

# UE-1000 USER

PCI Express x4, 8 Ports / 4 Ports USB 3.0 Expansion Card

# Manual

## Record of Revision

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Version	Date	Page	Description	Remark
0.9	01/20/2015	All	Preliminary Release	
1.0	02/13/2015	All	Official Release	
1.1	05/06/2020	6	Update	
1.2	05/12/2023	2, 5	Update	

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**FCC** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**CE** The products described in this manual comply with all applicable European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

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# Order Information

Part Number	Description
UE-1004	PCI Express x4, 4 Ports USB 3.0 Expansion Card
UE-1008	PCI Express x4, 8 Ports USB 3.0 Expansion Card

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# 1

## GENERAL INTRODUCTION

### 1.1 Overview

UE-1000 is a series of USB 3.0 expansion cards which is powered by independent USB 3.0 host chips. With the latest USB 3.0 technology, UE-1000 series USB 3.0 expansion card delivers 10-times data transfer rate, up to 5Gbps, to make performance driven plug-and-play system possible for Traffic Surveillance, Logistics, Factory Automation, Machine Vision, Factory Inspection, Medical, Security and any SuperSpeed data transportation applications.

### 1.2 Features

- 4 Independent USB 3.0 Controllers
- Up to 8 USB 3.0 Ports
- Smart Current Protection : 900mA/ 1500mA
- Remote Power-on/ Power-off Management by each port (Optional)
- USB 3.0 Rev. 1.0 compliant
- Intel® xHCI Rev. 1.0 compliant
- PCI Express x4 Interface

## 1.3 Product Specification

### 1.3.1 Specifications of Vecow UE-1004

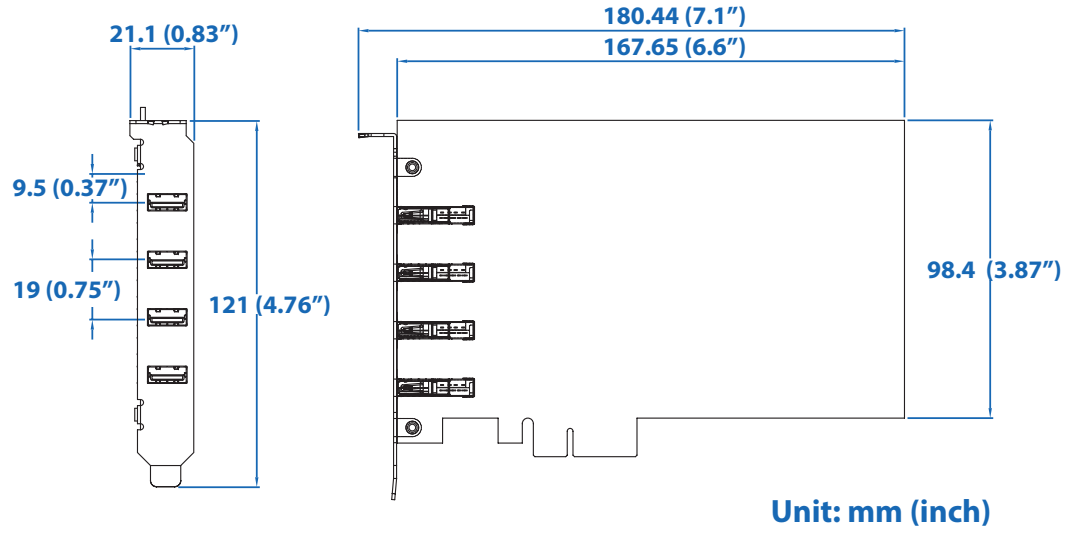
<b>USB</b>	
Interface	PCI Express x4
Chipset	4 Renesas $\mu$ PD720202 Host Controllers Compliant with Universal Serial Bus 3.0 specification Revision 1.0 Compliant with Intel <sup>®</sup> xHCI specification Revision 1.0
Connector	4 USB 3.0 Type-A Connectors
Current Protection	User-configurable 900mA/1500mA per-port current limit (Jumper)
Data Rate	SuperSpeed (5Gbps)/ High-Speed (480Mbps)/ Full-Speed (12Mbps)/ Low-Speed (1.5Mbps)
<b>Power</b>	
Power Connector	1 4-pin ATX 12V Power Connector
<b>Environment</b>	
Operating Temperature	0°C to 70°C (32°F to 158°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Certifications	FCC, CE, RoHS Compliance
<b>Mechanical</b>	
Dimension (WxDxH)	168mm x 121mm x 21mm (6.6" x 4.8" x 0.8")

### 1.3.2 Specifications of Vecow UE-1008

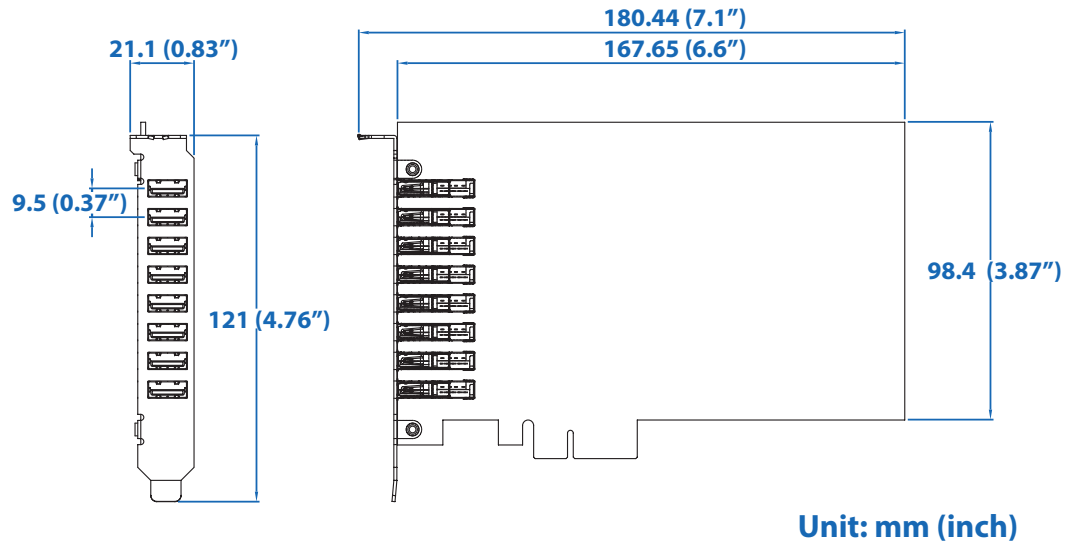
<b>USB</b>	
Interface	PCI Express x4
Chipset	4 Renesas $\mu$ PD720202 Host Controllers Compliant with Universal Serial Bus 3.0 specification Revision 1.0 Compliant with Intel <sup>®</sup> xHCI specification Revision 1.0
Connector	8 USB 3.0 Type-A Connectors
Current Protection	User-configurable 900mA/1500mA per-port current limit (Jumper)
Data Rate	SuperSpeed (5Gbps)/ High-Speed (480Mbps)/ Full-Speed (12Mbps)/ Low-Speed (1.5Mbps)
<b>Power</b>	
Power Connector	1 4-pin ATX 12V Power Connector
<b>Environment</b>	
Operating Temperature	0°C to 70°C (32°F to 158°F)
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Certifications	FCC, CE, RoHS Compliance
<b>Mechanical</b>	
Dimension (WxDxH)	168mm x 121mm x 21mm (6.6" x 4.8" x 0.8")

# 1.4 Mechanical Dimension

## 1.4.1 UE-1004



## 1.4.2 UE-1008





# 2

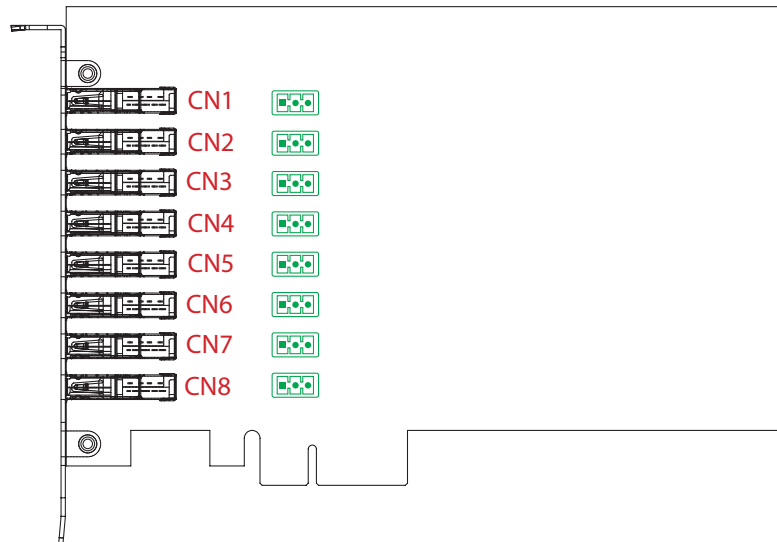
## GETTING TO KNOW YOUR UE-1000

### 2.1 Packing List

Item	Description	Qty
1	UE-1000, PCI Express x4, 8 Ports/4 Ports USB 3.0 Expansion Card (According to the configuration you order.)	1
2	Accessory box, which contains Vecow Drivers & Utilities DVD	1

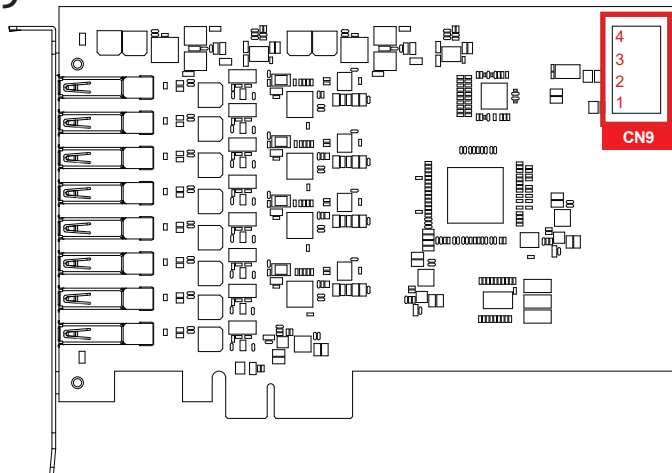
### 2.2 I/O and Indication

#### 2.2.1 USB Connectors



The UE-1000 comes with 8 USB 3.0. These USB 3.0 ports allow data transfers up to 5 Gbps. The controller supports SuperSpeed (SS), High-Speed (HS), Full-Speed (FS) and Low-Speed (LS) traffic on the bus.

## 2.2.2 CN9

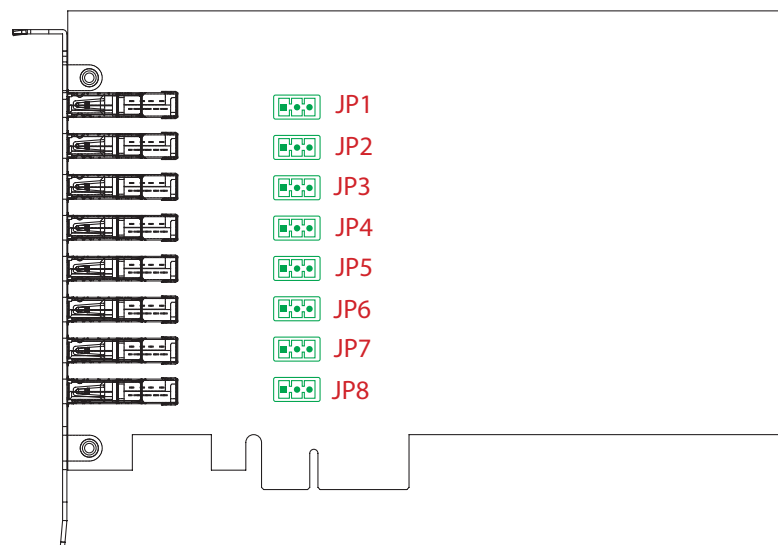


The UE-1000 also equipped with one 4-pin power plug (12V, 6A max) for additional power supply. For most cases, the power obtained from PCIe bus is sufficient for the PoE devices, and you do not need to supply extra power to the card. In case the external power is needed, you can use 4-pin ATX power connector (+5V/Red, GND/Black, GND/Black, +12V/Yellow) inside the host computer. Please always confirm the polarity before you plug into the onboard 4-pin power plug.

Pin No.	Description	Pin No.	Description
1	+12V	3	GND
2	GND	4	X

## 2.3 Jumper Setting for Current Limit

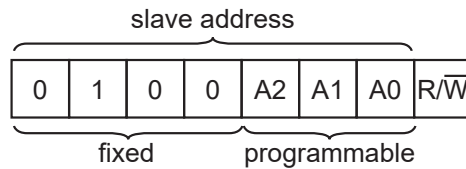
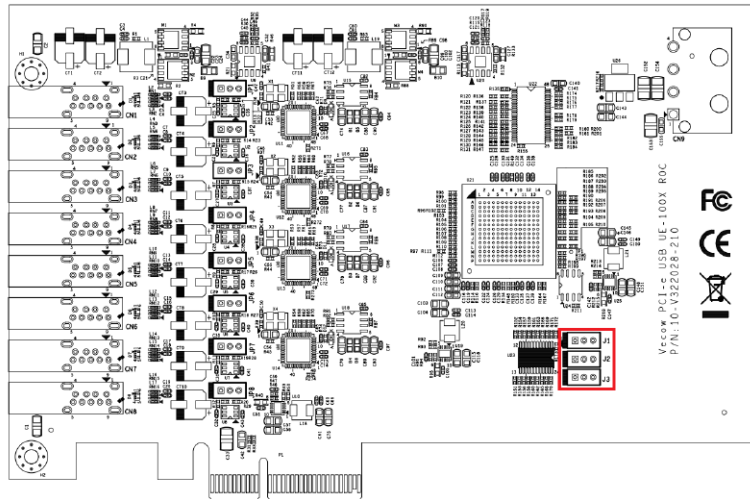
### 2.3.1 Current limit jumpers



User-configurable 900mA and 1500mA current limit.

	Jumper Pin
900 mA	1-2 (Default)
1500 mA	2-3

## 2.3.2 PCA9555 Device Address



002aac219

PCA9555 device address

Location	Setting
J1	(1-2) , A1=1 (2-3) , A1=0
J2	(1-2) , A2=1 (2-3) , A2=0
J3	(1-2) , A0=1 (2-3) , A0=0

Slave address ID	7bit Address	Setting
0	0x40	A1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J1 A2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J2 A0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J3
4	0x42	A1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J1 A2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J2 A0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J3
1	0x44	A1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J1 A2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J2 A0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J3
5	0x46	A1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J1 A2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J2 A0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J3

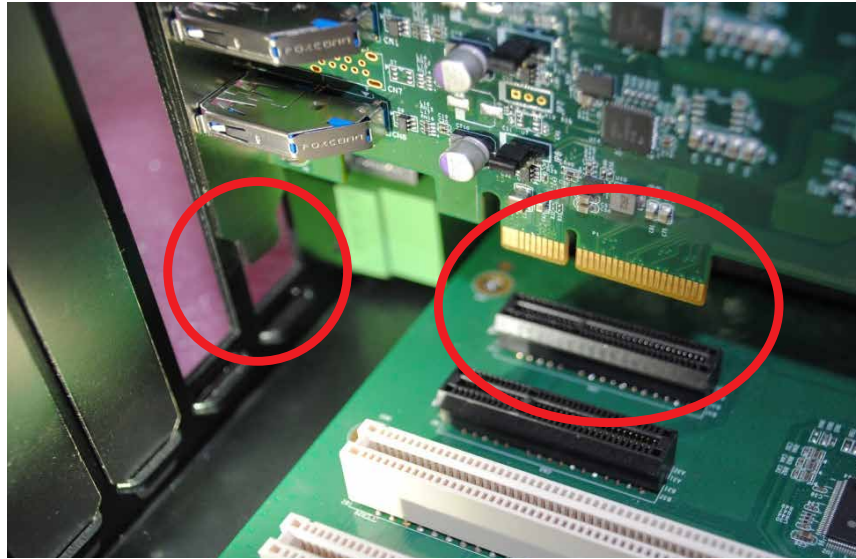
Slave address ID	7bit Address	Setting
2	0x48	A1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J1 A2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J2 A0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J3
6	0x4A	A1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J1 A2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J2 A0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J3
3	0x4C	A1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J1 A2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J2 A0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J3
7	0x4E	A1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J1 A2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J2 A0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J3

# 3

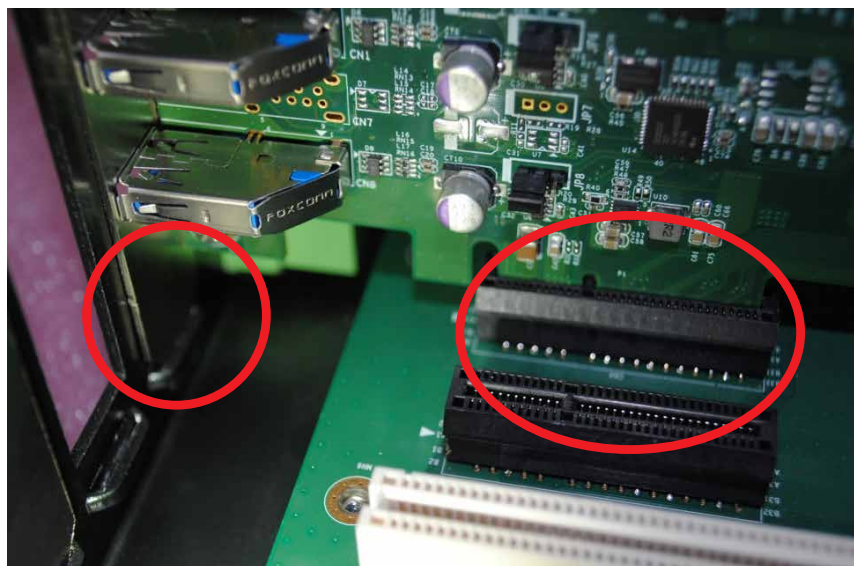
## GETTING START

### 3.1 Installing UE-1004/ UE-1008

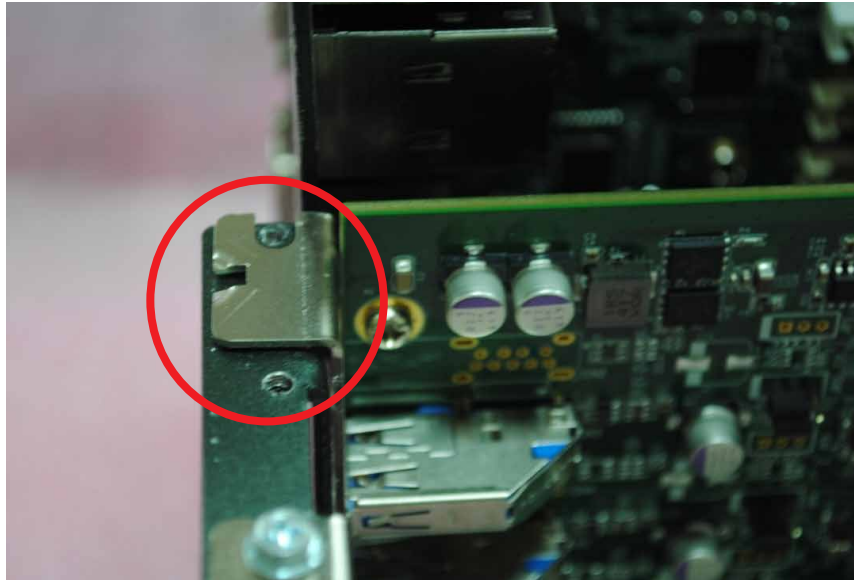
**Step 1.** Insert UE-1004/ UE-1008 golden finger and PCI bracket into PCIe socket carefully.



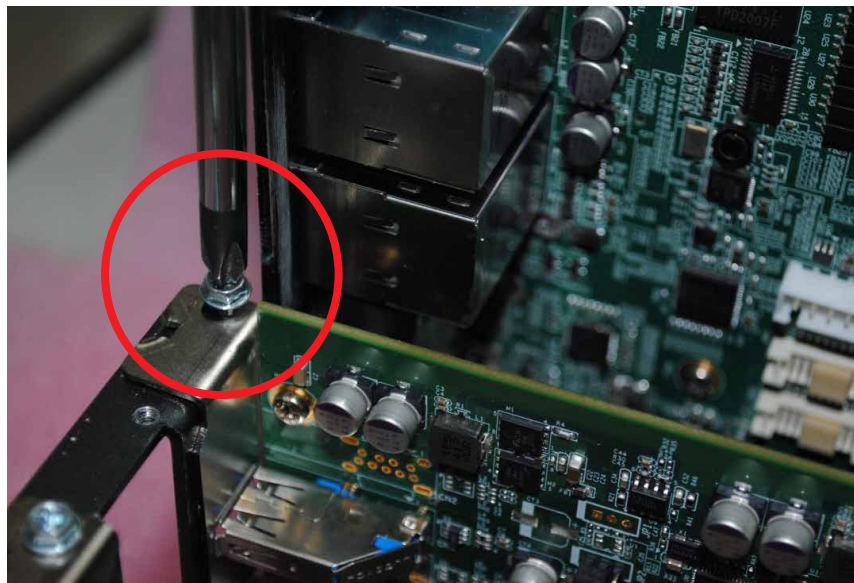
**Step 2.** Make sure golden finger and PCI bracket was inserted smoothly.



**Step 3.** Make sure the bracket aligns screw hole.



**Step 4.** Fasten the M3 screw.



# 4

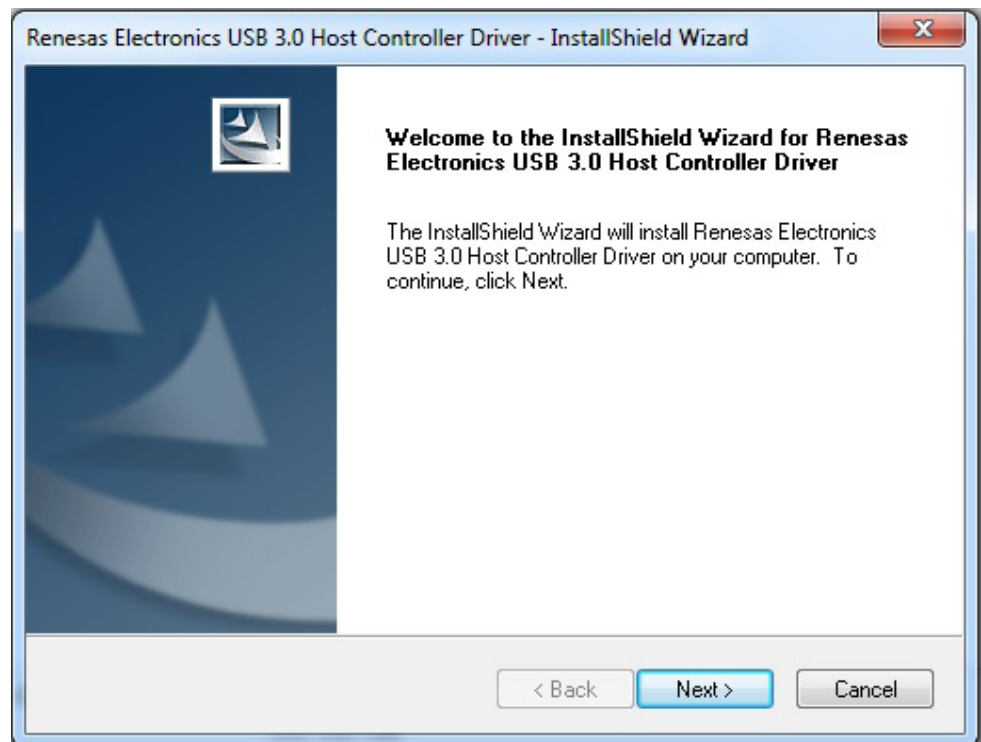
## DRIVER INSTALLATION AND SETTING

### 4.1 Driver Installation

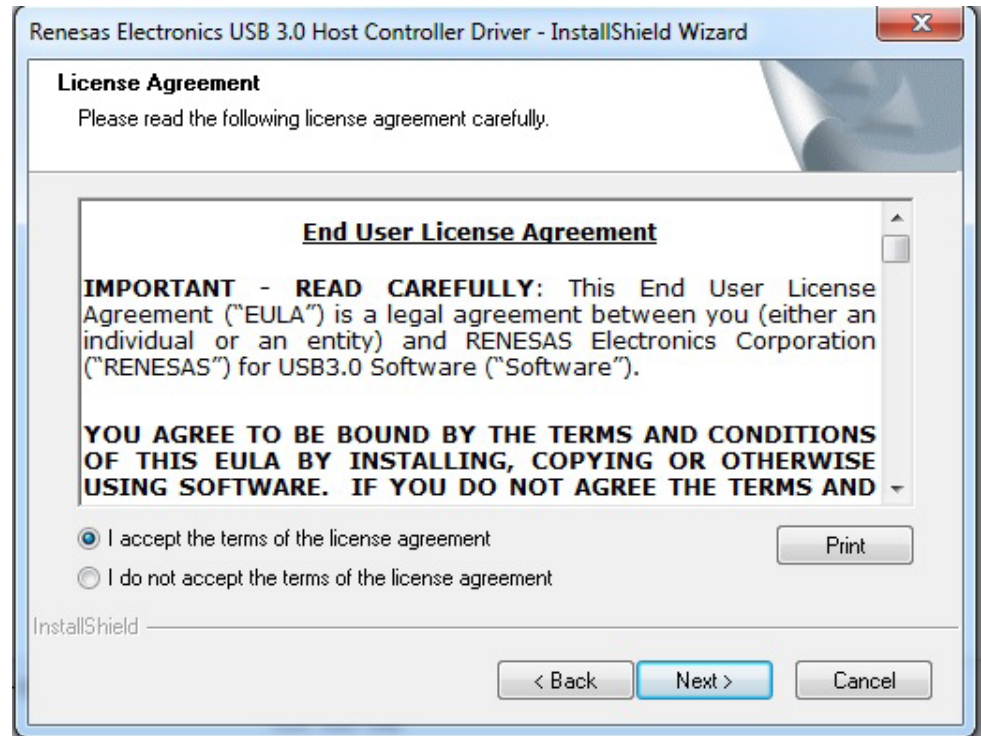
System OS: Windows

You can install the Windows driver for Vecow UE-1004 / UE-1008 manually by following the steps listed below :

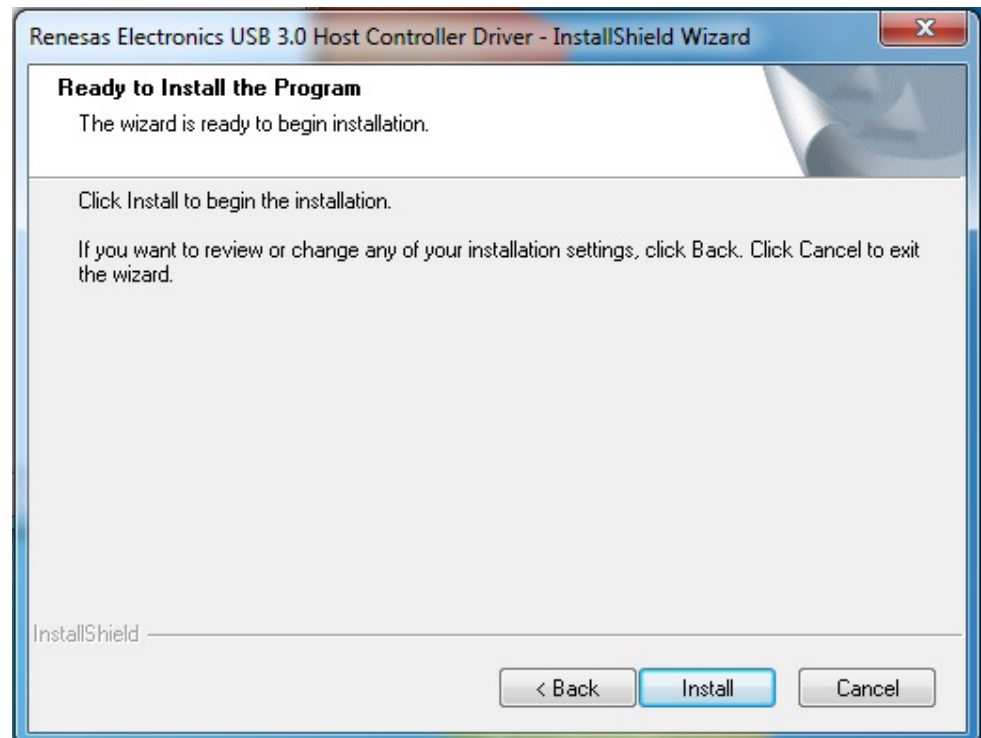
**Step 1.** Execute RENESAS-USB3-Host-Driver-30230-setup.exe and then go “Next” step.



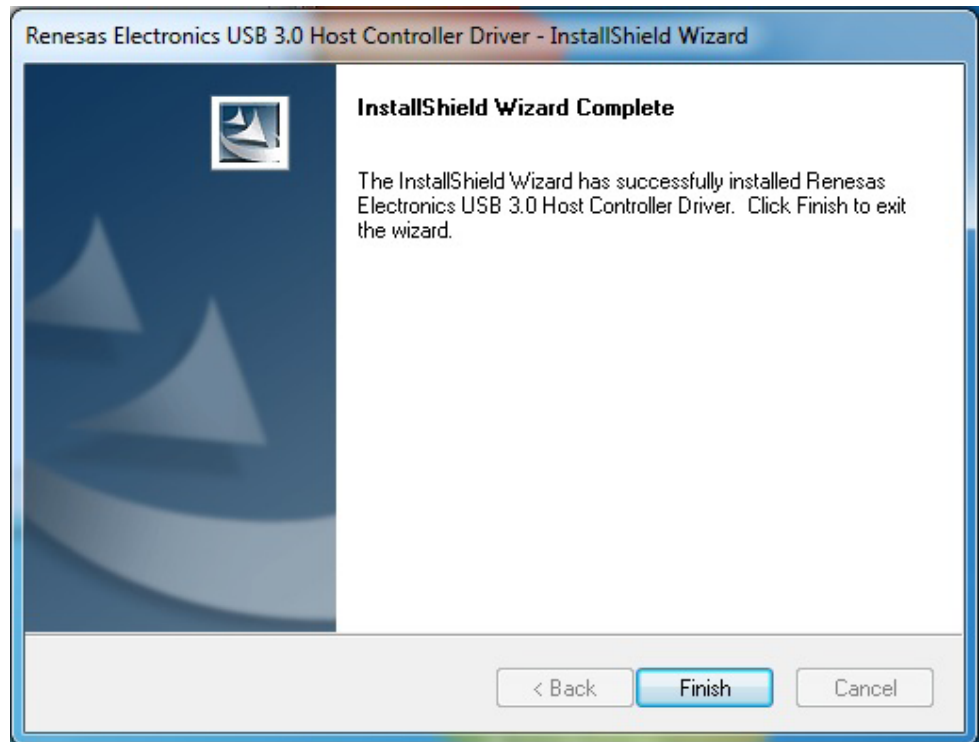
**Step 2.** Accept the terms of the license agreement and then go “Next” step.



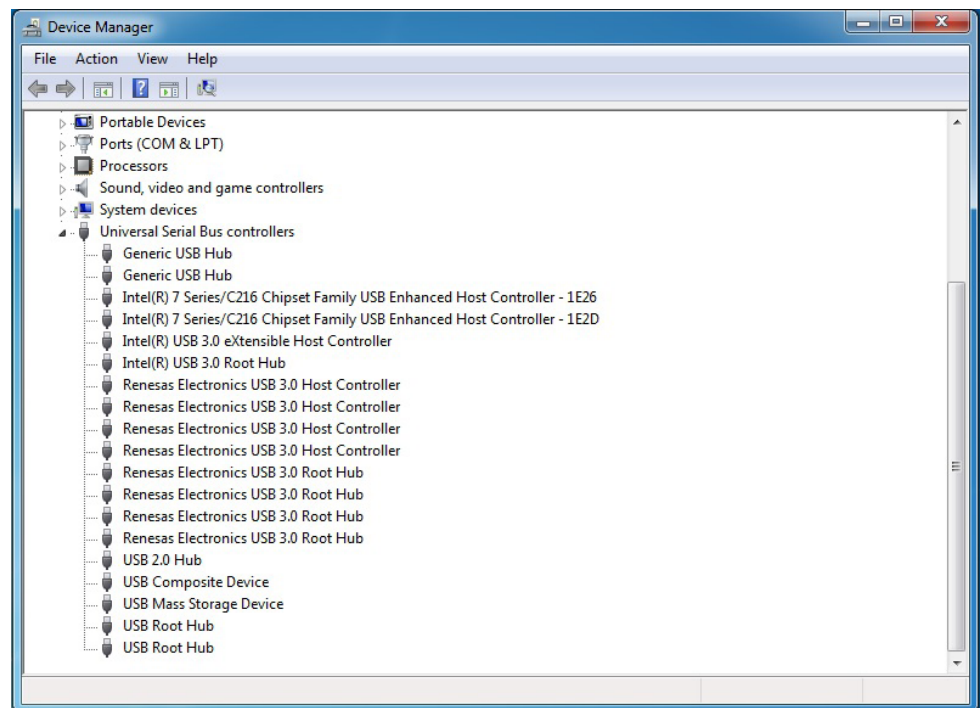
**Step 3.** Click “Install” to begin installation.



**Step 4.** Waiting for driver installation.



**Step 5.** Click into “Control Panel” → “Device Manager”.  
Check Vecow UE-1004/UE-1008 driver setup success.



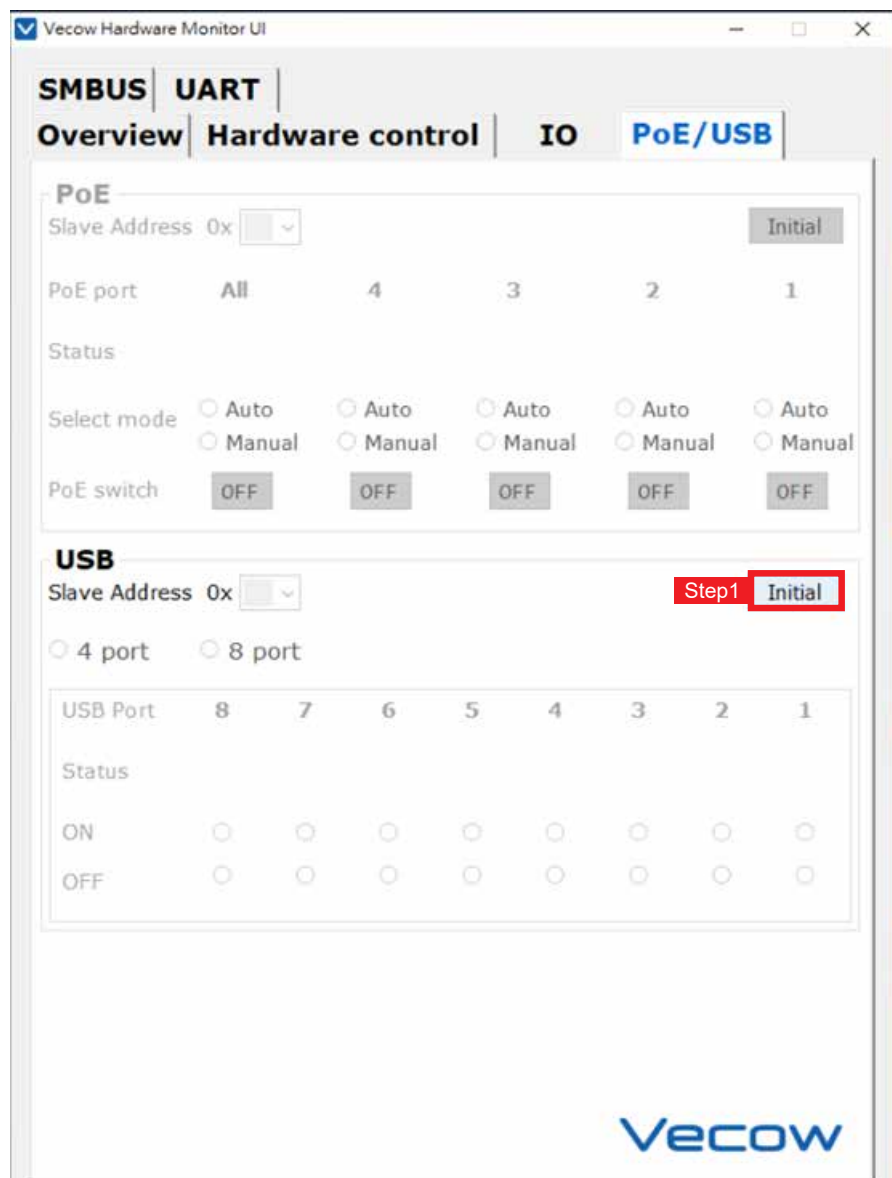


## 4.2 USB Power On/Off Control

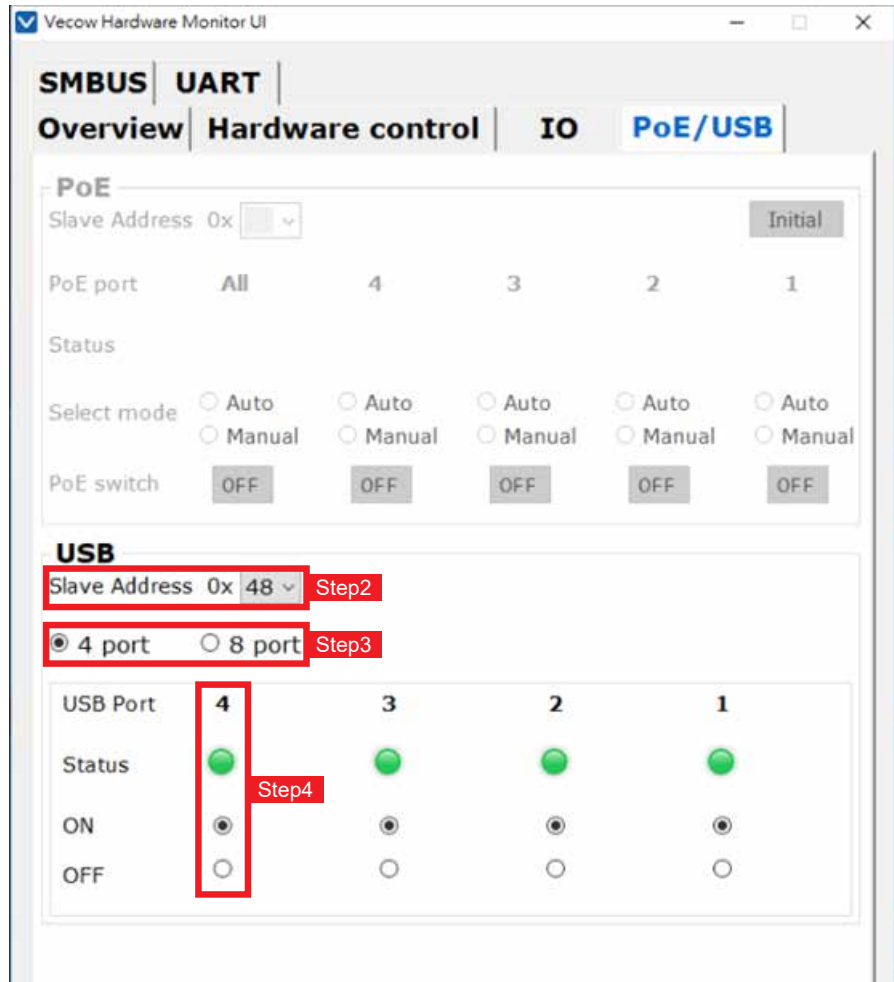
UE-1000 series include USB port power ON/OFF function and help to maintain on field operation.

### 4.2.1 Control by Vecow Hardware Monitor UI

**Step 1.** Press “Initial” button to detect UE-1000 series card.

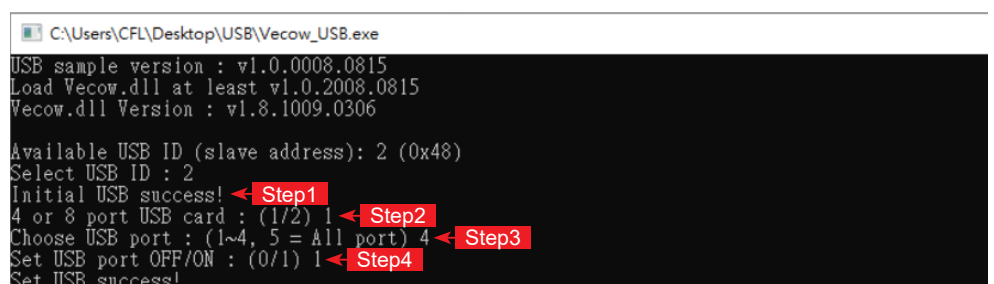


- Step 2.** Based on the slave address to select which card you want to control.
- Step 3.** Choose 4 port USB (UE-1004) or 8 port USB (UE-1008) card.
- Step 4.** Set USB per port ON/OFF.



#### 4.2.2 Control by Vecow console mode tool

- Step 1.** Based on the ID of slave address to select which card you want to control.
- Step 2.** Choose 4 port USB (UE-1004) or 8 port USB (UE-1008) card.
- Step 3.** Choose USB port.
- Step 4.** Set USB per port ON/OFF.



### 4.2.3 Control by Vecow API

#### **BOOL initial\_USB()**

Initial card for USB.

Return :

TRUE (1) : Success.

FALSE (0) : Fail (Driver not exists, or version is too old, or hardware problem).

#### **BOOL get\_USB(BYTE ID, BYTE \*USB)**

Get USB state.

A. **ID** : USB ID.

Range : 0~7.

B. **USB ([7:0])** : USB state, port setting by hexadecimal bitmask.

1 : On; 0 : Off.

Return:

TRUE (1) : Success.

FALSE (0) : Fail (Initial error, or out of range error, or call by pointer error, or hardware problem).

#### **BOOL set\_USB(BYTE ID, BYTE USB)**

Set USB state.

C. **ID** : USB ID.

Range : 0~7.

D. **USB ([7:0])** : USB state, port setting by hexadecimal bitmask.

1 : On; 0 : Off.

Return:

TRUE (1) : Success.

FALSE (0) : Fail (Initial error, or out of range error, or hardware problem).

Note : If you require the API to develop software, feel free to contact the Vecow FAE.



For further support information, please visit [www.vecow.com](http://www.vecow.com)

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