

# Unique Features

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Actual software supported may vary by motherboard model and OS version. The software setup menus are for reference only.

# BIOS Update Utilities

GIGABYTE motherboards provide two unique BIOS update tools, Q-Flash™ and @BIOS™. GIGABYTE Q-Flash and @BIOS are easy-to-use and allow you to update the BIOS without the need to enter MS-DOS mode. Additionally, this motherboard features the DualBIOS™ design and supports Q-Flash Plus, providing multiple protection for the safety and stability of your computer.

## What is DualBIOS™?

Motherboards that support DualBIOS have two BIOS onboard, a main BIOS and a backup BIOS. Normally, the system works on the main BIOS. However, if the main BIOS is corrupted or damaged, the backup BIOS will take over on the next system boot to ensure normal system operation. For the sake of system safety, users cannot update the backup BIOS manually.

## What is Q-Flash Plus?

Q-Flash Plus is a new solution derived from DualBIOS™. When both the main and backup BIOS fail during system boot, Q-Flash Plus will be automatically launched and then recover BIOS data from the USB flash drive connected to a specific USB port.

## What is Q-Flash™?

With Q-Flash you can update the system BIOS without having to enter operating systems like MS-DOS or Windows first. Embedded in the BIOS, the Q-Flash tool frees you from the hassles of going through complicated BIOS flashing process.

## What is @BIOS™?

@BIOS allows you to update the system BIOS while in the Windows environment. @BIOS will download the latest BIOS file from the nearest @BIOS server site and update the BIOS.

## 1-1 Updating the BIOS with the Q-Flash Utility

### A. Before You Begin

1. From GIGABYTE's website, download the latest compressed BIOS update file that matches your motherboard model.
2. Extract the file and save the new BIOS file (e.g. Z390AORUSMASTER.F1) to your USB flash drive, or hard drive. Note: The USB flash drive or hard drive must use FAT32/16/12 file system.
3. Restart the system. During the POST, press the <End> key to enter Q-Flash. Note: You can access Q-Flash by either pressing the <End> key during the POST or click the **Q-Flash** icon (or press the <F8> key) in BIOS Setup. However, if the BIOS update file is saved to a hard drive in RAID/AHCI mode or a hard drive attached to an independent SATA controller, use the <End> key during the POST to access Q-Flash.



Because BIOS flashing is potentially risky, please do it with caution. Inadequate BIOS flashing may result in system malfunction.



Select **Q-Flash** to access Q-Flash

## B. Updating the BIOS

In the main menu of Q-Flash, use the keyboard or mouse to select an item to execute. When updating the BIOS, choose the location where the BIOS file is saved. The following procedure assumes that you have saved the BIOS file to a USB flash drive.

Step 1:

1. Insert the USB flash drive containing the BIOS file into the computer. In the main screen of Q-Flash, select **Update BIOS**.



- The **Save BIOS** option allows you to save the current BIOS file.
- Q-Flash only supports USB flash drive or hard drives using FAT32/16/12 file system.
- If the BIOS update file is saved to a hard drive in RAID/AHCI mode or a hard drive attached to an independent SATA controller, use the <End> key during the POST to access Q-Flash.

2. Select the BIOS update file.



**Make sure the BIOS update file matches your motherboard model.**

Step 2:

The screen will show that the BIOS file is being read from your USB flash drive. Please select **Fast** or **Intact** to begin the BIOS update. The screen will then display the update process.



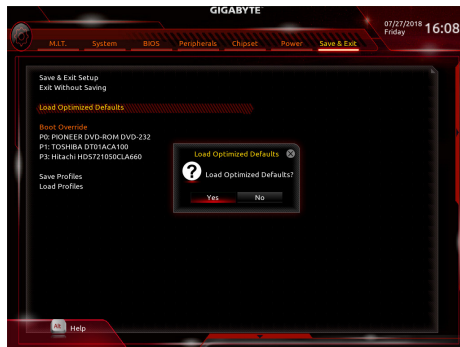
- Do not turn off or restart the system when the system is reading/updating the BIOS.
- Do not remove the USB flash drive or hard drive when the system is updating the BIOS.

Step 3:

The system will restart after the update process is complete.

Step 4:

During the POST, press <Delete> to enter BIOS Setup. Select **Load Optimized Defaults** on the **Save & Exit** screen and press <Enter> to load BIOS defaults. System will re-detect all peripheral devices after a BIOS update, so we recommend that you reload BIOS defaults.



Select **Yes** to load BIOS defaults

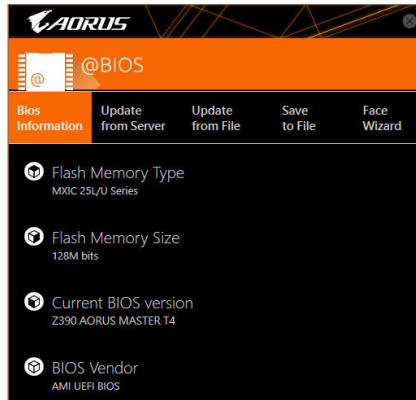
Step 5:

Select **Save & Exit Setup** and press <Enter>. And then select **Yes** to save settings to CMOS and exit BIOS Setup. The procedure is complete after the system restarts.

## 1-2 Updating the BIOS with the @BIOS Utility

### A. Before You Begin

1. In Windows, close all applications and TSR (Terminate and Stay Resident) programs. This helps prevent unexpected failures when performing a BIOS update.
2. If the BIOS is being updated via the Internet, ensure the Internet connection is stable and do NOT interrupt the Internet connection (for example, avoid a power loss or switching off the Internet). Failure to do so may result in a corrupted BIOS or a system that is unable to start.
3. GIGABYTE product warranty does not cover any BIOS damage or system failure resulting from an inadequate BIOS flashing.



### B. Using @BIOS

#### 1. Update the BIOS Using the Internet Update Function:



Click **Update from Server**, select the @BIOS server site closest to your location and then download the BIOS file that matches your motherboard model. Follow the on-screen instructions to complete.



If the BIOS update file for your motherboard is not present on the @BIOS server site, please manually download the BIOS update file from GIGABYTE's website and follow the instructions in "Update the BIOS without Using the Internet Update Function" below.

#### 2. Update the BIOS without Using the Internet Update Function:



Click **Update from File**, then select the location where you save the BIOS update file obtained from the Internet or through other source. Follow the on-screen instructions to complete.

#### 3. Save the Current BIOS File:



Click **Save to File** to save the current BIOS file.

#### 4. Change the Boot-up Logo:



Click **Upload new image** in Face-Wizard and you will be able to change the boot-up logo with your own picture, creating a personalized boot-up screen. Click **Backup current image** to save the current boot-up logo.



Supported image formats include jpg, bmp, and gif.

### C. After Updating the BIOS

Restart your system after updating the BIOS.



- Make sure that the BIOS file to be flashed matches your motherboard model. Updating the BIOS with an incorrect BIOS file could cause your system not to boot.
- Do not turn off the system or remove the power during the BIOS update process, or the BIOS may corrupt and the system may not boot.

## 1-3 Using Q-Flash Plus

### A. Before You Begin

1. From GIGABYTE's website, download the latest compressed BIOS update file that matches your motherboard model.
2. Uncompress the downloaded BIOS file, save it to your USB flash drive, and rename it to **GIGABYTE.bin**.  
Note: The USB flash drive must use the FAT32/16 file system and it must be a USB 2.0 flash drive.
3. Insert the USB flash drive into the white USB port on the back panel.

### B. Using Q-Flash Plus

If both the main and backup BIOS fail during system boot, wait for 15-20 seconds, the system will automatically search and match the BIOS file in the USB flash drive on the white USB port. The FBIOS\_LED will flash when the BIOS matching and flashing activities start.

Wait for 2-3 minutes and the FBIOS\_LED will stop flashing when the main BIOS flashing is complete.




After the main BIOS is flashed, the system will reboot automatically and then DualBIOS™ will continue to update the backup BIOS. After completion, the system will reboot again and boot from the main BIOS for normal operation.

## APP Center

GIGABYTE App Center gives you easy access to a wealth of GIGABYTE apps that help you get the most from your GIGABYTE motherboard <sup>(Note)</sup>. Using a simple, unified user interface, GIGABYTE App Center allows you to easily launch all GIGABYTE apps installed on your system, check related updates online, and download the apps, drivers, and BIOS.

### Running the APP Center

Insert the motherboard driver disk. On the Autorun screen, go to **Application Software** **Install GIGABYTE Utilities** to install GIGABYTE App Center and the selected apps. Restart your computer after the installation is complete. In Desktop mode, click the App Center icon  in the notification area to launch the App Center utility (Figure 1). On the main menu, you can select an app to run or click **LiveUpdate** to update an app online.

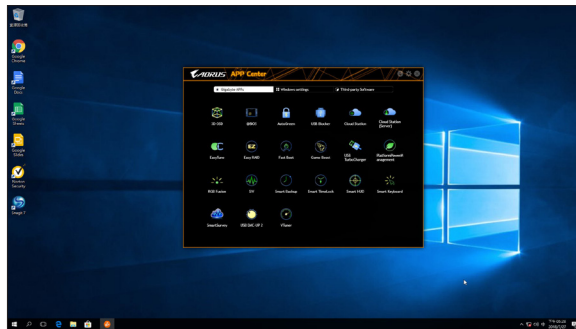


Figure 1

If the App Center is closed, you can restart it by clicking **Launch App Center** on the Start menu (Figure 2).

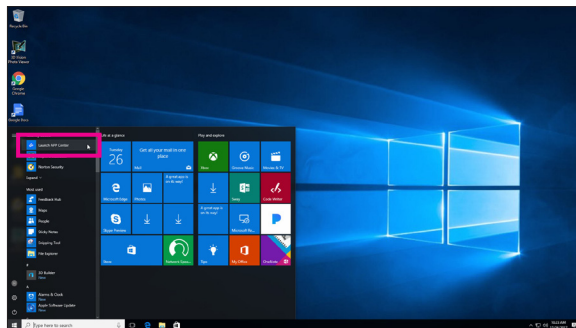


Figure 2

(Note) Available applications in APP Center may differ by motherboard model. Supported functions of each application may also vary depending on motherboard specifications.

## 2-1 3D OSD

3D OSD <sup>(Note)</sup> automatically detects and displays your system information during games, allowing you to easily get hold of your system information without switching between screens.

### The 3D OSD Interface



### Using 3D OSD

#### Main Menu:

Allows you to enable or disable the 3D OSD feature and to select the type of real-time system information you wish to display. 3D OSD will detect and display a list of available options.

#### Configuration Menu:

Allows you to set a hotkey for enabling /disabling 3D OSD and specify the font size/location/color of the displayed information.

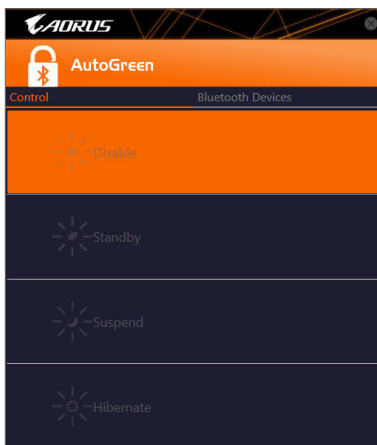
(Note) Please ensure that DirectX End-User Runtime has been installed on your system prior to installing 3D OSD.



## 2-2 AutoGreen

AutoGreen<sup>(Note)</sup> is an easy-to-use tool that provides users with simple options to enable system power savings via a Bluetooth-enabled smart phone/tablet device. When the device is out of the range of the computer's Bluetooth receiver, the system will enter the specified power saving mode. Before using this app, you need to turn on Bluetooth on both your computer and smart phone/tablet device.

### The AutoGreen Interface



#### Control Tab:

The **Control** tab allows you to select a system power saving mode.

Button	Description
Disable	Disables this function
Standby	Enters Power on Suspend mode
Suspend	Enters Suspend to RAM mode
Hibernate	Enters Suspend to Disk mode

#### Bluetooth Devices Tab:

The **Bluetooth** tab allows you to pair your smart phone/tablet device with the Bluetooth receiver on your computer. Press **Refresh** to let AutoGreen search for the Bluetooth devices around you. A message will appear on both your computer and smart phone/tablet device prompting you to compare the passcodes on the two devices. Confirm to complete the pairing process.

(Note) Once your smart phone/tablet device has been paired with your AutoGreen-enabled computer, you'll not be able to use it to connect to other Bluetooth device(s).

## 2-3 Cloud Station

GIGABYTE Cloud Station (Server) is composed of HomeCloud, GIGABYTE Remote, Remote OC, and HotSpot, which allow your smart phone, tablet device, and remote computer to communicate, share resources, and control the host computer via wireless connection. Cloud Station allows your computer to share files with another computer that has Cloud Station (Server) installed.

### Before You Begin:

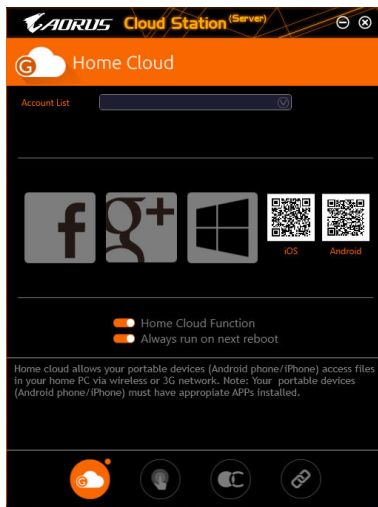
- To use HomeCloud, GIGABYTE Remote, and Remote OC, you must install GIGABYTE Cloud Station on your smart phone/tablet device. (For Android systems, please download the app from Google Play; for iOS systems, please download it from App Store.)<sup>(Note 1)</sup>
- To share HomeCloud files between computers, you need to install Cloud Station (Server) on the host computer and Cloud Station on the remote computer.
- Your smart phone/tablet device must have Android 4.0/iOS 6.0 or above version.
- The first time you use HomeCloud, GIGABYTE Remote, and Remote OC, you must sign in with your Google/Facebook/Windows Live account. Be sure to use the same account to sign in on your smart phone/tablet device and computers.

### HomeCloud

HomeCloud allows you to upload/download/back up files<sup>(Note 2)</sup> from your smart phone/tablet device/computer to the host computer.

### The HomeCloud Interface

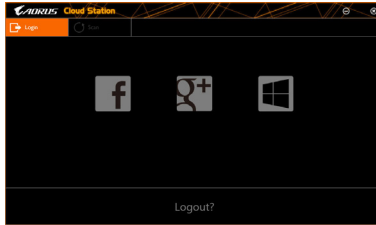
Cloud Station (Server):



(Note 1) You can use your smart phone/tablet device to scan the QR code on the HomeCloud UI to link to the download page of the GIGABYTE Cloud Station on App Store or Google Play.

(Note 2) For iOS systems, the file types are limited to image/video files.

## Cloud Station:



## Using HomeCloud

### Step 1:

Launch HomeCloud on the host computer (installed with Cloud Station (Server)), sign in with your Google/ Facebook/Windows Live account or select the account on the **Account List**. Then enable **HomeCloud Function**. To automatically enable this function after system reboot, enable **Always run on next reboot**.

### Step 2:

Run Cloud Station on your smart phone/tablet device/remote computer, sign in with the same account you use for HomeCloud on your host computer. Tap on **HomeCloud** to perform the following functions:

### On the Host Computer:

Option	Function
Account List	Displays currently signed in account(s).
Remove	Remove the selected account.
Share Folder	Displays the shared folder directory of the currently signed in account.
Open Folder	Access the shared folder of the currently signed in account.

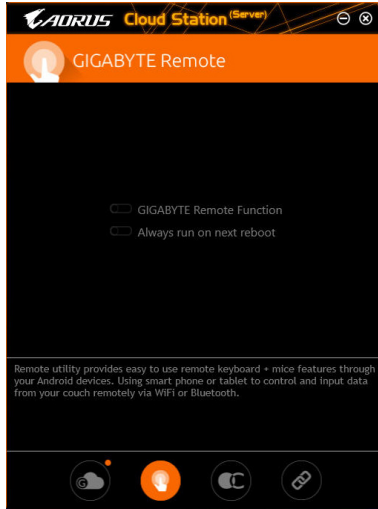
### On the Smart Phone/Tablet Device/Remote Computer:

Option	Function
All Picture Files	File Upload: Tap on the folder, browse and select the files inside. Tap on the menu icon and select <b>Upload selected Files</b> to upload the files to your computer. File Download: Tap on the folder and then tap on the menu icon, select <b>Download Files</b> . You can browse the files and select the files that you want to download to your smart phone/tablet device.
All Music Files	
All Video Files	
All Files	
User Contacts	Tap on the folder and then tap on the menu icon to use the options including <b>Backup to remote, Restore From remote, View Remote Contact, and Reselect Computers</b> .
Call Log	

## GIGABYTE Remote

GIGABYTE Remote allows you to use your smart phone/tablet device to remotely control the mouse/keyboard/Windows Media Player on your computer.

### The GIGABYTE Remote Interface



### Using GIGABYTE Remote

#### Step 1:

On the host computer, launch GIGABYTE Remote and enable **GIGABYTE Remote Function**. To automatically enable this function after system reboot, enable **Always run on next reboot**.

#### Step 2:

Run GIGABYTE Cloud Station on your smart phone/tablet device, sign in with the same account you use for HomeCloud on your computer. Tap on **Remote Control** to perform the following remote controls:

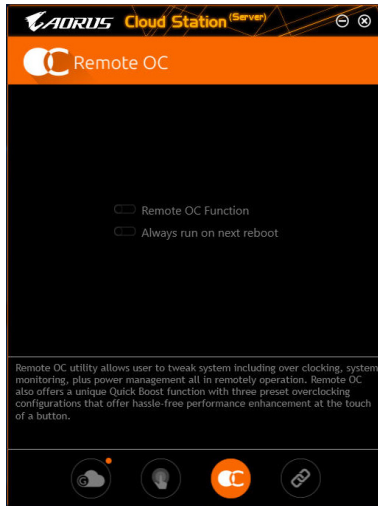
#### On the Smart Phone/Tablet Device:

Option	Function
Mouse	Remotely perform mouse functionalities including dragging, right/left-clicking, and holding the mouse left button.
Keyboard	Remotely control your keyboard such as text input (tap on Real-Time Mode to type texts) or deletion.
Media	Remotely configure and control the currently running Windows Media Player application on your computer.

## Remote OC

Remote OC provides you with remote control options including overclocking and system tweaking, system monitoring plus the ability to also remotely power down/reset the PC when needed.

### The Remote OC Interface



## Using Remote OC

### Step 1:

On the host computer, launch Remote OC and enable **Remote OC Function**. To automatically enable this function after system reboot, enable **Always run on next reboot**.

### Step 2:

Run GIGABYTE Cloud Station on your smart phone/tablet device, sign in with the same account you use for HomeCloud on your computer. Tap on **Remote OC** to perform the following functions:

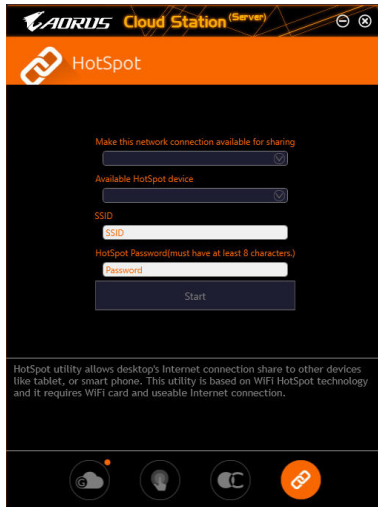
#### On the Smart Phone/Tablet Device:

Option	Function
Tuner	Allows you to change CPU/memory frequency and voltage settings.
INFO	Displays the system information, including the CPU, motherboard, and memory.
HW MONIT	Allows you to monitor system temperatures, voltages, and fan speeds.
QUICK BOOST	Provides you with three preset overclocking configurations.
CONTROL	Allows you to remotely reboot or shut down your computer.

## HotSpot

HotSpot turns your computer into a virtual wireless access point and allows you to share your connection with your other wireless devices. Make sure your computer has been connected to a network and Wi-Fi is enabled.

### The HotSpot Interface



### Using HotSpot:

Configuring your host computer:

The options are as follows. Make sure to click **Start** to complete.

- **Make this network connection available for sharing:**  
Select a currently running network connection you want to share.
- **Available HotSpot device:**  
Select a network virtual adapter. If there are more than one Wi-Fi card on your computer, you need to select the one you want to use from the list.
- **SSID:**  
The hotspot SSID name. You can keep the default name or create your own one.
- **HotSpot Password(must have at least 8 characters):**  
The password is required when other wireless devices want to access the Internet through the virtual wireless access point. You can keep the default name or create your own one. The password must have at least 8 characters and cannot be empty.

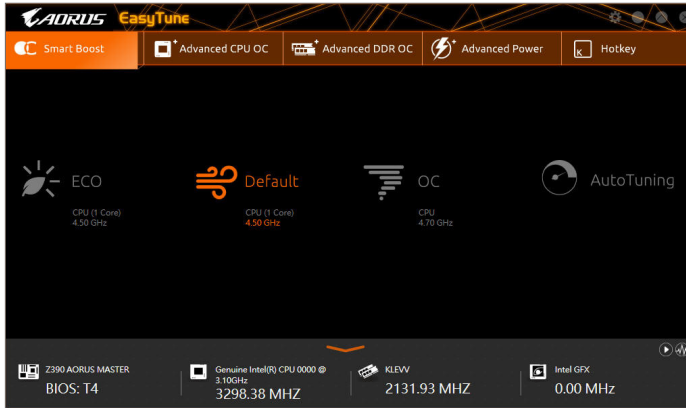
### Sharing your connection with other wireless devices:

First make sure Wi-Fi is enabled on the wireless devices. Then browse to the network configuration screen, search for available Wi-Fi networks, and tap the name of your virtual wireless access point, enter the password, and confirm.






## 2-4 EasyTune

GIGABYTE's EasyTune is a simple and easy-to-use interface that allows users to fine-tune their system settings or do overclock/overvoltage in Windows environment.

### The EasyTune Interface



### Tabs Information

Tab	Description
 Smart Boost	The <b>Smart Boost</b> tab provides you with different levels of CPU frequency to choose to achieve desired system performance. After making changes, be sure to restart your system for these changes to take effect.
 Advanced CPU OC	The <b>Advanced CPU OC</b> tab allows you to set CPU base clock, frequency, and voltages, and integrated graphics frequency. You can save the current settings to a profile. You can create up to 2 profiles.
 Advanced DDR OC	The <b>Advanced DDR OC</b> tab allows you to set the memory clock.
 Advanced Power	The <b>Advanced Power</b> tab allows you to adjust voltages.
 Hotkey	The <b>HotKey</b> tab allows you to set hotkeys for your profiles.



Available functions in EasyTune may vary by motherboard model and CPU. Grayed-out area(s) indicates that the item is not configurable or the function is not supported.



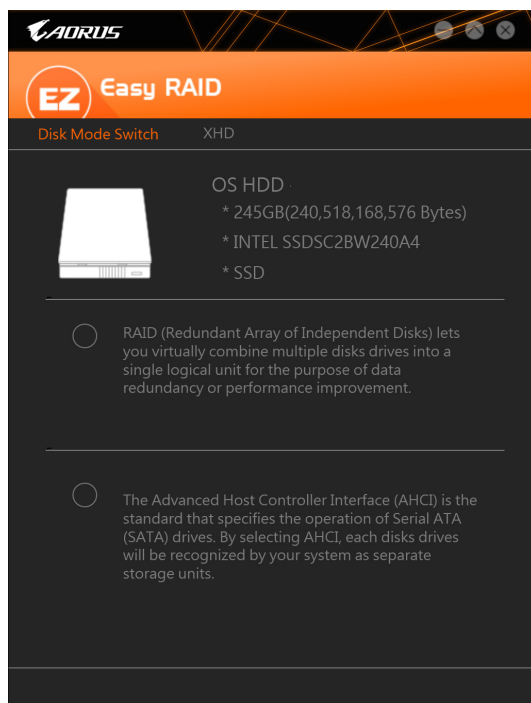
Incorrectly doing overclock/overvoltage may result in damage to the hardware components such as CPU, chipset, and memory and reduce the useful life of these components. Before you do the overclock/overvoltage, make sure that you fully know each function of EasyTune, or system instability or other unexpected results may occur.

## 2-5 Easy RAID

The GIGABYTE Easy RAID<sup>(Note)</sup> utility includes the following 'EZ' setups applications that will offer greatly simplified install and configuration procedures: Disk Mode Switch and XHD.

### Disk Mode Switch

Disk Mode Switch allows you to change the SATA controller disk mode from AHCI to RAID mode even after the hard drive has been installed with an operating system. After switching the operating mode, please restart your computer and make sure the Intel® Rapid Storage Technology utility can work properly.



(Note) This feature is supported only in UEFI mode.



## XHD

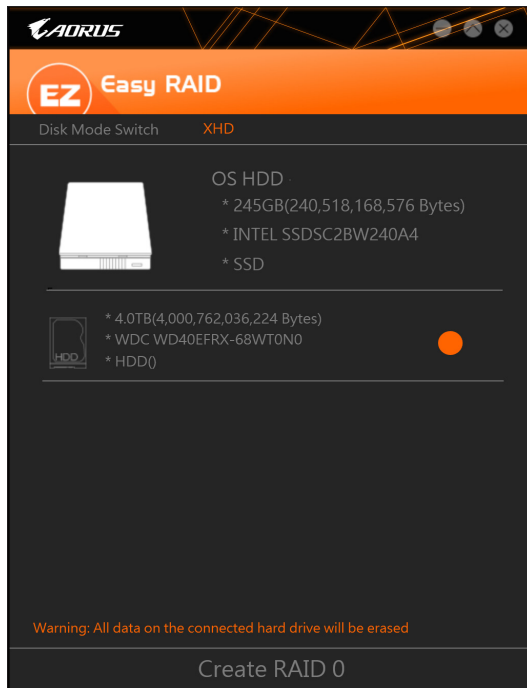
With GIGABYTE XHD <sup>(Note 1)</sup>, users can quickly configure a RAID-ready system for RAID 0 when a new SATA drive is added. All with a simple click of a button, XHD helps to enhance your hard drive read/write performance without the need for complex and time-consuming configurations.

### A. System Requirements

1. An Intel® Chipset motherboard supporting RAID
2. Intel® SATA controllers set to RAID mode
3. Intel® Rapid Storage Technology utility installed
4. Intel® SATA controller driver installed
5. The new drive must have equal or greater capacity than the system drive.

### B. Using XHD

Select **XHD** and click **Create RAID 0** based on your need <sup>(Note 2)</sup>.



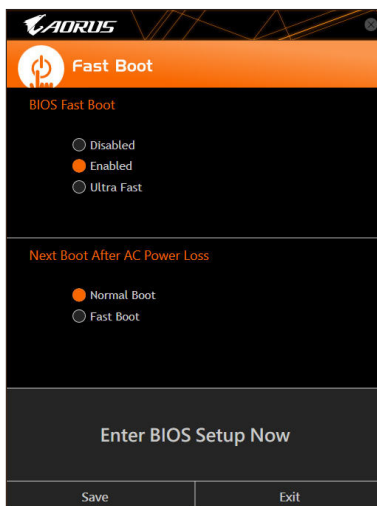
(Note 1) The XHD utility only supports the SATA connectors controlled by the Intel® Chipset.

(Note 2) Except for the operating system drive, all data on other hard drive will be deleted. Back up your data before using the XHD utility.

## 2-6 Fast Boot

Through the simple GIGABYTE Fast Boot interface, you can enable or change the **Fast Boot** or **Next Boot After AC Power Loss** setting right in the operating system.

### The Fast Boot Interface



### Using Fast Boot

- **BIOS Fast Boot:**  
This option is the same as the **Fast Boot** option <sup>(Note)</sup> in BIOS Setup. It allows you to enable or disable the fast boot function to shorten OS boot time.
- **Next Boot After AC Power Loss:**  
This option is the same as the **Next Boot After AC Power Loss** option <sup>(Note)</sup> in BIOS Setup. It allows you to select the system bootup mode upon the return of an AC power loss. (This mode is configurable only when **BIOS Fast Boot** is set to **Enabled** or **Ultra Fast**.)

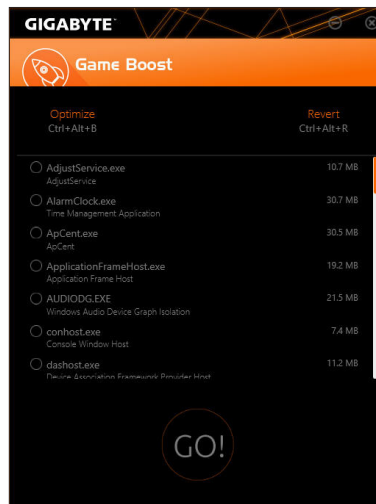
After you configure the settings, click **Save** to save and click **Exit**. The settings will take effect on next boot. If you click the **Enter BIOS Setup Now** button, the system will restart and enter BIOS Setup immediately.

(Note) For more details about this function, refer to Chapter 2, "BIOS Setup."

## 2-7 Game Boost

This app allows you to flexibly manage your applications to optimize your gaming performance by freeing up system resources and memory usage.

### The Game Boost Interface



### Using Game Boost

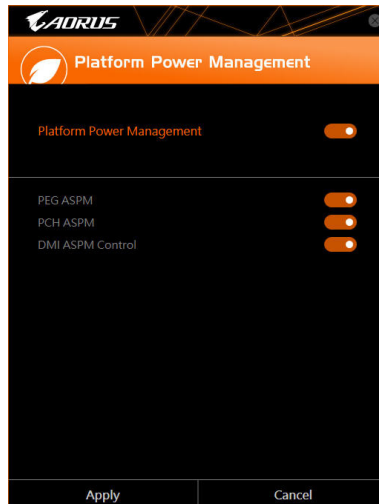
Select the application you want to suspend and then click **Go** to optimize your system for gaming. To revert the computer back to the state it was before, click **Revert**. In addition, two hotkeys are provided as follows:

- **Optimize(Ctrl+Alt+B)**: Automatically optimizes your gaming platform and gaming performance.
- **Revert(Ctrl+Alt+R)**: Restores your computer back to the state before the gaming begins.

## 2-8 Platform Power Management

This application allows you to change the Platform Power Management settings in Windows and sync the settings to the BIOS.

### The Platform Power Management Interface



#### Using Platform Power Management:

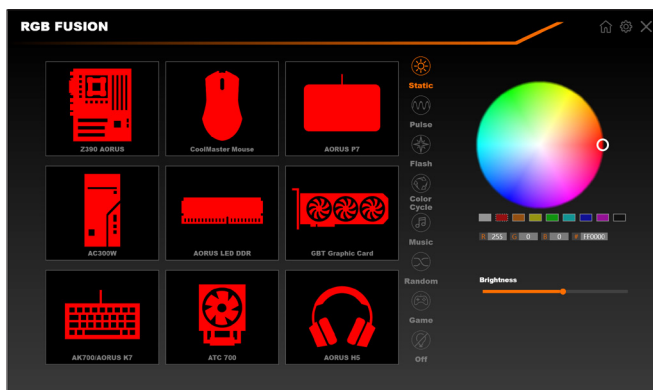
- **Platform Power Management:**  
Enables or disables the Active State Power Management function (ASPM).
- **PEG ASPM:**  
Allows you to configure the ASPM mode for the device connected to the CPU PEG bus.
- **PCH ASPM:**  
Allows you to configure the ASPM mode for the device connected to Chipset's PCI Express bus.
- **DMI ASPM Control:**  
Allows you to configure the ASPM mode for both CPU side and Chipset side of the DMI link.

(Note) **PEG ASPM, PCH ASPM, DMI ASPM Control** are configurable only when **Platform Power Management** is set to **Enabled**.



## 2-9-1 RGB Fusion

This application allows you to enable or specify the lighting mode of the select device <sup>(Note 1)</sup> while in the Windows environment.

### The RGB Fusion Interface



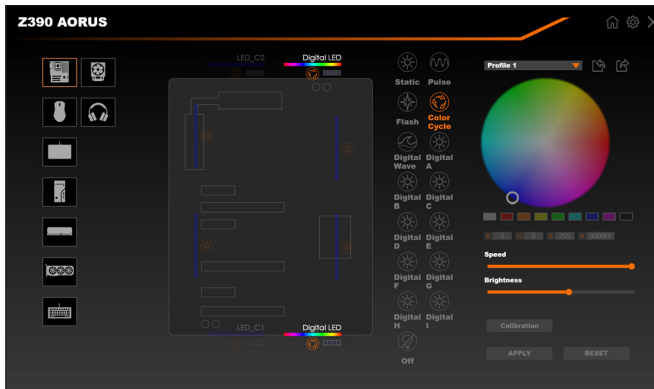
### Using RGB Fusion

- The  icon on the top right corner: Allows you to return to the main menu.
- The  icon on the top right corner: Allows your computer to connect to the GIGABYTE RGB Fusion app installed on your handheld devices. <sup>(Note 2)</sup>
- Click the icon of the desired device and select the LED color/ lighting behaviour on the right section of the screen.

Static	All LEDs emit a single color.
Pulse	All LEDs simultaneously fade in and fade out.
Flash	All LEDs simultaneously flash on and off.
Color Cycle	All LEDs simultaneously cycle through a full spectrum of colors.
Music	All LEDs are synchronized with your music.
Random	Single LED regions flash randomly.
Game	All LEDs are synchronized with your game.
Off	Turn off all LEDs.

(Note 1) RGB Fusion will automatically search for the devices that have LED lighting feature and display them on the list.

(Note 2) Please download the **RGB Fusion** app from App Store or Google Play.



- Options for controlling the LEDs on the motherboard and digital LED strip. Click the motherboard icon for further settings. <sup>(Note)</sup>

Select your desired area and select the LED color/ lighting behaviour on the right section of the screen.

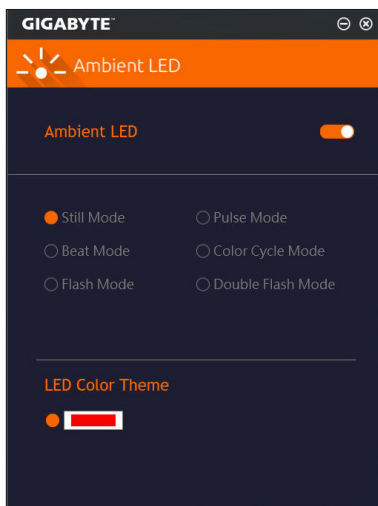
Static	The selected region LEDs emit a single color.
Pulse	The selected region LEDs simultaneously fade in and fade out.
Flash	The selected region LEDs simultaneously flash on and off.
Color Cycle	All LEDs simultaneously cycle through a full spectrum of colors.
Digital Wave	A full color spectrum cascades throughout the armor LED.
Digital A~I Mode	Provides multiple digital lighting mode throughout the armor LED and LED strip.
Off	Disable the selected region LEDs.

(Note) Regions/Modes/Colors available may vary by motherboard.


## 2-9-2 Ambient LED

This application allows you to enable or specify the lighting mode of the onboard LEDs while in the Windows environment.

### The Ambient LED Interface



### Using Ambient LED

- The  icon on the top right corner:  
Allows you to enable or disable the LED lighting.

- Allows you to configure the lighting behaviour of all LEDs.

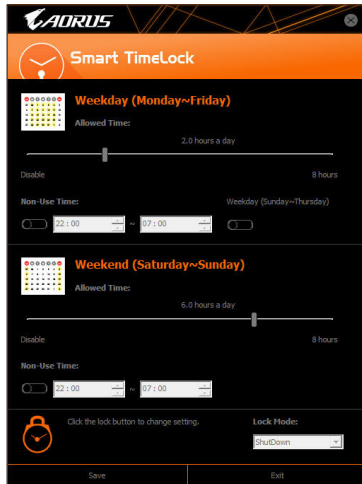
Still Mode	All LEDs emit a single color.
Beat Mode	All LEDs are synchronized with your music.
Flash Mode	All LEDs simultaneously flash on and off.
Pulse Mode	All LEDs simultaneously fade in and fade out.
Color Cycle Mode	All LEDs simultaneously cycle through a full spectrum of colors.
Double Flash Mode	All LEDs flash in an interlaced pattern.

LED Color Theme	Select the LED color.
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## 2-10 Smart TimeLock

GIGABYTE Smart TimeLock allows you to effectively manage computer or Internet usage time with simple rules and options.

### The Smart TimeLock Interface



### Using Smart TimeLock

Click the lock icon  on the bottom left corner and enter the password <sup>(Note)</sup>. Set the time when a user can or cannot use your computer for weekdays and weekends. The **Lock Mode** on the bottom right corner allows you to choose to turn off the computer or only close the Internet connection during the specified time period. Click **Save** to save the settings and click **Exit** to exit.

An alert will appear 15 minutes and 1 minute prior to the default shutdown time. When the alert appears, you can enter the password to extend the usage time or click **Cancel** to close the alert. If you respond **Cancel**, you will be requested to enter the password to extend the usage time again when the default shutdown time arrives, or the computer will shutdown right away.

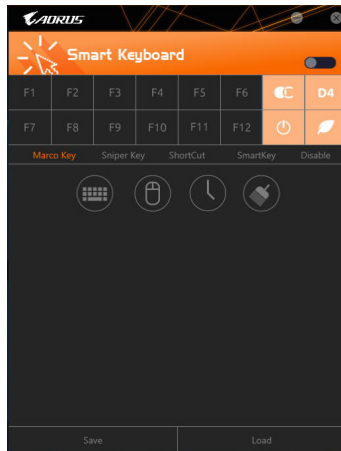
(Note) You can set the User Password in the system BIOS Setup program to prevent the system time being changed by other users.



## 2-11 Smart Keyboard

GIGABYTE Smart Keyboard allows you to set your own hotkeys using the F1 through F12 keys. You can use the customized hotkeys to change the mouse sensitivity, replace a word or password, open a file or an application, all of which helps to make the most out of your keyboard and mouse.

### The Smart Keyboard Interface



### Using Smart Keyboard

Select one of the F1 through F12 keys and configure the following functions:

- **Marco Key:**  
Allows you to assign key strokes to the selected key, or use the key to record mouse location, or set time interval between each keystroke.
- **Sniper Key:**  
Using this option, you can switch the mouse sensitivity when you are in sniper mode for better sniper accuracy.
- **Smart Cut:**  
Allows you to create keyboard shortcuts for a file or an application.
- **Smart Key:**  
Allows you to give the selected key the ability to replace to a word or password.
- **Disable:**  
Allows you to disable the functionality of particular key(s).

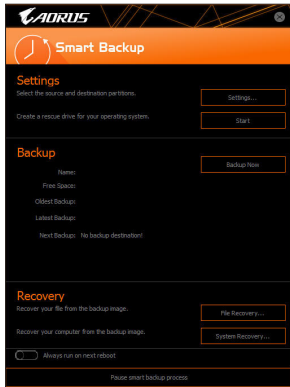
After completing the settings, make sure to click **Enable keyboard monitor function** on the top right corner.

- **Save:**  
Save current settings as a profile.
- **Load:**  
Load a previously save profile.

(Note) It is recommended that Smart Keyboard be closed if it violates the end user license agreement of your game.

## 2-12 Smart Backup

Smart Backup allows you to back up a partition as an image file every hour. You can use these images to restore your system or files when needed.



The Smart Backup main menu:

Button	Description
Settings	Allows you to select the source and destination partition
Start	Allows you to create a rescue drive
Backup Now	Allows you to perform the backup immediately
File Recovery...	Allows you to recover your files from the backup image
System Recovery...	Allows you to recover your system from the backup image



- Smart Backup only supports NTFS file system.
- You need to select the destination partition in **Settings** the first time you use Smart Backup.
- The **Backup Now** button will be available only after 10 minutes you have logged in Windows.
- Select the **Always run on next reboot** checkbox to automatically enable Smart Backup after system reboot.

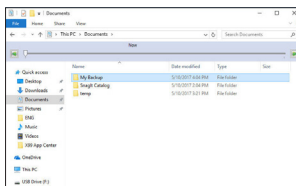


### Creating a backup:

Click the **Settings** button on the main menu. In the **Settings** dialog box, select the source partition and destination partition and click **OK**. The initial backup will start after 10 minutes and regular backup will be performed hourly. Note: By default, all partitions on the system drive are selected as the backup source. The backup destination cannot be on the same partition as the backup source.

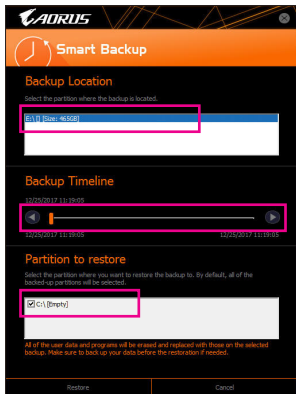
### Saving the backup to a network location:

If you want to save the backup to a network location, select **Browse network location**. Make sure your computer and the computer where you want to save the backup are in the same domain. Choose the network location where you want to store the backup and enter the user name and password. Follow the on-screen instructions to complete.



### Recovering a file:

Click the **File Recovery** button on the main menu. Use the time slider on the top of the popped out window to select a previous backup time. The right pane will display the backed-up partitions in the backup destination (in the **My Backup** folder). Browse to the file you want and copy it.



## Recovering your system with Smart Backup:

Steps:

1. Click the **System Recovery** button on the main menu.
2. Select the location where your backup is saved.
3. Use the time slider to select a time point.
4. Select a partition backup created on the selected time point and click **Restore**.
5. Confirm whether to restart your system to proceed with the restore immediately or later. Once you respond "Yes" the system will restart to the Windows recovery environment. Follow the onscreen instructions to restore your system.

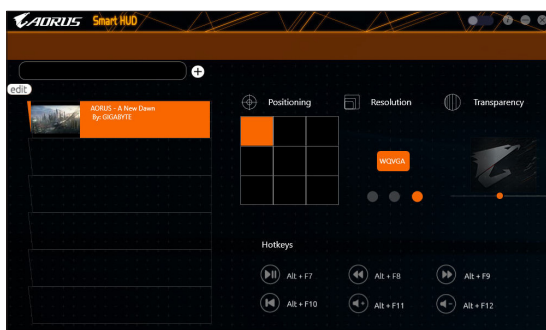


All of your files and programs will be deleted and replaced with those on the selected backup. If needed, be sure to make a copy of your data before the restore.


## 2-13 Smart HUD

GIGABYTE Smart HUD provides you with the ability to watch a video on YouTube or Twitch simultaneously during gameplay by simply setting the URLs on the UI. The easy-to-use UI allows you to memorize frequently used URLs, set window position and size, and change window transparency. Also, you can control Smart HUD videos and volume with hotkeys.

### The Smart HUD Interface



### Using Smart HUD

- The  icon on the top right corner:  
Allows you to open the Smart HUD window.

- **Configuration Menu:**

<b>[ + ]</b> / edit	Add or remove video URLs or add preference.
Positioning	Select the window position.
Resolution	Select the window size.
Transparency	Set the window transparency.

- **Hot Keys:**

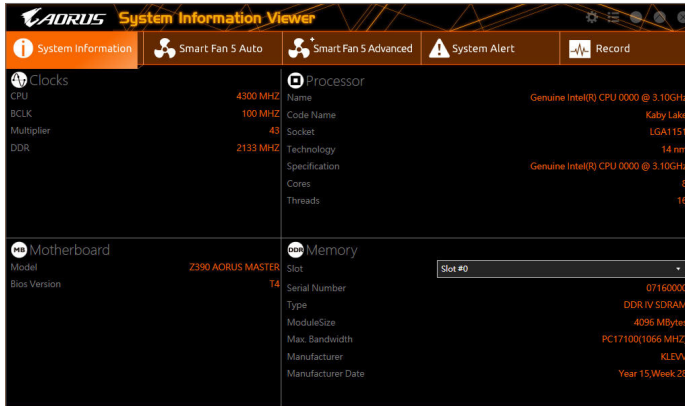
Alt + F7	Start, pause
Alt + F8	Fast forward
Alt + F9	Fast backward
Alt + F10	Replay
Alt + F11	Increase the volume
Alt + F12	Decrease the volume

(Note) Please ensure that DirectX End-User Runtime has been installed on your system prior to installing Smart HUD.








## 2-14 System Information Viewer

GIGABYTE System Information Viewer allows you to monitor and adjust the fan speed in the operating system. You can also display the hardware monitor information on the desktop to view the system status at any time.

### The System Information Viewer Interface



### Tabs Information

Tab	Description
 System Information	The <b>System Information</b> tab provides information on the installed CPU, motherboard, and the BIOS version.
 Smart Fan 5 Auto	The <b>Smart Fan 5 Auto</b> tab allows you to specify a Smart Fan mode.
 Smart Fan 5 Advanced	The <b>Smart Fan 5 Advanced</b> tab allows you to adjust the smart fan speed. The fans will run at different speeds according to system temperatures. Using the <b>Smart Fan</b> option you can adjust the fan's workload according system temperatures or you can fix the fan speeds using the <b>RPM Fixed Mode</b> option. Click the <b>Calibrate</b> button and the fan speed will be shown in relation to overall fan workload after calibration. The <b>Reset</b> button can revert the fan settings back to the last saved values.
 System Alert	The <b>System Alert</b> tab allows you to monitor hardware temperature, voltage and fan speed, and set temperature/fan speed alarm.  allows you to select what information to be displayed in quick mode (by default, all of the hardware information are displayed);  allows you to enable alert notification, click <b>Apply</b> after selection.
 Record	The <b>Record</b> tab allows you to record changes in system voltages, temperatures, and fan speeds. Please note, the recording will stop if you exit the <b>Record</b> tab during the recording process.

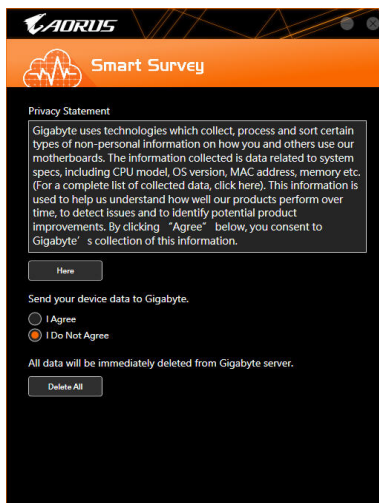


The speed control function requires the use of a fan with fan speed control design.

## 2-15 Smart Survey

GIGABYTE Smart Survey collects, processes, and sort certain types of non-personal information on how you and others use our motherboards. The information collected is data related to system specs, including CPU model, OS version, MAC address, memory etc. This information is used to help us understand how well our products perform over time, to detect issues and to identify potential product improvements.

### The Smart Survey Interface



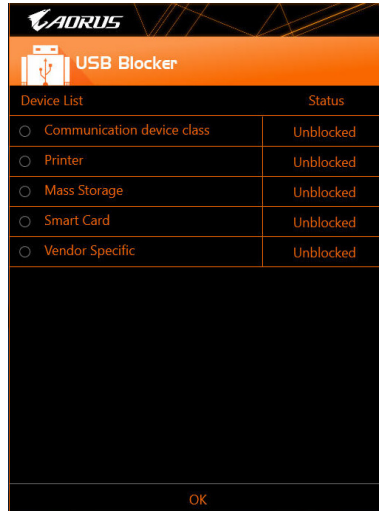
### Using Smart Survey

- **Clicking "Here":**  
Allows you to check the complete list of collected data.
- **Sending Device Data to GIGABYTE:**  
Selecting **I Agree** means you consent to GIGABYTE's collection of your device data. Smart Survey will not collect any data if you select **I Do Not Agree**.
- **Clicking "Delete All":**  
All data will be immediately deleted from Gigabyte server.

## 2-16 USB Blocker

GIGABYTE USB Blocker provides you with an easy-to-use interface that allows you to block certain USB device types on your PC. Devices classes that are blocked will be ignored by the operating system.

### The USB Blocker Interface



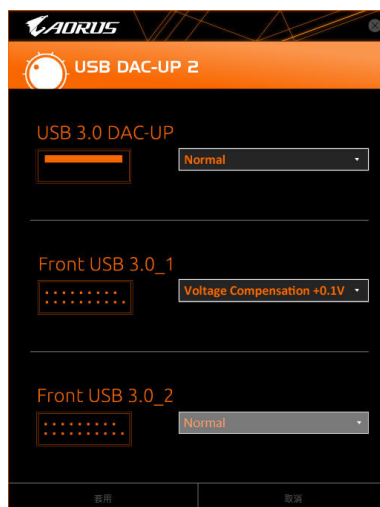
### Using USB Blocker

Select the class of USB device that you would like to block or unblock. Double left-click to change the **Blocked** or **Unblocked** status and click **OK**. Then enter your password and click **OK** to complete.

## 2-17 USB DAC-UP 2

GIGABYTE USB DAC-UP 2 allows you to increase the output voltage of the USB 3.1 Gen 1 ports on the front or back panel to strengthen the stability of your USB device(s).

### The USB DAC-UP 2 Interface



### Using USB DAC-UP 2

Click the drop down list on the right of the USB 3.1 Gen 1 connector you want to adjust the voltage and choose an option. Then click **Apply**. After the system restarts, the settings will be synchronized with the BIOS settings. The options are as follows:

- Normal: Keeps the original output voltage.
- Disable USB bus power: Disables the power of the USB connectors. High-end audio players may connect their own external USB power source.
- Voltage Compensation +0.1V: Adds 0.1V to the original output voltage.
- Voltage Compensation +0.2V: Adds 0.2V to the original output voltage.
- Voltage Compensation +0.3V: Adds 0.3V to the original output voltage.

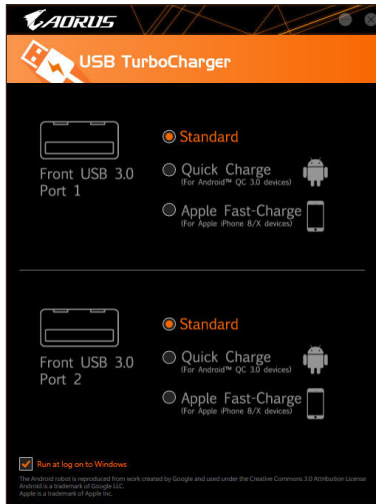
(Note) Connectors available may vary by motherboard.



## 2-18 USB TurboCharger

GIGABYTE USB TurboCharger supports the quick charging technologies <sup>(Note 1)</sup> of Apple's and Android™ QC 3.0's smart phones/tablet devices. It allows you to quick-charge your device(s) connected to the front USB 3.1 Gen 1 type A port (s) with the required mode.

### The USB TurboCharger Interface



### Using USB TurboCharger

The quick-charging performance of each connector may vary by the device used. Refer to the table below to select a proper way to charge:

	Apple	Android™ QC 3.0
<b>Standard</b>	Used as a normal USB 3.1 Gen 1 port	Used as a normal USB 3.1 Gen 1 port
<b>Quick Charge <sup>(Note 2)</sup></b>	✓ * Provides maximum output power of 10 W	✓ * Provides maximum output power of 18 W
<b>Apple Fast Charge <sup>(Note 3)</sup></b>	✓ * Provides maximum output power of 15 W	✗

✓ : Supports quick-charge, ✗ : Not support quick-charge.



While the system is in S3/S4, the Quick Charge and Apple Fast-Charge modes can only deliver 5V standby power, and the two front USB ports together can provide a total power of up to 10 W and do not support PME Event Wake Up function.

(Note 1) Quick-charging protocols supported: Apple and Samsung® divider charging profile at 5V@2.4A and 5V@2A, Qualcomm® Quick Charge 3.0™ at 3.6V~12V (QC3.0), backward compatible Quick Charge 2.0™ at 5V/9V/12V (QC2.0), Battery Charging Specification v1.2 DCP 5V@1.5A.

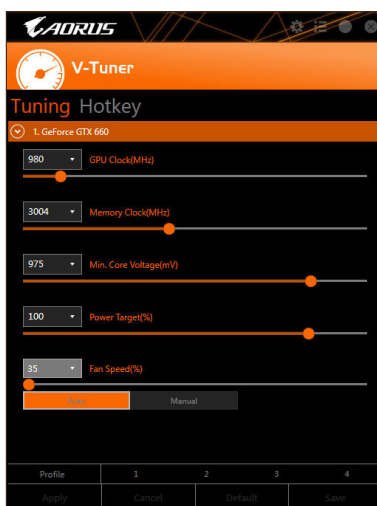
(Note 2) The file transfer function is not supported in this mode.

(Note 3) This is the recommended mode when Apple iPhone 8 / iPhone plus / iPhone X is connected.


## 2-19 V-Tuner

GIGABYTE V-Tuner <sup>(Note 1)</sup> allows you to easily fine-tune your graphics card in the Windows environment. You can manually overclock the GPU and memory <sup>(Note 2)</sup> or adjust the fan speed and power settings. It also allows you to monitor your graphics card status at any time.

### The V-Tuner Interface



### Using V-Tuner

You can manually select the values of each item or use the sliders for adjustment and then click **Apply**. To set the fan speed you need to select **Manual** first. You can save the current settings to a profile and create up to 4 profiles. To check the graphics card status, you can click the  icon on the top right corner.

(Note 1) Before using V-Tuner, be sure to install the graphics card driver first.

(Note 2) Items available may vary by graphics cards.