PE200U Series

Desktop PC

User Manual

HIGH-DEFINITION MULTIMEDIA INTERFACE

E17346
Revised Edition V3
November 2020

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About this manual

This manual provides information about the hardware and software features of your Edge Computer, organized through the following chapters:

Chapter 1: Getting to know your Edge Computer

This chapter details the hardware components of your Edge Computer.

Chapter 2: Using your Edge Computer

This chapter provides you with information on using your Edge Computer.

Chapter 3: Upgrading your Edge Computer

This chapter provides you with information on how to upgrade the memory modules, wireless modules, and hard disk drive / solid state drive of your Edge Computer.

Chapter 4: Using the software

This chapter provides you with information on how to install the ASUS IEC Vision software and also provides a brief summary of the software layout.

Appendix

This section includes notices and safety statements your Edge Computer.

Conventions used in this manual

To highlight key information in this manual, some text are presented as follows:

IMPORTANT! This message contains vital information that must be followed to complete a task.

NOTE: This message contains additional information and tips that can help complete tasks.

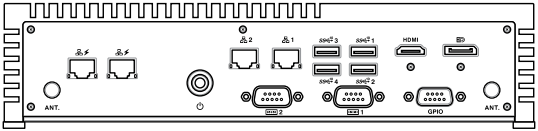
WARNING! This message contains important information that must be followed to keep you safe while performing certain tasks and prevent damage to your Edge Computer's data and components.

Typography

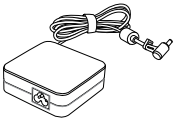
Bold text	Indicates a menu or an item to select.
Italic	This indicates sections that you can refer to in this manual.

Package contents

Your Edge Computer package contains the following items:

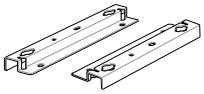


PE200U Series

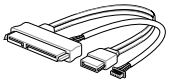


AC power adapter*

Power cord*



Wall mount kit



SATA and power cable

NOTE:

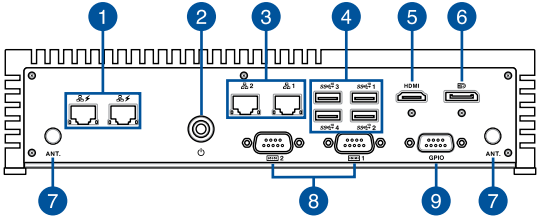
- *The bundled power adapter may vary by model and territories.
- Some bundled accessories may vary with different models. For details on these accessories, refer to their respective user manuals.
- The device illustration is for reference only. Actual product specifications may vary with models.
- If the device or its components fail or malfunction during normal and proper use within the warranty period, bring the warranty card to the ASUS Service Center for replacement of the defective components.

1

Getting to know your Edge Computer

1.1 Features

1.1.1 Front view



1 **LAN port with PoE (on selected models)**

The 8-pin RJ-45 LAN port supports a standard Ethernet cable for connection to a local network, and supports Power over Ethernet (PoE).

2 **Power button**

The power button allows you to turn the Edge Computer on or off. You can use the power button to put your Edge Computer to sleep mode or press it for four (4) seconds to force shutdown your Edge Computer.

3 **LAN port**

The 8-pin RJ-45 LAN port supports a standard Ethernet cable for connection to a local network.

4 **USB 3.2 Gen 2 port**

The USB 3.2 Gen 2 (Universal Serial Bus) port provides a transfer rate up to 10 Gbit/s.

5 HDMI

HDMI port

The HDMI (High Definition Multimedia Interface) port supports a Full-HD device such as an LCD TV or monitor to allow viewing on a larger external display.

6

Dual-mode DisplayPort

This port allows you to connect your Edge Computer to an external display, and supports DVI or HDMI adpaters.

7 ANT.

Antenna hole

The antenna hole allows you to connect a wireless antenna to enhance wireless signal reception.

8

Serial (COM) connector

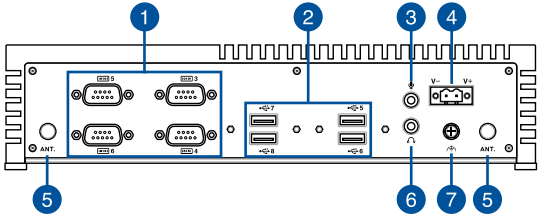
The 9-pin RS232/422/485 serial (COM) connector allows you to connect devices that have serial ports such as bar code scanner, modem, or printers.

9 GPIO

GPIO connector

The 9-pin GPIO (General-purpose Input/Output) connector allows you to program it for input or output use, such as lighting control, door control or alarm control.

1.1.2 Rear view



1 **Serial (COM) connector (on selected models)**

The 9-pin RS-232 serial (COM) connector allows you to connect devices that have serial ports such as bar code scanner, modem, or printers.

2 **USB 2.0 port (on selected models)**

The USB (Universal Serial Bus) port is compatible with USB 2.0 or USB 1.1 devices such as keyboards, pointing devices, flash disk drives, external HDDs, speakers, cameras and printers.

3 **Microphone**

The built-in microphone can be used for video conferencing, voice narrations, or simple audio recording.

4 **Power input**

The supplied terminal block power adapter converts AC power to DC power for use with this jack. Power supplied through this jack supplies power to the Edge Computer.

WARNING! The power adapter may become warm to hot when in use. Do not cover the adapter and keep it away from your body.

5 ANT. **Antenna hole**

The antenna hole allows you to connect a wireless antenna to enhance wireless signal reception.

6 **Headphone jack**

This port allows you to connect amplified speakers or headphones.

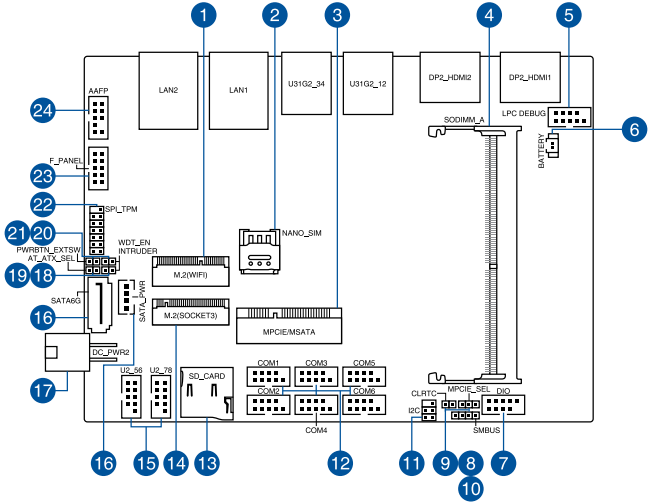
7 **Functional Earth Ground**

The Functional Earth Ground provides you with a grounding point.

1.2 Motherboard Overview

1.2.1 Motherboard layout

The PE200U Series features a motherboard with a 3.5” dimension (146mm x 105mm).



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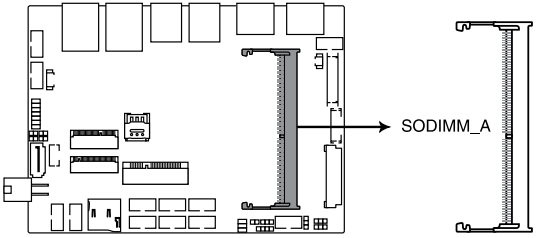
1.2.2 System memory

The motherboard comes with a Small Outline Dual Inline Memory Module (SODIMM) slot designed for DDR4 (Double Data Rate 4) memory modules.

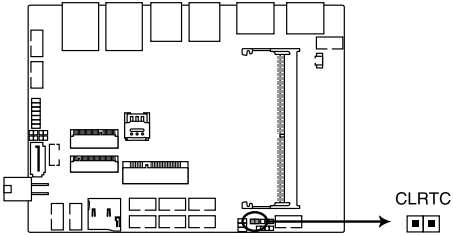


3.5” Dimension Motherboard SODIMM_A

1.2.3 Onboard jumpers

1. Clear RTC RAM jumper

The Clear RTC RAM jumper allows you to clear the Real Time Clock (RTC) RAM in the CMOS, which contains the date, time, system passwords, and system setup parameters.



3.5" Dimension Motherboard Clear CMOS jumper

To erase the RTC RAM:

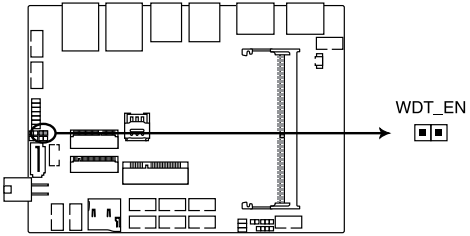
1. Turn OFF the computer and unplug the power cord.
2. Short-circuit pin 1-2 with a metal object or jumper cap for about 5-10 seconds.
3. Plug the power cord and turn ON the computer.
4. Hold down the <Del> key during the boot process and enter BIOS setup to re-enter data.

WARNING! DO NOT remove the jumper cap from its default position except when clearing the RTC RAM. Removing the jumper cap will cause system boot failure!

NOTE: If the steps above do not help, remove the onboard button cell battery and move the jumper again to clear the CMOS RTC RAM data. After clearing the CMOS, reinstall the button cell battery.

2. HW WDT Enable jumper

A watchdog timer is an electronic timer that is used to detect and recover from computer malfunctions. The HW WDT (watchdog timer) Enable jumper allows the HW watchdog resets the system automatically even when the system crashes.

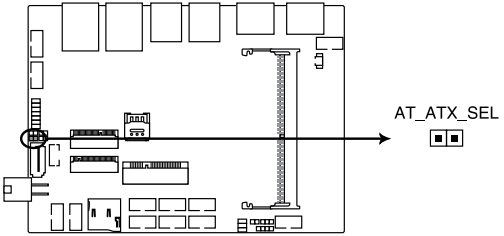


3.5" Dimension Motherboard HW WDT Enable jumper

NOTE: The default setting for this jumper is set to HW WDT enabled with a jumper cap attached.

3. AT/ATX Mode Configuration jumper

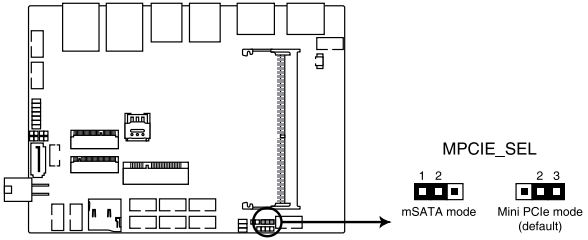
The AT/ATX Mode Configuration jumper allows you to switch between AT or ATX modes. The default setting for this jumper is set to ATX mode with a jumper cap attached, to switch to AT mode, remove the jumper cap.



3.5” Dimension Motherboard AT/ATX Mode Selection jumper

4. Mini PCIe/mSATA configuration jumper

The Mini PCIe/mSATA configuration jumper allows you to select between Mini PCIe mode or mSATA mode. Set to pins 1-2 for mSATA mode, or set to pins 2-3 for Mini PCIe mode.

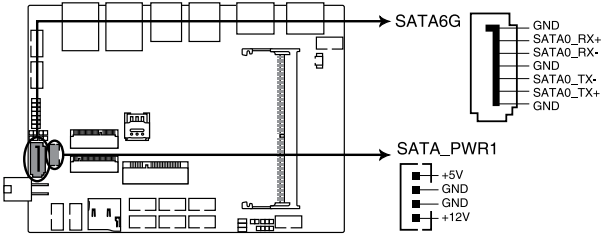


3.5” Dimension Motherboard Mini PCIe/mSATA SEL jumper

1.2.4 Internal connectors

1. SATA 6Gb/s & SATA Power connector

The SATA 6Gb/s and SATA Power connectors allow you to connect SATA devices such as optical disc drives and hard disk drives via a SATA cable and power cable.



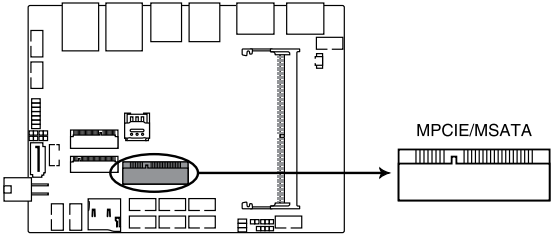
3.5" Dimension Motherboard SATA_PWR1 & SATA6G

Connector type	Wafer HD 4P, 2.0mm pitch

NOTE: Ensure to use the bundled cable when connecting a storage device to this connector.

2. Mini PCIe/mSATA slot

The Mini PCIe/mSATA slot allows you to install a Mini PCIe or mSATA peripheral device.



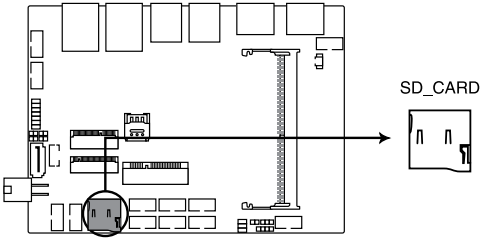
3.5" Dimension Motherboard MPCIE/MSATA

NOTE:

- The Mini PCIe / mSATA peripheral device is purchased separately.
- The mSATA shares the same slot with a full-length Mini PCIe.

3. Micro SD Card slot

The Micro SD Card slot allows you to install a Micro SD card.

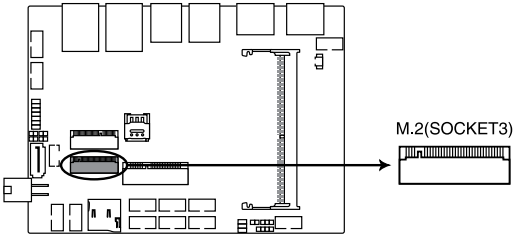


3.5" Dimension Motherboard SD CARD

NOTE: The Micro SD card is purchased separately.

4. M.2 slot

The M.2 slot allows you to install 2242 M.2 devices such as 2242 M.2 SSD modules.



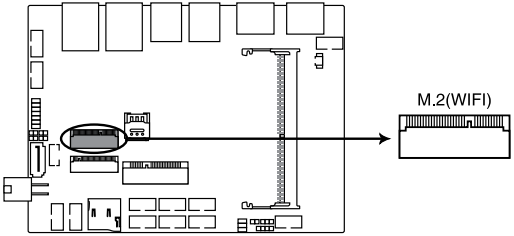
3.5" Dimension Motherboard M.2(SOCKET3)

NOTE:

- The M.2 SSD module is purchased separately.
- This motherboard supports 2242 PCIE SSD devices only.

5. M.2 Wi-Fi slot

The M.2 Wi-Fi slot allows you to install an M.2 Wi-Fi module (E-key, type 2230).

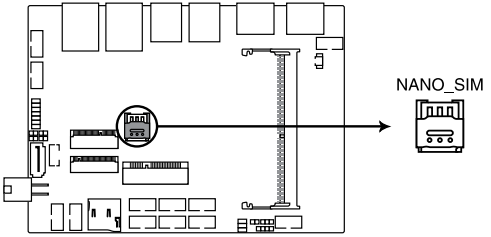


3.5" Dimension Motherboard M.2(WIFI)

NOTE: The M.2 Wi-Fi module is purchased separately.

6. Nano SIM Card slot

The Nano SIM Card slot allows you to install a Nano SIM card.

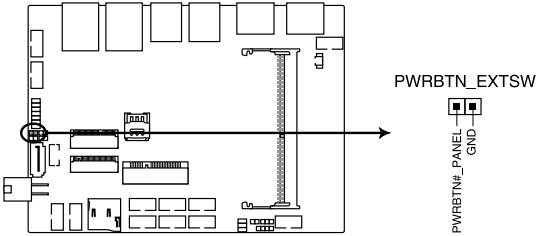


3.5" Dimension Motherboard NANO SIM

NOTE: The Nano SIM card is purchased separately.

7. Power button connector

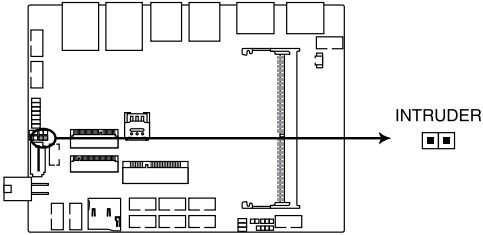
The Power Button connector allows you to connect an external power button.



3.5" Dimension Motherboard Power button connector

8. Chassis Intrusion connector

The Chassis Intrusion connector allows you to connect a intrusion sensor or microswitch for the chassis intrusion detection feature. When you remove any chassis component, the sensor or microswitch triggers and sends a high level signal and records a chassis intrusion event.

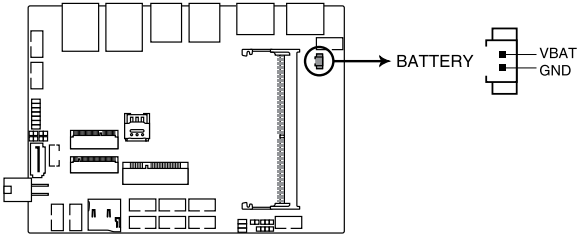


3.5" Dimension Motherboard Chassis Intruder jumper

NOTE: By default, a jumper cap that disables the intrusion detection feature is installed on the connector to prevent accidental triggers.

9. Battery connector

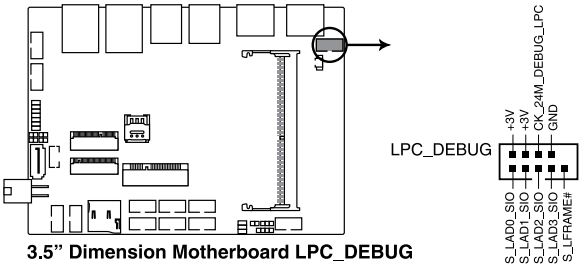
The Battery connector allows you to connect the lithium CMOS battery.



3.5” Dimension Motherboard Battery connector

10. Low Pin Count connector

The Low Pin Count connector allows you to connect a low pin count (LPC) debug card that offers a faster, more efficient motherboard troubleshooting solution. When connected to a debug card, users can view error and debugging codes on the card and get a better idea of initialization and recovery processes.

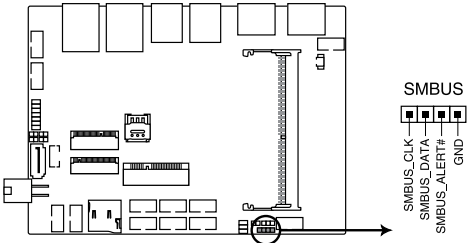


3.5” Dimension Motherboard LPC_DEBUG

Connector type	BOX header 2x5p, K10, 2.0mm pitch

11. System Management Bus connector

The System Management Bus (SMBus) connector allows you to connect SMBus devices. This connector is generally used for communication with the system and power management-related tasks.

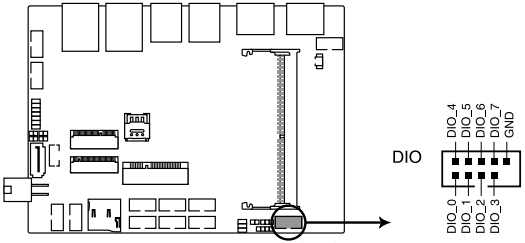


3.5" Dimension Motherboard SMBUS

Connector type	Header 1x4p, 2.0mm pitch

12. GPIO connector

The GPIO connector allows you to connect a general purpose input/ output module which allows you to customize the digital signal input/ output.

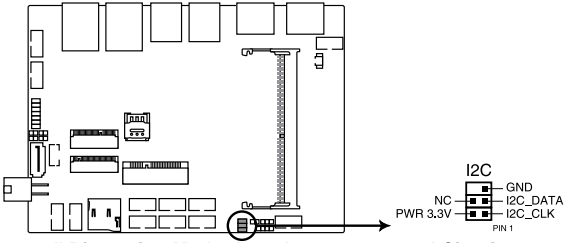


3.5" Dimension Motherboard GPIO connector

Connector type	BOX header 2x5p, K9, 2.0mm pitch

13. I2C connector

The I2C (Inter-Integrated Circuit)connector allows you to connect an I2C compatible IoT security module.

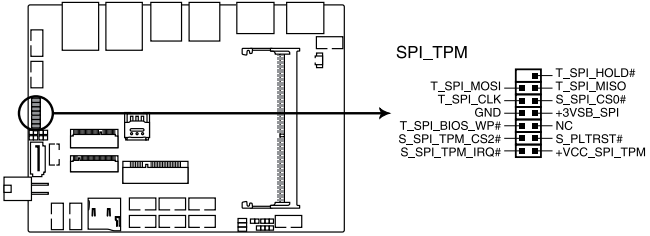


3.5” Dimension Motherboard Inter-Integrated Circuit connector

Connector type	Header 2x3p, K6, 2.0mm pitch

14. SPI TPM connector

The SPI TPM connector supports a Trusted Platform Module (TPM) system, which can securely store keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protects digital identities, and ensures platform integrity.

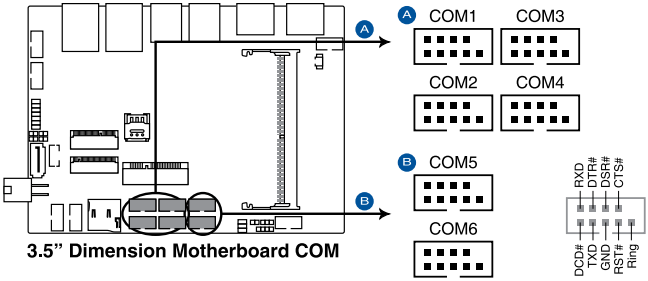


3.5” Dimension Motherboard SPI TPM connector

Connector type	Header 2x7p,K14, 2.0mm pitch

15. Serial Port connector

The Serial (COM) Port connector allows you to connect a serial port module. Connect the serial port module cable to this connector, then install the module to a slot opening on the system chassis.



3.5" Dimension Motherboard COM

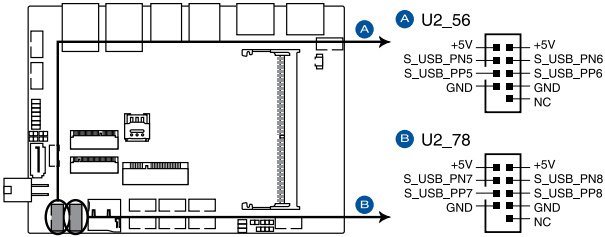
Connector type	BOX header 2x5p, K10, 2.0mm pitch

NOTE:

- The serial port module is purchased separately.
- **COM1** and **COM2** support RS-232/422/485.
- **COM 3**, **COM4**, **COM5**, and **COM6** support RS-232.

16. USB 2.0 connector

The USB 2.0 connector allows you to connect a USB module for additional USB 2.0 ports. The USB 2.0 connector provides data transfer speeds of up to 480 MB/s connection speed.



3.5" Dimension Motherboard USB 2.0 connector

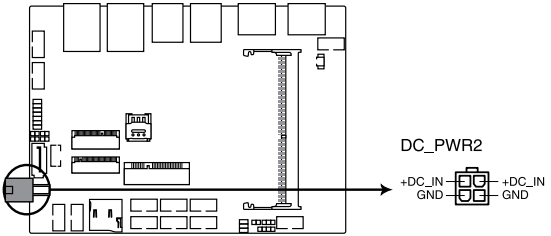
Connector type	BOX header 2x5p, K9, 2.0mm pitch

WARNING! DO NOT connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!

NOTE: The USB 2.0 module is purchased separately.

17. DC-in 4-Pin Power connector

The DC-in 4-pin Power connector is for DC power input. Using a compatible power cable and power board, you may connect a suitable power supply with DC -in jacks.

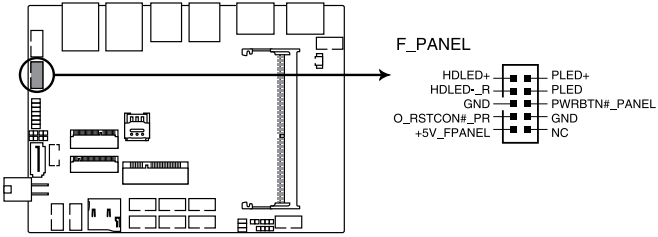


3.5” Dimension Motherboard DC-in 4-pin Power connector

Connector type	POWER CON 4P R/A

18. System Panel connector

The System Panel connector supports several chassis-mounted functions.



3.5" Dimension Motherboard Front Panel connector

Connector type	BOX header 2x5p 2.0mm pitch

- **System Power LED connector (PLED)**
  The 2-pin connector allow you to connect the System Power LED. The System Power LED lights up when the system is connected to a power source, or when you turn on the system power, and blinks when the system is in sleep mode.

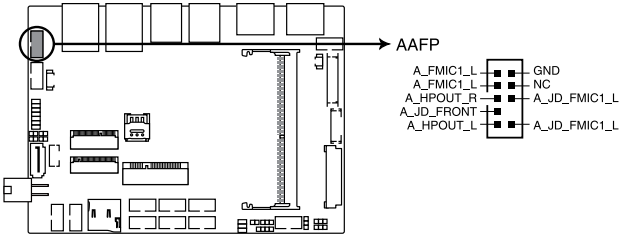
- **Storage Device Activity LED connector (HD_LED)**
  The 2-pin connector allows you to connect the Storage Device Activity LED. The Storage Device Activity LED lights up or blinks when data is read from or written to the storage device or storage device add-on card.

- **Power Button/Soft-off Button connector (PWRSW)**
  The 3-1 pin connector allows you to connect the system power button. Press the power button to power up the system, or put the system into sleep or soft-off mode (depending on the operating system settings).

- **Reset button connector (RESET)**
  The 2-pin connector allows you to connect the chassis-mounted reset button. Press the reset button to reboot the system.

19. Line Out / Mic connector

The Line Out / Mic connector is for a line out /microphone module that supports HD Audio. Connect one end of the line Out / mic module cable to this connector.



3.5" Dimension Motherboard Line_out/Mic connector

Connector type	BOX header 2x5p, K8, 2.0mm pitch

NOTE: We recommend that you connect a high-definition line out / mic module to this connector to avail of the motherboard's high-definition audio capability.

2

Using your Edge Computer

2.1 Getting started

2.1.1 Connect the AC power adapter to your Edge Computer

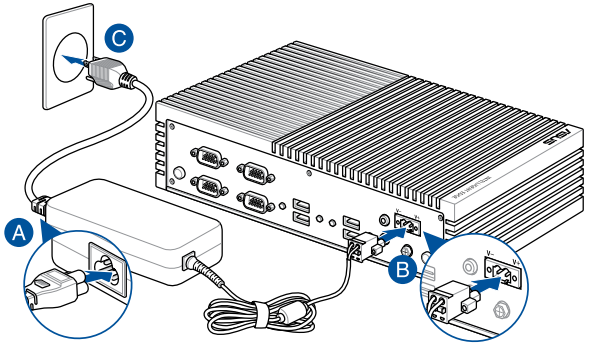
To connect the AC power adapter to your Edge Computer:

A. Connect the power cord to the AC power adapter.

B. Connect the DC power connector into your Edge Computer's power (DC) input.

C. Plug the AC power adapter into a 100V~240V power source.

NOTE: The power adapter may vary in appearance, depending on models and your region.



IMPORTANT!

- We strongly recommend that you use only the AC power adapter and cable that came with your Edge Computer.
- We strongly recommend that you use a grounded wall socket while using your Edge Computer.
- The socket outlet must be easily accessible and near your Edge Computer.
- To disconnect your Edge Computer from its main power supply, unplug your Edge Computer from the power socket.

NOTE:

The power adapter may vary between models and territories, please refer to the following for more information on the different adapters:

65W Power adapter

- Input voltage: 100-240 Vac
- Input frequency: 50-60 Hz
- Rating output current: 5.417A / 3.42A (65.0 W)
- Rating output voltage: 12.0V / 19.0V

120W Power adapter

- Input voltage: 100-240 Vac
- Input frequency: 50-60 Hz
- Rating output current: 10.0A / 6.32A max. (120.0 W)
- Rating output voltage: 12.0V / 19.0V

2.1.2 Connect a display panel to your Edge Computer

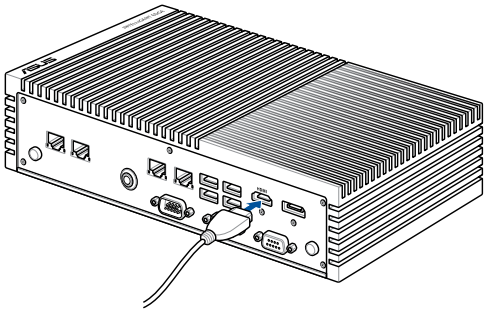
You can connect a display panel or projector to your Edge Computer that has the following connectors:

- HDMI connector
- DisplayPort

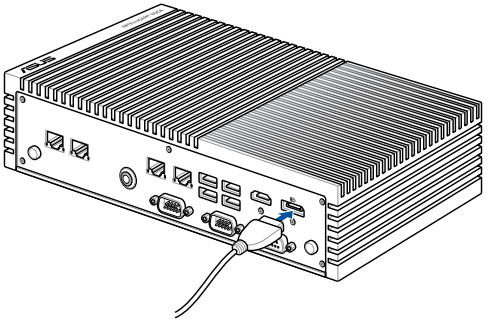
To connect a display panel to your Edge Computer:

Connect one end of an HDMI, or a DisplayPort cable to an external display, and the other end of the cable to your Edge Computer's HDMI port, or DisplayPort.

Connect display via HDMI port



Connect display via DisplayPort



2.1.3 Connect the USB cable from keyboard or mouse

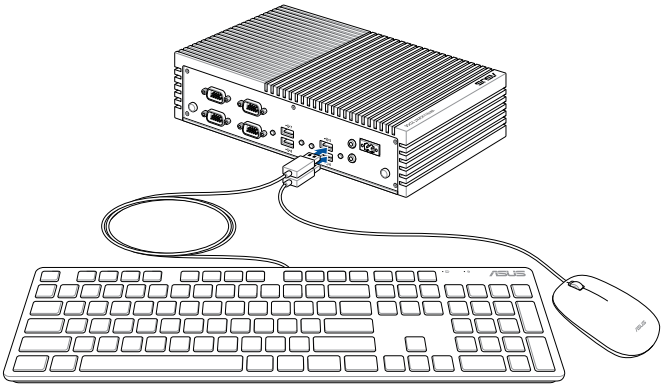
You can connect generally any USB keyboard and mouse to your Edge Computer. You can also connect a USB dongle for a wireless keyboard and mouse set.

To connect a keyboard and mouse to your Edge Computer:

Connect the USB cable from your keyboard and mouse to any of the USB ports of your Edge Computer.

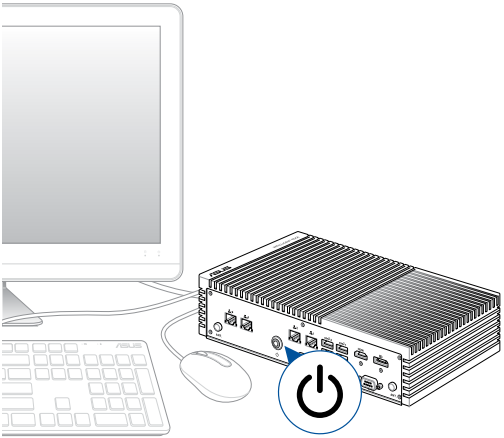
NOTE:

- The keyboard varies with country or region.
- The keyboard and mouse are purchased separately.



2.1.4 Turn on your Edge Computer

Press the power button to turn on your Edge Computer.



2.2 Turning your Edge Computer off

If your Edge Computer is unresponsive, press and hold the power button for at least four (4) seconds until your Edge Computer turns off.

2.3 Putting your Edge Computer to sleep

To put your Edge Computer on Sleep mode, press the Power button once.

2.4 Entering the BIOS Setup

BIOS (Basic Input and Output System) stores system hardware settings that are needed for system startup in the Edge Computer.

In normal circumstances, the default BIOS settings apply to most conditions to ensure optimal performance. Do not change the default BIOS settings except in the following circumstances:

- An error message appears on the screen during the system bootup and requests you to run the BIOS Setup.
- You have installed a new system component that requires further BIOS settings or update.

WARNING! Inappropriate BIOS settings may result to instability or boot failure. We strongly recommend that you change the BIOS settings only with the help of a trained service personnel.

2.4.1 Load default BIOS settings

To load the default values for each of the parameters in your BIOS:

- Enter the BIOS by pressing <F2> or <DEL> on the POST screen.

NOTE: POST (Power-On Self Test) is a series of software controlled diagnostic tests that run when you turn on your Edge Computer.

- Navigate to the **Exit** menu.
- Select the **Load Optimized Defaults** option, or you may press <F5>.
- Select **OK** to load the default BIOS values.

3

Upgrading your Edge Computer

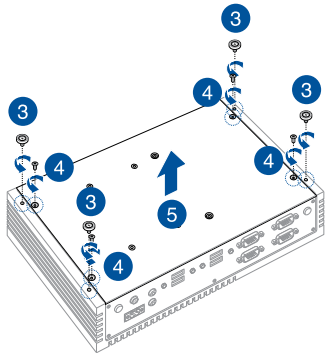
IMPORTANT!

- Ensure that your hands are dry before proceeding with the rest of the installation process. Before installing any of the features in this guide, use a grounded wrist strap or touch a safely grounded object or metal object to avoid damaging them due to static electricity.
- Turn off the power of your Edge Computer, and allow it to cool for at least 10 minutes before performing any installation/ uninstallation process.

NOTE: The illustrations in this section are for reference only. The slots may vary depending on model.

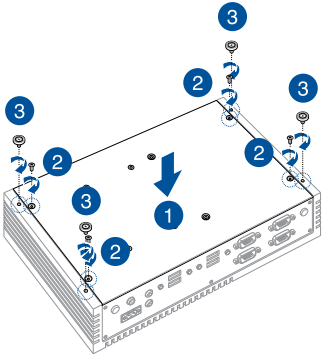
3.1 Removing the bottom cover

1. Turn off your Edge Computer then disconnect all cables and peripherals.
2. Place the Edge Computer on a flat stable surface, with its top side facing down.
3. Remove the four (4) rubber feet screws from the bottom cover.
4. Remove the four (4) screws securing the bottom cover.
5. After removing the screws, remove the bottom cover and place it aside.



3.2 Replacing the bottom cover

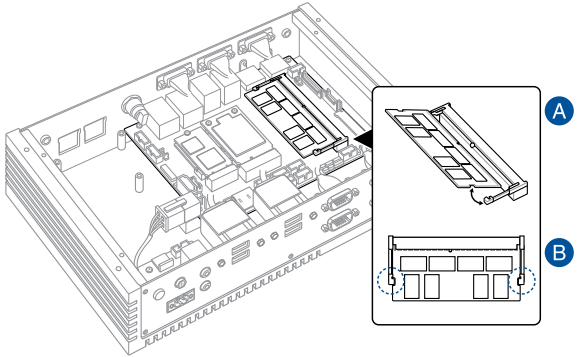
1. Align the bottom cover with the screw holes, then replace the bottom cover onto the Edge Computer.
2. Secure the bottom cover using the four (4) screws removed previously.
3. Replace the four (4) rubber feet screws removed previously.



3.3 Installing memory modules

Your Edge Computer comes with a SO-DIMM memory slot that allow you to install a DDR4 SO-DIMM.

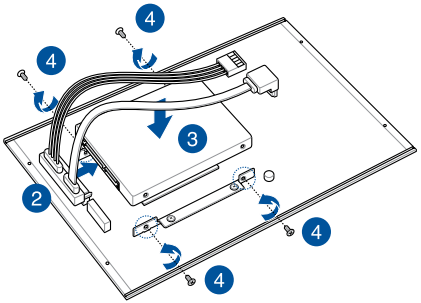
Align and insert the memory module into the slot (A) and press it down (B) until it is securely seated in place.



3.4 Installing 2.5” storage device

1. Prepare your 2.5” storage device, then align it with the storage bay on the bottom cover of your Edge Computer.
2. Connect the storage device cable to the storage device.
3. Insert your storage device into the storage bay.
4. Secure the storage device to the storage bay using four (4) screws.

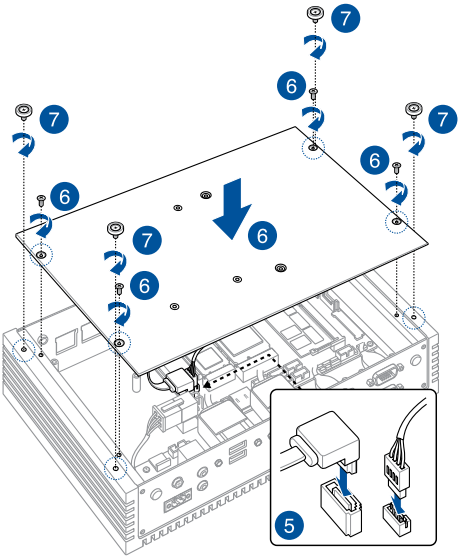
IMPORTANT! This device only supports 7mm 2.5” HDD or SSD.



5. Connect the storage device cable to the **SATA6G** and **SATA_PWR** connectors on the motherboard.

6. Replace the bottom cover, then secure the bottom cover using the four (4) screws removed previously.

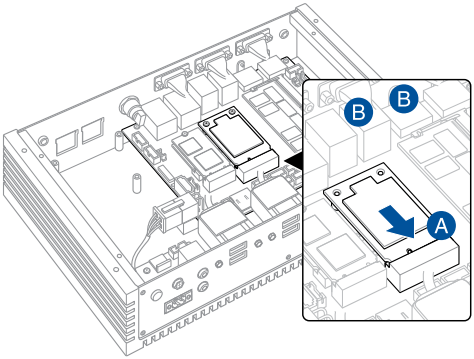
7. Replace the four (4) rubber feet screws removed previously.



3.5 Installing the Mini PCIe or mSATA card

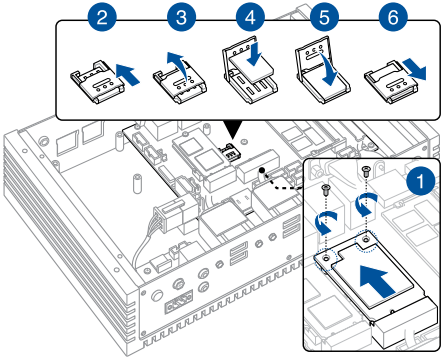
Your Edge Computer comes with a Mini PCIe/mSATA slot that allow you to install a Mini PCIe or mSATA peripheral card.

Align and insert the Mini PCIe or mSATA card into the slot (A) and press it down and secure it in place using two (2) screws.



3.6 Installing a nano SIM card

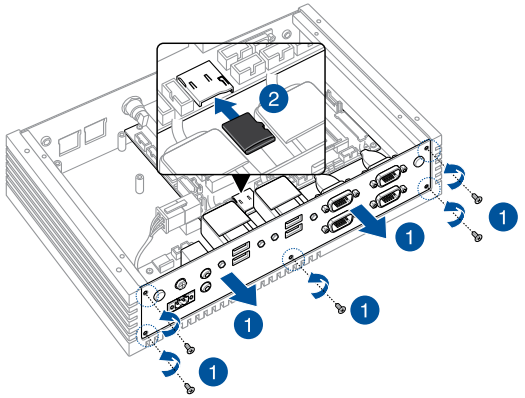
1. (optional) Remove the mPCIe or mSATA card if there is a mPCIe or mSATA card installed by removing the two (2) screws securing the mPCIe or mSATA card first, then removing the mPCIe or mSATA card.
2. Push the nano SIM cover towards the front of your Edge Computer.
3. Lift the nano SIM cover.
4. Place the nano SIM into the nano SIM slot.
5. Replace the nano SIM cover.
6. Push the nano SIM cover towards the rear of your Edge Computer to secure the nano SIM card.



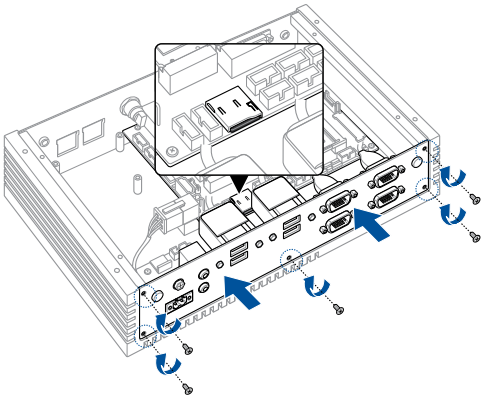
3.7 Installing an SD card

1. Remove the five (5) screws on the rear cover, then slightly pull the rear cover outwards, but do not remove it completely.

2. Insert your SD card into the SD card slot. Ensure that the SD card is pushed all the way into the SD card slot.



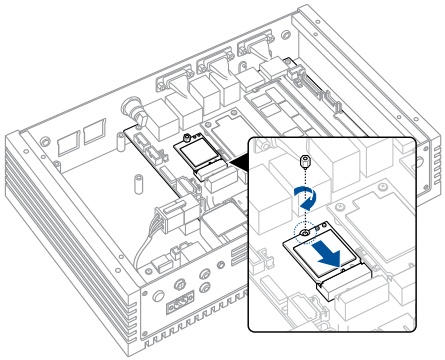
3. Once your SD card is properly installed into the SD card slot, replace the rear cover and secure it using the five (5) screws removed previously.



3.8 Installing the wireless card

1. Remove the M.2 stand screw.

2. Align and insert the wireless card into its slot inside the Edge Computer, then gently push down the wireless card on top of the screw hole and fasten it using the previously removed stand screw.



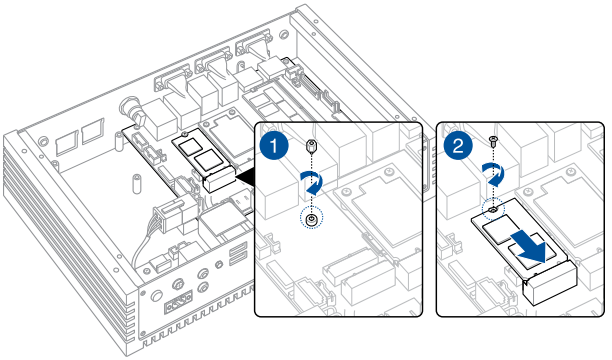
3. (optional) Connect the antennas to your wireless card.

NOTE:

- Please refer to the *Installing the antennas* section for more information on installing the antennas.
- Connecting antennas to your wireless card may strengthen the wireless signal.
- A soft clicking sound indicates that the antenna has been securely attached on the wireless card.

3.9 Installing an M.2 SSD

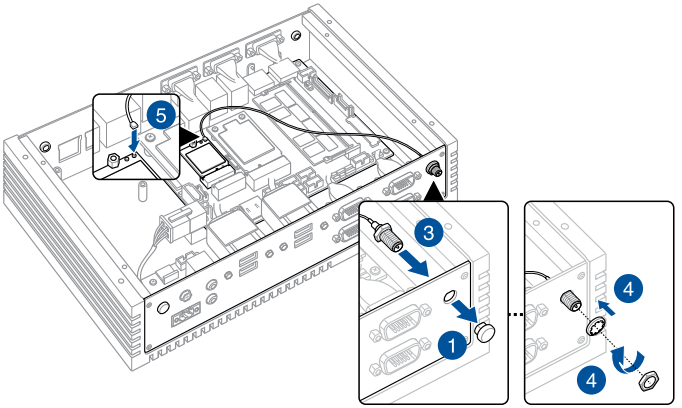
1. (optional) Replace the stand screw if it has been removed.
2. Align and insert the M.2 SSD into its slot inside the Edge Computer, then gently push down the M.2 SSD on top of the stand screw hole and fasten it using a screw.



3.10 Installing the antennas (optional)

You may install antennas to the four (4) antenna holes located on the front and rear panels. The installed antennas can be connected to a WWAN card installed in the Mini PCIe/mSATA slot, or to a wireless card installed in the M.2 Wi-Fi slot.

1. Remove the rubber caps from the antenna hole.
2. Prepare the RF connector and cable.
3. Insert the antenna jack end of the RF connector and cable into the antenna hole from within the chassis outwards.
4. Insert the bundled O-ring to the antenna jack, then secure the antenna jack using bundled hex screw.
5. Connect the other end of the RF connector and cable to your wireless card or WWAN card.
6. Repeat steps 1 to 5 to install additional antennas.

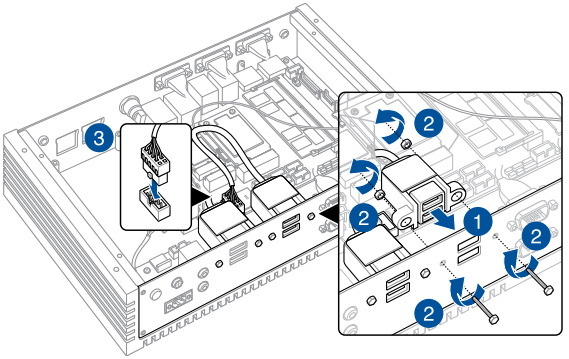


3.11 Installing the USB 2.0 module (on selected models)

1. Align the bundled USB 2.0 module with the USB 2.0 port holes and screw holes on the rear panel.
2. Secure the USB 2.0 module to the rear panel using two (2) bundled hex bolts and hex nuts.
3. Connect the USB 2.0 module connector to the **USB 2.0 connector** on the motherboard.

NOTE: Please refer to the *Motherboard layout* section for the location of the USB 2.0 connectors.

4. To install another USB 2.0 module, please repeat steps 1-3.

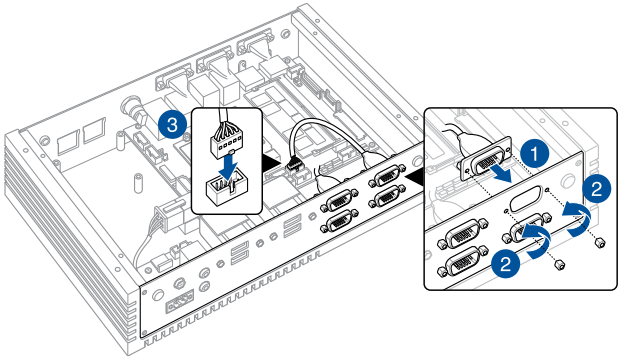


3.12 Installing the Serial port module (on selected models)

1. Align the bundled Serial port module with the Serial port holes and screw holes on the rear panel.
2. Secure the Serial port module to the rear panel using two (2) bundled hex screws.
3. Connect the Serial port module connector to the **Serial port connector** on the motherboard.

NOTE: Please refer to the *Motherboard layout* section for the location of the Serial port connectors.

4. To install another Serial port module, please repeat steps 1-3.



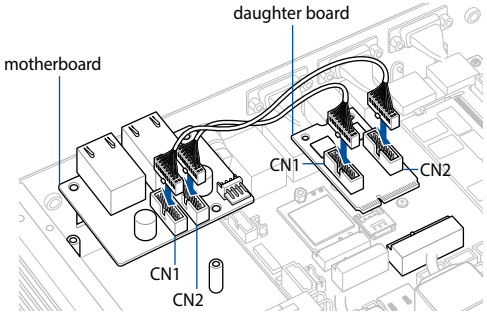
3.13 Installing the PoE LAN module (on selected models)

NOTE:

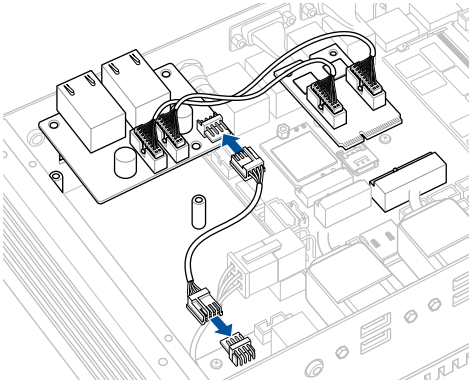
- The PoE LAN module supports up to 15W per port for powering IEEE802.3af.
- Operating temperature when using PoE with your device: -20°C~50°C.

1. Connect the **CN1** and **CN2** connectors on the PoE LAN module's daughter board to the **CN1** and **CN2** connectors on the PoE LAN module's motherboard using the two (2) bundled LAN signal cables.

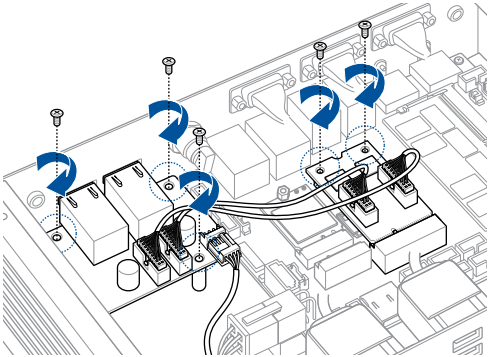
NOTE: Ensure to connect the **CN1** connector on the daughter board to the **CN1** connector on the motherboard, and the **CN2** connector on the daughter board to the **CN2** connector on the motherboard.



2. Connect the power connector on the daughter board to the power connector on the power board.



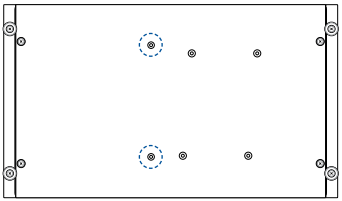
3. Secure the motherboard and daughter board using the bundled screws.



3.14 Installing the VESA mount (optional)

You may install a VESA mount to your Edge Computer which allows you to install your Edge Computer to a VESA mount-compatible device.

1. Place your Edge Computer upside down on a flat and stable surface.
2. Attach the bundled two (2) 12mm screws into the screw holes at the bottom of your Edge Computer.

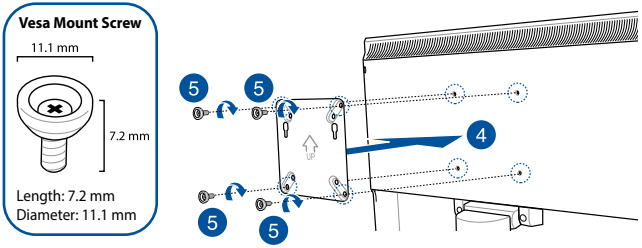


3. Remove the screw hole covers at the back of your VESA mount-compatible device, if any.

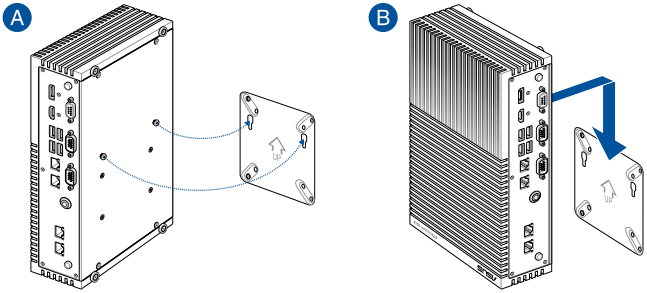
4. With the arrow on the VESA mounting plate pointing upward, align its screw holes to the screw holes of the VESA mount-compatible device.

5. Secure the VESA mounting plate to the VESA mount-compatible device using the bundled screws.

WARNING! Do not overtighten the screws as it may cause damage to your VESA mount-compatible device.

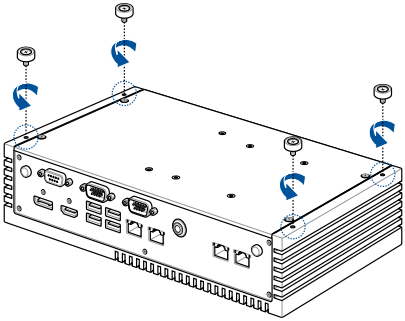


6. Position the Edge Computer and insert the screws attached on the Edge Computer to the mounting holes of the VESA mounting plate (A), then gently push the Edge Computer down in the angle shown in the illustration to secure it in place (B).

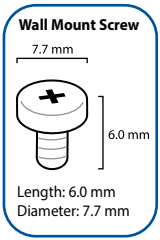


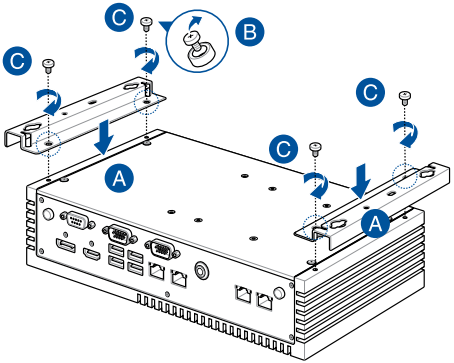
3.15 Installing the wall mount

1. Remove the four (4) rubber feet screws.



2. Align the wall mount with the rubber feet screw holes (A), then remove the rubber feet from the rubber feet screws (B) and secure the wall mount to your Edge Computer using the rubber feet screws (C).





NOTE: The rubber feet screws and wall mount screws are the same screws.

4

Using the software

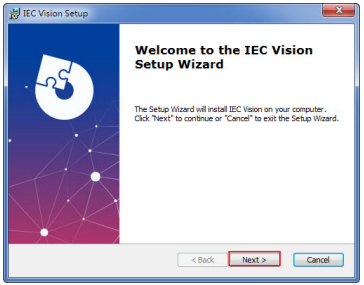
4.1 Installing IEC Vision

Your Edge Computer can support the Intelligent Edge Console (IEC)Vision software. Download IEC Vision by visiting **https://www.asus.com/AIoT-Industrial-Solutions/PE200U/HelpDesk_Download/**

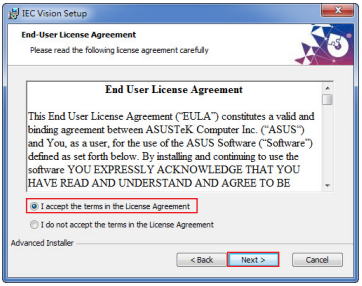
To install IEC Vision, please follow the steps below:

1. Click on **IEC Vision.msi**, located on the desktop, to execute the installation wizard.

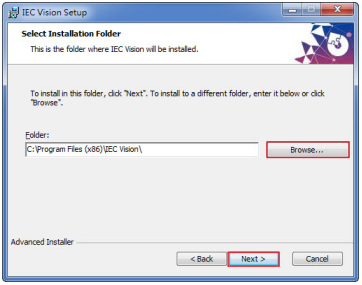
2. Click on **Next**.



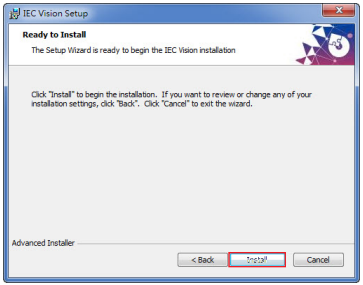
3. Read through the License Agreement, then check the **I accept the terms in the License Agreement** box and click on **Next**.



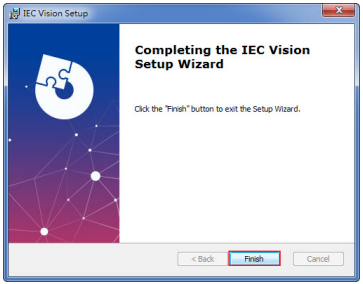
4. Click on **Next** to install to the default folder destination, or click on **Browse** to select a different folder then click on **Next**.



5. Click on **Install** to begin the installation process.



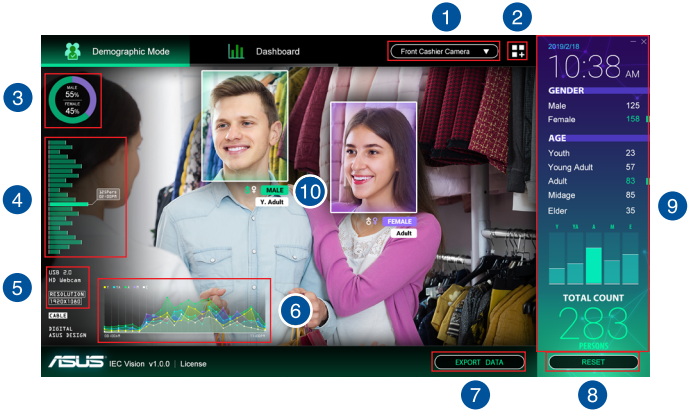
6. Wait for the installation process to finish then click on **Finish** to complete the installation.



4.2 IEC Vision overview

IEC Vision provides you with a GDPR compliant remote monitoring and control solution and supports USB cameras and PoE IP cameras.

4.2.1 Demographic Mode



1 **Camera select and settings:**

Select a camera to monitor. You may also add, edit, or delete an IP camera, or re-name your connected USB cameras or IP cameras.

2 **Widget settings:**

Enable or disable the Summary, Age or Gender widgets, or filter the data displayed on enabled widgets by day, week, or month.

3 **Gender widget:**

Displays the daily, weekly, or monthly male / female ratio for people identified by IEC Vision.

4 **Summary widget:**
Displays the total amount of people detected per hour of the day, per day of the week, or day of the month.

5 **Camera information:**
Displays camera type and resolution of the current camera being monitored.

6 **Age widget:**
Displays a bar graph of the amount of different age groups detected.

7 **Export data:**
Export the data collected on IEC Vision to an Excel file.

8 **Reset:**
Reset the data of the Total overview window.

9 **Total overview:**
Displays the total amount of gender, age and people count.

10 **Capture feed:**
Displays the camera's capture feed and shows the people count and detection.

4.2.2 Dashboard

1 **Data filter:**

Select a time range to filter the data displayed on the dashboard.

2 **Summary:**

Displays the amount of male and female identified on a line graph and the total amount of people. The data may vary between hour of the day, day of the week, or day of the month according to the selected time range filter.

3 **Age Distribution:**

Displays a line graph of the amount of different age groups detected. You may select to display or hide an age group in the drop down menu **Age Group** in the top right corner of the Age Distribution graph.

4 **Gender Ratio:**

Displays the daily, weekly, or monthly male / female ratio for people identified by IEC Vision.

4.3 Configuring the camera

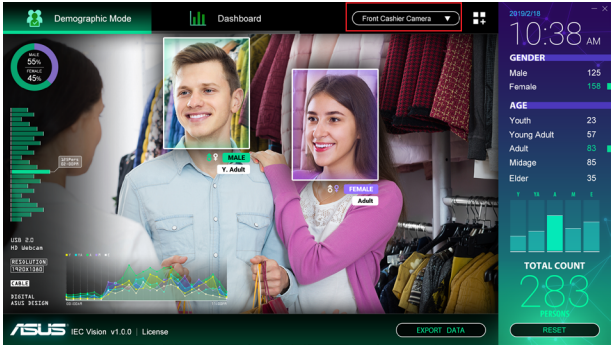
IEC Vision allows you to easily add PoE IP cameras or use USB cameras.

4.3.1 Configuring a USB camera

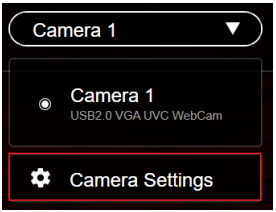
1. Connect a USB camera to an available USB port on your Edge Computer.

NOTE: For more information on the location of the USB ports on your Edge Computer, please refer to the *Features* section of this manual.

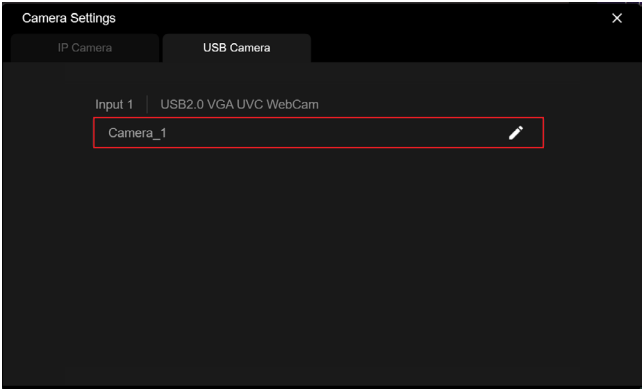
2. Click on the **Camera select and settings** drop down menu located at the top right of the main screen.



3. Click on **Camera Settings**.

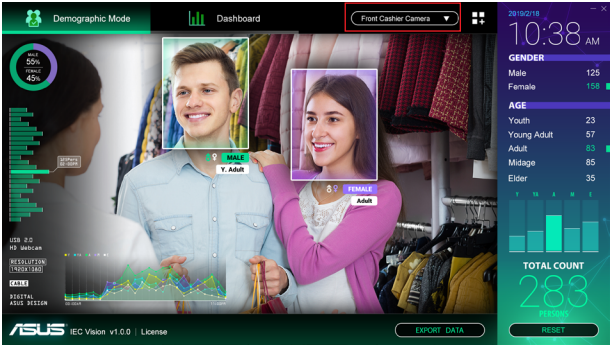


4. Click on the **USB Camera** tab. You may edit the name of your connected USB camera(s) here by clicking on next to the USB camera you wish to rename.

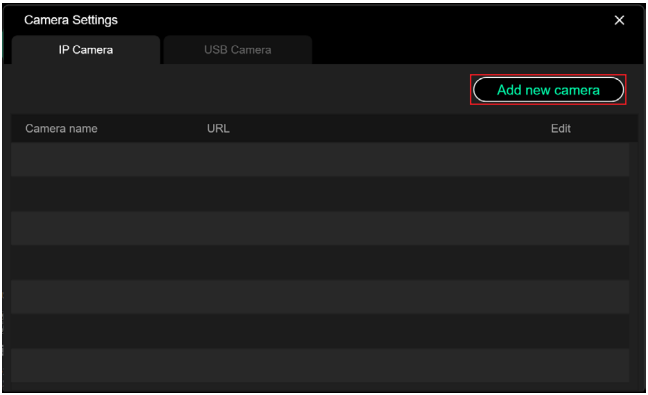


4.3.2 Configuring a PoE IP camera

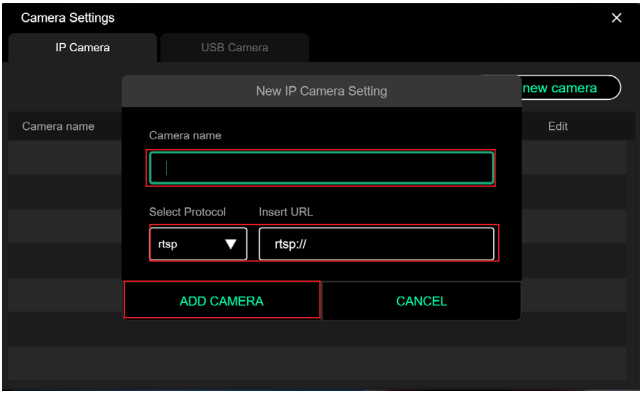
1. Click on the **Camera select and settings** drop down menu located at the top right of the main screen.



2. Click on the **IP Camera** tab, then click on **Add new camera** to add a new IP camera.



3. Enter a camera name, and select a protocol and URL for the PoE IP camera you wish to link to, then click on **ADD CAMERA** to add the IP camera.



5

Watchdog Timer

5.1 Watchdog Timer implementation

There are two watchdog timer implementations designed on this product, the HW and POST watchdog timers. The watchdog timer circuit is in SuperIO and can be controlled by a hardware jumper and BIOS setup menu through the system BIOS for different boot phases.

Please refer to the table below for the different implementations of the Watchdog Timer.

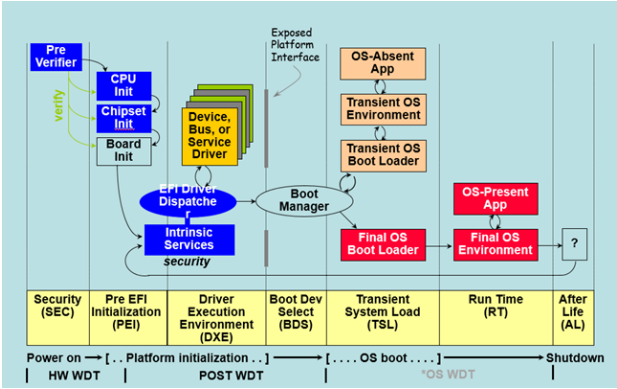
Watchdog timer	Implementation	Default Timeout
HW Watchdog Timer	This Watchdog Timer can prevent the system from failing before BIOS takeover. After the system is powered on, the watchdog timer will start automatically through the jumper setting. **NOTE:** • Please refer to the HW WDT enable jumper in section **1.2 Motherboard Overview** for more information. • The default setting for this jumper is set to **HW WDT enabled** with a jumper cap attached.	6 seconds.

(continued on the next page)

Watchdog timer	Implementation	Default Timeout
POST Watchdog Timer	This Watchdog Timer is for recovering the system from crashes during BIOS takeover to OS. After system BIOS takeover, the BIOS will stop the HW watchdog timer and start the POST watchdog timer on the same hardware watchdog circuit. **NOTE:** The default setting for the BIOS item is set to enabled.	The timeout value is determined by the BIOS settings.
*OS Watchdog Timer	No implementation. User needs to write software in OS to keep updating the watchdog timer to prevent it from timing out. The application is executed on payload. **NOTE:** Please refer to the section **4.9.3 Watchdog Timer Programming** for more information.	N/A

5.2 Watchdog Timer flowchart

Please refer to the Watchdog Timer initialization flowchart below:



5.3 Watchdog Timer Programming

Please refer to the pseudo code for the NCT6116D watchdog timer programming below:

SIO_INDEX_PORT is 0x2E

SIO_DATA_PORT is 0x2F

1. Set WDT Time Unit

```
Outportb(SIO_INDEX_PORT, 0x87); // Unlock SIO
Outportb(SIO_INDEX_PORT, 0x87); // Unlock SIO

Outportb(SIO_INDEX_PORT, 0x07);
Outportb(SIO_DATA_PORT,  0x08);
Outportb(SIO_INDEX_PORT, 0xF0);
val = Inportb(SIO_DATA_PORT) // Read current WDT setting

val = val | 0x08; // minute mode, val = val & 0xF7 if second mode
Outportb(SIO_INDEX_PORT, 0xF0);
Outportb(SIO_DATA_PORT,  val); // Write back WDT setting

Outportb(SIO_INDEX_PORT, 0xAA); // Lock SIO
```

2. Set WDT Time

```
Outportb(SIO_INDEX_PORT, 0x87); // Unlock SIO
Outportb(SIO_INDEX_PORT, 0x87); // Unlock SIO

Outportb(SIO_INDEX_PORT, 0x07);
Outportb(SIO_DATA_PORT,  0x08);
Outportb(SIO_INDEX_PORT, 0xF1);
Outportb(SIO_DATA_PORT,  Time); // Write WDT time, value 1 to 255

Outportb(SIO_INDEX_PORT, 0xAA); // Lock SIO
```

3. Enable WDT

```
Outportb(SIO_INDEX_PORT, 0x87); // Unlock SIO
Outportb(SIO_INDEX_PORT, 0x87); // Unlock SIO

Outportb(SIO_INDEX_PORT, 0x07);
Outportb(SIO_DATA_PORT,  0x08);
Outportb(SIO_INDEX_PORT, 0x30);
val = Inportb(SIO_DATA_PORT) // Read current WDT status

val = val | 0x01; // Enable WDT Timer
Outportb(SIO_INDEX_PORT, 0x30);
Outportb(SIO_DATA_PORT,  val); // Write back WDT status

Outportb(SIO_INDEX_PORT, 0xAA); // Lock SIO
```

4. Disable WDT

```
Outportb(SIO_INDEX_PORT, 0x87); // Unlock SIO
Outportb(SIO_INDEX_PORT, 0x87); // Unlock SIO

Outportb(SIO_INDEX_PORT, 0x07);

Outportb(SIO_DATA_PORT,  0x08);

Outportb(SIO_INDEX_PORT, 0xF1);

Outportb(SIO_DATA_PORT,  0x00); // Clear WDT time, it means WDT Time-
    Out disable

Outportb(SIO_INDEX_PORT, 0x30);

val = Inportb(SIO_DATA_PORT) // Read current WDT status

val = val & 0xFE; // Disable WDT Timer

Outportb(SIO_INDEX_PORT, 0x30);

Outportb(SIO_DATA_PORT,  val); // Write back WDT status

Outportb(SIO_INDEX_PORT, 0xAA); // Lock SIO
```

Appendix

Safety information

Your Edge Computer is designed and tested to meet the latest standards of safety for information technology equipment. However, to ensure your safety, it is important that you read the following safety instructions.

Setting up your system

- Read and follow all instructions in the documentation before you operate your system.
- Do not use this product near water or a heated source.
- Set up the system on a stable surface.
- Peripherals with extended temperature tolerance (such as industrial grade DRAM, SSD, etc.) will allow this product to be used in environments with ambient temperatures between -20˚C and 60˚C, with a 0.1m/s air flow. If you plan to use a 2.5" HDD with this product, please use this product in environments with ambient temperatures between 0˚C~45˚C, with a 0.1m/s air flow.
- The product should be used in environments with an ambient temperature of 40˚C when using the 65W adapter, whilst using HDD or SDD only and without the PoE module installed.
- If you use an extension cord, make sure that the total ampere rating of the devices plugged into the extension cord does not exceed its ampere rating.
- This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.
- Restricted Access Location:

  The equipment should only be installed in a Restricted Access Area where both these conditions apply:

  - access can only be gained by USERS who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken; and
  - access is through the use of a TOOL or lock and key, or other means of security, and is controlled by the authority responsible for the location.
- This device shall not be connected to an Ethernet network with outside plant routing.

Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill water or any other liquids on your system.
- When the system is turned off, a small amount of electrical current still flows. Always unplug the power cord from the power outlets before cleaning the system.
- If you encounter the following technical problems with the product, unplug the power cord and contact a qualified service technician or your retailer.
  - The power cord or plug is damaged.
  - Liquid has been spilled into the system.
  - The system does not function properly even if you follow the operating instructions.
  - The system was dropped or the cabinet is damaged.
  - The system performance changes.

Lithium-Ion Battery Warning

CAUTION: Danger of explosion if 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.

NO DISASSEMBLY

The warranty does not apply to the products that have been disassembled by users

DO NOT throw the Edge Computer in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical, electronic equipment, and mercury-containing button cell battery) should not be placed in municipal waste. Check local technical support services for product recycling.

Regulatory notices

COATING NOTICE

IMPORTANT! To provide electrical insulation and maintain electrical safety, a coating is applied to insulate the device except on the areas where the I/O ports are located.

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

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 not installed and used in accordance with the instruction manual, 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.

IMPORTANT! Outdoor operations in the 5.15~5.25 GHz band is prohibited. This device has no Ad-hoc capability for 5250~5350 and 5470~5725 MHz.

CAUTION! Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

RF exposure warning

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following:

Contains FCC ID: TX2-RTL8822CE and Contains IC:6317A-RTL8822CE

ISED Radiation Exposure Statement for Canada

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. To maintain compliance with ISED RF exposure compliance requirements, please avoid direct contact to the transmitting antenna during transmitting. End users must follow the specific operating instructions for satisfying RF exposure compliance.

Operation is subject to the following two conditions:

- This device may not cause interference and
- This device must accept any interference, including interference that may cause undesired operation of the device.

Compliance Statement of Innovation, Science and Economic Development Canada (ISED)

This device complies with Innovation, Science and Economic Development Canada licence exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CAN ICES-3(A)/NMB-3(A)

Déclaration de conformité de Innovation, Sciences et Développement économique Canada (ISED)

Le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CAN ICES-3(A)/NMB-3(A)

Wireless Operation Channel for Different Domains

N. America	2.412-2.462 GHz	Ch01 through CH11
Japan	2.412-2.484 GHz	Ch01 through Ch14
Europe ETSI	2.412-2.472 GHz	Ch01 through Ch13

KC: Korea Warning Statement

Class A:

사용자 안내문

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

VCCI: Japan Compliance Statement

Class A ITE

この装置は、クラスA機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI ー A

Japan RF Equipment Statement

屋外での使用について

本製品は、5GHz帯域での通信に対応しています。電波法の定めにより5.2GHz、5.3GHz帯域の電波は屋外で使

用が禁じられています。

法律および規制遵守

本製品は電波法及びこれに基づく命令の定めるところに従い使用してください。日本国外では、その国の法律ま

たは規制により、本製品の使用ができないことがあります。このような国では、本製品を運用した結果、罰せられ

ることがありますが、当社は一切責任を負いかねますのでご了承ください。

HDMI Compliance Statement

The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

Declaration of compliance for product environmental regulation

ASUS follows the green design concept to design and manufacture our products, and makes sure that each stage of the product life cycle of ASUS product is in line with global environmental regulations. In addition, ASUS disclose the relevant information based on regulation requirements.

Please refer to http://csr.asus.com/Compliance.htm for information disclosure based on regulation requirements ASUS is complied with:

EU REACH and Article 33

Complying with the REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals) regulatory framework, we publish the chemical substances in our products at ASUS REACH website at http://csr.asus.com/english/REACH.htm

EU RoHS

This product complies with the EU RoHS Directive. For more details, see http://csr.asus.com/english/article.aspx?id=35

Japan JIS-C-0950 Material Declarations

Information on Japan RoHS (JIS-C-0950) chemical disclosures is available on http://csr.asus.com/english/article.aspx?id=19

India RoHS

This product complies with the "India E-Waste (Management) Rules, 2016" and prohibits use of lead, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) in concentrations exceeding 0.1% by weight in homogenous materials and 0.01% by weight in homogenous materials for cadmium, except for the exemptions listed in Schedule II of the Rule.

Vietnam RoHS

ASUS products sold in Vietnam, on or after September 23, 2011,meet the requirements of the Vietnam Circular 30/2011/TT-BCT.

Các sản phẩm ASUS bán tại Việt Nam, vào ngày 23 tháng 9 năm2011 trở về sau, đều phải đáp ứng các yêu cầu của Thông tư 30/2011/TT-BCT của Việt Nam.

Turkey RoHS
AEEE Yönetmeliğine Uygundur

ASUS Recycling/Takeback Services
ASUS recycling and takeback programs come from our commitment to the highest standards for protecting our environment. We believe in providing solutions for you to be able to responsibly recycle our products, batteries, other components as well as the packaging materials. Please go to http://csr.asus.com/english/Takeback.htm for detailed recycling information in different regions.

Ecodesign Directive
European Union announced a framework for the setting of ecodesign requirements for energy-related products (2009/125/EC). Specific Implementing Measures are aimed at improving environmental performance of specific products or across multiple product types. ASUS provides product information on the CSR website. The further information could be found at https://csr.asus.com/english/article.aspx?id=1555.

ENERGY STAR complied product
ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products and practices.

All ASUS products with the ENERGY STAR logo comply with the ENERGY STAR standard, and the power management feature is enabled by default. The monitor is automatically set to sleep within 10 minutes of user inactivity; the computer is automatically set to sleep within 30 minutes of user inactivity. To wake your computer, click the mouse, press any key on the keyboard, or press the power button.

Please visit http://www.energystar.gov/powermanagement for detail information on power management and its benefits to the environment. In addition, please visit http://www.energystar.gov for detail information on the ENERGY STAR joint program.

NOTE: Energy Star is NOT supported on FreeDOS and Linux-based products.

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Authorised representative in Europe	ASUSTeK Computer GmbH	
	Address:	Harkortstrasse 21-23, 40880 Ratingen, Germany

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Online support	https://www.asus.com/support/Product/ContactUs/Services/questionform/?lang=en

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Web site	http://www.asus.com/us/

Technical Support

Support fax	+1-812-284-0883
Telephone	+1-812-282-2787
Online support	https://www.asus.com/support/Product/ContactUs/Services/questionform/?lang=en-us

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Technical Support

Telephone (DE)	+49-2102-5789557
Telephone (AT)	+43-1360-2775461
Online support	https://www.asus.com/de/support

Call center: https://www.asus.com/support/CallUs