USER'S MANUAL

notebook

V17.1.00-RS2

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HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

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.

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:

- Full Range AC/DC Adapter – AC in 100 - 240V, 50 - 60Hz DC Output 19V, 4.74A (**90 Watts**) minimum

This Computer's Optical Device is a Laser Class 1 Product

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.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*
		

2. **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.

Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface that will block the Vents/Fan Intakes.*
			

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.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*
			

5. **Take care when using peripheral devices**.

Use only approved brands of peripherals.	*Unplug the power cord before attaching 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.

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

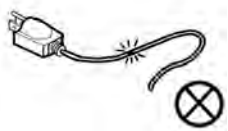
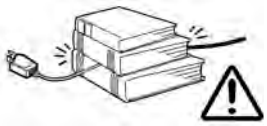
The computer has specific power requirements:

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).

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

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.

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.

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.

Packing

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 documents are prepared.

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 vent(s)/fan intake(s)/outlet(s) to be blocked. To prevent your computer from overheating make sure nothing blocks the vent(s)/fan intake(s)/outlet(s) 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.

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Modules

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Video Driver Controls

Specifications

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** and **card reader**)**, TouchPad** & **Mouse** and **Audio Features**.
- **Chapter 3** The computer's **power** management 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, Bluetooth & WLAN Combo, Sound Blaster Audio** 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 the **Control Center**.
- **Appendix C** Information on the **Video** driver controls.
- **Appendix D** The computer's **specification**.

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 *"Drivers & Utilities" on page 4 - 1* and *"BIOS Utilities" on page 5 - 1* in the User's Manual. You may also find the notes marked with a ✎ of interest to you.

Notes

Check the light colored boxes with the mark above to find detailed information about the computer's features.

Beginners and Not-So-Advanced Users

If you are new to computers (or do not have an advanced knowledge of them) then the information contained in this 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 ✎ 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 - 1*.

Warning Boxes

No matter what your level please pay careful attention to the warning and safety information indicated by the 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 appropriate drivers. 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 in ***Table 4 - 1, on page 4 - 4***. 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 ***"Drivers & Utilities" on page 4 - 1*** for installation instructions.

Ports and Jacks

See ***"Notebook Ports and Jacks" on page A - 2*** for a description of the interface (ports & jacks) which allow your computer to communicate with external devices, connect to the internet etc.

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.

Windows OS

Note that the information included on the following pages is for ***Windows 10 only***.

In order to run ***Windows 10 (64-bit)*** your computer requires a minimum **2GB** of system memory (RAM).

System Startup

1. Remove all packing materials, and place the computer on a stable surface, and securely attach any peripherals you want to use with the notebook (e.g. keyboard and mouse) to their ports.
2. **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 right of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter and **leave it there for 6 seconds or longer**.
   - Remove the adapter cord from the computer's DC-In jack, and then plug it back in again; the battery will now be unlocked.
3. Use one hand to raise the lid/LCD to a comfortable viewing angle (it is preferable not to exceed 135 degrees); use the other hand to support the base of the computer (**Note**: **Never** lift the computer by the lid/LCD).
4. Press the power button on the top of the computer **for about 2 - 3** seconds to turn the computer "**on**" (note that the **power LED** on the front of the computer **will turn from orange to green** when the computer powers on).

Figure 1 - 1 **- AC/DC Adapter In / Opening the Lid/LCD**

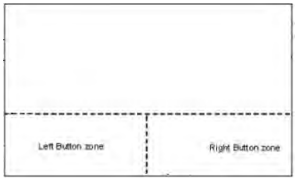
Shutdown

Note that you should always shut your computer down by choosing the **Shut Down** command in **Windows** (see page ***1 - 31***). This will help prevent hard disk or system problems.

LCD Panel Open

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.

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices (e.g. WLAN, Bluetooth or 3G/4G) aboard aircraft is usually prohibited. Make sure any wireless modules are OFF (i.e. the system is in **Airplane Mode**) if you are using the computer aboard aircraft.

Use **Fn + F11 Airplane Mode** key combination to toggle Airplane Mode On/ Off, and check the LED indicator for the power status.

LED Indicators

The LED indicators at the front of the computer display helpful information about the current status of the system.

Icon	Color	Description
	Orange	The Battery is Charging
	Blinking Orange	The Battery has Reached Critically Low Power Status
	Green	The Battery is Fully Charged
	Orange	AC/DC Power is Plugged In
	Green	The Computer is On
	Blinking Green	The Computer is in Sleep Mode
	Green	HDD Activity
	Green	**Airplane Mode** is **ON** (the WLAN, Bluetooth & 3G/4G Modules are OFF)

Table 1 - 1 **- LED Indicators**

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.

Scr Lk

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

Keyboard

The keyboard (or the factory option white illuminated 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 - 3, on page 1 - 12*** for full function key combination details.

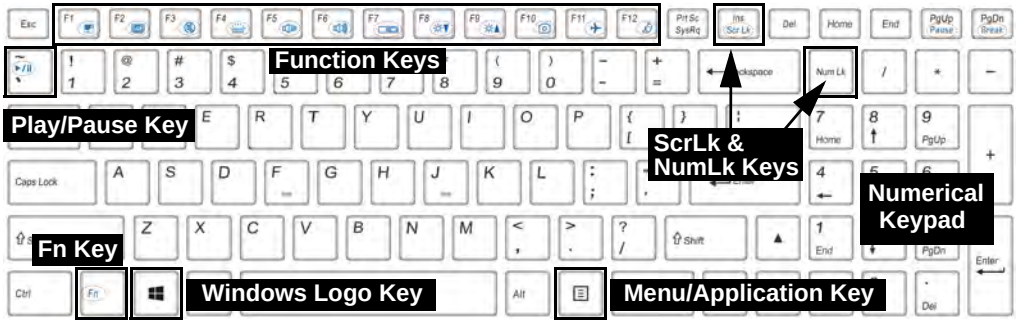


Figure 1 - 3 **- Keyboard**

Special Characters

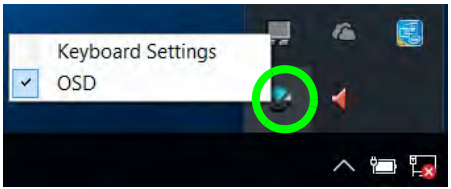
Some software applications allow the number-keys to be used with **Alt** to produce special characters. These special characters can only be produced by using the numeric keypad. Regular number keys (in the upper row of the keyboard) will not work. Make sure that **NumLk** is on.

Keyboard Application Settings

(**Illuminated Keyboard Option**)

If your computer includes an illuminated keyboard (factory option), you will need to install the keyboard **Control Center** application driver (see *"Control Center" on page 4 - 8*) and you can then select the type of keyboard as appropriate for your model's configuration (you can only select keyboards supported by your system). After the driver has been installed, and the system restarts, the control panel below will pop-up to allow you to select the **illuminated white keyboard** for your system. Click **Save** to retain the setting chosen.

If you wish to change the setting at any time then right-click on the **Control Center** icon and select **Keyboard Settings** to return to the keyboard select control panel.



Right-click and select ***Keyboard Settings***.

Figure 1 - 4 **- Keyboard Settings for Illuminated Keyboard Option**

Control Center

When in the **Windows Desktop application** (not in the **Start** screen) press the **Fn + Esc** key combination, or **double-click the icon** in the **notification area of the taskbar** to toggle the **Control Center** on/off. The **Control Center** gives quick access to frequently used controls and enables you to quickly turn the camera/touch pad on/off (see ***Appendix B*** for full details).

Control Center Access

To run the Control Center press the **Fn + Esc** key combination, or double-click the icon in the notification area of the taskbar.

Close the Control Center by clicking the close icon in the top right of the panel (move the cursor onto the top right corner of the panel to highlight it).

Figure 1 - 5 **- Control Center**

Keyboard Shortcuts

The following Windows Logo Key (Winkey) keyboard shortcuts are useful for navigation/operation in ***Windows 10***.

Windows Logo Key +	Description
Tap Winkey	Toggle the **Start** menu
A	Open the **Action Center**
B	Select the **Taskbar Notification Area**
C	Launch **Cortana** (in listening mode)
D	Toggle the **Desktop**
E	Launch **File Explorer** (Quick Access tab)
+ Number (1, 2, etc)	Launch an application from the taskbar (numbered from left to right)

Table 1 - 2 **- Keyboard Shortcuts**

Windows Logo Keyboard Shortcut

Use the Windows logo key **+ D key combination** to switch between the Start screen and Windows Desktop.

Menu/Application Keyboard Shortcut

When the Desktop app is running you can use the Menu/Application key on the keyboard to display the context menu as per a mouse right-click.

Function Keys & Visual Indicators

The **function keys** (F1 - F12 etc.) will act as **hot keys** when pressed while the **Fn** key is held down.

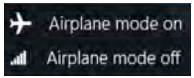
Keys	Function/Visual Indicators		Keys	Function/Visual Indicators	
Fn + ! 1	Fan Control Toggle Automatic / Full Power		Fn + Esc	**Control Center** Toggle	
Fn + ~	Play/Pause (in Audio/Video Programs)		Fn + F7	Display Toggle	
Fn + F1	Touchpad Toggle		Fn + F8 F9	Brightness Decrease/Increase	
Fn + F2	Turn LCD Backlight Off (Press a key to or use Touchpad to turn on)		Fn + F10	PC Camera Power Toggle	
Fn + F3	Mute Toggle		Fn + F11	Airplane Mode Toggle	
Fn + F4	For Backlight Keyboards Only Toggle Off/High/Low		Fn + F12	Sleep Toggle	
Fn + F5 F6	Volume Decrease/Increase				

Table 1 - 3 **- Function Keys & Visual Indicators**

Front & Rear Views

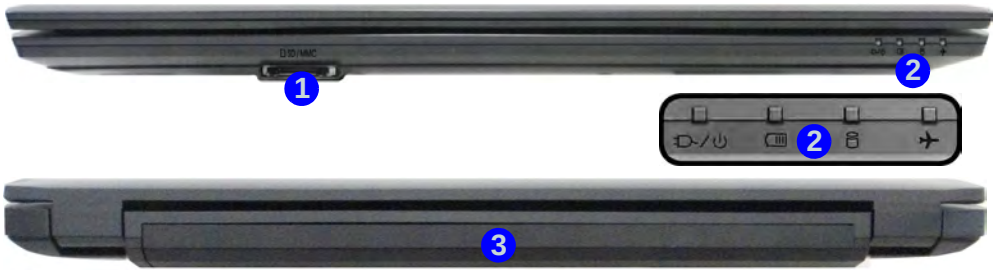


Figure 1 - 6
Front & Rear Views

1. Multi-In-1 Card Reader
2. LED Indicators
3. Battery

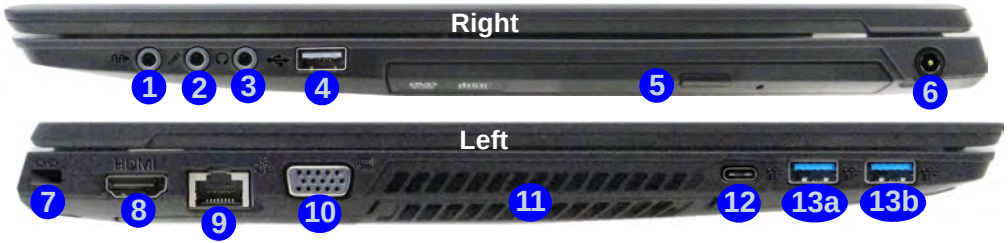
Multi-in-1 Card Reader

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

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

Right & Left Views

Figure 1 - 7
Right & Left Views



1. S/PDIF-Out Jack
2. Microphone Jack
3. Headphone Jack
4. 1 * USB 2.0 Port
5. Optical Device Drive Bay (for DVD Device)
6. DC-In Jack
7. Security Lock Slot
8. HDMI-Out Port
9. RJ-45 LAN Jack
10. External Monitor Port
11. Vent/Fan Intake
12. 1 * USB 3.0 Port (USB 3.1 Gen 1 - **Type C**)
13. 2 * USB 3.0 Ports (USB 3.1 Gen 1 - **Type A**)
    OR
12. 1 * USB 3.1 Port (USB 3.1 Gen 2 - **Type C**) &
13a. 1 * USB 3.1 Port (USB 3.1 Gen 2 - **Type A**) (**Factory Option**)
13b. 1 * USB 3.0 Port (USB 3.1 Gen 1 - **Type A**)

USB 3.0 / 3.1 Port OR USB 2.0 Port

This model includes 2 * USB 3.0 ports (USB 3.1 Gen 1 **Type A**), 1 * USB 3.0 port (USB 3.1 Gen 1 **Type C**) and 1 * USB 2.0 port.

Note: **1 * USB 3.1 (Gen 2 Type C)** 12 and **1 * USB 3.1 (Gen 2 Type A)** 13a **ports** are available as a factory option for this computer model series. The USB 3.1 ports are shared with the USB 3.0 ports in this option.

USB 3.1 Port Speed

Note that when a single USB device is plugged in to a USB 3.1 (Gen 2) port the data transfer speed will be 10Gbps, however when two devices are plugged in to both USB 3.1 (Gen 2) ports, this bandwidth will be shared between the ports..

Disk Eject Warning

Don't try to eject a CD/DVD while the system is accessing it. This may cause the system to "crash". Stop the disk first then eject it, or press the stop button twice.

CD/DVD Emergency Eject

If you need to manually eject a CD/DVD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. Do not use a sharpened pencil or any object that may break and become lodged in the hole. Don't try to remove a floppy disk/CD/DVD while the system is accessing it. This may cause the system to "crash".

Changing DVD Regional Codes

Go to the Control Panel and double-click Device Manager (Hardware and Sound), then click the + 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).

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 (see ***"DVD Regional Codes" on page 2 - 5***).

USIM Card Orientation

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

3G/4G Module USIM Card Installation

Remove the battery (see *"Removing the Battery" on page 1 - 18*) and insert the USIM card 1 as illustrated below (pay careful attention to the orientation of the card as the gold contact side of the card should face downwards) until it clicks fully into position. To eject the card simply press it until it ejects, but do not attempt to eject the card while connected to a 3G/4G network (see below).

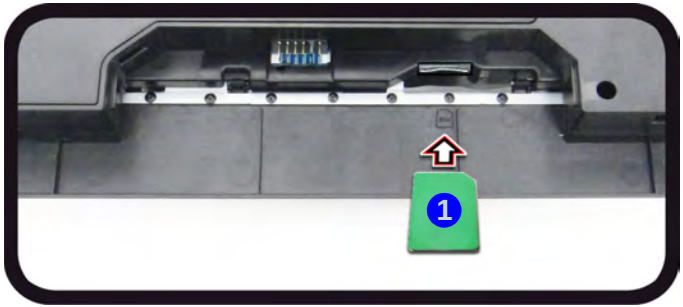


Figure 1 - 8
USIM Card Insertion

USIM Card Ejection

Simply press on the USIM card to eject it, however do not do this while a connection is in progress. If you do eject the card while a 3G/4G connection is ongoing, you will need to shut down the system, re-insert the USIM card, restart the system and then reestablish the 3G/4G connection.

If you wish to change USIM cards then you will need to shut the system down, reinsert the USIM card, restart the system and then reestablish the 3G/4G connection.

Bottom View

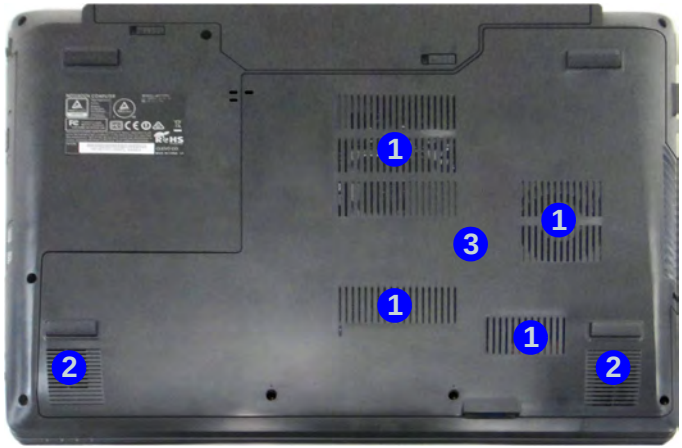


Figure 1 - 9
Bottom View

1. Fan Outlet/Intake
2. Speakers
3. Component Bay Cover

Battery Information

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.

Overheating

To prevent your computer from overheating make sure nothing blocks the vent(s)/fan intake(s) while the computer is in use.

Bottom Cover Removal Warning

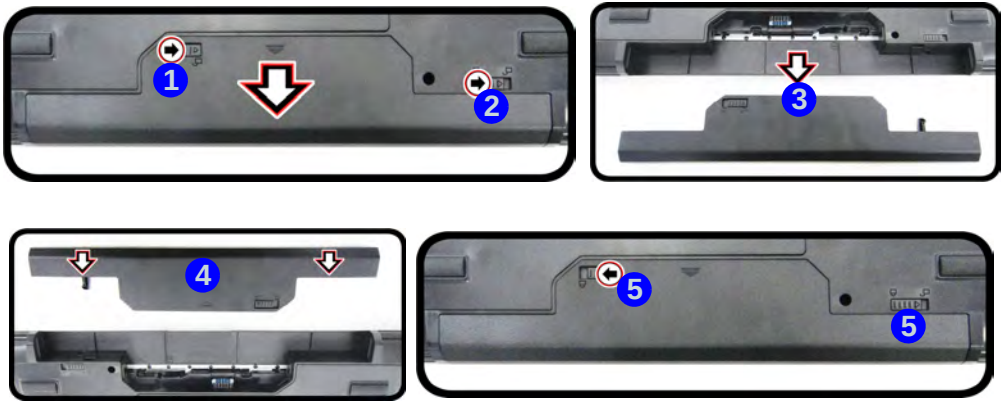
Do not remove any cover(s) and /or screw(s) for the purposes of device upgrade as this may violate the terms of your warranty.

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

Removing the Battery

It is possible to remove the battery from the computer, however we recommend that you do not remove the battery yourself. If you do need to remove the battery for any reason (e.g. long term storage) see below.

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. Slide the battery out in the direction of the arrow 3.
5. Reinsert the battery as illustrated below 4.
6. Make sure the latches are returned to the lock position 5.



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 - 10 **- Battery Removal & Insertion**

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 in the taskbar in the lower left corner of the screen (or by pressing the **Windows Logo Key** on the keyboard).

Windows Screens

Note that the ***Windows*** screens on the following pages are included as a basic guide and introduction to navigating around ***Windows 10***.

However note that these screens are always subject to change, upgrade and redesign. Check the Microsoft website for details.

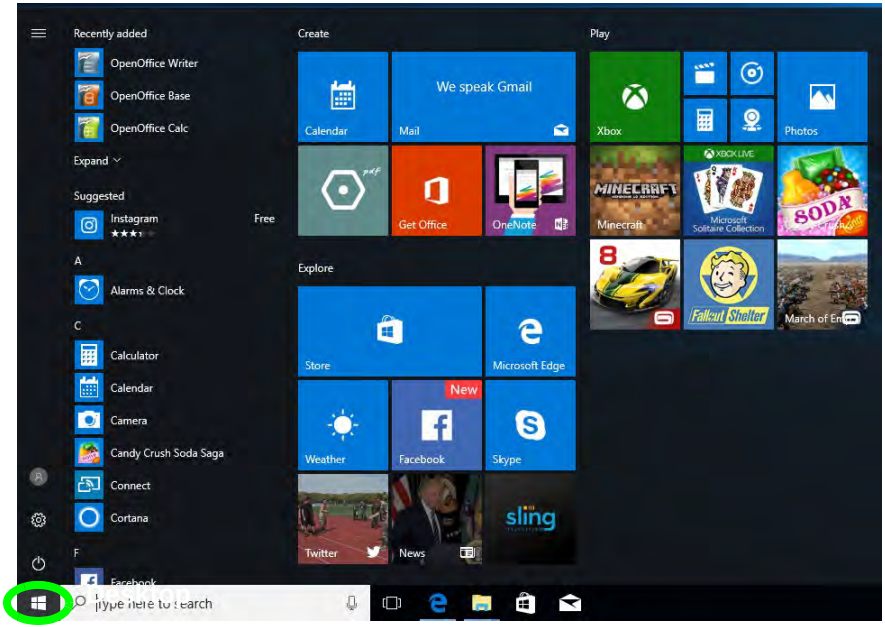


Figure 1 - 11 **- Windows Start Menu**

Right-Clicking the Windows Logo In Start Menu

Right-click the Start Menu icon (or use the **Windows Logo Key** + **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.

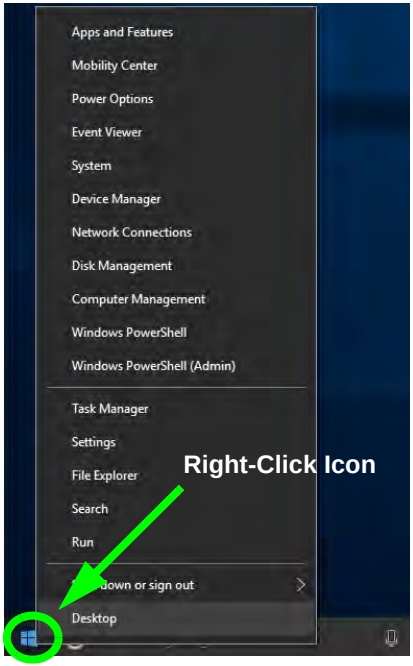


Figure 1 - 12 **- Right-Click Windows Logo in Start Menu**

Start Menu Apps & Tiles

The **Windows 10** 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 can fit on the screen so may need click and drag the handles at the edge of the screen to expand the menu in order to view all the apps (you can use the scroll bar to move up and down the screen).

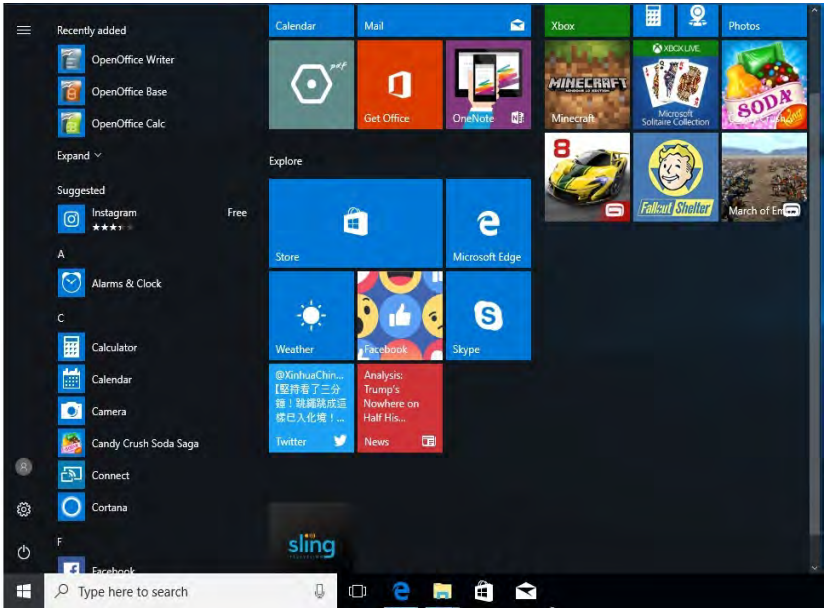


Figure 1 - 13 **- Expanding the Start Menu**

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/programs to/from the taskbar** (select pin to taskbar/unpin this program from the taskbar).

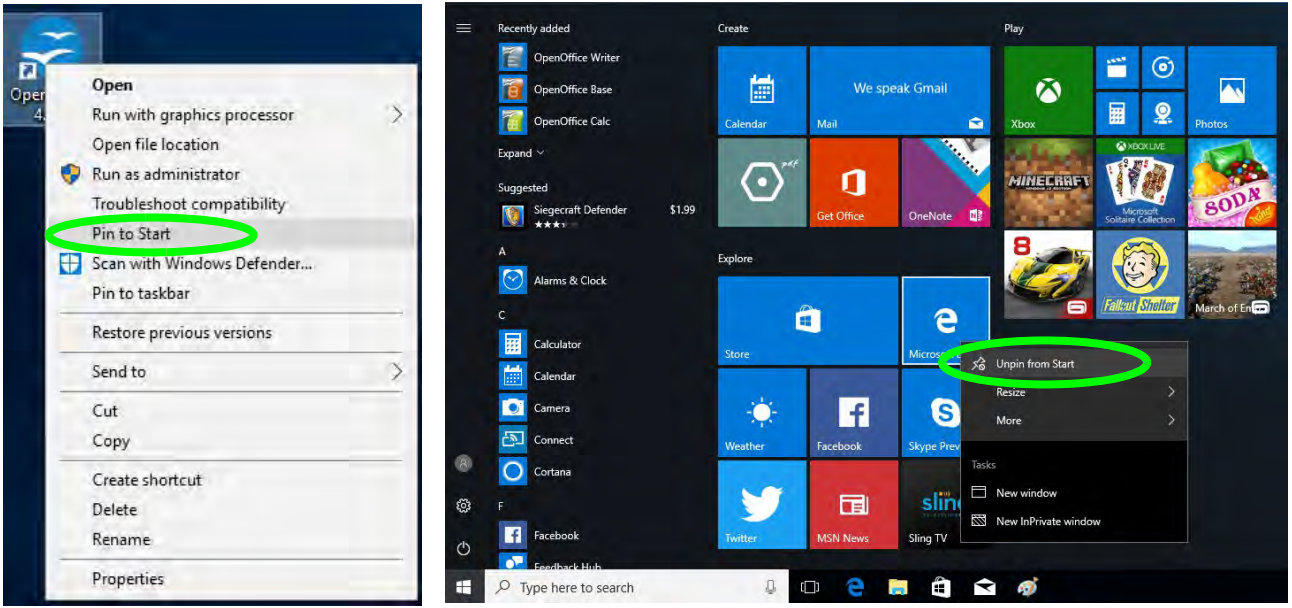


Figure 1 - 14 **- Pin to Start/Unpin from Start**

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 ***taskbar.***

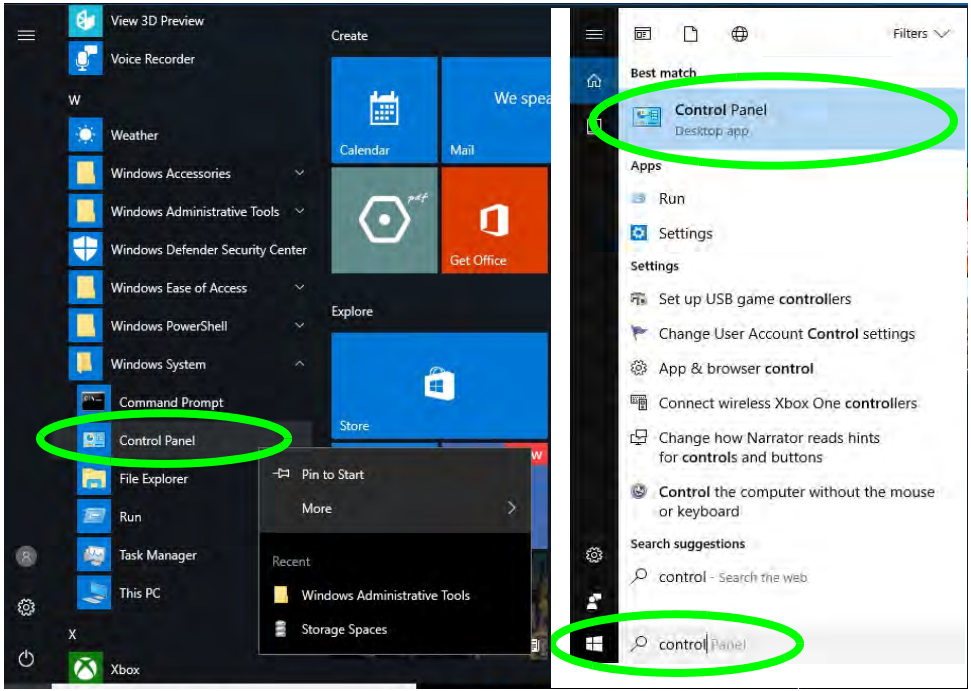


Figure 1 - 15 **- Windows 10 Control Panel Access**

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.

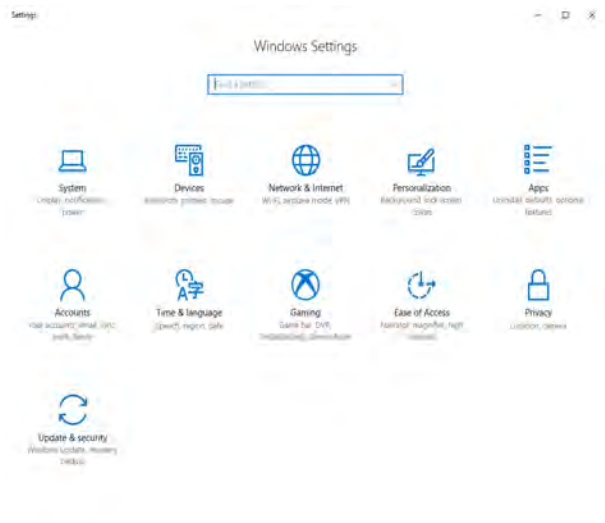


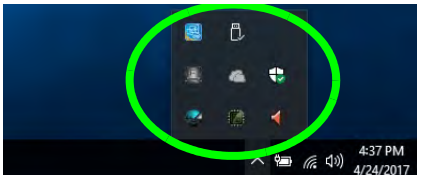
Figure 1 - 16 **- Settings**

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.

Taskbar

Taskbar - Pinned Programs and Apps



Notification Area

Figure 1 - 17 **- Taskbar**

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 - 22***).

Action Center

The **Action Center** appears as a vertical panel on the right side of the screen 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.

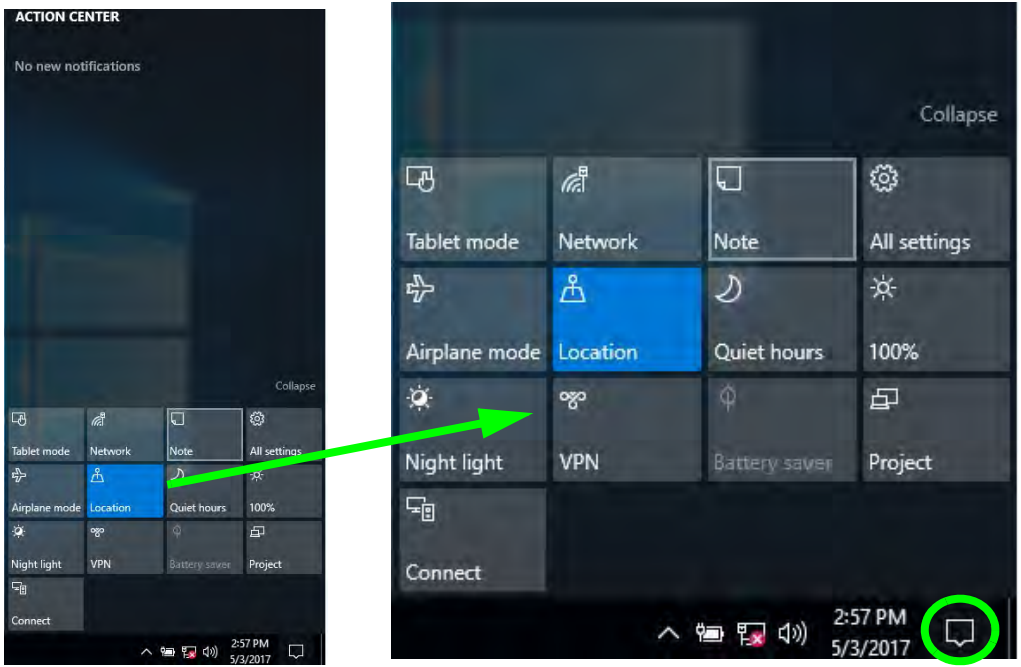


Figure 1 - 18 **- Action Center**

Video Features

You can switch display devices, and configure display options, from the **Display settings** (click the **Start Menu** and click **Settings** > **System** or right-click the desktop and select **Display settings**) control panel. In ***Windows 10*** it is possible to quickly configure external displays from the **Project** menu (press the Windows logo key on your keyboard and the **P** key or **Fn** + **F7**).

To Configure Displays using Project

1. Attach your display to the appropriate 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.

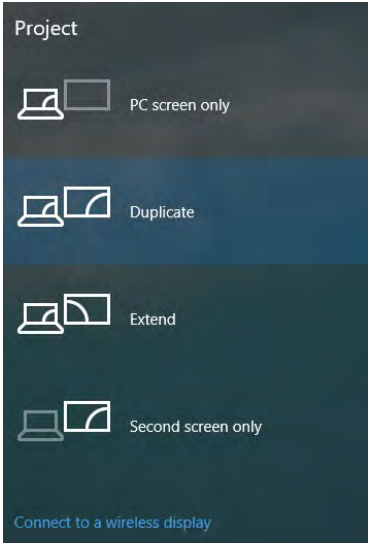


Figure 1 - 19 **- Project (Devices)**

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.

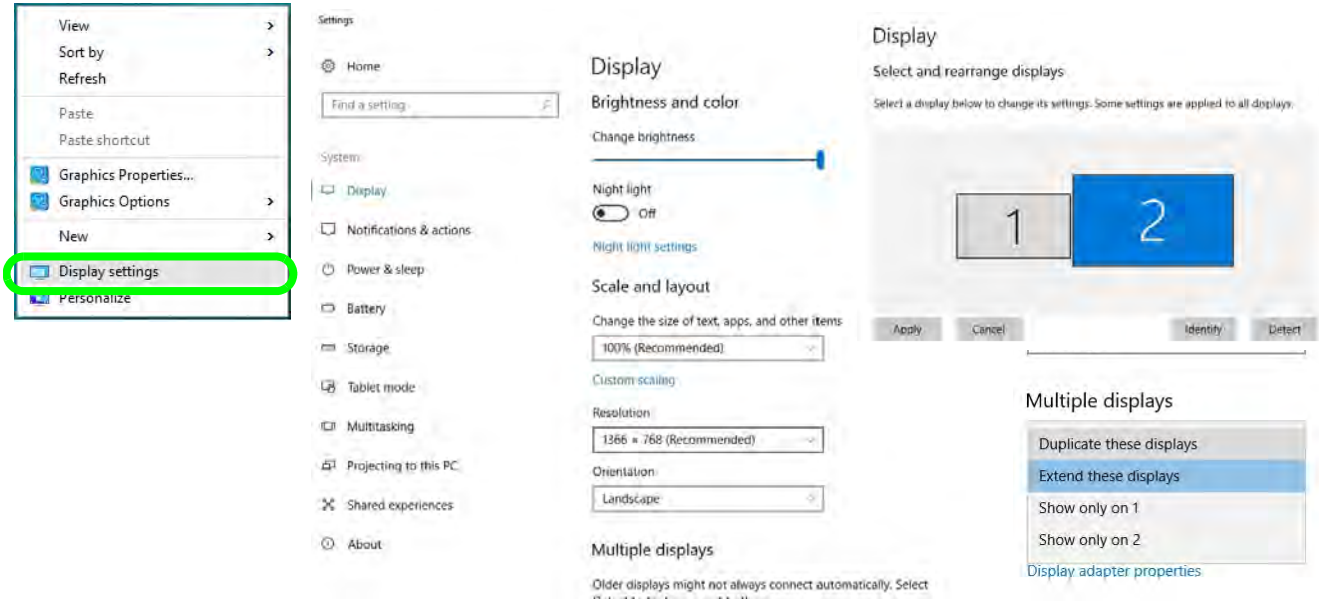


Figure 1 - 20 **- Display Settings**

To access the ***Intel(R) HD Graphics Control Panel***:

1. Right-click the desktop and select **Intel(R) Graphics Settings** from the menu.

OR

2. Click the icon in the notification area of the Desktop taskbar and select **Intel(R) Graphics Settings** from the menu.

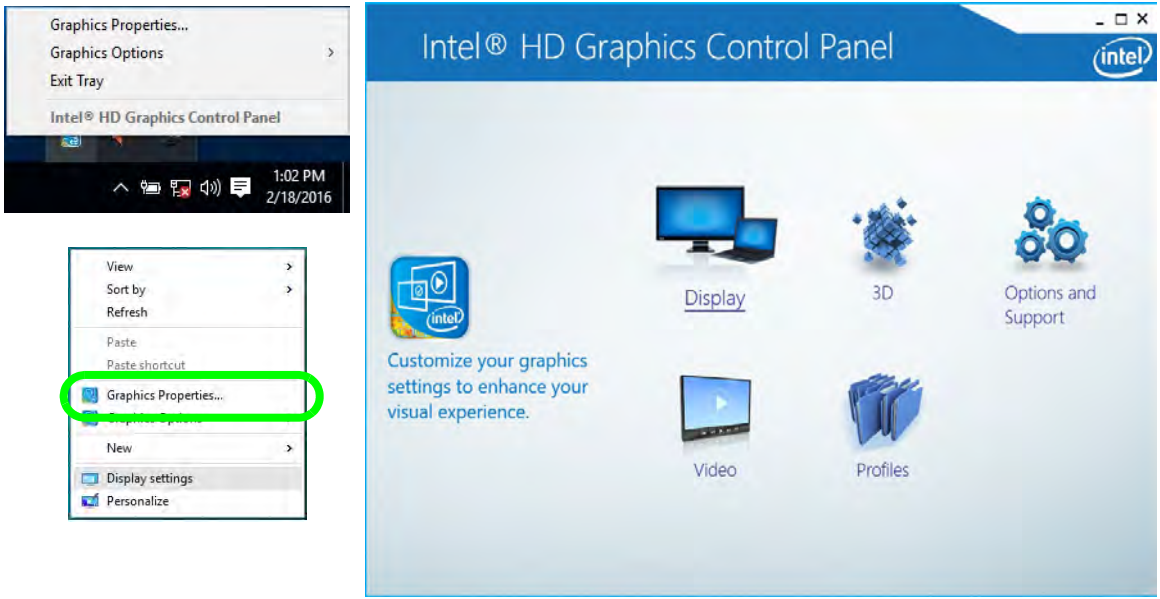


Figure 1 - 21 **- Intel Graphics Control Panel**

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 **Resolution** to make sure that it is at least **1024 * 768,** although preferably **1366 * 768** or above.

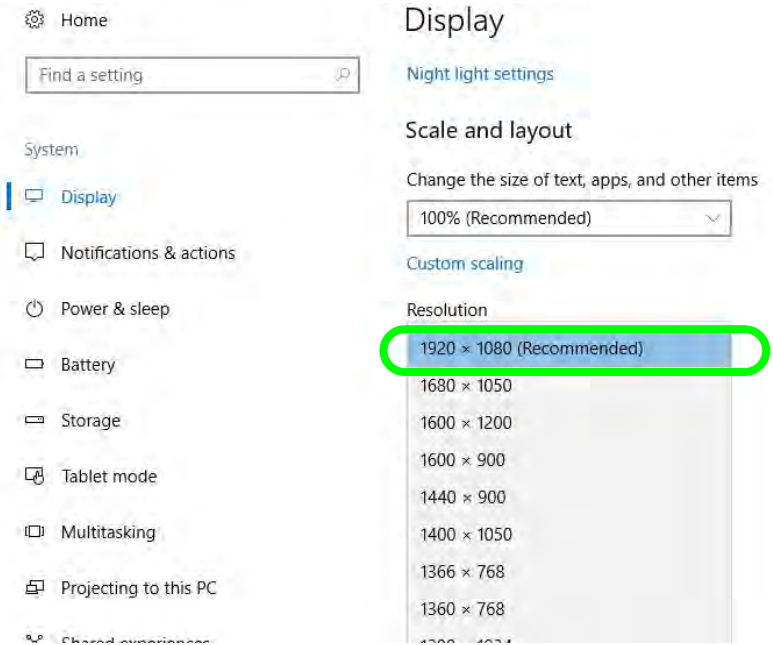


Figure 1 - 22 **- Display (Resolution)**

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 - 32*). 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.

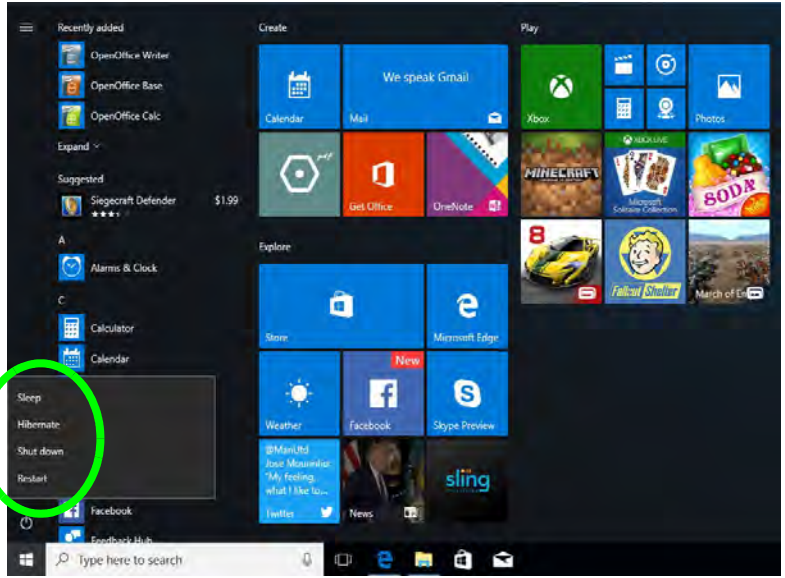
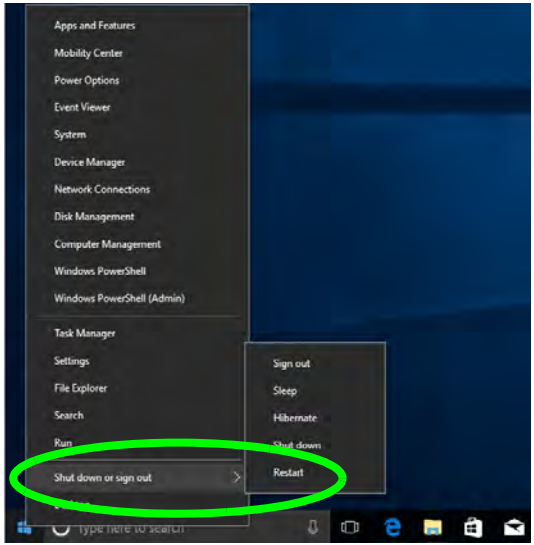


Figure 1 - 23 **- Shut Down/Restart**

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



Adding Hibernate/Sleep to the Power Men

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

Figure 1 - 24 **- Context Menu Shut Down or sign out**

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: Storage Devices, Mouse, & Audio

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
- Audio Features
- Touchpad and Buttons/Mouse

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

Optical (CD/DVD) Device

There is a bay for a 5.25" optical (CD/DVD) device (12.7mm height). The actual device will depend on the module you purchased (see *"Storage" on page D - 2*). The optical device is usually labeled "**Drive D:**" and may be used as a boot device if properly set in the **BIOS** (see *"Boot Menu" on page 5 - 15*).

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.

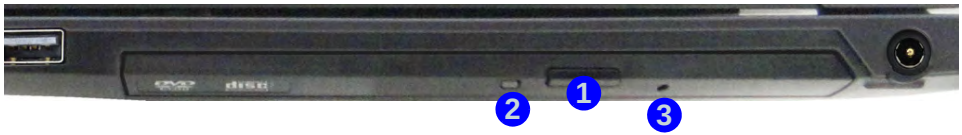


Figure 2 - 1
Optical Device

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 taskbar to check the setting (see *"Audio Features" on page 2 - 7*).

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.

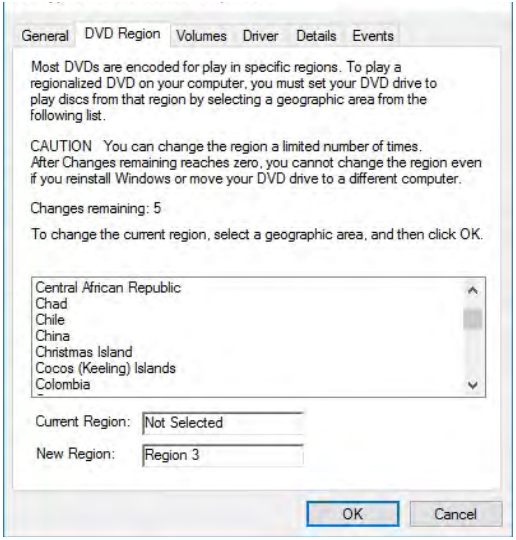
Note the following:

- 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**
2. Double-click **Device Manager (Hardware and Sound)**, then click the **+** next to **DVD/CD-ROM drives**.
3. 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.



- **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

DVD Region Note

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.

Figure 2 - 2
DVD Region Codes

Push-Push Card Reader

The card reader features a push-in/push-out card insertion and ejection mechanism. Simply push the card to insert and eject it, however Ms Duo cards require an adapter.

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 *"Card Reader" on page 4 - 7*).

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

Note: Some of these cards require PC adapters that are usually supplied with the cards.

Figure 2 - 3
Front View

1. Card Reader

Audio Features

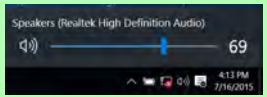
You can configure the audio options on your computer from the **Sound** control panel in ***Windows***, or from the **Realtek HD Audio Manager** icon in the taskbar notification area/control panel (right-click the taskbar notification area icon to bring up an audio menu). The volume may also be adjusted by means of the **volume icon in the taskbar or the audio slider in the Settings menu (see sidebar)**.

Right-click the icon to access the menu above.

Figure 2 - 4
Realtek Audio Manager

Volume Adjustment

The sound volume level can be clicking using the volume control icon in the ***notification area of the taskbar***.



See ***"HDMI Audio Configuration" on page C - 20*** for a description of the audio configuration when connecting an HDMI supported display device.

Disabling Front Jack Detection

It is recommended that **you do not disable front panel jack detection** in Connector Settings.

Disabling front panel jack detection may cause your internal microphone to become disabled, and audio may continue to play through the system's internal speakers even when headphones are plugged-in to the headphone jack (see page ***7 - 12***).

Setup for Audio Recording

To record audio sources on your computer at optimum quality follow the instructions below:

1. Go to the **Control Panel**.
2. Click **Realtek HD Audio Manager** (**Hardware and Sound**), or right-click the taskbar icon and select **Sound Manager**.
3. Click **Microphone Effects** (tab) in **Microphone** (tab), and then click to select **Noise Suppression** (button), or adjust the **Recording Volume** level to around **60**, to obtain the optimum recording quality.
4. Click **OK** to close the control panel and save the settings.

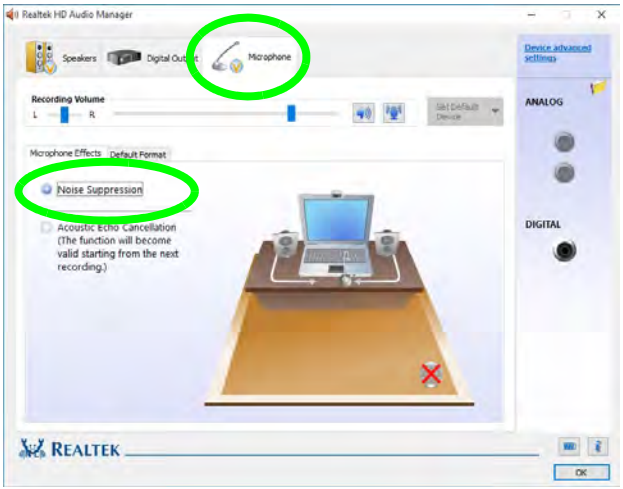


Figure 2 - 5
Realtek Audio Manager - Recording Setup

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 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.

TouchPad Scrolling

This computer model series may feature different TouchPad versions.

These TouchPads may differ in their vertical scrolling function in most scrollable windows.

Some TouchPads require sliding the finger up and down on the right of the TouchPad to scroll the window. Other versions require tapping/holding down the finger at the top right or bottom right of the TouchPad to scroll the window.

Touchpad Sensitivity

The **mouse button zones** at the bottom of the pad measure about **15mm from the bottom** of the pad, and the **left and right buttons** are divided roughly down the middle as illustrated below. Press the left button zone for a left click, and right button zone for a right click action.

Mouse Driver

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.

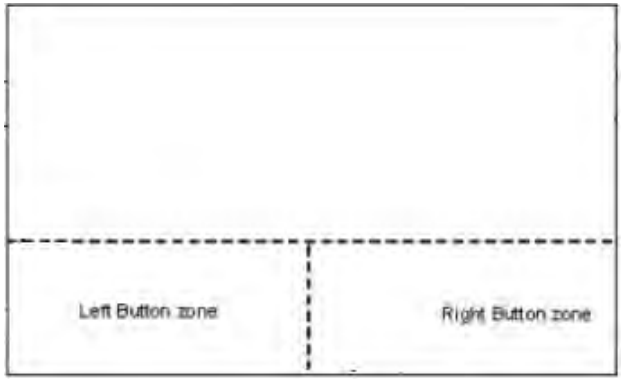
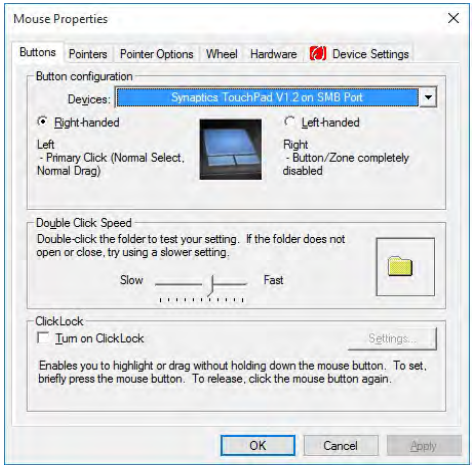


Figure 2 - 6
Touchpad Sensitivity

Touchpad Configuration

Once you have installed the TouchPad driver (see *"Touchpad" on page 4 - 7*) you can configure the functions from the Mouse control panel in ***Windows***, or by double-clicking the TouchPad driver icon in the notification area of the taskbar in the Desktop app. You may then configure the TouchPad tapping, buttons, scrolling, pointer motion and sensitivity options to your preferences. You will find further information at www.synaptics.com.



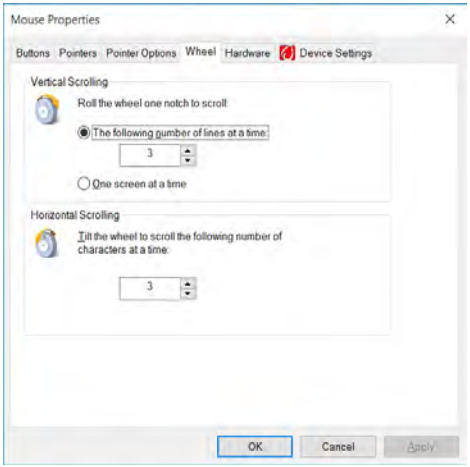


Figure 2 - 7
Mouse Properties

TouchPad Scrolling

This computer model series may feature different TouchPad versions.

These TouchPads may differ in their vertical scrolling function in most scrollable windows.

Some TouchPads require sliding the finger up and down on the right of the TouchPad to scroll the window. Other versions require tapping/holding down the finger at the top right or bottom right of the TouchPad to scroll the window.

Show Video

You can get a clearer view of the gestures involved by clicking the **Show Video** option for each gesture item.

Select the gesture (**Pinch Zoom, Rotating, Three Fingers Down and Three Finger Flick**) in the **Device Settings > Settings** left tree menu and click the **Show Video** button to see the demonstration video.

For more details on any of the gestures see the **help** in the lower part of the right menu window.

Gestures and Device Settings

The Synaptics Gestures Suite application allows you to use a specific gesture (action) on the surface of the Touchpad to perform specific actions to manipulate documents, objects and applications.

You can configure the settings from the Device Settings tab in **Mouse Properties**:

1. Go to the **Control Panel**.
2. Click **Mouse** (**Hardware and Sound**).
3. Click **Device Settings** (tab) and click **Settings**.
4. Use the menu tree on the left to access the user configurable settings.

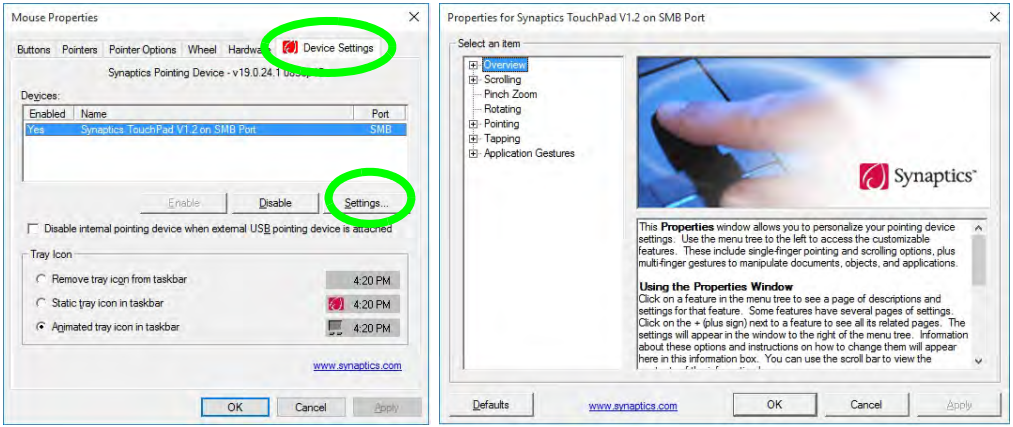


Figure 2 - 8
Mouse Properties - Device Settings

Disabling the Touchpad

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.

You can also set the system to automatically disable the internal Touchpad when an external USB point device (e.g a USB mouse) is attached.

1. Go to the **Mouse Properties** control panel.
2. Click to select **Device Settings** (tab).
3. Click to place a check in the "***Disable internal pointing device when external USB pointing device is attached***" check box.
4. Click **OK** to save the setting.

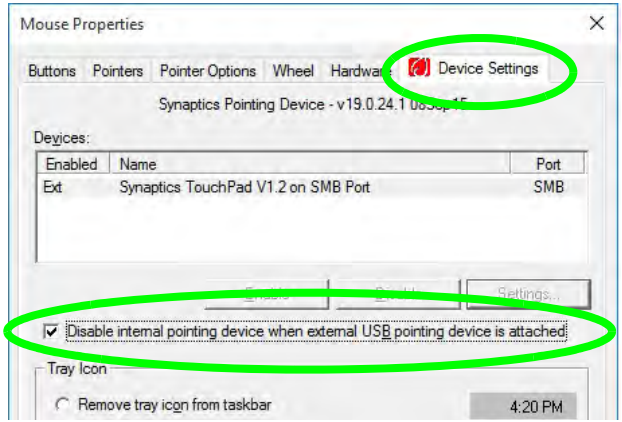


Figure 2 - 9
Mouse Properties (Disable Touchpad)

PalmCheck™

In order to improve Clickpad/Touchpad scrolling responsiveness when using one-finger scrolling, you can adjust the PalmCheck™ slider towards "Minimum" as per your preference.

However bear in mind that adjusting the slider too far towards "Minimum" can turn off PalmCheck™ altogether.

PalmCheck™

The PalmCheck™ feature (**Device Settings > Settings > Pointing > Sensitivity**) helps prevent operating the Clickpad/Touchpad by accident, by recognizing when your palm is resting on it or brushing its surface while you are typing.

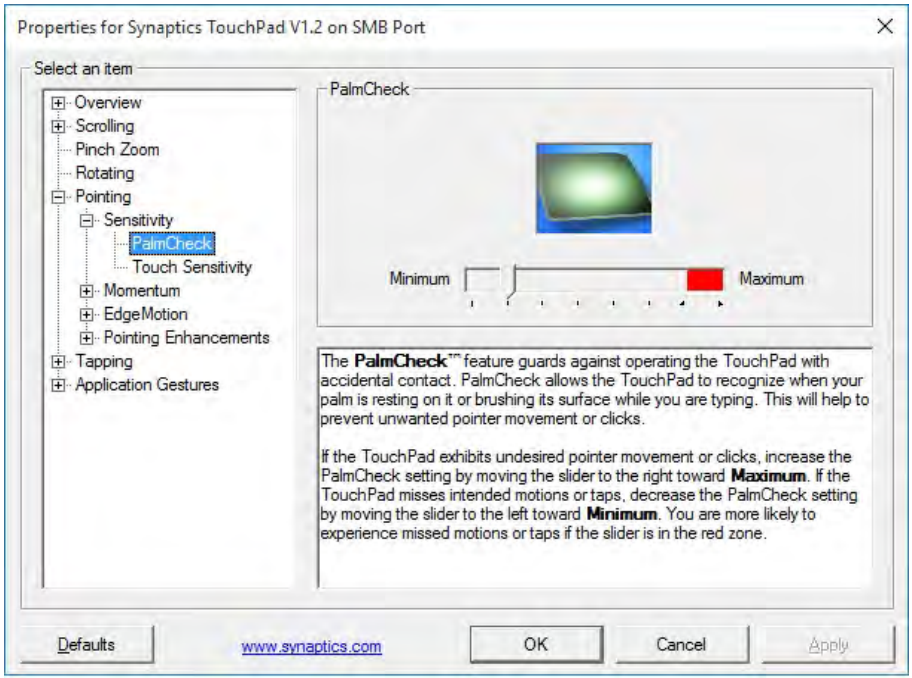


Figure 2 - 10
PalmCheck™ Slider

Scrolling

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).

Figure 2 - 11
Scrolling Gesture

Zooming

The Pinch 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 TouchPad (for best results use the tips of the fingers) and slide them apart to zoom in, or closer together to zoom out.

Figure 2 - 12
Zooming Gesture

Rotating

Use the Pivot Rotate gesture to rotate objects (e.g. photos) in 90 degree increments. Place a finger down on the left “target” zone and keep it stationary. Place another finger near the middle of the TouchPad and slide it in a circular motion around the stationary finger (clockwise or counterclockwise) to rotate the object.

Figure 2 - 13
Rotating Gesture

Three Finger-Flick/Three Fingers Down (Press)

The Three Finger-Flick gesture may be used to enhance navigation with a variety of applications such as browsing the Internet or scrolling through a photo viewer. The Three Fingers Down gesture may be used to launch user-selectable applications.

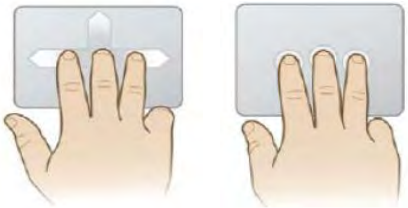


Figure 2 - 14
Flick/Press Gesture

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

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 right of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter and **leave it there for 6 seconds or longer**.
   - Remove the adapter cord from the computer's DC-In jack, and then plug it back in again; 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 - 17***.

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.

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

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

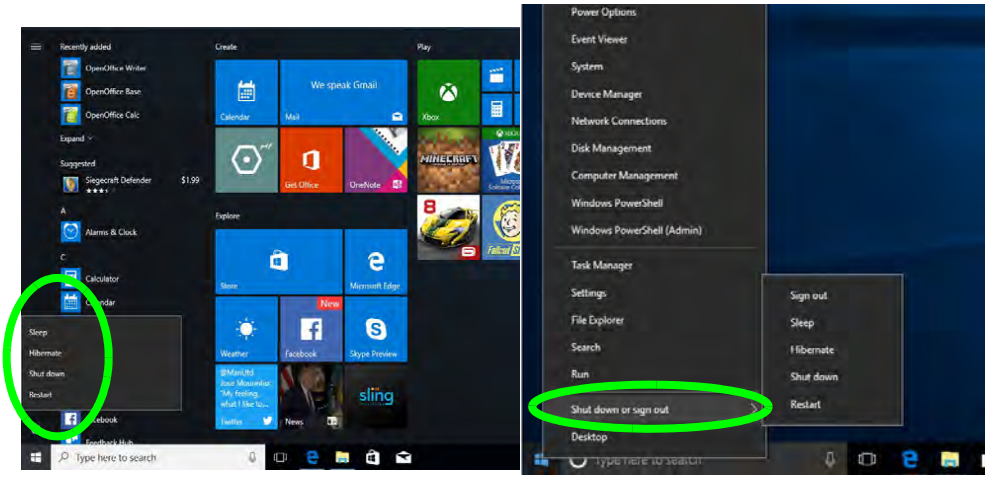


Figure 3 - 1
Shut Down/Restart

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**.

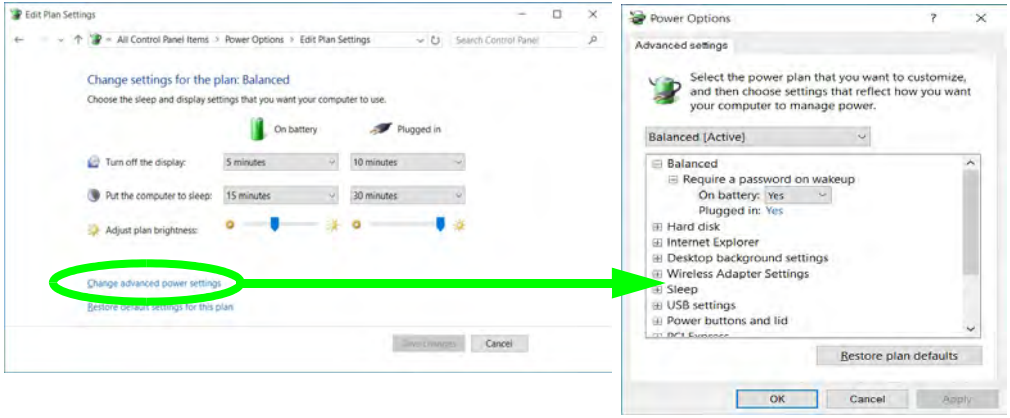


Figure 3 - 2
Power Plan Advanced Settings

Resuming Operation

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

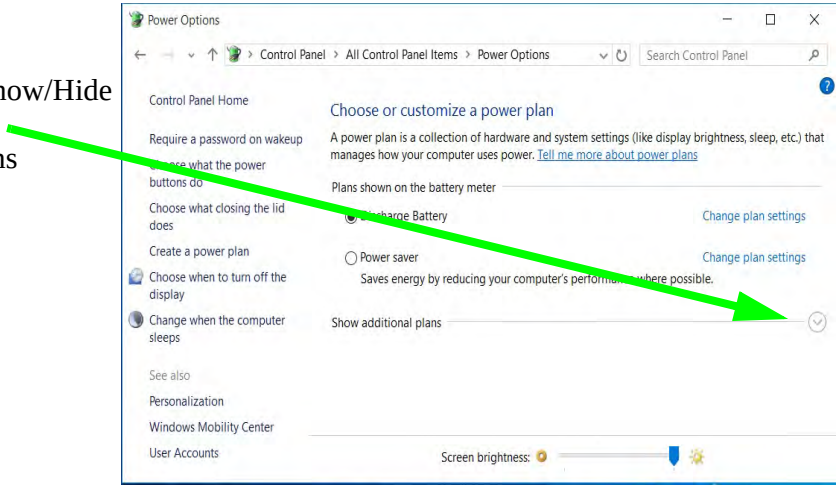
Password

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

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.

Figure 3 - 3
Power Plans



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**.

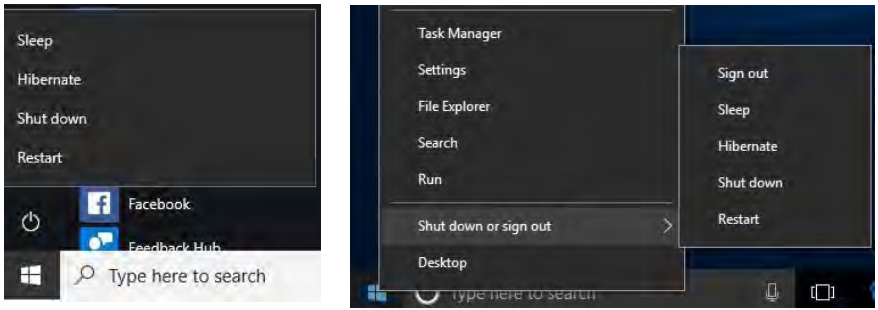
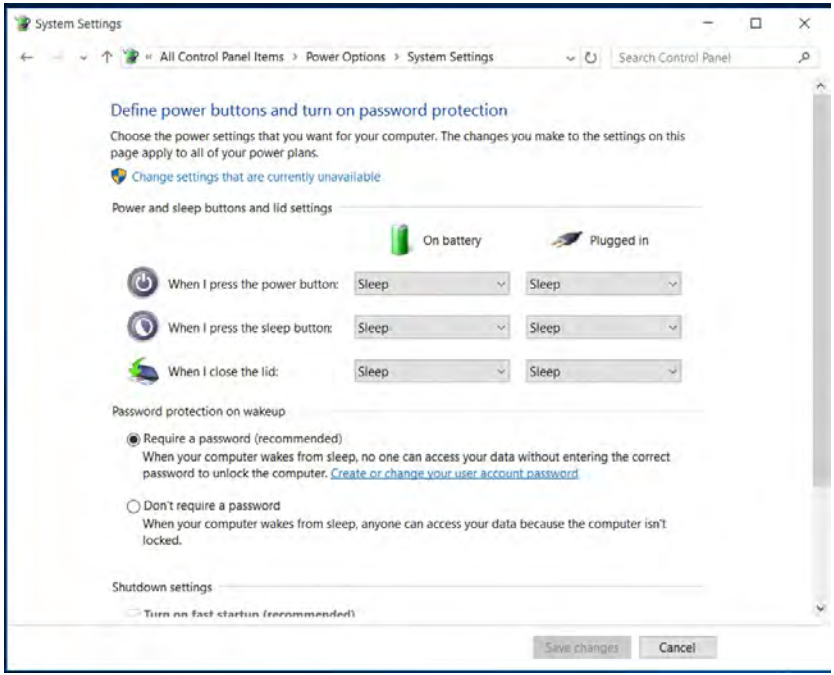


Figure 3 - 4
Power Button & Start Menu Power

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.



Password Protection

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.

1. Go to the **Power Options** (**Hardware and Sound**) control panel.
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.

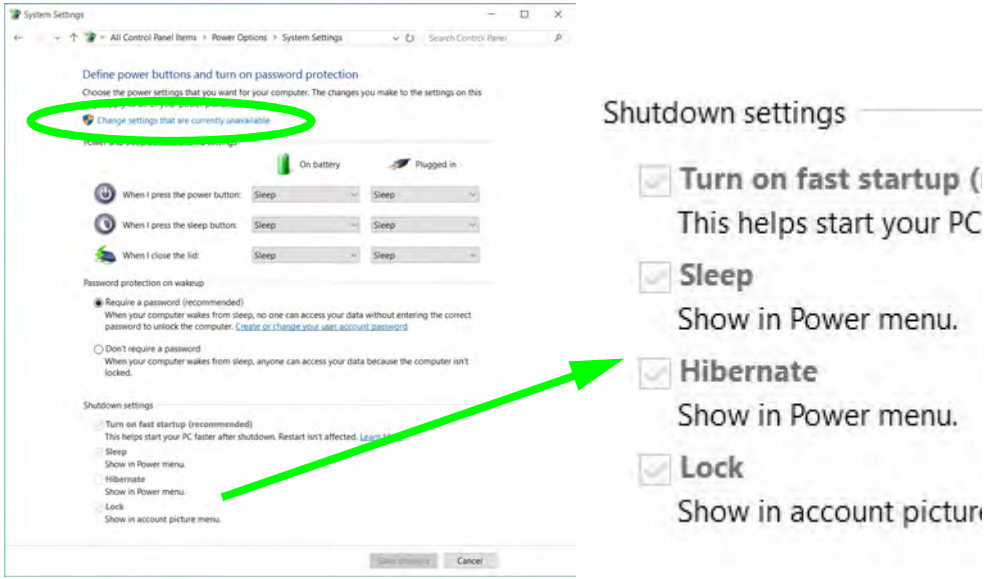


Figure 3 - 6
Power Options Define Power Buttons - Shutdown Settings

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

Table 3 - 1
Resuming Operation

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.

Power Conservation Modes

The **Power Saving** setting will result in maximum power saving, but with the possible loss of some performance.

Setting the mode to **Balance** will give power saving matched with performance.

Performance will give optimum computer performance but with less power conservation.

Note that the Energy Star setting will put the display into sleep after no more than 15 minutes of user inactivity.

Power Conservation Modes

This system supports **Power Saving** power management features that place computers (CPU, hard drive, etc.) into a low-power sleep modes after a designated period of inactivity. Adjust **Power Conservation Modes** from the **Control Center**:

1. Press the **Fn + Esc** key combination to toggle the **Control Center** on/off.
2. Click either the **Performance**, **Balanced** or **Power Saving** button.

Figure 3 - 7
Control Center

Ctrl + Alt + Delete Key Combination

You can use the **CTRL + ALT + DEL** key combination from almost any of the ***Windows 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**.

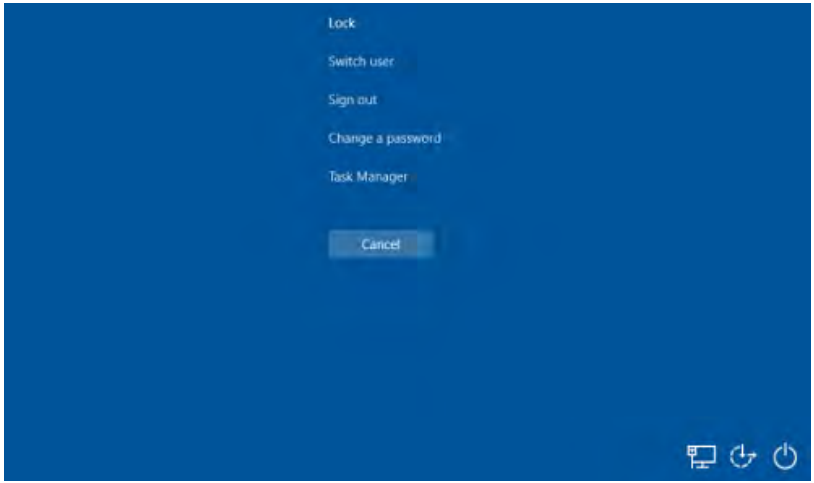


Figure 3 - 8
Ctrl + Alt + Delete Menu

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.

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.

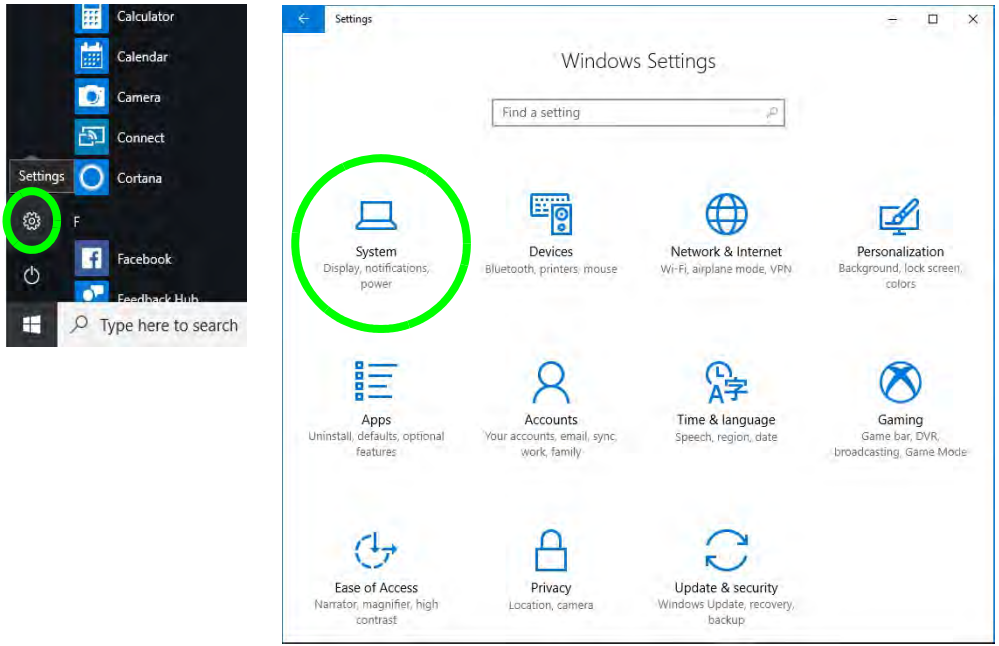


Figure 3 - 9
Settings

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.

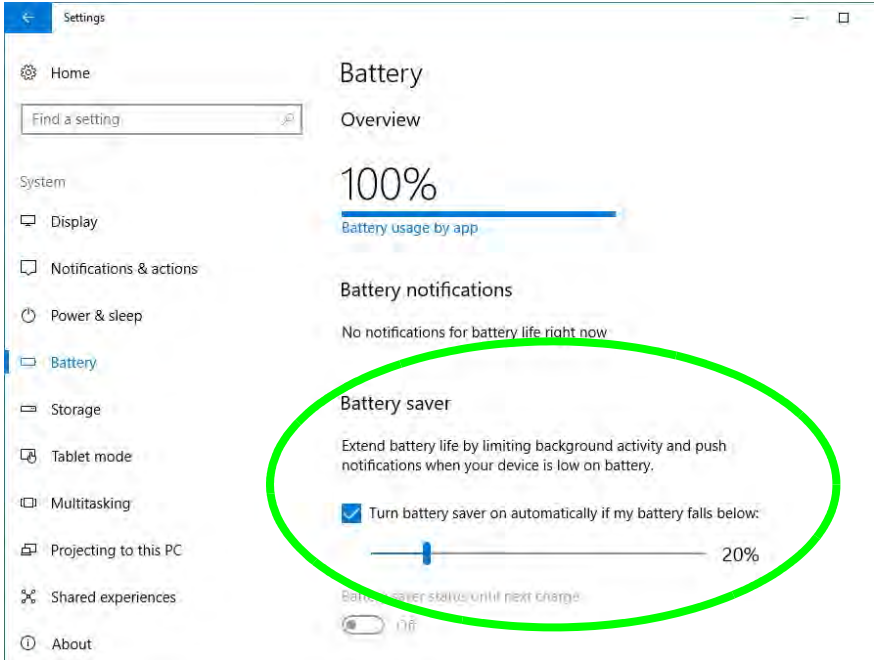


Figure 3 - 10
Settings > Battery > Battery Saver

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.

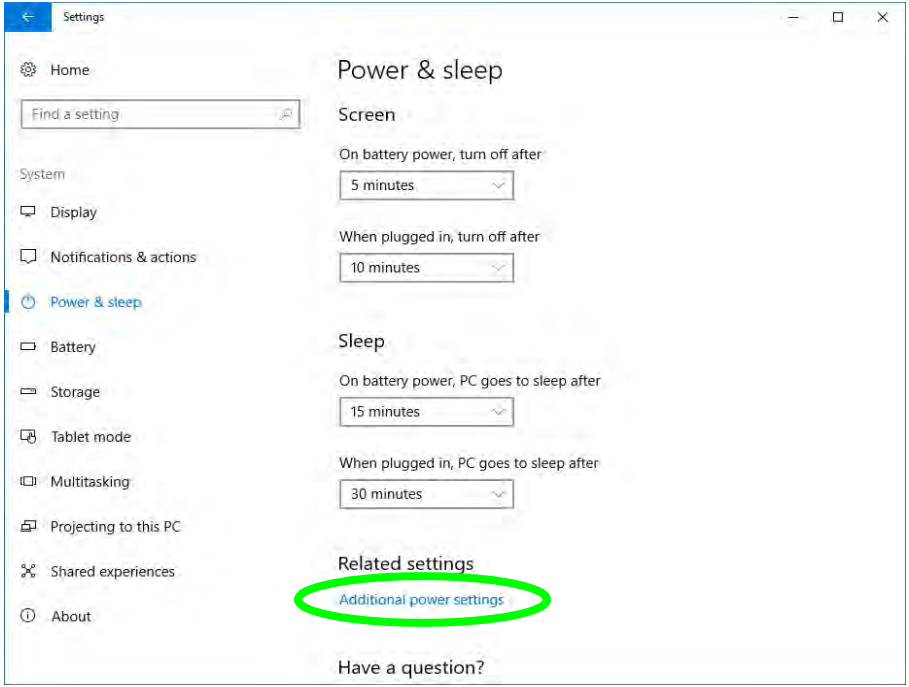


Figure 3 - 11
Settings > Power & Sleep

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).

Low Battery Warning

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.

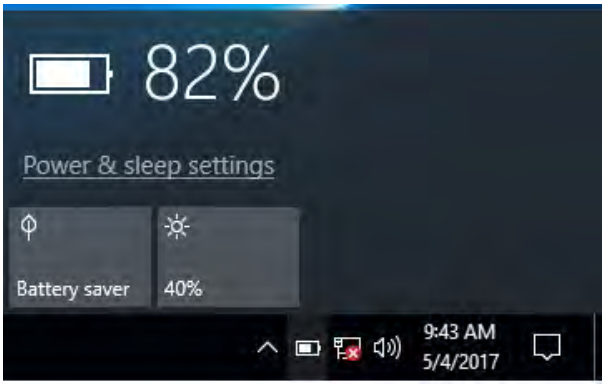


Figure 3 - 12
Battery Icon (Notification Area) & Battery Advanced Settings

Windows Mobility Center

The **Windows Mobility Center** control panel provides an easy point of access for information on battery status, power 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.

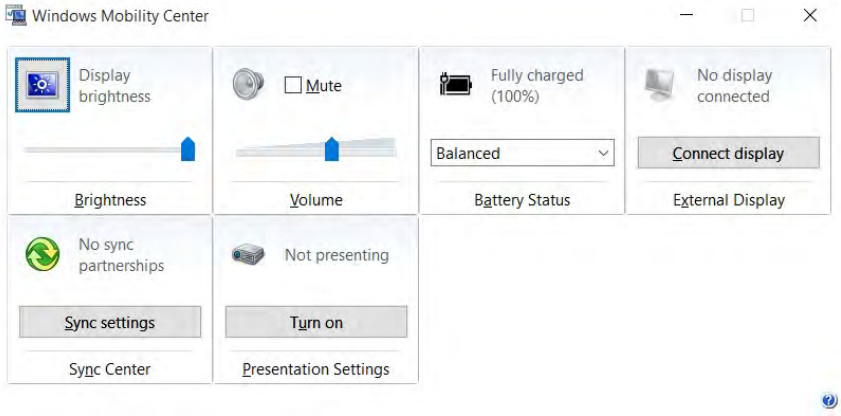


Figure 3 - 13
Windows Mobility Center (Control Panel)

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 should not remove the built-in battery yourself (see sidebar).

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 ***"LED Indicators" 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.

Battery Removal

Note that **the built-in battery is not user removable**. Removing the battery will violate the terms of your warranty.

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

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

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**.

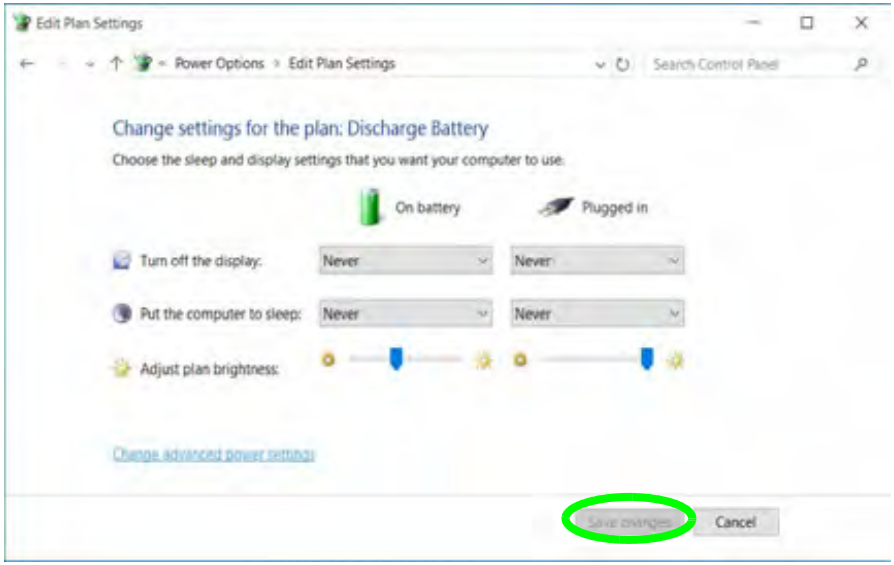
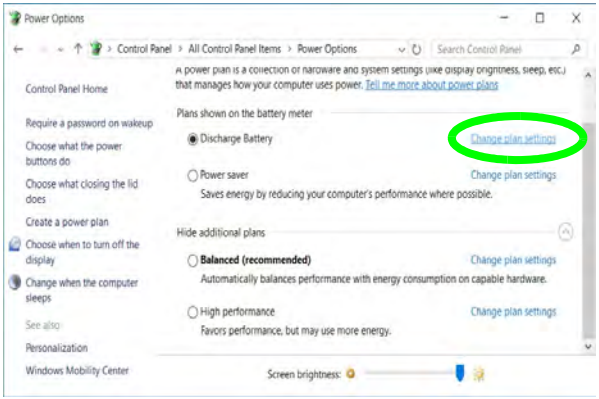


Figure 3 - 14
Power Plan Create

3. Click ***Change plan settings*** (after creating it) and click ***Change plan settings > Change advanced power settings***.



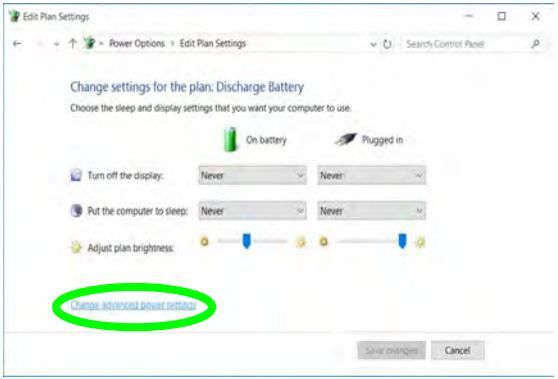


Figure 3 - 15
Change Plan Settings / Change Advanced Power Settings

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

Figure 3 - 16
Power Options Advanced Settings - Battery

- 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

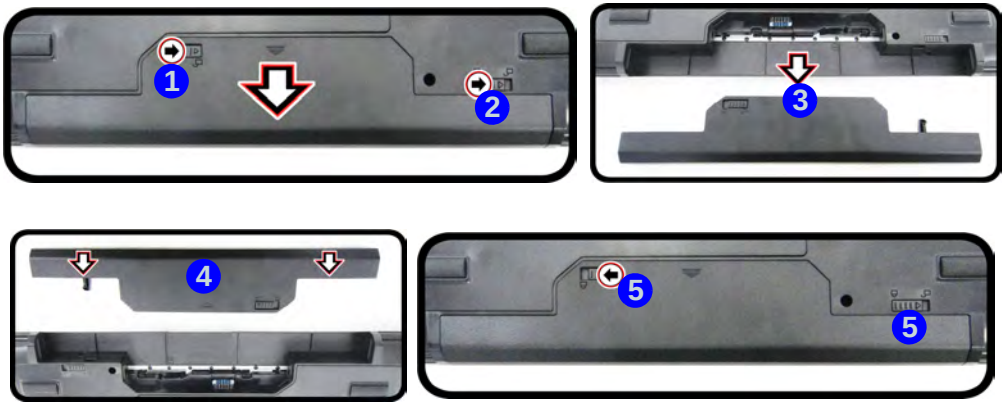
How do I fully charge the battery?
When charging the battery, don't stop until the LED charging indicator light changes from orange to green.

How do I maintain the battery?
Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges.

Removing the Battery

It is possible to remove the battery from the computer, however we recommend that you do not remove the battery yourself. If you do need to remove the battery for any reason (e.g. long term storage) see below.

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. Slide the battery out in the direction of the arrow 3.
5. Reinsert the battery as illustrated below 4.
6. Make sure the latches are returned to the lock position 5.



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 3 - 17
Battery Removal and Insertion

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

The ***Device Drivers & Utilities + User's Manual*** 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**, **Bluetooth & WLAN Combo, Intel Technology** and **4G** modules are provided in ***"Modules" on page 6 - 1***.

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 significant amount of 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 minute).

Driver Installation

1. Insert the *Device Drivers & Utilities + User's Manual* disc into the 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**

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 (64-bit) Driver	Page #	Win 10 (64-bit) - Optional Items	Page #
Chipset	*Page 4 - 7*	*Wireless LAN Module*	*Page 6 - 2*
Video (VGA)	*Page 4 - 7*	*Bluetooth & WLAN Combo Module*	*Page 6 - 7*
LAN	*Page 4 - 7*	*Intel® Rapid Storage Technology*	*Page 6 - 13*
Card Reader	*Page 4 - 7*	*PC Camera* (no driver installation required)	*Page 6 - 14*
Touchpad	*Page 4 - 7*	*Trusted Platform Module* (no driver installation required)	*Page 6 - 20*
Control Center	*Page 4 - 8*	*3G/4G Module* (no driver installation required)	*Page 6 - 26*
Airplane	*Page 4 - 8*		
MEI Driver	*Page 4 - 8*		
Audio	*Page 4 - 8*		
All drivers provided are for the Windows 10 (64-bit) operating system.			

Table 4 - 1 **- Driver Installation**

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

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 - 9*** 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 Features** menu:

1. Go to the **Control Panel**).
2. Double-click **Device Manager** (**Hardware and Sound > Devices and Printers > Device Manager**).
3. 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.

Video (VGA)

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

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 re-install the LAN driver.*

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

Card Reader

1. Click **4.Install Cardreader Driver > Yes**.
2. Click **Finish**.

Touchpad

1. Click **5.Install Touchpad Driver > Yes**.
2. Click **Next**.
3. Click the button to accept the license, and then click **Next**.
4. Click **Finish > Restart Now** to restart the computer.

Control Center

1. Click **6.Install Control Center AP > Yes**.
2. Click **Next > Install**.
3. Click **Finish** to restart your computer (see ***Appendix B*** - after restart you will be required to save your keyboard type).

Airplane

Note: Do not use Update Driver in Device Manager to install the Airplane Mode driver.

1. Click **7.Install Airplane Driver > Yes**.
2. Click **Next > Install**.
3. Click **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 license and then click **Next**.
4. Click **Next**.
5. Click **Finish**.

Audio

1. Click **10.Install Audio Driver > Yes**.
2. Click **Next**.
3. Click **Finish** to restart the computer.

Note that after installing the audio driver the system will not return to the ***Drivers Installer*** screen. To install any of the optional drivers listed overleaf, 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.

It is recommended that you install the **Intel Rapid Storage Technology** driver (see ***"Intel® Rapid Storage Technology" on page 6 - 13***).

Windows Update

After installing all the drivers make sure you enable **Windows Update** 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. Go to the **Control Panel**.
2. Click **Windows Update** (System and Security/ Security).
3. Click **Check for updates** (button).
4. The computer will now check for updates (you need to be connected to the internet).
5. Click **Install now** (button) to begin checking for the updates.
6. Click **Install updates** (button) to install the 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:

Diagnostics: The **POST** (Power-On Self Test)

Configuration: The ***Setup*** utility
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 ***Setup***. 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.

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 *Set-up* and restore the **Optimized Defaults** with **<F3>**.

UEFI Boot & POST

When UEFI Boot is enabled, then the prompts to **press F2 or F7 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.

The Power-On Self Test (POST)

If you enable the **Boot-time Diagnostic Screen** in the Setup Utility, each time you turn on the computer the system takes a few seconds to conduct a **POST**, including a quick test of the on-board RAM (memory).

As the **POST** 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 ***Setup***.

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

Failing the POST

Errors can be detected during the **POST**. There are two categories, “fatal” and “non-fatal”.

Fatal Errors

These stop the boot process and usually indicate there is something seriously wrong with your system. Take the computer to your service representative or authorized distributor/supplier as soon as possible.

Non-Fatal Errors

This kind of error still allows you to boot. You will get a message identifying the problem (make a note of this message!) and you can then press **F7** (the **F7** on screen will be highlighted to illustrate that the system is processing the request) for boot options.

Press **F2** (give the system a few seconds to enter ***Setup***; the **F2** on screen will be highlighted to illustrate that the system is processing the request) to run the **Setup** program and try to correct the problem. If you still get an error message after you change the setting, or if the “cure” seems even worse, call for help.

BIOS Settings Warning

Incorrect settings can cause your system to malfunction. To correct mistakes, return to *Set-up* and restore the **Optimized Defaults** with **<F3>**.

The Setup Utility

The **Aptio Setup Utility** tells the system how to configure itself and manage basic features and subsystems (e.g. port configuration).

Entering Setup

To enter ***Setup***, turn on the computer and press **F2** (give the system a few seconds to enter ***Setup***; the **F2** on screen will be highlighted to illustrate that the system is processing the request) during the **POST** (or press **F7** for boot options). If you get a "Keyboard Error", (usually because you pressed **F2** too quickly) just press **F2** again.

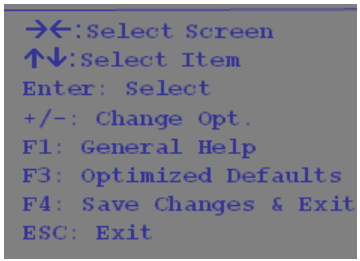
If the computer is already on, reboot using the **Ctrl + Alt + Delete** combination and then hold down **F2** when prompted. The ***Setup*** main menu will appear.

To see the boot options press **F7.**

Setup Screens

The following pages contain additional advice on portions of the ***Setup***. Along the top of the screen is a menu bar with menu headings. When you select a heading, a new screen appears. Scroll through the features listed on each screen to make changes to ***Setup***.

Instructions on how to navigate each screen are in the box at the bottom right side of the screen.



If these tools are confusing, press **F1** to call up a **General Help** screen, and then use the arrow keys to scroll up or down the page.

The **Item Specific Help** on the upper right side of each screen explains the highlighted item and has useful messages about its options.

If you see an arrow ▶ next to an item, press **Enter** to go to a sub-menu on that subject. The sub-menu screen that appears has a similar layout, but the **Enter** key may execute a command.

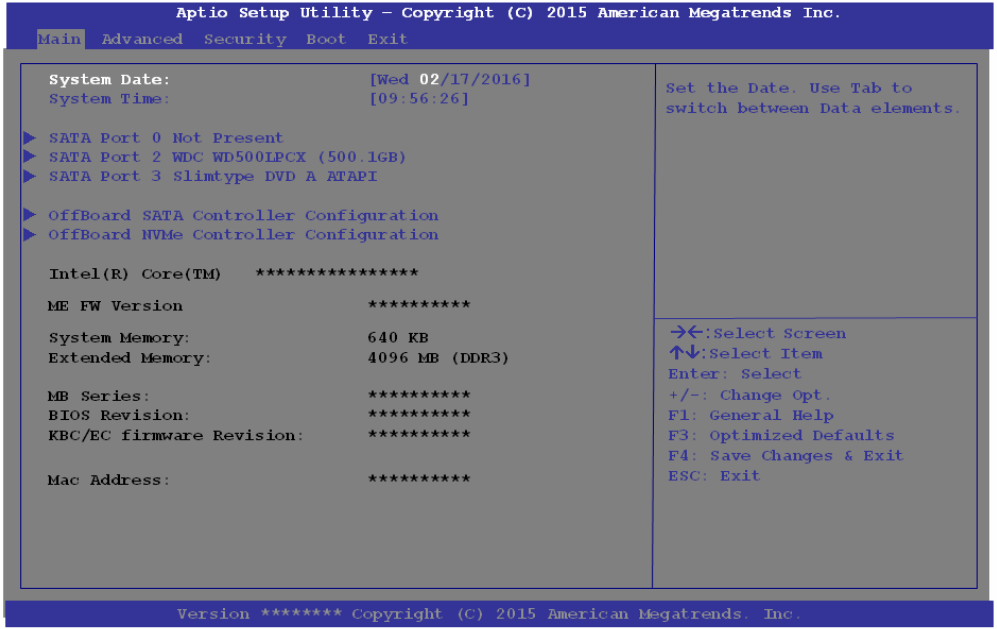
Setup Menus

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

Figure 5 - 1
Navigation Menu

Main Menu

Figure 5 - 2
Main Menu



System Time & Date (Main Menu)
The hour setting uses the 24-hour system (i.e., ØØ = 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.

SATA Port # (Main Menu)
Pressing **Enter** opens the sub-menu to show the configuration of a optical Device/ HDD on the computer's SATA Ports.

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.

CPU/ ME FW Version / System/ Extended Memory: (Main Menu)
This item contains information on the CPU type and 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 (Main Menu)
This item contains information on the BIOS version etc., and is not user configurable.

Advanced Menu

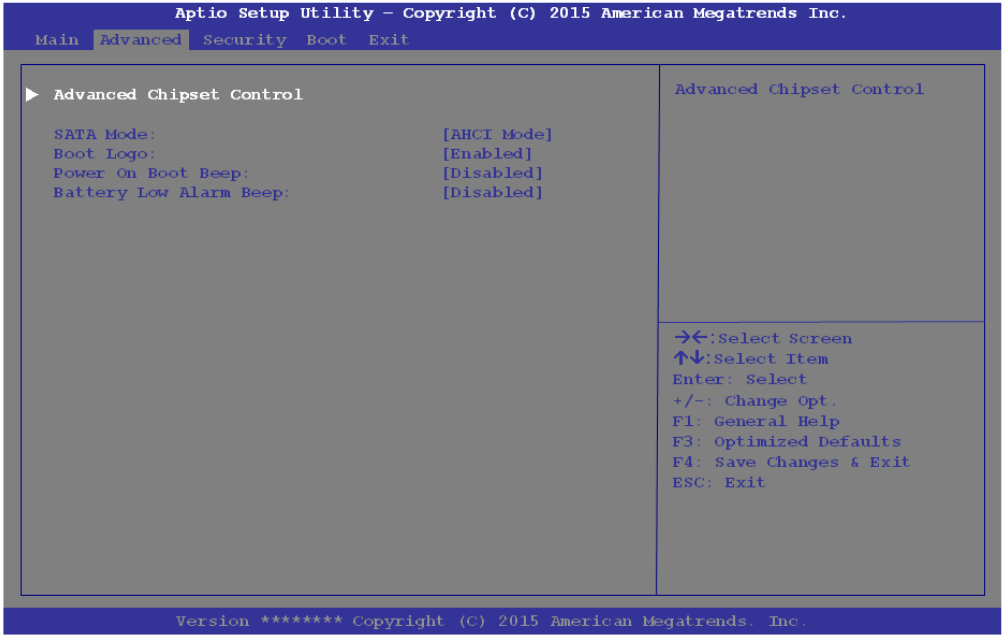


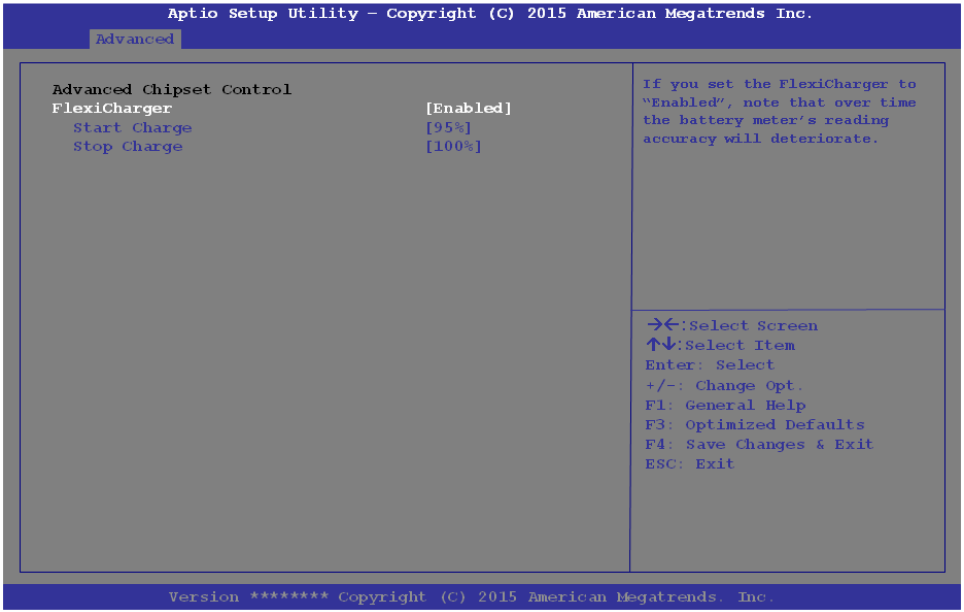
Figure 5 - 3
Advanced Menu

Advanced Chipset Control (Advanced Menu)
The sub-menu here allows you to enable/disable **FlexiCharger**.

FlexiCharger (Advanced Menu > Advanced Chipset Control)

The sub-menu here allows you to enable/disable the **FlexiCharger**. The FlexiCharger 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%).

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



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 - 4
Advanced Chipset Control > FlexiCharger

SATA Mode (Advanced Menu)
The SATA (Serial ATA) controller operates in **AHCI** (Advanced Host Controller Interface) mode. Install the ***Intel Rapid Storage Technology*** driver to support your drive in AHCI mode (see ***"Intel® Rapid Storage Technology" on page 6 - 13***).

Boot Logo (Advanced Menu)
Use this menu item to enable/disable the **Boot Logo** screen at system startup **if you have not enabled UEFI Boot**. If you disable the **Boot Logo** you will not see the **F2 Enter Setup** or **F7 Boot Options** prompts on the screen, however you can still press these keys, while the boot screen is displayed, to perform the Enter Setup or Boot Option functions.

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.

Security Menu

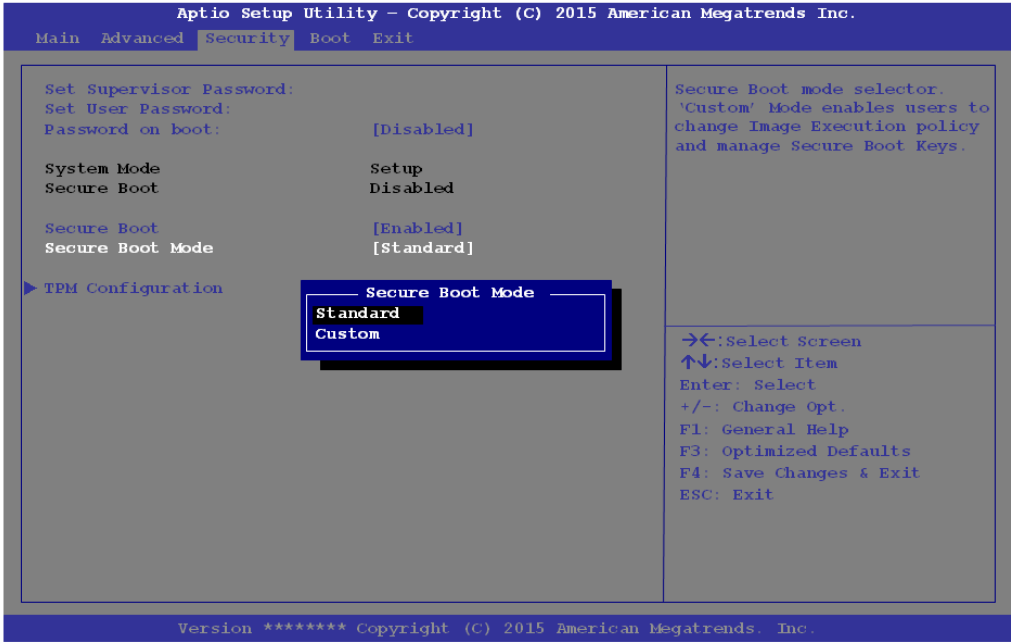


Figure 5 - 5
Security Menu

Security Menu

The changes you make here affect the access to the **Setup** 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 which will be set in your software OS.

Set Supervisor Password (Security Menu)

You can set a password for access to the **Aptio Setup Utility**. This will not affect access to the computer OS (only the **Aptio Setup Utility**).

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 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.

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

Set User Password (Security Menu)

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

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

Password on boot: (Security Menu)

Specify whether or not a password should be entered to boot the computer (**you may only set a password on boot 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***".

Secure Boot Control (Security Menu)

Secure Boot Control prevents unauthorized operating systems and software from loading during the startup process. **Secure Boot** is available as a menu option if you have enabled **UEFI Boot** (see ***"Boot Menu" on page 5 - 15***). Enabling Secure Boot will bring up the **Secure Boot Mode** menu to enable you to configure Secure Boot as **Standard** (with a fixed secure boot policy), or **Custom** (which enables you to make changes to the **Key Management** database).

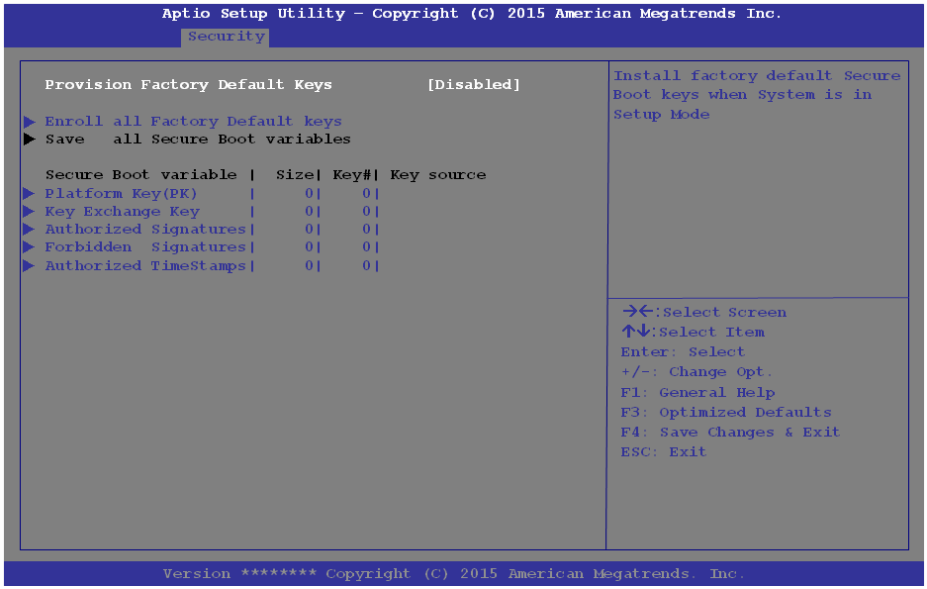


Figure 5 - 6
Security - Secure Boot (Key Management)

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. You can select **Pending operation**, and then select **TPM clear** to clear existing TPM information in order to reset the TPM (see ***"Trusted Platform Module" on page 6 - 20*** for details).

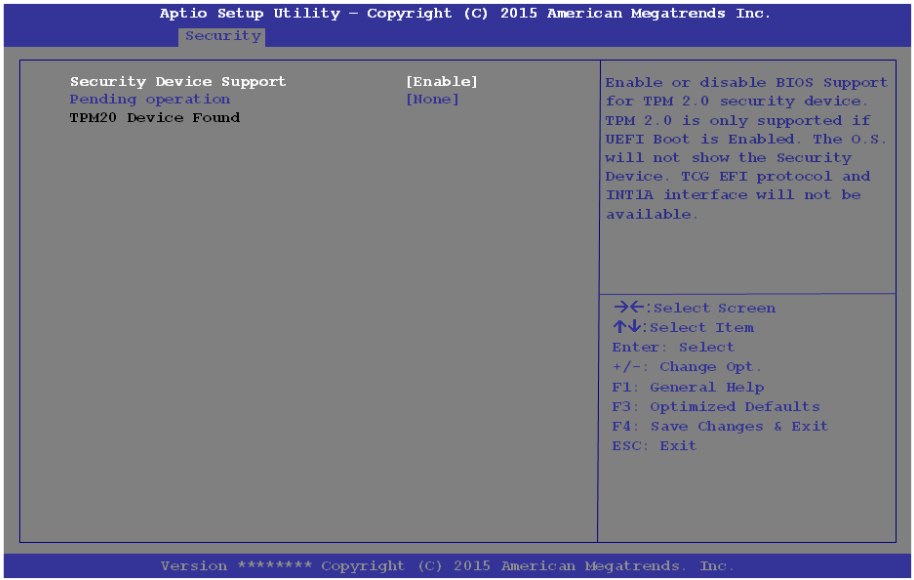


Figure 5 - 7
Security Device Support

Boot Menu

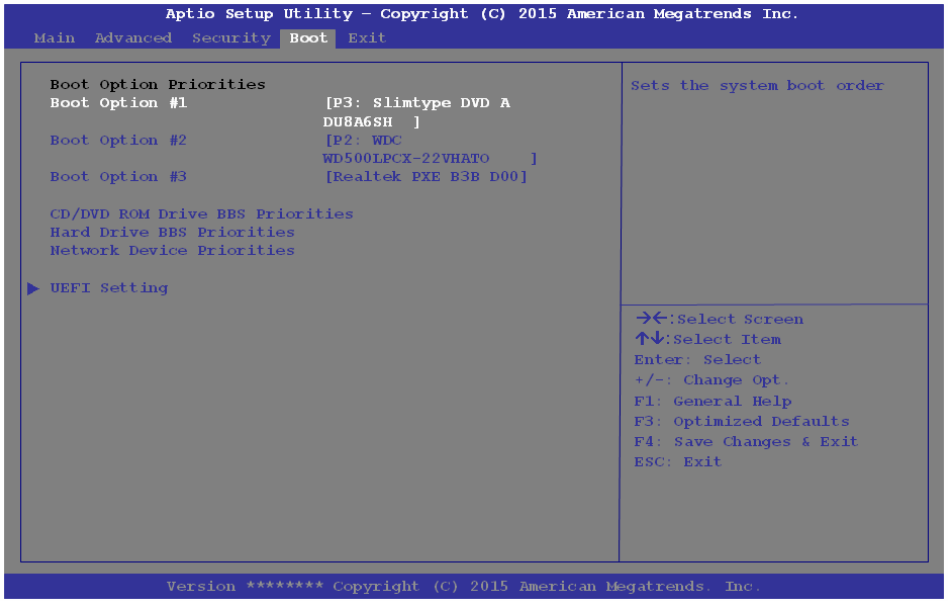


Figure 5 - 8
Boot Menu

When you turn the computer on it will look for an operating system (e.g. ***Windows 7***) 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 Priorities**.

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.

UEFI Boot

UEFI Boot is "**Enabled**" for your system by default.

It is recommended that you keep UEFI Boot enabled for the Windows 10/ Windows 8.1/ Windows 8 operating systems, however if you are running the Windows 7 OS then you should set UEFI Boot to "**Disabled**" (for other operating systems please check the OS's documentation).

Boot Option Priorities (Boot Menu)

Press Enter to select the Boot Option # and use the arrow keys to select any device in order to move its boot priority up and down the list (the selected device will be highlighted in white).

UEFI Boot (Boot Menu)

Enable/disable UEFI Boot from this 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 will be enabled as an option under UEFI Boot.

UEFI Boot is enabled for your system by default. It is recommended that you keep UEFI Boot enabled for the Windows operating system.

Exit Menu

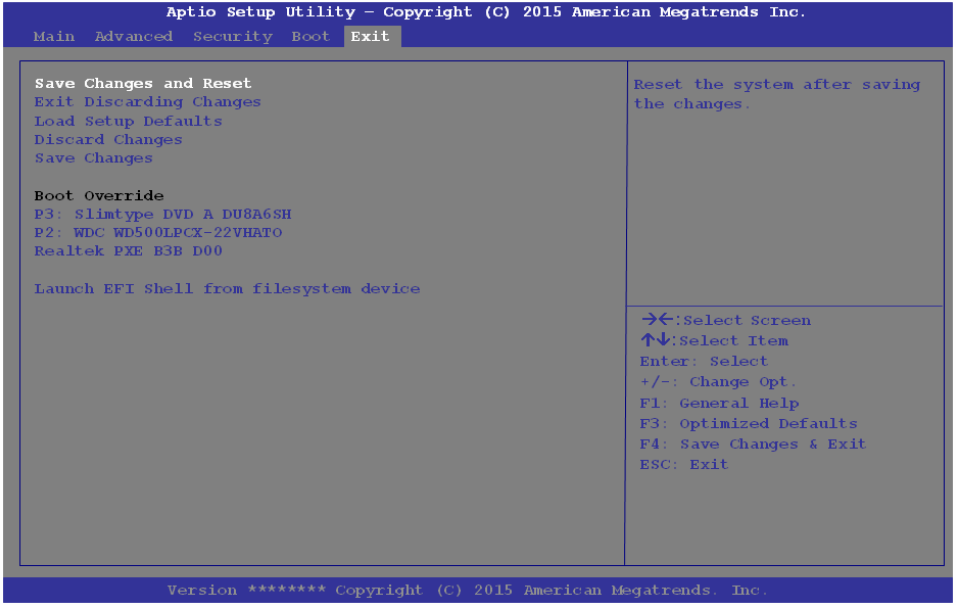


Figure 5 - 9
Exit Menu

Click ***Save Changes and Reset*** to save all changes made. Choosing to ***Discard Changes***, or ***Exit Discarding Changes***, will wipe out any changes you have made to the ***Setup***. You can also choose to restore the original ***Setup*** defaults that will return the ***Setup*** to its original state, and erase any previous changes you have made in a previous session.

Chapter 6: Modules

Overview

This chapter contains the information on the various modules (some of which are **optional**) which may come with your computer, depending on the configuration purchased. If you are unsure please contact your service representative.

The chapter includes information on the following:

- Wireless LAN Module
- Bluetooth & WLAN Combo Module
- Intel® Rapid Storage Technology
- PC Camera
- Trusted Platform Module
- 3G/4G Module

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 - 3, on page 1 - 12***).

Wireless LAN Module

If you have included an **Intel® or 3rd Party 802.11b/g/n (Combo) module** is on (i.e. the system is not in **Airplane Mode**) before installing the driver.

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 the appropriate driver installation instructions on the page indicated below:

- See ***"3rd Party 802.11b/g/n Driver Installation" on page 6 - 3***.
- See ***"Intel® WLAN Driver Installation" on page 6 - 3***.

3rd Party 802.11b/g/n Driver Installation

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

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 the 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 - 4***).

WLAN Configuration in Windows

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 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**).

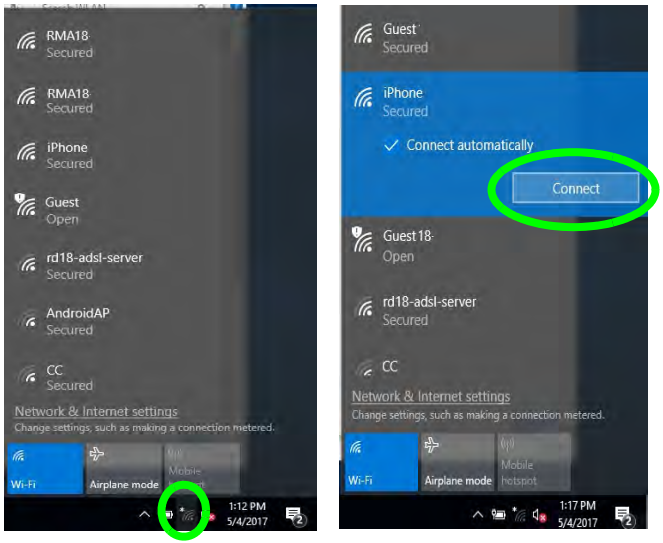


Figure 6 - 1
WiFi & Network Connections

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.
8. Select any connected network and click **Disconnect** Disconnect to disconnect from a connected access point.

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited.

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

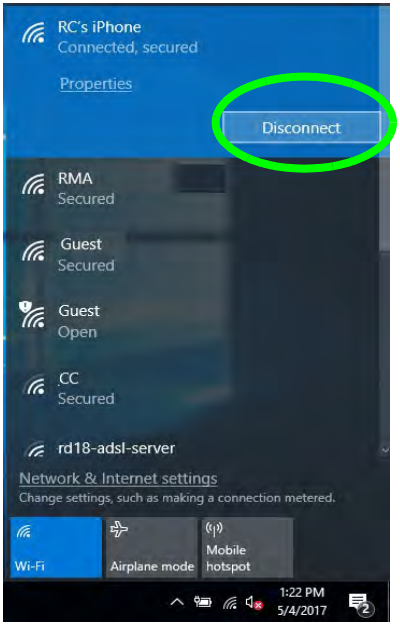


Figure 6 - 2
Network Connected (Click Disconnect)

9. You can click the **Airplane Mode** button to turn the mode On or Off.
10. You need to either use **Airplane Mode**, or **turn the WLAN module off** aboard aircraft.
11. **Network & Internet** in **Windows Settings** will bring up 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**.

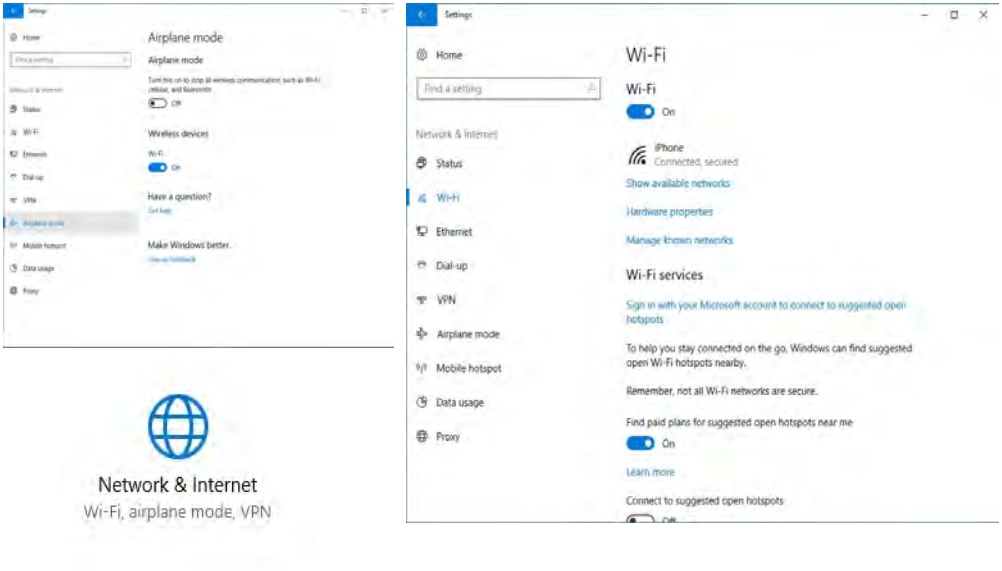


Figure 6 - 3
Network & Internet Settings

Bluetooth & WLAN Combo Module

If your purchase option includes the **Combination Wireless LAN & Bluetooth module** (either **Intel® or 3rd Party module**) then install the driver as instructed on the following pages.

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

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.

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 - 3, on page 1 - 12***).

3rd Party Bluetooth (V4.0) Combo Driver Installation

1. **Make sure the system is not in Airplane Mode**, and then insert the ***Device Drivers & Utilities + User's Manual*** disc into the DVD drive.
2. Click **Option Drivers** (button).
3. Click **2.Install Combo BT Driver > Yes**.
4. Click **Next**.
5. Click **Finish** to restart the computer.
6. See ***"Bluetooth Configuration in Windows" on page 6 - 9*** for configuration instructions.

Intel Bluetooth Combo Driver Installation

1. **Make sure the system is not in Airplane Mode**, and then insert the ***Device Drivers & Utilities + User's Manual*** disc into the DVD drive.
2. Click **Option Drivers** (button).
3. Click **2.Install Combo BT Driver > Yes**.
4. Click **Next > 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 - 9*** 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.**
3. Click **Add Bluetooth or other device > Bluetooth (Add a device)** and a list of discovered devices will appear.

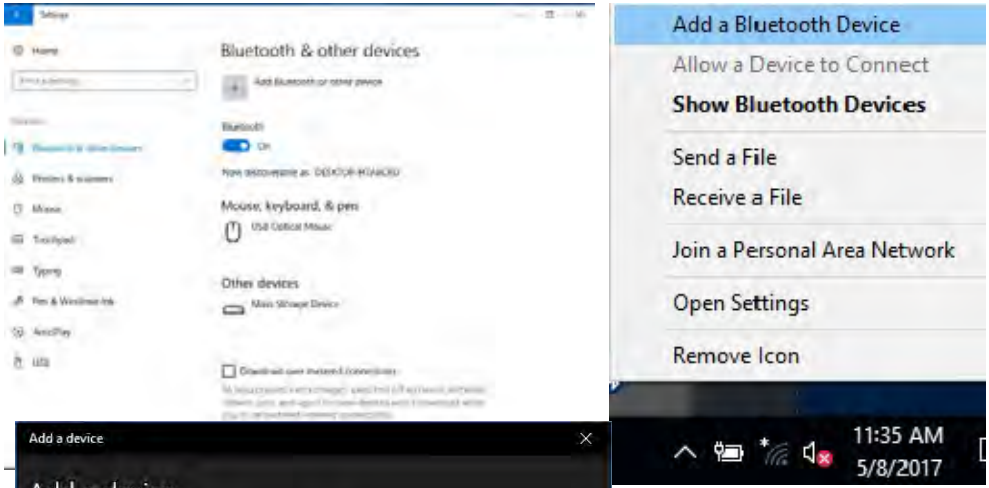


Figure 6 - 4
Settings > Bluetooth & Other Devices (Add a Bluetooth Device)

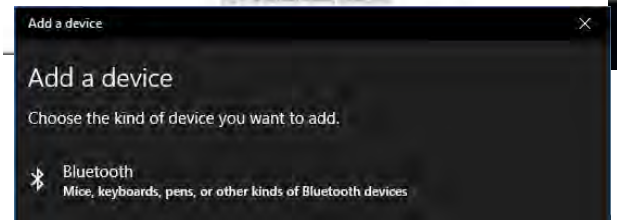


Figure 6 - 5
Add a Device

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)**.

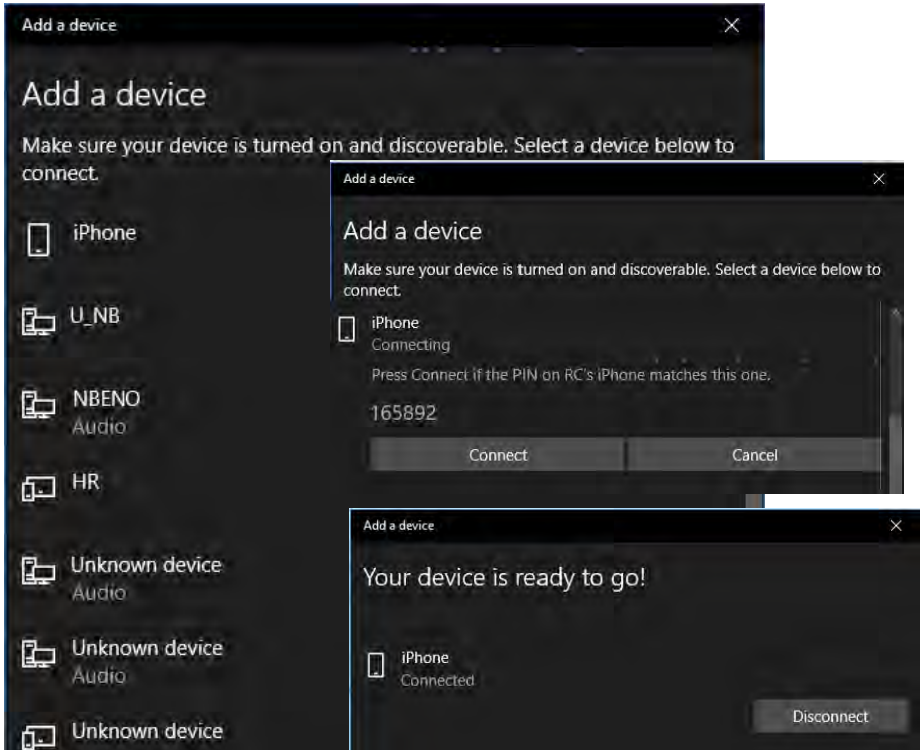


Figure 6 - 6
Bluetooth Connect

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

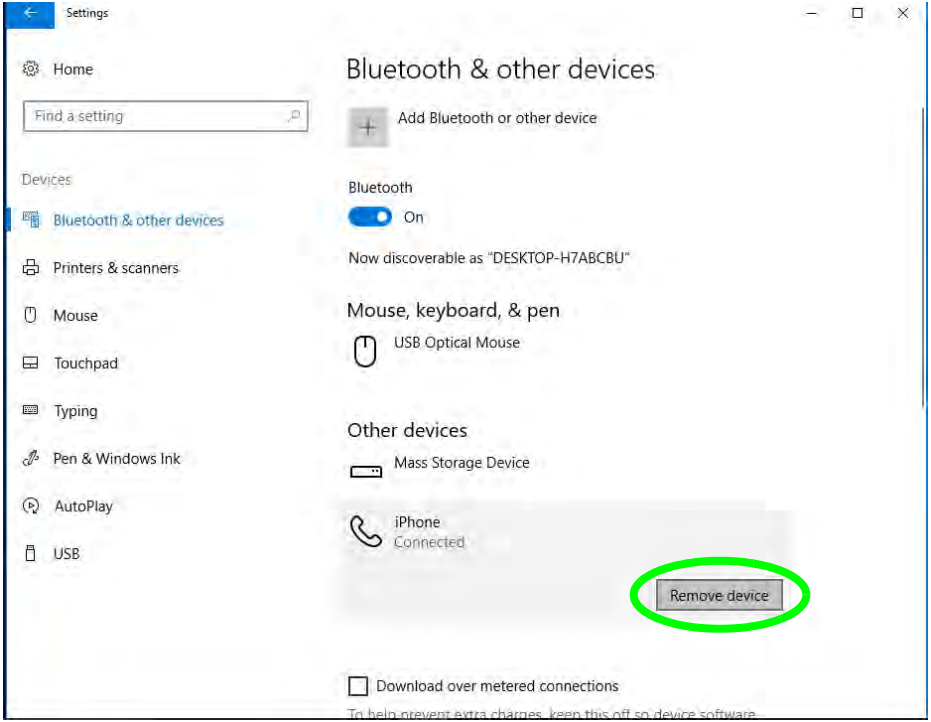


Figure 6 - 7
Bluetooth Remove Device

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.

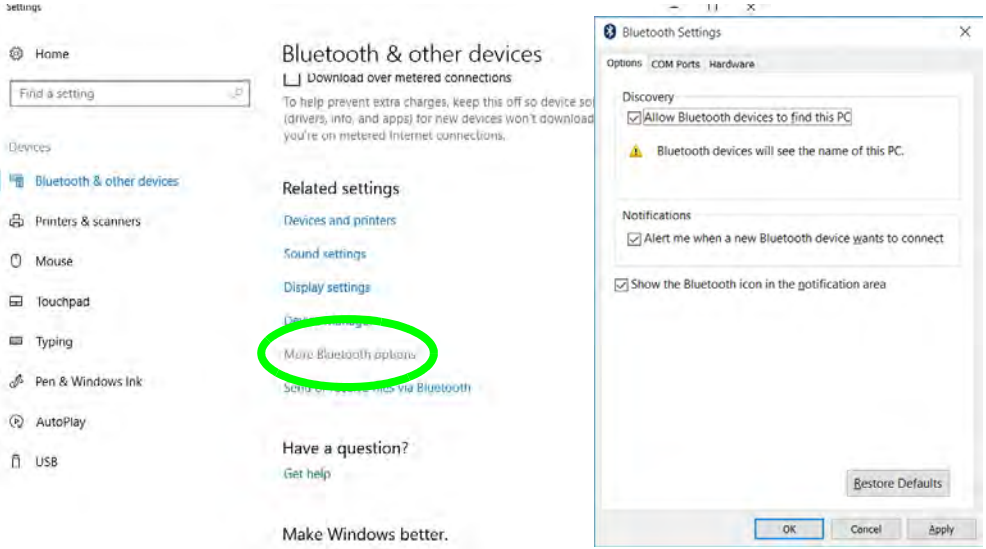


Figure 6 - 8
Bluetooth Settings

Intel® Rapid Storage Technology

The **Intel Rapid Storage Technology application** provides high-performance SATA and SATA RAID capabilities. Install the **Intel Rapid Storage Technology application** (after installing all necessary drivers in the correct order) to support your **RAID** system in **AHCI mode** in the BIOS (see ***"SATA Mode (Advanced Menu)" on page 5 - 10***).

IRST Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the DVD drive.
2. Click **Option Drivers** (button).
3. Click **3.Install IRST Driver > Yes**.
4. Click **Next**.
5. Click the check box to accept the license and click Next.
6. Click **Next > Next > Next**.
7. Click **Finish** to restart the computer.

PC Camera

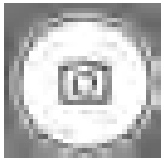
Use the **Fn + F10** key combination (see *"Function Keys & Visual Indicators" on page 1 - 12*) or **Control Center button** to toggle power to the PC Camera module.

When the PC Camera is in use the LED indicator to the left of the camera will be illuminated (see ❷ *Figure 1 - 2 on page 1 - 6*).

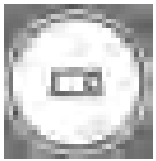
Note that you need to use the **Camera app** in ***Windows*** to take pictures and capture video.

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.



Photo



Video

Figure 6 - 9
Camera App Mode Icons

4. Simply click on the appropriate button to switch to either photo or video modes.
5. You can use the buttons at the top of the screen to access the **Settings** and **Auto/ Pro** menus (for **Self Timer** or **Exposure compensation**).

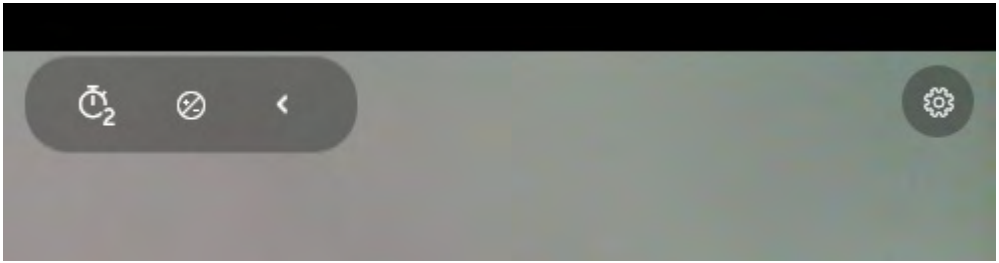


Figure 6 - 10
Camera Menu Buttons

6. Click **Settings** to access the camera settings menu to make adjustments for **Camera press and hold button**, photo **Aspect ratio, Framing grid**, Time lapse, video **recording frame rates** and **Flicker reduction**.

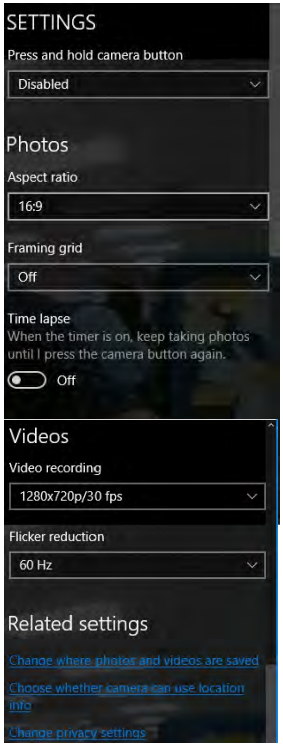


Figure 6 - 11
Camera Settings

Camera Settings

The **Self Timer** can be set to take Photos after **2**, 5 or *10* seconds and can also be set to continue taking pictures until the camera button is pressed again (**Photo Burst**).

The **Aspect Ratio** can be changed to those the system supports.

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

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

The **Video recording** 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. CD, DVD or 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 menu expanded you can access the **Exposure compensation** button to adjust the brightness.

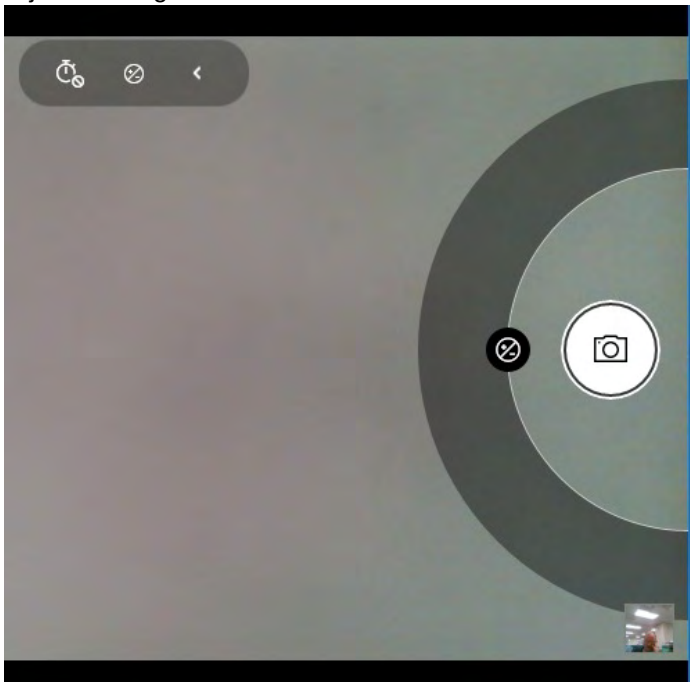


Figure 6 - 12
Camera Brightness Adjustment

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 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).

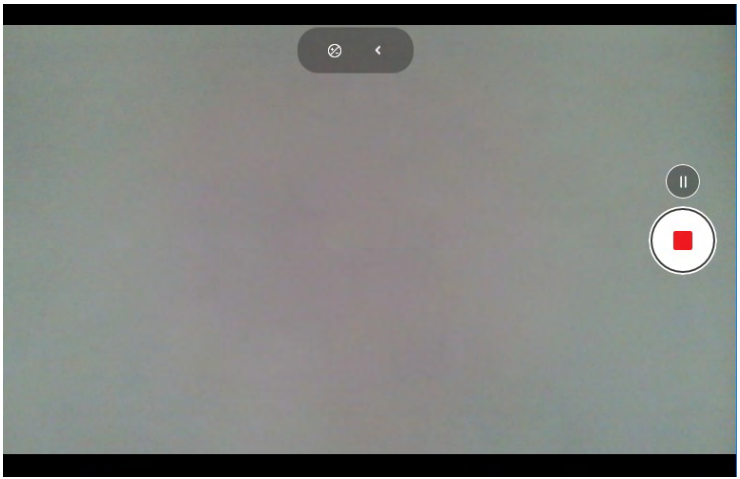


Figure 6 - 13
Video Camera Recording in Process

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.

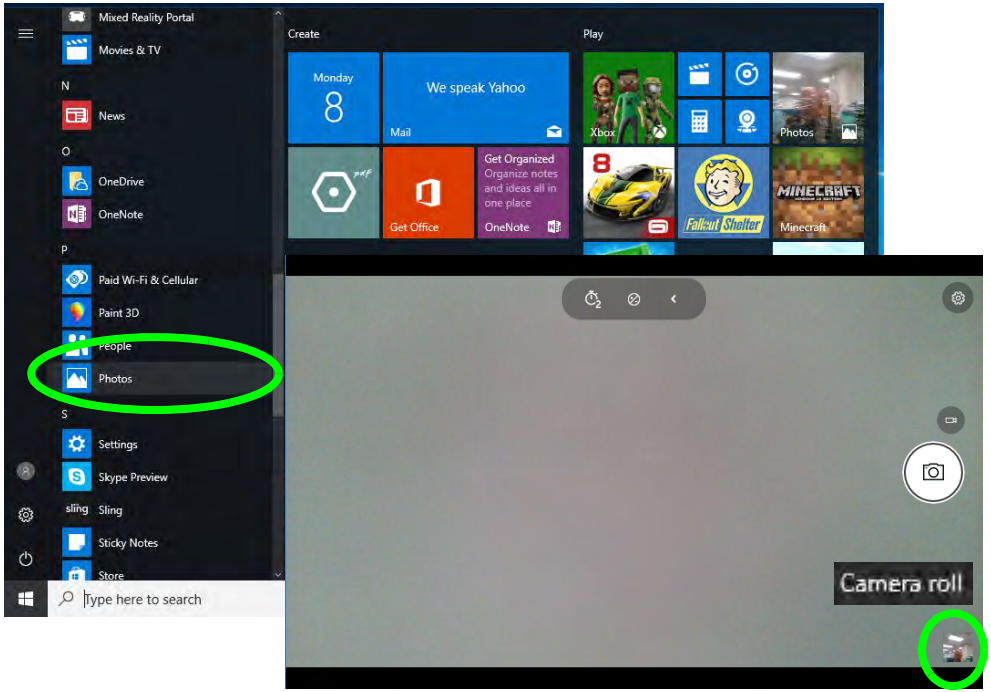


Figure 6 - 14
Photos App (For Captured Photos & Videos) & Camera Roll in the Camera App

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.

Enabling & Managing TPM

1. Restart the computer.
2. Enter the **Aptio Setup Utility** pressing **F2** during the POST/startup.
3. Use the arrow keys to select the **Security** menu.
4. Select **TPM Configuration** and press Enter to access the sub-menu.
5. Press Enter to access the **Security Device Support** menu and select **Enable**.
6. Press **F4** to save the changes and restart the computer.
7. You can now manage the TPM from ***Windows***.

Figure 6 - 15
TPM State (Enable)

Clearing TPM Information

You can select **Pending operation**, and then select **TPM clear** to clear existing TPM information in order to reset the TPM.

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**.

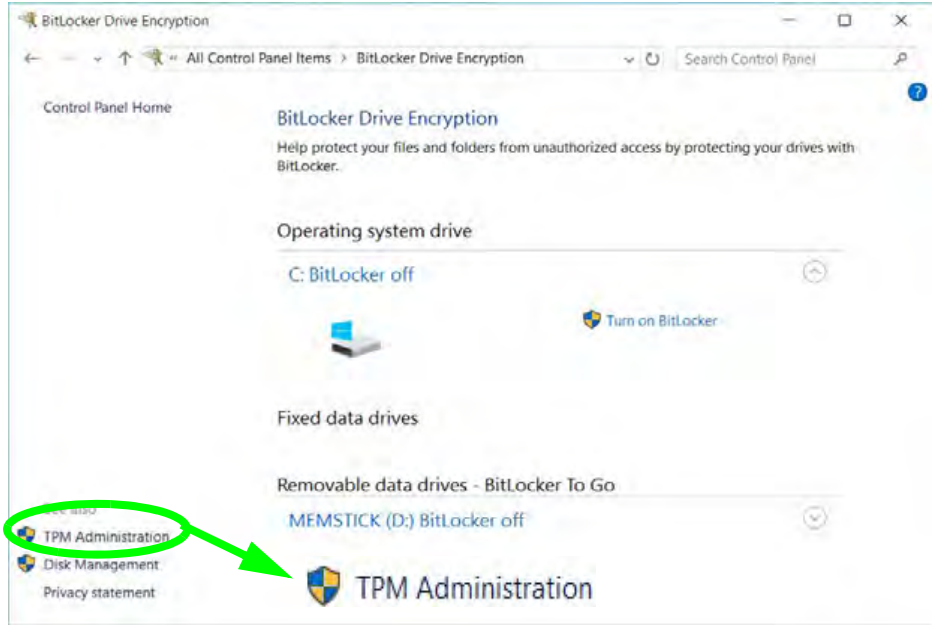


Figure 6 - 16
BitLocker Drive Encryption (TPM Administration)

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.

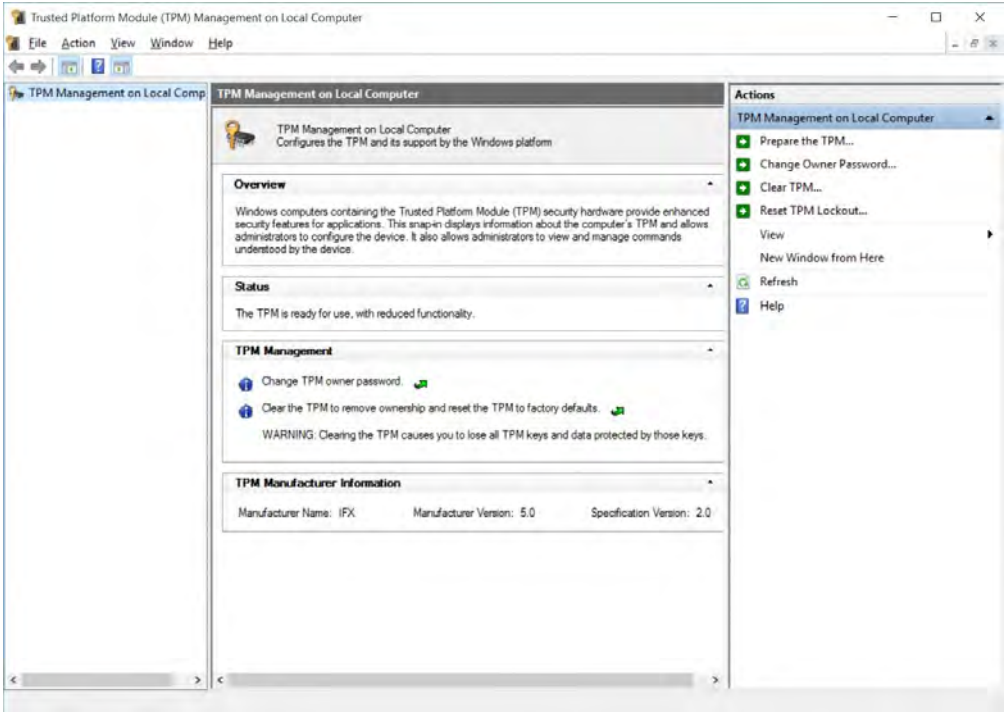


Figure 6 - 17
Trusted Platform Module (TPM) Management on Local Computer Administration

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.

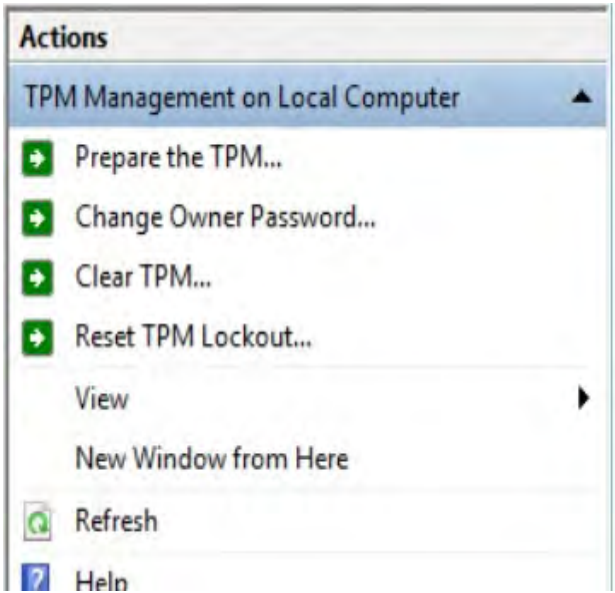


Figure 6 - 18
TPM Actions Menu

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.

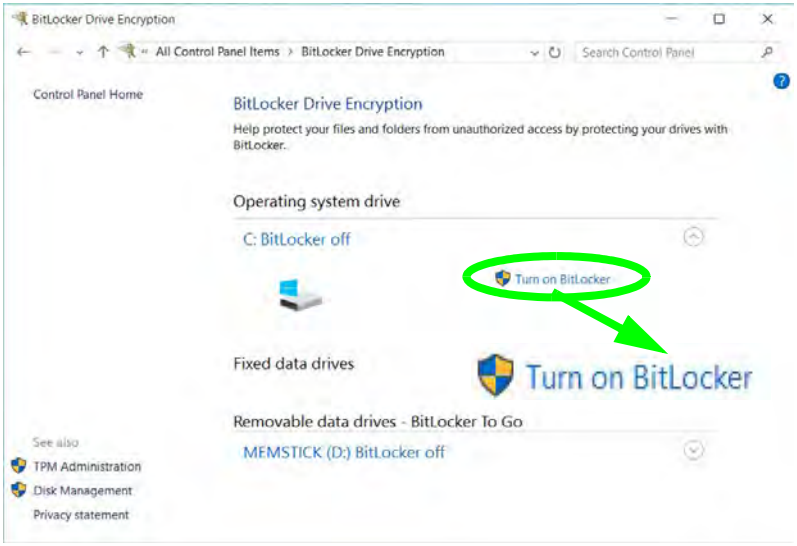


Figure 6 - 19
BitLocker Drive Encryption

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the **WLAN, Bluetooth and 3G/4G module(s) are OFF** (or the system is in **Airplane Mode**) if you are using the computer aboard aircraft (see ***Table 1 - 3, on page 1 - 12***).

3G/4G Module

If you have included an **optional UMTS/HSPA+** based 3G Module (Universal Mobile Telecommunications System or High Speed Packet Access) module or **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 10***. Follow the instructions overleaf to install the USIM card (which will be provided by your service provider), and then **use the Charms Bar Wireless icon to access the 3G/4G network** in the same manner as the WLAN.

Important Notice

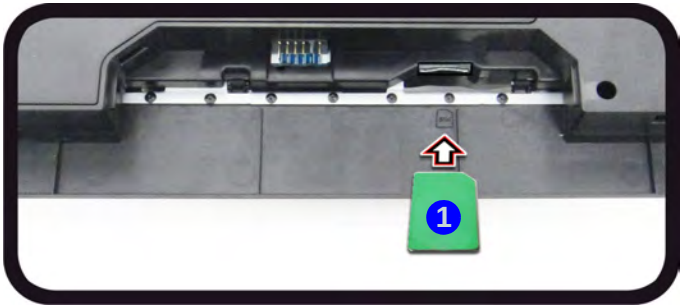
If your purchase option includes both Wireless LAN and 3G/4G modules, then the appropriate antennas will be installed. Note that In order to comply with FCC RF exposure compliance requirements, the antenna must not be co-located or operate in conjunction with any other antenna or transmitter.

Important Notice - 3G/4G & Bluetooth/Wireless LAN Modules

In order to comply with FCC regulations you should NOT operate the 3G/4G module and the Bluetooth/Wireless LAN modules at the same time as this may disrupt radio frequency, and cause interference. When the 3G/4G module is powered on, make sure that the Bluetooth/Wireless LAN modules are powered off.

3G/4G Module USIM Card Installation

Remove the battery (see *"Removing the Battery" on page 1 - 18*) and insert the USIM card 1 as illustrated below (pay careful attention to the orientation of the card as the gold contact side of the card should face downwards) until it clicks fully into position. To eject the card simply press it until it ejects, but do not attempt to eject the card while connected to a 3G/4G network (see below).



USIM Card Ejection

Simply press on the USIM card to eject it, however do not do this while a connection is in progress. If you do eject the card while a 3G/4G connection is ongoing, you will need to shut down the system, re-insert the USIM card, restart the system and then reestablish the 3G/4G connection.

If you wish to change USIM cards then you will need to shut the system down, reinsert the USIM card, restart the system and then reestablish the 3G/4G connection.

USIM Card Orientation

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

Figure 6 - 20
USIM Card Insertion

3G/4G Configuration

You can configure a 3G/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 3G/4G connection as priority**. You can connect to a 3G/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 (the Wi-Fi icon will be grayed out when off).

Figure 6 - 21
Wi-Fi Menu with Wi-Fi On & 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 .

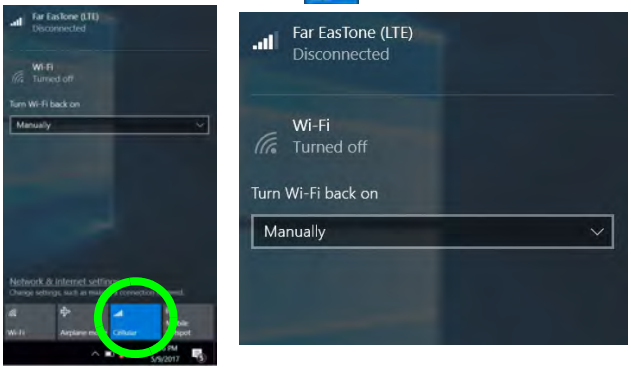
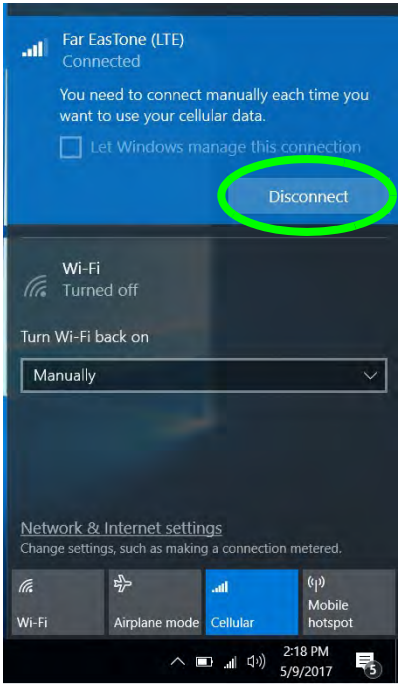


Figure 6 - 22
Cellular Menu (Disconnected)

4. Click **Connect** to connect 

to the cellular network manually.
5. Once connected you can then access the internet, download e-mail etc. as per any internet connection.
6. Click **Disconnect** 

to drop the connection to the cellular network.
7. You will need to turn your Wi-Fi on again after disconnecting.



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 system resumes.

Figure 6 - 23
Cellular Connection

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

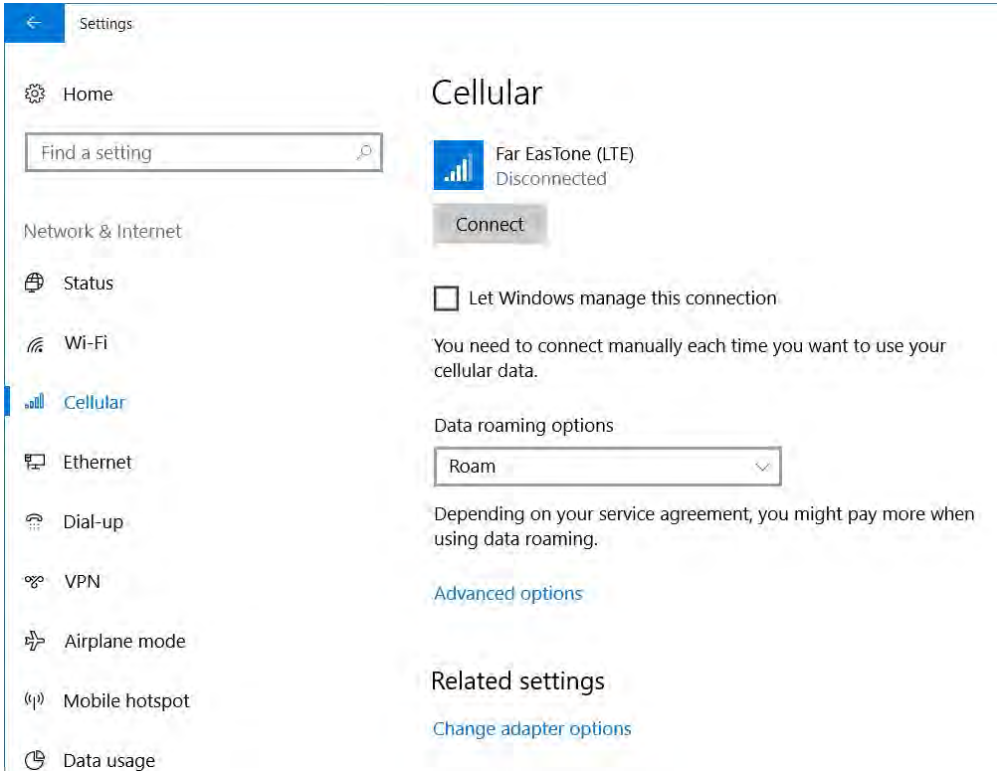


Figure 6 - 24
Network & Internet Settings > Cellular

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

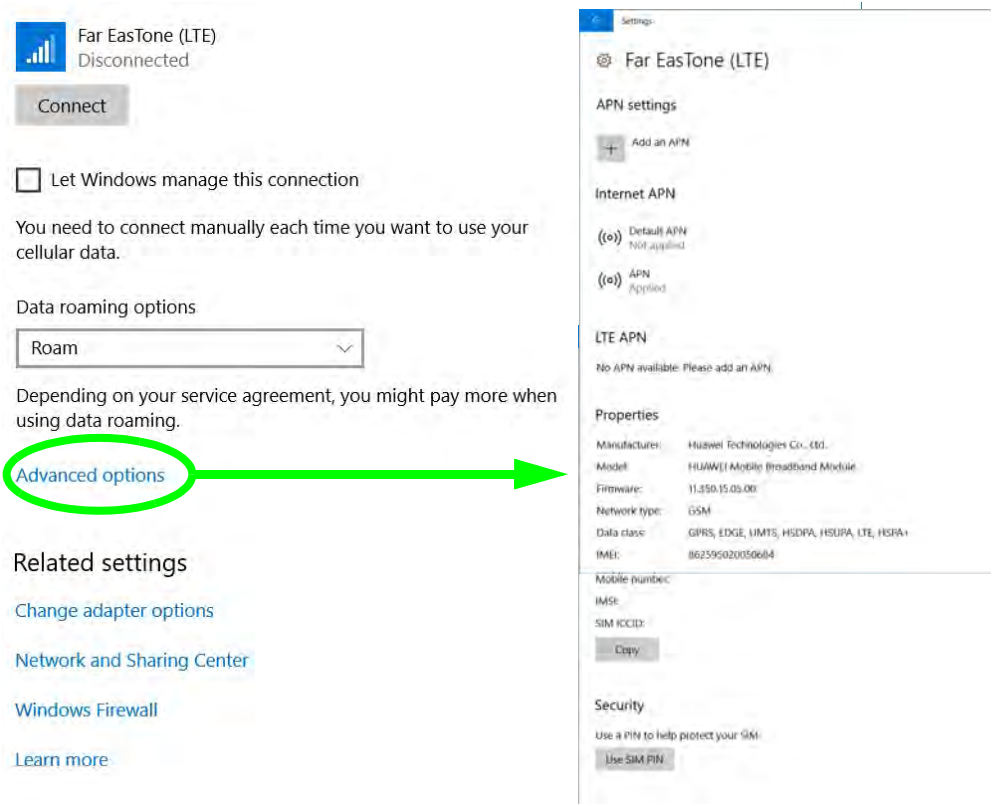


Figure 6 - 25
Cellular > Advanced Options

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 Indicators** (see *"LED Indicators" 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 P*ower Options* (see *"Configuring the Power Buttons" on page 3 - 9*), 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 (see *Table , on page 1 - 12*).
- **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.

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 **Boot** password for the SCU (see *"Security Menu" on page 5 - 11*).

- Keep copies of vital **settings files** such as network, dialup settings, mail settings etc. (even if just brief notes).

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.

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 knowledge.

- 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 as this may violate the terms of your warranty.

- 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
You turned on the **power** but it doesn't work.	*Battery missing / incorrectly installed.* Check the battery bay, make sure the battery is present and seated properly (the design of the battery only allows it to go in one way). Make sure there's nothing interfering with the battery contacts.
The battery **LED power** indicator  , is blinking orange.	*Low Battery.* 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 ***"Battery Information" on page 3 - 17***). *Power Options have been disabled.* Go to the **Control Panel** in *Windows* 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.

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 ***"Overheating" on page 1 - 17***). 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.
The **system will not wake up from a power saving state (Sleep/Hibernate) on network activity** (Wake on LAN) even though **I have plugged in the powered AC/DC adapter**.	*Wake on LAN is supported in AC mode only.* 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.
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.

Problem	Possible Cause - Solution
Nothing appears on screen.	*The system is in a power saving mode*. Toggle the sleep/resume key combination, **Fn + F12** (see ***"Configuring the Power Buttons" on page 3 - 9***). *The screen controls need to be adjusted.* 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. *The computer is set for a different display.* 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**.
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.

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.

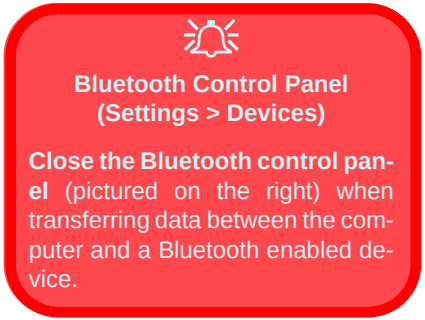
Problem	Possible Cause - Solution
The sound cannot be heard or the **volume is very low**.	*The volume might be set too low.* Check the volume control in the ***Volume Control Panel*** in the *Windows* notification area, or use the key combination **Fn + F5** and **F6** (see ***"Function Keys & Visual Indicators" on page 1 - 12***) to adjust.
Unwelcome numbers appear when typing.	*Num Lock is turned **ON*** (see ***"LED Indicators" on page 1 - 7***).

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.

The **system freezes** or the screen goes dark.	*The system's power saving features have timed-out*. Use the AC/DC adapter, press the sleep (**Fn + F12**) 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 ***Windows*** Power Options menu and enable the features you prefer (see ***"Power-Saving States" on page 3 - 7***). Make sure you have enabled **Hibernate** mode from the control panel.

Problem	Possible Cause - Solution
The **Wireless LAN/Bluetooth** modules cannot be detected.	*The modules are off as the computer is in **Airplane Mode**.* Check the LED indicator ✈ to see if it is in **Airplane Mode** (see ***"LED Indicators" on page 1 - 7***). Use the **Fn + F11** key combination to toggle **Airplane Mode** on/off (see ***Table 1 - 3, on page 1 - 12***).
The **PC Camera** module cannot be detected.	*The module is off.* Press the **Fn + F10** key combination in order to enable the module (see ***"Function Keys & Visual Indicators" on page 1 - 12***). Run the camera application to view the camera picture.
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 ***"Wireless LAN Module" on page 6 - 2*** and/or ***"Bluetooth & WLAN Combo Module" on page 6 - 7***).
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

Problem	Possible Cause - Solution
A file being copied to/from a connected **Bluetooth** device appears to be **transferring very slowly**.	*You may have the **Bluetooth control panel** (Settings > Devices > Bluetooth) **open**.* When transferring data between the computer and a Bluetooth enabled device, **make sure that the Bluetooth control panel is closed**. 
My **internal microphone seems to be disabled** and/or **I can still hear sound from the speakers** even though I have plugged headphones into the headphone jack.	*You have disabled "Front panel jack detection" in Connector Settings in the **Realtek HD Audio Manager** control panel. Go to the Realtek HD Audio Manager and click the **Connector Settings** icon and make sure that there is no tick alongside "Front panel jack detection" and click OK.*
No sound can be heard through an **HDMI** connected display.	*You have not configured the HDMI audio output*. See ***"HDMI Audio Configuration" on page C - 20***.

Problem	Possible Cause - Solution
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**):* 1. Go to the **Devices & Printers** control panel in ***Windows***. 2. Double-click the Bluetooth headset. 3. Click **Connect** to complete the stereo connection. **OR** 1. Go to the **Sound** control panel in ***Windows***. 2. Right-click (in the **Playback** tab) the Bluetooth Stereo Audio device (the default device is **Headset**). 3. Click **Connect** to complete the stereo connection.

Problem	Possible Cause - Solution
I have used **Update Driver** in **Device Manager (Unknown device > Other Devices)** to try and install the **Airplane Mode** driver. ***Windows*** encountered a problem in attempting to update the driver, and a **yellow exclamation mark** appears in **Device Manager** against the **Unknown device.**	*It is very important that the drivers are installed in the order indicated in Chapter 4 (which is the numbered installation order on the Device Drivers & Utilities + User's Manual disc). This issue can occur when drivers are manually installed, and not in the correct order.* If you have attempted to **Update Driver** from the **Device Manager** control panel and have encountered problems, then use the method below to correct this: **To correct this problem:** 4. Go to the **Programs and Features** (**Programs**) control panel in ***Windows***. 5. Select any installed Airplane Mode driver item (e.g. Insyde Airplane Mode HID Mini-Driver), and click **Uninstall/Change** to uninstall the current driver. 6. Restart the computer. 7. Insert the *Device Drivers & Utilities + User's Manual disc* and click **Install Drivers** (button). 8. Double-click the **Airplane Driver** item in the menu. 9. Follow the instructions to install the correct driver (you will need to restart the computer as part of the installation process).

Resolving the “Can’t connect to this network” issue with the 3G/4G Module

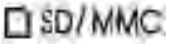
1. If you have issues connecting to the cellular network when you are attempting to use the 3G/4G network then you may need to manually connect to the **Internet access point name (APN)**.
2. Usually the **Internet APN** is set automatically, however if your cellular data connection isn't working, you should try manually entering a new Internet APN based on your location and mobile operator.
3. To find your APN settings contact your mobile operator directly (or of you can connect to a WiFi network on your PC, or have a phone handy, try searching online to find the Internet APN settings for your mobile operator).
4. See http://windows.microsoft.com/en-us/windows-10/cellular-settings or search the Microsoft website for "**Windows 10 cellular settings**".

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

Item	Description
Card Reader Port 	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.
HDMI-Out Port 	The HDMI-Out (**High-Definition Multimedia Interface**) is an audio/video connector interface for transmitting un compressed 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**.
Headphone-Out Jack 	Headphones or speakers may be connected through this jack. **Note**: Set your system's volume to a reduced level before connecting to this jack.
Microphone-In Jack 	Plug an external microphone in to this jack to record on your computer.

Item	Description
RJ-45 LAN Jack 	This port supports LAN (Network) functions. **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.
USB 2.0/1.1 Port  USB 3.0 Ports (USB 3.1 Gen 1 - Type A or C) USB 3.1 Ports (USB 3.1 Gen 2 - Type A or C)  ***Note:*** *The maximum amount of current supplied by USB Type-C ports is 500 mA for USB2.0/900 mA for USB 3.1*	These USB 2.0 compatible ports (USB 2.0 is fully USB 1.1 compliant) 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). USB 3.0 will transfer data much faster than USB 2.0, and is backwards-compatible with USB 2.0. The USB 3.0 ports capable of 5Gbps (SuperSpeed) are classified as USB 3.1 Gen 1. There are two Type A USB 3.1 Gen 1 ports and one Type C USB 3.1 Gen 1 port on this computer model. **Type A** is the larger blue colored port and **Type C** is the smaller sized black colored port. See ***"Right & Left Views" on page 1 - 14***. **Note:** 2 * USB 3.1 (Gen 2 Type A or C) ports (are available as a factory option for this computer model series. USB 3.1 (Gen 2) ports are capable of 10Gbps SuperSpeed+ for a single device, or if two devices are plugged in to both USB 3.1 (Gen 2) ports, this bandwidth will be shared between the ports. The USB 3.1 ports are shared with the USB 3.0 ports in this option. See ***"Right & Left Views" on page 1 - 14***.

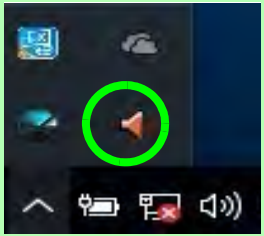
Appendix B: Control Center

Overview

The following chapter will give a quick description of the functions of the **Control Center**. The **Control Center** gives quick access to frequently used controls, power management features and enables you to quickly turn modules on/off. Click the **Control Center** icons to toggle the appropriate function, or hold the mouse button down and move the dial control where applicable. Certain functions will automatically be adjusted when a power mode is selected. The **Control Center** in ***Windows 10*** works under the **Desktop** App and not under the Start screen.

Control Center Access

To run the Control Center press the **Fn + Esc** key combination, or double-click the icon in the notification area of the taskbar.



Close the Control Center by clicking the close icon in the top right of the panel (move the cursor onto the top right corner of the panel to highlight it).

Figure B - 1 **- Control Center**

Power Modes

You can set a **Power Mode** by clicking the appropriate icon at the top of the **Control Center**. Each power mode will affect the Power Conservation Mode, Airplane Mode, Power Plan and PC camera power etc.

You can click a **Control Center** icon to set an overall power mode and then click individual icons in the **Control Center** to power on/off the Touchpad and PC camera.

Modes		Quiet	Power Saving	Performance	Entertainment
Icon					
Power Plan		Balanced	Power Saver	High Performance	Balanced
Power Conservation Mode		Balance	Power Saving	Performance	Balance
PC Camera		ON	OFF	ON	ON
TouchPad		ON	ON	ON	ON
Airplane Mode		OFF	ON	OFF	OFF

Table B - 1- **Power Modes**

Control Center Menus

The Control Center contains 2 menu headings (**System Program** and **Device**) under the Power Modes. Click the menu headings and then click any of the buttons outlined on the following pages.

Figure B - 2 **- Control Center Menus**

Power Status (System Program) 

The **Power Status** icon will show whether you are currently powered by the battery, or by the AC/DC adapter plugged in to a working power outlet. The power status bar will show the current battery charge state.

CPU Temperature (System Program) 

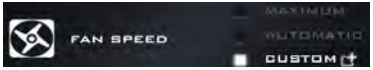
The **temperature** icon will display the current CPU temperature. Click the icon to have the temperature displayed in either degrees Celsius or Fahrenheit.

Brightness (System Program) 

The **Brightness** icon will show the current screen brightness level. You can use the slider to adjust the screen brightness or the **Fn + F8/F9** key combinations, or use the **Fn+ F2** key combination to turn off the LED backlight (press any key to turn it on again).

Volume (System Program) 

The **Volume** icon will show the current volume level. You can use the slider to adjust the Volume or the **Fn + F5/F6** key combinations, or use the **Fn+ F3** key combination to mute the volume.

Fan Speed (System Program) 

You can set the fan speed to **Maximum (full power)**, **Automatic or Custom** 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. Select **Custom** and click on the sliders 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 (see over).

Custom Settings

Click **Save** to retain customized settings, or **Reset** to select default settings.

Power Conservation (System Program)

This system supports **Energy Star** power management features that place computers (CPU, hard drive, etc.) into a low-power sleep modes after a designated period of inactivity (see *"Power Conservation Modes" on page 3 - 12*). Click either the **Performance**, **Balanced** or **Power Saving** button.

Sleep Button (System Program)

Click either the **Hibernate** or **Sleep** buttons to have the computer enter the selected power-saving mode when the **Fn + F4** key combination is pressed (see *"Power-Saving States" on page 3 - 7*).

Display Switch (System Program)

Click the **Display Switch** button to access the menu (or use the + **P** key combination) and select the appropriate attached display mode.

Time Zone (System Program)

Clicking the **Time Zone** button will access the **Date and Time** ***Windows*** control panel.

Desktop Background (System Program)

Clicking the **Desktop Background** button will allow you to change the desktop background picture.

Backlight Keyboard (Device)

Click the numbers under the Backlight Keyboard icon to adjust the brightness of the keyboard backlight LED.

TouchPad/PC Camera (Device)

Click either of these buttons to toggle the TouchPad or camera module's power status. The icon will appear dimmed when it is off. Note that the power status of the camera module is also effected by the **Power Mode** selected (see ***Table B - 1, on page B - 2***).

Caps Lock/Scroll Lock/ Number Lock/Airplane Mode

Click the button to toggle the appropriate lock mode and Airplane Mode.

Appendix C: Video Driver Controls

The basic settings for configuring the LCD are outlined in *"Windows 10 Start Menu" on page 1 - 19*.

Video Driver Installation

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

1. Insert the *Device Drivers & Utilities + User's Manual* disc and click ***Install Drivers*** (button).
2. Click **2.Install VGA Driver > Yes**.
3. Click **Next > Yes > Next > Next**.
4. Click **Finish** to restart the computer.

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

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 installed**). DVMT returns whatever memory is no longer needed to the operating system.

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.

C

Intel® HD Graphics Control Panel

Advanced video configuration options are provided by the **Intel® HD Control Panel**. To access the control panel see below and overleaf:

1. Right-click the **Desktop** and select **Intel(R) Graphics Settings** from the menu.

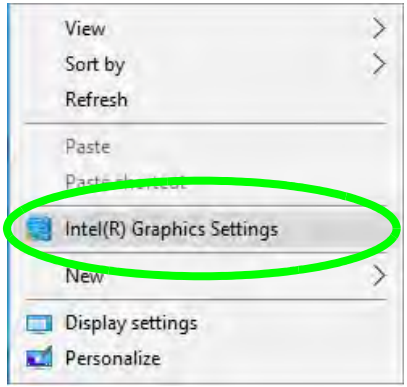


Figure C - 1
Right-Click Desktop (Intel Graphics Settings)

OR

2. Click the icon in the notification area of the Desktop taskbar and select **Intel(R) Graphics Settings** from the menu.

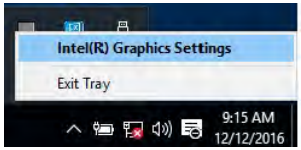


Figure C - 2
Taskbar Notification Area Icon Menu

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OR

3. Double-click the **Intel(R) HD Graphics** control panel in the ***Windows Control Panel***.

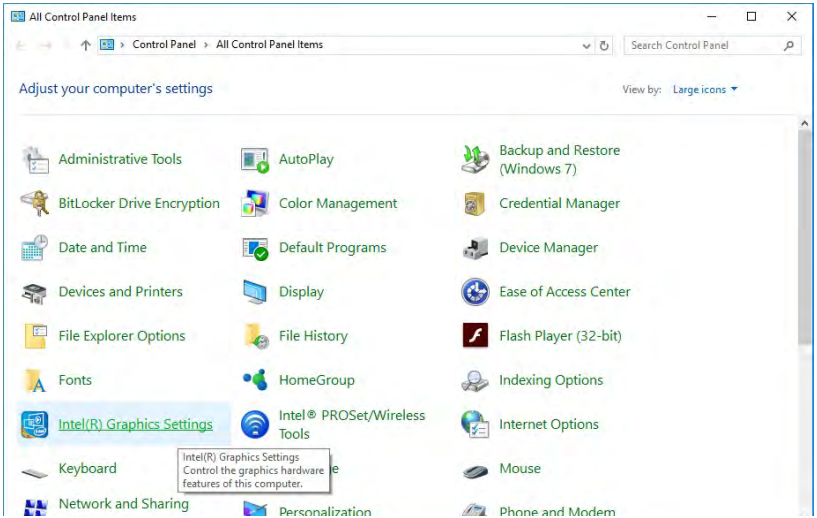


Figure C - 3
Control Panel
Intel® Graphics Settings

Home

Click the Home button to return to the main menu screen in any of the sub-menu screens.

You may make changes to any of the graphics properties by clicking the appropriate menu panel and adjusting the settings from the menus.

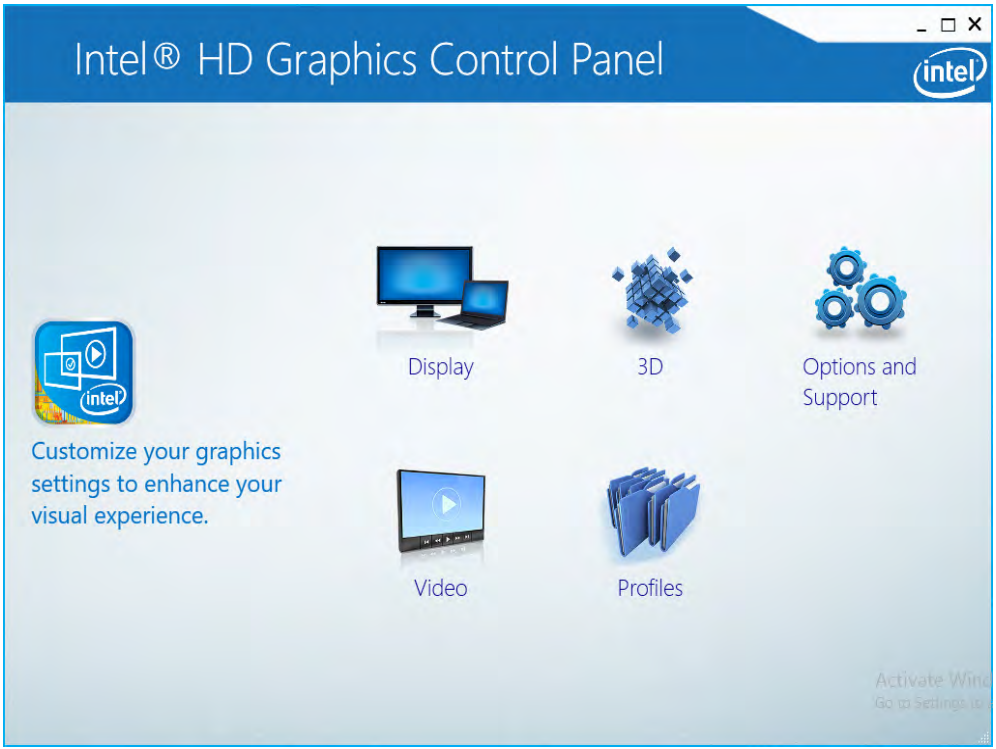


Figure C - 4
Intel® HD Graphics Control Panel

Display

Click either **Display Settings** or **Color Settings** 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 - 5
Intel® HD Graphics Control Panel Display

C

Multiple Display

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.

Click the **Display** menu at the top of the screen to display the sub-menus. The **Multiple Displays** menu allows you to configure the display mode of any attached displays (see *"Attaching Other Displays" on page C - 16*). Click **Apply** to save any changes made.

Figure C - 6
Intel® HD Graphics Control Panel Display - Multiple Displays

The **Custom Resolutions** sub-menu allows you to adjust the display (or any attached display) to any width, height, refresh rate, color depth 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.

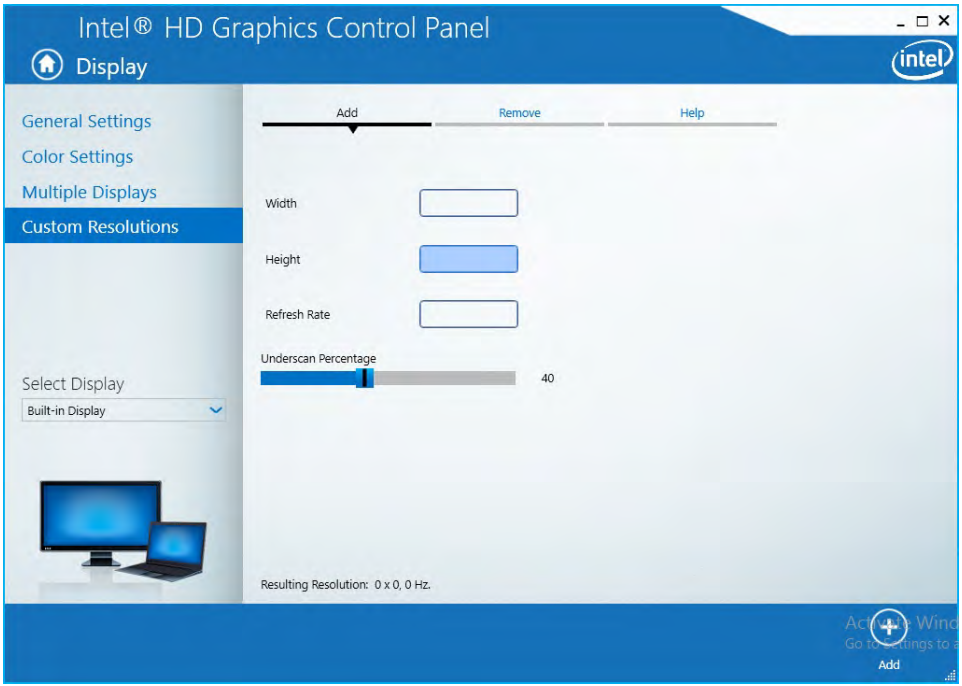


Figure C - 7
Intel® HD Graphics Control Panel Display Settings - Custom Resolutions

C

3D

This menu allows you to choose how 3D images are displayed. **Performance** gives the smoothest motion of images**, Quality** displays the most detail, **Balanced Mode** provides better computer performance with good quality and **Custom** allows you to configure the **Anisotropic Filtering** and **Vertical Sync** and features to your preferences. Click **Apply** to save changes.

Figure C - 8
Intel® HD Graphics Control Panel 3D

C

Options and Support

Hot Key Manager in **Options and Support** allows you to create hot keys for opening the application, rotating the display, scaling etc. Click **Apply** to save changes.

Figure C - 9
Intel® HD Graphics Control Panel Options and Support

C

Preferences

Go to the **Preferences** sub-menu in Options to configure the preferences for the Intel® HD Graphics Control Panel.

Make sure you click **Enable** under **Tray Icon** to display the Intel® HD Graphics Control Panel icon in the notification area of the taskbar (as below).

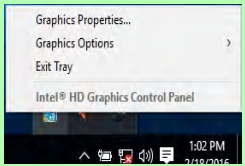
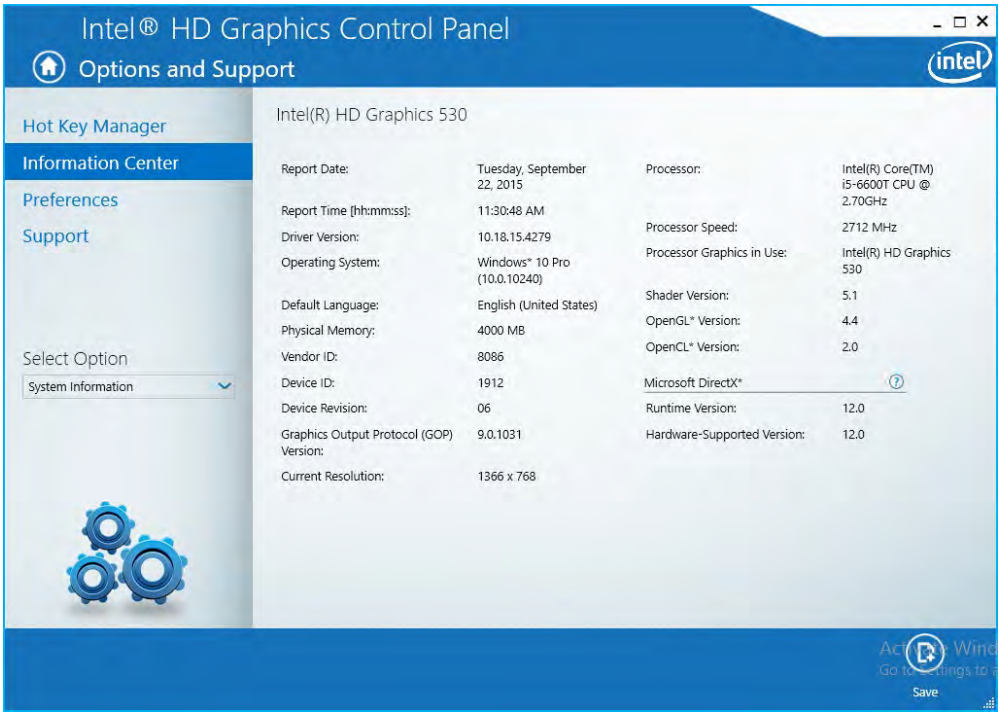


Figure C - 10
Intel® HD Graphics Control Panel Options - Information Center

Click the **Options** menu at the top of the screen to display the sub-menus. The **Information Center** provides details on **System Information**, the **Built-In Display** and any **attached displays**.



Video

The **Video** menu allows you to brighten or darken movies, or to switch to vivid colors. The **Preview** image will display a sample image using the current settings. You can **Save Profile** and name the Profile to recall the settings at any time. Click **Apply** to save changes (select **Color Enhancement**, **Image Enhancement**, **Image Scaling** or **Gamut Mapping** from the menu).

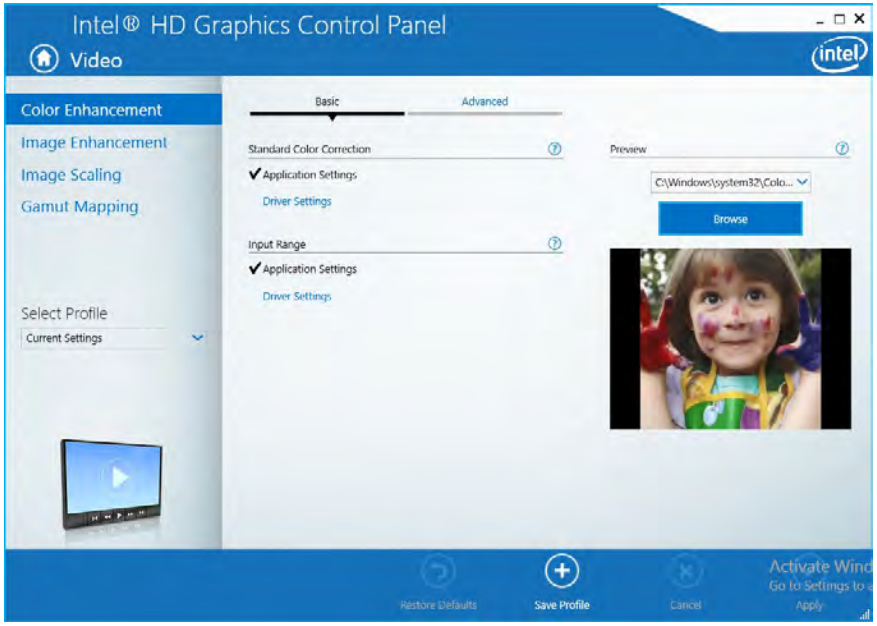
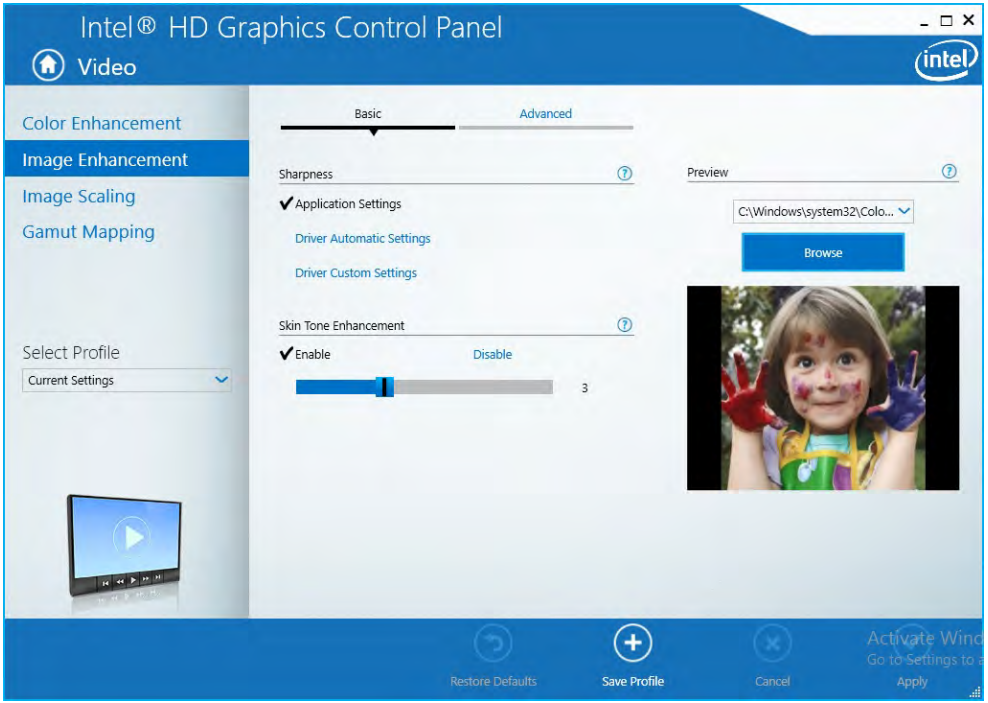


Figure C - 11
Intel® HD Graphics Control Panel - Video (Color Enhancement)

C

Click the **Video** menu at the top of the screen to display the sub-menus.The **Image Enhancement** menu allows you to adjust the **Sharpness**, **Skin Tone Enhancement** in the **Basic** menu, and **Noise Reduction, Contrast Enhancement** and **Film Mode Detection** in the Advanced menu. Click **Apply** to save changes.

Figure C - 12
Intel® HD Graphics Control Panel - Video (Image Enhancement Basic)



Enable **Image Scaling** to use the sliders to adjust the scaling.

Figure C - 13
Intel® HD Graphics Control Panel Video Image Scaling

Profiles

You can select one of the preset profiles (**Brighten Video**, **Darken Video** and **Enhance Video Colors**) from the menu on the left. Alternatively you can go through the menus to make adjustments to your preferences for **Display**, **Color**, **Video**, **3D**, **Options and Support** and **Power** (tick any boxes for the settings required), and then **Save** the settings to a profile (which may be imported or exported).

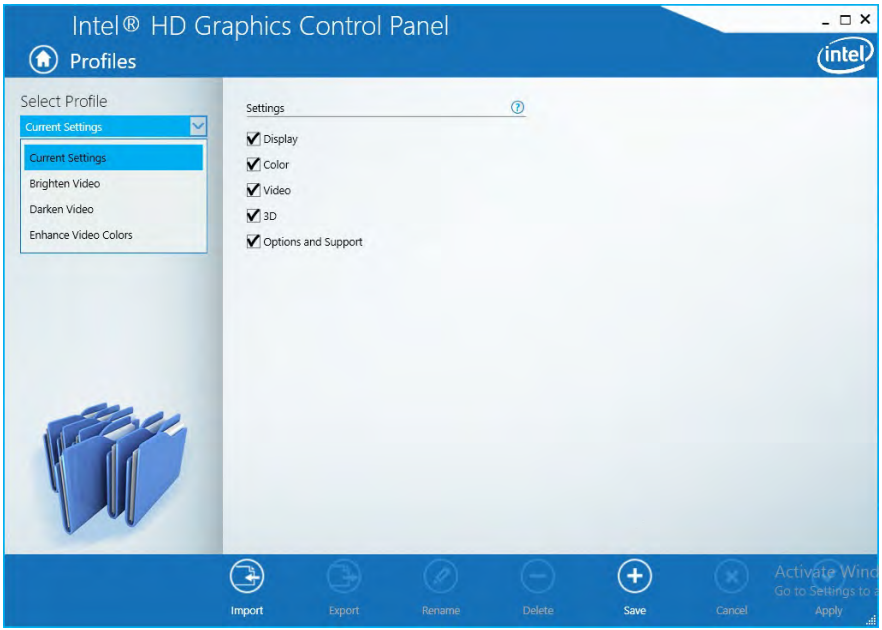


Figure C - 14
Intel® HD Graphics Control Panel - Profiles

Display Devices & Options

Note that you can use external displays connected to the HDMI-Out port and/or external monitor port. See your display device manual to see which formats are supported.

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) HD Graphics Control Panel to configure the full screen display.

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

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

Multiple Display

At least one other display must be attached in order to view **Multiple Display** selection options.

Attaching Other Displays

To Clone Displays:

1. Attach your external display to the HDMI-Out port/external monitor port, and turn it on.
2. Go to the **Intel(R) HD Graphics Control Panel** control panel and click **Display > Multiple Displays** (sub-menu).
3. Click **Clone** from the **Select Display Mode** menu.
4. Click **Apply**, and **OK** to confirm the settings change.
5. Select the displays from the **Select One or More Active Displays** menu.

Figure C - 15
Display > Multiple Displays (Clone)

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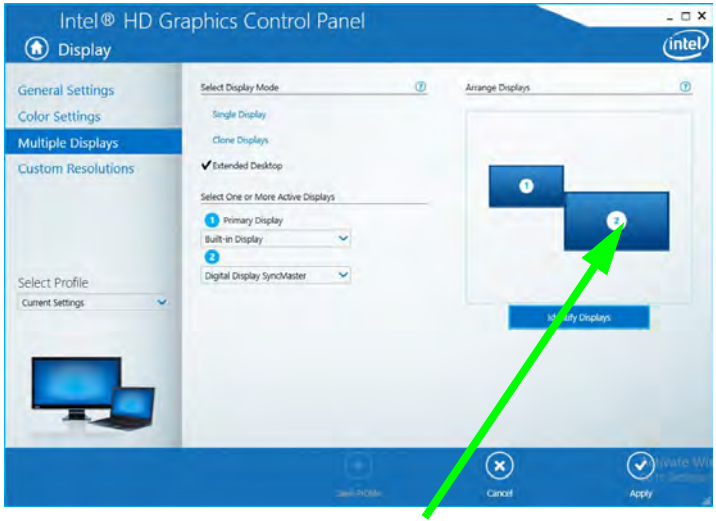
To Enable Extended Mode:

1. Attach your external display to the HDMI-Out port/external monitor port, and turn it on.
2. Go to the **Intel(R) HD Graphics Control Panel** control panel and click **Display > Multiple Displays** (sub-menu).
3. Click **Extended** from the **Select Display Mode** menu.
4. Click **Apply**, and **OK** to confirm the settings change.



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).

Display Settings Extended Desktop

You can have different Colors, Screen Area and Monitor Refresh Rates for each display device **provided your monitor can support them**.

You can drag the monitor icons to match the physical layout of your displays. Icons and programs may also be dragged between the displays.

Figure C - 16
Display > Multiple Displays (Extended)

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Configure Other Displays Using Project

You can configure attached displays from **Project**.

1. Attach your display to the appropriate 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.

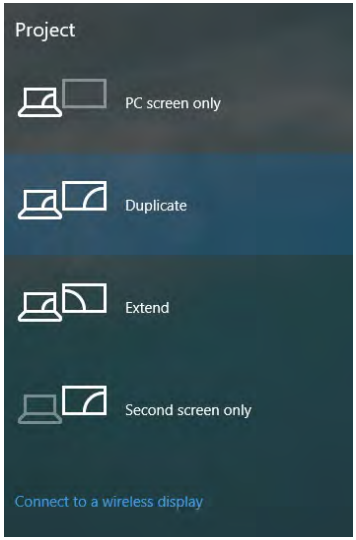

Figure C - 17
Project

Configuring an External Display In Windows

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

1. Attach your external display to the appropriate port, and turn it on.
2. Click the Start Menu and click **Settings > System** (or right-click the desktop and select **Display Settings**).
3. You can change Duplicate, Extend or choose to display on 1 screen only.
4. Click **Apply** to save any changes made.
5. Click **Advanced display settings** to access further options.

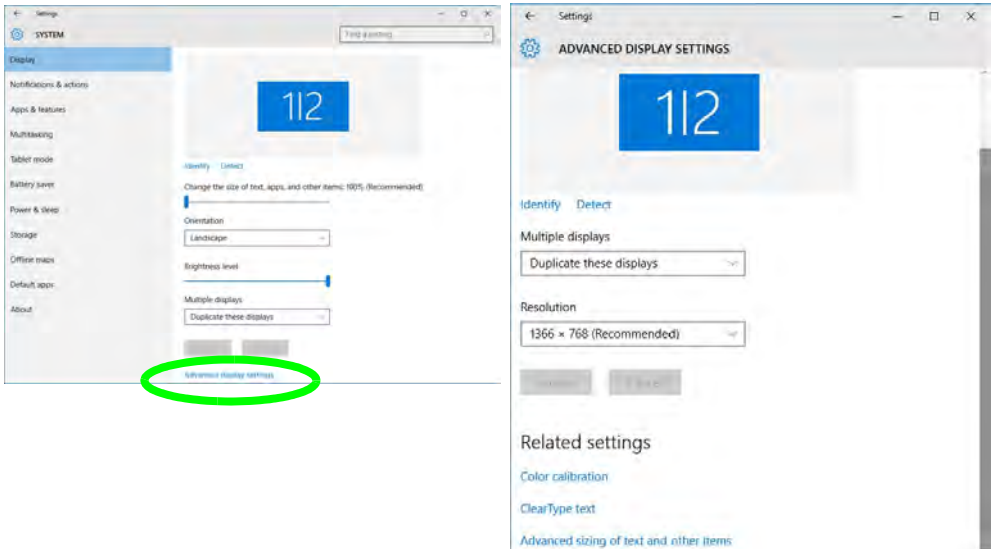

Figure C - 18
System > Display

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Volume Adjustment

The sound volume level can be clicking using the volume control icon in the ***notification area of the taskbar***.

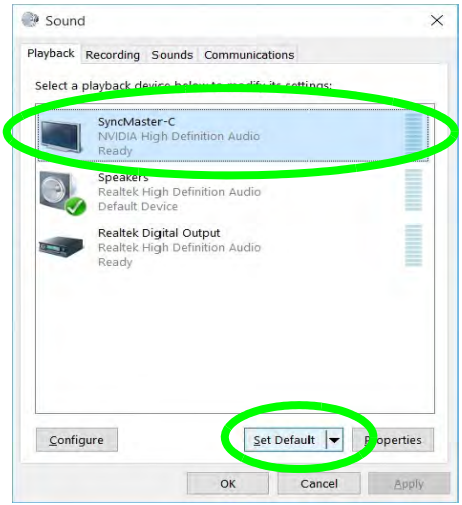
Figure C - 19

Sound - HDMI Device (set Default)

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.



C

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

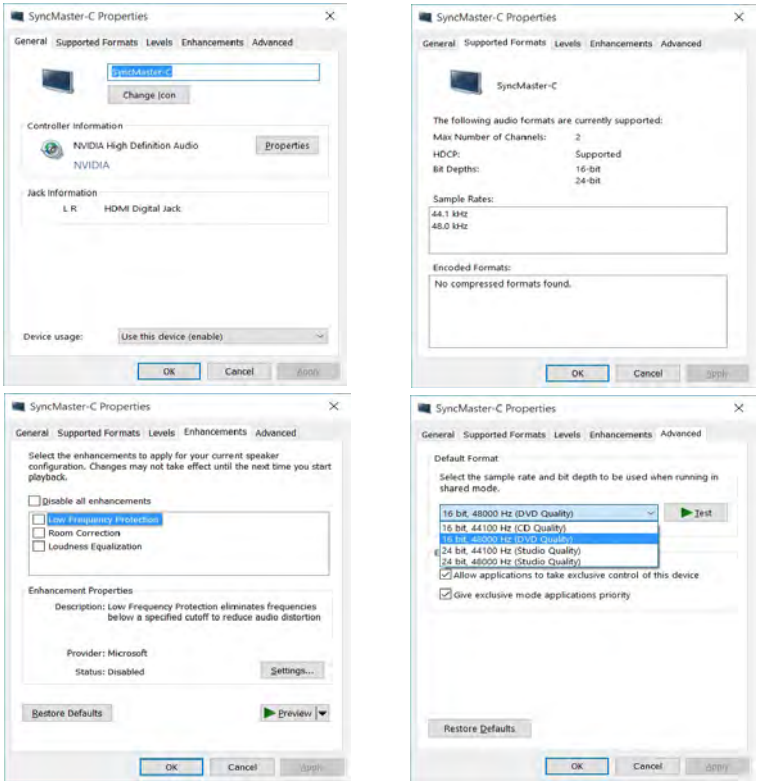


Figure C - 20
HDMI Device Properties

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Other Applications

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).

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 - 16***.
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.

Wireless Display

Wireless Display uses your Wireless LAN module/WLAN Bluetooth Combo module **(you need to make sure that your video adapter/display device is compatible with your particular WLAN/Combo module)** in conjunction with a **compatible video adapter/display device** (purchased separately) to allow you to display the contents of the notebook display on another display (e.g. HDTV), without the need to have cables stretching across a room.

You can use the wireless display to play games, browse the internet, display videos or photo slide shows on your TV/external display without using HDMI or A/V cables.

Before configuring **Wireless Display** you will need to set up your **compatible adapter** with your display/speakers. Connect the adapter using an HDMI or A/V cable and turn on the display (or in the case of speakers connect them to the wireless speaker adapter with the cables provided with the adapter), and then set the display to the appropriate input channel (see the documentation supplied with your **compatible adapter/display** for full details).

Note that no driver or application is required for wireless display in ***Windows 10***.

Compatible Adapters

For a list of compatible adapters check the video adapter/display device documentation, or with your distributor/supplier.

C

Wireless Display Configuration

1. Note that no driver or application is required for wireless display in ***Windows 10***.
2. 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.

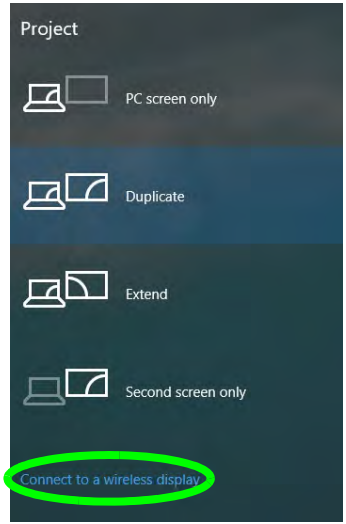

Figure C - 21
Add a Wireless Display

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.

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.
9. 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**.

Appendix D: Specifications

Latest Specification Information

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.**

Core Logic

Mobile Intel® H170 Express Chipset

Display

15.6" (39.62cm) FHD (1920 * 1080) / HD (1366 * 768), 3.8 mm, 16:9 Backlit Panel

Memory

Dual Channel **DDR4**
Two 260 Pin SO-DIMM Sockets Supporting **DDR4 2133** MHz Memory Modules (*real operational frequency depends on the FSB of the processor*)
Memory Expandable up to **32GB** (maximum), Compatible with 4GB/8GB/16GB Modules

Storage

One Changeable 2.5" 7mm(h) Hard Disk Drives (HDD) / Solid State Drives (SSD) with SATA Interface

One M.2 2280 SSD with SATA Interface (**Factory Option**)
OR
One M.2 2280 SSD with PCIe Gen x3/x4 Interface (**Factory Option**)

One Changeable Super Multi 9.5 mm (h) Optical Device Drive (ODD) with SATA Interface

One Changeable Caddy Bay for 9.5 mm (h) Optical Device Drive (ODD), 2.5"
7 mm (h) HDD / SSD with SATA Interface (**Factory Option**)

Audio

High Definition Audio
S/PDIF Digital Output
Built-In Microphone
Built-In Array Microphone (**Factory Option**)
2 Built-In 2W Speakers

Keyboard & Pointing Device

Full Size Keyboard with Numeric Pad

Full Size White LED Illuminated Keyboard with Numeric Pad (**Factory Option**)

Built-In TouchPad (with Multi Gesture & Scrolling Functionality)

Interface

Two USB 2.0 Ports
Two USB 3.0 (USB 3.1 Gen 1) Ports (Type-A)
One USB 3.0 (USB 3.1 Gen 1) Port (Type-C)
==========
***Note:** The maximum amount of current supplied by USB Type-C ports is 500 mA for USB2.0/900 mA for USB 3.1
==========
One HDMI™ (High-Definition Multimedia Interface) Out Port (with HDCP)
One External Monitor Port
One S/PDIF Coaxial Out Jack
One Headphone/Speaker-Out Jack
One Microphone-In Jack
One RJ-45 LAN Jack
One DC-In Jack
One USB 3.1 (Gen 2 - Type A) Port &
One USB 3.1 (Gen 2 - Type C) Port
(**Factory Option** shared with USB 3.0 ports) - *2 * USB 3.1 Gen 2 Ports with 10Gb Shared Bandwidth*

Card Reader

Embedded Multi-In-1 Push-Push Card Reader
- MMC / RSMMC
- SD / Mini SD / SDHC / SDXC

Card Reader Note: Some of the cards require PC adapters that are usually supplied with the cards.

Slots

Three M.2 Slots:

==========

Slot 1: for M.2 2230 **WLAN Combo Module** Card with USB Interface (A Key)

Slot 2: for M.2 2280 **SSD** Card with SATA/ PCIe Gen x3/x4 Interface (M Key)

Slot 3: for LTE or UTMS/HSPA+ M.2 3042 **3G or 4G Module** Card with USB Interface (B Key) - (**Factory Option**)

Communication

Built-In 10/100/1000Mb Base-TX Ethernet LAN

1.0M / 2.0M FHD PC Video Camera Module

Intel® Dual Band Wireless-AC 8260 (2*2 802.11 a/c) M.2 WLAN + Bluetooth Combo M.2 2230 Module (**Factory Option**)

Intel® Dual Band Wireless-N 7265 (2*2 802.11 b/g/n) M.2 WLAN + Bluetooth Combo M.2 2230 Module (**Factory Option**)

Intel® Dual Band Wireless-AC 3165 (1*1 802.11 ac) WLAN + Bluetooth Combo M.2 2230 Module (**Factory Option**)

3rd Party Combo WLAN (802.11b/g/n) **and Bluetooth v4.0+LE** Combo M.2 2230 Module (**Factory Option**)

3G UTMS/HSPA+ M.2 3042 Card Module with USB Interface (**Factory Option**)
4G LTE M.2 3042 Card Module with USB Interface (**Factory Option**)

Operating System

Windows® 10 (64-bit) - UEFI Only

Features

Painted Style
FlexiCharger

Indicators

LED Indicators - Power/Suspend, Battery, HDD/ODD, Airplane Mode, Camera

Security

Security (Kensington® Type) Lock Slot
BIOS Password
Intel® PTT for Systems without TPM
Trusted Platform Module 2.0 (**Factory Option**)

BIOS

One 64Mb SPI Flash ROM
AMI BIOS

Power Management

Supports Wake on LAN (AC Mode Only)
Supports Wake on USB
Supports Wake on RTC Alarm (AC Mode Only)

Power

Full Range AC/DC Adapter – AC in 100 - 240V, 50 - 60Hz DC Output 19V, 4.74A (**90 Watts**)

Removable 6 Cell Smart Lithium-Ion Battery Pack 62.16WH (**Factory Option**)
Removable 6 Cell Smart Lithium-Ion Battery Pack 48.84WH (**Factory Option**)
Environmental Spec
Temperature Operating: 5°C - 35°C Non-Operating: -20°C - 60°C Relative Humidity Operating: 20% - 80% Non-Operating: 10% - 90%
Physical Dimensions & Weight
379mm (w) * 263.4mm (d) * 32.5mm(h) 2.63kg *Barebone System with 48.84WH Battery **A barebone system does not include the HDD, RAM, adapter, power cord and factory option modules (weight tolerance within +/- 5%).*