

**PRIME B450M-K**



**Motherboard**

E14215  
First Edition  
May 2018

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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.

<b>Motherboard</b>	ASUS PRIME B450M-K motherboard
<b>Cables</b>	2 x Serial ATA 6.0 Gb/s cables
<b>Accessories</b>	1 x I/O shield 1 x M.2 anchor
<b>Application DVD</b>	1 x Support DVD
<b>Documentation</b>	1 x User Manual



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

## PRIME B450M-K specifications summary

<b>CPU</b>	<p><b>AM4 socket for AMD Ryzen™ 2<sup>nd</sup> Generation / Ryzen™ with Radeon™ Vega Graphics / Ryzen™ 1<sup>st</sup> Generation processors:</b></p> <p>Supports CPU up to 8 cores*</p> <p>* Due to CPU limitation, CPU cores supported vary by processor. ** Refer to <a href="http://www.asus.com">www.asus.com</a> for AMD CPU support list.</p>
<b>Chipset</b>	AMD B450 chipset
<b>Memory</b>	<p><b>AMD Ryzen™ 2<sup>nd</sup> Generation / AMD Ryzen™ with Radeon™ Vega Graphics / Ryzen™ 1<sup>st</sup> Generation processors:</b></p> <p>2 x DIMM, max. 32GB, DDR4 3200(O.C.) / 3000(O.C.)/2933(O.C.)/2800(O.C.)/2666/2400/2133 MHz, un-buffered memory</p> <p>Dual-channel memory architecture</p> <p>* Refer to <a href="http://www.asus.com">www.asus.com</a> for the latest Memory QVL (Qualified Vendors List). ** ECC memory(ECC mode) support varies by CPU.</p>
<b>Graphics</b>	<p>Integrated Graphics in the AMD Ryzen™ with Radeon™ Vega Graphics</p> <p>Multi-VGA output support: DVI-D and D-Sub ports</p> <ul style="list-style-type: none"> <li>- Supports DVI-D output with a maximum resolution of 1920 x 1200 @60Hz</li> <li>- Supports D-Sub output with a maximum resolution of 1920 x 1200 @60Hz</li> </ul>
<b>Expansion slots</b>	<p><b>AMD Ryzen™ 2<sup>nd</sup> Generation / Ryzen™ 1<sup>st</sup> Generation processors:</b></p> <p>1 x PCI Express 3.0/2.0 x16 slot (max. @x16 mode)</p> <p><b>AMD Ryzen™ with Radeon™ Vega Graphics</b></p> <p>1 x PCI Express 3.0/2.0 x16 slot (max. @x8 mode)</p> <p><b>AMD B450 Chipset:</b></p> <p>2 x PCI Express 2.0 x1 slots</p>
<b>Storage</b>	<p><b>AMD B450 Chipset</b></p> <ul style="list-style-type: none"> <li>- 4 x Serial ATA 6.0 Gb/s connectors with RAID 0, RAID 1 and RAID 10 support</li> </ul> <p><b>AMD Ryzen™ 2<sup>nd</sup> Generation/ Ryzen™ with Radeon™ Vega Graphics/ Ryzen™ 1<sup>st</sup> Generation processors:</b></p> <ul style="list-style-type: none"> <li>- 1 x M.2 socket 3 with M Key, Type 2242/2260/2280 (PCIe 3.0 x4 and SATA modes) storage devices support</li> </ul>

(continued on the next page)

# PRIME B450M-K specifications summary

LAN	Realtek® 8111H Gigabit LAN controller
Audio	<p>Realtek® ALC 887-VD2 8-Channel High Definition Audio CODEC</p> <ul style="list-style-type: none"> <li>- LED-illuminated design: Brighten up your build with the gorgeous illuminated audio trace path.</li> <li>- Audio Shielding: Ensures precision analog/digital separation and greatly reduces multi-lateral interference</li> <li>- Dedicated audio PCB layers: Separate layers for left and right channels to guard the quality of the sensitive audio signals</li> <li>- Premium Japanese audio capacitors: Provide warm, natural and immersive sound with exceptional clarity and fidelity</li> <li>- Supports jack-detection and front panel jack-retasking</li> </ul> <p>* Use a chassis with HD audio module in the front panel to support an 8-channel audio output.</p>
USB	<p><b>AMD Ryzen™ 2<sup>nd</sup> Generation/ Ryzen™ with Radeon™ Vega Graphics/ Ryzen™ 1<sup>st</sup> Generation processors:</b></p> <ul style="list-style-type: none"> <li>- 4 x USB 3.1 Gen 1 (up to 5Gbps) ports (4 ports at back panel)</li> </ul> <p><b>AMD B450 Chipset:</b></p> <ul style="list-style-type: none"> <li>- 2 x USB 3.1 Gen 2 (up to 10Gbps) ports ( 2 ports at back panel)</li> <li>- 2 x USB 3.1 Gen 1 (up to 5Gbps) ports ( 2 ports at mid-board)</li> <li>- 4 x USB 2.0/1.1 ports ( 4 ports at mid-board)</li> </ul>
ASUS unique features	<p><b>Dependable Stability</b></p> <p><b>ASUS 5X PROTECTION III</b></p> <ul style="list-style-type: none"> <li>- ASUS SafeSlot Core: Fortified PCIe Slot prevents damage</li> <li>- ASUS LANGuard: Protects against LAN surges, lightning strikes and static-electricity discharges!</li> <li>- ASUS Overvoltage Protection: World-class circuit-protecting power design</li> <li>- ASUS Stainless-Steel Back I/O: 3X corrosion-resistance for greater durability!</li> <li>- ASUS DIGI+ VRM: 6 Phase digital power design</li> </ul> <p><b>Superb performance</b></p> <p><b>UEFI BIOS</b></p> <ul style="list-style-type: none"> <li>- The most advanced options with a fast response time</li> </ul> <p><b>Easy PC DIY</b></p> <p><b>Safe motherboard mounting</b></p> <ul style="list-style-type: none"> <li>- Component-free areas to minimize damage risk</li> </ul> <p><b>Q-Design</b></p> <ul style="list-style-type: none"> <li>- ASUS Q-DIMM</li> <li>- ASUS Q-Slot</li> </ul> <p><b>UEFI BIOS EZ Mode</b></p> <ul style="list-style-type: none"> <li>- Featuring a friendly graphics user interface</li> <li>- ASUS CrashFree BIOS 3</li> <li>- ASUS EZ Flash 3</li> </ul>
ASUS Quiet Thermal Solution	<p><b>Quiet Thermal Design:</b></p> <ul style="list-style-type: none"> <li>- Stylish Fanless Design: Chipset Heat-sink</li> <li>- ASUS Fan Xpert</li> </ul>

(continued on the next page)

## PRIME B450M-K specifications summary

<b>Rear panel I/O ports</b>	<ul style="list-style-type: none"> <li>1 x PS/2 Keyboard port</li> <li>1 x PS/2 Mouse port</li> <li>1 x D-Sub port</li> <li>1 x DVI-D port</li> <li>1 x LAN (RJ-45) port</li> <li>2 x USB 3.1 Gen 2 ports</li> <li>4 x USB 3.1 Gen 1 ports</li> <li>3 x Audio jacks support 8-channel audio output</li> </ul>
<b>Internal connectors</b>	<ul style="list-style-type: none"> <li>1 x USB 3.1 Gen 1 connector supports additional 2 USB 3.1 Gen 1 ports</li> <li>2 x USB 2.0/1.1 connectors support additional 4 USB 2.0/1.1 ports</li> <li>4 x SATA 6.0Gb/s connectors</li> <li>1 x M.2 socket 3 for M Key and type 2242/2260/2280 devices support(both SATA &amp; PCIe mode)</li> <li>1 x COM connector</li> <li>1 x CPU Fan connector</li> <li>1 x Chassis Fan connector (supports 3-pin DC &amp; 4-pin PWM modes)</li> <li>1 x Front panel audio connector</li> <li>1 x 24-pin EATX power connector</li> <li>1 x 8-pin EATX 12V power connector</li> <li>1 x 2-pin Clear CMOS header</li> <li>1 x System panel connector</li> <li>1 x Speaker connector</li> <li>1 x S/PDIF out connector</li> </ul>
<b>BIOS features</b>	128 Mb Flash ROM, UEFI AMI BIOS, PnP, SM BIOS 3.1, ACPI 6.1, Multi-language BIOS, ASUS EZ Flash 3, ASUS CrashFree BIOS 3, My Favorite, Last Modified log, F12 PrintScreen, ASUS DRAM SPD (Serial Presence Detect) memory information, F6 Qfan Control
<b>Manageability</b>	WOL by PME, PXE
<b>Support DVD</b>	<ul style="list-style-type: none"> <li>Drivers</li> <li>ASUS Utilities</li> <li>ASUS Update</li> <li>Anti-virus software (OEM version)</li> </ul>
<b>OS support</b>	Windows® 10 (64-bit)
<b>Form factor</b>	uATX Form Factor, 8.9" x 8.7"(22.6cm x 22.1cm)



Specifications are subject to change without notice.



# Product introduction

# 1

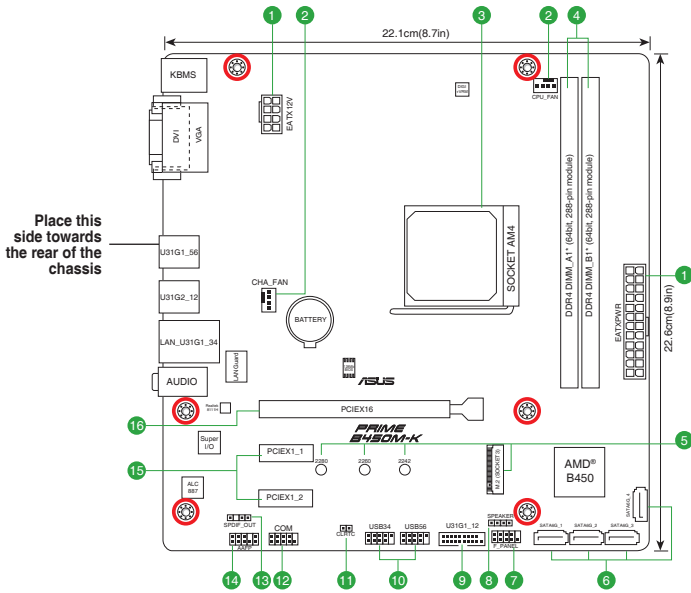
## Before you proceed

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

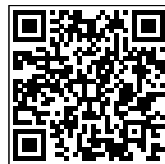


- Unplug the power cord from the wall socket before touching any component.
- Before handling components, use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, to avoid damaging them due to static electricity.
- Before you install or remove any 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.
- Unplug the power cord before installing or removing the motherboard. Failure to do so can cause you physical injury and damage to motherboard components.

## Motherboard overview



Scan the QR code to get the detailed pin definitions.



## 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.



- For a fully configured system, we recommend that you use a power supply unit (PSU) that complies with ATX12V Specification 2.0 (or later version) and provides a minimum power of 350 W. This PSU type has 24-pin and 8-pin power plugs.
- DO NOT forget to connect the 8-pin EATX +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\_FAN)

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 AMD AM4 CPU socket

This motherboard comes with an AMD AM4 socket designed for AMD Ryzen™ 2<sup>nd</sup> Generation / Ryzen™ with Radeon™ Vega Graphics / Ryzen™ 1<sup>st</sup> Generation processors.



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

## 4 DDR4 DIMM slots

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



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

5

**M.2 socket 3**

This socket allows you to install M.2 (NGFF) SSD modules.



This M.2 socket supports M Key and 2242/2260/2280 storage devices.

M.2(SOCKET3)



6

**AMD B450 Serial ATA 6.0Gb/s connectors (7-pin SATA6G\_1~4)**

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

7

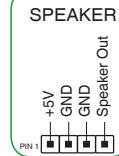
**System panel connector (10-1 pin F\_PANEL)**

This connector supports several chassis-mounted functions.

8

**Speaker connector (4-pin SPEAKER)**

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



9

**USB 3.1 Gen 1 (up to 5Gbps) connector (20-1 pin U31G1\_12)**

Connect a USB 3.1 Gen 1 module to this connector for additional USB 3.1 Gen 1 front or rear panel ports. This connector complies with USB 3.1 Gen 1 specifications and provides faster data transfer speeds of up to 5 Gbps, 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 USB34, USB56)**

Connect a USB module cable to either of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specifications and support up to 480Mbps connection speed.

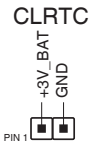
11

**Clear RTC RAM (2-pin CLRRTC)**

This header allows you to clear the CMOS RTC RAM data of the system setup information such as date, time, and 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 <Del> key during the boot process and enter BIOS setup to re-enter data.



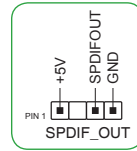
If the steps above do not help, remove the onboard battery and short the two pins again to clear the CMOS RTC RAM data. After clearing the CMOS, reinstall the battery.

### 12 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.

### 13 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.



### 14 Front panel audio connector (10-1 pin AAFP)

This connector is for a chassis-mounted front panel audio I/O module that supports HD Audio standards. 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 Audio].

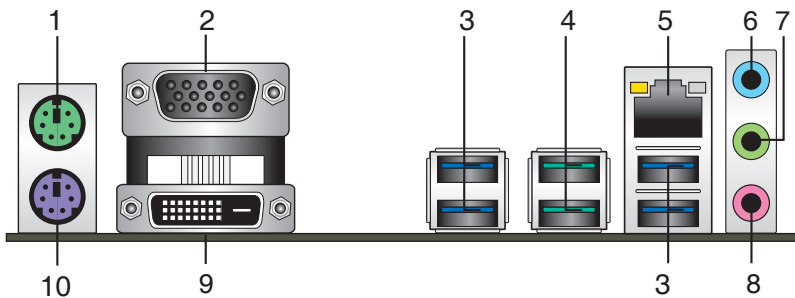
### 15 PCI Express 2.0 x1 slots

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 Express 3.0 / 2.0 x16 slot

This motherboard supports one PCI Express 3.0 / 2.0 x16 graphic card that complies with the PCI Express specifications.

## Rear panel connectors



- 1. PS/2 Mouse port.** This port is for a PS/2 mouse.
- 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 (up to 5Gbps) ports.** These 9-pin Universal Serial Bus (USB) ports connect to USB 3.1 Gen 1 devices.
- 4. USB 3.1 Gen 2 (up to 10Gbps) ports (teal blue, Type A).** These 9-pin Universal Serial Bus 3.1 (USB 3.1) ports are for USB 3.1 Gen 2 devices.

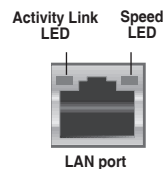


- USB 3.1 Gen 2 / Gen 1 devices can only be used for data storage.
- Due to the design of the AMD AM4 series chipset, all USB devices connected to the USB 2.0 and USB 3.1 Gen 2 / Gen 1 ports are controlled by the xHCI controller.
- We strongly recommend that you connect USB 3.1 Gen 2 devices to USB 3.1 Gen 2 ports for faster and better performance from your 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.

### 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.

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### 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

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




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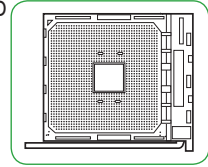
DVI-D can not be converted to output from RGB Signal to CRT and is not compatible with DVI-I.

---

- 10. **PS/2 Keyboard port.** This port is for a PS/2 keyboard.

## Central Processing Unit (CPU)

The motherboard comes with an AMD AM4 socket designed for AMD Ryzen™ 2<sup>nd</sup> Generation / Ryzen™ with Radeon™ Vega Graphics / Ryzen™ 1<sup>st</sup> Generation processors.



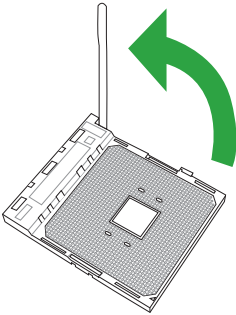
Unplug all power cables before installing the CPU.



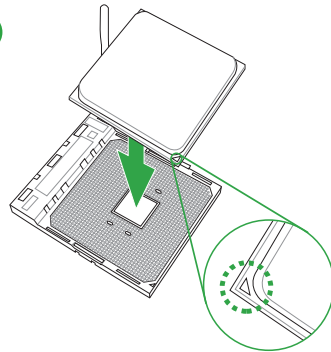
The AM4 socket has a different pinout from the FM2+/FM2 socket. Ensure that you use a CPU designed for the AM4 socket. The CPU fits in only one correct orientation. **DO NOT** force the CPU into the socket to prevent bending the pins and damaging the CPU!

## Installing the CPU

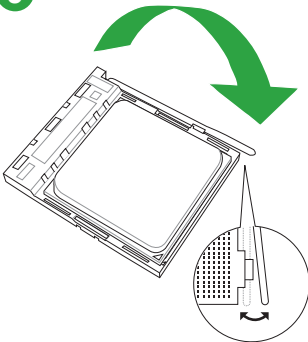
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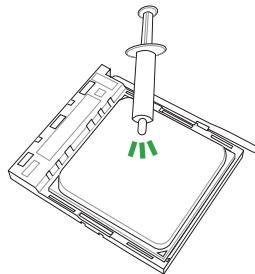
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3



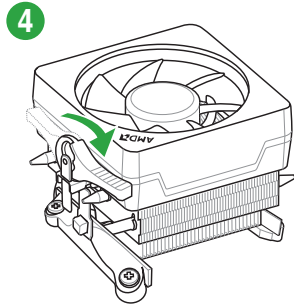
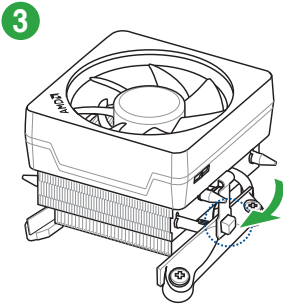
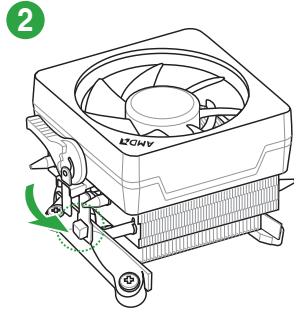
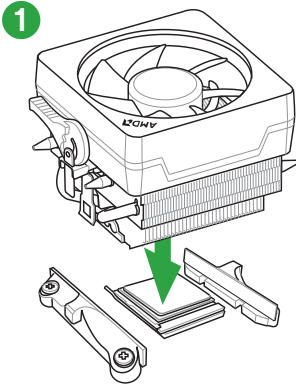
4



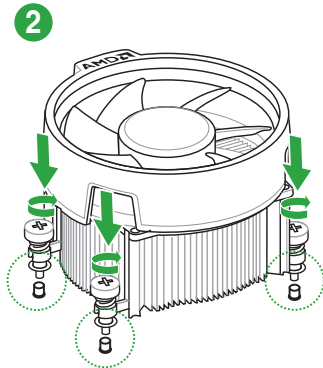
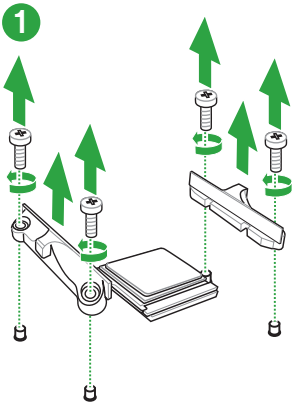
Apply the Thermal Interface Material to the CPU heatsink and CPU before you install the heatsink and fan if necessary.

# 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.



# System memory

## Overview

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



Channel	Socket
Channel A	DIMM_A1*
Channel B	DIMM_B1*

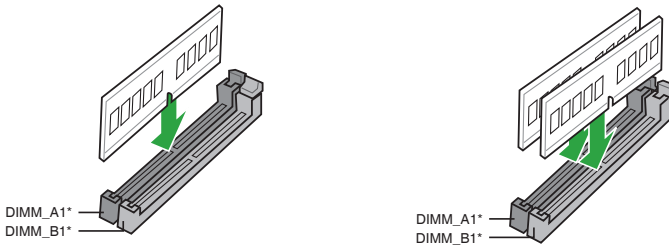


- You may install varying memory sizes in Channel A and Channel B. The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation.
- Always install DIMMs with the same CAS latency. 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.

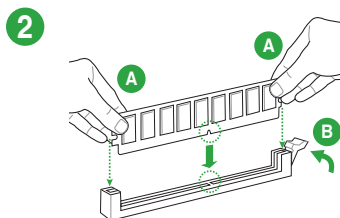
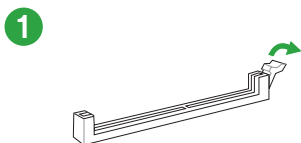


- For system stability, use a more efficient memory cooling system to support a full memory load (2 DIMMs).
- Refer to [www.asus.com](http://www.asus.com) for the latest Memory QVL (Qualified Vendors List).

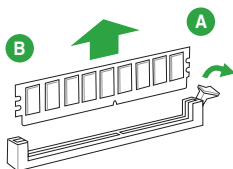
## Recommended memory configuration



## Installing a DIMM

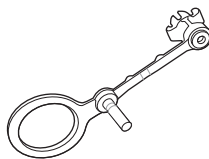


To remove a DIMM



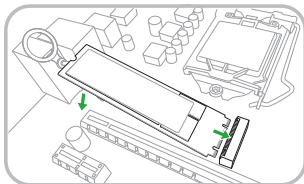
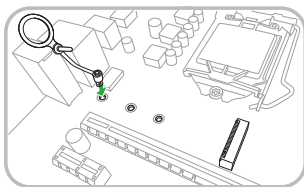
## M.2 Anchor Installation

The M.2 Anchor is a tool-less design to easily fasten and secure your M.2 SSD card to your motherboard without using extra tools.

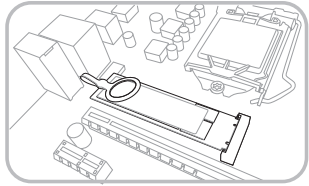
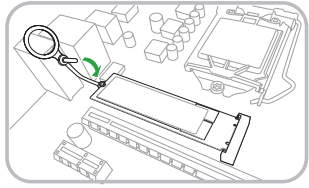


To install the M.2 SSD card using the M.2 Anchor:

1. Locate the M.2 mounting hole on your motherboard and firmly insert the M.2 Anchor into the hole.
2. Insert the M.2 SSD card into the M.2 slot. The notch at the end of the M.2 SSD card shall align with the rod of the M.2 Anchor.

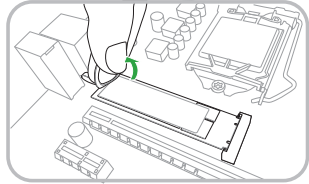


3. Firmly insert the pin on the M.2 Anchor into the hole on itself.



**To uninstall the M.2 SSD card:**

1. Pull up the ring on the M.2 Anchor until it is separated from the hole.
2. Remove the M.2 SSD card from the M.2 slot.



# BIOS information

# 2



- Scan the QR code to view the BIOS update guide.
- Before using the ASUS CrashFree BIOS 3 utility, rename the BIOS file in the removable device into **PB450MK.CAP**.



QR code

## BIOS setup program

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

### Entering BIOS Setup at startup

#### To enter BIOS Setup at startup:

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

### Entering BIOS Setup after POST

#### To enter BIOS Setup after POST:

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

Press the reset button on the system chassis.

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



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



- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the ASUS website at [www.asus.com](http://www.asus.com) to download the latest BIOS file for this motherboard.
- 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 **Motherboard overview** 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.

# 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>.



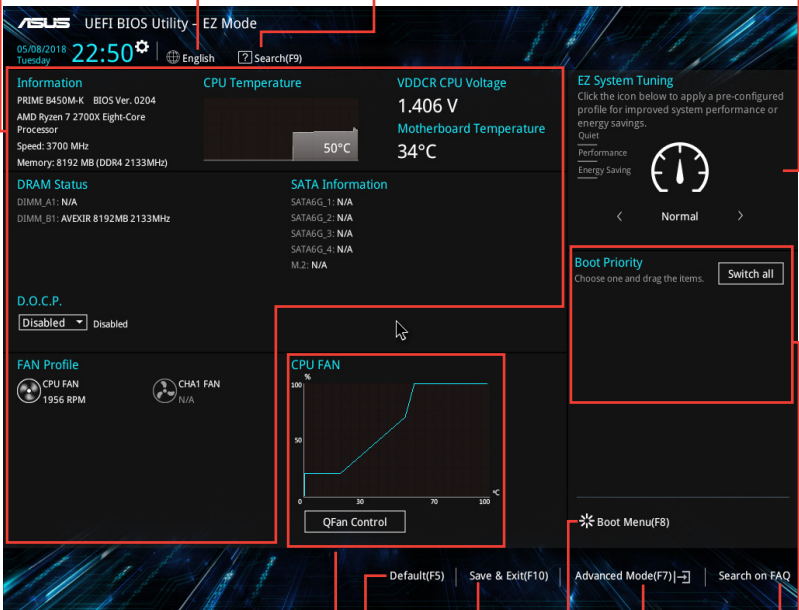
The default screen for entering the BIOS setup program can be changed.

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

Selects the display language of the BIOS setup program

Searches by BIOS item name, enter the item name to find the related item listing

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



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

Search on FAQ  
Selects the boot device priority



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

# 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 displays the ASUS UEFI BIOS Utility in Advanced Mode. The interface includes a menu bar at the top with options: My Favorites, Main, Ai Tweaker, Advanced, Monitor, Boot, Tool, and Exit. The current page is 'Ai Tweaker', which is divided into several sections: AI Overlock Tuner, Memory Frequency, Custom CPU Core Ratio, OC Tuner, Performance Bias, and VDDCR Voltage. The OC Tuner section is currently selected, showing options for 'Keep Current Settings' and 'OC Tuner'. A 'Hardware Monitor' panel on the right displays system metrics for CPU (Frequency: 3700 MHz, Temperature: 45°C, APU Freq: 100.0 MHz, Ratio: 37x, Core Voltage: 1.362 V), Memory (Frequency: 2133 MHz, Voltage: 1.200 V, Capacity: 16384 MB), and Voltage (+12V: 12.229 V, +5V: 4.986 V, +3.3V: 3.335 V). A 'General help' popup window is visible at the bottom left, providing information about the OC tuner. The bottom of the screen shows 'Last Modified', 'EzMode(F7) | ->', and 'Search on FAQ'. The footer includes 'Version 2.17.1246. Copyright © 2018 American Megatrend, Inc.'

Annotations in the image identify the following elements:

- Menu bar
- Language
- MyFavorite
- Q-Fan control
- Hot Keys
- Search
- Sub-menu items
- Menu items
- General help
- Configuration fields
- Popup window
- Last modified settings
- Scroll bar
- Goes back to EZ Mode
- Search on FAQ
- Display hardware monitoring data

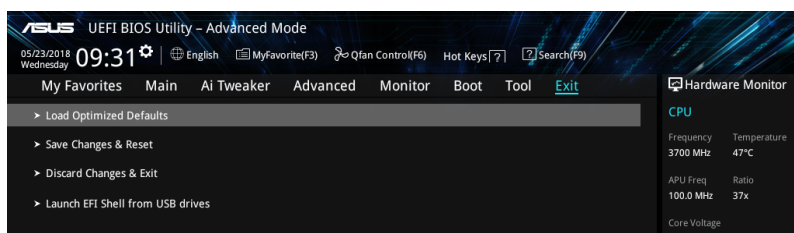
## Search on FAQ

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.



## 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.



### 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 & 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 (shelx64.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.

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CAN ICES-3(B)/NMB-3(B)

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CAN ICES-3(B)/NMB-3(B)

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VCCI-B

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## Regional notice for California



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Cancer and Reproductive Harm -  
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Online support <http://qr.asus.com/techserv>

### ASUS COMPUTER INTERNATIONAL (America)

Address 48720 Kato Rd., Fremont, CA 94538, USA  
Telephone +1-510-739-3777  
Fax +1-510-608-4555  
Web site <http://www.asus.com/us/>

#### **Technical Support**

Support fax +1-812-284-0883  
Telephone +1-812-282-2787  
Online support <http://qr.asus.com/techserv>

### ASUS COMPUTER GmbH (Germany and Austria)

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

#### **Technical Support**

Telephone +49-2102-5789555  
Support Fax +49-2102-959911  
Online support <http://qr.asus.com/techserv>

# FCC COMPLIANCE INFORMATION

Per FCC Part 2 Section 2.1077



**Responsible Party:** **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 B450M-K**

**compliance statement:**

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.

Ver. 180125