GA-IMB410TN

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:

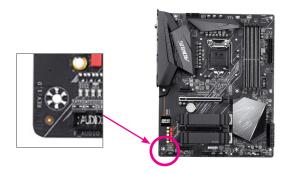
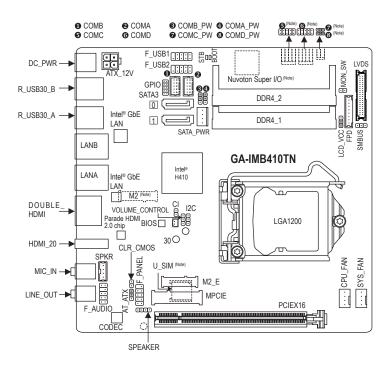


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GA-IMB410TN Motherboard Layout



Box Contents

- ☑ GA-IMB410TN motherboard
- ☑ Motherboard driver disc
- ✓ User's Manual
- ☑ Two SATA cables

- ✓ One SATA power cable
- ☑ Two I/O Shields (high/low)
- One serial port cable
- * 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.

(Note) The connector/chip is on the back of the motherboard.

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

CPU	 Support for 10th Generation Intel® Core™ i9 processors/Intel® Core™ i7 processors/Intel® Core™ i5 processors/Intel® Core™ i3 processors/Intel® Pentium® processors/Intel® Celeron® processors in the LGA1200 package (Go to GIGABYTE's website for the latest CPU support list.) L3 cache varies with CPU
Chipset	◆ Intel® H410 Express Chipset
Memory	Intel® Core™ i9/i7 processors: Support for DDR4 2933/2666/2400/2133 MHz memory modules Intel® Core™ i5/i3/Pentium®/Celeron® processors: Support for DDR4 2666/2400/2133 MHz memory modules 2 x DDR4 SO-DIMM sockets supporting up to 64 GB (32 GB single DIMM capacity) of system memory Dual channel memory architecture
	(Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
Onboard Graphics	Integrated Graphics Processor-Intel® HD Graphics support: 2 x HDMI ports, supporting a maximum resolution of 4096x2160@30 Hz * Support for HDMI 1.4 version and HDCP 2.3. Integrated Graphics Processor+Parade HDMI 2.0 chip: 1 x HDMI port, supporting a maximum resolution of 4096x2160@60 Hz * Support for HDMI 2.0 version, HDCP 2.2, and HDR.
	 Maximum shared memory of 512 MB Support for up to 2 displays at the same time
Audio	Realtek® ALC887 codec High Definition Audio 2/4/5.1-channel
ELAN LAN	• 2 x Intel® GbE LAN chips (1000/100/1000 Mbit)
Expansion Slots	1 x PCI Express x16 slot, running at x16 (The PCI Express x16 slot conforms to PCI Express 3.0 standard.) 1 x M.2 Socket 1 connector for a wireless communication module (M2_E) 1 x full size Mini PCIe connector (MINI_PCIE) * The MINI_PCIE connector can also be used as an MSATA connector. (The mini PCI Express conforms to PCI Express 3.0 standard.)
Storage Interface	Chipset: 1 x M.2 connector on the back of the motherboard (Socket 3, M key, type 2280 SATA and PCle x2 SSD support) 2 x SATA 6Gb/s connectors
USB USB	 Chipset: 4 x USB 3.0/2.0 ports on the back panel 4 x USB 2.0/1.1 ports available through the internal USB headers

Internal Connectors Rank Panel	 1 x 4-pin ATX 12V power connector 1 x AT/ATX mode switch jumper (AT_ATX) 1 x CPU fan header 1 x system fan header 1 x M.2 Socket 3 connector on the back of the motherboard 2 x SATA 6Gb/s connectors 1 x MSATA connector (MPCIE) 1 x USIM connector on the back of the motherboard 1 x SATA power connector 1 x front panel header 1 x front panel audio header 1 x battery power cable connector 2 x USB 2.0/1.1 headers 4 x serial port headers 4 x serial port power select jumpers 1 x CPIO header 1 x LVDS drive voltage jumper (LCD_VCC) 1 x front panel display header (FPD) 1 x flat panel display switch header (MON_SW) 1 x speaker header (SPKR) 1 x volume control header (VOLUME_CONTROL) 1 x Clear CMOS jumper 1 x Clear CMOS jumper 1 x Clan power connector 1 x DC-In power connector
Back Panel Connectors	 1 x DC-In power connector 2 x HDMI ports 1 x HDMI 2.0 port 4 x USB 3.0 ports 2 x RJ-45 ports 2 x audio jacks
I/O Controller	Nuvoton I/O Controller Chip
Hardware Monitor	Voltage detection Temperature detection Fan speed detection Overheating warning Fan fail warning Fan speed control * Whether the fan speed control function is supported will depend on the cooler you install.

BIOS	*	1 x 128 Mbit flash
	•	Use of licensed AMI UEFI BIOS
	•	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
Bundled	•	Norton® Internet Security (OEM version)
Software		, (· · · · · · · · · · · · · · · · ·
Operating System	•	Support for Windows 10 64-bit
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 CPU, memory modules, SSDs, and M.2 devices.



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

1-3 Installing the CPU

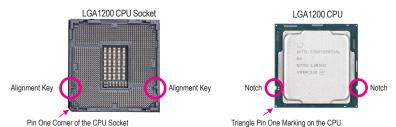


Read the following guidelines before you begin to install the CPU:

- Make sure that the motherboard supports the CPU.
 (Go to GIGABYTE's website for the latest CPU support list.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the CPU to prevent hardware damage.
- Locate the pin one of the CPU. The CPU cannot be inserted if oriented incorrectly. (Or you may locate the notches on both sides of the CPU and alignment keys on the CPU socket.)
- Apply an even and thin layer of thermal grease on the surface of the CPU.
- Do not turn on the computer if the CPU cooler is not installed, otherwise overheating and damage
 of the CPU may occur.
- Set the CPU host frequency in accordance with the CPU specifications. It is not recommended
 that the system bus frequency be set beyond hardware specifications since it does not meet the
 standard requirements for the peripherals. If you wish to set the frequency beyond the standard
 specifications, please do so according to your hardware specifications including the CPU, graphics
 card, memory, hard drive, etc.

Installing the CPU

Locate the alignment keys on the motherboard CPU socket and the notches on the CPU.





Do not remove the CPU socket cover before inserting the CPU. It may pop off from the load plate automatically during the process of re-engaging the lever after you insert the CPU.

1-4 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.



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

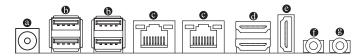
1-5 **Installing an Expansion Card**



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.

Back Panel Connectors 1-6



O DC In Power Connector

Connect the DC power to this port. This port supports 19V power adapters. When a 35W CPU is installed, it is recommended that a 95W power adapter be used. When a 65W CPU is installed, it is recommended that a 120W power adapter be used.

® USB 3.0 Port

The USB port supports the USB 3.0/2.0 specification. Use this port for USB devices.

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.



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
On	No data transmission or receiving is occurring

HDMI Port



The HDMI port supports HDCP 2.3 and Dolby TrueHD and DTS HD Master Audio formats. It also supports up to 192KHz/16bit 8-channel LPCM audio output. You can use this port to connect your HDMI-supported monitor. The maximum supported resolution is 4096x2160@30 Hz, but the actual resolutions supported are dependent on the monitor being used.

HDMI 2.0 Port

[™] The HDMI port supports HDCP 2.2 and Dolby TrueHD and DTS HD Master Audio formats. It also supports up to 192KHz/16bit 7.1-channel LPCM audio output. You can use this port to connect your HDMI-supported monitor. The maximum supported resolution is 4096x2160@60 Hz, 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.)



- 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.

• Mic In (Pink)

The Mic in jack.

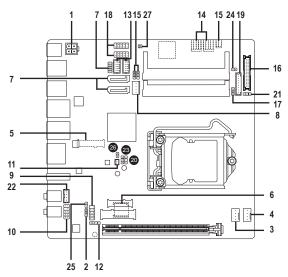
Line Out (Green)

The line out jack. Use this audio jack for a headphone or 2-channel speaker.



Please visit GIGABYTE's website for details on configuring the audio software.

1-7 Internal Connectors



1)	ATX_12V	15)	COMA/B/C (Note)/D (Note)_PW
2)	AT_ATX	16)	LVDS
3)	CPU_FAN	17)	LCD_VCC
4)	SYS_FAN	18)	F_USB1/F_USB2
5)	M2	19)	FPD
6)	U_SIM (Note)	20)	I2C
7)	SATA3 0/1	21)	SMBUS
8)	SATA_PWR	22)	SPKR
9)	F_PANEL	23)	VOLUME_CONTROL
10)	F_AUDIO	24)	MON_SW
11)	BAT	25)	CLR_CMOS
12)	SPEAKER	26)	CI
13)	COMA/COMB	27)	STB/BOOT
14)	COMC (Note)/COMD (Note)		



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.

(Note) The connector is on the back of the motherboard.

1) ATX_12V (2x2 12V Power Connector)

This connector can be used to input power when the DC power jack on the rear panel is not connected. However, if the DC power jack is connected, this connector can only be used to output power.



When used to input power:			
Pin No.	Definition		
1	GND		
2	GND		
3	+12V		
4	+12V		

when used to output power:		
Pin No.	Definition	
1	GND	
2	GND	
3	DC_OUT	
4	DC_OUT	

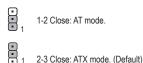


NOTE: The two connectors cannot be used simultaneously as a source of power input.



2) AT_ATX (ATX Power Switch Jumper)

This jumper allows you to select AT or ATX power mode.



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

All fan headers on this motherboard are 4-pin. 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.



Pin No.	Definition
1	GND
2	Voltage Speed Control
3	Sense
4	PWM Speed Control



- Be sure to connect fan cables to the fan headers to prevent your CPU and system from overheating. Overheating may result in damage to the CPU or the system may hang.
- These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers.

5) M.2 (M.2 Socket 3 Connector) (Note)

The M.2 connector supports M.2 SATA SSDs and M.2 PCle SSDs.



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Follow the steps below to correctly install an M.2 SSD in the M.2 connector.

Step 1

Use a screw driver to unfasten the screw from the motherboard.

Step 2:

Slide the M.2 SSD into the connector at an angle.

Step 3:

Press the M.2 SSD down and then secure it with the screw.

6) USIM (USIM Connector)(Note)

This connector can be used to install a Micro Sim card to connect to a mini PCle LAN card.



7) SATA3 0/13 (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
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

(Note) The connector is on the back of the motherboard.

8) SATA_PWR (SATA Power Connector)

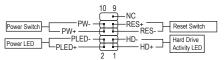
This connector provides power to installed SATA devices.



Pin No.	Definition
1	VCC
2	GND
3	GND
4	+12V

9) 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	LED
S0	On
S3/S4/S5	Off

Connects to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED is off when the system is in S3/S4 sleep 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.

10) 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	-ACZ_DET	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.

11) BAT (Battery/Battery Power Cable Connector)

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 cable:

- 1. Turn off your computer and unplug the power cord.
- Unplug the the battery cable from the battery cable header and wait for one minute.
- 3. Plug in the battery cable.
- 4. Plug in the power cord and restart your computer.



Pin No.	Definition
1(+)	RTC Power
2(-)	GND



- · 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 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.
- · Used batteries must be handled in accordance with local environmental regulations.

12) SPEAKER (Buzzer Header)

Connects to the buzzer on the chassis front panel. The system reports system startup status by issuing a beep code. One single short beep will be heard if no problem is detected at system startup.



Pin No.	Definition
1	VCC
2	NC
3	NC
4	SPK-

13) COMA/COMB (Serial Port Headers)

Each 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
1	NDCD-	6	NCTS-
2	NDSR-	7	NDTR-
3	NSIN	8	12V_5V
4	NRTS-	9	GND
5	NSOUT	10	NC

14) COMC/COMD (Serial Port Headers)(Note)

Each 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.



RS232 devices:		RS422 devices:			RS485 devices:		
Pin No.	Definition	Pin No.	Definition] [Pin No.	Definition	
1	NDCD-	1	TX(B)] [1	D-	
2	NDSR-	2	NC] [2	NC	
3	NSIN	3	TX(A)	1	3	D+	
4	NRTS-	4	NC	1	4	NC	
5	NSOUT	5	RX(A)	1	5	NC	
6	NCTS-	6	NC	1	6	NC	
7	NDTR-	7	RX(B)	11	7	NC	
8	+5V/+12V	8	+5V/+12V	1	8	+5V/+12V	
9	GND	9	GND		9	GND	
10	NC	10	NC	1	10	NC	

(Note) The connector is on the back of the motherboard.

15) COMA_PW/COMB_PW/COMC_PW(Note)/COMD_PW(Note)

(Serial Port Header Power Select Jumpers)

The power select jumpers are used to select serial port power.



16) LVDS (LVDS Header)

LVDS stands for Low-voltage differential signaling, which uses high-speed analog circuit techniques to provide multigigabit data transfers on copper interconnects and is a generic interface standard for high-speed data transmission.



Pin No.	Definition	Pin No.	Definition	Pin No.	Definition
1	LCD_VCC	15	-RXO3_C	29	CABLE_DET
2	LCD_VCC	16	+RXO3_C	30	-RXE3_C
3	VCC3	17	GND	31	+RXE3_C
4	NC	18	-RXECLKO_C	32	GND
5	NC	19	+RXECLKO_C	33	-RXECLKE_C
6	-RXO0_C	20	GND	34	+RXECLKE_C
7	+RXO0_C	21	-RXE0_C	35	GND
8	GND	22	+RXE0_C	36	SC_BKLT_EN
9	-RXO1_C	23	GND	37	SC_BKLT_CTL
10	+RXO1_C	24	-RXE1_C	38	FPD_PWR
11	GND	25	+RXE1_C	39	FPD_PWR
12	-RXO2_C	26	GND	40	FPD_PWR
13	+RXO2_C	27	-RXE2_C		
14	GND	28	+RXE2_C		

(Note) Connects to the ground pin of the LVDS.

17) LCD_VCC (LVDS Drive Voltage Jumper)

This jumper can be used to provide different screen voltage settings.

1-2 Close: Set to 3V. (Default)

2-3 Close: Set to 5V.

18) 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 2.0/1.1 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.

19) FPD (Flat Panel Display Header)

The FPD is a high-speed interface connecting the output of a video controller in a laptop computer, computer monitor or LCD television set to the display panel. Most laptops, LCD computer monitors and LCD TVs use this interface internally. The header conforms to FPD specification.



Pin No.	Definition
1	BKLT_EN
2	BKLT_PWM
3	BKLT_PWR (FPD_PWR)
4	BKLT_PWR (FPD_PWR)
5	BKLT_GND/Brightness_GND
6	BKLT_GND/Brightness_GND
7	Brightness_Up
8	Brightness_Down

20) I2C (Inter-Integrated Circuit)

This header provides the I2C signals.

Pin No.	Definition
1	I2C_SCL
2	I2C_SDA
3	GND

21) SMBUS (System Management Bus)

This header provides the SMBUS signals.

1

Pin No.	Definition
1	SMB_CLK
2	SMB_DATA
3	GND

22) SPKR (Speaker Header)

This speaker header is connected to a L/R audio pins from the board to support the 3W (4ohm) stereo speaker on your AIO chassis.



Pin No.	Definition
1	Speaker OUT R-
2	Speaker OUT R+
3	Speaker OUT L-
4	Speaker OUT L+

23) VOLUME_CONTROL (Volume Control Header)

The header connects to the volume control button of the monitor to control the volume.

Pin No.	Definition
1	VOL_DOWN
2	GND
3	VOL_UP

24) MON_SW (Flat Panel Display Switch Header)

This header allows you to connect an on/off switch for the display.

1 👀

Pin No.	Definition
1	Mon_SW
2	GND

25) 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 and unplug the power cord from the power outlet 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).

26) 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

27) STB/BOOT (Status LEDs)

If the STB LED is on, that means the system is in standby mode; if the BOOT LED is on, that means the system is powered on.

II II STB BOOT

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

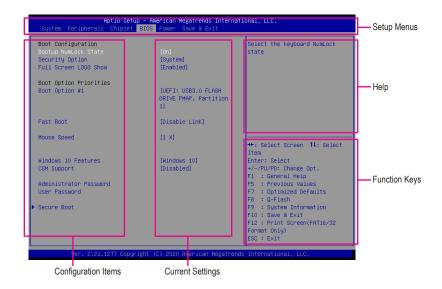
The following startup Logo screen will appear when the computer boots.





- 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 The Main Menu



Function Kevs

unction itcys	
<←><→>	Move the selection bar to select a setup menu
<↑><↓>	Move the selection bar to select an configuration item on a menu
<enter></enter>	Execute command or enter a menu
<+>/ <page up=""></page>	Increase the numeric value or make changes
<->/ <page down=""></page>	Decrease the numeric value or make changes
<f1></f1>	Show descriptions of the function keys
<f5></f5>	Restore the previous BIOS settings for the current submenus
<f7></f7>	Load the Optimized BIOS default settings for the current submenus
<f8></f8>	Access the Q-Flash utility
<f9></f9>	Display system information
<f10></f10>	Save all the changes and exit the BIOS Setup program
<f12></f12>	Capture the current screen as an image and save it to your USB drive
<esc></esc>	Main Menu: Exit the BIOS Setup program
	Submenus: Exit current submenu

2-3 System



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.

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.

→ System Language

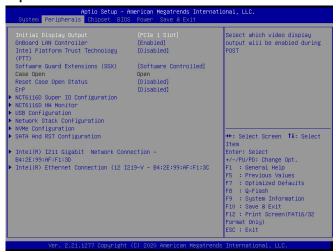
Selects the default language used by the BIOS.

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

System Time

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

2-4 Peripherals



☐ Initial Display Output

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

▶ IGFX (Note) Sets the onboard graphics as the first display.

▶ PCle 1 Slot Sets the graphics card on the PCIEX16 slot as the first display. (Default)

OnBoard LAN Controller (LANA)

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.

Intel Platform Trust Technology (PTT)

Enables or disables Intel® PTT Technology. (Default: Disabled)

Software Guard Extensions (SGX)

Enables or disables the Intel® Software Guard Extensions technology. This feature allows legal software to operate in a safe environment and protects the software against attacks from malicious software. The **Software Controlled** option allows you to enable or disable this feature with an Intel-provided application. (Default: Software Controlled)

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.

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.

→ 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 Wake on LAN function becomes unavailable.

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

▶ NCT6116D Super IO Configuration

Serial Port 1 Configuration (COMA Connector)

Enables or disables the onboard serial port.

Serial Port 2 Configuration (COMB Connector)

Enables or disables the onboard serial port.

Serial Port 3 Configuration (COMC Connector)

Enables or disables the onboard serial port.

Serial Port 4 Configuration (COMD Connector)

Enables or disables the onboard serial port.

NCT6116D HW Monitor

Displays system health status, including system temperature, fan speeds, and voltage values.

USB Configuration

☐ Legacy USB Support

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

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

USB Mass Storage Driver Support

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

☐ Mass Storage Devices

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

▶ Network Stack Configuration

Network Stack

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

☞ Ipv4 PXE Support

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

☐ Ipv4 HTTP Support

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

☞ Ipv6 PXE Support

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

☐ Ipv6 HTTP Support

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

PXE boot wait time

Allows you to configure how long to wait before you can press <Esc> to abort the PXE boot.

→ Media detect count

Allows you to set the number of times to check the presence of media.

NVMe Configuration

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

▶ SATA And RST Configuration

□ SATA Controller(s)

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

→ SATA Mode Selection

Specifies the operating mode of the integrated SATA controllers.

► 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)

Enables or disables the power saving feature, ALPM (Aggressive Link Power Management), for the Chipset SATA controllers. (Default: Disabled)

→ Port 0/1/2/3

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

Hot plug

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

Enables or disables support for external SATA devices.

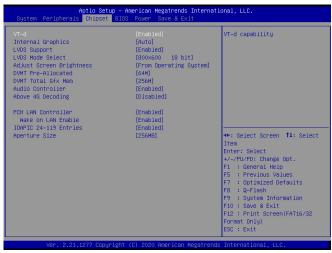
Intel(R) Gigabit Network Connection (LANB)

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

■ Intel(R) Ethernet Connection (LANA)

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

2-5 Chipset



▽ VT-d (Note)

Enables or disables Intel® Virtualization Technology for Directed I/O. (Default: Enabled)

Internal Graphics

Enables or disables the onboard graphics function. (Default: Auto)

LVDS Support

Enables or disables support for LVDS output. (Default: Enabled) (Default: Enabled)

☐ LVDS Mode Select

Allows to you set LVDS resolution and bit rate. (Default: 800x600 18 bit)

Adjust Screen Brightness

Allows you to select how to adjust the screen brightness. (Default: from operating system) (Default: From Operating System)

→ DVMT Pre-Allocated

Allows you to set the onboard graphics memory size. Options are: 32M~512M. (Default: 64M)

DVMT Total Gfx Mem

Allows you to allocate the DVMT memory size of the onboard graphics. Options are: 128M, 256M, MAX. (Default: 256M)

Audio Controller

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**.

Above 4G Decoding

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

(Note) This item is present only when you install a CPU that supports this feature. For more information about Intel® CPUs' unique features, please visit Intel's website.

→ PCH LAN Controller (LANB)

Enables or disables the Intel® GbE 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**.

→ Wake on LAN Enable

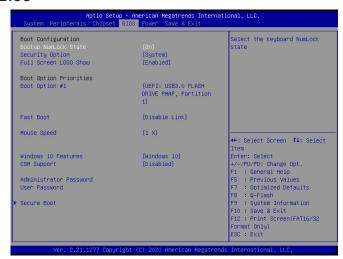
Enables or disables the wake on LAN function. (Default: Enabled)

○ IOAPIC 24-119 Entries

Enables or disables this function. (Default: Enabled)

Allows you to set the maximum amount of system memory that can be allocated to the graphics card. (Default: 256MB)

2-6 **BIOS**



Bootup NumLock State

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

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)

Boot Option Priorities

Specifies the overall boot order from the available devices. Removable storage devices that support GPT format will be prefixed with "UEFI:" string on the boot device list. To boot from an operating system that supports GPT partitioning, select the device prefixed with "UEFI:" string. Or if you want to install an operating system that supports GPT partitioning such as Windows 10 64-bit, select the optical drive that contains the Windows 10 64-bit installation disc and is prefixed with "UEFI:" string.

→ Fast Boot

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

→ 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

→ Disable Link All USB devices are disabled before the OS boot process completes.

▶ Full Initial All USB devices are functional in the operating system and during the POST.

▶ Partial Initial Part of the USB devices are disabled before the OS boot process completes. This item is configurable only when Fast Boot is set to Enabled. This function is disabled when Fast Boot is set to Ultra Fast.

NetWork Stack Driver Support

▶ Disable Link 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.

Next Boot After AC Power Loss

Normal Boot Enables normal bootup upon the return of the AC power. (Default) ▶ Fast Boot Keeps the Fast Boot settings upon the return of the AC power.

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

Mouse Speed

Allows you to set the mouse cursor movement speed. (Default: 1 X)

Windows 10 Features

Allows you to select the operating system to be installed. (Default: Windows 10)

CSM Support

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

▶ Enabled Enables UEFI CSM.

▶ Disabled Disables UEFI CSM and supports UEFI BIOS boot process only. (Default)

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 Enabled.

Storage Boot Option Control

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

▶ Do not launch Disables option ROM.

₩ UEFI Enables UEFI option ROM only.

Enables legacy option ROM only. (Default) ▶ Legacy This item is configurable only when CSM Support is set to Enabled.

Other PCI devices

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.

Disables option ROM. ▶ Do not launch

₩ UEFI Enables UEFI option ROM only. (Default)

Enables legacy option ROM only.

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

Administrator Password

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

User Password

Allows you to configure a user password. Press <Enter> on this item, type the password, and then press <Enter>. You will be requested to confirm the password. Type the password again and press <Enter>. You must enter the administrator password (or user password) at system startup and when entering BIOS Setup. However, the user password only allows you to make changes to certain BIOS settings but not all.

To cancel the password, press <Enter> on the password item and when requested for the password, enter the correct one first. When prompted for a new password, press <Enter> without entering any password. Press <Enter> again when prompted to confirm.

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

Secure Boot

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

2-7 Power



Platform Power Management

Enables or disables the Active State Power Management function (ASPM). (Default: Disabled)

→ PEG ASPM

Allows you to configure the ASPM mode for the device connected to the CPU PEG bus. This item is configurable only when **Platform Power Management** is set to **Enabled**. (Default: Disabled)

→ PCH ASPM

Allows you to configure the ASPM mode for the device connected to Chipset's PCI Express bus. This item is configurable only when **Platform Power Management** is set to **Enabled**. (Default: Disabled)

→ DMI ASPM

Allows you to configure the ASPM mode for both CPU side and Chipset side of the DMI link. This item is configurable only when **Platform Power Management** is set to **Enabled**. (Default: Disabled)

→ AC BACK

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

▶ Always Off
 ▶ Always On
 The system stays off upon the return of the AC power. (Default)
 ▶ Always On
 The system is turned on upon the return of the AC power.

Memory The system returns to its last known awake state upon the return of the AC power.

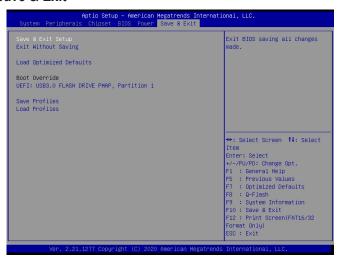
Watch Dog

Enables or disables Watch Dog function. (Default: Disabled)

□ RC6(Render Standby)

Allows you to determine whether to let the onboard graphics enter standby mode to decrease power consumption. (Default: Enabled)

2-8 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/FDD/USB** to save the profile to your storage device.

Load Profiles

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

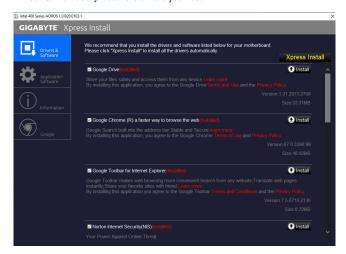
Chapter 3 Appendix

Drivers Installation



- Before installing the drivers, first install the 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 I con 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-IMB410TN

Responsible Party – U.S. Contact Information: **G.B.T. Inc.** Address: 17358 Railroad street, City Of Industry, CA91748 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 two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

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

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 European 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 toxic chemicals.

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 properly.

WEEE Symbol Statemer



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 apolicables.

European Union (EU) CE-Konformitätserklärung

Dieses Produkte mit CE-Kennzeichnung erfüllen folgenden EU-Richtlinien: EMV-Richtlinie 2014/30/EU, Niederspannungsrichtlinie 2014/30/EU und RoHS-Richtlinie 2011/65/EU erfüllt. Die Konformität mit diesen Richtlinien wird unter Verwendung der entsprechenden Standards zurEuropäischen Normierung beurfeilt.

CE declaração de conformidade

Este produto com a marcação CE estão em conformidade com das seguintes Diretivas UE: Diretiva Baixa 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 futti i requisiti essenziali delle Direttive.



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Tech. and Non-Tech. Support (Sales/Marketing): https://esupport.gigabyte.com

WEB address (English): https://www.gigabyte.com WEB address (Chinese): https://www.gigabyte.com/tw

GIGABYTE eSupport

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

