

H810A-IM-A



Industrial Motherboard

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Contents

Chapter 1 Product overview

1.1	Package contents	1-1
1.2	Features	1-1
1.3	Specifications	1-2

Chapter 2 Motherboard Information

2.1	Before you proceed	2-1
2.2	Motherboard layout	2-2
2.3	Central Processing Unit (CPU)	2-4
2.3.1	Installing the CPU	2-5
2.3.2	CPU heatsink and fan assembly installation	2-7
2.4	System memory	2-9
2.5	Jumpers	2-11
2.6	Connectors	2-16
2.6.1	Rear panel connectors	2-16
2.6.2	Internal connectors	2-18
2.7	Slots	2-33
2.8	Starting up for the first time	2-35
2.9	Turning off the computer	2-35

Chapter 3 BIOS setup

3.1	BIOS setup program	3-1
3.1.1	BIOS menu screen	3-2
3.2	Main menu	3-2
3.2.1	System Date [Day MM/DD/YYYY]	3-2
3.2.2	System Time [HH:MM:SS]	3-2
3.3	Advanced menu	3-3
3.3.1	ASUS CONFIG LOCK	3-3
3.3.2	PCH-FW Configuration	3-4
3.3.3	Trusted Computing	3-4
3.3.4	CPU Configuration	3-4
3.3.5	Graphics Configuration	3-6
3.3.6	PCI Express Configuration	3-6
3.3.7	Super IO Configuration	3-8
3.3.8	Serial Console Redirection	3-9
3.3.9	SATA Configuration	3-11

3.3.10	Network Stack Configuration	3-11
3.3.11	USB Configuration	3-12
3.3.12	NVMe Configuration	3-12
3.3.13	Onboard Devices Configuration.....	3-12
3.3.14	APM Configuration	3-13
3.3.15	EzFlash	3-14
3.3.16	Watchdog Timer	3-15
3.3.17	Preserve BIOS option method.....	3-15
3.4	Hardware Monitor menu	3-16
3.5	Security menu.....	3-17
3.6	Boot menu	3-19
3.7	Exit menu.....	3-20
3.8	Event Logs menu	3-21
 Appendix		
	Notices	A-1
	Service and Support.....	A-4

Chapter 1

Product overview

1.1 Package contents

Check your industrial motherboard package for the following items.

- ☒ 1 x ASUS H810A-IM-A Industrial Motherboard
- ☒ 1 x SATA 6.0 Gb/s cable
- ☒ 1 x M.2 screw package
- ☒ 1 x ASUS I/O Shield

NOTE:

- If any of the above items is damaged or missing, contact your distributor or sales representative immediately.
 - The above items are for standard SKUs. Actual accessories may vary with different models.
-

1.2 Features

- LGA1851 socket for Intel® Core™ Ultra Processors (Series 2)
- Two Dual Channel U-DIMMs supports up to 6400MT/S DDR5, max. 96GB
- 4 x SATA 6.0 Gb/s, 2 x USB 3.2 Gen 2, 2 x USB 3.2 Gen 1, 6 x USB 2.0, 6 COM ports
- 1 x PCIe 5.0 x16 slot, 1 x PCIe 4.0 x16 slot (x4 mode), 1 x PCIe 4.0 x4 slot (x1 mode), 4 x PCI slots, 1 x M.2 Socket 3 with M Key, 2242/2260/2280 (SATA/PCIe x1 mode)
- Multi-display: 1 x HDMI, 1 x DisplayPort, 1 x VGA

1.3 Specifications

CPU	LGA1851 socket for Intel® Core™ Ultra Processors (Series 2) Supports up to 65W TDP
Chipset	Intel® H810 Chipset
Memory	2 x U-DIMM, max.96GB, supports up to 6400MT/s DDR5
Graphics	Integrated graphics processor - Intel® HD Graphics support Multi-VGA output support: VGA/HDMI™/DisplayPort ports* - Supports HDMI™ 2.1 output with a maximum resolution of 4096 x 2160 @ 60Hz - Supports DisplayPort output with a maximum resolution of 3840 x 2160 @ 60Hz - Supports VGA output with a maximum resolution of 1920 x 1200 @ 60 Hz * The system supports up to three displays simultaneously.
Expansion slots	1 x PCIe 5.0 x16 slot 1 x PCIe 4.0 x16 slot (x4 mode) 1 x PCIe 4.0 x4 slot (x1 mode) 4 x PCI slots
Storage	4 x SATA Gen 3.0, up to 6.0 Gb/s ports 1 x M.2 Socket 3 with M key, type 2242/2260/2280 (SATA/PCIe x1 mode)
LAN	2 x LAN (RJ45) ports: 1 x Intel® i219V 1 x Intel® i210AT
Audio	Realtek ALC 897 High Definition Audio Line-In, Line-Out, Mic-In
Rear I/O ports	1 x HDMI™ port 1 x DisplayPort 1 x VGA port 2 x USB 3.2 Gen 2 ports 2 x USB 3.2 Gen 1 ports 4 x USB 2.0 ports 2 x LAN (RJ45) ports 2 x COM ports (RS232/422/485) 3 x Audio jacks

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Internal I/O connectors	1 x AutoRetry header
	2 x LAN LED headers
	4 x COM port headers (RS232)
	1 x USB 2.0 header supports 2 additional USB 2.0 ports
	1 x SGPIO header
	1 x CPU Fan header (PWM mode)
	2 x Chassis Fan headers (PWM mode)
	1 x Chassis intrusion header
	1 x Front Panel Audio header (F_AUDIO)
	1 x 10-1 pin System Panel header
	1 x Buzzer Onboard
	1 x Clear CMOS header
	1 x Speaker header
	1 x COM Debug header
	1 x I2C header
	1 x LPT Port header (supports 16-bit GPIO multi-function)
	1 x GPIO header (8-bit)
	1 x PS/2 Keyboard/Mouse header
	1 x 24-pin ATX power connector
	2 x 4-pin ATX power connectors
	1 x SPI TPM header
	1 x AT/ATX mode selection jumper
	2 x COM mode selection jumpers
	1 x GPIO Power selection jumper
	1 x Power Limit selection jumper
	1 x USB G3 Enable/Disable selection jumper
	1 x SMBDATA_PCH/CPU jumper
	1 x SMBCLK_PCH/CPU jumper
	1 x PCI Clock selection jumper (M66EN_SEL)
Watch dog timer	Yes
Power requirement	AT/ATX mode
Operation Temperature	0~60°C
Non-Operation Temperature	-40~85°C
Relative Humidity	10%~95%

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OS support	Windows® 10 IoT Enterprise LTSC
	Windows® 11 IoT Enterprise LTSC
	Ubuntu
	RedHat Enterprise
	Fedora Workstation
	OpenSUSE
Certification	CE, FCC, BSMI, VCCI, RCM, CE-LVD
Form Factor	ATX Form Factor, 12" x 9.6" (30.5cm x 24.4cm)

NOTE: Specifications are subject to change without notice.

Chapter 2

Motherboard information

2.1 Before you proceed

Take note of the following precautions before you install motherboard components or change any motherboard settings.

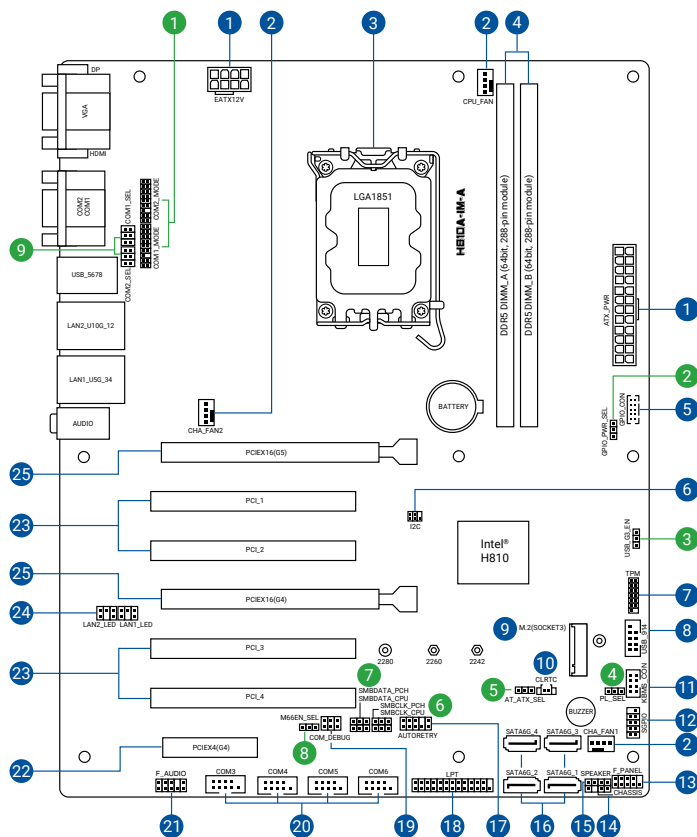
CAUTION!

- Unplug the power cord from the wall socket before touching any component.
 - Before handling components, use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, to avoid damaging them due to static electricity.
 - Hold components by the edges to avoid touching the ICs on them.
 - Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.
 - Before you install or remove any component, always remove the AC power by unplugging the power cord from the power outlet. Failure to do so may cause severe damage to the motherboard, peripherals, or components.
-

2.2 Motherboard layout

NOTE: Place nine screws into the holes indicated by circles to secure the motherboard to the chassis.

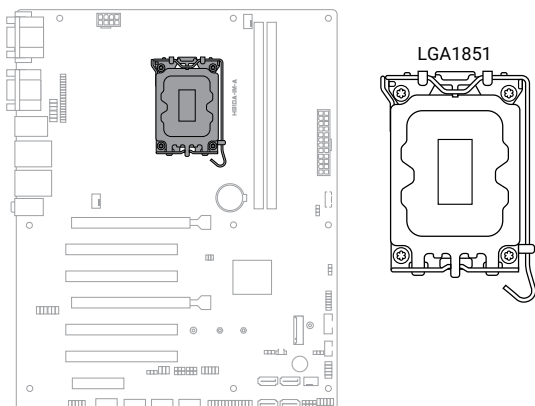
CAUTION! Do not overtighten the screws! Doing so can damage the motherboard.



Connectors/Slots	Page
1. ATX Power connectors (24-pin ATX_PWR, 8-pin ATX12V)	2-18
2. CPU and Chassis Fan headers (4-pin CPU_FAN, 4-pin CHA_FAN1-2)	2-19
3. Intel® LGA1851 CPU socket	2-4
4. DDR5 slots	2-9
5. General Purpose Input/Output header (10-pin GPIO_CON)	2-20
6. I ² C header (6-1 pin I ² C)	2-20
7. TPM header (14-1 pin TPM)	2-21
8. USB 2.0 header (10-1pin USB914)	2-22
9. M.2 slots (SOCKET3))	2-23
10. Clear CMOS (2-pin CLRRTC)	2-24
11. PS/2 Keyboard & Mouse header (8-pin KBMS_CON)	2-25
12. Serial General Purpose Input/Output connector (10-1 pin SGPIO)	2-26
13. System Panel header (10-1 pin F_PANEL)	2-27
14. Chassis Intrusion header (4-pin CHASSIS)	2-28
15. Speaker header (4-1 pin SPEAKER)	2-28
16. SATA 6.0Gb/s ports (7-pin SATA6G_1-4)	2-29
17. AutoRetry header (10-1 pin AUTORETRY)	2-29
18. LPT port header (supports 16-bit GPIO multi-function) (26-1 pin LPT)	2-30
19. COM Debug header (6-1 pin COM_DEBUG)	2-31
20. COM Port headers (10-1 pin COM3-6)	2-31
21. Front Panel Audio header (10-1 pin F-AUDIO)	2-32
22. PCI Express x4 (G4)	2-33
23. PCI slots	2-33
24. LAN LED headers (6-1 pin LAN1_LED, LAN2_LED)	2-32
25. PCI Express x16(G5), PCI Express x16(G4) slots	2-34
Jumpers	Page
1. COM mode selection jumpers (18-1pin COM1_MODE, COM2_MODE)	2-11
2. General Purpose Input/Output Power selection jumper (3-pin GPIO_PWR_SEL)	2-12
3. USB G3 Enable/Disable selection jumper (USB_G3_EN)	2-12
4. Power Limit selection jumper (3-pin PL_SEL)	2-13
5. AT/ATX Mode selection jumper (3-pin AT_ATX_SEL)	2-13
6. PCIe SMBus Clock Connection jumpers (3-pin SMBCLK_PCH, SMBCLK_CPU)	2-14
7. PCIe SMBus Data Connection jumpers (3-pin SMBDATA_PCH, SMBDATA_CPU)	2-14
8. PCI Clock selection jumper (3-pin M66EN_SEL)	2-15
9. COM1/2 Ring/+5V/+12V selection jumpers (6-pin COM1_SEL, COM2_SEL)	2-15

2.3 Central Processing Unit (CPU)

The motherboard comes with a surface mount LGA1851 socket designed for the Intel® Core™ Ultra Processors (Series 2).



IMPORTANT: Unplug all power cables before installing the CPU.

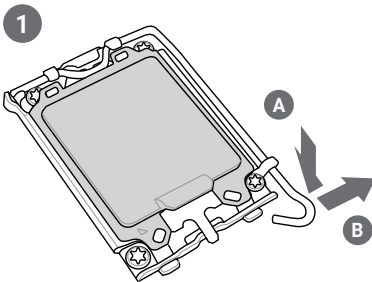
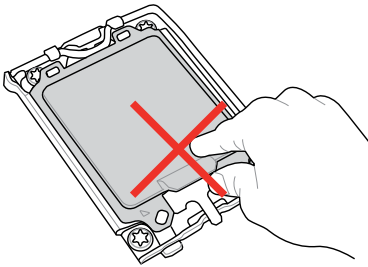
CAUTION!

- Ensure that you install the correct CPU designed for LGA1851 socket only. DO NOT install a CPU designed for other sockets on the LGA1851 socket.
 - Upon purchase of the motherboard, ensure that the PnP cap is on the socket and the socket contacts are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components. ASUS will shoulder the cost of repair only if the damage is shipment/transit-related.
 - Keep the cap after installing the motherboard. ASUS will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the cap on the LGA1851 socket.
 - The product warranty does not cover damage to the socket contacts resulting from incorrect CPU installation/removal, or misplacement/loss/incorrect removal of the PnP cap.
-

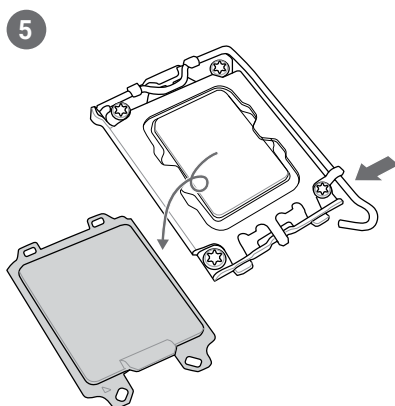
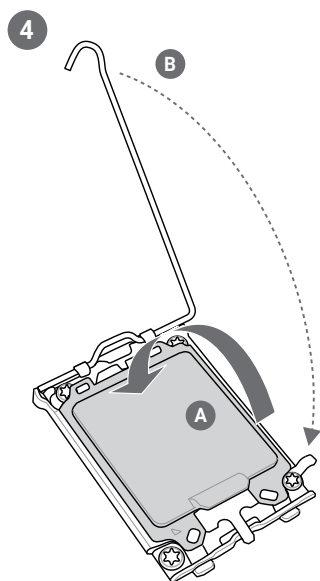
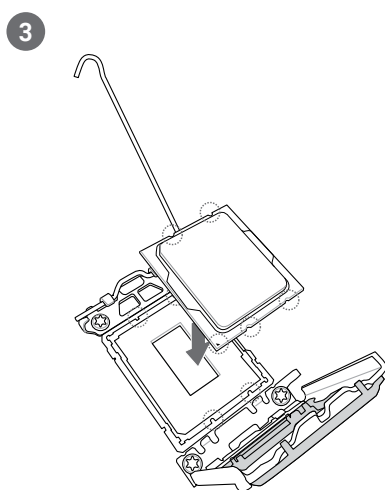
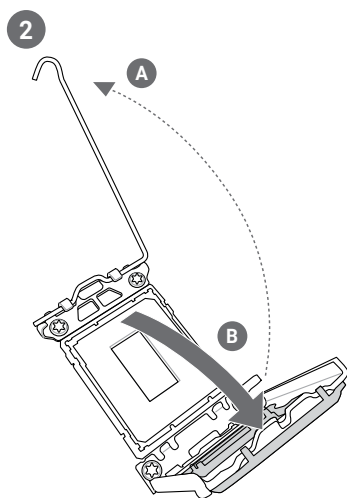
2.3.1 Installing the CPU

NOTE:

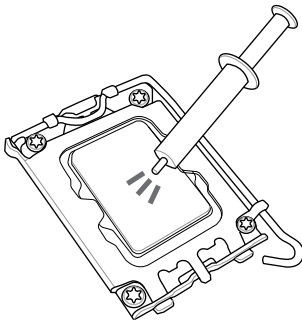
- Ensure that you install the correct CPU designed for LGA1851 socket only. DO NOT install a CPU designed for LGA1155, LGA1156, LGA1151, LGA1200, and LGA1700 sockets on the LGA1851 socket.
 - ASUS will not cover damages resulting from incorrect CPU installation/removal, incorrect CPU orientation/placement, or other damages resulting from negligence by the user.
-



NOTE: Take caution when lifting the load lever, ensure to hold onto the load lever when releasing the load lever. Letting go of the load lever immediately after releasing it may cause the load lever to spring back and cause damage to your motherboard.

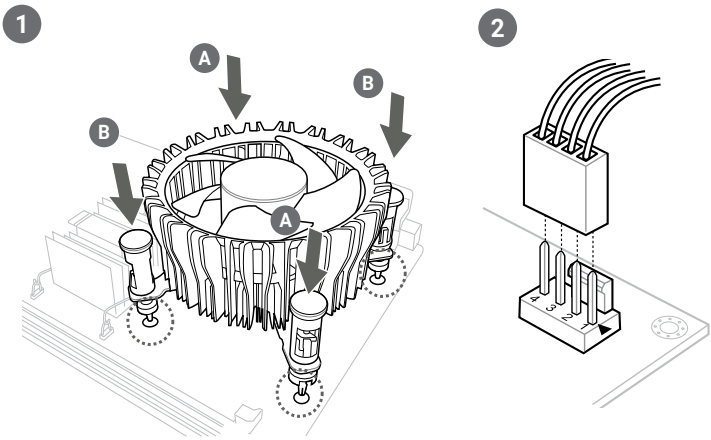


2.3.2 CPU heatsink and fan assembly installation



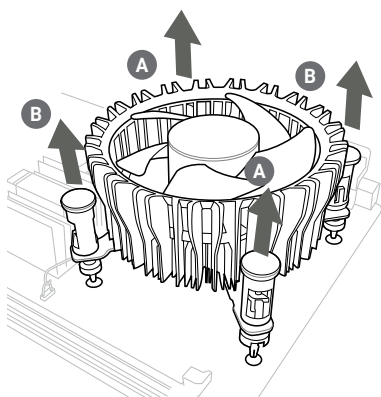
CAUTION! Apply the Thermal Interface Material to the CPU heatsink and CPU before you install the heatsink and fan if necessary.

To install the CPU heatsink and fan assembly



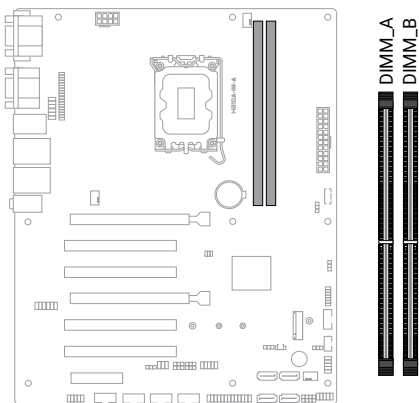
To uninstall the CPU heatsink and fan assembly

1

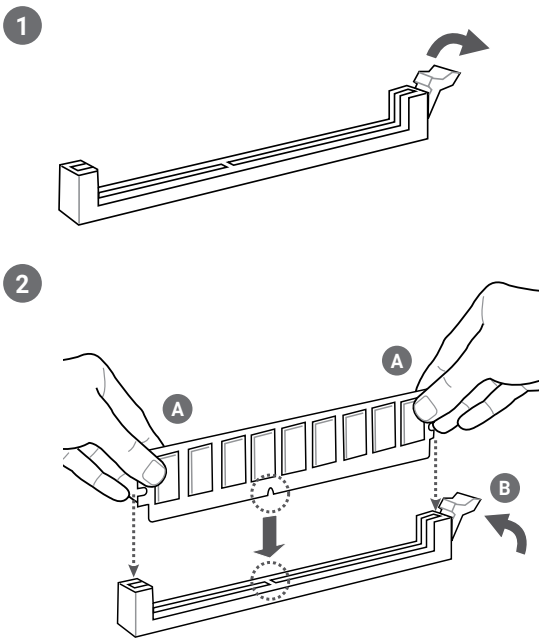


2.4 System memory

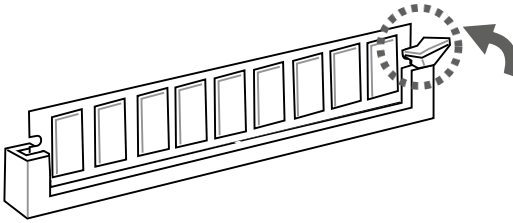
This motherboard comes with two Double Data Rate 5 (DDR5) Dual Inline Memory Module (DIMM) sockets. The figure below illustrates the location of the DDR5 DIMM sockets:



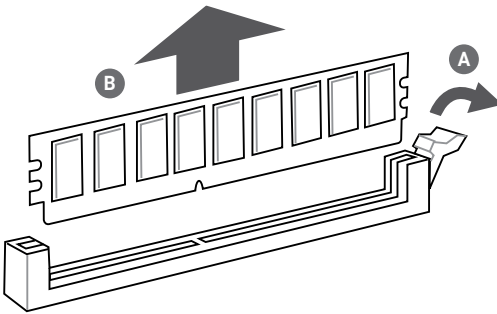
Installing a DIMM



3

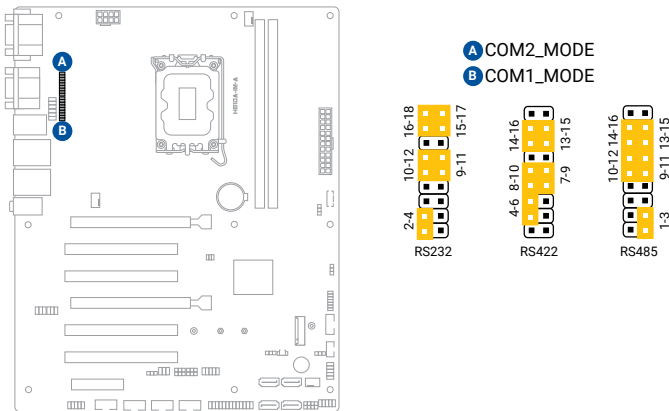


To remove a DIMM



2.5 Jumpers

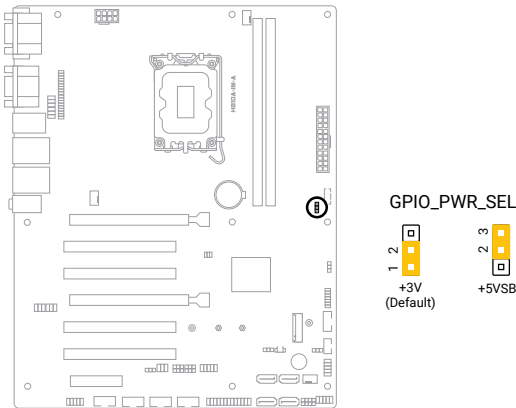
1. COM Mode selection jumpers (18-pin COM1/2_MODE)



Setting	Pins
RS232	2-4, 9-11, 10-12, 15-17, 16-18
RS422	4-6, 7-9, 8-10, 13-15, 14-16
RS485	1-3, 9-11, 10-12, 13-15, 14-16

2. **General Purpose Input/Output Power selection jumper (3-pin GPIO_PWR_SEL)**

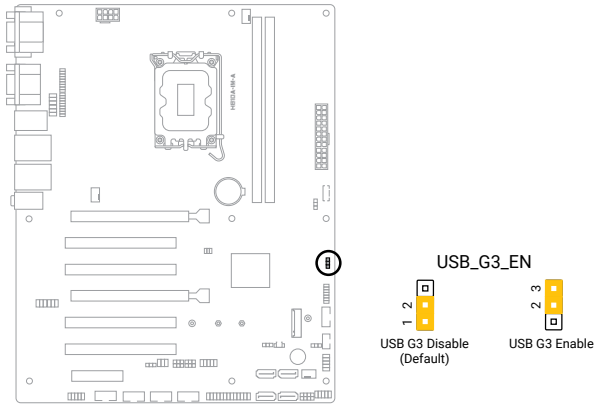
This jumper allows you to select 3V or 5V for a general purpose input/output module.



Setting	Pins
+3V (Default)	1-2
+5V	2-3

Connector type HEADER 1x3p, 2.54mm pitch, S/T

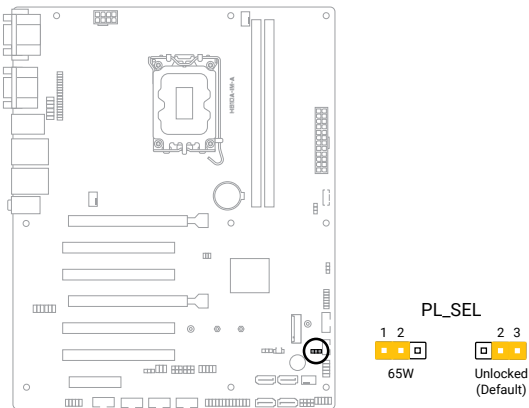
3. **USB G3 Enable/Disable selection jumper (3-pin USB_G3_EN)**



Setting	Pins
USB G3 Disable (Default)	1-2
USB G3 Enable	2-3

Connector type HEADER 1x3p, 2.54mm pitch, S/T

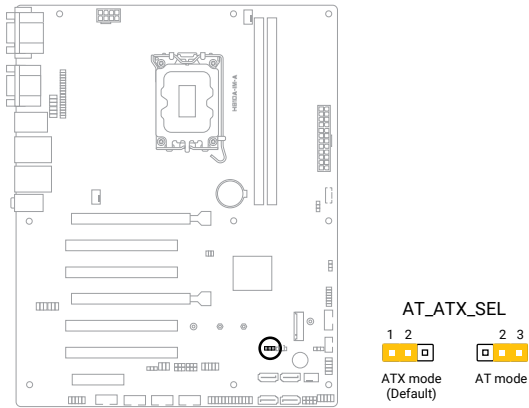
4. Power Limit selection jumper (3-pin PL_SEL)



Setting	Pins
65W	1-2
Unlocked (Default)	2-3

Connector type HEADER 1x3p, 2.54mm pitch, S/T

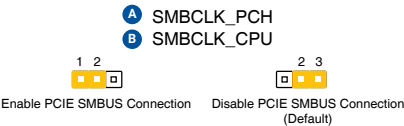
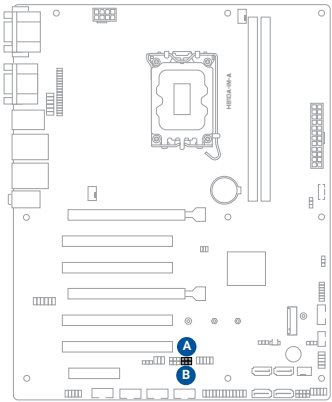
5. AT/ATX Mode selection jumper (3-pin AT_ATX_SEL)



Pins	Pins
ATX mode (Default)	1-2
AT mode	2-3

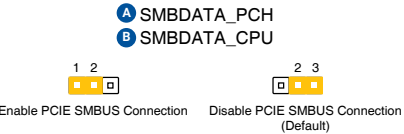
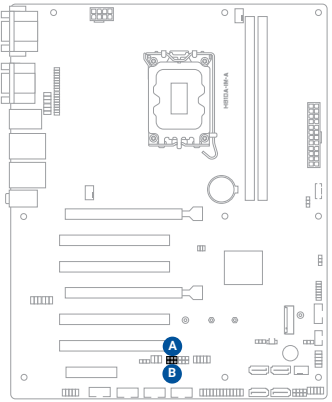
Connector type HEADER 1x3p, 2.54mm pitch, S/T

6. PCIe SMBus Clock Connection jumpers (3-pin SMBCLK_PCH, SMBCLK_CPU)



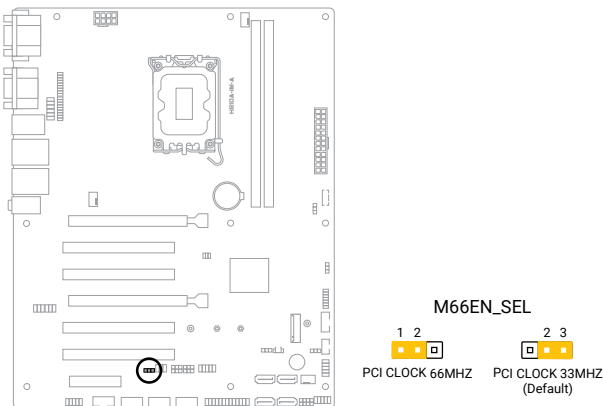
Settings	Pins
Enable PCIe SMBCLK connection	1-2
Disable PCIe SMBCLK connection (Default)	2-3

7. PCIe SMBus Data Connection jumpers (3-pin SMBDATA_PCH, SMBDATA_CPU)



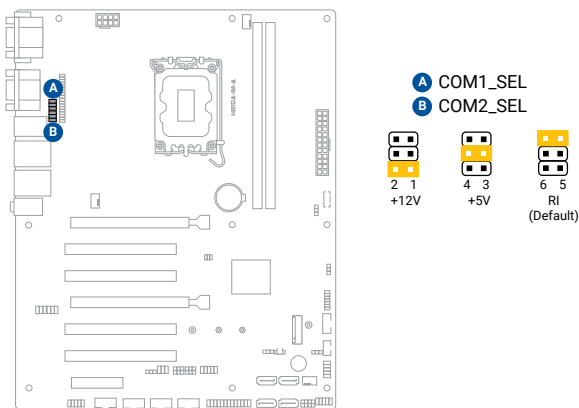
Settings	Pins
Enable PCIe SMBus connection	1-2
Disable PCIe SMBus connection (Default)	2-3

8. PCI Clock selection jumper (3-pin M66EN_SEL)



Settings	Pins
PCI clock 66MHz	1-2
PCI clock 33MHz (Default)	2-3

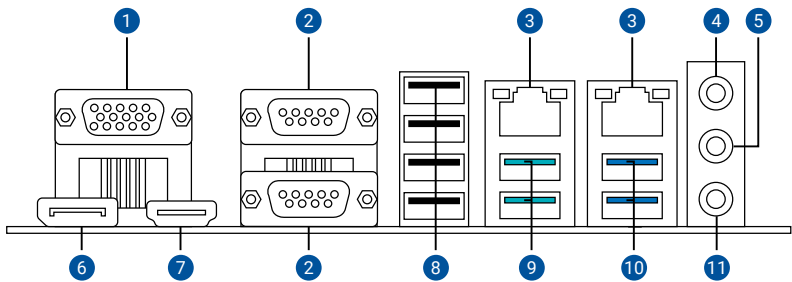
9. COM Ring/+5V/+12V selection jumper (6-pin COM1/2_SEL)



Setting	Pins
+12V	1-2
+5V	3-4
Ring (Default)	5-6

2.6 Connectors

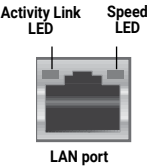
2.6.1 Rear panel connectors



1. **Video Graphics Adapter (VGA) port.** This 15-pin port is for a VGA monitor or other VGA-compatible devices.
2. **COM ports (COM, RS232/RS422/RS485).** These ports connect modems, or other devices that conform with serial specification.
3. **LAN (RJ-45) ports.** These ports allow Gigabit connection to a Local Area Network (LAN) through a network hub.

LAN port LED indications

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



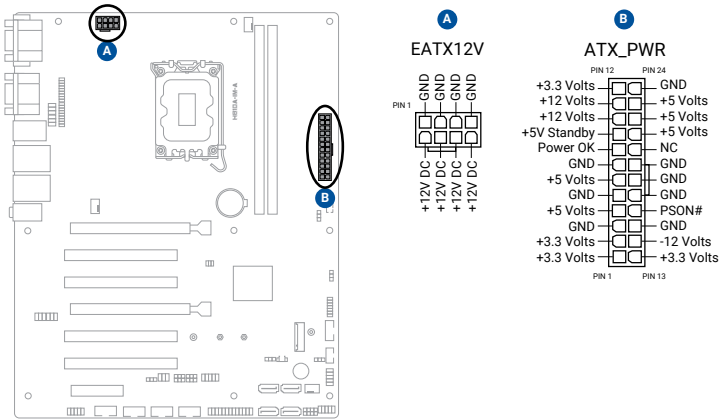
4. **Line In port (light blue).** This port connects to the tape, CD, DVD player, or other audio sources.
5. **Line Out port (lime).** This port connects to a headphone or a speaker. In the 4, 5.1 and 7.1 channel configurations, the function of this port becomes Front Speaker Out.
6. **DisplayPort.** This port is for a DisplayPort-compatible device.
7. **HDMI™ port.** This port is for a High-Definition Multimedia Interface (HDMI™) connector, and is HDCP compliant allowing playback of HD DVD, Blu-ray, and other protected content.
8. **USB 2.0 ports.** These 4-pin Universal Serial Bus (USB) ports are for USB 2.0 devices.

9. **USB 3.2 Gen 2 (up to 10Gbps) ports.** These 9-pin Universal Serial Bus (USB) ports are for USB 3.2 Gen 2 devices.
10. **USB 3.2 Gen 1 (up to 5Gbps) ports.** These 9-pin Universal Serial Bus (USB) ports are for USB 3.2 Gen 1 devices.
11. **Microphone port (pink).** This port connects to a microphone.

2.6.2 Internal connectors

1. ATX Power connectors (24-pin ATXPWR, 8-pin EATX12V)

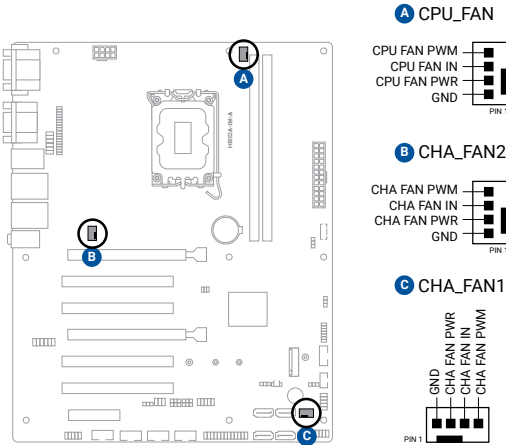
Correctly orient the ATX power supply plugs into these connectors and push down firmly until the connectors completely fit.



Connector type	POWER CON 24P S/T
	POWER CON 8P S/T

2. CPU and Chassis Fan headers (4-pin CPU_FAN, 4-pin CHA_FAN1/2)

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

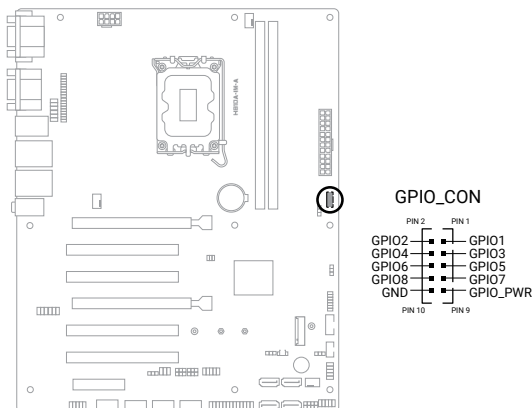


Connector type WAFER HD 4p, 2.54mm pitch, S/T

CAUTION! Do not forget to connect the fan cables to the fan headers. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan headers!

3. General Purpose Input/Output header (10-pin GPIO_CON)

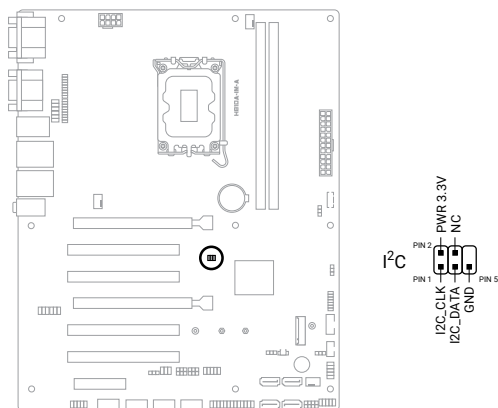
This header is for a general purpose input/output module which allows you to customize the digital signal input/output.



Connector type WAFER HD 2x5p, 2.0mm pitch, S/T

4. I²C header (6-1 pin I²C)

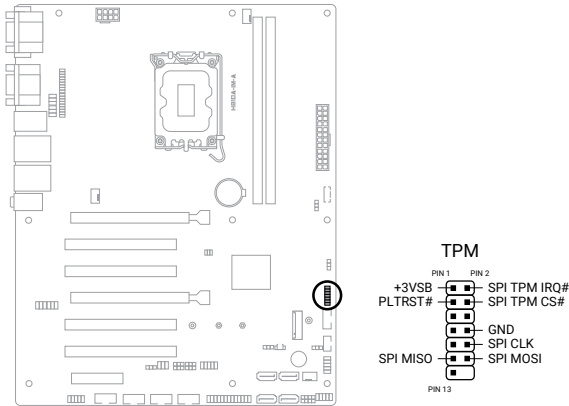
The I²C (Inter-Integrated Circuit) header allows you to connect an I²C compatible IoT security module.



Connector type HEADER 2x3p, K6, 2.0mm pitch

5. **TPM header (14-1 pin TPM)**

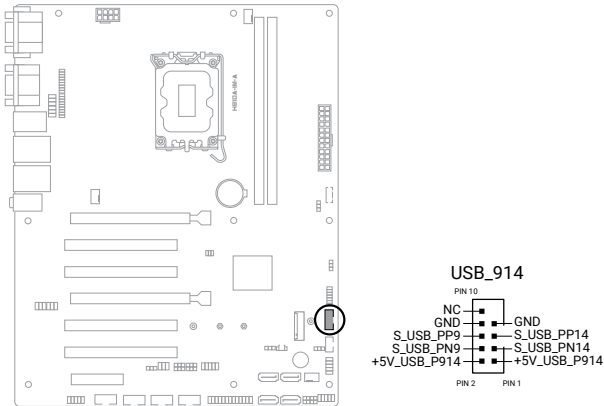
This header supports a Trusted Platform Module (TPM) system with a Serial Peripheral Interface (SPI), allowing you to securely store keys, digital certificates, passwords and data. A TPM system also enhances network security, protects digital identities, and ensures platform integrity.



Connector type	HEADER 2x7p, K14, 2.0mm pitch
----------------	-------------------------------

6. **USB 2.0 header (10-pin USB914)**

This header is for USB 2.0 ports. Connect a USB cable to the header. The USB header complies with USB 2.0 specification that supports up to 480 Mbps connection speed.



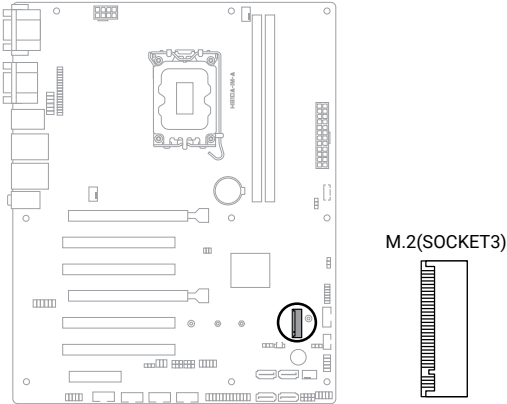
Connector type	HEADER 2x5p, K9, 2.54mm pitch
----------------	-------------------------------

CAUTION! Never connect a 1394 cable to the USB connector. Doing so will damage the motherboard.

NOTE: The USB cable is purchased separately.

7. M.2 slot (SOCKET 3)

This slot allows you to install an M.2 SSD module.



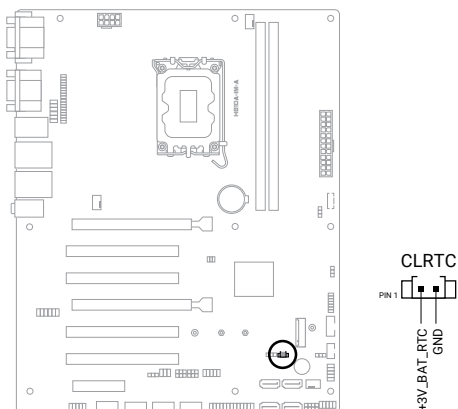
Connector type	NGFF KEY-M 67P, 8.5H
----------------	----------------------

NOTE:

- The M.2 SSD module is purchased separately.
- This slot supports M Key and 2242/2260/2280 storage devices.
- We recommend using a PH1 screwdriver with a torque of 2.0 +/- 0.2 kgf.cm when tightening the screw.

8. Clear CMOS (2-pin CLRTC)

This header allows you to clear the CMOS RTC RAM data of the system setup information such as date, time, and system passwords.



Connector type	HEADER 1x2p, 2.54mm pitch, S/T
-----------------------	--------------------------------

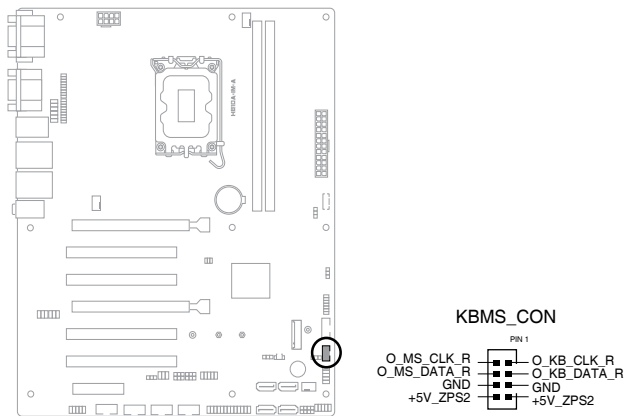
To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Use a metal object such as a screwdriver to short the two pins.
3. Plug the power cord and turn ON the computer.
4. Hold down the **** key during the boot process and enter BIOS setup to re-enter data.

NOTE: If the steps above do not help, remove the onboard battery and move the jumper again to clear the CMOS RTC RAM data. After clearing the CMOS, reinstall the battery.

9. PS/2 Keyboard & Mouse header (8-pin KBMS_CON)

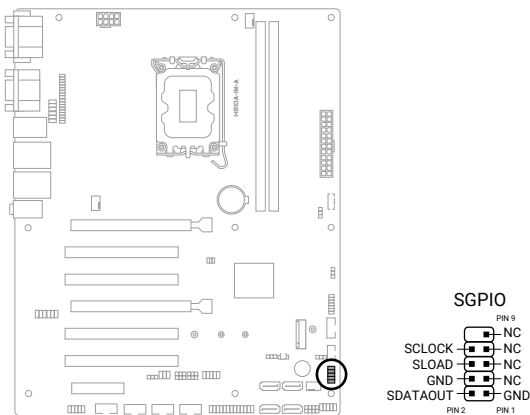
This header is for an IBM PS/2-compatible keyboard or mouse.



Connector type	WAFFER HD 2x4p, 2.0mm pitch, S/T
----------------	----------------------------------

10. Serial General Purpose Input/Output header (10-1 pin SGPIO)

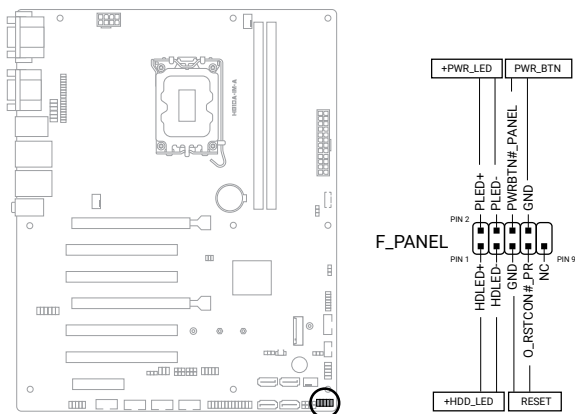
This header is for a serial general purpose input/output module which allows you to customize the digital signal input/output.



Connector type	WAFFER HD 2x5p, 2.54mm pitch, S/T
----------------	-----------------------------------

11. System Panel header (10-1 pin F_PANEL)

This header supports several chassis-mounted functions.



Connector type	HEADER 2x5p, K10, 2.54mm pitch
-----------------------	--------------------------------

- **System power LED (2-pin +PWR_LED)**

This 2-pin header is for the system power LED. Connect the chassis power LED cable to this header. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

- **Hard disk drive activity LED (2-pin +HDD_LED)**

This 2-pin header is for the HDD Activity LED. Connect the HDD Activity LED cable to this header. The IDE LED lights up or flashes when data is read from or written to the HDD.

- **ATX power button/soft-off button (2-pin PWR_BTN)**

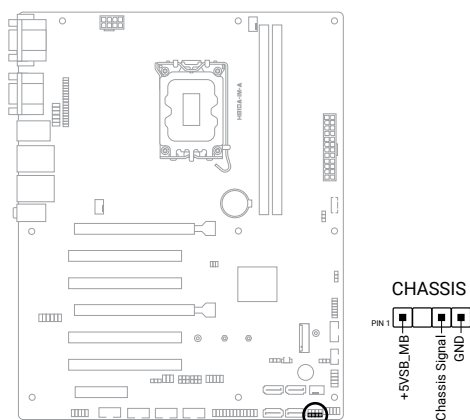
This 2-pin header is for the system power button.

- **Reset button (2-pin RESET)**

This 2-pin header is for the chassis-mounted reset button for system reboot without turning off the system power.

12. Chassis Intrusion header (4-1 pin CHASSIS)

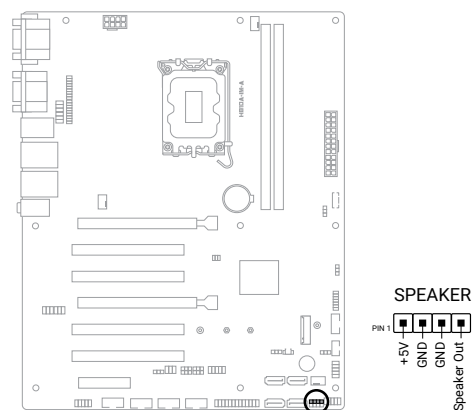
This header is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or switch cable to this connector. The chassis intrusion sensor or switch sends a low-level signal to this connector when a chassis component is installed. The signal is then generated as a chassis intrusion event.



Connector type	HEADER 4p, K2, 2.54mm pitch
----------------	-----------------------------

13. Speaker header (4-pin SPEAKER)

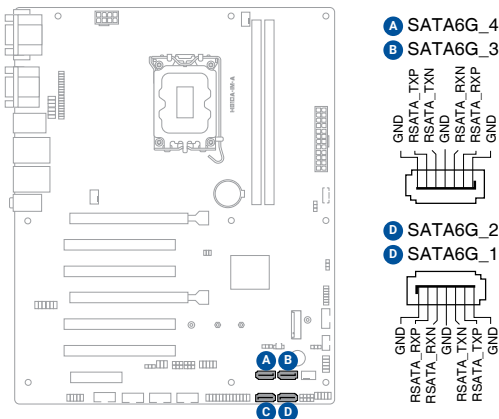
The 4-pin header is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings.



Connector type	HEADER 1x4p, 2.54mm pitch, S/T
----------------	--------------------------------

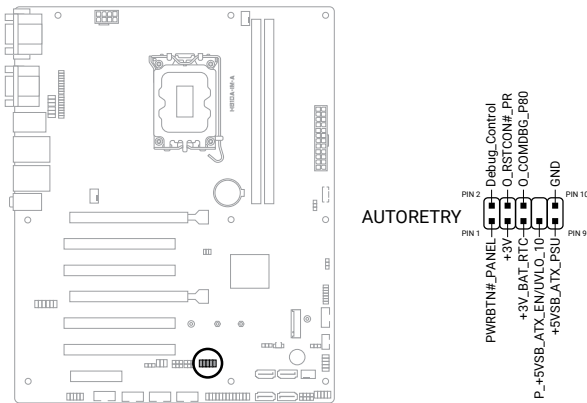
14. **SATA 6.0Gb/s ports (7-pin SATA6G_1-4)**

These ports connect to SATA 6.0 Gb/s hard disk drives or an optical drive via SATA 6.0 Gb/s signal cables.



Connector type	SATA CON 7P S/T
----------------	-----------------

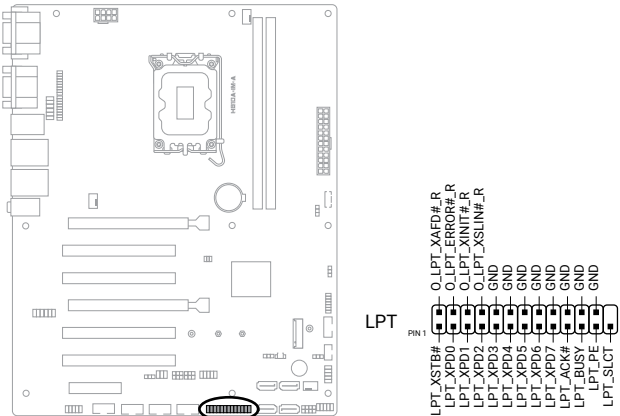
15. **AutoRetry header (10-1 pin AUTORETRY)**



Connector type	HEADER 2x5p, K8, 2.54mm pitch
----------------	-------------------------------

16. LPT header (supports 16-bit GPIO multi-function) (26-1 pin LPT)

The LPT (Line Printing Terminal) connector supports devices such as a printer. LPT standardizes as IEEE 1284, which is the parallel port interface on IBM PC-compatible computers. This connector also supports a 16-bit GPIO multi-function mode and is only tolerant to +5V signals.



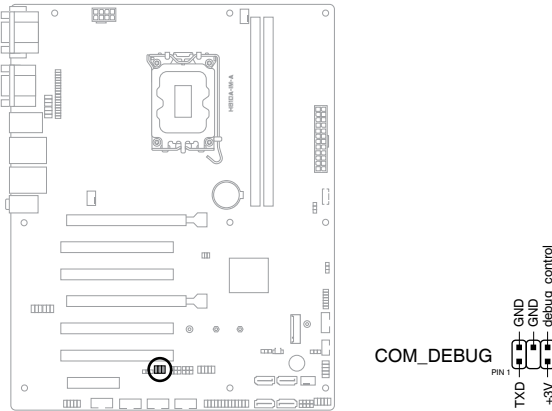
Connector type	HEADER 2x13p, K26, 2.54mm pitch, S/T
----------------	--------------------------------------

GPIO multi-function mode:

Pins	Signal	Pins	Signal
1	GPIO9(GP47)	2	GPIO10(GP46)
3	GPIO11(GP42)	4	GPIO12(GP45)
5	GPIO13(GP41)	6	GPIO14(GP44)
7	GPIO15(GP40)	8	GPIO16(GP43)
9	GPIO17(GP37)	10	GND
11	GPIO18(GP36)	12	GND
13	GPIO19(GP35)	14	GND
15	GPIO20(GP34)	16	GND
17	GPIO21(GP33)	18	GND
19	GPIO22(GP32)	20	GND
21	GPIO23(GP31)	22	GND
23	GPIO24(GP30)	24	GND
25	Not Used	26	

17. **COM Debug header (6-1 pin COM_DEBUG)**

This header allows connection to a COM Debug card.

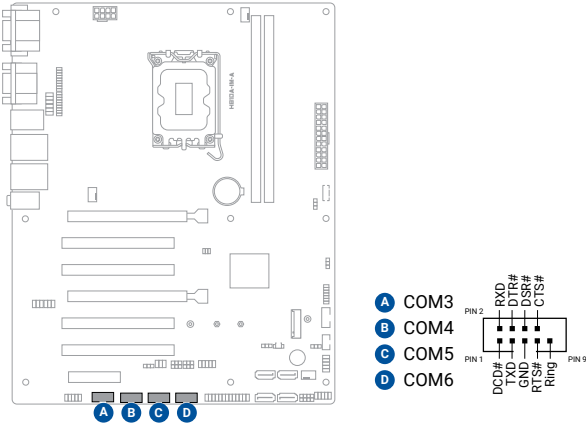


Connector type	HEADER 2x3p, K3, 2.54 mm pitch, S/T
----------------	-------------------------------------

NOTE: The COM Debug Card is purchased separately.

18. **COM Port headers (10-pin COM3 - COM6)**

These headers are for serial (COM) ports. Connect the serial port cables to these headers, then install the module to a slot opening at the back of the system chassis.

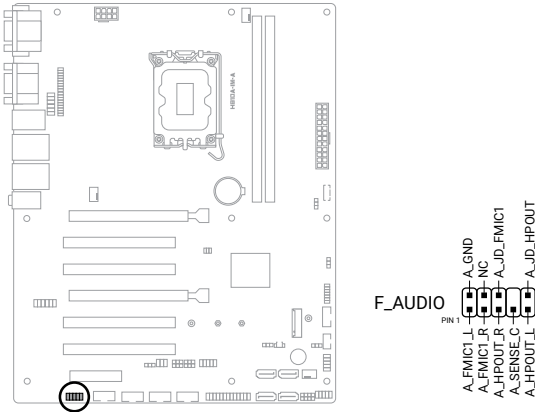


Connector type	HEADER 2x5p, K10, 2.54mm pitch
----------------	--------------------------------

NOTE: The serial port cable is purchased separately.

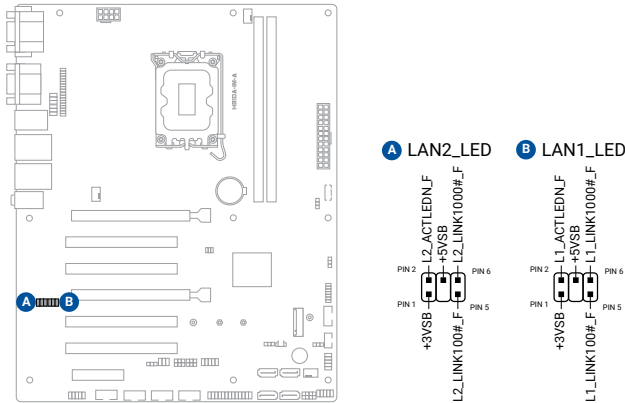
19. Front Panel Audio header (10-1 pin F_AUDIO)

This header is for a chassis-mounted front panel audio I/O module that supports HD Audio standard. Connect one end of the front panel audio I/O module cable to this header.



Connector type	HEADER 2x5p, K8, 2.54mm pitch
----------------	-------------------------------

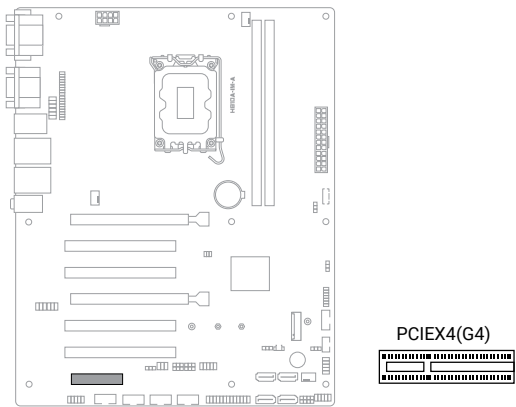
20. LAN LED headers (6-1 pin LAN1_LED, LAN2_LED)



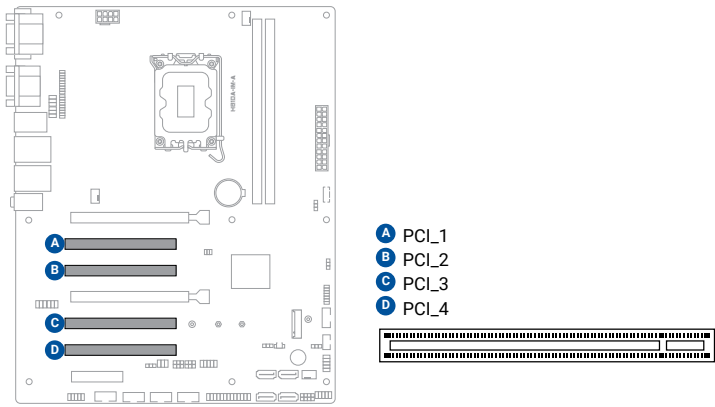
2.7 Slots

1. PCI Express x4 slot

This motherboard supports one PCIe x4 network card, SCSI card or other card that complies with the PCI Express specification.

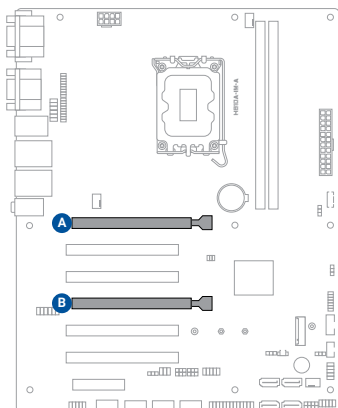


2. PCI slots



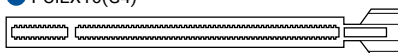
3. PCI Express x16 slots

This motherboard supports two PCIe x16 graphics cards that comply with the PCI Express specification.



A PCIEX16(G5)

B PCIEX16(G4)



2.8 Starting up for the first time

1. After making all the connections, replace the system case cover.
2. Ensure that all switches are off.
3. Connect the power cord to the power connector at the back of the system chassis.
4. Connect the power cord to a power outlet that is equipped with a surge protector.
5. Turn on the devices in the following order:
 - a. Monitor
 - b. External storage devices (starting with the last device on the chain)
 - c. System power
6. After applying power, the system power LED on the system front panel case lights up. For systems with ATX power supplies, the system LED lights up when you press the ATX power button. If your monitor complies with the “green” standards or if it has a “power standby” feature, the monitor LED may light up or change from orange to green after the system LED turns on.

The system then runs the power-on self tests (POST). While the tests are running, the BIOS beeps (refer to the BIOS beep codes table) or additional messages appear on the screen. If you do not see anything within 30 seconds from the time you turned on the power, the system may have failed a power-on test. Check the jumper settings and connections or call your retailer for assistance.

BIOS Beep	Description
One short beep	VGA detected Quick boot set to disabled No keyboard detected
One continuous beep followed by two short beeps then a pause (repeated)	No memory detected
One continuous beep followed by three short beeps	No VGA detected
One continuous beep followed by four short beeps	Hardware component failure

7. At power on, hold down the <Delete> key to enter the BIOS Setup. Follow the instructions in Chapter 3.

2.9 Turning off the computer

While the system is ON, press the power button for less than four seconds to put the system on sleep mode or soft-off mode, depending on the BIOS setting. Press the power button for more than four seconds to let the system enter the soft-off mode regardless of the BIOS setting.

Chapter 3

BIOS setup

NOTE: Scan the code to view the BIOS update guide.



3.1 BIOS setup program

Use the BIOS Setup program to update the BIOS or configure its parameters. The BIOS screens include navigation keys and brief online help to guide you in using the BIOS Setup program.

Entering BIOS Setup at startup

To enter BIOS Setup at startup:

Press <Esc> or during the Power-On Self Test (POST). If you do not press <Esc> or , POST continues with its routines.

Entering BIOS Setup after POST

To enter BIOS Setup after POST:

- Press <Ctrl>+<Alt>+ simultaneously.
- Press the reset button on the system chassis.
- Press the power button to turn the system off then back on. Do this option only if you failed to enter BIOS Setup using the first two options.

CAUTION! Using the power button, reset button, or the <Ctrl>+<Alt>+ keys to reboot a running operating system can cause damage to your data or system. Always shut down the system properly from the operating system.

NOTE:

- Visit the ASUS website at www.asus.com to download the latest BIOS file for this motherboard.
 - The default BIOS settings for this motherboard apply to most working conditions and ensures optimal performance. If the system becomes unstable after changing any BIOS settings, load the default settings to regain system stability. Select the option **Restore Defaults** under the Exit Menu or press hotkey F3.
 - The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
-

3.1.1 BIOS menu screen

Menu bar

The menu bar on top of the screen has the following main items:

Main	For changing the basic system configuration
Advanced	For changing the advanced system settings
Hardware Monitor	For displaying the system temperature and changing the fan settings
Security	For configuring the system security settings
Boot	For changing the system boot configuration.
Exit	For selecting the save options and default options.
Event Logs	For viewing or configuring the event logs.

To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted.

3.2 Main menu

The Main menu provides you an overview of the basic system information, and allows you to set the system date, time, language, and security settings.

3.2.1 System Date [Day MM/DD/YYYY]

Allows you to set the system date.

3.2.2 System Time [HH:MM:SS]

Allows you to set the system time.

3.3 Advanced menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.

NOTE: Be cautious when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.

3.3.1 ASUS CONFIG LOCK

NOTE: This item is unconfigurable and disabled by default, and will be enabled when the administrator password is set.

When this function is enabled and the configuration of a connected device is changed, users will get an alarm message. The function will be disabled by default when a port is not in use.

[Disabled] The system will boot normally without triggering any events due to device changes or modifications.

[Enabled] The current configuration of SATA, USB, and PCIe devices will be recorded.

During BIOS POST, the system will check for any changes or removals of recorded devices.

If a change or removal is detected, the BIOS will halt the boot process and display a message indicating that a device modification has been detected.

-
- When does ConfigLock trigger?
ConfigLock triggers if there are any changes or modifications to the recorded devices. The boot process will stop during BIOS POST and display a message indicating that a device change has been detected.
 - How to enable ConfigLock:
 1. Enter the BIOS Setup Menu and set an Admin Password.
 2. Set **ConfigLock** to **Enabled** and select **Save & Reset**.
 - How to disable ConfigLock:

Method 1: Press **F1**, enter the **Admin Password**, and set **ConfigLock** to **Disabled**.

Method 2: Clear the CMOS.
-

3.3.2 PCH-FW Configuration

TPM Device Selection

This item allows you to select the TPM device. Configuration options: [dTPM] [PTT]

3.3.3 Trusted Computing

Security Device Support

This item allows you to enable or disable BIOS support for security devices. Configuration options: [Disabled] [Enabled]

3.3.4 CPU Configuration

The items in this menu show CPU-related information the BIOS automatically detects.

NOTE: The items shown in the submenu may be different depending on the type of CPU installed.

Intel (VMX) Virtualization Technology

When set to **[Enabled]**, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology. Configuration options: [Disabled] [Enabled]

Intel Trusted Execution Technology

When set to **[Enabled]**, allows you to enable the utilization of additional hardware capabilities provided by Intel® Trusted Execution Technology and requires a full power cycle. Configuration options: [Disabled] [Enabled]

NOTE: This item becomes unconfigurable when **Intel (VMX) Virtualization Technology** or **VT-d** is disabled.

VT-d

This item becomes unconfigurable when it is set to [Disabled] or when **Intel (VMX) Virtualization Technology** is set to [Disabled]. Configuration options: [Disabled] [Enabled]

NOTE: The following two items become unconfigurable when **Intel Trusted Execution Technology** is enabled.

Active Performance-cores

Allows you to select the number of CPU cores to activate in each processor package. Configuration options: [All] [7] - [1]

Active Efficient-cores

Allows you to select the number of Efficient cores to activate in each processor package. Configuration options: [All] [15] - [0]

NOTE: Number of Cores and Efficient Cores are looked at together. When both are {0,0}, Pcode will enable all cores.

CPU Power Management Control

This item allows you to manage and configure the CPU's power.

Intel(R) SpeedStep(tm)

This item allows your system to support more than two frequency ranges.

Configuration options: [Disabled] [Enabled]

Intel(R) Speed Shift Technology

This item allows you to enable or disable Intel(R) Speed Shift Technology support.

When enabled, CPPC v2 interface allows hardware controlled P-state. Configuration options: [Disabled] [Enabled]

Turbo Mode

This item allows you to enable or disable Turbo Mode for your processor. Configuration options: [Enabled] [Disabled]

C states

[Enabled] Enables the CPU C states.

[Disabled] Disables the CPU C states.

NOTE: The following item appears only when you set **C States** to [Enabled].

Enhanced C-states

[Disabled] Disables enhanced C1 state.

[Enabled] Enables enhanced C1 state.

Power Limit 1 Override

[Disabled] Disables power limit 1.

[Enabled] Enables power limit 1.

NOTE: The following item appears only when you set **Power Limit 1 Override** to [Enabled].

Power Limit 1

This item allows you to input the value of power limit 1 in milliwatts. If the value is 0, BIOS will program this value as 1.25 times of Processor Base Power (TDP). For 12.50W, enter 12500. Processor applies control policies so that the package power does not exceed this limit.

Power Limit 2 Override

[Disabled] Disables power limit 2.

[Enabled] Enables power limit 2.

NOTE: The following item appears only when you set **Power Limit 2 Override** to [Enabled].

Power Limit 2

This item allows you to input the value of power limit 2 in milliwatts. If the value is 0, BIOS will program this value as 1.25 times of Processor Base Power (TDP). For 12.50W, enter 12500. Processor applies control policies so that the package power does not exceed this limit.

Max TOLUD [Dynamic]

Configures the maximum value of TOLUD. Dynamic assignment will adjust TOLUD automatically based on the largest MMIO length of installed graphics controller. Configuration options: [Dynamic] [0.75 GB] [1 GB] ~ [2.5GB]

3.3.5 Graphics Configuration

Allows you to select a primary display from graphical devices.

Primary Display

Allows you to select which graphical device should be the Primary Display or select **Force** for dual displays. Configuration options: [FORCE] [Auto] [IGFX]

NOTE: The following item becomes unconfigurable when you set **Primary Display** to [FORCE].

Internal Graphics

[Disabled] Disables internal graphics.

[Enabled] Enables internal graphics.

RC6 (Render Standby)

Allows you to enable or disable render standby support. Configuration options: [Disabled] [Enabled]

3.3.6 PCI Express Configuration

This item allows you to configure PCI Express settings.

PCIEX16 (G5) Slot

Allows you to configure the PCI Express Root Port settings.

PCI Express Root Port PXPA2

This item allows you to enable or disable the PCIEX16 (G5) slot. Configuration options: [Disabled] [Enabled]

NOTE: The following items appear only when you set **PCI Express Root Port PXPA2** to [Enabled].

PCIe Speed

Configures the speed of PCIEX16 (G5) slot. Configuration options: [Auto] [Gen1] [Gen2] [Gen3] [Gen4] [Gen5]

Detect Timeout

Allows you to set the time (milliseconds) of waiting for link to exit Detect state for enabled ports before assuming there is no device and potentially disabling the port. Use the <+> and <-> keys to adjust the value or input the desired value.

Compliance Test Mode

Allows you to enable or disable the compliance test mode. Configuration options: [Disabled] [Enabled]

PCIEX4 (G4X1) Slot

Allows you to configure the PCI Express Root Port settings.

PCI Express Root Port SPA1

This item allows you to enable or disable the PCIEX4 (G4X1) slot. Configuration options: [Disabled] [Enabled]

NOTE: The following items appear only when you set **PCI Express Root Port SPA1** to **[Enabled]**.

PCIe Speed

Configures the speed of PCIEx4 (G4X1) slot. Configuration options: [Auto] [Gen1] [Gen2] [Gen3] [Gen4]

Detect Timeout

Allows you to set the time (milliseconds) of waiting for link to exit Detect state for enabled ports before assuming there is no device and potentially disabling the port. Use the <+> and <-> keys to adjust the value or input the desired value.

Compliance Test Mode

Allows you to enable or disable the compliance test mode. Configuration options: [Disabled] [Enabled]

PCIEX16 (G4X4) Slot

Allows you to configure the PCI Express Root Port settings.

PCI Express Root Port SPB1

This item allows you to enable or disable the PCIEX16 (G4X4) slot. Configuration options: [Disabled] [Enabled]

NOTE: The following items appear only when you set **PCI Express Root Port SPB1** to **[Enabled]**.

PCIe Speed

Configures the speed of PCIEX16 (G4X4) slot. Configuration options: [Auto] [Gen1] [Gen2] [Gen3] [Gen4]

Detect Timeout

Allows you to set the time (milliseconds) of waiting for link to exit Detect state for enabled ports before assuming there is no device and potentially disabling the port. Use the <+> and <-> keys to adjust the value or input the desired value.

Compliance Test Mode

Allows you to enable or disable the compliance test mode. Configuration options: [Disabled] [Enabled]

PCH PCIE Clock Gating

Allows you to enable or disable PCH PCI Express clock gating for all ports.
Configuration options: [Disabled] [Enabled]

PCH PCIE Power Gating

Allows you to enable or disable PCH PCI Express power gating for all ports.
Configuration options: [Disabled] [Enabled]

Re-Size BAR Support

If the system has Resizable BAR capable PCIe Devices, this option enables or disables Resizable BAR Support. Configuration options: [Disabled] [Enabled]

3.3.7 Super IO Configuration

Super IO Configuration

Serial Port 1 Configuration

Serial Port

Allows you to enable or disable the serial port (COM). Configuration options: [Disabled] [Enabled]

NOTE: The following items appear only when you set **Serial Port** to **[Enabled]**.

COM1 Control

Allows you to select the COM1 mode. Configuration options: [RS232] [RS422] [RS485]

Serial Port 2 Configuration

Serial Port

Allows you to enable or disable the serial port (COM). Configuration options: [Disabled] [Enabled]

NOTE: The following item appears only when you set **Serial Port** to **[Enabled]**.

COM2 Control

Allows you to select the COM2 mode. Configuration options: [RS232] [RS422] [RS485]

Serial Port 3 Configuration

Serial Port

Allows you to enable or disable the serial port (COM). Configuration options: [Disabled] [Enabled]

Serial Port 4 Configuration

Serial Port

Allows you to enable or disable the serial port (COM). Configuration options: [Disabled] [Enabled]

Serial Port 5 Configuration

Serial Port

Allows you to enable or disable the serial port (COM). Configuration options: [Disabled] [Enabled]

Serial Port 6 Configuration

Serial Port

Allows you to enable or disable the serial port (COM). Configuration options: [Disabled] [Enabled]

Parallel Port Configuration

Parallel Port

Allows you to enable or disable the Parallel port (LPT/LPTE). Configuration options: [Disabled] [Enabled]

NOTE: The following items appear only when you set **Parallel Port** to **[Enabled]**.

Device Mode

Allows you to select the Parallel Port mode. Configuration options: [STD Printer Mode] [SPP Mode] [EPP-1.9 and SPP Mode] [EPP-1.7 and SPP Mode] [ECP Mode] [ECP and EPP 1.9 Mode] [ECP and EPP 1.7 Mode]

3.3.8 Serial Console Redirection

COM1~COM6

Console Redirection

Allows you enable or disable the console redirection feature. Configuration options: [Enabled] [Disabled]

NOTE: The following items are configurable only when you set **Console Redirection** to **[Enabled]**.

Console Redirection Settings

The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

Terminal Type

Configuration options: [VT100] [VT100Plus] [VT-UTF8] [ANSI]

[VT100] ASCII char set.

[VT100Plus] Extends VT100 to support color, function keys, etc.

[VT-UTF8] Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.

[ANSI] Extended ASCII char set.

Bits per second

Allows you to select serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds. Configuration options: [9600] [19200] [38400] [57600] [115200] [230400] [460800] [921600]

Data Bits

Configuration options: [7] [8]

Parity

A parity bit can be sent with the data bits to detect some transmission errors.

Configuration options: [None] [Even] [Odd] [Mark] [Space]

[None] Disables parity check.

[Even] Parity bit is 0 if the num of 1's in the data bits is even.

[Odd] Parity bit is 0 if the num of 1's in the data bits is odd.

[Mark] Parity bit is always 1.

[Space] Parity bit is always 0.

NOTE: Mark and Space Parity do not allow for error detection.

Stop Bits

Stop bits indicate the end of a serial data packet. The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit. Configuration options: [1] [2]

Flow Control

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a "stop" signal can be sent to stop the data flow. Once the buffers are empty, a "start" signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals. Configuration options: [None] [Hardware RTS/CTS]

VT-UTF8 Combo Key Support

Allows you to enable or disable VT-UTF8 Combination Key Support for ANSI/VT100 terminals. Configuration options: [Disabled] [Enabled]

Recorder Mode

With this mode enabled only text will be sent. This is to capture Terminal data.

Configuration options: [Disabled] [Enabled]

Resolution 100x31

Allows you to enable or disable extended terminal resolution. Configuration options: [Disabled] [Enabled]

Putty KeyPad

Allows you to select FunctionKey and KeyPad on Putty. Configuration options: [VT100] [LINUX] [XTERM6] [SCO] [ESCN] [VT400]

3.3.9 SATA Configuration

This item allows you to configure SATA device options settings.

SATA Controller(s)

Allows you to enable or disable the onboard SATA device. Configuration options: [Disabled] [Enabled]

NOTE: The following item appears only when you set **SATA Controller(s)** to **[Enabled]**.

SATA Mode Selection

Allows you to determine how SATA controller(s) operate. Configuration options: [AHCI]

[AHCI] Set to [AHCI] when you want the SATA hard disk drives to use the AHCI (Advanced Host Controller Interface). The AHCI allows the onboard storage driver to enable advanced Serial ATA features that increase storage performance on random workloads by allowing the drive to internally optimize the order of commands.

SATA6G_1/2/3/4

Allow you to enable/disable the SATA6G_1/2/3/4 port. Configuration options: [Disabled] [Enabled]

3.3.10 Network Stack Configuration

Network Stack

This item allows user to disable or enable the UEFI network stack. Configuration options: [Disabled] [Enabled]

NOTE: The following two items appear only when you set the previous item to **[Enabled]**.

Ipv4 PXE Support

This item allows user to disable or enable the Ipv4 PXE Boot support. Configuration options: [Disabled] [Enabled]

Ipv6 PXE Support

This item allows user to disable or enable the Ipv6 PXE Boot support. Configuration options: [Disabled] [Enabled]

3.3.11 USB Configuration

XHCI Hand-off

This item functions as a workaround for OSES without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver. Configuration options: [Enabled] [Disabled]

USB Mass Storage Driver Support

Allows you to enable or disable USB Mass Storage Driver Support. Configuration options: [Disabled] [Enabled]

U10G_1/2

Allows you to enable or disable the USB port. Once set to **[Disabled]**, any USB devices plugged into the connector will not be detected by BIOS or OS. Configuration options: [Disabled] [Enabled]

U5G_3/4

Allows you to enable or disable the USB port. Once set to **[Disabled]**, any USB devices plugged into the connector will not be detected by BIOS or OS. Configuration options: [Disabled] [Enabled]

USB5-9, 14

Allows you to enable or disable USB port. Once set to **[Disabled]**, any USB devices plugged into the connector will not be detected by BIOS or OS. Configuration options: [Disabled] [Enabled]

3.3.12 NVMe Configuration

The NVMe Configuration menu displays the NVMe controller and drive information of the devices connected and allows you to configure NVMe device options settings.

3.3.13 Onboard Devices Configuration

HD Audio

[Enabled] Enables the HD Audio Device.
[Disabled] Disables the HD Audio Device.

LAN1 I210AT

[Enabled] Enables the Intel LAN1 controller.
[Disabled] Disables the controller.

LAN2 I219V

[Enabled] Enables the Intel LAN2 controller.
[Disabled] Disables the controller.

I2C0 Controller

[Enabled] Enables the I2C controller.

[Disabled] Disables the I2C controller.

LPT Port Switch Function

[AUTO] Select the port function automatically by default.

[LPT] Force to switch the port function to LPT.

[GPIO] Force to switch the port function to GPIO.

NPU Device

[Enabled] Enables NPU (Neural Processing Unit) device.

[Disabled] Disables NPU (Neural Processing Unit) device.

3.3.14 APM Configuration

ErP Ready

Allows you to switch off some power at S5 to get the system ready for ErP requirement. When set to **[Enabled]**, all other PME options will be switched off. Configuration options: [Disabled] [Enabled]

Restore AC Power Loss

[S5 State] The system goes into off state after an AC power loss.

[S0 State] The system goes into on state after an AC power loss.

Power On By PCIE

This item allows you to enable or disable the Wake-on-LAN function of the onboard LAN controller or other installed PCIE LAN cards. Configuration options: [Disabled] [Enabled]

Power On By PS2

Enables or disables the system to be powered on by a PS/2 keyboard or mouse. Configuration options: [Disabled] [Enabled]

Power On By Ring

[Enabled] Enables the Ring devices to generate a wake event.

[Disabled] Disables the Ring devices to generate a wake event.

Power On By RTC

[Disabled] Disables RTC to generate a wake event.

[Single event] Allows you to generate a single wake event.

[Daily event] Allows you to generate a daily wake event.

[Weekly event] Allows you to generate a weekly wake event.

[Monthly event] Allows you to generate a monthly wake event.

NOTE: The following items appear when you set **Power On By RTC** to **[Single event]** or **[Daily event]**.

Wake up hour

Allows you to enter a natural number within 0-23 for hour. For example, enter 3 for 3:00 am and 15 for 3:00 pm.

Wake up minute

Allows you to enter a natural number within 0-59 for minute.

Wake up second

Allows you to enter a natural number within 0-59 for second.

NOTE: The following items appear when you set **Power On By RTC** to **[Weekly event]**.

Alarm day of Week

Allows you to select the day of the week when the system is to wake up.

Configuration options: [Sunday] [Monday] [Tuesday] [Wednesday] [Thursday] [Friday] [Saturday]

Wake up hour

Allows you to enter a natural number within 0-23 for hour. For example, enter 3 for 3:00 am and 15 for 3:00 pm.

Wake up minute

Allows you to enter a natural number within 0-59 for minute.

Wake up second

Allows you to enter a natural number within 0-59 for second.

NOTE: The following items appear when you set **Power On By RTC** to **[Monthly event]**.

Day of the Month

Allows you to select the day of the month when the system is to wake up.

Wake up hour

Allows you to enter a natural number within 0-23 for hour. For example, enter 3 for 3:00 am and 15 for 3:00 pm.

Wake up minute

Allows you to enter a natural number within 0-59 for minute.

Wake up second

Allows you to enter a natural number within 0-59 for second.

3.3.15 EzFlash

Enter Ez-Flash mode

This item allows you to run EzFlash utility. When you press <Enter>, a confirmation message appears. Use the left/right arrow key to select between [Yes] or [No], then press <Enter> to confirm your choice.

3.3.16 Watchdog Timer

Watchdog Support

This item allows you to enable or disable Watchdog timer. Configuration options: [Enabled] [Disabled]

NOTE: The following items appear when you set **Watchdog Support** to **[Enabled]**.

Watchdog Count mode

Allows you to select Watchdog Timer I count mode. Configuration options: [Second Mode] [Minute Mode]

Watchdog Timer

Use the <+> and <-> keys to adjust the value or input the desired value directly. The value ranges from 30 to 255.

3.3.17 Preserve BIOS option method

Preserve BIOS option

This item allows you to enable or disable preserve BIOS option after flashing BIOS. Configuration options: [Enabled] [Disabled]

3.4 Hardware Monitor menu

The items in this menu provide you an overview of system status including temperature, fan speed and voltage, and allow you to configure the smart fan.

Smart Fan Mode

Allows you to select the smart fan mode.

[Full Speed] Fans run at 100% speed.

[Standard] Select the recommended fan speed mode.

[Manual] Select the user-defined fan speed mode.

[Silent] Select noise-optimized fan speed mode.

[Performance] Select performance optimized fan speed mode.

NOTE: The following item appears only when you set **Smart Fan Mode** to **[Manual]**.

Smart Fan Function

CPU Fan Setting

CPU Fan Temperature 1(~4)

Allows you to set the value of temperature1(~4).

CPU Fan FD/RPM 1(~4)

Allows you to set the value of Fan Duty/PRM 1(~4) when temperature is T1(~4).

Chassis Fan1/2 Setting

Chassis Fan 1/2 Temperature 1(~4)

Allows you to set the value of temperature1(~4).

Chassis Fan 1/2 FD/RPM 1(~4)

Allows you to set the value of Fan Duty/PRM 1(~4) when temperature is T1(~4).

3.5 Security menu

This menu allows a new password to be created or a current password to be changed. The menu also enables or disables the Secure Boot state and lets the user configure the System Mode state.

Administrator Password

If you have set an administrator password, we recommend that you enter the administrator password for accessing the system.

To set an administrator password:

1. Select the **Administrator Password** item and press <Enter>.
2. From the **Create New Password** box, key in a password, then press <Enter>.
3. Confirm the password when prompted.

To change an administrator password:

1. Select the **Administrator Password** item and press <Enter>.
2. From the **Enter Current Password** box, key in the current password, then press <Enter>.
3. From the **Create New Password** box, key in a new password, then press <Enter>.
4. Confirm the password when prompted.

NOTE: To clear the administrator password, follow the same steps as in changing an administrator password, but press <Enter> when prompted to create/confirm the password.

User Password

If you have set a user password, you must enter the user password for accessing the system. The **User Password** item on top of the screen shows the default **Not Installed**. After you set a password, this item shows **Installed**.

To set a user password:

1. Select the **User Password** item and press <Enter>.
2. From the **Create New Password** box, key in a password, then press <Enter>.
3. Confirm the password when prompted.

To change a user password:

1. Select the **User Password** item and press <Enter>.
2. From the **Enter Current Password** box, key in the current password, then press <Enter>.
3. From the **Create New Password** box, key in a new password, then press <Enter>.
4. Confirm the password when prompted.

Secure Boot

Secure Boot

Secure Boot can be enabled if the system is running in User mode with enrolled platform Key (EPK) or if the CSM function is disabled. Configuration options: [Disabled] [Enabled]

Secure Boot Mode

In Custom mode, Secure Boot policy variables can be configured by a physically present user without full authentication. Configuration options: [Standard] [Custom]

Key Management

The Key Management item allows you to modify Secure Boot variables and set Key Management page.

Platform Key (PK) / Key Exchange Keys / Authorized Signatures / Forbidden Signatures

Configuration options: [Update] [Append]

3.6 Boot menu

The Boot menu items allow you to change the system boot options.

Boot Configuration

CHASSIS INTRUDE

Allows you to enable or disable the chassis intrusion detection function.

Configuration options: [Disabled] [Enabled]

Setup Prompt Timeout

Allows you to set the number of seconds to wait for setup activation key.

65535(0xFFFF) means indefinite waiting. Configuration options: [1] - [65535]

Post Time Delay

Allows you to set the delay for specific situation needs. For example, HDD spin up time (Delay time = value * 500ms). Use the <+> and <-> keys to adjust the value or input the desired value. Configuration options: [0] - [12]

Bootup NumLock State

[On] Set the power-on state of the NumLock to [On].

[Off] Set the power-on state of the NumLock to [Off].

Quiet Boot

Allows you to enable or disable the Quiet Boot option.

Configuration options: [Disabled] [Enabled]

Fast Boot

[Enabled] Select to accelerate the boot speed.

[Disabled] Select to go back to normal boot.

FIXED BOOT ORDER Priorities

Boot Option #1~#5

This item allows you to set the system boot order. Configuration options: [Hard Disk] [NVME] [CD/DVD] [USB Device] [Network] [Disabled]

3.7 Exit menu

The Exit menu items allow you to save or discard your changes to the BIOS items.

Save Changes & Exit

This option allows you to save your changes and exit the Setup program. When you select this option or if you press F4, a confirmation window appears. Select **Yes** to save changes and exit.

Discard Changes & Exit

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

Save Changes & Reset

This option allows you to exit the Setup program after saving changes.

Discard Changes & Reset

This option allows you to exit the Setup program without saving changes.

Save changes

This option allows you to save changes to any of the setup options you have made so far.

Discard changes

This option allows you to discard changes to any of the setup options you have made so far.

Restore Defaults

Restore/load default values for all the setup options.

Save as User Defaults

This option allows you to save the changes you have made so far as user defaults.

Restore User Defaults

Restore the user defaults with all the setup options.

3.8 Event Logs menu

The Event Logs menu items allow you to view or configure the Event Log.

Change Smbios Event Log Settings

Enabling/Disabling Options

Smbios Event Log

Change this to enable or disable all features of Smbios Event Logging during boot.
Configuration options: [Disabled] [Enabled]

The following item appears only when Smbios Event Log is set to **[Enabled]**.

Erasing Settings

When Log is Full

Choose options for reactions to a full Smbios Event Log. Configuration options: [Do Nothing] [Erase Immediately]

View Smbios Event Log

Press <Enter> to view the Smbios Event Log records.

Appendix

Notices

FCC Compliance Information

Responsible Party: Asus Computer International

Address: 48720 Kato Rd., Fremont, CA 94538,
USA

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

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

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 the 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 into 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.

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Compliance Statement of Innovation, Science and Economic Development Canada (ISED)

This device complies with Innovation, Science and Economic Development Canada licence exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CAN ICES (B)/NMB (B)

Déclaration de conformité de Innovation, Sciences et Développement économique Canada (ISED)

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CAN ICES (B)/NMB (B)

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DO NOT throw the mercury-containing button cell battery in municipal waste. This symbol of the crossed out wheeled bin indicates that the battery should not be placed in municipal waste.

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ASUS recycling and takeback programs come from our commitment to the highest standards for protecting our environment. We believe in providing solutions for you to be able to responsibly recycle our products, batteries, other components as well as the packaging materials. Please go to <https://esg.asus.com/en/Takeback.htm> for detailed recycling information in different regions.

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