

**Vi8103M/Vi8730M  
Motherboard  
Manual**

**Vi8103M**

**Great  
Minds  
Think**

**viglen**

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# Viglen, EMC and the 'CE' mark

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## CE Marking

European standards are being harmonised across borders. If products comply with the same standards in all European countries, product exporting and importing is made simple - paving our way to a common market. If you buy a product with a 'CE' mark on it (shown below), on the box, in the manual, or on the guarantee - it complies with the currently enforced directive(s).



## Introduction to EMC

EMC (Electromagnetic Compatibility) is the term used to describe certain issues with RF (Radio Frequency) energy. Electrical items should be designed so they do not interfere with each other through RF emissions. E.g. If you turn on your microwave, your television shouldn't display interference if both items are CE marked to the EMC directive.

If emitted RF energy is not kept low, it can interfere with other electrical circuitry - E.g. Cars Automatic Braking Systems have been known to activate by themselves while in a strong RF field. As this has obvious repercussions ALL electrical products likely to cause RF related problems have to be 'CE' marked from 1st January 1996 onwards.

If a product conforms to the EMC directive, not only should its RF emissions be very low, but its immunity to RF energy (and other types) should be high. The apparatus has to resist many 'real world' phenomena such as static shocks and mains voltage transients.

## Viglen's Environment laboratory

To gain a 'CE' mark, the Viglen computer range has had to undergo many difficult tests to ensure it is Electromagnetically Compatible. These are carried out in the in-house 'Environment lab' at Viglen Headquarters. We have made every effort to guarantee that each computer leaving our factory complies fully with the correct standards. To ensure the computer system maintains compliance throughout its functional life, it is essential you follow these guidelines.

- Install the system according to Viglen's instructions
- If you open up your Viglen:
  - Keep internal cabling in place as supplied.
  - Ensure the lid is tightly secured afterwards
  - Do not remove drive bay shields unless installing a 'CE' marked peripheral in its place
  - The clips or 'bumps' around the lips of the case increase conductivity - do not remove or damage.
  - Do not remove the ferrite ring from the L.E.D cables.
  - Only use your Viglen computer with 'CE' marked peripherals

This system has been tested in accordance with European standards for use in residential and light industrial areas - this specifies a 10 meter testing radius for emissions and immunity. If you do experience any adverse effects which you think might be related to your computer, try moving it at least 10 meters away from the affected item. If you still experience problems, contact Viglen's Technical Support department who will put you straight through to an EMC engineer - s/he will do everything possible to help. If modifications are made to your Viglen computer system, it might breach EMC regulations. XMA take no responsibility (with regards to EMC characteristics) of equipment which has been tampered with or modified.



This symbol on the product or on its packaging indicates that the product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or Viglen Ltd.

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# Chapter 1: Motherboard Overview

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## Introduction

This manual describes the Viglen Vig103M motherboard inside your computer. The motherboard is the most important part of your computer. It contains the CPU, memory and graphics circuitry that make the computer work in the correct manner.

The Vig103M motherboard is a Micro ATX form factor offering legacy to premium features. PS/2 mouse/keyboard combo port, integrated Graphics via VGA and HDMI, High Definition Audio via 3 flexible audio jacks and integrated 10/100/1000 network connection, as well as 4 USB 2.0 and 2 USB 3.0 ports to enrich your multimedia creation experience.

The Vig103M Motherboard supports 6th generation Intel Core i3, i5, and i7 processors, as well as being Microsoft Windows 7, 8.1 and Windows 10 WHQL certified.

This manual contains technical information about the Viglen Vig103M motherboard and other hardware components inside your computer. If you are new to computers we recommend that you read the user guide first. If you are an experienced computer user this manual should provide all the information you will need to perform simple upgrades and maintenance.

We hope that this manual is both readable and informative. If you have any comments for suggestions about how we could improve the format then please fill out the form at the back of the manual and send it to us.

Above all we hope that you enjoy using your Viglen computer.

# Feature Summary

## Form factor:

- MicroATX Form Factor 9.3 inch x 7.1 inch ( 23.5 cm x 18.0 cm )

## Processor:

- Supports 6<sup>th</sup> generation Intel® Core™ i7, Intel® Core™ i5, Intel® Core™ i3, Intel® Pentium® and Celeron® processors in an LGA1151 socket.
- Supports 14nm CPU
- Integrated graphics processing (processors with Intel® Graphics Technology)
- External graphics interface controller
- Integrated memory controller

## Chipset

- Intel® H110M Chipset

## Memory

- 2x DIMM, DDR4 2133MHz, non-ECC, un-buffered memory.
- Up to 64GB total
- Supports Intel® Extreme Memory Profile (XMP)

## Graphics

- Integrated graphics support for processors with Intel Graphics Technology:
  - VGA
  - HDMI
- Multi-VGA output support: HDMI/D-Sub ports
  - Supports HDMI with max. resolution of 4096x2160@24Hz, 2560x1600@60Hz
  - Supports VGA with max. resolution of 2048x1536@50Hz, 2048x1280@60Hz, 1920x1200@60Hz

## Audio

- Realtek® ALC887 7.1-Channel High Definition Audio CODEC

## LAN

- Realtek RTL8111H Gigabit Ethernet Controller

## SATA

- 4 x SATA 6Gb/s ports

## Internal Connectors

- 1 x 4-pin Chassis Fan Connector
- 1 x 4-pin CPU Fan Connector
- 1 x 2-pin Chassis Intrusion Connector
- 1 x S/PDIF-Out Header (2 x 6 pin)
- 1 x Front Panel Audio Connector (2 x 5 pin)
- 1 x System Front Panel Header (Reset, HD LED, Power LED, Power On) (2 x 5 pin)
- 1 x USB 2.0 Connector (2 x 5 pin)
- 1 x USB 3.0 connector
- 4 x SATA 6Gb/s Ports
- 1 x TPM Connector (2 x 7 pin)
- 1 x 4-pin ATX 12V Power connector
- 1 x 24-pin EATX Power connector(s)
- 1 x COM Connector
- 1 x 2-pin CMOS Header

## Expansion Capabilities

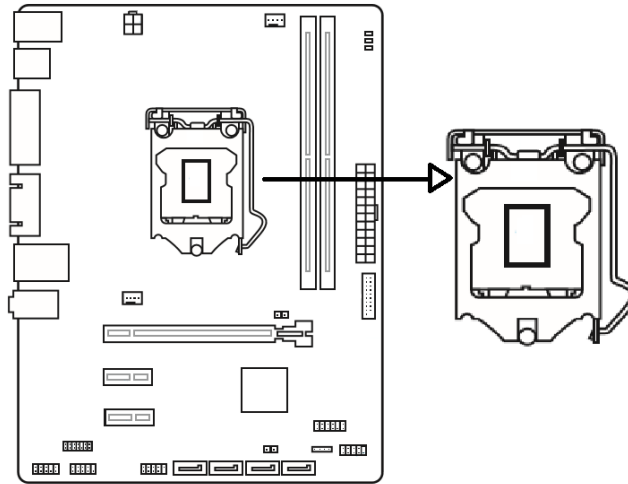
- 1x PCIe 3.0 x16 slot
- 2x PCIe 2.0 x1 slots

## Rear I/O Ports

- 1 x PS/2 keyboard/mouse port
- 1 x D-Sub port
- 1 x HDMI port
- 1 x LAN (RJ-45) port
- 4 x USB 2.0 ports
- 2 x USB 3.0 ports
- 3 x Audio jacks

## Processor

The motherboard is designed to support the Intel 6<sup>th</sup> generation Core™ i7 / Core™ i5 / Core™ i3, Pentium®, Celeron® processors in an LGA1151 socket.



**Figure 1:** CPU Socket

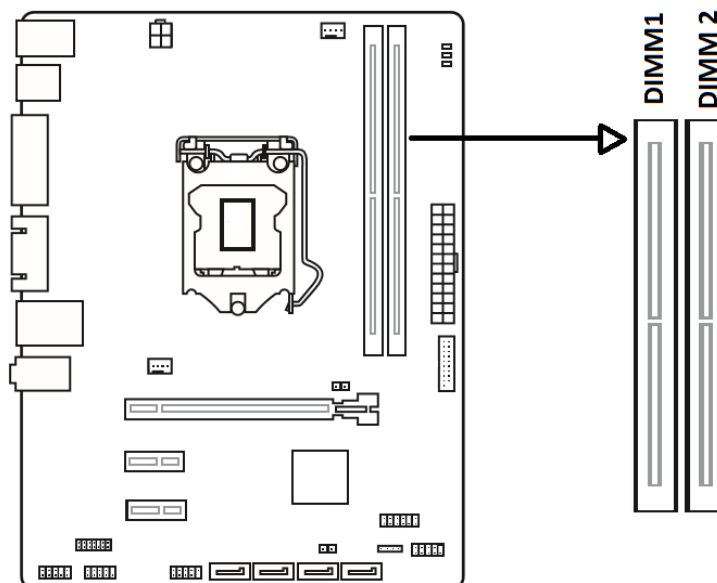
Other processors may be supported in the future. This board is designed to support processors with a maximum TDP of 130 W.

## Chipset

Intel® H110M Chipset

## Memory

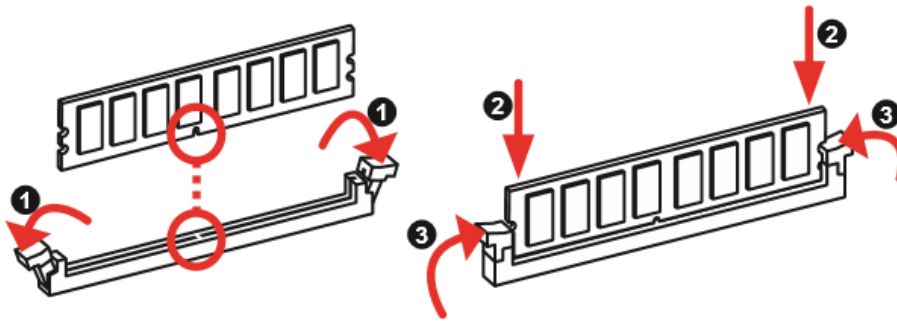
This motherboard comes with four Double Data Rate 4 (DDR4) Dual Inline Memory Module (DIMM) sockets. A DDR4 module is notched differently from a DDR, DDR2, or DDR3 module. DO NOT install a DDR, DDR2, or DDR3 memory module to the DDR4 slot.



**Figure 2:** Vig103M DDR4 DIMM Sockets

You may install 2GB, 4GB, 8GB and 16GB unbuffered non- ECC DDR4 DIMMs into the DIMM sockets.





**Figure 3:** Memory configuration

**NOTE:** To be fully compliant with all applicable DDR SDRAM memory specifications, the board should be populated with DIMMs that support the Serial Presence Detect (SPD) data structure. This allows the BIOS to read the SPD data and program the chipset to accurately configure memory settings for optimum performance. If non-SPD memory is installed, the BIOS will attempt to correctly configure the memory settings, but performance and reliability may be impacted or the DIMMs may not function under the determined frequency.

You may install varying memory sizes in DIMM1 and DIMM2. The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation.

- According to Intel® CPU spec, DIMM voltage below 1.35V is recommended to protect the CPU.
- Due to the memory address limitation on 32-bit Windows® OS, when you install 4GB or more memory on the motherboard, the actual usable memory for the OS can be about 3GB or less. For effective use of memory, we recommend that you do any of the following:

- Use a maximum of 3 GB system memory if you are using a 32-bit Windows® OS.
- Install a 64-bit Windows® OS if you want to install 4GB or more on the motherboard.

For more details, refer to the Microsoft® support site at:

<http://support.microsoft.com/kb/929605/en-us>.

## Memory Configurations

The Intel Core i7, Intel Core i5, Intel Core i3, and Intel Pentium processors support the following types of memory organization:

- **Dual channel (Interleaved) mode.** This mode offers the highest throughput for real world applications. Dual channel mode is enabled when the installed memory capacities of both DIMM channels are equal. Technology and device width can vary from one channel to the other but the installed memory capacity for each channel must be equal. If different DIMM speeds are used between channels, the slowest memory timing will be used.
- **Single channel (Asymmetric) mode.** This mode is equivalent to single channel bandwidth operation for real world applications. This mode is used when only a single DIMM is installed or the memory capacities are unequal. Technology and device width can vary from one channel to the other. If different DIMM speeds are used between channels, the slowest memory timing will be used.

## Graphics Subsystem

The board supports system graphics through either Intel Graphics Technology or a PCI Express x16 add-in graphics card.

### Integrated Graphics

The board supports integrated graphics through the Intel® Flexible Display Interface (Intel® FDI) for processors with Intel Graphics Technology.

### Analog Display (VGA)

The VGA port supports analog displays. The maximum supported resolution is 2048x1536@50Hz/ 2048x1280@60Hz/ 1920x1200@60Hz refresh rate.

### HDMI

The maximum supported resolution is of 4096x2160@24Hz /2560x1600@60Hz

### Multiple Display Configurations

The following multiple display configuration modes are supported (with appropriate driver software):

- Single Display is a mode with one display port activated to display the output to one display device.
- Intel® Display Clone is a mode with up to three display ports activated to drive the display content of same colour depth setting but potentially different refresh rate and resolution settings to all the active display devices connected.
- Extended Desktop is a mode with up to three display ports activated to drive the content with potentially different colour depth, refresh rate, and resolution settings on each of the active display devices connected.

### PCI Express 3.0/2.0 x16 (1 @x4) slots

The Intel Core i7/i5/i3, Pentium and Celeron processors in the LGA1151 socket support discrete add in graphics cards through the PCI Express 2.0 x16 connector:

- Supports PCI Express GEN3 frequency of 2.5 GHz resulting in 8.0 Gb/s each direction (1000 MB/s) per lane. Maximum theoretical bandwidth on interface is 16GB/s in each direction, simultaneously, when operating in x16 mode.
- Supports PCI Express GEN2 frequency of 2.5 GHz resulting in 5.0 Gb/s each direction (500 MB/s) per lane. Maximum theoretical bandwidth on interface is 8GB/s in each direction, simultaneously, when operating in x16 mode.

## Audio Subsystem

The motherboard supports Intel High Definition Audio through a Realtek ACL887 audio codec.

These audio connectors are used for audio devices. It is easy to differentiate between audio effects according to the colour of audio jacks.



**Figure 4:** Audio Connectors

- Line-In (Blue) - Line In, is used for external CD player, tape-player or other audio devices.
- Line-Out (Green) - Line Out, is a connector for speakers or headphones.
- Mic-in (Pink) - Mic, is a connector for microphones.

**Notes:** If you want to configure a 7-channel audio output: Use a chassis with HD audio module in the front panel to support a 7-channel audio output.

## LAN Subsystem

The LAN subsystem consists of the following:

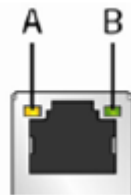
- Realtek RTL8111H Gigabit Ethernet Controller (10/100/1000 Mb/s)
- Intel H110M Chipset
- RJ-45 LAN connector with integrated status LEDs

Additional features of the LAN subsystem include:

- CSMA/CD protocol engine
- LAN connect interface between the PCH and the LAN controller
- Conventional PCI bus power management
  - ACPI technology support
  - LAN wake capabilities
- ACPI technology support
- LAN wake capabilities
- LAN subsystem software

### RJ-45 LAN Connector LEDs

The two LEDs are built into the RJ-45 LAN connector located on the back panel. These LEDs indicate the status of the LAN as shown in Table 2.



Item	Description
A	Link/Activity LED (yellow)
B	Link Speed LED (green/orange)

Figure 5: LAN Connector LED Locations

Link/ Activity LED		Speed LED	
Status	Description	Status	Description
Off	No link	Off	10 Mbps connection
Yellow	Linked	Green	100 Mbps connection
Blinking	Data activity	Orange	1 Gbps connection

Table 1: LAN Port LED Status

## Universal Serial Bus (USB)

The motherboard supports up to 4 USB 2.0 ports and 2 USB 3.0. The port arrangement is as follows:

- Four USB 2.0 ports are implemented with stacked back panel connectors (black)
- Two USB 3.0 ports are implemented with stacked back panel connectors (blue)

All USB ports are high-speed, full-speed, and low-speed capable.

**NOTE:** *Computer systems that have an unshielded cable attached to a USB port may not meet FCC Class B requirements, even if no device or a low-speed (sub-channel) USB device is attached to the cable. Use shielded cable that meets the requirements for high-speed (fully rated) devices.*

## SATA Support

The board provides four 6 Gb/s SATA connectors, which support one device per connector.

**NOTE:** *By default the SATA mode is set to AHCI in the BIOS to improve system performance. During Microsoft Windows XP installation, you must press F6 to install the AHCI drivers. Microsoft Windows Vista, Windows 7 and Windows 8 include the necessary RAID drivers for both AHCI and RAID without the need to install separate RAID drivers using the F6 switch in the operating system installation process. It is advised to install the latest AHCI drivers to improve system performance.*

## Expansion Slots

The motherboard provides the following expansion capability:

- 1x PCIe 3.0 x16 slot
- 2x PCIe 2.0 x1 slots

## Legacy I/O Controller

The Legacy I/O Controller provides the following features:

- PS/2-style keyboard/mouse interface on the back panel
- Intelligent power management, including a programmable wake-up event interface

The BIOS Setup program provides configuration options for the Legacy I/O controller.

## Real-Time Clock, CMOS RAM, and Battery

A coin-cell battery (CR2032) powers the real-time clock and CMOS memory. When the computer is not plugged into a wall socket, the battery has an estimated life of three years. When the computer is plugged in, the standby current from the power supply extends the life of the battery.

The clock is accurate to  $\pm 13$  minutes/year at 25 °C with power applied through the power supply 5V STBY rail.

**NOTE:** *If the battery and AC power fail, date and time values will be reset and the user will be notified during POST. When the voltage drops below a certain level, the BIOS Setup program settings stored in CMOS RAM (for example, the date and time) might not be accurate. Replace the battery with an equivalent one.*

## BIOS

The BIOS provides the Power-On Self-Test (POST), the BIOS Setup program, and the PCI/PCI Express and SATA auto-configuration utilities. The BIOS is stored in the Serial Peripheral Interface (SPI) Flash memory device.

## SATA Auto Configuration

If you install a SATA device (such as a hard disk drive) in your computer, the auto-configuration utility in the BIOS automatically detects and configures the device for your computer. You do not need to run the BIOS Setup program after installing a SATA device. You can override the auto-configuration options by specifying manual configuration in the BIOS Setup program.

## PCI/PCI Express Auto Configuration

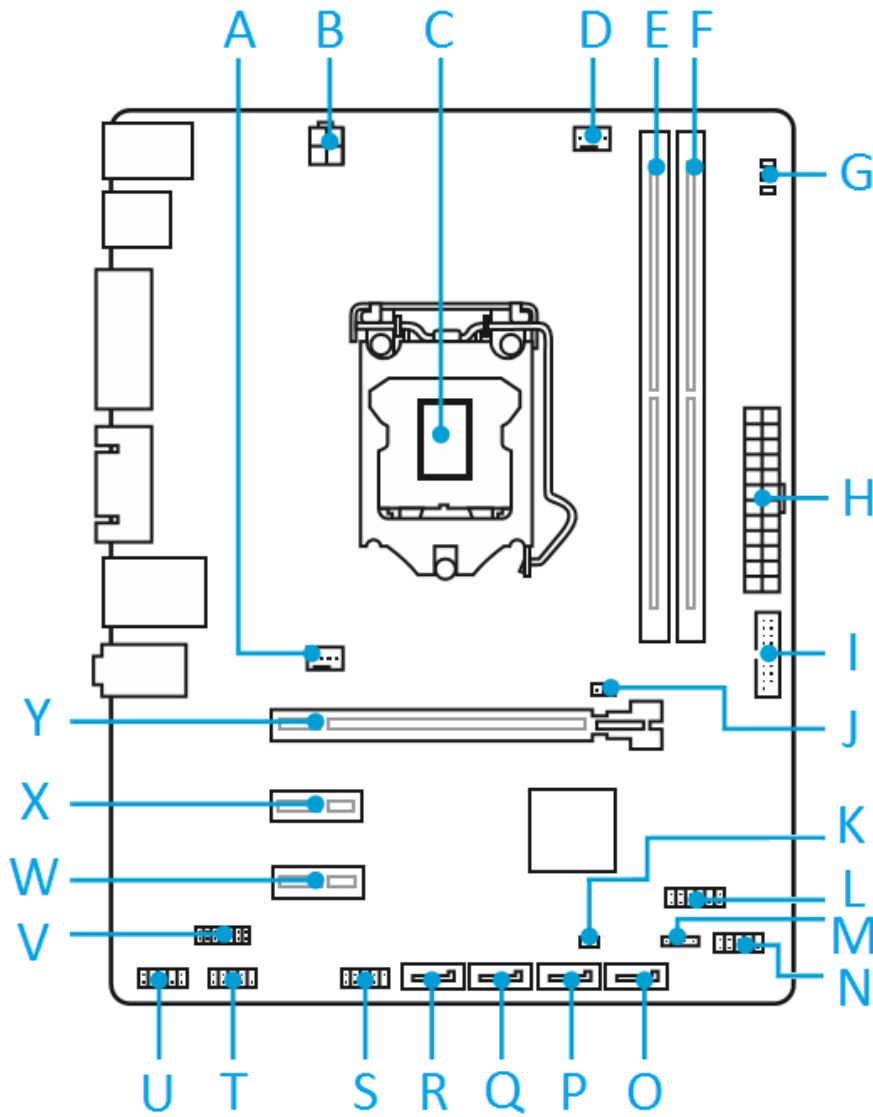
If you install a PCI Express add-in card in your computer, the PCI/PCI Express auto-configuration utility in the BIOS automatically detects and configures the resources (IRQs, DMA channels, and I/O space) for that add-in card. You do not need to run the BIOS Setup program after you install a Conventional PCI or PCI Express add-in card.

## BIOS Security Passwords

The BIOS includes security features that restrict whether the BIOS Setup program can be accessed and who can boot the computer. An administrator password and a user password can be set for the BIOS Setup and for booting the computer, with the following restrictions:

- The administrator password gives unrestricted access to view and change all Setup options. If only the administrator password is set, pressing <Enter> at the password prompt of Setup gives the user restricted access to Setup.
- If both the administrator and user passwords are set, you must enter either the administrator password or the user password to access Setup. Setup options are then available for viewing and changing depending on whether the administrator or user password was entered.
- Setting a user password restricts who can boot the computer. The password prompt is displayed before the computer is booted. If only the administrator password is set, the computer boots without asking for a password. If both passwords are set, you can enter either password to boot the computer.

# System Board Components



**Figure 6:** Motherboard Layout & Components

<b>A</b>	System Fan Header	<b>N</b>	Front Panel Header
<b>B</b>	External Main Power Connector	<b>O</b>	SATA1 Port
<b>C</b>	CPU Socket	<b>P</b>	SATA2 Port
<b>D</b>	CPU Fan Header	<b>Q</b>	SATA3 Port
<b>E</b>	SoDIMM1 Slot	<b>R</b>	SATA4 Port
<b>F</b>	SoDIMM2 Slot	<b>S</b>	USB2.0 Header
<b>G</b>	EZ Debug LEDs	<b>T</b>	Serial Port Connector
<b>H</b>	External Power Connector	<b>U</b>	Front Audio Connector
<b>I</b>	USB3.0 Connector	<b>V</b>	TPM Module Connector
<b>J</b>	CMOS Jumper	<b>W</b>	Mini PCI-E 3.0 x16 Slot
<b>K</b>	Chassis Intrusion Switch Connector	<b>X</b>	Mini PCI-E 2.0 d Slot
<b>L</b>	S/PDIF-Out Header	<b>Y</b>	Mini PCI-E Full-card Slot
<b>M</b>	Front Panel Speaker Header		

**Table 3:** Motherboard Connectors



# Back Panel Connectors

The motherboard external IO connectors are attached to a metallic I/O shield. This shield serves several purposes:

- It protects the sensitive motherboard from any external EMC interference.
- It stops the computer from interfering with other electrical devices.
- It allows the motherboard to be easily upgraded in the future without having to resort to buying a whole new case. Simply change the I/O shield to match the motherboard.

The I/O shield provides external access to PS/2 mouse/keyboard connectors as well as the USB ports, LAN Port, audio connectors, VGA and HDMI ports.

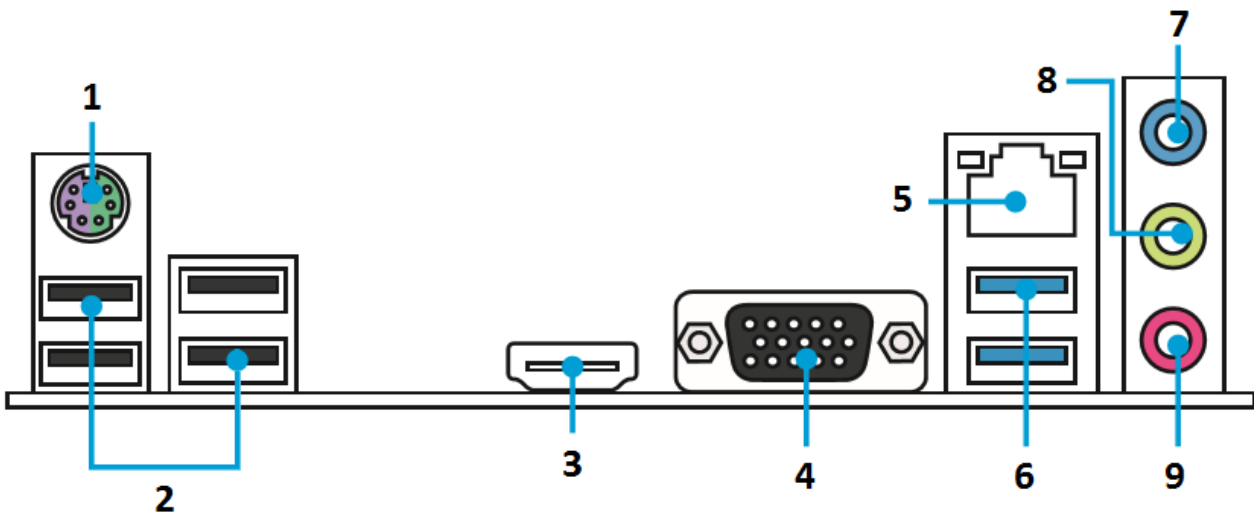


Figure 7: Back Panel Connectors

1	<b>PS/2 keyboard/mouse port</b> - This port is for a PS/2 mouse.
2	<b>USB 2.0 ports</b> - These Universal Serial Bus (USB) ports are for USB 2.0/1.1 devices.
3	<b>HDMI port</b> . This port is for a High-Definition Multimedia Interface (HDMI) connector, and is HDCP compliant allowing playback of HD DVD, Blu-ray, and other protected content.
4	<b>VGA Port</b> - The DB15-pin female connector is provided for monitor.
5	<b>LAN Port</b> - The standard RJ-45 LAN jack is for connection to the Local Area Network (LAN). You can connect a network cable to it.
6	<b>USB 3.0 ports</b> - These Universal Serial Bus (USB) ports are for USB 3.0 devices.
7	<b>Line-in port (light blue)</b> - This port connects the tape, CD, DVD player, or other audio sources.
8	<b>Line-out port (lime)</b> - This port connects to a headphone or a speaker. In the 4, 6 and 8-channel configurations, the function of this port becomes Front Speaker Out
9	<b>Mic in port (pink)</b> - This port connects a microphone.

Table 4: Back Panel

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# Chapter 2: System Board Options

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The Vig103M motherboard supports Intel® Core i3, i5, i7 and Celeron® and Pentium® processors in the LGA1151 socket. RAM can be upgraded to a maximum of 32GB using DDR4 2133 Non-ECC, un-buffered DIMMs.

## **WARNING!**

*Unplug the system before carrying out the procedures described in this chapter. Failure to disconnect power before you open the system can result in personal injury or equipment damage. Hazardous voltage, current, and energy levels are present in this product. Power switch terminals can have hazardous Voltages present even when the power switch is off.*

*The procedures assume familiarity with the general terminology associated with personal computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment.*

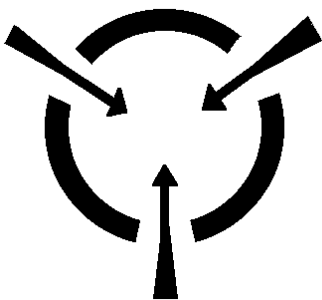
*Do not operate the system with the cover removed. Always replace the cover before turning on the system.*

As the colours of the wires in the mains lead of this computer may not correspond with the coloured markings identifying the terminals in your plug precede as follows:

The wire which is coloured **green-and-yellow** must be **connected** to the **terminal** in the plug which is marked by the letter **E** or by the safety Earth symbol **Q** or coloured green or **green-and-yellow**.

The wire which is coloured blue must be connected to the terminal which is marked with the letter **N** or coloured **black**.

The wire which is coloured brown must be connected to the terminal which is marked with the letter **L** or coloured **red**.



## **CAUTION!**

*The Viglen Vig103M motherboard and associated components are sensitive electronic devices. A small static shock from your body can cause expensive damage to your equipment.*

## **BEFORE YOU BEGIN**

Make sure you are earthed and free of static charge before you open the computer case. If you are unsure about upgrading your computer, return it to Viglen so a qualified engineer can perform the upgrade.

### **STEPS TO TAKE TO PREVENT STATIC DISCHARGE:**

1. The best way to prevent static discharge is to buy an anti-static strap from your local electrical shop. While you are wearing the strap and it is earthed, static charge will be harmlessly bled to ground.
2. Do not remove the component from its anti-static protective packaging until you are about to install it.
3. Hold boards by the edges - try not to touch components / interface strips etc.

**NOTE:** *We recommend that you return your computer to the service department for upgrading. Any work carried out is fully guaranteed. Upgrades should only be carried out by persons who are familiar with handling IC's, as incorrect installation will invalidate the guarantee.*

## **Overview of Jumper Settings**

The Vig103M motherboard contains the latest technology to offer an almost jumperless configuration. All Intel® Core CPUs are automatically detected and the speed is automatically set from the information provided by the CPU.

The only jumpers present on the motherboard are for clearing all the CMOS settings. In the unlikely event of the CMOS becoming corrupted then jumper CLRRTC can be set to clear the contents of the CMOS, and for write protecting the BIOS.

### **CAUTION!**

*Never remove jumpers using large pliers as this can damage the pins. The best way to remove a jumper is to use a small pair of tweezers or fine needle-nosed pliers.*

*Never remove a jumper when the computer is switch on. Always switch the computer off first.*

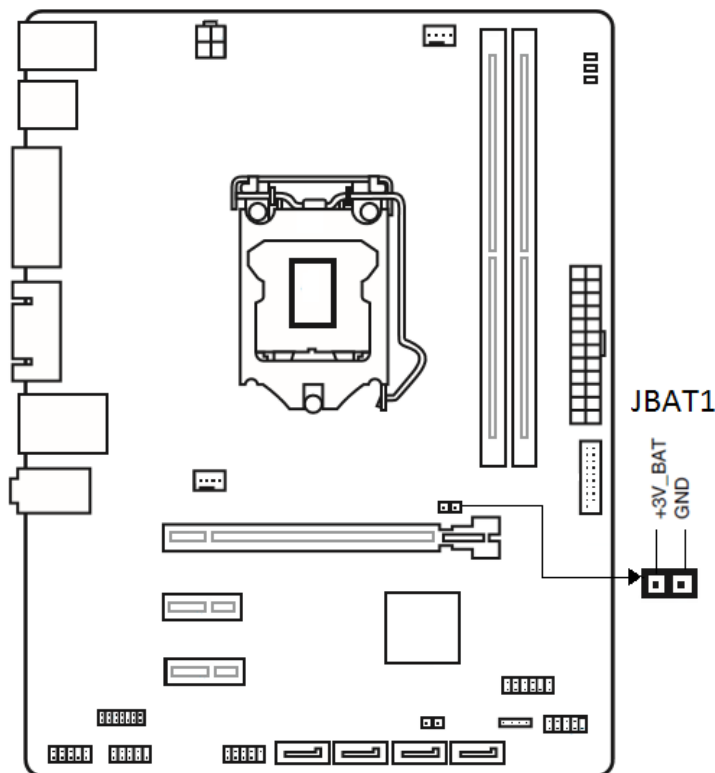
## System Board Jumper Settings

### **CAUTION**

Do not move the jumper with the power on. Always turn off the power and unplug the power cord from the computer before changing a jumper setting. Otherwise, the board could be damaged.

### Clear CMOS Memory (2-pin JBAT1)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords.



**Figure 8:** Clear CMOS jumper

### To erase the RTC RAM:

1. Power off the computer and unplug the power cord
2. Use a jumper cap to short JBAT1 for about 5-10 seconds.
3. Remove the jumper cap from JBAT1.
4. Plug the power cord and power on the computer.

Except when clearing the RTC RAM, never set the jumpers. Setting the jumpers will cause system boot failure!

If the steps above do not help, remove the on-board battery and place the jumper caps again to clear the CMOS RTC RAM data. After clearing the CMOS, reinstall the battery.

You do not need to clear the CMOS when the system hangs due to overclocking. For system failure due to overclocking, use the CPU Parameter Recall (C.P.R.) feature. Shut down and reboot the system, then the BIOS automatically resets parameter settings to default values.

# Motherboard Connectors

There are connectors on the motherboard for the Power supply, HD audio, fans, front panel audio, front panel USB and front panel connectors. The location and/or details of these connections are shown below.

## ATX power connectors (24-pin JPWR1, 4-pin JPWR2)

These connectors are for ATX power supply plugs. The power supply plugs are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.

This connector allows you to connect an ATX 12V 24-pin power supply. To connect the ATX 24-pin power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.

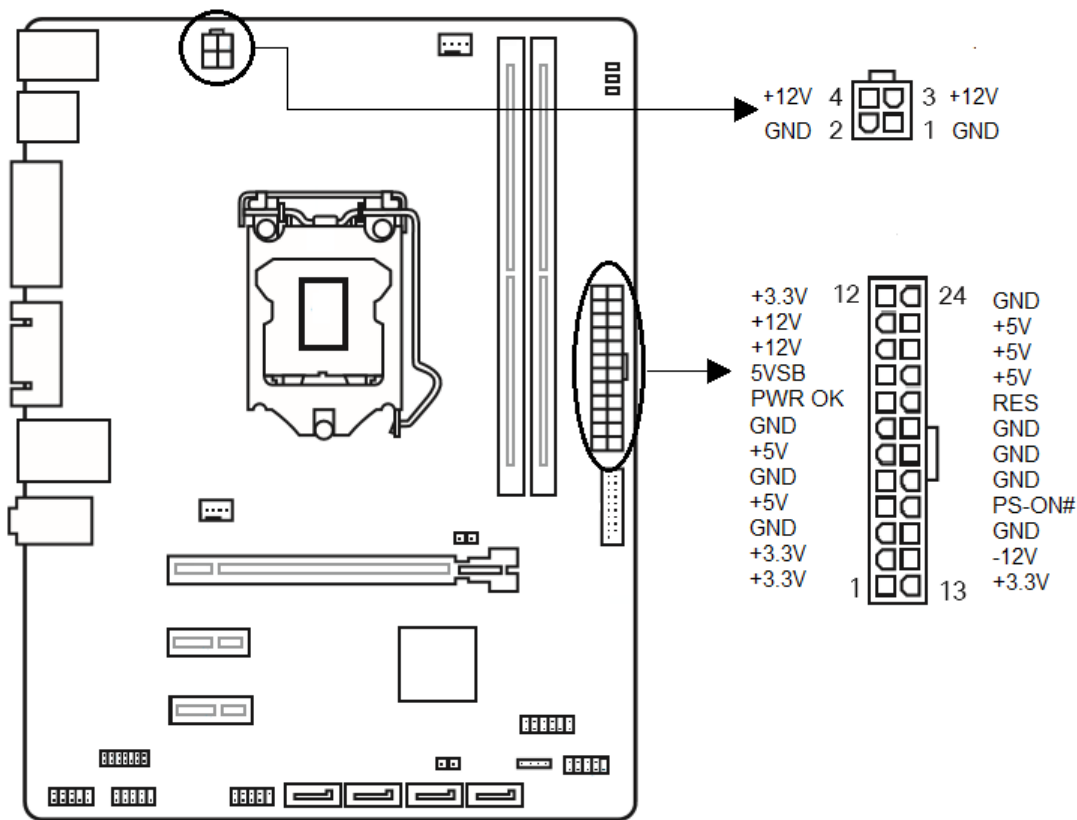


Figure 99: ATX Power Connectors

### System panel connector (10-1 pin JFP1):

These connectors are for electrical connection to the front panel switches and LEDs.

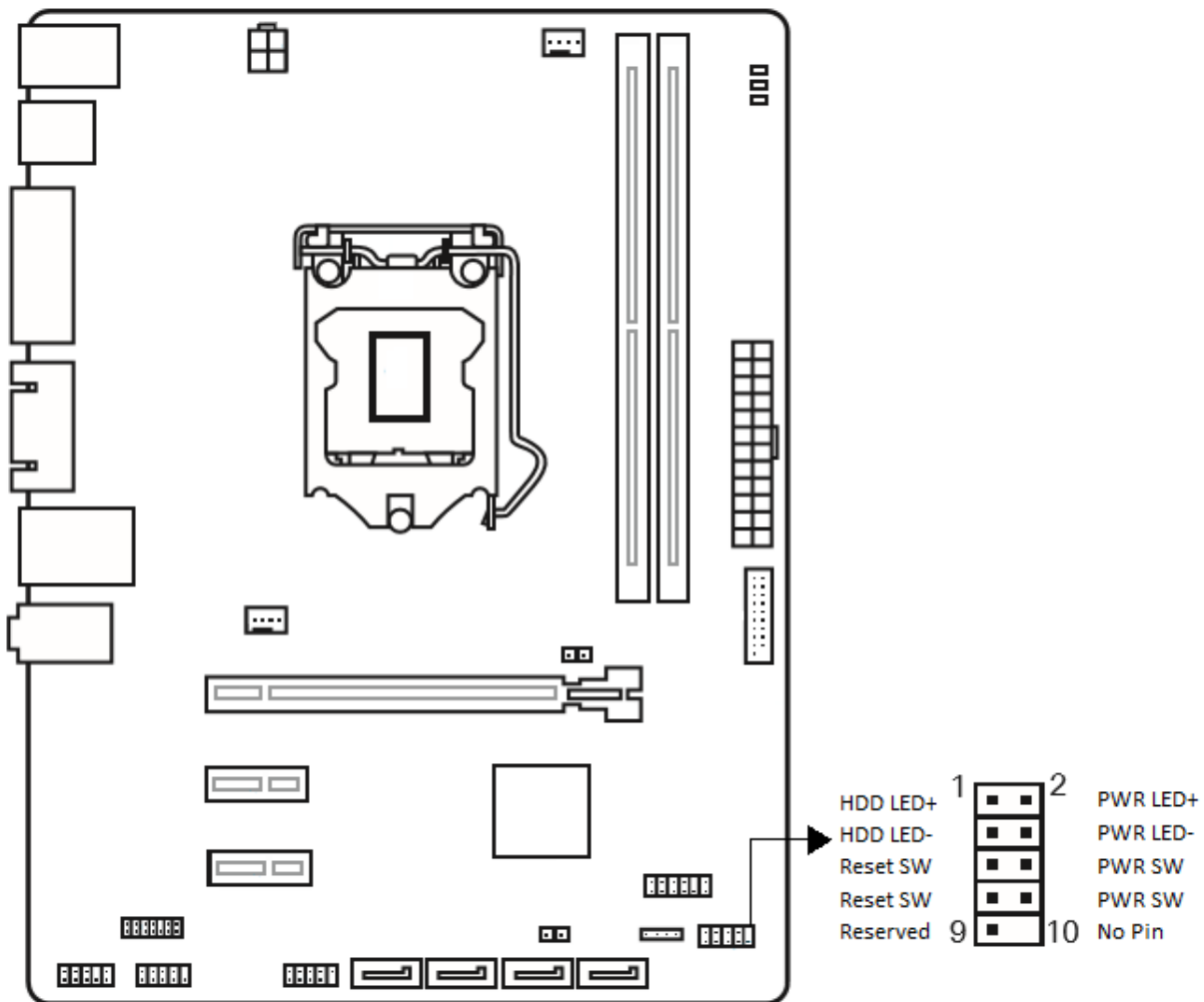


Figure 100: Front Panel Connectors

- **System power LED (2-pin PWR\_LED)**

This 2-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

- **Hard disk drive activity LED (2-pin HDD\_LED)**

This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The HDD LED lights up or flashes when data is read from or written to the HDD.

- **ATX power button/soft-off switch (2-pin PWR\_SW)**

This connector is for the system power switch.

- **Reset switch (2-pin RESET)**

This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.

### Speaker connector (4-pin JFP2)

The 4-pin connector is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings. Viglen chassis does not support speaker.

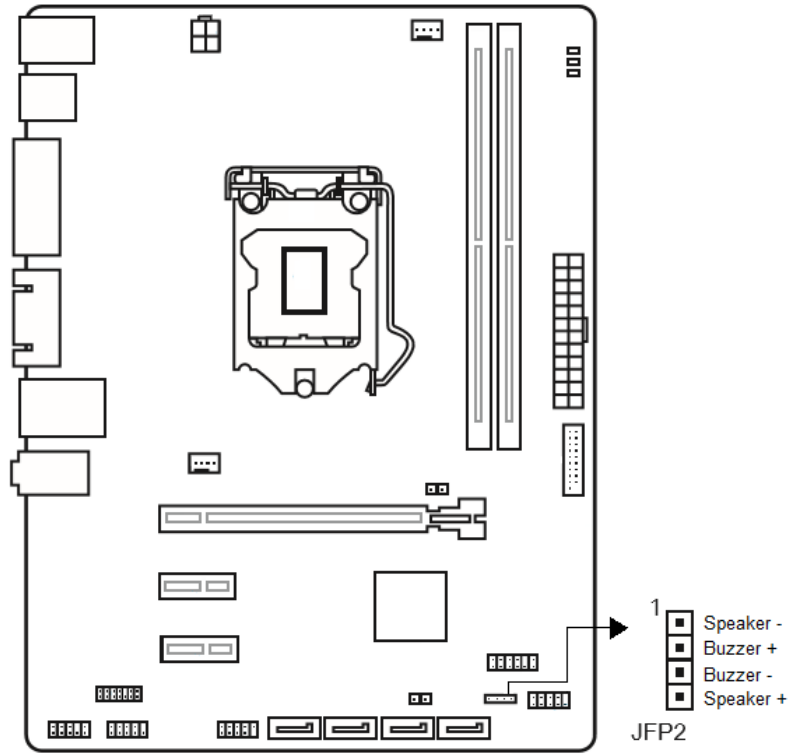


Figure 111: Speaker connector

### Front panel audio connector (10-1 pin JAUD1)

This connector allows you to connect the front panel audio and is compliant with Intel® Front Panel I/O Connectivity Design Guide.

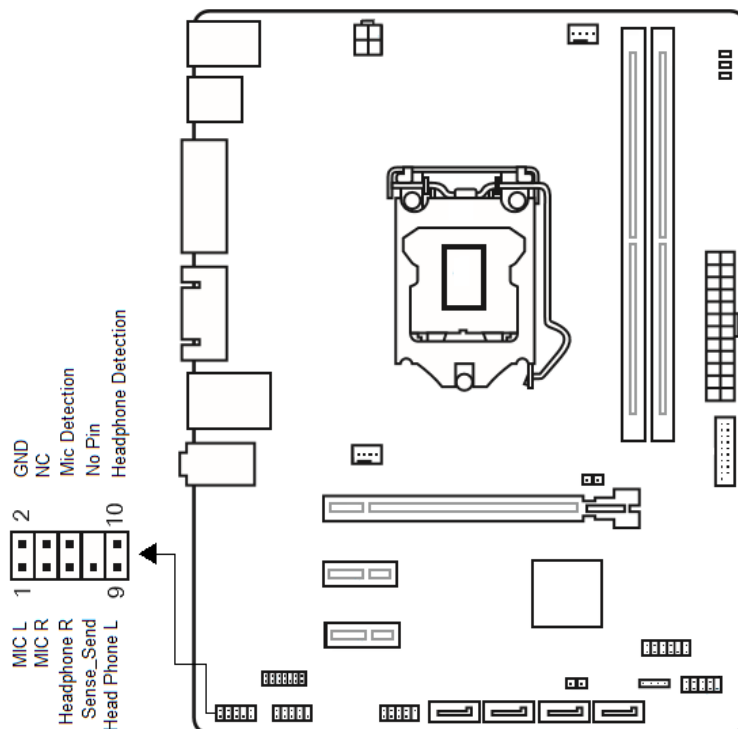


Figure 122: Front panel audio connector

### Chassis intrusion connector (4-1 pin JCI1)

This connector is for a chassis intrusion switch cable. Connect one end of the chassis intrusion switch cable to this connector. The chassis intrusion sensor or switch sends a high-level signal to this connector when a chassis component is removed or replaced. The signal is then generated as a chassis intrusion event. By default, both pins do not have JCI1 connector connected.

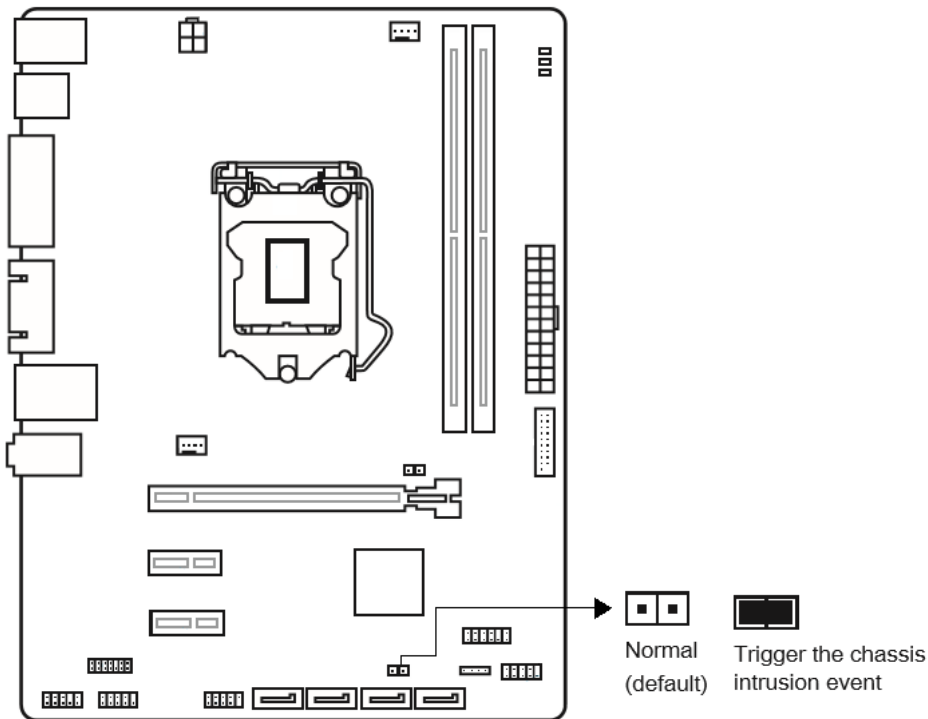


Figure 13: Chassis intrusion connector

### CPU and System fan connectors (4-pin CPUFAN1, 4-pin SYSFAN1)

Connect the fan cables to the fan connectors on the motherboard, ensuring that the black wire of each cable matches the ground pin of the connector.

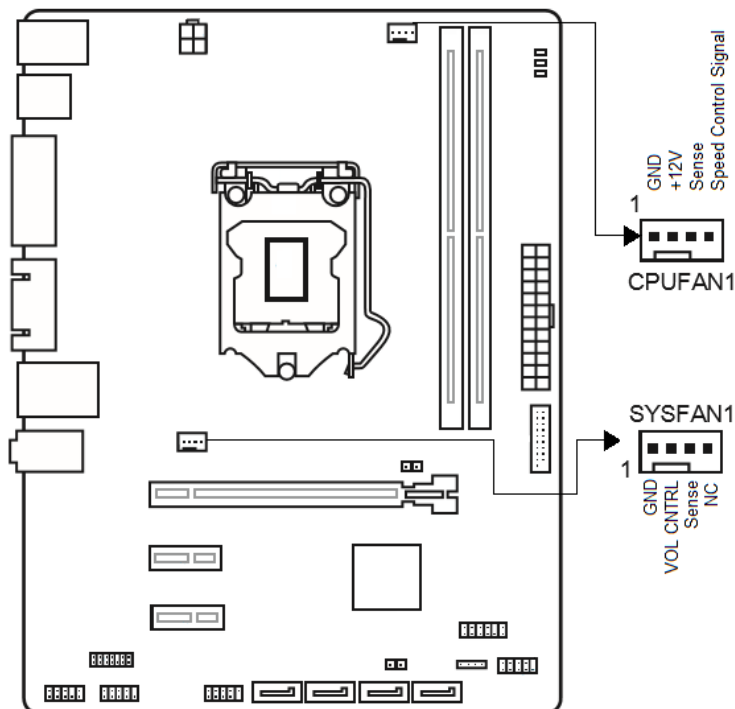


Figure 14: CPU and chassis fan connectors



## Intel® H110 Serial ATA 6.0Gb/s connector (SATA6G\_1~4 [gray])

This connector connects to Serial ATA 6.0 Gb/s hard disk drives via Serial ATA 6.0 Gb/s signal cables.

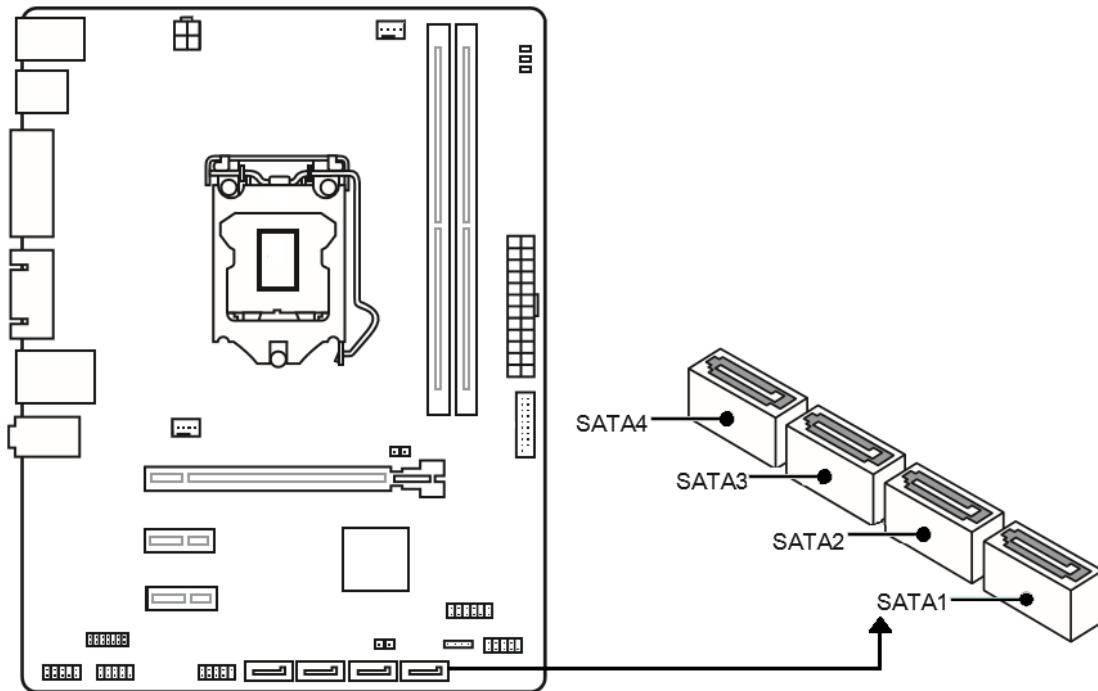


Figure 135: SATA connectors

## USB 3.1 Gen1 connector (20-pin USB3)

These connectors allow you to connect a USB 3.1 Gen1 ports on the front panel. With an installed USB 3.0 module, you can enjoy all the benefits of USB 3.0 including faster data transfer speeds of up to 5Gbps, faster charging time for USB-chargeable devices, optimized power efficiency, and backward compatibility with USB 2.0.

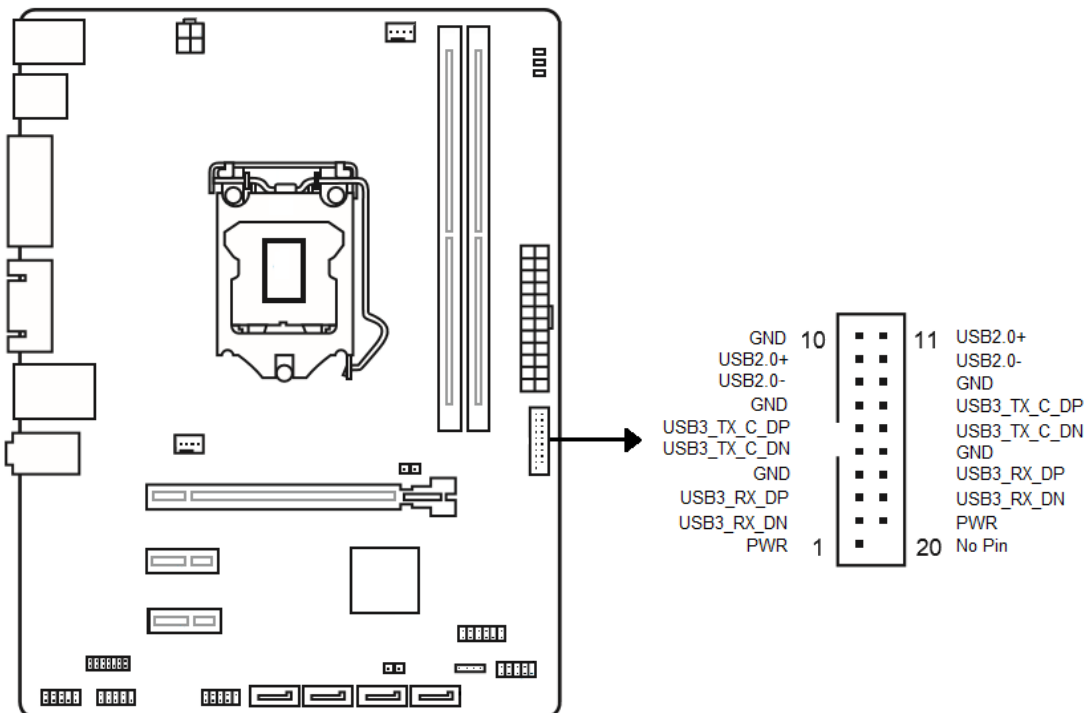


Figure 146: Front USB3.0 connector

## USB 2.0 connectors (10-1 pin JUSB1)

These connectors are for USB 2.0 ports on the front panel. Connect the USB module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specifications and supports up to 480Mbps connection speed.

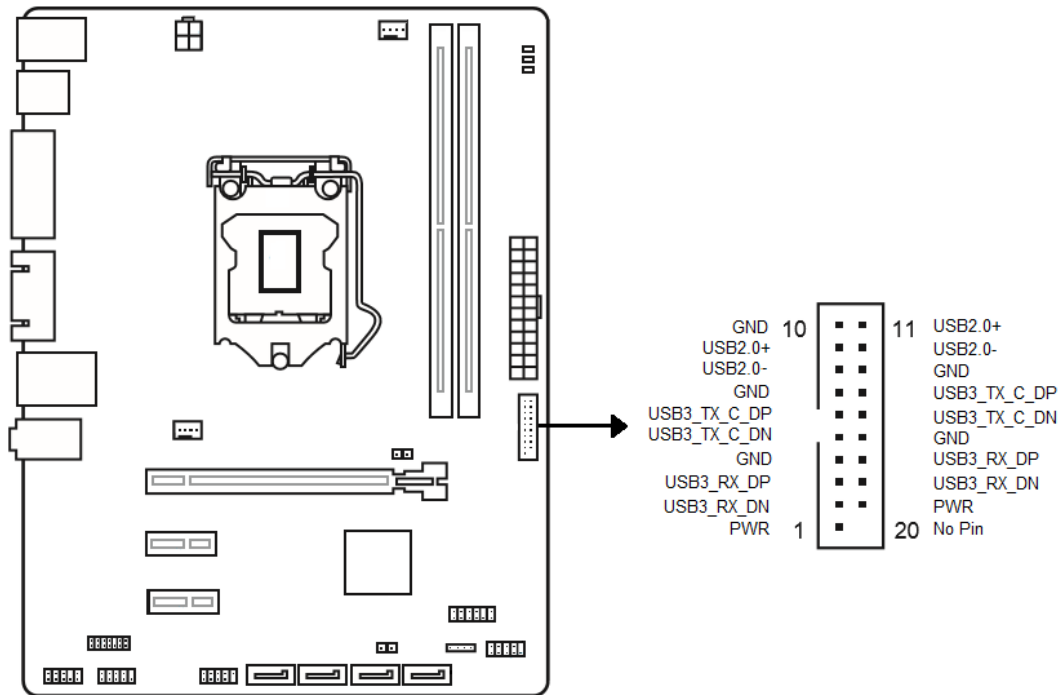


Figure 17: Front USB2.0 connector

## Serial Port (COM) Connector

This connector is used for connecting a serial port with bracket, which is used for connecting peripherals such as networks and printers.

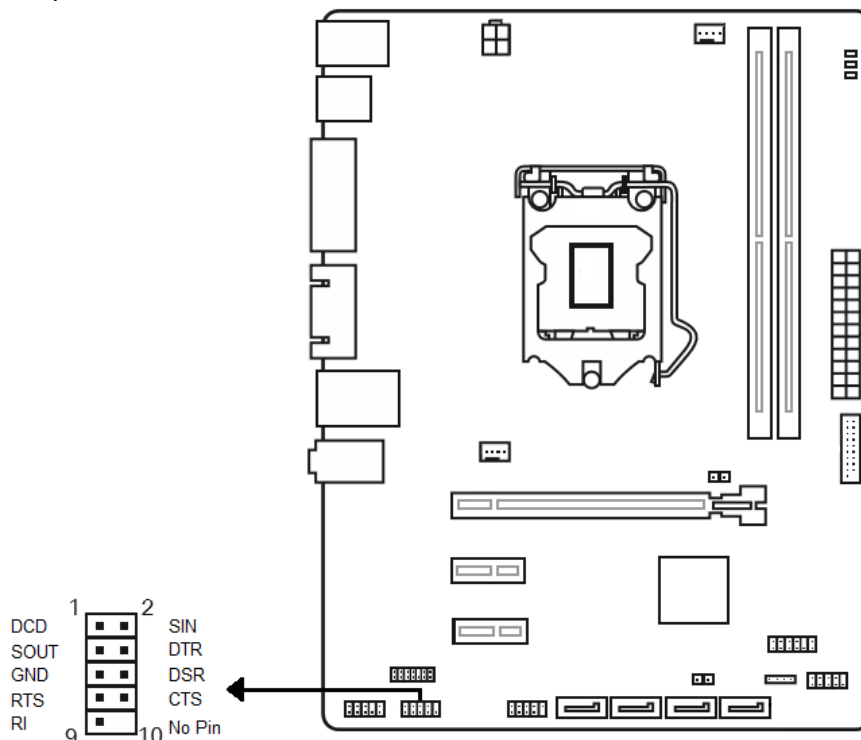


Figure 18: COM connector

## TPM Module Connector

This connector is for a TPM, trusted platform module, which secures hardware attached to the motherboard and incorporates encrypted keys to reinforce security.

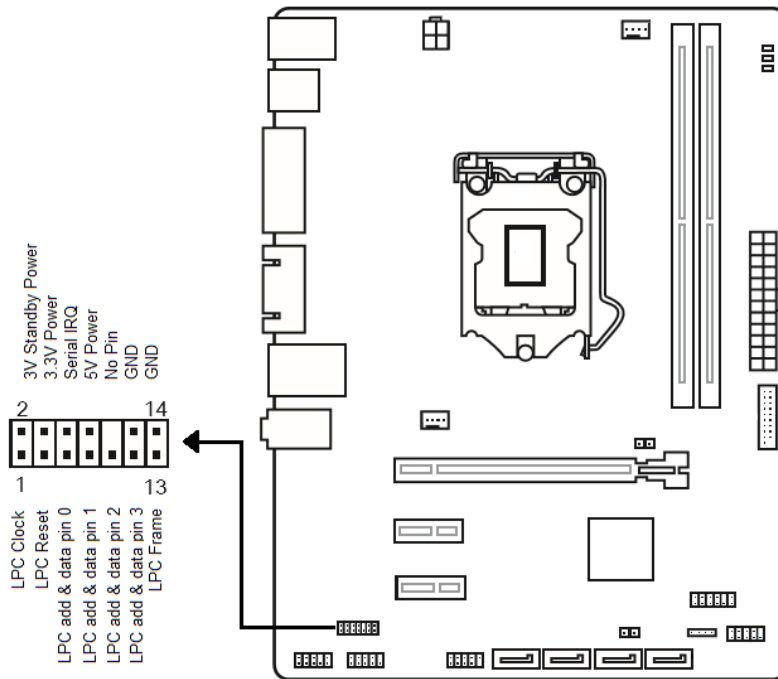


Figure 19: TPM Connector

## S/PDIF-Out Header

This header is for digital audio interconnect for audio signal transmission, typically using coaxial or RCA connectors.

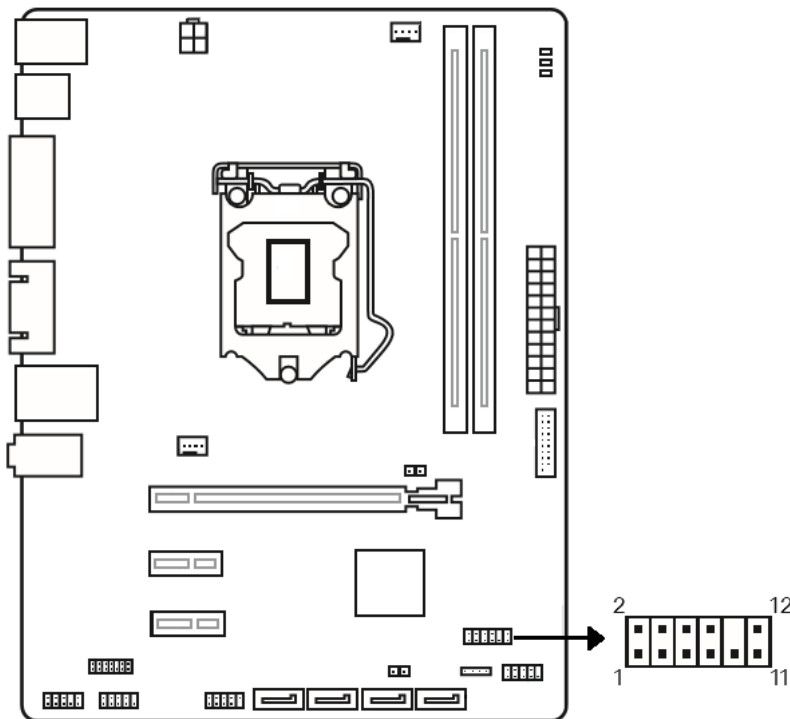
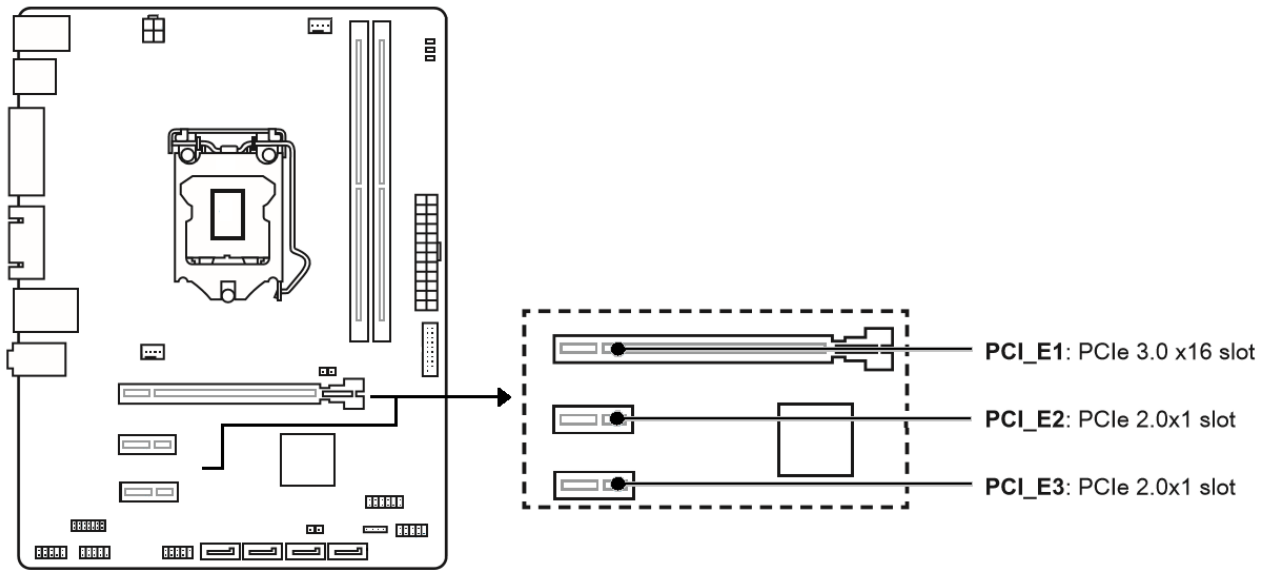


Figure 150: S/PDIF-Out Header

### PCI Express 3.0/2.0 x16/x1 slots

The PCI Express slot supports the PCI Express interface expansion card. The PCI Express x16 slot supports up to 4.0 GB/s transfer rate.



**Figure 161:** PCI Express Slots

**Note:** When adding or removing expansion cards, make sure that you power off the system first.

### Important

When adding or removing expansion cards, always turn off the power supply and unplug the power supply power cable from the power outlet. Read the expansion card's documentation to check for any necessary additional hardware or software changes.

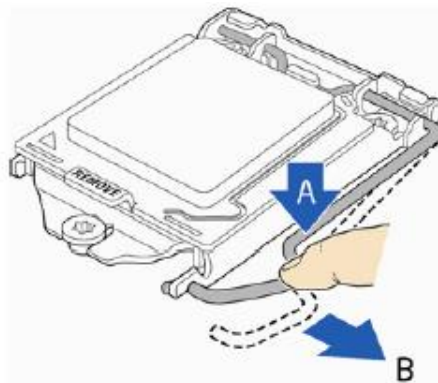
## Upgrading the CPU

### **CAUTION!**

Before installing or removing a processor, make sure the AC power has been removed by unplugging the power cord from the computer; the standby power LED should not be lit. Failure to do so could damage the processor and the board.

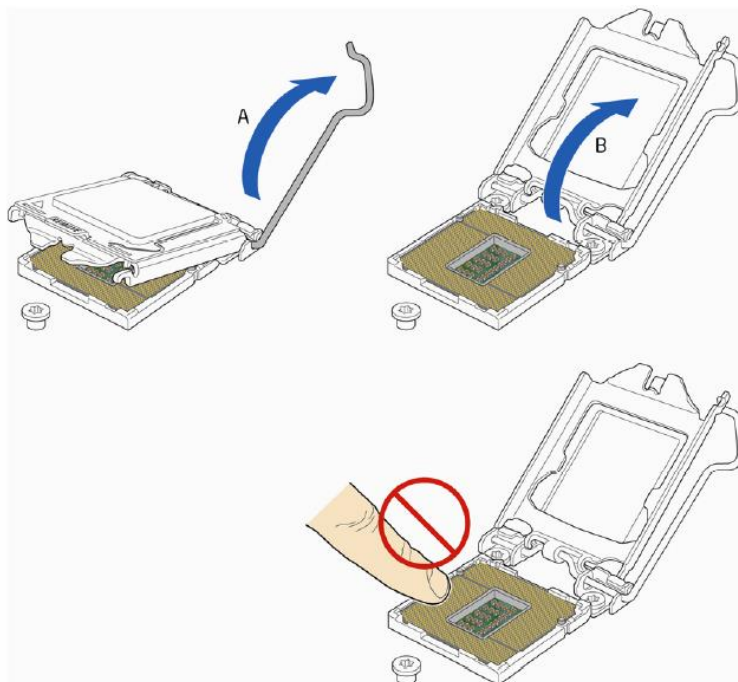
To install a processor, follow these instructions:

1. Unlatch the processor socket lever by pushing it down and away from the socket. (Figure 22, A, B)



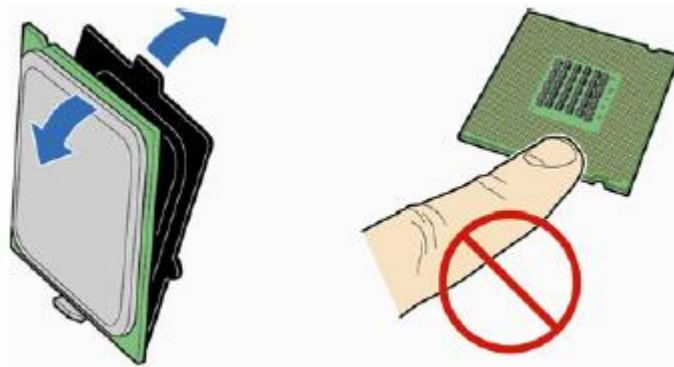
**Figure 172:** Unlatch the socket lever

2. Rotate the socket lever to lift the load plate away from the socket (Figure 23, A). Make sure that the load plate is in the fully open position (Figure 23, B) while being careful not to damage adjacent components. Do not touch the socket contacts.



**Figure 18:** Lift the load plate

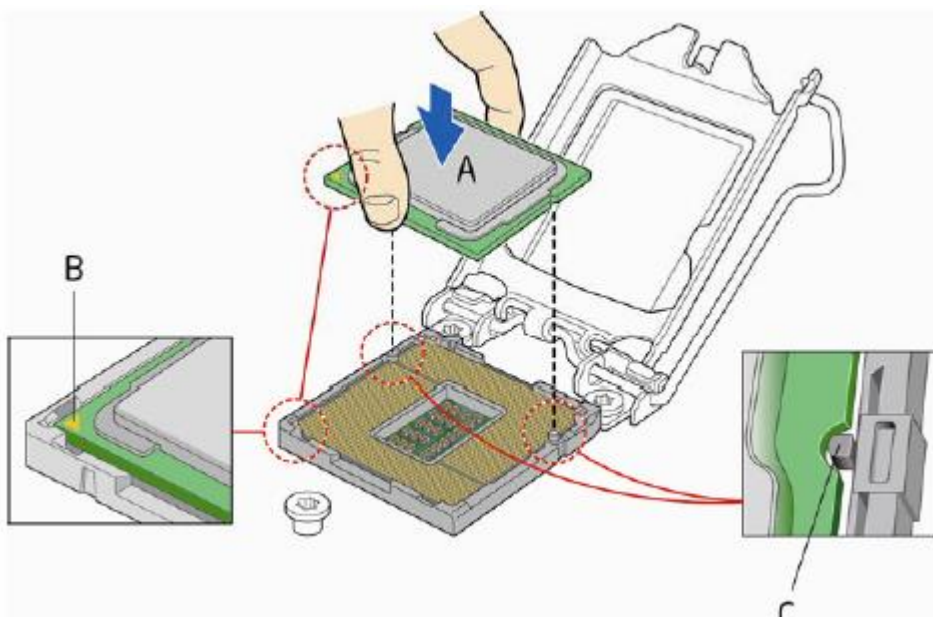
3. Remove the processor from its protective cover. Hold the processor only at the edges, being careful not to touch the bottom of the processor (see Figure 24).



**Figure 194:** Remove the processor from the protective cover

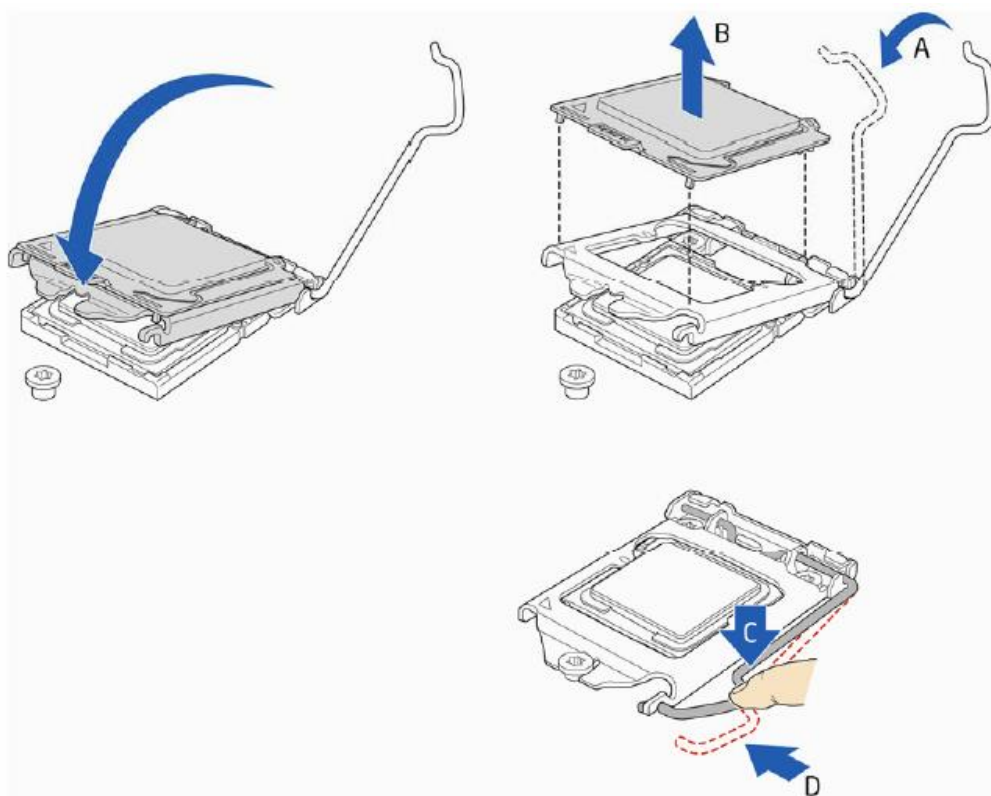
**Note:** Do not discard the processor cover. Always replace the processor cover if you remove the processor from the socket.

4. Hold the processor with your thumb and index finger oriented as shown in Figure 25 to align your fingers with the socket finger cut-outs. Make sure that the processor Pin 1 indicator (gold triangle) is aligned with the Pin 1 chamfer on the socket (Figure 25, B) and that the notches on the processor align with the posts on the socket (Figure 25, C). Lower the processor straight down without tilting or sliding it in the socket (Figure 25, A).



**Figure 205:** Install the processor

- Carefully lower the socket lever (Figure 26) while making sure that the front edge of the load plate slides under the shoulder screw cap as the lever is lowered. Latch the socket lever under the load plate tab (Figure 26, C, and D). The socket cover (Figure 26, B) will pop off as shown.



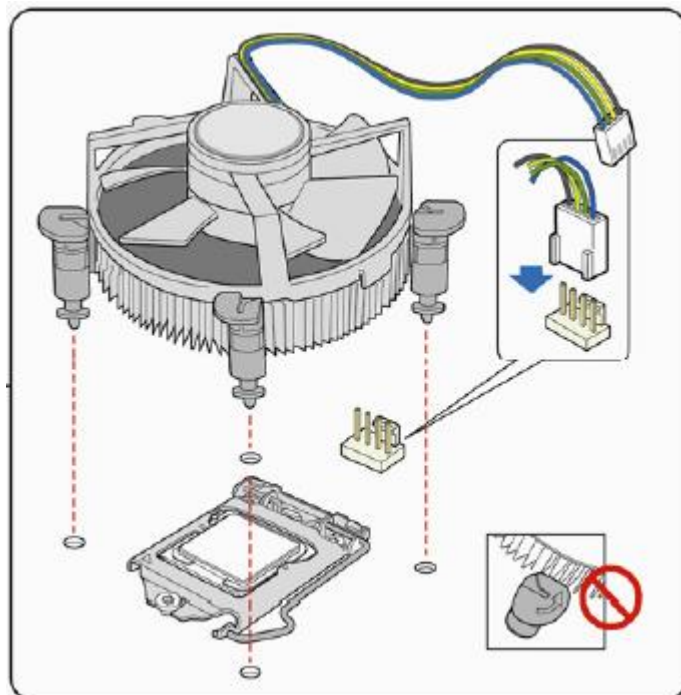
**Figure 216:** Secure the load plate in place

- Pick up the socket cover and remove it from the desktop board.

- **Connecting the Processor Fan Heat Sink Cable**

Connect the processor fan heat sink power cable to the 4-pin processor fan header (see Figure 27). A fan with a 4-pin connector as shown in Figure 27 is recommended.

1. Make sure the four hooks are in the proper position before you install the cooler.



**Figure 227:** Connecting the processor fan



## Installing & Removing Memory Modules

### • Installing Memory

You may install 2GB, 4GB, 8GB and 16GB unbuffered non- ECC DDR4 DIMMs into the DIMM sockets.

The motherboard has two DIMM sockets. The motherboard supports the following memory features:

- 2 x DDR4 DIMMs with gold-plated contacts.
- Non-ECC (64-bit) memory.
- 2GB, 4GB, 8GB and 16GB modules.
- Memory Speeds 2133MHz
- Max. 32GB, DDR4

To install DIMMs, follow these steps:

1. Observe the precautions in “Before You Begin”. Turn off the computer and all Peripheral devices.
2. Remove the computer cover and locate the DIMM sockets.
3. Holding the DIMM by the edges, remove it from its antistatic package.
4. Make sure the clips at either end of the socket are pushed away from the socket.
5. Position the DIMM above the socket. Align the two small notches in the bottom edge of the DIMM with the keys in the socket. Insert the bottom edge of the DIMM into the socket.
6. When the DIMM is seated, push down on the top edge of the DIMM until the retaining clips at the ends of the socket snap into place. Make sure the clips are firmly in place.
7. Replace the computer cover.

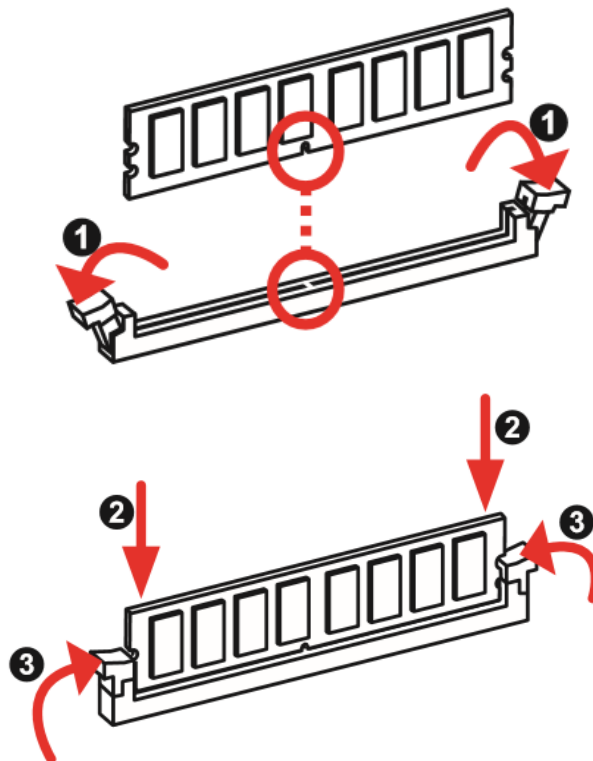
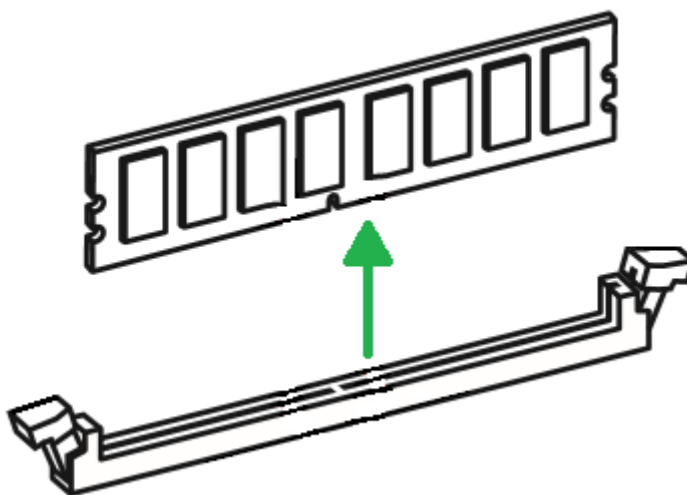


Figure 28: Memory Installation

## Removing Memory

To remove a DIMM, follow these steps:

1. Observe the precautions in "Before You Begin".
2. Turn off all peripheral devices connected to the computer. Turn off the computer.
3. Remove the computer cover.
4. Gently spread the retaining clips at each end of the socket. The DIMM pops out of the socket. Hold the DIMM by the edges, lift it away from the socket, and store it in an antistatic package.
5. Reinstall and reconnect any parts you removed or disconnected to reach the DIMM sockets.



**Figure 29:** Removing Memory Modules

## Replacing the Clock/CMOS RAM Battery

A lithium battery is installed in a socket on the system board.

The battery has an estimated life expectancy of seven years. When the battery starts to weaken, it loses voltage; when the voltage drops below a certain level, the system settings stored in CMOS RAM (for example, the date and time) may be wrong.

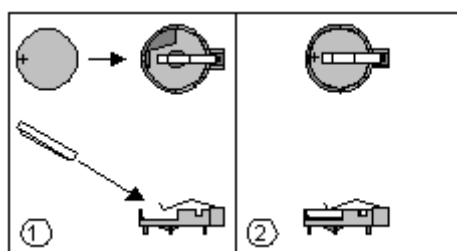
If the battery fails, you will need to replace it with a **CR2032** battery or an equivalent. As long as local ordinance permits, you may dispose of individual batteries as normal rubbish. Do not expose batteries to excessive heat or any naked flame. Keep all batteries away from children.

### **CAUTION!**

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

To replace the battery, carry out the following:

1. Observe the precautions in "Before You Begin."
2. Turn off all peripheral devices connected to the system.
3. Turn off the system.
4. Remove any components that are blocking access to the battery.
5. Figure 30 shows the battery location. Gently pry the battery free from its socket, taking care to note the "+" and "-" orientation of the battery (Figure 30, 2).
6. Install the new battery in the socket.



**Figure 230:** Removing the Battery

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## Chapter 3: Solving Problems

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The first part of this chapter helps you identify and solve problems that might occur when the system is in use. The second part lists error code messages that might be displayed.

Please remember that if you cannot solve the problem by yourself then you should contact Viglen Technical Support for further assistance.

Viglen Technical Support can be reached in the following ways:

Telephone: 01727 201 850  
Fax: 01727 201 858  
Email: techsupport@viglen.co.uk

You can also look for support information on our web site:

<http://www.viglen.co.uk>

Device drivers and various useful utilities can be downloaded from our ftp site:

<http://download.viglen.co.uk/files/Motherboards/Vig103M>

### Resetting the System

Before checking your system for hardware problems, it is always a good idea to try resetting your computer and see if a re-boot can solve the problem. Most software related problems can be solved simply by re-booting your PC.

To do the following	Press
Soft boot: Clear the system memory and reload the operating system (also called warm reset).	<Ctrl + Alt + Del>
Cold boot: Clear the system memory, halt power to all peripherals, restart POST, and reload the operating system.	Power off/on or reset button (at front of the system)

**Table 5:** Resetting the System

## Troubleshooting Procedures

This section provides a step-by-step troubleshooting procedure to identify a problem and locate its source.

### **CAUTION!**

1. Turn off the system and any peripheral devices before you disconnect any peripheral cables from the system. Otherwise, you can permanently damage the system or the peripheral devices.
2. Make sure the system is plugged into a properly grounded power outlet.
3. Make sure your keyboard and video display are correctly connected to the system. Turn on the video display, and turn up its brightness and contrast controls to at least two-thirds of the maximum (refer to the documentation supplied with the video display).
4. If the operating system normally loads from the hard disk drive, make sure there is no diskette in the diskette drive. If the operating system normally loads from a diskette, insert the operating system diskette into the drive.
5. Turn on the system. If the power indicator does not light, but the system seems to be operating normally, the indicator is probably defective. Monitor the power-on self test (POST) execution. Each time you turn on the system, the POST checks the system board, memory, keyboard, and certain peripheral devices.

**NOTE:** If the POST does not detect any errors, the system beeps once and boots up.

Errors that do not prevent the boot process (non-fatal errors) display a message that looks similar to the following:

```
Error Message Line 1
Error Message Line 2
Press <DEL> for Set-up, <F1> to Boot
You can note the error and press <F1> to resume the boot-up process, or <DEL>
to enter Set-up.
```

Errors that prevent the boot process from continuing (fatal errors), are communicated by a series of audible beeps. If this type of error occurs, refer to the error codes and messages listed at the end of this chapter.

6. Confirm that the operating system has loaded.

## Problems & Suggestions

What happens	What to do
Application software problems	<p>Try resetting the system.</p> <p>Make sure all cables are installed correctly.</p> <p>Verify that the system board jumpers are set properly.</p> <p>Verify that your system hardware configuration is set correctly. In Setup, check the values against the system settings you recorded previously. If an error is evident (wrong type of drive specified, for example), make the change in Setup and reboot the system. Record your change.</p> <p>Make sure the software is properly configured for the system. Refer to the software documentation for information.</p> <p>Try a different copy of the software to see if the problem is with the copy you are using.</p> <p>If other software runs correctly on the system, contact the vendor of the software that fails.</p> <p>If you check all of the above with no success, try clearing CMOS RAM and reconfiguring the system. Make sure you have your list of system settings available to re-enter, because clearing CMOS RAM sets the options to their default values.</p>
Characters on-screen are distorted or incorrect	<p>Make sure the brightness and contrast controls are properly adjusted on the monitor.</p> <p>Make sure the video signal cable and power cables are properly installed.</p> <p>Make sure your monitor is compatible with the video mode you have selected.</p>
Characters do not appear on screen	<p>Make sure the video display is plugged in and turned on.</p> <p>Check that the brightness and contrast controls are properly adjusted.</p> <p>Check that the video signal cable is properly installed.</p> <p>Make sure a video board is installed, enabled, and the jumpers are positioned correctly.</p> <p>Reboot the system.</p>

**Table 6:** Problems and Suggestions

<b>What happens</b>	<b>What to do</b>
CMOS RAM settings are wrong	If system settings stored in CMOS RAM change for no apparent reason (for example, the time of day develops an error), the backup battery may no longer have enough power to maintain the settings. Replace the battery (Chapter 2).
Diskette drive light does not go on when drive is in use or is tested by POST	Make sure the power and signal cables for the drive are properly installed. Check that the drive is properly configured and enabled in Setup.
Hard drive light does not go on when drive is in use or is tested by POST	Make sure the power and signal cables for the drive are properly installed. Make sure the front panel connector is securely attached to the system board headers. Check that the drive is properly configured and enabled in Setup. Check the drive manufacturer's manual for proper configuration for remote hard disk drive activity.
Power-on light does not go on	If the system is operating normally, check the connector between the system board and the front panel. If OK, the light may be defective.
Prompt doesn't appear after system boots	It's probably switched off. A serious fault may have occurred consult your dealer service department / Technical Support.
Setup, can't enter	If you can't enter Setup to make changes, check the switch that disables entry into Setup (Chapter 2). If the switch is set to allow entry into Setup, you might need to clear CMOS RAM to the default values and reconfigure the system in Setup.
System halts before completing POST	This indicates a fatal system error that requires immediate service attention. Note the screen display and write down any beep code emitted. Provide this information to your dealer service department / Technical Support.

**Table 7: Problems and Suggestions (Continued)**

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# Chapter 4: System BIOS

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## 4.1 What is the BIOS?

The BIOS (Basic Input Output System) is an important piece of software which is stored in a ROM (Read Only Memory) chip inside the computer. It consists of the basic instructions for controlling the disk drives, hard disk, keyboard and serial/parallel ports. The BIOS also keeps a list of the specifications of the computer in battery-backed RAM (also known as the CMOS RAM) and provides a special Setup program to change this information.

The BIOS in your Viglen computer is guaranteed to be fully compatible with the IBM BIOS. It has been written by American Megatrends Inc., an industrial leader in the field of BIOS software.

## 4.2 The Power-On sequence

When the computer is first switched on, certain instructions in the BIOS are executed to test various parts of the machine. This is known as the POST (Power-On Self-Test) routine. When you switch the computer on (or when you press the Reset button or press <Ctrl> + <Alt>+ <Delete> keys, which has the same effect), you can see on the monitor that it counts through the memory, testing it. The floppy disk drives are then accessed and tested, and the various interfaces are checked. If there are any errors, a message is displayed on the screen.



## 4.3 Managing and updating BIOS

There are three methods of updating BIOS to the latest Viglen approved version. The number of options made available for any particular board may vary depending on BIOS Support, drive support and BIOS update file size. Either method can be used.

- **BIOS Updater**
- **M-Flash**

Latest BIOS files and Utility are available from Viglen FTP site:

<http://download.viglen.co.uk/files/Motherboards/Vig103M>

**NOTE:** Please review the instructions distributed with the upgrade utility before attempting a BIOS upgrade.

### 4.3.1 BIOS Update Instructions under DOS

The BIOS Updater allows you to update BIOS in a DOS environment. This utility also allows you to copy the current BIOS file that you can use as a backup when the BIOS fails or gets corrupted during the updating process.

1. Save BIOS update zipped file to a temporary directory.
2. Extract the necessary files.
3. Copy the contents of the file to a bootable USB key or CD-ROM media.
4. Boot the target PC with the device connected or inserted.
5. Select <F8> during POST to display the Boot Menu and select your bootable device.
6. At the DOS prompt Type 'Flash.bat' to launch the BIOS updates process.
7. Reboot the system once complete.
8. Enter the BIOS Setup and Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the Load Optimized Defaults item under the Exit menu.

**DO NOT shutdown or reset the system while updating the BIOS! Doing so may cause system boot failure!**

### 4.3.2 BIOS Update with M-FLASH

Before updating:

Please download the latest BIOS file that matches your motherboard model. And then save the BIOS file into the USB flash drive.

Updating BIOS:

1. Insert the USB flash drive that contains the update file into the computer.
2. Reboot the system, and then press Del key to enter the BIOS Setup during POST.
3. Go to **BIOS > M-FLASH > Select one file to update BIOS and ME**, select a BIOS file to perform the BIOS update process.
4. After the flashing process is 100% complete, the system will reboot.

## 4.4 BIOS Setup Program

This chapter provides basic information on the BIOS Setup program and allows you to configure the system for optimum use. You may need to run the Setup program when:

- An error message appears on the screen during the system booting up, and requests you to run BIOS SETUP.
- You want to change the default settings for customized features.

**Note:** *The items under each BIOS category described in this chapter are under continuous update for better system performance. Therefore, the description may be slightly different from the latest BIOS and should be held for reference only.*

### ➤ Entering BIOS Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <F2> or <DEL> key to enter Setup. You can also press <F8> when the message below is on screen to bring up the Boot Menu.

**“Press <Del> or <F2> to enter BIOS setup Menu”**

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

### ➤ Function Keys

Key	Function	Key	Function
F1	General Help	F4	Enter CPU Specifications menu
F5	Enter Memory-Z menu	F6	Load optimized defaults
F10	Save Change and Reset*	F12	Take a screenshot and save it to USB flash drive (FAT/ FAT32 format only).

**Figure 241:** BIOS function keys

After entering the BIOS, the first screen you will see is the System Status Menu.

#### **BIOS menu screen**

The BIOS setup program loads up with only one mode and loads up on the System Status page by default.

## BIOS Main Menu selection

The menu bar on top of the screen has the following main items:

<b>System Status</b>	For basic system information
<b>Advanced</b>	For changing advanced system settings
<b>Overclocking</b>	Used to manage overclocking profiles
<b>M-Flash</b>	For flashing the BIOS
<b>Security</b>	For configuring security settings
<b>Boot</b>	For changing the system boot configuration
<b>Save &amp; Exit</b>	For saving settings and exiting the BIOS setup program

**Table 8:** BIOS main menu selection

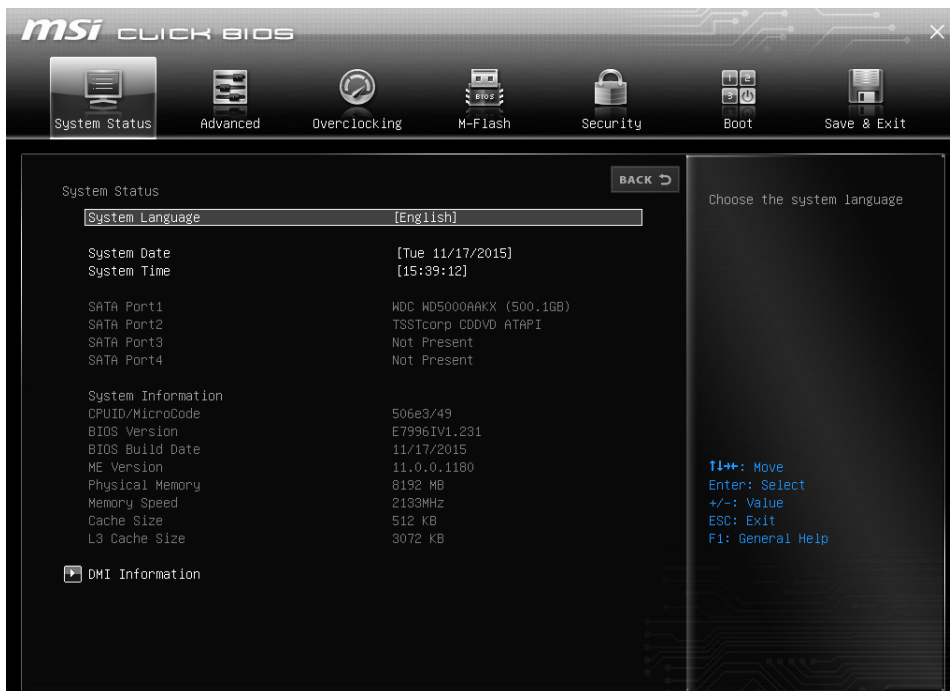
### Menu items

The highlighted item on the menu bar displays the specific settings for that menu. For example, selecting **System Status** shows the system status settings.

The other items (Advanced, Overclocking, M-Flash, Security, Boot and Save & Exit) on the menu bar have their respective menu items.

## 4.5 System Status

System Status is the main screen which displays basic information related to the system and BIOS as well as DMI information as a sub-menu.



**Figure 252:** System Status

## 4.6 Advanced

The Main menu screen appears when you enter the Advanced Mode of the BIOS Setup program. The Main menu provides you an overview of the basic system information, and allows you to set the system date, time, language, and security settings.

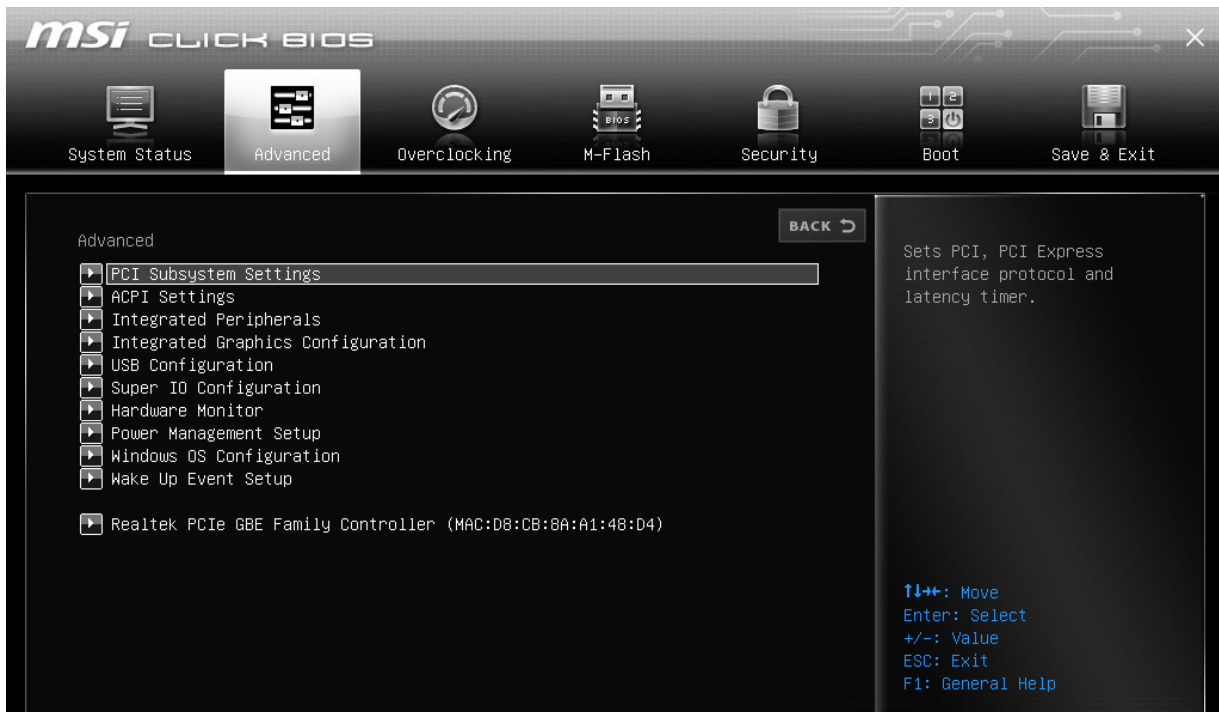


Figure 33: Advanced

### 4.6.1 PCI Subsystem Settings

Allows you to set PCI Express interface protocol and latency timer.

#### PEG0 – Max Link Speed

Allows you to set PCI protocol depending on the installed devices. Configuration options: [Auto] [Gen1] [Gen2] [Gen3]

#### PCI Latency Timer

This item appears only when you set the **TPM Support** item to [Enabled] and allows you to enable or disable the TPM after POST. Reboot your system for the changes to take effect.

Configuration options: [32 PCI Bus Clocks] [64 PCI Bus Clocks] [96 PCI Bus Clocks] [128 PCI Bus Clocks] [128 PCI Bus Clocks] [160 PCI Bus Clocks] [192 PCI Bus Clocks] [224 PCI Bus Clocks] [248 PCI Bus Clocks]

### 4.6.2 ACPI Settings

Allows you to set parameters on onboard LED behaviours.

#### Power LED

This item allows alteration of the behaviour of onboard LEDs. Configuration options: [Blinking] [Dual Color]

### 4.6.3 Integrated Peripherals

Allows you to set parameters on integrated peripherals.

#### Onboard LAN Configuration

Allows enabling or disabling the onboard LAN controller. Configuration options: [Enabled] [Disabled]

#### LAN Option ROM

Allows enabling or disabling the Legacy Network Boot Option ROM. Configuration options: [Enabled] [Disabled]

#### Network Stack

This item enabled or disables network stack and can be enabled for IPv4/IPv6 function. Configuration options: [Enabled] [Disabled]

#### SATA Mode

Allows configuring the mode of onboard SATA controller. Configuration options: [AHCI Mode]

#### SATA1 Hot Plug

This item enables or disables the SATA1 port support. Configuration options: [Enabled] [Disabled]

#### SATA2 Hot Plug

This item enables or disables the SATA2 port support. Configuration options: [Enabled] [Disabled]

#### SATA3 Hot Plug

This item enables or disables the SATA3 port support. Configuration options: [Enabled] [Disabled]

#### SATA4 Hot Plug

This item enables or disables the SATA4 port support. Configuration options: [Enabled] [Disabled]

#### HD Audio Controller

Allows enabling or disabling the High Definition Audio controller. Configuration options: [Enabled] [Disabled]

#### HPET

This item enables or disables High Precision Event Timer support. Configuration options: [Enabled] [Disabled]

### 4.6.4 Integrated Graphics Configuration

Allows you to adjust graphics settings to optimize system.

#### Initiate Graphic Adapter

This item selects a graphics device as the primary boot device. Configuration options: [PEG] [IGD]

#### Integrated Graphics Share Memory

This item allows you to select and allocate fixed amount of memory size to onboard graphics. Configuration options: [32M] [64M] [96M] [128M] [160M] [192M] [224M] [256M] [288M] [320M] [352M] [384M] [416M] [448M] [480M] [512M] [1024M]

#### IGD Multi-Monitor

Allows you to enable or disable multiple display output from internal and external graphics. Configuration options: [Enabled] [Disabled]

## 4.6.5 USB Configuration

Allows you to set onboard controllers and device function.

### USB Controller

This item allows you to enable or disable the onboard USB controller. Configuration options: [Enabled] [Disabled]

### XHCI Hand-off

This item allows you to enable or disable the XHCI support. Configuration options: [Enabled] [Disabled]

### Legacy USB Support

Allows you to enable or disable legacy support for USB function. Configuration options: [Enabled] [Disabled] [Auto]

### USB Speed Optimization

Allows you to enhance USB throughput, which cause slight increase in power consumption in idle mode. Configuration options: [Enabled] [Disabled] [Auto]

## 4.6.6 Super IO Configuration

Allows you to set Super I/O chip parameters.

### 4.6.6.1 Serial (COM) Port 0 Configuration

#### Serial (COM) Port0

Allows you to enable or disabled the serial (COM) port 0. Configuration options: [Enabled] [Disabled]

#### Serial (COM) Port0 Settings

This item allows you to set Serial Port0. Automatically optimizes IRQ when set to "Auto". Configuration options: [Auto] [IO=3F8h; IRQ=4;] [IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;] [IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;] [IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;] [IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;]

## 4.6.7 Hardware Monitor

Allows you to monitor the hardware status.

### CPU Smart Fan Control

Allows you to enable or disable the CPU Smart Fan Control. Configuration options: [Enabled] [Disabled]

### SYS Fan1 Smart Fan Control

Allows you to enable or disable the System Smart Fan Control. Configuration options: [Enabled] [Disabled]

### CPU Fan Fail Warning Control

Allows you to enable or disable the CPU Fan Fail Warning Control. Configuration options: [Enabled] [Disabled]

## 4.6.8 Power Management Setup

Allows you to configure system power management and power behaviours.

### EuP 2013

Allows you to enable or disable the system power consumption optimum according to EuP2013 regulation. Configuration options: [Enabled] [Disabled]

### Restore after AC Power Loss

This item allows you to change system behaviour while encountering AC power loss. Configuration options: [Power Off] [Power On] [Last State]

### System Power Fault Protection

Allows you to avoid abnormal voltage source and power connection. Selecting "Enable" protects system from unexpected operation and remain shut down status. Configuration options: [Enabled] [Disabled]

#### 4.6.9 Windows OS Configuration

Allows you to configure Windows OS and OS behaviours.

The Windows 8.1/10 WQHL Support item does not function when Windows 7 Installation is enabled, and vice versa.

##### **Windows 8.1/10 WQHL Support**

This item enables support for Windows 8/10 installation or disables for others OS. Configuration options: [Enabled] [Disabled]

##### **Windows 7 Installation**

This item is for the process of Windows 7 installation. Configuration options: [Enabled] [Disabled]

##### **MSI Fast Boot**

Allows you to boot the system the fastest way, and will not detect USB/PS2/SATA devices while booting. Configuration options: [Enabled] [Disabled]

##### **Fast Boot**

Allows you to enable or disable Windows 8 fast boot feature. This item is not available if **MSI Fast Boot** is enabled. Configuration options: [Enabled] [Disabled]

#### 4.6.10 Wake Up Event Setup

Allows you to set wake up behaviour on different modes.

##### **Wake Up Event By**

This item is for selecting the wake up event for BIOS or operating system. Configuration options: [BIOS] [OS]

##### **Resume by RTC Alarm**

This item is for enabling or disabling wake up event by RTC Alarm. Configuration options: [Enabled] [Disabled]

##### **Resume by PCI-E Device**

Allows you to enable or disable wake up event by PCI express device. Enable this option for resume from sleep mode by USB device for third party supported USB port. Configuration options: [Enabled] [Disabled]

##### **Resume by USB Device**

Allows you to enable or disable system wake up from S3/S4/S5 via USB device. Configuration options: [Enabled] [Disabled]

##### **Resume From S3/S4/S5 by PS/2 Mouse**

Allows you to enable or disable wake up event via PS/2 Mouse. Configuration options: [Enabled] [Disabled]

##### **Resume From S3/S4/S5 by PS/2 Keyboard**

Allows you to enable or disable wake up event via PS/2 Keyboard. Configuration options: [Any Key] [Hot Key] [Disabled]

The Windows 7 Installation item does not function when Windows 8.1/10 WQHL Support is enabled, and vice versa.

#### 4.6.11 Realtek PCIe GBE Family Controller

Displays driver, device and patent information for the Realtek Ethernet Controller

## 4.7 Overclocking

Be cautious when changing the settings of the Overclocking menu items. Incorrect field values can cause the system to malfunction.

The configuration options for this section vary depending on the CPU and DIMM model installed on the motherboard.



Figure 34: Overclocking

## 4.8 M-Flash

The M-Flash menu is for selecting a BIOS file to update the BIOS and ME

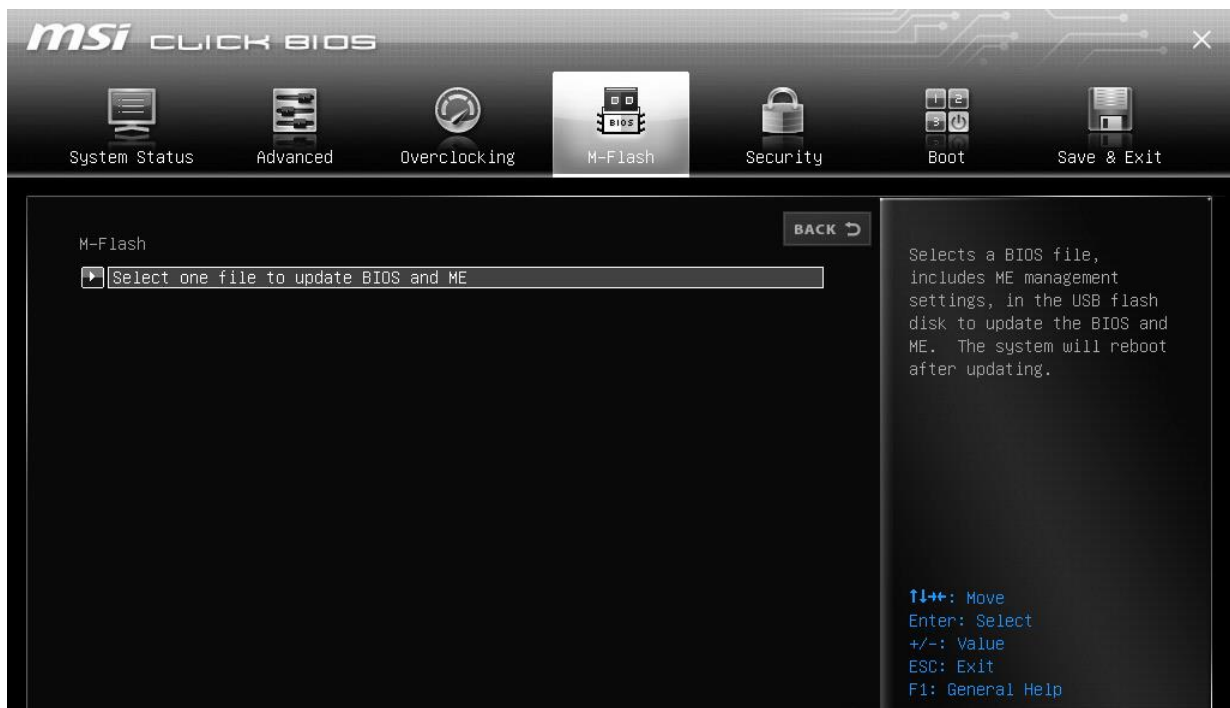


Figure 35: M-Flash



## 4.9 Security

This menu is for setting security rights for administrator and user and configuring system security.

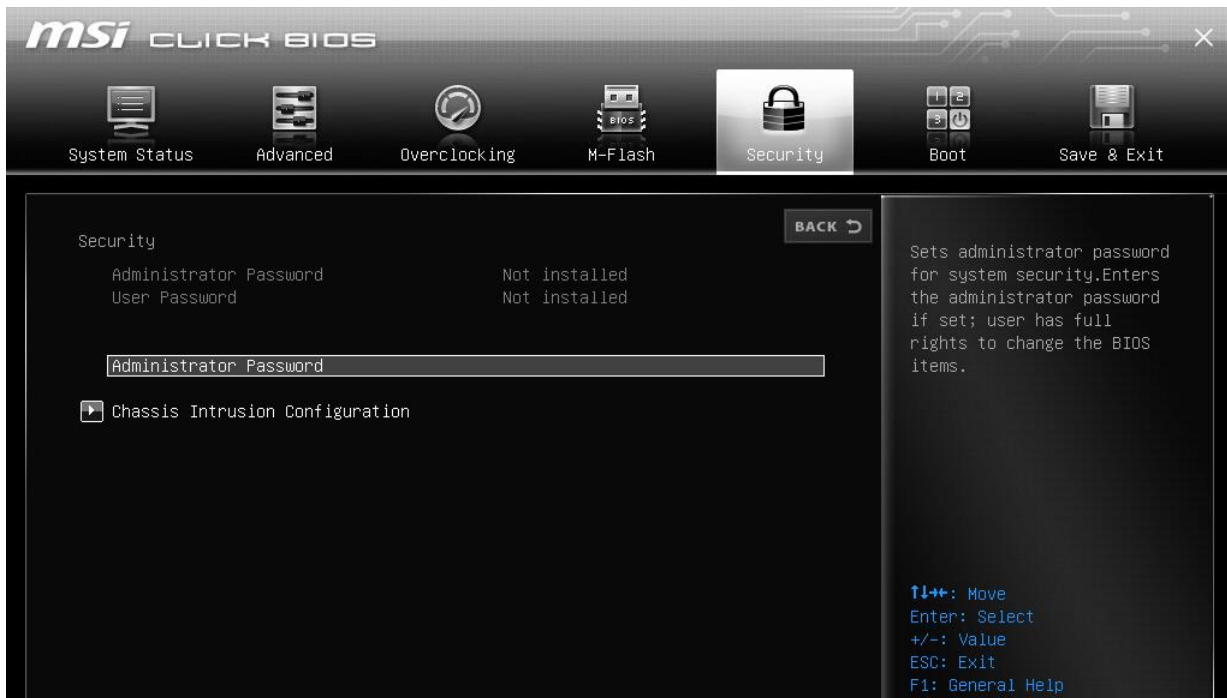


Figure 36: Security

- If you have forgotten your BIOS password, erase the CMOS RAM to clear the BIOS password.
- The **Administrator** or **User Password** items on top of the screen show the default **Not installed**. After you set a password, these items show **Installed**.

### Administrator Password

If you have set an administrator password, we recommend that you enter the administrator password for accessing the system. Otherwise, you might be able to see or change only selected fields in the BIOS setup program.

#### To set an administrator password:

1. Select the **Administrator Password** item and press <Enter>.
2. From the **Create New Password** box, key in a password, then press <Enter>.
3. Confirm the password when prompted.

#### To change an administrator password:

1. Select the **Administrator Password** item and press <Enter>.
2. From the **Enter Current Password** box, key in the current password, then press <Enter>.
3. From the **Create New Password** box, key in a new password, then press <Enter> Confirm the password when prompted.

To clear the administrator password, follow the same steps as in changing an administrator password, but press <Enter> when prompted to create/confirm the password. After you clear the password, the **Administrator Password** item on top of the screen shows **Not Installed**.

### User Password

If you have set a user password, you must enter the user password for accessing the system. The **User Password** item on top of the screen shows the default **Not Installed**. After you set a password, this item shows **Installed**.

#### To set a user password:

1. Select the **User Password** item and press <Enter>.
2. From the **Create New Password** box, key in a password, then press <Enter>.
3. Confirm the password when prompted.

#### To change a user password:

1. Select the **User Password** item and press <Enter>.
2. From the **Enter Current Password** box, key in the current password, then press <Enter>.
3. From the **Create New Password** box, key in a new password, then press <Enter>.
4. Confirm the password when prompted.

To clear the user password, follow the same steps as in changing a user password, but press <Enter> when prompted to create/confirm the password. After you clear the password, the **User Password** item on top of the screen shows **Not Installed**.

## 4.9.1 Chassis Intrusion Configuration

### Chassis Intrusion

This item allows you to enable or disable messages when chassis is opened.

Configuration options: [Enabled] [Disabled]

## 4.10 Boot Menu

The Boot menu items allow you to configure boot options and prioritize options.



Figure 267: Boot Menu

### Full Screen Logo Display

This item enables or disables the full screen logo showing during system POST. Configuration options: [Enabled] [Disabled]

### GO2BIOS

Allows you to enter BIOS setup directly by pressing Power Button for 4 seconds upon start-up. Configuration options: [Enabled] [Disabled]

### Bootup NumLock State

This item turns on or off the keyboard NumLock while booting. Configuration options: [Turn On] [Turn Off]

### AUTO CLR\_CMOS

Allows you to enable or disable CMOS to be resumed when system cannot boot to OS and reboot repeatedly. Configuration options: [Enabled] [Disabled]

### Boot mode select

This item sets the system boot mode from legacy or UEFI architecture depending on OS installation requirement. Configuration options: [Legacy+UEFI] [UEFI]

### Boot Option #1 → #13

Allows you to set the system boot order. Configuration options: **[CD/DVD]** **[Hard Disk]** **[Network]** **[USB Floppy]** **[USB CD/DVD]** **[USB Hard Disk]** **[USB Key]** [UEFI Hard Disk] [UEFI CD/DVD] [UEFI Network] [UEFI USB Key] [UEFI USB CD/DVD] [UEFI USB Floppy] [UEFI USB Hard Disk] [Disabled]

*Configuration options highlighted in bold are only available when Boot mode select is set to Legacy+UEFI.*

## 4.11 Save & Exit Menu

The Save & Exit menu items allow you to restore default values for the BIOS items, and save or discard your changes to the BIOS items, as well as override the boot order.



Figure 278: Save & Exit Menu

### Discard Changes & Exit

This option allows you to exit the Setup program without saving your changes. When you select this option or if you press <Esc>, a confirmation window appears. Select Yes to discard changes and exit.

### Save Changes & Reset

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved. When you select this option or if you press <F10>, a confirmation window appears. Select Yes to save changes and exit.

### Save Changes

Choose this option from the Exit menu to ensure the values you selected are saved.

### Discard Changes

Choose this option from the Exit menu to ensure the values you selected are discarded, if they are mistakenly configured.

### Restore Defaults

This option allows you to restore the default values for each of the parameters on the Setup menus. When you select this option or if you press <F5>, a confirmation window appears. Select Yes to restore the default values.

## 4.13 BIOS settings for Windows 7 and Windows 8/8.1 O/S

### 4.13.1 Windows UEFI mode for Windows 8/8.1

Vig103M system configured with Windows 8/8.1 will have following default BIOS settings. If you wish to downgrade to Windows 7 then BIOS must be configured to Non-UEFI mode.

#### Advanced\Integrated Peripherals

Network Stack	[Enabled]
Ipv4 PXE Support	[Enabled]
Network Stack	[Enabled]

#### Advanced\Windows OS Configuration

Windows 8.1/10 WHQL Support	[Enabled]
Fast Boot	[Enabled]

#### Advanced\Windows OS Configuration\Secure Boot

Secure Boot Support	[Enabled]
Secure Boot Mode	[Custom]

#### Advanced\Windows OS Configuration\Secure Boot\Key Management

Provision Factory Default Keys	[Enabled]
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#### Note

Please ensure the changes of the following settings are performed by personnel with some previous experience/knowledge of altering BIOS settings.

### 4.13.2 Enabling Windows UEFI mode for Windows 8/8.1 Operating System

1. From the BIOS main menu bar select '**Advanced**'
2. Navigate to the **Integrated Peripherals** item.

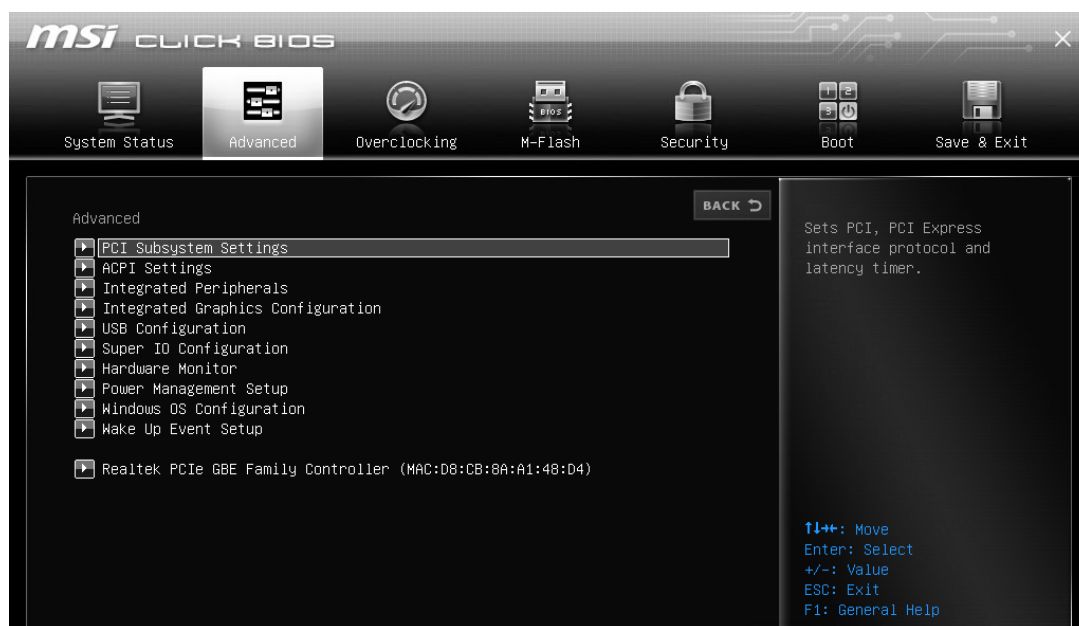
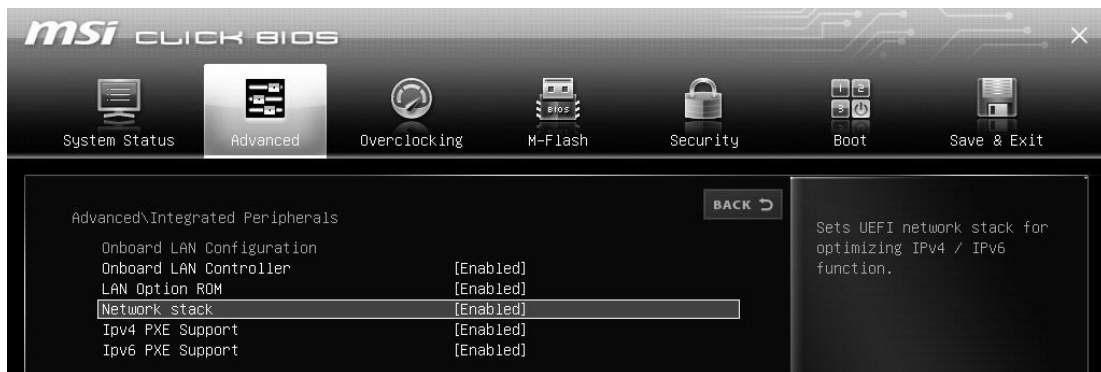


Figure 289: Advanced Menu

- In **Integrated Peripherals** change following settings for Windows 8.1/10

Network Stack [Enabled]  
 Ipv4 PXE Support [Enabled]  
 Network Stack [Enabled]



**Figure 29: Integrated Peripherals**

*When these settings have been changed, press <Esc> or the Back Button to go back to the Advanced Menu.*

- From the Advanced menu navigate to **Windows OS Configuration**.
- In **Integrated Peripherals** change following settings for Windows 8.1/10

Windows 8.1/10 WHQL Support [Enabled]  
 Fast Boot [Enabled]



**Figure 41: Windows OS Configuration**

- Select **Secure Boot**.
- In **Secure Boot** change following settings

Secure Boot Support [Enabled]  
 Secure Boot Mode [Custom]



Figure 42: Secure Boot

8. Select **Secure Boot**.
9. Select **Provision Factory Default Keys** and set to **[Enabled]**.



Figure 43: Key Management

10. Press **F10** to Save and exit.

*If you need to check changes have been saved go back into BIOS after reboot and navigate into Secure Boot settings. Check that **Secure Boot Support state is enabled** and **Platform Key (PK) state is Loaded**.*

### 4.13.3 BIOS Settings for Windows 7 Operating System (Non UEFI Mode)

To downgrade to Windows 7 operating system, BIOS settings must be changed to boot into Legacy BIOS mode (non UEFI Mode).

For Windows 7 operating system BIOS should be configured as per below settings

#### Advanced\Integrated Peripherals

Network Stack

[Disabled]



Figure 44: Integrated Peripherals (Win 7)

#### Advanced\Windows OS Configuration

Windows 7 Installation

[Enabled]

Fast Boot

[Disabled]

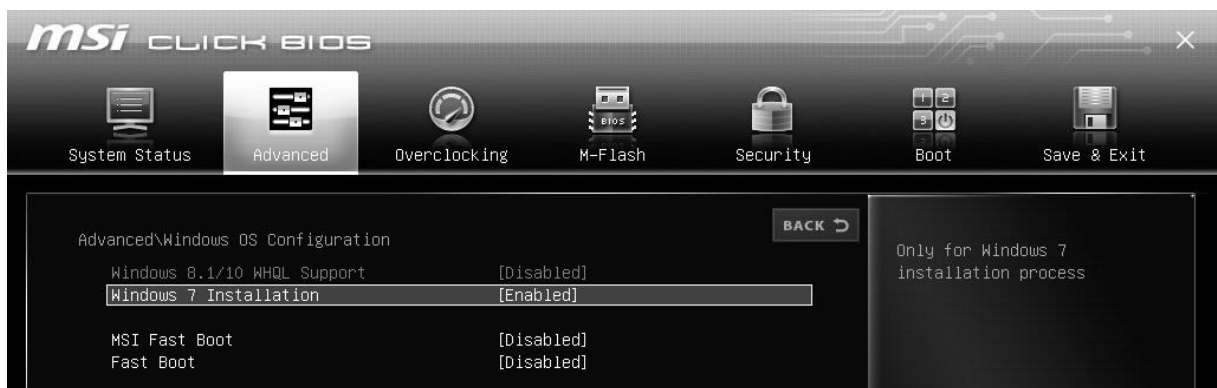


Figure 45: Windows OS Configuration (Win 7)



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# Chapter 5: Suggestions

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XMA is interested in continuing to improve the quality and information provided in their manuals. XMA has listed some questions that you may like to answer and return to Viglen. This will help Viglen help to keep and improve the standard of their manuals.

1. Is the information provided in this and other manuals clear enough?

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2. What could be added to the manual to improve it?

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3. Does the manual go into enough detail?

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4. Would you like an on-line version of this manual?

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5. How do you rate the Viglen Technical support and Service Departments?

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6. Are there any technological improvements that could be made to the system?

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7. Other points you would like to mention?

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Please return this slip to:      Product Development Dept.  
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