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Preface

Content

Copyright Notice

The material in this document is the intellectual property of MICRO-STAR INTERNATIONAL. We take every care in the preparation of this document, but no guarantee is given as to the correctness of its contents. Our products are under continual improvement and we reserve the right to make changes without notice.

Trademarks

All trademarks are the properties of their respective owners.

Revision History

▶ Version: 1.0

▶ Date: 02, 2016

FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and radiates radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ▶ Reorient or relocate the receiving antenna.
- ▶ Increase the separation between the equipment and receiver.
- ▶ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

NOTE

- ▶ The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- ▶ Shield interface cables and AC power cord, if any, must be used in order to comply with the emission limits.

FCC Conditions

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.
- ▶ This device must accept any interference received, including interference that may cause undesired operation.

CE Conformity

$C\epsilon$ This device is in compliance with the essential safety requirements and other relevant provisions set out in the European Directive.

Battery Regulations

European Union: Batteries, battery packs, and accumulators should not be disposed of as unsorted household waste. Please use the public collection system to return, recycle, or treat them in compliance with the local regulations.

Taiwan: For better environmental protection, waste batteries should be collected separately for recycling or special disposal.

廢電池請回收

California, USA: The button cell battery may contain perchlorate material and requires special handling when recycled or disposed of in California.

For further information please visit: http://www.dtsc.ca.gov/hazardouswaste/perchlorate/

WEEE Statement

European Union: Under the European Union ("EU") Directive on Waste Electrical and Electronic Equipment, Directive 2002/96/EC, which takes effect on August 13, 2005, products of "electrical and electronic equipment" cannot be discarded as municipal waste anymore and manufacturers of covered electronic equipment will be obligated to take back such products at the end of their useful life.

Chemical Substances Information

In compliance with chemical substances regulations, such as the EU REACH Regulation (Regulation EC No. 1907/2006 of the European Parliament and the Council), MSI provides the information of chemical substances in products at:

http://www.msi.com/html/popup/csr/evmtprtt_pcm.html

RoHS Statement

Japan JIS C 0950 Material Declaration

A Japanese regulatory requirement, defined by specification JIS C 0950, mandates that manufacturers provide material declarations for certain categories of electronic products offered for sale after July 1, 2006.

http://www.msi.com/html/popup/csr/cemm_jp.html

http://tw.msi.com/html/popup/csr_tw/cemm_jp.html

India RoHS

This product complies with the "India E-waste (Management and Handling) Rule 2011" and prohibits use of lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers in concentrations exceeding 0.1 weight % and 0.01 weight % for cadmium, except for the exemptions set in Schedule 2 of the Rule.

Turkey EEE regulation

Conforms to the EEE Regulations of the Republic Of Turkey.

Ukraine restriction of hazardous substances

The equipment complies with requirements of the Technical Regulation, approved by the Resolution of Cabinet of Ministry of Ukraine as of December 3, 2008 № 1057, in terms of restrictions for the use of certain dangerous substances in electrical and electronic equipment.

Vietnam RoHS

As from December 1, 2012, all products manufactured by MSI comply with Circular 30/2011/TT-BCT temporarily regulating the permitted limits for a number of hazardous substances in electronic and electric products.

Upgrade and Warranty

Please note that certain components, such as memory modules, HDD, SSD, ODD, and Bluetooth/WiFi combo card, etc., preinstalled in the product may be upgradable or replaceable by user's request depending on the models users purchased.

For any further information on the product users purchased, please contact the local dealer. Do not attempt to upgrade or replace any component of the product if users do not understand the component location or how to assembly/disassembly, since it may cause the product damaged. It is recommended that user contact the authorized dealer or service center for product service.

Acquisition of Replaceable Parts

Please be noticed that the acquisition of replaceable parts (or compatible ones) of the product users purchased in certain countries or territories may be fulfilled by the manufacturer within 5 years at most since the product has been discontinued, depending on the official regulations declared at the time. Please contact the manufacturer via http://www.msi.com/support/ for the detailed information about the acquisition of spare parts.

Safety Instructions

- Read the safety instructions carefully and thoroughly.
- All cautions and warnings on the equipment or user's manual should be noted.

Keep this equipment away from humidity and high temperature.

Do not cover the ventilators of the equipment to prevent the equipment from overheating.

- Do not leave the equipment in an unconditioned environment with a storage temperature above 60ºC (140ºF) or below 0ºC (32ºF), which may damage the equipment.
- This equipment should be operated under maximum ambient temperature of 35ºC (95ºF).

Place the power cord in a way that people are unlikely to step on it. Do not place anything on top of the power cord.

Always keep the strong magnetic or electrical objects away from the equipment.

Never pour liquid onto the equipment, since it may damage the equipment or cause an electrical shock.

If any of the following situations arises, get the equipment checked by a service personnel:

• The power cord or plug is damaged.

• Liquid has penetrated into the equipment.

• The equipment has been exposed to moisture.

• The equipment has not worked well or you can not get it work according to User's Manual.

• The equipment was dropped and damaged.

• The equipment has obvious signs of breakage.

Green Product Features

• Reduced energy consumption during use and stand-by

• Limited use of substances harmful to the environment and health

• Easily dismantled and recycled

• Reduced use of natural resources by encouraging recycling

• Extended product lifetime through easy upgrades

• Reduced solid waste production through take-back policy

Environmental Policy

• The product has been designed to enable proper reuse of parts and recycling and should not be thrown away at its end of life.

• Users should contact the local authorized point of collection for recycling and disposing of their end-of-life products.

• Visit the MSI website and locate a nearby distributor for further recycling information.

• Users may also reach us at gpcontdev@msi.com for information regarding proper disposal, take-back, recycling, and disassembly of MSI products.

User's Manual

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Introductions

Congratulations on becoming an user of this equipment, the finely designed equipment. You will have a delightful and professional experience in using this exquisite equipment. We are proud to tell users that this equipment is thoroughly tested and certified by our reputation for unsurpassed dependability and customer satisfaction.
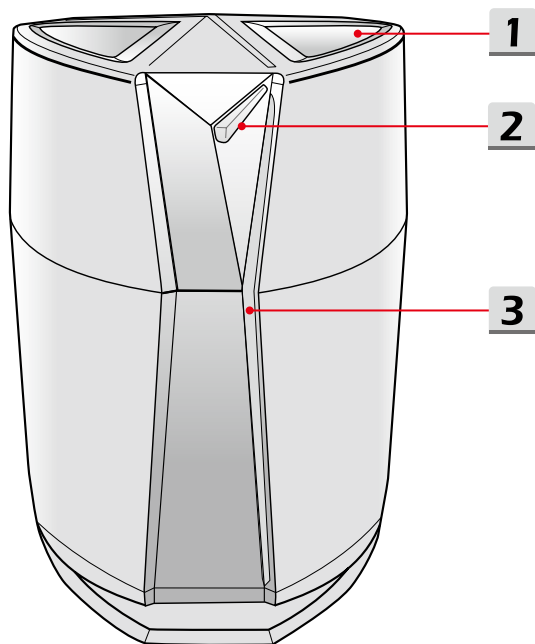
Unpacking

First, unpack the shipping carton and check all items carefully. If any item contained is damaged or missing, please contact your local dealer immediately. Also, keep the box and packing materials in case you need to ship the unit in the future. The package should contain the following items:

▶ Equipment

▶ Quick Start Guide

▶ AC power cord

▶ Optional all-in-one application disk, containing the full version of user's manual, drivers, utilities, and so on.

Product Overview

This section provides the description of basic aspects of the equipment. It will help you to know more about the appearance of this equipment before using it. Please be aware that the figures shown here are for reference only.

Front Side View

1

2

3

1. Ventilator

The ventilator is designed to cool the system. DO NOT block the ventilator for air circulation.

2. Power Button / Power LED

Power

Power Button

- Use this button to turn the equipment power ON and OFF.
- Use this button to awake the equipment from the sleep state.
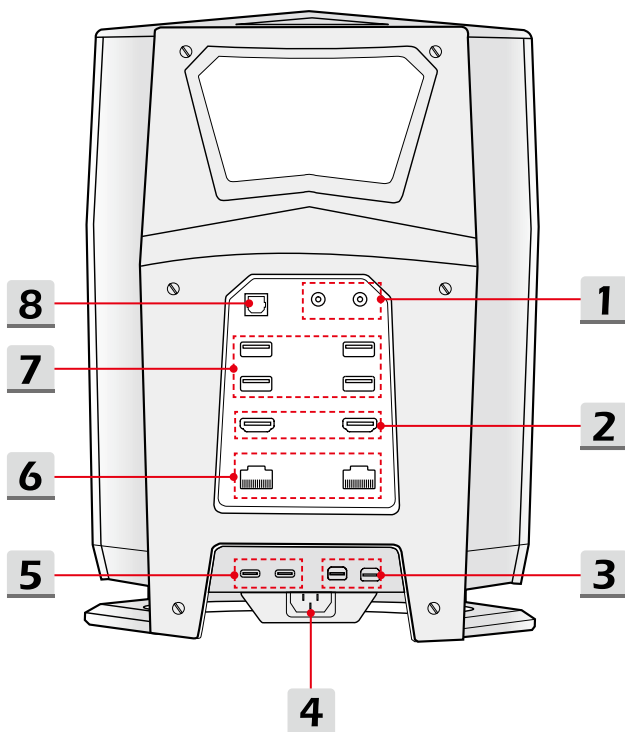- Note: The equipment can also be awakened by any mouse or keyboard activity.

Power LED

- LED glows when the equipment power is turned on.
- LED goes off when the equipment is turned off.

3. Light Bars

The illuminated activity can be adjusted by the MSI Dragon Center software, refer to the Notebook Software Application Manual for details.

Rear Side View

1. Audio Port Connectors

Microphone

Used for an external microphone.

Headphone

A connector for speakers or headphones.

2. HDMI Connector HDMI

HDMI (High-Definition Multimedia Interface) technology is the industry-leading interface and de-facto standard connecting high-definition (HD) and ultra high-definition (UHD) equipment.

3. DisplayPort

DisplayPort is a digital display interface standard. This connector is used to connect a monitor with DisplayPort inputs.

Note: It is highly recommended to plug your monitor(s) in HDMI connector or DisplayPort first to bring the ultimate gaming experience.

4. Power Connector

This connector allows you to connect an ATX power supply.

5. Thunderbolt (Type-C)

Thunderbolt™ 3 supports up to 40Gbps data rate, dual 4K displays monitor output and portable charging power up to 5V and 3A (optional).

6. RJ-45 Connector

This connector is used to connect a LAN cable for network connection.

7. USB 3.0 Port

USB 3.0, the SuperSpeed USB, delivers the higher interface speeds for connecting various devices, such as storage devices, hard drives, or video cameras, and offers more advantages over high-speed data transferring.

8. S/PDIF-out

The S/PDIF connector is also provided for digital audio transmission to external speakers through an optical fiber cable.

Specifications

The specifications listed here is reference only, and may change without notice. The actual products sold are different from areas.

Visit MSI official website at www.msi.com, or contact the local retailers to learn the correct specifications of the product user purchased.

Physical Characteristic	
Weight	4.0 kg
CPU	
Package	LGA1151
CPU Processor Type	Intel® SKL-S K Series CPU
Core Chip	
PCH	Intel® Z170
Memory	
Technology	DDR4 2133MHz
Memory	SO-DIMM slots x 4
Maximum	Up to 64GB
Power	
PSU	450W AC: 100~240V 50~60Hz Output: +12V === 37.5A ⊖─●─⊕
RTC Battery	Yes
Storage	
HDD	2.5" HDD x 1
SSD	M.2 SSD x 2

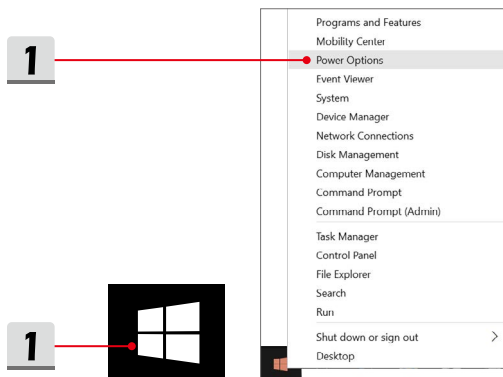| I/O Port	
USB	x 4 (version 3.0)
Thunderbolt™ 3	x 2, USB 3.1 Type-C interface, 4K output, 3A outpout charing (optional)
Mic-in	x 1
S/PDIF-Out	x 1
Headphone-out	x 1
RJ45	x 2
HDMI	x 2 (v2.0)
DisplayPort	x 2 (v1.2)
Communication Port	
LAN	Supported
Wireless LAN	Supported
Bluetooth	Supported
Video	
Graphics (optional)	NVIDIA® GeForce® discrete MXM graphics/ Intel® HD UMA graphics card
VRAM	GDDR5, based on GPU structure

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How To Get Started

How to Set Up a Power Plan in Windows 10

A power plan is a collection of hardware and system settings that manages how your computer uses and conserves power. Power plans can save energy, maximize system performance, or balance energy conservation with performance. The default power plans — Balanced and Power saver — meet most people's needs. But you can modify settings for existing plans or create your own plan.

Choose or Customize a Power Plan

1. Find [Windows] icon in the lower-left corner of the screen. Right click it to show selection menu. Select [Power Options] in the menu.

2. Choose a Power Plan by left clicking on one of the selections from the Power Plan list. The Power Plan of [High performance] is selected as an example here. Click on the [Change plan settings] to the right of the power plan to customize a power plan.

3. Choose the sleep and display settings you want your computer to use. Click on [Change advanced power settings] to make changes to the selected power plan settings to meet your needs.

4. To restore the selected Power Plan back to its default settings, click on [Restore plan defaults] and then click [Yes] to confirm.

5. Click [OK] to finish.

2

Choose or customize a power plan

A power plan is a collection of hardware and system settings (like display brightness, sleep, etc.) that manages how your computer uses power. Tell me more about power plans

Preferred plans

○ Balanced (recommended)   Change plan settings
Automatically balances performance with energy consumption on capable hardware.

◉ High performance   Change plan settings
Favors performance, but may use more energy.

Change settings for the plan: High performance

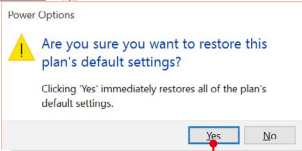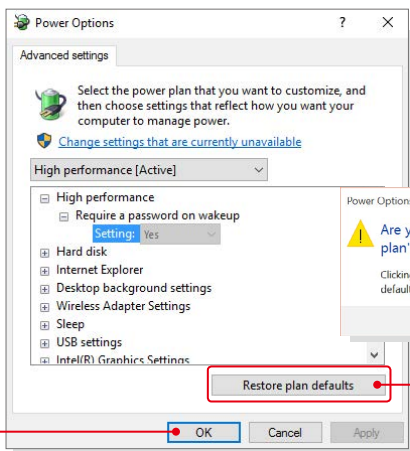Choose the sleep and display settings that you want your computer to use.

🕒 Turn off the display: Never   ∨

🌙 Put the computer to sleep: Never   ∨

3

Change advanced power settings

Restore default settings for this plan

Power Options   ?   ×

Advanced settings

Select the power plan that you want to customize, and
then choose settings that reflect how you want your
computer to manage power.

🛡 Change settings that are currently unavailable

High performance [Active]   ∨

☐ High performance
  ☐ Require a password on wakeup
      Setting: Yes   Power Options
  ⊞ Hard disk   ⚠ Are you sure you want to restore this
  ⊞ Internet Explorer   plan's default settings?
  ⊞ Desktop background settings
  ⊞ Wireless Adapter Settings   Clicking 'Yes' immediately restores all of the plan's
  ⊞ Sleep   default settings.
  ⊞ USB settings
  ⊞ Intel(R) Graphics Settings   Yes   No

                              Restore plan defaults   **4**

5   OK   Cancel   Apply

Create Your Own Power Plan

You can create your own power plan and customize it as your requirement. However, it will be recommended to use ECO Engine power saving function while using this equipment.

1. Select Power Options in the menu. Click [Create a power plan] in the left pane.

2. Select an existing plan that meet your needs most, and give the plan a name. Click [Next] to continue.

3. Change the settings for the new power plan. Click [Create] to make the customized power plan taking effect.

4. Now you have a new power plan that is automatically set as active.

1

Control Panel Home

Require a password on wakeup

Choose what the power buttons do

Create a power plan

Choose when to turn off the display

Change when the computer sleeps

Choose or customize a power plan

A power plan is a collection of hardware and system settings (like d how your computer uses power. Tell me more about power plans

Preferred plans

○ **Balanced (recommended)**
   Automatically balances performance with energy consumpti

◉ High performance
   Favors performance, but may use more energy.

Hide additional plans

2

Create a power plan

Start with an existing plan and give it a name.

○ **Balanced (recommended)**
   Automatically balances performance with energy consumption on capable hardware.

○ Power saver
   Saves energy by reducing your computer's performance where possible.

◉ High performance
   Favors performance, but may use more energy.

Plan name:
Extreme Performance

Next   Cancel

3

Change settings for the plan: Extreme Performance

Choose the sleep and display settings that you want your computer to use.

Turn off the display: Never

Put the computer to sleep: Never

Create   Cancel

4

Choose or customize a power plan

A power plan is a collection of hardware and system settings (like display brightness, sleep, etc.) that manages how your computer uses power. Tell me more about power plans

Preferred plans

◉ Extreme Performance   Change plan settings

○ High performance   Change plan settings
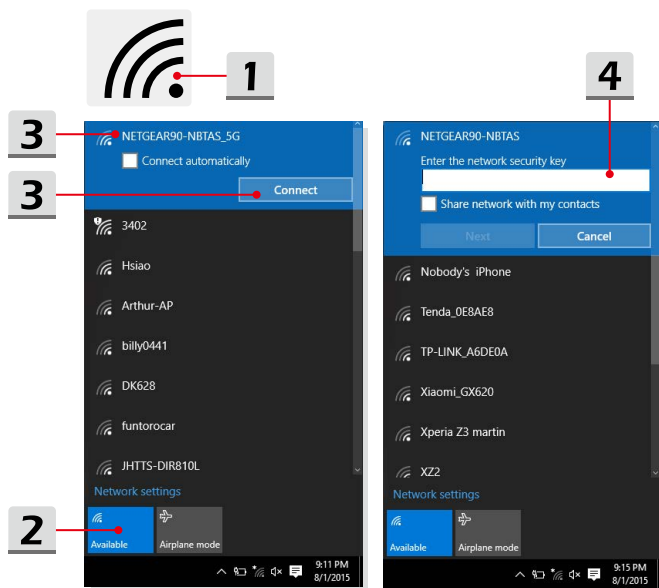   Favors performance, but may use more energy.

How to Connect the Internet

Wireless LAN

Wireless LAN is a wireless broadband connection that allows you to connect to the Internet without using any cables. Follow the instructions below to set up a Wireless LAN connection.
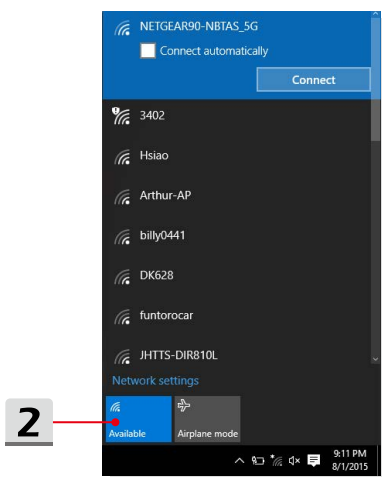
▶ Wireless LAN Connection

1. Go to the desktop. Find the icon in the lower-right corner of the task bar and click on it to unfold the settings menu.

2. There are [Wi-Fi] and [Airplane mode] two options in the Network settings, select [Wi-Fi] here.

3. Choose one Wireless LAN connection from the network list to connect to the Internet. Click [Connect] to continue.

4. A security key may be required for connecting the selected network. Then click [Next].

► Check the Wireless LAN status

When Airplane mode is enabled, Wireless LAN connection will be turned off. Before setting up a Wireless LAN connection, make sure that Airplane mode is turned off.

1. Go to the desktop. Find the 📶 icon in the lower-right corner of the task bar and click on it to unfold the settings menu.

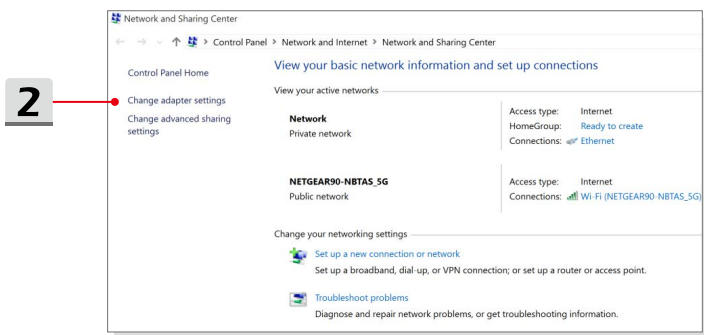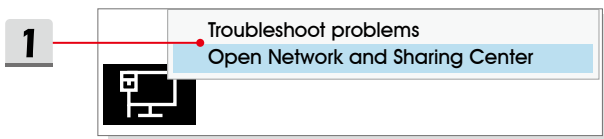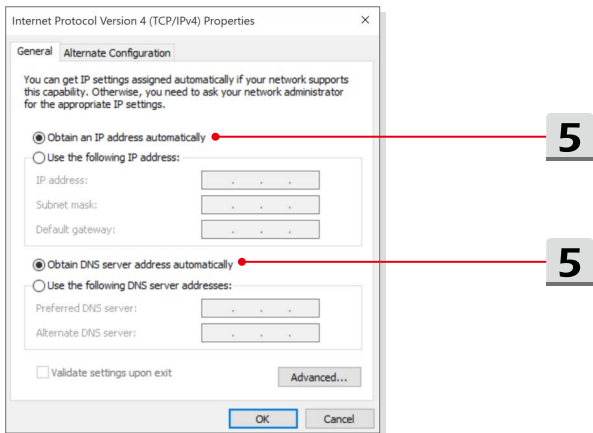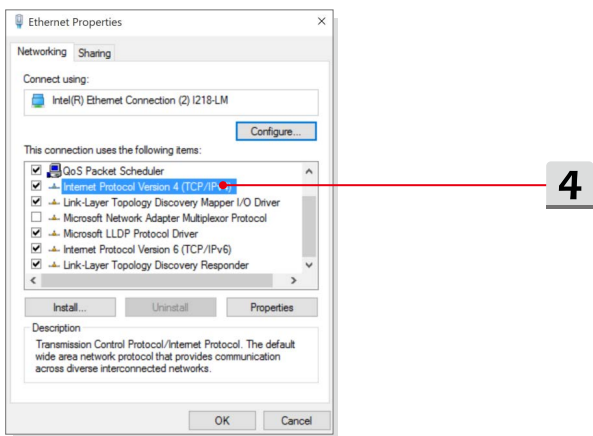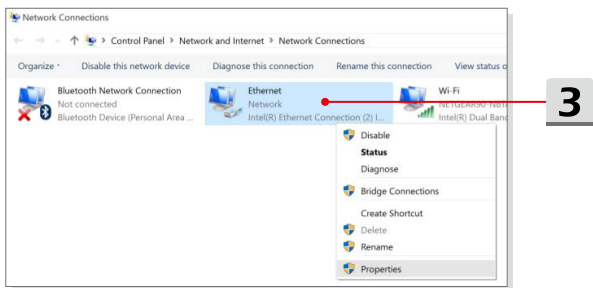2. Check if Wireless LAN mode is available in the Network settings.

Wired LAN

Using cables and network adapters to connect to the Internet. Before setting up the connection of Dynamic IP/PPPoE or Broadband (PPPoE) or Static IP, contact your Internet Service Provider (ISP) or network administrator for assistance of setting up Internet connection.

▶ Dynamic IP/PPPoE Connection

1. Go to the desktop. Find the ![icon] icon in the lower-right corner of the task bar, and then right click on it to select [Open Network and Sharing Center].

2. Choose [Change adapter settings].

3. Right click on [Ethernet] to select [Properties] from the drop-down menu.

4. In the Ethernet Properties window, select [Networking] tab and check [Internet Protocol Version 4 (TCP/IPv4)]. Then click [Properties] to continue.

5. Select [General] tab, click [Obtain an IP address automatically] and [Obtain DNS server address automatically]. Then click [OK].
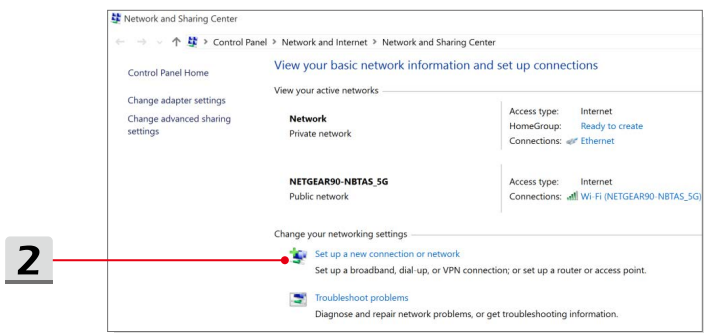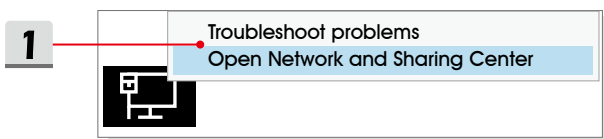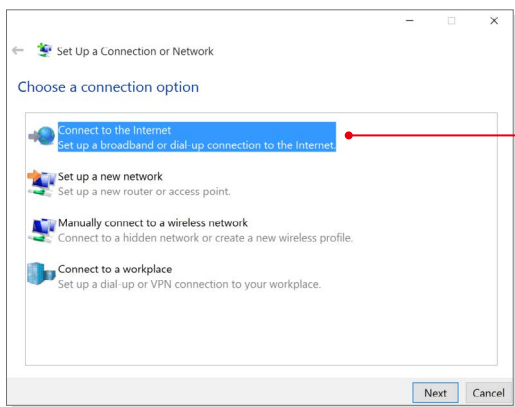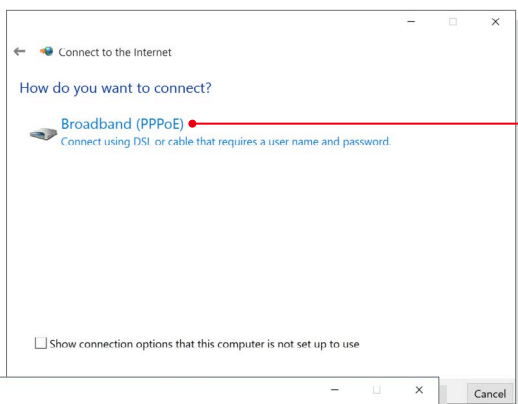
► Broadband (PPPoE) Connection

1. Go to the desktop. Find the ▣ icon in the lower-right corner of the task bar, right click on it to select [Open Network and Sharing Center].

2. Select [Set up a new connection or network] under [Change your networking settings].

3. Select [Connect to the Internet], and then click [Next].

4. Click [Broadband (PPPoE)].

5. Fills User name, Password, and Connection name fields. Then click [Connect].
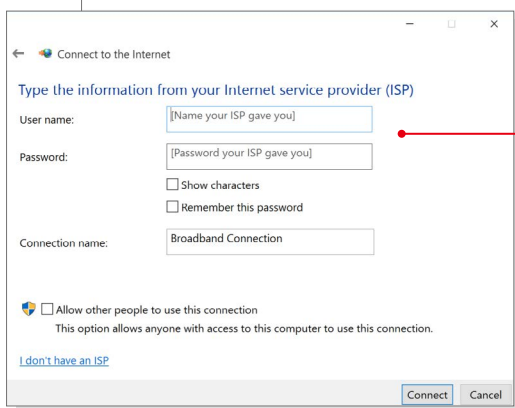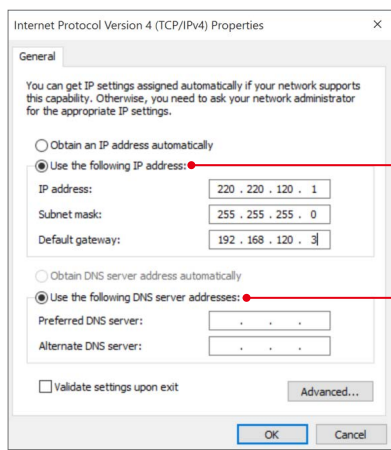
Set Up a Connection or Network

Choose a connection option

Connect to the Internet
Set up a broadband or dial-up connection to the Internet.

3

Set up a new network
Set up a new router or access point.

Manually connect to a wireless network
Connect to a hidden network or create a new wireless profile.

Connect to a workplace
Set up a dial-up or VPN connection to your workplace.

Next   Cancel

Connect to the Internet

How do you want to connect?

Broadband (PPPoE)
Connect using DSL or cable that requires a user name and password.

4

☐ Show connection options that this computer is not set up to use

Cancel

Connect to the Internet

Type the information from your Internet service provider (ISP)

User name: [Name your ISP gave you]

Password: [Password your ISP gave you]
                    ☐ Show characters
                    ☐ Remember this password

Connection name: Broadband Connection

5

🛡 ☐ Allow other people to use this connection
   This option allows anyone with access to this computer to use this connection.

I don't have an ISP

Connect   Cancel

► Static IP Connection

1. Follow the previous steps 1 to 4 in Dynamic IP/PPPoE Connection.

2. Select [General] tab and click [Use the following IP address] and [Use the following DNS server addresses]. You will be asked to fill the IP address, Subnet mask, and Default gateway, and then click [OK].
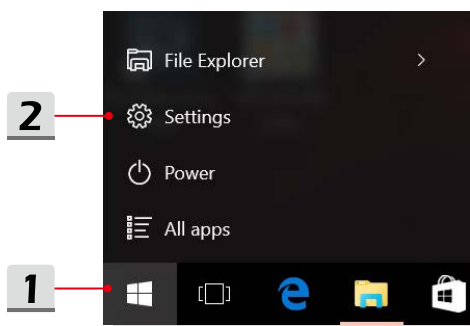
How to Set Up Bluetooth Connection

Bluetooth pairing is a process in which two Bluetooth devices communicate with each other through an established connection.
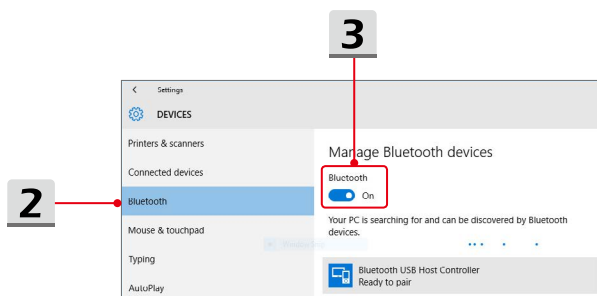
Activating Bluetooth Connection

► Checking the Bluetooth status
When Airplane mode is enabled, Bluetooth connection will be turned off. Before setting up a Bluetooth connection, make sure that Airplane mode is turned off.
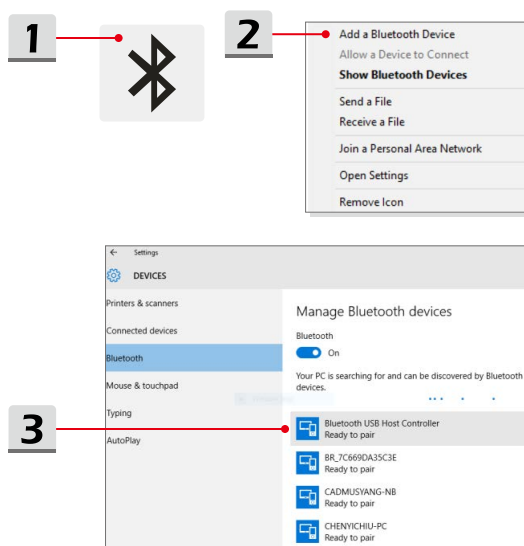
1. Go to the desktop. Find the ⊞ icon in the lower-left corner of the screen and click on it.

2. Select [Settings], and then go to [Devices/ Bluetooth] to check if the Bluetooth connection is available.

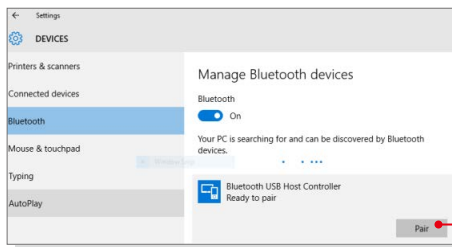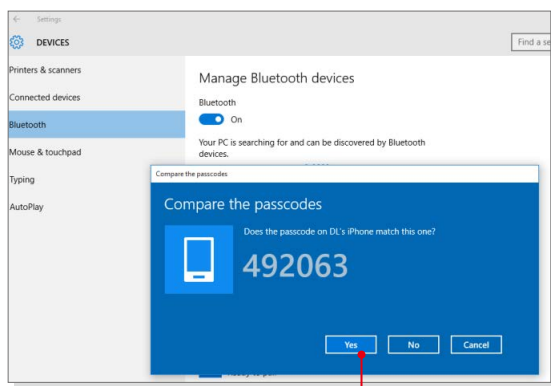3. Switch [On] the Bluetooth connection if it is set to [Off].

2

Settings

⚙ SETTINGS

🖥
System
Display, notifications,
apps, power

⌨
Devices
Bluetooth, printers,
mouse

3

2

‹ Settings

⚙ DEVICES

Printers & scanners

Connected devices

Bluetooth

Mouse & touchpad

Typing

AutoPlay

Manage Bluetooth devices

Bluetooth
⬤ On

Your PC is searching for and can be discovered by Bluetooth
devices.

••• • • •

Bluetooth USB Host Controller
Ready to pair

▶ Pairing the Bluetooth devices

1. Go to the desktop. Find the [Bluetooth] icon in the lower-right corner of the task bar and click on it.

2. Choose [Add a Bluetooth Device].

3. Select one Bluetooth connection from the network list.

4. Click [Pair] to continue.

5. Match the passcode between the equipment and the selected Bluetooth device, click [Yes] to finish.

How to Connect External Devices

This equipment may be equipped with various connecting I/O (input/output) ports, such as USB, HDMI and DisplayPort. Users will be able to connect diverse peripheral devices to the equipment.

To connect these devices, refer to the instruction manuals of each device first, and then connect the device to the equipment. This equipment is capable to auto detect the connected devices, and if there is no detection of the devices, please manually enable the devices by going to [Start Menu/ Control Panel/ Hardware and Sound/ Add a device] to add the new devices.