

# BIOS Setup (AMD X670/B650 Series)

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The BIOS Setup menus described in this section may differ from the exact settings for your motherboard. The actual BIOS Setup menu options you will see shall depend on the motherboard you have and the BIOS version.

# BIOS Setup

BIOS (Basic Input and Output System) records hardware parameters of the system in the CMOS on the motherboard. Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters and loading operating system, etc. BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features.

When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS.

To access the BIOS Setup program, press the <Delete> key during the POST when the power is turned on.

To upgrade the BIOS, use either the GIGABYTE Q-Flash or Q-Flash Plus.

- Q-Flash allows the user to quickly and easily upgrade or back up BIOS without entering the operating system.
- Q-Flash Plus allows you to update the BIOS when your system is off (S5 shutdown state). Save the latest BIOS on a USB thumb drive and plug it into the dedicated port, and then you can now flash the BIOS automatically by simply pressing the Q-Flash Plus button.

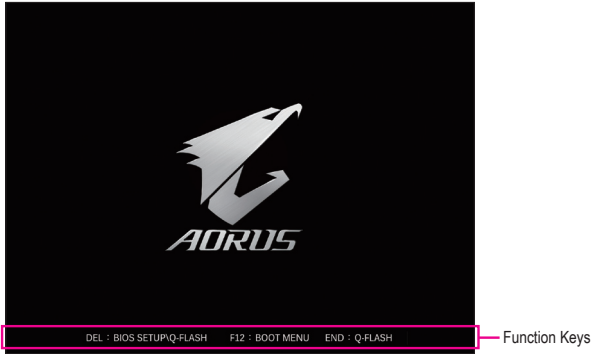
For instructions on using the Q-Flash and Q-Flash Plus utilities, please navigate to the "Unique Features" page of GIGABYTE's website and search for "BIOS Update Utilities."



- Because BIOS flashing is potentially risky, if you do not encounter problems using the current version of BIOS, it is recommended that you not flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction.
- It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in system's failure to boot. If this occurs, try to clear the CMOS values and reset the board to default values.
- Refer to the introductions of the battery/clear CMOS jumper/button in user's manual or refer to the "Load Optimized Defaults" section for how to clear the CMOS values.

# Startup Screen

The following startup Logo screen will appear when the computer boots. (The screen may vary from motherboards.)



### Function Keys:

#### <DEL>: BIOS SETUP\Q-FLASH

Press the <Delete> key to enter BIOS Setup or to access the Q-Flash utility in BIOS Setup.

#### <F12>: BOOT MENU

Boot Menu allows you to set the first boot device without entering BIOS Setup. In Boot Menu, use the up arrow key <↑> or the down arrow key <↓> to select the first boot device, then press <Enter> to accept. The system will boot from the device immediately.

Note: The setting in Boot Menu is effective for one time only. After system restart, the device boot order will still be based on BIOS Setup settings.

#### <END>: Q-FLASH

Press the <End> key to access the Q-Flash utility directly without having to enter BIOS Setup first.

# The Main Menu

## Advanced Mode

The Advanced Mode provides detailed BIOS settings. You can press the arrow keys on your keyboard to move among the items and press <Enter> to accept or enter a sub-menu. Or you can use your mouse to select the item you want.



Option Description

Current Settings

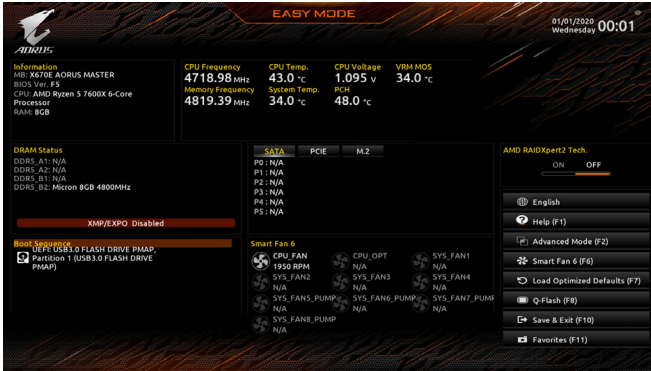
Quick Access Bar allows you to quickly move to the General Help, Easy Mode, Smart Fan 6, or Q-Flash screen.

## Advanced Mode Function Keys

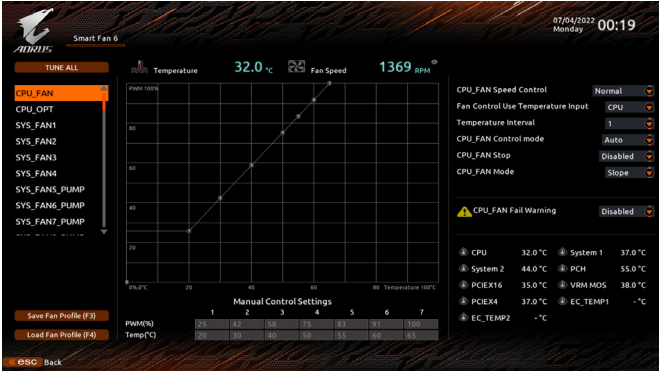
<<>>	Move the selection bar to select a setup menu
<↑><↓>	Move the selection bar to select an configuration item on a menu
<Enter>/Double Click	Execute command or enter a menu
<+>/<Page Up>	Increase the numeric value or make changes
<->/<Page Down>	Decrease the numeric value or make changes
<F1>	Show descriptions of the function keys
<F2>	Switch to Easy Mode
<F3>	Save the current BIOS settings to a profile
<F4>	Load the BIOS settings from a profile created before
<F5>	Restore the previous BIOS settings for the current submenus
<F6>	Display the Smart Fan 6 screen
<F7>	Load the Optimized BIOS default settings for the current submenus
<F8>	Access the Q-Flash utility
<F10>	Save all the changes and exit the BIOS Setup program
<F11>	Switch to the Favorites submenu
<F12>	Capture the current screen as an image and save it to your USB drive
<Insert>	Add or remove a favorite option
<Ctrl>+<S>	Display information on the installed memory
<Esc>	Main Menu: Exit the BIOS Setup program Submenus: Exit current submenu

## B. Easy Mode

Easy Mode allows users to quickly view their current system information or to make adjustments for optimum performance. In Easy Mode, you can use your mouse to move through configuration items or press <F2> to switch to the Advanced Mode screen.



# Smart Fan 6



Use the <F6> function key to quickly switch to this screen. This screen allows you to configure fan speed related settings for each fan header or monitor your system/CPU temperature.

## ☞ TUNE ALL

Allows you to apply the current settings to all fan headers.

## ☞ Temperature

Displays the current temperature of the selected target area.

## ☞ Fan Speed

Displays various fan/pump speeds.

## ☞ Flow Rate

Displays the flow rate of your water cooling system. Press <Enter> on **Fan Speed** to switch to this function.

## ☞ Fan Speed Control

Allows you to determine whether to enable the fan speed control function and adjust the fan speed.

- ▶▶ Normal Allows the fan to run at different speeds according to the temperature. You can adjust the fan speed with System Information Viewer based on your system requirements.
- ▶▶ Silent Allows the fan to run at slow speeds.
- ▶▶ Manual Allows you to drag the curve nodes to adjust fan speed. Or you can use the **EZ Tuning** feature. After adjusting the node position, press **Apply** to automatically calculate the slope of the curve.
- ▶▶ Full Speed Allows the fan to run at full speeds.

## ☞ Fan Control Use Temperature Input

Allows you to select the reference temperature for fan speed control.

## ☞ Temperature Interval

Allows you to select the temperature interval for fan speed change.

## ☞ FAN/PUMP Control Mode

- ▶▶ Auto Lets the BIOS automatically detect the type of fan installed and sets the optimal control mode.
- ▶▶ Voltage Voltage mode is recommended for a 3-pin fan/pump.
- ▶▶ PWM PWM mode is recommended for a 4-pin fan/pump.

☞ **FAN/PUMP Stop**

Enables or disables the fan/pump stop function. You can set the temperature limit using the temperature curve. The fan or pump stops operation when the temperature is lower than the limit.

☞ **FAN/PUMP Mode**

Allows you to set the operating mode for the fan.

- ▶▶ Slope Adjusts the fan speed linearly based on the temperature.
- ▶▶ Stair Adjusts the fan speed stepwise based on the temperature.

☞ **FAN/PUMP Fail Warning**

Allows the system to emit warning sound if the fan/pump is not connected or fails. Check the fan/pump condition or fan/pump connection when this occurs.

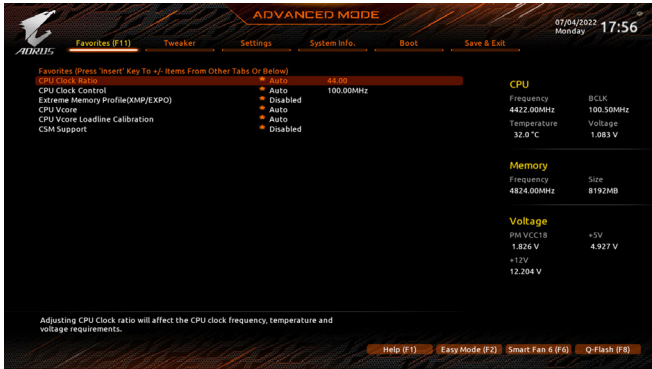
☞ **Save Fan Profile (F3)**

This function allows you to save the current settings to a profile. You can save the profile in the BIOS or select **Select File in HDD/FDD/USB** to save the profile to your storage device.

☞ **Load Fan Profile (F4)**

This function allows you to load a previously saved BIOS profile without the hassles of reconfiguring the BIOS settings. Or you can select **Select File in HDD/FDD/USB** to load a profile from your storage device.

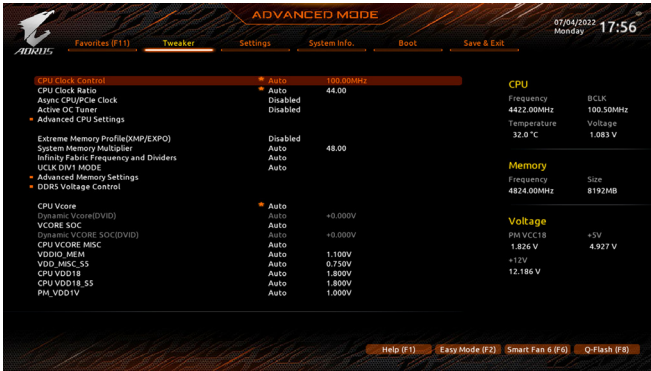
# Favorites (F11)



Set your frequently used options as your favorites and use the <F11> key to quickly switch to the page where all of your favorite options are located. To add or remove a favorite option, go to its original page and press <Insert> on the option. The option is marked with a star sign if set as a "favorite."



# Tweaker



Whether the system will work stably with the overclock/overvoltage settings you made is dependent on your overall system configurations. Incorrectly doing overclock/overvoltage may result in damage to CPU, chipset, or memory and reduce the useful life of these components. This page is for advanced users only and we recommend you not to alter the default settings to prevent system instability or other unexpected results. (Inadequately altering the settings may result in system's failure to boot. If this occurs, clear the CMOS values and reset the board to default values.)

## ⌄ CPU Clock Control

Allows you to manually set the CPU base clock in 1 MHz increments.

**Important:** It is highly recommended that the CPU frequency be set in accordance with the CPU specifications.

## ⌄ CPU Clock Ratio (Note)

Allows you to alter the clock ratio for the installed CPU. The adjustable range is dependent on the CPU being installed.

## ⌄ Async CPU/PCIe Clock (Note)

Allows for asynchronous CPU/PCIe clock.

## ⌄ Spread Spectrum Control (Note)

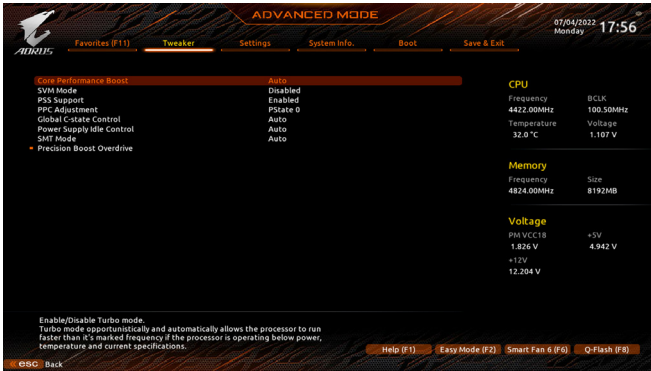
Enables or disables CPU/PCIe Spread Spectrum.

## ⌄ Active OC Tuner (Note)

Enables or disables the Active OC Tuner feature.

(Note) This item is available only when the motherboard chipset and the CPU used support this feature. For more information about AMD CPUs' unique features, please visit AMD's website.

## ■ Advanced CPU Settings



### ☞ Core Performance Boost

Allows you to determine whether to enable the Core Performance Boost (CPB) technology, a CPU performance-boost technology.

### ☞ SVM Mode

Virtualization enhanced by Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems.

### ☞ PSS Support

Enables or disables the generation of ACPI\_PPC, \_PSS, and \_PCT objects.

### ☞ PPC Adjustment

Allows you to fix the PState of the CPU.

### ☞ Global C-state Control

Allows you to determine whether to let the CPU enter C states. When enabled, the CPU core frequency will be reduced during system halt state to decrease power consumption.

### ☞ Power Supply Idle Control

Enables or disables Package C6 State.

- ▶▶ Typical Current Idle Disables this function.
- ▶▶ Low Current Idle Enables this function.
- ▶▶ Auto Lets the BIOS automatically configure this setting.

### ☞ SMT Mode

Allows you to enable or disable the CPU Simultaneous Multi-Threading technology.

## ■ Precision Boost Overdrive

Allows you to determine whether to automatically increase CPU clock and working performance.

### ☞ Extreme Memory Profile (XMP/EXPO)

Allows the BIOS to read the SPD data on XMP/EXPO memory module(s) to enhance memory performance when enabled. Selections are available only when an XMP or EXPO memory module is installed.

### ☞ System Memory Multiplier

Allows you to set the system memory multiplier. **Auto** sets memory multiplier according to memory SPD data.

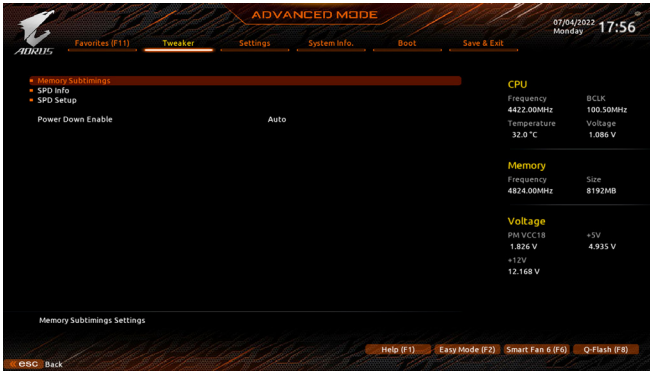
## ↪ **Infinity Fabric Frequency and Dividers**

Allows you to set the FCLK frequency.

## ↪ **UCLK DIV1 MODE**

Allows you to specify the UCLK DIV1 mode.

## ■ **Advanced Memory Settings**



## ■ **Memory Subtimings**

### ▼ **Standard Timing Control, Advanced Timing Control, Data Bus Configuration**

These sections provide memory timing settings. Note: Your system may become unstable or fail to boot after you make changes on the memory timings. If this occurs, please reset the board to default values by loading optimized defaults or clearing the CMOS values.

## ■ **SPD Info**

Displays information on the installed memory.

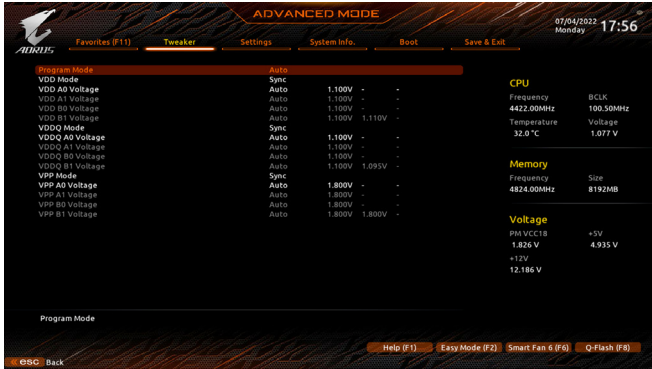
## ■ **SPD Setup**

Allows you to configure memory parameters for the installed memory.

## ↪ **Power Down Enable**

Enables or disables Power Down support.

- **DDR5 Voltage Control**



These items allow you to adjust DDR5 memory voltages.

- ☞ **CPU Vcore/Dynamic Vcore(DVID)/VCORE SOC/Dynamic VCORE SOC(DVID)/VDDIO\_MEM/VDD\_MISC\_S5/CPU VDD18/CPU VDD18\_S5/PM\_VDD1V/PM\_1V8/PM\_1V\_S5/PM2\_VDD1V**

These items allow you to adjust the CPU Vcore and memory voltages. The displayed items and values may vary depending on motherboard chipset and the CPU used.

- **VDDG Voltage Control**

This sub-menu allows you to control VDDG voltage.

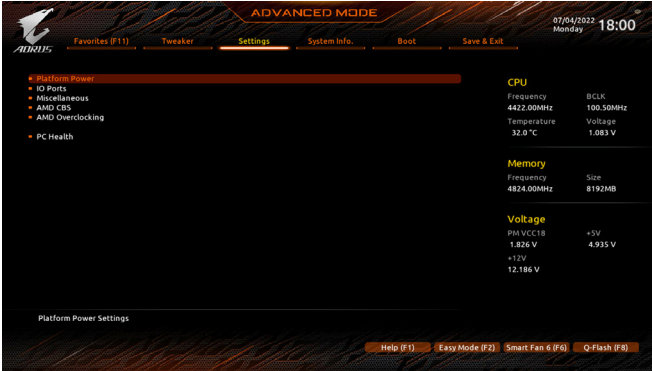
- **VDDP Voltage Control**

This sub-menu allows you to control VDDP voltage.

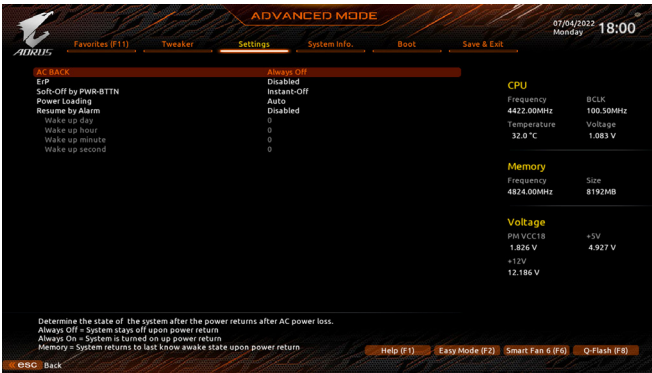
- **CPU/VRM Settings**

This submenu allows you to configure Load-Line Calibration level, over-voltage protection level, over-current protection level, and PWM phases.

# Settings



## ■ Platform Power



### ☞ AC BACK

Determines the state of the system after the return of power from an AC power loss.

- ▶▶ Memory      The system returns to its last known awake state upon the return of the AC power.
- ▶▶ Always On    The system is turned on upon the return of the AC power.
- ▶▶ Always Off    The system stays off upon the return of the AC power.

### ☞ ErP

Determines whether to let the system consume least power in S5 (shutdown) state.

Note: When this item is set to **Enabled**, the Resume by Alarm function becomes unavailable.

### ☞ Soft-Off by PWR-BTTN

Configures the way to turn off the computer in MS-DOS mode using the power button.

- ▶▶ Instant-Off    Press the power button and then the system will be turned off instantly.
- ▶▶ Delay 4 Sec.    Press and hold the power button for 4 seconds to turn off the system. If the power button is pressed for less than 4 seconds, the system will enter suspend mode.

### ☞ Power Loading

Enables or disables dummy load. When the power supply is at low load, a self-protection will activate causing it to shutdown or fail. If this occurs, please set to **Enabled**. **Auto** lets the BIOS automatically configure this setting.

## Resume by Alarm

Determines whether to power on the system at a desired time.

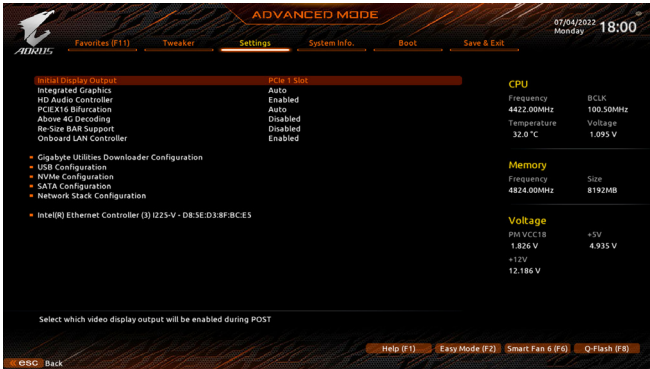
If enabled, set the date and time as following:

▶▶ Wake up day: Turn on the system at a specific time on each day or on a specific day in a month.

▶▶ Wake up hour/minute/second: Set the time at which the system will be powered on automatically.

Note: When using this function, avoid inadequate shutdown from the operating system or removal of the AC power, or the settings may not be effective.

## IO Ports



### Initial Display Output (Note)

Specifies the first initiation of the monitor display from the installed PCI Express graphics card or the onboard graphics.

- ▶▶ IGD Video (Note) Sets the onboard graphics as the first display.
- ▶▶ PCIe 1 Slot Sets the graphics card on the PCIe16 slot as the first display.

### Integrated Graphics (Note)

Enables or disables the onboard graphics function.

- ▶▶ Auto The BIOS will automatically enable or disable the onboard graphics depending on the graphics card being installed.
- ▶▶ Forces Enables the onboard graphics.
- ▶▶ Disabled Disables the onboard graphics.

### UMA Mode (Note)

Specify the UMA mode.

- ▶▶ Auto Lets the BIOS automatically configure this setting.
  - ▶▶ UMA Specified Sets the UMA Frame Buffer Size.
  - ▶▶ UMA Auto Sets the display resolution.
  - ▶▶ UMA Game Optimized Adjusts the frame buffer size based on the total system memory size.
- This item is configurable only when **Integrated Graphics** is set to **Forces**.

### UMA Frame Buffer Size (Note)

Frame buffer size is the total amount of system memory allocated solely for the onboard graphics controller. MS-DOS, for example, will use only this memory for display. Options are: Auto, 64M-16G. This item is configurable only when **UMA Mode** is set to **UMA Specified**.

(Note) This item is present only when you install a CPU that supports this feature.

☞ **HD Audio Controller**

Enables or disables the onboard audio function.

If you wish to install a 3rd party add-in audio card instead of using the onboard audio, set this item to **Disabled**.

☞ **PCIEX16 Bifurcation**

Allows you to determine how the bandwidth of the PCIEX16 slot is divided. Options: Auto, PCIe x8x8, PCIe x8x4x4, PCIe x4x4x4x4. The adjustable range may vary by CPU.

☞ **Above 4G Decoding**

Enables or disables 64-bit capable devices to be decoded in above 4 GB address space (only if your system supports 64-bit PCI decoding). Set to **Enabled** if more than one advanced graphics card are installed and their drivers are not able to be launched when entering the operating system (because of the limited 4 GB memory address space).

☞ **Re-Size BAR Support**

Enables or disables support for Resizable BAR.

☞ **Onboard LAN Controller**

Enables or disables the onboard LAN function.

If you wish to install a 3rd party add-in network card instead of using the onboard LAN, set this item to **Disabled**.

■ **Gigabyte Utilities Downloader Configuration**

☞ **Gigabyte Utilities Downloader Configuration**

Allows you to determine whether to automatically download and install GIGABYTE Control Center after entering the operating system. Before the installation, make sure the system is connected to the Internet.

■ **Super IO Configuration** <sup>(Note)</sup>

☞ **Serial Port**

Enables or disables the onboard serial port. (Default: Enabled)

■ **USB Configuration**

☞ **Legacy USB Support**

Allows USB keyboard/mouse to be used in MS-DOS.

☞ **XHCI Hand-off**

Determines whether to enable XHCI Hand-off feature for an operating system without XHCI Hand-off support.

☞ **USB Mass Storage Driver Support**

Enables or disables support for USB storage devices.

☞ **Port 60/64 Emulation**

Enables or disables emulation of I/O ports 64h and 60h. This should be enabled for full legacy support for USB keyboards/mice in MS-DOS or in operating system that does not natively support USB devices.

☞ **Mass Storage Devices**

Displays a list of connected USB mass storage devices. This item appears only when a USB storage device is installed.

(Note) Available options may vary depending on motherboard specifications.

## ■ NVMe Configuration

Displays information on your M.2 NVME PCIe SSD if installed.

## ■ SATA Configuration

### ☞ SATA Mode

Enables or disables RAID for the SATA controllers integrated in the Chipset or configures the SATA controllers to AHCI mode.

- ▶▶ RAID Enables RAID for the SATA controller.
- ▶▶ AHCI Configures the SATA controllers to AHCI mode. Advanced Host Controller Interface (AHCI) is an interface specification that allows the storage driver to enable advanced Serial ATA features such as Native Command Queuing and hot plug.

### ☞ NVMe RAID mode

Allows you to determine whether to use your M.2 NVMe PCIe SSDs to configure RAID.

### ☞ Chipset SATA Port Enable

Enables or disables the integrated SATA controllers.

### ☞ Chipset SATA Port Hot plug

Enables or disable the hot plug capability for each SATA port.

### ☞ Chipset SATA Port

Displays the information of the connected SATA device(s).

## ■ Network Stack Configuration

### ☞ Network Stack

Disables or enables booting from the network to install a GPT format OS, such as installing the OS from the Windows Deployment Services server.

### ☞ IPv4 PXE Support

Enables or disables IPv4 PXE Support. This item is configurable only when **Network Stack** is enabled.

### ☞ IPv4 HTTP Support

Enables or disables HTTP boot support for IPv4. This item is configurable only when **Network Stack** is enabled.

### ☞ IPv6 PXE Support

Enables or disables IPv6 PXE Support. This item is configurable only when **Network Stack** is enabled.

### ☞ IPv6 HTTP Support

Enables or disables HTTP boot support for IPv6. This item is configurable only when **Network Stack** is enabled.

### ☞ PXE boot wait time

Allows you to configure how long to wait before you can press <Esc> to abort the PXE boot. This item is configurable only when **Network Stack** is enabled.

### ☞ Media detect count

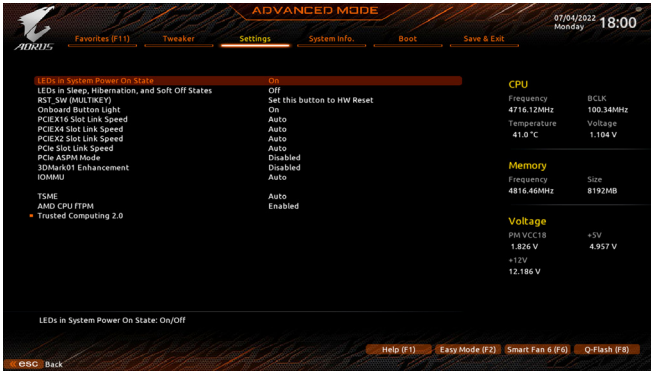
Allows you to set the number of times to check the presence of media. This item is configurable only when **Network Stack** is enabled.

## ■ Ethernet Controller / PCIe GBE Family Controller

This sub-menu provides information on LAN configuration and related configuration options.



■ Miscellaneous



⊞ LEDs in System Power On State

Allows you to enable or disable motherboard LED lighting when the system is on.

- ▶▶ Off Disables the selected lighting mode when the system is on.
- ▶▶ On Enables the selected lighting mode when the system is on.

⊞ LEDs in Sleep, Hibernation, and Soft Off States

Allows you to set the lighting mode of the motherboard LEDs in system S3/S4/S5 state.

This item is configurable when **LEDs in System Power On State** is set to **On**.

- ▶▶ Off Disables the selected lighting mode when the system enters S3/S4/S5 state.
- ▶▶ On Enables the selected lighting mode when the system enters S3/S4/S5 state.

⊞ RST\_SW (MULTIKEY) (Functionality of the RST\_SW Button)

- ▶▶ Set this button to HW Reset Use the button to reset your system.
- ▶▶ Set this button to Switch LED On/Off Use the button to turn on/off the motherboard LEDs.
- ▶▶ Set this button to Enter BIOS Setup Use the button to enter the BIOS Setup.
- ▶▶ Set this button to Boot on Safe Mode Use the button to boot the system in safe mode.

⊞ Onboard Button Light <sup>(Note 1)</sup>

Allows you to enable or disable the LED lighting of the onboard quick buttons when the system is on.

⊞ PCIEX16 Slot Link Speed <sup>(Note 1)</sup>

Allows you to set the operation mode of the PCIEX16 slot to Gen 1, Gen 2, Gen 3, Gen 4, or Gen 5 <sup>(Note 2)</sup>. Actual operation mode is subject to the hardware specification of each slot. **Auto** lets the BIOS automatically configure this setting.

⊞ PCIEX4 Slot Link Speed <sup>(Note 1)</sup>

Allows you to set the operation mode of the PCIEX4 slot to Gen 1, Gen 2, Gen 3, or Gen 4. Actual operation mode is subject to the hardware specification of each slot. **Auto** lets the BIOS automatically configure this setting.

⊞ PCIEX2 Slot Link Speed <sup>(Note 1)</sup>

Allows you to set the operation mode of the PCIEX2 slot to Gen 1, Gen 2, or Gen 3. Actual operation mode is subject to the hardware specification of each slot. **Auto** lets the BIOS automatically configure this setting.

⊞ PCIe Slot Link Speed

Allows you to set the operation mode of the PCI Express slots and M.2 connectors to Gen 1, Gen 2, Gen 3, Gen 4, or Gen 5 <sup>(Note 2)</sup>. Actual operation mode is subject to the hardware specification of each slot. **Auto** lets the BIOS automatically configure this setting.

(Note 1) Available options may vary depending on motherboard specifications.

(Note 2) This item is present only when you install a CPU that supports this feature.

➤ **PCIe ASPM Mode**

Allows you to configure the ASPM mode for the device connected to the CPU/Chipset PCI Express bus.

➤ **3DMark01 Enhancement**

Allows you to determine whether to enhance some legacy benchmark performance.

➤ **IOMMU**

Enables or disables AMD IOMMU support.

➤ **TSME**

Enables or disables TSME support.

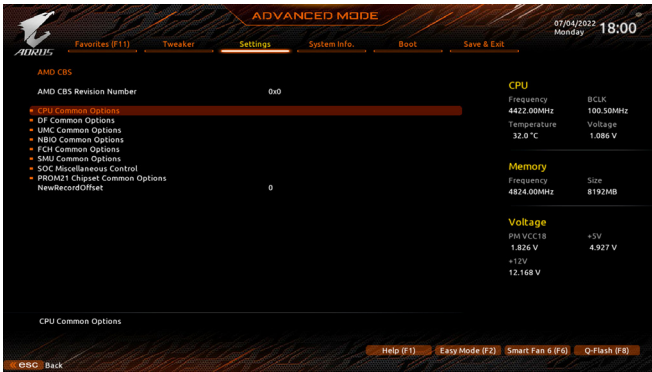
➤ **AMD CPU fTPM**

Enables or disables the TPM 2.0 function integrated in the AMD CPU.

■ **Trusted Computing 2.0**

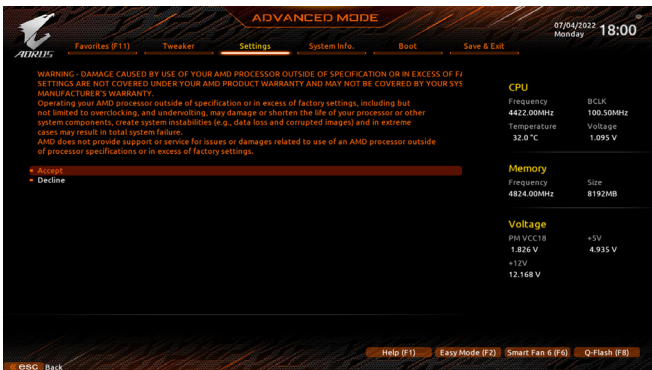
Enables or disables Trusted Platform Module (TPM).

■ **AMD CBS**



This sub-menu provides AMD CBS-related configuration options.

■ **AMD Overclocking**



This sub-menu provides AMD overclocking-related configuration options.

## ■ PC Health



### ☞ Reset Case Open Status

- ▶▶ Disabled Keeps or clears the record of previous chassis intrusion status.
- ▶▶ Enabled Clears the record of previous chassis intrusion status and the **Case Open** field will show "No" at next boot.

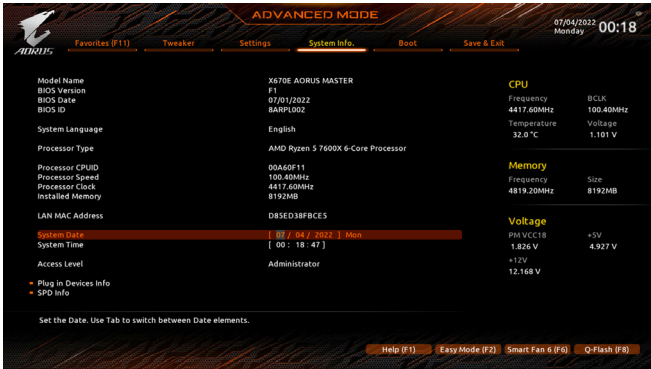
### ☞ Case Open

Displays the detection status of the chassis intrusion detection device attached to the motherboard CI header. If the system chassis cover is removed, this field will show "Yes", otherwise it will show "No". To clear the chassis intrusion status record, set **Reset Case Open Status** to **Enabled**, save the settings to the CMOS, and then restart your system.

### ☞ CPU Vcore/CPU Vcore MISC/CPU VDD18/PM VDD1V/+3.3V/+5V/PM VCC18/+12V/CPU Vcore SOC

Displays the current system voltages.

# System Info.



This section provides information on your motherboard model and BIOS version. You can also select the default language used by the BIOS and manually set the system time.

## System Language

Selects the default language used by the BIOS.

## System Date

Sets the system date. The date format is week (read-only), month, date, and year. Use <Enter> to switch between the Month, Date, and Year fields and use the <Page Up> or <Page Down> key to set the desired value.

## System Time

Sets the system time. The time format is hour, minute, and second. For example, 1 p.m. is 13:00:00. Use <Enter> to switch between the Hour, Minute, and Second fields and use the <Page Up> or <Page Down> key to set the desired value.

## Access Level

Displays the current access level depending on the type of password protection used. (If no password is set, the default will display as **Administrator**.) The Administrator level allows you to make changes to all BIOS settings; the User level only allows you to make changes to certain BIOS settings but not all.

## Plug in Devices Info

Displays information on your PCI Express and M.2 devices if installed.

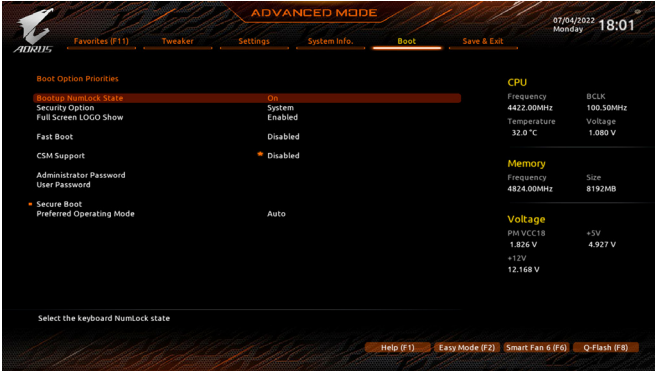
## SPD Info

Displays information on the installed memory.

## Q-Flash

Allows you to access the Q-Flash utility to update the BIOS or back up the current BIOS configuration.

# Boot



## Boot Option Priorities

Specifies the overall boot order from the available devices. Removable storage devices that support GPT format will be prefixed with "UEFI:" string on the boot device list. To boot from an operating system that supports GPT partitioning, select the device prefixed with "UEFI:" string.

Or if you want to install an operating system that supports GPT partitioning such as Windows 11 64-bit, select the optical drive that contains the Windows 11 64-bit installation disc and is prefixed with "UEFI:" string.

## Bootup NumLock State

Enables or disables Numlock feature on the numeric keypad of the keyboard after the POST.

## Security Option

Specifies whether a password is required every time the system boots, or only when you enter BIOS Setup. After configuring this item, set the password(s) under the **Administrator Password/User Password** item.

▶▶ Setup A password is only required for entering the BIOS Setup program.

▶▶ System A password is required for booting the system and for entering the BIOS Setup program.

## Full Screen LOGO Show

Allows you to determine whether to display the GIGABYTE Logo at system startup. **Disabled** skips the GIGABYTE Logo when the system starts up.

## Fast Boot

Enables or disables Fast Boot to shorten the OS boot process. **Ultra Fast** provides the fastest bootup speed.

## SATA Support

▶▶ Last Boot SATA Devices Only Except for the previous boot drive, all SATA devices are disabled before the OS boot process completes.

▶▶ All SATA Devices All SATA devices are functional in the operating system and during the POST. This item is configurable only when **Fast Boot** is set to **Enabled** or **Ultra Fast**.

## NVMe Support

Allows you to enable or disable NVMe device(s).

This item is configurable only when **Fast Boot** is set to **Enabled** or **Ultra Fast**.

### ↳ **VGA Support**

Allows you to select which type of operating system to boot.

- ▶▶ Auto                      Enables legacy option ROM only.
- ▶▶ EFI Driver                Enables EFI option ROM.

This item is configurable only when **Fast Boot** is set to **Enabled** or **Ultra Fast**.

### ↳ **USB Support**

- ▶▶ Disabled                      All USB devices are disabled before the OS boot process completes.
- ▶▶ Full Initial                 All USB devices are functional in the operating system and during the POST.
- ▶▶ Partial Initial              Part of the USB devices are disabled before the OS boot process completes.

This item is configurable only when **Fast Boot** is set to **Enabled**. This function is disabled when **Fast Boot** is set to **Ultra Fast**.

### ↳ **NetWork Stack Driver Support**

- ▶▶ Disabled                      Disables booting from the network.
- ▶▶ Enabled                      Enables booting from the network.

This item is configurable only when **Fast Boot** is set to **Enabled** or **Ultra Fast**.

### ↳ **CSM Support**

Enables or disables UEFI CSM (Compatibility Support Module) to support a legacy PC boot process.

- ▶▶ Disabled                      Disables UEFI CSM and supports UEFI BIOS boot process only.
- ▶▶ Enabled                      Enables UEFI CSM.

### ↳ **LAN PXE Boot Option ROM**

Allows you to select whether to enable the legacy option ROM for the LAN controller. This item is configurable only when **CSM Support** is set to **Enabled**.

### ↳ **Storage Boot Option Control**

Allows you to select whether to enable the UEFI or legacy option ROM for the storage device controller.

- ▶▶ Disabled                      Disables option ROM.
- ▶▶ UEFI Only                      Enables UEFI option ROM only.
- ▶▶ Legacy Only                 Enables legacy option ROM only.

This item is configurable only when **CSM Support** is set to **Enabled**.

### ↳ **Other PCI Device ROM Priority**

Allows you to select whether to enable the UEFI or Legacy option ROM for the PCI device controller other than the LAN, storage device, and graphics controllers.

- ▶▶ Disabled                      Disables option ROM.
- ▶▶ UEFI Only                      Enables UEFI option ROM only.
- ▶▶ Legacy Only                 Enables legacy option ROM only.

This item is configurable only when **CSM Support** is set to **Enabled**.

### ↳ **Administrator Password**

Allows you to configure an administrator password. Press <Enter> on this item, type the password, and then press <Enter>. You will be requested to confirm the password. Type the password again and press <Enter>. You must enter the administrator password (or user password) at system startup and when entering BIOS Setup. Differing from the user password, the administrator password allows you to make changes to all BIOS settings.

### ↳ **User Password**

Allows you to configure a user password. Press <Enter> on this item, type the password, and then press <Enter>. You will be requested to confirm the password. Type the password again and press <Enter>. You must enter the administrator password (or user password) at system startup and when entering BIOS Setup. However, the user password only allows you to make changes to certain BIOS settings but not all. To cancel the password, press <Enter> on the password item and when requested for the password, enter the correct one first. When prompted for a new password, press <Enter> without entering any password. Press <Enter> again when prompted to confirm.

NOTE: Before setting the User Password, be sure to set the Administrator Password first.

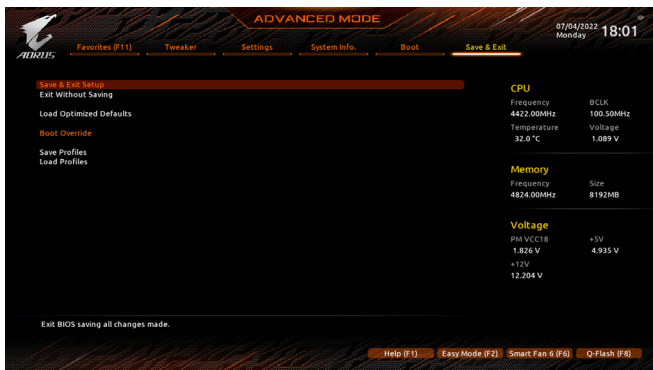
### ■ **Secure Boot**

Allows you to enable or disable Secure Boot and configure related settings. This item is configurable only when **CSM Support** is set to **Disabled**.

### ↳ **Preferred Operating Mode**

Allows you to select whether to enter Easy mode or Advanced mode after entering BIOS Setup. **Auto** enters the BIOS mode where it was last time.

## Save & Exit



### Save & Exit Setup

Press <Enter> on this item and select **Yes**. This saves the changes to the CMOS and exits the BIOS Setup program. Select **No** or press <Esc> to return to the BIOS Setup Main Menu.

### Exit Without Saving

Press <Enter> on this item and select **Yes**. This exits the BIOS Setup without saving the changes made in BIOS Setup to the CMOS. Select **No** or press <Esc> to return to the BIOS Setup Main Menu.

### Load Optimized Defaults

Press <Enter> on this item and select **Yes** to load the optimal BIOS default settings. The BIOS default settings help the system to operate in optimum state. Always load the Optimized defaults after updating the BIOS or after clearing the CMOS values.

### Boot Override

Allows you to select a device to boot immediately. Press <Enter> on the device you select and select **Yes** to confirm. Your system will restart automatically and boot from that device.

### Save Profiles

This function allows you to save the current BIOS settings to a profile. You can create up to 8 profiles and save as Setup Profile 1~ Setup Profile 8. Press <Enter> to complete. Or you can select **Select File in HDD/FDD/USB** to save the profile to your storage device.

### Load Profiles

If your system becomes unstable and you have loaded the BIOS default settings, you can use this function to load the BIOS settings from a profile created before, without the hassles of reconfiguring the BIOS settings. First select the profile you wish to load and then press <Enter> to complete. You can select **Select File in HDD/FDD/USB** to input the profile previously created from your storage device or load the profile automatically created by the BIOS, such as reverting the BIOS settings to the last settings that worked properly (last known good record).