



# **ST102-SD**

## **Desktop Box PC**

### **User's Manual**

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## Trademarks

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## FCC and DOC Statement on Class A

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

### Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables must be used in order to comply with the emission limits.

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## About this Manual

An electronic file of this manual can be obtained from the DFI website at [www.dfi.com](http://www.dfi.com). To download the user's manual from our website, please go to Support > Download Center. On the Download Center page, select your product or type the model name and click "Search" to find all technical documents including the user's manual for a specific product.

## Warranty

1. Warranty does not cover damages or failures that arised from misuse of the product, inability to use the product, unauthorized replacement or alteration of components and product specifications.
2. The warranty is void if the product has been subjected to physical abuse, improper installation, modification, accidents or unauthorized repair of the product.
3. Unless otherwise instructed in this user's manual, the user may not, under any circumstances, attempt to perform service, adjustments or repairs on the product, whether in or out of warranty. It must be returned to the purchase point, factory or authorized service agency for all such work.
4. We will not be liable for any indirect, special, incidental or consequential damages to the product that has been modified or altered.

## Static Electricity Precautions

It is quite easy to inadvertently damage your PC, system board, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build-up.

1. To prevent electrostatic build-up, leave the system board in its anti-static bag until you are ready to install it.
2. Wear an antistatic wrist strap.
3. Do all preparation work on a static-free surface.
4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.
5. Avoid touching the pins or contacts on all modules and connectors. Hold modules or connectors by their ends.



### Important:

Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

## Safety Measures

To avoid damage to the system:

- Use the correct AC input voltage range.

To reduce the risk of electric shock:

- Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

Battery:

- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.

## Safety Precautions

- Use the correct DC input voltage range.
- Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.
- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.
- Keep this system away from humidity.
- Place the system on a stable surface. Dropping it or letting it fall may cause damage.
- The openings on the system are for air ventilation to protect the system from overheating. **DO NOT COVER THE OPENINGS.**
- Place the power cord in such a way that it will not be stepped on. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the system and that it matches the voltage and current marked on the system's electrical range label.
- If the system will not be used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
- If one of the following occurs, consult a service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated the system.
  - The system has been exposed to moisture.
  - The system is not working properly.
  - The system dropped or is damaged.
  - The system has obvious signs of breakage.
- The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace the outlet.
- Disconnect the system from the DC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.

## About the Package

The package contains the following items. If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

- 1 ST102-SD system unit
- 1 HDD drive bay kit
- 1 Quick Installation Guide

## Optional Items

- Power Cord (DC output 12V, 100W)
- Slim optical disc drive (ODD)
- 1 CD disk includes
  - Manual
  - Drivers

The board and accessories in the package may not come similar to the information listed above. This may differ in accordance to the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.

## Before Using the System

Before powering-on the system, prepare the basic system components.

If you are installing the system board in a new system, you will need at least the following internal components.

- Memory module
- Storage devices such as hard disk drive, CD-ROM, etc.

You will also need external system peripherals you intend to use which will normally include at least a keyboard, a mouse and a video display monitor.

## Chapter 1 - Introduction

### Overview



Front View



Rear View

### Key Features

Model Name	ST102-SD
Processor	6th/7th Generation Intel® Core™ i7/i5/i3 processors
LAN	2 LAN ports
Displays	1 DP/HDMI (DP available upon request), 1 DVI-D (DVI-I connector)
USB	2 USB 2.0 ports (front) 4 USB 3.0 ports (rear)
Audio	Mic-in, Line-out

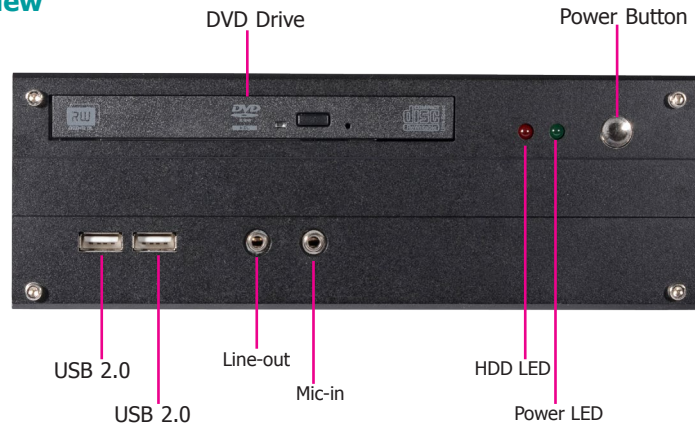
## Specifications

<b>Processor System</b>	<ul style="list-style-type: none"> <li>Processor:            6th/7th Generation Intel® Core™ Processors, LGA 1151 Socket            Intel® Core™ i7-7700T, Quad Core, 8M Cache, 2.9GHz (3.8GHz), 35W            Intel® Core™ i5-7500T, Quad Core, 6M Cache, 2.7GHz (3.3GHz), 35W            Intel® Core™ i3-7101T, Dual Core, 3M Cache, 3.4GHz, 35W            Intel® Celeron® Processor G3930TE, Dual Core, 2M Cache, 2.7GHz, 35W            Intel® Core™ i7-6700TE, Quad Core, 8M Cache, 2.4GHz (3.4GHz), 35W            Intel® Core™ i5-6500TE, Quad Core, 6M Cache, 2.3GHz (3.3GHz), 35W            Intel® Core™ i3-6100TE, Dual Core, 4M Cache, 2.7GHz, 35W            Intel® Pentium® G4400TE, Dual Core, 3M Cache, 2.4GHz, 35W            Intel® Celeron® Processor G3900TE, Dual Core, 2M Cache, 2.6GHz, 35W         </li> <li>Chipset:            Intel® H110 Express chipset         </li> </ul>
<b>Memory</b>	<ul style="list-style-type: none"> <li>2 x 260-pin SODIMM (Dual Channel DDR4 1866/2133/2400MHz)</li> </ul>
<b>Graphics</b>	<ul style="list-style-type: none"> <li>Intel® HD Gen 9 Graphics</li> <li>OpenGL 5.0, DirectX 12, OpenCL 2.1            HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9            HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9         </li> <li>Displays:            1 x DVI-D (DVI-I connector, resolution up to 1920x1200 @ 60Hz)            1x HDMI (resolution up to 2560x1600 @ 60Hz or 4096x2160 @ 24Hz)            or DP (resolution up to 4096x2304 @ 60Hz)         </li> <li>Dual Display: DVI-D + DP/HDMI</li> </ul>
<b>Storage</b>	1 x 2.5" SATA 3.0 Drive Bay 1 x slim ODD Bay (optional)
<b>Ethernet</b>	1 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I219V PCIe with iAMT11.0 (10/100/1000Mbps)
<b>Audio</b>	Realtek ALC888
<b>Power</b>	<ul style="list-style-type: none"> <li>Power type            - DC-in External Power Adapter: DC output 12V 100W, Level 6         </li> </ul>
<b>Cooling System</b>	1 x System Fan 1 x CPU Fan

<b>I/O Ports</b>	<ul style="list-style-type: none"> <li>Front Panel           <ul style="list-style-type: none"> <li>1 Power button</li> <li>2 x USB 2.0</li> <li>2 LED indicators: Power, HDD</li> <li>Mic-in and line-out jack</li> </ul> </li> <li>Rear Panel           <ul style="list-style-type: none"> <li>2 x GbE (RJ-45)</li> <li>4 x USB 3.0</li> <li>1 x DVI-D (DVI-I connector)</li> <li>1 x DP (or optional HDMI)</li> <li>DC-in Jack</li> </ul> </li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>Temperature           <ul style="list-style-type: none"> <li>Operating: 0°C~40°C</li> <li>Storage: -20°C~70°C</li> </ul> </li> <li>Humidity           <ul style="list-style-type: none"> <li>10 to 85% RH (non-condensing)</li> </ul> </li> </ul>
<b>Construction</b>	<ul style="list-style-type: none"> <li>Metal chassis + Aluminum front bezel</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>219mm x 77.15mm x 229.7mm (W x H x D)</li> </ul>
<b>Mounting</b>	Desktop/wall mount
<b>Weight</b>	TBD
<b>OS Support</b>	Windows 10 IoT Enterprise 64bit
<b>STANDARDS AND CERTIFICATIONS</b>	<ul style="list-style-type: none"> <li>Shock           <ul style="list-style-type: none"> <li>Operating: 3G</li> <li>Non-operating: 5G</li> </ul> </li> <li>Vibration           <ul style="list-style-type: none"> <li>Operating: Random 5~500Hz 1G</li> <li>Non-operating: Sweep Sine 10~500Hz 1.5G</li> </ul> </li> <li>Package Drop           <ul style="list-style-type: none"> <li>ISTA Project 1A</li> </ul> </li> <li>CE/FCC/VCCI</li> </ul>
<b>Other Features</b>	<ul style="list-style-type: none"> <li>Watchdog Timer function; System Reset, programmable via software from 1 to 255 Seconds</li> </ul>

## Getting to Know the ST102-SD

### Front View



#### DVD RW Drive

A Slim Optical Disc Drive (ODD) for reading a disc.

#### Power Button<sup>(1)</sup>

Press to power on or power off the system.

#### Line-out

Connects a speaker.

#### Mic-in

Connects an external microphone.

#### USB Ports (2.0)

Connect USB 2.0/1.1 devices. They comply with USB 2.0 which supports data transmission rate up to 480 Mbit/s.

#### HDD LED (flashing red)

Indicates the status of the hard drive.

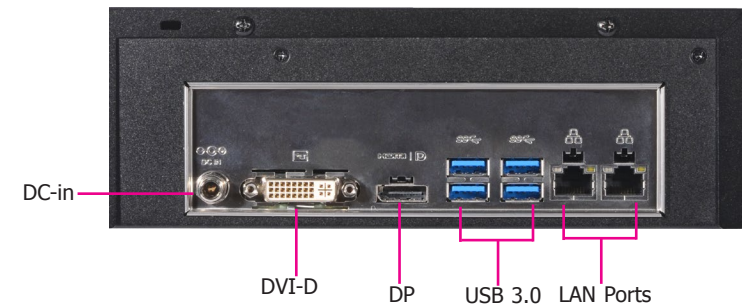
HDD LED		
HDD State	Disk access activity	HDD present or HDD not present
LED Behavior	Blink	Off

#### Power LED (solid green)

Indicates the power status of the system.

Power LED			
Power Mode	power-on	Sleep	power-off
LED Behavior	Always ON	Blink	Off

### Rear View



#### DC-in Jack

Connects a DC-in power adapter. Please note the acceptable power range: 12V.

#### DVI-D Port (DVI-I connector)

Connects to the DVI-D connector of an LCD monitor.

#### HDMI Port<sup>(2)</sup>

Connects to the HDMI port of an LCD monitor.

#### USB Ports (3.0)

Connect USB 3.0/2.0/1.1 devices. They comply with USB 3.0 which supports data transmission rate up to 5 Gbits.

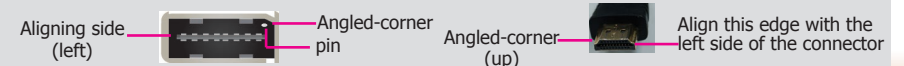
#### LAN Ports

Connect the system to a local area network.



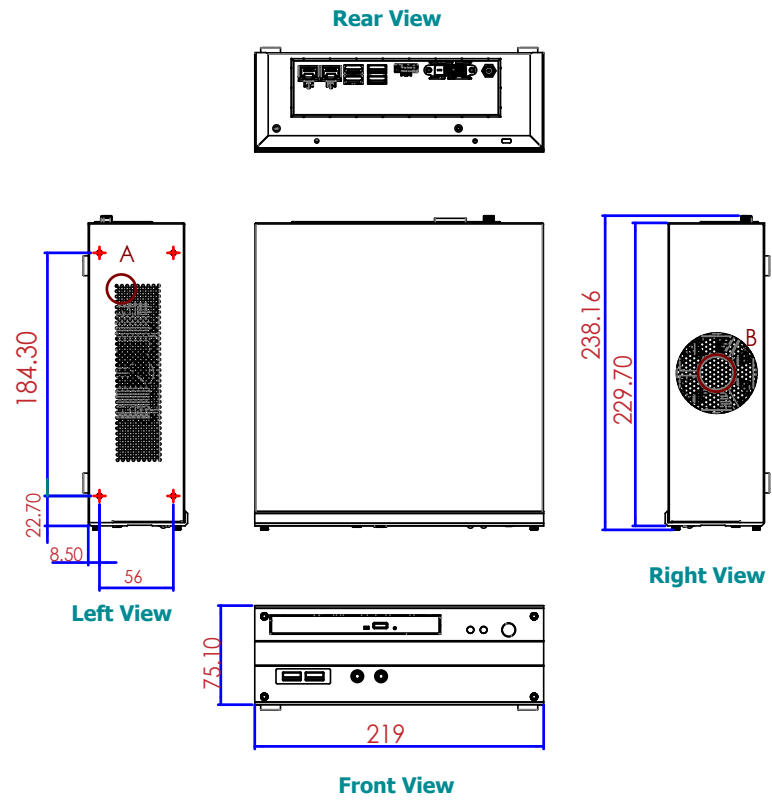
#### Notes:

1. Please gently press the power button to avoid possible damages.
2. The HDMI is a DP/HDMI combo port but can only transmit HDMI signals (unless wired as a DP port). Please plug in an HDMI cable with the right orientation and alignment to avoid damage to the connector. You should feel resistance (due to a pin on the right) if the cable is not inserted correctly. Please see a video at <https://youtu.be/SUj07rFN5i8> for detailed instructions.

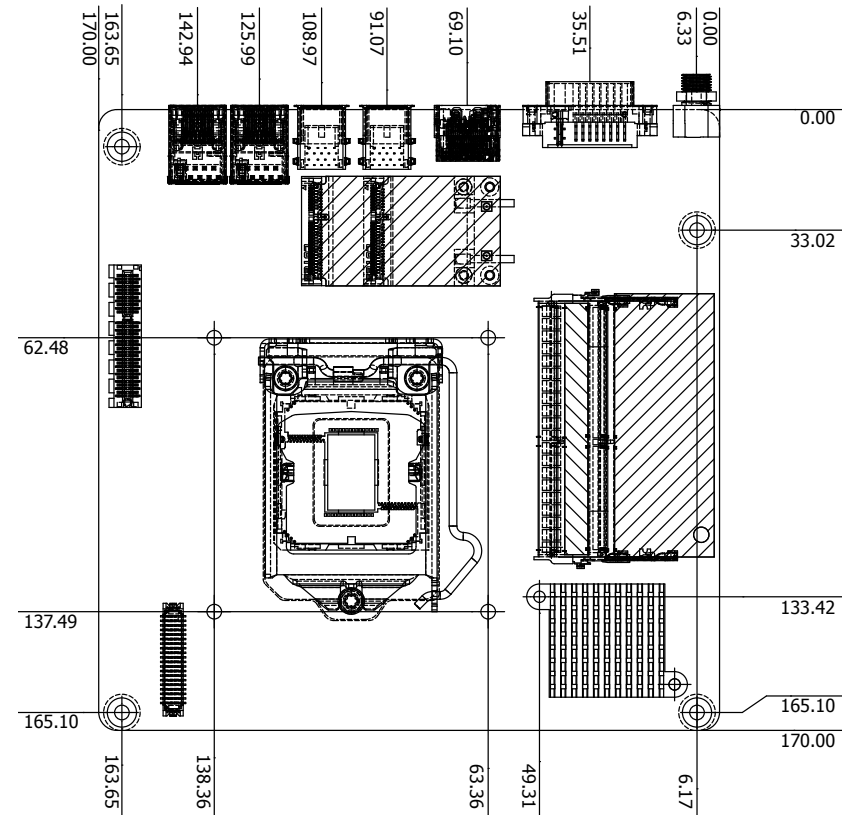




## Mechanical Dimensions



## Motherboard Dimensions



## Chapter 2 - Getting Started

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### Preparing the System

Before you start using the system, you need the following items:

- SATA hard drive
- AC power adapter
- Screwdriver
- Memory modules

### Installing Devices

The following devices can be installed in the system.

- Memory module(s)
- SATA hard drive(s)

### Configuring the BIOS

To get you started, you may need to change configurations such as the date, time and the type of hard disk drive.

1. Power on the system.
2. After the memory test, the message "Press DEL to run setup" will appear on the screen. Press the Delete key to enter the BIOS setup utility.

### Installing the Operating System

Depending on the method you choose to install your system, you may use a USB flash drive or install a CD-ROM drive to run the Operating System CD.

Make sure that a SATA drive is already installed.

1. Refer to the following chapters for information on installing a SATA drive
2. Refer to your operating system manual for instructions on installing an operating system.

### Installing the Drivers

The system package includes a CD disk. The CD includes drivers that must be installed to provide the best system performance. Refer to the Supported Software chapter for instructions on installing the drivers.

## Chapter 3 - Installing Devices



### Import:

To prevent damage to the system board, power down the system and remove all AC power cords before opening the chassis cover.

### Opening the chassis

1. Make sure the system and all other peripheral devices connected to it have been powered off.
2. Disconnect all power cords and cables.
3. The 2 mounting screws on the rear side of the system are used to secure the cover to the chassis. Remove these screws and then put them in a safe place for later use.

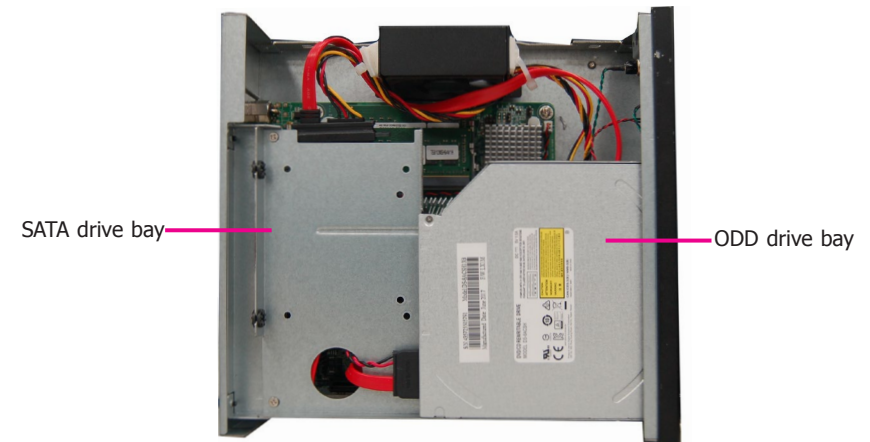
Mounting  
screw



4. Slide the cover backwards to open the system.



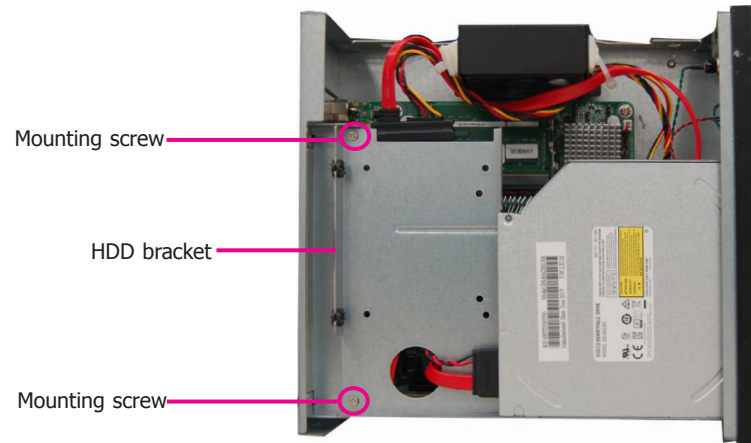
5. The SODIMM sockets and SATA drive bay are readily accessible after removing the chassis cover.



## Installing a 2.5" SATA Drive

The system can accommodate one 2.5" SATA drive. Please use the following procedure to install a 2.5" SATA drive:

1. Remove the 2 mounting screws that secure the drive bay to the system.



2. Align the mounting holes on the SATA drive with the mounting holes on the HDD bracket.

SATA mounting screws

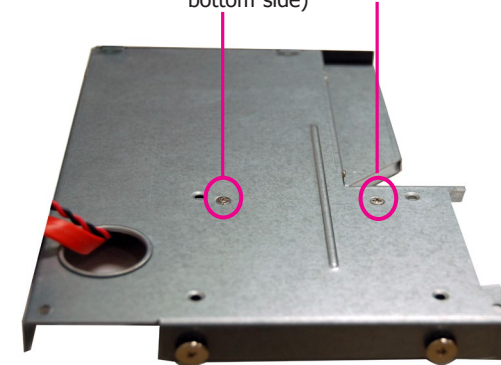


3. Use the mounting screws provided in the drive bay kit to attach the HDD bracket onto the drive bay and secure the drive in place.

HDD bracket mounting screws



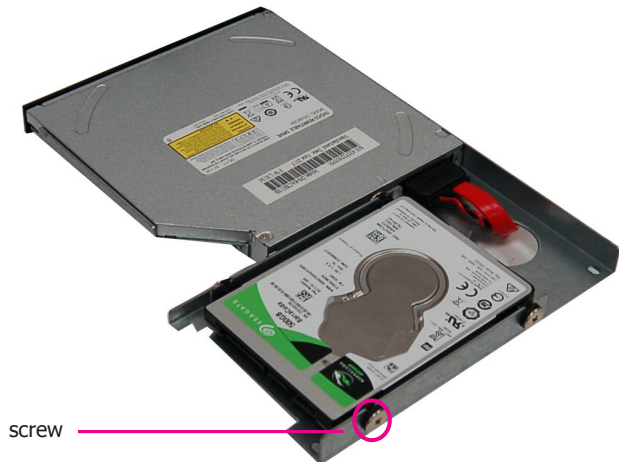
HDD bracket mounting holes  
(on the drive bay's bottom side)



SATA mounting screws

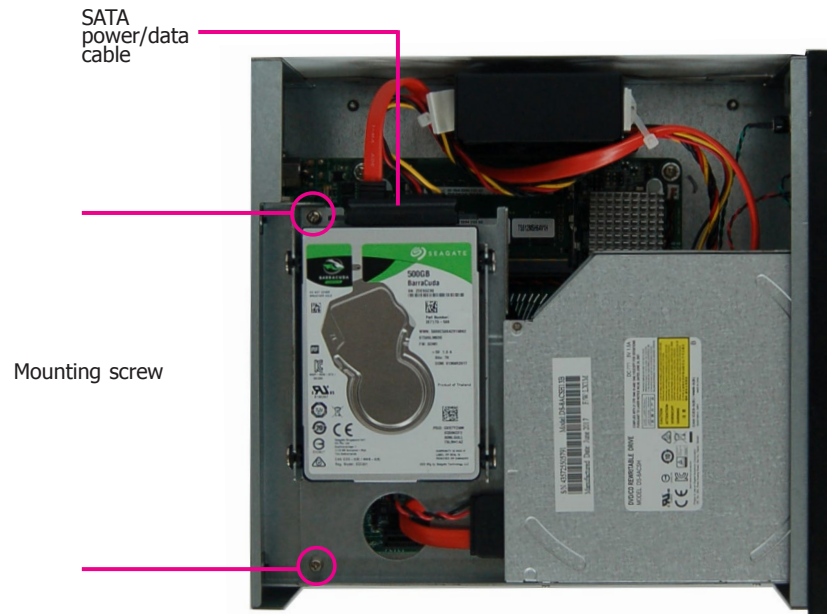


Mounting screw

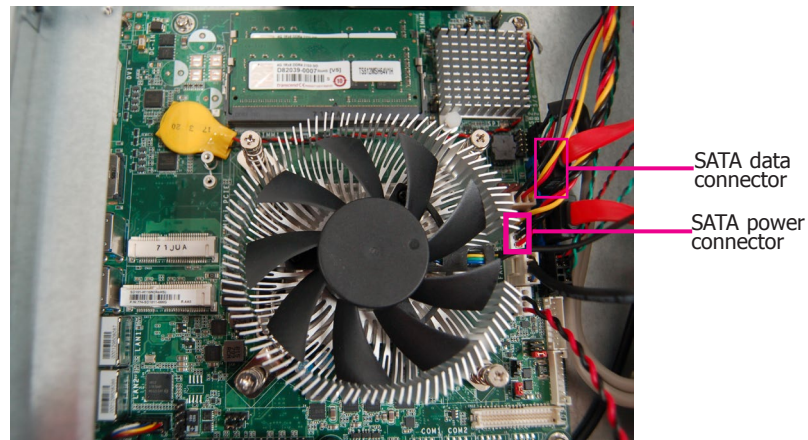




- Place the SATA drive bay back in the chassis and install the SATA drive bay using the mounting screws you removed in step 1.



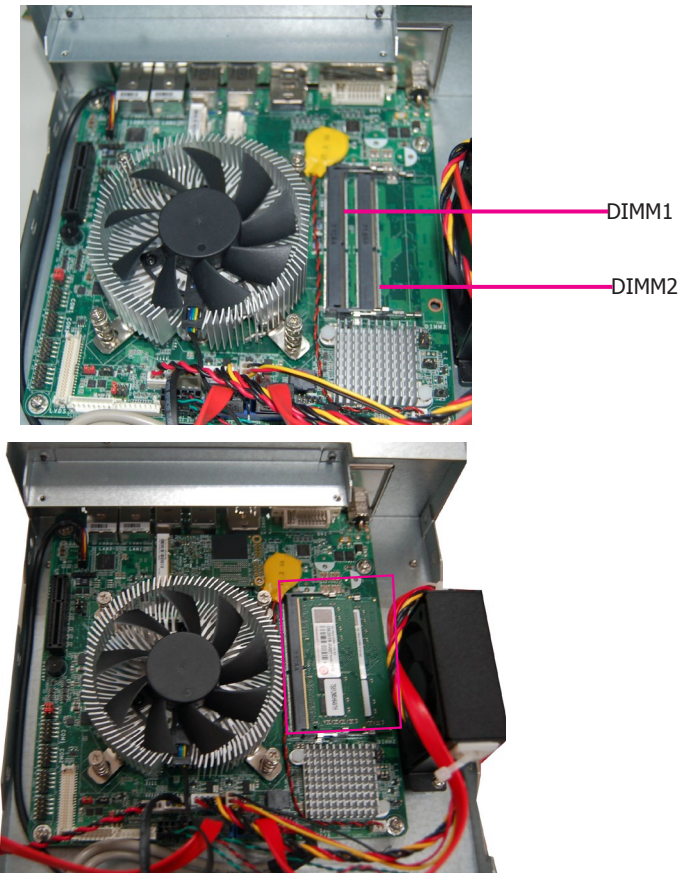
- Connect the SATA data/power cable to the SATA drive (refer to the above picture). Make sure the other end of the SATA data/power cable is connected to the connectors on the system board (refer to the picture below).



## Installing a Memory Module

The system board is equipped with two memory slots. Please use the following procedure to install SODIMM modules.

Grasp the module by its edges and align the memory's notch with the socket's notch; then insert the memory into the socket at an angle and push it down until you feel a click.

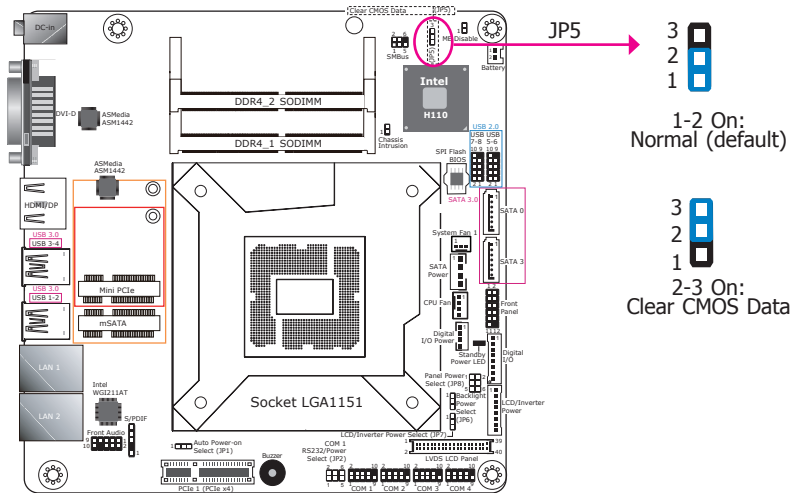


### Notes:

- The system supports dual-channel configuration. To enable dual-channel, populate both SODIMM sockets.
- If installing only one memory module, please install it on the memory socket labeled DIMM 1 (the one closer to the center of the board).
- The SODIMM sockets can only accommodate DDR4 memory modules. Please do not install other types of memory modules.

## Chapter 4 - Jumper Settings

### Clear CMOS Data



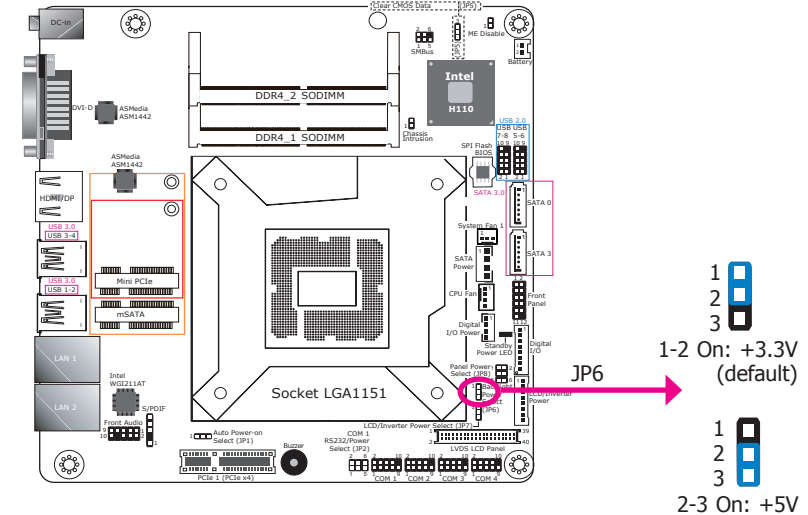
If you encounter the following situations, you can reconfigure the system with the default values stored in the ROM BIOS.

- CMOS data becomes corrupted.
- You forgot the supervisor or user password.

To load the default values stored in the ROM BIOS, please follow the steps below.

- Power off the system and unplug the power cord.
- Set the jumper pins 2 and 3 to On. Wait for a few seconds and set JP5 back to its default setting, pins 1 and 2 On.
- Now plug the power cord and power-on the system.

### Backlight Power Select



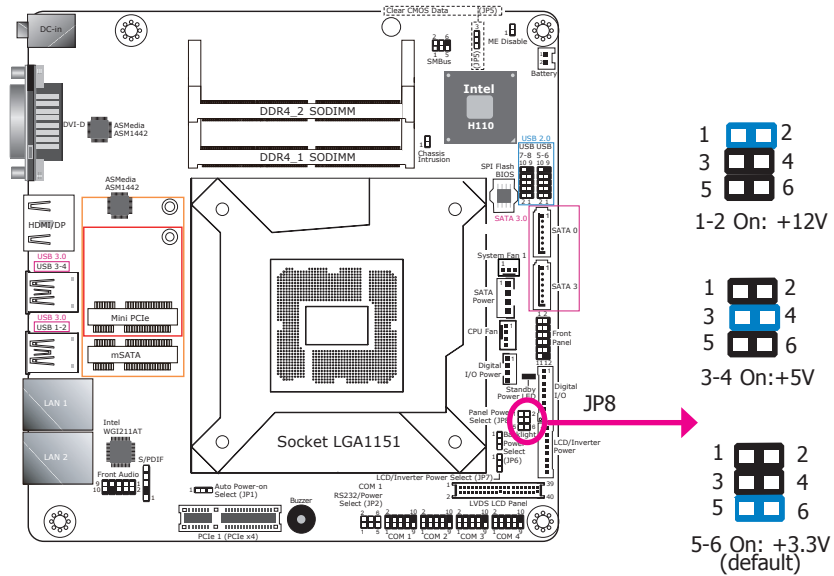
JP6 is used to select the power level of backlight brightness control: +3.3V or +5V.



#### Important:

Before powering on the system, make sure that the power settings of JP6 match the power specification of backlight control. Selecting the incorrect voltage will seriously damage the backlight.

## Panel Power Select



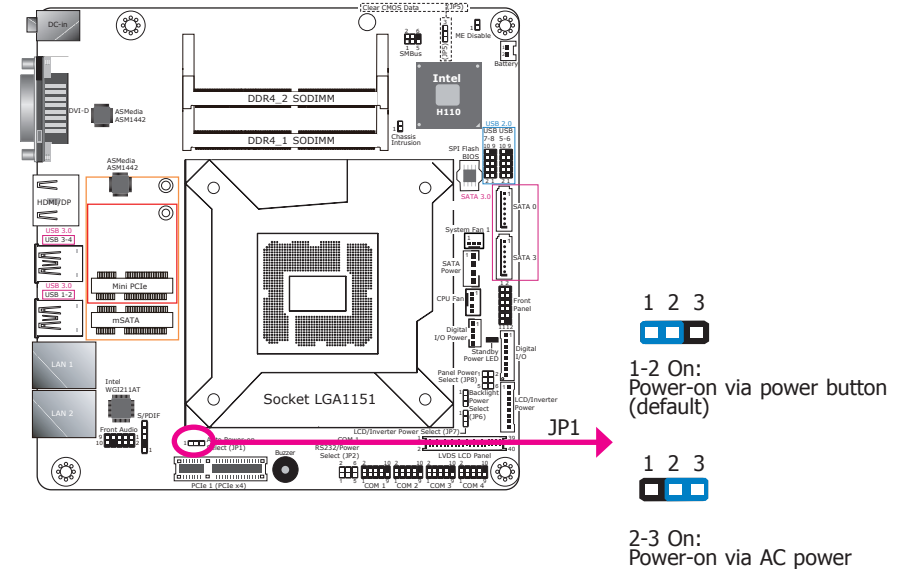
JP8 is used to select the power supplied with the LCD panel.



### Important:

Before powering-on the system, make sure that the power settings of JP8 match the LCD panel's specification. Selecting the incorrect voltage will seriously damage the LCD panel.

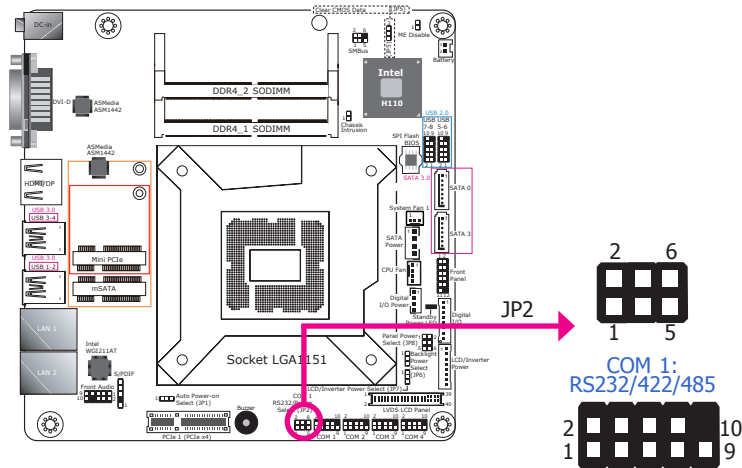
## Power-on Select



JP1 is used to select the method of powering on the system. If you want the system to power-on whenever AC power comes in, set the jumper pins 2 and 3 to On. If you want to use the power button, set jumper pins 1 and 2 to On.

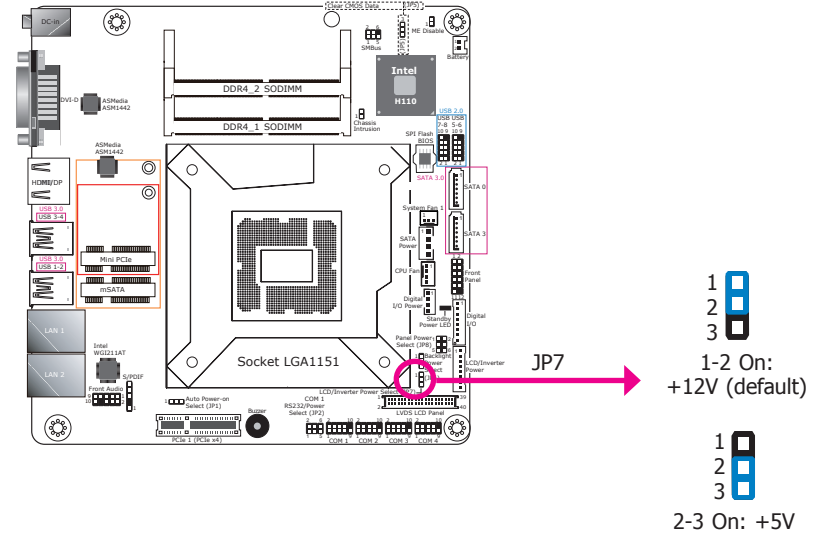
When using JP1 "Power On" feature to power the system back on after a power failure occurs, the system may not power on if the power lost is resumed within 5 seconds (power flicker).

## COM 1 RS232/Power Select

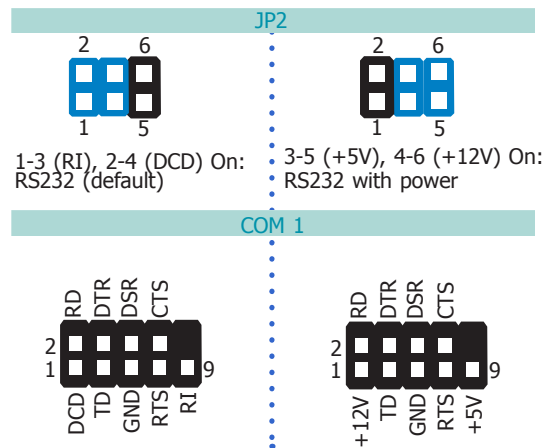


JP2 (for COM 1) is designed to configure the Serial COM port to pure RS232 or RS232 with power. The pin functions of COM 1 will vary according to JP2's setting respectively.

## LCD/Inverter Power Select



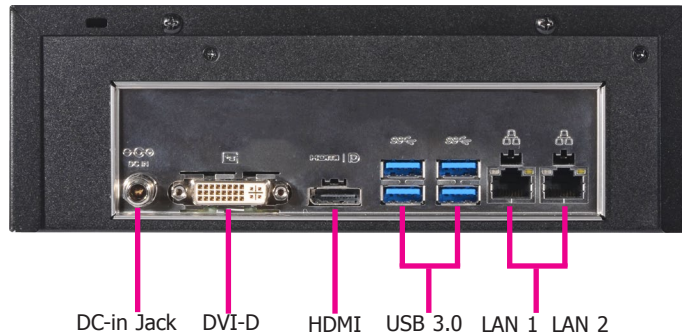
JP7 is used to select the power level of LVDS LCD/inverter power connector.





## Chapter 5 - Ports and Connectors

### Rear Panel I/O Ports



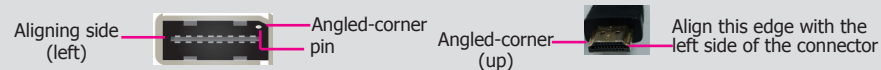
The rear panel I/O ports consist of the following:

- Power Socket:  
DC-in Jack
- Ethernet Ports:  
Two GbE (RJ-45)
- USB Ports:  
Four USB 3.0
- Display ports:  
DVI-D (DVI-I connector)  
HDMI\*

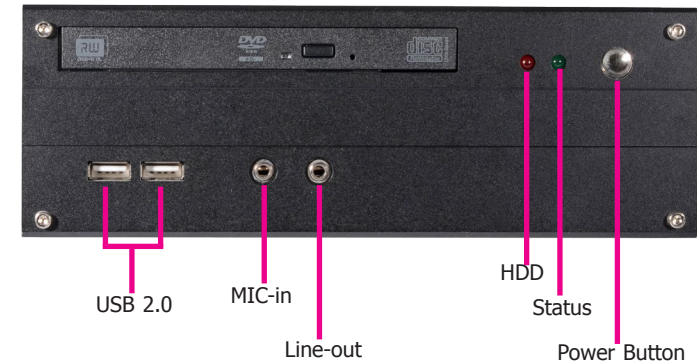


#### Note:

The HDMI is a DP/HDMI combo port but can only transmit HDMI signals (unless wired as a DP port). Please plug in an HDMI cable with the right orientation and alignment to avoid damage to the connector. You should feel resistance (due to a pin on the right) if the cable is not inserted correctly. Please see a video at <https://youtu.be/SUj07rN5I8> for detailed instructions.



### Front Panel I/O Ports



The front panel I/O ports consist of the following:

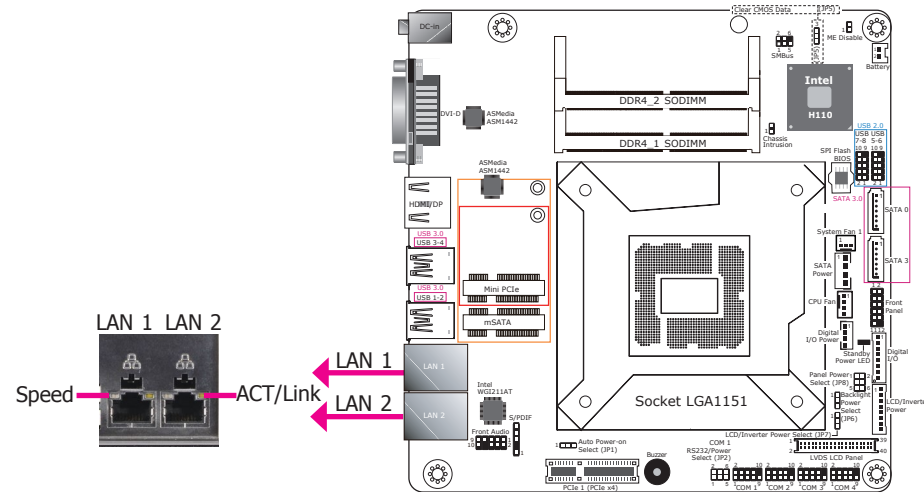
- Power button\*
- USB Ports:  
Two USB 2.0
- Audio Ports:  
Microphone & Line-out
- Power and Status LED:  
HDD LED  
Status LED



#### Note:

Please gently press the power button to avoid possible damage.

## RJ45 LAN Ports



## Features

- LAN 1: Intel® I219V PCIe (10/100/1000Mbps)
- LAN 2: Intel® I211AT PCIe (10/100/1000Mbps)

Activity/Link LED		Speed LED	
LED Behavior	Description	LED Behavior	Description
Off	No link	Off	10Mbps connection
Blinking	Data Activity	Green	100Mbps connection
On	Link	Orange	1Gbps connection

The two LAN ports allow the system board to connect to a local area network with a network hub.

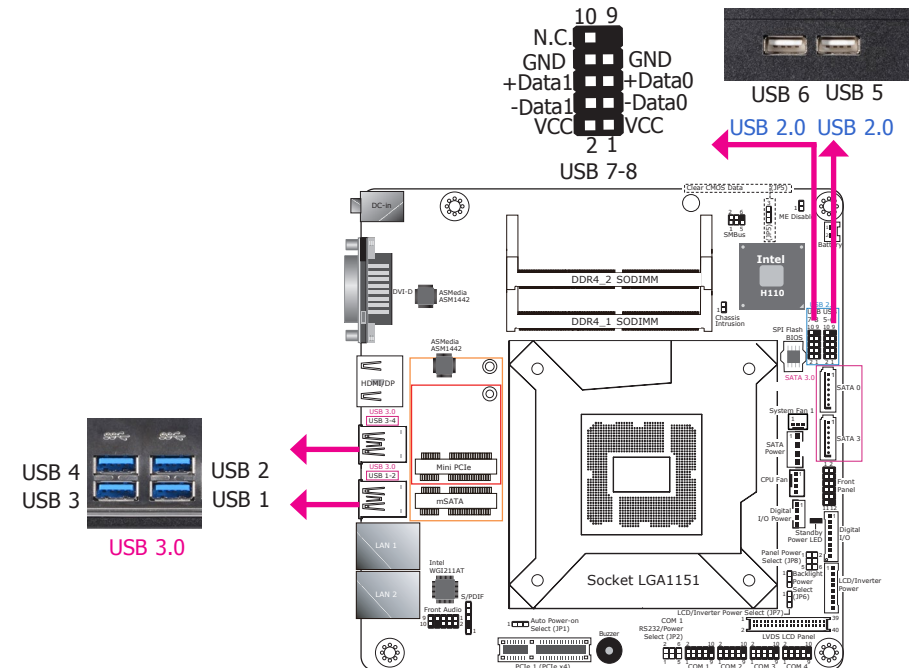
## BIOS Setting

Configure the onboard LAN ports in the Advanced menu ("ACPI Configuration" submenu) of the BIOS. Refer to Chapter 7 - BIOS for more information.

## Driver Installation

Install the LAN drivers. Refer to Chapter 8 - Supported Software for more information.

## USB Ports



The USB device allows data exchange between your computer and a wide range of simultaneously accessible external Plug and Play peripherals.

The system board is equipped with four external USB 3.0 ports (USB 1-2/3-4) and two external USB 2.0 ports (USB 5-6). The internal 9-pin connector allows you to connect 2 additional USB 2.0/1.1 ports (USB 7-8).

## BIOS Setting

Configure these onboard USB devices in the Advanced menu ("USB Configuration" submenu) of the BIOS. Refer to Chapter 7 - BIOS for more information.

## Driver Installation

You may need to install the proper drivers in your system operation to use the USB device. Refer to your operating system's manual or documentation for more information.

## Wake-On-USB Keyboard/Mouse

The Wake-On-USB Keyboard/Mouse function allows you to use a USB keyboard or USB mouse to wake up a system from the S3 (STR - Suspend To RAM) state.



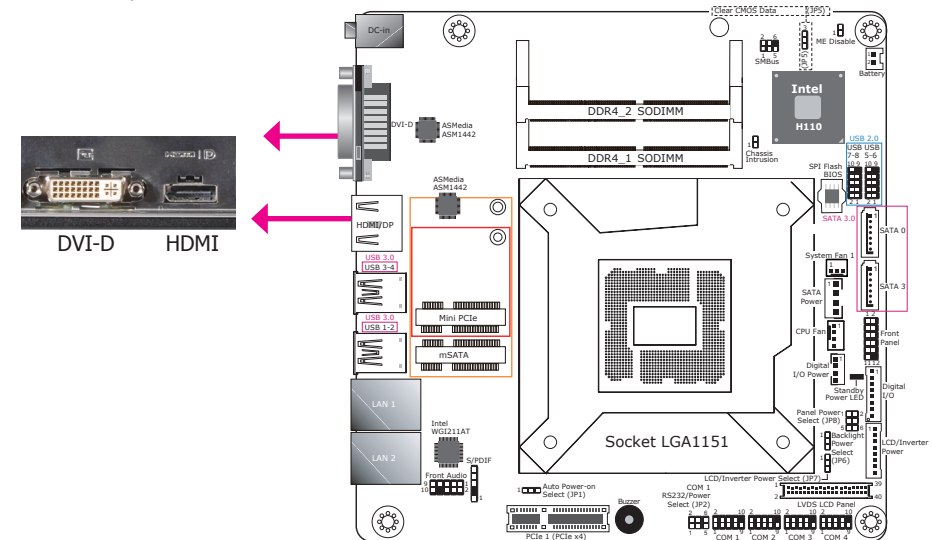
### Important:

If you are using the Wake-On-USB Keyboard/Mouse function for 2 USB ports, the +5V\_standby power source of your power supply must support  $\geq 1.5A$ . For 3 or more USB ports, the +5V\_standby power source of your power supply must support  $\geq 2A$ .

## Graphics Interfaces

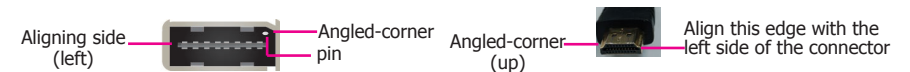
The display ports consist of the following:

- 1 HDMI port
- 1 DVI-D port



## HDMI (or an optional DP Port)

The HDMI (or an optional DisplayPort) is a digital display interface used to connect a display device such as a computer monitor. Both HDMI and DP can be used to transmit audio and video data simultaneously. Please note that this is an HDMI/DP combo port but can only transmit HDMI signals (unless wired as a DP port). Please plug in an HDMI cable with the right orientation and alignment to avoid damage to the connector. You should feel resistance (due to a pin on the right) if the cable is not inserted correctly. Please see a video at <https://youtu.be/SUj07rFN5I8> for detailed instructions.



## DVI-D (DVI-I connector) Port

The DVI-I port is used to connect an LCD monitor. This port supports DVI-D signals only. Connect the display device's cable connector to the DVI-I port. After plugging the cable connector into the port, gently tighten the cable screws to hold the connector in place.

## Driver Installation

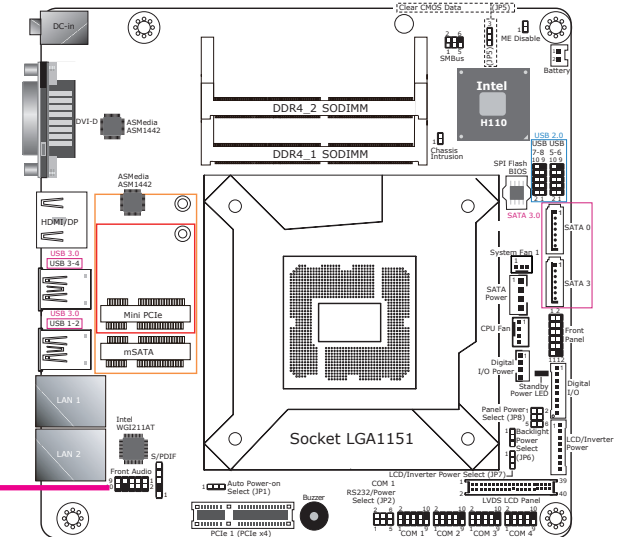
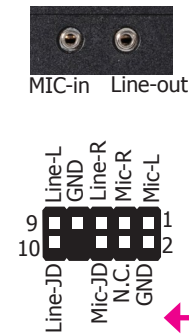
Install the graphics driver. Refer to Chapter 8 - Supported Software for more information.

## DC-in Jack



This jack is considered a low power solution. Connect a DC power cord to this jack. Using a voltage more than the recommended range (12V only) may fail to boot the system or cause damage to the system board.

## Audio



### Rear Audio

The system board is equipped with 2 audio jacks.

- Line-out Jack  
This jack is used to connect a headphone or external speakers.
- Microphone-in Jack  
This jack is used to connect an external microphone.

### BIOS Setting

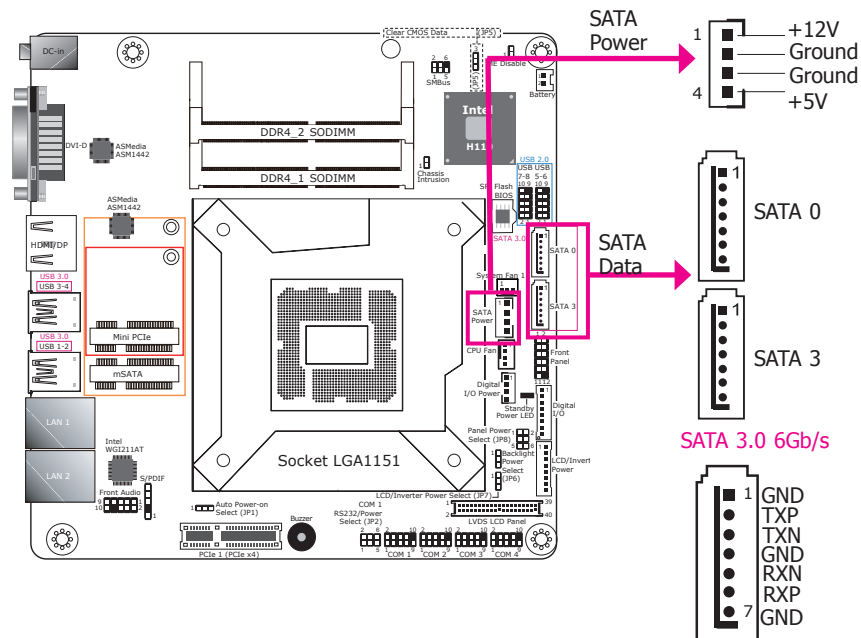
Configure the audio settings in the Advanced menu ("Audio Configuration" submenu) of the BIOS. Refer to Chapter 7 - BIOS for more information.

### Driver Installation

Install the audio driver. Refer to Chapter 8 - Supported Software for more information.

## I/O Connectors

## SATA (Serial ATA) & Power Connectors



## Features

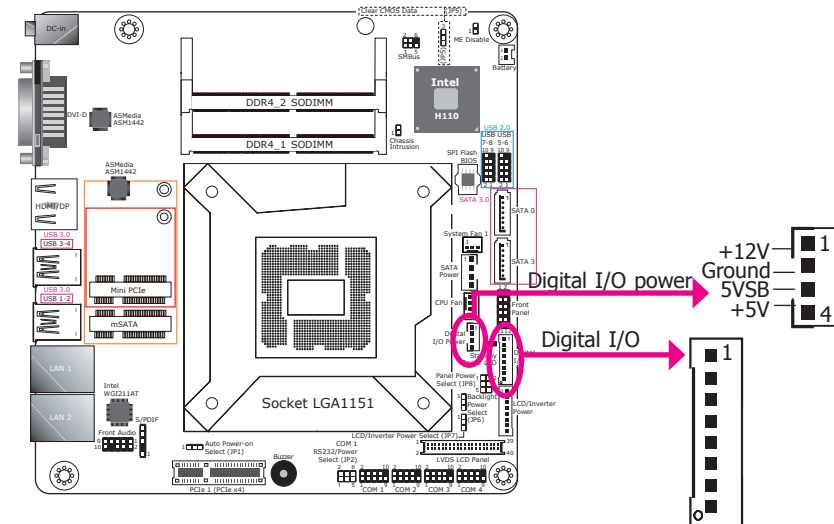
- 2 Serial ATA 3.0 ports with data transfer rate up to 6Gb/s (SATA 0 and SATA 3)

The Serial ATA connectors are used to connect Serial ATA devices. Connect one end of the Serial ATA data cable to a SATA connector and the other end to your Serial ATA device.

## BIOS Setting

Configure the Serial ATA drives in the Advanced menu ("SATA Configuration" submenu) of the BIOS. Refer to Chapter 7 - BIOS for more information.

## Digital I/O Connector

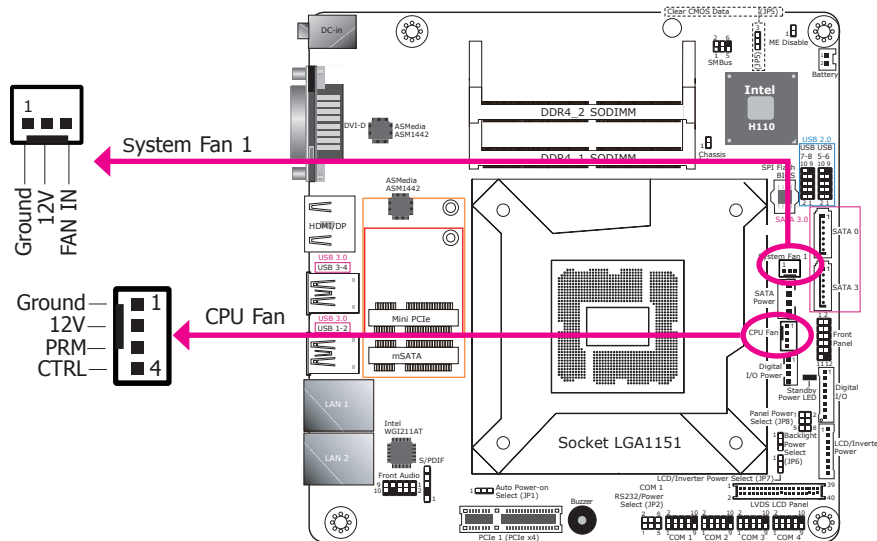


The 8-bit Digital I/O connector provides the ability to monitor and control connected external devices.

## Digital I/O Connector

Pins	Function
1	DIO7
2	DIO6
3	DIO5
4	DIO4
5	DIO3
6	DIO2
7	DIO1
8	DIO0

## Cooling Fan Connectors

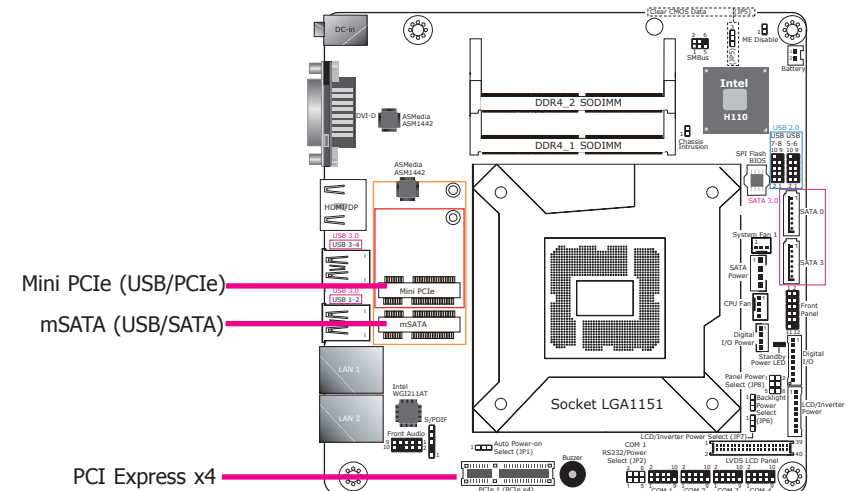


The fan connectors are used to connect cooling fans. The cooling fans will provide adequate airflow throughout the chassis to prevent overheating the CPU and system board components.

### BIOS Setting

The Advanced menu ("Super IO" submenu) of the BIOS will display the current speed of the cooling fans. Refer to Chapter 7 - BIOS for more information.

## Expansion Slots



### Mini PCI Express Slot

The Mini PCIe socket is used to install a Mini PCIe card. This socket provides PCIe and USB signals and can support common Wi-Fi and Bluetooth cards or mobile broadband cards.

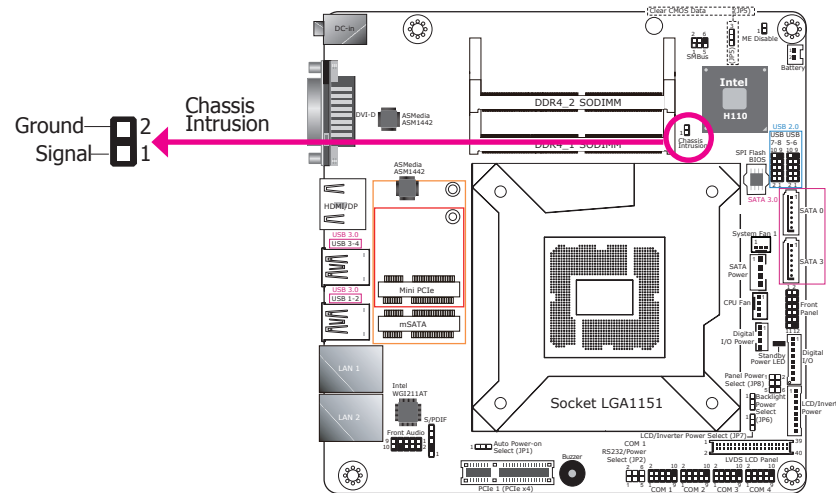
### mSATA Slot (full-size)

The full-size mSATA slot supports SATA III (6Gb/s) transmission rate and is used to connect an mSATA card. It can expand the system's storage capacity.

### PCI Express x4 Slot

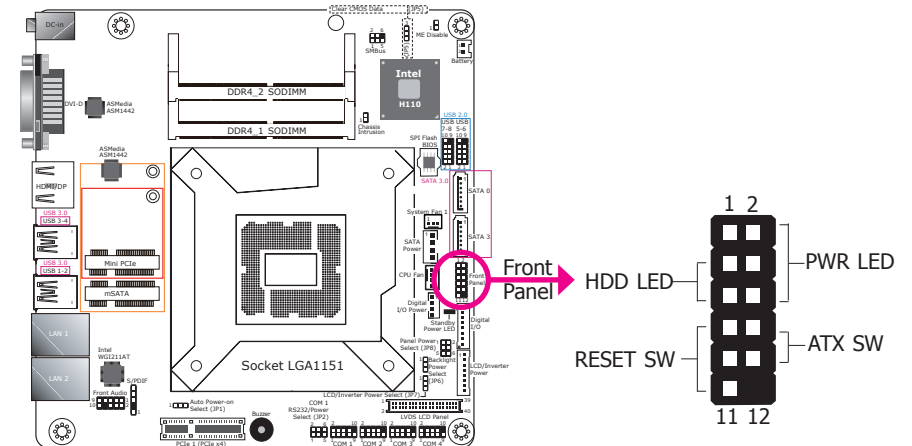
Install PCI Express cards such as network cards or USB expansion cards that comply to the PCI Express specifications into the PCI Express x4 slot.

## Chassis Intrusion Connector



The board supports chassis intrusion detection function. Connect the chassis intrusion sensor cable from the chassis to this connector. When the system's power is on and a chassis intrusion event occurs, an alarm will sound. When the system's power is off and a chassis intrusion event occurs, the alarm will sound only after the system restarts.

## Front Panel Connector



### HDD LED - HDD LED

This LED will be lit when the hard drive is being accessed.

### RESET SW - Reset Switch

This switch allows you to reboot without having to power off the system.

### ATX SW - ATX Power Switch

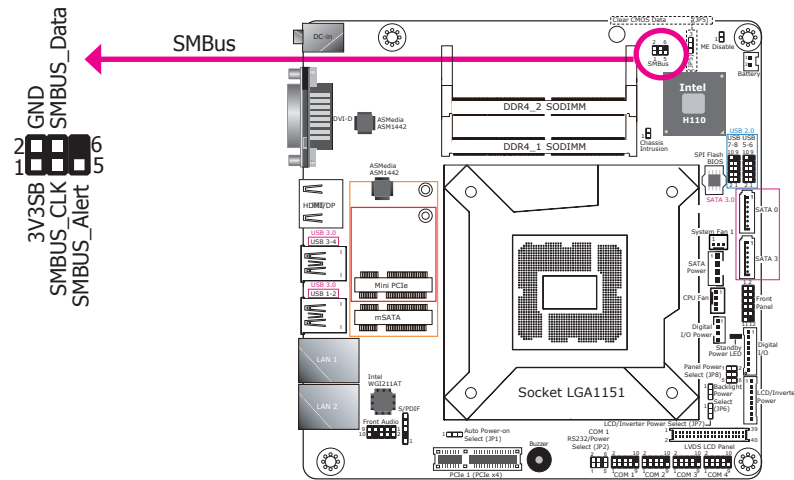
This switch is used to power on or off the system.

### PWR LED - Power/Standby LED

When the system's power is on, this LED will be lit. When the system is in the S1 (POS - Power On Suspend) state, it will blink every second. When the system is in the S3 (STR - Suspend To RAM) state, it will blink every 4 seconds.

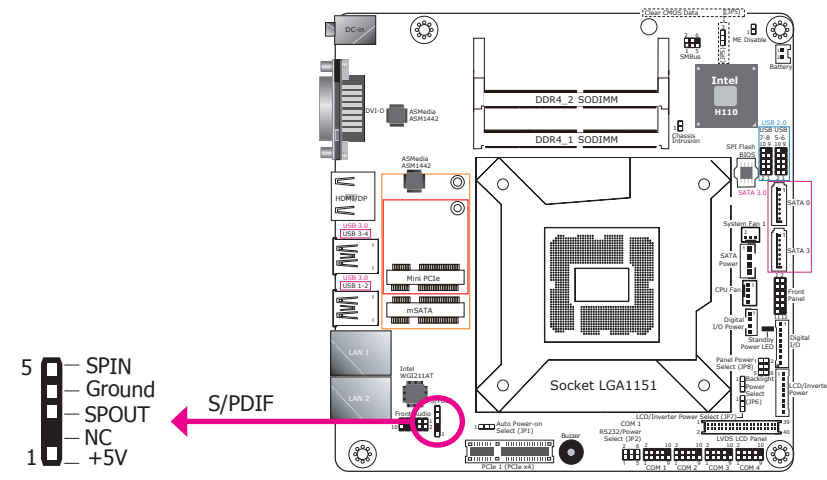
	Pin	Pin Assignment		Pin	Pin Assignment
HDD LED	3	HDD Power	PWR LED	2	LED Power
	5	Signal		4	LED Power
RESET SW	7	Ground	ATX SW	6	Signal
	9	RST Signal		8	Ground
	11	N.C.		10	Signal

## SMBus Connector



The SMBus (System Management Bus) connector is used to connect low-bandwidth SMBus devices. It is a multiple device bus that allows multiple chips to connect to the same bus and enable each one to act as a master by initiating data transfer.

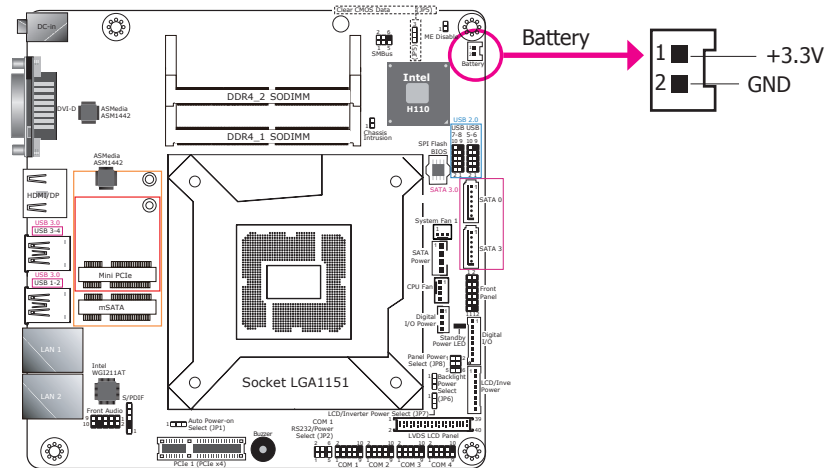
## S/PDIF Connector



S/PDIF (Sony/Philips Digital Interface Format), a type of digital audio connector, is used for digital audio transmission or output.



## Battery

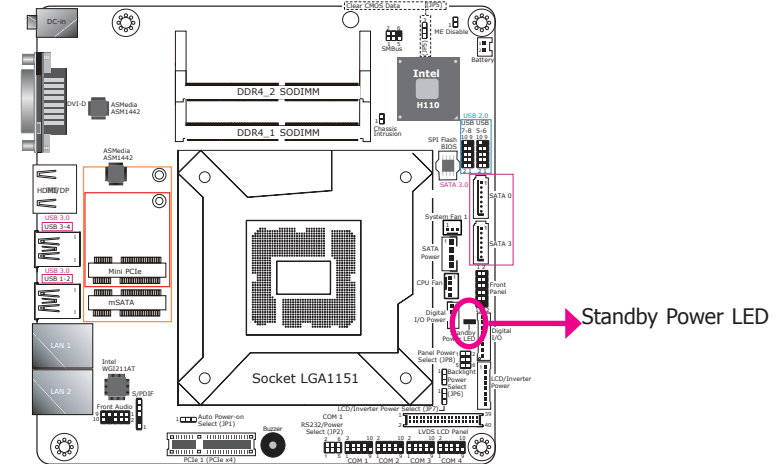


The lithium ion battery powers the real-time clock and CMOS memory. It is an auxiliary source of power when the main power is shut off.

### Safety Measures

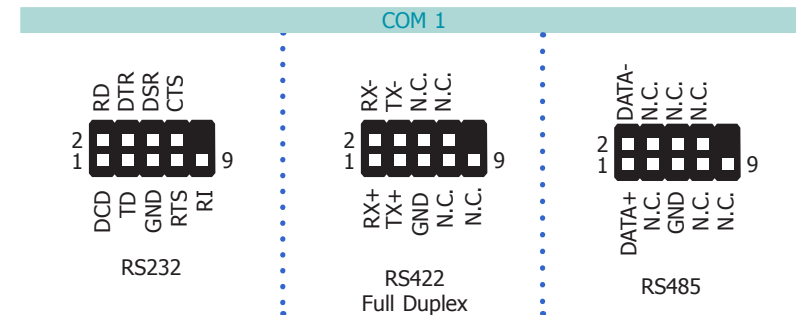
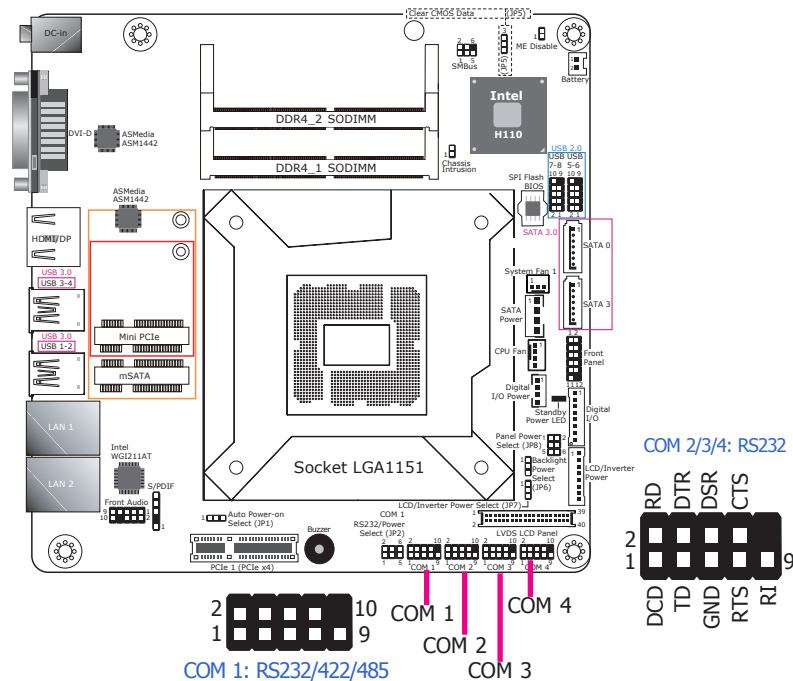
- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.

## Standby Power LED



This LED will be red when the system is in the standby mode. It indicates that there is power on the system board. Power off the system and then unplug the power cord prior to installing any devices. Failure to do so will cause severe damage to the motherboard and components.

## COM (Serial) Ports



The pin functions of COM 1 will vary according to BIOS' setting. JP2 (for COM1) is designed to configure Serial COM port to pure RS232 or RS232 with power. Refer to "COM 1 RS232/Power Select" in Chapter 4 for more information.

COM 2, COM 3 and COM 4 are fixed at RS232.

The serial ports are asynchronous communication ports with 16C550A-compatible UARTs that can be used with modems, serial printers, remote display terminals, and other serial devices.

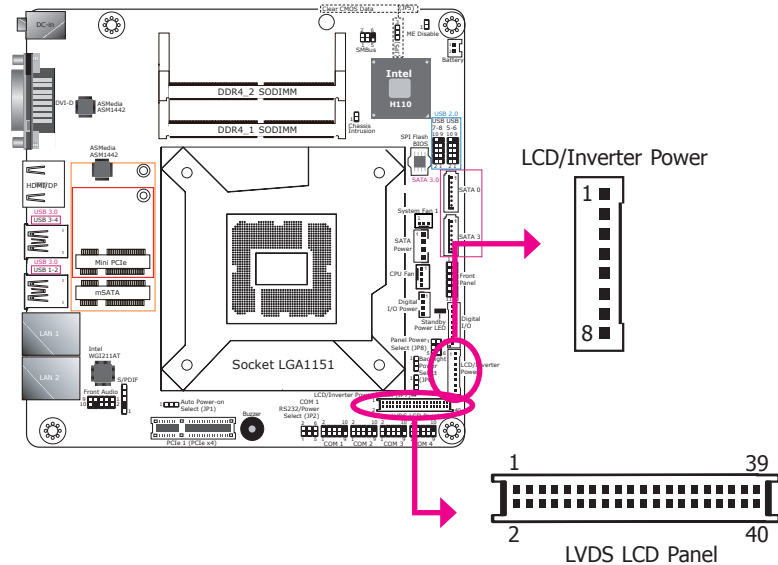
### Connecting External Serial Ports

Your COM port may come mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then insert the serial port cable to the COM connector. Make sure the colored stripe on the ribbon cable is aligned with pin 1 of the COM connector.

### BIOS Setting

Configure the serial COM ports including the communication mode in the Advanced menu ("SIO NUVOTON6106D" submenu) of the BIOS. Refer to Chapter 7 for more information.

## LVDS LCD Panel Connector LCD/Inverter Power Connector



The system board allows you to connect an LCD panel with the LVDS LCD panel connector and the LCD/Inverter Power connector. These connectors transmit video signals and power from the system board to the LCD panel.

Refer to the right side for the pin functions of these connectors.

### BIOS Setting

Configure the LCD panel in the Advanced menu ("Video Configuration" sub-menu) of the BIOS. Refer to Chapter 7 for more information.

### LVDS LCD Panel Connector

Pin	Function	Pin	Function
1	GND	2	GND
3	LVDS_Out3+ (Odd_3+)	4	LVDS_Out7+ (Even_3+)
5	LVDS_Out3- (Odd_3-)	6	LVDS_Out7- (Even_3-)
7	GND	8	GND
9	LVDS_Out2+ (Odd_2+)	10	LVDS_Out6+ (Even_2+)
11	LVDS_Out2- (Odd_2-)	12	LVDS_Out6- (Even_2-)
13	GND	14	GND
15	LVDS_Out1+ (Odd_1+)	16	LVDS_Out5+ (Even_1+)
17	LVDS_Out1- (Odd_1-)	18	LVDS_Out5- (Even_1-)
19	GND	20	GND
21	LVDS_Out0+ (Odd_0+)	22	LVDS_Out4+ (Even_0+)
23	LVDS_Out0- (Odd_0-)	24	LVDS_Out4- (Even_0-)
25	GND	26	GND
27	LVDS_CLK1+ (Odd_CLK+)	28	LVDS_CLK2+ (Even_CLK+)
29	LVDS_CLK1- (Odd_CLK-)	30	LVDS_CLK2- (Even_CLK-)
31	GND	32	GND
33	LVDS_DDC_CLK	34	NC
35	LVDS_DDC_DATA	36	+3.3V
37	Panel Power	38	Panel Power
39	Panel Power	40	Panel Power

### LCD/Inverter Power Connector

Pin	Function
1	GND
2	GND
3	Panel Inverter Brightness Voltage Control
4	Panel Power
5	+3.3V
6	Panel Backlight On/Off Control
7	LCD/Inverter Power
8	LCD/Inverter Power



#### Note:

DFI board's LVDS connector: Hirose DF13-40DP-1.25V(91)/40P/1.25mm; cable side connector: Hirose DF13-40DS-1.25C.

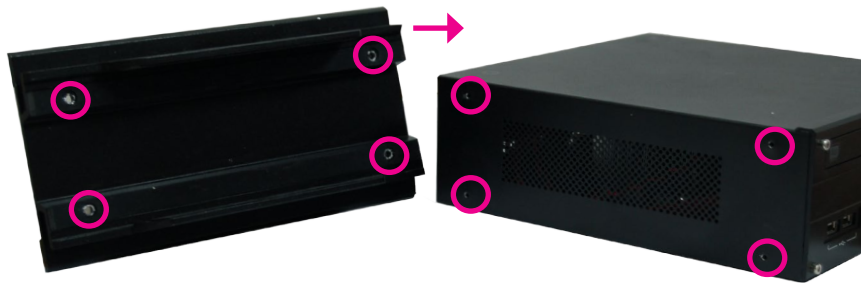
## Chapter 6 - Mounting Options

### Desktop Mount

The desktop mount kit includes the following:

- 1 Desktop mounting stand
  - Mounting screws
1. The mounting holes are located at the side panel of the system. Fasten the mounting stand on the side of the system using the mounting screws.

Mounting screws



2. Place the system upright with the stand's support at the bottom.



## Chapter 7 - BIOS Setup

### Overview

The BIOS is a program that takes care of the basic level of communication between the CPU and peripherals. It contains codes for various advanced features found in this system board. The BIOS allows you to configure the system and save the configuration in a battery-backed CMOS so that the data retains even when the power is off. In general, the information stored in the CMOS RAM of the EEPROM will stay unchanged unless a configuration change has been made such as a hard drive replaced or a device added.

It is possible that the CMOS battery will fail causing CMOS data loss. If this happens, you need to install a new CMOS battery and reconfigure the BIOS settings.



**Note:**

The BIOS is constantly updated to improve the performance of the system board; therefore the BIOS screens in this chapter may not appear the same as the actual one. These screens are for reference purpose only.

### Default Configuration

Most of the configuration settings are either predefined according to the Load Optimal Defaults settings which are stored in the BIOS or are automatically detected and configured without requiring any actions. There are a few settings that you may need to change depending on your system configuration.

### Entering the BIOS Setup Utility

The BIOS Setup Utility can only be operated from the keyboard and all commands are keyboard commands. The commands are available at the right side of each setup screen.

The BIOS Setup Utility does not require an operating system to run. After you power up the system, the BIOS message appears on the screen and the memory count begins. After the memory test, the message "Press DEL to run setup" will appear on the screen. If the message disappears before you respond, restart the system or press the "Reset" button. You may also restart the system by pressing the <Ctrl> <Alt> and <Del> keys simultaneously.

### Legends

Keys	Function
Right and Left arrows	Move the highlight left or right to select a menu.
Up and Down arrows	Move the highlight up or down between submenu or fields.
<Esc>	Exit the BIOS Setup Utility.
<F1>	Help
<F5>	Change values
<F6>	Change values
<F9>	Setup Defaults
<F10>	Save and Exit
<Enter>	Press <Enter> to enter the highlighted submenu.

### Scroll Bar

When a scroll bar appears to the right of the setup screen, it indicates that there are more available fields not shown on the screen. Use the up and down arrow keys to scroll through all the available fields.

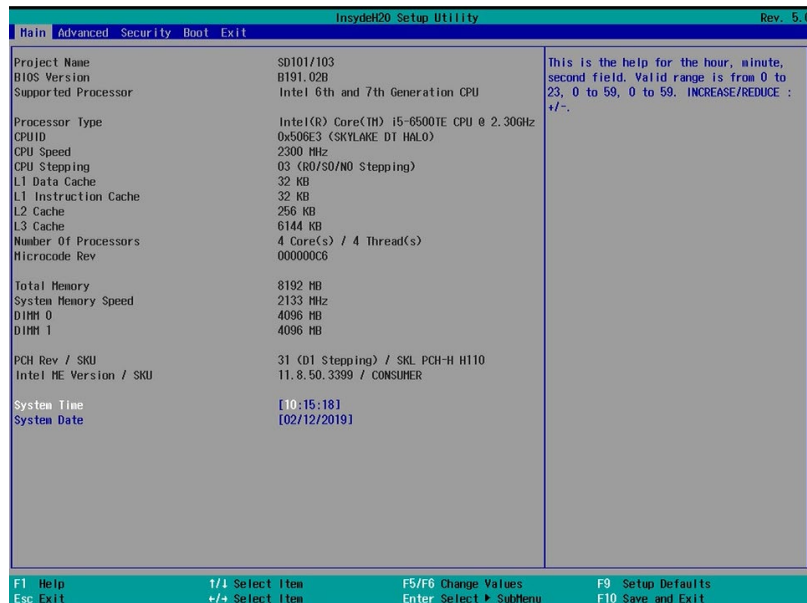
### Submenu

When "►" appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press <Enter>.

## Insyde BIOS Setup Utility

### Main

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.



### System Date

The date format is <month>, <date>, <year>. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1980 to 2099.

### System Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

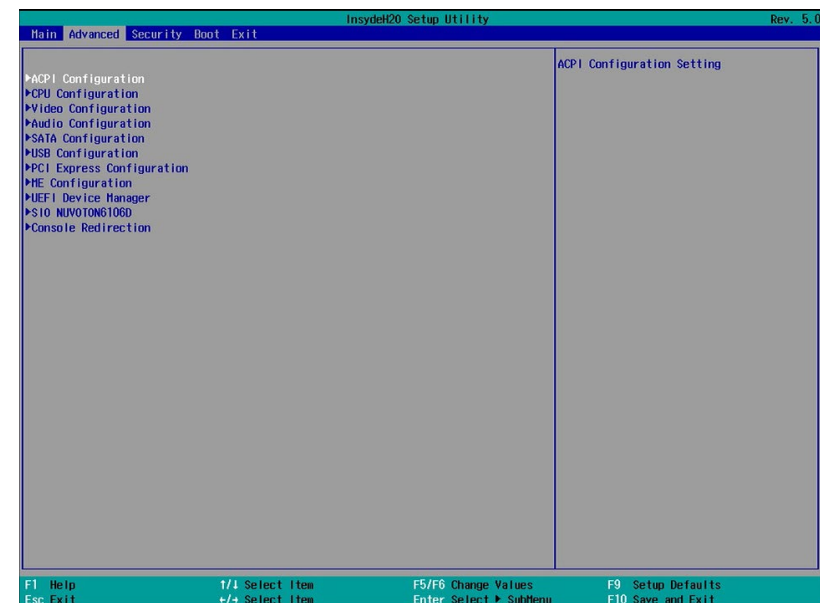
## Advanced

The Advanced menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.



### Important:

Setting incorrect field values may cause the system to malfunction.



## ACPI Configuration

This section configures system ACPI parameters.



### Wake on LAN

This field use to enable or disable the LAN signal to wake up the system.

### After G3

This field is to specify which state the system should be in when power is re-applied after a power failure (G3, the mechanical-off, state).

**Always On** The system is powered on.

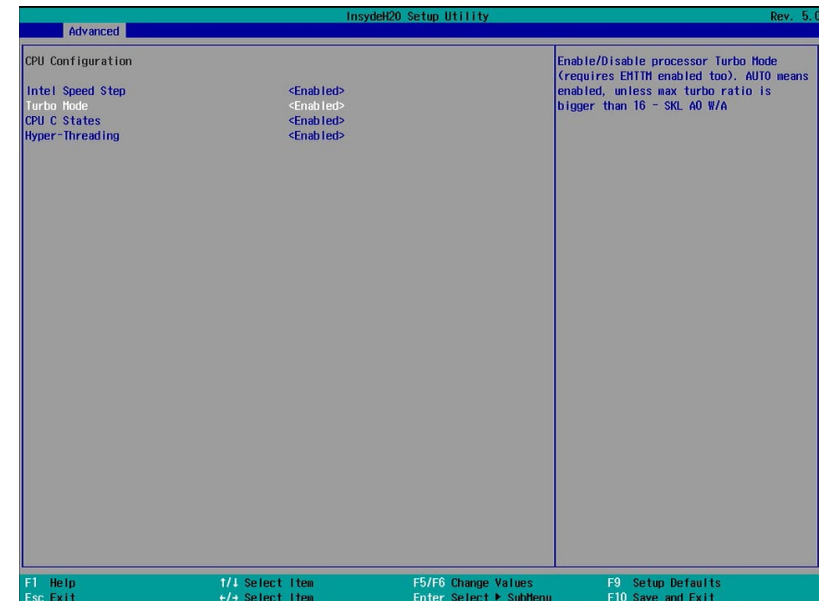
**Always Off** The system is powered off.

### Wake on RTC

Automatically power the system on at a particular time every day from the real-time clock battery. Specify the wake up time of the day below: <hour>, <minute>, <second>.

## CPU Configuration

This section configures the CPU.



### Intel® SpeedStep™

Enable or disable the Enhanced Intel SpeedStep® Technology, which helps optimize the balance between system's power consumption and performance. After it is enabled in the BIOS, you can take advantage of its offering by setting power schemes from the operating system's power options.

### Turbo Mode (This option may not be available depending on the model)

Enable or disable processor turbo mode, which allows the processor core to automatically run faster than the base frequency by taking advantage of thermal and power headroom. Note this option is not available on the Core™ i3 processor.

### CPU C States

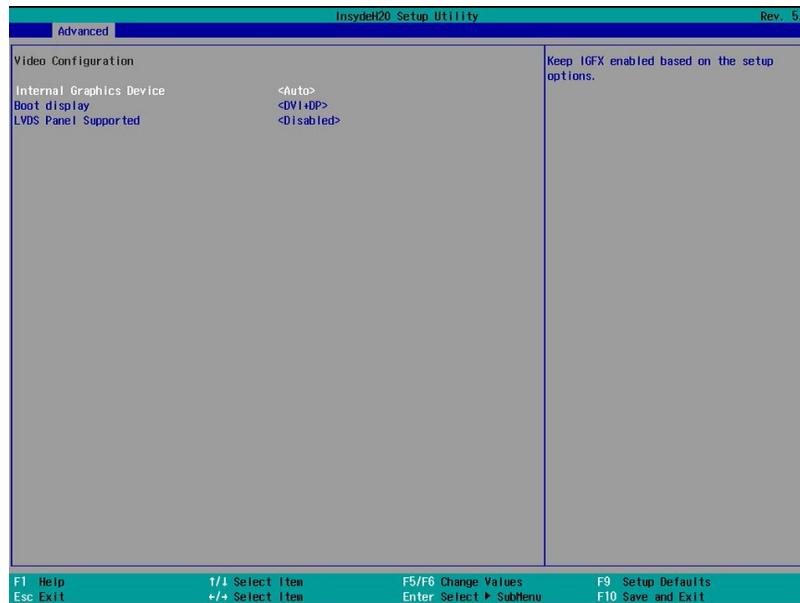
Enable or disable CPU Power Management. It allows the CPU to go to C states when it's not 100% utilized.

### Hyper-Threading (This option may not be available depending on the model)

Enable Intel® Hyper-Threading Technology (HT) on the processor to improve performance of operating systems and software that are optimized for hyper-threading technology. Please check the software specifications to determine if enabling HT can be advantageous to the overall system performance. Note this function is not available with the Intel® Core™ i5-6500TE, Pentium® G4400TE and Celeron® G3900TE processors.

## Video Configuration

This section configures video settings. Note that the configuration options vary depending on the "Boot type" selected in the "Boot" menu.



### Primary Display

Select the primary display for the system. Note that this option will be shown only if the "Boot type" is set to "Dual" or "UEFI". The options are Auto or IGFX (internal graphics), PEG and PCI. The order of video device initialization will be as follows:

Auto mode: PEG (PCIe Graphics devices connected to PEG lanes) -> PCIe graphics devices -> PCI graphics devices -> IGFX (internal graphics)

IGFX: IGFX (internal graphics) -> PEG (PCIe Graphics devices connected to PEG lanes) -> PCIe graphics devices -> PCI graphics devices

PEG: PEG (PCIe Graphics devices connected to PEG lanes) -> PCIe graphics devices -> PCI graphics devices -> IGFX (internal graphics)

PCI: PCI graphics devices -> PCIe graphics devices -> PEG (PCIe Graphics devices connected to PEG lanes) -> IGFX (internal graphics)

### Internal Graphics Device

Enable, disable or automatically detect the internal graphics. Note that this option will be shown only if the "Boot type" is set to "Dual" or "UEFI".

### Boot display

Prioritize device combination for display during system boot with the following options. Note that this option will be shown only if the "Boot type" is set to "Dual" or "Legacy".

LCD+DVI

LCD+DP

DVI+DP

DP+DVI

**LVDS Panel Supported** (This option may not be available depending on the model)

Enable this option to configure your LCD panel with the following configurations:

**PTN3460 Configuration** Select the color depth from the following options: 18bit, 24bit, 36bit, and 48bit.

**LCD Panel Type** Select the resolution for the LCD panel from the following options: 800x480, 800x600, 1024x768, 1366x768, 1280x1024, and 1920x1080.

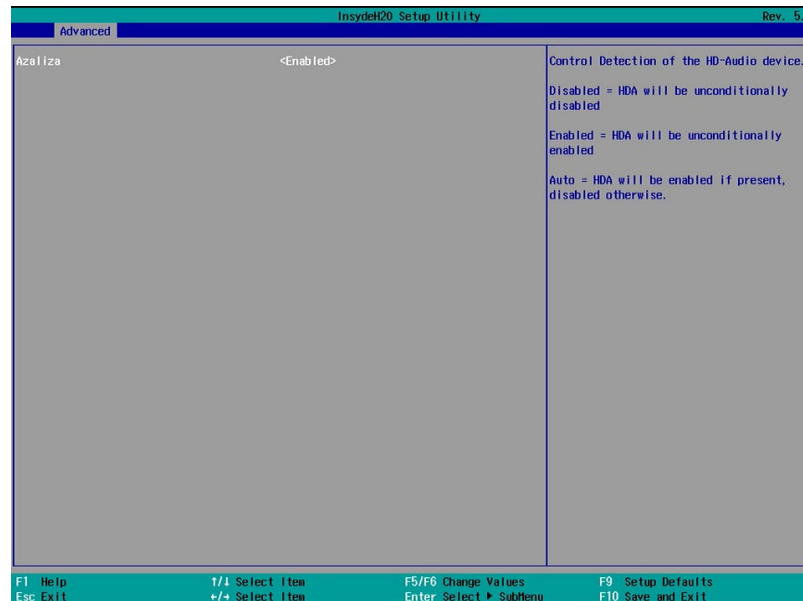
### Backlight Type

Select the backlight type from the following options: Normal+PWM, Normal+DC, Invert+PWM, and Invert+DC.



## Audio Configuration

This section configures audio settings.



### Azalizer

Control the detection of high-definition audio devices.

#### Disabled

HDA will be unconditionally disabled.

#### Enabled

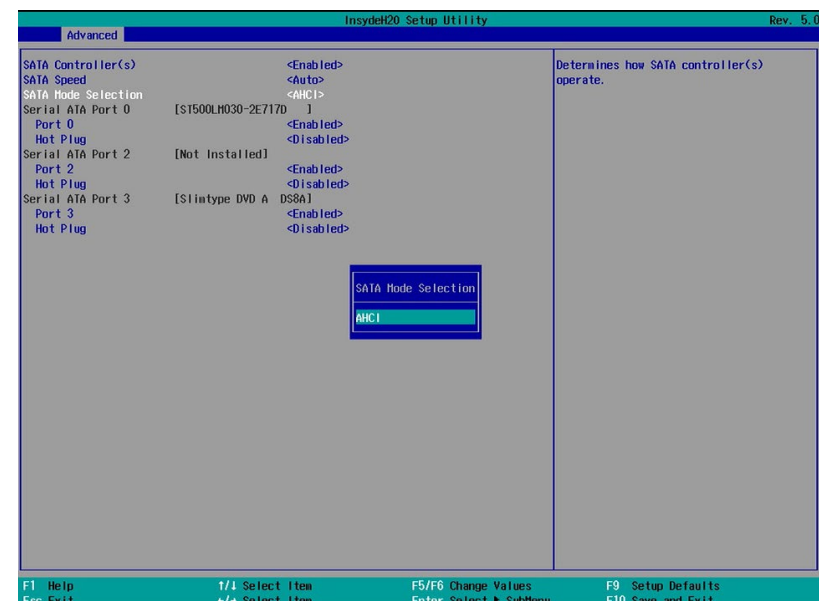
HDA will be unconditionally enabled.

#### Auto

HDA will be enabled if present, disabled otherwise.

## SATA Configuration

This section configures the SATA controllers.



### SATA Controller(s)

Enable or disable Serial ATA devices.

### SATA Speed

Select Serial ATA device speed from Gen1 (1.5 Gbit/s), Gen2 (3 Gbit/s), Gen 3 (6 Gbit/s) or auto.

### SATA Mode Selection

The mode selection shows how the SATA controller(s) operates.

#### AHCI Mode

This option allows the Serial ATA devices to use AHCI (Advanced Host Controller Interface).

### Serial ATA Port 0, 1, 2, and 3 and Hot Plug

Enable or disable the serial ATA port and its hot plug function.

## USB Configuration

This section configures the parameters of the USB devices.



### Legacy USB Support

#### Disabled

Disable USB keyboard/mouse/storage support.

#### Enabled

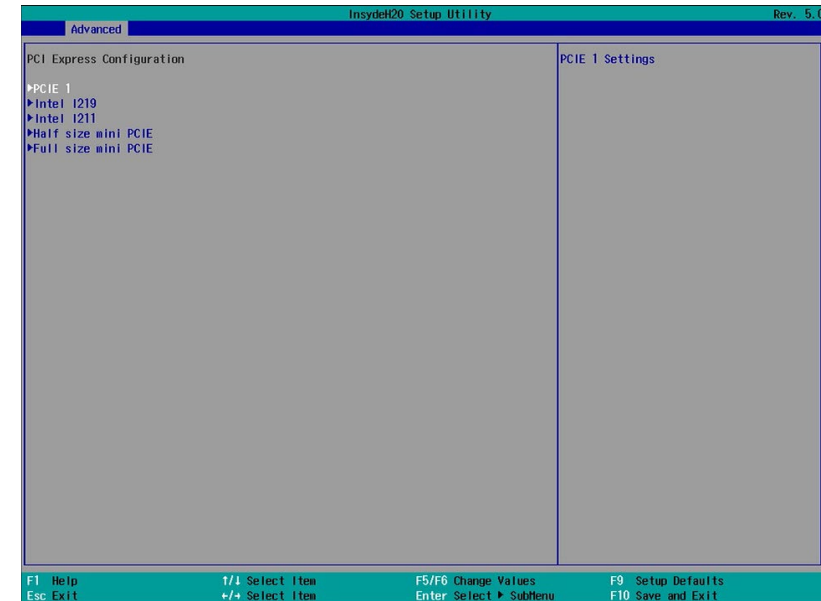
Enable USB keyboard/mouse/storage support.

#### XHCI Hand-off

Enable this item for operating systems that do not support xHCI Hand-off. The xHCI ownership change will be claimed by the xHCI driver.

## PCI Express Configuration

This section configures the PCI Express root ports.



### PCI Express Root Port

PCIe 1: PCIe1 expansion slot

Intel I219 Gigabit Ethernet port

Intel I211 Gigabit Ethernet port (Disabled)

Full-size Mini PCIe (may not be available depending on your model)

Half-size Mini PCIe (may not be available depending on your model)

### PCI Express Configuration

Select a PCI Express root port and press "Enter" to configure.

#### Enabled / Disabled

Enable or disable this PCIe slot.

#### PCIe Speed

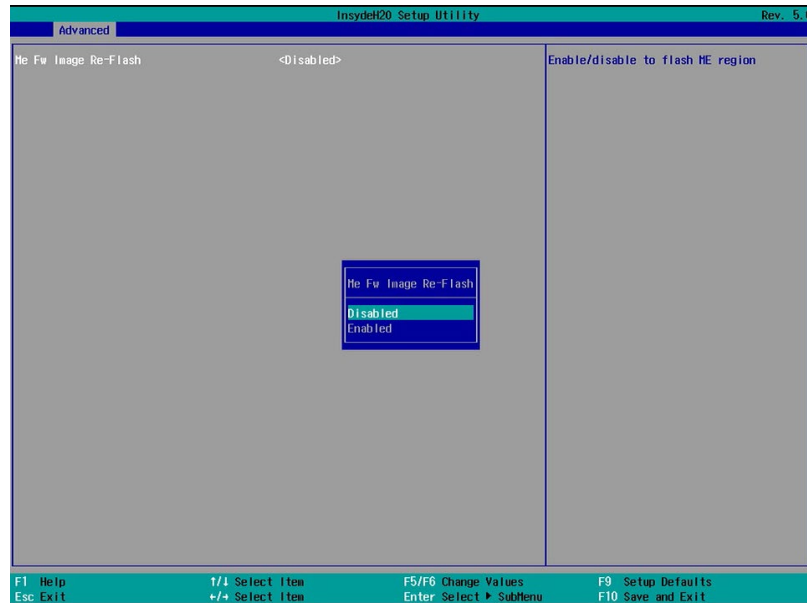
Select the PCIe speed: Auto, Gen1 (2.5 GT/s) or Gen2 (5 GT/s).

#### Hot Plug

Enable or disable hot plug function of the PCIe root port.

## ME Configuration

This section configures settings of flashing the Intel® Management Engine firmware.

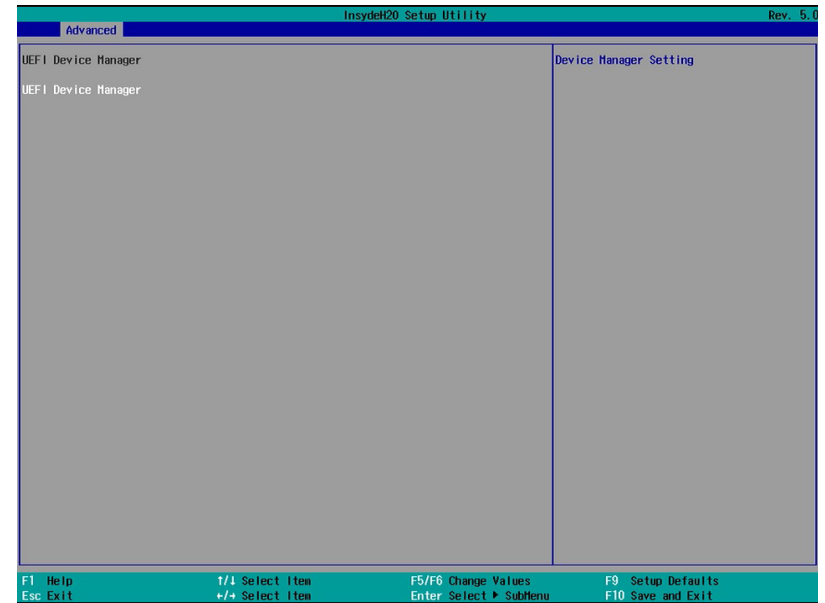


### Me Fw Image Re-Flash

Enable or disable flashing of the Intel® Management Engine firmware.

## UEFI Device Manager

This Device Manager menu is used to configure UEFI network settings when the “Network Stack” is enabled in the “Dual” or “UEFI” boot mode or when the “PXE Boot to LAN” is enabled in the “Legacy” boot mode. Refer to the “Boot” section in this chapter. After this function is selected, the screen will warn you that you are going to exit the BIOS setup utility.



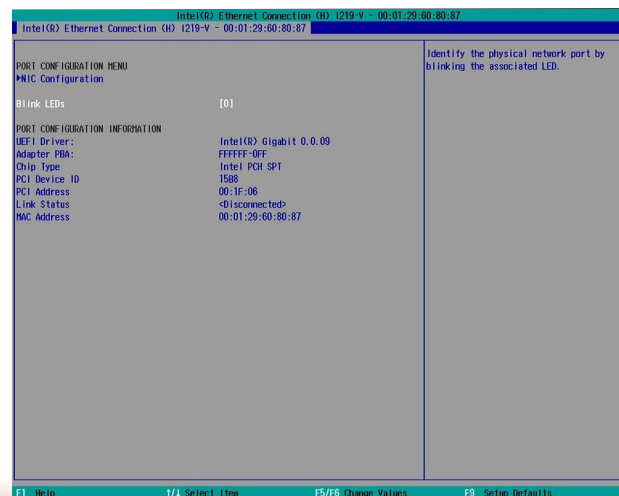
## Network Device List

The “Device Manager” screen is displayed. And if the “Network Stack” or the “PXE Boot to LAN” option is enabled from the “Boot” menu, the “Network Device List” should be shown in the “Device list”. Select “Network Device List” to view all of the detected network devices. For each network device, you can select to view and configure its settings. In addition, you can select either the IPv4 or IPv6 network settings for UEFI network configuration.



## NIC Configuration Menu

This screen shows hardware information for the Ethernet controllers and configures their operation.

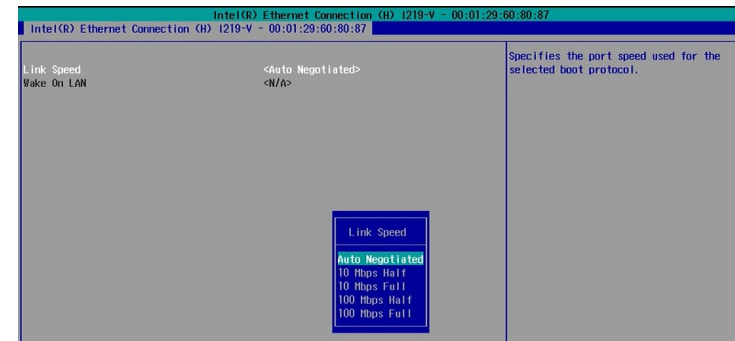


## Blink LEDs

Enter the duration (seconds) to blink the Ethernet's Speed LED to indicate its presence.

## NIC Configuration

This screen configures the Ethernet controller. Select the link speed from the following options: Auto Negotiated, 10Mbps Half, 10Mbps Full, 100Mbps Half, and 100Mbps Full.



## IPv4 Network Configuration

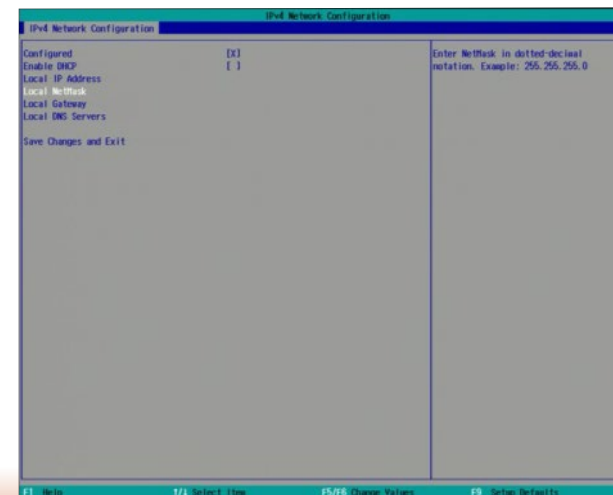
This screen configures the IP addressing method (DHCP or static IP). For static IP addressing, configure the following:

Local IP address and subnet mask: Enter the IP address for the network device in the IPv4 format:

x . x . x . x (x must be a decimal value between 0 and 255).

Local Gateway: Enter the gateway address in the IPv4 format.

Local DNS (Domain Name System) Servers: Enter DNS (Domain Name System) server IP addresses in the IPv4 format.



### IPv6 Network Configuration

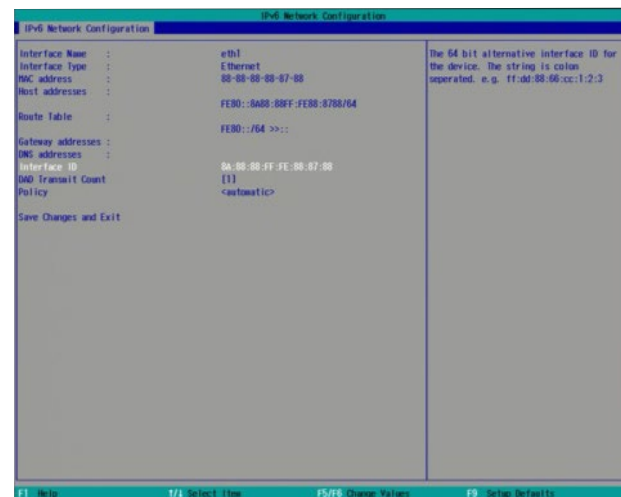
If you select to use IPv6 network settings, enter the Interface ID (64 bit).  
Policy: Select either automatic or manual. And select "Advanced Configuration" to configure IPv6 network address manually if the manual option is selected.

New IPv6 address: Enter the IP address for the network device in the IPv6 format:

x : x : x : x : x : x : x : x (x can be any hexadecimal value between 0 and FFFF). Place a space to separate each IP address to enter more than one address.

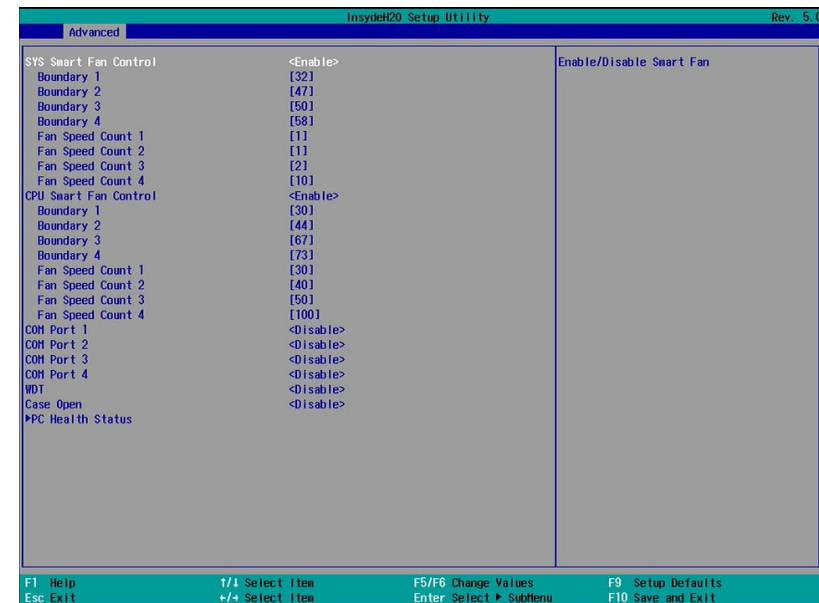
New Gateway addresses: Enter gateway addresses in the IPv6 format.

New DNS addresses: Enter DNS (Domain Name System) server IP addresses in the IPv6 format.



### SIO NUVOTON6106D

This section configures the system's super I/O chip parameters.



### SYS/CPU Smart Fan Control

Enable or disable the system or CPU smart fan.

#### Boundary 1 to Boundary 4

Set the boundary temperatures that determine the operation of the fan with different fan speeds accordingly. For example, when the system or the CPU temperature reaches boundary temperature 1, the system or CPU fan should be turned on and operate at the designated speed.

The range of the temperature is from 0 to 127°C.

#### Fan Speed Count 1 to Fan Speed Count 4

Set the fan speed. The range is from 1 (lowest speed)-10 (full speed).

### COM Port 1 to COM Port 4 (These settings may not be available depending on the model)

Configures the settings of the serial port.

Disable Disable this serial port.

Enable Enable this serial port.

#### Type

Choose RS232/RS422/RS485 for the serial port type for COM port 1 only.

#### WDT

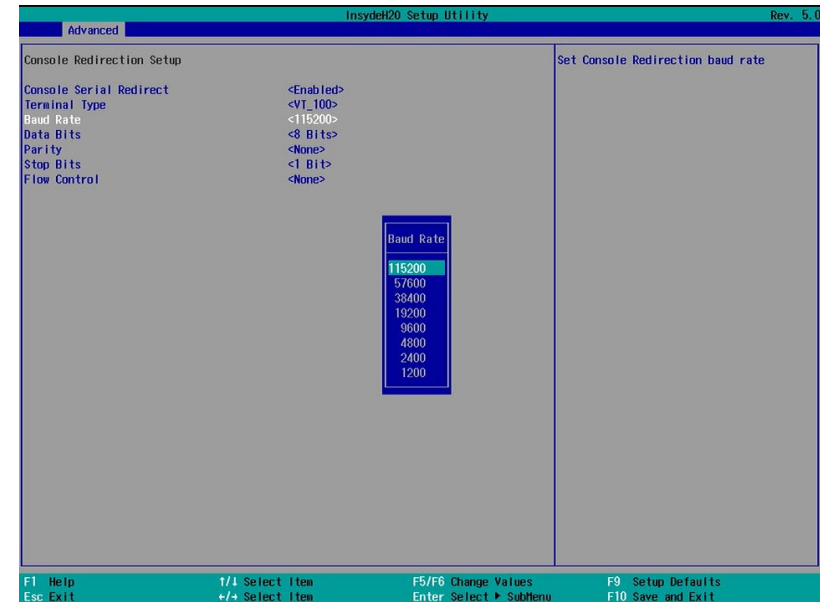
Enable or disable the watchdog function. A counter will appear if you select to enable WDT. Input any value between 1 and 255.

#### Case Open

Enable or disable the case open function.

### Console Redirection

Console redirection lets you monitor and control the system from a remote station by re-directing the host screen output through a serial port.



#### Console Serial Redirect

Enable or disable the console redirection function. (The default is disabled.) If you select to enable it, please configure the following parameters for serial communication between the system and a remote station:

Terminal type: VT\_100, VT\_100+, VT\_UTF8, or PC\_ANSI.

Baud rate: 115200, 57600, 38400, 19200, 9600, 4800, 2400 or 1200.

Data bits: 8 bits or 7 bits.

Parity: None, Even or Odd.

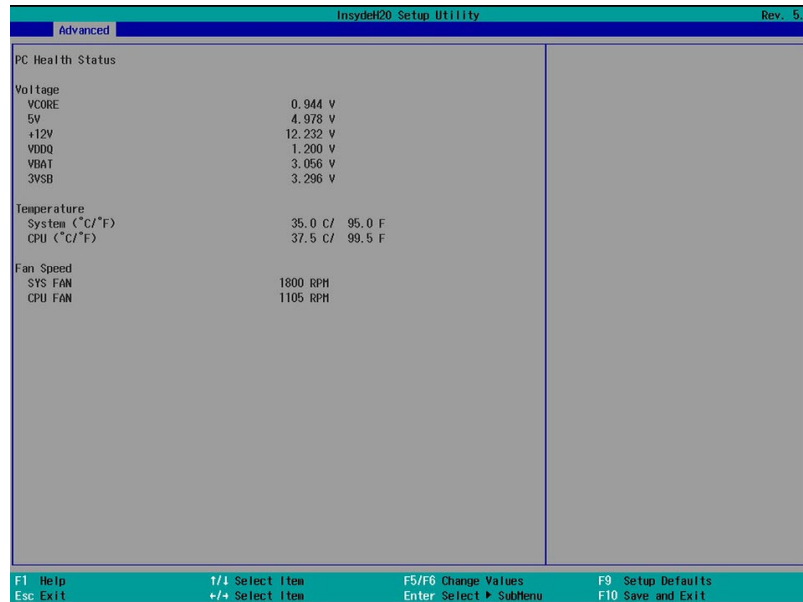
Stop bits: 1 bit or 2 bits.

Flow control: None, RTS/CTS or XON/XOFF

This is the global setting for all of the designated serial ports for the console redirection function.

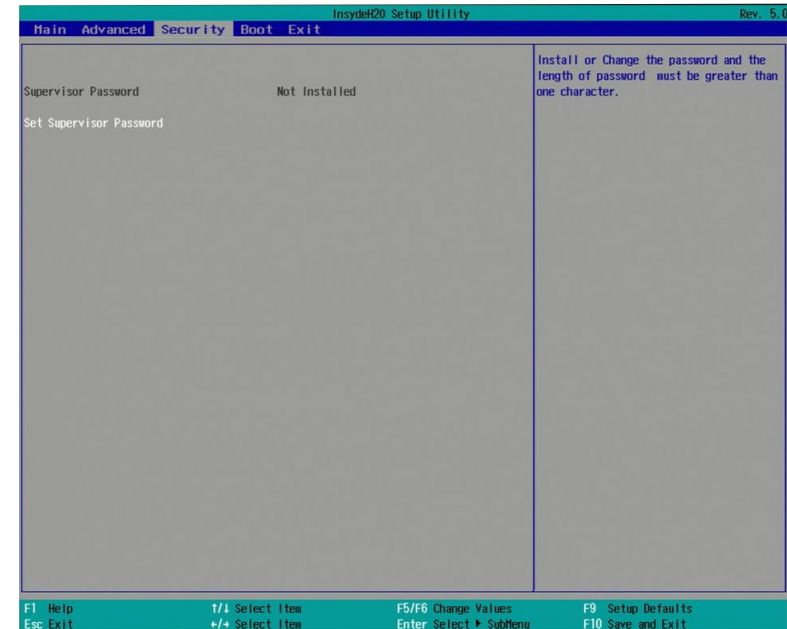
## PC Health Status

This section displays PC health status.



## Security

This section configures the security of accessing the BIOS setup utility and system startup.



### Set Supervisor Password

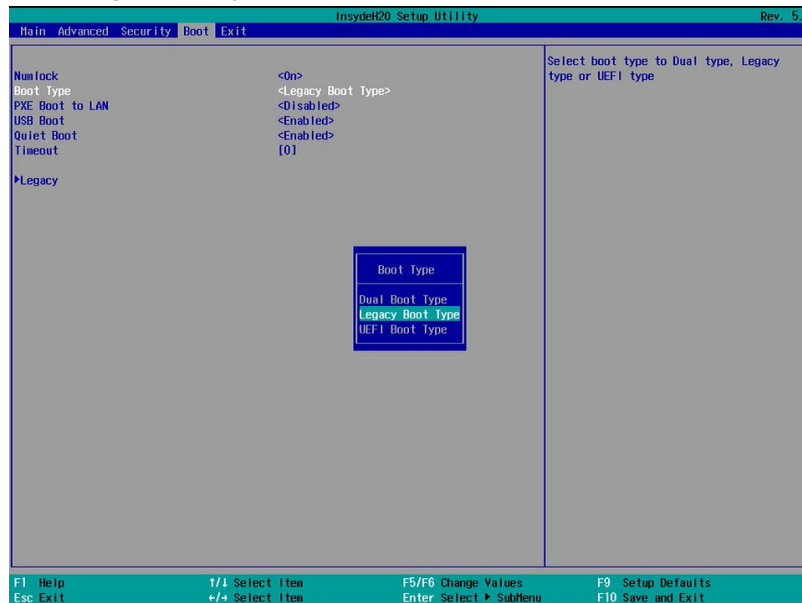
Set the administrative password for entering the BIOS setup utility or upon entering the power-on self-test (POST) process. The length of the password must be greater than 1 character and less than or equal to 10 characters.

### Power-on Password

If you select to set the supervisor password, this option will be shown. Enable or disable prompt for password at boot.

## Boot

This section configures boot options.



### NumLock

Select the power-on state for NumLock.

### Boot Type

Select the boot type. The options are Dual Boot Type, Legacy Boot Type or UEFI Boot Type.

### Network Stack

This option is shown only when the boot type is set to Dual or UEFI. Enable or disable UEFI network stack. It supports the operation of these functions or software: Windows 8 BitLocker Network Unlock, UEFI IPv4/IPv6 PXE and legacy PXE option ROM.

If this function is enabled, you can then go to "Advanced">"UEFI Device Manager" to configure network settings for network connection under the UEFI environment.

### PXE Boot Capability (UEFI mode) / PXE Boot to LAN (Legacy mode)

Enable or disable Preboot eXecution Environment (PXE) boot to LAN. In the UEFI or Dual boot mode, this function can only be enabled if the Network Stack support is enabled.

### USB Boot

Enable this function to boot from a USB flash drive.

### Quiet Boot

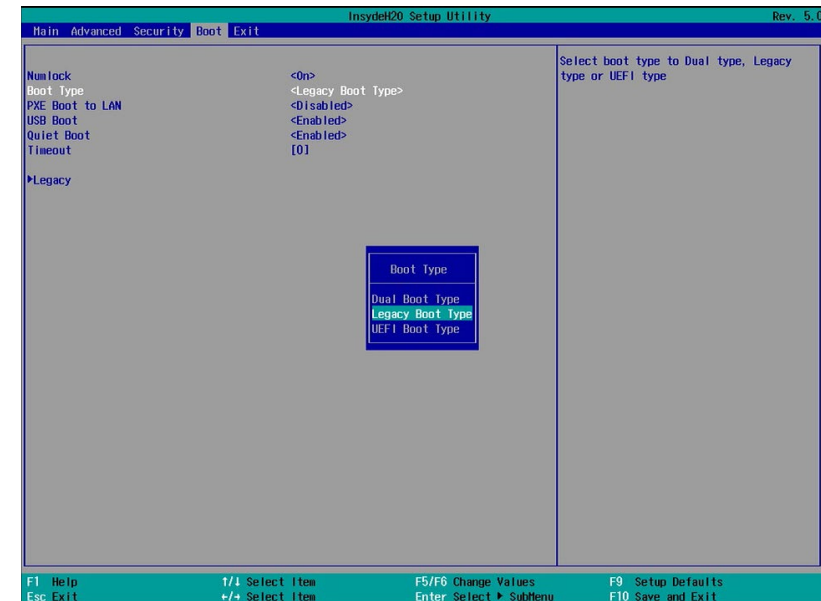
Enable or disable the quiet boot function to configure the screen's display between POST messages or the OEM logo at startup. Select Disabled to display the POST messages and select Enabled to display the OEM logo.

### Timeout

Enter the number of seconds the BIOS should wait before booting the designated device.

### Boot Device Priority

This section configures legacy or EFI boot order or both depending on the "Boot Type" selected.



### EFI Boot Menu

Use + and - keys to rearrange the priority list for boot devices.

### Legacy Boot Menu

#### Normal

For this option, determine the boot order for the devices within each category. Use the + and - key to arrange the priority of the boot type devices in the list. The first device in the list has the highest boot priority.

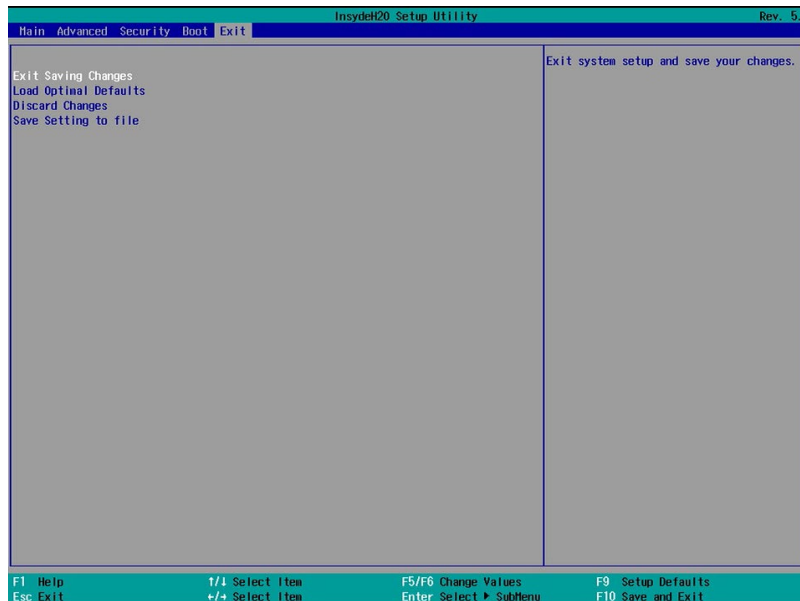
#### Advance

For this option, determine the boot order for all bootable devices. Use + and - keys to arrange the priority of the detected boot devices in the list. The first device in the list has the highest boot priority.



## Exit

This section configures the parameters for exiting the BIOS menu.



### Exit Saving Changes

Select this field and press <Enter> to exit BIOS setup and save your changes.

### Load Optimal Defaults

Select this field and press <Enter> to load the optimal defaults.

### Discard Changes

Select this field and press <Enter> to exit the BIOS setup without saving your changes.

### Save Setting to file

Select this option to save BIOS configuration settings to a USB drive. The operation will fail if there aren't any USB devices detected on the system. The saved configuration will have the DSF file extension and can be used for restoration.

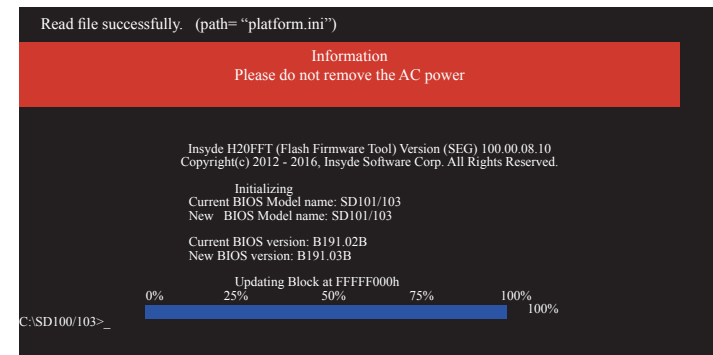
### Restore Setting from file

Select this option to restore BIOS configuration settings from a USB drive. Note that this option will not be available if there aren't any USB devices detected on the system.

## Updating the BIOS

To update the BIOS, you will need the new BIOS file and a flash utility. Please contact technical support or your sales representative for latest BIOS file and the firmware update utility.

For instructions on how to update BIOS with the flash utility, please see <https://www.dfi.com/Knowledge/Video/31> from the Knowledge Base of the DFI website.



**Notice: BIOS SPI ROM**

1. The Intel® Management Engine has already been integrated into this system board. Due to the safety concerns, the BIOS (SPI ROM) chip cannot be removed from this system board and used on another system board of the same model.
2. The BIOS (SPI ROM) on this system board must be the original equipment from the factory and cannot be used to replace one which has been utilized on other system boards.
3. If you do not follow the methods above, the Intel® Management Engine will not be updated and will cease to be effective.

**Note:**

- a. You can take advantage of flash tools to update the default configuration of the BIOS (SPI ROM) to the latest version anytime.
- b. When the BIOS IC needs to be replaced, you have to populate it properly onto the system board after the EEPROM programmer has been burned and follow the technical person's instructions to confirm that the MAC address should be burned or not.

## Chapter 8 - Supported Software

The system requires you to install drivers for some devices to operate properly. Your product package may include a CD that contain drivers. You can also download the latest drivers from the DFI Download Center:

<http://www.dfi.com/DownloadCenter>

Once you are in the Download Center page, select your product or type the model name and click "Search" to find product-related resources such as documentation and drivers.

Drivers are available for the following devices in Windows 10:

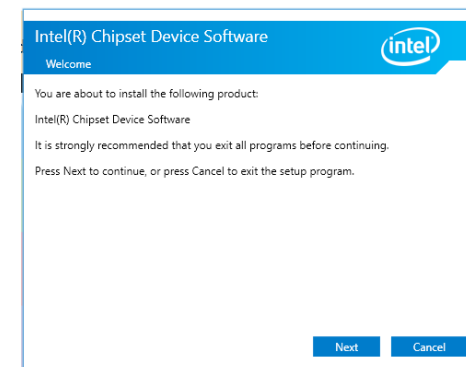
- Intel® Chipset Device Software
- Intel® Graphics Driver
- Intel® LAN Driver
- Intel® ME Driver
- Audio Driver
- Intel® Serial IO Driver

### Intel Chipset Device Software

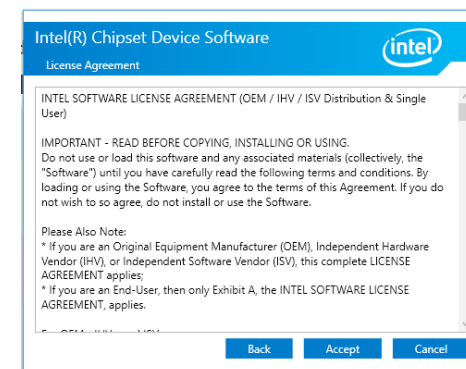
The Intel Chipset Device Software is used for updating Windows® INF files so that the Intel chipset can be recognized and configured properly in the system.

Please use the following procedure to install the "Intel Chipset Device Software".

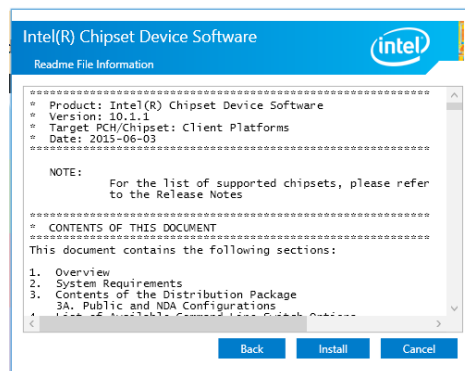
1. Setup is ready to install the utility. Click "Next" to continue.



2. Read the license agreement and then click "Yes".



- Go through the readme document for more installation tips and then click "Next".



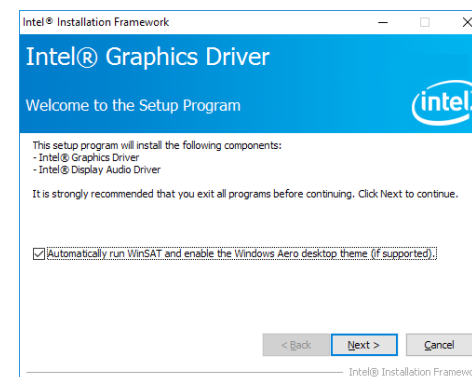
- Click "Finish" to exit setup.



## Intel Graphics Driver

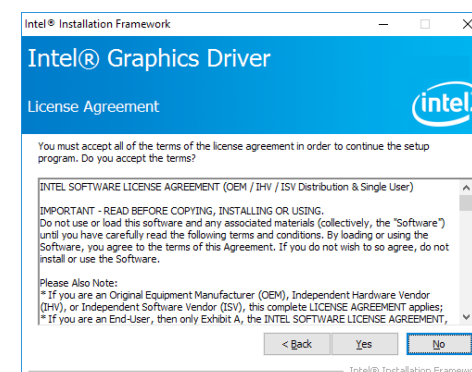
Please use the following procedure to install the Intel Graphics Driver.

- Setup is now ready to install the graphics driver. Click "Next" to continue.

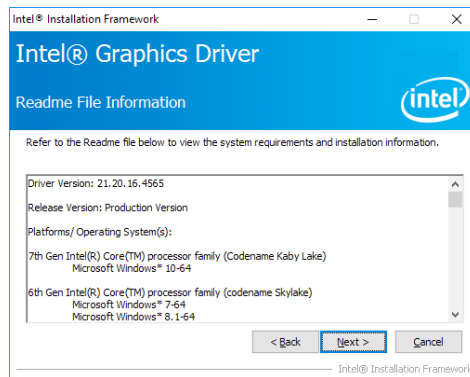


By default, the "Automatically run WinSAT and enable the Windows Aero desktop theme" is enabled. With this enabled, after the graphics driver is installed and the system is rebooted, the screen will turn blank for 1 to 2 minutes (while WinSAT is running) before the Windows 7/Windows 8.1/Windows 10 desktop appears. The "blank screen" period is the time Windows is testing the graphics performance.

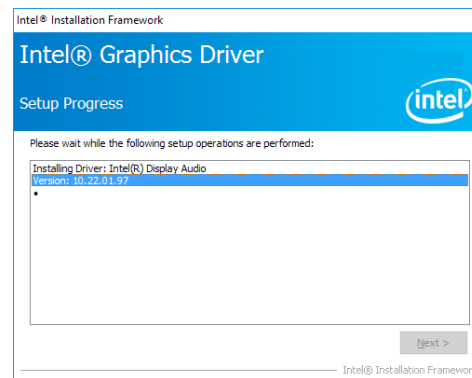
- Read the license agreement and then click "Yes".



- Go through the readme document for system requirements and installation tips and then click "Next".

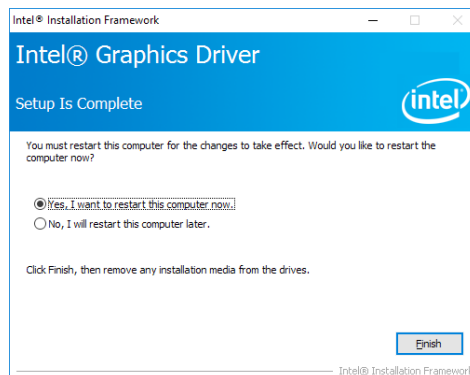


- Setup is now installing the driver. Click "Next" to continue.



- Click "Yes, I want to restart this computer now" and then click "Finish".

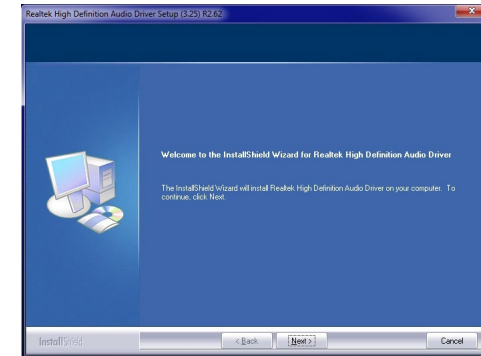
Restarting the system will allow the new software installation to take effect.



## Audio Drivers

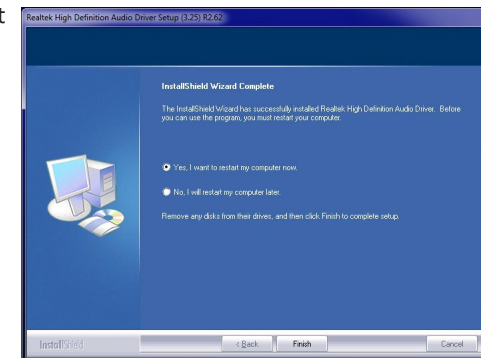
Please use the following procedure to install audio drivers.

- Setup is ready to install the driver. Click "Next" to continue.



- Click "Yes, I want to restart my computer now" and then click "Finish".

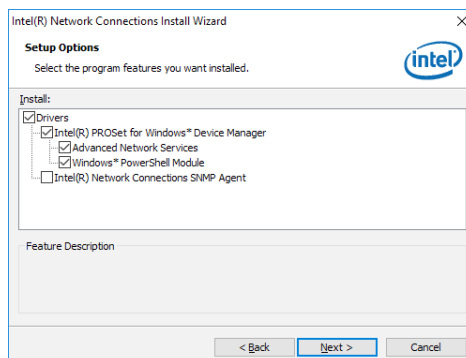
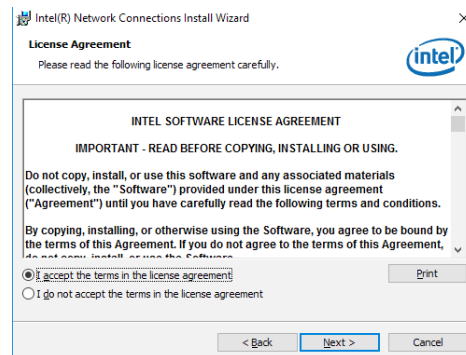
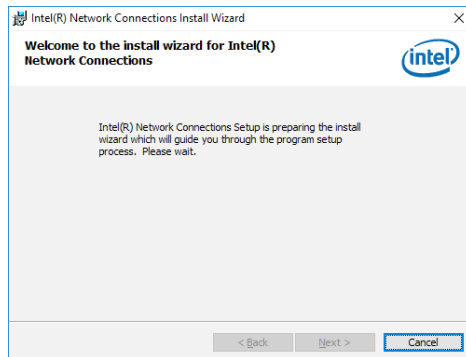
Restarting the system will allow the new software installation to take effect.



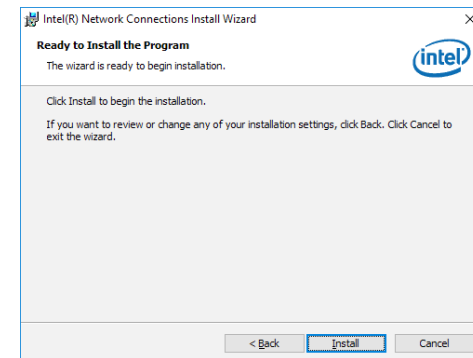
## Intel LAN Driver

Please use the following procedure to install the Intel LAN Driver.

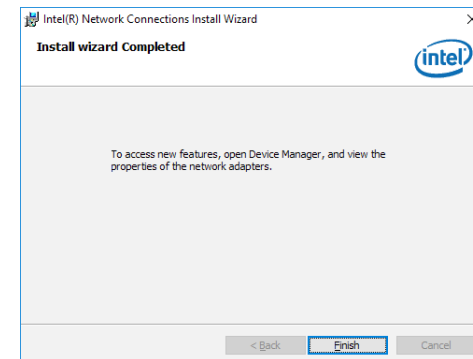
1. Setup is ready to install the driver. Click "Next" to continue.
2. Read and License Agreement and click "I accept the terms in the license agreement" if you agree the terms in the agreement, and then click "Next".
3. Select the program features you want to install and then click "Next".



4. Click "Install" to begin the installation.



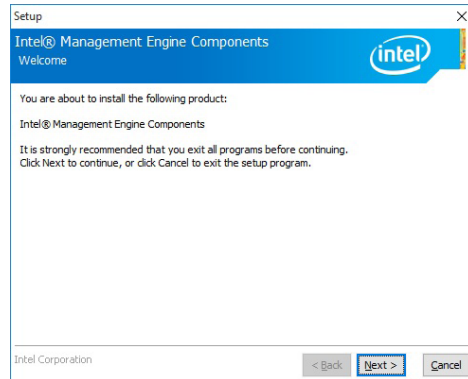
5. After the installation is complete, click "Finish" to exit setup.



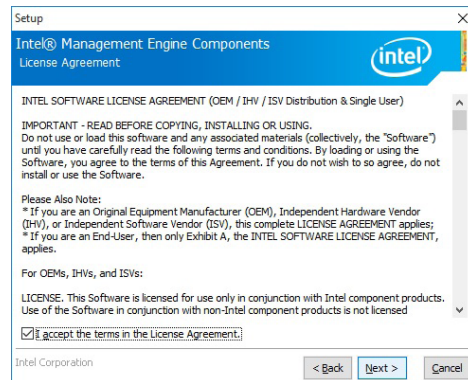
## Intel Management Engine Drivers

Please use the following procedure to install the Intel Management Engine Driver.

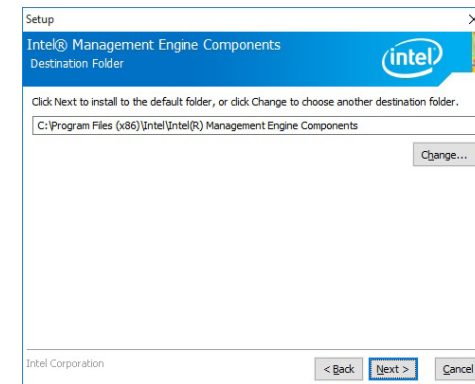
1. Setup is ready to install the driver. Click "Next" to continue.



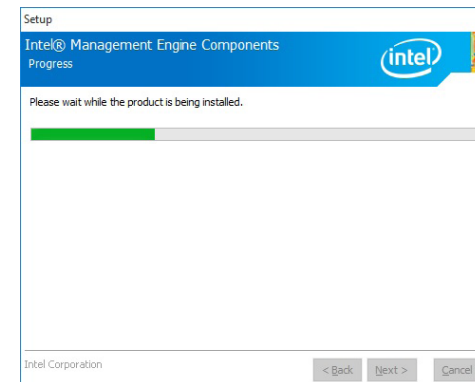
2. Read and License Agreement and click "I accept the terms in the license agreement" if you agree with the terms in the agreement, and then click "Next".



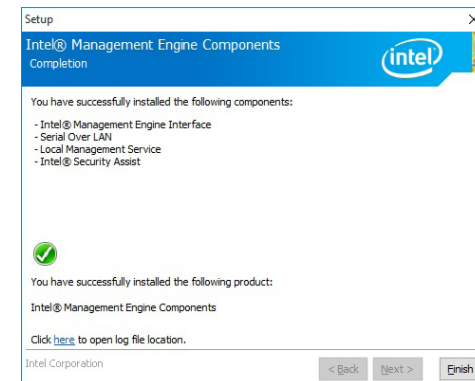
3. Setup is currently installing the driver. After the installation is complete, click "Next".



4. Please wait while the product is being installed.



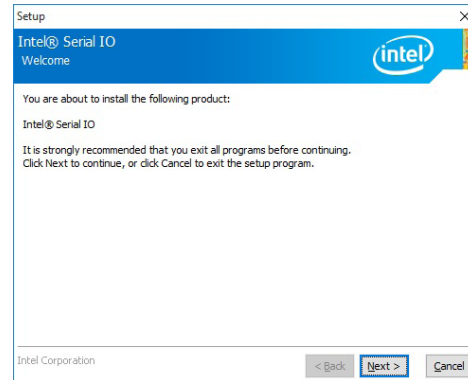
5. After the installation is complete, click "Finish" to exit setup.



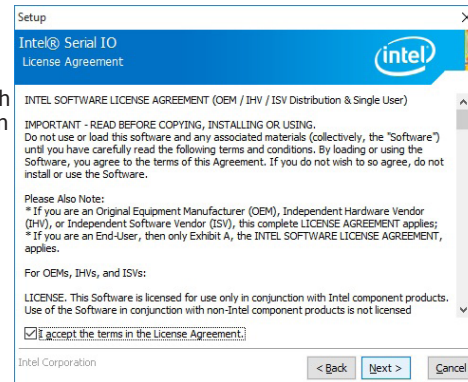
## IO Driver

Please use the following procedure to install the Intel Serial IO Driver.

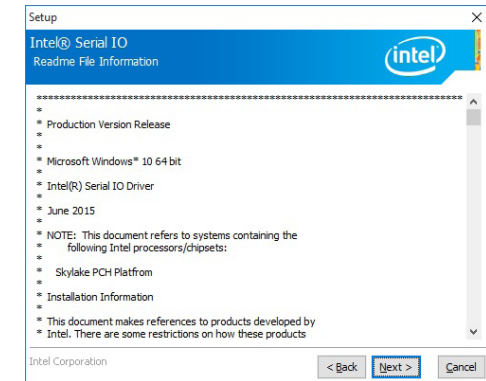
1. Setup is ready to install the driver.  
Click "Next" to continue.



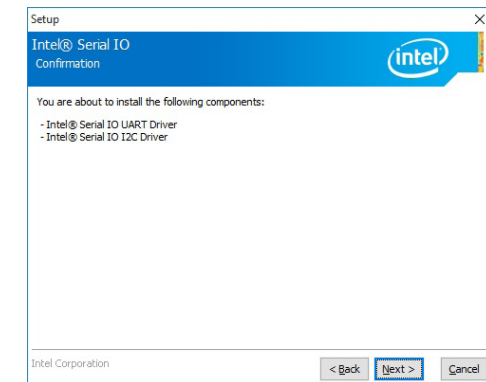
2. Read the license agreement carefully.  
Click "I accept the terms in the License Agreement" if you agree with the terms in the agreement and then click "Next".



3. Read the file information and then click "Next".

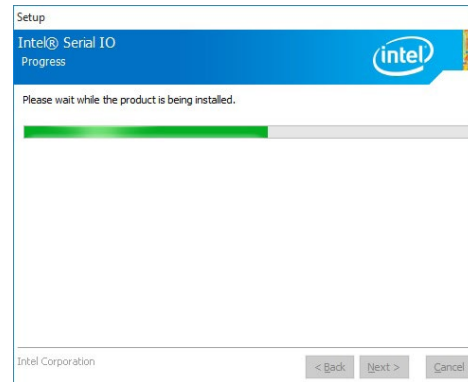


4. Setup is ready to install the driver.  
Click "Next" to begin the installation.





5. Setup is now installing the driver.



6. Click "Finish" to exit setup.

