

# UP Squared Pro 7000 Edge

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Maker Board System  
UPN-EDGE-ADLN01

User's Manual 1st Ed

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## Packing List

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Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
● UPN-EDGE-ADLN01 (UP Squared Pro 7000 Edge)	1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

## About this Document

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This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the product page at [AAEON.com](http://AAEON.com) for the latest version of this document.

## Safety Precautions

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Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.
13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.

17. If any of the following situations arises, please the contact our service personnel:
  - i. Damaged power cord or plug
  - ii. Liquid intrusion to the device
  - iii. Exposure to moisture
  - iv. Device is not working as expected or in a manner as described in this manual
  - v. The device is dropped or damaged
  - vi. Any obvious signs of damage displayed on the device
18. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

## FCC Statement

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### **Warning!**



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

### **Caution:**

*There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.*

### **Attention:**

*Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.*



## 产品中有毒有害物质或元素名称及含量

AAEON System

QO4-381 Rev.A0

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板 及其电子组件	×	○	○	○	○	○
外部信号 连接器及线材	×	○	○	○	○	○
外壳	○	○	○	○	○	○
中央处理器 与内存	×	○	○	○	○	○
硬盘	×	○	○	○	○	○
液晶模块	×	○	○	○	○	○
光驱	×	○	○	○	○	○
触控模块	×	○	○	○	○	○
电源	×	○	○	○	○	○
电池	×	○	○	○	○	○

本表格依据 SJ/T 11364 的规定编制。

○：表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T 26572 标准规定的限量要求以下。

×：表示该有害物质的某一均质材料超出了 GB/T 26572 的限量要求，然而该部件仍符合欧盟指令 2011/65/EU 的规范。

备注：

- 一、此产品所标示之环保使用期限，系指在一般正常使用状况下。
- 二、上述部件物质中央处理器、内存、硬盘、光驱、电源为选购品。
- 三、上述部件物质液晶模块、触控模块仅一体机产品适用。

# China RoHS Requirement (EN)

## Hazardous and Toxic Materials List

AAEON System

QQ4-381 Rev.A0

Component Name	Hazardous or Toxic Materials or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated biphenyls (PBBS)	Polybrominated ethers (PBDES)
PCB and Components	X	O	O	O	O	O
Wires & Connectors for Ext.Connections	X	O	O	O	O	O
Chassis	O	O	O	O	O	O
CPU & RAM	X	O	O	O	O	O
HDD Drive	X	O	O	O	O	O
LCD Module	X	O	O	O	O	O
Optical Drive	X	O	O	O	O	O
Touch Control Module	X	O	O	O	O	O
PSU	X	O	O	O	O	O
Battery	X	O	O	O	O	O

This form is prepared in compliance with the provisions of SJ/T 11364.

O: The level of toxic or hazardous materials present in this component and its parts is below the limit specified by GB/T 26572.

X: The level of toxic or hazardous materials present in the component exceed the limits specified by GB/T 26572, but is still in compliance with EU Directive 2011/65/EU (RoHS 2).

Notes:

1. The Environment Friendly Use Period indicated by labelling on this product is applicable only to use under normal conditions.
2. Individual components including the CPU, RAM/memory, HDD, optical drive, and PSU are optional.
3. LCD Module and Touch Control Module only applies to certain products which feature these components.

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# Chapter 1

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Product Specifications

## 1.1 Specifications

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### System

<b>CPU</b>	Intel® Core™ i3-N305 Intel Atom® x7425E Intel® Processor N97 Intel® Processor N50 (formerly Alder Lake-N)
<b>Memory</b>	Up to 16GB LPDDR5
<b>Graphics</b>	Intel® UHD Graphics for 12th Gen Intel® Processors
<b>Storage</b>	Up to 64GB eMMC
<b>Ethernet</b>	2.5GbE x 2 (Intel® I225/I226)
<b>Wi-Fi/BT</b>	Optional via M.2 2230 E-Key
<b>Expansion</b>	M.2 2230 E-Key x 1 (CNVI, PCIe Gen 3 [x1], USB 2.0) M.2 2280 M-Key x 1 (PCIe Gen 3 [x2], USB 2.0) M.2 3052 B-Key x 1 (USB 3.2 Gen 2 only) SATA III x 1
<b>Security</b>	Onboard TPM 2.0
<b>OS Support</b>	Windows® 10 IoT Enterprise Windows® IoT Core Ubuntu 22.04 LTS Yocto 4

## I/O

USB	USB 3.2 Gen 2 x 3 (Type-A x 2, Type-C x 1)
Display Port	HDMI 2.0b x 1 DP 1.2 x 1 DP 1.4a via USB Type-C
Ethernet	2.5GbE x 2 (Intel® I226-IT)
COM	RS-232/422/485 x 2
Audio	Audio Jack x 1 (Line out + MIC in)
GPIO	40-pin GPIO x 1

## Power Supply

Power Requirement	12V DC-in, 6A
Power Supply Type	AT/ATX
Power Consumption	35W

## Mechanical

Mounting	VESA Mounting
Dimensions (W x H x D)	5.27" x 4.13" x 2.56" (134mm x 105mm x 65mm)
Net Weight	2 lb. (0.95Kg)
Gross Weight	2.8 lb. (1.3Kg)

## Environment

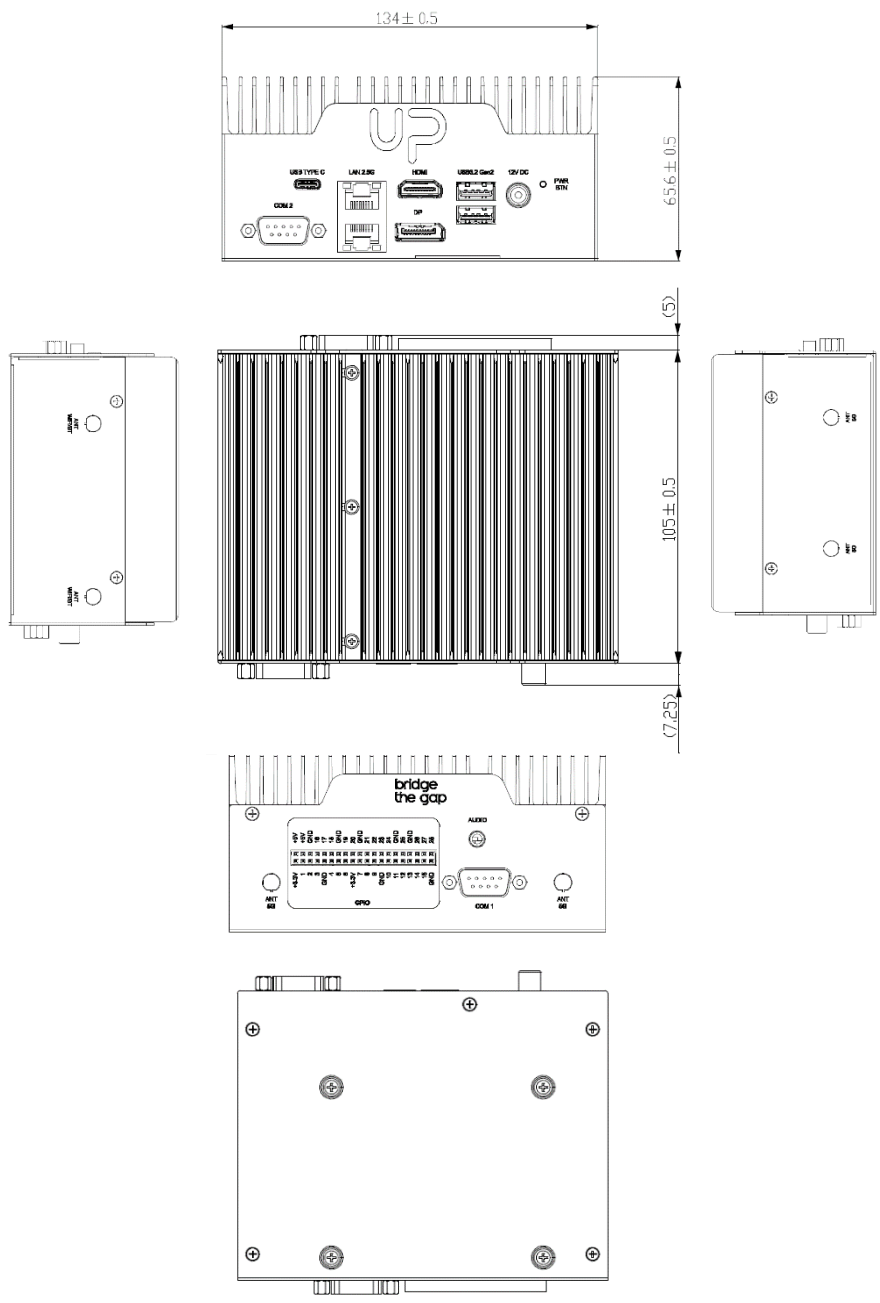
Operating Temperature	32°F ~ 140°F (0°C ~ 60°) / 0.5 airflow
Operating Humidity	0% ~ 90% relative humidity, non-condensing
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)
MTBF	422,053
Certification	CE/FCC Class A, RoHS Compliant, REACH

# Chapter 2

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Hardware Information

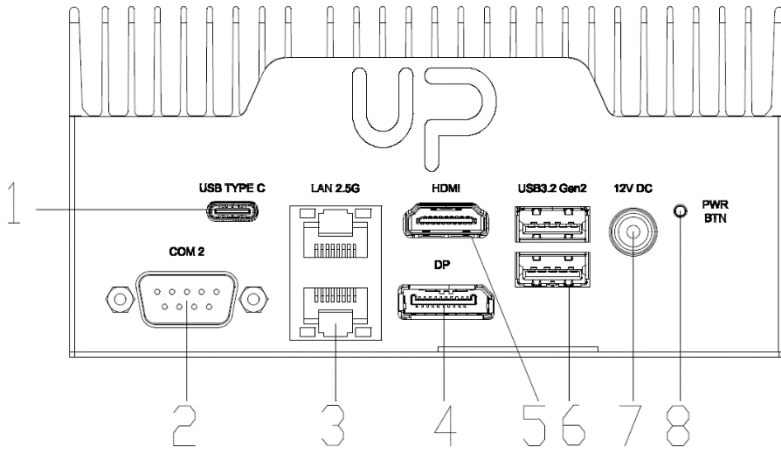
## 2.1 Dimensions



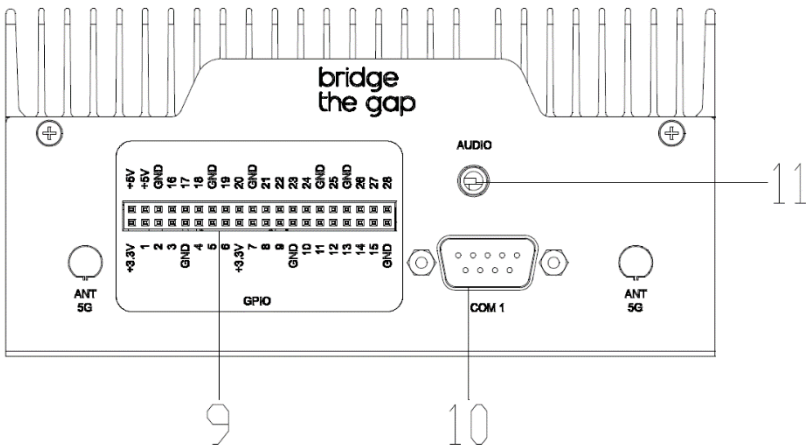


## 2.2 Jumpers and Connectors

### Front I/O



### Rear I/O



## 2.3 List of Jumpers and Connectors

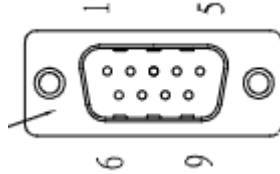
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Please refer to the table below for all of the board's jumpers and connectors that you can configure for your application

Label	Function
1	USB 3.2 Gen 2 (Type-C)/DP 1.4a
2	COM 2
3	2.5GbE Dual LAN Port
4	Display Port 1.2
5	HDMI 2.0b
6	USB 3.2 Gen 2 (Type-A) Dual Port
7	12V DC-in
8	Power Button
9	GPIO
10	COM 1
11	Audio Jack (Line out + MIC in)

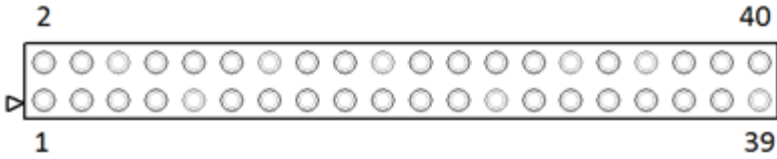
**Note:** Please refer to the user manual of UP Squared Pro 7000 for the detailed PCBA-level internal connector pin definition.

### 2.3.1 COM 1/COM 2: RS232/RS422/RS485 (10/2)



Pin	Signal
1	DCDA / RS422TX- / RS485-
2	RXA / RS422TX+ / RS485+
3	TXA / RS422RX+
4	DTRA / RS422RX-
5	GND
6	DSRA
7	RTSA
8	CTSA
9	RIA

### 2.3.2 40-Pin GPIO (9)



Pin	Signal	Pin	Signal
1	+3.3V	2	+5V
3	I2C1_DAT / GPIO1	4	+5V
5	I2C1_CLK / GPIO2	6	GND
7	ANALOG_DATA / GPIO3	8	UART_TX / GPIO16
9	GND	10	UART_RX / GPIO17
11	GPIO4/ UART_RTS	12	I2S_BCLK / GPIO18
13	GPIO5	14	GND
15	GPIO6	16	GPIO19
17	+3.3V	18	GPIO20
19	SPI_MOSI / GPIO7	20	GND
21	SPI_MISO / GPIO8	22	GPIO21
23	SPI_CLK / GPIO9	24	SPI_CS0 / GPIO22
25	GND	26	GPIO23
27	I2C0_DAT / GPIO10	28	I2C0_CLK / GPIO24
29	GPIO11	30	GND
31	GPIO12	32	PWM0 / GPIO25
33	PWM1 / GPIO13	34	GND
35	I2S_SYNC / GPIO14	36	GPIO26/ UART_CTS
37	GPIO15	38	I2S_SDI / GPIO27
39	GND	40	I2S_SDO / GPIO28

# Chapter 3

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Software Installation

### 3.1 Linux Setup

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The UP Squared Pro 7000 Edge supports Linux operating systems (see Chapter 1 for specifications). For instructions on how to install a Linux OS onto your UP Squared Pro 7000 Edge, you can find several guides and tutorials in the wiki section of the UP website at <https://up-board.org> for both installing supported distributions as well as porting your own Linux build.

### 3.2 Windows Drivers Installation

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Drivers for the UP Squared Pro 7000 Edge can be downloaded from the UP website by following the link <https://up-board.org> and navigating to the Downloads section, then clicking on the UP Squared Pro 7000 Edge to find all relevant drivers.

## 3.3 Dummy Driver Information

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### 3.3.1 Dummy Driver Installation

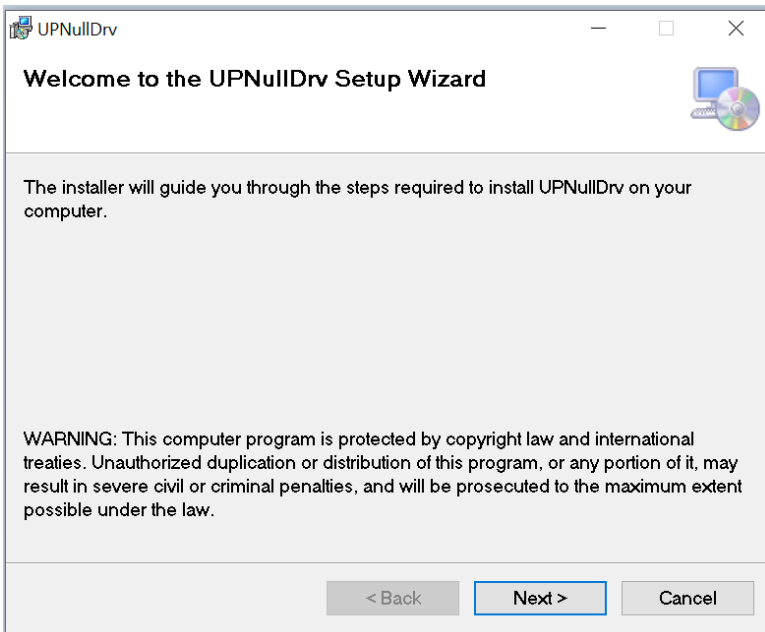
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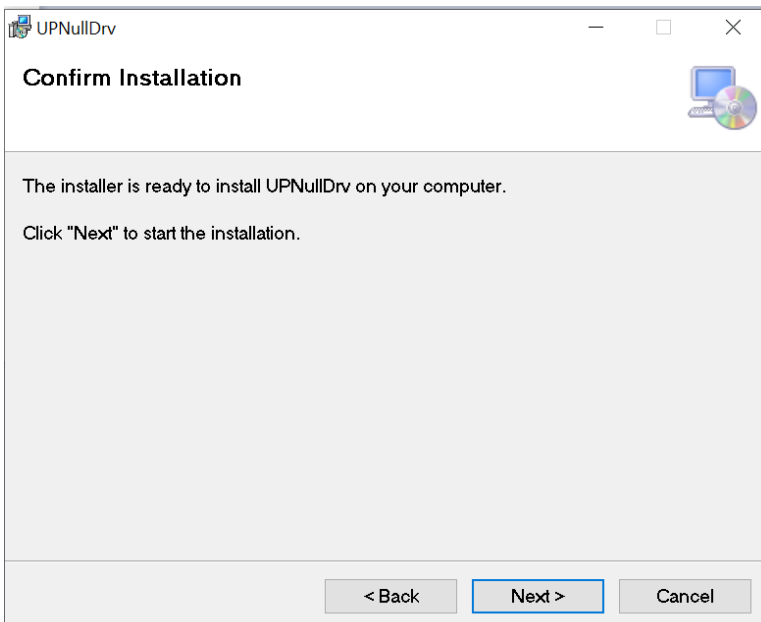
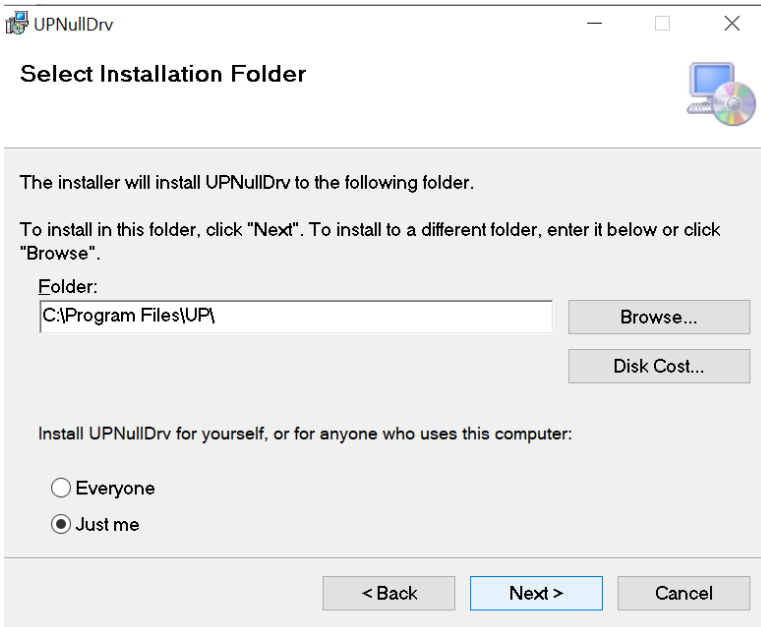
The following instructions detail how to install the dummy driver for your UP Squared Pro 7000 Edge (UPN-EDGE-ADLN01).

#### Step 1 – Download UPNullDrv.msi.

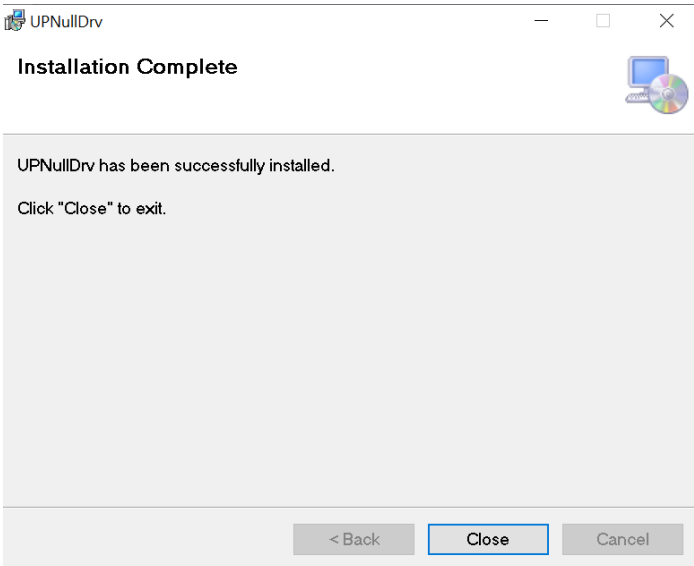
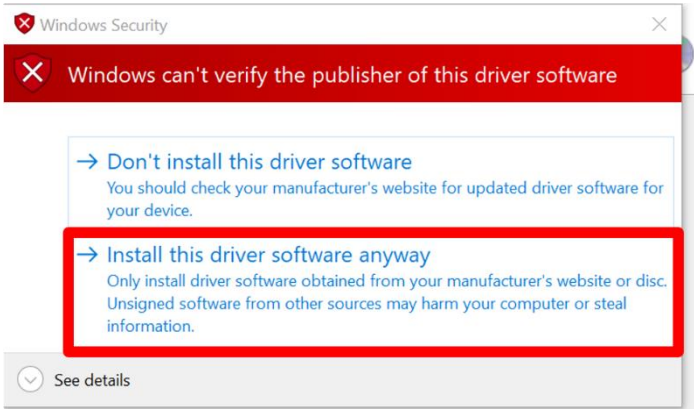
 UPNullDrv.msi	10/17/2022 2:18 AM	Windows Installer Pa...	200 KB
---	--------------------	-------------------------	--------

**Step 2 – Click UPNullDrv.msi** and follow the steps as per the below images to install Driver.

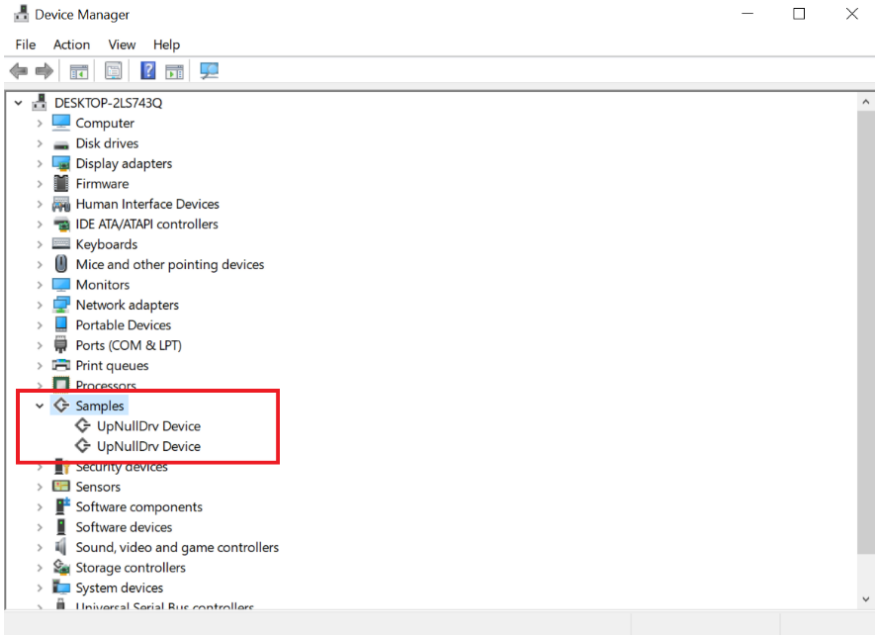






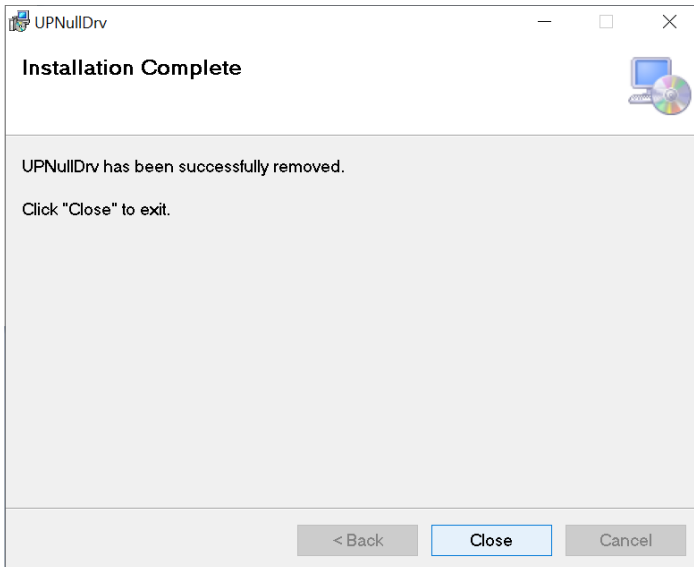
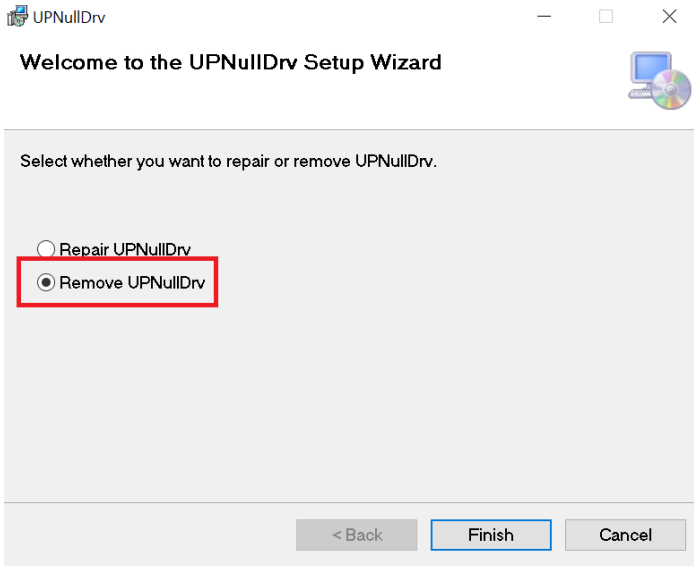


Once you have successfully installed the dummy driver, you will be able to locate it via your system's Device Manager, as shown below.



### 3.3.2 Uninstalling the Dummy Driver

Click **UPNullDrv.msi** to uninstall driver, then select **Remove UPNullDrv**.



# Appendix A

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UP Framework SDK Installation

## A.1 Introduction

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This section provides instructions for the installation of the UP Framework SDK. Instructions are provided for Windows 10 and Windows IoT Core. You can download the latest version of UP Framework SDK from the UP community:

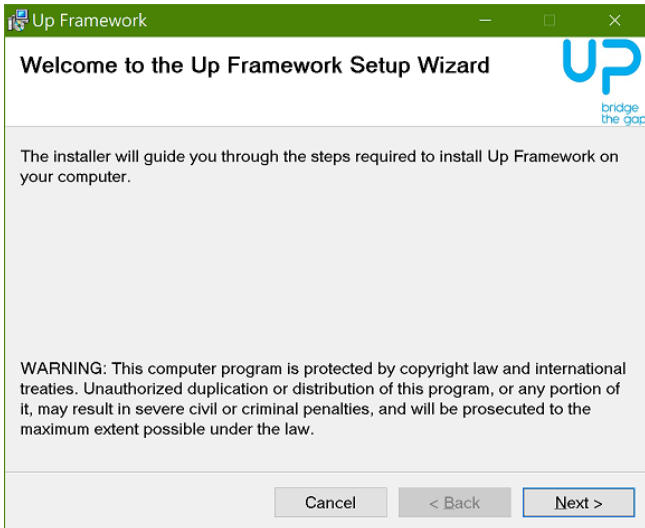
<https://downloads.up-community.org/download/up-sdk-for-windows-10-and-windows-iot/>

## A.2 Installation for Windows 10

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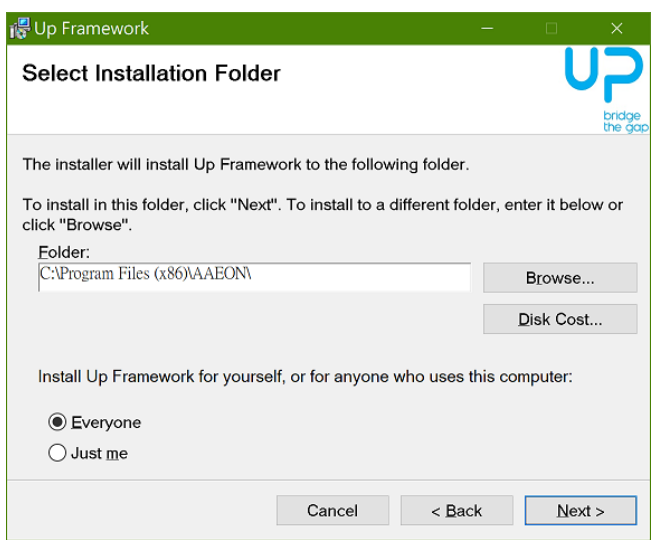
### Step 1

Locate the downloaded file UpFrameworkSetup.msi and run the installer. Press “Next” to begin the setup process.



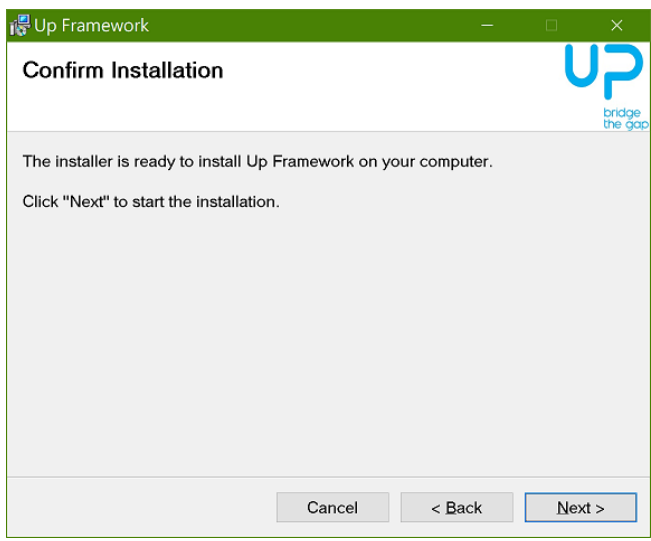
### Step 2

Select the installation folder. Default destination path is C:\Program Files(x86)\AAEON\ You may also choose to install the UP Framework SDK for all users or only the current user. Press "Next" to continue installation.



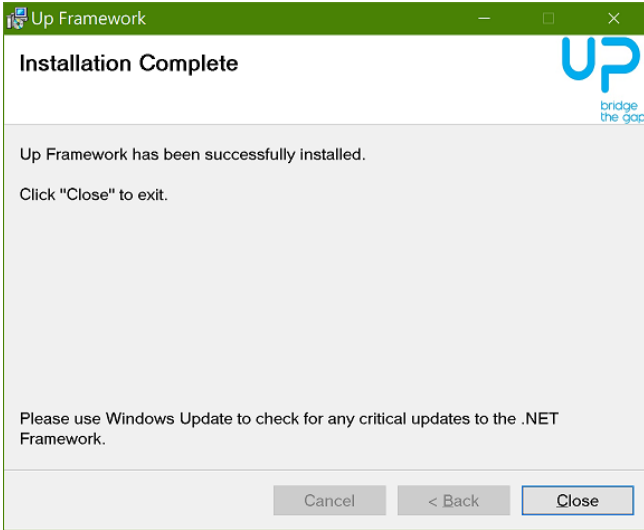
### Step 3

Press "Next" to confirm the installation.



## Step 4

Press "Close" to exit once setup is complete.



## A.3 Installation for Windows IoT Core

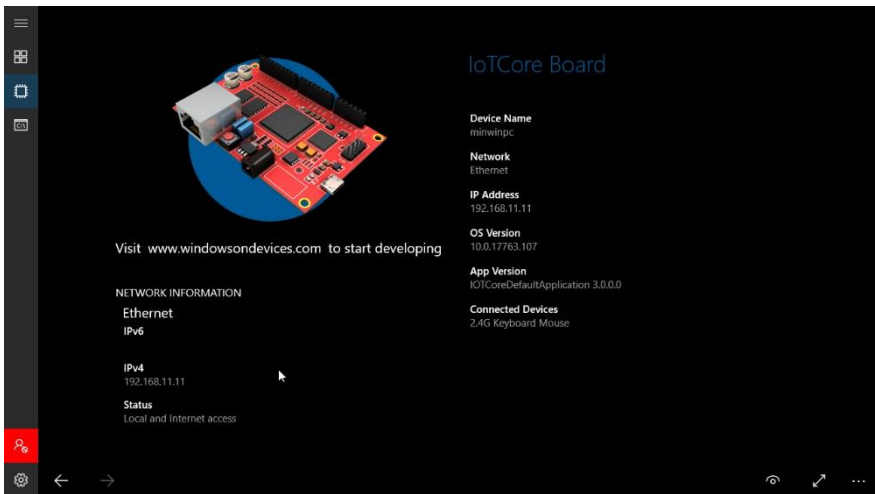
Before you begin, make sure you have downloaded and installed the latest version of the Windows IoT Core image from the UP community.

Installation requires using a connected PC with the UP Framework SDK software downloaded and saved.

**Note:** Make sure the UP IoT Core device is connected to the same network as the PC you are using to install the software from.

### Step 1

Turn on your UP IoT Core device and note the IP address at the home screen.





## Step 2

Download the UP Framework SDK to your PC and unzip the files.

Open PowerShell as an Administrator. Enter the command

**RemoteInstallation.ps1** to install the UP Framework SDK on the UP IoT Core device.

Enter the IP address of the UP IoT Core device when prompted.

```

    系统管理员: Windows PowerShell
    PS D:\UpFramework\1919.08.27\iot> .\RemoteInstallation.ps1
    The requested service has already been started.

    More help is available by typing NET HELPMSG 2182.

    Enter IP address: 192.168.11.11

    CMDKEY: Credential added successfully.
    No devices were removed.
    ***** WARNING *****
    This Devcon command should only be used for development/testing purposes.

    Driver package INF files should be added/updated into the offline OS image
    using the supported offline package deployment process in order to ensure
    that they are properly configured and integrated into the Windows OS state.

    Updating driver package INF files from within the runtime environment of
    this OS product may lead to unexpected OS state conflicts, resulting in the
    inability to apply future updates to core OS components and/or drivers on
    retail/consumer systems.

    ***** WARNING *****
    Device node created. Install is complete when drivers are installed..
    ***** WARNING *****
    This Devcon command should only be used for development/testing purposes.

    Driver package INF files should be added/updated into the offline OS image
    using the supported offline package deployment process in order to ensure
    that they are properly configured and integrated into the Windows OS state.

    Updating driver package INF files from within the runtime environment of
    this OS product may lead to unexpected OS state conflicts, resulting in the
    inability to apply future updates to core OS components and/or drivers on
    retail/consumer systems.

    ***** WARNING *****
    Updating drivers for root\upframework from c:\windows\system32\upframework.inf.
  
```

**Note:** you must connect Up IoT Core and PC in the same network.