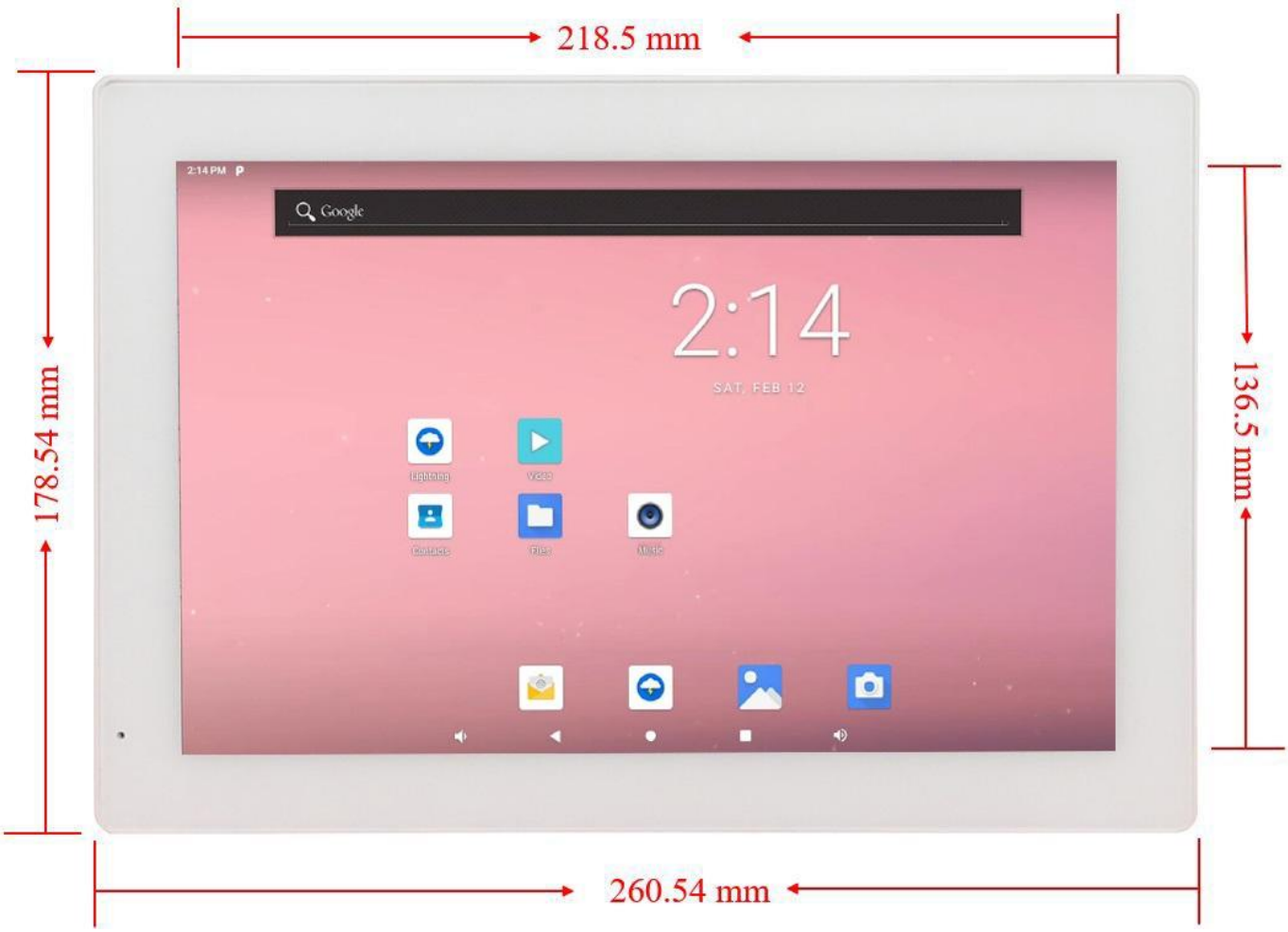



Figure 802: *Front Panel Dimension Technical Drawing*

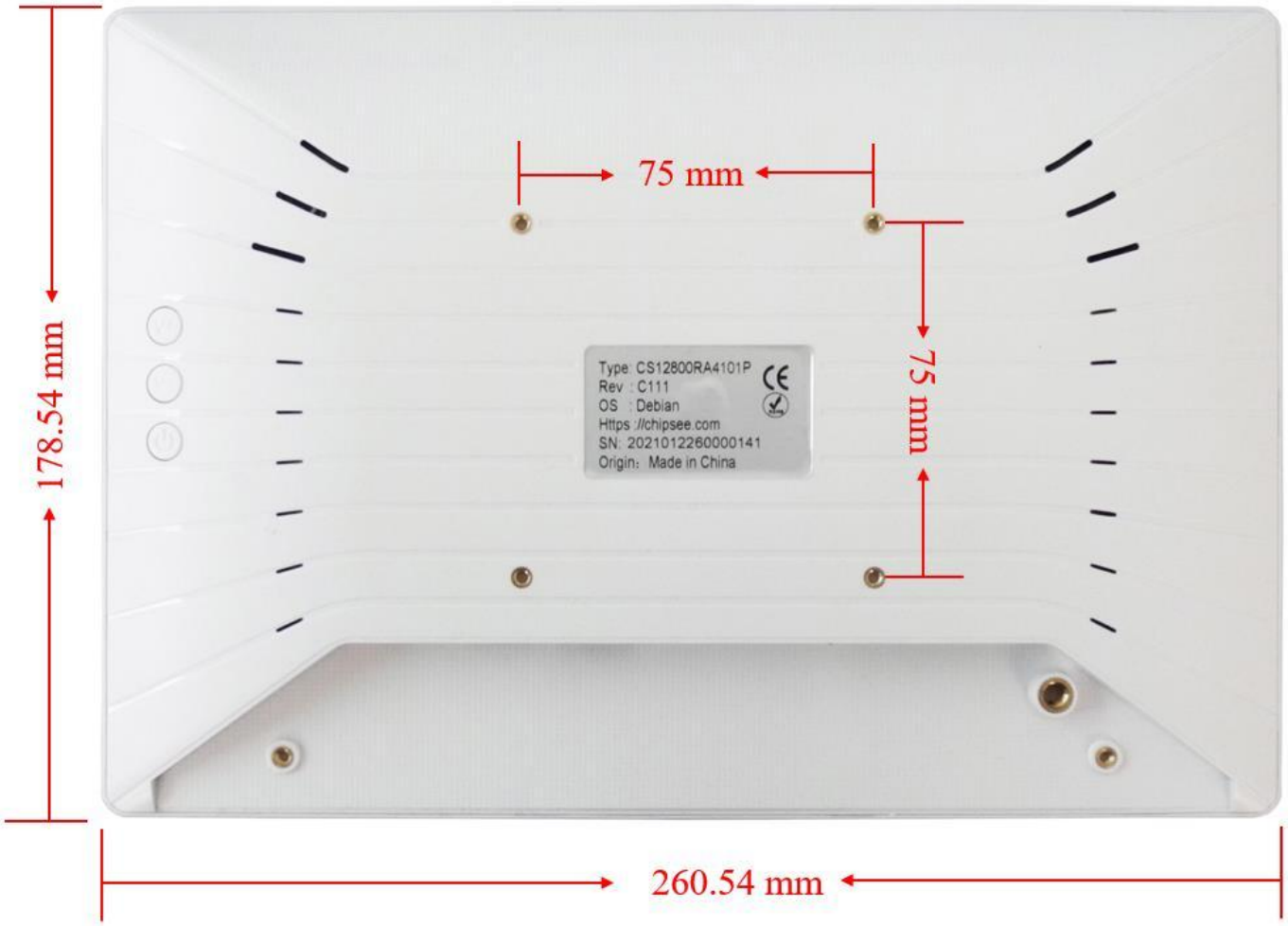



Figure 803: *Backside Dimension Technical Drawing*

Figure 804: *Side Dimension Technical Drawing*

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