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PRIME B250M-PLUS

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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.

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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



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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></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.</enter>		
<key1> + <key2> + <key3></key3></key2></key1>	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+).		

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Check your motherboard package for the following items.

Motherboard	ASUS PRIME B250M-PLUS motherboard			
Cables	2 x Serial ATA 6.0 Gb/s cables			
Accessories	1 x I/O Shield, 2 x M.2 screws			
Application DVD	Support DVD			
Documentation	User Guide			

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

PRIME B250M-PLUS specifications summary

LGA1151 socket for Intel [®] 7th/6th Generation Core™ i7 / i5 / i3, Pentium [®] , an Celeron [®] processors Supports Intel [®] 14nm CPU	d				
Supports Intel® 14nm CPU					
CPU					
Supports Intel [®] Turbo Boost Technology 2.0*	Supports Intel [®] Turbo Boost Technology 2.0*				
* The Intel® Turbo Boost Technology 2.0 support depends on the CPU types.	* The Intel® Turbo Boost Technology 2.0 support depends on the CPU types.				
** Refer to <u>www.asus.com</u> for Intel [®] CPU support list.					
Chipset Intel [®] B250 Chipset					
4 x DIMMs, maximum 64GB, DDR4 2400*/2133**MHz, non-ECC, un-bufferer memory***	t				
Dual-channel memory architecture					
Supports Intel [®] Extreme Memory Profile (XMP)					
Memory * Due to Intel® chipset limitation, DDR4 2400MHz memory frequency is only suppor by 7th Generation Intel® processors. Higher memory modules will run at the maxi transfer rate of DDR4 2400MHz.	* Due to Intel [®] chipset limitation, DDR4 2400MHz memory frequency is only supported by 7th Generation Intel [®] processors. Higher memory modules will run at the maximum transfer rate of DDR4 2400MHz.				
** Due to Intel [®] chipset limitation, DDR4 2133MHz and higher memory modules on 6 Generation Intel [®] processors will run at the maximum transfer rate of DDR4 2133	** Due to Intel [®] chipset limitation, DDR4 2133MHz and higher memory modules on 6th Generation Intel [®] processors will run at the maximum transfer rate of DDR4 2133MHz.				
*** Refer to <u>www.asus.com</u> for the Memory QVL(Qualified Vendors List)					
1 x PCI Express 3.0/2.0 x16 slot (gray, at x16 mode)					
Expansion 1 x PCI Express 3.0/2.0 x16 slot (black, at x4 mode)	1 x PCI Express 3.0/2.0 x16 slot (black, at x4 mode)				
1 x PCI Express 3.0/2.0 x1 slot					
Multi-GPU Support Supports AMD [®] CrossFireX [™] Technology					
Integrated graphics processor - Intel [®] HD Graphics support					
Multi-VGA output support: HDMI/DVI-D/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					
Graphics - Supports D-Sub with maximum resolution of 1920 x 1200 @ 60Hz					
Support Intel [®] InTru™ 3D/Quick Sync Video/Clear Video HD Technology/ Insider™					
Support up to three displays simultaneously					
Maximum shared memory of 1024 MB (for iGPU exclusively)					

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PRIME B250M-PLUS specifications summary

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	Intel® B250 Chipset with Intel® Rapid Storage Technology 15 support:				
	 1 x M.2_1 Socket 3 with M Key, type 2242/2260/2280 storage devices support (both SATA and PCIe x2 mode)* 				
	- 1 x M.2 2 Socket 3 with M Key, type 2242/2260/2280 storage devices				
	support (IRST support, PCIe x4 mode)**				
	- 6 x SATA 6.0 Gb/s ports (gray)				
Storage	- Intel [®] Optane [™] Memory Ready***				
	* When a device in SATA mode is installed on the M.2_1 socket, SATA_1 port cannot				
	be used. ** Only M.2_2 socket can support Intel® Optane™ Memory.				
	*** Intel [®] Optane [™] Technology is only supported when using 7th Generation Intel [®]				
	processors. Before using Intel [®] Optane [™] memory modules, ensure that you have				
	updated your motherboard drivers and BIOS to the latest version from ASUS support website.				
	Intel® I219-V Gigabit LAN				
LAN	 Dual interconnection between the integrated Media Access Controller (MAC) 				
	and physical layer (PHY)				
	Realtek® ALC887 8-channel High Definition Audio CODEC				
	- LED-illuminated design: Brighten up your build with the gorgeous illuminated				
	audio trace path				
	 Audio Shielding: Ensures precision analog/digital separation and greatly reduced multi-lateral interference 				
Audio	 Dedicated audio PCB layers: Separate layers for left and right channels to 				
	guard the quality of the sensitive audio signals				
	- Premium Japanese audio capacitors: Provide warm, natural and immersive				
	sound with exceptional clarity and fidelity				
	- Supports Jack-Detection and Front Panel Jack-Retasking				
	Intel® B250 Chipset				
USB	 1 x 5Gb/s USB Type C port (at back panel) support 3A power output 5 x USB 3.0/2.0 ports (2 ports at mid-board; 3 ports at back panel, blue, 				
005	Type A)				
	- 6 x USB 2.0/1.1 ports (4 ports at mid-board; 2 ports at back panel)				
	ASUS 5X PROTECTION III				
	- 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 				
ASUS special	Superb Performance				
features	M.2 onboard				
	 The latest transfer technologies with up to 32Gb/s data transfer speeds 				
	ASUS Fan Xpert 2+				
	 Advanced fan controls for ultimate cooling and quietness 				
	ASUS EPU				
	- EPU				
	UEFI BIOS				
	Most advanced options with fast response time				
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PRIME B250M-PLUS specifications summary

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	Coming Seenerie			
	Gaming Scenario			
	Audio Features			
	 Audio that roars on the battlefield 			
	ASUS Exclusive Features			
	- ASUS AI Charger			
	- ASUS AI Suite 3			
ASUS special features	EZ DIY			
	UEFI BIOS EZ Mode			
	 Featuring friendly graphics user interface 			
	- ASUS CrashFree BIOS 3			
	- ASUS EZ Flash 3			
	Q-Design			
	- ASUS Q-DIMM - ASUS Q-Slot			
ASUS Quiet Thermal	Quiet Thermal Design - ASUS Fan Xpert 2+			
Solution	 Stylish Fanless Design: MOS Heat-sink and PCH Heat-sink solution 			
	1 x PS/2 keyboard/mouse combo port			
	1 x HDMI port			
	1 x DVI-D port			
Rear panel I/O	1 x D-Sub port 1 x LAN (RJ-45) port			
ports	1 x USB 5Gb/s Type C port			
	3 x USB 3.0/2.0 ports (blue, Type A) 2 x USB 2.0/1.1 ports			
	6-Jack 8-Channel Audio I/O ports			
	1 x USB 3.0/2.0 connector supports additional 2 USB ports (19-pin)			
	2 x USB 2.0/1.1 connectors support additional 4 USB ports			
	2 x M.2 Socket 3 (for M Key)			
	6 x SATA 6.0Gb/s connectors (gray)			
	1 x 4-pin CPU Fan connector for 4-pin (PWM mode) coolers control*			
	2 x 4-pin Chassis Fan connectors for both 3-pin (DC mode) and 4-pin (PWM			
Internal	mode) coolers control*			
connectors	1 x Front panel audio connector(AAFP)			
	1 x System panel connector			
	1 x S/PDIF out header			
	1 x 24-pin EATX Power connector			
	1 x 4-pin ATX 12V Power connector			
	1 x COM header 1 x Clear CMOS header			
BIOS	128Mb Flash ROM, UEFI AMI BIOS, PnP, DMI3.0, WfM2.0, SM BIOS 3.0, ACPI 6.0, Multi-language BIOS, ASUS EZ Flash 3, CrashFree BIOS 3, F6 Qfan			
8105	Control, F3 My Favorites, Last Modified log, F12 PrintScreen, and ASUS			
	DRAM SPD (Serial Presence Detect) memory information			

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PRIME B250M-PLUS specifications summary

Manageability	WfM 2.0, DMI 3.0, WOL by PME, PXE			
Support DVD	Drivers ASUS Utilities ASUS EZ Update Anti-virus software (OEM version)			
OS Support	Windows® 10 (64-bit only) Windows® 8.1 (64-bit only)* Windows® 7 (64-bit/32-bit)* * Windows® 8.1 64-bit and Windows® 7 32-bit/64-bit are only supported when using 6th Generation Intel® processors.			
Form Factor	uATX form factor: 9.6 in x 8.8 in (24.4 cm x 22.4 cm)			

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Specifications are subject to change without notice.

Product introduction

Motherboard overview

- 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.



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ASUS PRIME B250M-PLUS

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ATX power connectors (24-pin EATXPWR, 4-pin ATX12V)

Correctly orient the ATX power supply plugs into these connectors 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 ATX 12 V Specification 2.0 (or later version) and provides a minimum power of 350 W.
- 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 <u>http://support.asus.com/PowerSupplyCalculator/PSCalculator.aspx?SLanguage=en-us</u> for details.



Intel® LGA1151 CPU socket

Install Intel[®] LGA1151 CPU into this surface mount LGA1151 socket, which is designed for 7th/6th Generation Intel[®] Core[™] i7 / i5 / i3, Pentium[®], and Celeron[®] processors.

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



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.



DDR4 DIMM slots

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



For more details, refer to System memory.



USB 3.0 connectors (20-1 pin USB3_12)

Connect a USB 3.0 module to any this connector for additional USB 3.0 front or rear panel ports. This connector complies with USB 3.0 specifications and provide faster data transfer speeds of up to 5 Gbps, faster charging time for USBchargeable devices, optimized power efficiency, and backward compatibility with USB 2.0.

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Chapter 1: Product introduction



Intel® B250 Serial ATA 6.0Gb/s connectors (7-pin SATA6G_1~6)

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

Clear RTC RAM (2-pin CLRTC)

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.
- 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.

System panel connector (20-5 pin PANEL)

This connector supports several chassis-mounted functions.



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USB 2.0 connectors (10-1 pin USB910, USB1112)

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



Serial port connector (10-1 pin COM)

Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis.

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Digital audio connector (4-1 pin SPDIF_OUT)

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.







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 Audio]. 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 Audio].



PCI Express 3.0/2.0 x16 slots

This motherboard supports two PCI Express 3.0/2.0 x16 graphic cards that comply with the PCI Express specifications.

VCA configuration	PCI Express operating mode			
VGA configuration	PCle 3.0/2.0 x16_1 (gray)	PCle 3.0/2.0 x16_2		
Single VGA/PCle card	x16 (Recommended for single VGA card)	N/A		
Dual VGA/PCIe cards	x16	x4		

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- 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.



PCI Express 3.0/2.0 x1 slot

This motherboard has one PCI Express 3.0/2.0 x1 slots that support PCI Express x1 network cards, SCSI cards, and other cards that comply with the PCI Express specifications.



M.2 socket 3

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



- These M.2 sockets support M Key and 2242/2260/2280 storage devices.
- The M.2_1 socket supports data transfer speed up to 16Gb/s.
- The M.2_2 socket supports data transfer speed up to 32Gb/s.
- Only M.2_2 can support Intel[®] Optane[™] Memory. Intel[®] Optane[™] Technology is only supported when using 7th Generation Intel[®] processors. Before using Intel[®] Optane[™] memory modules, ensure that you have updated your motherboard drivers and BIOS to the latest version from ASUS support website.
- When a device in SATA mode is installed on the M.2_1 socket, SATA_1 port cannot be used.

IRQ assignments for this motherboard

	Α	В	С	D	E	F	G	н
HD Audio Controller	shared	-	-	-	-	-	-	-
XHCI	shared	-	_	-	_	-	_	-
SATA Controller	shared	-	-	-	-	-	_	-
LAN Controller	shared	_	-	_	-	-	-	-
PCIEx1	-	-	shared	-	-	-	-	-
PCIEx16_1	shared	-	-	-	-	-	-	-
PCIEx16_2	shared	-	-	-	-	-	-	-
M.2_1	shared	-	-	-	-	-	-	-
M.2_2	shared	-	_	-	_	-	_	-

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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

- PS/2 Mouse/Keyboard combo port. This port connects to a PS/2 mouse or PS/2 keyboard.
- Video Graphics Adapter (VGA) port. This 15-pin port is for a VGA monitor or other VGA-compatible devices.
- LAN (RJ-45) port. This port allows Gigabit connection to a Local Area Network (LAN) through a network hub.

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

LAN port LED indications

- 4. Center / Subwoofer port (orange). This port connects the center/subwoofer speakers.
- 5. Rear Speaker Out port (black). This port connects the rear speakers in a 4.1 channel, 5.1 channel, or 7.1 channel audio configuration.
- 6. Line In port (light blue). This port connects to the tape, CD, DVD player, or other audio sources.
- 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.
- Side Speaker Out port (gray). This port connects to the side speakers in a 7.1-channel audio configuration.

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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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Chapter 1: Product introduction

Port	Headset 2.1 channel	4.1 channel	5.1 channel	7.1 channel	
Light Blue	Line In	Line in	Line in	Line in	
Lime	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out	
Pink	Mic In	Mic In	Mic in	Mic in	
Orange	-	-	Center/Subwoofer	Center/Subwoofer	
Black	-	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out	
Gray	-	-	-	Side Speaker Out	

 USB 3.0 ports (blue, Type A). These 9-pin Universal Serial Bus (USB) ports are for USB 3.0 devices.



- USB 3.0 devices can only be used for data storage.
- We strongly recommend that you connect USB 3.0 devices to USB 3.0 ports for faster and better performance from your USB 3.0 devices.
- Due to the design of the Intel[®] 200 series chipset, all USB devices connected to the USB 2.0 and USB 3.0 ports are controlled by the xHCI controller. Some legacy USB devices must update their firmware for better compatibility.
- 11. USB 5Gb/s Type C port. This 24-pin Universal Serial Bus (USB) port is for USB (Type C) devices.
- 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.
- 13. 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.

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

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Central Processing Unit (CPU)

This motherboard comes with a surface mount LGA1151 socket designed for the 7th/6th Generation Intel[®] Core[™] i7 / Core[™] i5 / Core[™] i3, Pentium[®] and Celeron[®] processors.



Unplug all power cables before installing the CPU.

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

Installing the CPU

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

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Chapter 1: Product introduction



Overview

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



- 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.
- According to Intel[®] CPU spec, DIMM voltage below 1.4V is recommended to protect the CPU.
- Due to Intel[®] chipset limitation, DDR4 2400MHz memory frequency is only supported by 7th Generation Intel[®] processors. Higher memory modules will run at the maximum transfer rate of DDR4 2400MHz.
- Due to Intel[®] chipset limitation, DDR4 2133MHz and higher memory modules on 6th Generation Intel[®] processors will run at the maximum transfer rate of DDR4 2133MHz.
- Due to the memory address limitation on 32-bit Windows[®] OS, when you install 4GB or more memory on the motherboard, the actual usable memory for the OS can be about 3GB or less. For effective use of memory, we recommend that you do any of the following:
 - Use a maximum of 3GB system memory if you are using a 32-bit Windows® OS.
 - Install a 64-bit Windows[®] OS if you want to install 4GB or more on the motherboard.
 - For more details, refer to the Microsoft[®] support site at <u>http://support.microsoft.com/kb/929605/en-us</u>.
- Memory modules with memory frequency higher than 2133/2400 MHz and its corresponding timing or the loaded X.M.P. Profile is not the JEDEC memory standard. The stability and compatibility of these memory modules depend on the CPU's capabilities and other installed devices.



- The default memory operation frequency is dependent on its Serial Presence Detect (SPD), which is the standard way of accessing information from a memory module. Under the default state, some memory modules for overclocking may operate at a lower frequency than the vendor-marked value.
- For system stability, use a more efficient memory cooling system to support a full memory load (4 DIMMs).
- Refer to <u>www.asus.com</u> for the latest Memory QVL (Qualified Vendors List)

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Installing a DIMM



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To remove a DIMM

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Chapter 1: Product introduction

BIOS information





- 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 B250MP.CAP.



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.



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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 <u>www.asus.com</u> 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.

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ASUS PRIME B250M-PLUS



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 under the **Boot** menu for details.



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

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Chapter 2: Getting started



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>.

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—Menu bar Langua	MyFavorite	Q-Fa	n control Hot Ke	ys	
09/30/2016 10:02 [¢]	Utility - Advanced Moo		? Hot Keys		
,	le Frequency : 3800MHz cy : 2133MHz	Advanced Monitor	Boot Tool	Exit	Hardware Monitor Hardware Monitor CPU Frequency Temperature 3800 MHz 48*C
Target CPU Graphics Fi CPU Core Ratio DRAM Odd Ratio Mode			Auto Enabled	· ·	BCLK Core Voltage 100.0 MHz 1.200 V Ratio 38x
DRAM Frequency EPU Power Saving Mod ASUS System Mode	ie		Auto Disabled Standard mode	· · ·	Memory Frequency Voltage 2133 MHz 1.200 V Capacity
CPU SVID Support DRAM Timing Control DIGI+ VRM			Auto Auto Disabled Enabled		8192 MB Voltage *12V +5V 12.096 V 5.160 V
 Internal CPU Power M Disable this item to prevent for overclocking. 		ng with the external volta _f e regu	lator. A setting of Disabl	ed is recommended	*3.3V 3.344 V
	Version 2.	7.1246. Copyright (C) 2016 A	meric in Megatrends, I	At the second second	
Sub-menu item	General help Config fields	Pop-up window uration	Scroll bar Goes ba	Last modified settings ick to EZ Mod	FAQ

Displays the CPU temperature, CPU and memory voltage output ۲

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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 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.

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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.



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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.

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.

Cet appareil est conforme aux normes CNR exemptes de licence d'Industrie Canada. Le fonctionnement est soumis aux deux conditions suivantes :

(1) cet appareil ne doit pas provoquer d'interférences et

(2) cet appareil doit accepter toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité de l'appareil.

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ASUS PRIME B250M-PLUS

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

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

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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.

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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 1999/5/EC. 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 лиректив Полробную 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 sukladan s bitnim zahtjevima i ostalim odgovarajućim odredbama vezanih direktiva. Cijeli tekst EU izjave o sukladnosti 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

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Eesti Käesolevaga kinnitab ASUSTeK Computer Inc, et see seade vastab asjakohaste direktiivide oluliste nõuetele ja teistele asjassepuutuvatele 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 olennaisten vaatimusten ja muiden tätä koskevien säädösten mukainen. EU-yhdenmukaisuusilmoituksen koko teksti on luettavissa osoitteessa: www.asus.com/support

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

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Latviski ASUSTeK Computer Inc. ar šo paziņo, ka šī ierīce atbilst saistīto Direktīvu būtiskajām prasībām un citiem citiem saistošajiem nosacījumiem Pilns ES atbilstibas 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

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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

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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 ostatým 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 новним 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 Yönergelerin diğer ilgili koşullarıyla uyumlu olduğunu beyan eder. AB uygunluk bildiriminin tam metni şu adreste bulunabilir: www.asus.com/support

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ASUS PRIME B250M-PLUS

ASUS contact information

ASUSTeK COMPUTER INC.

Address Telephone Fax Web site 4F, No. 150, Li-Te Road, Peitou, Taipei 112, Taiwan +886-2-2894-3447 +886-2-2890-7798 www.asus.com

Technical Support

Telephone Fax Online support +86-21-38429911 +86-21-5866-8722, ext. 9101# http://qr.asus.com/techserv

ASUS COMPUTER INTERNATIONAL (America)

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

Technical Support

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

ASUS COMPUTER GmbH (Germany and Austria)

Address Fax Web site Online contact

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Harkort Str. 21-23, 40880 Ratingen, Germany +49-2102-959931 http://www.asus.com/de http://eu-rma.asus.com/sales

Technical Support

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

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Appendices

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 produ	ct			
Product Name :	Motherboard			
Model Number	PRIME B250M-PLUS			
Conforms to the following spe	cifications:			
➢ FCC Part 15, St	ubpart B, Unintentional Radiators			
Supplementary Information				
following two conditions:	bart 15 of the FCC Rules. Operation is subject to the 1) This device may not cause harmful interference, sept any interference received, including interference beration.			
Representative Person's N	ame : <u>Steve Chang / President</u>			
Signa	Steve Chang			
Ι	Date : Nov. 11, 2016			
	Ver. 140331			

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ASUS PRIME B250M-PLUS

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