Q170M-C
Q170M-C/CSM

Motherboard

E10374
First Edition
September 2015

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Contents

Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Ensure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing the motherboard and adding components, carefully read all the manuals that came with the package.
- Before using the product, ensure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may be exposed to moisture.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

About this guide

This user guide contains the information you need when installing and configuring the motherboard.

How this guide is organized

This guide contains the following parts:

- **Chapter 1: Product introduction**

  This chapter describes the features of the motherboard and the new technology it supports. It includes descriptions of the switches, jumpers, and connectors on the motherboard.

- **Chapter 2: BIOS information**

  This chapter discusses changing system settings through the BIOS Setup menus. Detailed descriptions fo the BIOS parameters are also provided.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS websites**

   The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. **Optional documentation**

   Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To ensure that you perform certain tasks properly, take note of the following symbols used throughout this manual.

DANGER/WARNING: Information to prevent injury to yourself when completing a task.

CAUTION: Information to prevent damage to the components when completing a task

IMPORTANT: Instructions that you MUST follow to complete a task.

NOTE: Tips and additional information to help you complete a task.

Typography

Bold text	Indicates a menu or an item to select.
Italics	Used to emphasize a word or a phrase.
<Key>	Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key. Example: <Enter> means that you must press the Enter or Return key.
<Key1> + <Key2> + <Key3>	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+).

Package contents

Check your motherboard package for the following items.

Motherboard	ASUS Q170M-C motherboard
Cables	2 x Serial ATA 6.0 Gb/s cables
Accessories	1 x I/O Shield
Application DVD	Support DVD
Documentation	User Guide

If any of the above items is damaged or missing, contact your retailer.

Q170M-C specifications summary

CPU	LGA1151 socket for 6th Generation Intel® Core™ i7/ i5/ i3/Pentium®/ Celeron® Processors* Supports 14nm CPU Supports Intel® Turbo Boost Technology 2.0* *** The Intel® Turbo Boost Technology 2.0 support depends on the CPU types.** **** Refer to www.asus.com for Intel® CPU support list.**
Chipset	Intel® Q170 Express Chipset
Memory	4 x DIMM, max. 64GB, DDR4 2133MHz, non-ECC, un-buffered memory *** Hyper DIMM support is subject to the physical characteristics of individual CPUs. Please refer to Memory QVL for details.** **** Refer to www.asus.com for the latest Memory QVL (Qualified Vendors List).**
Graphics	Integrated graphics processor Multi-VGA output support: DP/HDMI/DVI-D/D-Sub ports - Supports DisplayPort with max. resolution of 4096 x 2304 @60Hz - Supports HDMI with max. resolution of 4096x2160@24Hz / 2560x1600@60Hz - Supports DVI-D with max. resolution of 1920 x 1200 @60Hz - Supports D-Sub with max. resolution of 1920 x 1200 @60Hz Support up to three displays simultaneously Support Intel® InTruTM 3D, Quick Sync Video, Intel® Clear Video HD Technology, and Intel® Insider™ Maximum shared memory of 1024 MB
Expansion slots	2 x PCI Express 3.0/2.0 x16 (1@ x4 mode) 1 x PCI Express 3.0/2.0 x1 slot 1 x PCI slot
Storage	Intel® Q170 Express Chipset: - 6 x Serial ATA 6.0 Gb/s connector (gray)
LAN	Intel® I219LM Gigabit LAN Controller
Audio	Realtek ALC887 8-channel High Definition Audio CODEC - Supports jack-detection and front panel jack-retasking
USB	10 x USB 3.0 ports (4 ports at midboard, 6 ports at back panel) 4 x USB 2.0 ports (2 ports at midboard, 2 ports at back panel)

(continued on the next page)

Q170M-C specifications summary

ASUS unique features	**Dependable stability:** **ASUS 5X PROTECTION II:** - ASUS LANGuard - 2.5X higher surge tolerance - ASUS Overvoltage Protection - World-class circuit-protecting power design - ASUS DRAM Overcurrent Protection - Prevents damage from short circuits - ASUS Stainless Steel Back I/O - 3X corrosion-resistance for greater durability - ESD Guards - Electrostatic discharge protection **Superb performance:** **Media-acclaimed UEFI BIOS:** - Most advanced options with fast response time **Easy PC DIY:** **Safe motherboard mounting** - Component-free areas to minimize damage risk **Q-Design** - ASUS Q-DIMM - Easy memory removal - ASUS Q-Slot - Effortless PCI Express component removal **Optimized Cooling** - ASUS Fan Xpert 2+ - Advanced fan controls **One Stop Control** **AI Suite 3** **Push Notice** - Monitor your PC status with smart devices in real time **Mobo Connect** - All-in-one control between your PC and smart device **Media Streamer** - Your digital PC hub for sharing and home theater - Media Streamer app for portable smartphone/tablet, supporting iOS7 and Android 4.0 system **Ai Charger**
Rear panel I/O ports	1 x PS/2 keyboard port (purple) 1 x PS/2 mouse port (green) 1 x DVI-D port 1 x D-Sub port 1 x HDMI port 1 x DisplayPort 1 x LAN (RJ-45) port 2 x USB 2.0/1.1 ports 6 x USB 3.0/2.0 ports 3 x Audio jacks *** Use a chassis with HD audio module in the front panel to support an 8-channel audio output.**

(continued on the next page)

Q170M-C specifications summary

Internal connectors/ switches/ buttons	2 x USB 3.0/2.0 connectors support additional 4 USB 3.0 ports 1 x USB 2.0/1.1 connectors support additional 2 USB 2.0 ports 6 x SATA 6.0 Gb/s connector 1 x CPU fan connector 2 x Chassis fan connectors 1 x Front panel audio connector (AAFP) 1 x System panel connector 1 x Speaker connector 1 x LPT connector 2 x COM connectors 1 x MONO-out header 1 x DIS ME jumper 1 x Chassis intrusion header 1 x Clear CMOS header 1 x 24-pin ATX power connector 1 x 8-pin ATX 12V power connector TPM IC Onboard
BIOS features	128 Mb Flash ROM, UEFI AMI BIOS, PnP, DMI3.0, WfM2.0, SM BIOS 3.0, ACPI 5.0, Multi-language BIOS, ASUS EZ Flash 3, CrashFree BIOS 3, F3 My Favorites, Quick Note, Last Modified log, F12 PrintScreen, and ASUS DRAM SPD (Serial Presence Detect) memory information, F6 Qfan Control
Manageability	WfM 2.0, DMI 3.0, WOL by PME, PXE
Support DVD	Drivers ASUS utilities ASUS Update Anti-virus software (OEM version)
Operating systems	Windows® 10 (64-bit) Windows® 8.1 (64-bit) Windows® 7 (64-bit/32-bit) *** Please refer to chapter 1.9 or ASUS official website to download Windows® 7 installation Guide and EZ Installer to install Windows® 7.** **** Warning: Before Windows® 7 64-bit installation, select other OS item under the Boot menu from Advanced Mode > Boot > Secure Boot > Other OS.**
Form factor	MicroATX form factor: 9.6”x 8.9” (24.4cm x 22.6cm)

Specifications are subject to change without notice.

Product introduction

1

1.1 Before you proceed

Take note of the following precautions before you install motherboard components or change any motherboard settings.

- Unplug the power cord from the wall socket before touching any component.
- Before handling components, use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, to avoid damaging them due to static electricity.
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.
- Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, or components.

1.2 Motherboard overview

Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits.

Unplug the power cord before installing or removing the motherboard. Failure to do so can cause you physical injury and damage to motherboard components.

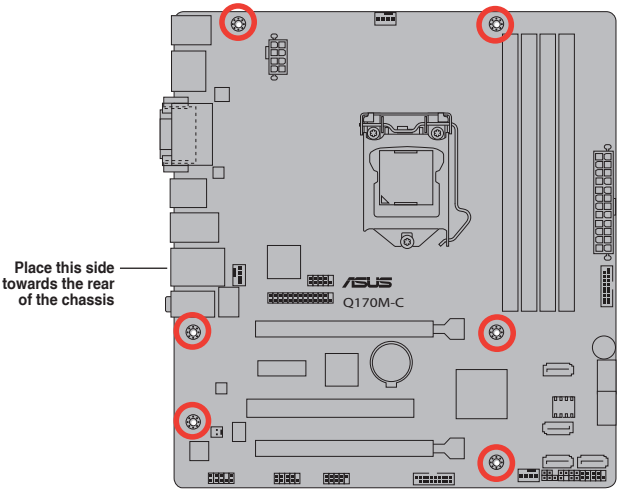
1.2.1 Placement direction

When installing the motherboard, place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image.

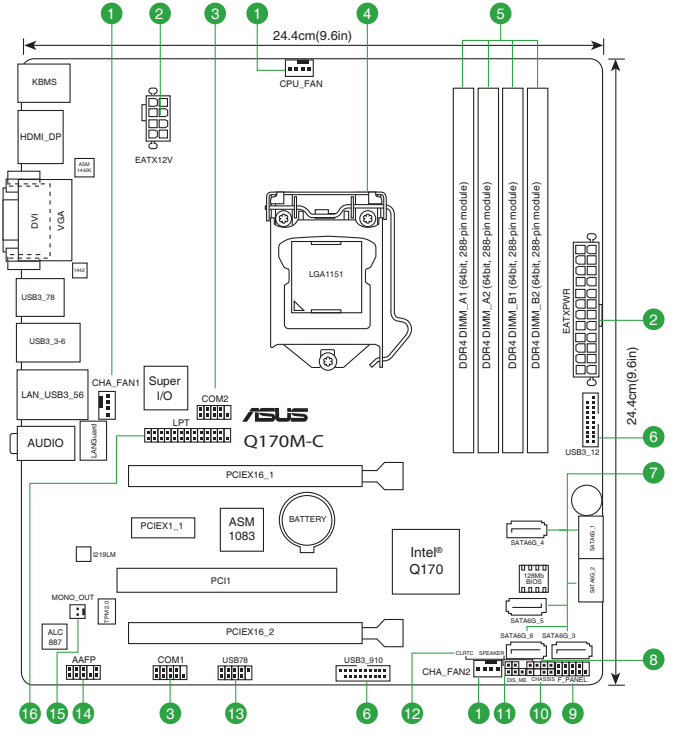
1.2.2 Screw holes

Place six screws into the holes indicated by circles to secure the motherboard to the chassis.

Do not overtighten the screws! Doing so can damage the motherboard.



1.2.3 Motherboard layout



1.2.4 Layout contents

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4.	Intel® LGA1151 CPU socket	1-3
5.	DDR4 DIMM slots	1-7
6.	USB 3.0 connector (20-1 pin USB3_12, USB3_910)	1-19
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8.	Speaker connector (4-pin SPEAKER)	1-17
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10.	Chassis intrusion header (4-1 pin CHASSIS)	1-12
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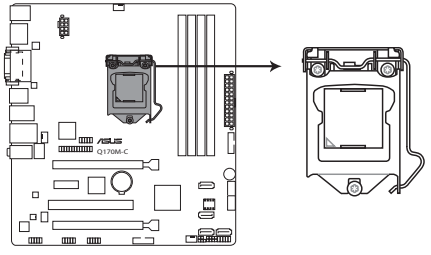
15.	Mono out header (2-pin MONO_OUT)	1-13
16.	LPT connector (26-1 pin LPT)	1-15

1.3 Central Processing Unit (CPU)

This motherboard comes with a surface mount LGA1151 socket designed for the 6th Generation Intel® Core™ i7 / Core™ i5 / Core™ i3, Pentium® and Celeron® processors.

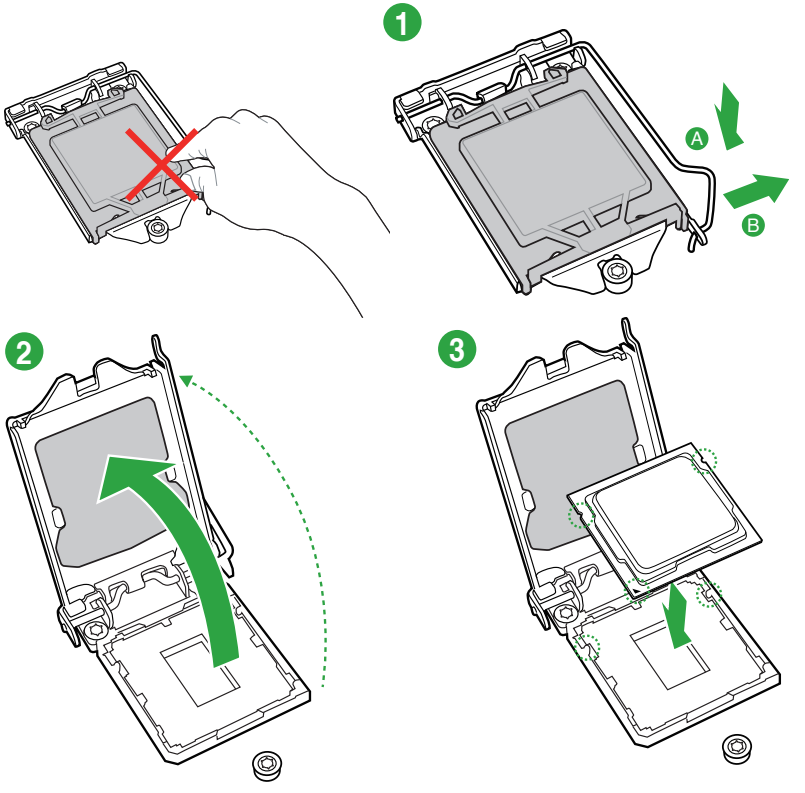


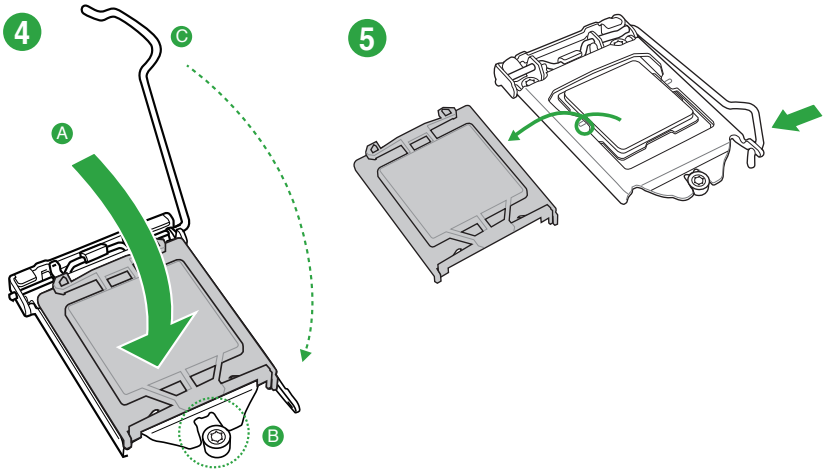
Q170M-C CPU socket LGA1151

Unplug all power cables before installing the CPU.

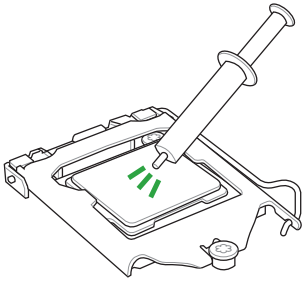
- Ensure that you install the correct CPU designed for the LGA1151 socket only. DO NOT install a CPU designed for LGA1150, LGA1155 and LGA1156 sockets on the LGA1151 socket.
- Upon purchase of the motherboard, ensure that the PnP cap is on the socket and the socket contacts are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components.
- Keep the cap after installing the motherboard. ASUS will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the cap on the LGA1151 socket.
- The product warranty does not cover damage to the socket contacts resulting from incorrect CPU installation/removal, or misplacement/loss/incorrect removal of the PnP cap.

1.3.1 Installing the CPU



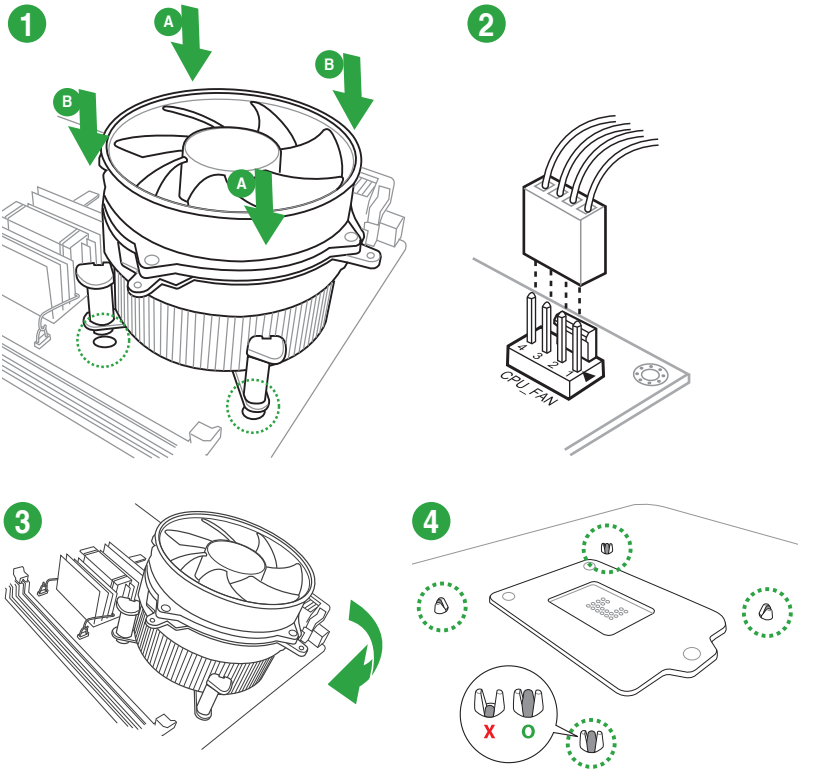


1.3.2 CPU heatsink and fan assembly installation

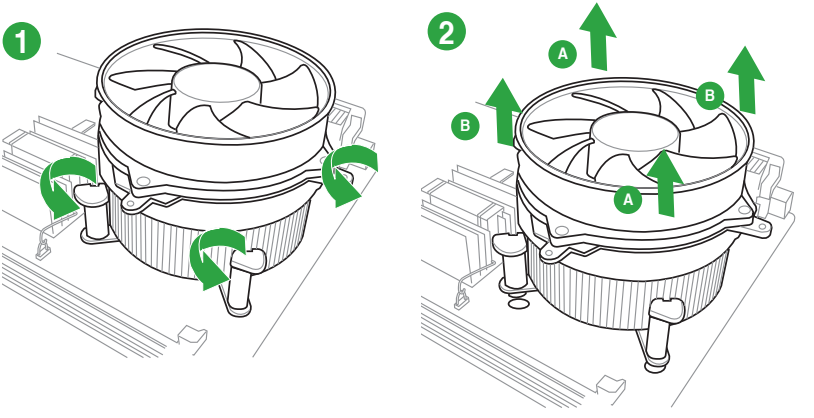


Apply the Thermal Interface Material to the CPU heatsink and CPU before you install the heatsink and fan if necessary.

To install the CPU heatsink and fan assembly



To uninstall the CPU heatsink and fan assembly

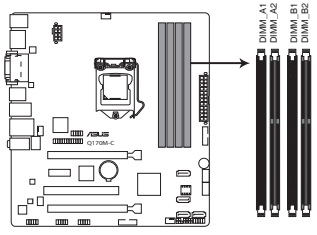


1.4 System memory

1.4.1 Overview

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.

According to Intel® CPU spec, DIMM voltage below 1.35 V is recommended to protect the CPU.



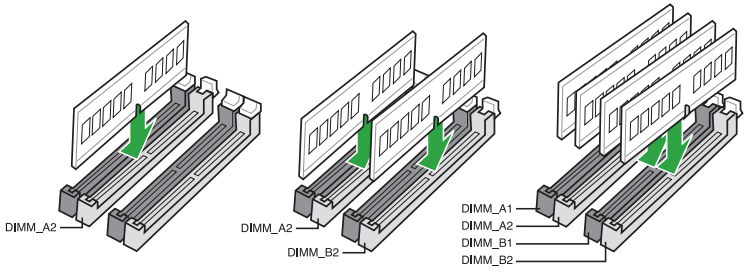
Channel	Sockets
Channel A	DIMM_A1 & DIMM_A2
Channel B	DIMM_B1 & DIMM_B2

Q170M-C 288-pin DDR4 DIMM sockets

1.4.2 Memory configurations

You may install 2 GB, 4 GB, 8 GB and 16 GB unbuffered non-ECC DDR4 DIMMs into the DIMM sockets. You can refer to the recommended memory population below.

Recommended memory configurations

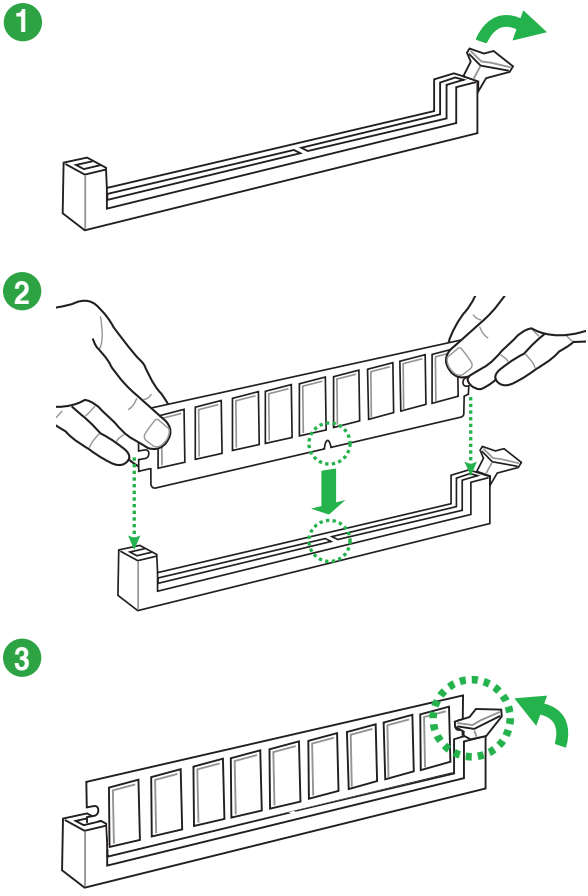


- You may install varying memory sizes in Channel A and Channel B. The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation.
- According to Intel® CPU spec, DIMM voltage below 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.

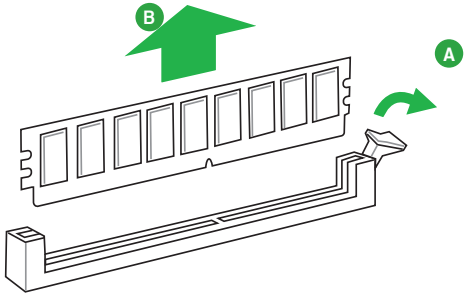
- The default memory operation frequency is dependent on its Serial Presence Detect (SPD), which is the standard way of accessing information from a memory module. Under the default state, some memory modules for overclocking may operate at a lower frequency than the vendor-marked value. To operate at the vendor-marked or at a higher frequency, refer to section **2.5 Ai Tweaker menu** for manual memory frequency adjustment.
- Always install the DIMMs with the same CAS Latency. For an optimum compatibility, we recommend that you install memory modules of the same version or data code (D/C) from the same vendor. Check with the vendor to get the correct memory modules.
- For system stability, use a more efficient memory cooling system to support a full memory load (4 DIMMs) or overclocking condition.

Visit the ASUS website at www.asus.com for the latest QVL.

1.4.3 Installing a DIMM



1.4.4 Removing a DIMM



1.5 Expansion slots

In the future, you may need to install expansion cards. The following sub-sections describe the slots and the expansion cards that they support.

Unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

1.5.1 Installing an expansion card

To install an expansion card:

1. Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.
2. Remove the system unit cover (if your motherboard is already installed in a chassis).
3. Remove the bracket opposite the slot that you intend to use. Keep the screw for later use.
4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
5. Secure the card to the chassis with the screw you removed earlier.
6. Replace the system cover.

1.5.2 Configuring an expansion card

After installing the expansion card, configure it by adjusting the software settings.

1. Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 for information on BIOS setup.
2. Assign an IRQ to the card.
3. Install the software drivers for the expansion card.

When using PCI cards on shared slots, ensure that the drivers support “Share IRQ” or that the cards do not need IRQ assignments. Otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable.

1.5.3 PCI slot

The PCI slot supports LAN cards, SCSI cards, USB cards, and other card that comply with PCI specifications.

1.5.4 PCI Express 3.0/2.0 x1 slot

This motherboard supports PCI Express x1 network cards, SCSI cards, and other cards that comply with the PCI Express specifications.

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

This motherboard supports PCI Express x16 network cards, SCSI cards, and other cards that comply with the PCI Express specifications.

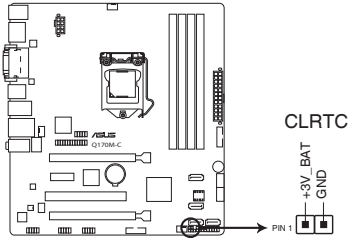
IRQ assignments for this motherboard

	A	B	C	D
PCIE x16_1	shared	–	–	–
PCIE x16_2	shared	–	–	–
PCIE x1_1	shared	–	–	–
Realtek 8111F controller	–	shared	–	–
USB 3.0 Controller	shared	–	–	–
SATA Controller	shared	–	–	–
HD Audio	shared	–	–	–

1.6 Headers and Jumpers

1. Clear RTC RAM (2-pin CLRTC)

This header 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.



Q170M-C Clear RTC RAM

To erase the RTC RAM:

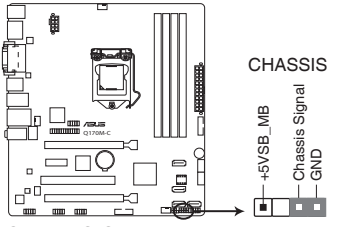
1. Turn OFF the computer and unplug the power cord.
2. Use a metal object such as a screwdriver to short the two pins.
3. Plug the power cord and turn ON the computer.
4. Hold down the <**Del**> key during the boot process and enter BIOS setup to re-enter data.

- If the steps above do not help, remove the onboard battery and short the two pins again to clear the CMOS RTC RAM data. After clearing the CMOS, reinstall the battery.
- You do not need to clear the RTC 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.

2. Chassis intrusion header (4-1 pin CHASSIS)

This connector is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or 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.

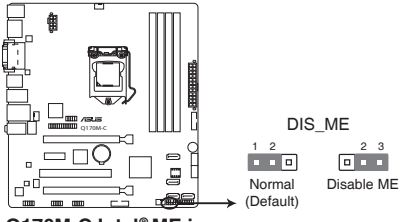
By default, the pin labeled “Chassis Signal” and “Ground” are shorted with a jumper cap. Remove the jumper caps only when you intend to use the chassis intrusion detection feature.



Q170M-C Chassis intrusion connector

3. Intel® ME jumper (3-pin DIS_ME)

This jumper allows you to enable or disable the Intel® ME function. Set this jumper to pins 1-2 to enable (default) the Intel® ME function and to pins 2-3 to disable it.

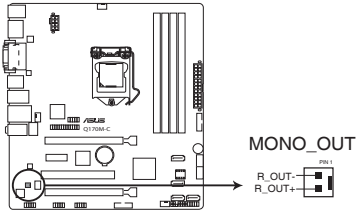


Q170M-C Intel® ME jumper

Disable the Intel® ME function before updating it.

4. **Mono out header (2-pin MONO_OUT)**

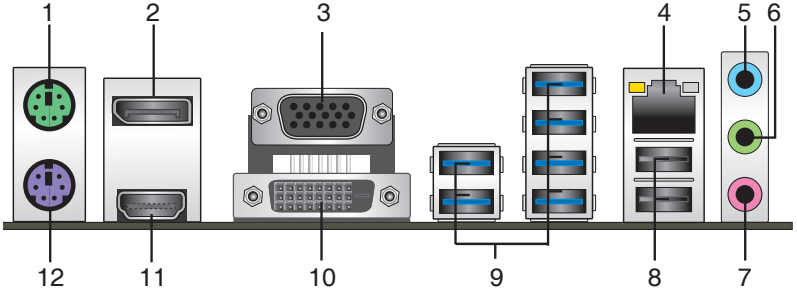
This internal mono out header allows connection to an internal, low power speaker for basic system sound capability. The subsystem is capable of driving a speaker load of 4 Ohms at 2 Watts (rms).



Q170M-C MONO_OUT connector

1.7 Connectors

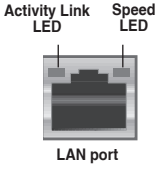
1.7.1 Rear panel connectors



1. **PS/2 mouse port (green).** This port is for a PS/2 mouse.
2. **DisplayPort**. This port is for a DisplayPort-compatible devices.
3. **Video Graphics Adapter (VGA) port.** This 15-pin port is for a VGA monitor or other VGA-compatible devices.
4. **LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub.

LAN port LED indications

Activity/Link LED		Speed LED	
Status	Description	Status	Description
Off	No link	OFF	10Mbps connection
Orange	Linked	ORANGE	100Mbps connection
Orange (Blinking)	Data activity	GREEN	1Gbps connection
Orange (Blinking then steady)	Ready to wake up from S5 mode	–	–



5. **Line In port (light blue).** This port connects to the tape, CD, DVD player, or other audio sources.

6. **Line Out port (lime).** This port connects to a headphone or a speaker. In the 4.1, 5.1and 7.1-channel configurations, the function of this port becomes Front Speaker Out.

7. **Microphone port (pink)**. This port connects to a microphone.

Refer to the audio configuration table for the function of the audio ports in 2.1, 4.1, 5.1, or 7.1-channel configuration.

Audio 2.1, 4.1, 5.1, or 7.1-channel configuration

Port	Headset 2.1-channel	4.1-channel	5.1-channel	7.1-channel
Light Blue (Rear panel)	Line In	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out
Lime (Rear panel)	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink (Rear panel)	Mic In	Mic In	Bass/Center	Bass/Center
Lime (Front panel)	-	-	-	Side Speaker Out

To configure an 7.1-channel audio output:

Use a chassis with HD audio module in the front panel to support an 7.1-channel audio output.

8. **USB 2.0 ports.** These 4-pin Universal Serial Bus (USB) ports are for USB 2.0/1.1 devices.

9. **USB 3.0 ports**. These 9-pin Universal Serial Bus (USB) ports are for USB 3.0 devices.

- USB 3.0 devices can only be used for data storage.
- We strongly recommend that you connect USB 3.0 devices to USB 3.0 ports for faster and better performance from your USB 3.0 devices.
- Due to the design of the Intel® 100 series chipset, all USB devices connected to the USB 2.0 and USB 3.0 ports are controlled by the xHCI controller. Some legacy USB devices must update their firmware for better compatibility.

10. **DVI-D port.** This port is for any DVI-D compatible device. DVI-D can't be converted to output RGB Signal to CRT and isn't compatible with DVI-I.

- Multi-VGA output supports up to three displays under Windows® OS environment, two displays under BIOS, and one display under DOS.
- Intel® display architecture design supports the following maximum supported pixel clocks (Pixel Clock = H total x V Total x Frame Rate (Screen refresh rate)):
  - DVI port: 165 MHz
  - VGA port: 180 MHz
  - HDMI port: 300 MHz

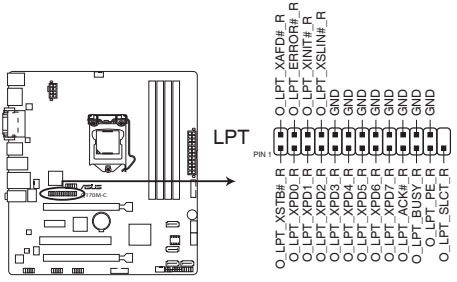
11. **HDMI port.** This port is for a High-Definition Multimedia Interface (HDMI) connector, and is HDCP compliant allowing playback of HD DVD, Blu-ray, and other protected content.

12. **PS/2 keyboard port (purple).** This port is for a PS/2 keyboard.

1.7.2 Internal connectors

1. LPT connector (26-1 pin LPT)

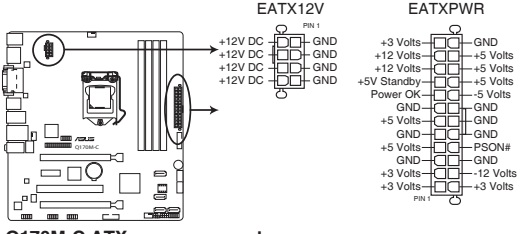
The LPT (Line Printing Terminal) connector supports devices such as a printer. LPT standardizes as IEEE 1284, which is the parallel port interface on IBM PC-compatible computers.



Q170M-C Parallel Port Connector

2. ATX power connectors (24-pin EATXPWR, 8-pin EATX12V)

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.

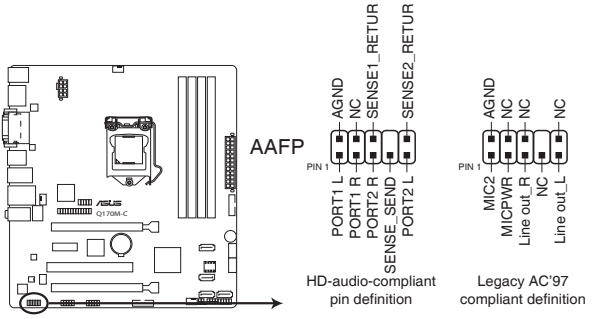


Q170M-C ATX power connectors

- We recommend that you use an ATX 12V Specification 2.0-compliant or later version power supply unit (PSU) with a minimum of 350W power rating. This PSU type has 24-pin and 4-pin power plugs.
- DO NOT forget to connect the 4-pin / 8-pin ATX +12V power plug. Otherwise, the system will not boot up.
- We recommend that you use a PSU with higher power output when configuring a system with more power-consuming devices or when you intend to install additional devices. The system may become unstable or may not boot up if the power is inadequate.
- If you are uncertain about the minimum power supply requirement for your system, refer to the Recommended Power Supply Wattage Calculator at http://support.asus.com/PowerSupplyCalculator/PSCalculator.aspx?SLanguage=en-us for details.

3. Front panel audio connector (10-1 pin AAFP)

This connector is for a chassis-mounted front panel audio I/O module that supports HD Audio. Connect one end of the front panel audio I/O module cable to this connector.

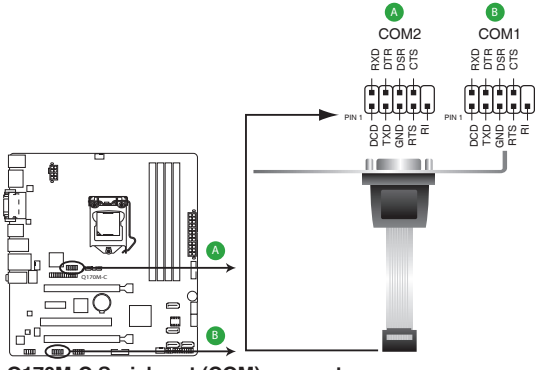


Q170M-C Front panel audio connector

We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability.

4. Serial port connector (10-1 pin COM)

This connector is for a serial (COM) port. Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis.

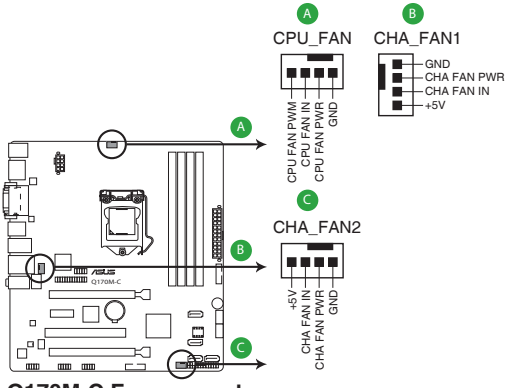


Q170M-C Serial port (COM) connectors

The COM module is purchased separately.

5. CPU and chassis fan connectors (4-pin CPU_FAN, 4-pin CHA_FAN1/2)

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.

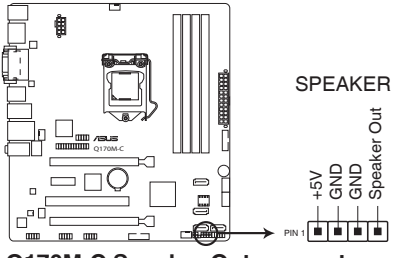


Q170M-C Fan connectors

Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan connectors! The CPU_FAN connector supports a CPU fan of maximum 1A (12 W) fan power.

6. Speaker connector (4-pin SPEAKER)

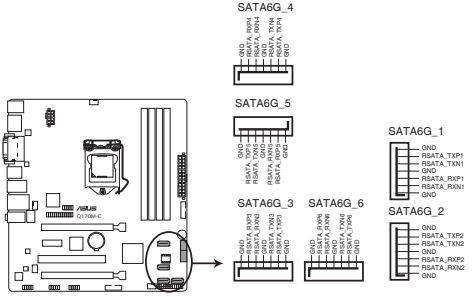
The 4-pin connector is for the chassis-mounted system warning speaker. The speaker allows you hear system beeps and warnings.



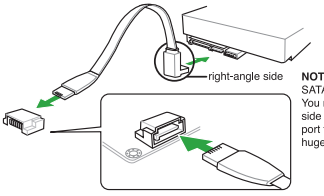
Q170M-C Speaker Out connector

8. Intel® Q170 Serial ATA 6.0Gb/s connector (7-pin SATA6G_1~6 [gray])

These connectors connect to Serial ATA 6.0 Gb/s hard disk drives via Serial ATA 6.0 Gb/s signal cables.



Q170M-C Intel® SATA 6 Gb/s connectors

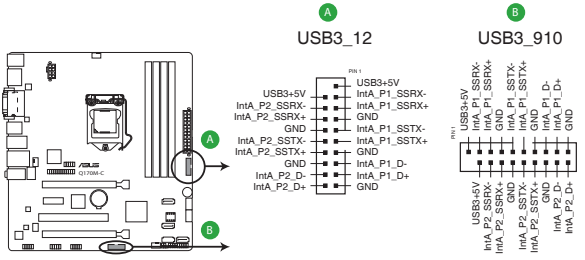


NOTE: Connect the right-angle side of SATA signal cable to SATA device. You may also connect the right-angle side of SATA cable to the onboard SATA port to avoid mechanical conflict with huge graphics cards.

- You must install Windows. XP Service Pack 3 or later version before using Serial ATA hard disk drives.
- When using hot-plug and NCQ, set the **SATA Mode Selection** item in the BIOS to [AHCI].

9. USB 3.0 connector (20-1 pin USB3_12, USB3_910)

These connectors allow you to connect a USB 3.0 module for additional USB 3.0 front or rear panel ports. 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.

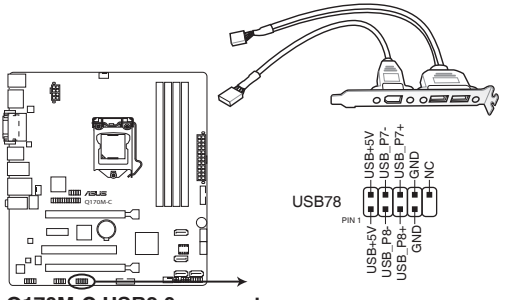


Q170M-C USB3.0 Front panel connectors

The USB 3.0 module is purchased separately.

10. USB 2.0 connectors (10-1 pin USB78)

These connectors are for USB 2.0 ports. 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.



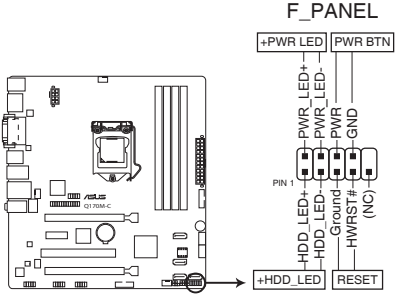
Q170M-C USB2.0 connector

Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!

The USB 2.0 module is purchased separately.

11. System panel connector (10-1 pin F_PANEL)

This connector supports several chassis-mounted functions.



Q170M-C System panel connector

- **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 button (2-pin PWR_BTN)**

  This connector is for the system power button.

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

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

1.8 Software support

1.8.1 Installing an operating system

This motherboard supports Windows® 7 (32bit/64bit), Windows® 8.1 (64bit) and Windows® 10 (64bit) Operating Systems (OS). Always install the latest OS version and corresponding updates to maximize the features of your hardware.

Motherboard settings and hardware options vary. Refer to your OS documentation for detailed information.

1.8.2 Support DVD information

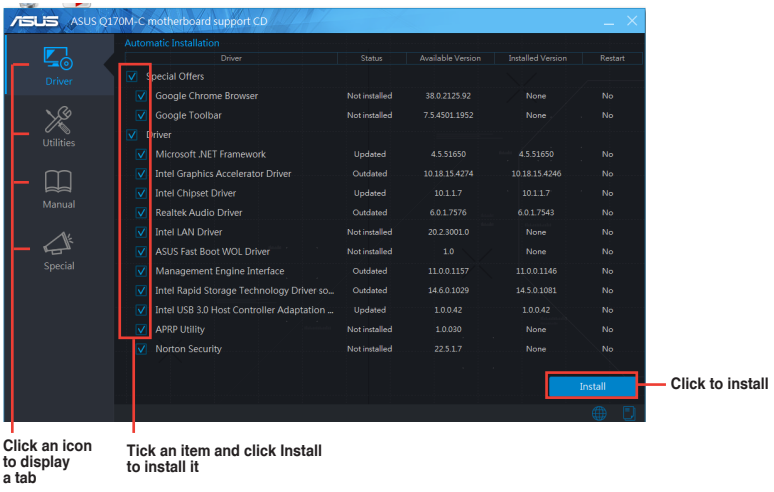
The Support DVD that comes with the motherboard package contains the drivers, software applications, and utilities that you can install to avail all motherboard features.

The contents of the Support DVD are subject to change at any time without notice. Visit the ASUS website at www.asus.com for updates.

To run the Support DVD

Place the Support DVD into the optical drive. If Autorun is enabled in your computer, the DVD automatically displays the Specials screen which lists the unique features of your ASUS motherboard. Click Drivers, Utilities, Manual and Special tabs to display their respective menus.

The following screen is for reference only.



If Autorun is NOT enabled in your computer, browse the contents of the Support DVD to locate the file ASSETUP.EXE from the BIN folder. Double-click the ASSETUP.EXE to run the DVD.

1.8.3 Intel® SBA support

Intel® SBA (Small Business Advantage) is a combination of hardware and software that provides unique security and productivity capabilities designed for small businesses.

Intel® SBA requires MEI driver (AMT host software kit) installed.

Platform requirements:

- Windows® 7 (32/64bit) / Windows® 8.1 (64bit) / Windows® 10 (64bit)
- PCH with 6th-generation Intel® Core™ processor (100 series platforms) with 6.5MB Intel® Management Engine (ME) 11.0 firmware installed

CPU and chipsets requirements:

* Intel® Core™ i3 / i5 /i7 with one of these chipsets: B150, H170, Q170

- The Intel® Management Engine software kit must be installed (The Local Manageability Service and the Intel® Management Engine Interface must be installed and running.)

- Local Administrator rights are required on the target machine.
- Some models without the 6.5MB Intel® Management Engine firmware do not support Intel® SBA. Please refer to the specification sheet for details.
- Visit the ASUS website at www.asus.com for the latest CPU QVL (Qualified Vendors List).
- Uninstall SBA3.1 before you install and upgrade to SBA4.0 or latest version.

1.9 Installing an operating system

- Motherboard settings and hardware options vary. The setup procedures presented in this chapter are for reference only. Refer to Windows® operating system documentation for detailed information.
- Due to Windows® 7 limitation, before Windows® 7 64-bit installation, select other OS item under the Boot menu from Advanced Mode > Boot > Secure Boot > Other OS.

Windows® 7 and USB 3.0 driver for 100 Series

Based on the chipset specification, the 100 series requires USB 3.0 drivers to be preloaded in order to use USB keyboard/mouse during Windows® 7 installation. This section is a guide on preloading USB 3.0 drivers and installing Windows® 7.

Method 1: Using SATA ODD & USB devices

Load USB 3.0 drivers using the ASUS support DVD and install Windows® 7 using a USB device.

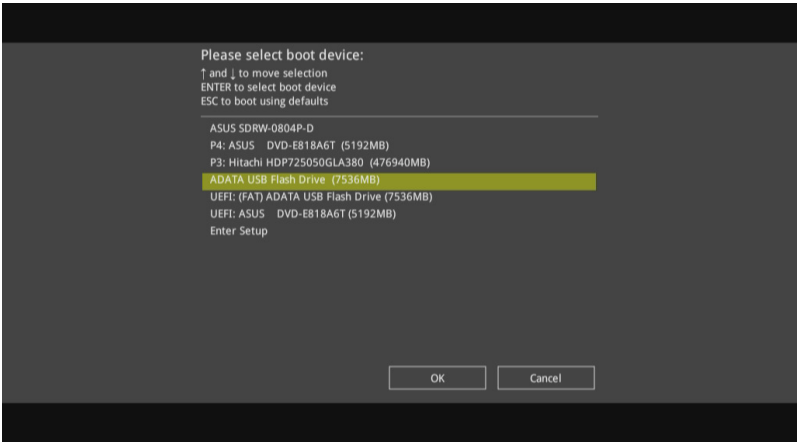
Requirement:

- 1 x ASUS support DVD
- 1 x Windows® 7 installation source
- 1 x SATA ODD
- 1 x USB device (ODD or storage)

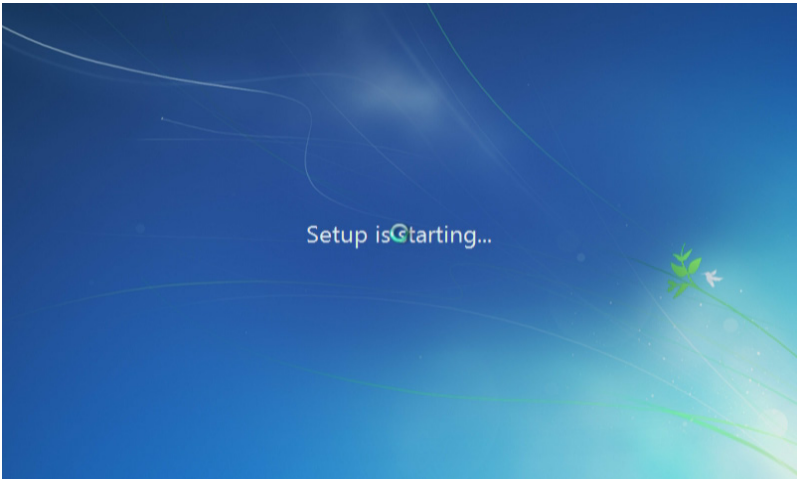
- The USB storage device requires 8 GB or more capacity. It is recommended to format the storage device before use.
- Use both a USB ODD and a SATA ODD if you want to install Windows® 7 64-bit UEFI mode.

1. Insert the Windows® 7 installation DVD into a USB ODD, or copy all files on the Windows® 7 installation DVD to a USB storage device on a working system.
2. Connect the USB ODD or USB storage device to your 100 series platform.
3. Insert the ASUS support DVD into a SATA ODD on your 100 series platform.
4. Power on your system and press F8 during POST (Power-On Self Test) to enter the boot screen.

5. Select the USB ODD or USB storage device as the boot device.



6. The USB 3.0 driver will be loaded automatically during installation startup.



The “Setup is starting...” screen will show up if the USB 3.0 driver is loaded correctly.

7. Follow the onscreen instructions to complete the Windows® 7 installation.

Method 2: Using a modified Windows® 7 ISO

Load USB 3.0 drivers and install Windows® 7 using a modified Windows® 7 installation DVD.

Requirement:

- 1 x ASUS support DVD
- 1 x Windows® 7 installation source
- 1 x Working system (PC or notebook)
- 1 x SATA ODD

1. On your working system, create an ISO image file of the Windows® 7 installation source using a third-party ISO software.
2. Copy both “Auto_Unattend.xml” and “Auto_Unattend” folder from the root directory of the ASUS supporting DVD to your system.
3. Edit the ISO file and add both “Auto_Unattend.xml” and “Auto_Unattend” folder into the ISO file.
4. Burn this ISO file onto an empty DVD to create a modified Windows® 7 installation DVD.
5. Insert the modified Windows® 7 installation DVD into an ODD on your 100 series platform.
6. Power on your system and press F8 during POST (Power-On Self Test) to enter the boot screen.
7. Select the ODD as the boot device.
8. The USB 3.0 driver will be loaded automatically during installation startup.

The “Setup is starting...” screen will show up if the USB 3.0 driver is loaded correctly.

9. Follow the onscreen instructions to complete the Windows® 7 installation.

Method 3: Using ASUS EZ Installer

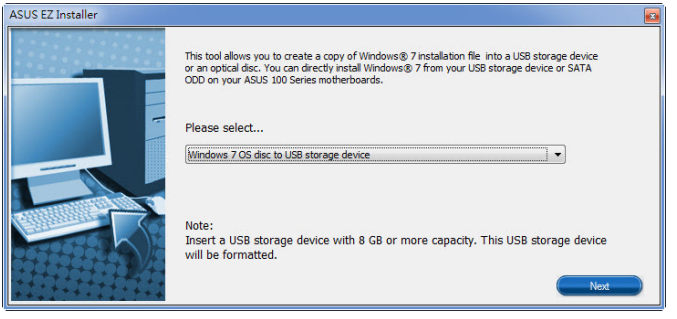
Use the ASUS EZ Installer to create a modified Windows® 7 installation source.

Requirement:

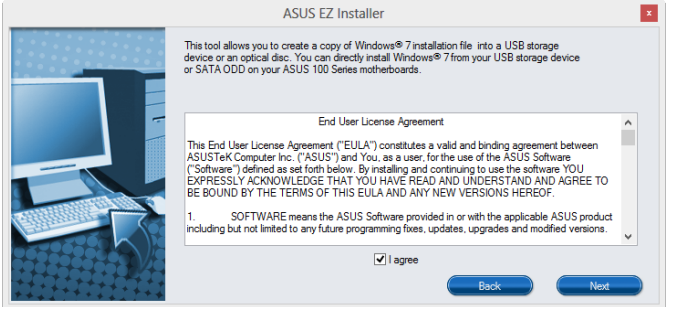
- 1 x ASUS support DVD
- 1 x Windows® 7 installation DVD
- 1 x Working system (PC or notebook)
- 1 x SATA ODD
- 1 x USB storage device (8 GB or more)

1. Insert the Windows® 7 installation DVD.
2. Launch the ASUS EZ Installer located on the ASUS support DVD.
3. Select a method of creating a modified Windows® 7 installation file:
   - Windows® 7 OS disk to USB storage device

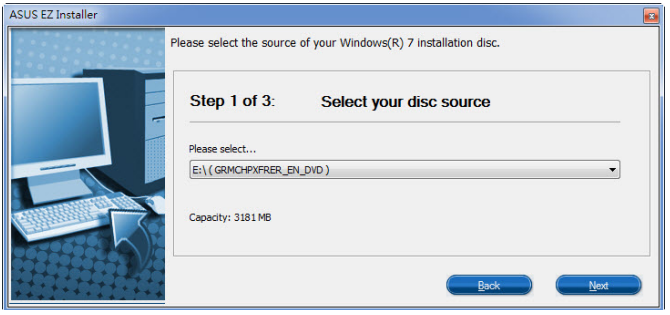
     - Select **Windows 7 OS disk to USB storage device** then click **Next**.



     - Check **I agree** and then click **Next**.



- Select the source of the Windows® 7 installation disk then click **Next**.



- Select the USB storage device and click **next**.

Click the refresh icon if the USB storage device is not displayed.

- Click **Yes** to clear the contents on the USB storage device and create a bootable USB device.

Make sure to backup contents on the USB storage device, as it will be formatted.

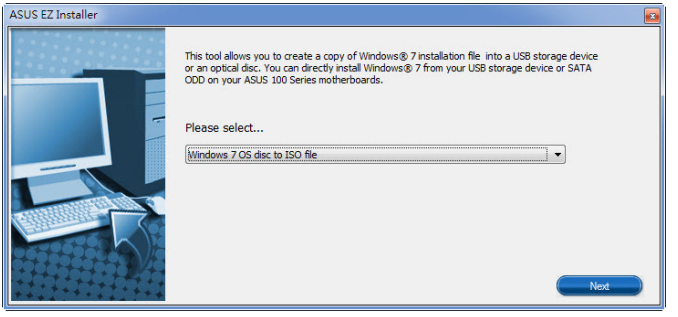
- Once completed, click **OK** to finish.

- Windows® 7 OS disk to ISO file

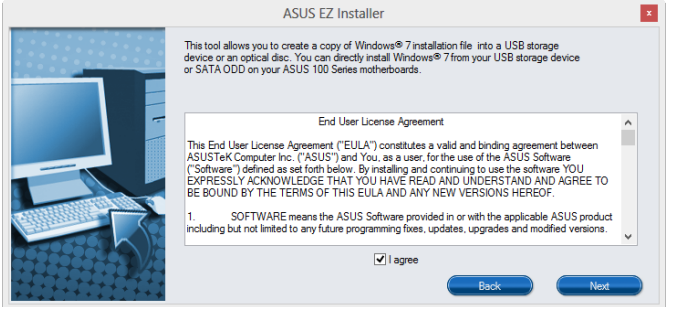
Before using this method to install Windows® 7:

- If you are using only one SATA HDD, ensure that your SATA HDD has more than twice the storage space (ISO file size +500MB).
- If you are using two or more SATA HDDs, ensure that at least two of your SATA HDDs have more than the storage space (ISO file size +500Mb).

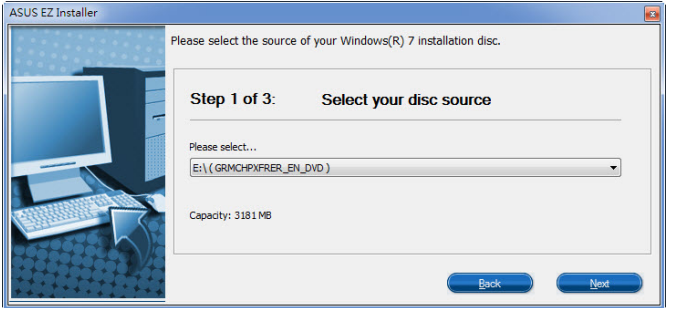
- Select **Windows 7 OS disk to ISO file** then click **Next**.



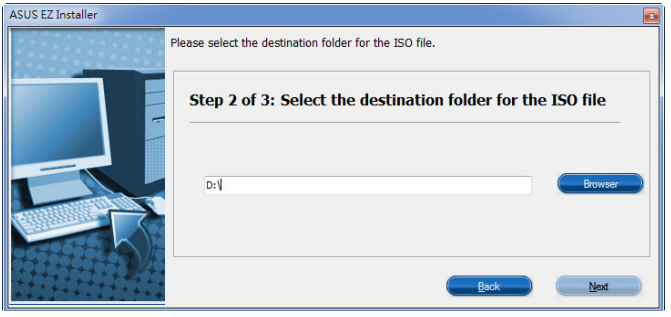
- Check **I agree** and then click **Next**.



- Select the source of the Windows® 7 installation disk then click **Next**.



- Select the folder to save the modified Windows® 7 installation ISO file and click **Next**.



- Once completed, click OK to finish.
- Burn this ISO file onto an empty DVD to create a modified Windows® 7 installation DVD.

4. Insert the modified Windows® 7 installation DVD into an ODD or connect the USB storage device with modified Windows® 7 installation files onto your 100 series platform.
5. Power on your system and press F8 during POST (Power-On Self Test) to enter the boot screen.
6. Select the ODD or USB storage device as the boot device.
7. The USB 3.0 driver will be loaded automatically during installation startup.

The “Setup is starting...” screen will show up if the USB 3.0 driver is loaded correctly.

8. Follow the onscreen instructions to complete the Windows® 7 installation.

BIOS information

2

2.1 Managing and updating your BIOS

Save a copy of the original motherboard BIOS file to a USB flash disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update utility.

2.1.1 EZ Update

EZ Update is a utility that allows you to automatically update your motherboard's softwares, drivers and the BIOS version easily. With this utlity, you can also manually update the saved BIOS and select a boot logo when the system goes into POST.

To launch EZ Update, click **EZ Update** on the AI Suite 3 main menu bar.

Click to automatically update your motherboard's driver, software and firmware

Click to find and select the BIOS from file

Click to select a boot logo

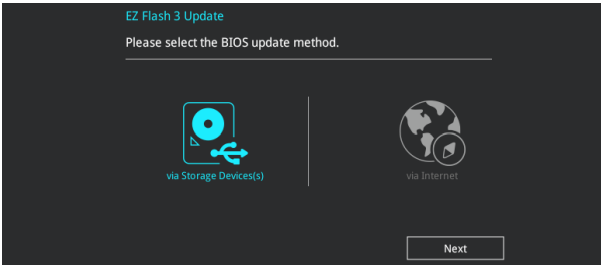
Click to update the BIOS

EZ Update requires an Internet connection either through a network or an ISP (Internet Service Provider).

2.1.2 ASUS EZ Flash 3

The ASUS EZ Flash 3 feature allows you to update the BIOS without using an OS-based utility.

- Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the Load Optimized Defaults item under the Exit menu. See section **2.10 Exit Menu** for details.
- Check your local Internet connection before updating through the Internet.



To update the BIOS using EZ Flash 3:

1. Enter the **Advanced Mode** of the BIOS setup program. Go to the **Tool** menu to select ASUS EZ Flash 3 and press <Enter> to enable it.
2. Follow the steps below to update the BIOS via USB or Internet.

   Via Storage Device(s)

   a) Insert the USB flash disk that contains the latest BIOS file to the USB port, then select **via Storage Device(s)**.

   b) Press <Tab> to switch to the **Drive** field.

   c) Press the Up/Down arrow keys to find the USB flash disk that contains the latest BIOS, and then press <Enter>.

   d) Press <Tab> to switch to the **Folder Info** field.

   e) Press the Up/Down arrow keys to find the BIOS file, and then press <Enter> to perform the BIOS update process.

   Via the Internet

   a) Select **via Internet**.

   b) Press the Left/Right arrow keys to select an Internet connection method, and then press <Enter>.

   c) Follow the onscreen instructions to complete the update.
3. Reboot the system when the update process is done.

- ASUS EZ Flash 3 supports USB devices, such as a USB flash disk, with FAT 32/16 format and single partition only.
- DO NOT shut down or reset the system while updating the BIOS to prevent system boot failure!.

2.1.3 ASUS CrashFree BIOS 3 utility

The ASUS CrashFree BIOS 3 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can restore a corrupted BIOS file using the motherboard support DVD or a USB flash drive that contains the updated BIOS file.

- Before using this utility, rename the BIOS file in the removable device into **Q170C.CAP**.
- The BIOS file in the support DVD may not be the latest version. Download the latest BIOS file from the ASUS website at www.asus.com.

Recovering the BIOS

To recover the BIOS:

1. Turn on the system.
2. Insert the support DVD to the optical drive or the USB flash drive that contains the BIOS file to the USB port.
3. The utility automatically checks the devices for the BIOS file. When found, the utility reads the BIOS file and enters ASUS EZ Flash 3 utility automatically.
4. The system requires you to enter BIOS Setup to recover BIOS settings. To ensure system compatibility and stability, we recommend that you press <F5> to load default BIOS values.

DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

2.1.4 ASUS BIOS Updater

ASUS BIOS Updater allows you to update the BIOS in DOS environment.

The screen captures used in this section are for reference only and may not be exactly the same as actually shown on your computer screen.

Before updating BIOS

- Prepare the motherboard support DVD and a USB flash drive.
- Download the latest BIOS file and BIOS Updater from http://support.asus.com and save them in your USB flash drive.

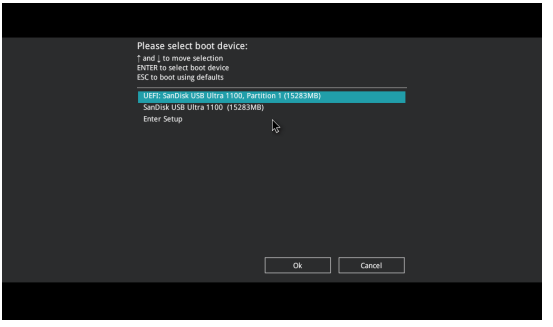
NTFS is not supported under FreeDOS environment. Ensure that your USB flash drive is in single partition and in FAT32/16 format.

- Turn off the computer.
- Ensure that your computer has a DVD optical drive.

Booting the system in DOS environment

To boot the system in DOS:

1. Insert the USB flash drive with the latest BIOS file and BIOS Updater to the USB port.
2. Boot your computer then press <F8> to launch the select boot device screen.
3. When the select boot device screen appears, insert the Support DVD into the optical drive then select the optical drive as the boot device.



4. When the booting message appears, press <Enter> within five (5) seconds to enter FreeDOS prompt.

```
ISOLINUX 3.20 2006-08-26 Copyright (C) 1994-2005 H. Peter Anvin
A Bootable DVD/CD is detected. Press ENTER to boot from the DVD/CD.
If no key is pressed within 5 seconds, the system will boot next priority
device automatically. boot:
```

5. On the FreeDOS prompt, type **d:** then press <Enter> to switch the disk from Drive C (optical drive) to Drive D (USB flash drive).

```
Welcome to FreeDOS (http://www.freedos.org)!
C:/> d:
D:/>
```

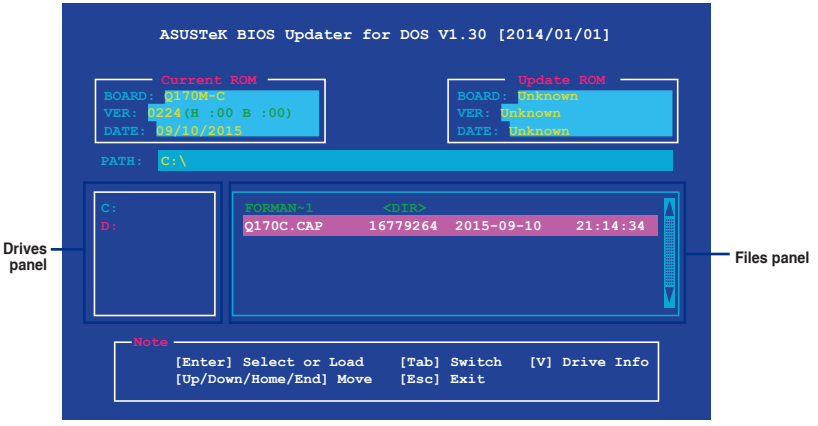
Updating the BIOS file

To update the BIOS file:

1. On the FreeDOS prompt, type **bupdater /pc /g** and press <Enter>.

```
D:/> bupdater /pc /g
```

2. On the BIOS Updater screen, press <Tab> to switch from Files panel to Drives panel then select **D:**.



3. Press <Tab> to switch from Drives panel to Files panel then press <Up/Down or Home/End> keys to select the BIOS file and press <Enter>.
4. After the BIOS Updater checks the selected BIOS file, select **Yes** to confirm the BIOS update.

The BIOS Backup feature is not supported due to security regulations.

5. Select **Yes** then press <Enter>. When BIOS update is done, press <ESC> to exit BIOS Updater.
6. Restart your computer.

DO NOT shut down or reset the system while updating the BIOS to prevent system boot failaure.

Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the **Load Optimized Defaults** item under the **Exit** BIOS menu. See section **2.10 Exit Menu** for details.

2.2 BIOS setup program

Use the BIOS Setup program to update the BIOS or configure its parameters. The BIOS screens include navigation keys and brief online help to guide you in using the BIOS Setup program.

Entering BIOS Setup at startup

To enter BIOS Setup at startup:

Press <Delete> or <F2> during the Power-On Self Test (POST). If you do not press <Delete> or <F2>, POST continues with its routines.

Entering BIOS Setup after POST

To enter BIOS Setup after POST:

Press <Ctrl>+<Alt>+<Del> simultaneously.

Press the reset button on the system chassis.

Press the power button to turn the system off then back on. Do this option only if you failed to enter BIOS Setup using the first two options.

Using the power button, reset button, or the <Ctrl>+<Alt>+<Del> keys to force reset from a running operating system can cause damage to your data or system. We recommend you always shut down the system properly from the operating system.

- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the ASUS website at **www.asus.com** to download the latest BIOS file for this motherboard.
- Ensure that a USB mouse is connected to your motherboard if you want to use the mouse to control the BIOS setup program.
- If the system becomes unstable after changing any BIOS setting, load the default settings to ensure system compatibility and stability. Select the **Load Optimized Defaults** item under the Exit menu or press hotkey F5. See section **2.10 Exit Menu** for details.
- If the system fails to boot after changing any BIOS setting, try to clear the CMOS and reset the motherboard to the default value. See section **1.6 Headers and Jumpers** for information on how to erase the RTC RAM.

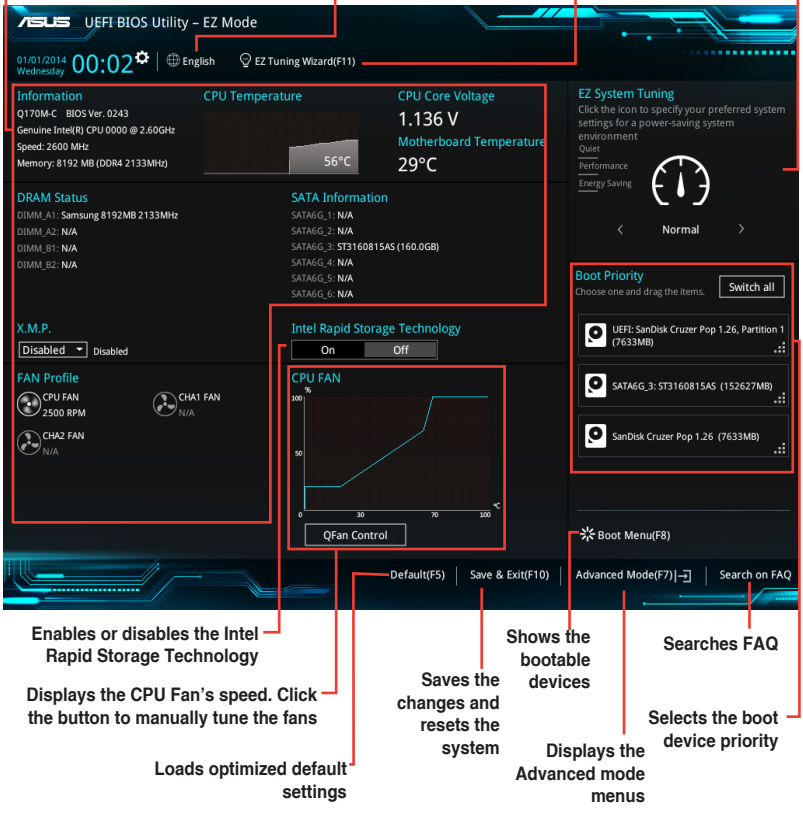
BIOS menu screen

The BIOS setup program can be used under two modes: **EZ Mode** and **Advanced Mode**. Press <F7> to change between the two modes.

2.2.1 EZ Mode

By default, the EZ Mode screen appears when you enter the BIOS setup program. The EZ Mode provides you an overview of the basic system information, and allows you to select the display language, system performance mode, fan profile and boot device priority. To access the Advanced Mode, click **Advanced Mode(F7)** or press <F7>.

The default screen for entering the BIOS setup program can be changed. Refer to the **Setup Mode** item in section **2.8 Boot menu** for details.

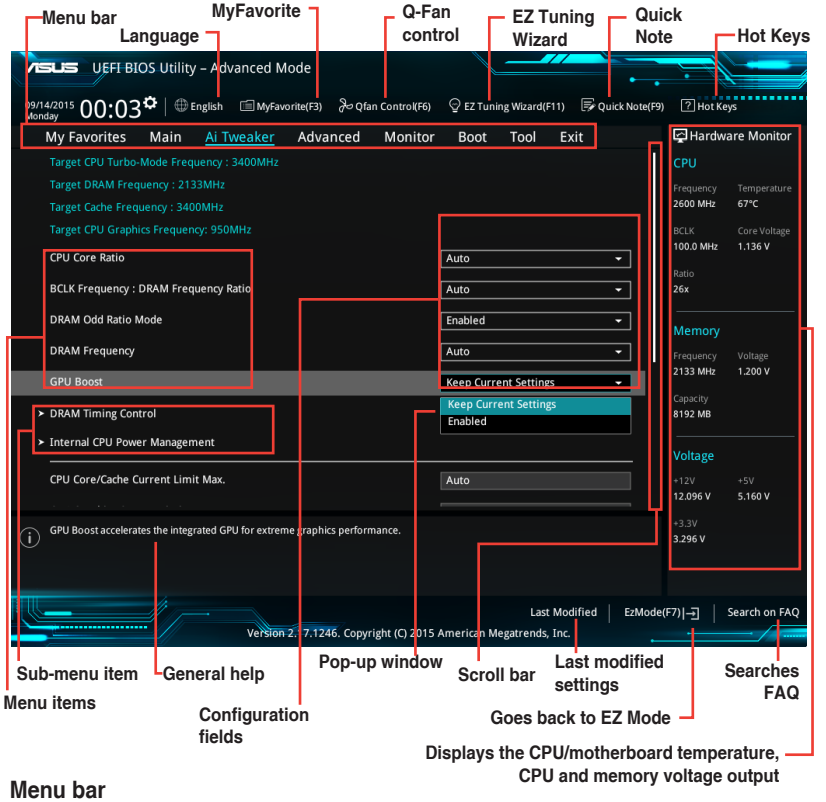


The boot device options vary depending on the devices you installed to the system.

2.2.2 Advanced Mode

The Advanced Mode provides advanced options for experienced end-users to configure the BIOS settings. The figure below shows an example of the **Advanced Mode**. Refer to the following sections for the detailed configurations.

To access the EZ Mode, click **EzMode(F7)** or press <F7>.



Menu bar

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

My Favorites	For saving the frequently-used system settings and configuration
Main	For changing the basic system configuration
Ai Tweaker	For changing the overclocking settings
Advanced	For changing the advanced system settings
Monitor	For displaying the system temperature, power status, and changing the fan settings
Boot	For changing the system boot configuration
Tool	For configuring options for special functions
Exit	For selecting the exit options and loading default settings

Menu items

The highlighted item on the menu bar displays the specific items for that menu. For example, selecting **Main** shows the Main menu items.

The other items (My Favorites, Ai Tweaker, Advanced, Monitor, Boot, Tool, and Exit) on the menu bar have their respective menu items.

Submenu items

A greater than sign (>) before each item on any menu screen means that the item has a submenu. To display the submenu, select the item and press <Enter>.

Language

This button above the menu bar contains the languages that you can select for your BIOS. Click this button to select the language that you want to display in your BIOS screen.

MyFavorites (F3)

This button above the menu bar shows all BIOS items in a Tree Map setup. Select frequently-used BIOS settings and save it to MyFavorites menu.

Refer to section **2.3 My Favorites** for more information.

Q-Fan Control (F6)

This button above the menu bar displays the current settings of your fans. Use this button to manually tweak the fans to your desired settings.

Refer to section **2.2.3 QFan Control** for more information.

EZ Tuning Wizard (F11)

This button above the menu bar allows you to view and tweak the overclocking settings of your system. It also allows you to change the motherboard's SATA mode from AHCI to RAID mode.

Refer to section **2.2.4 EZ Tuning Wizard** for more information.

Quick Note (F9)

This button above the menu bar allows you to key in notes of the activities that you have done in BIOS.

- The Quick Note function does not support the following keyboard functions: delete, cut, copy and paste.
- You can only use the alphanumeric characters to enter your notes.

Hot keys

This button above the menu bar contains the navigation keys for the BIOS setup program. Use the navigation keys to select items in the menu and change the settings.

Scroll bar

A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen. Press the Up/Down arrow keys or <Page Up> / <Page Down> keys to display the other items on the screen.

General help

At the top right corner of the menu screen is a brief description of the selected item. Use <F12> key to capture the BIOS screen and save it to the removable storage device.

Configuration fields

These fields show the values for the menu items. If an item is user-configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

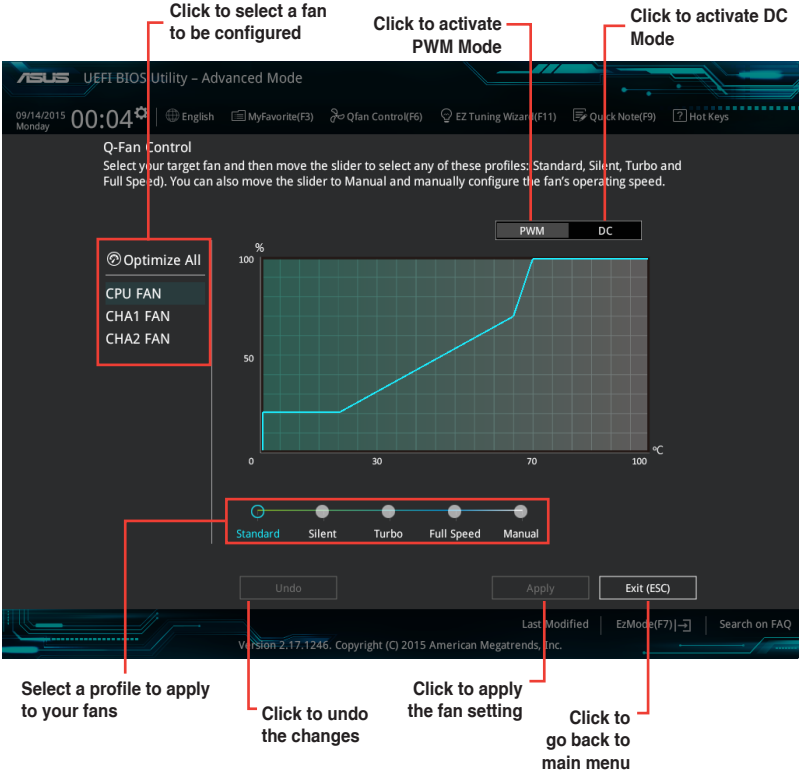
A configurable field is highlighted when selected. To change the value of a field, select it and press <Enter> to display a list of options.

Last Modified button

This button shows the items that you last modified and saved in BIOS Setup.

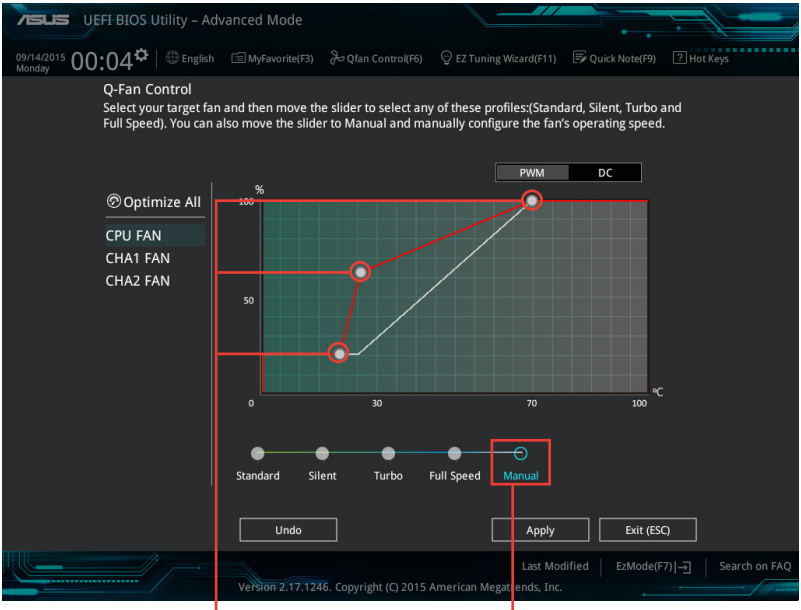
2.2.3 QFan Control

The QFan Control allows you to set a fan profile or manually configure the operating speed of your CPU and chassis fans.



Configuring fans manually

Select **Manual** from the list of profiles to manually configure your fans' operating speed.

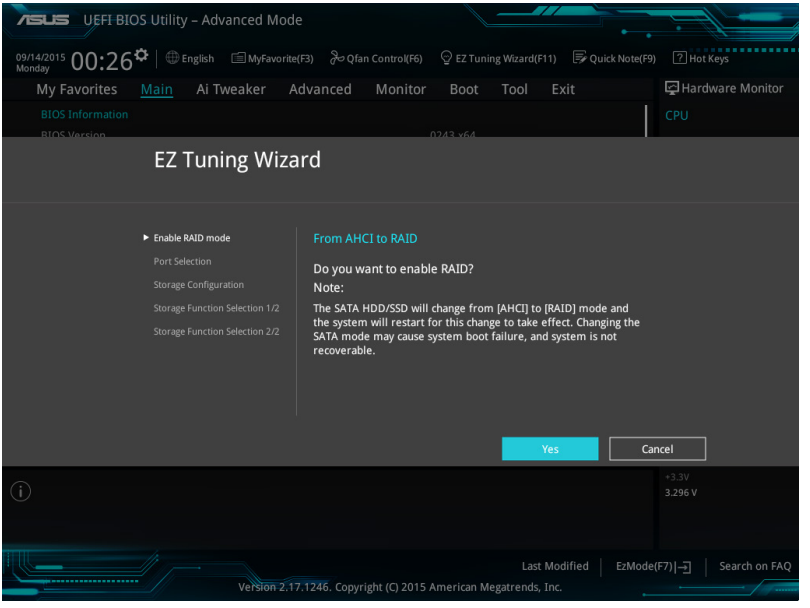


To configure your fans:

1. Select the fan that you want to configure and to view its current status.
2. Click and drag the speed points to adjust the fans' operating speed.
3. Click **Apply** to save the changes then click **Exit (ESC)**.

2.2.4 EZ Tuning Wizard

EZ Tuning Wizard allows you to view your CPU and DRAM, computer usage, and CPU fan settings. You can also easily set RAID in your system using this feature.



Tuning your system settings

To tune your settings:

1. Press <F11> on your keyboard or click EZ Tuning Wizard(F11) from the BIOS screen to open EZ Tuning Wizard screen, then click **Next**.
2. Select a PC scenario **Daily Computing** or **Gaming/Media Editing**, then click **Next**.
3. Select the CPU fan type (**Box cooler**, **Tower cooler**, or **Water cooler**) that you installed then click **Next**.

If you are not sure of the CPU fan type, click **I'm not sure**. The system automatically detects the CPU fan type.

4. Click **Next** then click **Yes** to confirm auto-tuning.

Creating RAID

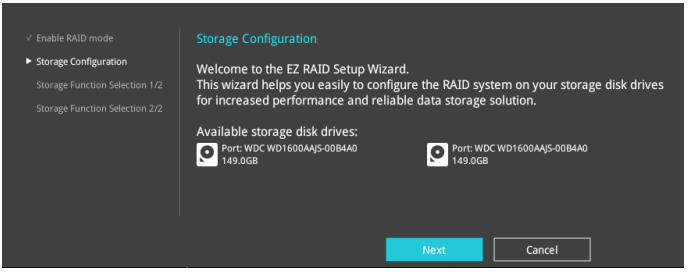
To create RAID:

1. Press <F11> on your keyboard or click EZ Tuning Wizard(F11) from the BIOS screen to open EZ Tuning Wizard screen.

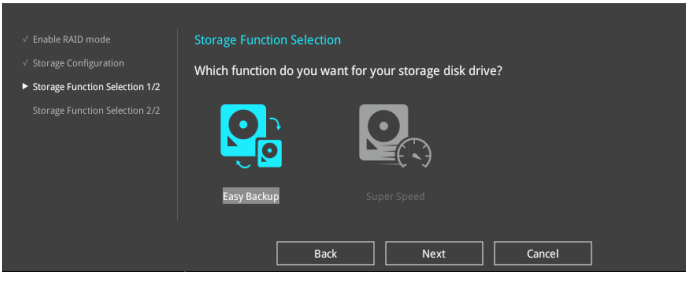
2. Click **RAID** then click **Next**.

- Ensure that your HDDs have no existing RAID volumes.
- Ensure to connect your HDDs to Intel® SATA connectors.

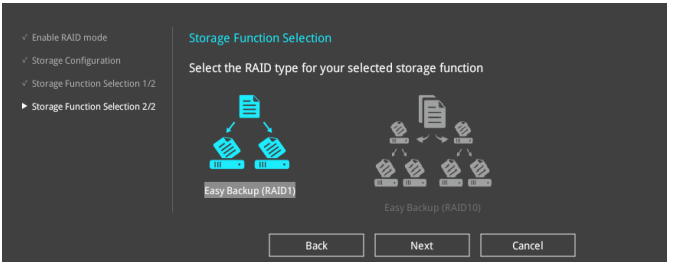
3. The available HDDs display. Click Next to continue.



4. Select the type of storage for your RAID **Easy Backup** or **Super Speed**, then click **Next**.

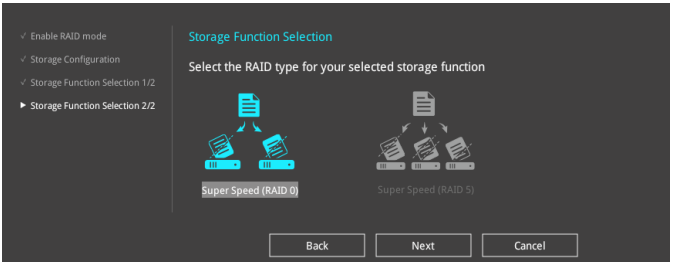


a. For Easy Backup, select from **Easy Backup (RAID1)** or **Easy Backup (RAID10)** then click **Next**.



You can only select Easy Backup (RAID 10) if you connect four (4) HDDs.

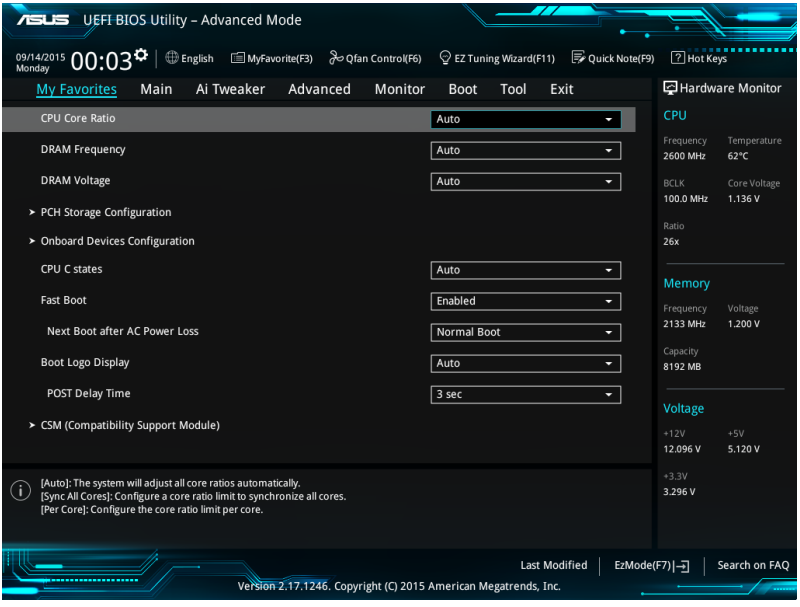
b. For Easy Backup, select from **Super Speed (RAID0)** or **Super Speed (RAID5)** then click **Next**.



5. After selecting the type of RAID, click **Yes** to continue the RAID setup.
6. After the RAID setup is done, click **Yes** to exit the setup then click **OK** to reset your system.

2.3 My Favorites

MyFavorites is your personal space where you can easily save and access your favorite BIOS items.

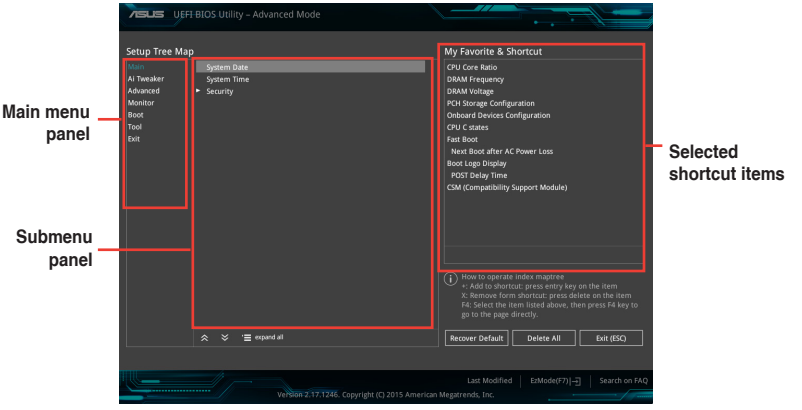


Adding items to My Favorites

To add BIOS items:

1. Press <F3> on your keyboard or click (F3)MyFavorite from the BIOS screen to open Setup Tree Map screen.

2. On the Setup Tree Map screen, select the BIOS items that you want to save in MyFavorites screen.



3. Select an item from main menu panel, then click the submenu that you want to save as favorite from the submenu panel and click +.

You cannot add the following items to My Favorite items:

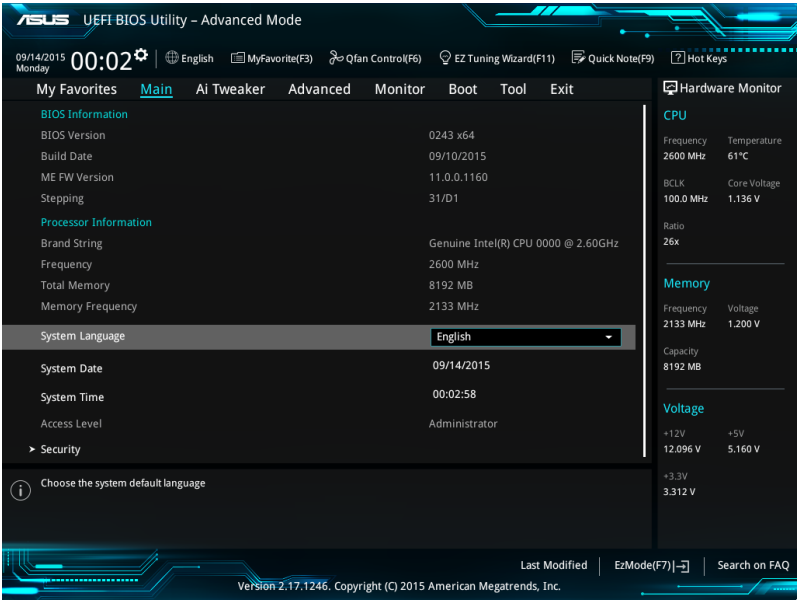
- User-managed items such as language and boot order
- Configuration items such as Memory SPD Information, system time and date.

4. Click **Exit (ESC)** or press <esc> key to close Setup Tree Map screen.

5. Go to My Favorites menu to view the saved BIOS items.

2.4 Main menu

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.



2.4.1 Language [English]

Allows you to choose the BIOS language version from the options. Configuration options: [English] [Français] [Deutsch] [简体中文] [繁體中文] [日本語] [Español] [Русский] [Korean]

2.4.2 Security

The Security menu items allow you to change the system security settings.

- If you have forgotten your BIOS password, erase the CMOS Real Time Clock (RTC) RAM to clear the BIOS password. See section **1.6 Headers and Jumpers** for information on how to erase the RTC RAM.
- 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>.
4. 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**.

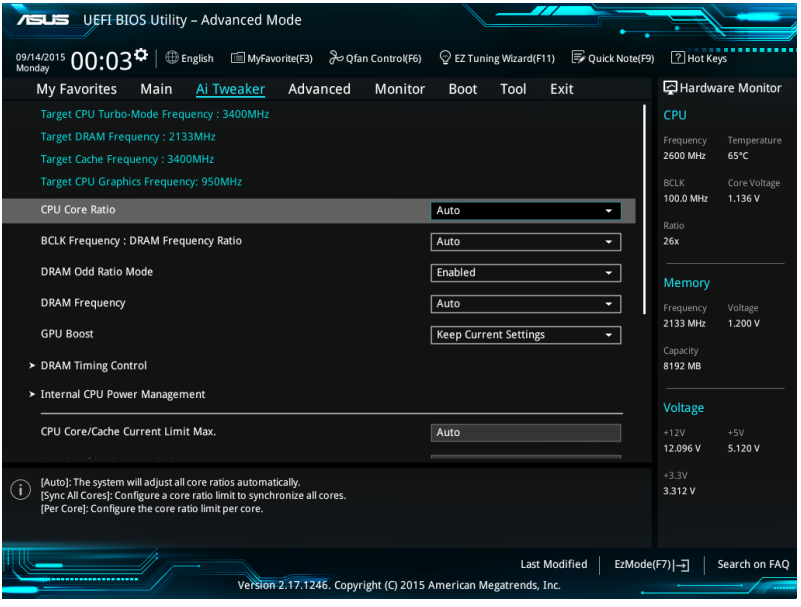
2.5 Ai Tweaker menu

The Ai Tweaker menu items allow you to configure overclocking-related items.

Be cautious when changing the settings of the Ai Tweaker 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 you installed on the motherboard.

Scroll down to display other BIOS items.



CPU Core Ratio [Auto]

This item allows you to set the CPU core ratio limit per core or synchronize automatically to all cores. Configuration options: [Auto] [Sync All Cores] [Per Core]

When the CPU Core Ratio is set to [**Sync All Cores**] or **[Per Core]**, the following items appear:

1-Core Ratio Limit [Auto]

Select **[Auto]** to apply the CPU default Turbo Ratio setting or manually assign a 1-Core Limit value that must be higher than or equal to the 2-Core Ratio Limit.

2-Core Ratio Limit [Auto]

Select **[Auto]** to apply the CPU default Turbo Ratio setting or manually assign a 2-Core Limit value that must be higher than or equal to the 3-Core Ratio Limit.

If you assign a value for 2-Core Ratio Limit, do not set the 1-Core Ratio Limit to **[Auto]**.

3-Core Ratio Limit [Auto]

Select **[Auto]** to apply the CPU default Turbo Ratio setting or manually assign a 3-Core Limit value that must be higher than or equal to the 4-Core Ratio Limit.

If you assign a value for 3-Core Ratio Limit, do not set the 1-Core Ratio Limit and 2-Core Ratio Limit to **[Auto]**.

4-Core Ratio Limit [Auto]

Select **[Auto]** to apply the CPU default Turbo Ratio setting or manually assign a 4-Core Limit value that must be higher than or equal to the 3-Core Ratio Limit.

If you assign a value for 4-Core Ratio Limit, do not set the 1-Core Ratio Limit, 2-Core Ratio Limit, and 3-Core Ratio to **[Auto]**.

BCLK Frequency: DRAM Frequency Ratio [Auto]

Allows you to set the CPU bus speed to DRAM speed ratio mode.

[Auto]	DRAM speed is set to the optimized settings.
[100:133]	The BCLK frequency to DRAM speed ratio is set to 100:133.
[100:100]	The BCLK frequency to DRAM speed ratio is set to 100:100.

DRAM Odd Ratio Mode [Enabled]

Odd ratio mode provides better granularity. Configuration options: [Enabled] [Disabled]

DRAM Frequency [Auto]

This item allows you to set the memory operating frequency. The configurable options vary with the BCLK (base clock) frequency setting. Select the auto mode to apply the optimized setting. Configuration options: [DDR4-800MHz] [DDR4-933MHz] [DDR4-1066MHz] [DDR4-1200MHz] [DDR4-1333MHz] [DDR4-1400MHz] [DDR4-1500MHz] [DDR4-1600MHz] ~ [DDR4-4266MHz]

Selecting a very high memory frequency may cause the system to become unstable! If this happens, revert to the default setting.

GPU Boost [Keep Current Settings]

Allows you to enable the GPU Boost to accelerate the integrated GPU for extreme graphics performance. Configuration options: [Keep Current Settings] [Enabled]

DRAM Timing Control

The subitems in this menu allow you to set the DRAM timing control features. Use the <+> and <-> keys to adjust the value. To restore the default setting, type [auto] using the keyboard and press the <Enter> key.

Changing the values in this menu may cause the system to become unstable! If this happens, revert to the default settings.

Internal CPU Power Management

The subitems in this menu allow you to set the CPU ratio and features.

Intel® SpeedStep(tm) [Auto]

AThis item allows the operating system to dynamically adjust the processor voltage and cores frequency, resulting to a decreased average power consumption and decreased average heat production. Configuration options: [Auto] [Disabled] [Enabled]

Turbo Mode [Enabled]

This item allows you to automatically set the CPU cores to run faster than the base operating frequency when it is below the operating power, current and temperature specification limit. Configuration options: [Enabled] [Disabled]

Turbo Mode is only available on selected CPU models only.

Turbo Mode Parameters

Long Duration Package Power Limit [Auto]

Allows you to limit the turbo ratio's long duration package power.
Use the <+> and <-> keys to adjust the value.

Package Power Time Window [Auto]

Allows you to set the package power time window.
Use the <+> and <-> keys to adjust the value.

Short Duration Package Power Limit [Auto]

Allows you to limit the turbo ratio's long duration power.
Use the <+> and <-> keys to adjust the value.

IA/AC Load Line [Auto]

Allows you to limit the AC Loadline in 1/100 mOhms. Use <+> and <-> key to adjust the value.

IA/DC Load Line [Auto]

Allows you to limit the DC Loadline in 1/100 mOhms. Use <+> and <-> key to adjust the value.

CPU Core/Cache Current Limit Max. [Auto]

Allows you to configure a higher current limit to prevent a frequency or power throttling when overclocking. The values range from 0.00A to 255.50A with a 0.25A interval.

CPU Graphics Current Limit Max. [Auto]

Allows you to configure a higher current limit to prevent a frequency or power throttling when overclocking. The values range from 0.00A to 255.50A with a 0.25A interval.

Min. CPU Cache Ratio [Auto]

Allows you to configure the minimum possible CPU cache ratio. Use the <+> or <-> keys to adjust the value. The values range from 0 to 83 with a 1 interval.

Max. CPU Cache Ratio [Auto]

Allows you to configure the maximum possible CPU cache ratio. Use the <+> or <-> keys to adjust the value. The values range from 0 to 83 with a 1 interval.

Max. CPU Graphics Ratio [Auto]

Allows you to configure the maximum CPU graphics ratio. Use the <+> or <-> keys to adjust the value. The values range from 0 to 60 with a 1 interval.

DRAM Voltage [Auto]

This item allows you to set the voltage for the DRAM. Use the <+> and <-> keys to adjust the value. The values range from 1.200V to 1.500V.

CPU System Agent Voltage [Auto]

This item allows you to set the voltage for the CPU system agent. Use the <+> and <-> keys to adjust the value. The values range from 1.000V to 1.150V with a 0.050V interval.

PCH Core Voltage [Auto]

This item allows you to set the voltage for the PCH Core. Use the <+> and <-> keys to adjust the value. The values range from 1.000V to 1.100V with a 0.1V interval.

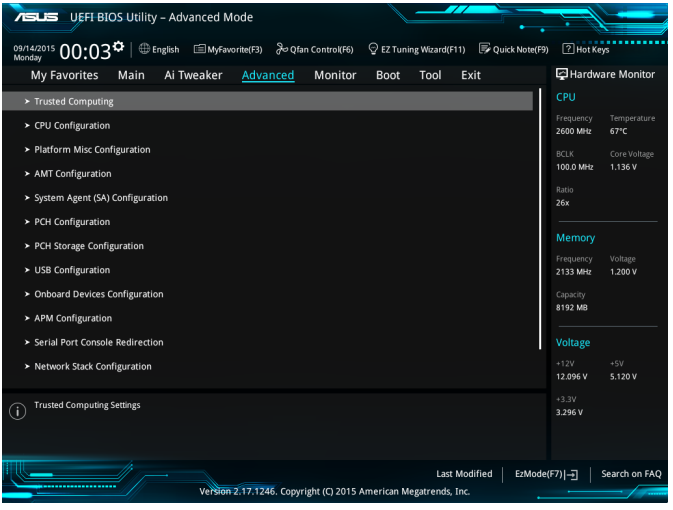
DRAM REF Voltage Control

The subitems in this menu allow you to set the DRAM reference voltage on the control lines from the memory bus. You can use the <+> or <-> keys to adjust the value.

2.6 Advanced menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.

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



Trusted Computing

The items in this menu allow you to set the TPM (Trusted Platform Module) feature.

Due to Windows® 7 limitation, before Windows® 7 64-bit installation, select other OS item under the Boot menu from Advanced Mode > Boot > Secure Boot > Other OS.

The following items function only when a TPM module is installed in this motherboard.

Security Device Support [Enable]

Enables or disables the BIOS support for security devices. OS will not show Security Device. TCG EFI protocol and INT1A interface will not be available. Configuration options: [Disable] [Enable]

TPM State [Enabled]

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

Pending operation [None]

This item allows you to schedule an operation for the Security Device. Configuration options: [None] [TPM clear]

Your computer will reboot during restart in order to change the state of Security Device.

CPU Configuration

The items in this menu show the CPU-related information that the BIOS automatically detects.

The items shown in submenu may be different due to the CPU you installed.

Hyper-threading [Enabled]

The Intel Hyper-Threading Technology allows a hyper-threading processor to appear as two logical processors to the operating system, allowing the operating system to schedule two threads or processes simultaneously.

[Enabled] Two threads per activated core are enabled.

[Disabled] Only one thread per activated core is enabled.

Active Processor Cores [All]

This item allows you to select the number of CPU cores to activate in each processor package. Configuration options: [All] [1] [2] [3]

For some CPU types, only [**All**] and [**1**] appear.

Intel Virtualization Technology [Disabled]

When set to **[Enabled]**, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology. Configuration options: [Disabled] [Enabled]

Hardware Prefetcher [Enabled]

This item allows you to turn on/off the MLC streamer prefetcher. Configuration options: [Disabled] [Enabled]

Adjacent Cache Line Prefetcher [Enabled]

This item allows you to turn on/off prefetching adjacent cache lines. Configuration options: [Disabled] [Enabled]

CPU Power Management Configuration

This item allows you to manage and configure the CPU's power.

Intel(R) SpeedStep(tm) [Auto]

Allows you to enable or disable the Intel® SpeedStep technology. Configuration options: [Auto] [Disabled] [Enabled]

Turbo Mode [Enabled]

This item allows you to automatically set the CPU cores to run faster than the base operating frequency when it is below the operating power, current and temperature specification limit. Configuration options: [Enabled] [Disabled]

Turbo Mode is only available on selected CPU models only.

CPU C states [Auto]

[Auto] Automatic configuration.

[Enabled] Enables the CPU C states.

[Disabled] Disables the CPU C states.

The following items appear only when you set the CPU C states to **[Enabled]**.

Enhanced C states [Enabled]

[Enabled] Enables enhanced C1 state.

[Disabled] Disables enhanced C1 state.

CPU C3 Report [Enabled]

Allows you to disable or enable the CPU C3 report to OS. Configuration options: [Enabled] [Disabled]

CPU C6 Report [Enabled]

Allows you to disable or enable the CPU C6 report to OS. Configuration options: [Enabled] [Disabled]

CPU C7 Report [CPU C7s]

Allows you to disable or enable the CPU C7 report to OS. Configuration options: [Enabled] [Disabled]

CPU C8 Report [Enabled]

Allows you to disable or enable the CPU C8 report to OS. Configuration options: [Enabled] [Disabled]

Package C State Limit [Auto]

Allows you to disable or enable the whole C-State package support. Configuration options: [C0/C1] [C2] [C3] [C6] [C7] [C7s] [C8] [Auto]

CFG Lock [Disabled]

This item allows you to configure the MSR 0xE2[15], CFG lock bit. Configuration options: [Disabled] [Enabled]

SW Guard Extensions (SGX) [Disabled]

Allows you to enable or disable SW Guard Extensions (SGX). Configuration options: [Disabled] [Enabled] [Software Controlled]

Platform Misc Configuration

The items in this menu allow you to configure the Platform Misc.

PCIE Express Native Power Management [Disabled]

Allows you to enable or disable PCIE express native power management. Configuration options: [Enabled] [Disabled]

DMI Link ASPM Control [Disabled]

This item allows you to control the Active State Power Management on both NB (NorthBridge) side and SB (SouthBridge) side of the DMI Link. Configuration options: [Disabled] [Enabled]

ASPM Support [Disabled]

This item allows you to select the ASPM state for energy-saving conditions. Configuration options: [Disabled] [L0s] [L1] [L0sL1] [Auto]

AMT Configuration

The items in this menu allow you to change the Intel® Active Management Technology (AMT) feature.

Intel® AMT [Enabled]

Allow you to enable or disable the Intel® Active Management Technology (AMT) in the BIOS extension. Configuration options: [Enabled] [Disabled]

- iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device.
- The following eleven items become configurable only when you set the Intel®AMT item to [Enabled].

BIOS Hotkey Pressed [Off]

This item allows you to enable or disable this function. Configuration options: [On] [Off]

MEBx Selection Screen [Off]

This item allows you to enable or disable this function. Configuration options: [On] [Off]

Un-Configure ME [Off]

Sets this item to [Disabled] to unconfigure AMT/ME without using a password or set it to [Enabled] to use a password. Configuration options: [On] [off]

System Agent (SA) Configuration

VT-d [Enabled]

Allows you to enable or disable VT-d function on MCH. Configuration options: [Enabled] [Disabled]

Graphics Configuration

Allows you to select a primary display from iGPU, and PCIe graphical devices.

Primary Display [Auto]

Allows you to select which of the iGPU/PCIE Graphics device should be the Primary Display. Configuration options: [Auto] [CPU Graphics] [PCIE] [PCI]

iGPU Multi-Monitor [Disabled]

Allows you to enable the iGPU Multi-Monitor. Set this item to [Enabled] to empower both integrated and discrete graphics. The iGPU shared system memory size will be fixed at 64MB. Configuration options: [Disabled] [Enabled]

RC6(Render Standby) [Disabled]

Allows you to enable or disable render standby support. Configuration options: [Disabled] [Enabled]

DVMT Pre-Allocated [32M]

Allows you to select DVMT 5.0 Pre_Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device. Configuration options: [32M] [64M] [96M] ~ [1024M]

DMI/OPI Configuration

Allows you to control various DMI/OPI functions.

DMI Max Link Speed [Auto]

Allows you to set the DMI speed. Configuration options: [Auto] [Gen1] [Gen2] [Gen3]

PEG Port Configuration

Allows you to configure the PEG Port settings.

Enable Root Port [Enabled]

Allows you to enable or disable the Root Port. Configuration options: [Auto] [Disabled] [Enabled]

PCIEX16_1 Link Speed [Auto]

Allows you to configure the PCIEX16_1 speed. Configuration options: [Auto] [Gen1] [Gen2] [Gen3]

Memory Configuration

Memory Remap [Enabled]

Allows you to enable or disable remapping the memory above 4GB. Configuration options: [Disabled] [Enabled]

PCH Configuration

DeepSx Power Policies [Disabled]

Allows you to configure the DeepSx Mode. Configuration options: [Disabled] [Enabled in S4-S5]

PCI Express Configuration

PCIe Speed [Auto]

Allows you to configure the PCIe speed. Configuration options: [Auto] [Gen1] [Gen2]

PCH Storage Configuration

While entering Setup, the BIOS automatically detects the presence of SATA devices. The SATA Port items show **Not Present** if no SATA device is installed to the corresponding SATA port.

SATA Controller(s) [Enabled]

Enables or disables onboard the SATA device. Configuration options: [Disabled] [Enabled]

The following items appear only when you set SATA Controller(s) to **[Enabled]**.

SATA Mode Selection [AHCI]

Allows you to set the SATA configuration.

[AHCI] Set to [AHCI] when you want the SATA hard disk drives to use the AHCI (Advanced Host Controller Interface). The AHCI allows the onboard storage driver to enable advanced Serial ATA features that increases storage performance on random workloads by allowing the drive to internally optimize the order of commands.

[RAID] Set to [RAID Mode] when you want to create a RAID configuration from the SATA hard disk drives.

Aggressive LPM Support [Disabled]

This item is designed for LPM (link power management) support with a better energy saving conditions. When disabled, the hot plug function of SATA ports are disabled. Configuration options: [Disabled] [Enabled]

Smart Self Test [On]

This item allows you to enable or disable the SMART Self Test on all HDDs during POST. Configuration options: [On] [Off]

SATA6G_1~6(Gray) [Enabled]

Allow you to enable/disable the SATA6G_1~6 port. Configuration options: [Disabled] [Enabled]

Hot Plug [Disabled]

These items allow you to enable/disable SATA Hot Plug Support. Configuration options: [Disabled] [Enabled]

USB Configuration

The items in this menu allow you to change the USB-related features.

The **USB Devices** item shows the auto-detected values. If no USB device is detected, the item shows None.

Legacy USB Support [Enabled]

[Enabled] Enables the support for USB devices on legacy operating systems (OS).

[Disabled] The USB devices can be used only for the BIOS setup program.

[Auto] Allows the system to detect the presence of USB devices at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled.

XHCI Hand-off [Disabled]

[Enabled] Enables the support for operating systems without an XHCI hand-off feature.

[Disabled] Disables the function.

USB Single Port Control

Allow you to enable or disable the USB Port Disable Override.

USB3_1~10 [Enabled]

Allows you to enable or disable the USB3.0 port 1~10 individually. Configuration options: [Enabled] [Disabled]

USB 5~8 [Enabled]

Allows you to enable or disable the USB port 5~8 individually. Configuration options: [Enabled] [Disabled]

Onboard Devices Configuration

HD Audio Controller [Enabled]

[Enabled] Enables the HD Audio Device.

[Disabled] Disables the HD Audio Device.

The following item appears only when you set the **HD Audio Controller** item to [Enabled].

DVI Port Audio [Disabled]

Allows you to enable or disable the DVI port audio. Configuration options: [Enabled] [Disabled]

Intel LAN Controller [Enabled]

[Enabled] Enables the Intel LAN controller.

[Disabled] Disables the controller.

Intel PXE Option ROM [Off]

This item appears only when you set the previous item to [Enabled] and allows you to enable or disable the PXE Option ROM of the Intel LAN controller. Configuration options: [Off] [On]

Charging USB devices in Power State S5 [Disabled]

[Enabled] Charges USB devices even when the system is in Power State S5.

[Disabled] Disables this function.

Serial Port Configuration

The sub-items in this menu allow you to set the serial port configuration.

Serial Port [On]

Allows you to enable or disable the serial port (COM).Configuration options: [On] [Off]

Change Settings [IO=3F8h; IRQ=4]

This item appears only when you set the **Serial Port** to [On] and allows you to select the Serial Port base address. Configuration options: [IO=3F8h; IRQ=4] [IO=2F8h; IRQ=3] [IO=3E8h; IRQ=4] [IO=2E8h; IRQ=3]

Serial Port 1 Configuration

The sub-items in this menu allow you to set the serial port 1 configuration.

Serial Port [On]

Allows you to enable or disable the serial port (COM).Configuration options: [On] [Off]

Change Settings [IO=2F8h; IRQ=3]

This item appears only when you set the **Serial Port** to [On] and allows you to select the Serial Port base address. Configuration options: [IO=3F8h; IRQ=4] [IO=2F8h; IRQ=3] [IO=3E8h; IRQ=4] [IO=2E8h; IRQ=3]

Parallel Port Configuration

The sub-items in this menu allow you to set the parallel port configuration.

Parallel Port [On]

Allows you to enable or disable the parallel port (LPT/LPTE).Configuration options: [On] [Off]

The following items appear only when you set the **Parallel Port Configuration** item to [On].

Change Settings [Auto]

Allows you to select an optimal setting for Super I/O devices. Configuration options: [Auto] [IO=378h; IRQ=5;] [IO=378h; IRQ=5,6,7,9,10,11,12;] [IO=278h; IRQ=5,6,7,9,10,11,12;] [IO=3BCh; IRQ=5,6,7,9,10,11,12;]

Device Mode [STD Printer Mode]

Allows you to select the Printer Port mode. Configuration options: [STD Printer Mode] [SPP Mode] [EPP-1.9 and SPP Mode] [EPP-1.7 and SPP Mode] [ECP Mode] [ECP and EPP 1.9 Mode] [ECP and EPP 1.7 Mode]

APM Configuration

Restore AC Power Loss [Power Off]

[Power On]	The system goes into on state after an AC power loss.
[Power Off]	The system goes into off state after an AC power loss.
[Last State]	The system goes into either off or on state, whatever the system state was before the AC power loss.

Power On By PS/2 Keyboard [Disabled]

[Disabled]	Disables the Power On by a PS/2 keyboard.
[Space Bar]	Sets the Space Bar on the PS/2 keyboard to turn on the system.
[Ctrl-Esc]	Sets the Ctrl+Esc key on the PS/2 keyboard to turn on the system.
[Power Key]	Sets Power key on the PS/2 keyboard to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead.

Power On By PS/2 Mouse [Disabled]

[Disabled] Disables the Power On by a PS/2 mouse.

[Enabled] Enables the Power On by a PS/2 mouse. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead.

Power On By PCI-E/PCI [Disabled]

[Disabled] Disables the PCIE/PCI devices to generate a wake-on-LAN feature of the Intel®/Realtek LAN device.

[Enabled] Enables the PCIE/PCI devices to generate a wake-on-LAN feature of the Intel®/Realtek LAN device.

Power On By Ring [Disabled]

[Disabled] Disables Ring to generate a wake event.

[Enabled] Enables Ring to generate a wake event.

Power On By RTC [Disabled]

[Disabled] Disables RTC to generate a wake event.

[Enabled] When set to [Enabled], the items **RTC Alarm Date (Days)** and **Hour/ Minute/Second** will become user-configurable with set values.

Serial Port Console Redirection

Console Redirection [Off]

Enables or disables the console redirection feature. When enabled, it allows you to maintain a system from a remote location by redirecting keyboard input and text output through the serial port. Configuration options: [On] [Off]

Console Redirection Settings

The following items become configurable only when you set the previous item to [On].

Terminal Type [ANSI]

VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100. Configuration options: [VT100] [VT100+] [VT-UTF8] [ANSI]

Bits per second [115200]

Allows you to select the transmission speed of the serial port. Configuration options: [9600] [19200] [38400] [57600] [115200]

Data Bits [8]

Allows you to select the data bits. Configuration options: [7] [8]

Parity [None]

A parity bit can be sent with the data bits to detect some transmission errors. This item allows you to set the parity bit. Configuration options: [None] [Even] [Odd] [Mark] [Space]

Stop Bits [1]

Stop bits indicate the end of a serial data packet. This item allows you to set the stop bits. Configuration options: [1] [2]

Flow Control [None]

Flow control prevents data loss from buffer overflow. This item allows you to set the flow control. Configuration options: [None] [Hardware RTS/CTS]

VT-UTF8 Combo Key Support [On]

Allows you to enable or disable VT-UTF8 Combo Key Support. Configuration options: [On] [Off]

Recorder Mode [Off]

When set to [Off], only text will be sent. Configuration options: [On] [Off]

Resolution 100x31 [Off]

Allows you to enable or disable extended terminal resolution. Configuration options: [On] [Off]

Legacy OS Redirection Resolution [80x24]

Allows you to set the redirection resolution on legacy OS. Configuration options: [80x24] [80x25]

Putty KeyPad [VT100]

Allows you to select FunctionKey and Keypad on Putty. Configuration options: [VT100] [LINUX] [XTERMR6] [SCO] [ESCN] [VT400]

Redirection After BIOS POST [Always Enable]

[Always Enable] Legacy console redirection is enabled for legacy OS.

[BootLoader] Legacy console redirection is disabled before booting to Legacy OS.

Legacy Console Redirection Settings

Legacy Serial Redirection Port [COM0]

This item allows you to set the legacy serial redirection port. Configuration options: [COM0] [COM1(Pci Bus0, Dev0, Func0) (Disabled)]

Console Redirection [Off]

Allows you to enable or disable the console redirection. Configuration options: [On] [Off].

The following items become configurable only when you set the previous item to [On].

Out-of-Band Mgmt Port [COM0]

Microsoft Windows Emergency Management Services (EMS) allows for remote management of a Windows Server OS through a serial port. Configuration options: [COM0] [COM1(Pci Bus0, Dev0, Func0) (Disabled)]

Terminal Type [VT-UTF8]

VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100. Configuration options: [VT100] [VT100+] [VT-UTF8] [ANSI]

Bits per second [115200]

Allows you to select the transmission speed of the serial port. Configuration options: [9600] [19200] [57600] [115200]

Flow Control [None]

Flow control prevents data loss from buffer overflow. This item allows you to set the flow control. Configuration options: [None] [Hardware RTS/CTS] [Software Xon/Xoff]

Network Stack Configuration

Network Stack [Disabled]

This item allows user to disable or enable the UEFI network stack. Configuration options: [Disabled] [Enabled]

The following two items appear only when you set the previous item to [Enabled].

Ipv4 PXE Support [Enabled]

This item allows user to disable or enable the Ipv4 PXE Boot support. Configuration options: [Disabled] [Enabled]

Ipv6 PXE Support [Enabled]

This item allows user to disable or enable the Ipv6 PXE Boot support. Configuration options: [Disabled] [Enabled]

Intel TXT Information

This item displays the Intel TXT information.

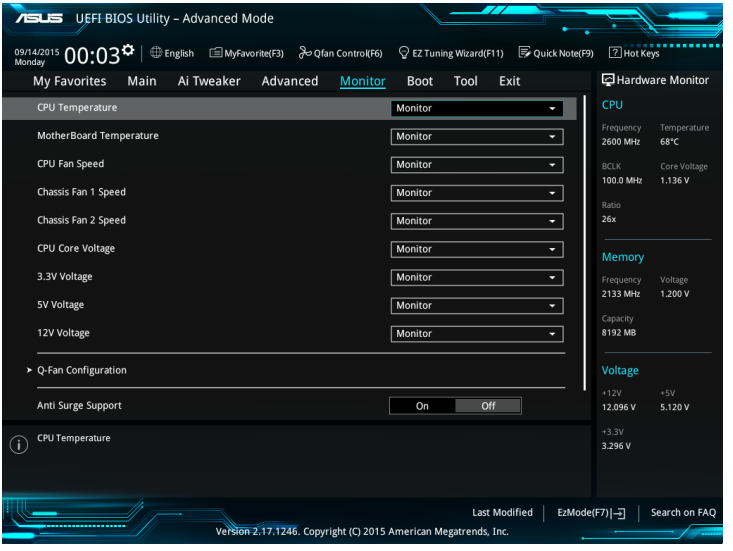
HDD/SSD SMART Information

This item displays the SMART information.

2.7 Monitor menu

The Monitor menu displays the system temperature/power status, and allows you to change the fan settings.

Scroll down to display more items.



CPU / MotherBoard Temperature [xxxºC/xxxºF]

The onboard hardware monitor automatically detects and displays the CPU / motherboard temperatures. Select **Ignore** if you do not wish to display the detected temperature.

CPU / Chassis Fan 1/2 Speed [xxxx RPM] or [Ignore] / [N/A]

The onboard hardware monitor automatically detects and displays the CPU / chassis fan 1/2 speeds in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows N/A. Select Ignore if you do not wish to display the detected speed.

CPU Core Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage

The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators. Select Ignore if you do not want to detect this item.

Q-Fan Configuration

Q-Fan Tuning

Click [OK] button to detect the lowest speed and configure the minimum duty circle for each fan. Do not shut down or reset your system during the tuning progress. Configuration options: [Ok] [Cancel]

CPU Q-Fan Control [Auto]

[Disabled] Disables the CPU Q-Fan control feature.

[DC Mode] Enable the CPU Q-Fan control in DC mode for 3-pin CPU fan.

[PWM Mode] Enable the CPU Q-Fan control in PWM mode for 4-pin CPU fan.

CPU Fan Speed Low Limit [200 RPM]

This item appears only when you enable the CPU Q-Fan Control feature and allows you to disable or set the CPU fan warning speed.
Configuration options: [Ignore] [100RPM] [200RPM] [300 RPM] [400 RPM] [500 RPM]

CPU Fan Profile [Standard]

This item appears only when you enable the CPU Q-Fan Control feature and allows you to set the appropriate performance level of the CPU fan.

[Standard] Sets to [Standard] to make the CPU fan automatically adjust depending on the CPU temperature.

[Silent] Sets to [Silent] to minimize the fan speed for quiet CPU fan operation.

[Turbo] Sets to [Turbo] to achieve maximum CPU fan speed.

[Manual] Sets to [Manual] to assign detailed fan speed control parameters.

The following four items appear only when you set **CPU Fan Profile** to [Manual].

CPU Upper Temperature [70]

Use the <+> and <-> keys to adjust the upper limit of the CPU temperature. The values range from 20ºC to 75ºC.

CPU Fan Max. Duty Cycle(%) [100]

Use the <+> and <-> keys to adjust the maximum CPU fan duty cycle. The values range from 20% to 100%. When the CPU temperature reaches the upper limit, the CPU fan will operate at the maximum duty cycle.

CPU Middle Temperature [45]

Use the <+> or <-> keys to set the value for CPU Middle Temperature. The range of the values depends on the CPU installed.

CPU Fan Middle Duty Cycle(%) [60]

Use the <+> or <-> keys to adjust the CPU fan middle duty cycle. The values range from 20% to 100%. When the CPU temperature reaches the middle value, the CPU fan operates at the middle duty cycle.

CPU Lower Temperature [20]

Displays the lower limit of the CPU temperature.

CPU Fan Min. Duty Cycle(%) [20]

Use the <+> and <-> keys to adjust the minimum CPU fan duty cycle. The values range from 20% to 100%. When the CPU temperature is under the lower limit, the CPU fan will operate at the minimum duty cycle.

Chassis1/2 Q-Fan Control [Enabled]

[Disabled] Disables the Chassis1/2 Q-Fan control feature.

[Enabled] Enables the Chassis1/2 Q-Fan control feature.

Chassis1/2 Fan Speed Low Limit [600 RPM]

This item appears only when you enable the Chassis1/2 Q-Fan Control feature and allows you to disable or set the chassis1/2 fan warning speed.
Configuration options: [Ignore] [200RPM] [300 RPM] [400 RPM] [500 RPM] [600 RPM]

Chassis1/2 Fan Profile [Standard]

This item appears only when you enable the Chassis1/2 Q-Fan Control feature and allows you to set the appropriate performance level of the chassis1/2 fan.

[Standard] Sets to [Standard] to make the chassis1/2 fan automatically adjust depending on the chassis1/2 temperature.

[Silent] Sets to [Silent] to minimize the fan speed for quiet chassis1/2 fan operation.

[Turbo] Sets to [Turbo] to achieve maximum chassis1/2 fan speed.

[Manual] Sets to [Manual] to assign detailed fan speed control parameters.

The following four items appear only when you set **Chassis1/2 Fan Profile** to [Manual].

Chassis1/2 Upper Temperature [70]

Use the <+> and <-> keys to adjust the upper limit of the chassis temperature. The values range from 40ºC to 75ºC.

Chassis1/2 Fan Max. Duty Cycle(%) [100]

Use the <+> and <-> keys to adjust the maximum chassis fan duty cycle. The values range from 60% to 100%. When the chassis temperature reaches the upper limit, the chassis fan will operate at the maximum duty cycle.

Chassis Fan 1/2/3 Middle Temperature [25]

Use the <+> or <-> keys to set the value for Chassis Fan Middle Temperature.

Chassis Fan 1/2/3 Middle Duty Cycle(%) [60]

Use the <+> or <-> keys to adjust the chassis fan middle duty cycle. The values range from 20% to 100%.

Chassis1/2 Lower Temperature [40]

Displays the lower limit of the chassis temperature.

Chassis1/2 Fan Min. Duty Cycle(%) [60]

Use the <+> and <-> keys to adjust the minimum chassis fan duty cycle. The values range from 60% to 100%. When the chassis temperature is under 40ºC, the chassis fan will operate at the minimum duty cycle.

Anti Surge Support [Off]

This item allows you to enable or disable the Anti Surge function. Configuration options: [Off] [On]

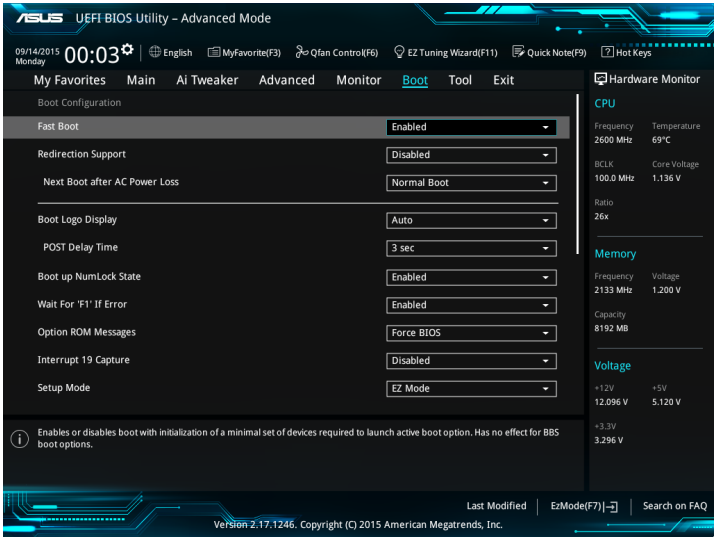
Chassis Intrude Detect Support [On]

This item allows you to enable or disable the chassis intrude detect support. Configuration options: [Off] [On]

2.8 Boot menu

The Boot menu items allow you to change the system boot options.

Scroll down to display more items.



Fast Boot [Enabled]

[Enabled] Select to accelerate the boot speed.

[Disabled] Select to go back to normal boot.

The following six items appear when you set **Fast Boot** to [Enabled].

Redirection Support [Disabled]

[Disabled] Select to disable the redirection support.

[Enabled] Select to enable the redirection support.

Next Boot after AC Power Loss [Normal Boot]

[Normal Boot] Returns to normal boot on the next boot after AC power loss.

[Fast Boot] Accelerates the boot speed on the next boot after AC power loss.

Boot Logo Display [Auto]

[Auto] Adjust automatically for Windows® requirement.

[Full Screen] Maximize the boot logo size.

[Disabled] Hide the logo during POST.

POST Delay Time [3 sec]

This item appears only when you set **Boot Logo Display** to [Enabled]. This item allows you to select the desired additional POST waiting time to easily enter the BIOS setup. You can only execute the POST delay time during Normal Boot. The values range from 0 to 10 seconds.

This feature will only work under normal boot.

Post Report [5 sec]

This item appears only when you set **Boot Logo Display** to [Auto] or [Full Screen]. This item allows you to select a desired post report waiting time. Configuration options: [1 sec] ~ [10 sec] [Until Press ESC].

Bootup NumLock State [Enabled]

[Enabled] Sets the power-on state of the NumLock to [Enabled].

[Disabled] Sets the power-on state of the NumLock to [Disabled].

Wait for 'F1' If Error [Enabled]

When this item is set to [Enabled], the system waits for the F1 key to be pressed when error occurs. Configuration options: [Disabled] [Enabled]

Option ROM Messages [Force BIOS]

[Force BIOS] The third-party ROM messages will be forced to display during the boot sequence.

[Keep Current] The third-party ROM messages will be displayed only if the third-party manufacturer had set the add-on device to do so.

Interrupt 19 Capture [Disabled]

This item allows you to trap Interrupt 19 by the option ROMs. Configuration options: [Disabled] [Enabled]

Setup Mode [EZ Mode]

[Advanced Mode] This item allows you to go to Advanced Mode of the BIOS after POST.

[EZ Mode] This item allows you to go to EZ Mode of the BIOS after POST.

CSM (Compatibility Support Module)

Allows you to configure the CSM (Compatibility Support Module) items to fully support the various VGA, bootable devices and add-on devices for better compatibility.

Launch CSM [Enabled]

[Auto] The system automatically detects the bootable devices and the add-on devices.

[Enabled] For better compatibility, enable the CSM to fully support the non-UEFI driver add-on devices or the Windows® UEFI mode.

[Disabled] Disable the CSM to fully support the Windows® Security Update and Security Boot.

The following four items appear when you set Launch CSM to [Enabled].

Boot Device Control [UEFI and Legacy OPROM]

Allows you to select the type of devices that you want to boot up. Configuration options: [UEFI and Legacy OPROM] [Legacy OPROM only] [UEFI only]

Boot from Network Devices [Legacy only]

Allows you to select the type of network devices that you want to launch. Configuration options: [Ignore] [Legacy only] [UEFI driver first]

Boot from Storage Devices [Legacy Only]

Allows you to select the type of storage devices that you want to launch. Configuration options: [Ignore] [Legacy only] [UEFI driver first]

Boot from PCI-E/PCI Expansion Devices [Legacy Only]

Allows you to select the type of PCI-E/PCI expansion devices that you want to launch. Configuration options: [Legacy only] [UEFI driver first]

Secure Boot

Allows you to configure the Windows® Secure Boot settings and manage its keys to protect the system from unauthorized access and malwares during POST.

OS Type [Windows UEFI mode]

Allows you to select your installed operating system.

[Windows UEFI mode] This item allows you to select your installed operating system. Execute the Microsoft® Secure Boot check. Only select this option when booting on Windows® UEFI mode or other Microsoft® Secure Boot compliant OS.

[Other OS] Get the optimized function when booting on Windows® non-UEFI mode. Microsoft® Secure Boot only supports Windows® UEFI mode.

Key Management

This item allows you to manage the Secure Boot keys.

Install Default Secure Boot keys

This item allows you to immediately load the default Security Boot keys, Platform key (PK), Key-exchange Key (KEK), Signature database (db), and Revoked Signatures (dbx). When the default Secure boot keys are loaded, all the Secure Boot keys' state will change from Unloaded mode to loaded mode.

Clear Secure Boot keys

This item appears only when you load the default Secure Boot keys. This item allows you to clear all the previously applied Secure Boot keys.

Save Secure Boot Keys

This item allows you to save all the Secure Boot keys to a USB storage device.

PK Management

The Platform Key (PK) locks and secures the firmware from any non-permissible changes. The system verifies the PK before your system enters the OS.

Set New Key

Allows you to set a new key from your system. Press [Yes] to load factory default PK or select [No] to load it from a file on external media Configuration options: [Yes] [No]

Delete PK

Allows you to delete the PK from your system. Once the PK is deleted, all the system's Secure Boot keys will not be active. Configuration options: [Yes] [No]

The PK file must be formatted as a public key certificate or UEFI variable structure with time-based authenticated variable.

KEK Management

The KEK (Key-exchange Key or Key Enrollment Key) manages the Signature database (db) and Revoked Signature database (dbx).

Key-exchange Key (KEK) refers to Microsoft® Secure Boot Key-Enrollment Key (KEK).

Set New Key

Allows you to set a new key.

Append Key

Allows you to load the additional KEK from a storage device for an additional db and dbx loaded management.

The KEK file must be formatted as a public key certificate or UEFI variable structure with time-based authenticated variable.

Delete key

Allows you to delete the Key from your system. Configuration options: [Yes] [No]

DB Management

The db (Authorized Signature database) lists the signers or images of UEFI applications, operating system loaders, and UEFI drivers that you can load on the single computer.

Set New Key

Allows you to set a new key.

Append Key

Allows you to load the additional KEK from a storage device for an additional db and dbx loaded management.

The KEK file must be formatted as a public key certificate or UEFI variable structure with time-based authenticated variable.

Delete key
Allows you to delete the Key from your system. Configuration options: [Yes] [No]

DBX Management

The DBX (Revoked Signature database) lists the forbidden images of db items that are no longer trusted and cannot be loaded.

Set New Key
Allows you to set a new key.

Append Key
Allows you to load the additional KEK from a storage device for an additional db and dbx loaded management.

The KEK file must be formatted as a public key certificate or UEFI variable structure with time-based authenticated variable.

Delete key
Allows you to delete the Key from your system. Configuration options: [Yes] [No]

Boot Option Priorities

These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

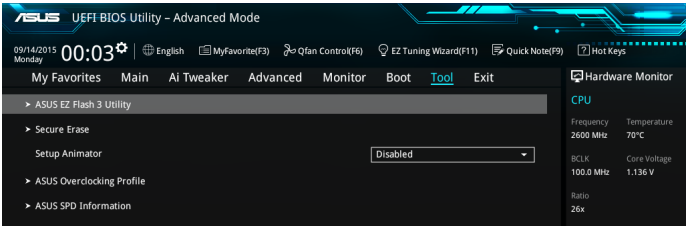
- To select the boot device during system startup, press <F8> when ASUS Logo appears.
- To access Windows OS in Safe Mode, do any of the following:
  - Press <F5> when ASUS Logo appears.
  - Press <F8> after POST.

Boot Override

These items displays the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system. Click an item to start booting from the selected device.

2.9 Tools menu

The Tools menu items allow you to configure options for special functions. Select an item then press <Enter> to display the submenu.



ASUS EZ Flash 3 Utility

Allows you to run ASUS EZ Flash 3. Press [Enter] to launch the ASUS EZ Flash 3 screen.

For more details, see section **2.1.2 ASUS EZ Flash 3**.

Secure Erase

Allows you to completely clean your SSD and restores it to its factory settings.

Ensure that you run Secure Erase on a compatible SSD. Running Secure Erase on an incompatible SSD might make the SSD unusable completely.

Refer to ASUS Support site at www.asus.com/support for the list of Secure Erase compatible SSDs.

Setup Animator [Disabled]

This item allows you to enable or disable the Setup animator.

Configuration options: [Disabled] [Enabled]

ASUS Overclocking Profile

This item allows you to store or load multiple BIOS settings.

The **Setup Profile Status** items show **Not Installed** if no profile is created.

Save to Profile

Allows you to save the current BIOS settings to the BIOS Flash, and create a profile. Key in a profile number from one to eight, press <Enter>, and then select **Yes**.

Load/Save Profile from/to USB Drive

This item allows you to load or save profile from your USB drive, load and save profile to your USB drive.

- DO NOT shut down or reset the system while updating the BIOS to prevent the system boot failure!
- We recommend that you update the BIOS file only coming from the same memory/ CPU configuration and BIOS version.

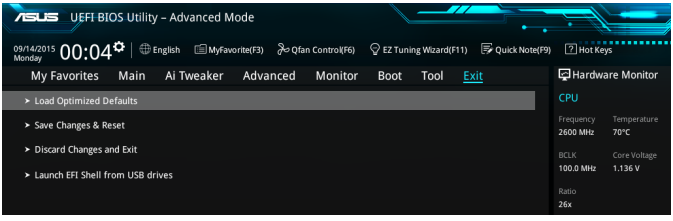
ASUS SPD Information

DIMM Slot # [DIMM_A1]

Displays the Serial Presence Detect (SPD) information of the DIMM module installed on the selected slot. Configuration options: [DIMM_A1] [DIMM_A2] [DIMM_B1] [DIMM_B2]

2.10 Exit menu

The Exit menu items allow you to load the optimal default values for the BIOS items, and save or discard your changes to the BIOS items. You can access the EZ Mode from the Exit menu.



Load Optimized Defaults

This option allows you to load 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 load the default values.

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.

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.

Launch EFI Shell from filesystem device

This option allows you to attempt to launch the EFI Shell application (shellx64.efi) from one of the available devices that have a filesystem.

Appendices

Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to 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.

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IC: Canadian Compliance Statement

Complies with the Canadian ICES-003 Class B specifications. This device complies with RSS 210 of Industry Canada. This Class B device meets all the requirements of the Canadian interference-causing equipment regulations.
This device complies with Industry Canada license exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Cut appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.
Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.
Cet appareil est conforme aux normes CNR exemptes de licence d'Industrie Canada. Le fonctionnement est soumis aux deux conditions suivantes :
(1) cet appareil ne doit pas provoquer d'interférences et
(2) cet appareil doit accepter toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité de l'appareil.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

VCCI: Japan Compliance Statement

VCCI Class B Statement

情報処理装置等電波障害自主規制について
この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は家庭環境で使用されることを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

This is a Class B product based on the standard of the VCCI Council. If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

KC: Korea Warning Statement

B급 기기 (가정용 방송통신기자재)
이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

*당해 무선설비는 전파혼신 가능성이 있으므로 인명안전과 관련된 서비스는 할 수 없습니다.

REACH

Complying with the REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulatory framework, we published the chemical substances in our products at ASUS REACH website at http://csr.asus.com/english/REACH.htm.

DO NOT throw the motherboard in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

DO NOT throw the mercury-containing button cell battery in municipal waste. This symbol of the crossed out wheeled bin indicates that the battery should not be placed in municipal waste.

ASUS Recycling/Takeback Services

ASUS recycling and takeback programs come from our commitment to the highest standards for protecting our environment. We believe in providing solutions for you to be able to responsibly recycle our products, batteries, other components as well as the packaging materials. Please go to http://csr.asus.com/english/Takeback.htm for detailed recycling information in different regions.

Google™ License Terms

English AsusTek Inc. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of CE Directives. Please see the CE Declaration of Conformity for more details.

Français AsusTek Inc. déclare par la présente que cet appareil est conforme aux critères essentiels et autres clauses pertinentes des directives européennes. Veuillez consulter la déclaration de conformité CE pour plus d'informations.

Deutsch AsusTek Inc. erklärt hiermit, dass dieses Gerät mit den wesentlichen Anforderungen und anderen relevanten Bestimmungen der CE-Richtlinien übereinstimmt. Weitere Einzelheiten entnehmen Sie bitte der CE-Konformitätserklärung.

Italiano AsusTek Inc. con la presente dichiara che questo dispositivo è conforme ai requisiti essenziali e alle altre disposizioni pertinenti alle direttive CE. Per maggiori informazioni fate riferimento alla dichiarazione di conformità CE.

Компания ASUS заявляет, что это устройство соответствует основным требованиям и другим соответствующим условиям европейских директив. Подробную информацию, пожалуйста, смотрите в декларации соответствия.

Български С настоящото AsusTek Inc. декларира, че това устройство е в съответствие със съществените изисквания и другите приложими постановления на директивите CE. Вижте CE декларацията за съвместимост за повече информация.

Hrvatski AsusTek Inc. ovim izjavljuje da je ovaj uređaj sukladan s bitnim zahtjevima i ostalim odgovarajućim odredbama CE direktiva. Više pojedinosti potražite u CE izjavi o sukladnosti.

Čeština Společnost AsusTek Inc. tímto prohlašuje, že toto zařízení splňuje základní požadavky a další příslušná ustanovení směrnic CE. Další podrobnosti viz Prohlášení o shodě CE.

Dansk AsusTek Inc. Erklærer hermed, at denne enhed er i overensstemmelse med hovedkravene and andre relevante bestemmelser i CE-direktiverne. Du kan læse mere i CE-overensstemmelseserklæring.

Nederlands AsusTek Inc. verklaart hierbij dat dit apparaat compatibel is met de essentiële vereisten en andere relevante bepalingen van CE-richtlijnen. Raadpleeg de CE-verklaring van conformiteit voor meer details.

Eesti Käesolevaga kinnitab AsusTek Inc., et see seade vastab CE direktiivide oluliste nõuetele ja teistele asjakohastele sätetele. Vt üksikasju CE vastavusdeklaratsioonist.

Suomi AsusTek Inc. vakuuttaa täten, että tämä laite on CE-direktiivien olennaisten vaatimusten ja muiden asiaan kuuluvien lisäysten mukainen. Katso lisätietoja CE-vaatimustenmukaisuusvakuutuksesta.

Ελληνικά Με το παρόν, η AsusTek Inc. Δηλώνει ότι αυτή η συσκευή συμμορφώνεται με τις θεμελιώδεις απαιτήσεις και άλλες σχετικές διατάξεις των Οδηγιών της ΕΕ. Για περισσότερες λεπτομέρειες ανατρέξτε στην Δήλωση Συμμόρφωσης ΕΕ.

Magyar Az AsusTek Inc. ezennel kijelenti, hogy a készülék megfelel a CE-irányelvek alapvető követelményeinek és ide vonatkozó egyéb rendelkezéseinek. További részletekért tekintse meg a CE-megfelelőségi nyilatkozatot.

Latviski Līdz ar šo AsusTek Inc. paziņo, ka šī ierīce atbilst būtiskajām prasībām un citiem saistošajiem nosacījumiem, kas norādīti CE direktīvā. Lai uzzinātu vairāk, skatiet CE Atbilstības deklarāciju.

Lietuvių Šiuo dokumentu bendrovė „AsusTek Inc." pareiškia, kad šis įrenginys atitinka pagrindinius CE direktyvų reikalavimus ir kitas susijusias nuostatas. Daugiau informacijos rasite CE atitikties deklaracijoje.

Norsk AsusTek Inc. erklærer herved at denne enheten er i samsvar med hovedsaklige krav og andre relevante forskrifter i CE-direktiver. Du finner mer informasjon i CE-samsvarserklæringen.

Polski Niniejszym AsusTek Inc. deklaruje, że to urządzenie jest zgodne z istotnymi wymaganiami oraz innymi powiązanymi zaleceniami Dyrektyw CE. W celu uzyskania szczegółów, sprawdź Deklarację zgodności CE.

Português A AsusTek Inc. declara que este dispositivo está em conformidade com os requisitos essenciais e outras disposições relevantes das Diretivas da CE. Para mais detalhes, consulte a Declaração de Conformidade CE.

Română Prin prezenta, AsusTek Inc. declară faptul că acest dispozitiv respectă cerinţele esenţiale şi alte prevederi relevante ale directivelor CE. Pentru mai multe detalii, consultaţi declaraţia de conformitate CE.

Srpski AsusTek Inc. ovim izjavljuje da je ovaj uređaj u saglasnosti sa ključnim zahtevima i drugim relevantnim odredbama CE Direktiva. Molimo vas, pogledajte CE Deklaraciju o usklađenosti za više detalja.

Slovensky Spoločnosť AsusTek Inc. týmto prehlasuje, že toto zariadenie vyhovuje príslušným požiadavkám a ďalším súvisiacim ustanoveniam smerníc ES. Viac podrobností si pozrite v prehlásení o zhode ES.

Slovenščina AsusTek Inc. tukaj izjavlja, da je ta naprava skladna s temeljnimi zahtevami in drugimi relevantnimi določili direktiv CE. Za več informacij glejte Izjavo CE o skladnosti.

Español Por la presente, AsusTek Inc. declara que este dispositivo cumple los requisitos básicos y otras disposiciones relevantes de las directivas de la CE. Consulte la Declaración de conformidad de la CE para obtener más detalles.

Svenska AsusTek Inc. förklarar härmed att denna enhet är i överensstämmelse med de grundläggande kraven och andra relevanta bestämmelser i CE-direktiven. Se CE-försäkran om överensstämmelse för mer information.

Українська AsusTek Inc. заявляє, що цей пристрій відповідає основним вимогам відповідних Директив ЄС. Будь ласка, див. більше подробиць у Декларації відповідності нормам ЄС.

Türkçe AsusTek Inc., bu aygıtın temel gereksinimlerle ve CE Yönergelerinin diğer ilgili koşullarıyla uyumlu olduğunu beyan eder. Daha fazla ayrıntı için lütfen CE Uygunluk Beyanına bakın.

Bosanski AsusTek Inc. ovim potvrđuje da je ovaj uređaj usklađen s osnovnim zahtjevima i drugim relevantnim propisima Direktiva EK. Za više informacija molimo pogledajte Deklaraciju o usklađenosti EK.

ASUS contact information

ASUSTeK COMPUTER INC.

Address	15 Li-Te Road, Peitou, Taipei, Taiwan 11259
Telephone	+886-2-2894-3447
Fax	+886-2-2890-7798
E-mail	info@asus.com.tw
Web site	http://www.asus.com

Technical Support

Telephone	+86-21-3842-9911
Fax	+86-21-5866-8722 ext. 9101#
Online support	http://support.asus.com/techserv/techserv.aspx

ASUS COMPUTER INTERNATIONAL (America)

Address	800 Corporate Way, Fremont, CA 94539, USA
Telephone	+1-510-739-3777
Fax	+1-510-608-4555
Web site	http://www.asus.com/us/

Technical Support

Support fax	+1-812-284-0883
General support	+1-812-282-2787
Online support	http://www.service.asus.com/

ASUS COMPUTER GmbH (Germany and Austria)

Address	Harkort Str. 21-23, D-40880 Ratingen, Germany
Fax	+49-2102-959931
Web site	http://www.asus.com/de
Online contact	http://eu-rma.asus.com/sales

Technical Support

Telephone	+49-2102-5789555
Support Fax	+49-2102-959911
Online support	http://www.asus.com/de/support/

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2. 1077(a)

Responsible Party Name: **Asus Computer International**

Address: **800 Corporate Way, Fremont, CA 94539.**

Phone/Fax No: **(510)739-3777/(510)608-4555**

hereby declares that the product

Product Name : Motherboard

Model Number : Q170M-C

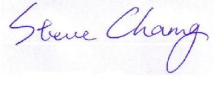
Conforms to the following specifications:

☒ FCC Part 15, Subpart B, Unintentional Radiators

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Representative Person's Name : **Steve Chang / President**



Signature :

Date : **Sep. 02, 2015**

Ver. 140331

EC Declaration of Conformity

ASUS IN SEARCH OF INCREDIBLE

We, the undersigned,

Manufacturer:	ASUSTeK COMPUTER INC.
Address:	4F, No. 150, LI-TE Rd., PEITOU, TAIPEI 112, TAIWAN
Authorized representative in Europe:	ASUS COMPUTER GmbH
Address, City:	HARKORT STR. 21-23, 40880 RATINGEN
Country:	GERMANY

declare the following apparatus:

Product name :	**Motherboard**
Model name :	**Q170M-C**

conform with the essential requirements of the following directives:

☒**2004/108/EC-EMC Directive**

☒ EN 55022:2010+AC:2011	☒ EN 55024:2010
☒ EN 61000-3-2:2006+A2:2009	☒ EN 61000-3-3:2008
☐ EN 55013:2001+A1:2003+A2:2006	☐ EN 55020:2007+A11:2011

☐**1999/5/EC-R&TTE Directive**

☐ EN 300 328 V1.8.1(2012-06)	☐ EN 301 489-1 V1.9.2(2011-09)
☐ EN 300 440-1 V1.6.1(2010-08)	☐ EN 301 489-3 V1.4.1(2002-08)
☐ EN 300 440-2 V1.4.1(2010-08)	☐ EN 301 489-4 V1.4.1(2009-05)
☐ EN 301 511 V9.0.2(2003-03)	☐ EN 301 489-7 V1.3.1(2005-11)
☐ EN 301 908-1 V5.2.1(2011-05)	☐ EN 301 489-9 V1.4.1(2007-11)
☐ EN 301 908-2 V5.2.1(2011-07)	☐ EN 301 489-17 V2.2.1(2012-09)
☐ EN 301 893 V1.7.1(2012-06)	☐ EN 301 489-24 V1.5.1(2010-09)
☐ EN 302 544-2 V1.1.1(2009-01)	☐ EN 302 326-2 V1.2.2(2007-06)
☐ EN 302 623 V1.1.1(2009-01)	☐ EN 302 326-3 V1.3.1(2007-09)
☐ EN 50360:2001	☐ EN 301 357-2 V1.4.1(2008-11)
☐ EN 62479:2010	☐ EN 302 291-1 V1.1.1(2005-07)
☐ EN 50385:2002	☐ EN 302 291-2 V1.1.1(2005-07)
☐ EN 62311:2008	

☒**2006/95/EC-LVD Directive**

☐ EN 60950-1: 2006 / A12: 2011	☐ EN 60065:2002 / A12: 2011
☒ EN 60950-1: 2006 / A2: 2013	

☐**2009/125/EC-ErP Directive**

☐ Regulation (EU) No. 1275/2008	☐ Regulation (EU) No. 278/2009
☐ Regulation (EU) No. 642/2009	☐ Regulation (EU) No. 617/2013

☒**2011/65/EU-RoHS Directive** Ver. 150326

☒**CE marking**

CE (EC conformity marking)

Position : **CEO**

Name : **Jerry Shen**

Signature : _____

Declaration Date: 02/09/2015

Year to begin affixing CE marking: 2015