

**TUF H310-PLUS
GAMING**



Motherboard

E13853
First Edition
January 2018

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Safety information

Electrical safety

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

Operation safety

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

About this guide

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

How this guide is organized

This guide contains the following parts:

- **Chapter 1: Product introduction**
This chapter describes the features of the motherboard and the new technology it supports. It includes descriptions of the switches, jumpers, and connectors on the motherboard.
- **Chapter 2: BIOS information**
This chapter discusses changing system settings through the BIOS Setup menus. Detailed descriptions for the BIOS parameters are also provided.

Where to find more information

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

1. ASUS websites

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

2. Optional documentation

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

Conventions used in this guide

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



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



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



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



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

Typography

Bold text

Indicates a menu or an item to select.

Italics

Used to emphasize a word or a phrase.

<Key>

Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key.

Example: <Enter> means that you must press the Enter or Return key.

<Key1> + <Key2> + <Key3>

If you must press two or more keys simultaneously, the key names are linked with a plus sign (+).

Package contents

Check your motherboard package for the following items.

Motherboard	ASUS TUF H310-PLUS GAMING motherboard
Cables	2 x Serial ATA 6.0 Gb/s cables 1 x I/O Shield
Accessories	1 x M.2 Screw package 1 x TUF Sticker
Application DVD	Support DVD
Documentation	User Guide 1 x TUF Certification card



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

TUF H310-PLUS GAMING specifications summary

CPU	LGA1151 socket for 8th Generation Intel® Core™ i7 / i5 / i3 / Pentium® and Celeron® processors Supports Intel® 14nm CPU Supports Intel® Turbo Boost Technology 2.0* * The Intel® Turbo Boost Technology 2.0 support depends on the CPU types. ** Refer to www.asus.com for Intel® CPU support list.
Chipset	Intel® H310 Chipset
Memory	2 x DIMMs, maximum 32GB, DDR4 2666 / 2400 / 2133MHz Non-ECC, unbuffered memory modules 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 Gen. 6-core or higher processors. *** Refer to www.asus.com for the latest Memory QVL (Qualified Vendors List).
Graphics	Integrated graphics processor - Intel® HD Graphics support Multi-VGA output support: HDMI / D-Sub ports - Supports HDMI 1.4b with maximum resolution of 4096 x 2160 @ 24Hz / 2560 x 1600 @ 60Hz - Supports D-Sub with maximum resolution of 1920 x 1200 @ 60Hz Maximum shared memory of 1024 MB
Expansion slots	1 x PCI Express 3.0 / 2.0 x16 slot (at x16 mode) 2 x PCI Express 2.0 x1 slots 3 x PCI slots
Storage	Intel® H310 Chipset - 1 x M.2 Socket 3 with M key, type 2242 / 2260 / 2280 storage devices support (both SATA & PCIe x 2 mode)* - 4 x Serial ATA 6.0 Gb/s ports (gray) * When a device in SATA mode is installed on the M.2 socket, SATA_2 port can not be used.
LAN	Intel® I219-V Gigabit LAN

(continued on the next page)

TUF H310-PLUS GAMING specifications summary

USB	Intel® H310 Chipset <ul style="list-style-type: none"> - 4 x USB 3.1 Gen1 (up to 5Gb/s) ports (2 ports at mid-board, 2 ports at the rear panel, blue, Type A) - 6 x USB 2.0 / 1.1 ports (4 ports at mid-board, 2 ports at the rear panel)
Audio	Realtek® ALC887 8-channel* High Definition Audio CODEC <ul style="list-style-type: none"> - Audio shielding - Ensures precision analog/digital separation and greatly reduced 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 <p>* Use a chassis with HD audio module in the front panel to support an 8-channel audio output.</p>
ASUS unique features	<p>ASUS TUF Protection</p> <ul style="list-style-type: none"> - ASUS SafeSlot - Protects your graphics card investment - ASUS ESD Guard - Enhanced ESD protection - ASUS Overvoltage Protection: World-class circuit-protecting power design - ASUS DIGI+ VRM - 5 Phase digital power design - ASUS Stainless-Steel Back I/O - 3X corrosion-resistance for greater durability <p>Superb Performance</p> <p>ASUS OptiMem</p> <ul style="list-style-type: none"> - Improved DDR4 stability <p>M.2 onboard</p> <ul style="list-style-type: none"> - The latest transfer technologies with up to 10Gb/s data transfer speeds <p>ASUS Fan Xpert 2+</p> <ul style="list-style-type: none"> - Ultimate cooling and quietness <p>ASUS EPU</p> <ul style="list-style-type: none"> - EPU <p>UEFI BIOS</p> <ul style="list-style-type: none"> - The most advanced options with a fast response time <p>Gaming Scenario</p> <p>Audio Features</p> <ul style="list-style-type: none"> - Audio that roars on the battlefield <p>Aura</p> <ul style="list-style-type: none"> - Brighten up your build <p>ASUS Exclusive Features:</p> <ul style="list-style-type: none"> - ASUS AI Charger - ASUS AI Suite 3 - ASUS File Transfer - ASUS PC Cleaner

(continued on the next page)

TUF H310-PLUS GAMING specifications summary

ASUS unique features	EZ DIY UEFI BIOS EZ Mode <ul style="list-style-type: none"> - Featuring a friendly graphics user interface - ASUS CrashFree BIOS 3 - ASUS EZ Flash 3 Q-Design <ul style="list-style-type: none"> - ASUS Q-DIMM - ASUS Q-Slot
ASUS Quiet Thermal Solution	Quiet Thermal Design <ul style="list-style-type: none"> - ASUS Fan Xpert 2+ - Stylish Fanless Design: PCH Heat-sink & MOS Heat-sink
Back Panel I/O ports	1 x PS/2 keyboard / mouse combo port 1 x COM port 1 x D-Sub port 1 x HDMI port 2 x USB 3.1 Gen 1 (up to 5Gb/s) ports (blue, Type A) 2 x USB 2.0 / 1.1 ports 1 x LAN (RJ-45) port 3 x Jack 8-Channel Audio I/O ports
Internal I/O connectors	1 x USB 3.1 Gen 1 (up to 5Gbps) connectors support additional 2 USB ports (19-pin) 2 x USB 2.0 / 1.1 connectors support additional 4 USB ports 4 x SATA 6.0Gb/s connectors (gray) 1 x M.2 Socket 3 for M Key, type 2242 / 2260 / 2280 storage devices support (SATA mode & PCIE x2 mode) 1 x 4-pin CPU Fan connector for 4-pin (PWM mode) coolers control 2 x 4-pin Chassis Fan connectors for 3-pin (DC mode) and 4-pin (PWM mode) coolers control 1 x RGB header 1 x Front panel audio connector (AAFP) 1 x S/PDIF Out connector 1 x 24-pin EATX power connector 1 x 8-pin EATX 12V power connector 1 x System panel connector (20-5 pin)
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, F6 Qfan Control, F3 My Favorites, Last Modified log, F12 PrintScreen, and ASUS DRAM SPD (Serial Presence Detect) memory information
Manageability	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 in x 7.9 in (30.5cm x 20cm)



Specifications are subject to change without notice.

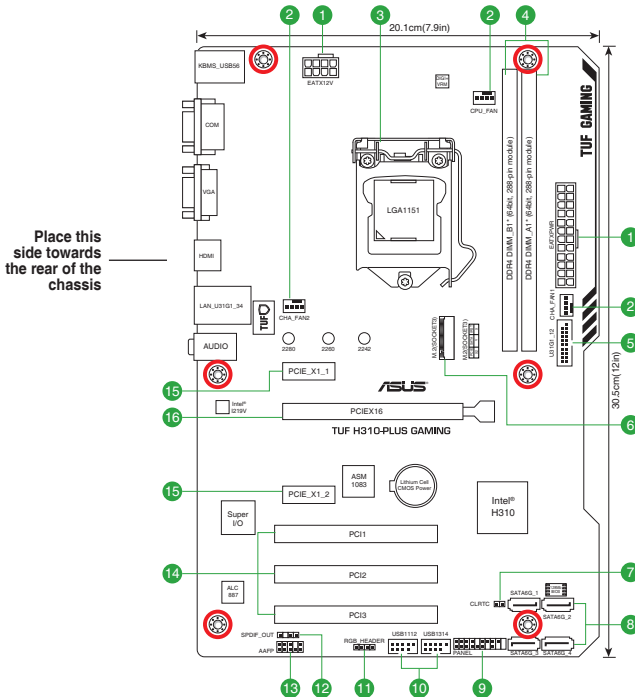
Product introduction

1

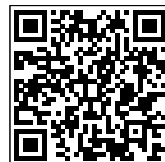
Motherboard overview



- 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.



Scan the QR code to get the detailed pin definitions.



1

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.
- If you are uncertain about the minimum power supply requirement for your system, refer to the Recommended Power Supply Wattage Calculator at <http://support.asus.com/PowerSupplyCalculator/PSCalculator.aspx?SLanguage=en-us> for details.

2

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

Connect the fan cables to the fan connectors on the motherboard, ensuring that the black wire of each cable matches the ground pin of the connector.



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

3

Intel® LGA1151 CPU socket

Install Intel® LGA1151 CPU into this surface mount LGA1151 socket, which is designed for 8th Generation Intel® Core™ i7 / i5 / i3, Pentium®, and Celeron® processors.



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

4

DDR4 DIMM slots

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



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

5**USB 3.1 Gen 1 (up to 5Gb/s) connector (20- 1pin U31G1_12)**

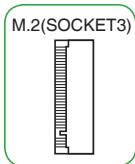
Connect a USB 3.1 Gen 1 module to this connector for additional USB 3.1 Gen 1 front or rear panel ports. This connector complies with USB 3.1 Gen 1 specifications and provides faster data transfer speeds of up to 5 Gbps, faster charging time for USB-chargeable devices, optimized power efficiency, and backward compatibility with USB 2.0.

6**M.2 socket 3**

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



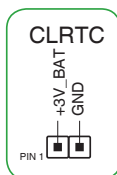
- This M.2 socket supports M Key and 2242/2260/2280 storage devices.
- When a device in SATA mode is installed on the M.2 socket, SATA_2 port can not be used.

**7****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.
4. Hold down the key during the boot process and enter BIOS setup to re-enter data.



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

8**Intel® H310 Serial ATA 6.0Gb/s connectors (7-pin SATA6G_1~4)**

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

9**System panel connector (20-5 pin F_PANEL)**

This connector supports several chassis-mounted functions.

10**USB 2.0 connectors (10-1 pin USB78, USB914)**

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.

11 RGB header

This header is 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 3 m.



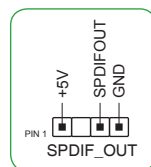
Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, or components.



- 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 strip is purchased separately.

12 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.



13 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].

14 PCI slots

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

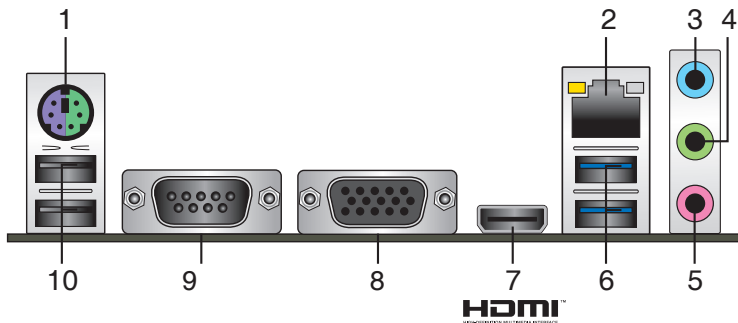
PCI Express 2.0 x1 slots

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

16 PCI Express 3.0 / 2.0 x16 slot

This motherboard has a PCI Express 3.0 / 2.0 x16 slot that supports PCI Express 3.0 / 2.0 x16 graphic cards complying with the PCI Express specifications.

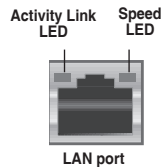
Rear panel connectors



1. **PS/2 Mouse/Keyboard combo port.** This port connects to a PS/2 mouse or PS/2 keyboard.
2. **LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub.

LAN port LED indications

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



3. **Line In port (light blue).** This port connects to the tape, CD, DVD player, or other audio sources.
4. **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.
5. **Microphone port (pink).** This port connects to a microphone.



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

Audio 2.1, 4.1, 5.1 or 7.1-channel configuration

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



To configure 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.

6. **USB 3.1 Gen 1 (up to 5Gb/s) ports.** These 9-pin Universal Serial Bus (USB) ports are for USB 3.1 Gen 1 devices.

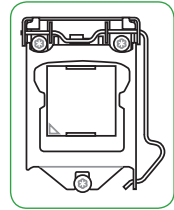


- USB 3.1 Gen 1 devices can only be used for data storage.
- We strongly recommend that you connect USB 3.1 Gen 1 devices to USB 3.1 Gen 1 ports for faster and better performance from your USB 3.1 Gen 1 devices.
- Due to the design of the Intel® 300 series chipset, all USB devices connected to the USB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

7. **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.
8. **Video Graphics Adapter (VGA) port.** This 15-pin port is for a VGA monitor or other VGA-compatible devices.
9. **Serial port connector (10-1 pin COM).** This port connects a modem, or other devices that conform with serial specification.
10. **USB 2.0 / 1.1 ports.** These 4-pin Universal Serial Bus (USB) ports are for USB 2.0/1.1 devices.

Central Processing Unit (CPU)

This motherboard comes with a surface mount LGA1151 socket designed for the 8th Generation Intel® Core™ i7 / Core™ i5 / Core™ i3, Pentium® and Celeron® processors.

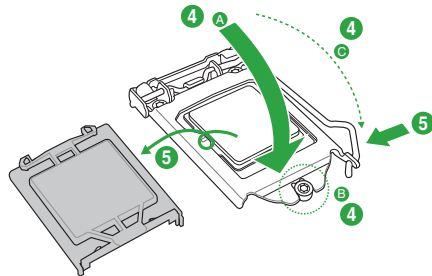
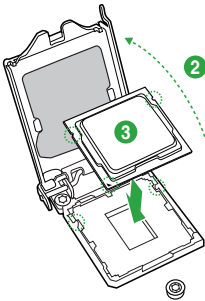
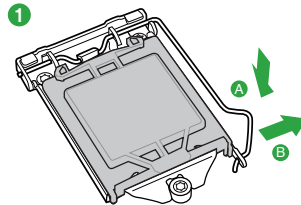
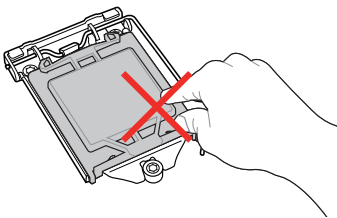


Unplug all power cables before installing the CPU.



- 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



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

System memory

Overview

This motherboard comes with two 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.



Channel	Sockets
Channel A	DIMM_A1*
Channel B	DIMM_B1*

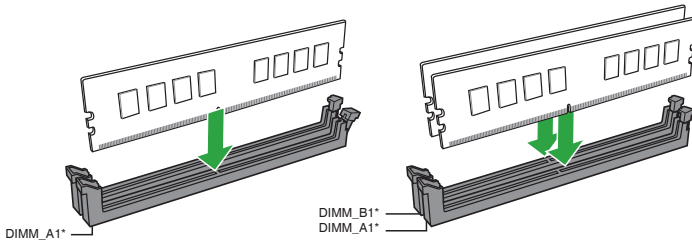


- You may install varying memory sizes in Channel A and Channel B. The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation.
- Always install DIMMs with the same CAS latency. For optimal compatibility, we recommend that you install memory modules of the same version or date code (D/C) from the same vendor. Check with the retailer to get the correct memory modules.
- DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel® 8th Gen. 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.

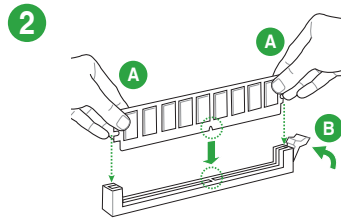
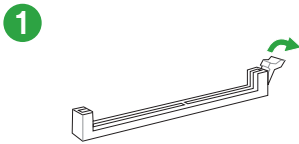


- The default memory operation frequency is dependent on its Serial Presence Detect (SPD), which is the standard way of accessing information from a memory module. Under the default state, some memory modules for overclocking may operate at a lower frequency than the vendor-marked value.
- Refer to www.asus.com for the latest Memory QVL (Qualified Vendors List)

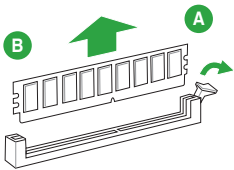
Recommended memory configuration



Installing a DIMM



To remove a DIMM



BIOS information

2



- Scan the QR code to view the BIOS update guide.
- Before using the ASUS CrashFree BIOS 3 utility, rename the BIOS file in the removable device into **TH310PS.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.



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



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

BIOS menu screen

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

EZ Mode

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



The default screen for entering the BIOS setup program can be changed. Go to the **Setup Mode** item under the **Boot** menu.

The screenshot shows the UEFI BIOS Utility - EZ Mode interface. The top bar displays the date (01/23/2018), time (17:31), language (English), search function (F9), and AURA ON/OFF (F4). The main area is divided into several sections: Information (TUF H310-PLUS GAMING, BIOS Ver. 0214, CPU 3.20GHz, 3200 MHz, 8192 MB DDR4 2133MHz), CPU Temperature (39°C), CPU Core Voltage (0.944 V), Motherboard Temperature (25°C), DRAM Status (DIMM_A1: AVEXIR 8192MB 2133MHz), SATA Information (SATA0G_1-4: N/A), X.M.P. (Disabled), FAN Profile (CPU FAN 2184 RPM, CHA1 FAN N/A, CHA2 FAN N/A), and EZ System Tuning (Normal). A Boot Priority section shows a bootable device (UEFI: KingstonDataTraveler 3.0PMAP, Partition 1 (114784MB)). At the bottom, navigation options include Default (F5), Save & Exit (F10), Advanced Mode (F7), and Search on FAQ.

Selects the display language of the BIOS setup program

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

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

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

Turns the RGB LED lighting or functional LED on or off

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

Shows the bootable devices

Displays the Advanced mode menus

Search on FAQs

Selects the boot device priority

Loads optimized default settings

Saves the changes and resets the system



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

Advanced Mode

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



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

The screenshot displays the ASUS UEFI BIOS Utility in Advanced Mode. The interface is dark-themed with blue accents. At the top, the menu bar includes 'My Favorites', 'Main', 'Ai Tweaker', 'Advanced', 'Monitor', 'Boot', 'Tool', and 'Exit'. The 'Ai Tweaker' menu is expanded, showing various configuration fields such as 'CPU Power Enhancement', 'CPU Core Ratio', 'BCLK Frequency', 'DRAM Odd Ratio Mode', 'DRAM Frequency', 'GPU Boost', 'Power-saving & Performance Mode', 'DRAM Timing Control', 'DIGI+ VRM', and 'CPU Power Enhancement'. A 'Hardware Monitor' panel on the right shows real-time data for CPU (Frequency: 3200 MHz, Temperature: 40°C, BCLK: 100.00 MHz, Core Voltage: 0.944 V, Ratio: 32x) and Memory (Frequency: 2133 MHz, Capacity: 8192 MB). The bottom status bar shows 'Last Modified', 'EzMode(F7)', 'Hot Keys', and 'Search on FAQ'. Red lines and boxes highlight specific features, with labels pointing to them.

Menu bar
Language
MyFavorite
Q-Fan control
Search
Aura On / Off

Hardware Monitor
CPU
Frequency: 3200 MHz, Temperature: 40°C
BCLK: 100.00 MHz, Core Voltage: 0.944 V
Ratio: 32x
Memory
Frequency: 2133 MHz, Capacity: 8192 MB
Voltage
+12V: 12.096 V, +5V: 5.160 V, +3.3V: 3.328 V

Configuration fields
CPU Power Enhancement: Auto
CPU Core Ratio: Auto
BCLK Frequency : DRAM Frequency Ratio: Auto
DRAM Odd Ratio Mode: Enabled
DRAM Frequency: Auto
GPU Boost: Keep Current Settings
Power-saving & Performance Mode: Auto

Sub-menu items
DRAM Timing Control
DIGI+ VRM
CPU Power Enhancement

General help
Last Modified | EzMode(F7) | Hot Keys | Search on FAQ

Menu items
My Favorites | Main | Ai Tweaker | Advanced | Monitor | Boot | Tool | Exit

Scroll bar
Displays the CPU temperature, CPU and memory voltage output

Hot Keys
Goes back to Ez Mode

Searches FAQ

Last modified settings

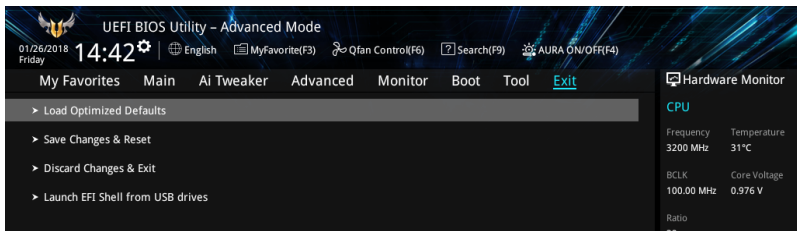
Search on FAQ

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.



Exit menu

The Exit menu items allow you to load the optimal default values for the BIOS items, and save or discard your changes to the BIOS items.



Load Optimized Defaults

This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option or if you press <F5>, a confirmation window appears. Select OK to load the default values.

Save Changes & Reset

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved. When you select this option or if you press <F10>, a confirmation window appears. Select OK to save changes and exit.

Discard Changes & Exit

This option allows you to exit the Setup program without saving your changes. When you select this option or if you press <Esc>, a confirmation window appears. Select OK to discard changes and exit.

Launch EFI Shell from USB drives

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

Appendix

Notices

Federal Communications Commission Statement

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

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

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



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

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

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

VCCI: Japan Compliance Statement

Class B ITE

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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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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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DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2. 1077(a)



Responsible Party Name: Asus Computer International

Address: 800 Corporate Way, Fremont, CA 94539.

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

hereby declares that the product

Product Name : Motherboard

Model Number : TUF H310-PLUS GAMING

Conforms to the following specifications:

FCC Part 15, Subpart B, Unintentional Radiators

Supplementary Information:

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