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R&TTE Directive

This device is in compliance with the essential requirements and other relevant provisions of the R&TTE Directive 1999/5/EC.

This device will be sold in the following EEA countries: Austria, Italy, Belgium, Liechtenstein, Denmark, Luxembourg, Finland, Netherlands, France, Norway, Germany, Portugal, Greece, Spain, Iceland, Sweden, Ireland, United Kingdom, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Slovakia, Poland, Slovenia.

ErP Off Mode Power Consumption Statement:

The figures below note the power consumption of this computer in compliance with European Commission (EC) regulations on power consumption in off mode:

• Off Mode < 0.5W

CE Marking

This device has been tested to and conforms to the regulatory requirements of the European Union and has attained CE Marking. The CE Mark is a conformity marking consisting of the letters "CE". The CE Mark applies to products regulated by certain European health, safety and environmental protection legislation. The CE Mark is obligatory for products it applies to: the manufacturer affixes the marking in order to be allowed to sell his product in the European market.

This product conforms to the essential requirements of the R&TTE directive 1999/5/EC in order to attain CE Marking. A notified body has determined that this device has properly demonstrated that the requirements of the directive have been met and has issued a favorable certificate of expert opinion. As such the device will bear the notified body number 0560 after the CE mark.

The CE Marking is not a quality mark. Foremost, it refers to the safety rather than to the quality of a product. Secondly, CE Marking is mandatory for the product it applies to, whereas most quality markings are voluntary.

FCC Statement (Federal Communications Commission)

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 can radiate 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:

- Re orient 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.
- Consult the service representative or an experienced radio/TV technician for help.

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.

FCC RF Radiation Exposure Statement:

- 1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- 2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

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Warning Use only shielded cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not expressly approved by the manufacturer for compliance with the above standards could void your authority to operate the equipment.

IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock, and injury to persons when using any electrical equipment:

- 1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
- 2. Avoid using this equipment with a telephone line (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
- 3. Do not use the telephone to report a gas leak in the vicinity of the leak.
- 4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
- 5. This product is intended to be supplied by a Listed Power Unit according to the model's requirements:
- Full Range AC/DC Adapter AC Input 100 240V, 50 60Hz, DC Output 19V, 2.1A (40W) minimum.

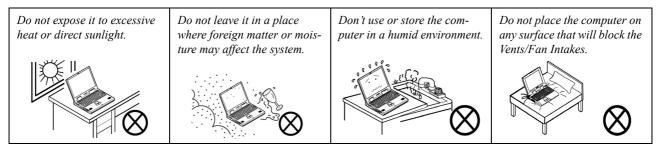
Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

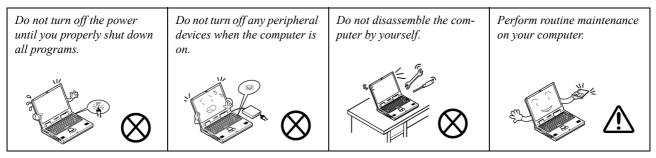
1. Don't drop it, or expose it to shock. If the computer falls, the case and the components could be damaged.



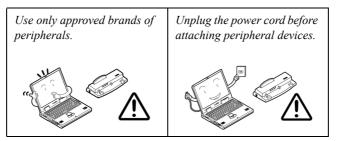
Keep it dry, and don't overheat it. Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.



- 3. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
- 4. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



5. Take care when using peripheral devices.



Servicing

Do not attempt to service the computer yourself. Doing so may violate your warranty and may expose you and the computer to electric shock. Refer all servicing to authorized service personnel. Unplug the computer from the power supply. Then refer servicing to qualified service personnel under any of the following conditions:

- When the power cord or AC/DC adapter is damaged or frayed.
- If the computer has been exposed to rain or other liquids.
- If the computer does not work normally when you follow the operating instructions.
- If the computer has been dropped or damaged (do not touch the poisonous liquid if the LCD panel breaks).
- If there is an unusual odor, heat or smoke coming from your computer.

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Bottom Cover Removal Warning

Users should not remove any cover(s) and /or screw(s) for the purposes of device upgrade as this may violate the terms of your warranty. If you need to replace/remove the hard disk/RAM/optical device etc., for any reason, please contact your distributor/supplier for further information.

Removal Warning

When removing any cover(s) and screw(s) for the purposes of device upgrade, remember to replace the cover(s) and screw(s) before restoring power to the system.

Also note the following when the cover is removed:

- Hazardous moving parts.
- Keep away from moving fan blades.

Power Safety

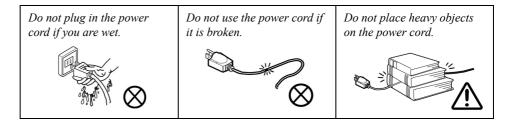
The computer has specific power requirements:

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines and power cord).

You must also remove your battery in order to prevent accidentally turning the machine on. Before removing the battery disconnect the AC/DC adapter from the computer.

- Only use a power adapter approved for use with this computer.
- Your AC/DC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies (i.e. AC/DC adapter or car adapter).



Polymer/Lithium-Ion Battery Precautions

Note the following information which is specific to Polymer/Lithium-Ion batteries only, and where applicable, this overrides the general battery precaution information overleaf.

- Polymer/Lithium-Ion batteries may experience a slight expansion or swelling, however this is part of the battery's safety mechanism and is not a cause for concern.
- Use proper handling procedures when using Polymer/Lithium-Ion batteries. Do not use Polymer/Lithium-Ion batteries in high ambient temperature environments, and do not store unused batteries for extended periods.
- If you are working in areas of low temperature use the AC/DC adapter to power the computer.

See also the general battery precautionary information overleaf for further information.

General Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not remove any batteries from the computer while it is powered on.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- If you do not use the battery for an extended period, then remove the battery from the computer for storage.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

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Battery Disposal & Caution

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Cleaning

Do not apply cleaner directly to the computer; use a soft clean cloth.

Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

Cleaning Instructions

(For Computer Models Supplied with Light Blue Cleaning Cloth)

Some computer models in this series come supplied with a light blue cleaning cloth. To clean the computer case with this cloth follow the instructions below:

- 1. Power off the computer and peripherals.
- 2. Disconnect the AC/DC adapter from the computer.
- 3. Use a little water to dampen the cloth slightly.
- 4. Clean the computer case with the cloth.
- 5. Dry the computer with a dry cloth, or allow it time to dry before turning on.
- 6. Reconnect the AC/DC adapter and turn the computer on.

Travel Considerations

As you get ready for your trip, run through this list to make sure the system is ready to go:

- 1. Check that the battery pack and any spares are fully charged.
- 2. Power off the computer and peripherals.
- 3. Close the display panel and make sure it's latched.
- 4. Disconnect the AC/DC adapter and cables. Stow them in the carrying bag.
- 5. The AC/DC adapter uses voltages from 100 to 240 volts so you won't need a second voltage adapter. However, check with your travel agent to see if you need any socket adapters.
- 6. Put the notebook in its carrying bag and secure it with the bag's straps.
- 7. If you're taking any peripherals (e.g. a printer, mouse or digital camera), pack them and those devices' adapters and/or cables.
- 8. Anticipate customs Some jurisdictions may have import restrictions or require proof of ownership for both hardware and software. Make sure your "papers" are handy.



Power Off Before Traveling

Make sure that your notebook is completely powered off before putting it into a travel bag (or any such container). Putting a notebook which is powered on in a travel bag may cause the Vents/Fan Intakes to be blocked. To prevent your computer from overheating make sure nothing blocks the Vent/Fan Intakes while the computer is in use.

On the Road

In addition to the general safety and maintenance suggestions in this preface, and Chapter 8: Troubleshooting, keep these points in mind:

Hand-carry the notebook - For security, don't let it out of your sight. In some areas, computer theft is very common. Don't check it with "normal" luggage. Baggage handlers may not be sufficiently careful. Avoid knocking the computer against hard objects.

Beware of Electromagnetic fields - Devices such as metal detectors & X-ray machines can damage the computer, hard disk, floppy disks, and other media. They may also destroy any stored data - Pass your computer and disks around the devices. Ask security officials to hand-inspect them (you may be asked to turn it on). **Note**: Some airports also scan luggage with these devices.

Fly safely - Most airlines have regulations about the use of computers and other electronic devices in flight. These restrictions are for your safety, follow them. If you stow the notebook in an overhead compartment, make sure it's secure. Contents may shift and/or fall out when the compartment is opened.

Get power where you can - If an electrical outlet is available, use the AC/DC adapter and keep your battery(ies) charged.

Keep it dry - If you move quickly from a cold to a warm location, water vapor can condense inside the computer. Wait a few minutes before turning it on so that any moisture can evaporate.

Developing Good Work Habits

Developing good work habits is important if you need to work in front of the computer for long periods of time. Improper work habits can result in discomfort or serious injury from repetitive strain to your hands, wrists or other joints. The following are some tips to reduce the strain:



- Adjust the height of the chair and/or desk so that the keyboard is at or slightly below the level of your elbow. Keep your forearms, wrists, and hands in a relaxed position.
- Your knees should be slightly higher than your hips. Place your feet flat on the floor or on a footrest if necessary.
- Use a chair with a back and adjust it to support your lower back comfortably.
- Sit straight so that your knees, hips and elbows form approximately 90-degree angles when you are working.
- Take periodic breaks if you are using the computer for long periods of time.



Remember to:

- Alter your posture frequently.
- Stretch and exercise your body several times a day.
- Take periodic breaks when you work at the computer for long periods of time. Frequent and short breaks are better than fewer and longer breaks.

Lighting

Proper lighting and a comfortable viewing angle can reduce eye strain and shoulder and neck muscle fatigue.

- Position the display to avoid glare or reflections from overhead lighting or outside sources of light.
- Keep the display screen clean and set the brightness and contrast to levels that allow you to see the screen clearly.
- Position the display directly in front of you at a comfortable viewing distance.
- Adjust the display-viewing angle to find the best position.

LCD Screen Care

To prevent **image persistence** on LCD monitors (caused by the continuous display of graphics on the screen for an extended period of time) take the following precautions:

- Set the Windows Power Plans to turn the screen off after a few minutes of screen idle time.
- Use a rotating, moving or blank screen saver (this prevents an image from being displayed too long).
- Rotate desktop background images every few days.
- Turn the monitor off when the system is not in use.

LCD Electro-Plated Logos

Note that in computers featuring a raised LCD electro-plated logo, the logo is covered by a protective adhesive. Due to general wear and tear, this adhesive may deteriorate over time and the exposed logo may develop sharp edges. Be careful when handling the computer in this case, and avoid touching the raised LCD electro-plated logo. Avoid placing any other items in the carrying bag which may rub against the top of the computer during transport. If any such wear and tear develops contact your distributor/supplier.0

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Chapter 1: Quick Start Guide

Overview

This Quick Start Guide is a brief introduction to the basic features of your computer, to navigating around the computer and to getting your system started. The remainder of the manual covers the following:

- Chapter 2 A guide to using some of the main features of the computer e.g. the storage devices (hard disk/ SSD and Multi-in-1 card reader), TouchPad & Mouse & Audio.
- Chapter 3 The computer's power saving options.
- Chapter 4 The installation of the drivers and utilities essential to the operation or improvement of some of the computer's subsystems.
- Chapter 5 An outline of the computer's built-in software or **BIOS** (Basic Input Output System).
- Chapter 6 A quick guide to the computer's PC Camera, Wireless LAN, Combo Bluetooth & WLAN, 4G and Intel modules (some of which may be optional depending on your purchase configuration).
- Chapter 7 A troubleshooting guide.
- Appendix A Definitions of the interface, ports/jacks which allow your computer to communicate with external devices.
- Appendix B Information on Control Center.
- Appendix C Information on the Video driver controls.
- Appendix D The computer's specification.

Quick Start Guide

Advanced Users

If you are an advanced user you may skip over most of this Quick Start Guide. However you may find it useful to refer to "*What to Install*" on page 4 - 1 and "*BIOS Utilities*" on page 5 - 1 in the remainder of the User's Manual. You may also find the notes marked with a \mathcal{P} of interest to you.

Beginners and Non-Advanced Users

// Notes

Check the light colored boxes with the mark above to find detailed information about the computer's features. If you are new to computers (or do not have an advanced knowledge of them) then the information contained in the Quick Start Guide should be enough to get you up and running. Eventually you should try to look through all the documentation (more detailed descriptions of the functions, setup and system controls are covered in the remainder of the User's Manual), but do not worry if you do not understand everything the first time. Keep this manual nearby and refer to it to learn as you go. You may find it useful to refer to the notes marked with a P as indicated in the margin. For a more detailed description of any of the interface ports and jacks see "Interface (Ports & Jacks)" on page A - I.

Warning Boxes

No matter what your level please pay careful attention to the warning and safety information indicated by the 2 symbol. Also please note the safety and handling instructions as indicated in the *Preface*.

Not Included

Operating Systems (e.g. *Windows 10*) and applications (e.g. word processing, spreadsheet and database programs) have their own manuals, so please consult the appropriate manuals.

Drivers

If you are installing new system software, or are re-configuring your computer for a different system, you will need to install the drivers listed in "*Drivers & Utilities*" on page 4 - 1. Drivers are programs which act as an interface between the computer and a hardware component e.g. a wireless network module. It is very important that you install the drivers in the order listed. You will be unable to use most advanced controls until the necessary drivers and utilities are properly installed. If your system hasn't been properly configured (your service representative may have already done that for you); refer to *Chapter 4* for installation instructions.

Ports and Jacks

See "Interface (Ports & Jacks)" on page A - 1 for a description of the interface (ports & jacks) which allow your computer to communicate with external devices, connect to the internet etc.

Quick Start Guide

System Startup

- 1. Remove all packing materials, and place the computer on a stable surface.
- 2. Securely attach any peripherals you want to use with the notebook (e.g. keyboard and mouse) to their ports.
- 3. When first setting up the computer use the following procedure (as to safeguard the computer during shipping, the battery will be locked to not power the system until first connected to the AC/DC adapter and initially set up as below):
 - Attach the AC/DC adapter cord to the DC-In jack on the left of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter and the battery will now be unlocked.
- 4. Use one hand to raise the lid/LCD to a comfortable viewing angle (**do not exceed 130 degrees**); use the other hand to support the base of the computer (**Note**: **Never** lift the computer by the lid/LCD).
- 5. Press the power button on the left side of the computer to turn it on (**note that the lid/LCD must be open for the power button to function**).

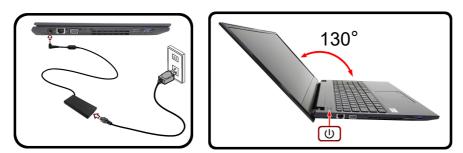


Figure 1 - 1 - Opening the Lid/LCD & Computer with AC/DC Adapter Plugged-In

Shutdown Note that you should always shut your computer down by choos-

puter down by choosing the **Shut Down** command in **Windows**. This will help prevent hard disk or system problems.

1 - 4 System Startup

System Software

Your computer may already come with system software pre-installed. Where this is not the case, or where you are re-configuring your computer for a different system, you will find the *Windows 10 (64-bit)* operating system is supported.



Quick Start Guide

Figure 1 - 2 LCD Panel Open

- 1. Built-in PC Camera
- 2. PC Camera LED
- 3. Built-In Array Microphone
- 4. LCD
- 5. Power Button
- 6. Keyboard
- 7. Touchpad & Buttons



Note that the Touchpad/ Clickpad and Buttons has a valid operational area indicated within the dotted lines above.

LCD Panel Open - Model A



Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the WLAN & Bluetooth are OFF if you are using the computer aboard aircraft by putting the system in to Airplane Mode (see Table 1 - 2, on page 1 - 12).

LCD Panel Open - Model B





The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the WLAN & Bluetooth are OFF if you are using the computer aboard aircraft by putting the system in to Airplane Mode (see Table 1 - 2, on page 1 - 12).

Figure 1 - 3 LCD Panel Open

- 1. Built-in PC Camera
- 2. PC Camera LED
- 3. Built-In Array Microphone
- 4. LCD
- 5. Power Button
- 6. Keyboard
- 7. Touchpad & Buttons



Note that the Touchpad/ Clickpad and Buttons has a valid operational area indicated within the dotted lines above.

LED Indicators

The LED indicators on the computer display helpful information about the current status of the computer.

lcon	Color	Description		
	Orange	DC Power is Plugged In (Computer is Off)		
も/し	Green	The Computer is On		
	Blinking Green	The Computer is in Sleep Mode		
	Orange	The Battery is Charging		
(III	Green	The Battery is Fully Charged		
	Blinking Orange	The Battery Has Reached Critically Low Power Status		
2	Green	Hard Disk Activity		

Table 1 - 1 - LED Indicators

Keyboard - Model A

The keyboard has a numerical keypad for easy numeric data input, and function keys to change operational features instantly. See *Table 1 - 2, on page 1 - 12* for full function key combination details.



Figure 1 - 4 - Keyboard

Special Characters

B

Some software applications allow the number-keys to be used with **Alt** to produce special characters. These special characters can only be produced by using the numeric keypad. Regular number keys (in the upper row of the keyboard) will not work. Make sure that **NumLk** is on.

Other Keyboards

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If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/hot-keys unique to the system's regular keyboard may not work.

ScrLk

Hold down the **Fn Key** and ScrLk to enable scroll lock, and check the LED indicator for status.

Other Keyboards

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If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/hot-keys unique to the system's regular keyboard may not work.

ScrLk

Hold down the **Fn Key** and ScrLk to enable scroll lock, and check the LED indicator for status.

Illuminated Colored LED Keyboard

The **illuminated colored LED keyboard** has an embedded numerical keypad for easy numeric data input, and features function keys to allow you to change operational features instantly. See *Table 1 - 2, on page 1 - 12* for full function key combination details.

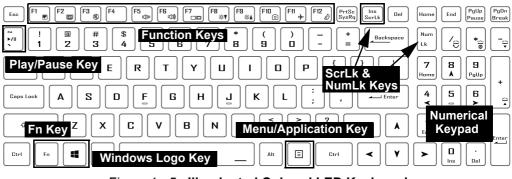


Figure 1 - 5 - Illuminated Colored LED Keyboard

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Special Characters

Some software applications allow the number-keys to be used with **Alt** to produce special characters. These special characters can only be produced by using the numeric keypad. Regular number keys (in the upper row of the keyboard) will not work. Make sure that **NumLk** is on.

1 - 10 Illuminated Colored LED Keyboard

Keyboard - Model B

The keyboard has a numerical keypad for easy numeric data input, and function keys to change operational features instantly. See *Table 1 - 2, on page 1 - 12* for full function key combination details.



Figure 1 - 6 - Keyboard

C Special Characters

Some software applications allow the number-keys to be used with **Alt** to produce special characters. These special characters can only be produced by using the numeric keypad. Regular number keys (in the upper row of the keyboard) will not work. Make sure that **NumLk** is on.

CP Other Keyboards

If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/hot-keys unique to the system's regular keyboard may not work.

ScrLk

Hold down the **Fn Key** and ScrLk to enable scroll lock, and check the LED indicator for status. 1

Function/Hot Key Indicators

The **function keys** (F1 - F12 etc.) will act as **hot keys** when pressed while the **Fn** key is held down. In addition to the basic function key combinations; visual indicators are available when the hot key utility is installed.

Keys	Funct	tion	Keys	F	unction
Fn + 🯹	Play/Pause (in Audio	/Video Programs)	Fn + F ⁸	Brightness	Decrease/Increase
Fn + 1	Fan Control Toggle Automatic Fan Control / Full Power	FAN SPEED AUTOMATIC FAN SPEED MAXIMUM	Fn + F 10	PC Camera Power Toggle	CAMERA ON
Fn + [F1]	TouchPad Toggle	TOUCH PAD ON	Fn + F11	Airplane Mode Toggle	Airplane mode on Airplane mode off
Fn + F ²	LCD Toggle (or press any key)		Fn + F 12	Sleep Toggle	
Fn + F ³	Mute To	oggle	Fn + NumLk	Number Lock Toggle	NUM LOCK ON NUM LOCK OFF
Fn + F5	Volume Decrea	ase/Increase	Fn + ScrLk	Scroll Lock Toggle	SCR LOCK ON
Fn + F 7	Display 1	loggle	Caps Lock	Caps Lock Toggle	A CAPS LOCK ON A CAPS LOCK OFF
Fn + Esc	Control Cent	er Toggle			

Table 1 - 2 - Function & Hot Key Indicators

1 - 12 Function/Hot Key Indicators

Keyboard Backlight LED Device

(For Illuminated Colored LED Keyboards Only)

Press **Fn** plus the $\boxed{2}$ key to toggle the keyboard LED on/off. The keyboard LED may be configured using the **Fn** + **key combination** outlined in the table below. In addition press **Fn** plus the $\boxed{2}$ (1) key to launch the keyboard backlight application to configure the settings.

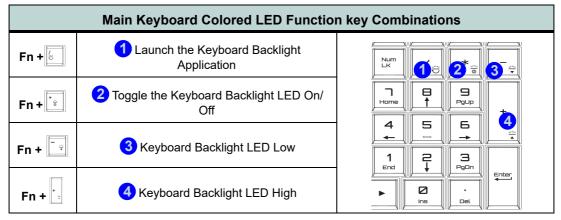
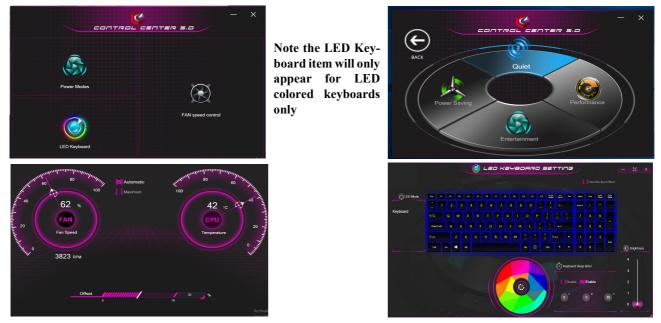


Table 1 - 3 - Main Keyboard LEDs (for Illuminated Colored Keyboards Only)

Control Center

Run the Control Center from the Windows Start menu Control Center 30 or use the Fn + Esc key combination, or double-click the icon in the notification area of the taskbar. The Control Center provides quick access to Power Modes, Fan settings and LED Keyboard (for optional LED keyboards only) configuration.





Front & Left Views - Model A





This model includes 2 * USB 2.0 ports (Type-A), 1 * USB 3.1 (USB 3.1 Gen 1 port) Type-A ports and 1 * USB 3.1 (USB 3.1 Gen 2 port) Type-C port. The larger **blue port is a Type A USB 3.1, Gen 1 port**, the **USB 2.0 ports** are colored **black** and the **smaller port** is a **USB 3.1 Gen 2 Type C port**.

Alternatively the USB 3.1 (USB 3.1 Gen 2) Type C port may be replaced (**Factory Option**) by a USB 3.1 (USB 3.1 Gen 2) Type C port that supports Power Delivery with DC-In. This port allows you to use a third party AC/DC adapter/laptop power bank plugged into the port as a power supply. **If you are using a power bank make sure that it complies with the USB-C PD (Power Delivery) standard specification**. **If you are using a third party AC/DC adapter, the rating of the adapter must be at least 20Volts, 2.25A (45 Watts) and it should be appropriately certified**.

Multi-In-1 Card Reader

The card reader allows you to use the most popular digital storage card formats:

MMC (MultiMedia Card) / RS MMC SD (Secure Digital) / Mini SD / SDHC / SDXC

Figure 1 - 8 Front & Left Views

- 1. LED Indicators
- 2. Multi-in-1 Card Reader
- 3. DC-In Jack
- 4. RJ-45 LAN Jack
- 5. External Monitor (VGA) Port
- USB 3.1 (USB 3.1 Gen 2) Type C Port (Factory Option for port with Power Delivery DC-In)
- 7. Vent
- 8. HDMI-Out Port
- 9. USB 3.0 (USB 3.1 Gen 1) Type A Port

Figure 1 - 9 Front & Left Views

- 1. LED Indicators
- 2. Multi-in-1 Card Reader
- 3. DC-In Jack
- 4. RJ-45 LAN Jack
- 5. External Monitor (VGA) Port
- USB 3.1 (USB 3.1 Gen 2) Type C Port (Factory Option for port with Power Delivery DC-In)
- 7. Vent
- 8. HDMI-Out Port
- 9. USB 3.0 (USB 3.1 Gen 1) Type A Port

Front & Left Views - Model B





This model includes 2 * USB 2.0 ports (Type-A), 1 * USB 3.1 (USB 3.1 Gen 1 port) Type-A ports and 1 * USB 3.1 (USB 3.1 Gen 2 port) Type-C port. The larger **blue port is a Type A USB 3.1**, **Gen 1 port**, the **USB 2.0 ports** are colored **black** and the **smaller port** is a **USB 3.1 Gen 2 Type C port**.

Alternatively the USB 3.1 (USB 3.1 Gen 2) Type C port may be replaced (**Factory Option**) by a USB 3.1 (USB 3.1 Gen 2) Type C port that supports Power Delivery with DC-In. This port allows you to use a third party AC/DC adapter/laptop power bank plugged into the port as a power supply. **If you are using a power bank make sure that it complies with the USB-C PD (Power Delivery) standard specification**. **If you are using a third party AC/DC adapter, the rating of the adapter must be at least 20Volts, 2.25A (45 Watts) and it should be appropriately certified**.

Multi-In-1 Card Reader

The card reader allows you to use the most popular digital storage card formats:

MMC (MultiMedia Card) / RS MMC SD (Secure Digital) / Mini SD / SDHC / SDXC

Right View & Rear Views - Model A

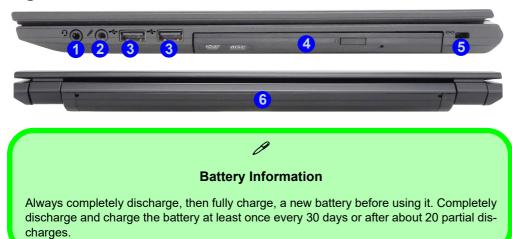


Figure 1 - 10 Right & Rear Views

- 1. Headphone + Microphone Combo Jack
- 2. Microphone Jack
- 3. USB 2.0 Ports
- 4. Optical Device Drive
- 5. Security Lock Slot
- 6. Battery

Figure 1 - 11 Right & Rear Views

- 1. Headphone + Microphone Combo Jack
- 2. Microphone Jack
- 3. USB 2.0 Ports
- 4. Optical Device Drive
- 5. Security Lock Slot
- 6. Battery

Right View & Rear Views - Model B

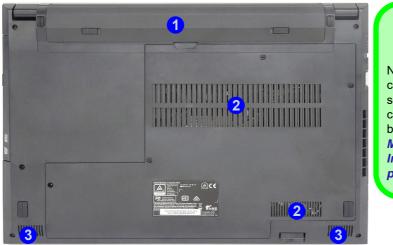


Battery Information

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Always completely discharge, then fully charge, a new battery before using it. Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges.

Bottom View - Model A



4G SIM Card

Note that the 4G SIM card needs to be inserted into the slot located under the battery (see "4G Module SIM Card Installation" on page 6 - 44).

Figure 1 - 12 Bottom View

- 1. Battery
- 2. Vent/Fan Intake/ Outlet
- 3. Speakers



Bottom Cover Appearance

Note that some design styles will have a bottom cover that differs in appearance slightly form that pictured here.

Overheating

To prevent your computer from overheating make sure nothing blocks the Vent/Fan Intake while the computer is in use.

Bottom Cover Removal Warning

Do not remove any cover(s) and /or screw(s) for the purposes of device upgrade as this may violate the terms of your warranty.

If you need to replace/remove the hard disk/RAM/optical device etc., for any reason, please contact your distributor/supplier for further information.

Figure 1 - 13 Bottom View

- 1. Battery
- 2. Vent/Fan Intake/ Outlet
- 3. Speakers

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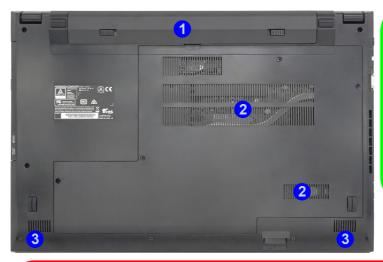
Bottom Cover Appearance

Note that some design styles will have a bottom cover that differs in appearance slightly form that pictured here.

Overheating

To prevent your computer from overheating make sure nothing blocks the Vent/Fan Intake while the computer is in use.

Bottom View - Model B



4G SIM Card Note that the 4G SIM card needs to be inserted into the slot located under the battery (see "4G Module SIM Card Installation" on page 6 - 44).

B

Bottom Cover Removal Warning

Do not remove any cover(s) and /or screw(s) for the purposes of device upgrade as this may violate the terms of your warranty.

If you need to replace/remove the hard disk/RAM/optical device etc., for any reason, please contact your distributor/supplier for further information.

Windows 10 Start Menu

Most of the apps, control panels, utilities and programs within *Windows 10* can be accessed from the **Start Menu** by clicking the icon \blacksquare in the taskbar in the lower left corner of the screen (or by pressing the **Windows Logo Key** \blacksquare on the keyboard). The Start Menu will contain a number of apps, and many more will be installed as you add more applications etc. Not all of these apps may fit on the screen so you can use the scroll bar to move up and down the screen.



Figure 1 - 14 - Windows Start Menu

Right-Clicking the Windows Logo In Start Menu

Right-click the Start Menu and icon (or use the Windows Logo Key and + X key combination) to bring up an advanced Context Menu of useful features such as Apps and Features, Power Options, Task Manager, Search, File Explorer, Device Manager, Computer Management and Network Connections etc.

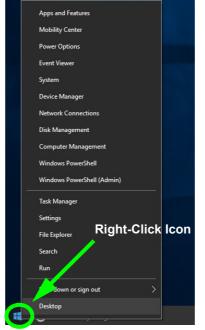


Figure 1 - 15 - Right-Click Windows Logo in Start Menu

Pining/Unpinning Apps & Programs to/from the Start Menu

To make things easy to find you can add and remove tiles for apps and programs to the Start Menu. Right-Click on a program's icon and select **Pin to Start** from the drop-down menu. To remove an app or program from the Start Menu right-click the icon and select **Unpin from Start**. You can use the same method to **pin apps/pro-grams to/from the taskbar** (select pin to taskbar/unpin this program from the taskbar).

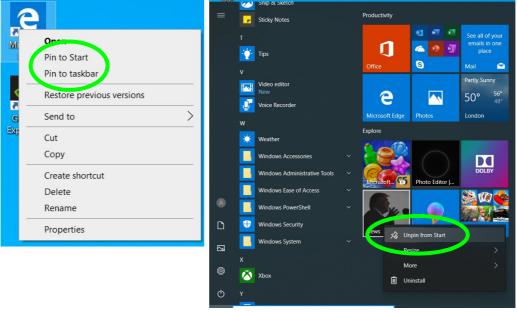


Figure 1 - 16 - Pin to Start/Unpin from Start

Windows 10 Control Panel

In many instances throughout this manual you will see an instruction to open the **Control Panel**. The Control Panel can be accessed in a number of ways in *Windows 10*.

- Select *Control Panel* under the Windows System item in the Start Menu.
- Type *Control Panel* into the *Search* box in the taskbar and click on the icon when it pops up.
- You can pin the *Control Panel* tile to *Start* or *task-bar*.

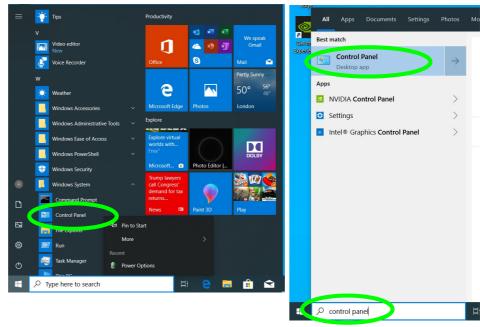
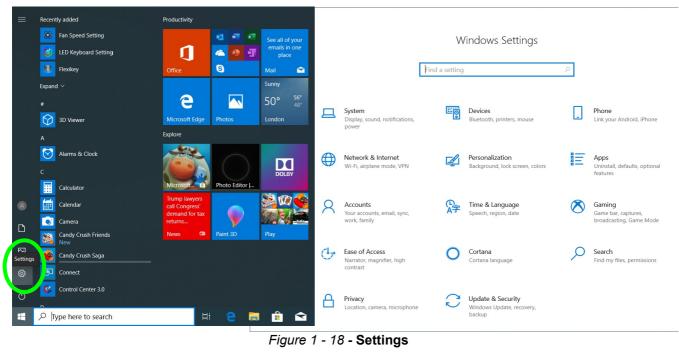


Figure 1 - 17 - Windows 10 Control Panel Access

Settings

The **Settings** item in the Start Menu (and also as an App) gives you quick access to a number of system settings control panels allowing you to adjust settings for System, Devices, Network & internet, Personalization, Apps, Accounts, Time & language, Gaming, Ease of Access, Privacy and Update & security.



Windows 10 Taskbar

In many instances throughout this manual you will see an instruction to access the **notification area of the taskbar**. The notification area of the taskbar in the bottom right of the screen. Some of the Control Panels and applications referred to throughout the course of this manual can be accessed from here.



You can pin/unpin apps to/from the taskbar in much the same way as you can to the Start screen (see "*Pining/* Unpinning Apps & Programs to/from the Start Menu" on page 1 - 23).

Action Center

The Action Center appears as a vertical panel on the right side of the screen (click Expand to view the full panel) when you swipe in from the right or click the button in the notification tray. This gives you access to commonly needed functions like Network, All Settings, Airplane Mode, and Project etc. The Action Center also contains a **Brightness** slider when expanded.

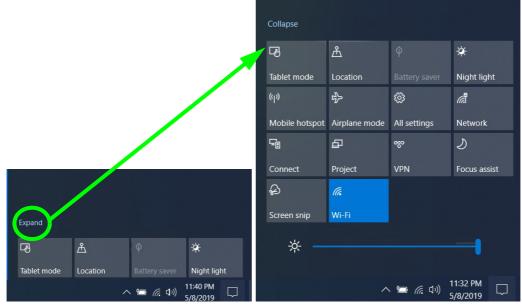


Figure 1 - 20 - Action Center

Video Features

You can switch display devices, and configure display options, from the **Display Settings** control panel (see over). In *Windows 10* it is possible to quickly configure external displays from the **Project** menu (press the Windows logo key **II** on your keyboard and the **P** key).

To Configure Displays using Project

- 1. Attach your display to the appropriate port (HDMI/External Monitor (VGA) Port), and turn it on.
- 2. Press the **# + P** key combination.
- 3. Click on any one of the options from the menu to select PC screen only, Duplicate, Extend or Second screen only.
- 4. You can also click **Connect to a wireless display** at the bottom of the **Project** screen and follow the steps to connect to any wireless enabled display.



Figure 1 - 21 - Project (Devices)

To access the Display Settings:

- 1. You can quickly adjust the display by right-clicking the desktop and selecting **Display Settings**.
- 2. Adjust the settings for **Brightness and color**, **Scale and layout**, **Resolution** and **Orientation** from the menus.
- 3. When and external display is attached you can arrange the display configuration from the **Multiple Displays** menu, and arrange the configuration from **Select and rearrange displays**.
- 4. Click **Apply** to save any changes made.

		← Settings		Display	
View Sort by	>	ය Home	Display	Display Select and rearrange di	splays
Refresh	1	Find a setting	Brightness and color	Select a display below to chan	ge its settings. Some settings are applied to all displays.
Paste		System	Change brightness for the built-in display		
Paste shortcut		🖵 Display	Night light		
New	>	4)) Sound	Off Off	1	2
🚺 🔄 Display settings		Notifications & actions	Night light settings	I	
Versonalize		 Focus assist 	Windows HD Color		
		O Power & sleep	Get a brighter, more vibrant picture in HDR and WCG videos, games, and apps on the display selected above.	Apply Cancel	Identify Detect
		Battery	Windows HD Color settings		
		Storage	Scale and layout		Multiple displays
		- Tablet mode	Change the size of text, apps, and other items		Duplicate these displays
		🛱 Multitasking	125% (Recommended) Advanced scaling settings		Extend these displays
		Projecting to this PC	Display resolution		Show only on 1
		Shared experiences	1920 × 1080 (Recommended)		Show only on 2 Display adapter properties
		8.8 Shared experiences	Display orientation		

Figure 1 - 22 - Display Settings

To access the *Intel(R) Graphics Command Center*:

- 1. Access the Intel Graphics Command Center from the Start menu in Windows.
- 2. You can **right-click** the **Intel Graphics Command Center** in the Start menu and pin the control panel to Start and/or taskbar.

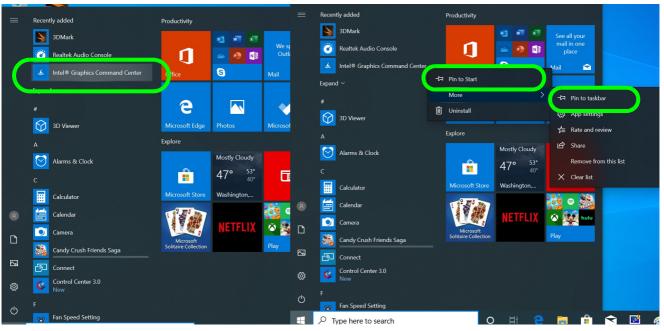


Figure 1 - 23 - Intel® Graphics Command Center Access

1 - 30 Video Features

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Advanced video configuration options are provided by the Intel Graphics Command Center.

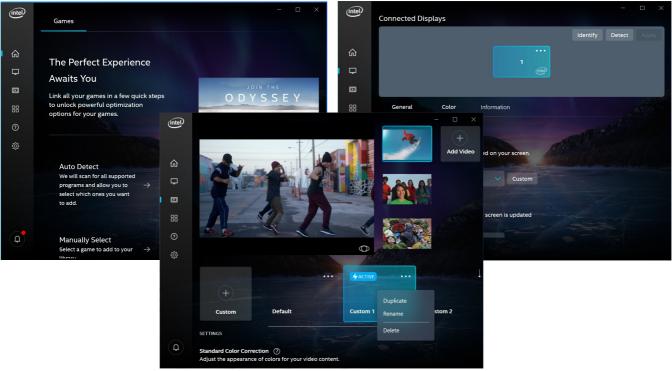


Figure 1 - 24 - Intel® Graphics Command Center

1

Minimum Screen Resolution Settings

- 1. Windows 10 has minimum screen resolution requirements.
- 2. Right-click a blank area of the Desktop and select **Display Settings**.
- 3. Adjust the **Display Resolution** to make sure that it is at least **1024** * **768**, although preferably **1366** * **768** or above.

Settings	- D	Х
ය Home	Display	
Find a setting	Windows HD Color Get a brighter, more vibrant picture in HDR and WCG videos, games, and apps on the display selected above.	
🖵 Display	Windows HD. Color settings	
ላ፡) Sound	1920 × 1080 (Recommended) 1680 × 1050	
Notifications & actions	1600 × 900	
J Focus assist	1440 × 900 1400 × 1050	
O Power & sleep	1366 × 768	
🗆 Battery	1360 × 768 1280 × 1024	
📼 Storage	1280 × 960	
Cð Tablet mode	1280 × 800 1280 × 768	
耳 Multitasking	1280 × 720	
Projecting to this PC	1280 × 600 1152 × 864	A
X Shared experiences	1024 × 768	

Figure 1 - 25 - Display (Resolution)

Power Options

Power Options (Hardware and Sound) can be accessed from the Control Panel. The **Power** button item in **Start Menu** (or the context menu) may be used to **Shut down** or **Restart** (you can also add **Hibernate/Sleep** to the menu - see page 1 - 34). To fully control all the power options (including Hibernate mode) go to the **Power Options** control panel and configure the power button, sleep button and lid to perform the function selected.

Using the Power Button

- 1. Go to the Start Menu.
- 2. Click the **Power button**
- 3. Select the power state required from the menu.

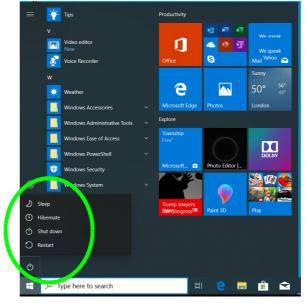
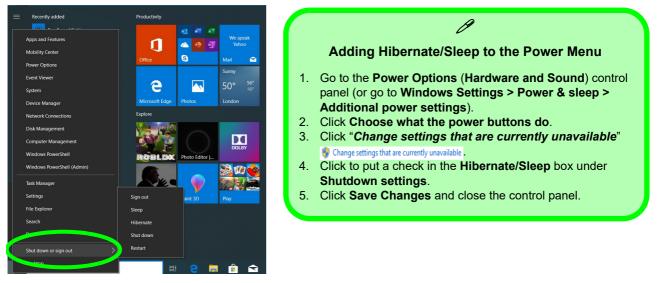
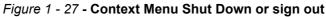


Figure 1 - 26 - Shut Down/Restart

You can also use the **context menu** (right-click the Start Menu **t** icon or press the Windows logo **t** + X key combination) to **Sign out, Sleep, Hibernate, Shut down**, and **Restart**.





Ctrl + Alt + Delete Key Combination

You can use the **CTRL** + **ALT** + **DEL** key combination to bring up a full-screen displaying **Lock**, **Sign out**, **Change a password**, **Task Manager and Switch User**. If you click the **Power** icon in the lower right corner of the screen a power management option menu appears to display **Sleep**, **Hibernate**, **Shut down**, and **Restart**.

Chapter 2: Features & Components

Overview

Read this chapter to learn more about the following main features and components of the computer:

- Hard Disk Drive/Solid State Drive
- Optical (CD/DVD) Device
- Multi-In-1 Card Reader
- Touchpad and Buttons/Mouse
- Realtek Audio Console

Features & Components

Bottom Cover Removal Warning

Do not remove any cover(s) and /or screw(s) for the purposes of device upgrade as this may violate the terms of your warranty.

If you need to replace/ remove the hard disk for any reason, please contact your distributor/supplier for further information.

Hard Disk Drive/Solid State Drive

The hard disk drive/solid state drive is used to store your data in the computer. The hard disk can be taken out to accommodate other serial (SATA) hard disk drives, however you will need to contact your distributor/supplier to do this in order to avoid violating the terms of your warranty. The system can also support solid state drives as storage devices (see "*Storage*" on page D - 2 for specification information).

Optical (CD/DVD) Device

There is a bay for an optical (CD/DVD) device (9.0 / 9.5 mm height). The actual device will depend on the module you purchased (see "*Storage*" on page D - 2). There is also an option for a dummy ODD, or a caddy bay for an HDD or SSD. The optical device is usually labeled "**Drive D**:" and may be used as a boot device if properly set in the **BIOS** (see "*Boot Manager*" on page 5 - 6).

Loading Discs

To insert a CD/DVD, press the open button 1 and carefully place a CD/DVD onto the disc tray with label-side facing up (use just enough force for the disc to click onto the tray's spindle). Gently push the CD/DVD tray in until its lock "clicks" and you are ready to start. The busy indicator 2 will light up while data is being accessed, or while an audio/video CD, or DVD, is playing. If power is unexpectedly interrupted, insert an object such as a straightened paper clip into the emergency eject hole 3 to open the tray.

Sound Volume Adjustment

How high the sound volume can be set depends on the setting of the volume control within *Windows*. Click the **Volume** icon on the notification area to check the setting.

Figure 2 - 1 **Optical Device**

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	3

Features & Components



CD Emergency Eject

If you need to manually eject a CD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. However please do NOT use a sharpened pencil or similar object that may break and become lodged in the hole.

Disk Eject Warning

Don't try to remove a CD/DVD while the system is accessing it. This may cause the system to "crash".

Handling CDs or DVDs

Proper handling of your CDs/DVDs will prevent them from being damaged. Please follow the advice below to make sure that the data stored on your CDs/DVDs can be accessed.

Note the following:

- Hold the CD or DVD by the edges; do not touch the surface of the disc.
- Use a clean, soft, dry cloth to remove dust or fingerprints.
- Do not write on the surface with a pen.
- Do not attach paper or other materials to the surface of the disc.
- Do not store or place the CD or DVD in high-temperature areas.
- Do not use benzene, thinner, or other cleaners to clean the CD or DVD.
- Do not bend the CD or DVD.
- Do not drop or subject the CD or DVD to shock.

DVD Regional Codes

To change the DVD regional codes:

- 1. Go to the Control Panel
- Double-click Device Manager (Hardware and Sound > Devices and Printers), then click the arrow next to DVD/CD-ROM drives.
- Double-click on the DVD-ROM device to bring up the Properties dialog box, and select the DVD Region (tab) to bring up the control panel to allow you to adjust the regional code.
- 4. DVD region detection is device dependent, not OS-dependent. You can select your module's region code **5** times. The fifth selection is permanent. This cannot be altered even if you change your operating system or you use the module in another computer.

General	DVD Re	gion	Volumes	Driver	Details	Events	
regiona	lized DVD cs from th	on yo	ed for play i our comput ion by sele	er, you m	ust set yo	ur DVD dri	
After Cl	nanges rer	mainin	nange the i g reaches i or move y	zero, you	cannot c	hange the	region even
Change	es remainir	ng: 5					
To cha	nge the cu	urrent	region, sel	ect a geo	graphic a	rea, and th	nen click OK.
Chad Chile China Christr	l African F nas Island (Keeling)						^
Colom		ional na					~
		Not	Selected		_		
Curren	t Region:						
	r Region: Region:	Reg	ion 3				

- Region 1 USA & Canada
- **Region 2** Western Europe, Japan, South Africa, Middle East & Egypt
- **Region 3** South-East Asia, Taiwan, South Korea, The Philippines, Indonesia, Hong Kong
- **Region 4** South & Central America, Mexico, Australia, New Zealand
- **Region 5** N Korea, Russia, Eastern Europe, India & Most of Africa
- Region 6 China

Figure 2 - 2 **DVD Region Codes**

Multi-In-1 Card Reader

The card reader allows you to use some of the latest digital storage cards. Push the card into the slot and it will appear as a removable device, and can be accessed in the same way as your hard disk (s). Make sure you install the card reader driver (see *"CardReader" on page 4 - 8*).

- MMC (MultiMedia Card) / RSMMC
- SD (Secure Digital) / Mini SD / SDHC / SDXC

*Note: The PC adapters are usually supplied with these cards.

Figure 2 - 3 Front View



Model A



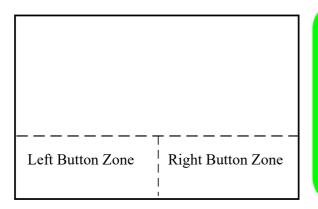
1. Card Reader

Touchpad and Buttons/Mouse

The Touchpad is an alternative to the mouse; however, you can also add a mouse to your computer through one of the USB ports. The Touchpad buttons function in much the same way as a two-button mouse.

Touchpad Sensitivity

The **mouse button zones** at the bottom of the pad are defined by the line at the **bottom** of the pad, and the **left and right buttons** are divided roughly down the middle. Press the left button zone for a left click, and right button zone for a right click action.





If you are using an external mouse your operating system may be able to auto-configure your mouse during its installation or only enable its basic functions. Be sure to check the device's user documentation for details.

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Touchpad Cleaning

In order to improve pad performance it is necessary to keep the surface clean and free of fingerprints and marks etc.

Use a soft dry cleaning cloth to keep the pad surface clean.

Disabling the Pad

Use the **Fn + F1** or Control Center button to disable the Touchpad.

Features & Components

Disabling the Touchpad

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If you need to disable the Touchpad for any reason (e.g. you may find that when using the computer's internal keyboard you accidentally trigger the Touchpad when resting your wrists or palms on it) you can do so by using Fn + F1 key combination.

Figure 2 - 4 Mouse Properties Control Panel -Buttons

Mouse Properties Control Panel

You can configure the functions from the **Mouse** control panel in *Windows* as follows.

- 1. Right-click the Start Menu **#** icon.
- 2. Select Control Panel under the Windows System item in the Start Menu.
- 3. Click Mouse (Hardware and Sound > Devices and Printers).
- 4. Click the menu headings tabs to adjust your mouse preferences.

	e Propertie	25			
Buttons	Pointers	Pointer Options	Wheel	Hardware	
Button	configurati	on			
Sv	vitch prima	ry and secondary	buttons		
right t		t box to make the use for primary agging.			
Doub		d folder to test you pen or close, try			
settin		ipen of close, try	using a si	ower	
				Fast	
Spee	d: Slow			1 431	
Speer				031	
ClickLo		н н н н н н			Settings
ClickLo Tu Enabl To se	ock ırn on Click les you to h	н н н н н н	vithout hol	ding down the r	nouse button.
ClickLo Tu Enabl To se	ock urn on Click les you to h t, briefly pr	Lock ighlight or drag v	vithout hol	ding down the r	nouse button.

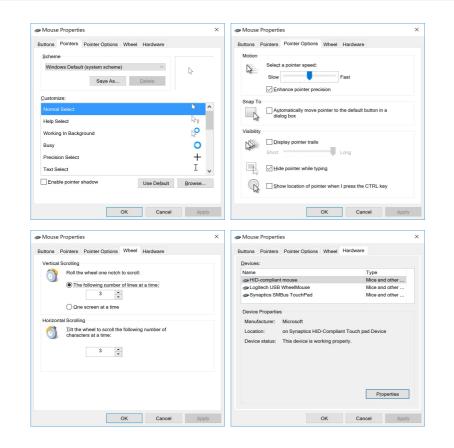
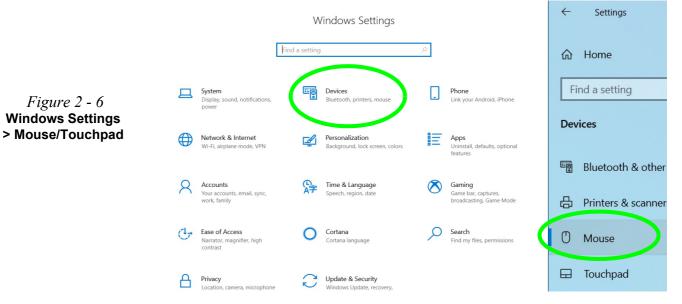


Figure 2 - 5 Mouse Properties Control Panels

Mouse & Touchpad Devices

You can configure the functions from the **Mouse or Touchpad** control panels in *De*vices in the *Settings* control panel as follows.

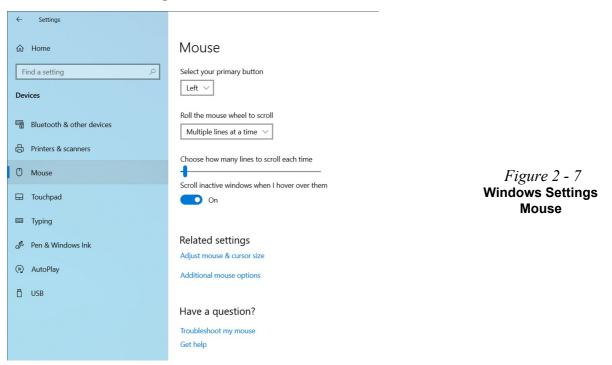
- 1. Click the Settings item in the Start Menu (or All Settings in the Action Center).
- 2. Click Devices.
- 3. Click Mouse or Touchpad.



2

Mouse Settings

You can select the primary mouse button and scrolling options and access Mouse Properties from Additional mouse options.



Touchpad Settings

You can disable the Touchpad by clicking the Touchpad button to turn it off.

You can set the system to automatically disable the internal Touchpad when an external USB point device (e.g a USB mouse) is attached. Click "Leave touchpad on when a mouse is connected" to off.

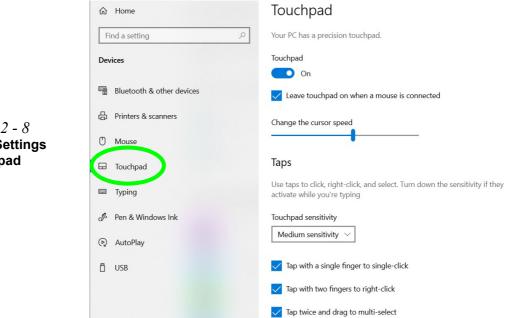


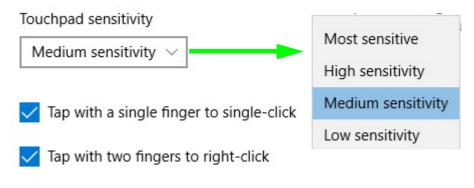
Figure 2 - 8 Windows Settings Touchpad

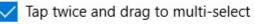
2 - 12 Mouse & Touchpad Devices

Touchapd Taps

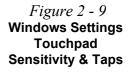
The **Touchpad Sensitivity** feature helps prevent recognizing taps on the pad by accident, by recognizing when your palm is resting on it or brushing its surface while you are typing.

Click in the check box to enable/disable the different gestures or taps on the surface of the pad to perform specific actions to manipulate documents, objects and applications.





Press the lower right corner of the touchpad to right-click



Touchapd Scroll and Zoom

Click to enable/disable the **two finger scrolling** and **pinch zooming** gesture.

Figure 2 - 10 Scroll and Zoom/ Scrolling Gesture

Scroll and zoom	
Drag two fingers to scroll	
Scrolling direction	2
Down motion scrolls up $$	T

The **two-finger scrolling** feature works in most scrollable windows and allows you to scroll horizontally and vertically. Place two fingers, slightly separated, on the Touchpad surface and slide both fingers in the direction required (in a straight continuous motion).

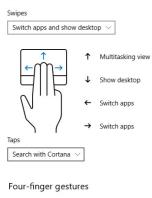
The **two-finger pinch to zoom** gesture can be used to perform the same function as a scroll wheel in *Windows* applications that support CTRL + scroll wheel zoom functionality. Place two fingers on the pad (for best results use the tips of the fingers) and slide them apart to zoom in, or closer together to zoom out.

Figure 2 - 11 **Zooming Gesture**



The **three-finger** and **four-finger swipes** and **taps** can be configured for a number of different functions. Select the appropriate function from the drop-down menu.

Three-finger gestures





Nothing Switch apps and show desktop Switch desktops and show desktop Change audio and volume



Nothing Switch apps and show desktop Switch desktops and show desktop Change audio and volume Change Search with Cortana Action Center Play/pause Middle mouse button



Figure 2 - 12 Three-Finger Gestures (Swipes & Taps)

Figure 2 - 13 Four-Finger Gestures (Swipes & Taps)

The following is an overview of some of the main gestures you can use with your Touchpad, however these can be configured from the Touchpad menus.

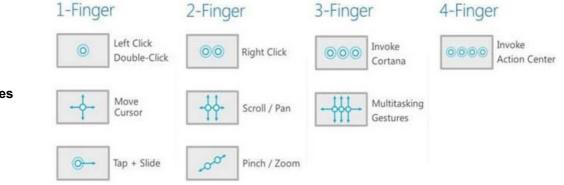
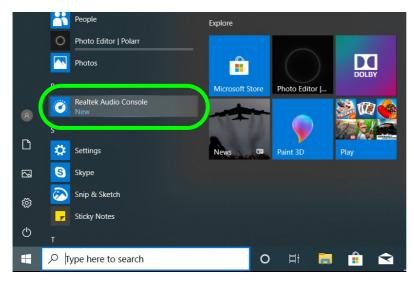
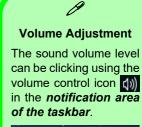


Figure 2 - 14 **Touchpad Gesture Examples**

Realtek Audio Console

You can configure the audio options on your computer from the **Sound** $\overset{@}{=}$ control panel in *Windows*, or from the **Realtek Audio Console Windows Start** menu. Make sure you have installed the driver and checked the Microsoft Store for updates (see "Audio" on page 4 - 9). The volume may also be adjusted by means of the volume icon in the taskbar or the audio slider in the Settings menu (see sidebar).





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Figure 2 - 15 Realtek Audio Console (Windows Start Menu)

Realtek Audio Console - Main

You can adjust the **Speaker** and **Microphone** levels by using the sliders in the **Realtek Audio Console Main** window.

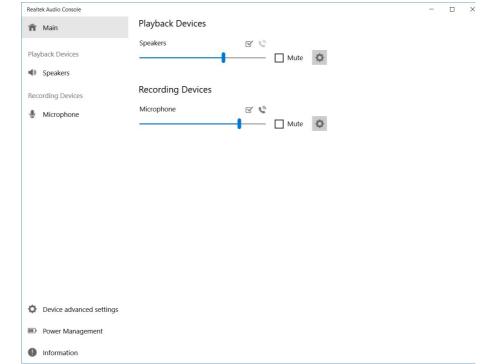


Figure 2 - 16 Realtek Audio Console (Main)

2 - 18 Realtek Audio Console

Realtek Audio Console - Speakers

Click Speakers to access controls for the format and speaker balance etc.

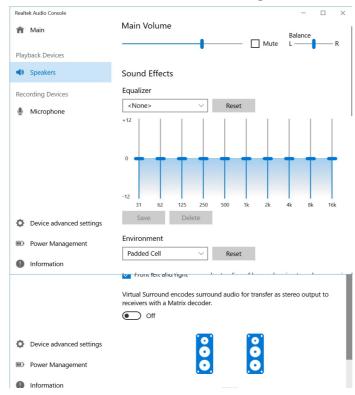




Figure 2 - 17 **Realtek Audio**

Realtek Audio Console - Microphone

Click **Microphone** to access advanced controls for recording on the microphone. Adjust the recording **Main Volume** level to around **60**, to obtain the optimum recording quality. The On-Screen menu which appears will depend on whether or not you have enabled Cortana (see over).

Real	Itek Audio Console		-		\times
ñ	Main	Main Volume			
Pla	yback Devices Speakers	Microphone Boost			
Ree	cording Devices				
٩	Microphone	Microphone Effects			
		Noise suppression reduces ambient stationary noises, i.e. Notebook PC fan, air condition fan no Off Off	se, thu	ıs impr	oving :
		AEC removes the acoustic echo coupled into the microphones from the loudspeaker output thr	u air.		
		The function will become valid starting from the next recording. Default Format			
		Select the sample rate and bit depth to be used when running in shared mode. 48000Hz 16Bits V Reset			
¢	Device advanced settings				
	Power Management				
0	Information				

Figure 2 - 18 **Realtek Audio Console** (Microphone)

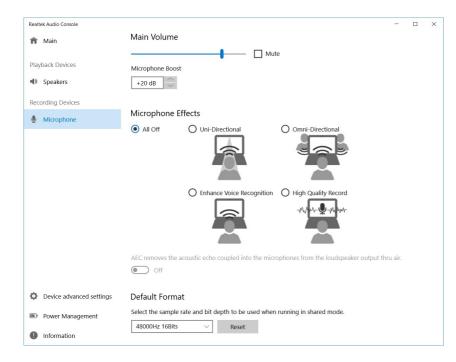
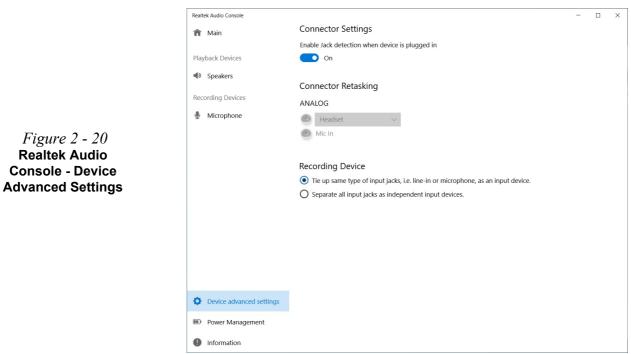


Figure 2 - 19 Realtek Audio Console (Microphone -Cortana Enabled)

Realtek Audio Console 2 - 21



Realtek Audio Console - Device Advanced Settings

Device Advanced Settings allows for further configuration of the **Connector Settings**, **Playback Device** and **Recording Device**.

Overview 3 - 1

Power Management

Chapter 3: Power Management

Overview

To conserve power, especially when using the battery, your computer power management conserves power by controlling individual components of the computer (the monitor and hard disk drive) or the whole system. This chapter covers:

- The Power Sources
- Turning On the Computer
- Power Plans
- Power-Saving States
- Configuring the Power Buttons
- Battery Information

The computer uses enhanced power saving techniques to give the operating system (OS) direct control over the power and thermal states of devices and processors. For example, this enables the OS to set devices into low-power states based on user settings and information from applications.

OS Note

Power management functions will vary slightly depending on your operating system. For more information it is best to refer to the user's manual of your operating system.



Forced Off

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If the system "hangs", and the **Ctrl + Alt + Del** key combination doesn't work, press the power button for **4 seconds**, or longer, to force the system to turn itself off.

The Power Sources

The computer can be powered by either an AC/DC adapter or a battery pack.

AC/DC Adapter

Use only the AC/DC adapter that comes with your computer. The wrong type of AC/DC adapter will damage the computer and its components.

- 1. When first setting up the computer use the following procedure (as to safeguard the computer during shipping, the battery will be locked to not power the system until first connected to the AC/DC adapter and initially set up as below):
 - Attach the AC/DC adapter cord to the DC-In jack on the left of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter and the battery will now be unlocked.
- 2. Raise the lid/LCD to a comfortable viewing angle.
- 3. Press the power button to turn "On".

Battery

The battery allows you to use your computer while you are on the road or when an electrical outlet is unavailable. Battery life varies depending on the applications and the configuration you're using. To increase battery life, let the battery discharge completely before recharging (see "*Battery FAQ*" on page 3 - 21).

We recommend that you do not remove the battery. For more information on the battery, please refer to "*Battery Information*" on page 3 - 16.

Turning On the Computer

Now you are ready to begin using your computer. To turn it on simply press the power button on the front panel.

When the computer is on, you can use the power button as a Stand by/Hibernate/ Shutdown hot-key button when it is pressed for less than 4 seconds (pressing and holding the power button for longer than this will shut the computer down). Use Power Options (Hardware and Sound) in the Windows control panel to configure this feature.



Note that for the power button to function the lid/ LCD must be open.



Power Button as Stand by or Hibernate Button

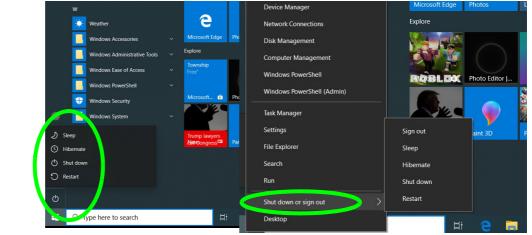
You can use the OS's "Power Options" control panel to set the power button to send the system into Stand by or Hibernate mode (see your OS's documentation, or "Configuring the Power Buttons" on page 3 - 9 for details).

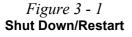
Shutting the Computer Down

Note that you should always shut your computer down by choosing the **Shut down** command as this will help prevent hard disk or system problems. Use the **Power** () item in the **Start Menu** and select **Shut down**.

You can also use the **context menu** (right-click the Start Menu \blacksquare icon or press the Windows logo \blacksquare + X key combination) to Sign out, Sleep, Hibernate, Shut down, and Restart.

If you want to add Hibernate/Sleep to the Power Menu see "Adding Hibernate/ Sleep to the Power Menu" on page 3 - 10.



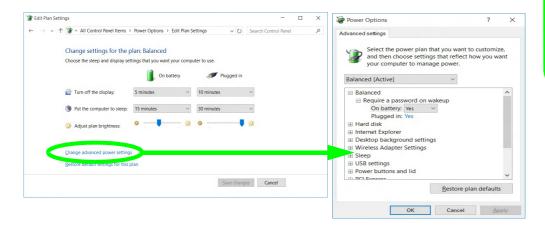


Power Plans

The computer can be configured to conserve power by means of **power plans (Control Panel > Power Options)**. You can use (or modify) an existing **power plan**, or create a new one.

The settings may be adjusted to set the **display** to turn off after a specified time, and to send the computer into **Sleep** after a period of inactivity.

Click *Change plan settings* and then click *Change advanced power settings* to access further configuration options in **Advanced Settings**.



Resuming Operation

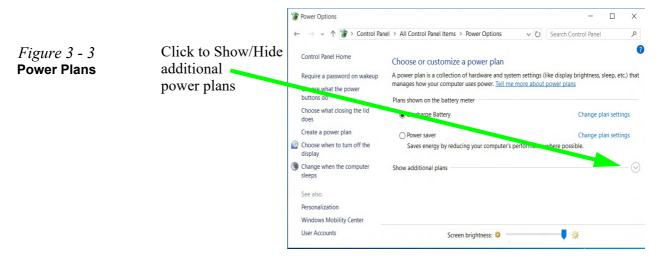
See **Table 3 - 1**, **on page 3 - 11** for information on how to resume from a power-saving state.

Password

It is recommended that you enable a password on system resume in order to protect your data.

Figure 3 - 2 **Power Plan** Advanced Settings Each *Windows* **power plan** will also adjust the processor performance of your machine in order to save power. This is worth bearing in mind if you are experiencing any reduced performance (especially under DC/battery power).

Choose **High performance** (you may need to click **Show additional plans** to view the High performance plan) for maximum performance when the computer is powered from an AC power source. Choose the **Power saver** (bear in mind that this scheme may slow down the overall performance of the computer in order to save power) for maximum power saving when the computer is battery (DC power) powered.



Power-Saving States

You can use power-saving states to stop the computer's operation and restart where you left off. *Windows 10* uses the **Sleep, Hibernate** and **Shut Down** power-saving states.

Sleep

In **Sleep** all of your work, settings and preferences are saved to memory before the system sleeps. When you are not using your computer for a certain length of time, which you specify in the operating system, it will enter **Sleep** to save power.

The PC wakes from **Sleep within seconds** and will return you to where you last left off (what was on your desktop) without reopening the application(s) and file(s) you last used.

If your mobile PC in **Sleep** is running on battery power the system will use only a minimum amount of power. After an extended period the system will save all the information to the hard disk and shut the computer down before the battery becomes depleted.

To add **Sleep** to the **Power Menu** see "Adding Hibernate/Sleep to the Power Menu" on page 3 - 10.

Wake On LAN Support

Wake-On-LAN is only supported from **Sleep** or **Hibernate** states *in Windows*.

If you require your computer to wake up from network activity in Windows then make sure that the computer is either in **Sleep** or **Hibernate**.

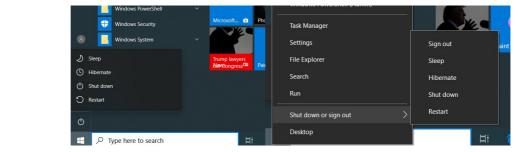
Wake-On-LAN is not supported from Shutdown states in *Windows.*

Hibernate

Hibernate uses the least amount of power of all the power-saving states and saves all of your information on a part of the hard disk before it turns the system off. If a power failure occurs the system can restore your work from the hard disk; if a power failure occurs when work is saved only to memory, then the work will be lost. **Hibernate** will also return you to where you last left off within seconds. You should put your mobile PC into **Hibernate** if you will not use the computer for a period of time, and will not have the chance to charge the battery. To add **Hibernate** to the **Power Menu** see "*Adding Hibernate/Sleep to the Power Menu*" on page 3 - 10.

Shut down

You should **Shut down** the computer if you plan to install new hardware, plan to be away from the computer for several days, or you do not need it to wake up and run a scheduled task. Returning to full operation from **Shut down** takes longer than from **Sleep** or **Hibernate**.





Configuring the Power Buttons

The power/sleep button (Fn + F12 key combo) and closed lid may be set to send the computer in to a power-saving state. Click **Choose what the power buttons do** on the left menu in **Power Options** to bring up the menu.

System Settings				-	\times
← → → ↑ 🝞 « All Co	ntrol Panel Items > Power Op	tions > System Settings	∨ U Se	arch Control Panel	P
Choose the pr page apply to Change se	wer buttons and turn o ower settings that you want for o all of your power plans. ettings that are currently unavai eep buttons and lid settings —	your computer. The change		ettings on this	
() wh	en I press the power button:	On battery Sleep ~	Sleep	ged in	
Wh	en I press the sleep button:	Sleep ~	Sleep	~	
🤙 Wh	en I close the lid:	Sleep ~	Sleep	~	
Shutdown set	ttings				
This help Sleep Show in Hiberna Show in Lock	Power menu.		<u>Learn More</u>		
Show in	account picture menu.		Save changes	Cancel	



It is recommended that you enable a password on wake up in order to protect your data.

However you can disable this setting from the **Power Options** menu by clicking **Require a password on wakeup** in the left menu, and selecting the options (click **Change settings that are currently unavailable**).

> Figure 3 - 5 Power Options Define Power Buttons

Adding Hibernate/Sleep to the Power Menu

Add Hibernate/Sleep to the Power Menu as follows.

- Go to the Power Options (Hardware and Sound) control panel. 1.
- 2. Click "Change settings that are currently unavailable" * Change settings that are currently unavailable.
- 3. Click Choose what the power buttons do.
- 4. Click to put a check in the Hibernate/Sleep box under Shutdown settings.
- 5. Click Save Changes and close the control panel.

	Choose the power settings that you want for your computer. The changes you make to the se page 1, pry to all of your power plans. Change settings that are currently unavailable Power and steep partons and settings	ettings on this Shutdown settings
<i>Figure 3 - 6</i> Power Options Define Power uttons - Shutdown Settings	Image: Construction of the security of the secu	 Turn on fast startup (This helps start your PC Sleep Show in Power menu. Hibernate Show in Power menu. Lock Show in account picture

B

Resuming Operation

You can resume operation from power-saving states by pressing the power button, or in some cases pressing the sleep button (Fn + F12 key combo).

Power Status	lcon ⊅/() Color	To Resume
Power Off	Off	Press the Power Button
		Press the Power Button
Sleep	Blinking Green	Press the Sleep Button (Fn + F12 Key Combo)
Hibernate	Off (battery)	Press the Power Button
Tibernate	Orange (AC/DC adapter)	
Display Turned Off	Green	Press a Key or Move the Mouse/Touchpad

Table 3 - 1 Resuming Operation

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Power Button

When the computer is on, you can use the power button as a Sleep/Hibernate/Shut Down hot key button when it is pressed for less than **4 seconds** (pressing and holding the power button for longer than this will force the computer to shut down).

Closing the Lid If you have chosen to send the computer to Sleep when the lid is closed, raising the lid will wake the system up.

Ctrl + Alt + Delete Key Combination

You can use the CTRL + ALT + DEL key combination from almost any of the *Win-dows 10* interfaces/Apps to bring up a full-screen displaying Lock, Switch User, Sign out, Change a password and Task Manager options. If you click the Power icon in the lower right corner of the screen a power management option menu appears to display Sleep, Shut down, and Restart.

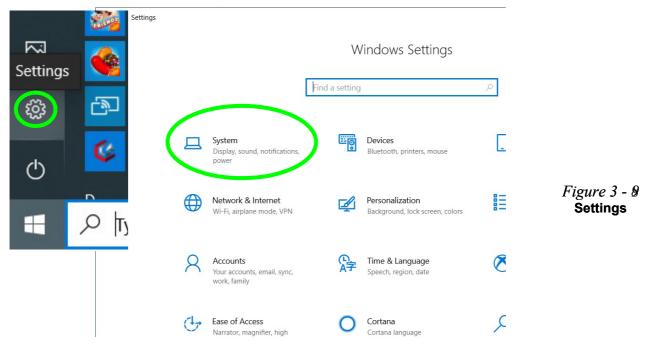
Lock	
Switch user	
Sign out	
Change a password	
Task Manager	
Cancel	
	臣 아 이

To fully control all the power options (including Hibernate mode) go to the **Power Options** control panel and configure the power button, sleep button and lid to perform the function selected.

Figure 3 - 7 Ctrl + Alt + Delete Menu

Settings Menu Power Controls

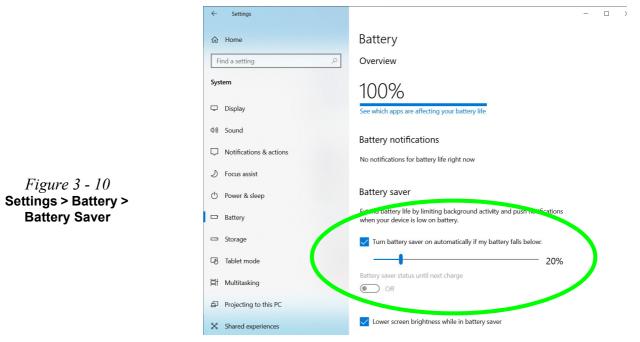
The **Settings** item in the **Start Menu** (or via the **Action Center**) gives you access to a number of power settings control panels which enable you to quickly adjust power options. Click **System** to access the menu including the power option settings.



Settings Menu Power Controls 3 - 13

Battery Saver

Battery in Settings will display the battery level, and by clicking **Battery usage by app** you can see the current state of battery usage by application etc. The **Battery saver** can be level can be adjusted to be turned on if the battery level falls below a certain level to limit background activity and push notifications.



3 - 14 Settings Menu Power Controls

Power & Sleep

Power & sleep gives you quick access to **Screen** and **Sleep** settings. Click **Additional power settings** to go to the main power options control panel.

← Settings	- 🗆 X
命 Home	Power & sleep
Find a setting	Screen
System	On battery power, turn off after 2 minutes
🖵 Display	
d ゆ Sound	When plugged in, turn off after 5 minutes V
Notifications & actions	
J Focus assist	Sleep
🖞 Power & sleep	On battery power, PC goes to sleep after 10 minutes
□ Battery	
📼 Storage	When plugged in, PC goes to sleep after 15 minutes
- Tablet mode	
岸 Multitasking	Save energy and battery life
Projecting to this PC	Make your battery last longer by choosing shorter times for screen and sleep settings.
℅ Shared experiences	
🛱 Clipboard	Related settings Additional power settings
✓ Remote Desktop	

Figure 3 - 11 Settings > Power & Sleep



When the battery is critically low, immediately connect the AC/DC adapter to the computer or save your work, otherwise, the unsaved data will be lost when the power is depleted.

Figure 3 - 12 Battery Icon (Notification Area) & Battery Advanced Settings

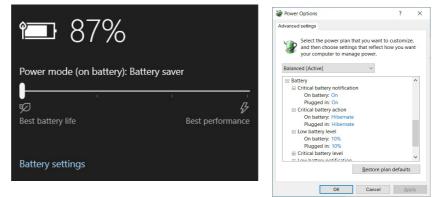
Battery Information

Follow these simple guidelines to get the best use out of your battery.

Battery Power

Your computer's battery power is dependent upon many factors, including the programs you are running, and peripheral devices attached. You can set actions to be taken (e.g. Shut down, Hibernate etc.), and set critical and low battery levels from power plan Change plan settings > Change advanced power settings (see *Figure 3 - 3 on page 3 - 6*).

Click the battery icon in the notification area to see the current battery level and charge status (you can also click **Power & sleep settings** to access the **Settings** menu to quickly adjust power settings).



Power Slider Settings

Battery Saver	Better Battery	Better Performance	Best Performance
Power mode (on battery): Battery saver	Power mode (or battery): Better battery go bet hattery like Bet particular battery Bet particular	Power mode (on battery): Better performance	Rower mode (on battery): Best performance
For DC Only		For AC & DC	
Lowest Power Setting	Lower Power than Default Settings	Slightly Favors Performance Over Power	Favors Performance Over Power
Windows Features Throttled & Screen Brightness Reduced	Default Position		
Auto Enabled at 20% of Battery Capacity			

Battery Saver

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Note that some Windows features and background applications may behave differently, or may be blocked, when the system is in Battery Saver mode (check with Microsoft for details).

Table 3 - 2 Power Slider Settings & Notes

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plans used and wireless

device status etc.

Conserving Battery Power

- Use a **power plan** that conserves power (e.g **Power saver**), however note that this may have an affect on computer performance.
- Lower the brightness level of the LCD display. The system will decrease LCD brightness slightly to save power when it is not powered by the AC/DC adapter.
- Reduce the amount of time before the display is turned off.
- Close wireless, Bluetooth, modem or communication applications when they are not being used.
- Disconnect/remove any unnecessary external devices e.g. USB devices, ExpressCards etc.

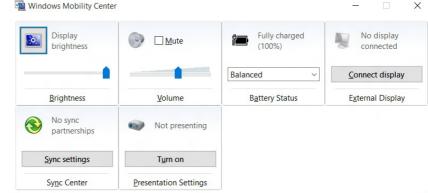


Figure 3 - 13 Windows Mobility Center (Control Panel)

Battery Life

Battery life may be shortened through improper maintenance. To optimize the life and improve its performance, fully discharge and recharge the battery at least once every 30 days.

We recommend that you do not remove the battery yourself as the removal of the bottom cover may violate the terms of your warranty.

New Battery

Always completely discharge, then fully charge, a new battery (see "*Battery FAQ*" on page 3 - 21 for instructions on how to do this).

Recharging the Battery with the AC/DC Adapter

The battery pack automatically recharges when the AC/DC adapter is attached and plugged into an electrical outlet. If the computer is powered on, and in use, it will take several hours to fully recharge the battery. When the computer is turned off but plugged into an electrical outlet, battery charge time is less. Refer to *"LCD Panel Open - Model B" on page 1 - 7* for information on the battery charge status, and to *"Battery FAQ" on page 3 - 21* for more information on how to maintain and properly recharge the battery pack.

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Caution

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Proper handling of the Battery Pack

- DO NOT disassemble the battery pack under any circumstances
- DO NOT expose the battery to fire or high temperatures, it may explode
- DO NOT connect the metal terminals (+, -) to each other

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Damaged Battery Warning

Should you notice any physical defects (e.g. the battery is bent out of shape after being dropped), or any unusual smells emanating from the notebook battery, shut your computer down immediately and contact your distributor/supplier. If the battery has been dropped we do not recommend using it any further, as even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire. It is recommended that you replace your computer battery every two years.

Battery FAQ

How do I completely discharge the battery?

Use the computer with battery power until it shuts down due to a low battery. Don't turn off the computer even if a message indicates the battery is critically low, just let the computer use up all of the battery power and shut down on its own.

- 1. Save and close all files and applications.
- 2. Create a power plan for discharging the battery and set all the options to Never.

\rightarrow v	↑ 🍞 « Power Options → Edit	Dian Sottings		v Ū	Search Control Panel	P
~		Fian Settings		v 0	Search Control Panel	7
	Change settings for the p	lan: Discharge Batt	ery			
	Choose the sleep and display set	tings that you want your	computer to use.			
		On battery	+	Plugged	in	
	🔮 Turn off the display:	Never	~ Never		~	
	Put the computer to sleep:	Never	~ Never		\checkmark	
	🔅 Adjust plan brightness:	0	÷ •		• 🔅	
	Change advanced power setting	2				
				Save ch	anges Cancel	

Figure 3 - 14 **Power Plan Create**

3.

Figure 3 - 15 Change Plan Settings / Change Advanced Power Settings

	ontrol Panel > All C	ontrol Panel Items > Power Opt	ions 🗸	U Search	Control Panel	
Control Panel Home		pian is a collection of naroware lages how your computer uses p				eep, etc
Require a password on v	Plans sh	own on the battery meter				
Choose what the power buttons do		scharge Battery			Change plan s	ettings
Choose what closing the does	e lid	wer saver ves energy by reducing your cor	nputer's performa	ance where pr	Change plan s ossible.	ettings
Create a power plan	104-14	distance along				
Choose when to turn off display	f the	ditional plans			Change plan s	ettings
Change when the compu- sleeps	uter A	tomatically balances performar	nce with energy co	onsumption o	n capable hardw	vare.
	() Hi	gh performance			Change plan s	ettings
See also	Fa	vors performance, but may use r	more energy.			
Personalization						
Windows Mobility Cente	er	Screen brightness	0		*	
🍞 Edit Plan Settings					- 0	×
← → v ↑ 谢 «	Power Options > Edit	Plan Settings	~ Ŭ	Search Con	ntrol Panel	p
		lan: Discharge Battery tings that you want your computer	to use. 🛷 Plugged	in		
Choose th		tings that you want your computer		in V		
Choose th	ne sleep and display set	tings that you want your computer	🚿 Plugged	in V		
Choose th	ne sleep and display set	tings that you want your computer	Plugged Never	in ∨ ♥ À		

Click Change plan settings (after creating it) and click Change plan settings >

Change advanced power settings.

- 4. Scroll down to **Battery** and click + to expand the battery options.
- 5. Choose the options below (click **Yes** if a warning appears):



- Low battery levels = 0%
- Critical battery Levels = 1%
- Low battery action = Do Nothing
- Critical battery action (On battery) = Shut Down
- Critical battery action (Plugged in) = Do Nothing

Figure 3 - 16 **Power Options Advanced Settings -Battery**

Power Management

How do I fully charge the battery?

When charging the battery, don't stop until the LED charging indicator light changes from orange to green.

How do I maintain the battery?

Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges.

Chapter 4: Drivers & Utilities

This chapter deals with installing the drivers and utilities essential to the operation or improvement of some of the computer's subsystems. The system takes advantage of some newer hardware components for which the latest versions of most available operating systems haven't built in drivers and utilities. Thus, some of the system components won't be auto-configured with an appropriate driver or utility during operating system installation. Instead, you need to manually install some system-required drivers and utilities.

What to Install

You will need to attach an external optical CD/DVD device drive to install the drivers from the *Device Drivers & Utilities* + *User's Manual* disc. The disc contains the drivers and utilities necessary for the proper operation of the computer. *Table 4 - 1, on page 4 - 4* lists what you need to install and it is very important that the drivers are installed by the method outlined in this chapter, and in the order indicated. Note that the information on the following pages is for *Windows 10 (64-bit) only*.

Module Driver Installation

The procedures for installing drivers for the **Wireless LAN** and **Combination Blue-tooth & WLAN** modules are provided in *"Modules & Options" on page 6 - 1*.

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Driver Installation & Power

When installing drivers make sure your computer is powered by the AC/DC adapter connected to a working power source. Some drivers draw a power during the installation procedure, and if the remaining battery capacity is not adequate this may cause the system to shut down and cause system problems (note that there is no safety issue involved here, and the battery will be rechargeable within 1

Driver Installation

- 1. Insert the Device Drivers & Utilities + User's Manual disc into an attached DVD drive.
- 2. Click the message "Tap to choose what happens with this disc."
- 3. Click Run autorun.exe.
- 4. Click *Install Drivers* (button), or *Option Drivers* (button) to access the **Optional** driver menu.



Figure 4 - 1 - Drivers Installer Screen 1

4 - 2 Driver Installation

- 5. Check the driver installation order from *Table 4 1, on page 4 4* (the drivers must be installed in this order) which is the same as that listed in the *Drivers Installer* menu below.
- 6. Click to select the driver you wish to install, (you should note down the drivers as you install them).
- 7. Follow the instructions for each individual driver installation procedure as listed on the following pages.

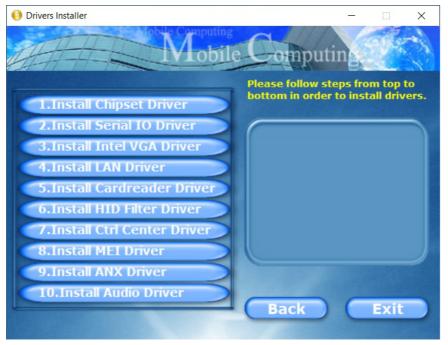


Figure 4 - 2 - Install Drivers

Win 10 Drivers (64-bit) System Required	Page #	Win 10 Drivers (64-bit) Other / Options	Page #
Chipset	Page 4 - 7	Wireless LAN	Page 6 - 9
Serial IO	Page 4 - 7	Wireless LAN	Page 6 - 9
Video (VGA)	Page 4 - 7	Bluetooth	Page 6 - 14
LAN	Page 4 - 8	Intel® Software Guard Extensions Driver	Page 6 - 20
CardReader	Page 4 - 8	Intel® Speed Shift Technology Driver	Page 6 - 21
Intel® HID Filter Driver	Page 4 - 8	Intel® Rapid Storage Technology	Page 6 - 22
Control Center	Page 4 - 8	PC Camera Module (No driver required)	Page 6 - 30
MEI Driver	Page 4 - 8	Trusted Platform Module (No driver required)	Page 6 - 37
ANX Driver	Page 4 - 8	4G Module (No driver required)	Page 6 - 43
Audio	Page 4 - 9		

Table 4 - 1 - Driver Installation

All drivers provided are for Windows 10 (64-bit).

Note that you need to install both the WLAN & Bluetooth drivers for the WLAN & Bluetooth Combo modules.

4 - 4 Driver Installation

Manual Driver Installation

Click *Browse CD/DVD* (button) in the *Drivers Installer* application and browse to the executable file in the appropriate driver folder.

Windows Update

After installing all the drivers make sure you enable Check for updates (Settings > Update & security > Check for updates) in order to get all the latest security updates etc. (all updates will include the latest hotfixes from Microsoft). See *"Windows Update" on page 4 - 10* for instructions.

Updating/Reinstalling Individual Drivers

If you wish to update/reinstall individual drivers it may be necessary to uninstall the original driver. To do this go to the **Control Panel** in the *Windows OS* and double-click the **Programs** icon (**Programs** > **Uninstall a program**). Click to select the driver (if it is not listed see below) and click **Uninstall**, and then follow the on screen prompts (it may be necessary to restart the computer). Reinstall the driver as outlined in this chapter.

If the driver is not listed in the **Programs and Fea**tures menu:

- 1. Go to the **Control Panel**).
- Double-click Device Manager (Hardware and Sound > Devices and Printers > Device Manager).
- Double-click the device you wish to update/reinstall the driver for (you may need to click "+" to expand the selection).
- 4. Click **Driver** (tab) and click the **Update Driver** or **Uninstall** button and follow the on screen prompts.

User Account Control

If a User Account Control prompt appears as part of the driver installation procedure, click Continue or Allow, and follow the installation procedure as directed.

Windows Security Message

If you receive a *Windows* security message as part of the driver installation process. Just click *"Install this driver software anyway"* or *"Install"* to continue the installation procedure.

You will receive this message in cases where the driver has been released after the version of *Windows* you are currently using. All the drivers provided will have already received certification for *Windows*.

New Hardware Found

If you see the message "New Hardware Found" during the installation procedure (other than when outlined in the driver install procedure), click Cancel to close the window, and follow the installation procedure.

Driver Installation General Guidelines

The driver installation procedure outlined in this Chapter (and in **Chapter 7 Options & Modules**), are accurate at the time of going to press.

Drivers are always subject to upgrade and revision so the exact procedure for certain drivers may differ slightly. As a general guide follow the default on screen instructions for each driver (e.g. **Next > Next > Finish**) unless you are an advanced user. In many cases a restart is required to install the driver.

Make sure any modules (e.g. WLAN or Bluetooth) are **ON (i.e. the system is not in Airplane Mode)** before installing the appropriate driver.

Driver Installation Procedure

Insert the *Device Drivers & Utilities + User's Manual disc* and click *Install Drivers* (button).

Chipset

- 1. Click **1.Install Chipset Driver > Yes**.
- 2. Click Next > Accept > Install.
- 3. Click **Restart Now** to restart the computer.

Serial IO

- 1. Click 2.Install Serial IO Driver > Yes.
- 2. Click Next.
- 3. Click the button to accept the license agreement and click **Next**.
- 4. Click Next > Next.
- 5. Click Finish to restart the computer.

Video (VGA)

- 1. Click **3.Install VGA Driver > Yes**.
- 2. Click Next > Yes > Next > Next.
- 3. Click **Finish** to restart the computer.

- 4. **Intel Graphics Control Panel** will download but you will need to have a working internet connection.
- 5. Click the **Start** menu in Windows to access the **Microsoft Store App** tile under **Explore**.
- 6. Click the Sign in icon A and select Downloads and updates.
- 7. Click Check for Updates.
- 8. A list of apps being downloaded will pop-up.
- 9. To prioritize the driver you can click **Pause all** to pause the download queue.
- 10. Click on Intel Graphics Command Center and click on the resume icon 🕐 to download the driver.
- 11. When finished the Intel Graphics Command Center will appear in the Windows Start menu.

Note: After installing the video driver go to the **Display/Display Settings** control panel to adjust the video settings to the highest resolution.

LAN

Note: If the computer enters a deep sleep mode during installation, you will be prompted to plug in a network cable, and click **OK**, to continue installation. If a network cable is not available, restart the system and reinstall the LAN driver.

- 1. Click 4.Install LAN Driver > Yes.
- 2. Click Next > Install.
- 3. Click Finish.

CardReader

- 1. Click 5.Install Cardreader Driver > Yes.
- 2. Click Finish.

Intel® HID Filter Driver

- 1. Click 6.Install HID Filter Driver > Yes.
- 2. Click Next.
- 3. Click Yes to accept the license.
- 4. Click Next.
- 5. Click Finish to restart the computer.

Control Center

- 1. Click 7.Install Control Center AP > Yes.
- 2. Click Next > Install.
- 3. Click **Finish > Finish** to restart the computer.

MEI Driver

- 1. Click 8.Install MEI Driver > Yes.
- 2. Click Next.
- 3. Click the check box to accept the terms of the license agreement and then click **Next**.
- 4. Click Next.
- 5. Click Finish.

ANX Driver

- 1. Click 9.Install ANX Driver > Yes.
- 2. Click **Yes > OK** to complete the installation.

4 - 8 Driver Installation

Audio

- 1. Click **10.Install Audio Driver > Yes**.
- 2. Click Next > Next.
- 3. Click **Finish** to restart the computer.
- 4. **Realtek Audio Control Panel** will download but you will need to have a working internet connection.
- 5. Click the **Start** menu in Windows to access the **Microsoft Store App** tile under **Explore**.
- 6. Click the Sign in icon A and select Downloads and updates.
- 7. Click Check for Updates.
- 8. A list of apps being downloaded will pop-up.
- 9. To prioritize the Realtek audio driver you can click **Pause all** to pause the download queue.
- 10. Click on **Realtek Audio Control** and click on the resume icon ◯ to download the driver.
- 11. When just installed the **Realtek Audio Con**sole will appear in the **Windows Start** menu.

After installing the audio driver the system will not return to the **Drivers Installer** screen. To install any of the optional drivers, eject the *Device Drivers & Utilities* + *User's Manual* disc and then reinsert it (or double-click the disc icon in My Computer), and click **Option Drivers** (button) to access the optional driver menu.

Windows Update

After installing all the drivers make sure you enable **Check for updates** in order to get all the latest security updates etc. (all updates will include the latest **hotfixes** from Microsoft).

To enable Windows Update make sure you are connected to the internet:

- 1. Click the Start Menu and select the Settings item.
- 2. Click Update & Security.
- 3. Click Check for updates (Windows Update).
- 4. The computer will now check for updates (you need to be connected to the internet).
- 5. The system will install any available updates.

Optional Drivers

See the pages indicated in *Table 4 - 1, on page 4 - 4* for the driver installation procedures for any modules included in your purchase option.



Figure 4 - 3 - Optional Drivers Installer Screen

Note that you need to install both the WLAN & Bluetooth drivers for the WLAN & Bluetooth Combo modules

Chapter 5: BIOS Utilities

Overview

This chapter gives a brief introduction to the computer's built-in software **BIOS** (Basic Input/Output System).

If your computer has never been set up, or you are making important changes to the system (e.g. hard disk setup), then you should review this chapter first and note the original settings found in **BIOS**. Even if you are a beginner, keep a record of the settings you find and any changes you make. This information could be useful if your system ever needs servicing.

There is one general rule: *Don't make any changes unless you are sure of what you are doing*. Many of the settings are required by the system, and changing them could cause it to become unstable or worse. If you have any doubts, consult your service representative.

To enter BIOS, turn on the computer and press F2 as the system "Boots up".

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BIOS Screens

Note that the BIOS screens pictured on these pages are intended for guidance in setting up your system's BIOS.

BIOS versions are subject to constant change and revision, therefore your computer's actual screens may appear slightly different from those pictured on these pages.



BIOS Settings Warning

Incorrect settings can cause your system to malfunction. To correct mistakes, return to *BIOS* and **Load Optimized Defaults** (press **F9**).

BIOS Menus

The menus shown in this section are for **reference** only. Your computer's menus will indicate the configuration appropriate for your model and options.

The Insyde BIOS Utility

Each time you turn on the computer the system takes a few seconds to conduct a including a quick test of the on-board RAM (memory).

As the boot process proceeds, the computer will tell you if there is anything wrong. If there is a problem that prevents the system from booting, it will display a system summary and prompt you to run the BIOS setup.

If there are no problems the system will load the operating system. Once that starts, you can't get into *BIOS* without rebooting.

The **Setup BIOS Utility** tells the system how to configure itself by translating instructions from the operating system, and other software, into instructions that the computer hardware understands. manage basic features, identify installed devices and subsystems (e.g. port configuration).

UEFI Boot

UEFI (Unified Extensible Firmware Interface) is an advanced firmware standard supporting fast startup.

With UEFI Boot prompts at boot to press F2 (to access the BIOS) or F7 (to access Boot options) will not appear. However you can still press F2 to enter the setup, or F7 to choose the preferred boot device, if you press the key immediately the system boots up.

To enter BIOS, turn on the computer and press F2 as the system "Boots up".

If the computer is already on, reboot using the Ctrl + Alt + Delete combination and then hold down F2 when prompted. The *BIOS* main menu will appear. To see the boot options press F7 and choose your preferred boot device.

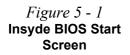
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Insyde BIOS Start Screen

On accessing the BIOS you will be presented with the Start Screen with 5 menu icons, date and time information, CPU temperature information and navigation and Help icons at the bottom of the screen.

You can use the Touchpad, an attached mouse, or the cursor/arrow keys to navigate the menus and press *Enter* to access the submenu.





Insyde BIOS Start Screen Options:

- **Continue**: Press *Enter* here or click *Continue* to carry on with the boot process and load the operating system.
- **Boot Manager**: Press *Enter* here or click *Boot Manager* to access the Boot Manager utility.
- **Boot From File**: Press *Enter* here or click *Boot From File* to select a file or device to Boot from.
- Administer Secure Boot: Press *Enter* here or click *Administer Secure Boot* to proceed with a Secure Boot process. This will take you to the Secure Boot screen which allows you to manage secure boot settings.
- Setup Utility: Press *Enter* here or click *Setup Utility* to access the BIOS settings in the Setup Utility.

Note to return to the Start Screen from any of the submenus press the Esc key.

Boot Manager

Figure 5 - 2 Boot Manager

BIOS Screens

Note that the BIOS screens pictured on these pages are intended for guidance in setting up your system's BIOS.

BIOS versions are subject to constant change and revision, therefore your computer's actual screens may appear slightly different from those pictured on these pages.



When you turn the computer on it will look for an operating system from the devices listed in this menu, and **in this priority order**. If it cannot find the operating system on that device, it will try to load it from the next device in the order specified in the **Boot Option Menu**.

Press Enter to access the menu, use the arrow keys to move up and down the menu, and press Enter to select a device.

Boot From File / File Explorer

- consyde* 1rdaliii) Contr(M) 3 8 3 450 UPU @ B105 Version: 107.P4c 2004: DRAM Frequency: 2400 MHz ME FW Version: 12.0.6.1120 Memory Size: B192 MB	insyde Heiss
📷 File Explorer	
NTFS, [PciRoot(0x0)/Pci(0x17,0x0)/Sata(0x4,0x0,0x0)/HD(1,G NTFS,	ڻ ا
NO VOLUME LABEL. [PciRoot(0x0)/Pci(0x17,0x0)/Sata(0x4,0 [PciRoot(0x0)/Pci(0x17,0x0)/Sata(0x4,0	
a(0x4,0x0,0x0)/ NTFS, [PciRoot(0x0)/Pci(0x17,0x0)/Sata(0x4,0x0,0x0)/HD(4,G 3B8F-038A-4F4	
NTFS, [PciRoot(0x0)/Pci(0x17,0x0)/Sata(0x4,0x0,0x0)/HD(5,G 37CA8D0,0x80	
RC1, [PciRoot(0x0)/Pci(0x14,0x0)/USB(0x10,0x0)/HD(1,MBR,0	
(F1) (FS) (*) (*) Help Exit Select Item Select SubM	

If you need to boot from a file (e.g. on a USB flash drive) then access this menu and use the cursor keys to select the device or file (you can press *Enter* to explore for a file on an attached device).

Figure 5 - 3 Boot From File (File Explorer)

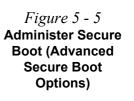
Administer Secure Boot

- Inter(R) Cores (14) 13-81.45U CPU & B105 Version 2.1064/2 DRAM Prequency: 2400 MHz ME PW Versio Memory Size: 8192 MB	in:1.07.P1) ^{2018/10/11} 13:07:5 ТНО	55 insyde
🎯 Administer Secu	e Boot		
System Status:		0	Erase all
Secure Boot Database	Unlocked		Secure Boot 🛛 🤡 Settings
Secure Boot Status	Disabled		Enable this option will erase all
 User Customized Security 	NO	_	Secure Boot Settings. This action will clear four variables PK, KEK, db, and dbx.
Options:			
Select a UEFI file as trusted for execution \Im			
Enforce Secure Boot		Disabled >	
Erase all Secure Boot Settings		Disabled >	

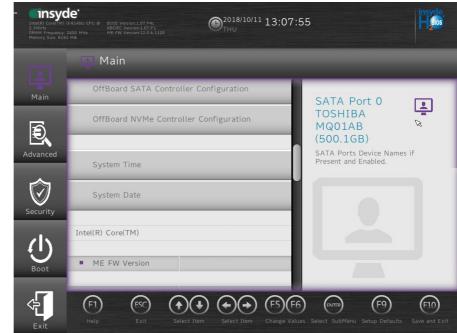
Secure Boot prevents unauthorized operating systems and software from loading during the startup process. You can select a trusted UEFI file to execute the BIOS, make sure that you Enforce Secure Boot, Erase all Secure Boot Settings or Restore the Factory Settings.

Figure 5 - 4 Administer Secure Boot You can also make custom changes to the Key Management database if required by accessing the advanced secure boot options for Platform Key (PK Options), Key Exchange Key (KEK Options), Allowed Signatures Database (DB Options) and Forbidden Signatures Database (DBX Options).





Setup Utility - Main Menu



SATA Port # (Main Menu)

Pressing **Enter** opens the sub-menu to show the configuration of devices (e.g. HDD) on the computer's SATA Ports.

Figure 5 - 6 Main (Upper)

OffBoard SATA/NVme Controller Configuration (Main Menu)

Pressing **Enter** opens the sub-menu to show the configuration of any devices on the off board SATA/NVme Controller if applicable.

System Time & System Date (Main Menu)

The hour setting uses the 24-hour system (i.e., $\emptyset \emptyset$ = midnight; 13 = 1 pm). If you can change the date and time settings in your operating system, you will also change these settings. Some applications may also alter data files to reflect these changes.

System/Extended Memory: (Main Menu)

This item contains information on the system memory, and is not user configurable. The system will auto detect the amount of memory installed.

MB Series / BIOS Revision / KBC/EC firmware Revision / MAC Address This item contains information on the BIOS version, network adapter address etc., and is not user configurable.

Setup Utility - Advanced Menu



Advanced Menu

The Advanced menu provides settings for Advanced Chipset Control (see over), the SATA Mode, Power on Boot Beep and Battery Low Alarm Beep.

Figure 5 - 7 Advanced Menu Advanced Chipset Control (Advanced Menu)

The sub-menu here allows you to enable/disable the Flexicharger, Intel Speed Shift Technology, VT-d, UEFI OS Fast Boot and Software Guard Extensions.



Figure 5 - 8 Advanced Chipset Control Menu

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Setup Utility - Advanced Menu 5 - 13



FlexiCharger Warning

If you leave the FlexiCharger continuously **"Enabled**" for a period of three months or more, the battery meter's reading accuracy will deteriorate.

To reset this, set the FlexiCharger to **"Disabled**", and then allow the battery to completely discharge (see **"Battery FAQ"** on page 3 - 21) before enabling the function again.

Figure 5 - 9 Advanced Chipset Control > FlexiCharger

FlexiCharger (Advanced Menu > Advanced Chipset Control)

The sub-menu here allows you to enable/disable the **FlexiCharger**. The FlexiCharger er may be set to automatically start charging your battery when the battery reaches a certain capacity level (e.g. you could start the battery charge level at 40%).

You can then set the level to stop charging (e.g. 100%), and of course this stop charge level must be higher then the start charge level.

See the sidebar warning for information on running the FlexiCharger for an extended period as this is not recommended.

FlexiCharger	Enabled >
Start Charge	95% >
Stop Charge	100% >

Intel(R) Speed Shift Technology (Advanced Menu > Advanced Chipset Control) Use this menu item to enable/disable Intel® Speed Shift Technology. You will also need to install the driver for Intel Speed Shift Technology (see "Intel® Speed Shift Technology Driver" on page 6 - 40).

VT-d (Advanced Menu > Advanced Chipset Control)

Enable/disable Intel® Virtualization Technology for Directed I/O (VT-d) from this menu. This extends Intel's Virtualization Technology (VT) by providing hardware assists for a virtualization solution.

UEFI OS Fast Boot(Advanced Menu > Advanced Chipset Control) Use this menu item to enable/disable the Fast Boot option, which when enabled, helps reduce the time it takes to boot the computer.

Software Guard Extensions (SGX) - (Advanced Menu > Advanced Chipset Control) Intel provides SGX, which is a set of instructions allowing user-level code a degree of security, and privacy, from the operating system. Make sure that SW Guard Extensions is Enabled in the BIOS before installing the driver (see "Intel® Software Guard Extensions Driver" on page 6 - 20). **BIOS Utilities**



Intel® Optane[™] Supported by IRST Driver

You do not have to set the SATA Mode to Intel **RST Premium With Intel Optane System Accelera**tion if you install the Intel IRST driver, and setup the SATA controller to Premi-"Switch System SATA controller to Intel® RST Premimode (Recommended)." as part process (see "IRST Driv-Installation" on page 6 - 23). DO NOT uninstall the driver and application after selecting Intel® RST Premium mode

SATA Mode (Advanced Menu)

The SATA (Serial ATA) control is configured to operate in AHCI Mode (Advanced Host Controller Interface) or in Intel RST Premium With Intel Optane (for Intel® $Optane^{TM}$).

The SATA Mode should be set BEFORE installing an operating system, and after you have backed up all necessary files and data (see sidebar). See "Intel® Rapid Storage Technology" on page 6 - 22 for details. Make sure you install the Intel Rapid Storage Technology driver and Intel® OptaneTM Memory and Storage Management app if you have set the SATA Mode to Intel RST Premium With Intel Optane (for Intel Optane), or to AHCI (see "IRST Driver Installation" on page 6 - 23).

If you wish to change your SATA mode to/from AHCI/Intel RST (Optane) mode note that doing so may prevent your operating system from booting, and may require a reinstall of the OS. If you do wish to change the SATA mode then backup any necessary data on your hard disk(s) as you will need wipe the disks clean in order to prevent system problems.

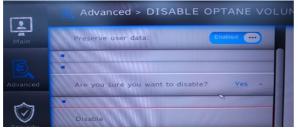
Intel Optane Options

Intel® OptaneTM is a combination of a compatible memory device and **Intel Rapid Technology software**. This combination is designed to speed up your system performance by caching boot data, executables, frequently accessed data and system page files to an non volatile, low latency Intel® OptaneTM SSD.

Clearing Intel Optane

If you need to clear Intel Optane Memory data then follow the process below, **how-ever note you will need to back up your system first** as the procedure will result in the system being required to be reinstalled and data and files will be lost in the process.

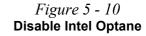
- 1. Go to the BIOS and select Bios setup > Advanced > Intel Rapid Storage Technology and select Intel Optane.
- 2. Select Disable.
- 3. Select Yes when prompted "Are you sue you want to disable?".
- 4. Select **Disable** and the system will clear the data.
- 5. The system will then return to the Intel Rapid Storage Technology menu.



Intel® Optane™ Memory Series

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Intel® Optane[™] Memory Series - A single Intel® Optane[™] SSD automatically configured as a single volume disk, designed to speed up your system without any data storage options.



Power On Boot Beep (Advanced Menu) Use this menu item to enable/disable the beep as the computer starts up.

Battery Low Alarm Beep (Advanced Menu) Use this menu item to enable/disable the battery low alarm beep.

Setup Utility - Security Menu



Security Menu The changes you make here affect the access to the BIOS utility itself, and also access to your machine as it boots up after you turn it on. These settings do not affect your machine or network passwords

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Figure 5 - 11 Security Menu

which will be set in your

software OS.

Set Supervisor Password (Security Menu)

You can set a password for access to the **BIOS**. This will not affect access to the computer OS (only the **BIOS**). An on-screen keyboard is available to assist with keyboard input.



Password Warning

If you set a boot password (Password on boot is "Enabled"), **NEVER** forget your password.

The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk. **Note**: To clear existing supervisor passwords press **Enter** and type the existing password, then press **Enter** for the new password (without typing any password entry) and **Enter** again to confirm the password clearance. To clear a user password just click on **Clear User Password**.

Set User Password (Security Menu)

You can set a password for user mode access to the **BIOS**. This will not affect access to the computer OS, (only the *Setup* utility) unless you choose to set a *Password on Boot* (see below). Some menu items in the **BIOS** cannot be modified in user mode.

Note: You can only set the user password after you have set the supervisor password.

Power on Password: (Security Menu)

Specify whether or not a password should be entered to boot the computer (you may only set a Power on Password if a supervisor password is enabled). If "*Enabled*" is selected, only users who enter a correct password can boot the system (see the warning in the sidebar). The default setting is "*Disabled*".

TPM Configuration (Security Menu)

This sub-menu will allow you to enable/disable Trusted Platform Module (TPM) support, and to configure the TPM State. Select **TPM Configuration** and press Enter to access the sub-menu. Press Enter to access the **Security Device Support** menu and select **Enable** to support TPM. To reset the TPM select **Clear TPM** to clear existing TPM information (see *"Trusted Platform Module" on page 6 - 37*).

Intel(R) Core(TM) i 2.30GHz DRAM Frequency: Memory Size: 819;	2667 MHz ME FW Version:1:07.P02 MON	
ļ	Given Security > Trusted Computing	
Main	Security Device Support Enable > 🕅	Clear TPM 🔗
Advanced	Clear TPM	Clear TPM. Removes all TPM context associated with a specific Owner.
Security	TPM20 Device Found	
U Boot		
Exit		
	(F1) (Fc) (Initial data data data data data data data da	ENTRE (F9) (F10) Select SubMenu Setup Defaults Save and Exit

Figure 5 - 12 Security Menu TPM Configuration 5

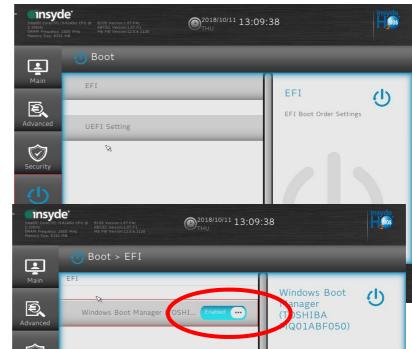
Setup Utility - Boot Menu

Figure 5 - 13 Boot Menu & EFI

BIOS Screens

Note that the BIOS screens pictured on these pages are intended for guidance in setting up your system's BIOS.

BIOS versions are subject to constant change and revision, therefore your computer's actual screens may appear slightly different from those pictured on these pages.



EFI (Boot Menu)

Press Enter to Enable/Disable any available device from which to boot under EFI.

UEFI Setting (Boot Menu)

The Unified Extensible Firmware Interface (UEFI) specification provides a clean interface between operating systems and platform firmware at boot time. In contrast to BIOS, UEFI defines a set of standard boot and runtime services. The *Network Stack* item can be enabled/disabled as an option under UEFI Setting and PXE Boot capability can be enabled/disabled and configured here.



Figure 5 - 14 **UEFI Setting**

BIOS Utilities

BIOS Utilities

Setup Utility - Exit Menu

Figure 5 - 15 Exit Menu



Click *Exit Saving Changes* (or press F10) to save all changes made and exit the BI-OS. Choosing *Exit Discarding Changes* will wipe out any changes you have made to the *Setup* and exit the BIOS. You can also choose to **Load Optimal Defaults** (or press F9) to return the *BIOS* to its original state, and erase any previous changes you have made in a previous session. Select **Discard Changes** to cancel any changes made in the current session.

Chapter 6: Modules & Options Overview

This chapter contains information on the following modules, which may come with your computer, depending on the configuration purchased. If you are unsure please contact your service representative.

- Setting Up SATA Mode (Optane[™] or AHCI)
- Wireless LAN
- Bluetooth
- Intel® Software Guard Extensions Driver
- Intel® Speed Shift Technology Driver
- Intel® Rapid Storage Technology
- PC Camera Module
- Trusted Platform Module
- 4G Module

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Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the WLAN & Bluetooth module(s) are OFF (or the system is in Airplane Mode) if you are using the computer aboard aircraft (see Table 1 - 2, on page 1 - 12).



The SATA mode selection should be made **be**fore installing your operating system.

DO NOT change your selected SATA mode unless you intend to reinstall your operating system. Make sure you have backed up all your data before doing so.

See "SATA Mode (Advanced Menu)" on page 5 - 16.

Setting Up SATA Mode (Optane[™] or AHCI) AHCI Mode

Advanced Host Controller Interface (AHCI) is an interface specification that allows the storage driver to enable advanced serial ATA features such as Native Command Queuing (for maximum hard disk efficiency and performance). Make sure you install the Intel® OptaneTM Memory and Storage Management application to support your HDDs/SSDs in AHCI mode (see "Intel® Rapid Storage Technology" on page 6 - 22).

Intel® Optane™

Intel® OptaneTM is a combination of a compatible memory device and Intel® OptaneTM Memory and Storage Management. This combination is designed to speed up your system performance by caching boot data, executables, frequently accessed data and system page files to an non volatile, low latency Intel® OptaneTM SSD.

Contact your distributor or supplier to see if your system supports this technology.

Intel® Optane[™] Memory and Storage Management

Make sure you install the Intel® OptaneTM Memory and Storage Management application if you have set up your system in Intel RST Premium With Intel Optane (for Intel® OptaneTM) mode (see "Intel® Rapid Storage Technology" on page 6 - 22).

After setting the SATA mode to Intel® OptaneTM and installing the Intel® Rapid Storage Technology driver and Intel® OptaneTM Memory and Storage Management application, DO NOT uninstall them.

Intel® Optane[™]

Intel® Optane[™] is a combination of a compatible memory device and Intel Rapid Technology software. This combination is designed to speed up your system performance.

Contact your distributor or supplier to see if your system supports this technology.

SATA Mode Selection

If you have installed the *Windows* OS with either AHCI or Intel RST (Optane) mode enabled, DO NOT disable the set mode (if you wish to disable the set mode you will need to reinstall the *Windows* OS).



Optane SSD Module Removal

If you need to remove an installed Optane SSD module for any reason, you must disable Intel Optane before doing so.

Failure to disable Optane before removing an Optane SSD module will result in the system being unable to start up.

Intel® Optane[™] Setup Procedure

After initial setup make sure you install the Intel Rapid Storage Technology driver/Intel® OptaneTM Memory and Storage Management application.

You need to setup Intel® OptaneTM before installing your *Windows 10* operating system, and you will need to prepare the following in order to do so.

- The Microsoft Windows 10 OS DVD.
- An Intel[®] Optane[™] SSD installed in your system.
- The Device Drivers & Utilities + User's Manual disc.

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Intel® Optane[™] Supported by IRST Driver

You do no have to set the SATA Mode to Intel RST Premium With Intel Optane System Acceleration if you install the Intel IRST driver, and setup the SATA controller to Premium mode by selecting "Switch System SATA controller to Intel® RST Premium mode (Recommended)." as part of the driver installation process (see "IRST Driver Installation" on page 6 - 23). DO NOT uninstall the driver and application after selecting Intel® RST Premium mode.

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If you prefer to setup your Optane drive without doing so in the BIOS then you can skip the following steps 1 to 7, and start with the process of installing Windows (DO NOT forget to leave 5MB of unallocated space on the drive for acceleration as indicated in step 14). Make sure you install the IRST driver.

- 1. Start-up your notebook computer and press <F2> to enter the **BIOS**.
- 2. Select Setup Utility and go to the Advanced menu.
- 3. Select SATA Mode (see page 5 16), press <Enter> and select "Intel RST Premium With Intel Optane Acceleration.".

SATA Mode:	Intel RST Premiu >	

- 4. Select "Save and Exit".
- 5. As the computer restarts press <F2> to enter the **BIOS** again.
- Go to the Setup Utility, and go to the Advanced menu and you will now see the Intel(R) Rapid Storage Technology item. You can press <Enter> to check the information.

(Note this item only appears after you have restarted and accessed the BIOS again after having set SATA Mode to Intel RST Premium With Intel Optane Acceleration)

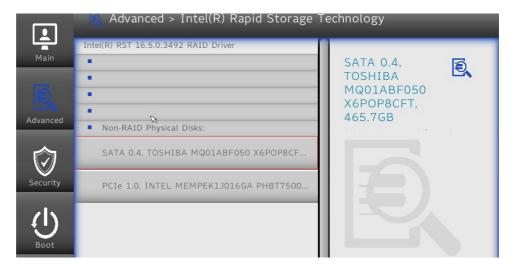


If you need to remove an installed Optane SSD module for any reason, you must disable Intel Optane before doing so.

Failure to disable Optane before removing an Optane SSD module will result in the system being unable to start up.

> *Figure 6 - 1* SATA Mode

Figure 6 - 2 Inte(R) Rapid Storage Technology



- 7. Select "**Save and Exit**", and make sure the *Windows 10* OS DVD is in the DVD drive, or on a USB flash drive, as the computer starts up it will automatically boot from the *Windows 10* DVD or flash drive.
- 8. Press <F2> as the computer starts up and select **Boot Manager**.
- 9. Click to select the drive containing the *Windows 10* OS.
- 10. Press a key at system startup to begin installing *Windows* from your *Microsoft Windows* 10 disc.
- Click Next > Install Now to continue installing the operating system as normal (see your Windows documentation if you need help on installing the Windows OS).
- 12. Select Custom: Install Windows only (advanced).

Setting Up SATA Mode (Optane™ or AHCI) 6 - 7

Modules & Options

- 13. It is recommended that you select and then delete existing partitions.
- 14. Click "New" to create a partition for Windows on your system drive (leave 5MB of unallocated space on the drive for acceleration as indicated below), and you can format a disk partition for you Optane drive now, or in the Disk Management control panel in Windows (Administrative Tools) after system installation is complete.
- 15. Bear in mind the following when creating partitions for your system drive and your Optane drive:
- The drive partition should be set to GPT (MBR partitions are not supported).
- The drive type should be basic, Dynamic drives are not supported.
- It is very important to make sure that when you create any partition, to leave at least a minimum of unallocated space of **5MB** (see sidebar). This space is required for any drive that is being accelerated (System or Data Drive).
- 16. Follow the on-screen instructions to install the *Windows 10* operating system.
- 17. Install the *Windows* drivers from the *Device Drivers & Utilities + User's Manual* disc as per *Table 4 1, on page 4 4* (make sure you install the Intel Rapid Storage Technology driver see overleaf).
- 18. Run the Intel® Optane[™] Memory and Storage Management application to manage your Intel® Optane[™] system as instructed in *"Intel® Optane[™] Memory & Storage Management" on page 6 24*.
- 19. After installing the Intel® Optane[™] Memory and Storage Management application you can access Device Manager (right-click the Start menu and select Device Manager).

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Creating a Windows Partition for Optane

When installing Windows on your system SSD, make sure that you leave a minimum of 5MB of unallocated space for the Intel® Optane™ software to create needed metadata.

After you have created a Windows partition the **Windows Setup** screen will display the partitions and sizes, including the unallocated space. If the unallocated space is less than 5MB, then delete the partitions and recreate them until the criteria is met.

Note this is 5MB only, not GB.

20. Click **Disk drives** to check the Optane drive.



Figure 6 - 3 **Device Manager**

- 21. If you need to partition a drive for Optane go to the **Control Panel** in Windows and click **System and Security**, and then click **Create and format hard disk partitions (Administrative Tools)**.
- 22. Bear in mind the bulleted point information on the previous page when creating the partition (you meed need to initialize the drive if necessary).

6 - 8 Setting Up SATA Mode (Optane[™] or AHCI)

Wireless LAN

If your purchase option includes the **Combination Wireless LAN & Bluetooth module** then install the driver as instructed overleaf.

Make sure you install the drivers in the order indicated in *Table 4 - 1, on page 4 - 4*.

Note that you need to install both the WLAN & Bluetooth drivers for the WLAN & Bluetooth Combo modules.

See overleaf for the appropriate driver installation instructions.

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Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the WLAN & Bluetooth module(s) are OFF if you are using the computer aboard aircraft by putting the system in to Airplane Mode (see Table 1 - 2, on page 1 - 12).

Intel® WLAN Driver Installation

- 1. Make sure the system is not in Airplane Mode, and then insert the *Device Drivers & Utilities + User's Manual* disc into an attached DVD drive.
- 2. Click **Option Drivers** (button).
- 3. Click 1.Install WLAN Driver > Yes.
- 4. Click in the check box to agree to the End User License Agreement and click Install.
- 5. Click Finish.
- 6. The operating system is the default setting for Wireless LAN control in *Windows* (see page 6 11).

Wireless LAN 6 - 11

WLAN Configuration in Windows 10

You can configure a wireless connection using one of the following options, however make sure the Wireless LAN module is turned on (and not in Airplane Mode) before configuration begins.

- 1. Click the Wireless icon *file* (in the notification area of the taskbar.
- 2. Make sure that Airplane mode is off (the Airplane mode icon should be gray).
- 3. A list of available access points will appear.
- 4. Double-click an access point to connect to it (or click it and click Connect).

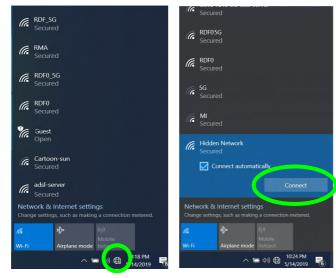
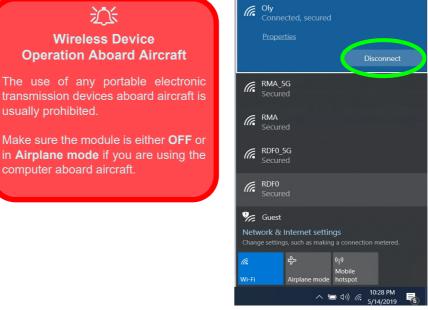


Figure 6 - 4 WiFi & Network Connections

- 5. Enter a network security key (password) if required, and click Next.
- 6. You can choose to share or connect to devices or not.
- 7. When you are connected to the network access point it will display Connected status Connected.
- Select any connected network and click **Disconnect Disconnect** to disconnect 8. from a connected access point.



usually prohibited.

Make sure the module is either OFF or in Airplane mode if you are using the computer aboard aircraft.

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(Click Disconnect)

- 9. You can click the Airplane Mode button to turn the mode On or Off.
- 10. You need to either use **Airplane Mode**, or to **turn the WLAN module off** aboard aircraft.
- If you click on Network Settings to bring up Network & Internet for a more comprehensive list of network and internet settings including Wi-Fi (can be turned on/off), Airplane mode (Airplane mode and Wireless devices can be turned on/off) VPN, Dial-up, Ethernet and Proxy.

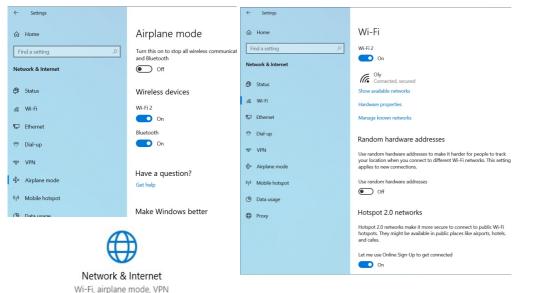


Figure 6 - 6 Network & Internet Settings

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Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the WLAN & Bluetooth module(s) are OFF if you are using the computer aboard aircraft by putting the system in to Airplane Mode (see Table 1 - 2, on page 1 - 12).

Bluetooth

If your purchase option includes the **Combination Wireless LAN & Bluetooth module** then install the driver as instructed overleaf.

Make sure that the module is on (i.e. the system is not in **Airplane Mode**) before installing the driver.

P Bluetooth Data Transfer

Note that the transfer of data between the computer and a Bluetooth enabled device is supported in one direction only (simultaneous data transfer is not supported). Therefore if you are copying a file from your computer to a Bluetooth enabled device, you will not be able to copy a file from the Bluetooth enabled device to your computer until the file transfer process from the computer has been completed.

Note that you need to install both the WLAN & Bluetooth drivers for the WLAN & Bluetooth Combo modules.

Intel Bluetooth Driver Installation

- 1. Make sure the system is not in Airplane Mode, and then insert the *Device Drivers & Utilities + User's Manual* disc into an attached DVD drive.
- 2. Click **Option Drivers** (button).
- 3. Click 2.Install Combo BT Driver > Yes.
- 4. Click Next.
- 5. Click in the check box to accept the license and click Next.
- 6. Select the setup type (Typical is recommended) and click Install.
- 7. Click Finish.
- 8. See *"Bluetooth Configuration in Windows" on page 6 16* for configuration instructions.

Bluetooth Configuration in Windows

- 1. Go to the **Settings** control panel and click **Devices** (or click the Bluetooth icon ***** in the taskbar and click **Add a Bluetooth Device**).
- 2. Click Bluetooth & other devices and make sure Bluetooth is On.
- Click Add Bluetooth or other device > Bluetooth (Add a device) and a list of discovered devices will appear.

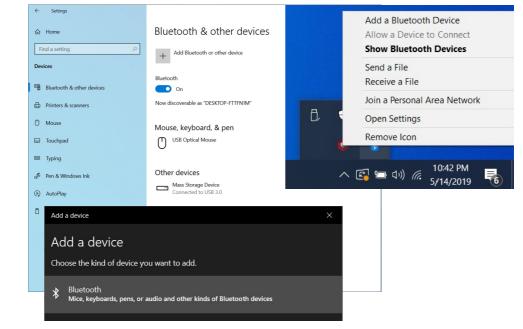
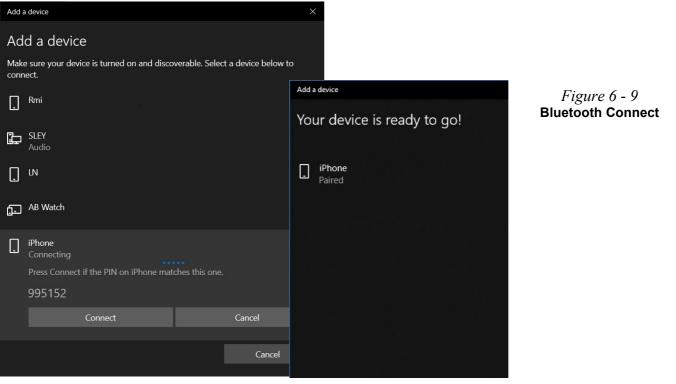


Figure 6 - 7 Settings > Bluetooth & Other Devices (Add a Bluetooth Device)

> *Figure 6 - 8* Add a Device

6 - 16 Bluetooth

4. Double-click the device you want to pair with the computer and click **Connect**, if the PIN matches that on the device to which you wish to connect (you may need to click paid on the device).



5. Select a device and click **Remove Device** Remove device to disconnect from any device (click **Yes** to confirm).

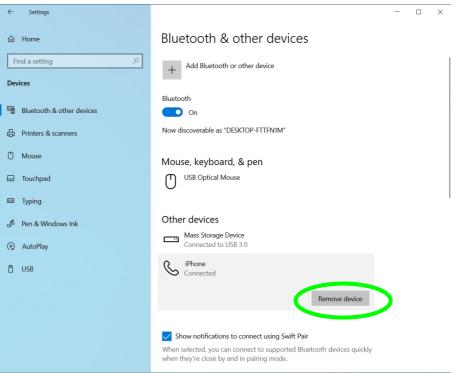


Figure 6 - 10 Bluetooth Remove Device

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To Make your Computer Discoverable to Bluetooth Devices

- 1. Go to the **Settings** control panel and click **Devices** (or click the Bluetooth icon ***** in the taskbar and click **Open Settings**).
- 2. Click Bluetooth & other devices and click More Bluetooth options.
- 3. In **Bluetooth Settings** make sure that **Allow Bluetooth devices to find this PC** check box (**Discovery**) has a check inside it.
- 4. Make sure that the *Alert me when a new Bluetooth device wants to connect* check box (**Notifications**) has a check inside it, if you want to be notified when a Bluetooth device wants to connect.

← Settings		8 Bluetooth Settings	×
යි Home	Bluetooth & other devices	Options COM Ports Hardware	
Find a setting ϕ Devices Bluetooth & other devices	Download over metered connections To help prevent extra charges, keep this off so device software (drivers, info, and app) for new devices won't download while you're on metered Internet connections.	Discovery Altow Bluetooth devices to find this PC Bluetooth devices will see the name of this PC.	
Printers & scanners		Notifications	
() Mouse	Turn on Bluetooth even faster	Alert me when a new Bluetooth device wants to connect	
🖬 Touchpad	To turn Bluetooth on or off without opening Settings, open action center and Bluetooth icon.	Show the Bluetooth icon in the notification area	
Typing	Related settings		
🤌 Pen & Windows Ink	Devices and printers		
AutoPlay	Sound settings		
Ē USB	Display settings More Bluetooth options		
	Send or receive files via Bluetooth		
	Have a question?	<u>R</u> estore Defaults	
	Fix Bluetooth connections Reinstall Bluetooth drivers	OK Cancel Apply	

Figure 6 - 11 Bluetooth Settings

Intel® Software Guard Extensions Driver

Install the Intel® Software Guard Extensions Driver which provides a set of instructions allowing user-level code a degree of security, and privacy, from the operating system. Make sure that SW Guard Extensions is Enabled in the BIOS before installing the driver (see "Software Guard Extensions (SGX) - (Advanced Menu > Advanced Chipset Control)" on page 5 - 15).

Intel SGX Driver Installation

- 1. Insert the *Device Drivers & Utilities* + *User's Manual* disc into an attached DVD drive.
- 2. Click **Option Drivers** (button).
- 3. Click 4.Install SGX Driver > Yes.
- 4. Click **OK** > **OK** to complete the installation.

Intel® Speed Shift Technology Driver 6 - 21

Modules & Options

Intel® Speed Shift Technology Driver

Install the **Intel® Speed Shift Technology** driver as outlined below. Speed Shift Technology allows operating system to hand off some or all control of the handing of the computer's *P-States to the processor. This has a couple of noticeable benefits in responsiveness and the reduction of power consumption.

Speed Shift Technology Driver Installation

- 1. Insert the *Device Drivers & Utilities* + *User's Manual* disc into an attached DVD drive.
- 2. Click **Option Drivers** (button).
- 3. Click **5.Install Speed Shift Driver > Yes**.
- 4. When the "*Is this package from a source you trust*?" message pops-up click "*Yes, add it*".
- 5. This will complete the installation procedure.

P-States

P-states are voltage-frequency pairs that set the speed and power consumption of the coprocessor.

When the operating voltage of the processor is lower, so is the power consumption.



IRST and M.2 PCI-e SSDs

Note that Intel® Rapid Storage Technology does not support M.2 SSDs with a PCI-e Interface (M.2 SSDs with a SATA Interface are supported).

Optane SSD Module Removal

If you need to remove an installed Optane SSD module for any reason, **you must disable Intel Optane before doing so**.

Failure to disable Optane before removing an Optane SSD module will result in the system being unable to start up.

Intel® Rapid Storage Technology

The Intel® Rapid Storage Technology driver supports your AHCI mode SATA drive, or your Intel® OptaneTM system. Install the Intel Rapid Storage Technology driver (after installing all necessary drivers in the correct order) to install the Intel® OptaneTM Memory and Storage Management app to support your Optane system or SATA drive if set up in AHCI or Intel RST Premium With Intel Optane System Acceleration mode in the BIOS (see "SATA Mode (Advanced Menu)" on page 5 - 16). See the driver installation procedure overleaf.

Note that you can set the system to Intel[®] RST Premium mode to support your Intel[®] Optane[™] system even if not enabled in the BIOS by selecting "*Switch System SATA controller to Intel*[®] *RST Premium mode (Recommended)*." as part of the installation process.

Note: This option will only be available if you have NOT set the SATA Mode in the BIOS to Intel RST Premium With Intel Optane System Acceleration.

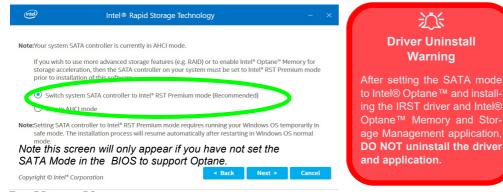
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IRST Premium Mode & BIOS Setting

After installing the IRST driver in Intel® RST Premium mode to support your Intel® Optane[™] system, **do not change the BIOS SATA Mode to AHCI** as this will cause your system to stop working.

IRST Driver Installation

- 1. Insert the *Device Drivers & Utilities* + *User's Manual* disc into an attached DVD drive.
- 2. Click **Option Drivers** (button).
- 3. Click 6.Install IRST Driver > Yes.
- 4. Click Next.
- 5. Click in the check box to accept the license and click Next.
- 6. Click Next (make sure you select AHCI mode if SATA mode is set to AHCI in the BIOS).



- 7. Next > Next.
- 8. Click Finish to restart the computer.
- 9. Run the Intel® Optane[™] Memory and Storage Management application app from the Apps screen.

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IRST Driver Installation

If you have an Optane SSD installed, and have **NOT** set the BIOS to Intel RST Premium With Intel Optane System Acceleration, at this point you can setup the SATA controller to Premium mode to support your Optane SSD.

To set the controller to Premium select "Switch System SATA controller to Intel® RST Premium mode (Recommended)."

Figure 6 - 12 IRST Driver (Select Premium Mode for Optane)

Intel® Optane™ Memory & Storage Management

Run Intel[®] Optane[™] Memory & Storage Management from the Start menu in Windows.

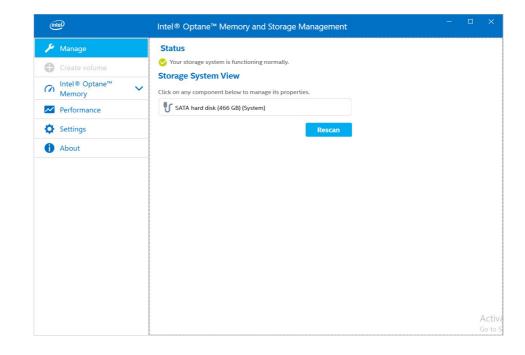
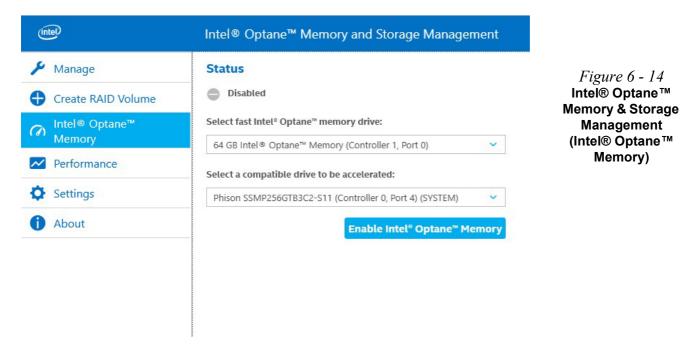


Figure 6 - 13 Intel® Optane™ Memory & Storage Management

6 - 24 Intel® Rapid Storage Technology

There are five areas on the left panel of the application and you can click on Intel® **OptaneTM Memory to manage** system acceleration with the Optane memory system. Select the Optane memory module, and then click **Enable Intel® OptaneTM Memory to** start the process.



Optane™

Enabling Intel® Optane™

- Run the Intel® Optane[™] Memory & Storage Management application. 1.
- Click Enable Intel® Optane[™] Memory. 2.

Figure 6 - 15	intel	Intel® Optane™ Memory and Storage Management
Enable Intel® ptane™ Memory	🔑 Manage	Status
	Create RAID Volume	Disabled
	A Intel® Optane™ Memory	Select fast Intel® Optane™ memory drive: 64 GB Intel® Optane™ Memory (Controller 1, Port 0)
	Performance	Select a compatible drive to be accelerated:
	Settings	Phison SSMP256GTB3C2-S11 (Controller 0, Port 4) (SYSTEM)
	1 About	Enable Intel® Optane™ Memory

A warning will pop up to notify you that the Optane Memory Module will be erased, 3. and if this is OK then click Enable.

Intel[®] Optane[™] Memory Status

WARNING: This process will erase all data on Intel® Optane™ memory module. Please back-up any data on this module before continuing.

NOTE: This process WILL NOT erase data on any other drives in your system.

NOTE: To avoid the risk of data loss, Intel® Optane™ memory must be disabled before moving this device to another system.

✓ Erase all data on Intel[®] Optane[™] memory module.

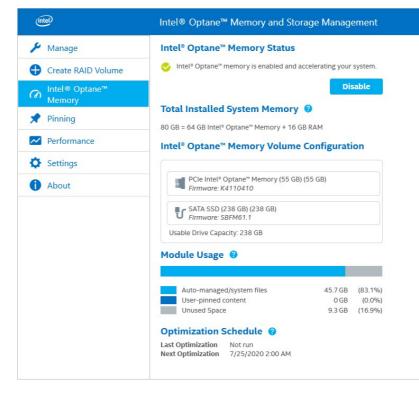
Figure 6 - 16 Warning

4. The system will prepare and enable the Optane drive, and when finished you can then click **Restart**.

- 5. The system will then optimize the Optane Memory upon restart.
- 6. Run the Intel® Optane[™] Memory & Storage Management application.
- 7. The system status will then be displayed.

intel	Intel® Optane™ Mer	mory and Storage Management
🏓 Manage	Status	
Create RAID Volume	Your storage system is Storage System Vie	-
		low to manage its properties.
Pinning	Intel® Optane™ Memory Ar	ray
Performance	PCle (55 GB)	Intel® Optane™ Memory Volume Type: Intel® Optane™ Memory 238 GB
Settings	U SATA (238 GB)	
i About	Internal empty port 3	
	U internat empty port 3	

Figure 6 - 17 Restart Figure 6 - 19 Intel® Optane™ Memory



8. You can drag and drop files, folders and applications so that they will always benefit from the speed of Optane Memory from the **Pinning** menu.

(m)	Intel® Optane [™] Memory and Storage	Management		
🔑 Manage	Pinning			
Create RAID Volume	Pinning files, folders and applications ensures the Optane" memory. All pinned items are listed belo	v will always benefit from the sp w. Note: Subfolders within a pi	eed and responsivenes nned folder are NOT pir	s of Intel® nned.
Intel® Optane™ Memory Memory	Pin 🗸 Unpin	Filter By All	• Search	n Q.
📌 Pinning				
Performance				1.1
Settings				
About				
	Please tog in as 'Administra	or' to drag and drop files, fold	ers or applications for	
ē	Note: Right-click for more actions on item or how Remaining space for user-pinned content 14.9 GB			- 0
@	Remaining space for user-pinned content 14.9 GB			
🄑 Manage	Remaining space for user-prinned content 14.9 GB Initel® Optane ^w Memory and Storage Pinning Pering first, folders and applications ensures the	Management	reed and responsiveness	- B
 Manage Create RAID Volume 	Remaining space for user-pinned content 14.9 GB Intel® Optane ³⁶ Memory and Storage Pinning	Management	eed and responsiveness nned folder are NOT pil	- B
Manage Create RAID Volume	Remaining space for user prived content 14.9 GB Inite(® Optiane [®] Memory and Storage Pinning Pinning Pinning like, listers and applications ensures the Option* memory. All proved likes are listed below Pin v Urgein	Management will always benefit from the sp r Note: Subfolders within a pi Filter By All	v Search	- D
 Manage Create RAID Volume Intel® Optane™ 	Remaining space for user prived content 14.9 GB Initel® Optione™ Memory and Storage Pinning Priving the hoties and applications ensures the Option™ memory All prived times are taked belo Pin w	Management rvill always benefit from the sp totors sublotiders within a pi Filter By All pe * Size *	v Search Path	- Cl i of intel [®] med. v
Manage Create RAID Volume Intel® Optane [™] Memory	Remaining space for user prived content 14.9 GB Initel® Optione™ Memory and Storage Pinning Priving the hoties and applications ensures the Option™ memory All prived times are taked belo Pin w	Management rvill always benefit from the sp totors sublotiders within a pi Filter By All pe * Size *	v Search	- Cl i of intel [®] med. v
Manage Create RAID Volume Intel® Optane [™] Memory Pinning	Remaining space for user prived content 14.9 GB Initel® Optione™ Memory and Storage Pinning Priving the hoties and applications ensures the Option™ memory All prived times are taked belo Pin w	Management rvill always benefit from the sp totors sublotiders within a pi Filter By All pe * Size *	v Search Path	- Cl i of intel [®] med. v
Manage Create RAID Volume Intel® Optane [™] Memory Pinning Performance	Remaining space for user prived content 14.9 GB Initel® Optione™ Memory and Storage Pinning Priving the hoties and applications ensures the Option™ memory All prived times are taked belo Pin w	Management rvill always benefit from the sp totors sublotiders within a pi Filter By All pe * Size *	v Search Path	- Cl i of intel [®] med. v

Figure 6 - 20 Pinning

PC Camera Module

When the PC Camera application is run the LED indicator to the left of the camera will be illuminated (see **2** *Figure 1 - 2 on page 1 - 6*). Note that you need to use the **Camera** app in *Windows* to take pictures and capture video. Use the Fn + F10 key combination (see *"Keyboard - Model B" on page 1 - 11*) to toggle power to the PC Camera module.

Note that you need to use the **Camera** app **o** in *Windows* to take pictures and capture video.

Camera App

- 1. Make sure the PC Camera is turned on by using the **Fn + F10** key combination (or **Control Center button**).
- 2. Run the Camera app from the Start menu by clicking on the **Camera** app icon (you can type "camera" into the search box to find the Camera app).
- 3. The interface displays two buttons on the right of the screen; one for photo and one for video.



Figure 6 - 21 Camera App Mode Icons

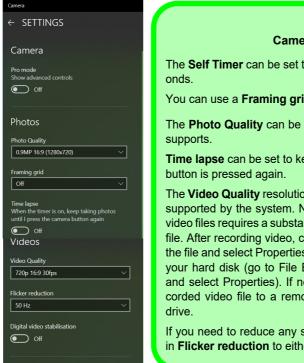
- 4. Simply click on the appropriate button (or arrow) to switch to either photo or video modes.
- 5. You can use the buttons on the left of the screen to access the **Settings, HDR**/ **Brightness** and **Photo Timer**.



Figure 6 - 22 Camera Menu Buttons *Figure 6 - 23*

Camera Settings

6. Click Settings to access the camera settings menu to select/deselect Pro mode, make adjustments for Photo Quality, Framing grid, Time lapse, Video Quality and Flicker reduction.



Camera Settings

The **Self Timer** can be set to take Photos after **2**, 5 or *10* seconds.

You can use a Framing grid to help you line up pictures.

The **Photo Quality** can be changed to that which the system supports.

Time lapse can be set to keep taking photos until the camera button is pressed again.

The **Video Quality** resolution and frame rate can be set to any supported by the system. Note that capturing high resolution video files requires a substantial amount of disk space for each file. After recording video, check the video file size (right-click the file and select Properties) and the remaining free space on your hard disk (go to File Explorer, right-click the hard disk, and select Properties). If necessary you can remove the recorded video file to a removable medium e.g. a USB Flash drive.

If you need to reduce any screen flicker, change the settings in **Flicker reduction** to either e.g. 50Hz or 60Hz.

7. With the **Pro mode** selected (in Settings) you can access the **Brightness** button to adjust the brightness.

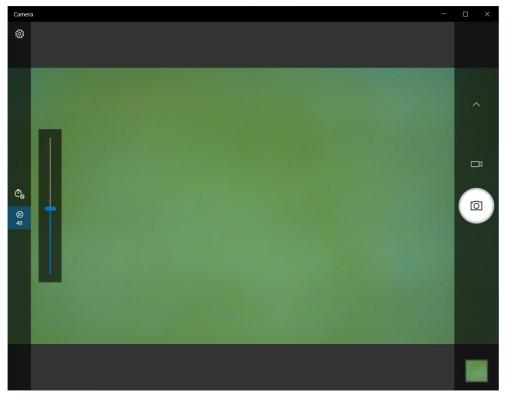
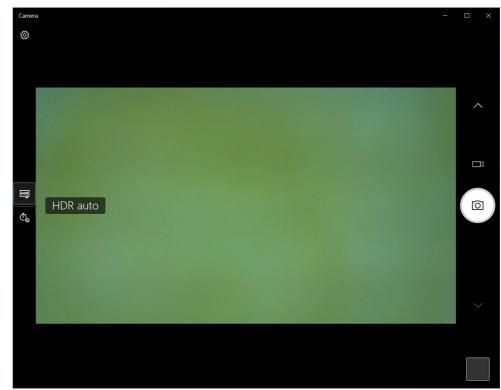


Figure 6 - 2 Camera Brightness Adjustment (Pro mode)



8. In Auto mode you can toggle HDR on or off.

Figure 6 - 26 Camera HDR (Auto mode)

6

Taking Pictures/Capturing Video

- 1. Make sure the PC Camera is turned on by using the **Fn + F10** key combination (or **Control Center button**).
- 2. Run the Camera app from the Start menu by clicking on the **Camera** app icon (you can type "camera" into the search box to find the Camera app).
- 3. Click to select either **photo** or **video** modes.
- 4. Click the photo icon to take a picture.
- 5. Click on the video icon it to start video capture (when video capture begins a timer will appear at the bottom of the screen).
- 6. To stop video capture click the stop 💽 button (you can also pause 🕕 the video capture).





7. Captured photos and videos will be saved to the **Photos** app stored in the Start menu (type **Photos** into the search box if you cannot find the app). You can also access the photos from the **Camera roll** icon at the bottom right of the Camera app screen.

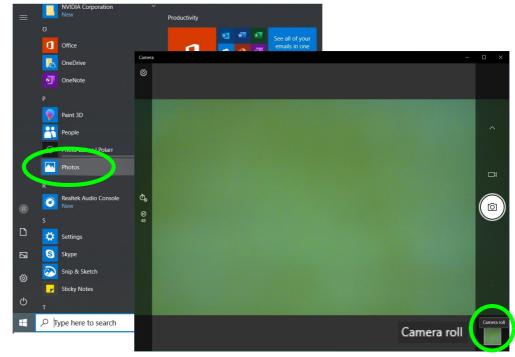


Figure 6 - 28 Photos App (For Captured Photos & Videos) & Camera Roll in the Camera App

Trusted Platform Module

(Optional)

The **TPM security chip** allows you to create and manage digital certificates for user and platform authentication. This type of security is usually administered within large enterprises and organizations, and therefore requires implementation by a system administrator before users can access security features.

Individual users can use the TPM as an authentication with the fingerprint reader.

Make sure you have administrator's rights to your computer, and have a *Windows* password enabled for full security protection. In addition Make sure you prepare a removable media (e.g. a USB flash drive) to store passwords etc. before beginning the TPM initialization process.

Before setting up the TPM functions you must initialize the security platform.

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Clearing TPM Information

You can click **Clear TPM**, which will toggle the setting between **Enabled/Disabled**. If set to **Enabled** this will clear existing TPM information in order to reset the TPM.

Figure 6 - 29 Security - Trusted Computing

Enabling & Activating TPM

- 1. Restart the computer.
- 2. Enter the **BIOS** pressing **F2** during the POST/startup.
- 3. Click to enter the Setup Utility and select the Security menu.
- 4. Click TPM Configuration and select Enable for Security Device Support.
- 5. You will then need to save the changes and restart the computer.



TPM Management in Windows

You can manage your TPM settings from within Windows:

- 1. Go to the Control Panel.
- 2. Click BitLocker Drive Encryption (System and Security).
- 3. Click TPM Administration.

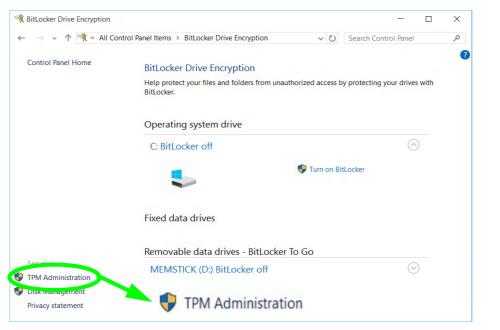


Figure 6 - 30 BitLocker Drive Encryption (TPM Administration) 4. The TPM Management window allows you to configure the TPM within *Windows*. As TPM is usually administered within large enterprises and organizations, your system administrator will need to assist you in managing the information here.

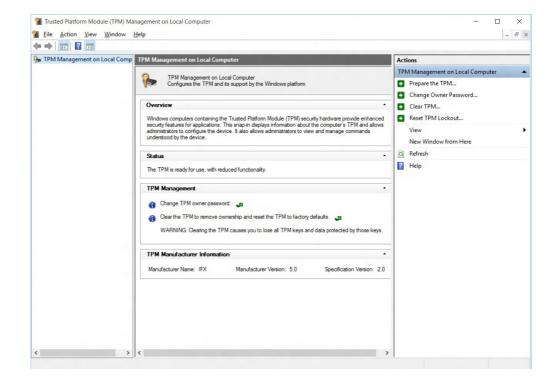


Figure 6 - 31 Trusted Platform Module (TPM) Management on Local Computer Administration

TPM Actions

- 1. Click **Prepare the TPM** and follow the instructions in the Wizard **to** prepare the TPM (this will probably require a restart of the computer and confirmation of the setting changes after restart by pressing the appropriate F key).
- 2. After the restart the TPM will be prepared and you can then use the **Actions** menu to **Turn TPM off**, **Change Owner Password**, **Clear TPM** or **Reset TPM Lockout**.
- 3. A wizard will help take you through any setup steps.

Act	ions
TPI	Management on Local Computer
•	Prepare the TPM
•	Change Owner Password
•	Clear TPM
•	Reset TPM Lockout
	View
	New Window from Here
Q	Refresh
?	Help

Figure 6 - 32 **TPM Actions Menu**

BitLocker

BitLocker Drive Encryption can be used in conjunction with the TPM to encrypt data on the disk. Access the Microsoft **BitLocker Drive Encryption** control panel applet from the *Windows* control panel (System and Security).

- 1. Click Turn on Bit Locker.
- 2. Follow the on-screen instructions to setup BitLocker, and make sure you have a removable media (e.g. a USB flash drive) to store saved recovery keys etc.

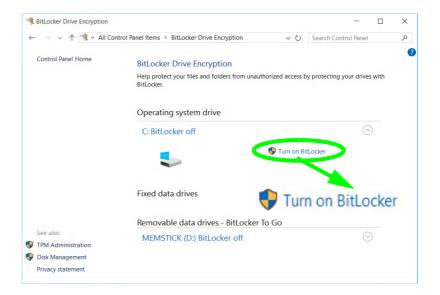


Figure 6 - 33 BitLocker Drive Encryption

4G Module

(Factory Option Only)

If you have included an **optional LTE** (Long Term Evolution) 4G module (see "*Communication*" *on page D - 3* for specification details) in your purchase option, you do not require a driver/application installation for Windows. Follow the instructions overleaf to install the SIM card (which will be supplied by your service provider), and then use the Charms Bar Wireless icon to access the 4G network in the same manner as the WLAN.



Important Notice

If your purchase option includes both Wireless LAN and 4G modules, then the appropriate antennas will be installed. Note that In order to comply with FCC RF exposure compliance requirements, the antenna must not be co-located or operate in conjunction with any other antenna or transmitter.

Important Notice - 4G & Bluetooth/Wireless LAN Modules

In order to comply with FCC regulations you should NOT operate the 4G module and the Bluetooth/Wireless LAN modules at the same time as this may disrupt radio frequency, and cause interference. When the 4G module is powered on, make sure that the Bluetooth/ Wireless LAN modules are powered off.

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Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the WLAN & Bluetooth module(s) are OFF (or the system is in Airplane Mode) if you are using the computer aboard aircraft (see Table 1 - 2, on page 1 - 12).



Power Safety Warning

Before you undertake any installation procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines).

SIM Card Orientation

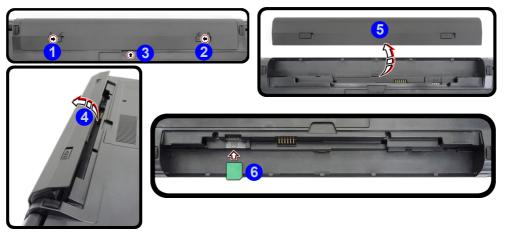
Note that the SIM card's readable side (with the gold-colored contacts) should face as illustrated.

Figure 6 - 34 Battery Removal & USIM Card Insertion

4G Module SIM Card Installation

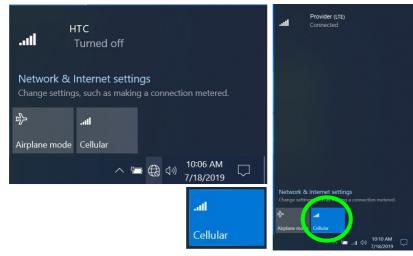
Follow the instructions below to install the SIM card (which will be supplied by your service provider).

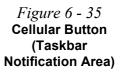
- 1. Turn the computer off, and turn it over.
- 2. Slide the latch (1) in the direction of the arrow.
- 3. Slide the latch (2) in the direction of the arrow, and hold it in place.
- 4. While holding the latch (2) in place, pull the battery up from point (3) in the direction of the arrow (4).
- 5. Remove the battery 5.
- 6. Insert the SIM card ⁶ as illustrated below until it clicks fully into position, and replace the battery.



You can configure a 4G connection as below, however make sure the **system is not in Airplane Mode** before configuration begins and **turn Wi-Fi Off in order to use your 4G connection as priority**. You can connect to a 4G connection in much the same way as the WLAN connection except you use the **Cellular** menu.

- 1. Click the Wireless icon in the notification area of the taskbar and click on the Wi-Fi icon in order to turn it off if applicable (the Wi-Fi icon will be grayed out when off).
- 2. Make sure that Airplane mode is off (the Airplane mode icon should be gray).
- 3. Click the Cellular button to turn it On.





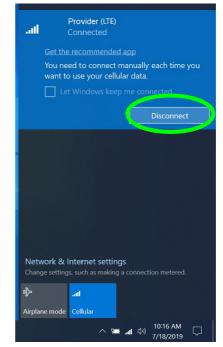
Power Saving States & Cellular Connections Note that if your system goes in to a power saving state, you will need to reconnect to your cellular network when the

6.

Also see "Let Windows keep me connected" on page 6 - 47.

Figure 6 - 36 Cellular Connection

- 4. Click **Connect** to connect **Connect** to the cellular network manually.
- 5. Once connected you can then access the internet, download e-mail etc. as per any internet connection.
 - Click **Disconnect Disconnect** to drop the connection to the cellular network.
- 7. You will need to turn your Wi-Fi on again after disconnecting.



8. **Cellular** in **Network & Internet** in **Windows Settings** will allow you to access some further cellular settings.

← Settings	- 🗆 X
命 Home	Cellular
Find a setting	LIII Provider (LTE) Connected
Network & Internet	Get the recommended app
🖨 Status	Disconnect
00 Cellular	Let Windows manage this connection
문 Ethernet	You need to connect manually each time you want to use your cellular data.
ଳି Dial-up	Data roaming options
∞ VPN	Don't roam 🗸
$\mathcal{E}_{\mathcal{V}}^{\mathcal{D}}$ Airplane mode	When entering a roaming area, your data connection will be turned off.
🕒 Data usage	Advanced options
Proxy	Choose apps that can use your cellular data
	Use cellular instead of Wi-Fi
	When Wi-Fi is poor \checkmark

Let Windows keep me connected If you leave "Let Windows keep me connected" unchecked, then if your system goes in to a power saving state, you will need to manually reconnect to your cellular network when the system resumes.

Figure 6 - 37 Network & Internet Settings > Cellular

9. Click Advanced options to access more detailed menu options.

	Get the recommended app	
	Let Windows manage this connection You need to connect manually each time you want to use your	Metered connection If you have a limited data plan and want more control over data usage, make this connection a metered network. Some apps might work differently to reduce data usage when you're connected to this network. Set as a metered connection
	cellular data. Data roaming options	On You set a data limit, Windows will set the metered connection setting for you to help you stay under your limit. Set a data limit to help control data usage on this network APN settings
8 Iced	When entering a roaming area, your data connection will be turne off.	Observe the default Internet APN Automatic Vell automatically use the best Internet APN we found. We won't use an APN That you or your organization might have created. +
	Check appendit can use your cellular data	Internet APN ((c)) Default APN Accounted Properties
	Use cellular instead of Wi-Fi When Wi-Fi is poor	Manufacturer Huawii Technologies Co., Itol. Model HUAWII Mohile Brossbard Module Fimmare: L20.05.00.03.88 Network type: GAM Data dass: GRS. MBI: 64/66/2004/027724 MSI: 66/66/2004/02772 SM (CDD: 98/66/2004/0272279 Copy Copy
		Security Use a PNN to help protect your SIM Use SIM PIN

Figure 6 - 38 Cellular > Advanced Options

Chapter 7: Troubleshooting

Overview

Should you have any problems with your computer, before consulting your service representative, you may want to try to solve the problem yourself. This chapter lists some common problems and their possible solutions. This can't anticipate every problem, but you should check here before you panic. If you don't find the answer in these pages, make sure you have followed the instructions carefully and observed the safety precautions in the preface. If all else fails, talk to your service representative. You should also make a record of what happened and what remedies you tried.

Of course, if something goes wrong, it will happen at the most inconvenient time possible, so you should preview this section just in case. If, after you've tried everything, and the system still won't cooperate, try turning it off for a few minutes and then rebooting. You will lose any unsaved data, but it may start working again. Then call your service representative.

Basic Hints and Tips

Many of the following may seem obvious but they are often the solution to a problem when your computer appears not to be working.

- Power Is the computer actually plugged into a working electrical outlet? If plugged into a power strip, make sure it is actually working. Check the LED Power & Communication Indicators (see "LCD Panel Open Model B" on page 1 7) to see the computer's power status.
- Connections Check all the cables to make sure that there are no loose connections anywhere.
- Power Savings Make sure that the system is not in Hibernate or Sleep mode by pressing the keys configured in your Power Options (see "Power-Saving States" on page 3 7), the Fn + F12 key combination, or power button to wake-up the system.
- Brightness Check the brightness of the screen by pressing the Fn + F8 and F9 keys to adjust the brightness.
- Display Choice Press Fn + F7 to make sure the system is not set to "external only" display.
- Boot Drive Make sure there are no optical media and/or USB storage devices in any connected drive.

7 - 2 Basic Hints and Tips

Backup and General Maintenance

- Always **backup** your important data, and keep copies of your OS and programs safe, but close to hand. Don't forget to note the **serial numbers** if you are storing them out of their original cases, e.g. in a CD wallet.
- Run **maintenance programs** on your hard disk and OS as often as you can. You may schedule these programs to run at times when you are not using your computer. You can use those that are provided free with your OS, or buy the more powerful dedicated programs to do so.
- Write down your passwords and keep them safe (away from your computer). This is especially important if you choose to use a **Supervisor** password for the BIOS (see *"The Insyde BIOS Utility" on page 5 2*).
- Keep copies of vital settings files such as network, dialup settings, mail settings etc.(even if just brief notes).

Warranty

The CPU is not a user serviceable part. Opening this compartment, or accessing the CPU in any way, may violate your warranty.

Viruses

- Install an Anti-Virus program and keep the definitions file (the file which tells your program which viruses to look for) up to date. New computer viruses are discovered daily, and some of them may seriously harm your computer and cause you to lose data. Anti-Virus programs are commercially available and the definitions file updates are usually downloadable directly from the internet.
- Be careful when opening e-mail from sources you don't know. **Viruses** are often triggered from within **e-mail attachments** so take care when opening any attached file. You can configure most **Anti-Virus** programs to check all **e-mail attachments**. **Note**: You should also beware of files from people you know as the virus may have infected an **address book** and been automatically forwarded without the person's knowl-edge.
- Keep a "Bootable CD-ROM/DVD-ROM/USB storage device" (this CD/DVD/USB device provides basic information which allows you to startup your computer) handy. You may refer to your OS's documentation for instructions on how to make one, and many Anti-Virus programs will also provide such a disk (or at least instructions on how to make one).

Upgrading and Adding New Hardware/Software

- Do not be tempted to make changes to your **Windows Registry** unless you are very sure of what you are doing, otherwise you will risk severely damaging your system.
- Don't open your computer or undertake any repair or upgrade work if you are not comfortable with what you are doing.
- Read the **documentation**. We can assume, since you are reading this that you are looking at the computer's manual, but what about any new peripheral devices you have just purchased? Many problems are caused by the installation of new hardware and/or software. Always refer to the documentation of any new hardware and/or software, and pay particular attention to files entitled "**READ ME**" or "**READ ME FIRST**".
- When installing a new device always make sure the device is powered on, and in many cases you will need to restart the computer. Always check that all the cables are correctly connected.
- Make sure you have installed the **drivers** for any new hardware you have installed (latest **driver files** are usually available to download from vendor's websites).

- Thoroughly check any **recent changes** you made to your system as these changes may affect one or more system components, or software programs. If possible, go back and undo the change you just made and see if the problem still occurs.
- Don't over complicate things. The less you have to deal with then the easier the source of the problem may be found; **Example** if your computer has many devices plugged into its ports, and a number of programs running, then it will be difficult to determine the cause of a problem. Try disconnecting all of the devices and restarting the computer with all the peripheral devices unplugged. A process of elimination (adding and removing devices and restarting where necessary) will often find the source of a problem, although this may be time consuming.

Problems and Possible Solutions

Problem	Possible Cause - Solution
The battery LED power indicator [], is blinking orange.	<i>Low Battery.</i> Plug in the DC power source. If the computer doesn't start up immediately, turn it off then on again.
You are losing battery power too quickly.	The system is using too much power. If your OS has a Power Options scheme (see "Power Plans" on page 3 - 5) check its settings. You may also be using a peripheral device/USB device that is drawing a lot of power.
Actual battery operating time is shorter than expected.	The battery has not been fully discharged before being recharged. Make sure the battery is fully discharged and recharge it completely before reusing (see pages 3 - 16 to 3 - 21).
	<i>Power Options have been disabled.</i> Go to the Control Panel in <i>Windows</i> and re-enable the options.
	A peripheral device/USB device is consuming a lot of power. Turn off/remove the unused device to save power.
The system will not wake up from a	Wake on LAN is supported in AC mode only.
power saving state (Sleep/Hibernate) on network activity (Wake on LAN) even though I have plugged in the powered AC/DC adapter.	When the system enters a power saving state the plugged in AC/DC adapter should be connected, and should remain connected, in order to allow the system to wake up on network activity. Unplugging the adapter, and then plugging it back in again, will not allow the system to wake up on network activity.

Problem	Possible Cause - Solution
The computer feels too hot .	Make sure the computer is properly ventilated and the Vent/Fan intakes are not blocked. If this doesn't cool it down, put the system into Hibernate mode or turn it off for an hour. Make sure the computer isn't sitting on a thermal surface (see <i>"Overheating" on page 1 - 19</i>). Make sure you're using the correct adapter.
	Make sure that your notebook is completely powered off before putting it into a travel bag (or any such container). Putting a notebook which is powered on in a travel bag may cause the Vent/Fan intakes to be blocked.
Nothing appears on screen.	The system is in a power saving mode. Toggle the sleep/resume key combination, Fn + F4 (see "Configuring the Power Buttons" on page 3 - 9).
	<i>The screen controls need to be adjusted.</i> Toggle the screen control key combinations Fn + F8/F9 . If you're connected to an external monitor, make sure it's plugged in and turned on. You should also check the monitor's own brightness and contrast controls.
	<i>The computer is set for a different display.</i> Toggle the screen display key combination, Fn + F7 . If an external monitor is connected, turn it on.
	The screen saver is activated. Press any key or touch the TouchPad.
No image appears on the external monitor I have plugged in and powered on.	You haven't installed the video driver and configured it appropriately from the Control Panel . See Appendix C for instructions on installing and configuring the video driver.

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Problem	Possible Cause - Solution	
You forget the boot password .	If you forget the password, you may have to discharge the battery of the CMOS. Contact your service representative for help.	
EXE Password Warning If you choose to set a boot password, NEVER forget your password. The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.		
The sound cannot be heard or the volume is very low. The volume might be set too low. Check the volume control in the V Control Panel in the Windows notification area, or use the key combinate + F5 and F6 (see "Function/Hot Key Indicators" on page 1 - 12) to adj		
Unwelcome numbers appear when typing.	Num Lock is turned ON (see "Function/Hot Key Indicators" on page 1 - 12).	
I am sliding my finger up and down on the right side of the Touchpad to scroll a Window and the Touchpad does not respond .	There are different Touchpad versions available on this computer, and this version requires tapping/holding to scroll. Either tap repeatedly, or hold the finger down, at the top or bottom right of the Touchpad (depending on the scrolling direction required) to scroll the window.	

Problem	Possible Cause - Solution	
	ිළ Other Keyboards	
If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system detect and enable it automatically. However special functions/hot keys unique to the system's regular keyboard may work.		
The system freezes or the screen goes dark.	<i>The system's power saving features have timed-out.</i> Use the AC/DC adapter, press the sleep (Fn + F4) key combination, or press the power button if no LEDs are lit.	
The system never goes into a power saving mode.	Power Options features are not enabled. Go to the <i>Windows</i> Power Options menu and enable the features you prefer (see <i>"Power-Saving States" on page 3 - 7</i>). Make sure you have enabled Hibernate mode from the control panel.	
The Wireless LAN/Bluetooth modules cannot be detected.	The modules are off as the computer is in Airplane Mode . Click the Wireless icon in the notification area of the taskbar and make sure Airplane Mode is Off.	
The PC Camera module cannot be detected.	<i>The module is off.</i> Press the Fn + F10 key combination in order to enable the module (see <i>"Function/Hot Key Indicators" on page 1 - 12</i>). Run the camera application to view the camera picture.	

Problem	Possible Cause - Solution
The Wireless LAN/Bluetooth modules cannot be configured.	The driver(s) for the module(s) have not been installed. Make sure you have installed the driver for the appropriate module (see the instructions for the appropriate module in <i>"Modules & Options" on page 6 - 1</i>).
A file cannot be copied to/from a connected Bluetooth device.	The transfer of data between the computer and a Bluetooth enabled device is supported in one direction only (simultaneous data transfer is not supported). If you are copying a file from your computer to a Bluetooth enabled device, you will not be able to copy a file from the Bluetooth enabled device to your computer until the file transfer process has been completed
When using a Bluetooth headset the audio appears to be mono and not stereo.	This is a common issue with Bluetooth headsets. To resolve this issue do the following (you will need to repeat this procedure after every boot up , restart , or when the system resumes from hibernation):
	 Go to the Devices & Printers control panel in Windows. Double-click the Bluetooth headset. Click Connect to complete the stereo connection. OR Go to the Sound control panel in Windows. Right-click (in the Playback tab) the Bluetooth Stereo Audio device (the default device is Headset). Click Connect to complete the stereo connection.

Problem	Possible Ca	use - Solution
A file being copied to/from a connected Bluetooth device appears to be transferring very slowly .	-	<i>I panel</i> (Settings > Devices > Bluetooth) n the computer and a Bluetooth enabled n control panel is closed.
	Eluetooth Control Panel (Settings > Devices) Close the Bluetooth control pan- el (pictured on the right) when transferring data between the com- puter and a Bluetooth enabled de- vice.	Serrey - □ × ● Hone Bluetooth & other devices Fred austing → Devess ■ ● Inters & conners ● ● Hone ■ ● None ■ ■ Buetooth & scher devices ■ ● Inters & conners ■ ● None ■ ● None ■ ● None ■ ● Nones ■ ● None ■ <td< th=""></td<>

Problem	Possible Cause - Solution
I can't hear any sound from the microphone in my connected headset, when trying to test the audio playback.	 You need to enable listening to the microphone in the audio control panel in order to hear any sound through your connected headset as follows: 1. Right-click the volume control icon in the taskbar. 2. Select Recording Devices. 2. Select Recording Devices. 3. Double-click Microphone and select Listen. 4. Click to put a check in Listen to this device check box. A Microphone Properties General Listen Levels Enhancements Advanced Vou can listen to a portable music player or other device through Microphone jack. If you connect a microphone, you may hear fet 5. Click Apply. 6. You can then listen to the playback though the headset for testing. 7. Remember to disable this feature (remove the check from the Listen to this device check box) otherwise you may hear an echo from the internal

Intel® Optane[™] Notes

Intel® Optane[™] is a combination of a compatible memory device and Intel Rapid Technology software. This combination is designed to speed up your system performance. However note the following;

- The SATA Mode should be set BEFORE installing an operating system, and after you have backed up all necessary files and data (see sidebar). See "Setting Up SATA Mode (OptaneTM or AHCI)" on page 6 2 for details. Make sure you install the Intel Rapid Storage Technology application if you have set the SATA Mode to Intel RST Premium..., or to AHCI (see "IRST Driver Installation" on page 6 23).
- It is very important to make sure that when you create a hard disk drive partition when installing Windows for an Intel® Optane[™] system, that you leave at least a minimum of 5MB of unallocated space (note this is 5MB only, not GB).
- After setting the SATA mode (Intel RST Premium...) to Intel[®] Optane[™] and installing the Intel[®] Rapid Storage Technology application, DO NOT uninstall the Intel[®] Rapid Storage Technology application.
- If you are reinstalling a system that has previously been setup in Intel RST Premium mode, make sure you have disabled the Intel Optane Memory.
- If you need to reinstall an operating system, uninstall the IRST driver/application or swap the hard disk drive (or Intel® OptaneTM SSD) make sure you have disabled the Intel Optane Memory.

^{7 - 14} Intel® Optane[™] Notes

Appendix A: Interface (Ports & Jacks) Overview

The following chapter will give a quick description of the interface (ports & jacks) which allow your computer to communicate with external devices, connect to the internet etc.

Notebook Ports and Jacks

ltem	Description
2-In-1 Audio Jacks Headphone/Microphone	Headphones/headsets or speakers may be connected through this jack. Note : Set your system's volume to a reduced level before connecting to this jack. Plug an external microphone in to this jack to record on your computer.
Card Reader	 The card reader allows you to use some of the latest digital storage cards. Push the card into the slot and it will appear as a removable device. MMC (MultiMedia Card) / RSMMC SD (Secure Digital) / Mini SD / SDHC / SDXC
DC-In Jack	Plug the supplied AC/DC adapter into this jack to power your computer.
External Monitor (VGA) Port	This port allows you to connect an external monitor, or Flat Panel Display, to get dual video or simultaneous display on the LCD and external monitor/FPD.
	The HDMI-Out (High-Definition Multimedia Interface) is an audio/video connector interface for transmitting uncompressed digital streams. This allows you to connect an external monitor, TV or Flat Panel Display etc. as a display device by means of a HDMI cable. Note that HDMI carries both audio and video signals .

Item	Description
Microphone-In Jack	Plug an external microphone in to this jack to record on your computer.
RJ-45 LAN Jack	This port supports LAN (Network) functions (you will need to open the cover slightly before inserting a LAN cable). Note: Broadband (e.g. ADSL) modems usually connect to the LAN port.
Security Lock Slot	To prevent possible theft, a Kensington-type lock can be attached to this slot. Locks can be purchased at any computer store.

Interface (Ports & Jacks)

Item	Description
USB 2.0 Port	These USB ports are for low-speed peripherals such as keyboards, mice or scanners, and for high-speed peripherals such as external HDDs, digital video cameras or high-speed scanners etc. Devices can be plugged into the computer, and unplugged from the computer, without the need to turn the system off (if the power rating of your USB device is 500mA or above, make sure you use the power supply which comes with the device).
Type A Ports	Note: The maximum amount of current supplied by USB Type-C ports is 500 mA for USB2.0/900 mA for USB 3.1
-7.E	USB 3.0 ports capable of 5Gbps (SuperSpeed) are classified as USB 3.1 Gen 1 and USB ports capable of 10Gbps (SuperSpeed+) are classified as USB 3.1 Gen 2.
USB 3.1 (USB 3.1 Gen 2) Type C Port	This model includes 2 * USB 2.0 ports (Type-A), 1 * USB 3.1 (USB 3.1 Gen 1 port) Type-A port and 1 * USB 3.1 (USB 3.1 Gen 2 port) Type-C port. The larger blue port is a Type A USB 3.1 , Gen 1 port , the USB 2.0 ports are colored black and the smaller port is a USB 3.1 Gen 2 Type C port .
OR USB 3.1 (USB 3.1 Gen 2) Type C with DC Power Delivery Support Factory Option	Alternatively the USB 3.1 (USB 3.1 Gen 2) Type C port may be replaced (Factory Option) by a USB 3.1 (USB 3.1 Gen 2) Type C port that supports Power Delivery with DC-In. This port allows you to use a third party AC/DC adapter/laptop power bank plugged into the port as a power supply. If you are using a power bank make sure that it complies with the USB-C PD (Power Delivery) standard specification. If you are using a third party AC/DC adapter, the rating of the adapter must be at least 20Volts, 2.25A (45 Watts) and it should be appropriately certified.

Appendix B: Control Center Overview

The following chapter will give a quick description of the functions of the Control Center application.

Control Center

The Control Center provides quick access to Power Modes, Fan and the LED Keyboard (for illuminated colored keyboards only) configuration. Click icons to access the appropriate menu, and make adjustments as applicable.

Control Center

Run the **Control Center** from the **Windows Start** menu Control Center 3.0 or by clicking the icon in the notification area of the taskbar.



Note the LED Keyboard item will only appear for LED colored keyboards only







Figure B - 1 - Control Center Screens

Control Center

Fan Speed Setting

You can access the **Fan Speed Setting** from the **Control Center** or the **Windows Start** menu **Control Set** the fan speed to **Maximum (full power) or Automatic** from this menu item. The fan speed will adjust itself automatically to control the heat of the CPU. However you can adjust the setting to maximum if you prefer. You can use the **Offset** slider to adjust the settings to your preference, however these settings can be overridden by the system as a safety precaution, if it requires heavier use of the fan.



Figure B - 2 - Fan Settings

Control Center

Power Modes

Power Modes allows you to adjust the power mode by clicking the appropriate icon.



Figure B - 3 - Power Modes

- **Power Saving** mode focuses on saving battery life (the CPU Turbo Boost and dGPU Turbo will be off).
- Quiet mode focuses on reducing fan noise and will decrease both CPU power and GPU power.
- Entertainment balances CPU and GPU power and is ideal for watching videos etc.
- Performance mode is ideal for gaming with higher CPU and GPU performance.

LED Keyboard - For Illuminated Colored LED Keyboards

The LED Keyboard menu will allow to change the **Brightness** and **Keyboard Sleep Timer**. The LED **Keyboard** application can be accessed by clicking **LED Keyboard** in the Control Center), or from the **Windows** Start menu C LED Keyboard Setting.



Figure B - 4 - LED Mode for Illuminated Colored LED Keyboards

Control Center

Color Swatch

The color swatch in the middle of the screen allows you to select a range of colors for your keyboard backlight by clicking on the color required. Click to select any colors from the swatch to apply to the keyboard.



Figure B - 5 - Keyboard Color Swatch

Keyboard Sleep Timer

Enable and then select the amount of time the system for which the system is idle before the keyboard LED enters sleep mode (i.e. the LED keyboard illumination will turn off to save power).

Brightness

Click on any of the numbers (1 - 4) on the **Brightness** bar to set the brightness level of the LED Device. You can also turn the keyboard backlight LED Device off by clicking the **OFF** button, or by using the **Fn** plus $\boxed{\cdot}$ key.

Appendix C: Video Driver Controls

Intel Video Driver Installation

- 1. Click **3.Install VGA Driver > Yes**.
- 2. Click Next > Yes > Next > Next.
- 3. Click Finish to restart the computer.
- 4. **Intel Graphics Control Panel** will download but you will need to have a working internet connection.
- 5. Click the **Start** menu in Windows to access the **Microsoft Store App** tile under **Explore**.
- 6. Click the Sign in icon \mathcal{R}_{+} and select Downloads and updates.
- 7. Click Check for Updates.
- 8. A list of apps being downloaded will pop-up.
- 9. To prioritize the driver you can click **Pause all** to pause the download queue.
- 10. Click on Intel Graphics Command Center and click on the resume iconto download the driver.
- 11. When finished the Intel Graphics Command Center will appear in the Windows Start menu.

Note: After installing the video driver go to the **Display/Display Settings** control panel to adjust the video settings to the highest resolution.

CP Video Card Options

Note that card types, specifications and drivers are subject to continual updates and changes. Check with your distributor/supplier for the latest details on video cards supported.

DVMT Notes

DVMT is not local video memory.

DVMT will not function in MS-DOS. DOS uses the legacy memory indicated.

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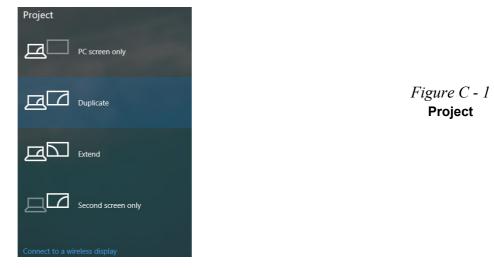
Dynamic Video Memory Technology

Intel[®] DVMT automatically and dynamically allocates as much system memory (RAM) as needed to the integrated video system (**the video driver must be in-stalled**). DVMT returns whatever memory is no longer needed to the operating system.

Configure Other Displays Using Project

You can configure attached displays from Project.

- 1. Attach your display to the appropriate port (HDMI/External Monitor (VGA) Port), and turn it on.
- 2. Press the **# + P** key combination.
- 3. Click on any one of the options from the menu to select **PC screen only**, **Duplicate**, **Extend** or **Second screen only**.
- 4. You can also click **Connect to a wireless display** at the bottom of the **Project** screen and follow the steps to connect to any wireless enabled display.



Configuring an External Display In Windows

The **System > Display** Control Panel in **Settings** may also be used to configure displays.

- 1. Attach your display to the appropriate port (HDMI/External Monitor (VGA) Port), and turn it on.
- 2. Click the Start Menu and click **Settings > System** (or right-click the desktop and select **Display Settings**).
- 3. Click the Multiple Displays menu and select Duplicate these displays, Extend these displays or Show only on 1/2.
- 4. Click **Keep changes** to save any changes made.

☆ Home	Display		
Find a setting	-	Select and rearrange displ	ays
System	Brightness and color	Select a display below to change it	ts settings. Some settings are applied to all displays
🖵 Display	Change brightness for the built-in display		
회 Sound	Night light Off		
Notifications & actions	Night light settings	1	2
J Focus assist	Windows HD Color		
O Power & sleep	Get a brighter, more vibrant picture in HDR and WCG videos, and apps on the display selected above.		
🖾 Battery	and apps on the display selected above. Windows HD Color settings	Apply Cancel	Identify Det
📼 Storage		M	ultiple displays
Tablet mode	Scale and layout	1.1	uniple uisplays
⊟† Multitasking	Change the size of text, apps, and other items 100% (Recommended)	I	Duplicate these displays
Projecting to this PC	Advanced scaling settings	1	Extend these displays
X Shared experiences	Display resolution		Show only on 1

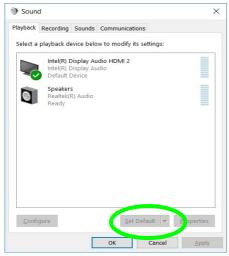
C - 4 Configuring an External Display In Windows

Figure C - 2 System > Display (Multiple Displays)

HDMI Audio Configuration

HDMI (High-Definition Multimedia Interface) carries both **audio** and video signals. In some cases it will be necessary to go to the **Sound** control panel and manually configure the HDMI audio output as per the instructions below.

- 1. Go to the Sound control panel.
- 2. Click Playback (tab)
- 3. The playback device will be selected.
- 4. You may need to select the audio device and click Set Default (button).
- 5. Double-click the device to access the control panel tabs.



Ø
Volume Adjustment
The sound volume level can be clicking using the volume control icon ()) in the <i>notification area</i> <i>of the taskbar</i> .

¢) ¢ م الله الله م		Audio)	nition	Defi	ligh	altek H	ers (Re	Speake
я ^р – Че 🕎 Ф	67							口心
	5	9:44 AM 12/20/2017	12 40	90		ጵ		
	6	12/20/2017	12 40	5	^	Å		

Figure C - 3

Sound - HDMI Device (set Default)

- 6. Adjust the HDMI settings from the control panel tabs.
- 7. Click **OK** to close the **Sound** O control panel.

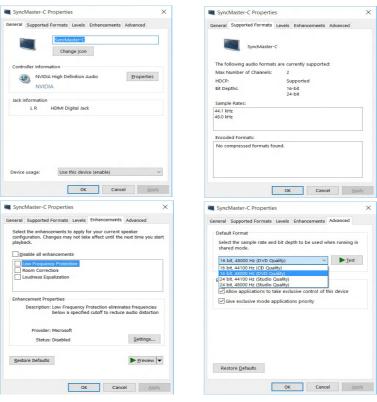


Figure C - 4 HDMI Device Properties

HDMI Notes

- Connect a device with HDMI support to the HDMI-Out port **BEFORE** attempting to play audio/video sources through the device.
- To play audio sources through your external display's (TV or LCD) speakers you will need to go to the audio configuration control panel on the display and configure the audio input accordingly (see your display device manual).

HDMI Video Configuration

- 1. Connect an HDMI cable from the HDMI-Out port to your external display.
- 2. Configure your external display as per the instructions in "Attaching Other Displays" on page C 24.
- 3. Set up your external display (TV or LCD) for HDMI input (see your display device manual).
- 4. You can now play video/audio sources through your external display.

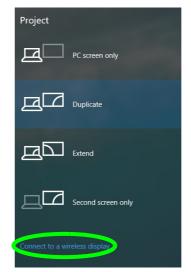
Other Applications

R

If you are using a third party application to play DVDs etc. from any attached DVD device, you will need to consult the application's documentation to see the appropriate audio configuration (the application must support digital to analog translation).

Wireless Display Configuration

- 1. Note that no driver or application is required for wireless display in *Windows 10*.
- Press the **# + P** key combination.
- 3. Click **Connect to a wireless display** at the bottom of the **Project** screen and follow the steps to connect to any wireless enabled display.



- 4. The system will then search for compatible display devices (**this may take up to 60 seconds** so allow time for this to complete).
- 5. Double-click any detected display device in the list.
- C 8 Wireless Display Configuration

Figure C - 5 Add a Wireless Display

- 6. You may then need to input a pin number for the device to which you are connecting and click **Next**.
- 7. The display will then connect (for specific settings for your display see the documentation supplied with your compatible adapter/display for full details).
- 8. Go to the **Project** menu and click **Disconnect** to temporarily disconnect from the wireless display.
- To permanently disconnect from the display (you will need to go back through the connection process again) you can select it in **Devices** and click **Remove Device** > Yes.

Intel® Graphics Command Center

Advanced video configuration options are provided by the Intel Graphics Command Center.

1. Access the Intel Graphics Command Center from the Start menu in Windows.



Figure C - 6 Intel® Graphics **Command Center** (Windows Start Menu)

OR

2. You can **right-click** the **Intel Graphics Command Center** in the **Start** menu and pin the control panel to the taskbar.

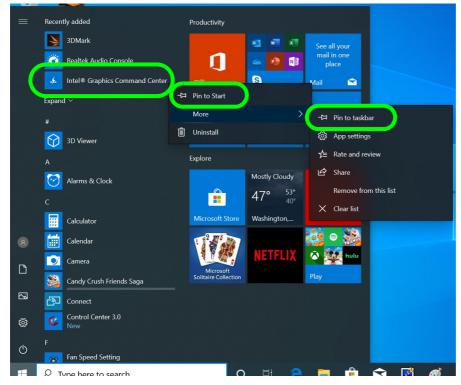
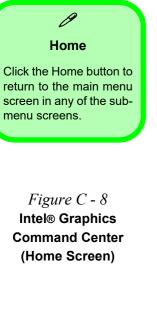
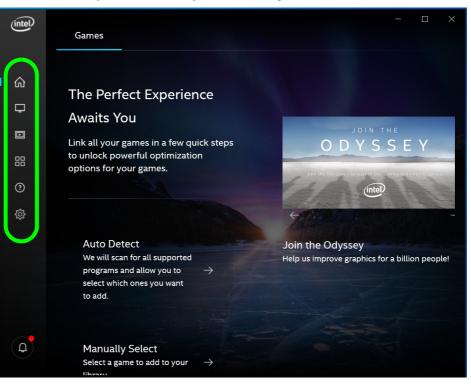


Figure C - 7 Intel® Graphics Command Center (right-click to Pin to taskbar)



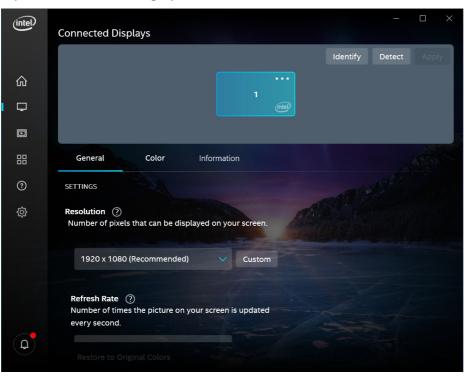
You may make changes to any of the graphics properties by clicking the appropriate icon on the left and you and then adjust the settings from the sub-menus.



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Display

Click either **General** or **Color** to make display adjustments, including configuration for any attached external displays.



Multiple Display

At least one other display must be attached in order to view multiple display selection options.

Figure C - 9 Intel® Graphics Command Center (Display Screen)

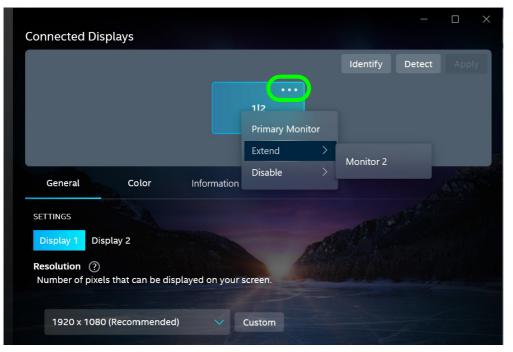
Use the **Display** menu to adjust the display's Resolution, Refresh Rate, Scale, and Rotation, and to access the Display control panel in System Settings.

Connected Displays Identify Detect 仚 \Box Þ 品 General Color Information ? Refresh Rate (?) Number of times the picture on your screen is updated <u>ေ</u> every second. 60p Centered Stretched Maintain Aspect Ratio Ĵ Maintain Display Scaling

Figure C - 10 Intel® Graphics Command Center (Display Scale)

С

When external displays are attached you can use the **Connected Displays** control panel to configure **multiple displays** (see "*Attaching Other Displays*" on page C - 24). Click on the **dotted lines** at the top right of the display graphic to access the settings options and click **Apply** to save any changes made.



Multiple Display

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Video Driver Controls

At least one other display must be attached in order to view multiple display selection options.

Audio Settings

Any attached active displays must have audio capacity to allow audio configuration.

Figure C - 11 Intel® Graphics Command Center Connected Displays

The **Custom Resolutions** sub-menu allows you to adjust the display (or any attached display) to any Timing Standard, Width, Height, Refresh Rate and Underscan percentage of your choice. Note that incorrect settings can cause system instability and even possible component damage, so this is adjusted at your own risk.

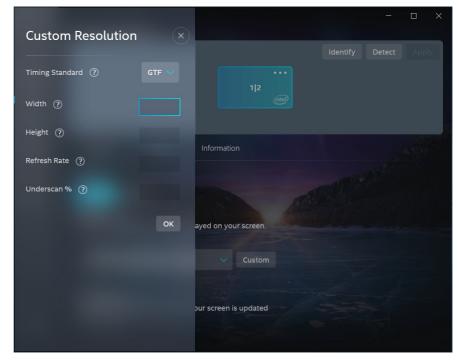


Figure C - 12 Intel® Graphics Command Center Custom Resolutions

C - 16 Intel® Graphics Command Center

Display (Color)

Use the color sliders from the menu to make changes to the display. If you wish to revert to the default settings simply click on **Restore to Original Colors**.

(intel)	- D × Connected Displays
	Identify Detect Apply
Ģ	
D	Swatch 🗳
	General Color Information
0	SETTINGS
ŝ	Brightness Enhancement Adjust screen brightness for all colors or individual color.
	All Colors
	All Colors ⑦ Overall lightness or darkness of the content on your screen.
- P	Restore to Original Colors

Figure C - 13 Intel® Graphics Command Center (Display - Color Screen)

Video

The Video menu allows you to brighten or darken movies, adjust colors and a range of other video options. The **Preview** image will display a sample image using the current settings, and you can click **Add Video** to select your own sample video. You will need to click **Custom** to create a **custom profile** to make adjustments to most of the settings and you can rename, duplicate or delete custom profiles.

 \mathbb{O}

Custom 1

Duplicate

Rename Delete stom 2

....

Default

Adjust the appearance of colors for your video content

Custom

Standard Color Correction (?)

SETTINGS

Ω

hics enter

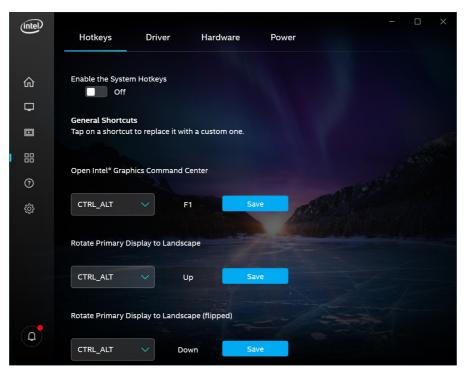
(intel)

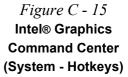
Figure C - 14 Intel® Graphics Command Center (Video)

C - 18 Intel® Graphics Command Center

System

Hot Keys in System allows you to create and enable/disable hot keys for opening the application and display rotation etc. Click Apply to save changes.





The **Driver** and **Hardware** tabs provide information on your current video driver version and hardware configuration, and the **Power** tab can be used to extend battery life through dynamic control of the frame rate if **Extended Battery Life for Gaming** is enabled. **Power Plan** can be set to **Maximum Performance**, **Balanced Mode** or **Maximum Battery Life**.

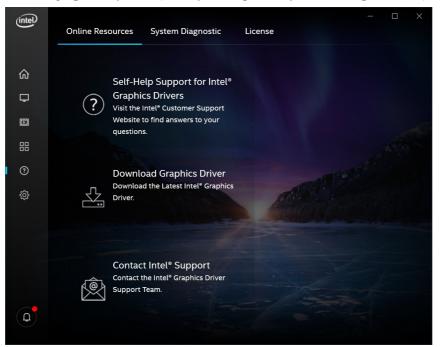
Figure C - 16 Intel® Graphics Command Center (System - Power)

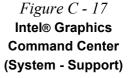
(intel)	Hotkeys Driver	Hardware	Power	- 🗆 X
	Laptop Battery	96%		
ŵ	Charge Rate Design Capacity	7323 mW 36960 mWh		
Ģ	Full Charge Capacity Remaining Charge Capacity	36051 mWh 34434 mWh		
	Battery Status	Charging		
	Extend Battery Life for Gami Dynamically regulate frame ra		On	
0	On Battery Plugged	In		
ŝ	Power Plans (?)		A	
	Controls power utilization Maximum Performan			
	Balanced Mode			
	Maximum Battery Lif	e		
	Panel Self Refresh (?)			
(Q	Saves power by allowing pa independently.	thet to refresh		
	On			

C - 20 Intel® Graphics Command Center

Support

Online Resources in **Support** provides links to online support for Intel graphics issues and to the latest drivers. The **System Diagnostic** tab allows you to **Generate Report** on the graphics system (as may be required by online help services).





Preferences

You can configure the App to your preferences from this menu.

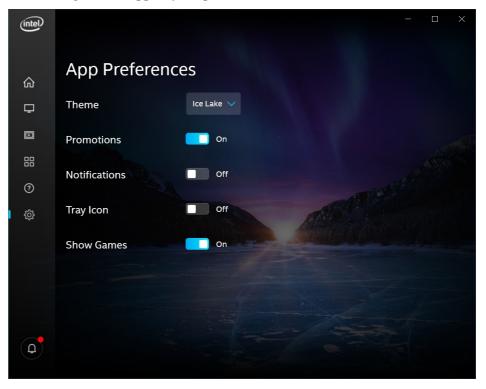


Figure C - 18 Intel® Graphics Command Center (Preferences)

C - 22 Intel® Graphics Command Center

Display Devices & Options

Note that you can use external displays connected to the HDMI-Out port and External Monitor (VGA) Port.



Attaching Displays

When you first attach an external display you may find that the desktop does not occupy the full screen area. Use either the display's auto adjust/configure controls, or the Intel(R) Graphics Command Center to configure the full screen display.

Intel Display Mode	Description
Single Display	One of the connected displays is used as the display device (PC screen only or Second screen only).
Clone/Duplicate	Both connected displays output the same view and may be configured independently
Extended / Extend	Both connected displays are treated as separate devices, and act as a virtual desktop
Collage	A number of connected displays are combined into a single unified higher resolution for larger screen sizes
Hybrid	A number of connected displays are combined and can be configured in a combination of Clone and Extended modes

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4K2K Videos on 4K2K External Displays

Note you may experience some video lag when playing 4K2K videos on an attached 4K2K external display.

> Table C - 1 Display Modes Table C - 2

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Connected Displays

At least one other dis-

play must be attached in

order to view Connect-

ed Displays selection

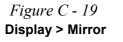
options.

Attaching Other Displays

To Mirror Displays:

- 1. Attach your external display to the appropriate port, and turn it on.
- 2. Go to the Intel Graphics Command Center and click the Display menu button.
- 3. Click **Detect** if you need to scan for any attached displays.
- 4. The system should automatically be in Mirror mode,
- 5. If not, click on the dotted lines at the top right of the display graphic to access the settings options and select **Mirror** and the Monitor #.
- 6. Click Apply to confirm any settings change if necessary.

(intel)	– D × Connected Displays
	Identify Detect Apply
ŵ	···· ··· ···
Ţ	Primary Monitor
	Mirror >
	General Color Information
?	Resolution ⑦ Number of pixels that can be displayed on your screen.
ŝ	
	1920 x 1080 (Recommended) Custom



C

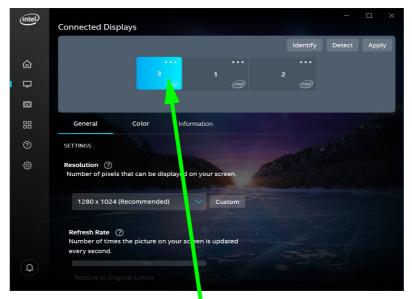
To Enable Extend Mode:

- 1. Attach your external display to the appropriate port, and turn it on.
- 2. Go to the Intel Graphics Command Center and click the Display menu button.
- 3. Click **Detect** if you need to scan for any attached displays.
- 4. Click on the dotted lines at the top right of the display graphic to access the settings options and select **Extend** and the Monitor #.
- 5. Click Apply to confirm any settings change if necessary.

(intel)	- D × Connected Displays
	Identify Detect Apply
	112
Ģ	Primary Monitor
	Extend > Monitor 2
88	General Color Information
?	SETTINGS
ŝ	Display 1 Display 2
	Resolution ⑦ Number of pixels that can be displayed on your screen.
	1920 x 1080 (Recommended) Custom

Figure C - 20 **Display > Extend**

- 6. You can have different resolutions, monitor refresh rates, scales, rotations and aspect ratios for each display device **provided your display can support them**.
- 7. You can drag the display icons to match the physical layout of your displays.
- 8. Icons and programs may also be dragged between the displays.



Click the appropriate monitor icon and drag it to match the physical arrangement you wish to use (e.g. the secondary display may be extended left/right/above/below the primary display).

Figure C - 21 Display > Extend (Drag Display)

Appendix D: Specifications

Latest Specification Information

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The specifications listed in this Appendix are correct at the time of going to press. Certain items (particularly processor types/ speeds and CD/DVD device types) may be changed, updated or delayed due to the manufacturer's release schedule. Check with your distributor/supplier for details.

Note that this computer model series may support a range of CPUs and/or video adapters.

To find out which **CPU** is installed on your system go to the **Start** menu and select **Settings**, and then select **System** and click **About**. This will also provide information on the amount of **Installed RAM** etc.

To get information on your system's video adapter go to the Start menu and select Settings, and then select System and click Display> Advanced display settings > Display adapter properties.

Specifications

Display <u>Model A:</u> 15.6" / 39.62cm FHD (1920 * 1080) / HD (1366 * 768) 16:9, 3.2mm Thick Backlit Panel <u>Model B:</u> 17.3" / 43.94cm FHD (1920 * 1080) / 16:9, 3.5mm Thick Backlit Panel	One Changeable 9.5mm(h) or 9.0mm(h) DVD Writer Optical Device Drive with SATA Interface (Factory Option) Dummy Optical Device Drive (Factory Option) or Caddy Bay for 2.5" / 7.0mm (h) HDD / SSD (Factory Option) Audio High Definition Audio Interface	Interface Two USB 2.0 Ports One USB 3.1 (USB 3.1 Gen 1) Port (Type-A) ====================================
Memory	2 * Built-In Speakers	Option)
Dual Channel DDR4 Memory Expandable up to 32GB Compatible with 4GB, 8GB or 16GB Modules Two 260 Pin SO-DIMM Sockets Supporting DDR4 2400MHz / 2666MHz (processor dependent) Memory Modules (<i>real operational frequency depends on</i> <i>the FSB of the processor</i>)	Built-In Array Microphone Pointing Device & Keyboard Built-in TouchPad with Microsoft PTP Multi-Gesture and Scrolling Functionality Full Size Isolated Keyboard with Numeric Keypad OR Full Size Multi-Colored Illuminated Keyboard with Numeric Keypad (Option)	*Note: The maximum amount of current supplied by USB Type-C ports is 500 mA for USB2.0/900 mA for USB 3.1 When using a laptop power bank as a power supply, make sure that it complies with the USB-C PD (Power Delivery) standard specification. ====================================
Storage One Changeable 2.5" / 7.0 mm (h) HDD/ SSD with SATA (Serial) Interface One M.2 SSD 2280, SATA/PCIe Gen 3x4 Interface (Factory Option)		One Microphone-In Jack One RJ-45 LAN Jack One DC-In Jack

Specifications

Card Reader	Intel® Dual Band Wireless-AC 9462 (1*1 802.11 a/c) WLAN + Bluetooth M.2	Power & Battery
Embedded Multi-In-1 Card Reader - MMC/ RS MMC - SD/ Mini SD / SDHC/ SDXC Note: Some cards require PC adapters that are usually supplied with the cards.	 (1 1 002.11 a/2) WLAN + Bidetooth M.2 2230 Combo Module (Factory Option) 4G LTE M.2 3042 Card Module with USB Interface (Factory Option) *Note that UMTS modes CAN NOT be used in North America 	Full Range AC/DC Adapter - AC input 100 - 240V, 50 - 60Hz, DC Output 19V, 2.1A (40 Watts) Removable 4-Cell Smart Lithium Ion Battery Pack 31WH
Slot	Intel® Dual Band Wireless-AX AX-200 (2*2 802.11 ax) WLAN + Bluetooth M.2 2230 Module (Factory Option)	Removable 4-Cell Smart Lithium Ion Battery Pack 41WH - (Factory Option)
Three M.2 Card Slots:	For Design I Series Only:	Security
Slot 1 for M.2 2230 WLAN Combo Module with PCIe / USB / CNVI Interfaces (E Key)	Intel® Dual Band Wireless-AX AX-201 (2*2 802.11 ax) WLAN + Bluetooth M.2	Security (Kensington® Type) Lock Slot
Slot 2 for SSD M.2 2280 Card with SATA / PCIe Gen 3*4 Interface (M Key)	2230 Module (Factory Option)	BIOS Password Intel® PTT for systems without TPM
Slot 3 Factory Option: for M.2 3042 LTE 4G Module with USB Interface (B Key)	For Design II Series Only: Intel® Dual Band Wireless-AC 9260 (2*2 802.11 a/c) WLAN + Bluetooth M.2	Trusted Platform Module 2.0 (Factory Option)
Communication	2230 Combo Module (Factory Option)	Features
Built-In 10/100/1000Mb Base-TX	Operating System	Shipping Mode
Ethernet LAN	Windows® 10 RS6 (64-bit)	FlexiCharger Intel® Optane™
1.0M HD Video Camera Module with USB interface	Power Management	Supports Windows® Mixed Reality
Intel® Dual Band Wireless-AC 9560	Supports Wake on LAN (AC Mode Only)	Indicators
(2*2 802.11 a/c) WLAN + Bluetooth M.2 2230 Combo Module (Factory Option)	Supports Wake on USB Supports Wake on RTC Alarm (AC Mode Only	LED Indicators - Power/Suspend, Battery, HDD, Camera

Specifications

BIOS		*A barel RAM, ad
One 128Mb SPI Flas Insyde BIOS	sh ROM	modules
Environmental Spe	ec	
Temperature Operating: Non-Operating: Relative Humidity Operating: Non-Operating:	5°C - 35°C -20°C - 60°C 20% - 80% 10% - 90%	
Horr operating.		
Dimensions & Wei	ght	
Dimensions & Wei Model A Series: 361mm (w) * 256mm Height excludes batte 2.0kg *Barebone Sys	(d) * 24.1mm (h) - ry area	
Dimensions & Wei Model A Series: 361mm (w) * 256mm Height excludes batte	(d) * 24.1mm (h) - ry area	
Dimensions & Wei Model A Series: 361mm (w) * 256mm Height excludes batte 2.0kg *Barebone Sys Battery	(d) * 24.1mm (h) - ry area stem with 31WH nm (d) * 24.8mm (h) -	

*A barebone system does not include the HDD, RAM, adapter, power cord and factory option nodules (weight tolerance within +/- 5%).

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