

PRIME X370-A

ASUS[®]

Motherboard

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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.

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 PRIME X370-A motherboard
Cables	2 x Serial ATA 6.0 Gb/s cables
Accessories	1 x I/O shield 1 x M.2 screw package
Application DVD	1 x Support DVD
Documentation	1 x User Manual



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

PRIME X370-A specifications summary

CPU	AM4 socket for AMD Ryzen™ / 7th Generation A-series / Athlon™ processors Supports CPU up to 8 cores* * Due to CPU limitation, CPU cores supported vary by processor. ** Refer to www.asus.com for AMD CPU support list.
Chipset	AMD X370 Chipset
Memory	AMD Ryzen™ Processors: 4 x DIMMs, max. 64GB, DDR4 3200(O.C.) / 2933(O.C.) / 2666 / 2400 / 2133 MHz, ECC and non-ECC, un-buffered memory AMD 7th Generation A-series / Athlon™ Processors: 4 x DIMMs, max. 64GB, DDR4 2400 / 2133 MHz, non-ECC, un-buffered memory Dual-channel memory architecture * Hyper DIMM support is subject to the physical characteristics of individual CPUs. ** Refer to www.asus.com for the latest Memory QVL (Qualified Vendors List).
Graphics	Integrated AMD Radeon™ R Series Graphics in the 7th Generation A-series APU Multi-VGA output support: HDMI, DVI-D and D-Sub ports - Supports HDMI 1.4b with maximum resolution of 4096 x 2160 @24Hz / 2560 x 1600 @60Hz - Supports DVI-D with maximum resolution of 1920 x 1200 @60Hz - Supports D-Sub with maximum resolution of 1920 x 1200 @60Hz - Maximum shared memory of 2048 MB
Multi-GPU support	Supports AMD CrossFireX™ Technology
Expansion slots	AMD Ryzen™ Processors: 1 x PCI Express 3.0/2.0 x16 slot (max. @x16 mode) AMD 7th Generation A-series / Athlon™ Processors: 1 x PCI Express 3.0/2.0 x16 slot (max. @x8 mode) AMD X370 Chipset: 1 x PCI Express 2.0 x16 slot (max. @ x4 mode) 2 x PCI Express 2.0 x1 slots 2 x PCI slots

(continued on the next page)

PRIME X370-A specifications summary

Storage	<p>AMD X370 Chipset:</p> <ul style="list-style-type: none"> - 6 x Serial ATA 6.0 Gb/s connectors with RAID 0, RAID 1 and RAID 10 support <p>AMD Ryzen™ Processors:</p> <ul style="list-style-type: none"> - 1 x M.2 socket 3 with M Key, Type 2242 / 2260 / 2280 / 22110 (PCIe 3.0 x4 and SATA modes) storage devices support <p>AMD 7th Generation A-series / Athlon™ Processors:</p> <ul style="list-style-type: none"> - 1 x M.2 socket 3 with M Key, Type 2242 / 2260 / 2280 / 22110 (PCIe 3.0 x2 and SATA modes) storage devices support
LAN	Realtek® 8111H Gigabit LAN Controller
Audio	<p>Realtek® ALC 887-VD2 8-Channel High Definition Audio CODEC</p> <p>* Use a chassis with HD audio module in the front panel to support an 8-channel audio output.</p>
USB	<p>AMD Ryzen™ / 7th Generation A-series / Athlon™ Processors</p> <ul style="list-style-type: none"> - 4 x USB 3.1 Gen 1 ports (4 ports at the rear panel) <p>AMD X370 Chipset:</p> <ul style="list-style-type: none"> - 2 x USB 3.1 Gen 2 ports (2 ports at the rear panel, teal blue, Type A) - 2 x USB 3.1 Gen 1 ports (2 ports at mid-board) - 6 x USB 2.0 / 1.1 ports (2 ports at the rear panel; 4 ports at mid-board)
ASUS unique features	<p>Dependable Stability</p> <p>ASUS 5X PROTECTION III</p> <ul style="list-style-type: none"> - ASUS SafeSlot Core: Fortified PCIe Slot prevents damage - ASUS LANGuard: Protects against LAN surges, lightning strikes and static-electricity discharges! - ASUS Overvoltage Protection: World-class circuit-protecting power design - ASUS Stainless-Steel Back I/O: 3X corrosion-resistance for greater durability! - ASUS DIGI+ VRM: 6 Phase digital power design <p>Superb performance</p> <p>UEFI BIOS</p> <ul style="list-style-type: none"> - Most advanced options with fast response time <p>Easy PC DIY</p> <p>Safe motherboard mounting</p> <ul style="list-style-type: none"> - Component-free areas to minimize damage risk <p>Q-Design</p> <ul style="list-style-type: none"> - ASUS Q-DIMM - ASUS Q-Slot <p>UEFI BIOS EZ Mode</p> <ul style="list-style-type: none"> - featuring friendly graphics user interface - ASUS CrashFree BIOS 3 - ASUS EZ Flash 3
ASUS Quiet Thermal Solution	<p>Quiet Thermal Design:</p> <ul style="list-style-type: none"> - Stylish Fanless Design: MOS Heat-sink & Chipset Heat-sink solution - ASUS Fan Xpert 2+

(continued on the next page)

PRIME X370-A specifications summary

Rear panel I/O ports	<ul style="list-style-type: none"> 1 x PS/2 keyboard/mouse combo port 1 x HDMI port 1 x DVI-D port 1 x D-Sub port 1 x LAN (RJ-45) port 2 x USB 3.1 Gen 2 ports (teal blue, Type A) 4 x USB 3.1 Gen 1 ports 2 x USB 2.0/1.1 ports 3 x Audio jacks support 8-channel audio output
Internal connectors	<ul style="list-style-type: none"> 1 x USB 3.1 Gen 1 connector support additional 2 USB 3.1 Gen 1 ports 2 x USB 2.0/1.1 connectors support additional 4 USB 2.0/1.1 ports 1 x M.2 socket 3 for M Key and type 2242 / 2260 / 2280 / 22110 devices (both SATA & PCIe mode) 6 x SATA 6.0Gb/s connectors 1 x COM connector 1 x CPU Fan connector 1 x Fan RGB header 2 x Chassis Fan connectors (Support DC & PWM mode) 1 x Front panel audio connector 1 x 24-pin EATX power connector 1 x 8-pin EATX 12V power connector 1 x 2-pin Clear CMOS header 1 x S/PDIF out connector 1 x System panel connector
BIOS features	<p>128 Mb Flash ROM, UEFI AMI BIOS, PnP, WfM2.0, SM BIOS 3.0, ACPI 6.1, Multi-language BIOS, ASUS EZ Flash 3, ASUS CrashFree BIOS 3, My Favorites, Last Modified log, F12 PrintScreen, ASUS DRAM SPD (Serial Presence Detect) memory information, F6 Qfan Control</p>
Manageability	<p>WfM 2.0, DMI 3.0, WOL by PME, PXE</p>
Support DVD	<ul style="list-style-type: none"> Drivers ASUS utilities ASUS Update Anti-virus software (OEM version)
OS support	<p>Windows® 10 (64-bit)</p>
Form factor	<p>ATX form factor: 12 in. x 9.35 in. (30.5 cm x 23.7 cm)</p>



Specifications are subject to change without notice.

Product introduction

1

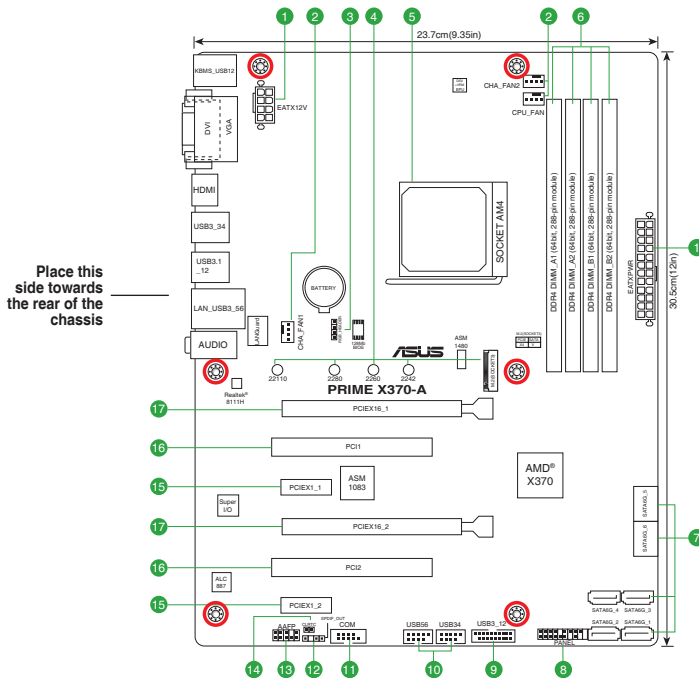
1.1 Before you proceed

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.
- 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



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

1.2.1 Layout contents

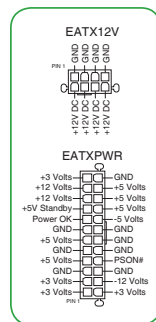
Connectors / Jumpers / Slots / LED	Page
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1. ATX power connectors (24-pin EATXPWR, 8-pin EATX12V)

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.



- We recommend that you use an EATX 12V Specification 2.0-compliant power supply unit (PSU) with a minimum of 300W power rating. This PSU type has 24-pin and 8-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.

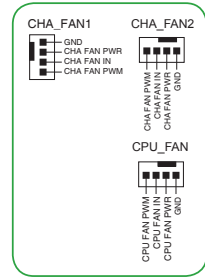


2. CPU and chassis fan connectors (4-pin CPU_FAN, 4-pin CHA_FAN1/2)

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.



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.

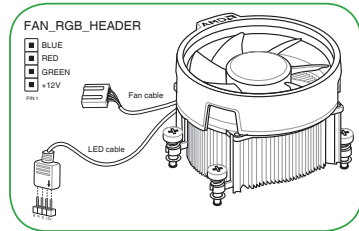


3. FAN RGB header (4-pin FAN_RGB_HEADER)

This header is for RGB LED strips of a CPU fan.



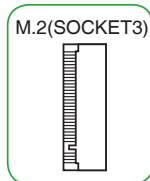
The FAN RGB header supports CPU fans with multi-color LED strips (12V/G/R/B) and with a maximum power rating of 1A (12V).



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.

4. M.2 socket 3

These sockets allow you to install M.2 (NGFF) SSD modules.



- This socket supports M Key and 2242 / 2260 / 2280 / 22110 storage devices.
- Due to CPU limitation, M.2 socket supported varies by processor. Refer to the specifications summary table for more details.

5. AMD AM4 CPU socket

This motherboard comes with an AMD AM4 socket designed for AMD Ryzen™ / 7th Generation A-series / Athlon™ processors.



For more details, refer to **Central Processing Unit (CPU)**.

6. DDR4 DIMM slots

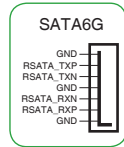
Install 2 GB, 4 GB, 8 GB, and 16 GB unbuffered ECC and non-ECC DDR4 DIMMs into these DIMM sockets.



For more details, refer to **System memory**.

7. AMD X370 SATA 6.0Gb/s ports (7-pin SATA6G_1-6)

These ports connect to SATA 6.0 Gb/s hard disk drives via SATA 6.0 Gb/s signal cables.



8. System panel connector (20-5 pin PANEL)

This connector supports several chassis-mounted functions.

- System power LED (4-pin PWR_LED)**

This 4-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.

- System warning speaker (4-pin SPEAKER)**

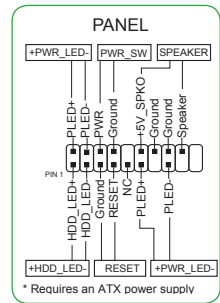
This 4-pin connector is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings.

- ATX power button / soft-off button (2-pin PWR_SW)**

This connector is for the system power button.

- Reset button (2-pin RESET)**

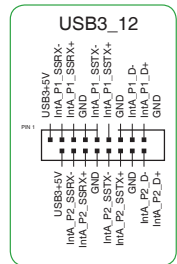
This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.



* Requires an ATX power supply

9. USB 3.1 Gen 1 connector (20-1 pin USB3_12)

This connector allows you to connect a USB 3.1 Gen 1 module for additional USB 3.1 Gen 1 front or rear panel ports. With an installed USB 3.1 Gen 1 module, you can enjoy all the benefits of USB 3.1 Gen 1 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.

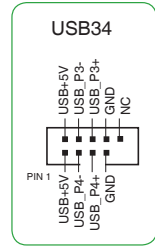


10. USB 2.0 connectors (10-1 pin USB3-6)

These connectors are for USB 2.0 ports. Connect the USB module cable to any of these connector, 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.

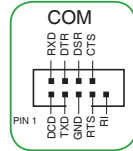


Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!



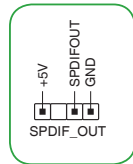
11. Serial port connector (10-1 pin COM)

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.



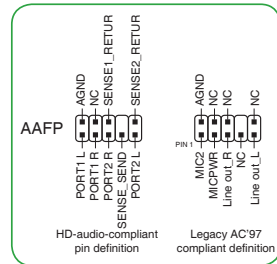
12. Digital audio connector (4-1 pin SPDIF_OUT)

This connector is for an additional Sony/Philips Digital Interface (S/PDIF) port. Connect the S/PDIF Out module cable to this connector, then install the module to a slot opening at the back of the system chassis.



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

This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC'97 audio standard. Connect one end of the front panel audio I/O module cable to this connector.



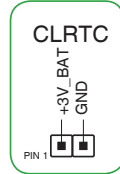
- We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability.
- If you want to connect a high-definition front panel audio module to this connector, set the **Front Panel Type** item in the BIOS setup to [HD]. If you want to connect an AC'97 front panel audio module to this connector, set the item to [AC97]. By default, this connector is set to [HD].

14. Clear RTC RAM (2-pin CLRRTC)

This header allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, 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.

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 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.

15. PCI Express 2.0 x1 slots

This motherboard has two PCI Express 2.0 x1 slots that support PCI Express x1 network cards, SCSI cards, and other cards that comply with the PCI Express specifications.

16. PCI slots

The PCI slots support cards such as LAN card, SCSI card, USB card, and other cards that comply with the PCI specifications.

17. PCI Express x16 slots

This motherboard supports two PCI Express x16 graphic cards that comply with the PCI Express specifications.

VGA configuration	PCI Express operating mode	
	PCIe 3.0/ 2.0 x16_1 (gray)	PCIe 2.0 x16_2
Single VGA / PCIe card	x16 (on AMD Ryzen™ processors)	N/A
	x8 (on AMD 7th Generation A-series / Athlon™ processors)	
Dual VGA / PCIe cards	x16 (on AMD Ryzen™ processors)	x4
	x8 (on AMD 7th Generation A-series / Athlon™ processors)	



- In single VGA card mode, use the PCIe 3.0/2.0 x16_1 slot (gray) for a PCI Express x16 graphics card to get better performance.
- We recommend that you provide sufficient power when running CrossFireX™ mode.
- Connect a chassis fan to the motherboard connector labeled CHA_FAN1/2 when using multiple graphics cards for better thermal environment.

IRQ assignments for this motherboard

- For 7th Generation A-series / Athlon™ processors

	A	B	C	D	E	F	G	H
PCIEx16_1	-	-	-	shared	-	-	-	-
PCIEx16_2	shared	-	-	-	-	-	-	-
PCIEx1_1	shared	-	-	-	-	-	-	-
PCIEx1_2	-	-	-	shared	-	-	-	-
PCI1	shared	-	-	-	-	-	-	-
PCI2	-	shared	-	-	-	-	-	-
M.2	-	-	-	shared	-	-	-	-
CPU USB 3.1 Gen 1 XHCI controller	-	-	shared	-	-	-	-	-
AMD Promonotry Chip XHCI controller	shared	-	-	-	-	-	-	-
SATA controller	-	-	-	shared	-	-	-	-
HD audio controller	-	-	-	-	-	-	shared	-
Realtek LAN controller	-	-	shared	-	-	-	-	-

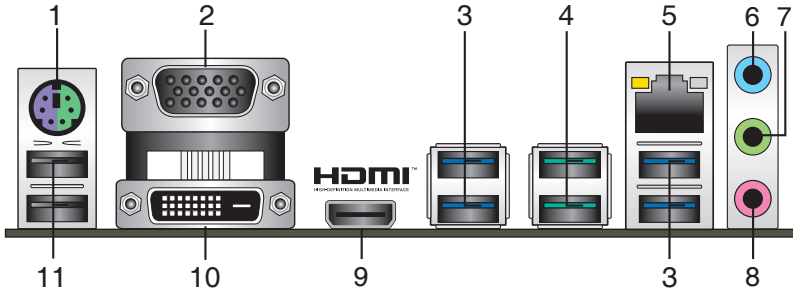
- For Ryzen™ processors

	A	B	C	D	E	F	G	H
PCIEx16_1	-	-	-	-	-	-	shared	-
PCIEx16_2	shared	-	-	-	-	-	-	-
PCIEx1_1	shared	-	-	-	-	-	-	-
PCIEx1_2	-	-	-	shared	-	-	-	-
PCI1	shared	-	-	-	-	-	-	-
PCI2	-	shared	-	-	-	-	-	-
M.2	shared	-	-	-	-	-	-	-
CPU USB 3.1 Gen 1 XHCI controller	-	-	-	-	-	-	-	shared
AMD Promonotry Chip XHCI controller	shared	-	-	-	-	-	-	-
SATA controller	-	shared	-	-	-	-	-	-
HD audio controller	-	-	-	shared	-	-	-	-
Realtek LAN controller	-	-	shared	-	-	-	-	-



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.

1.2.2 Rear panel connectors



1. **PS/2 keyboard/mouse combo port.** This port is for a PS/2 mouse or keyboard.
2. **Video Graphics Adapter (VGA) port.** This 15-pin port is for a VGA monitor or other VGA-compatible devices.
3. **USB 3.1 Gen 1 ports.** These two 9-pin Universal Serial Bus (USB) ports connect to USB 3.1 Gen 1 devices.

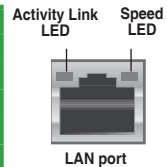


- USB 3.1 Gen 1 devices can only be used for data storage.
- Due to the design of AMD AM4 series chipset, all USB devices connected to the USB 2.0 and USB 3.1 Gen 1 ports are controlled by the xHCI controller.

4. **USB 3.1 Gen 2 ports (teal blue, Type A).** These 9-pin Universal Serial Bus 3.1 (USB 3.1 Gen 2) ports are for USB 3.1 Gen 2 devices.
5. **LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications.

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		



6. **Line In port (light blue).** This port connects to the tape, CD, DVD player, or other audio sources.
7. **Line Out port (lime).** This port connects to a headphone or a speaker. In the 4.1, 5.1 and 7.1-channel configurations, the function of this port becomes Front Speaker Out.
8. **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

- 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.
- DVI-D port.** This port is for any DVI-D compatible device.

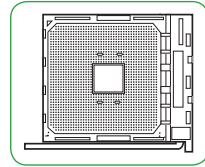


DVI-D can not be converted to output from RGB Signal to CRT and is not compatible with DVI-I.

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

1.3 Central Processing Unit (CPU)

The motherboard comes with an AMD AM4 socket designed for AMD Ryzen™ / 7th Generation A-series / Athlon™ processors.



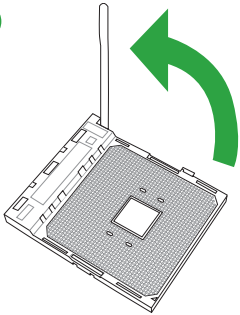
Unplug all power cables before installing the CPU.



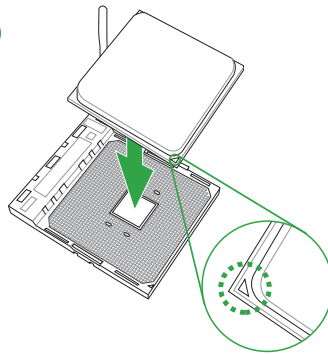
The AM4 socket has a different pinout from the FM2+ / FM2 socket. Ensure that you use a CPU designed for the AM4 socket. The CPU fits in only one correct orientation. **DO NOT** force the CPU into the socket to prevent bending the pins and damaging the CPU!

Installing the CPU

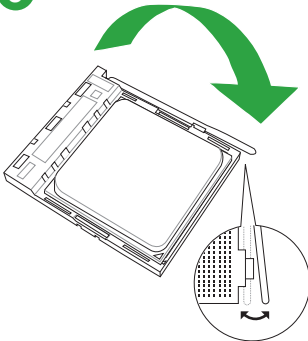
1



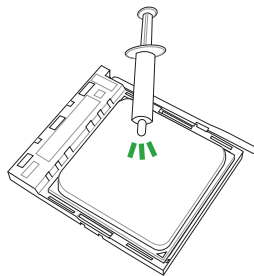
2



3



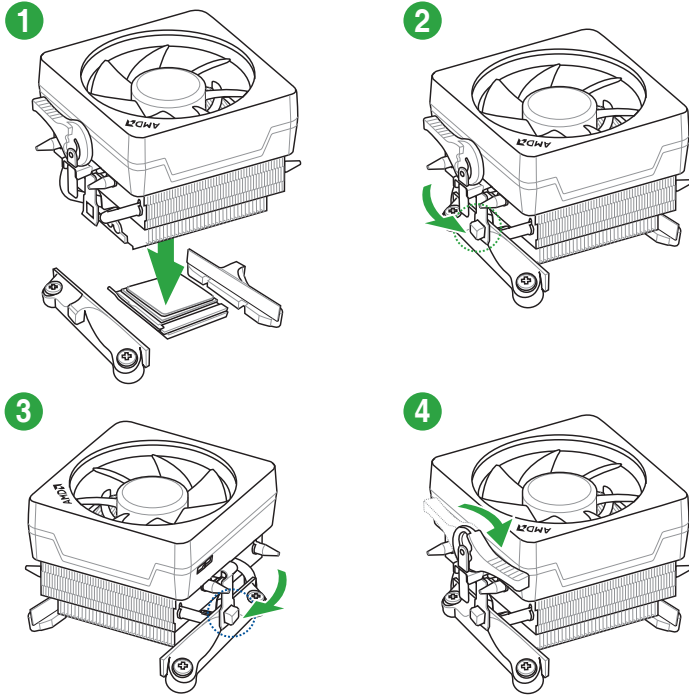
4



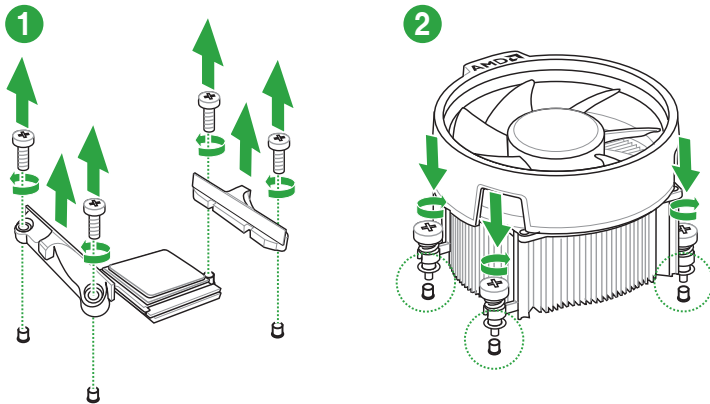
Apply the Thermal Interface Material to the CPU heatsink and CPU before you install the heatsink and fan if necessary.

Installing the CPU heatsink and fan assembly

Type 1



Type 2



Remove the screws and the retention module only. Do not remove the plate on the bottom.

1.4 System memory

Overview

This motherboard comes with four Double Data Rate 4 (DDR4) Dual Inline Memory Module (DIMM) sockets. The figure illustrates the location of the DDR4 DIMM sockets:



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

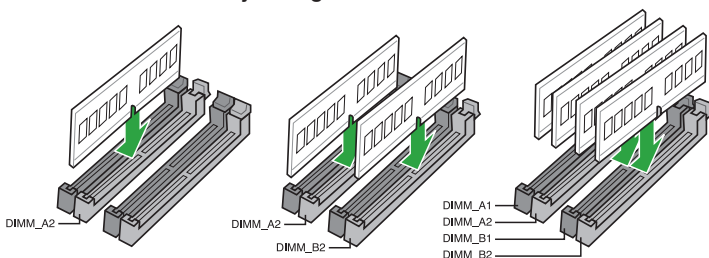


- You may install varying memory sizes in Channel A and Channel B. The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation.
- Always install DIMMs with the same CAS latency. For optimal compatibility, we recommend that you install memory modules of the same version or date code (D/C) from the same vendor. Check with the retailer to get the correct memory modules.



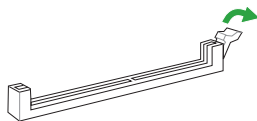
- For system stability, use a more efficient memory cooling system to support a full memory load (4 DIMMs).
- Refer to www.asus.com for the latest Memory QVL (Qualified Vendors List)

Recommended memory configurations

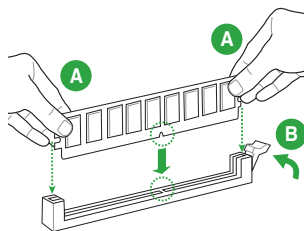


Installing a DIMM

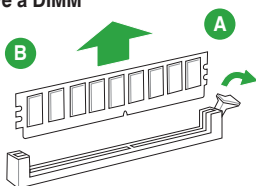
1



2



To remove a DIMM



1.5 Software support

1.5.1 Installing an operating system

This motherboard supports Windows® 10 (64-bit) 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.

1.5.2 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.



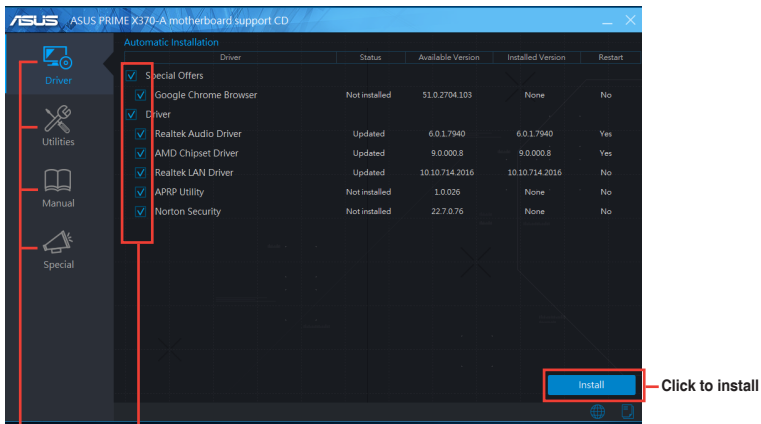
The contents of the Support DVD are subject to change at any time without notice. Visit the ASUS website at www.asus.com for updates.

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 lists of the unique features of your ASUS motherboard. Click the **Driver**, **Utilities**, **Manual**, or **Special** tabs to display their respective menus.



The following screen is for reference only.



Click a tab to display Support DVD information

Select an item/ subitem that you want to install



If Autorun is NOT enabled in your computer, browse the contents of the Support DVD to locate the file Setup.exe in the root folder. Double-click the Setup.exe to run the DVD.

BIOS information

2

2.1 Managing and updating your BIOS

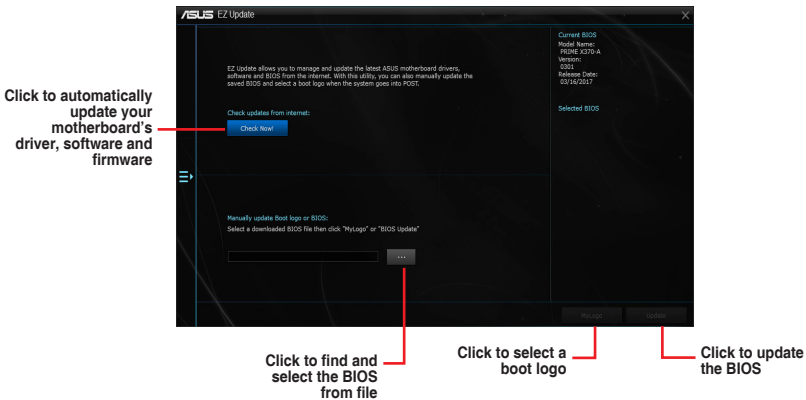


Save a copy of the original motherboard BIOS file to a USB flash disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update utility.

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 utility, 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.



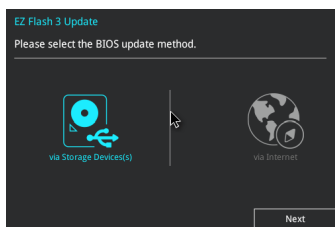
EZ Update requires an Internet connection either through a network or an ISP (Internet Service Provider).

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 that you load the BIOS default settings to ensure system compatibility and stability. Select the **Load Optimized Defaults** item under the Exit menu.
- Check your Internet connection before updating the BIOS via 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 Utility** and press <Enter> to enable it.
2. Follow the steps below to update the BIOS via a storage device or Internet.

Via Storage Device

- a) Insert the USB flash disk that contains the latest BIOS file to the USB port, then select **via Storage Devices**.
- 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 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 **PRX370A.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 2 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

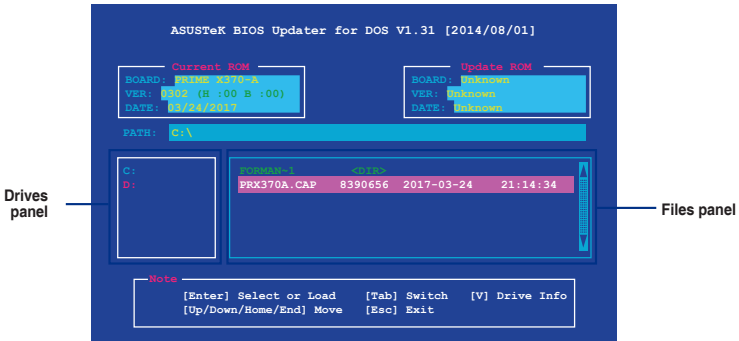
To boot the system in DOS:

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.
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).

Updating the BIOS file

To update the BIOS file:

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



Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the **Load Optimized Defaults** item under the **Exit BIOS** menu.

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>+ 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>+ 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>.
 - 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 1.2.1 **Layout contents** 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.

Displays the CPU/motherboard temperature, CPU voltage output, CPU/chassis fan speed, and SATA information

Displays the system properties of the selected mode. Click <Enter> to switch EZ System Tuning modes

Selects the display language of the BIOS setup program

Displays the CPU Fan's speed. Click the button to manually tune the fans

Loads optimized default settings

Saves the changes and resets the system

Shows the bootable devices

Displays the Advanced mode menus

Searches FAQ

Selects the boot device priority



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>.

The screenshot shows the ASUS UEFI BIOS Utility in Advanced Mode. The interface includes a menu bar at the top with options like My Favorites, Main, Ai Tweaker, Advanced, Monitor, Boot, Tool, and Exit. A hardware monitor panel on the right displays CPU and memory information. The main area contains various configuration fields and pop-up windows for settings like AI Overclock Tuner, Memory Frequency, and VDDCR CPU Voltage. A search bar for FAQ is located at the bottom right.

Labels and their corresponding components in the image:

- Menu bar**: Points to the top navigation menu.
- Language**: Points to the language selection icon.
- MyFavorite**: Points to the My Favorites menu item.
- Q-Fan control**: Points to the Q Fan Control(F6) icon.
- Hot Keys**: Points to the Hot Keys icon.
- Sub-menu item**: Points to the 'AI Tweaker' menu item.
- Menu items**: Points to the 'My Favorites' menu item.
- General help**: Points to the information icon (i) next to VDDCR CPU Voltage.
- Configuration fields**: Points to the dropdown menus for VDDCR CPU Voltage and VDDCR SOC Voltage.
- Pop-up window**: Points to the 'AI Overclock Tuner' settings window.
- Last modified settings**: Points to the 'Last Modified' text at the bottom.
- Scroll bar**: Points to the vertical scrollbar on the right side of the configuration area.
- Goes back to EZ Mode**: Points to the 'EzMode(F7) [-]' button.
- Searches FAQ**: Points to the 'Search on FAQ' button.
- Displays the CPU temperature, CPU and memory voltage output**: Points to the 'Hardware Monitor' panel.

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.

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 bottom left 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.

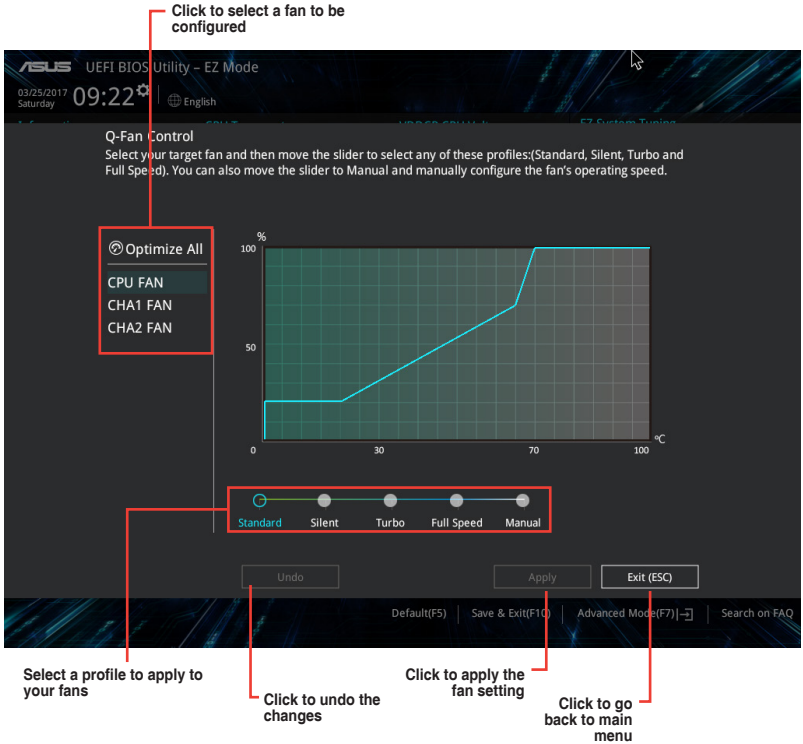
Search on FAQ

Move your mouse over this button to show a QR code. Scan this QR code with your mobile device to connect to the ASUS BIOS FAQ web page. You can also scan the QR code below.



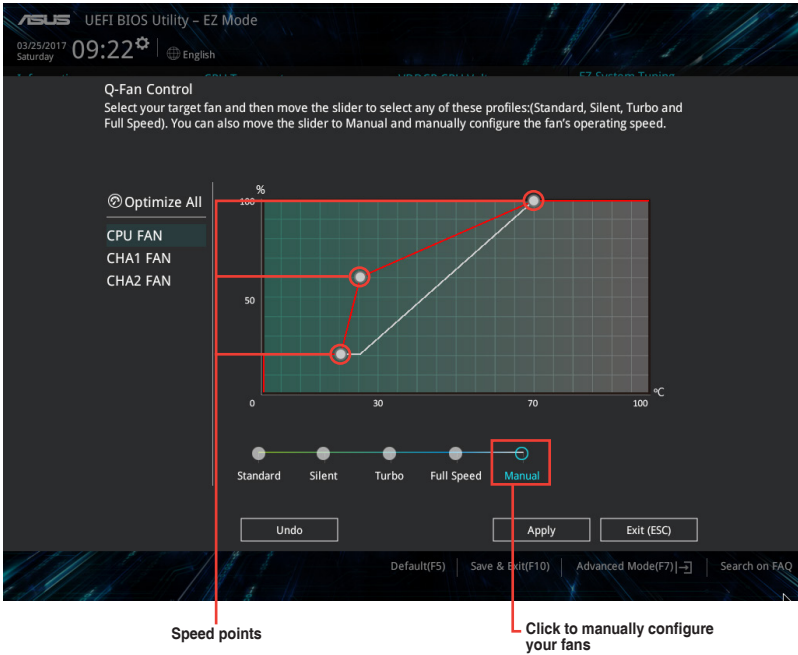
2.2.3 QFan Control

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.

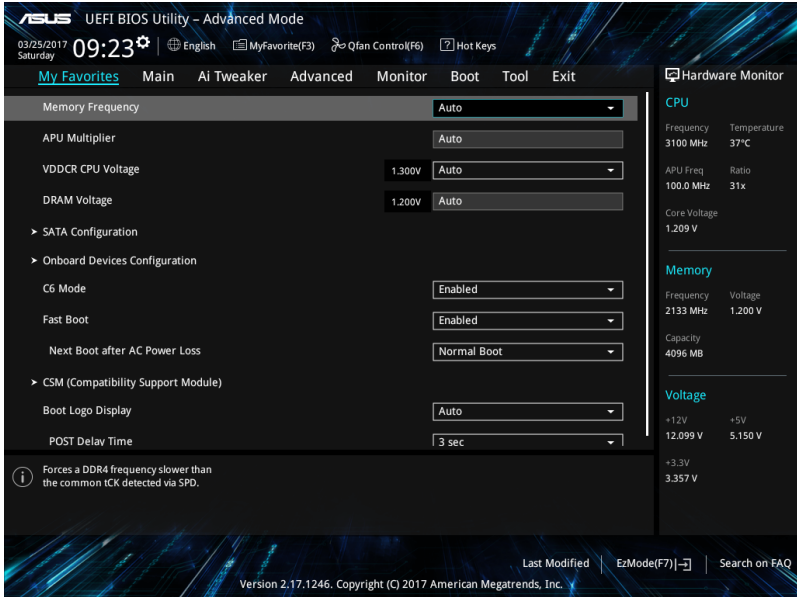


To configure your fans:

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)**.

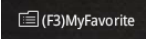
2.3 My Favorites

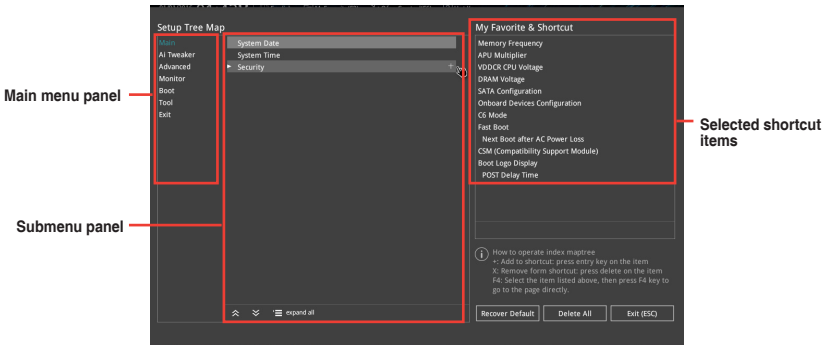
MyFavorites is your personal space where you can easily save and access your favorite BIOS items.



Adding items to My Favorites

To add BIOS items:

1. Press <F3> on your keyboard or click  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 **+**.



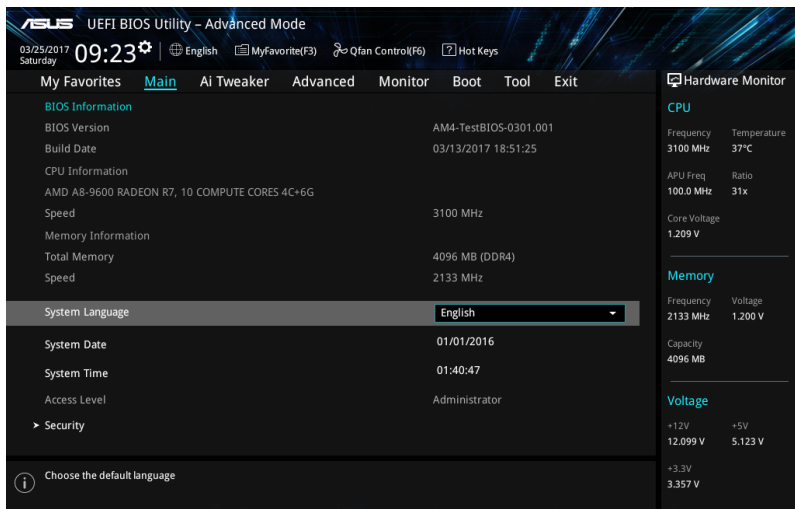
You cannot add the following items to My Favorite items:

- User-managed items such as language and boot order

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] [한국어]

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 1.2 **Motherboard overview** 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.

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.

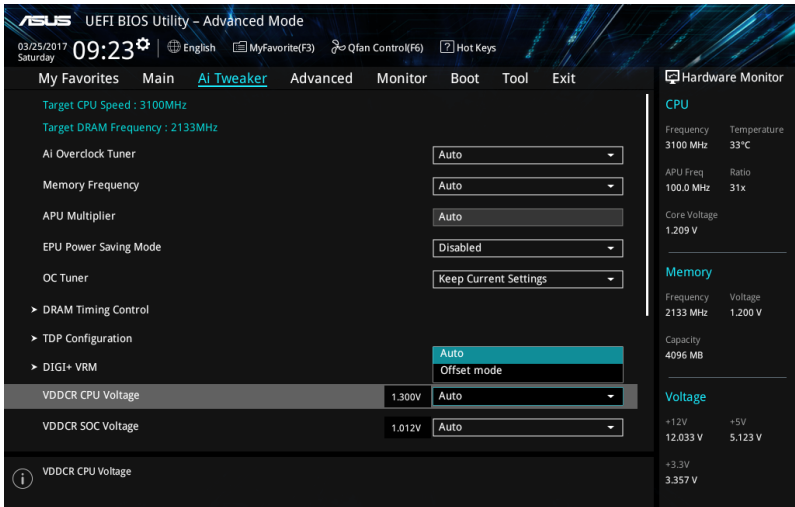


Be cautious when changing the settings of the Ai Tweaker menu items. Incorrect field values can cause the system to malfunction.



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.



2.5.1 Ai Overclock Tuner [Auto]

Allows you to select the CPU overclocking options to achieve the desired CPU internal frequency. Select any of these preset overclocking configuration options:

- [Auto] Loads the optimal settings for the system.
- [Manual] Allows you to individually set overclocking parameters.

APU Frequency [XXX]

This item appears only when you set the **Ai Overclock Tuner** item to [Manual]. Use the <-> and <-> keys to adjust the value. You can also key in the desired value using the numeric keypad. The values range from 90.0MHz to 300.0MHz.



We recommend you to set the value based on the CPU specification, as high APU frequencies may damage the CPU permanently.



This item appears only when you install an AMD 7th Generation A-series/Athlon™ processor.

2.5.2 Memory Frequency [Auto]



The configuration options displayed vary depending on the CPU installed.

Allows you to set the memory operating frequency. Configuration options: [Auto] [DDR4-1346MHz] [DDR4-1616MHz] [DDR4-1885MHz] [DDR4-2154MHz] [DDR4-2424MHz]



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

2.5.3 APU Multiplier [Auto]



This item appears only when you install an AMD 7th Generation A-series/Athlon™ processor.

Allows you to set the multiplier between the CPU Core Clock and the FSB Frequency. Use the <+> and <-> keys to adjust the ratio. The valid value ranges vary according to your CPU model.

2.5.4 Custom CPU Core Ratio [Auto]



This item appears only when you install an AMD Ryzen™ processor.

Allows you to set the CPU core ratio automatically or manually. When you set this item to [Manual], the CPU frequency equals (FID/DID) x 200. Configuration options: [Auto] [Manual]

CPU Core Ratio [Auto]

This item appears when you set **Custom CPU Core Ratio** to [Auto]. Use the <+> and <-> keys to adjust the value. You can also key in the desired value using the numeric keypad.

FID [Auto]

This item appears when you set **Custom CPU Core Ratio** to [Manual]. Use the <+> and <-> keys to adjust the value. You can also key in the desired value using the numeric keypad. The values range from 16 to 255.

DID [Auto]

This item appears when you set **Custom CPU Core Ratio** to [Manual]. Use the <+> and <-> keys to adjust the value. You can also key in the desired value using the numeric keypad. The values range from 8 to 48.

2.5.5 EPU Power Saving Mode [Disabled]

Allows you to enable or disable the EPU power saving function. Configuration options: [Disabled] [Enabled]

2.5.6 OC Tuner [Keep Current Settings]

This item allows you to automatically overclock the CPU and DRAM frequencies and voltage for an enhanced system performance. It also accelerates the CPU graphics performance to the extreme depending on the CPU graphics loading. Configuration options: [Keep Current Settings] [OC Tuner]



Ensure that you installed an efficient CPU fan for CPU and graphics loading before selecting either [OC Tuner]. To keep the current overclocking tuner status, select [Keep Current Settings].

2.5.7 DRAM Timing Control

The sub-items 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 <Enter>.



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

2.5.8 TDP Configuration



This item appears only when you install an AMD 7th Generation A-series/Athlon™ processor.

Target TDP [Auto]

Allows you to manually set up a TDP (Thermal Design Power) value. The processor will run within the specified TDP to constrain power consumption.

2.5.9 DIGI+ VRM

VDDCR CPU Load Line Calibration [Auto]

Load-line Calibration is defined by AMD VRM specifications and affects CPU voltage. The CPU working voltage will decrease proportionally to CPU loading. Higher load-line calibration would get higher voltage and better overclocking performance, but increase the CPU and VRM thermal. This item allows you to adjust the voltage range from the following percentages to boost the system performance: 0% (Regular), 60% (Medium), 80% (High), and 100% (Extreme). Configuration options: [Auto] [Regular] [Medium] [High] [Extreme]



- The boosted performance may vary depending on the CPU specification. Do not remove the thermal module.
- The configuration levels vary depending on the CPUs installed.

VDDCR SOC Load Line Calibration [Auto]

Allows you to select the CPU/NB Load-Line Calibration mode. Configuration options: [Auto] [Regular] [High] [Extreme]

VDDCR CPU Power Phase Control [Optimized]

Phase number is the number of working VRM phase. Increasing phase number under heavy system loading to get more transient and better thermal performance. Reducing phase number under light system loading to increase VRM efficiency.

[Optimized] Loads the ASUS optimized phase tuning profile.

[Extreme] Proceeds the full phase mode.



DO NOT remove the thermal module when switching to Extreme. The thermal conditions should be monitored.

VDDCR CPU Switching Frequency [Auto]

This item affects the VRM transient response speed and the component thermal production. Use the <+> and <-> keys to adjust the value.

2.5.10 VDDCR CPU Voltage [Auto]

[Auto] Loads the optimal settings for the system.

[Offset Mode] To offset the voltage by a positive or negative value.



[Offset] is available for some specific CPU types.

VDDCR CPU Offset Mode Sign [+]

[+] To offset the voltage by a positive value.

[-] To offset the voltage by a negative value.

VDDCR CPU Offset Voltage [Auto]

Allows you to set the CPU Offset voltage. The values range from 0.00625V to 0.20000V with a 0.00625V interval.



Refer to the CPU documentation before setting the CPU voltage. Setting a high voltage may damage the CPU permanently, and setting a low voltage may make the system unstable.

2.5.11 VDDCR SOC Voltage [Auto]

[Auto] Loads the optimal settings for the system.

[Offset Mode] To offset the voltage by a positive or negative value.

VDDCR SOC Offset Mode Sign [+]

[+] To offset the voltage by a positive value.

[-] To offset the voltage by a negative value.

VDDCR SOC Offset Voltage [Auto]

Allows you to set the SOC Offset voltage. The values range from 0.00625V to 0.20000V with a 0.00625V interval.

2.5.12 DRAM Voltage [Auto]

Allows you to set the DRAM voltage. Use the <+> and <-> keys to adjust the value. The values range from 1.2V to 1.35V with a 0.005V interval.

2.5.13 1.05V SB Voltage [Auto]

Allows you to set the 1.05V Southbridge voltage. Use the <+> and <-> keys to adjust the value. The values range from 1.05V to 1.1V with a 0.05V interval.

2.5.14 2.5V SB Voltage [Auto]

Allows you to set the 2.5V Southbridge voltage. Use the <+> and <-> keys to adjust the value. The values range from 2.5V to 2.55V with a 0.05V interval.

2.5.15 VDDP Voltage [Auto]

Allows you to set the VDDP voltage. Use the <+> and <-> keys to adjust the value. The values range from 1.05V to 1.2V with a 0.05V interval.

2.5.16 CPU 1.80V Voltage [Auto]

Allows you to set the CPU 1.80V voltage. Use the <+> and <-> keys to adjust the value. The values range from 1.80V to 1.85V with a 0.05V interval.

2.5.17 VTTDDR Voltage [Auto]

Allows you to set the VTTDDR voltage. Use the <+> and <-> keys to adjust the value.

2.5.18 VPP_MEM Voltage [Auto]

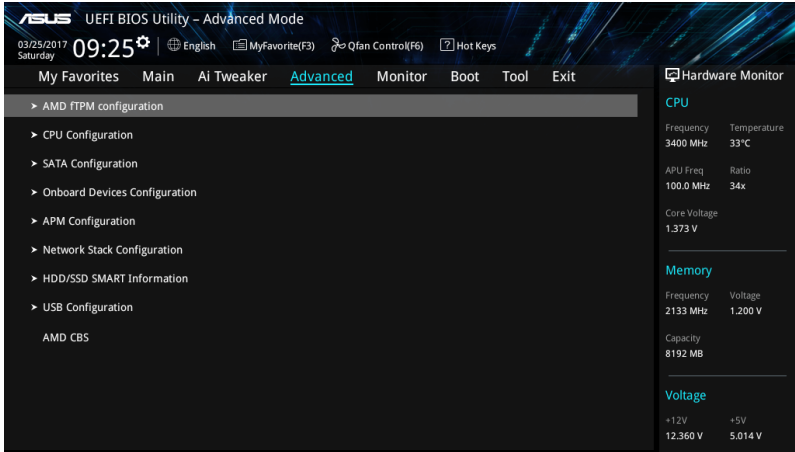
Allows you to set the VPP_MEM voltage. Use the <+> and <-> keys to adjust the value.

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.



AMD fTPM switch [Disabled]

Enables or disables AMD CPU firmware TPM. Configuration options: [Enabled] [Disabled]



When AMD firmware TPM is disabled, all data saved on it will be lost.

2.6.1 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.

PSS Support [Enabled]

Enables or disables the generation of ACPI_PPC, _PSS, and _PCT objects. Configuration options: [Enabled] [Disabled]

NX Mode [Enabled]

Enables or disables the No-execute page protection function. Configuration options: [Enabled] [Disabled]

SVM Mode [Disabled]

Enables or disables CPU virtualization. Configuration options: [Disabled] [Enabled]

CPB Mode [Enabled]

Enables or disables the CPB (Core Performance Boost) mode. Configuration options: [Disabled] [Enabled]

C6 Mode [Enabled]

Enables or disables C6 mode. Configuration options: [Enabled] [Disabled]

IOMMU [Disabled]

Set this item to [Enabled] to show IOMMU Mode. Configuration options: [Enabled] [Disabled] [Auto]

Bank Interleaving [Enabled]

Enables or disables the bank memory interleaving. Configuration options: [Enabled] [Disabled]

Channel Interleaving [Enabled]

Enables or disables the channel memory interleaving. Configuration options: [Enabled] [Disabled]

Core Leveling Mode [Automatic mode]

Allows you to change the number of Compute Units on the system. Configuration options: [Automatic mode] [One Compute Unit]

2.6.2 NB Configuration



NB Configuration function is not support when using an AMD Ryzen™ processor.

IGFX Multi-Monitor [Disabled]

Enables or disables the Internal Graphics Device Multi-Monitor support for add-on VGA devices. And the memory size of Internal Graphics Device will keep memory reserved. Configuration options: [Disabled] [Enabled]



The **IGFX Multi-Monitor** item must be enabled before using AMD® Dual Graphics technology.

Primary Video Device [PCIe / PCI Video]

Selects the primary display device. Configuration options: [IGFX Video] [PCIe / PCI Video]

UMA Frame Buffer Size [Auto]

This item appears only when you set the **Integrated Graphics** item to [Auto]. Configuration options: [Auto] [32M] [64M] [128M] [256M] [512M] [1G] [2G]

2.6.3 SATA 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.

Hyper Kit Mode [Disabled]

Disable this option for M.2 devices. Enable this option for ASUS Hyper Kit card. Configuration options: [Disabled] [Enabled]

SATA Port Enable [Enabled]

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

SATA Mode [AHCI]

Allows you to set the SATA configuration.

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

SMART Self Test [On]

SMART (Self-Monitoring, Analysis and Reporting Technology) is a monitoring system that shows a warning message during POST (Power-on Self Test) when an error occurs in the hard disks. Configuration options: [On] [Off]

Hot Plug [Disabled] (SATA6G_1 (Gray) ~ SATA6G_6(Gray))

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

2.6.4 Onboard Devices Configuration

HD Audio Controller [Enabled]

- [Enabled] Enables the HD Audio Device.
- [Disabled] Disables the HD Audio Device.



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

Front Panel Type [HD Audio]

Allows you to set the front panel audio connector (AAFP) mode to legacy AC'97 or high-definition audio depending on the audio standard that the front panel audio module supports.

- [HD] Sets the front panel audio connector (AAFP) mode to high definition audio.
- [AC97] Sets the front panel audio connector (AAFP) mode to legacy AC'97.

SPDIF Out Type [SPDIF]

- [SPDIF] Sets to an SPDIF audio output.
- [HDMI] Sets to an HDMI audio output.

LED Lighting [Breathing Mode]

Allows you to set the behavior of the audio LED. Configuration options: [Disabled] [Still Mode] [Breathing Mode]

Fan RGB [Enabled]

Enables or disables the fan RGB. Configuration options: [Enabled] [Disabled]

Realtek LAN Controller [On]

- [On] Enables the Realtek LAN controller.
- [Off] Disables the controller.

Realtek PXE OPROM [Off]

This item appears only when you set the **Realtek LAN Controller** item to [On] and allows you to enable or disable the Rom of the Realtek LAN controller. Configuration options: [On] [Off]

Charging USB devices in Power State S5 [Enabled]

- [Enabled] Charges USB devices even in 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 1 [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 [Enabled] 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]

2.6.5 APM

ErP Ready [Disabled]

Allows BIOS to switch off some power at S4/S5 to get the system ready for ErP requirement. When set to [Enabled], all other PME options will be switched off. Configuration options: [Enabled] [Disabled]

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 PCI-E/PCI [Disabled]

This item allows you to enable or disable the Wake-on-LAN function of the onboard LAN controller or other installed PCIe/PCI LAN cards. Configuration options: [Disabled] [Enabled]

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]

This item allows you to enable or disable the RTC (Real-Time Clock) to generate a wake event and configure the RTC alarm date. When enabled, you can set the days, hours, minutes, or seconds to schedule an RTC alarm date. Configuration options: [Disabled] [Enabled]

2.6.6 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 / Ipv6 PXE Support [Enabled]

This item allows you to enable or disable the Ipv4/Ipv6 PXE wake event. Configuration options: [Disable Link] [Enabled]

2.6.7 HDD/SSD SMART Information

This menu displays the SMART information of the connected devices.



NVM Express devices do not support SMART information.

2.6.8 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.

EHCI Hand-off [Enabled]

- [Enabled] Enables the support for operating systems without an EHCI hand-off feature.
- [Disabled] Disables the function.

USB Device Enable [Enabled]

Allows you to enable or disable all USB ports. Configuration options: [Disabled] [Enabled]

USB Single Port Control

Allows you to enable/disable individual USB ports.

2.6.9 AMD CBS

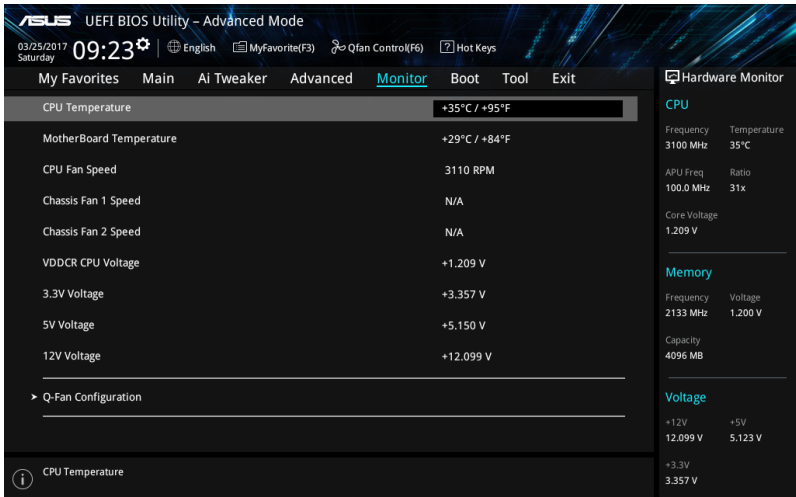
The items in this menu display the CPU-related information that the BIOS automatically detects.



This item appears only when you install an AMD Ryzen™ processor.

2.7 Monitor menu

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



2.7.1 CPU/ MB Temperature [xxx°C/xxx°F]/ [Ignore]

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

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

The onboard hardware monitor automatically detects and displays the CPU and 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.

2.7.3 VDDCR CPU 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.

2.7.4 Q-Fan Configuration

The subitems in this menu allows you to configure the Q-Fan features.

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 [PWM Mode]

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

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

CPU Fan Speed Lower 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] [200RPM] [300 RPM] [400 RPM] [500 RPM] [600RPM]

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 25°C to 75°C.

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 [25]

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(%) [20]

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 upper limit, the CPU fan operates at the maximum duty cycle.

CPU Lower Temperature [20]

Use the <+> or <-> keys to adjust the CPU fan's lower temperature. The values range from 0°C to 75°C.

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 operates at the minimum duty cycle.

2.7.6 Chassis Fan(s) Configuration

The subitems in this menu allows you to configure the chassis Q-Fan features.

Chassis Fan 1/2 Q-Fan Control [DC mode]

- [PWM mode] Enables the chassis Q-Fan control in PWM mode for the 4-pin chassis fan.
- [DC mode] Enables the chassis Q-Fan control in DC mode for the 3-pin chassis fan.
- [Disabled] Disables the chassis Q-Fan control feature.



The following items appear only when you set the Chassis Fan 1/2 Q-Fan Control to **[PWM Mode]** or **[DC Mode]**.

Chassis Fan 1/2 Q-Fan Source [CPU]

This item controls the assigned fan according to the selected temperature source.
Configuration options: [CPU] [Motherboard]

Chassis Fan 1/2 Speed Low Limit [200 RPM]

This item allows you to disable or set the chassis fan warning speed. Configuration options: [Ignore] [200RPM] [300 RPM] [400 RPM] [500 RPM] [600 RPM]

Chassis Fan 1/2 Profile [Standard]

This item allows you to set the appropriate performance level of the chassis fan.

- [Standard] Sets to [Standard] to make the chassis fan automatically adjust depending on the chassis temperature.
- [Silent] Sets to [Silent] to minimize the fan speed for quiet chassis fan operation.
- [Turbo] Sets to [Turbo] to achieve maximum chassis fan speed.
- [Manual] Sets to [Manual] to assign detailed fan speed control parameters.



The following four items appear only when you set **Chassis Fan 1/2 Profile** to [Manual].

Chassis Fan 1/2 Upper Temperature [70]

Use the <+> or <-> keys to adjust the upper limit of the CPU temperature. The values range from 45°C to 75°C.

Chassis Fan 1/2 Max. Duty Cycle(%) [100]

Use the <+> or <-> 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 Middle Temperature [45]

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

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

Use the <+> or <-> keys to adjust the chassis fan middle duty cycle. The values range from 60% to 100%.

Chassis Fan 1/2 Lower Temperature [40]

Use the <+> or <-> keys to adjust the chassis fans' lower temperature. The values range from 0°C to 75°C.

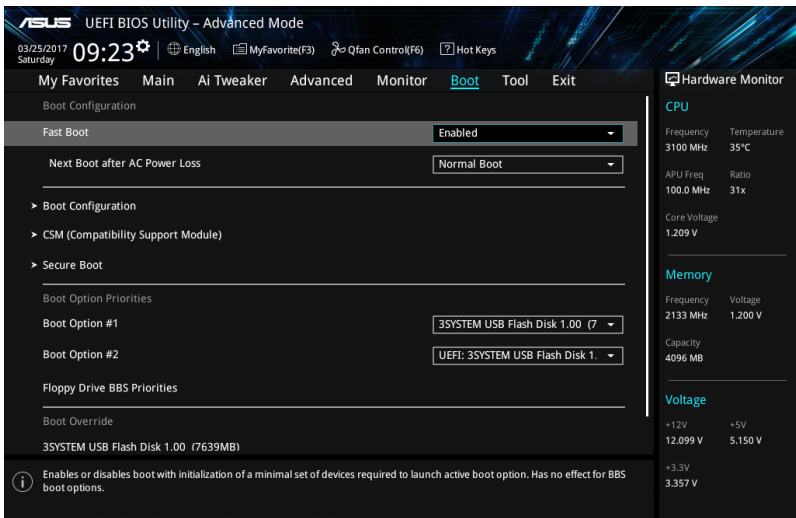
Chassis Fan 1/2 Min. Duty Cycle(%) [60]

Use the <+> or <-> keys to adjust the minimum chassis fan duty cycle. The values range from 60% to 100%. When the CPU temperature is under the lower limit, the chassis fan operates at the minimum duty cycle.

2.8 Boot menu

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

Scroll down to display the other BIOS items.



2.8.1 Fast Boot [Enabled]

[Enabled] Select to accelerate the boot speed.

[Disabled] Select to go back to normal boot speed.



The following item appears only when you set **Fast Boot** to [Enabled].

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.

2.8.2 Boot Configuration

Boot Logo Display [Auto]

- [Auto] Adjusts logo automatically based on Windows® display requirements.
- [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 [Auto] and [Full Screen]. 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 [Disabled]. This item allows you to select a desired post report waiting time. Configuration options: [1 sec] ~ [10 sec] [Until Press ESC].

Startup NumLock State [Enabled]

This item allows you to enable or disable power-on state of the NumLock. Configuration options: [Disabled] [Enabled]

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.

2.8.3 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 expansion devices that you want to launch. Configuration options: [Legacy only] [UEFI driver first]

2.8.4 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 [Other OS]

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 allows you to manage the Secure Boot keys.

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 all Secure Boot variables

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.

Save to File

This item allows you to save the downloaded PK to a USB storage device.

Set New Key

This item allows you to load the downloaded PK from a USB storage device.



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

Delete Key

This item 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.

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).

Save to File

Allows you to save the downloaded KEK to a USB storage device.

Set New Key

Allows you to load the downloaded KEK from a USB storage device.

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.

Save to File

Allows you to save the downloaded db to a USB storage device.

Set New Key

Allows you to load the downloaded db from a USB storage device.

Append Key

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



The db file must be formatted as a UEFI variable structure with time-based authenticated variable. DBX Management

Delete Key

Allows you to delete the db file 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.

Save to File

Allows you to load the downloaded dbx to a USB storage device.

Set New Key

Allows you to load the downloaded dbx from a USB storage device.

Append Key

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



The dbx file must be formatted as a UEFI variable structure with time-based authenticated variable.

Delete key

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

2.8.5 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.



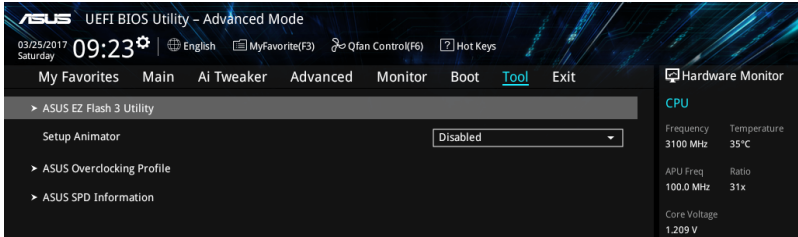
To select the boot device during system startup, press <F8> when ASUS Logo appears.

2.8.6 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 Tool menu

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



2.9.1 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**.

2.9.2 Setup Animator [Disabled]

Enables or disables the Setup animator. Configuration options: [Disabled] [Enabled]

2.9.3 ASUS Overclocking Profile

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



The **Overclocking Profile** items show **Not assigned** if no profile is created.

Load from Profile

Allows you to load the previous BIOS settings saved in the BIOS Flash. Key in the profile number that saved your CMOS settings, press <Enter>, and then select Yes.



- 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.

Profile Name

Allows you to create a name for the profile you want to save.

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.

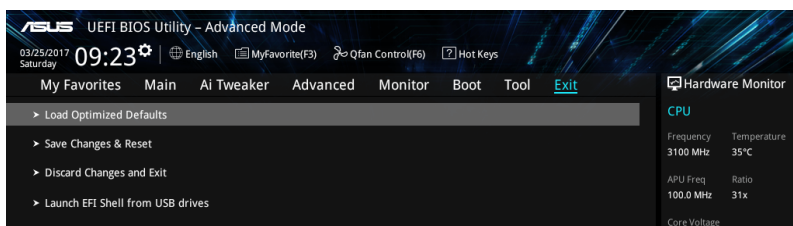
2.9.4 ASUS SPD Information

DIMM Slot number [DIMM_A1]

Displays the Serial Presence Detect (SPD) information of the DIMM module installed on the selected slot. Configuration options: [DIMM_A1] [DIMM_B1] [DIMM_A2] [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 OK 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 OK to save changes and exit.

Discard Changes and 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 OK to discard changes and exit.

Launch EFI Shell from USB drives

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

Appendix

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.

Déclaration de conformité d'Industrie Canada

Cet 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.

Le présent appareil est conforme aux normes CNR d'Industrie Canada applicables aux appareils radio exempts de licence. Son utilisation est sujette aux deux conditions suivantes : (1) cet appareil ne doit pas créer d'interférences et (2) cet appareil doit tolérer tout type d'interférences, 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

Class B ITE

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用す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。

VCCI-B

KC: Korea Warning Statement

B급 기기 (가정용 방송통신기자재)

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

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.

Regional notice for California

WARNING: This product may contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

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English ASUSTeK Computer Inc. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related Directives. Full text of EU declaration of conformity is available at: www.asus.com/support

Français ASUSTeK Computer Inc. déclare par la présente que cet appareil est conforme aux critères essentiels et autres clauses pertinentes des directives concernées. La déclaration de conformité de l'UE peut être téléchargée à partir du site Internet suivant : www.asus.com/support

Deutsch ASUSTeK Computer Inc. erklärt hiermit, dass dieses Gerät mit den wesentlichen Anforderungen und anderen relevanten Bestimmungen der zugehörigen Richtlinien übereinstimmt. Der gesamte Text der EU-Konformitätserklärung ist verfügbar unter: www.asus.com/support

Italiano ASUSTeK Computer Inc. con la presente dichiara che questo dispositivo è conforme ai requisiti essenziali e alle altre disposizioni pertinenti con le direttive correlate. Il testo completo della dichiarazione di conformità UE è disponibile all'indirizzo: www.asus.com/support

Русский Компания ASUS заявляет, что это устройство соответствует основным требованиям и другим соответствующим условиям соответствующих директив. Подробную информацию, пожалуйста, смотрите на www.asus.com/support

Български С настоящото ASUSTeK Computer Inc. декларира, че това устройство е в съответствие със съществените изисквания и другите приложими постановления на свързаните директиви. Пълният текст на декларацията за съответствие на ЕС е достъпна на адрес: www.asus.com/support

Hrvatski ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj skladan s bitnim zahtjevima i ostalim odgovarajućim odredbama vezanih direktiva. Cijeli tekst EU izjave o skladnosti dostupan je na: www.asus.com/support

Čeština Společnost ASUSTeK Computer Inc. tímto prohlašuje, že toto zařízení splňuje základní požadavky a další příslušná ustanovení souvisejících směrnic. Plné znění prohlášení o shodě EU je k dispozici na adrese: www.asus.com/support

Dansk ASUSTeK Computer Inc. erklærer hermed, at denne enhed er i overensstemmelse med hovedkravene og andre relevante bestemmelser i de relaterede direktiver. Hele EU-overensstemmelseserklæringen kan findes på: www.asus.com/support

Nederlands ASUSTeK Computer Inc. verklaart hierbij dat dit apparaat voldoet aan de essentiële vereisten en andere relevante bepalingen van de verwante richtlijnen. De volledige tekst van de EU-verklaring van conformiteit is beschikbaar op: www.asus.com/support

Eesti Käesolevaga kinnitab ASUSTeK Computer Inc. et see seade vastab asjakohaste direktiivide oluliste nõuetele ja teistele asjassepuutuvalate sätetele. EL vastavusdeklaratsiooni täielik tekst on saadaval järgmisel aadressil: www.asus.com/support

Suomi ASUSTeK Computer Inc. ilmoittaa täten, että tämä laite on asiaankuuluvien direktiivien olennaisien vaatimusten ja muiden tätä koskevien säädösten mukainen. EU-yhdenmukaisuusilmoituksen koko teksti on luettavissa osoitteessa: www.asus.com/support

Ελληνικά Με το παρόν, η ASUSΤeK Computer Inc. δηλώνει ότι αυτή η συσκευή συμμορφώνεται με τις θεμελιώδεις απαιτήσεις και άλλες σχετικές διατάξεις των Οδηγών της ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης είναι διαθέσιμο στη διεύθυνση: www.asus.com/support

Magyar Az ASUSTeK Computer Inc. ezennel kijelenti, hogy ez az eszköz megfelel a kapcsolódó irányelvek lényeges követelményeinek és egyéb vonatkozó rendelkezésének. Az EU-megfelelőségi nyilatkozat teljes szövege innen letölthető: www.asus.com/support

Latviski ASUSTeK Computer Inc. ar šo paziņo, ka šī ierīce atbilst saistošo Direktīvu būtiskajām prasībām un citiem citiem saistošajiem nosacījumiem. Pils ES atbilstības paziņojuma teksts pieejams šeit: www.asus.com/support

Lietuvių „ASUSTeK Computer Inc.“ šiuo tvirtina, kad šis įrenginys atitinka pagrindinius reikalavimus ir kitas svarbias susijusių direktyvų nuostatas. Visą ES atitikties deklaracijos tekstą galima rasti: www.asus.com/support

Norsk ASUSTeK Computer Inc. erklærer herved at denne enheten er i samsvar med hovedsaklige krav og andre relevante forskrifter i relaterte direktiver. Fullstendig tekst for EU-samsvarserklæringen finnes på: www.asus.com/support

Polski Firma ASUSTeK Computer Inc. niniejszym oświadcza, że urządzenie to jest zgodne z zasadniczymi wymogami i innymi właściwymi postanowieniami powiązanych dyrektyw. Pełny tekst deklaracji zgodności UE jest dostępny pod adresem: www.asus.com/support

Português A ASUSTeK Computer Inc. declara que este dispositivo está em conformidade com os requisitos essenciais e outras disposições relevantes das Diretivas relacionadas. Texto integral da declaração da UE disponível em: www.asus.com/support

Română ASUSTeK Computer Inc. declară că acest dispozitiv se conformează cerințelor esențiale și altor prevederi relevante ale directivelor conexe. Textul complet al declarației de conformitate a Uniunii Europene se găsește la: www.asus.com/support

Srpski ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj u saglasnosti sa osnovnim zahtevima i drugim relevantnim odredbama povezanih direktiva. Pun tekst EU deklaracije o usaglašenosti je dostupan da adresi: www.asus.com/support

Slovensky Spoločnosť ASUSTeK Computer Inc. týmto vyhlasuje, že toto zariadenie vyhovuje základným požiadavkám a ostatným príslušným ustanoveniam príslušných smerníc. Celý text vyhlásenia o zhode pre štáty EÚ je dostupný na adrese: www.asus.com/support

Slovenščina ASUSTeK Computer Inc. izjavlja, da je ta naprava skladna z bistvenimi zahtevami in drugimi ustreznimi določbami povezanih direktiv. Celotno besedilo EU-izjave o skladnosti je na voljo na spletnem mestu: www.asus.com/support

Español Por la presente, ASUSTeK Computer Inc. declara que este dispositivo cumple los requisitos básicos y otras disposiciones pertinentes de las directivas relacionadas. El texto completo de la declaración de la UE de conformidad está disponible en: www.asus.com/support

Svenska ASUSTeK Computer Inc. förklarar härmed att denna enhet överensstämmer med de grundläggande kraven och andra relevanta föreskrifter i relaterade direktiv. Fulltext av EU-försäkran om överensstämmelse finns på: www.asus.com/support

Українська ASUSTeK Computer Inc. заявляє, що цей пристрій відповідає основним вимогам та іншим відповідним положенням відповідних Директив. Повний текст декларації відповідності стандартам ЄС доступний на: www.asus.com/support

Türkçe ASUSTeK Computer Inc., bu aygıtın temel gereksinimlerle ve ilişkili Yönergelere diğer ilgili koşullarla uyumlu olduğunu beyan eder. AB uygunluk bildirimini tam metni şu adreste bulabilirsiniz: www.asus.com/support

Bosanski ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj uskladen sa bitnim zahtjevima i ostalim odgovarajućim odredbama vezanih direktiva. Cijeli tekst EU izjave o skladnosti dostupan je na: www.asus.com/support

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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 : PRIME X370-A

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

A handwritten signature in blue ink that reads "Steve Chang". The signature is written in a cursive style and is positioned above the "Signature:" label.

Signature :

Date : Apr 24, 2017

Ver. 140331