GA-E6010N

User's Manual

Rev. 1001



For more product details, please visit GIGABYTE's website.



To reduce the impacts on global warming, the packaging materials of this product are recyclable and reusable. GIGABYTE works with you to protect the environment.



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- In order to assist in the use of this product, carefully read the User's Manual.
- For product-related information, check on our website at: https://www.gigabyte.com

Identifying Your Motherboard Revision

The revision number on your motherboard looks like this: "REV: X.X." For example, "REV: 1.0" means the revision of the motherboard is 1.0. Check your motherboard revision before updating motherboard BIOS, drivers, or when looking for technical information.

Example:





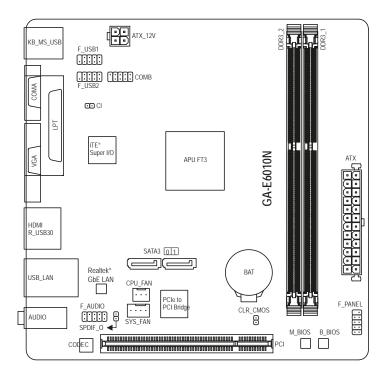


Table of Contents

GA-E6010	N Mot	herboard Layout	4
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Chapter 1	Hardy	ware Installation	5
	1-1	Installation Precautions	5
	1-2	Product Specifications	<i>6</i>
	1-3	Installing the Memory	8
	1-4	Installing an Expansion Card	8
	1-5	Back Panel Connectors	8
	1-6	Internal Connectors	10
Chapter 2	BIOS	Setup	15
	2-1	Startup Screen	15
	2-2	M.I.T	16
	2-3	System Information	19
	2-4	BIOS Features	20
	2-5	Peripherals	23
	2-6	Power Management	25
	2-7	Save & Exit	27
Chapter 3	Appe	ndix	28
		s Installation	
	Regula	atory Notices	29
	Conta	rt IIs	32



GA-E6010N Motherboard Layout



Box Contents

- ☑ GA-E6010N motherboard
- Motherboard driver disc
- ☑ Two SATA cables
- ✓ User's Manual
- ☑ I/O Shield



^{*} The box contents above are for reference only and the actual items shall depend on the product package you obtain.

The box contents are subject to change without notice.

Chapter 1 Hardware Installation

1-1 Installation Precautions

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the user's manual and follow these procedures:

- Prior to installation, make sure the chassis is suitable for the motherboard.
- Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.
- When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely.
- When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
- Prior to installing the motherboard, please have it on top of an antistatic pad or within an
 electrostatic shielding container.
- Before connecting or unplugging the power supply cable from the motherboard, make sure the power supply has been turned off.
- Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
- Before using the product, please verify that all cables and power connectors of your hardware components are connected.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
- Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- Do not place the computer system on an uneven surface.
- Do not place the computer system in a high-temperature or wet environment.
- Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.
- If you use an adapter, extension power cable, or power strip, ensure to consult with its installation and/or grounding instructions.



1-2 Product Specifications

APU	Built in an AMD® E1-6010 (1.35 GHz) APU with Radeon™ R2 graphics SoC * Do not disassemble the onboard SoC and the heatsinks by yourself to avoid damage to these components. 2MB L2 Cache
Memory	2 x DDR3 DIMM sockets supporting up to 32 GB of system memory * The maximum 32 GB of system memory can be supported using 16 GB (or above) memory modules. GIGABYTE will update the memory support list on the official website when the memory modules are available on the market. Support for DDR3 1333/1066 MHz memory modules (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
Onboard	Integrated in the SoC:
Graphics	 1 x D-Sub port, supporting a maximum resolution of 1920x1200 1 x HDMI port, supporting a maximum resolution of 4096x2160
	* Support for HDMI 1.4a version.
	- Maximum shared memory of 2 GB
Audio	Realtek® ALC887 codec
	High Definition Audio
	• 2/4/5.1/7.1-channel
	* To configure 7.1-channel audio, you need to open the audio software and select Device advanced settings > Playback Device to change the default setting first.
	Please visit GIGABYTE's website for details on configuring the audio software.
	Support for S/PDIF Out
LAN LAN	Realtek® GbE LAN chip (1000 Mbit/100 Mbit)
	Notation Obe 2 in only (1000 mon) 100 mon)
Expansion Slots	1 x PCI slot
Storage Interface	· ·
	- 2 x SATA 6Gb/s connectors
USB	• Integrated in the SoC:
	- 2 x USB 3.1 Gen 1 ports on the back panel
	- 8 x USB 2.0/1.1 ports (4 ports on the back panel, 4 ports available through
_	the internal USB headers)
Internal	1 x 24-pin ATX main power connector
Connectors	1 x 4-pin ATX 12V power connector
	2 x SATA 6Gb/s connectors
	1 x APU fan header
	1 x system fan header
	1 x front panel header 1 y front panel audio header
	 1 x front panel audio header 1 x S/PDIF Out header
	 1 x S/PDIF Out header 2 x USB 2.0/1.1 headers
	 2 x 05B 2.0/1.1 headers 1 x serial port header
	1 x chassis intrusion header
	1 x Chassis initiation neader 1 x Clear CMOS jumper
	1 x Great Givios jumper

Back Panel Connectors	 1 x PS/2 keyboard/mouse port 1 x parallel port 1 x serial port 1 x D-Sub port 1 x HDMI port 2 x USB 3.1 Gen 1 ports 4 x USB 2.0/1.1 ports 1 x RJ-45 port 3 x audio jacks
I/O Controller	iTE* I/O Controller Chip
Hardware Monitor	 Voltage detection Temperature detection Fan speed detection Fan speed control Whether the fan speed control function is supported will depend on the cooler you install.
BIOS	 2 x 64 Mbit flash Use of licensed AMI UEFI BIOS Support for DualBIOS™ PnP 1.0a, DMI 2.7, WfM 2.0, SM BIOS 2.7, ACPI 5.0
Unique Features	 Support for @BIOS Support for Q-Flash Support for Xpress Install
Bundled Software	Norton® Internet Security (OEM version)
Operating System	 Support for Windows 10 64-bit Support for Windows 7 64-bit Please download the "Windows USB Installation Tool" from GIGABYTE's website and install it before installing Windows 7.
Form Factor	Mini-ITX Form Factor; 17.0cm x 17.0cm

^{*} GIGABYTE reserves the right to make any changes to the product specifications and product-related information without prior notice.



Please visit GIGABYTE's website for support lists of memory modules.



Please visit the Support\Utility List page on GIGABYTE's website to download the latest version of apps.



Please visit GIGABYTE's website for details on hardware installation.



1-3 Installing the Memory

Read the following guidelines before you begin to install the memory:



- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
 - (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. A memory module can be installed in only one direction.
 If you are unable to insert the memory, switch the direction.

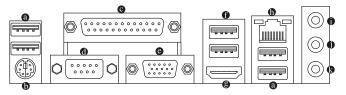
1-4 Installing an Expansion Card



Read the following guidelines before you begin to install an expansion card:

- Make sure the motherboard supports the expansion card. Carefully read the manual that came with your expansion card.
- Always turn off the computer and unplug the power cord from the power outlet before installing an
 expansion card to prevent hardware damage.

1-5 Back Panel Connectors



USB 2.0/1.1 Port

The USB port supports the USB 2.0/1.1 specification. Use this port for USB devices.

PS/2 Keyboard/Mouse Port

Use this port to connect a PS/2 mouse or keyboard.

Parallel Port

Use the parallel port to connect devices such as a printer, scanner and etc. The parallel port is also called a printer port.

Serial Port

Use the serial port to connect devices such as a mouse, modem or other peripherals.

O D-Sub Port

The D-Sub port supports a 15-pin D-Sub connector and supports a maximum resolution of 1920x1200 (the actual resolutions supported depend on the monitor being used). Connect a monitor that supports D-Sub connection to this port.

USB 3.1 Gen 1 Port

The USB 3.1 Gen 1 port supports the USB 3.1 Gen 1 specification and is compatible to the USB 2.0 specification. Use this port for USB devices.



- When removing the cable connected to a back panel connector, first remove the cable from your device and then remove it from the motherboard.
- When removing the cable, pull it straight out from the connector. Do not rock it side to side to prevent
 an electrical short inside the cable connector.



HDMI Port

The HDMI port is HDCP compliant and supports Dolby TrueHD and DTS HD Master Audio formats. It also supports up to 192KHz/24bit 7.1-channel LPCM audio output. You can use this port to connect your HDMI-supported monitor. The maximum supported resolution is 4096x2160, but the actual resolutions supported are dependent on the monitor being used.



After installing the HDMI device, make sure to set the default sound playback device to HDMI. (The item name may differ depending on your operating system.)

Dual-Display Configurations for the Onboard Graphics:

Dual-display configurations are supported after you install motherboard drivers in OS.

RJ-45 LAN Port

The Gigabit Ethernet LAN port provides Internet connection at up to 1 Gbps data rate. The following describes the states of the LAN port LEDs.

Speed LED Activity LED

	Connection/Speed LED:				
	State	Description			
	Orange	1 Gbps data rate			
	Green	100 Mbps data rate			
Off		10 Mbps data rate			

Activity LED:

State	Description
Blinking	Data transmission or receiving is occurring
Off	No data transmission or receiving is occurring

Line In/Rear Speaker Out (Blue)

The line in jack. Use this audio jack for line in devices such as an optical drive, walkman, etc.

Line Out/Front Speaker Out (Green)

The line out jack.

Mic In/Center/Subwoofer Speaker Out (Pink)

The Mic in jack.

Audio Jack Configurations:

Jack	Headphone/ 2-channel	4-channel	5.1-channel	7.1-channel
Line In/Rear Speaker Out	2 onamo	~	~	~
Line Out/Front Speaker Out	~	~	•	~
Mic In/Center/Subwoofer Speaker Out			•	~
Front Panel Line Out/Side Speaker Out				~

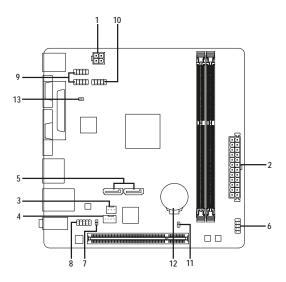


- The integrated HD (High Definition) audio provides jack retasking capability that allows the user to change the function for each jack through the audio driver.
- To configure 7.1-channel audio, you need to open the audio software and select Device advanced settings > Playback Device to change the default setting first. Please visit GIGABYTE's website for details on configuring the audio software.



Please visit GIGABYTE's website for more audio software information.

1-6 Internal Connectors



1)	ATX_12V	8)	F_AUDIO
2)	ATX	9)	F_USB1/F_USB2
3)	CPU_FAN	10)	COMB
4)	SYS_FAN	11)	CLR_CM O S
5)	SATA3 0/1	12)	BAT
6)	F_PANEL	13)	CI
7)	SPDIF_0		



Read the following guidelines before connecting external devices:

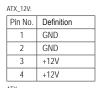
- First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the computer, make sure the device cable has been securely attached to the connector on the motherboard.

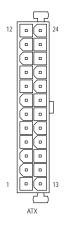
1/2) ATX_12V/ATX (2x2 12V Power Connector and 2x12 Main Power Connector)

With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, first make sure the power supply is turned off and all devices are properly installed. The power connector possesses a foolproof design. Connect the power supply cable to the power connector in the correct orientation.

The 12V power connector mainly supplies power to the CPU. If the 12V power connector is not connected, the computer will not start.







ATX:			
Pin No.	Definition	Pin No.	Definition
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON (soft On/Off)
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power Good	20	NC
9	5VSB (stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V (Only for 2x12-pin	23	+5V (Only for 2x12-pin ATX)
	ATX)		
12	3.3V (Only for 2x12-pin	24	GND (Only for 2x12-pin
	ATX)		ATX)

3/4) CPU FAN/SYS FAN (Fan Headers)

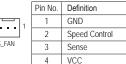
The motherboard has a 3-pin CPU fan header (CPU_FAN) and a 4-pin system fan header (SYS_FAN). Most fan headers possess a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation (the black connector wire is the ground wire). The speed control function requires the use of a fan with fan speed control design. For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis.





CPU_FAN:				
Pin No.	Definition			
1	GND			
2	Speed Control			
3	Sense			







These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers.



5) SATA3 0/1 (SATA 6Gb/s Connectors)

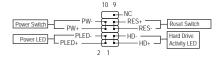
The SATA connectors conform to SATA 6Gb/s standard and are compatible with SATA 3Gb/s and SATA 1.5Gb/s standard. Each SATA connector supports a single SATA device.



Pin No.	Definition	Pin No.	Definition
1	GND	5	RXN
2	TXP	6	RXP
3	TXN	7	GND
4	GND		

6) F_PANEL (Front Panel Header)

Connect the power switch, reset switch, and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.



· PLED (Power LED, Yellow):

System Status	LLD	Connects to the power status indicator on the chassis front panel. The LED is on
S0	011	when the system is operating. The LED is off when the system is in S3/S4 sleep
S3/S4/S5	Off	state or powered off (S5).

• PW (Power Switch, Red):

Connects to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch (refer to Chapter 2, "BIOS Setup," "Power Management," for more information).

- HD (Hard Drive Activity LED, Blue):
 Connects to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.
- RES (Reset Switch, Green):
 Connects to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.
- NC (Purple): No connection.



The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

7) SPDIF_O (S/PDIF Out Header)

This header supports digital S/PDIF Out and connects a S/PDIF digital audio cable (provided by expansion cards) for digital audio output from your motherboard to certain expansion cards like graphics cards and sound cards. For example, some graphics cards may require you to use a S/PDIF digital audio cable for digital audio output from your motherboard to your graphics card if you wish to connect an HDMI display to the graphics card and have digital audio output from the HDMI display at the same time.

For information about connecting the S/PDIF digital audio cable, carefully read the manual for your expansion card.



Pin No.	Definition
1	SPDIFO
2	GND

8) F_AUDIO (Front Panel Audio Header)

The front panel audio header supports High Definition audio (HD). You may connect your chassis front panel audio module to this header. Make sure the wire assignments of the module connector match the pin assignments of the motherboard header. Incorrect connection between the module connector and the motherboard header will make the device unable to work or even damage it.



Pin No.	Definition	Pin No.	Definition
1	MIC2_L	6	Sense
2	GND	7	FAUDIO_JD
3	MIC2_R	8	No Pin
4	NC	9	LINE2_L
5	LINE2_R	10	Sense



Some chassis provide a front panel audio module that has separated connectors on each wire instead of a single plug. For information about connecting the front panel audio module that has different wire assignments, please contact the chassis manufacturer.

9) F_USB1/F_USB2 (USB 2.0/1.1 Headers)

The headers conform to USB 2.0/1.1 specification. Each USB header can provide two USB ports via an optional USB bracket. For purchasing the optional USB bracket, please contact the local dealer.



Pin No.	Definition	Pin No.	Definition
1	Power (5V)	6	USB DY+
2	Power (5V)	7	GND
3	USB DX-	8	GND
4	USB DY-	9	No Pin
5	USB DX+	10	NC



- Do not plug the IEEE 1394 bracket (2x5-pin) cable into the USB header.
- Prior to installing the USB bracket, be sure to turn off your computer and unplug the power cord from the power outlet to prevent damage to the USB bracket.

10) COMB (Serial Port Header)

The COM header can provide one serial port via an optional COM port cable. For purchasing the optional COM port cable, please contact the local dealer.



	Pin No.	Definition	Pin No.	Definition
ĺ	1	NDCD-	6	NDSR-
ĺ	2	NSIN	7	NRTS-
ĺ	3	NSOUT	8	NCTS-
	4	NDTR-	9	NRI-
	5	GND	10	No Pin



11) CLR_CMOS (Clear CMOS Jumper)

Use this jumper to clear the BIOS configuration and reset the CMOS values to factory defaults. To clear the CMOS values, use a metal object like a screwdriver to touch the two pins for a few seconds.

Open: Normal

Short: Clear CMOS Values



- · Always turn off your computer before clearing the CMOS values.
- After system restart, go to BIOS Setup to load factory defaults (select Load Optimized Defaults) or manually
 configure the BIOS settings (refer to Chapter 2, "BIOS Setup," for BIOS configurations).

12) BAT (Battery)

The battery provides power to keep the values (such as BIOS configurations, date, and time information) in the CMOS when the computer is turned off. Replace the battery when the battery voltage drops to a low level, or the CMOS values may not be accurate or may be lost.



You may clear the CMOS values by removing the battery:

- 1. Turn off your computer and unplug the power cord.
- Gently remove the battery from the battery holder and wait for one minute. (Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.)
- Replace the battery.
- Plug in the power cord and restart your computer.



- Always turn off your computer and unplug the power cord before replacing the battery.
 Replace the battery with an equivalent one. Damage to your devices may occur if the battery is replaced
- Replace the battery with an equivalent one. Damage to your devices may occur if the battery is replaced with an incorrect model.
 Contact the place of purchase or local dealer if you are not able to replace the battery by yourself or uncertain
- about the battery model.

 When installing the battery, note the orientation of the positive side (+) and the negative side (-) of the battery
- when installing the battery, note the orientation of the positive side (+) and the negative side (-) of the battery
 (the positive side should face up).
- Used batteries must be handled in accordance with local environmental regulations.

13) CI (Chassis Intrusion Header)

This motherboard provides a chassis detection feature that detects if the chassis cover has been removed. This function requires a chassis with chassis intrusion detection design.



Pin No.	Definition
1	Signal
2	GND



Chapter 2 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 @BIOS utility.

- Q-Flash allows the user to quickly and easily upgrade or back up BIOS without entering the operating system.
- @BIOS is a Windows-based utility that searches and downloads the latest version of BIOS from the Internet
 and updates the BIOS.



- 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 "Load Optimized Defaults" section in
 this chapter or introductions of the battery/clear CMOS jumper in Chapter 1 for how to clear the CMOS values.)

2-1 Startup Screen

The following startup Logo screen will appear when the computer boots.



On the main menu of the BIOS Setup program, press arrow keys 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.



When the system is not stable as usual, select the **Load Optimized Defaults** item to set your system to its defaults. The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version.



2-2 M.I.T.



This section provides information on the BIOS version, CPU base clock, CPU frequency, memory frequency, total memory size, CPU temperature, Vcore, and memory voltage.



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.)

M.I.T. Current Status

This screen provides information on CPU/memory frequencies/parameters.

Advanced Frequency Settings

CPU Clock Control

Allows you to manually set the CPU base clock in 0.01 MHz increments. (Default: Auto)

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

CPU NorthBridge Frequency

Allows you to manually set the CPU North Bridge frequency. The adjustable range is from 400 MHz to 2000 MHz.

CPU Clock Ratio

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

○ CPU Frequency

Displays the current operating CPU frequency.

Advanced CPU Core Settings

CPU Clock Ratio, CPU Frequency

The settings above are synchronous to those under the same items on the **Advanced Frequency Settings** menu.



AMD Cool&Quiet function

▶ Enabled Lets the AMD Cool'n'Quiet driver dynamically adjust the CPU clock and VID to reduce

heat output from your computer and its power consumption. (Default)

Disabled Disables this function.

→ 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. (Default: Enabled)

Allows you to determine whether to let the CPU enter C6 mode in system halt state. When enabled, the CPU core frequency will be reduced during system halt state to decrease power consumption. The C6 state is a more enhanced power-saving state than C1. (Default: Enabled)

Allows the BIOS to read the SPD data on XMP memory module(s) to enhance memory performance when enabled.

Disabled Disables this function. (Default)
 Profile1 Uses Profile 1 settings.
 ▶ Profile2 (Note) Uses Profile 2 settings.

System Memory Multiplier

Allows you to set the system memory multiplier. **Auto** sets memory multiplier according to memory SPD data. (Default: Auto)

This value is automatically adjusted according to the System Memory Multiplier settings.

Advanced Memory Settings

Extreme Memory Profile (X.M.P.) (Note), System Memory Multiplier, Memory Frequency(MHz) The settings above are synchronous to those under the same items on the Advanced Frequency Settings menu.

Memory Timing Mode

Manual and Advanced Manual allows the Rank Interleaving and memory timing settings below to be configurable. Options are: Auto (default), Manual, Advanced Manual.

Profile DDR Voltage

When using a non-XMP memory module or **Extreme Memory Profile (X.M.P.)** is set to **Disabled**, the value is displayed according to your memory specification. When **Extreme Memory Profile (X.M.P.)** is set to **Profile1** or **Profile2**, the value is displayed according to the SPD data on the XMP memory.

Rank Interleaving

Enables or disables memory rank interleaving. Enabled allows the system to simultaneously access different ranks of the memory to increase memory performance and stability. Auto lets the BIOS automatically configure this setting. (Default: Auto)

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

Channel A Memory Sub Timings

This sub-menu provides memory timing settings for each channel of memory. The respective timing setting screens are configurable only when Memory Timing Mode is set to Manual or Advanced Manual. 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.

Advanced Voltage Settings

This sub-menu allows you to set CPU, chipset and memory voltages.

▶ PC Health Status

Reset Case Open Status

▶ Disabled Keeps or clears the record of previous chassis intrusion status. (Default)

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/DRAM Voltage/+3.3V/+5V/+12V

Displays the current system voltages.

CPU/System Temperature

Displays current CPU/system temperature.

CPU/System Fan Speed

Displays current CPU/system fan speeds.

CPU 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 CPU temperature. You can adjust the fan speed with EasyTune based on your system requirements. (Default)
 Silent Allows the fan to run at slow speeds.

Manual Allows you to control the fan speed under the Fan Speed Percentage item.

➤ Full Speed Allows the fan to run at full speeds.

Fan Speed Percentage

Allows you to control the fan speed. This item is configurable only when **CPU Fan Speed Control** is set to **Manual**. Options are: 0.75 PWM value l° C ~ 2.50 PWM value l° C.

System 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 CPU temperature. You can

adjust the fan speed with EasyTune based on your system requirements. (Default)

Silent Allows the fan to run at slow speeds.

▶ Manual Allows you to control the fan speed under the Fan Speed Percentage item.

➤ Full Speed Allows the fan to run at full speeds.

Fan Speed Percentage

Allows you to control the fan speed. This item is configurable only when **System Fan Speed Control** is set to **Manual**. Options are: 0.75 PWM value $/^{\circ}$ C ~ 2.50 PWM value $/^{\circ}$ C.



2-3 System Information



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 13:0:0. 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.



2-4 BIOS Features



Boot Option Priorities

Specifies the overall boot order from the available devices. For example, you can set hard drive as the first priority (**Boot Option #1**) and DVD ROM drive as the second priority (**Boot Option #2**). The list only displays the device with the highest priority for a specific type. For example, only hard drive defined as the first priority on the Hard Drive BBS Priorities submenu will be presented here.

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 10 64-bit, select the optical drive that contains the Windows 10 64-bit installation disc and is prefixed with "UEFI:" string.

→ Hard Drive/CD/DVD ROM Drive/Floppy Drive/Network Device BBS Priorities

Specifies the boot order for a specific device type, such as hard drives, optical drives, floppy disk drives, and devices that support Boot from LAN function, etc. Press <Enter> on this item to enter the submenu that presents the devices of the same type that are connected. This item is present only if at least one device for this type is installed.

Bootup NumLock State

Enables or disables Numlock feature on the numeric keypad of the keyboard after the POST. (Default: Enabled)

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. (Default)

→ 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. (Default: Enabled)



→ Fast Boot

Enables or disables Fast Boot to shorten the OS boot process. **Ultra Fast** provides the fastest bootup speed. (Default: Disabled)

→ SATA Support

▶ Last Boot SATA Devices Only Except for the previous boot drive, all SATA devices are disabled

before the OS boot process completes. (Default)

▶ 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.

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. (Default)

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.

(Default)

▶ 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 or Ultra Fast. This item is disabled when Fast Boot is set to Ultra Fast.

PS2 Devices Support

▶ Disabled All PS/2 devices are disabled before the OS boot process completes.

➤ Enabled All PS/2 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**. This item is disabled when **Fast Boot** is set to **Ultra Fast**.

NetWork Stack Driver Support

▶ Disabled Disables booting from the network. (Default)

➤ Enabled Enables booting from the network.

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

Windows 8 Features

Allows you to select the operating system to be installed. (Default: Other OS) $\,$

CSM Support

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

→ Always Enables UEFI CSM. (Default)

Never Disables UEFI CSM and supports UEFI BIOS boot process only.

This item is configurable only when Windows 8 Features is set to Windows 8 or Windows 8 WHQL.

Boot Mode Selection

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

▶ UEFI and Legacy Allows booting from operating systems that support legacy option ROM or UEFI

option ROM. (Default)

▶ Legacy Only
 ▶ UEFI Only
 Allows booting from operating systems that only support legacy Option ROM.
 Allows booting from operating systems that only support UEFI Option ROM.

This item is configurable only when CSM Support is set to Always.

LAN PXE Boot Option ROM

Allows you to select whether to enable the legacy option ROM for the LAN controller. (Default: Disabled) This item is configurable only when CSM Support is set to Always.

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.

▶ Legacy only Enables legacy option ROM only. (Default)

→ UEFI only Enables UEFI option ROM only.

This item is configurable only when CSM Support is set to Always.

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.

▶ Legacy OpROM
 ▶ UEFI OpROM
 Enables legacy option ROM only.
 Enables UEFI option ROM only. (Default)

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. (Default: Disabled)

→ Ipv4 PXE Support

Enables or disables IPv4 PXE Support. 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.

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 Never.

Secure Boot Mode

Allows you to configure the secure boot mode. This item is configurable only when CSM Support is set to Never. (Default: Custom)

2-5 Peripherals



THD Audio Azalia Device

Enables or disables the onboard audio function. (Default: Enabled)

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

Onboard LAN Controller

Enables or disables the onboard LAN function. (Default: Enabled)

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

→ OnChip USB Controller

Enables or disables the integrated USB controller. (Default: Enabled)

Two Layer KVM Switch

Set to Enabled to ensure proper device functionality when chaining two KVM switches. (Default: Disabled)

USB Configuration

Legacy USB Support

Allows USB keyboard/mouse to be used in MS-DOS. (Default: Enabled)

XHCI Hand-off

Determines whether to enable XHCI Hand-off feature for an operating system without XHCI Hand-off support. (Default: Enabled)

☐ EHCI Hand-off

Determines whether to enable EHCI Hand-off feature for an operating system without EHCI Hand-off support. (Default: Disabled)

USB Mass Storage Driver Support

Enables or disables support for USB storage devices. (Default: Enabled)

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. (Default: Disabled)

Mass Storage Devices

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

▶ GFX Configuration

Integrated Graphics

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. (Default)

▶ Disabled Disables the onboard graphics.

▶ Force Always activates the onboard graphics, whether or not a PCI Express card is installed.

UMA Frame Buffer Size

This item is configurable only when Integrated Graphics is set to Force. 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: 32M, 64M, 128M, 256M(default), 512M, 1G, 2G.

→ GNB HD Audio

Enables or disables the onboard HDMI audio function. (Default: Enabled)

SATA Configuration

OnChip SATA Channel

Enables or disables the integrated SATA controllers. (Default: Enabled)

OnChip SATA Type

Allows you to decide whether to configure the SATA controller AHCI mode.

Native IDE Configures the SATA controller to IDE mode.

➤ 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. (Default)

→ PORT0 Hot Plug~PORT1 Hot Plug

Enables or disable the hot plug capability for each SATA port. (Default: Disabled)

SATA Power on PORT0~SATA Power on PORT1

Enables or disables each SATA port. (Default: Enabled)

▶ Super IO Configuration

This section provides information on the super I/O chip and allows you to configure the serial port and parallel port.

Serial Port A/B

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

Parallel Port

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

Device Mode

This item is configurable only when Parallel Port is set to Enabled. Selects an operating mode for the onboard parallel (LPT) port. Options are: Standard Parallel Port Mode (Default), EPP Mode (Enhanced Parallel Port), ECP Mode (Extended Capabilities Port), EPP Mode & ECP Mode. (Default)



2-6 Power Management



Resume by Alarm

Determines whether to power on the system at a desired time. (Default: Disabled) 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.

→ 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. (Default)
- ▶ 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.

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. (Default)

Power On By Keyboard

Allows the system to be turned on by a PS/2 keyboard wake-up event.

Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead.

- ▶ Disabled Disables this function. (Default)
- ▶ Password Set a password with 1~5 characters to turn on the system.
- ▶ Keyboard 98 Press POWER button on the Windows 98 keyboard to turn on the system.
- ▶ Any Key Press any key to turn on the system.



Power On Password

Set the password when **Power On By Keyboard** is set to **Password**.

Press <Enter> on this item and set a password with up to 5 characters and then press <Enter> to accept. To turn on the system, enter the password and press <Enter>.

Note: To cancel the password, press <Enter> on this item. When prompted for the password, press <Enter> again without entering the password to clear the password settings.

Power On By Mouse

Allows the system to be turned on by a PS/2 mouse wake-up event.

Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead.

▶ Disabled Disables this function. (Default)

Move the mouse to turn on the system.

▶ Double Click Double click on left button on the mouse to turn on the system.

→ ErP

Determines whether to let the system consume least power in S5 (shutdown) state. (Default: Disabled) Note: When this item is set to **Enabled**, the following functions will become unavailable: Resume by Alarm, power on by mouse, and power on by keyboard.



2-7 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 defaults 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.

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/USB/FDD** 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/USB/FDD 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).

Chapter 3 Appendix

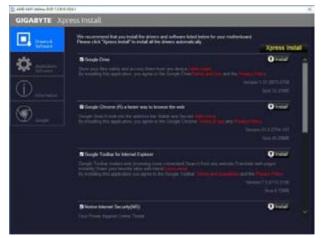
Drivers Installation



- Before installing the drivers, first install the operating system. (The following instructions use Windows 10 as the example operating system.)
- After installing the operating system, insert the motherboard driver disc into your optical drive. Click
 on the message "Tap to choose what happens with this disc" on the top-right corner of the screen
 and select "Run Run.exe." (Or go to My Computer, double-click the optical drive and execute the
 Run.exe program.)

"Xpress Install" will automatically scan your system and then list all of the drivers that are recommended to install. You can click the **Xpress Install** button and "Xpress Install" will install all of the selected drivers. Or click the arrow

| Compared to individually install the drivers you need.





Please visit GIGABYTE's website for more software information.



Please visit GIGABYTE's website for more troubleshooting information.

Regulatory Notices

United States of America, Federal Communications Commission Statement

Supplier's Declaration of Conformity
47 CFR § 2.1077 Compliance Information

Product Name: Motherboard Trade Name: GIGABYTE Model Number: GA-E6010N

Responsible Party – U.S. Contact Information: **G.B.T. Inc.**Address: 17358 Railroad street, City Of Industry, CA91748
Tel.: 1-626-854-9338

Tel.: 1-626-854-9338
Internet contact information: https://www.gigabyte.com

FCC Compliance Statement:

This device complies with Part 15 of the FCC Rules, Subpart B, Unintentional Radiators.

Operation is subject to the following you conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference but any 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 manufacturers 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.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications. This class B digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada

European Union (EU) CE Declaration of Conformity

This device complies with the following directives: Electromagnetic Compatibility Directive 2014/30/EU, Low-voltage Directive 2014/35/EU, RoHS directive (recast) 2011/65/EU & the 2015/863 Statement. This product has been tested and found to comply with all essential requirements of the Directives.

European Union (EU) RoHS (recast) Directive 2011/65/EU & the GIOPAPA Commission Delegated Directive (EU) 2015/863 Statement GIGABYTE products have not intended to add and safe from hazardous substances (Cd, Pb, Hg, Cr-6, PBDE, PBB, DEHP, BBP, DBP and DIBP). The parts and components have been carefully selected to meet RoHS requirement. Moreover, we at GIGABYTE are continuing our efforts to develop products that do not use internationally banned lawls chamilies.

European Union (EU) Community Waste Electrical & Electronic Equipment (WEEE) Directive Statement

GIGABYTE will fulfill the national laws as interpreted from the 2012/19/ EU WEEE (Waste Electrical and Electronic Equipment) (recast) directive. The WEEE Directive specifies the treatment, collection, recycling and disposal of electric and electronic devices and their components. Under the Directive, used equipment must be marked, collected separately, and disposed of property.

WEEE Symbol Statement



The symbol shown below is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure.

For more information about where you can drop off your waste equipment for recycling, please contact your local government office, your household waste disposal service or where you purchased the product for details of environmentally safe recycling.

End of Life Directives-Recycling



The symbol shown below is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure.

Déclaration de Conformité aux Directives de l'Union européenne (UE)

Cet appareil portant la marque CE est conforme aux directives de l'UE suivantes: directive Compatibilité Electromagnétique 2014/30/ UE, directive Basse Tension 2014/35/UE et directive RoHS II 2011/65/ UE. La conformité à ces directives est évaluée sur la base des normes européennes harmonisées applicables.

European Union (EU) CE-Konformitätserklärung

Dieses Produkte mit CE-Kennzeichnung erfüllen folgenden EU-Richtlinien: EMV-Richtlinie 2011/3/0/EU, Niederspannungsrichtlinie 2011/3/0/EU und RoHS-Richtlinie 2011/65/EU erfüllt. Die Konformität mit diesen Richtlinien wird unter Verwendung der entsprechenden Standards zurEuropäischen Normierung beurteilt.

CE declaração de conformidade

Este produto com a marcação CE estão em conformidade com das seguintes Diretivas UE: Diretiva Báixa Tensão 2014/35/EU; Diretiva CEM 2014/30/EU; Diretiva RSP 2011/65/UE. A conformidade com estas diretivas é verificada utilizando as normas europeias harmonizadas.

CE Declaración de conformidad

Este producto que llevan la marca CE cumplen con las siguientes Directivas de la Unión Europea: Directiva EMC (2014/30/EU), Directiva de bajo voltaje (2014/35/EU), Directiva RoHS (recast) (2011/65/EU). El cumplimiento de estas directivas se evalúa mediante las normas europeas armonizadas.

Dichiarazione di conformità CE

Questo prodotto è conforme alle seguenti direttive: Direttiva sulla compatibilità elettromagnetica 2014/30/UE, Direttiva sulla bassa tensione 2014/35/UE, Direttiva RoHS (rifusione) 2011/65/UE. Questo prodotto è stato testato e trovato conforme a tutti i requisiti essenziali delle Direttive.



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GIGABYTE eSupport

To submit a technical or non-technical (Sales/Marketing) question, please link to: https://esupport.gigabyte.com



