

Digitized Automation for a Changing World

Delta Embedded Industrial PC Operation Manual – PPC-B2xx Series

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Delta Embedded Industrial PC
Operation Manual- PPC-B2XX Series

Revision History

Version	Revision	Date
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Delta Embedded Industrial Panel PC

Operation Manual –PPC-B2XX Series

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- **Notes on Use:**

  This is as Class A product and may cause EMI (Electro Magnetic Interference) in the living environment which users are required to take appropriate measure.

- **Warning:**

  Notice (Marked on operating instructions and its packaging):

  (1) Operate the device for 30 minutes and take 10-minute break.

  (2) Do not let young children less than 2 years old stare at the screen, nor let elder children stare at the screen for more than 1 hour.

(3) Overuse of devices can affect the eyes.

(4) Risk of explosion may occur when batteries are inaccurately changed. Please handle the batteries based on the instructions provided by the manufacturer.

Safety Instructions:

We disclaim liability for inadequate installation or use of device that led to direct or indirect damages and with intent or not.

1. Carefully read the operation manual before using the product and keep it for future reference.
2. Before connecting power supply to the product, please confirm the voltage is compliant with the requirement of the device.
3. To avoid electric shock or damage to the product, please unplug the power cord from the socket before cleaning the device with wet cloth.
4. Do not use liquid or stain remover spray aerosol cleaner to clean up the device.
5. To avoid short circuit or fire, please do not let any liquid get into or splash into the product.
6. For device that needs power cords, there must be an easy-to-reach power socket near the device.
7. Do not use the product in a damp environment.
8. Make sure the device is placed on a solid surface before installation; accidental drop or tipping may cause malfunction or damage to the device.
9. All power cords need to be unplugged first before connecting or unplugging any signal cables.
10. To avoid unnecessary damage caused by frequent power-on/off, wait at least 30 seconds after restarting the computer.
11. When product is not used for a long time, please disconnect the power cord to avoid damages caused by transient voltage.
12. Some precision devices are sensitive to ESD and needs to be installed or dismantled via its workstation for enhancement.
13. Provide excellent heat dissipation and system ventilation.
14. Do not open or dismantle the device by yourself. Please let professional maintenance person open the device due to safety concerns.

Product Contents:

PPC-B2xx Industrial Panel Computer

1. One fanless touchscreen industrial panel computer
2. Installation clips and screw kit (customer assembly)
3. Certificate of compliance
4. Packing list
5. Address label
6. Genuine Microsoft Windows 10 IoT license sticker (if a licensed version product is purchased), to be affixed next to the product label.

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P.1 Unpack and Check the Delivery Package

Please take note of the following when accepting a delivery:

- Do not dispose the original packaging in case you have to reuse it to transport the device again.
- Please keep the enclosed disc drive containing the documentation in a safe place.
- Check the device for any transport damage at the time of delivery.
- Verify the packing list for the completeness of the packaging contents and any accessories.
- If the contents of the packaging are damaged or do not match your order, please contact our customer service.

P.2 Transportation

Well-packaged devices are suited for all kinds of transportation. During long-distance transport, pay attention to the following:

- Do not store the device in open cabin or carriage.
- No device is to keep in an outdoor storage during transit.
- Avoid transporting the products together with flammable, explosive and corrosive chemicals.
- Keep the device dry and do not expose to rain, snow or any liquid substances to avoid damage the device.

P.3 Storage Requirements

In order to store or keep the products, please take the following precautions:

- Store the product in its original packaging. Please refer to the spec sheet for storage temperature and relative humidity.
- Do not store any harmful gas, flammable, explosive products and corrosive chemicals.
- The device is stored without vibrations, shocks, and strong magnetic interference.
- Keep at least 10cm distance between the packing box and the ground and at least 50cm distance from the wall, heat source, cooling source, window or air inlet.



CAUTION ! !
Risk of damage to the device ! When transporting the device in cold weather, please pay attention to the extreme changes in temperature. Make sure no water drop (condensation) is build up on the surface or inside the device. If condensation develops, please wait at least 12 hours before switching on the device.

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Chapter 1 Product Specification

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1.1 Introduction

PPC-B2xx series are embedded industrial PCs featuring low power, high-performance and with sealed fan-less design. In addition, the product adopts excellent high-strength aluminum-alloy material including heat sinks made from dense aluminum-alloy.

The product is equipped with Intel® J1900 processors, standard 8G RAM in memory. It supports operating systems such as Windows 10 and Linux.

PPC products are suitable for various industries, including mechanical rubber, solar photovoltaic (PV), vehicle control and general industrial automation (e.g., papermaking, environmental protection).

1.2 Host Controller Specification

The PPC-B2xx series features three hardware specifications including fan-less 12/15/19-inch PPCs. Below are details regarding each specification.

1.2.1 PPC-B2xx Series

Applicable Models	PPC-B212、PPC-B215、PPC-B219 Series

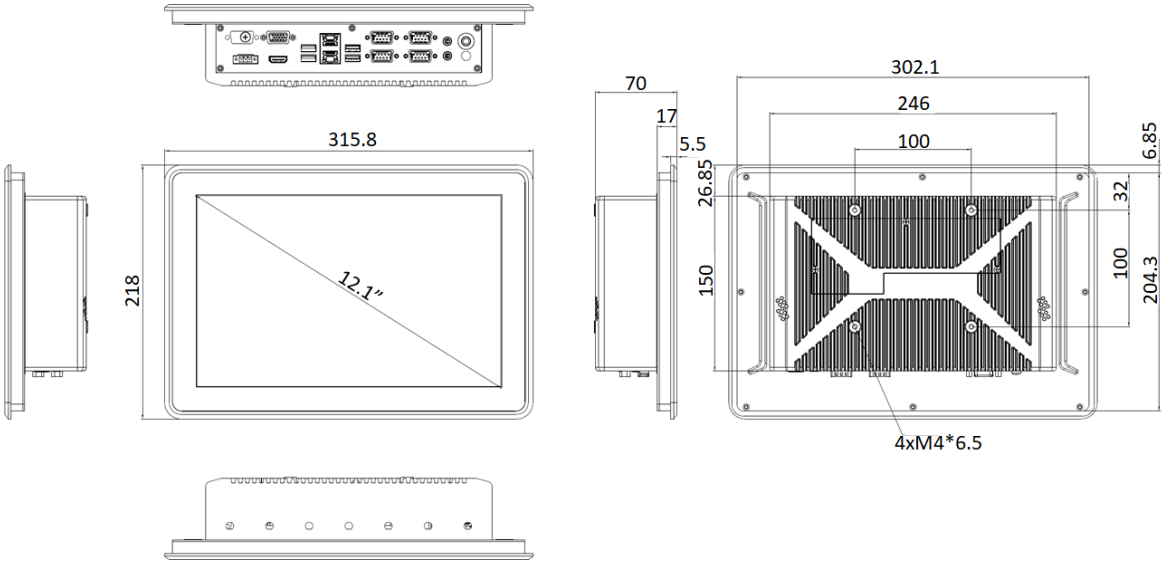
Item	Specification	
CPU	Intel® Celeron J1900 2.0 GHz quad-core processor	
RAM	8GB DDR3L 1600MHz SO-DIMM	
SSD	128 GB M.2 SSD	
Network	2x Intel® I211 Gigabit Ethernet Controller	
Audio	Built-in speakers, with an additional set of Standard frequency I/O	
Expansion	Supports mini PCIE interface and Wi-Fi communication modules	
External I/O	● Serial port: COM 1~4 (RS-232) ● 3 x USB 2.0, 1 x USB 3.0（blue） ● 1 x VGA output ● 1 x HDMI output	
LED Screen	12.1” PPC	● Display Screen: 12.1" TFT LED ● Screen Resolution: 1280x800 ● Brightness: 500 cd/m2 ● Contrast Ratio: 1200:1 ● Viewing Angle (CR≧10): 170°(V) / 170°(H)
	15.6” PPC	● Display Screen: 15.6" TFT LED ● Screen Resolution: 1920x1080 ● Brightness: 450 cd/m2 ● Contrast Ratio: 3000:1 ● Viewing Angle (CR≧10): 178°(V) / 178°(H)

Item	Specification	
	19” PPC	● Display Screen: 19" TFT LED ● Screen Resolution: 1440x900 ● Brightness: 250 cd/m2 ● Contrast Ratio: 1000:1 ● Viewing Angle (CR≧10): 160° (V) / 170° (H)
Touchscreen	● Material: 6H Tempered Glass ● Type: Capacitive	
Dimension	12.1 " PPC: 315.8mm(L)× 218mm(W)× 70mm (H) ; 15.6 " PPC: 408mm(L)× 257.3mm(W)× 69.9mm (H) ; 19 " PPC: 472.3mm(L)× 319.3mm(W)× 71.1mm (H)	
Installation Methods	VESA Mount: 12.1 " PPC: 100mm(L)× 100mm(W) ; 15.6 " PPC: 100mm(L)× 100mm(W) ; 19 " PPC: 100mm(L)× 100mm(W) Embedded Installation: 12.1 " PPC: 302.1mm(L)× 204.3mm(W) ; 15.6 " PPC: 393.4mm(L)× 242.6mm(W) ; 19 " PPC: 458.6mm(L)× 305.6mm(W)	
Structure	● Case: High-strength aluminum alloy, sand blasting anodizing aluminum ● Color: Silver ● Thermal conductivity: An integrated aluminum case with active heat conduction design ● Material: Aluminum alloy heat sink	
Weight	12.1 " PPC: Net Weight: 2.8Kg ; Gross Weight: 4.2Kg 15.6 " PPC: Net Weight: 4.1Kg ; Gross Weight: 5.7Kg 19 " PPC: Net Weight: 6.0Kg ; Gross Weight: 7.5Kg	
Temperature	● Operation temperature: -10°C ~ 50°C (with air flow) ● Storage temperature: -20°C ~ 70°C	
Humidity	10~95% @ 40°C (non-condensing)	
Certification	CE(EMC+LVD)、FCC	
Environment	● Anti-vibration: 5-17Hz/1.0mm amplitude；17-200Hz/1.0g acceleration ● Anti-shock: 10g acceleration, 11ms duration	
Power	● Input voltage: 9~32 Vdc wide voltage input, it is recommended to use a power supply of at least 60W to ensure system stability.	
	12.1” PPC	● Power consumption: 11.4 W (stand-by)
	15.6” PPC	● Power consumption: 20.5 W (stand-by)
	19” PPC	● Power consumption: 12.7 W (stand-by)

1.3 Dimensions

1.3.1 PPC-B212 Series

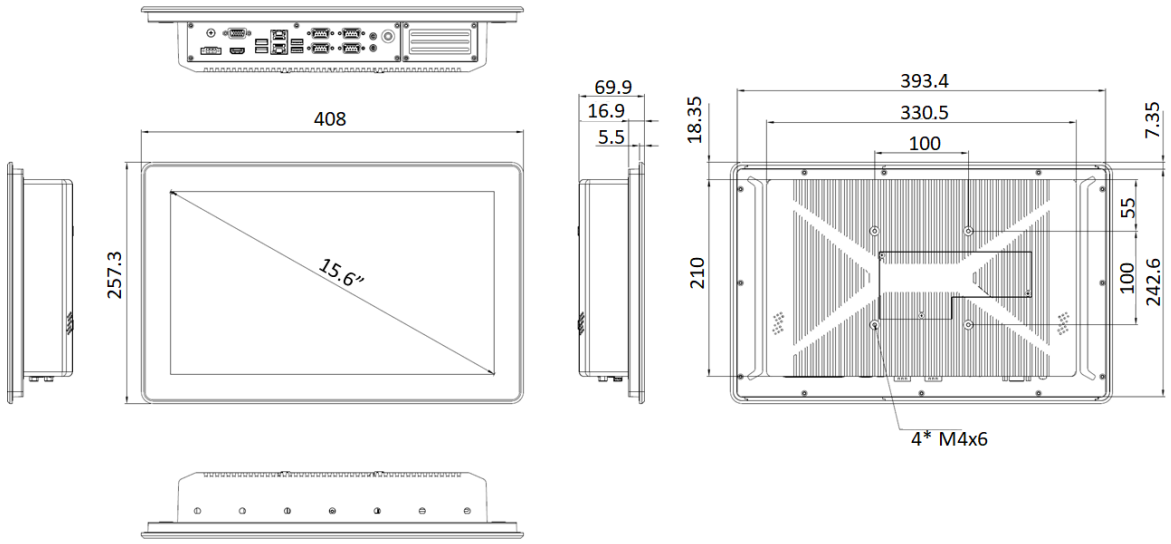
Applicable Models	PPC-B212 Series



Unit：mm

1.3.2 PPC-B215 Series

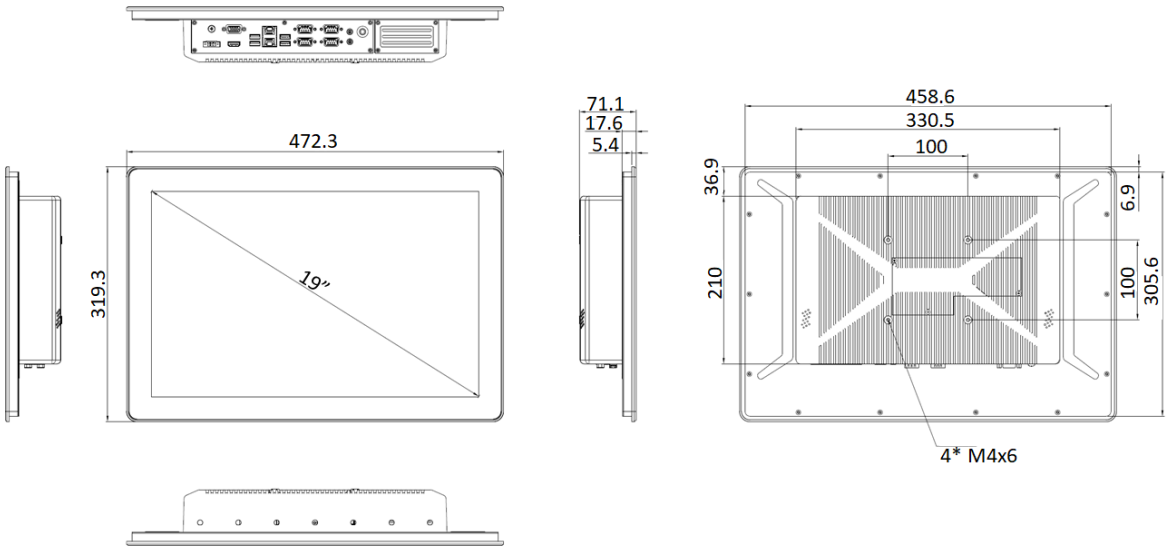
Applicable Models	PPC-B215 Series



Unit：mm

1.3.3 PPC-B219 Series

Applicable Models	PPC-B219 Series



Unit：mm

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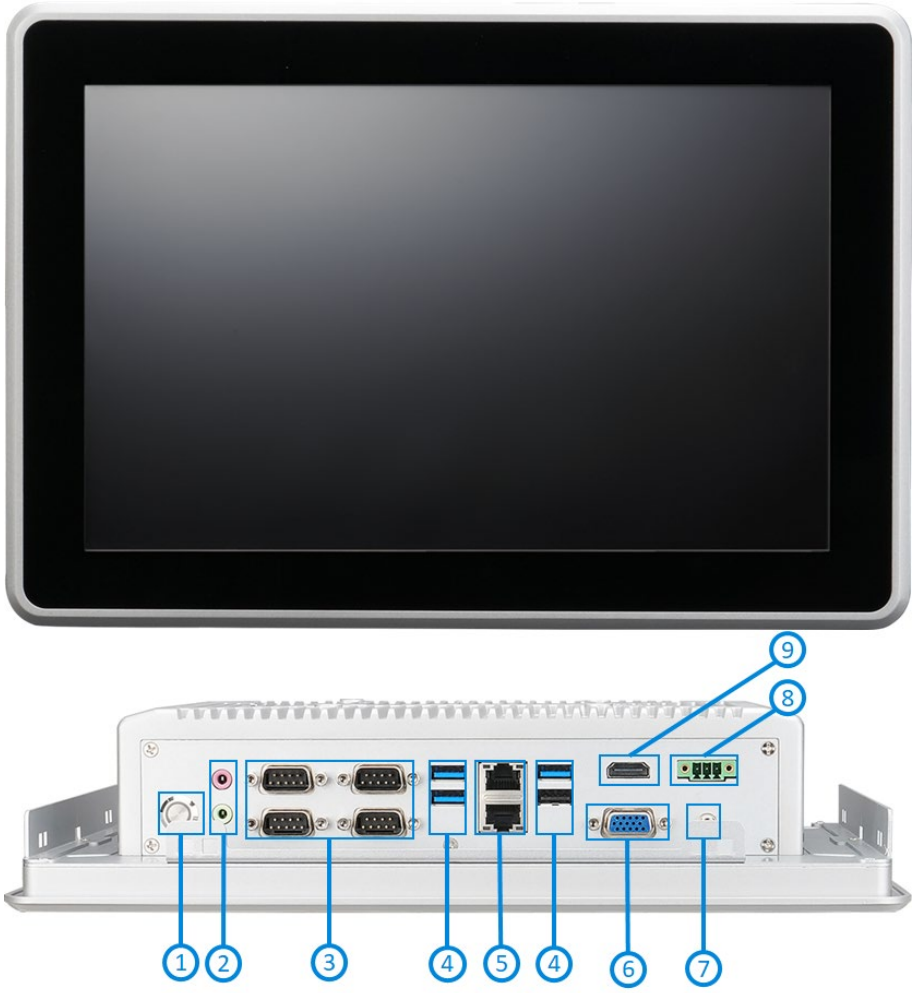
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2.1 Diagrams of I/O Interface

2.1.1 PPC-B212 Series

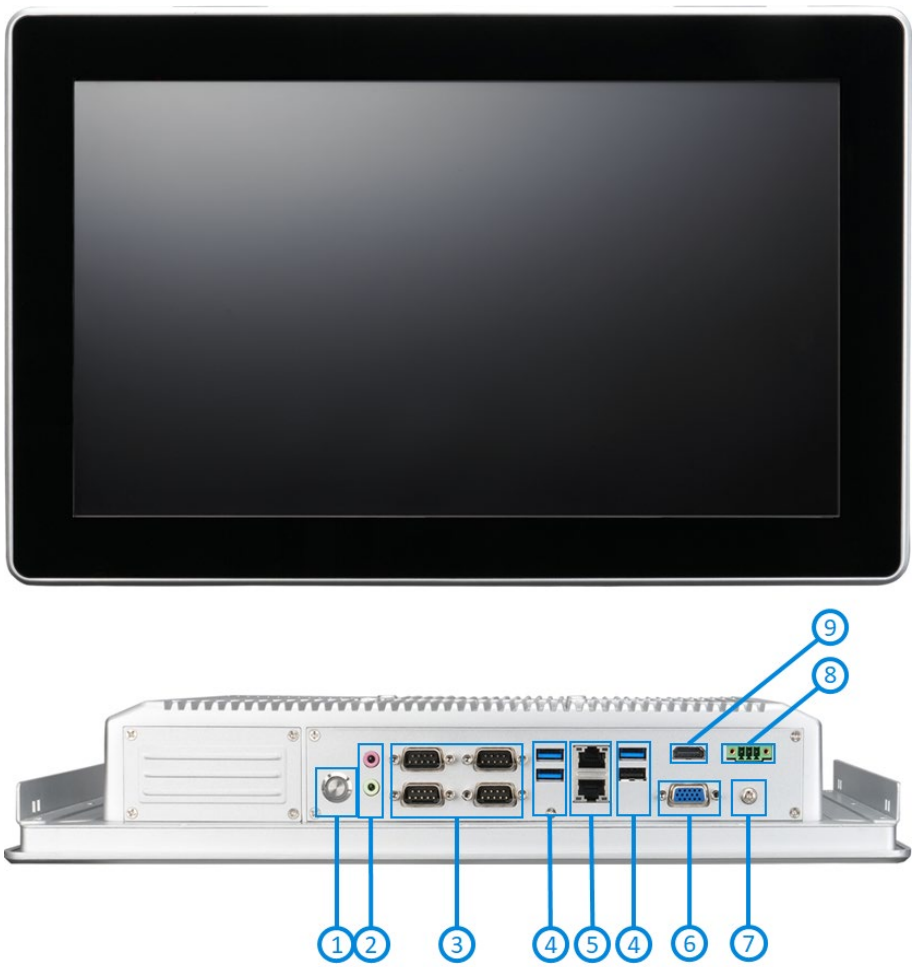
Applicable Models	PPC-B212 Series



No.	Item	No.	Item
1	Power Switch	6	VGA
2	Line-In/Out	7	GND
3	RS-232	8	Power Connector
4	USB2.0 / USB3.0	9	HDMI
5	Ethernet		

2.1.2 PPC-B215 Series

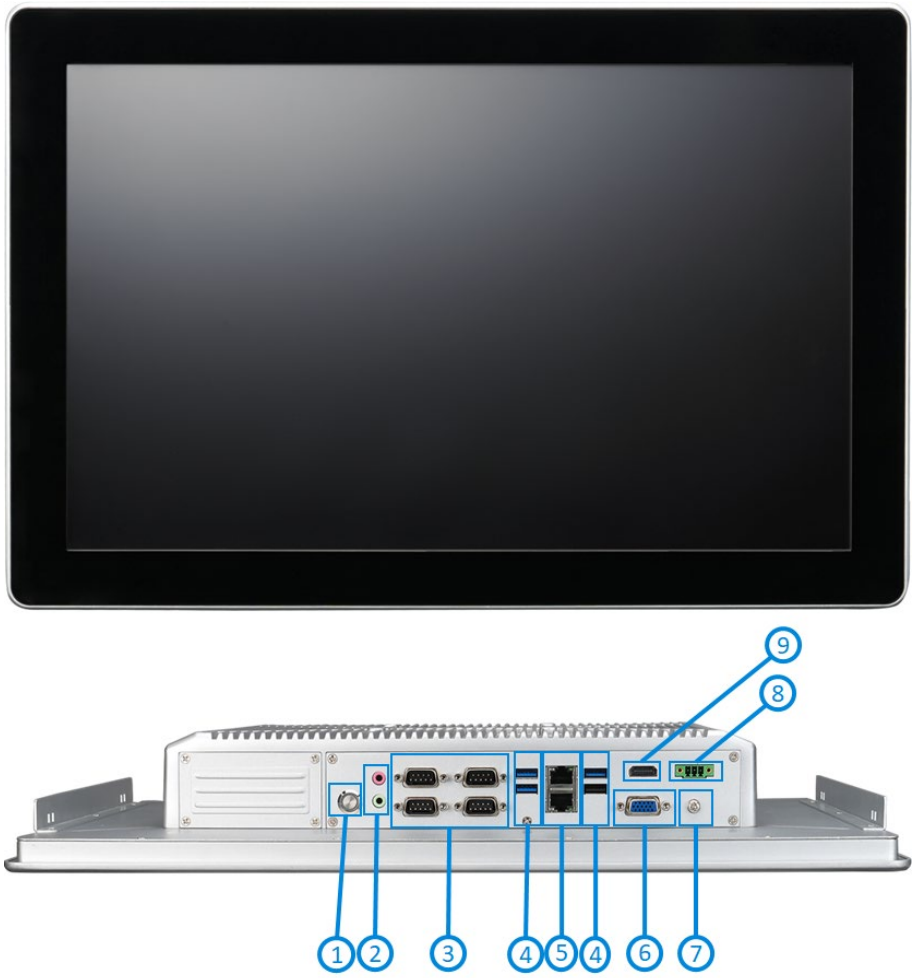
Applicable Models	PPC-B215 Series



No.	Item	No.	Item
1	Power Switch	6	VGA
2	Line-In/Out	7	GND
3	RS-232	8	Power Connector
4	USB2.0 / USB3.0	9	HDMI
5	Ethernet		

2.1.3 PPC-B219 Series

Applicable Models	PPC-B219 Series



No.	Item	No.	Item
1	Power Switch	6	VGA
2	Line-In/Out	7	GND
3	RS-232	8	Power Connector
4	USB2.0 / USB3.0	9	HDMI
5	Ethernet		

2.2 I/O Port Pins

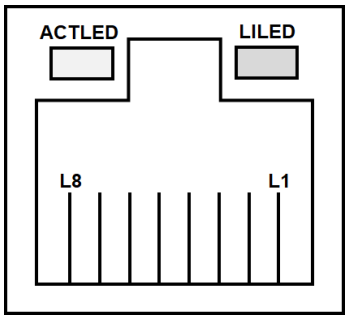
2.2.1 Standard DB9 Port

Applicable Models	PPC-B212、PPC-B215、PPC-B219 Series

	Pin	Communication Interface
		RS-232
Serial Port	2	RXD
	3	TXD
	4	DTR
	5	GND
	6	DSR
	7	RTS
	8	CTS
	9	RI

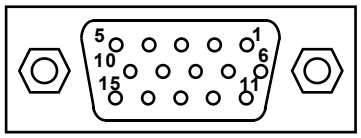
2.2.2 RJ-45 LAN Port

Applicable Models	PPC-B212、PPC-B215、PPC-B219 Series

RJ-45	Pin	1000 Base-T	100 Base-T
	L1	Red	Green
	L2	Blue	N.C.
	L3	GND	DETECT
	L4	GND	GND
	L5	+5V	GND
	L6	N.C.	DDC DATA
	L7	Horizontal Sync	Vertical Sync
	L8	DDC CLK	
	ACTLED	**Network Status Display** LED ON: Data transmitting LED OFF: No data transmission	
	LILED	**Network Transmission Rate** LED (Orange light): 1000Mbps LED (Green light): 100Mbps LED OFF: 10Mbps	

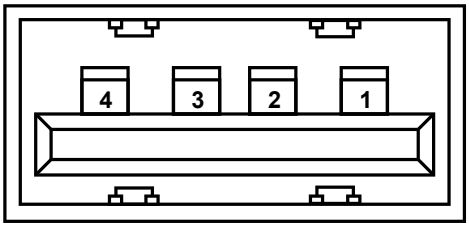
2.2.3 VGA Port

Applicable Models	PPC-B212、PPC-B215、PPC-B219 Series

VGA	Pin	Signal	Pin	Signal
	1	Red	2	Green
	3	Blue	4	N.C.
	5	GND	6	DETECT
	7	GND	8	GND
	9	+5V	10	GND
	11	N.C.	12	DDC DATA
	13	Horizontal Sync	14	Vertical Sync
	15	DDC CLK		

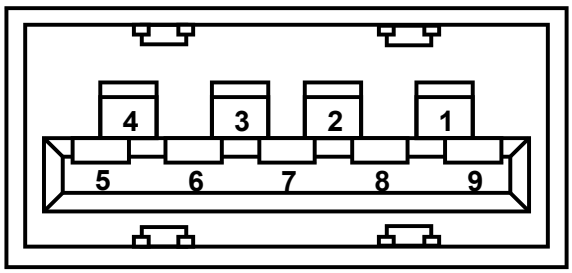
2.2.4 USB 2.0 Port

Applicable Models	PPC-B212、PPC-B215、PPC-B219 Series

USB 2.0	Pin	Signal
	1	USB VCC +5V
	2	USB Data-
	3	USB Data+
	4	GND

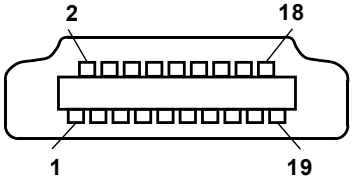
2.2.5 USB 3.0 Port

Applicable Models	PPC-B212、PPC-B215、PPC-B219 Series

USB 3.0	Pin	Signal
	1	USB VCC +5V
	2	USB Data-
	3	USB Data+
	4	GND
	5	StdA_SSRX-
	6	StdA_SSRX+
	7	GND
	8	StdA_SSTX-
	9	StdA_SSTX+

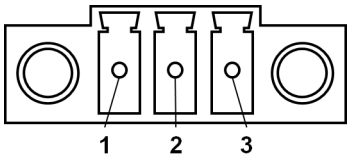
2.2.6 HDMI A Type Port

Applicable Models	PPC-B212、PPC-B215、PPC-B219 Series

HDMI	Pin	Signal	Pin	Signal
	1	TMDS Data2+	2	TMDS Data2 Shield
	3	TMDS Data2–	4	TMDS Data1+
	5	TMDS Data1 Shield	6	TMDS Data1–
	7	TMDS Data0+	8	TMDS Data0 Shield
	9	TMDS Data0–	10	TMDS Clock+
	11	TMDS Clock Shield	12	TMDS Clock–
	13	CEC	14	Reserved
	15	SCL	16	SDA
	17	DDC/CEC Ground	18	+5V Power
	19	Hot Plug Detect		

2.2.7 DC 9~32V Power Port

Applicable Models	PPC-B212、PPC-B215、PPC-B219 Series

DC12V	Pin	Signal
	1	DC +
	2	
	3	DC -

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Chapter 3 Common BIOS Settings

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3.3 Set up Automatic Startup After Power-On 3-3

3.4 Setting the System Boot Order 3-4

3.1 Starting BIOS

The AMI BIOS provides users with a built-in setup program to modify basic system configuration. Start the BIOS setup via the following steps:

1. Turn on the computer and immediately press <F2>

2. After entering the BIOS configuration menu, users can access to other setting pages, such as Advanced and Boot menus.

It is strongly recommended NOT to change the BIOS default setup parameters. AMI and the system manufacturer have carefully configured the default values for each parameter to provide optimal performance and reliability.

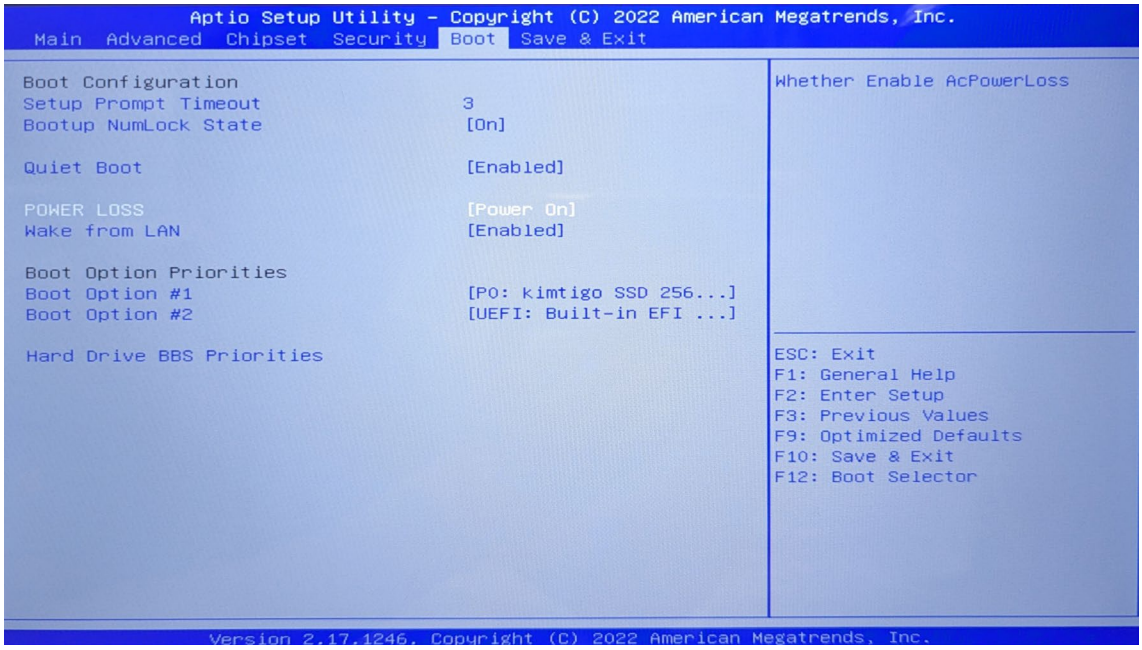
3.2 Hotkey Shortcuts

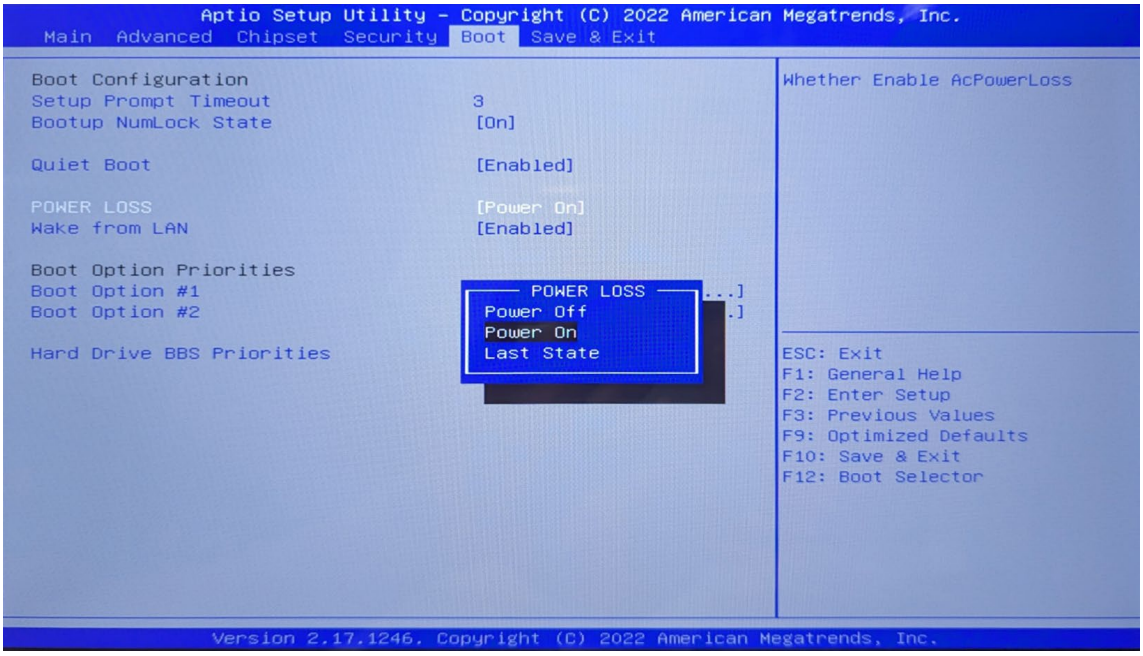
BIOS settings are controlled using keyboard commands, and most of the shortcut keys can be used at any point during the operation. These keys include <F2>, <F10>, <Enter>, <Esc>, arrow keys, and more.

Hotkey	Description
←→ **Left/Right**	The left/right keys can be used to navigate between BIOS configuration pages.
↑ ↓ **Up/Down**	The up/down keys can be used to switch between individual sub-items within single BIOS configuration page.
+ - Plus/Minus	The plus/minus keys can be used to change the parameter values of specific options.
Tab	<Tab> key can be used to switch between fields.
F1	<F1> key can display the “Help” page.
F3	<F3> key can load the previously modified settings parameters.
F9	<F9> key can load the factory-optimized default values.
F10	<F10> key can save any changes made and exit the BIOS settings.
Esc	<Esc> key can discard the current BIOS settings.
Enter	<Enter> key can display or change specific parameters.

3.3 Set up Automatic Startup After Power-On

Use the left and right arrow keys to enter the Boot function page. Use the up and down arrow keys to select the 'Power Loss' options and press the Enter key to configure the parameter value.

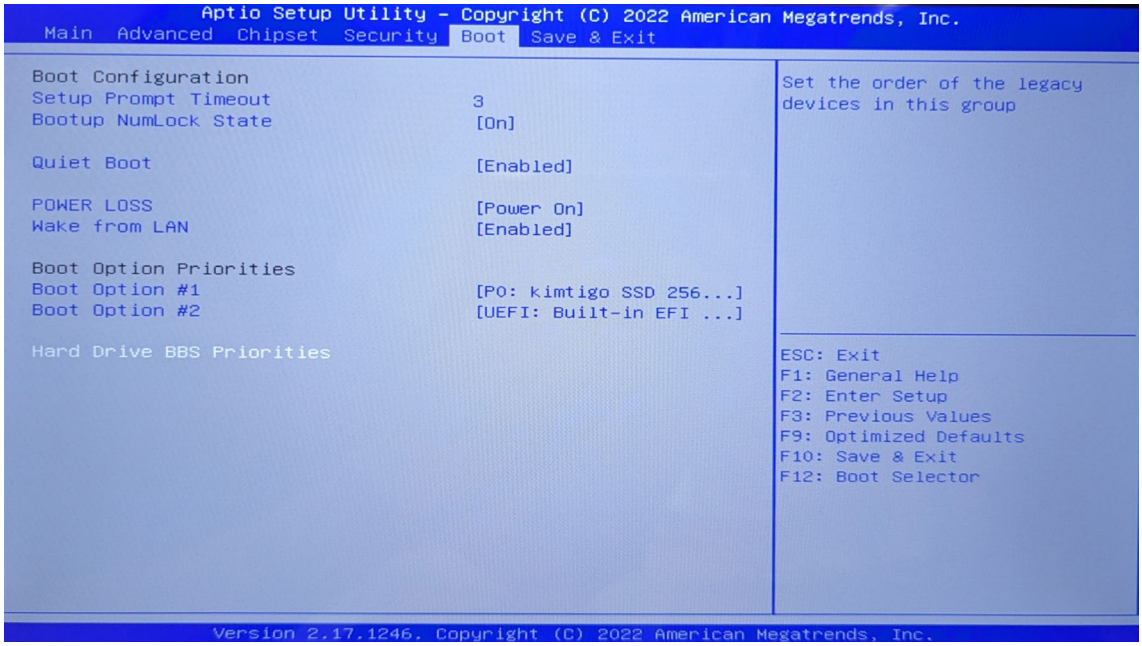




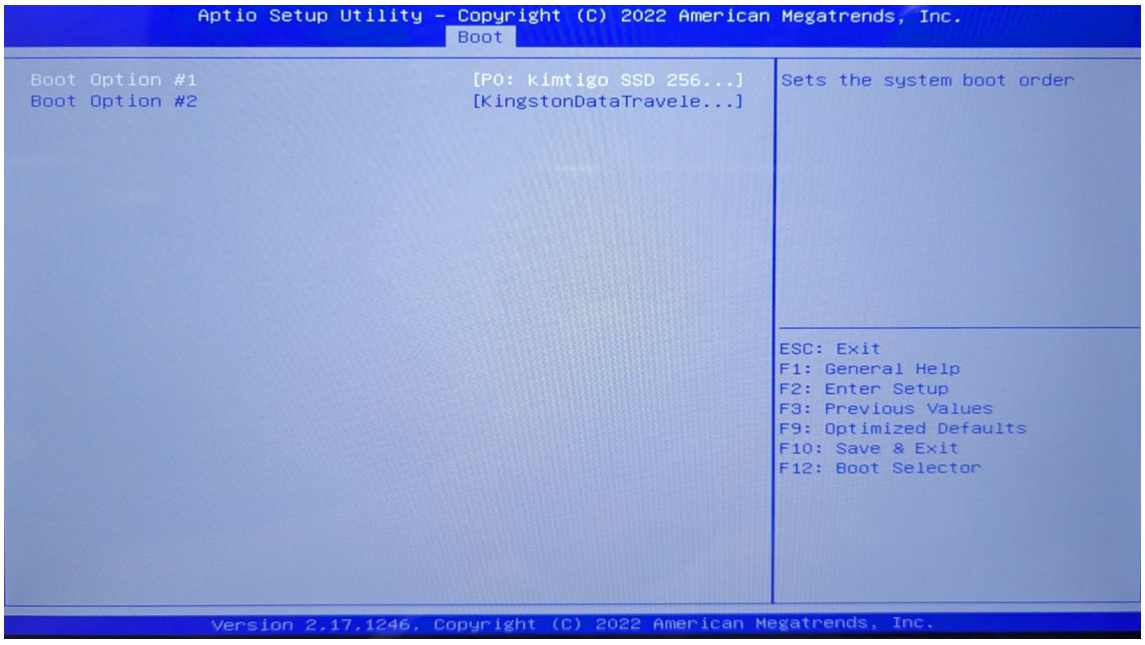
- Stay off: Powering on the computer requires pressing the power button on the main unit.
- Last State: Restore to the last state when power is on; if the computer is not properly shut down, it will be turned on when the power is on; if properly shut down, it remains in a shutdown state.
- Power on: Turn on the computer immediately upon powering up.

3.4 Setting the System Boot Order

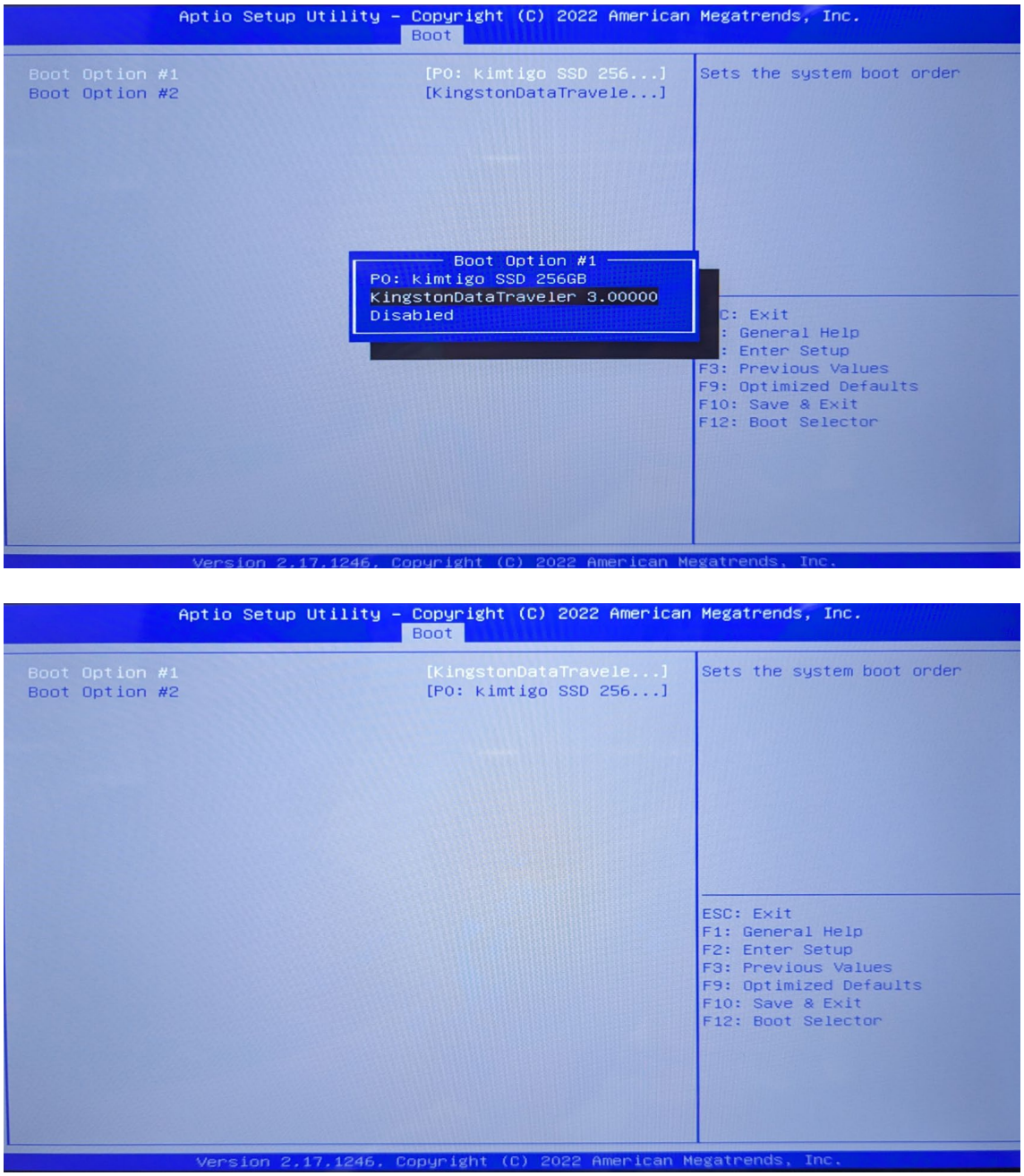
Step 1. Use the left and right arrow keys to enter the Boot function page. Use the up and down arrow keys to select the 'Hard Drive BBS Priority' options and press the Enter key to enter the configuration.



Step 2. In the 'Boot Option #1' item, press the Enter key to select the first boot device.



Step 3. After selecting the first boot device, press the Enter key to complete the setup.



Step 4. After all settings are completed, press F10 key to save the settings and exit the BIOS configuration page.

4

Chapter 4 Driver Installation

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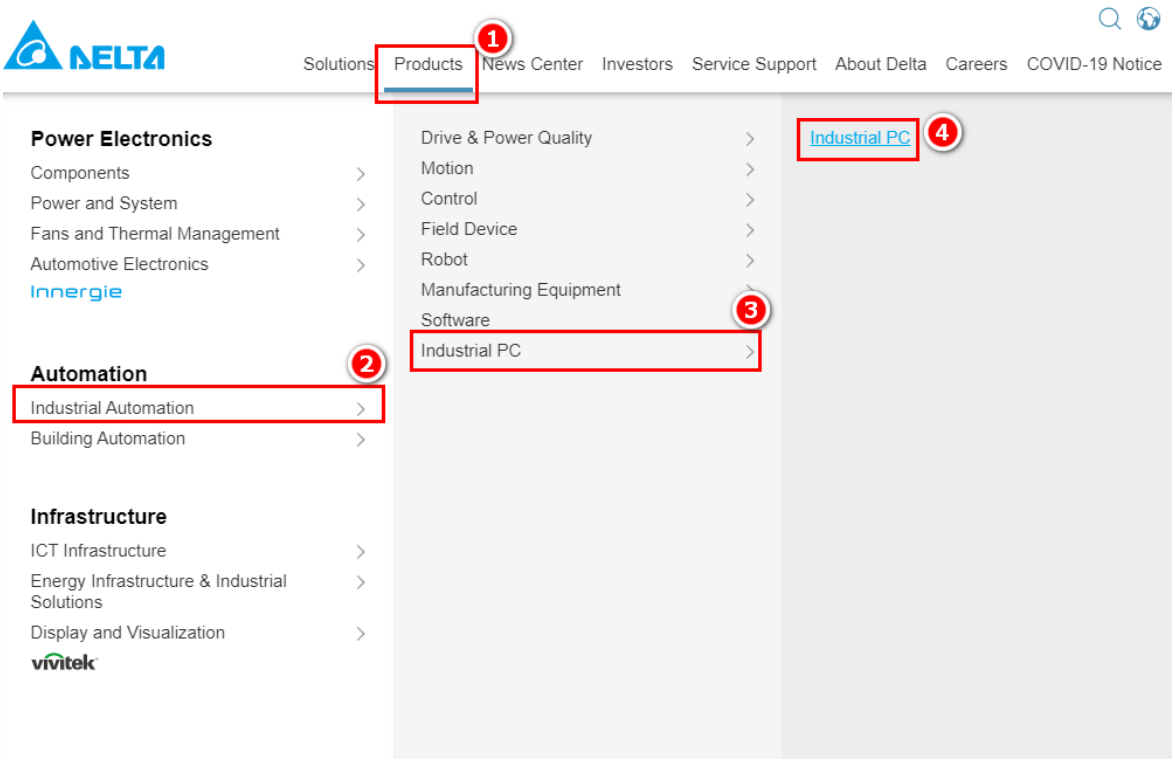
4.5 Install Audio Drivers 4-15

4.1 Download Drivers

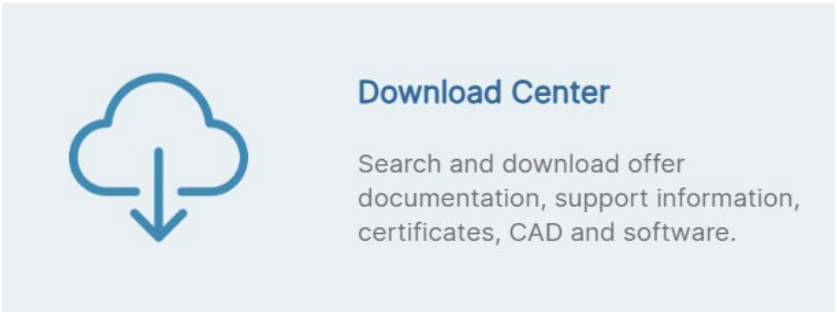
The required driver must be downloaded from the download center on Delta's official site before the installation.

Step 1. Access Delta's official website: http://www.deltaww.com/

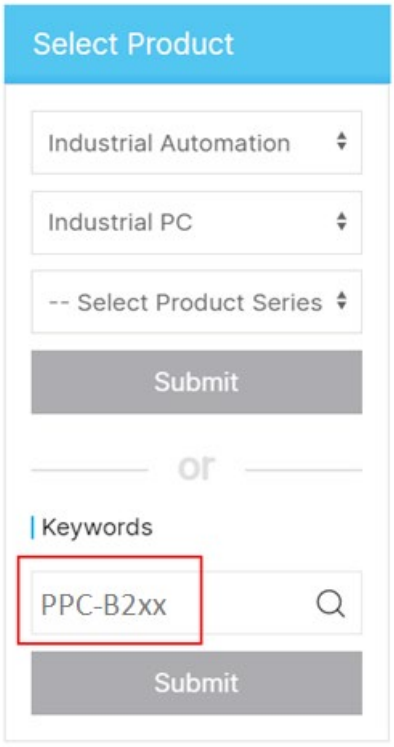
Step 2. Click "Products", "Industrial Automation" and "Industrial PC" accordingly.

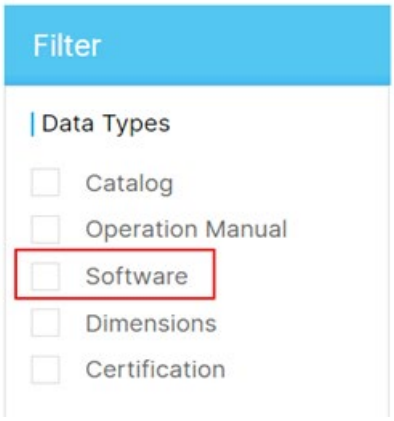


Step 3. Move to the bottom of the page, click "Download Center".



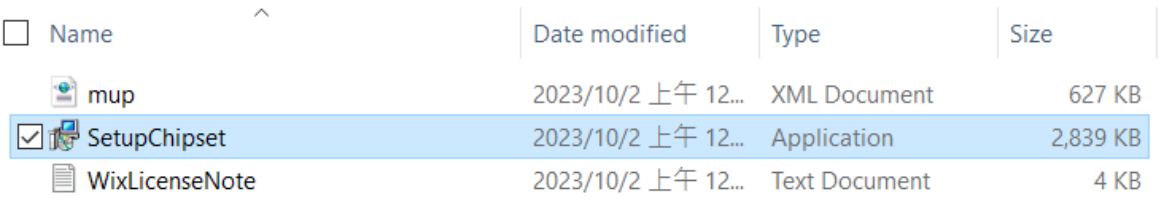
Step 4. Search keyword 'PPC-B2xx' and filter by the 'Software' option, then download the drivers for PPC-B2xx series models.



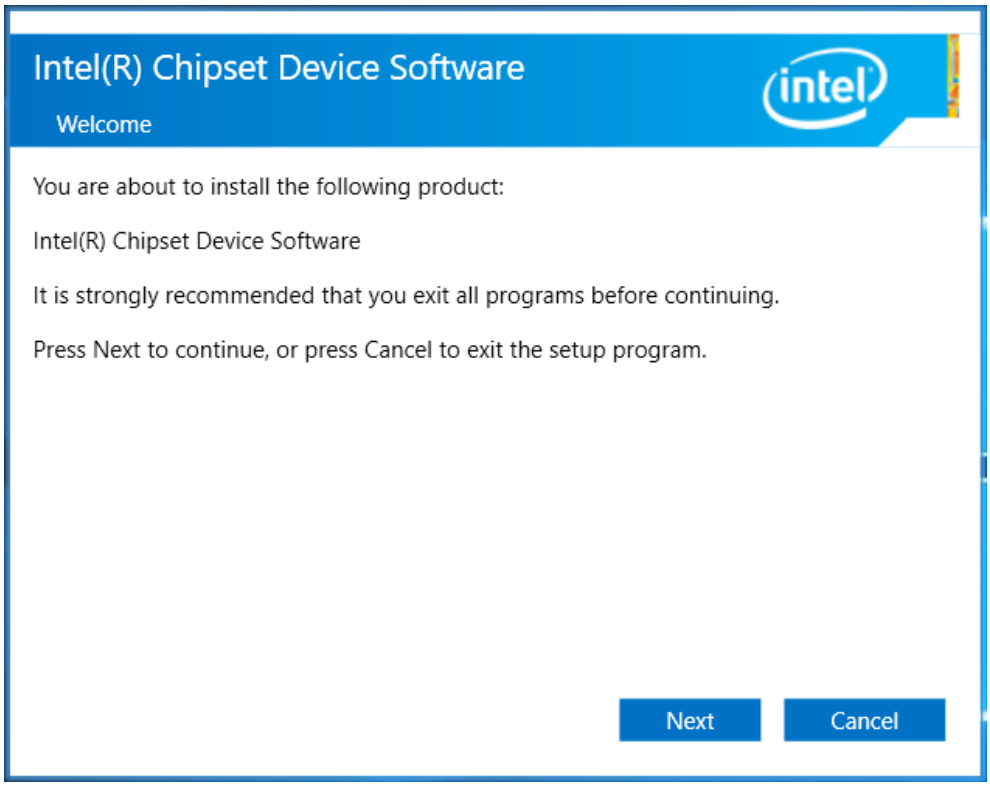


4.2 Install Chipset Drivers

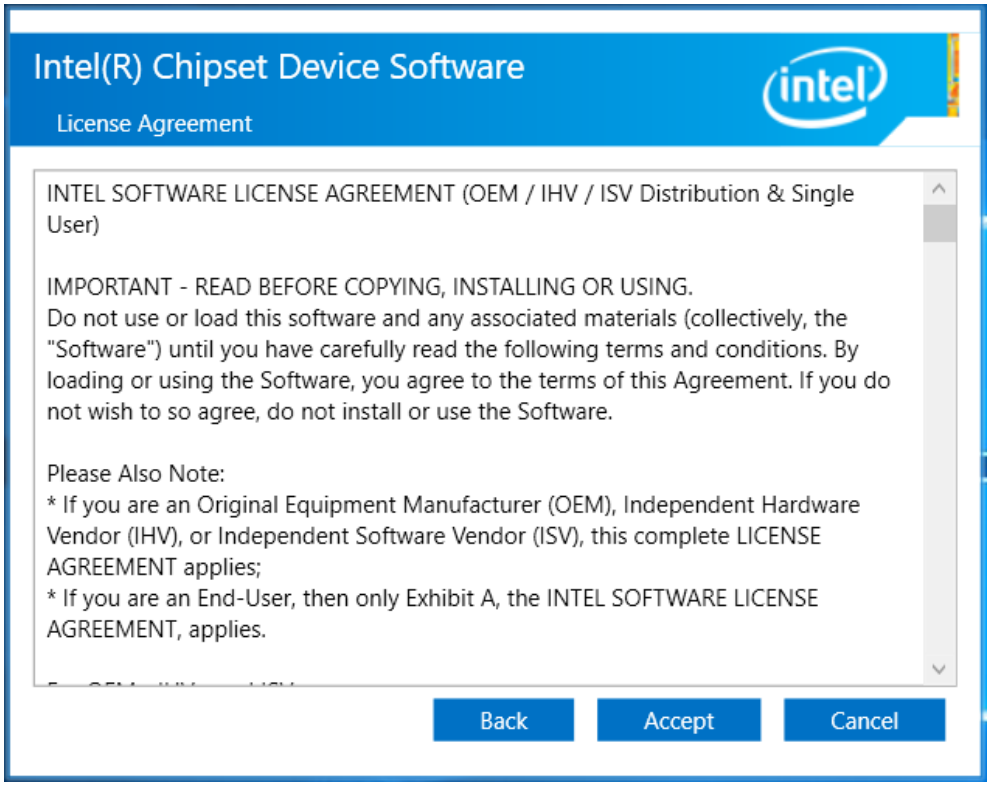
Step 1. Initiate the installation process by double-clicking on the "SetupChipset.exe" file.



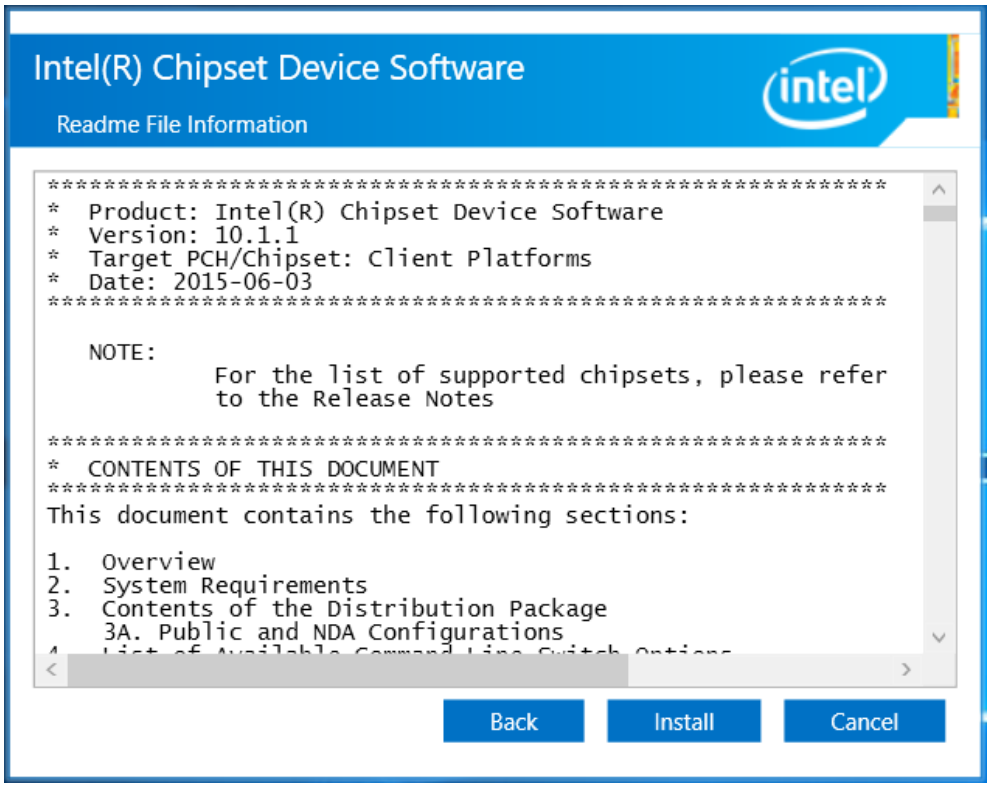
Step 2. Click “Next” to start the setup program.



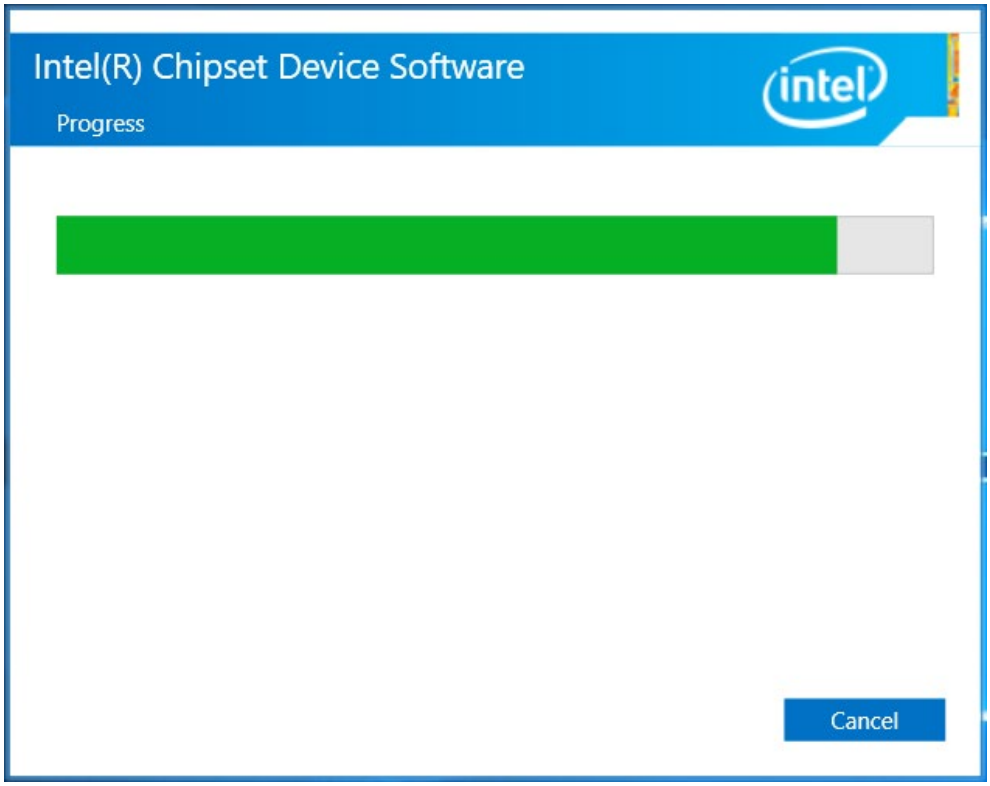
Step 3. Please read the license agreement in detail and click “Accept”.



Step 4. Click “Install” after confirming the file information.



Step 5. No action is required while waiting for the installation program to be completed.

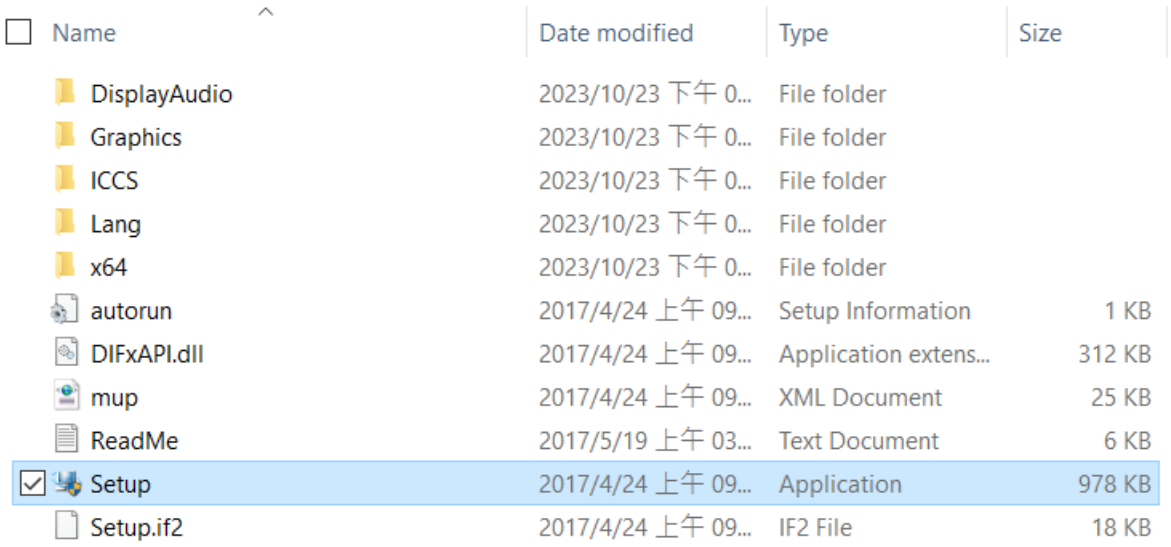


Step 6. The chipset driver has been successfully installed, click “Finish” to complete the installation process.

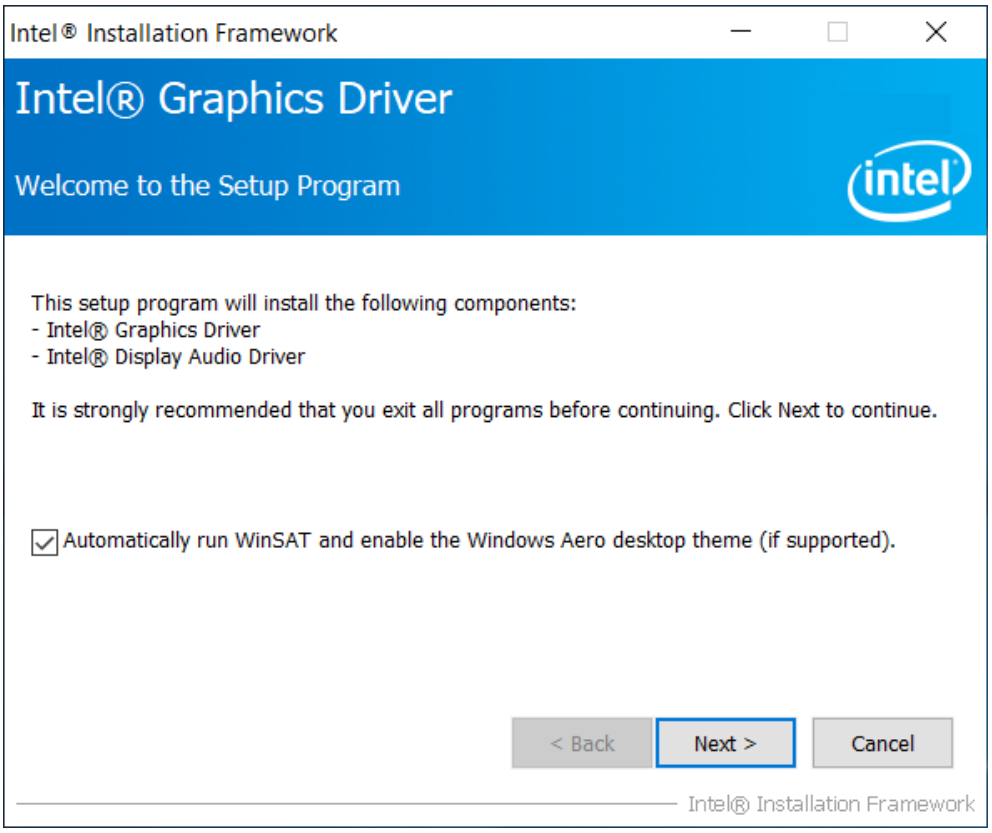


4.3 Install Graphics Drivers

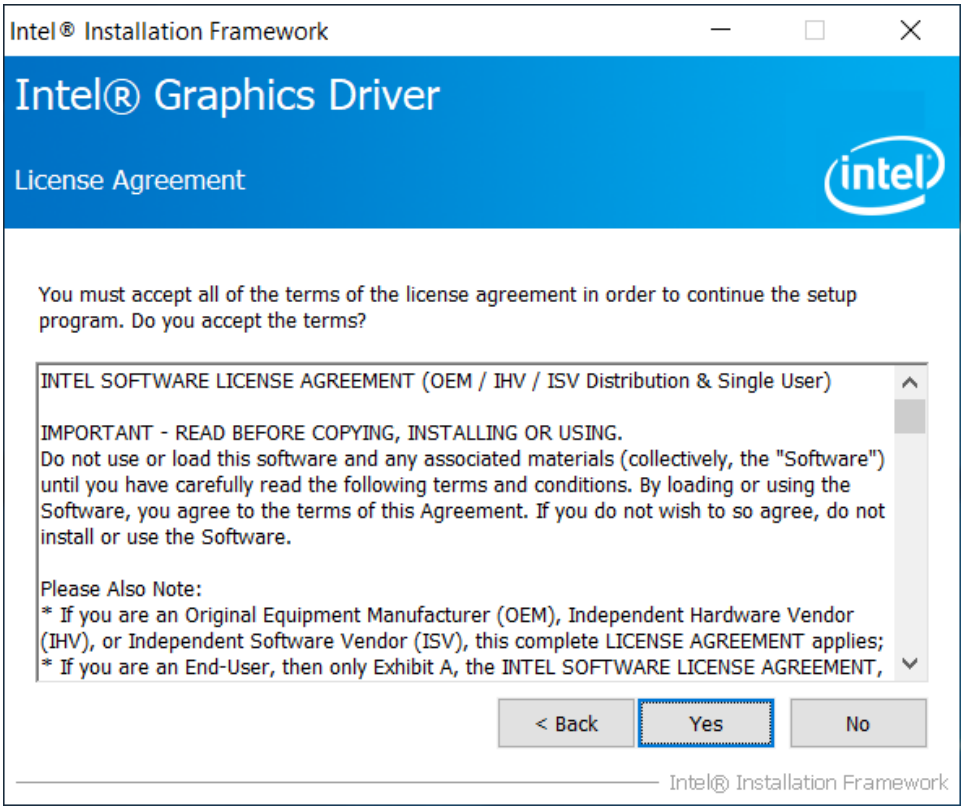
Step 1. Initiate the installation process by double-clicking on the "Setup.exe" file.



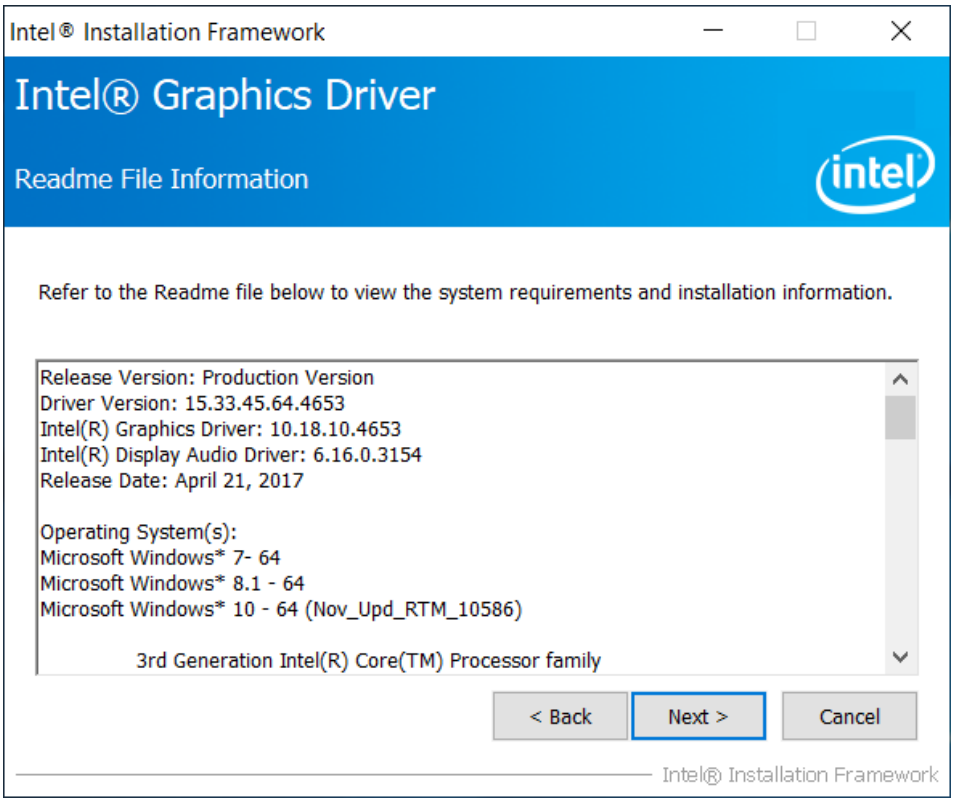
Step 2. Click on “Next” to start installing the Graphics Drivers.



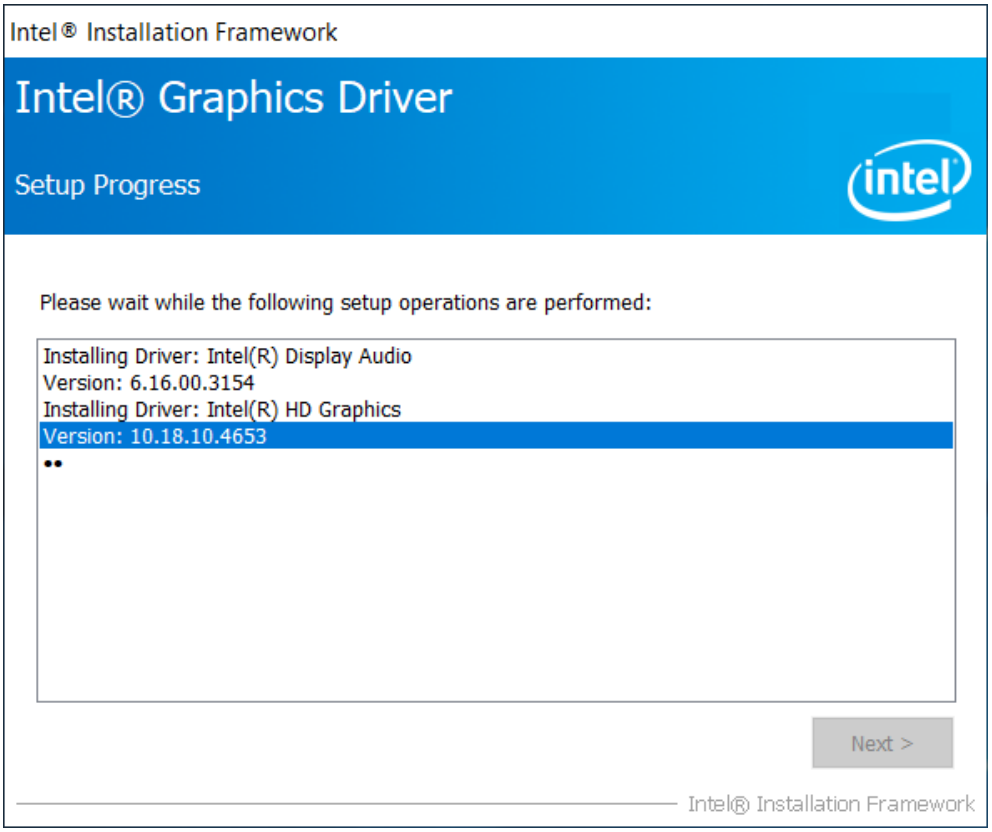
Step 3. Please read the license agreement in detail and click on “Yes”.



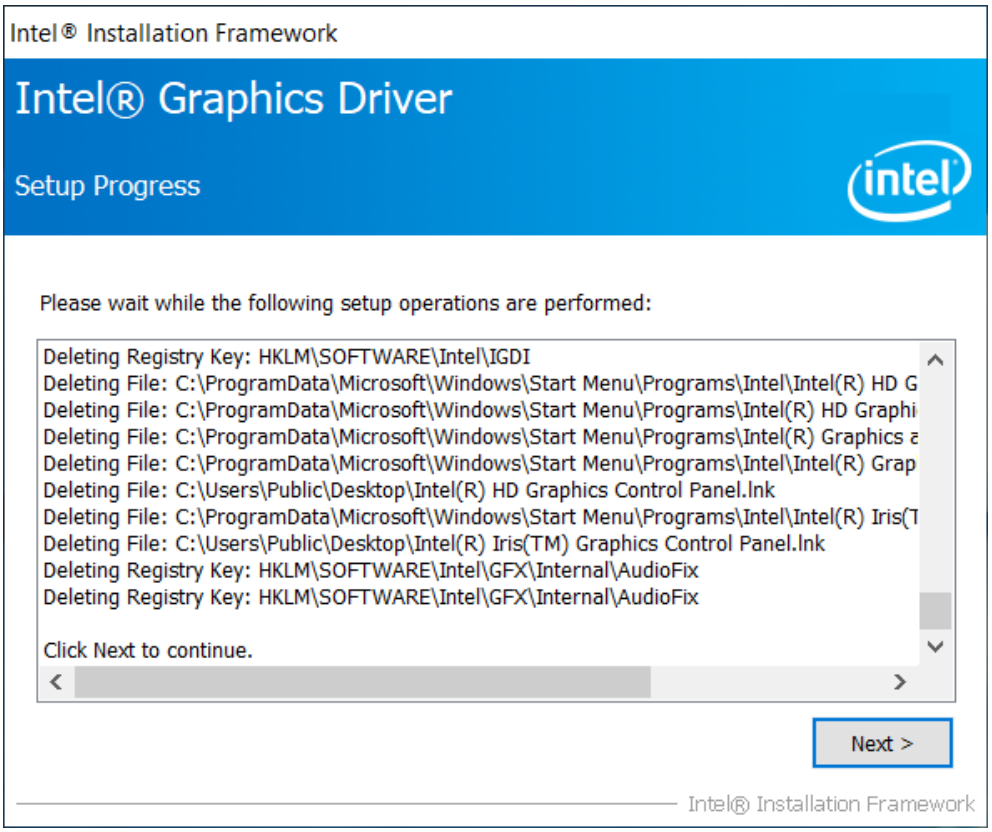
Step 4. Click “Next” after confirming the file information.



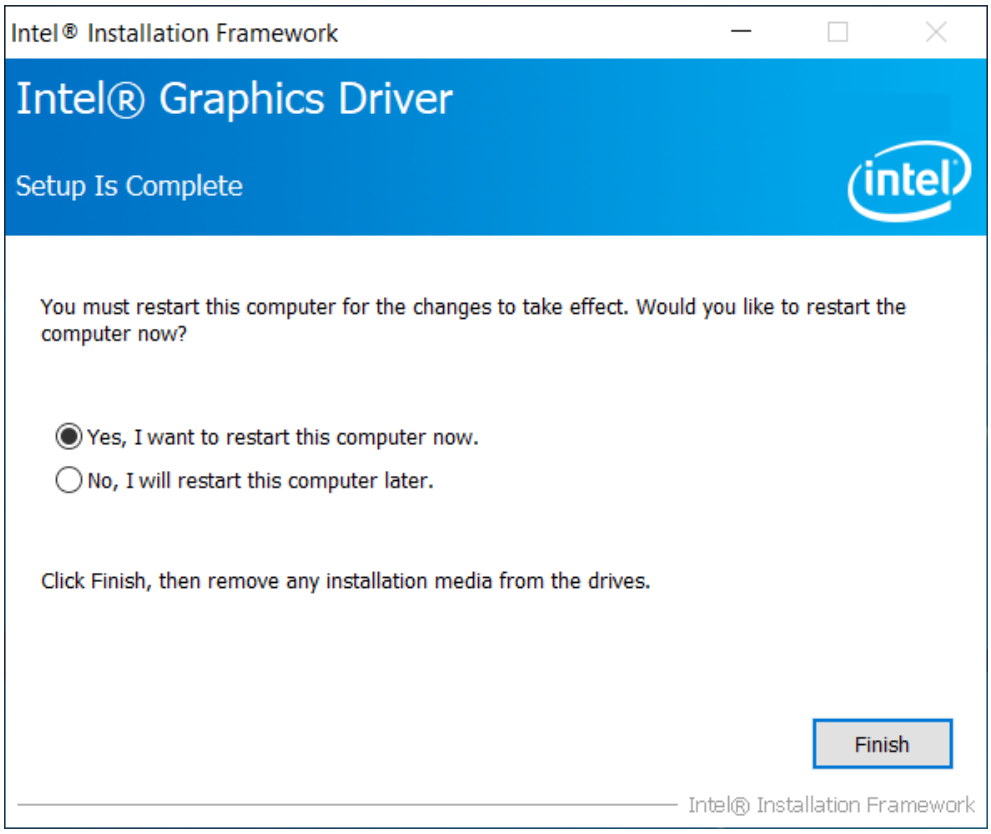
Step 5. No action is required while waiting for the installation program to be completed.



Step 6. Click “Next” to complete the setup process.

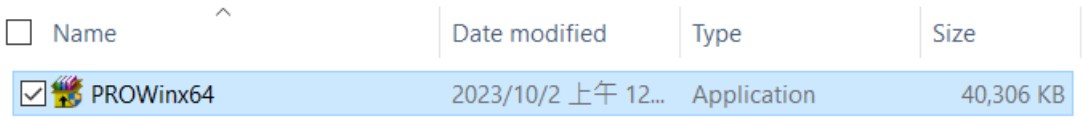


Step 7. The graphics driver has been successfully installed. Choose whether to reboot the computer and click “Finish” to complete the setup program.

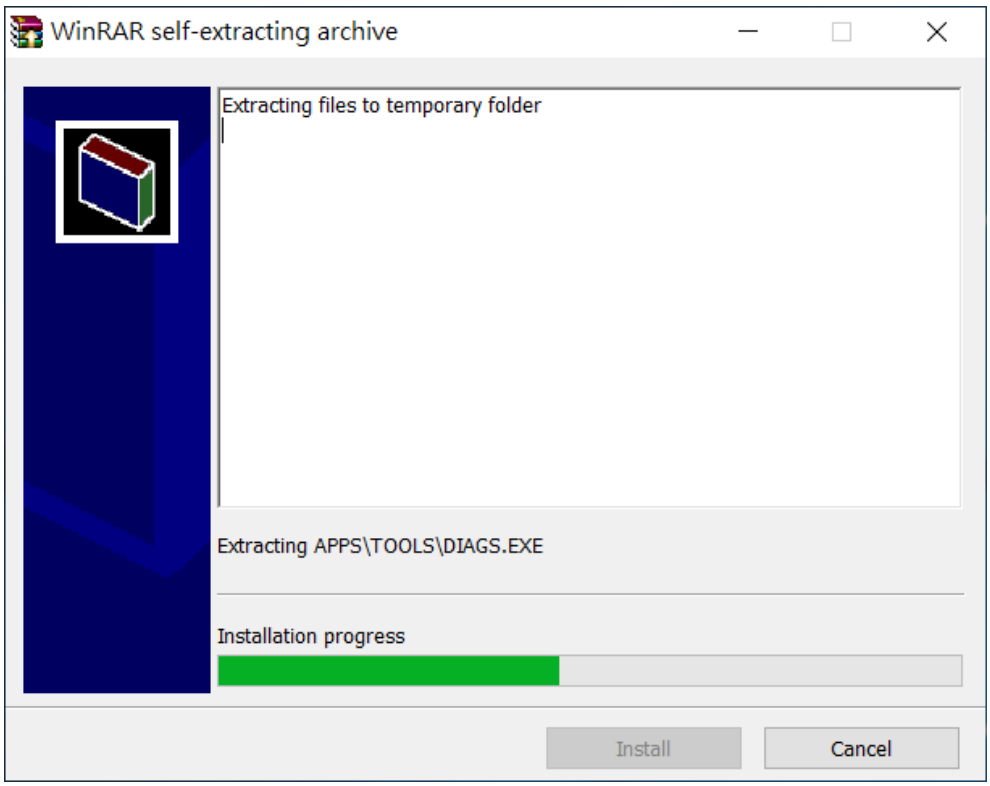


4.4 Install LAN Drivers

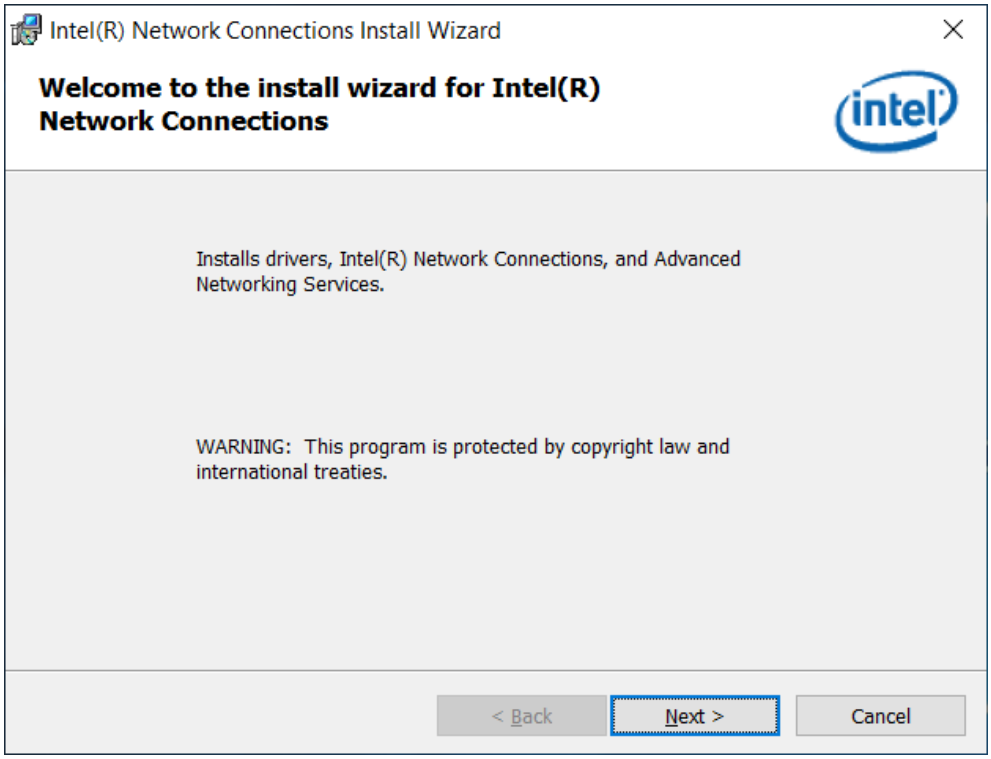
Step 1. Initiate the installation process by double-clicking on the installation file.



Step 2. No action required while waiting for the progress to be completed.

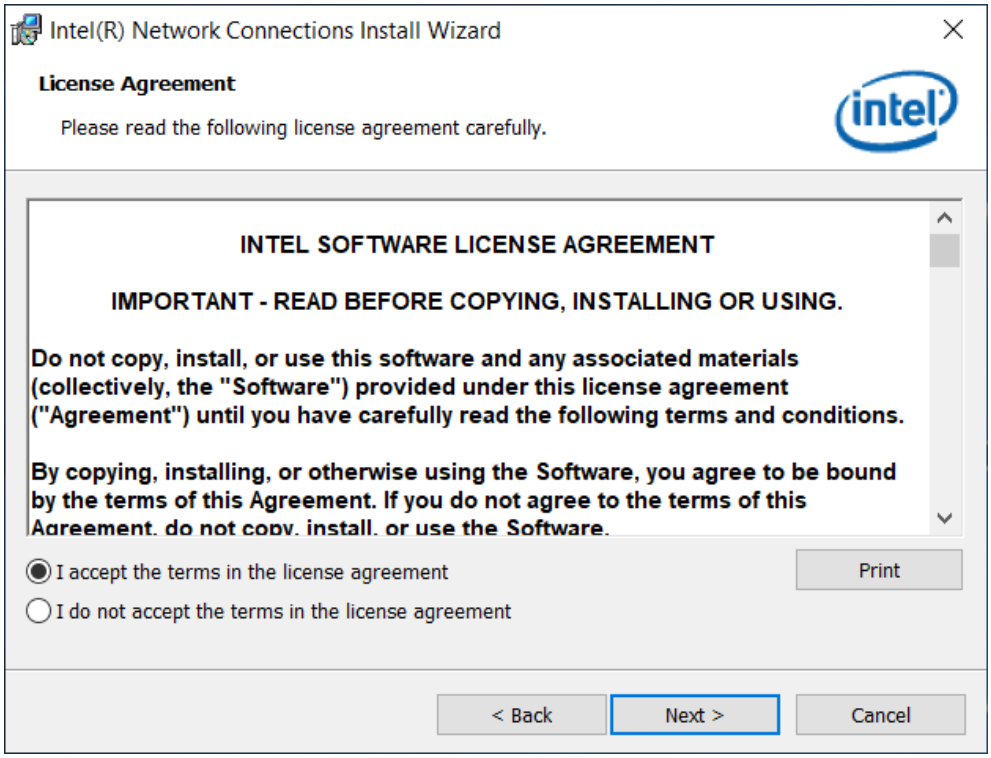


Step 3. Click “Next” to start installing the drivers for Network Connections.

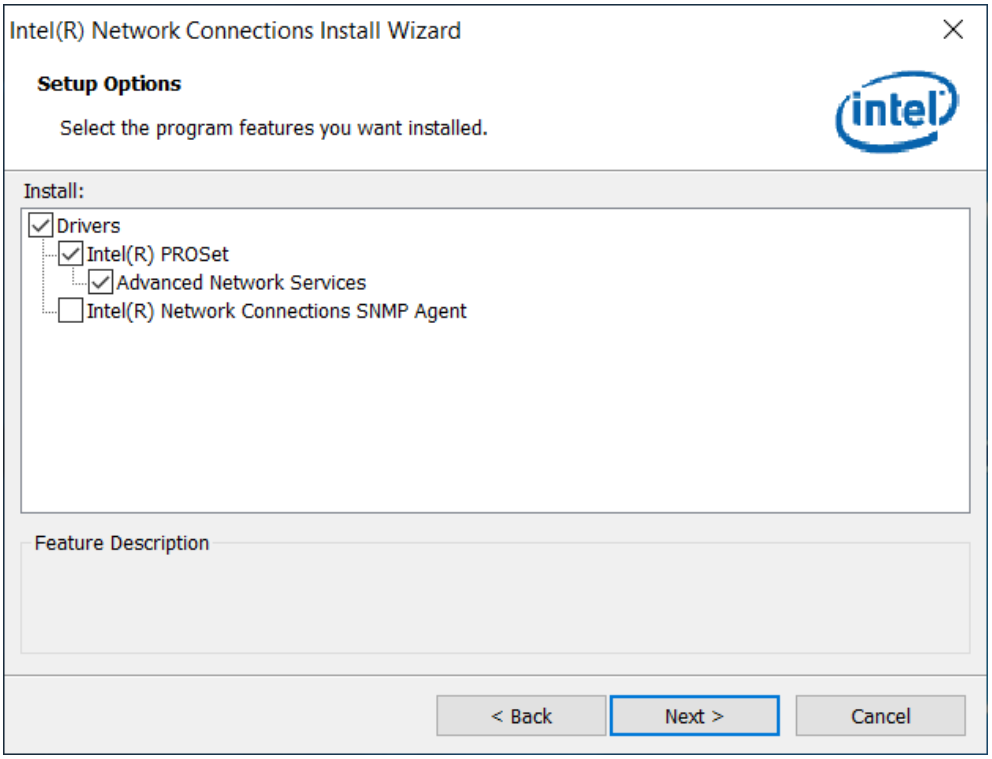


4

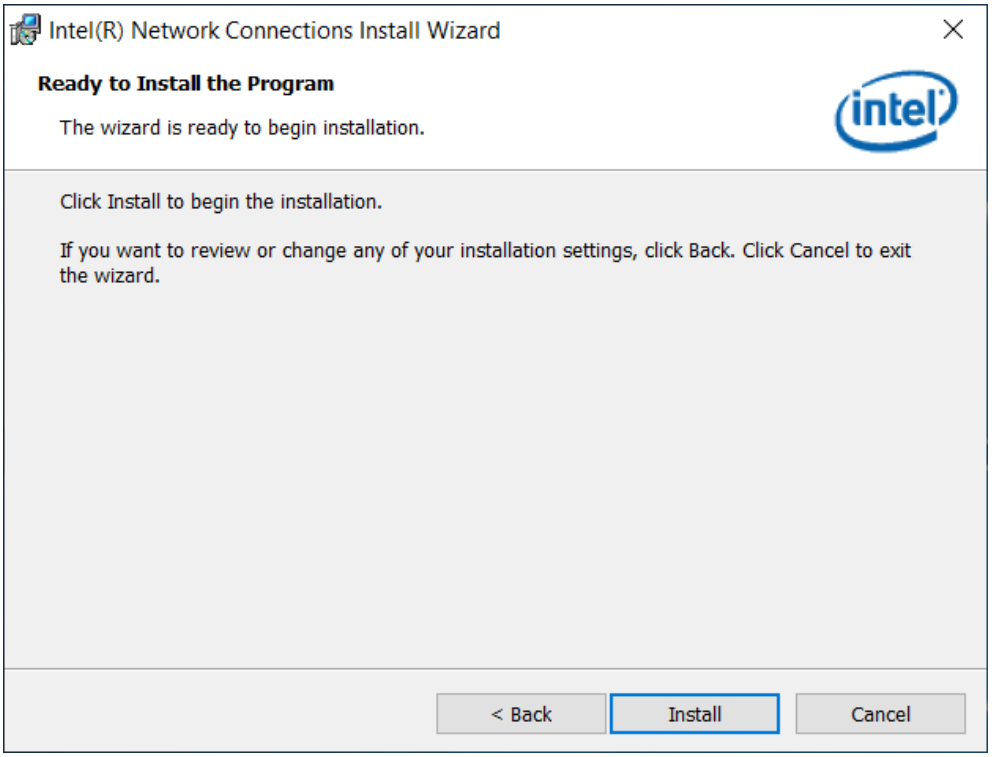
Step 4. Please read the license agreement in detail and click on “Next”.



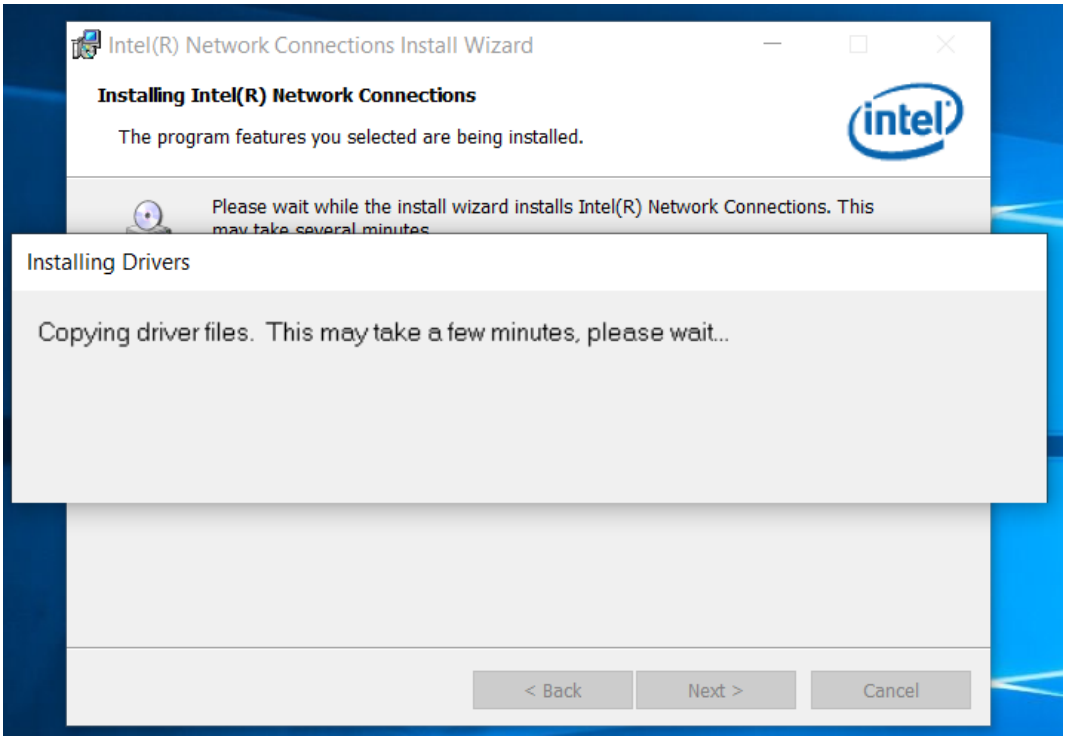
Step 5. Select the desired program features and click "Next" to proceed with the installation.



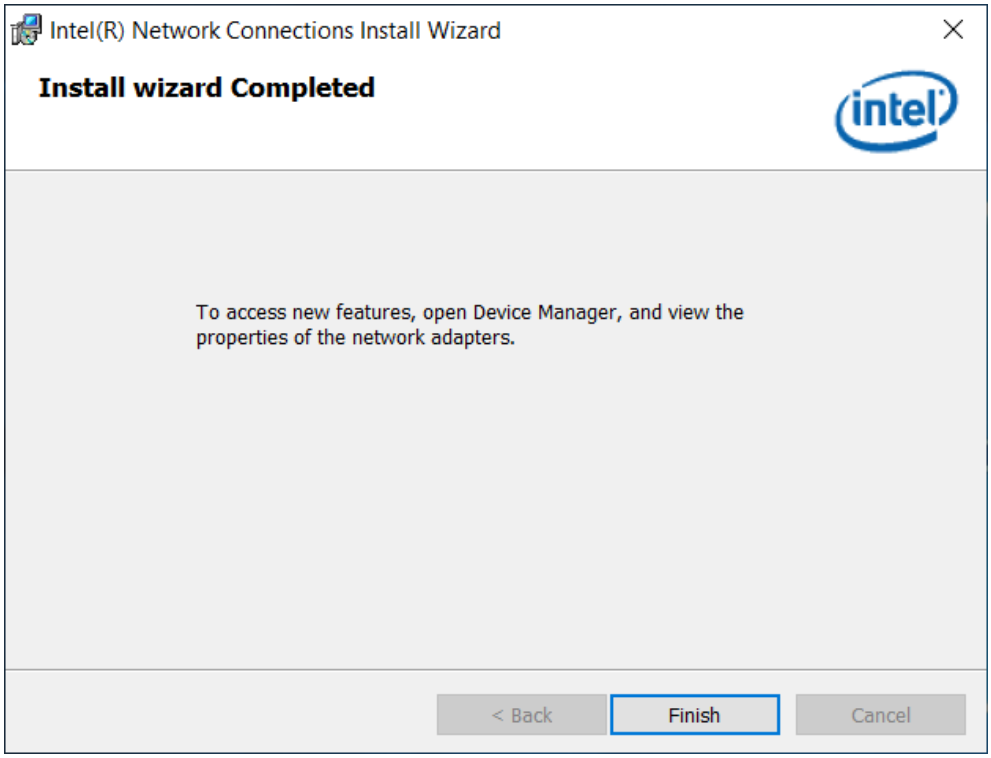
Step 6. Click “Install” to begin the installation of the drivers for Network Connections.



Step 7. No action is required while waiting for the installation program to be completed.

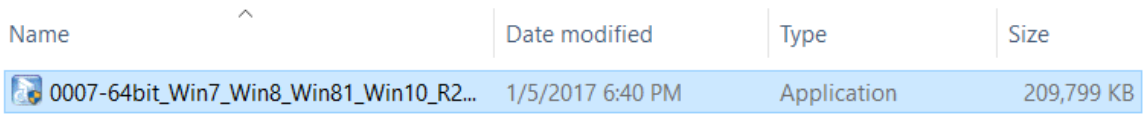


Step 8. The Network Connection driver has been successfully installed, click “Finish” to complete the installation process.

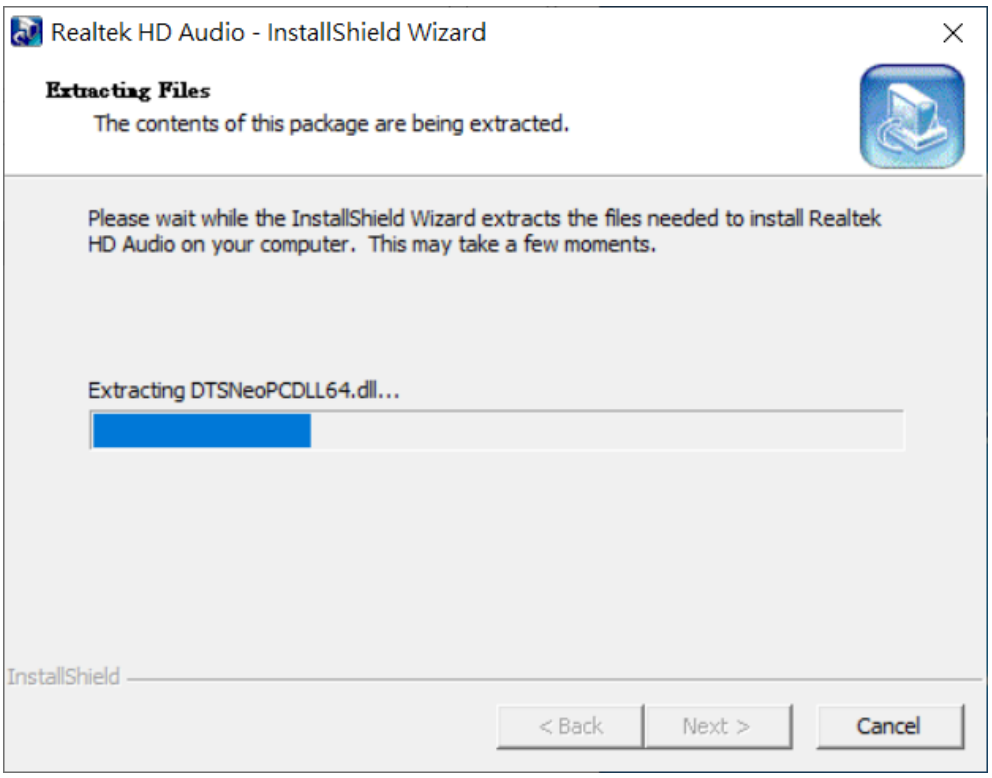


4.5 Install Audio Drivers

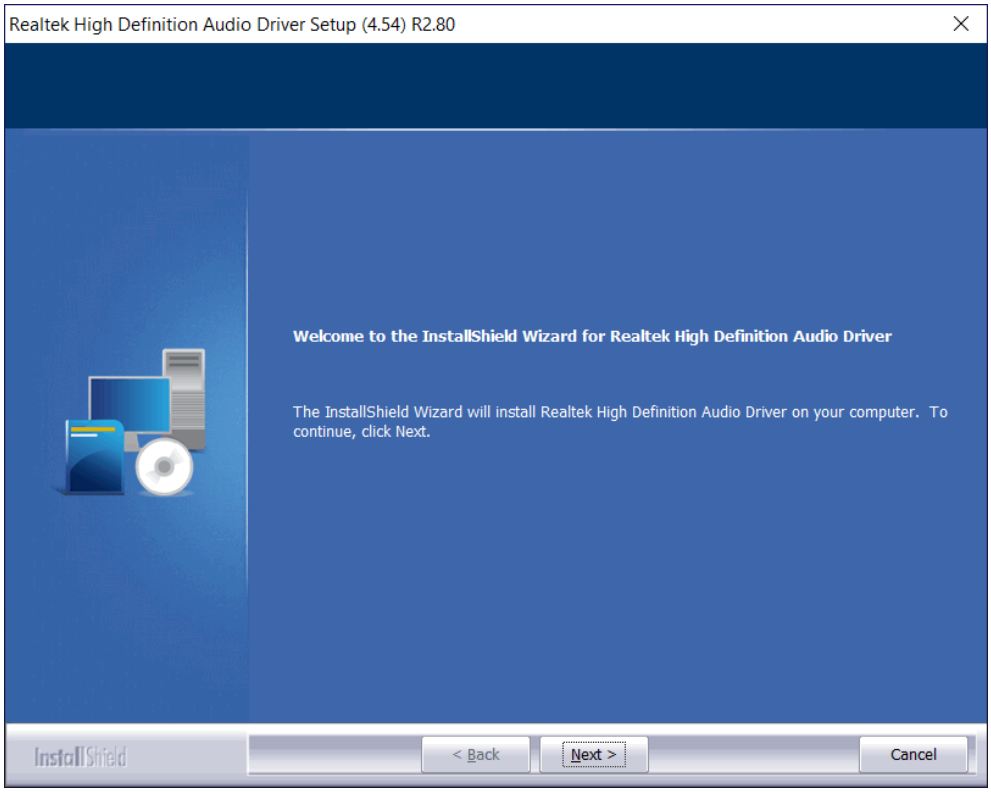
Step 1. Start the installation process by double-clicking on the installation file.



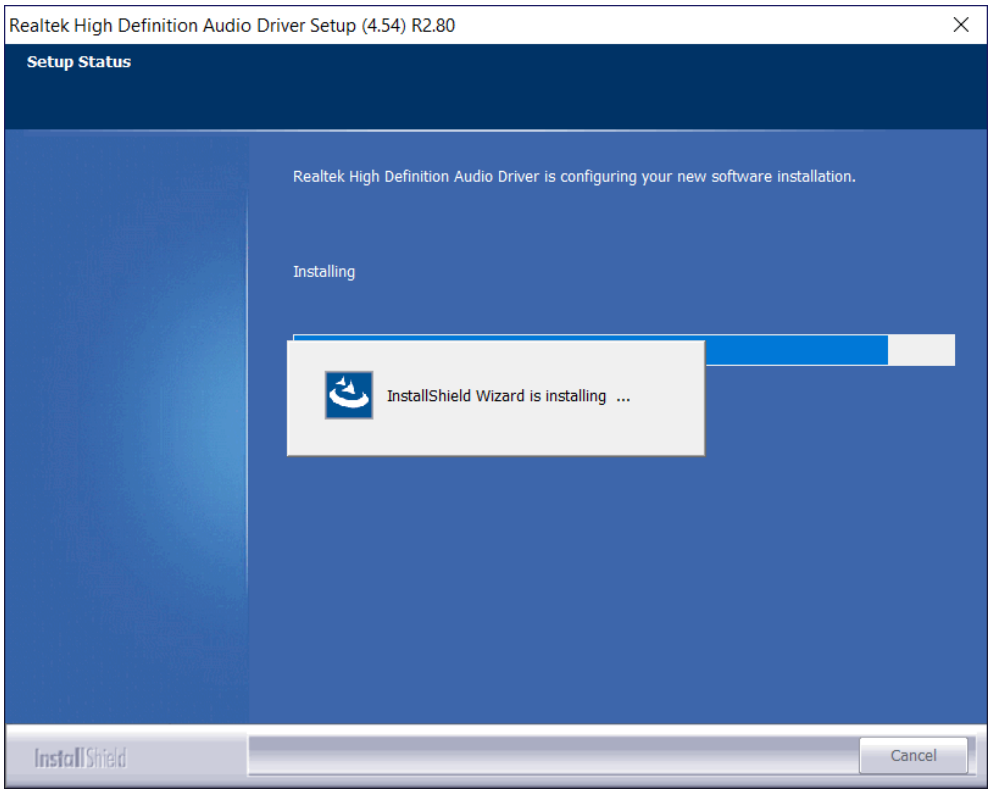
Step 2. No action is required while waiting for the installation file to be extracted.



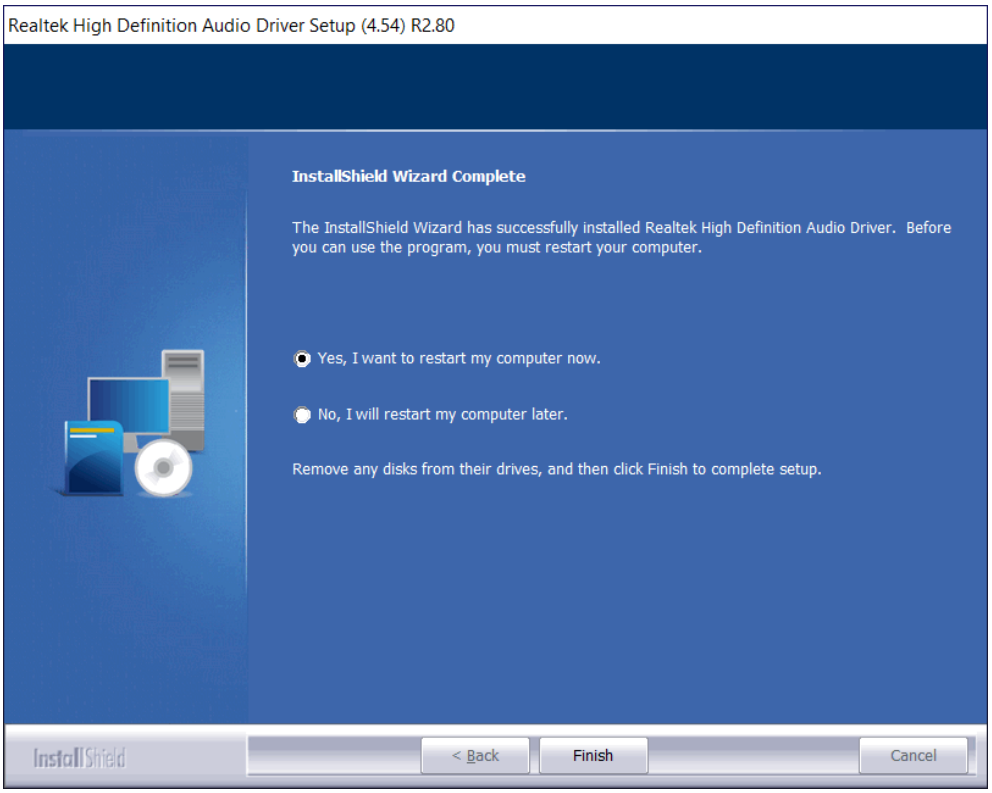
Step 3. Click “Next” to start installing the Audio Driver.



Step 4. No action is required while waiting for the installation program to be completed



Step 5. The Audio Driver has been successfully installed. Choose whether to reboot the computer and click “Finish” to complete the setup program.



Appendix A PPC Touch Screen Usage and Calibration

Table of Contents

A.1 Using the Touch Screen A-2

A.2 Touchscreen Calibration A-2

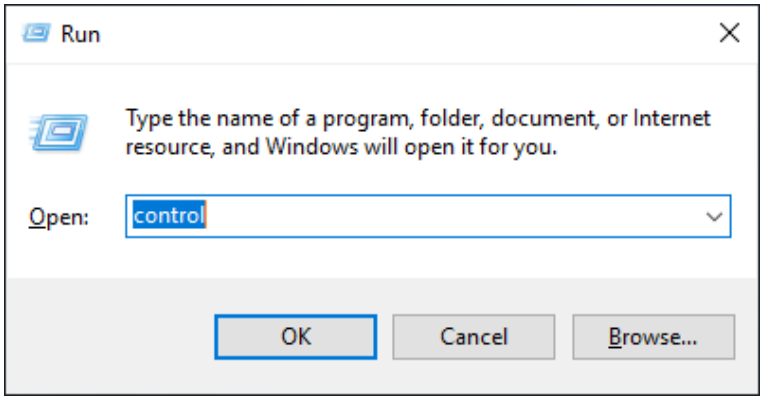
A.1 Using the Touch Screen

Here are the gestures for using a touchscreen:

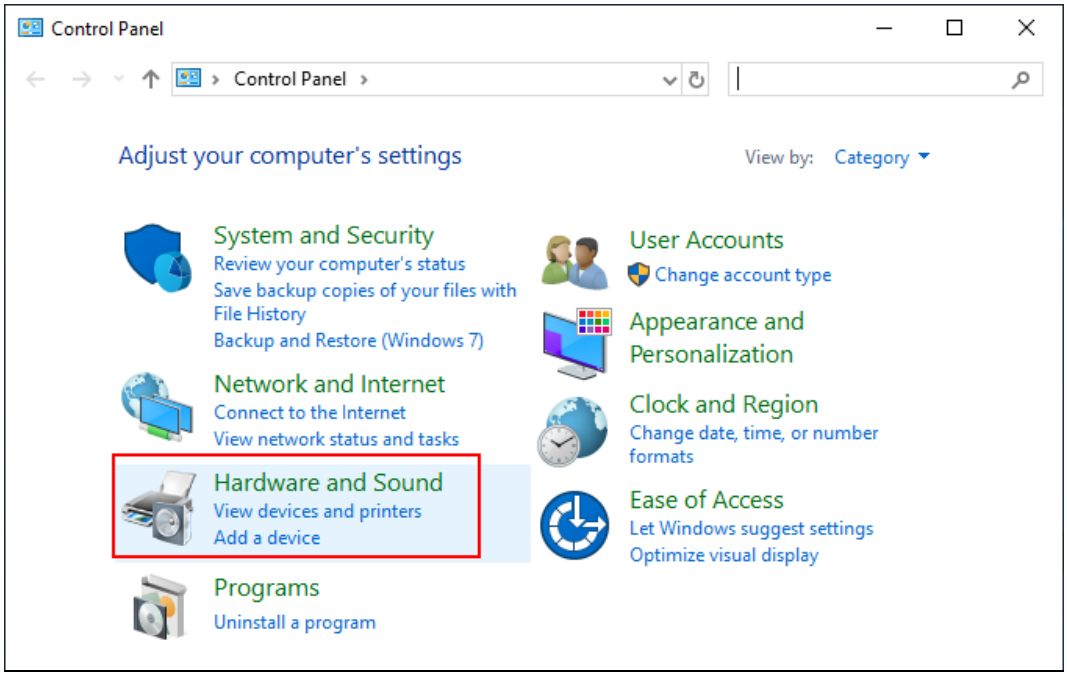
- Left-click the mouse: Tap the touchscreen once.
- Double left-click the mouse: Tap the touchscreen once.
- Right-click the mouse: touch the screen and wait for one second.

A.2 Touchscreen Calibration

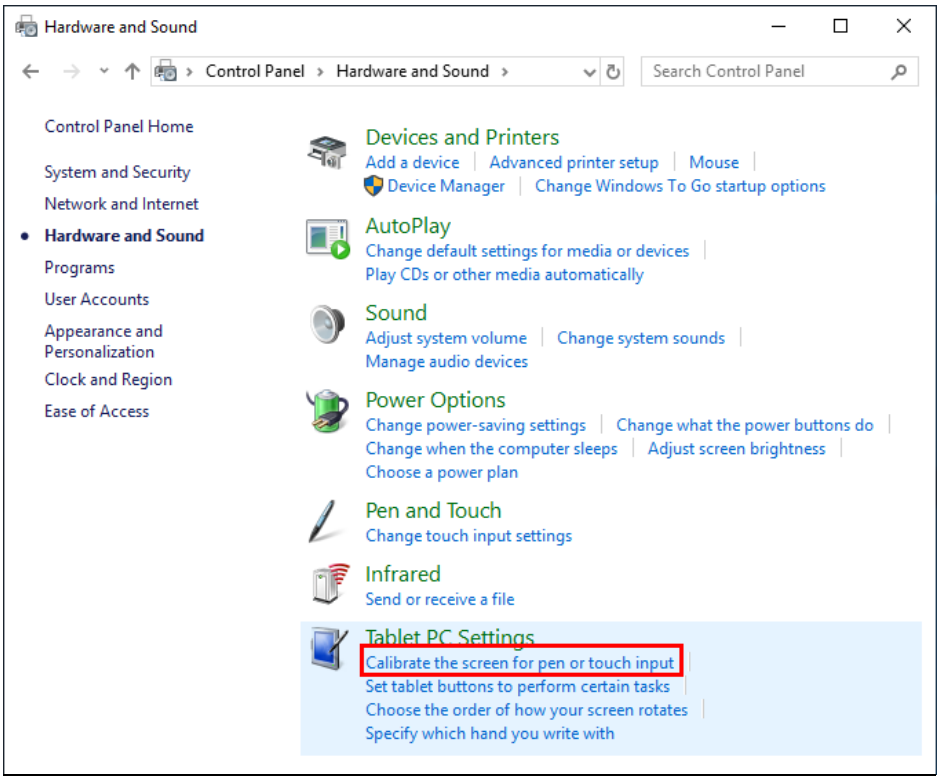
Step 1. Press the Windows key and the "R" key on the keyboard, then type "control" to access the Control Panel.



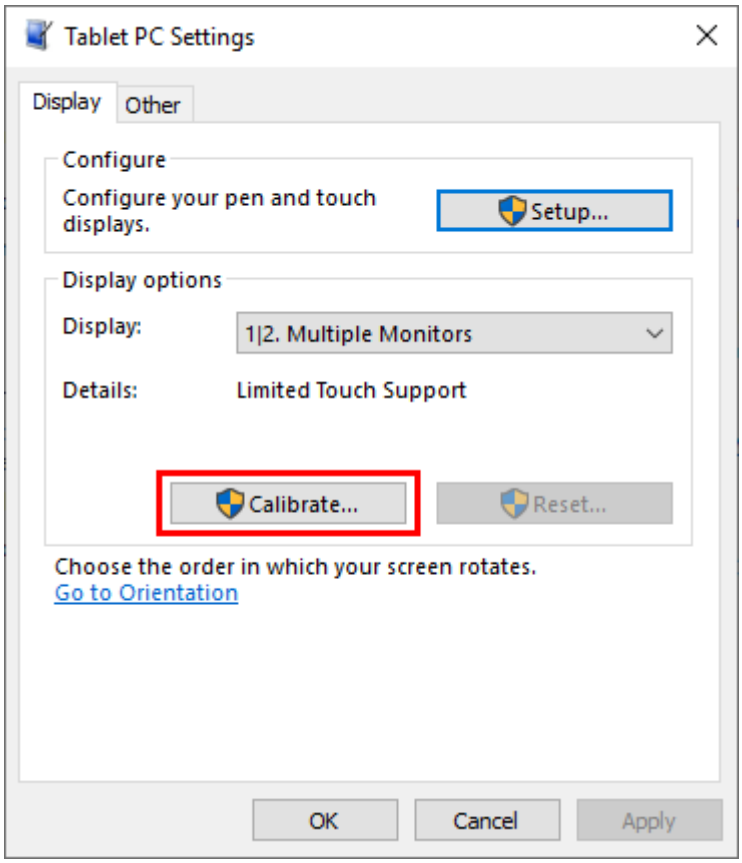
Step 2. Click “Hardware and Sound”.



Step 3. Click “Calibrate the screen for pen or touch input”.



Step 4. Click “Calibrate”.



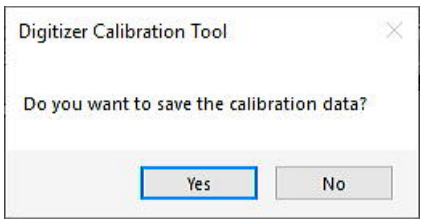
Step 5. Initial calibration involves a 16-point calibration (as shown in the upper image), while calibration with existing data involves a 4-point calibration (as shown in the lower image).





A

Step 6. Click "Yes" to finish the touchscreen calibration process.



B

Appendix B Common Windows Functions Setting

Table of Contents

B.1 Open On Screen Keyboard 2

B.2 Disable the Display Automatic Shutdown Feature..... 4

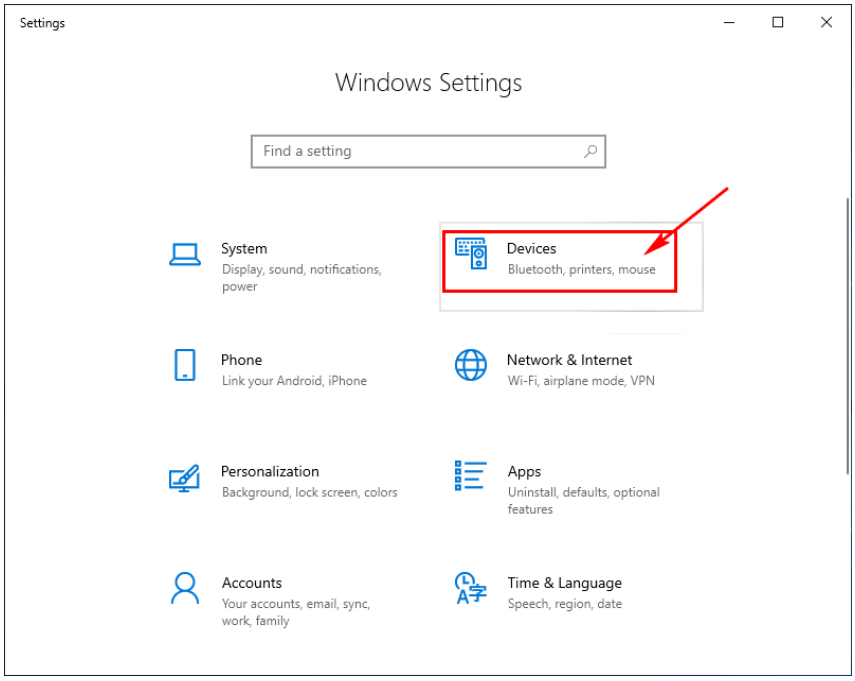
B.3 Disable the System Scheduled Sleep Function. 6

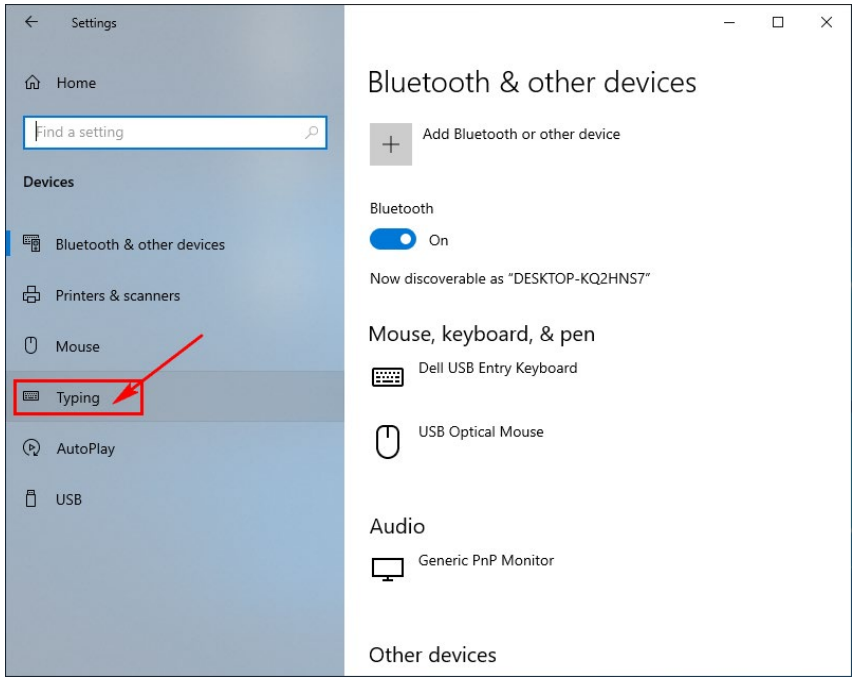
B.1 Open On Screen Keyboard

Enabling this function allows users to access the on-screen keyboard when an external physical keyboard is not connected to the PPC, but text input is required.

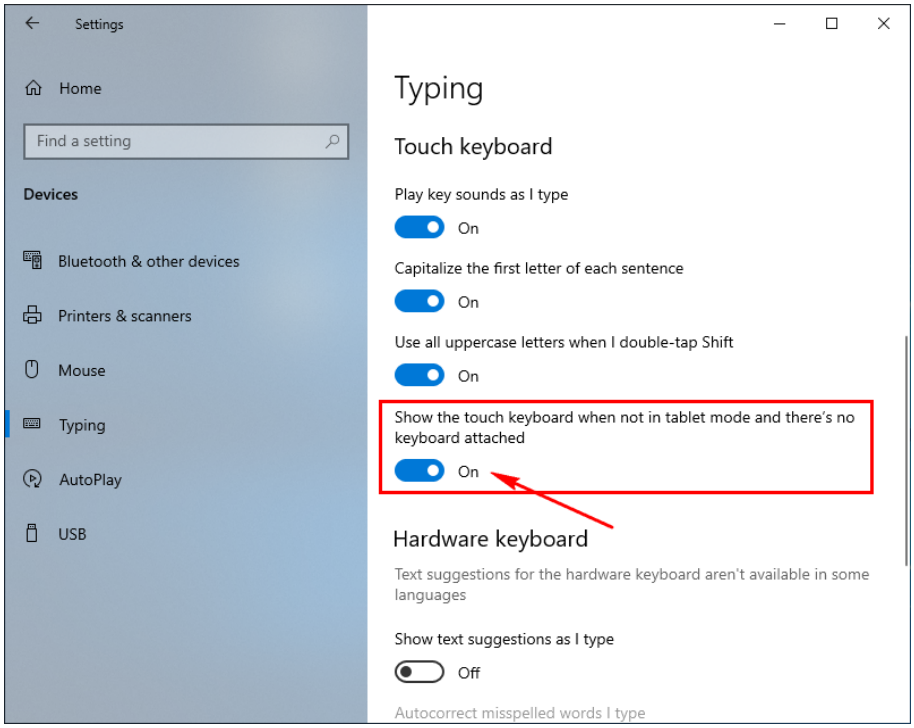
Step 1. Click on "Start" \ and then "Settings"

Step 2. Click on “Devices” and then “Typing”.





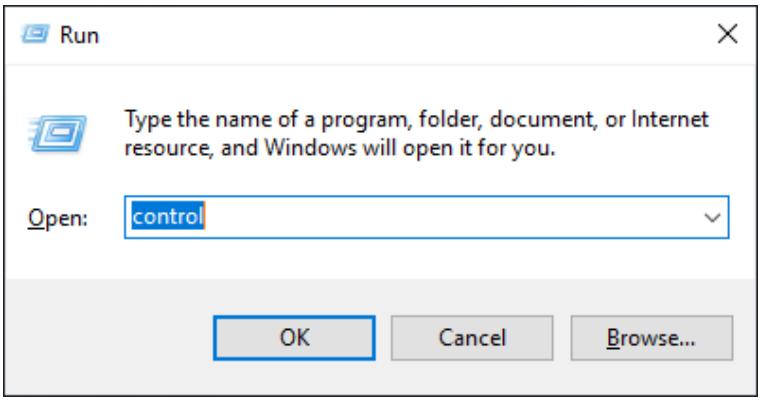
Step 3. Enable the feature “Show the touch keyboard when not in tablet mode and there’s no keyboard attached”.



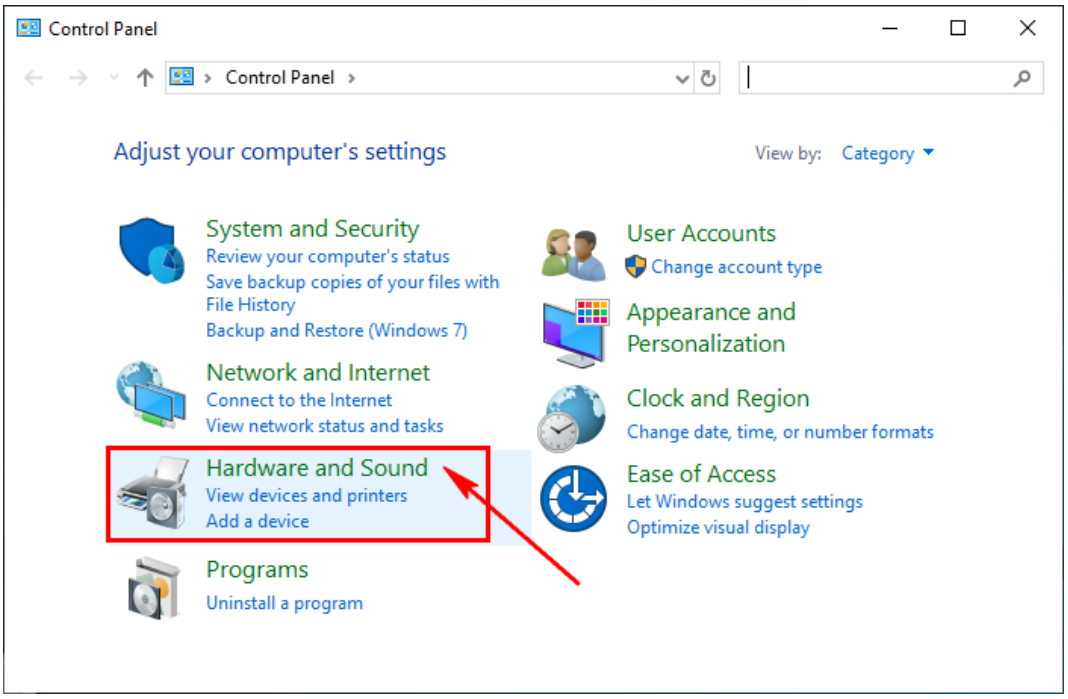
B.2 Disable the Display Automatic Shutdown Feature

If the PPC display turns off after an extended period of inactivity, press the power button to turn it back on.

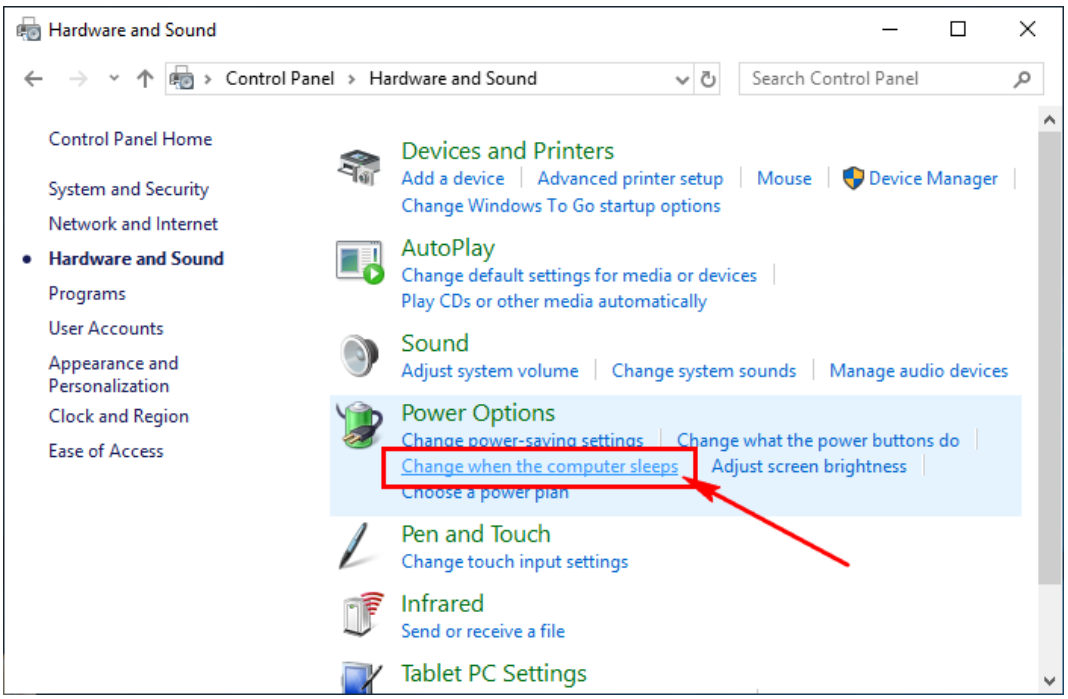
Step 1. Press the Windows key + R on the keyboard, type "control," and press Enter to access the Control Panel.



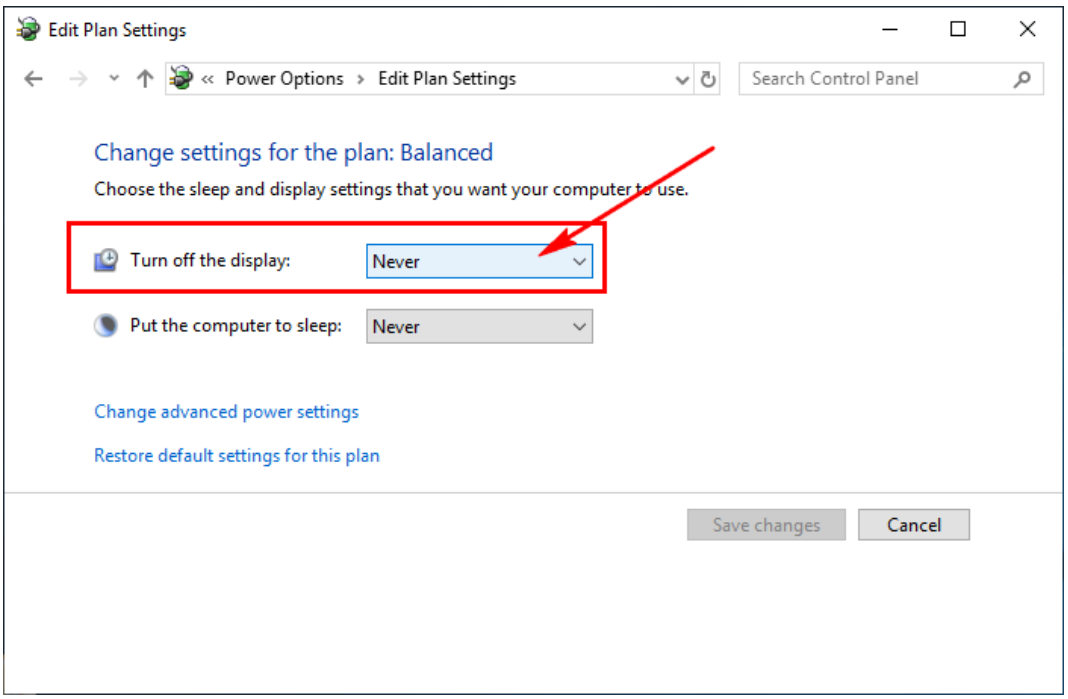
Step 2. Click “Hardware and Sound”.



Step 3. Click “Change when the computer sleeps.”



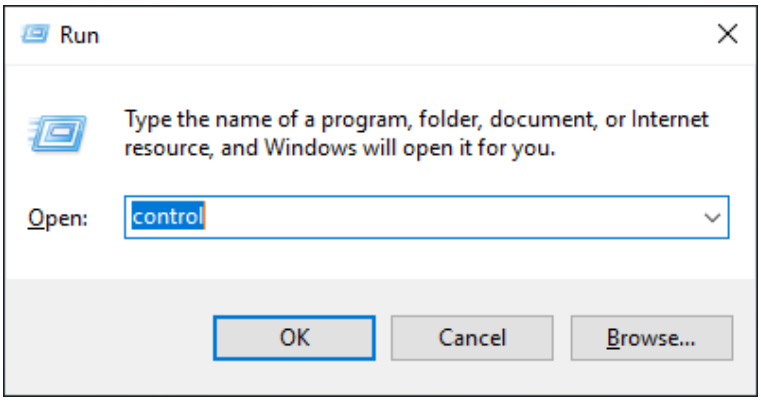
Step 4. Set the selection for Turn off the display to "Never," and click on "Save Changes."



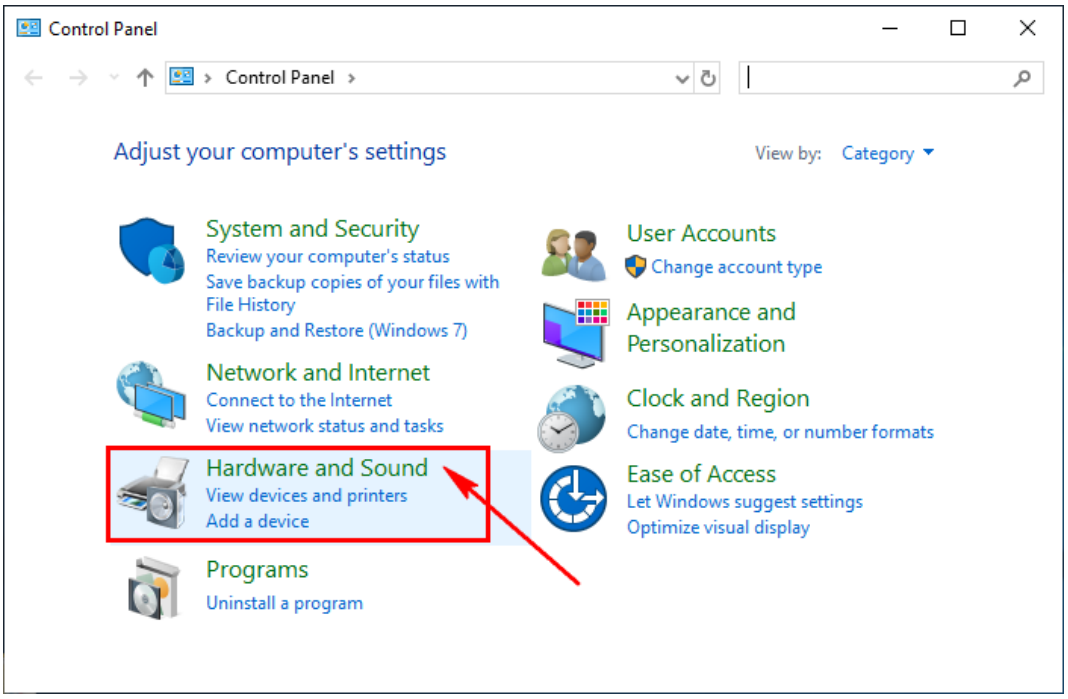
B.3 Disable the System Scheduled Sleep Function.

If the PPC enters sleep mode after an extended period of inactivity, press the power button to wake it up.

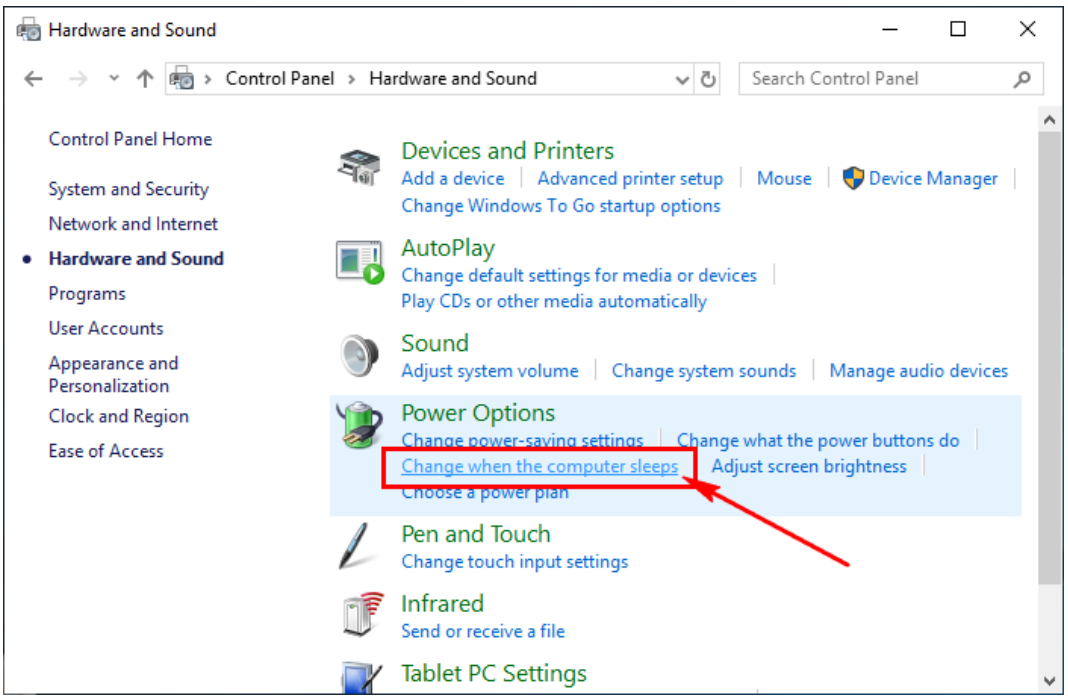
Step 1. Press the Windows key + R on the keyboard, type “control”, and press Enter to access the Control Panel.



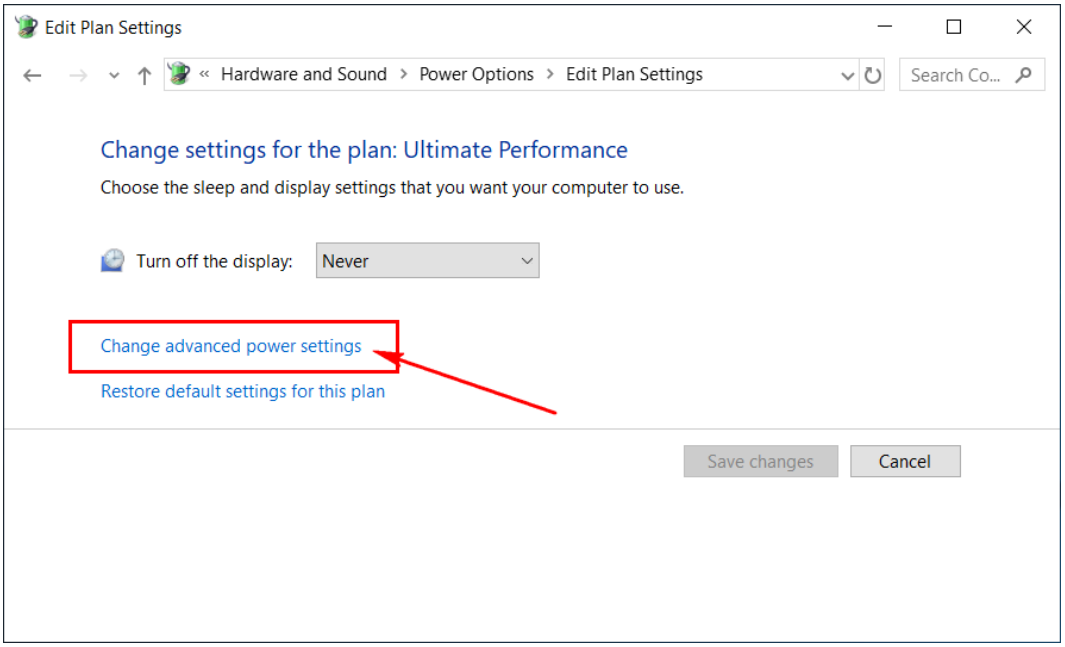
Step 2. Click “Hardware and Sound”.



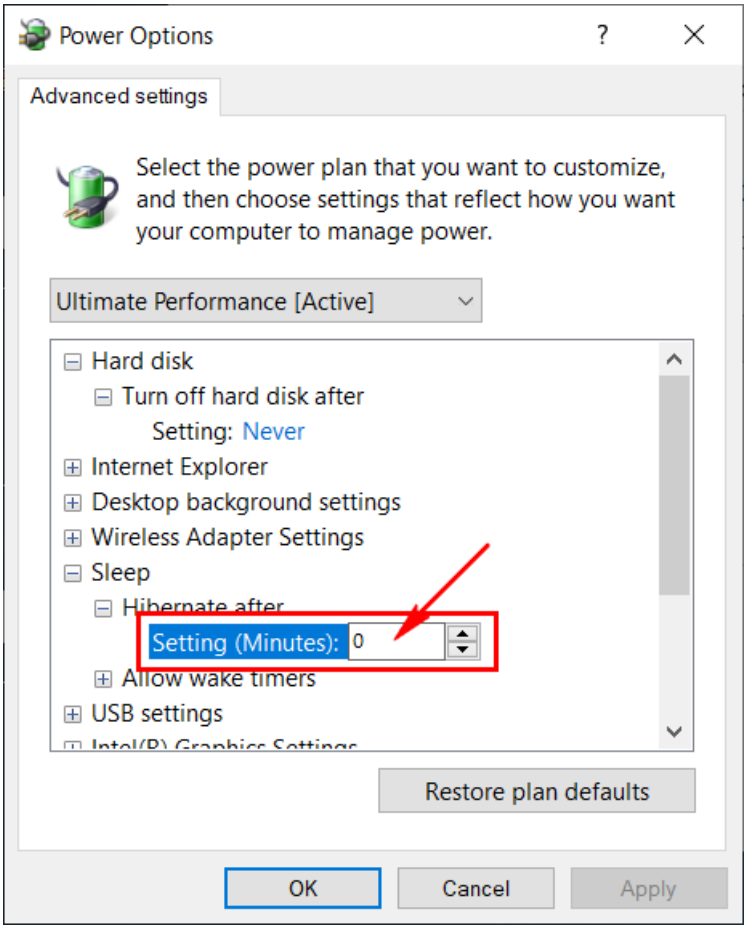
Step 3. Click “Change when the computer sleeps.”



Step 4. Click “Change advanced power settings”.



Step 5. Open the menu "Sleep", then click "Hibernate after". Enter “0” in the Setting (Minutes), indicating never to enter sleep. Finally, press "OK" to complete the configuration.



Smarter. Greener. Together.

Industrial Automation Headquarters

Delta Electronics, Inc.
Taoyuan Technology Center
No.18, Xinglong Rd., Taoyuan District,
Taoyuan City 330477, Taiwan
TEL: +886-3-362-6301 / FAX: +886-3-371-6301

Asia

Delta Electronics (Shanghai) Co., Ltd.
No.182 Minyu Rd., Pudong Shanghai, P.R.C.
Post code : 201209
TEL: +86-21-6872-3988 / FAX: +86-21-6872-3996
Customer Service: 400-820-9595

Delta Electronics (Japan), Inc.
Industrial Automation Sales Department
2-1-14 Shibadaimon, Minato-ku
Tokyo, Japan 105-0012
TEL: +81-3-5733-1155 / FAX: +81-3-5733-1255

Delta Electronics (Korea), Inc.
1511, 219, Gasan Digital 1-Ro., Geumcheon-gu,
Seoul, 08501 South Korea
TEL: +82-2-515-5305 / FAX: +82-2-515-5302

Delta Energy Systems (Singapore) Pte Ltd.
4 Kaki Bukit Avenue 1, #05-04, Singapore 417939
TEL: +65-6747-5155 / FAX: +65-6744-9228

Delta Electronics (India) Pvt. Ltd.
Plot No.43, Sector 35, HSIIDC Gurgaon,
PIN 122001, Haryana, India
TEL: +91-124-4874900 / FAX: +91-124-4874945

Delta Electronics (Thailand) PCL.
909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z),
Pattana 1 Rd., T.Phraksa, A.Muang,
Samutprakarn 10280, Thailand
TEL: +66-2709-2800 / FAX: +66-2709-2827

Delta Electronics (Australia) Pty Ltd.
Unit 2, Building A, 18-24 Ricketts Road,
Mount Waverley, Victoria 3149 Australia
Mail: IA.au@deltaww.com
TEL: +61-1300-335-823 / +61-3-9543-3720

Americas

Delta Electronics (Americas) Ltd.
5101 Davis Drive, Research Triangle Park, NC 27709, U.S.A.
TEL: +1-919-767-3813 / FAX: +1-919-767-3969

Delta Electronics Brazil Ltd.
Estrada Velha Rio-São Paulo, 5300 Eugênio de
Melo - São José dos Campos CEP: 12247-004 - SP - Brazil
TEL: +55-12-3932-2300 / FAX: +55-12-3932-237

Delta Electronics International Mexico S.A. de C.V.
Gustavo Baz No. 309 Edificio E PB 103
Colonia La Loma, CP 54060
Tlalnepantla, Estado de México
TEL: +52-55-3603-9200

EMEA

Delta Electronics (Netherlands) B.V.
Sales: Sales.IA.EMEA@deltaww.com
Marketing: Marketing.IA.EMEA@deltaww.com
Technical Support: iatechnicalsupport@deltaww.com
Customer Support: Customer-Support@deltaww.com
Service: Service.IA.emea@deltaww.com
TEL: +31(0)40 800 3900

Delta Electronics (Netherlands) B.V.
Automotive Campus 260, 5708 JZ Helmond, The Netherlands
Mail: Sales.IA.Benelux@deltaww.com
TEL: +31(0)40 800 3900

Delta Electronics (Netherlands) B.V.
Coesterweg 45,D-59494 Soest,Germany
Mail: Sales.IA.DACH@deltaww.com
TEL: +49 2921 987 238

Delta Electronics (France) S.A.
ZI du bois Challand 2,15 rue des Pyrénées,
Lisses, 91090 Evry Cedex, France
Mail: Sales.IA.FR@deltaww.com
TEL: +33(0)1 69 77 82 60

Delta Electronics Solutions (Spain) S.L.U
Ctra. De Villaverde a Vallecas, 265 1º Dcha Ed.
Hormigueras – P.I. de Vallecas 28031 Madrid
TEL: +34(0)91 223 74 20

Carrer Llacuna 166, 08018 Barcelona, Spain
Mail: Sales.IA.Iberia@deltaww.com

Delta Electronics (Italy) S.r.l.
Via Meda 2–22060 Novedrate(CO)
Piazza Grazioli 18 00186 Roma Italy
Mail: Sales.IA.Italy@deltaww.com
TEL: +39 039 8900365

Delta Greentech Elektronik San. Ltd. Sti. (Turkey)
Şerifali Mah. Hendem Cad. Kule Sok. No:16-A
34775 Ümraniye – İstanbul
Mail: Sales.IA.Turkey@deltaww.com
TEL: + 90 216 499 9910

Eltek Dubai (Eltek MEA DMCC)
OFFICE 2504, 25th Floor, Saba Tower 1,
Jumeirah Lakes Towers, Dubai, UAE
Mail: Sales.IA.MEA@deltaww.com
TEL: +971(0)4 2690148

*We reserve the right to change the information in this manual without prior notice.

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