



# BKHD-B760-8LAN Motherboard

VER 1.0

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## Safety Guide

To ensure optimal use of Beikong products, please review the user manual in its entirety. Before reviewing product-specific information, we kindly request that you carefully read the safety instructions.

## Product Version Identification

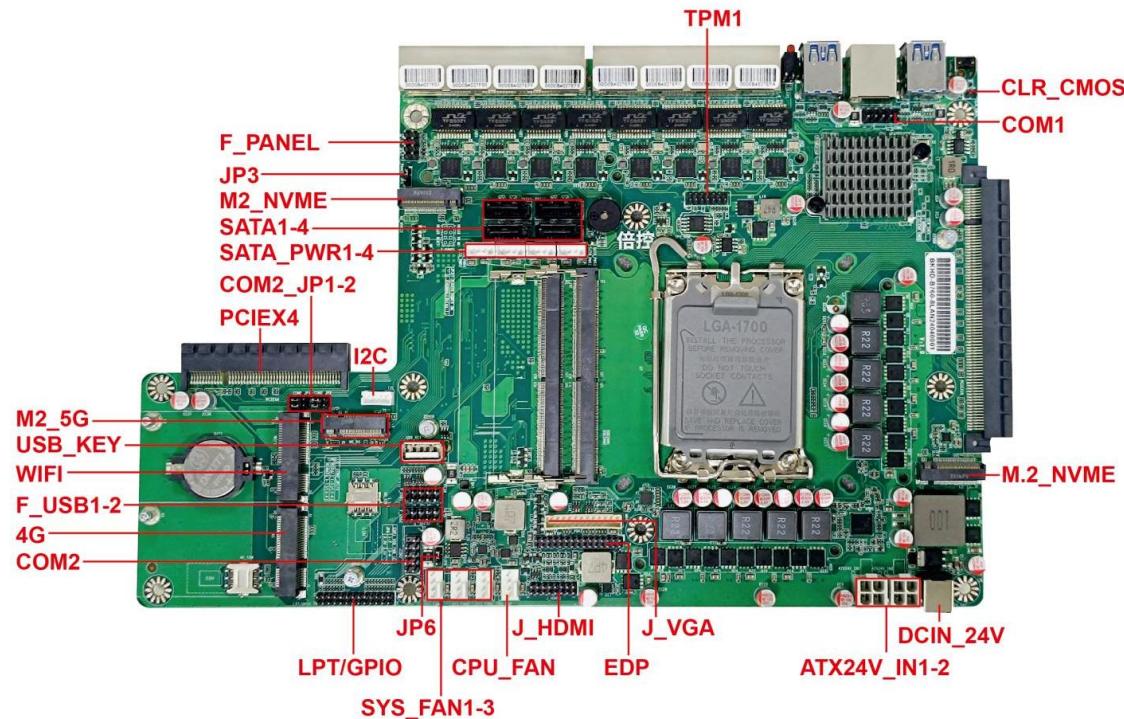
The product version number can be found on the motherboard, where X.X represents a number. For example, if the version is indicated as [VER1.0], it signifies that the current version of the motherboard is 1.0. The BIOS interface homepage provides information such as [XXXXNP-XXXX], which denotes the BIOS version number utilized by the current product. When updating the motherboard's BIOS, driver, or referencing other technical documents, please refer to the product version label for the most up-to-date information.

# Catalog

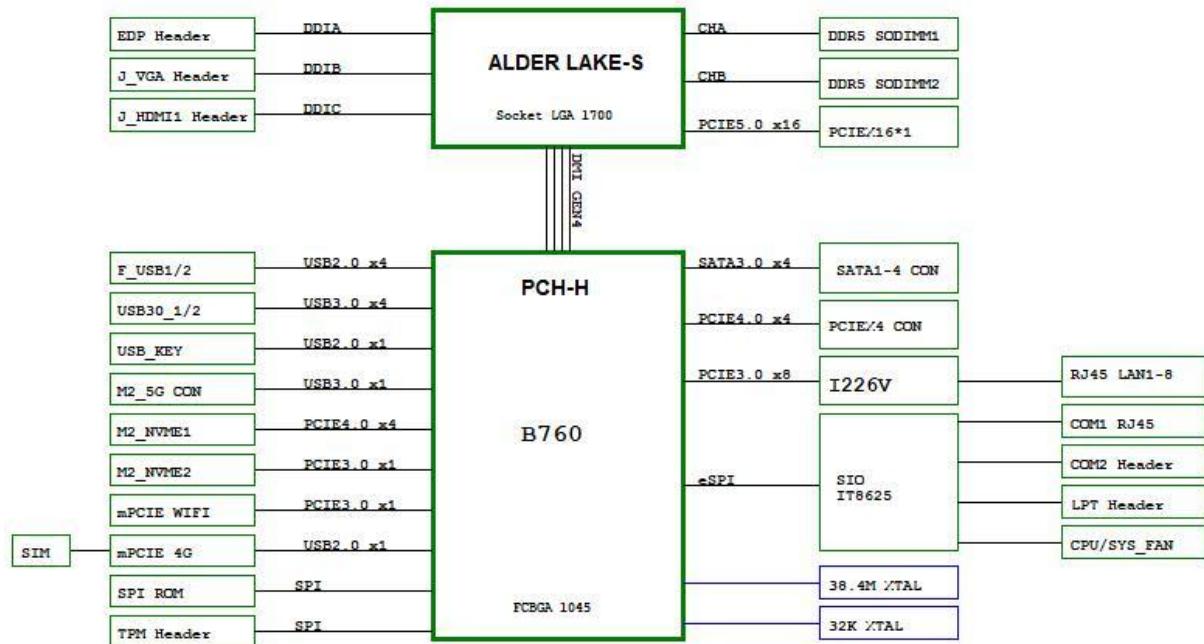
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## Product Images

*Please be advised that products manufactured in different batches may exhibit slight variations in appearance. To ensure the most accurate representation, please refer to the actual received goods.*



## Block Diagram



## Product Profile

The B760-8LAN is a high-performance network motherboard built on the Intel B760 chipset, supporting 12th to 14th Gen Intel processors. It integrates 8x 2.5GbE high-speed Ethernet ports, dual-channel DDR5 memory, a PCIe 5.0 expansion slot, and multiple industrial-grade I/O interfaces. Combining powerful computing performance, flexible scalability, and reliable design, it is ideal for next-generation firewalls, security gateways, virtualization nodes, edge computing servers, and industrial network devices.

### **Main features:**

#### **Exceptional Network Performance**

Equipped with 8x 2.5GbE Ethernet ports powered by Intel I226-V controllers, it supports Link Aggregation (LACP), multi-WAN, VLAN, and virtual bridge configurations. Designed for firewalls, SD-WAN, vRouters, edge nodes, and data center applications, it delivers high throughput and reliable connectivity for demanding workloads.

#### **Advanced Expansion Capabilities**

Includes one PCIe x16 (Gen5) and one PCIe x4 (Gen4) slot for flexible expansion. Multiple mPCIe and M.2 interfaces support Wi-Fi, Bluetooth, and I/O modules, while a reserved SIM card slot enables cellular and IoT communication capabilities.

#### **Next-Generation Computing Platform**

The LGA1700 socket supports 12th–14th Gen Intel processors, paired with dual-channel DDR5 SO-DIMM memory up to 96GB at 4800MT/s. It delivers exceptional computing power to handle complex and data-intensive applications with ease.

#### **Comprehensive I/O and Storage Options**

Features 4x SATA 3.0 interfaces for traditional storage devices and 2x M.2 slots for system drives or high-speed data caching. Multiple display outputs and ample USB ports provide versatile connectivity for peripherals and display solutions.

#### **Industrial-Grade Design**

Built for harsh environments, it supports wide temperature and humidity ranges and includes four fan connectors for efficient cooling. Rich industrial interfaces such as GPIO, LPT, I<sup>2</sup>C, and TPM are available, along with dual power input options (ATX 24V or DC 24V) for enhanced deployment flexibility.

## Motherboard Specifications

Processor	Product Collection	Intel® 12th/13th/14th Gen Processor
	Sockets Supported	FCLGA1700
Memory specifications	Memory type	2*DDR5 SO-DIMM
	Maximum capacity	2*48GB
	Maximum frequency	4800 MT/s
Storage specifications	SATA	4*SATA 3.0
	M.2	2*M.2 Key-M 2280 (PCIe Gen4 x4/PCIe Gen3 x1)
Network features	Ethernet	8*2.5GbE
	Controller	8*Intel I226V
Extension interface	PCIe	1*PCIe x16 (PCIe 5.0), 1*PCIe x4 (PCIe 4.0)
	mPCIe	1*mPCIe (PCIe 3.0 signal), 1*mPCIe (USB 2.0 signal)
	M.2	1*M.2 Key-B 3052 (USB 3.0 signal)
Display functions	Pins	1*J_VGA/1*J_HDMI
	Chip	Depends on the processor
Super I/O	Chip	IT8625E
	USB	4*USB-A 3.2 (10Gb/s) Ports
Backplane I/O	Console	1*RJ45 COM-RS232
	Ethernet	8*RJ45
	Button	1*Power button
Onboard I/O	Power supply	1*Jack DC 5.5/2.5mm
	SATA	4*SATA Data connector, 4*SATA Power socket
	USB	1*USB-A 2.0

Display	1*J_VGA, 1*J_HDMI, 1*J_eDP	
SIM	1*SIM Card slots	
Fan	1*CPU_FAN, 3*SYS_FAN	
1*F_PANEL		
		2*J_COM
		2*F_USB 2.0 (can expand 4x USB2.0 ports)
Pins	1*J_GPIO or J_LPT	
		1*J_I2C
		1*J TPM
Power supply mode	DC 24V	1*ATX 24V 4-pin Connector or 1*Jack DC 24V
Motherboard size	Specification	187*190 (mm)
Work Environment	Temperature	-20~60°C
	Humidity	0%~90% (Relative humidity, no condensation)

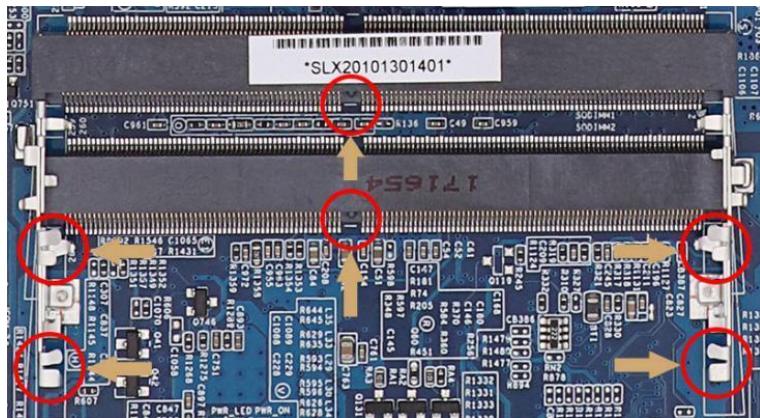
## Motherboard Installation

### Safety Note

- Please do not remove the serial number and agent warranty sticker from the motherboard prior to installation. Doing so may affect the product's warranty recognition standard.
- Prior to installing or removing the motherboard or other hardware devices, please ensure that the power is turned off and the power cord is unplugged from the socket.
- When installing additional hardware devices on the motherboard interfaces, please ensure that the connectors and sockets are securely fastened.
- When handling the motherboard, please avoid contact with the metal wiring components to prevent the risk of short circuits.
- It is recommended that an anti-static wrist strap be worn when handling the motherboard, central processing unit (CPU), or memory. In the absence of an anti-static wrist strap, it is advisable to ensure that your hands are dry and to touch a metal object first in order to eliminate static electricity.
- Before installing the motherboard, we kindly request that place it on an antistatic mat or in an antistatic bag.
- Make sure the power adapter is turned off before unplugging the motherboard power connector.
- Before turning on the power, make sure the voltage of the adapter is within the standard voltage range.
- Before turning on the power, make sure all hardware device cables and power cords are properly connected.
- Do not allow the fixing screws to collide with the circuits or parts on the motherboard to avoid damage or malfunction of the motherboard.
- Make sure there are no loose screws or metal parts on the motherboard or inside the computer case before using the unit.
- Please secure the computer host in a stable location before starting the device.
- To prevent system failure, do not place the unit in an environment where the temperature is excessive.
- Turning on the power before installation is complete may damage the motherboard, other equipment, or yourself.
- If you are unfamiliar with how to perform the installation, or if you have any technical problems using this product, please contact a professional technician.

# Memory Installation

The motherboard provides DDR5 SODIMM memory slot.



## Before installing memory:

1. Please confirm that the memory you purchased is compatible with the specifications supported by this motherboard.
2. Before installing or removing the memory, please make sure that the power of the computer is turned off to avoid damage.
3. The memory design has a foolproof mark. If you insert the memory in the wrong direction, the memory cannot be installed. Please change the direction.

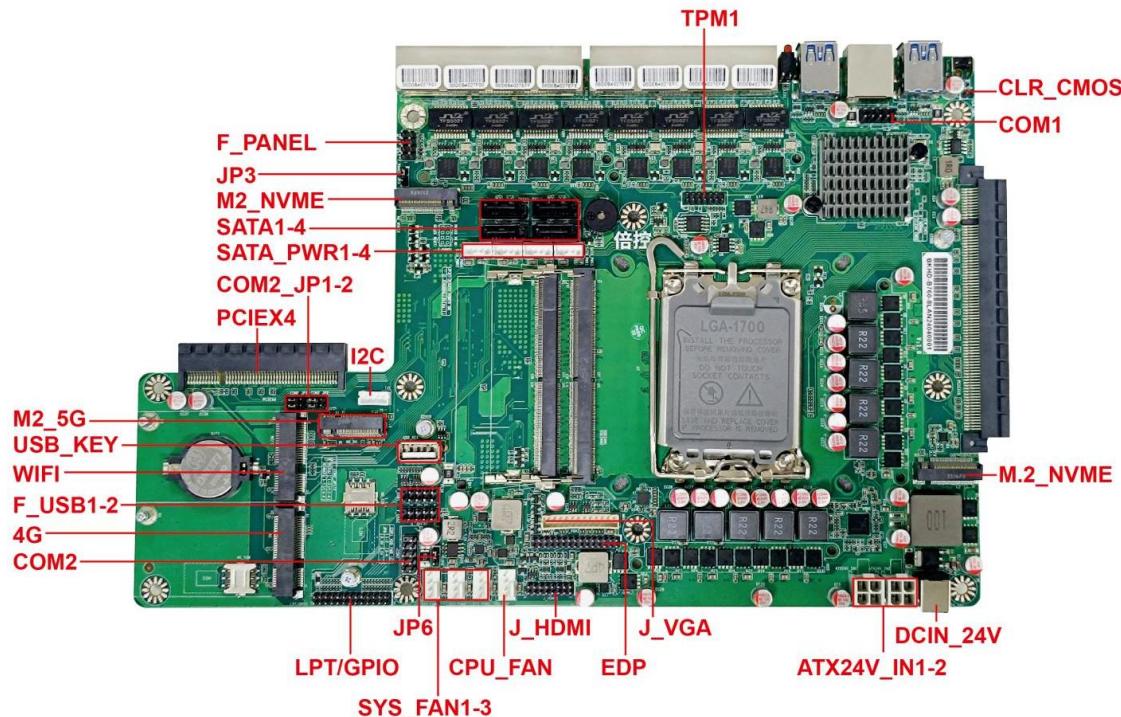
## When installing memory:

1. Before installing or removing memory, please turn off the power and unplug the power cord.
2. Carefully hold the two ends of the Memory Stick and do not touch the metal contacts on the Memory Stick.
3. Align the metal contacts of the memory with the memory slot, making sure that the concave hole is aligned with the convex point of the upper slot.
4. Insert the memory into the slot at an angle of 30 degrees, then press the Memory Stick down until you hear a "click," indicating that the memory has been successfully installed and is ready to use. (Note: Do not press the Memory Stick too hard to avoid damaging the memory).
5. To remove the Memory Stick, push out the tabs at both ends of the memory slot simultaneously, and then remove the Memory Stick.

## To remove the memory:

Use two fingers to push the latches at either end of the slot outward, the memory will pop up, then remove the memory.

## Motherboard Interface & Pin Description



Item	Describe
CLR_CMOS	CMOS jumper, used to clear BIOS settings
COM 1	Can be used to expand COM-RS232 ports
F_PANEL	Motherboard function pin, used to connect chassis button
JP 3	Jumper to enable or disable Auto Power-On
M.2_NVME	M.2 Key-M Storage SSD interface
SATA	SATA HDD/SSD data connectors
COM 2 JP 1-2	Jumper for switching COM 2 protocol
PCIe x4	Used to install expansion cards for PCIe x4/x2/x1 slot

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I2C	Header for I2C serial communication
M.2 5G	M.2 Key-B 3052 slot (USB 3.0 signal)
USB Key	Onboard USB-A 2.0 port
WiFi	mini PCIe slot (PCIe signal)
F_USB 1/2	Can be used to expand USB2.0 ports
4G	mini PCIe slot (USB 2.0 signal)
COM 2	Can be used to expand COM-RS232 or RS485 ports
LPT/GPIO	Optional LPT or GPIO pin headers
JP 6	Jumper for adjusting the power status
SYS_FAN 1-3	System fan, used to install chassis fan
CPU_FAN	For CPU fan power supply
J_HDMI	Pins for expanding HDMI ports
J_VGA	Pins for expanding VGA ports
EDP	Pins for expanding eDP ports
ATX 24V 1-2	ATX socket for power supply, requires 24V
DC_IN 24V	Jack DC 55*25 power socket, requires 24V

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Item	Describe
PWR_BTN	Button to turn the device ON or OFF
USB3_1-2	Double-layer USB-Type-A 3.2 port
RJ45	RJ45 port for COM RS232 standard
LED	LED indicator: Green light for power, Red light for hard disk
LAN 1-8	<p>RJ45 Ethernet port for LAN/WAN</p> <p>Link LED: Green and solid, indicating the network is connected            Active LED: Orange flashing, indicating data transmission</p>

## Jumper Setting

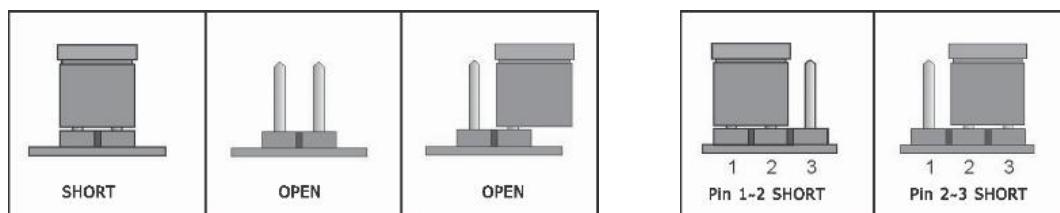
Before installing the hardware device, you can set the corresponding jumpers according to your needs based on the following table.

### To identify the first pin of a jumper or connector

Look at the marking next to the jumper or connector. The triangle symbol "▲" or "1" or a bold line indicates the first pin; check the pad on the back of the motherboard. The square pad is the first pin. When connecting the connector to the device, be careful to distinguish the first pin. Mixing the pins will damage the motherboard.

**2-pin headers:** Insert a jumper cap into both pins turns them off (short).

**3-pin headers:** Insert a jumper cap into pins 1-2 or pins 2-3 to off (short) them.



## AUTO\_ON Jumper Setting (JP3)

Image	Status	Setting
	1-2	Automatic power on
	2-3	Normal (Default)

## Motherboard Pin Definition

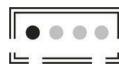
### SATA Data

The motherboard provides 7-pin SATA data socket:

Image	PIN	Definition	PIN	Definition
	1	GND	2	SATA_TXP
	3	SATA_TXN	4	GND
	5	SATA_RXN	6	SATA_RXP
	7	GND		-

### SATA PWR

The motherboard provides 4-pin SATA power socket:

Image	PIN	Definition
	1	+12V
	2	GND
	3	GND
	4	+5V

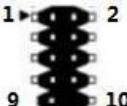
**Tip:** The 1st pin of the SATA\_PWR hard disk power supply interface is +12V output, and the 4th pin is +5V output.

## Serial Port (COM)

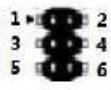
The motherboard provides RJ45 COM port:

Image	PIN	Definition	PIN	Definition
	1	RTS#	2	DTR#
	3	TXD	4	N/A
	5	GND	6	RXD
	7	DSR#	8	CTS#

The motherboard provides COM 2 pins (2\*5-pin, 2.54 mm pitch, 10th pin is empty):

Image	PIN	Definition	PIN	Definition
	1	-NDCD	2	SIN
	3	SOUT	4	DTR#
	5	GND	6	DSR#
	7	RTS#	8	CTS#
	9	RI#		

The motherboard provides a COM 2 jumper that can be used to switch the COM 2 protocol to RS232 or RS485

Image	Status	Setting
	1-3, 2-4	RS-232 (Default)
	3-5, 4-6	RS-485

## Front panel pin: F\_PANEL

The motherboard provides F\_PANEL pins (2\*4-pin, 2.54 mm pitch):

Image	PIN	Definition	PIN	Definition
	1	HDD_LED+	2	PWR_LED+
	3	HDD_LED-	4	PWR_LED-
	5	GND	6	GND
	7	RESET	8	PWR_ON

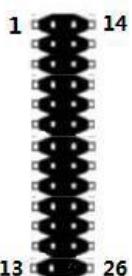
## USB Expansion pin: F\_USB

**Before** connecting the USB expansion board, be sure to turn off the computer and unplug the power cord from the socket to avoid damaging the USB expansion board.

The motherboard provides F\_USB pins (2\*5-pin, 2.54 mm pitch, 9th pin is empty):

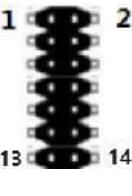
Image	PIN	Definition	PIN	Definition
	1	+5V	2	+5V
	3	USB1_DATA-	4	USB2_DATA-
	5	USB1_DATA+	6	USB2_DATA+
	7	GND	8	GND
			10	GND

## Printer interface: LPT

Image	PIN	Definition	PIN	Definition
	1	R_STB	14	R_AFD-
	2	R_PD0	15	R_ERR-
	3	R_PD1	16	R_INIT-
	4	R_PD2	17	R_SLIN-
	5	R_PD3	18	GND
	6	R_PD4	19	GND
	7	R_PD5	20	GND
	8	R_PD6	21	GND
	9	R_PD7	22	GND
	10	R_ACK-	23	GND
	11	R_BUSY	24	GND
	12	R_PE	25	GND
	13	R_SLCT	26	N/C

## Trusted Platform Module: TPM

The motherboard provides TPM pins (2\*7-pin, 2.00mm pitch):

Image	PIN	Definition	PIN	Definition
	1	3.3V	2	SPI_IRQ
	3	PLTRST	4	SPI_CS
	5	NA	6	SPI_WP
	7	3.3V	8	GND
	9	NA	10	SPI_CLOCK
	11	SPI_MISO	12	SPI_MOSI
	13	SPI_HOLD	14	

## VGA Expansion pin: VGA\_H

The motherboard provides VGA\_H pins (1\*12-pin, 2.00 mm pitch):

Image	PIN	Definition	PIN	Definition
	1	GND	2	VSync
	3	HSync	4	GND
	5	Red	6	GND
	7	Green	8	GND
	9	Blue	10	GND
	11	DCC_Data	12	DCC_Clk

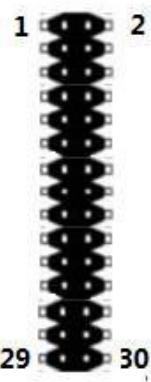
## HDMI Expansion pin: JHDMI

The motherboard provides JHDMI pins (2\*8-pin, 2.00 mm pitch):

Image	PIN	Definition	PIN	Definition
	1	DDI1_TXP2L	2	DDI1_SCLDDC
	3	DDI1_TXN2L	4	DDI1_DALDDC
	5	DDI1_TXP1L	6	N/A
	7	DDI1_TXN1L	8	HDMI-B_PLUG
	9	DDI1_TXP0L	10	5V_HDMI
	11	DDI1_TXN0L	12	GND
	13	DDI1_TXCPL	14	GND
	15	DDI1_TXCNL	16	GND

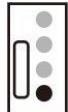
## eDP Expansion pin: J\_eDP

The motherboard provides eDP pins (2\*15-pin):

Image	PIN	Definition	PIN	Definition
	1	VCC	2	VCC
	3	NC	4	NC
	5	EDP1_DATA0P	6	EDP1_DATA0N
	7	GND	8	GND
	9	EDP1_DATA1P	10	EDP1_DATA1N
	11	GND	12	GND
	13	EDP1_DATA2P	14	EDP1_DATA2N
	15	GND	16	GND
	17	NCEDP1_DATA3P	18	EDP1_DATA3N
	19	GND	20	GND
	21	EDP1_AUXP	22	EDP1_AUXN
	23	GND	24	EDP1_HPD
	25	EDP1_BKLCTL	26	EDP1_BKLEN
	27	GND	28	GND
	29	VLED1	30	VLED1

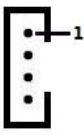
## Cooling fan power socket: CPU\_FAN, SYS\_FAN

The motherboard provides cooling fan power pins (1\*4pin, 2.54mm pitch):

Image	PIN	Definition
	1	Ground
	2	+12V
	3	FAN_TACH
	4	FAN_PWM

## Inter-Integrated Circuit Protocol (I2C)

The motherboard provides I2C pins.

Image	PIN	Definition
	1	3.3V
	2	GND
	3	SLC
	4	SDA

## SIM card slot: SIMB

The motherboard provides SIM card slot (on the back) for installing an LTE SIM card.



**Note:** When inserting the SIM card, make sure the chip is facing downwards (the chip faces the motherboard).

# BIOS User Guide

## BIOS Description

This motherboard uses AMI BIOS. BIOS stands for (Basic Input Output System). It is a set of programs stored on a ROM (Read Only Memory) chip on the computer's motherboard. It stores the computer's most important basic I/O programs, the power-on self-test program, and the system startup program. It can read and write specific information about system settings from the CMOS. Its primary function is to provide the most basic and immediate hardware settings and control for the computer.

When you turn on your computer, the BIOS is the first program to run. It has the following main functions:

- The Power-On Self-Test (POST) checks whether the computer is functioning properly.
- It initializes and tests some external devices and loads your operating system.
- It provides the lowest-level, most basic control of your computer hardware.
- You manage your computer through the SETUP function in the BIOS.

The BIOS data is stored in a CMOS/R RAM chip on the motherboard, maintained by a 3.3V button battery. It contains important system information and the BIOS Setup program for setting system parameters. When the system is operating normally, the BIOS does not need to be modified. However, if the CMOS data is lost due to other reasons, the BIOS must be reset.

**Note:**

Incorrect BIOS settings can directly damage the computer hardware and even burn out the motherboard. Those unfamiliar with the system are advised to modify the settings with caution. Because the motherboard BIOS is constantly being updated, the BIOS information in this manual is for reference only. We cannot guarantee that the BIOS information in this manual will be consistent with the actual BIOS information on the motherboard.

## BIOS Settings

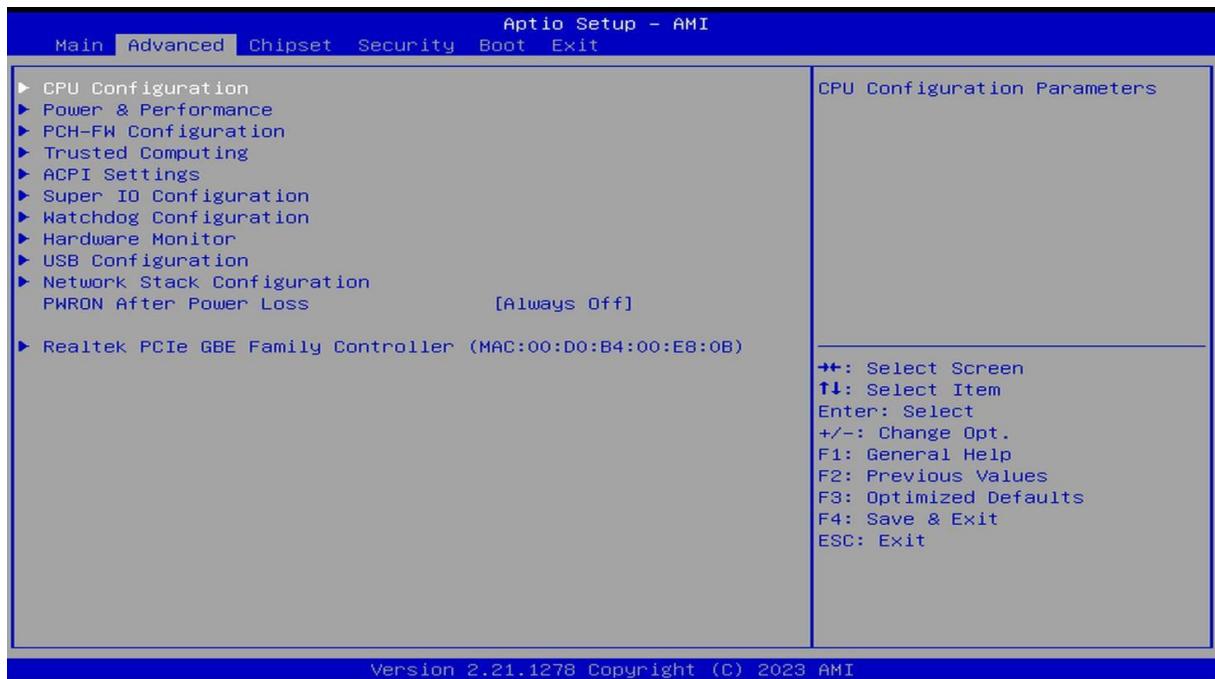
When the motherboard is powered on or the system is restarted, the following prompt will appear on the display screen in the Post interface. Press "DEL" on the keyboard to enter BIOS Setup.



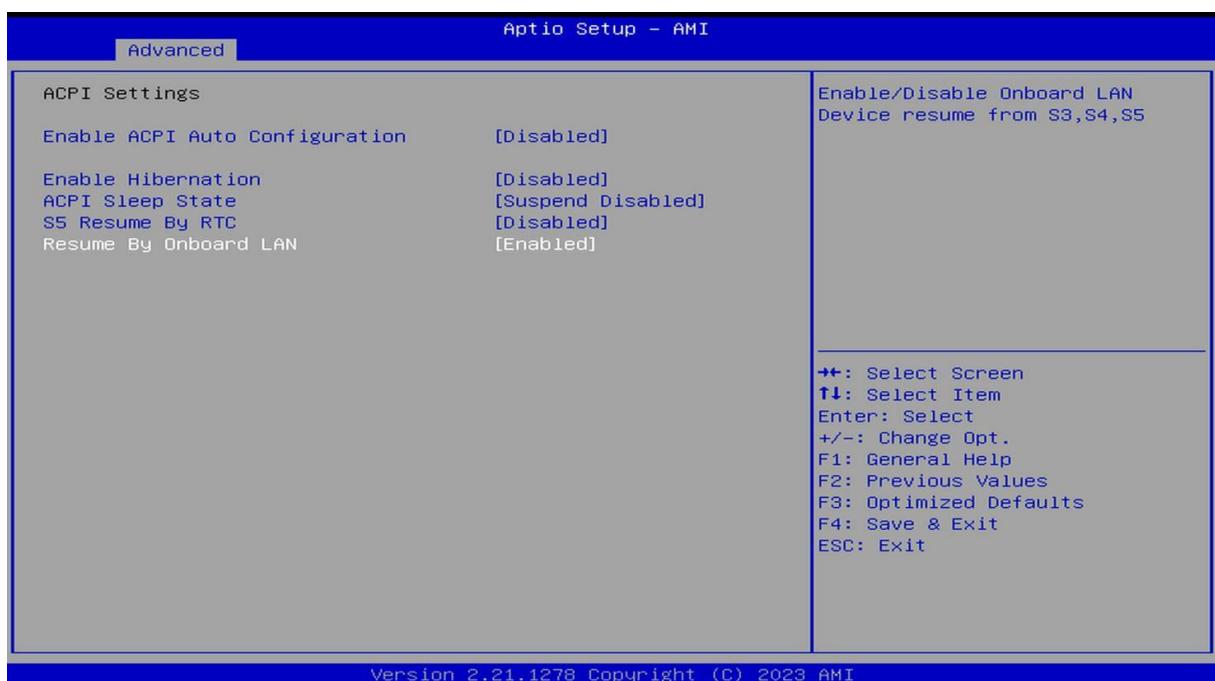
If this message disappears before you respond, you can press <Ctrl> + <Alt> + <Del> at the same time to restart the computer, or shut down and then restart the computer, or press the power button on the case to restart the computer.

Keyboard keys	Functional Description
← / →	Move the Left and Right arrows to select the screen.
↑ / ↓	Move the Up and Down arrows to select the item.
+ / -	Increase/Decrease value or Change selection
<Enter>	Select, Confirm this option or Enter the submenu
<ESC>	Return to Main page, or End the setup process from Main page
<F1>	Show related Help instructions
<F2>	Restore previous settings
<F9>	Load the optimized settings (BIOS defaults)
<F10>	Save the changed settings and reboot

## Advanced Settings



## ACPI Settings



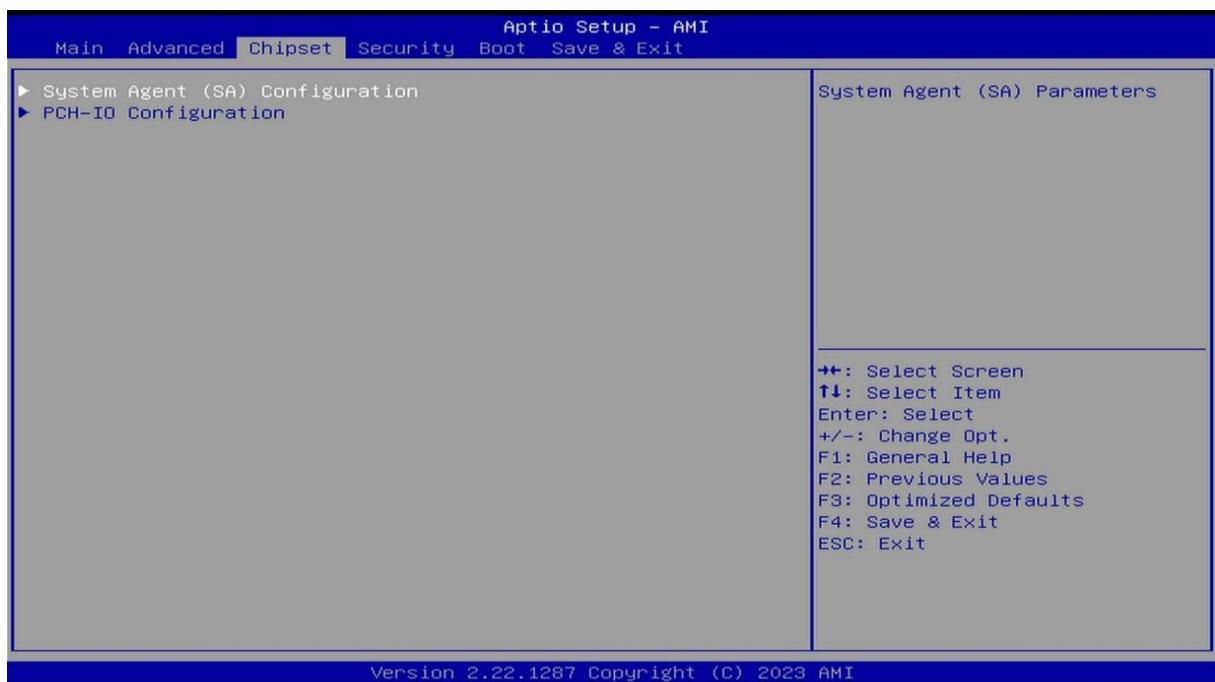
[Resume By onboard LAN] This option is used to set up Wake-up on LAN.

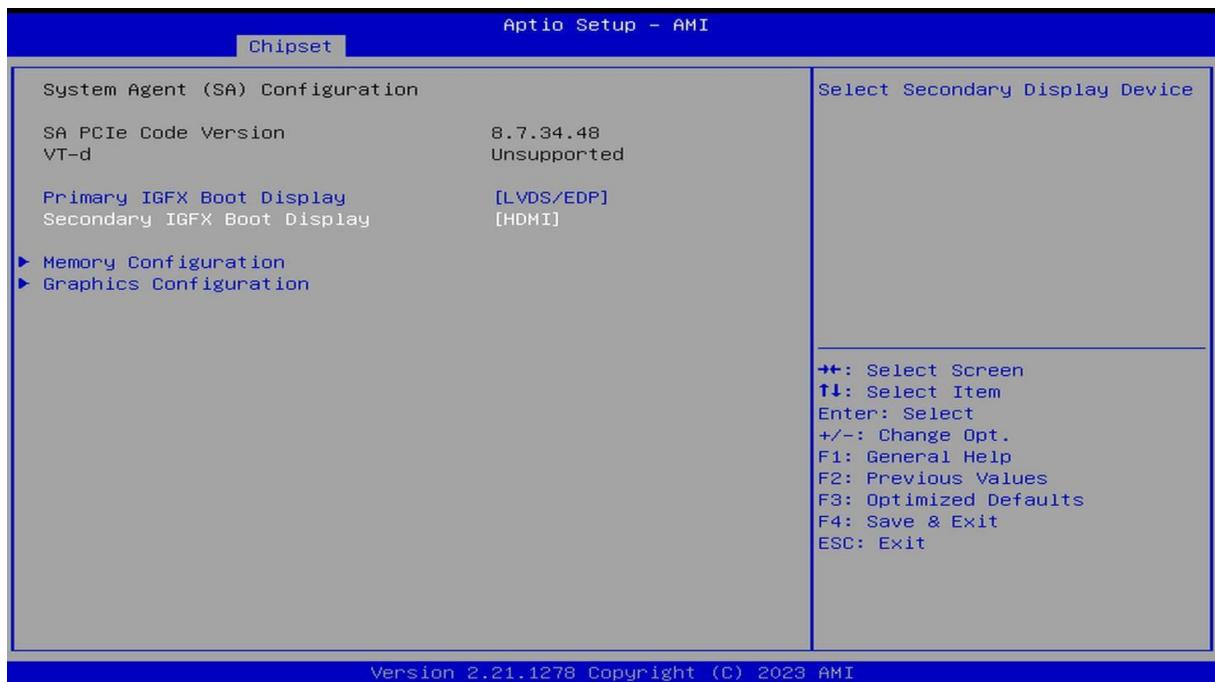
## Network Stack Settings



[IPv4 PXE Support] This option is used to set up PXE boot.

## Chipset Settings

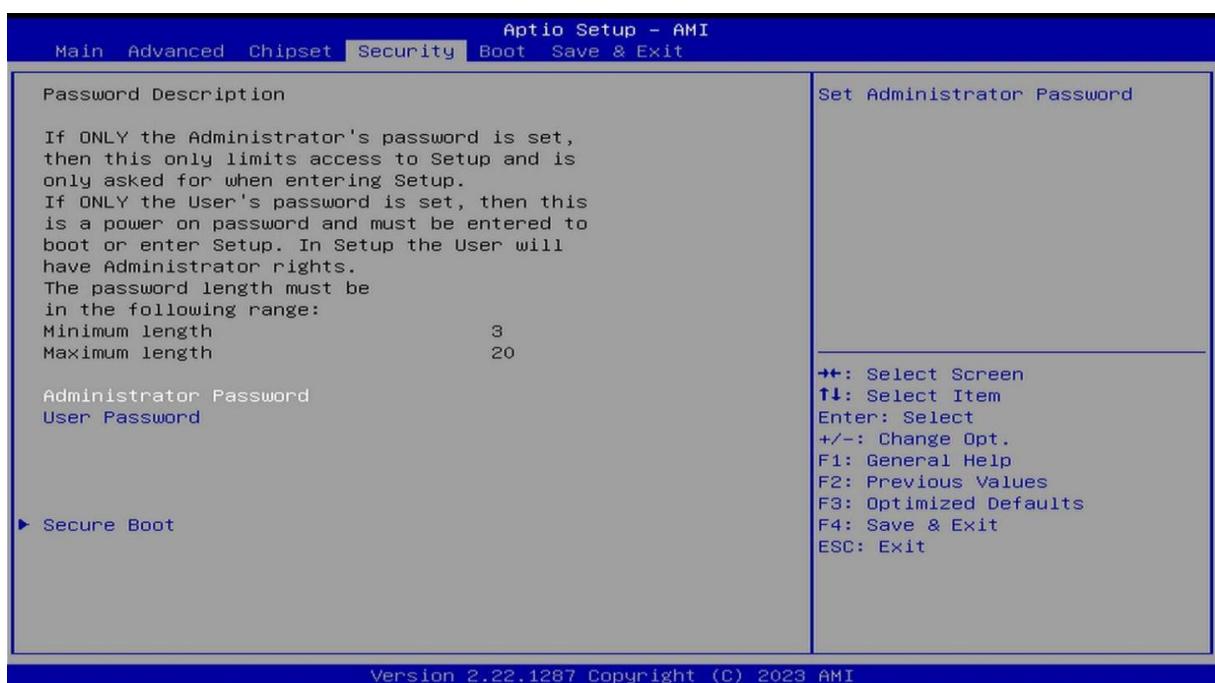




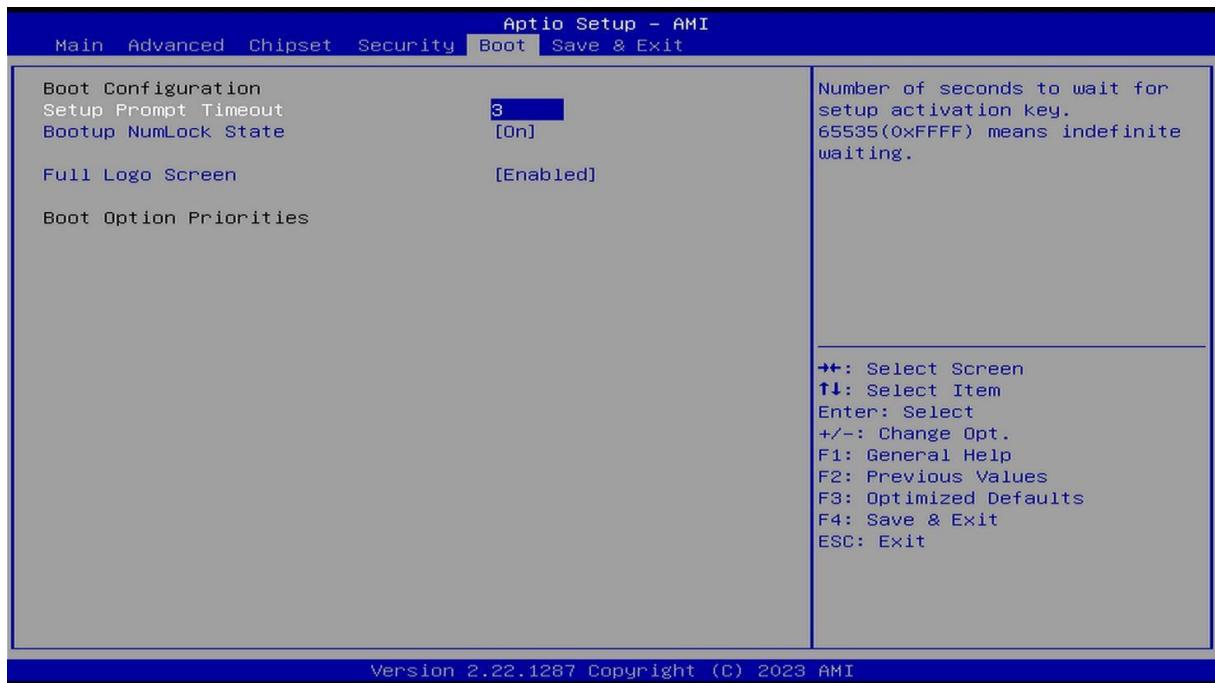
Primary IGFX Boot Display (This option is used to set the display as the primary display.)

Secondary IGFX Boot Display (This option is used to set the display as the secondary display.)

## Security Settings



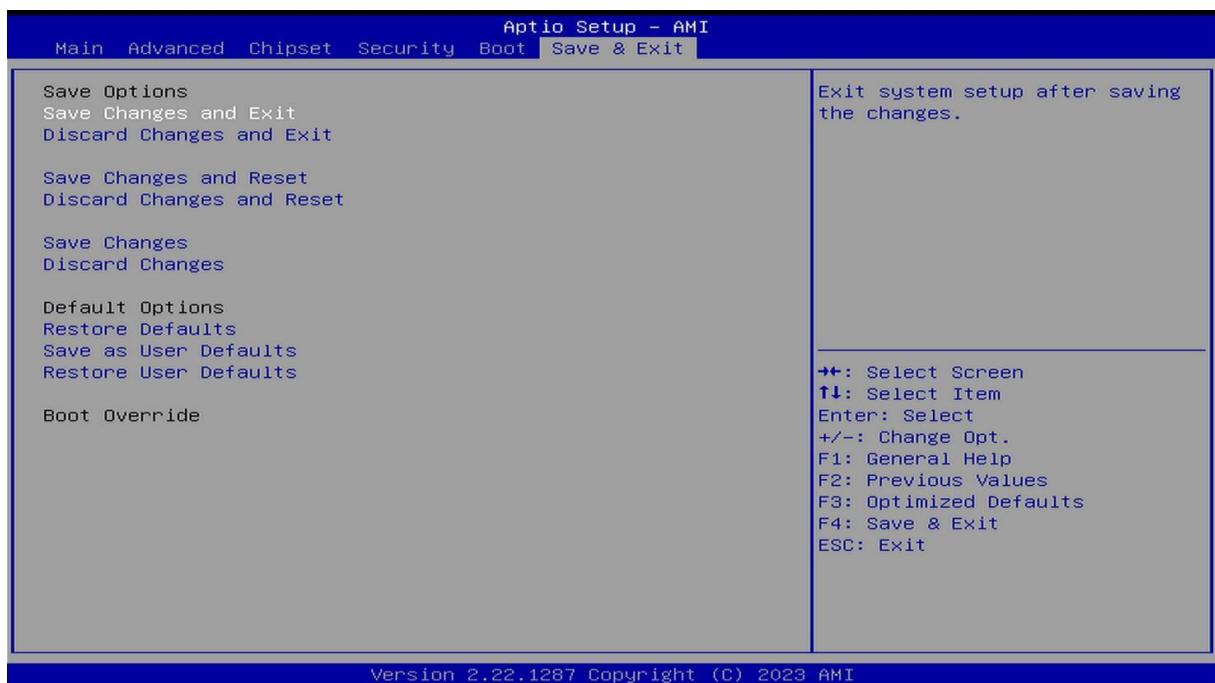
## Boot Settings



[Setup Prompt Timeout] This option is used to set the length of time the POST interface stays on.

[Bootup Numlock State] This option is used to set the state of Numlock after the system starts.

## Save&Exit Settings



## Common fault analysis and solutions

We have compiled some frequently asked questions for your reference. Please check  
<https://bkminipc.com/frequently-asked-questions-and-answers/>

Error	Inspection Method
Unable to start after power on	<p>Make sure the power cord is properly connected.</p> <p>Make sure that the power supply you are using meets the power supply requirements of the motherboard.</p> <p>Try to reinsert the Memory Stick.</p> <p>Try to replace the Memory Stick.</p> <p>Try to clear the CMOS of the main board.</p> <p>Please confirm if there is an external expansion card and if it is normal after removing the external card.</p>
Unable to display after power on	<p>Make sure the monitor is turned on.</p> <p>Make sure the monitor and host power cables are properly connected. Make sure the monitor and host cables are properly connected.</p> <p>Check to see if the monitor is in "Sleep" mode.</p> <p>Try changing the monitor interface or replacing the monitor.</p>
BIOS Setup cannot be saved	<p>Check that the CMOS battery is installed</p> <p>Try to replace the CMOS battery (CR2032)</p> <p>Adjust the time and date in BIOS setup</p>
Unable to find a bootable device	<p>Make sure the drive's power and data cables are properly connected.</p> <p>Make sure the operating system is installed on the drive.</p> <p>Make sure the hard drive is not physically damaged.</p>
Blue screen or freeze when logging on to the system	<p>Check if the Memory Stick and External Card are loose.</p> <p>Try removing the newly installed hardware and uninstalling the newly installed driver or software.</p> <p>Try replacing the memory with a different specification.</p>
Slow entry into the operating system	<p>Check if the CPU cooling fan is running normally.</p> <p>Check if the remaining space of the system partition is insufficient.</p> <p>Use software to check for bad sectors on the hard drive.</p>
System restarts automatically	<p>Confirm that the CPU cooling fan is rotating normally.</p> <p>Confirm that the switch/reset button has not been accidentally touched.</p> <p>Confirm that the Memory Stick and external card are loose.</p> <p>Confirm that the power supply has sufficient load capacity, try to replace the power supply</p> <p>Check if the system is infected with viruses.</p>
Unable to detect USB device	<p>Confirm that the USB device requires separate power.</p> <p>Confirm that the USB interface has poor contact.</p> <p>Confirm that the USB controller is enabled in the BIOS setup.</p>

## Useful Links

Submit your suggestions and ideas in the community	<a href="https://www.reddit.com/r/bkminipc/">https://www.reddit.com/r/bkminipc/</a>	
Watch our new product demos	<a href="https://www.youtube.com/@BKHD-PCs">https://www.youtube.com/@BKHD-PCs</a>	
Corporate News and Cooperation	<a href="https://www.linkedin.com/company/beikong/">https://www.linkedin.com/company/beikong/</a>	
Get our latest news on Meta	<a href="https://www.facebook.com/people/%E5%80%8D%E6%8E%A7/61558406109357/">https://www.facebook.com/people/%E5%80%8D%E6%8E%A7/61558406109357/</a>	