PRIME B365-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.

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></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 (4)

Package contents

Check your motherboard package for the following items.

Motherboard	ASUS PRIME B365-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	



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

PRIME B365-PLUS specifications summary

CPU	LGA1151 socket for 9th / 8th Generation Intel® Core™. Pentium® Gold. and		
CFU	Celeron® processors*		
	Supports 14nm CPU		
	Supports Intel® Turbo Boost Technology 2.0**		
	* Refer to www.asus.com for Intel® CPU support list.		
	** Intel [®] Turbo Boost Technology 2.0 support depends on the CPU types.		
Chipset	Intel® B365 Chipset		
Memory	4 x DIMM, maximum 64 GB, DDR4 2666/ 2400/ 2133MHz, non-ECC, un- buffered memory		
	Dual-channel memory architecture		
	Supports Intel® Extreme Memory Profile (XMP)		
	* The maximum memory frequency supported varies by processor.		
	** DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel® 8th Generation 6-core or higher processors.		
	*** Refer to <u>www.asus.com</u> for the latest Memory QVL (Qualified Vendors List).		
Expansion slots	1 x PCI Express 3.0/2.0 x16 slot (at x16 mode)		
	1 x PCI Express 3.0/2.0 x16 slot (max. at x4 mode)		
	4 x PCI Express 3.0/2.0 x1 slots		
Multi-GPU support	Supports AMD® 2-Way CrossFireX™ Technology		
Graphics	Integrated graphics processor - Intel® UHD Graphics support		
	Multi-VGA output support: HDMI, DVI-D, and D-sub ports		
	- Supports HDMI 1.4b with max. resolution of 4096 x 2160@24Hz		
	- Supports DVI-D with max. resolution of 1920 x 1200@60Hz		
	- Supports D-sub with max. resolution of 1920 x 1200@60Hz		
	Supports Intel® InTru™ 3D/Quick Sync Video/Clear Video HD Technology/ Insider™		
LAN	Realtek® 8111H, 1 x Gigabit LAN controller		
	ASUS LANGuard		

(continued on the next page)

PRIME B365-PLUS specifications summary

Storage	Intal® B265 Chinact with BAID 0.1.5.10 and Intal Banid	
Storage	Intel® B365 Chipset with RAID 0, 1, 5, 10 and Intel Rapid Storage Technology support	
	 1 x M.2_1 Socket 3 with M Key, type 2242/2260/2280 storage devices support (both SATA mode & PCIe x2 modes)* 	
	- 1 x M.2_2 Socket 3 with M Key, type 2242/2260/2280/22110 storage devices support (PCIe x4 mode)	
	- 6 x SATA 6.0 Gb/s ports	
	- Intel [®] Optane™ Memory Ready	
	* When a device in SATA mode is installed on the M.2_1 socket, SATA_2 port cannot be used. Adjust the BIOS settings to use a SATA device.	
Audio	Realtek® ALC887 8-channel* high definition audio CODEC	
	 Audio Shielding: Ensures precision analog/digital separation and greatly reduces multi-lateral interference 	
	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	
	* Use a chassis with HD audio module in the front panel to support an 8-channel audio output.	
USB	Intel® B365 Chipset:	
	 8 x USB 3.1 Gen 1 (up to 5Gbps) ports (4 ports at mid-board; 4 ports at the back panel) 	
	- 6 x USB 2.0/1.1 ports (4 ports at mid-board; 2 ports at the back panel)	
ASUS unique features	ASUS 5X PROTECTION III ASUS SafeSlot Core: Fortified PCle with solid soldering ASUS ESD Guard: Enhanced ESD protection ASUS Overvoltage Protection: World-class circuit-protecting power design ASUS Stainless-Steel Back I/O: 3X corrosion-resistance for greater durability! ASUS DIGI+ VRM power design	
	AURA	
	- Aura Sync - Aura RGB Headers	
	ASUS EPU - EPU	
	ASUS Quiet Thermal Solution - ASUS Fan Xpert 2+ - Stylish Fanless Design: Heat-sink solution & MOS Heatsink	
	ASUS Exclusive Features - ASUS Ai Charger - ASUS AI Suite 3	
	ASUS EZ DIY - ASUS UEFI BIOS EZ Mode - ASUS CrashFree BIOS 3 - ASUS EZ Flash 3	

(continued on the next page)

PRIME B365-PLUS specifications summary

A CUI C		
ASUS unique features	ASUS Q-Design	
reatures	- ASUS Q-DIMM	
	- ASUS Q-Slot	
	- ASUS Q-LED (CPU, DRAM, VGA, Boot Device LED)	
Back panel I/O	1 x PS/2 keyboard/mouse combo port	
ports	1 x HDMI port	
	1 x DVI-D port	
	1 x D-sub port	
	1 x LAN (RJ-45) port	
	4 x USB 3.1 Gen 1 (up to 5Gbps) Type A ports (blue)	
	2 x USB 2.0/1.1 ports	
	3-Jack 8-Channel Audio I/O ports	
Internal I/O connectors	2 x USB 3.1 Gen 1 (up to 5Gbps) connector supports additional 4 USB ports (19-pin)	
	2 x USB 2.0 connectors support additional 4 USB ports	
	1 x M.2_1 Socket 3 (for M Key, type 2242/2260/2280 devices)	
	1 x M.2 2 Socket 3 (for M Key, type 2242/2260/2280/22110 devices)	
	6 x SATA 6.0 Gb/s connectors (gray)	
	2 x RGB headers	
	1 x 4-pin CPU Fan connector (support DC/PWM modes)	
	3 x 4-pin Chassis Fan connectors for 3-pin (DC mode) and 4-pin (PWM mode)	
	coolers control	
	1 x Front panel audio connector (AAFP)	
	1 x S/PDIF out header	
	1 x System panel connector*	
	1 x 24-pin EATX power connector	
	1 x 8-pin EATX 12V power connector	
	1 x TPM connector	
	1 x COM connector	
	1 x Clear CMOS jumper	
	1 x Mono out header	
	* Chassis intrusion header is built in the system panel connector.	
BIOS features	128 Mb Flash ROM, UEFI AMI BIOS, PnP, SM BIOS 3.1, ACPI 6.1, Multi- language BIOS, ASUS EZ Flash 3, CrashFree BIOS 3, F11 EZ Tuning Wizard,	
	F6 Qfan Control, F3 My Favorites, Last Modified log, F12 PrintScreen, and ASUS DRAM SPD (Serial Presence Detect) memory information	
Manageability	WfM 2.0, DMI 3.0, WOL by PME, PXE	
Support DVD	Drivers	
	ASUS utilities	
	ASUS EZ Update	
	Anti-virus software (OEM version)	
Operating system support	Windows® 10 (64-bit)	
Form factor	ATX form factor: 12.0 in. x 8.7 in. (30.5 cm x 22.1 cm)	



Specifications are subject to change without notice.

Product introduction



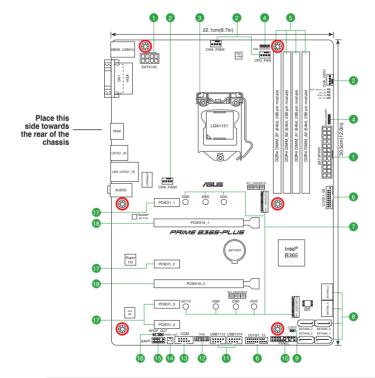
1.1 Before you proceed

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.

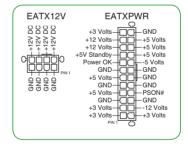
1.2.1 Layout contents

Con	nectors/Jumpers/Slots/LED	Page
1.	ATX power connectors (24-pin EATXPWR, 8-pin EATX12V)	1-2
2.	CPU and chassis fan connectors (4-pin CPU_FAN, 4-pin CHA_FAN1~3)	1-3
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ATX power connectors (24-pin EATXPWR, 8-pin EATX12V)

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. 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.

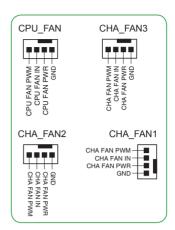


CPU and chassis fan connectors (4-pin CPU FAN, 4-pin CHA FAN1~3)

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.





Intel® LGA1151 CPU socket

Install Intel® LGA1151 CPU into this surface mount LGA1151 socket, which is designed for 9th / 8th Generation Intel® Core™, Pentium® Gold, and Celeron® processors.



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



RGB headers (4-pin RGB HEADER1, RGB HEADER2)

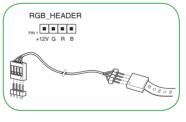
These headers are for RGB LED strips.



The RGB header supports 5050 RGB multi-color LED strips (12V/G/R/B), with a maximum power rating of 3A (12V), and no longer than 3m.



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.



- Actual lighting and color will vary with LED strip.
- If your LED strip does not light up, check if the RGB LED extension cable and the RGB LED strip is connected in the correct orientation, and the 12V connector is aligned with the 12V header on the motherboard.
- The LED strip will only light up when the system is operating.
- The LED strips are purchased separately.



DDR4 DIMM slots

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

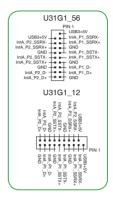


For more details, refer to System memory.



USB 3.1 Gen 1 (up to 5Gbps) connectors (20-1 pin U31G1 12, U31G1 56)

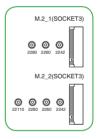
Connect a USB 3.1 Gen 1 module to any of these connectors for additional USB 3.1 Gen 1 front or rear panel ports. These connectors comply with USB 3.1 Gen 1 specifications and provide faster data transfer speeds of up to 5 Gbps, faster charging time for USB-chargeable devices, optimized power efficiency, and backward compatibility with USB 2.0.





M.2 socket 3

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





- The M.2_1 socket supports M Key and type 2242/2260/2280 storage devices.
- The M.2_2 socket supports M Key and type 2242/2260/2280/22110 storage devices.
- Both sockets can support Intel[®] Optane[™] Memory.
- 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 the M.2_1 socket can support SATA mode storage devices. When a device in SATA mode is installed on the M.2_1 socket, SATA_2 is disabled.



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.
- 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 < 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.

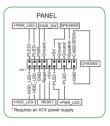


System panel connector (20-3 pin F_PANEL)

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. Pressing the power button turns the system on or puts the system in sleep or soft-off mode depending on the operating system settings. Pressing the power switch for more than four seconds while the system is ON turns the system OFF.

Reset button (2-pin RESET)

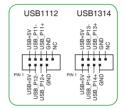
This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.

Chassis intrusion header (2-pin CHASSIS)

This connector is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or switch cable to this connector. The chassis intrusion sensor or switch sends a high-level signal to this connector when a chassis component is removed or replaced. The signal is then generated as a chassis intrusion event.

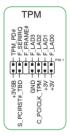
USB 2.0 connectors (10-1 pin USB1112, USB1314)

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.



TPM connector (14-1 pin TPM)

This connector supports a Trusted Platform Module (TPM) system, which can securely store keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protects digital identities, and ensures platform integrity.



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.



14

Mono out header (2-pin MONO OUT)

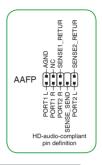
This internal mono out header allows connection to an internal, low power speaker for basic system sound capability. The subsystem is capable of driving a speaker load of 4 Ohms at 2 Watts (rms).





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 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].
 By default, this connector is set to [HD Audio].



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.





PCI Express 3.0/2.0 x1 slots

This motherboard has two 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.



PCI Express 3.0/2.0 x16 slots

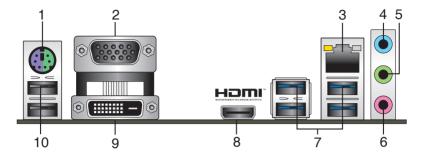
This motherboard supports two PCI Express 3.0/2.0 x16 graphic cards that comply with the PCI Express specifications.

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



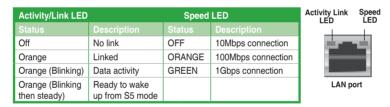
- In single VGA card mode, use the PCIe 3.0 x16_1 slot (gray) for a PCI Express x16 graphics card to get better performance.
- We recommend that you provide sufficient power when running CrossFireX™ mode.
- Connect a chassis fan to the motherboard connector labeled CHA_FAN1/2/3 when using multiple graphics cards for better thermal environment.

1.2.2 Rear panel connectors



- 1. PS/2 keyboard/mouse combo port. This port is for a PS/2 mouse or 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. Refer to the table below for the LAN port LED indications.

LAN port LED indications



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



Refer to the audio configuration table on the next page 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 par	nel)	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink (Rear par	nel)	Mic In	Mic In	Bass/Center	Bass/Center
Lime (Front pa	nel)	_	_	_	Side Speaker Out



To configure a 7.1-channel audio output:

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

7. 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



- USB 3.1 Gen 1 devices can only be used for data storage.
- Due to the design of the Intel® 300 series chipset, all USB devices connected to the USB 2.0 and USB 3.1 Gen 1 ports are controlled by the xHCl controller. Some legacy USB devices must update their firmware for better compatibility.
- We strongly recommend that you connect USB 3.1 Gen 1 devices to USB 3.1 Gen 1 ports for faster and better performance from your USB 3.1 Gen 1 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.
- 9. **DVI-D port.** This port is for any DVI-D compatible device.



1-9

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)

This motherboard comes with a surface mount LGA1151 socket designed for the 9th / 8th Generation Intel® Core™, Pentium® Gold, and Celeron® processors.

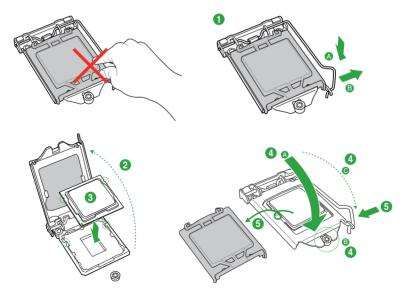


Unplug all power cables before installing the CPU.



- 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





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

1.4 System memory

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

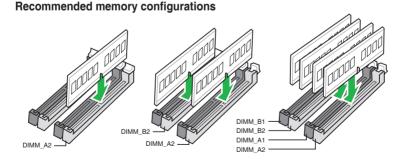


- You may install varying memory sizes in Channel A and Channel B. The system
 maps the total size of the lower-sized channel for the dual-channel configuration. Any
 excess memory from the higher-sized channel is then mapped for single-channel
 operation.
- Always install DIMMs with the same CAS latency. 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.
- DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel® 8th Generation 6-core or higher processors.
- Memory modules with memory frequency higher than 2133 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.

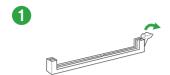


1-11

- 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 www.asus.com for the latest Memory QVL (Qualified Vendors List)

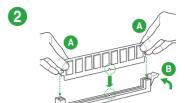


Installing a DIMM









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 Al 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. See section 2.3 Exit Menu for details.
- Check your Internet connection before updating the BIOS via the Internet.



To update the BIOS using EZ Flash 3:

- 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 Device.
- b) Press <Tab> to switch to the **Drive** field.
- 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.
- 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 PB365PS.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.
- Insert the support DVD to the optical drive or the USB flash drive that contains the BIOS file to the USB port.
- The utility automatically checks the devices for the BIOS file. When found, the utility reads the BIOS file and enters ASUS EZ Flash 3 utility automatically.
- 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.
- When the select boot device screen appears, insert the Support DVD into the optical drive then select the optical drive as the boot device.
- When the booting message appears, press <Enter> within five (5) seconds to enter FreeDOS prompt.
- 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:

- On the FreeDOS prompt, type bupdater /g and press <Enter>.
- On the BIOS Updater screen, press <Tab> to switch from Files panel to Drives panel then select D:.



- 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>.
- 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 Press any key to reboot the system to automatically launch EZ Flash 3. Wait until the BIOS update is completed.



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

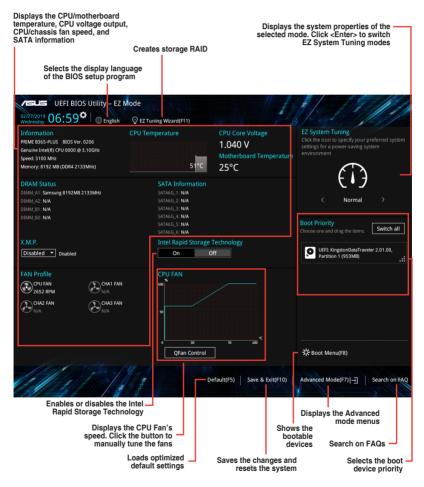
The BIOS setup program can be used under two modes: **EZ Mode** and **Advanced Mode**. You can change modes from the **Exit** menu or from the Exit/Advanced Mode button in the EZ Mode/Advanced Mode screen.

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 and boot device priority. To access the Advanced Mode, click **Advanced Mode** or press <**F7**> for the advanced BIOS settings.



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





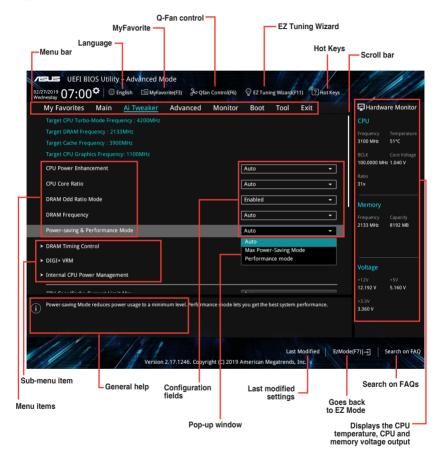
The boot device options vary depending on the devices you installed to the system.

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 EZ Mode(F7) or press <F7>.



Menu har

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.

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.

EZ Tuning Wizard (F11)

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

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.

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.



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.

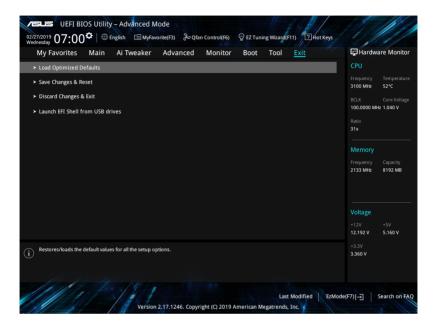
A configurable field is highlighted when selected. To change the value of a field, select it and press <Enter> to display a list of options.

Last Modified button

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

2.3 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

FCC Compliance Information

Responsible Party: Asus Computer International

Address: 48720 Kato Rd., Fremont, CA 94538, USA

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

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.

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 the 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 into 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.

Compliance Statement of Innovation, Science and Economic Development Canada (ISED)

This device complies with Innovation, Science and Economic Development Canada licence 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.

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

Déclaration de conformité de Innovation, Sciences et Développement économique Canada (ISED)

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

VCCI: Japan Compliance Statement

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取扱説明書に従って正しい取り扱いをして下さい。

VCCI-B

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Appendix A-2

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

Cancer and Reproductive Harm - www.P65Warnings.ca.gov

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Slovensky Społočnosť 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 ie 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/suoport

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 из: <u>www.asus.com/support</u>

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

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

Appendix A-4

ASUS contact information

ASUSTEK COMPUTER INC.

Address 4F, No. 150, Li-Te Road, Peitou, Taipei 112, Taiwan

Telephone +886-2-2894-3447 Fax +886-2-2890-7798 Web site www.asus.com

Technical Support

Telephone +86-21-38429911

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