



GF-1264NP-12

VER 1.0Y

用户手册 User Manual

版权声明 Copyright Notice:

©2020 年，倍控工控，版权所有。

©2020, Beikong Industrial Control, all rights reserved.

本使用手册所提及的商标与名称，均属其合法注册的公司所有。

The trademarks and names mentioned in this manual belong to their legally registered companies.

责任声明 Responsibility statement

本使用手册受著作权保护，所撰写的内容均为倍控工控所拥有。

This user manual is protected by copyright, and the content written is owned by Beikong Industrial Control.

本使用手册所提及的产品规格或相关信息，倍控工控保留修改的权利。

The product specifications or related information mentioned in this user manual, Beikong Industrial Control reserves the right to modify.

本使用手册所提及的产品规格或相关信息有任何修改或变更时，恕不另行通知。

Any modification or change of product specifications or related information mentioned in this user manual will be made without notice.

未事先经由倍控工控书面允许，不得以任何形式复制、修改、转载、传播或出版本使用手册内容。

Without the prior written permission of Beikong Industrial Control, the contents of this manual shall not be reproduced, modified, reprinted, transmitted or published in any form.

安全须知 Safety Guide

为了协助您使用倍控产品，请仔细阅读【使用手册】。在了解产品相关信息，请先务必仔细阅读安全指导。

In order to assist you in the use of the Beikong products, please read the [User Manual] carefully. Before understanding product-related information, please be sure to read the safety instructions carefully.

产品版本辨识 Product Version Identification

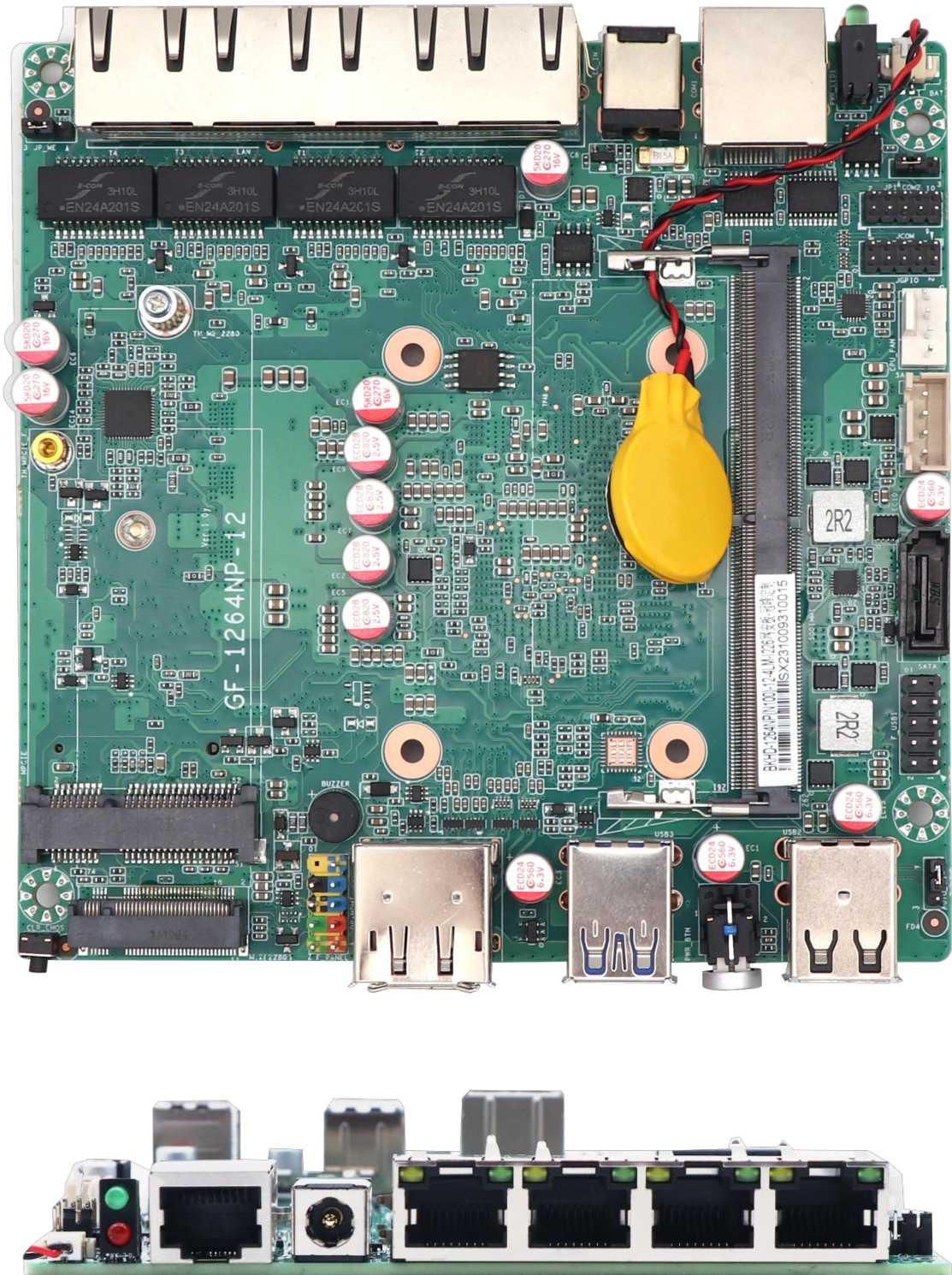
您可在主板上找到标示此主板的版本[VER:X.X],其中 X.X 为数字。例如标示[VER1.0],即此主板的版本为 1.0。当您更新主板的 BIOS、驱动程序或参考其他技术资料时，请注意产品版本的标示。

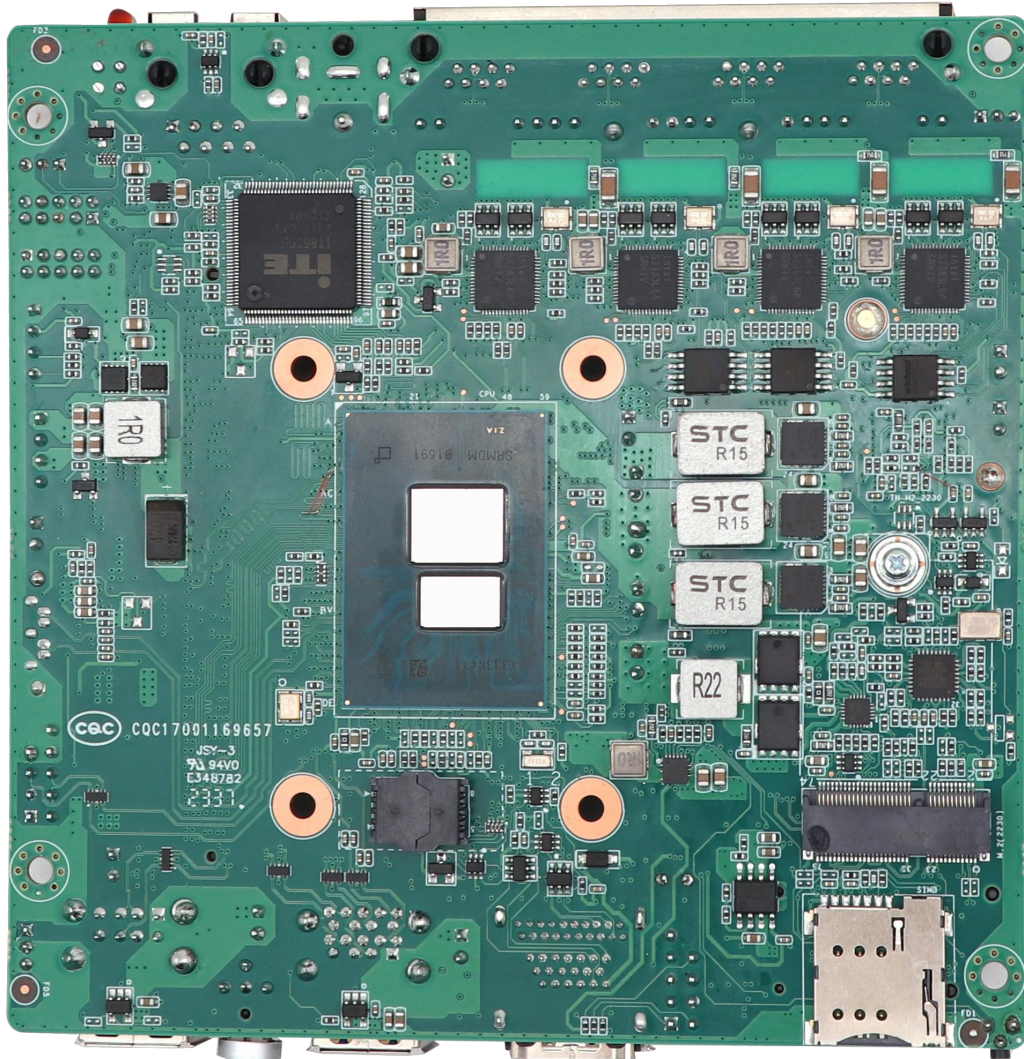
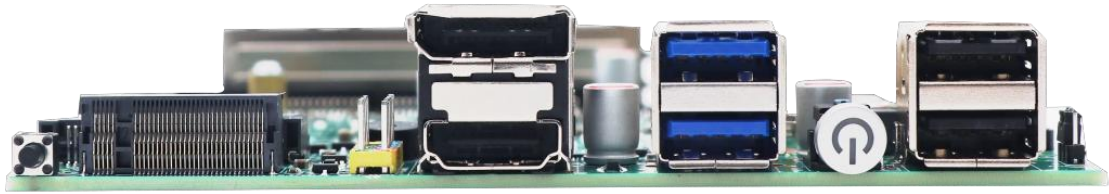
You can find the motherboard version [VER:X.X] marked on the motherboard, where X.X is a number. For example, if marked [VER1.0], the version of this motherboard is 1.0. When you want to update the motherboard's BIOS, drivers or refer to other technical documents, please pay attention to the product version label.

安全使用小常识 Tips for Safe Use

1. 在使用本产品前，请您务必仔细阅读产品说明书；
 2. 对未准备安装的板卡，应将其保存在防静电保护袋中；
 3. 在从防静电保护袋中拿出板卡前，应先将手置于接地金属物体上一会儿（比如 10 秒钟），以释放身体及手中的静电；
 4. 在拿板卡时，需佩戴静电保护手套，尽可能仅触及边缘部分；
 5. 为避免人体被电击或产品被损坏，在对板卡进行拔插或重新配置时，务必先关断电源；
 6. 在需对板卡或整机进行搬动前，务必先关断电源；
 7. 对整机产品，需增加或减少板卡时，务必先关断交流电源；
 8. 当您需连接或移除任何设备前，务必先关断交流电源；
 9. 为避免频繁开关机对产品造成不必要的损伤，关闭电源后，应至少等待 30 秒后再开机。
-
- I. Please read the product manual carefully before using this product;
 - II. For boards that are not ready to be installed, they should be stored in anti-static protective bags;
 - III. Before taking out the board from the anti-static protective bag, place your hands on a grounded metal object for a while (for example, 10 seconds) to release static electricity from your body and hands;
 - IV. When handling the board, wear electrostatic protective gloves and try to only touch the edge of it;
 - V. In order to avoid electric shock to the human body or damage to the product, the power must be turned off before removing or reconfiguring the board;
 - VI. Before moving the board or the whole machine, the power must be turned off;
 - VII. For a complete machine, when adding or removing a motherboard, be sure to turn off the power first;
 - VIII. Before you need to connect or remove any equipment, be sure to turn off the AC power first;
 - IX. In order to avoid unnecessary damage to the product caused by frequent switching on and off, after turning off the power, wait at least 30 seconds before turning it on.

实物照片 Physical Photos:





***不同批次生产的产品可能存在差异，请以实际收到货物为准**
***There may be differences in products produced in different batches, please refer to the actual received goods**

一、产品简介 Product Profile

GF-1264NP-12 Motherboard 为倍控工控网安系列主板，支持 Intel® Alder Lake-N 系列 CPU。可应用于工业控制、网络安全、云服务、云终端等领域。

GF-1264NP-12 Motherboard is the BKHD industrial control Network Security series motherboard supporting Intel® Alder Lake-N series CPU. It can be applied in industrial control, network security, cloud service, cloud terminal and other fields.

GF-1264NP-12 主要特点如下

The main features of GF-1264NP-12 are as follows:

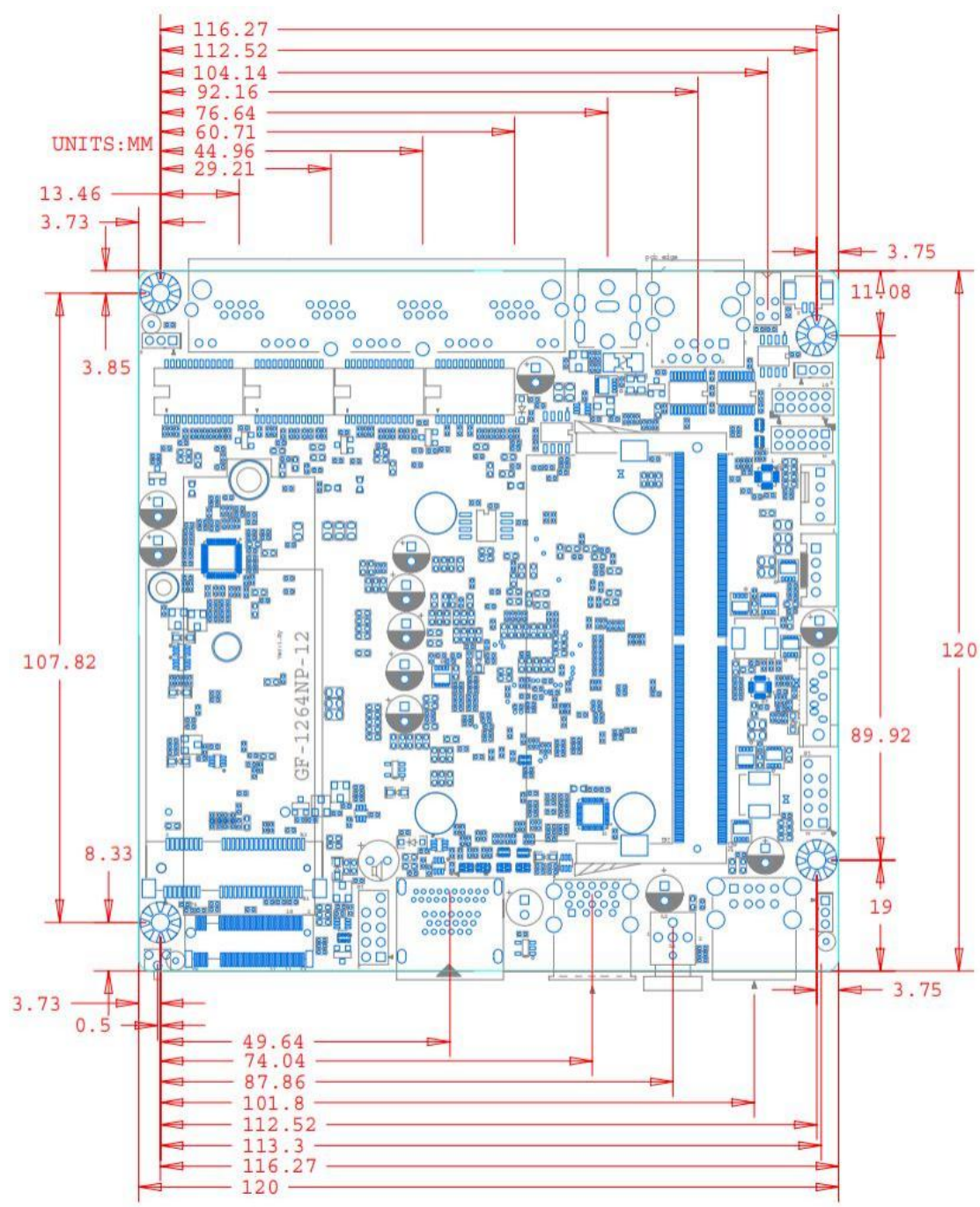
1. 集成 Intel®N100 四核处理器，兼容 Intel® Alder Lake-N 系列 CPU；
2. 1*DDR5 SO-DIMM 内存插槽,最大支持 16GB;
3. 支持 HDMI、DP 双视频显示输出；
4. 支持 4 个 2.5G 以太网；
5. 支持 1 个 M.2 2280 和 1 个 SATA 3.0 用于存储；
6. 支持 2 个 USB3.0 接口和 2 个 USB2.0 接口；
7. 支持 -20~55 度宽温工作；
8. 支持 DC_12V 供电；

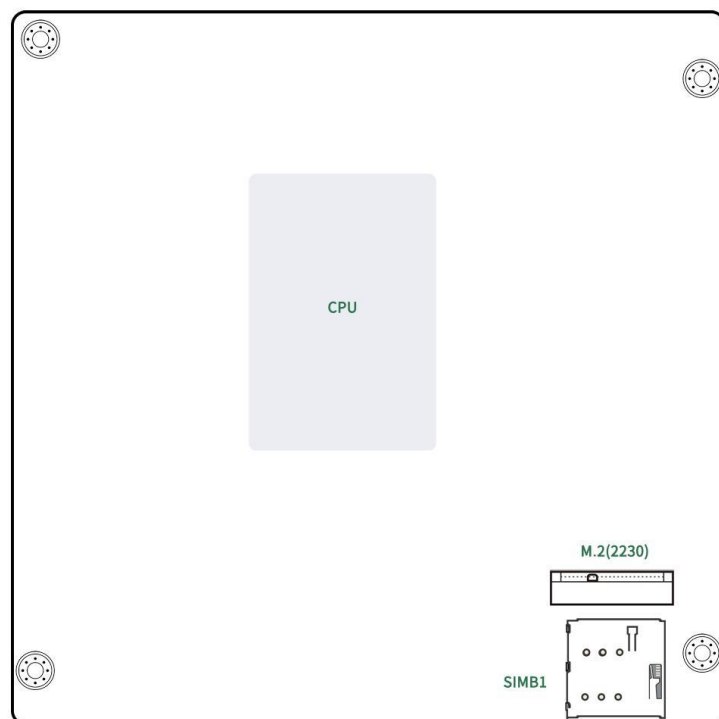
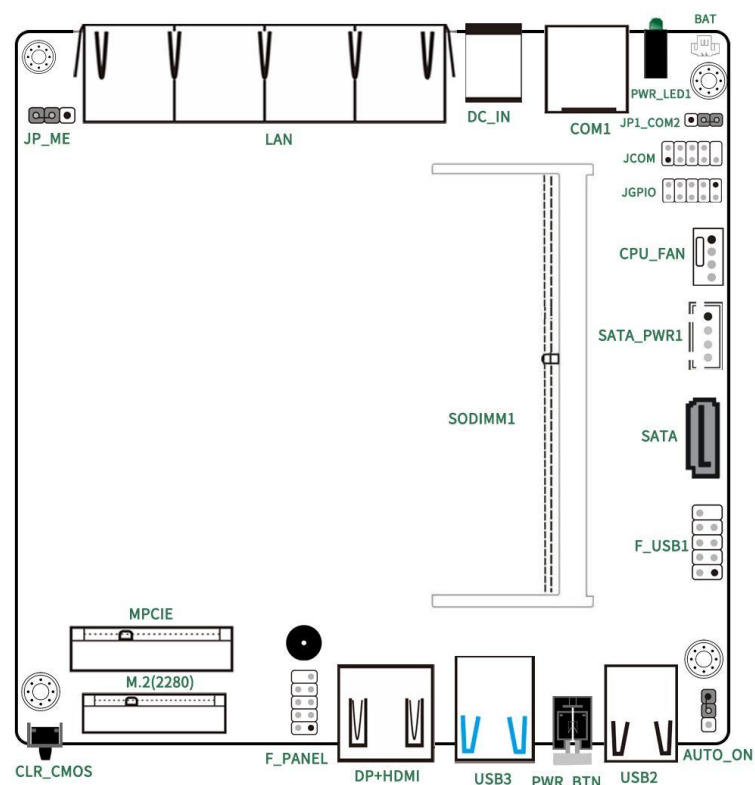
1. Integrated Intel® N100 quad-core processor, Compatible with Intel® Alder Lake-N series CPU;
2. 1*DDR5 SO-DIMM memory slots, Support up to 16GB;
3. Support HDMI and DP dual video display output;
4. Support 4*2.5Gigabit networks;
5. Support 1*M.2 2280 (Nvme)and 1*SATA 3.0 for storage;
6. Support 2*USB3.0 interfaces and 2*USB2.0 interfaces;
7. Support -20 ~ 55 degrees wide temperature work;
8. Support DC_12V power supply;

二、主板详细规格 Motherboard Specifications

Item	Description
Processor	Onboard Intel® processor N100 3.40 GHz quad-core processor, TDP 6W
Memory	1*DDR5 SO-DIMM memory slots, Support up to 16GB
Display	Integrated Intel® UHD Graphics Card
	1*HDMI ; 1*DP interface
Network	4*Intel i226 2.5Gigabit Ethernet port
Storage	1*M.2 2280 SSD slot (Nvme)
Expansion slot	1*Mini PCIe (Support USB signal WiFi/Bluetooth/3G/4G module)
	1*M.2 CNVi 3052 (Support WiFi module)
Backplane I/O interface	1*Reset BTN
	4*Ethernet port
	2*USB 2.0; 2*USB 3.0
	1*Power, HDD indicator light
	1*HDMI 1*DP video output port
On-board I/O interface	1*Mini PCIe (Support WiFi/BT/4G module)
	1*M.2 CNVi 3052 (Support WiFi module)
	1*SATA3.0 slot
	1*CPU fan 4Pin
Power type	DC_12V power input
Working Temperature	-20°C ~ 55°C
Storage Temperature	-20°C ~ 70°C
Working Humidity	5%-90% Relative humidity, Non-condensing
Size	120mm x 120mm

Motherboard size chart





三、主板安装 Motherboard Installation



安全须知:

- 安装前请勿任意撕毁主板上的序列号及代理商保修贴纸等,否则会影响到产品保修期限的认定标准。
- 要安装或移除主板以及其他硬件设备之前请务必先闭电源,并且将电源线处插座中拔除。
- 安装其他硬件设备至主板内的插座时,请确认接头和插座已紧密结合。
- 拿取主板时请尽量不要触碰金属接线部份以避免线路发生短路。
- 拿取主板、中央处理器 (CPU) 或内存条时, 最好戴上防静电手环。若无防静电手环, 请确保双手干燥, 并先碰触金属物以消除静电。
- 主板在未安装之前, 请先置放在防静电垫或防静电袋内。
- 当您要拔除主板电源插座上的插头时, 请确认电源供应器是关闭的。
- 在开启电源前请 确定电源供应器的电压值是设定在所在窗口的电压标准值。
- 在开启电源前请 确定所有硬件设备的排线及电源线都已正确地连接。
- 请勿让螺丝接触到主板上的线路或零件, 避免造成主板损坏或故障。
- 请确保没有遗留螺丝或金属制品在主板上或电脑机箱内。
- 请勿将电脑主机放置在不平稳处。
- 请勿将电脑主机放置在温度过高的环境中。
- 在安装时若开启电源可能会造成主板、其他设备或您自己本身的伤害。
- 如果您对执行安装不熟悉, 或使用本产品发生任何技术性问题时, 请咨询专业技术人员。

**Safety Note:**

- Before installation, please do not arbitrarily tear up the serial number on the main board and the dealer's warranty sticker, otherwise it will affect the certification standard of the product warranty period.
- Before installing or removing the motherboard and other hardware devices, please be sure to turn off the power and unplug the power cord from the socket.
- When installing other hardware devices to the sockets on the motherboard, please make sure the connectors and sockets are tightly combined.
- Please try not to touch the metal wiring part when picking up the motherboard to avoid short circuits.
- When handling the motherboard, processing unit (CPU) or memory module, it is best to wear an anti-static wrist strap. If you do not have an anti-static wrist strap, make sure your hands are dry, and touch a metal object first to eliminate static electricity.
- Before installing the motherboard, please place it in an antistatic mat or antistatic bag.
- When you unplug the motherboard power socket, please make sure the power supply is turned off.
- Before turning on the power, please make sure that the voltage value of the power supply is the voltage standard value set in the window.
- Before turning on the power, please make sure that the cables and power cables of all hardware devices are properly connected.
- Do not let the screws touch the circuit or parts on the main board to avoid damage or malfunction of the main board.
- Please make sure there are no screws or metal products left on the motherboard or inside the computer case.
- Do not place the main computer in an unstable place.
- Do not place the host computer in an environment with excessive temperature.
- Turning on the power during installation may cause damage to the motherboard, other devices or yourself.
- If you are not familiar with performing installation, or if you have any technical problems with this product, please consult a professional technician.

四、内存安装 Memory Installation

该主板提供 1 根 DDR5 内存插槽。

This motherboard provides 1*DDR5 memory slots.

安装内存前:

- 1、请先确认您所购买的内存适用本主板所支持的规格。
- 2、在安装或移除内存之前，请先确定电脑的电源已经关闭以免造成损毁。
- 3、内存设计有防呆标示，若您插入方向错误，内存将无法插入，此时请立刻更改插入方向。

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 fool-proof mark. If you insert the memory in the wrong direction, the memory cannot be inserted. At this time, please change the insertion direction immediately.

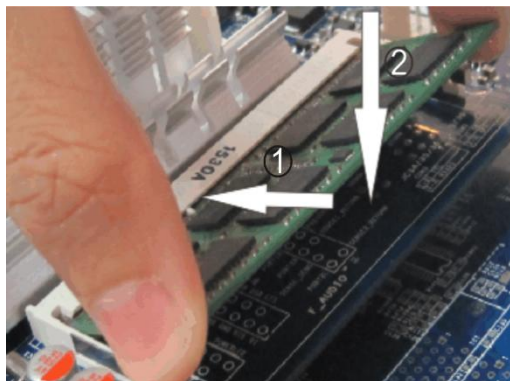
安装内存时:

- 1、在安装或移除内存之前请先关掉电源，并且拨下 AC 电源线。
- 2、小心握住内存条的两端，不要触碰到上面的金属接点。
- 3、将内存条的金手指对齐内存条插槽，并且在方向上要注意金手指凹孔对上插槽的凸起点；
- 4、将内存条斜 30 度插入内存槽处，然后将内存条往下压，压至可以听到“咔”的声响,说明内存已安装成功，可以使用。（注意：将内存条下压的力度不可过大，以免损坏内存）
- 5、要移除内存条，请将 DIMM 插槽两端的卡榫同时向外推，然后取出内存条。

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 it.
3. Align the metal contacts of the memory with the memory slot, and pay attention to the orientation of the concave hole to the convex point of the upper slot.
4. Insert the memory into the memory slot at an angle of 30 degrees, and then press down the memory stick until you can hear a "click" sound, indicating that the memory has been installed successfully and can be used. (Note: Do not press the memory stick too hard to avoid damage to the memory)
5. To remove the memory stick, please push the tenons at both ends of the memory slot outward at the same time, and then take out the memory stick.

安装图示仅供参考 Installation diagram reference:



五、跳线设置 Jumper Setting

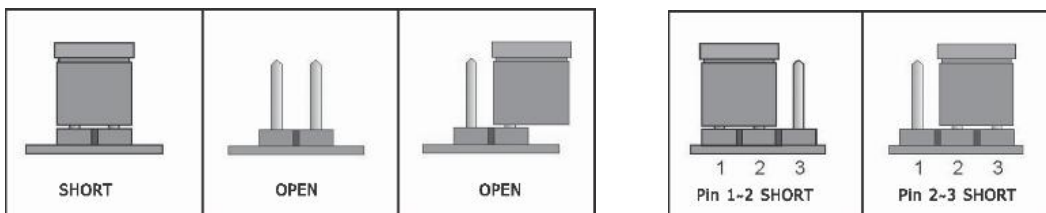
跳线说明 Jumper description

2 针脚的接头：将跳线帽插入两个针脚将使其关闭（短路）。

2-pin headers: Inserting a jumper cap into both pins will turn them off (short).

3 针脚的接头：跳线帽可插入针脚 1~2 或针脚 2~3 使其关闭（短路）。

3-pin connector: A jumper cap can be inserted into pins 1-2 or pins 2-3 to close (short)



怎么辨认跳线的第 1 脚位置?

请仔细查看主板，凡有标明"1"或是有白色粗线标记的接脚即为 1 脚位置。观看背板的焊盘，通常方型焊盘为第一脚。

How to identify the first pin position of a jumper?

Please check the motherboard carefully, the pin marked with "1" or marked with a thick white line is the position of pin 1. Look at the pad on the backplane, usually the square pad is the first pin.

Clear CMOS 跳针：主板提供 1 个 1*3PIN 的 JBAT1 接头：CMOS 内容清除/保持设置（脚距:2.54 mm）CMOS 由板上纽扣电池供电。清 CMOS 会导致永久性消除以前系统配置并将其设为原始（工厂设置）系统设置。

Clear CMOS jumper pin: The main board provides a 1*3PIN JBAT1 connector: CMOS content clear/hold setting (pin pitch: 2.54 mm) CMOS is powered by the button battery on the board. Clearing the CMOS will permanently erase the previous system configuration and set it to the original (factory default) system settings.

其步骤如下:

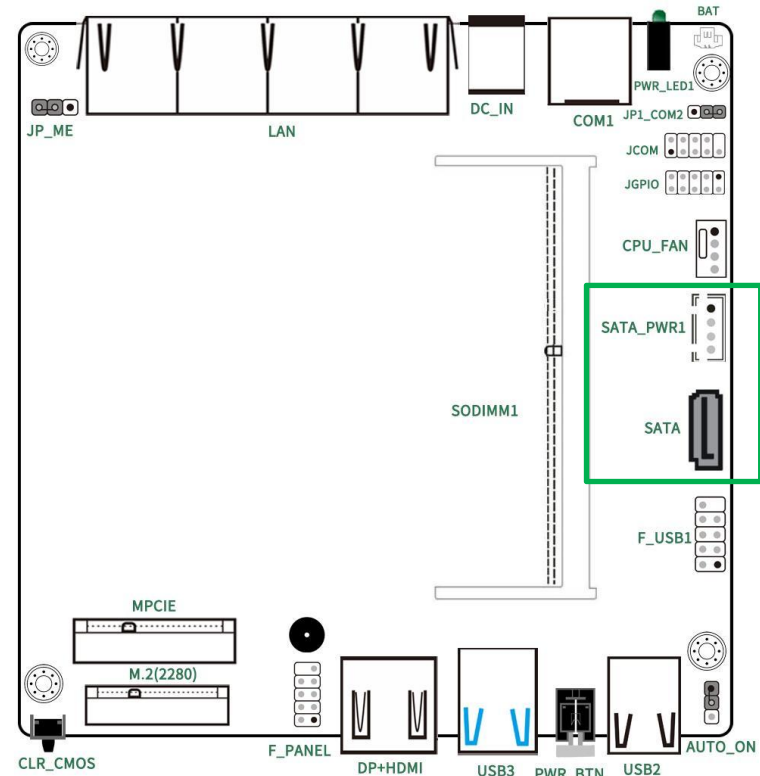
(1) 关闭计算机，断开电源；(2) 短接 JBAT1 2-3pin 约 5 秒；(3) 开启计算机；(4) 启动时按屏幕提示按键进入 BIOS 设置，重新加载最优缺省值；(5) 保存并退出设置。

The steps:

(1) Turn off the computer and disconnect the power supply; (2) Short JBAT1 2-3pin for about 5 seconds; (3) Turn on the computer; (4) Press the screen prompt button to enter the BIOS setting when starting up, and reload the optimal default Save value; (5) Save and exit the settings.

六、各插针定义 Each pin definition

1、主板上提供 1 个 7 Pin SATA 接口。
The motherboard provides 1*7 Pin SATA interface.



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

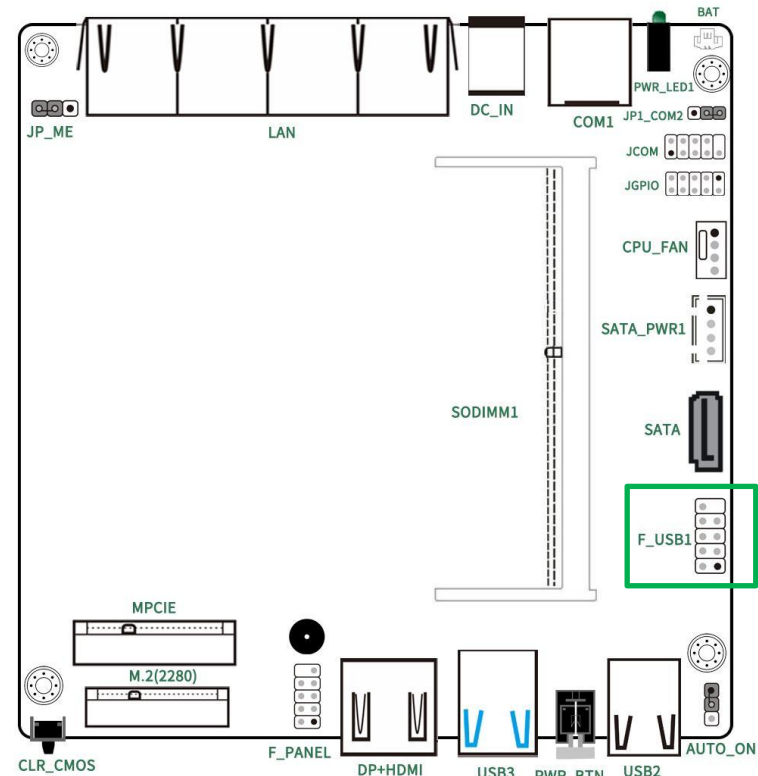
SATA_PWR	PIN	Definition
	1	+12V
	2	GND
	3	GND
	4	+5V

2、主板内置 USB 接口 (F_USB1)。

The motherboard has built-in USB interfaces (F_USB1).

连接 USB 扩展挡板前，请务必将电脑电源关闭，并且将电源线自插座中拔除，以免造成 USB 扩展挡板的毁损。

Before connecting the USB expansion shield, please be sure to turn off the power of the computer and unplug the power cord from the socket to avoid damage to the USB expansion shield.



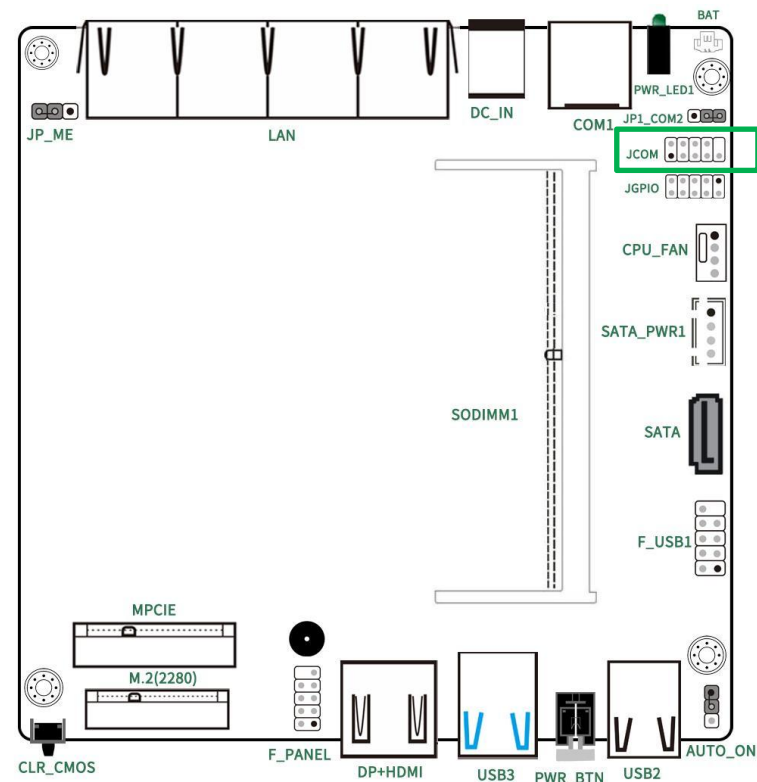
F_USB1 (2x5 pin 间距 2.54mm 第 9pin 空)

F_USB1 (2x5 pin spacing 2.54mm 9th pin empty)

F_USB1	PIN	Definition	PIN	Definition
	1	+5V	2	+5V
	3	USB1_DATA-	4	USB2_DATA-
	5	USB1_DATA+	6	USB2_DATA+
	7	GND	8	GND
	9	N/A	10	GND

3、该主板提供 1 个 COM 插针。

The motherboard provides 1*COM pins.



COM (2x5 pin 间距 2.54mm)

COM (2x5 pin pitch 2.54mm)

COM	PIN	Definition	PIN	Definition
	1	DCD#	2	RXD
	3	TXD	4	DTR#
	5	GND	6	DSR#
	7	RTS#	8	CTS#
	9	485_RXP	10	485_RXN

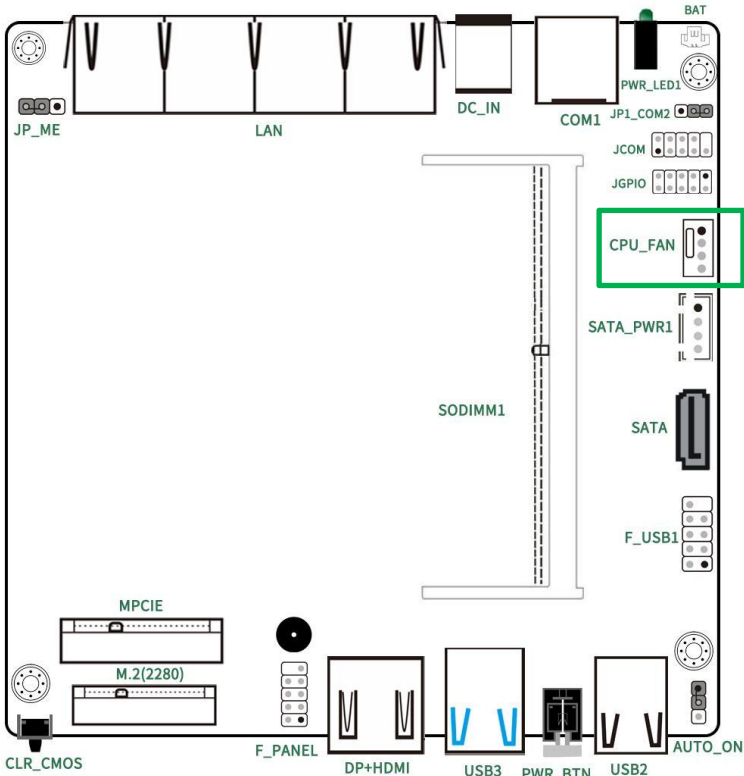
JP_COM	PIN	Definition
	1-2	RS232
	2-3	RS485

4、主板提供 1 个风扇接口 (CPU_FAN)

The motherboard provides 1 FAN interface (CPU_FAN)

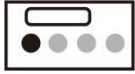
此主板的散热风扇电源插座为 1*4-pin。电源插座皆有防呆设计，安装时请注意方向(黑色线为接地线)。

The cooling fan power socket of this motherboard is 1*4-pin. All power sockets have foolproof design, please pay attention to the direction when installing (the black line is the grounding line).



CPU_FAN (1x4 pin 全靠背)

CPU_FAN (1x4 pin full backrest)

CPU_FAN	PIN	Definition
	1	GND
	2	+12V
	3	FAN_TAC
	4	FAN_CTL

注意：请务必接上散热风扇的电源插座，以避免CPU及系统处于过热的工作环境，若温度过高可能导致 CPU 烧毁或是系统死机。

这些散热风扇电源插座并非跳线，请勿放置跳帽在针脚上。

Note: Be sure to connect the power outlet of the cooling fan to avoid overheating of the CPU and system. If the temperature is too high, it may cause the CPU to burn out or the system to crash.

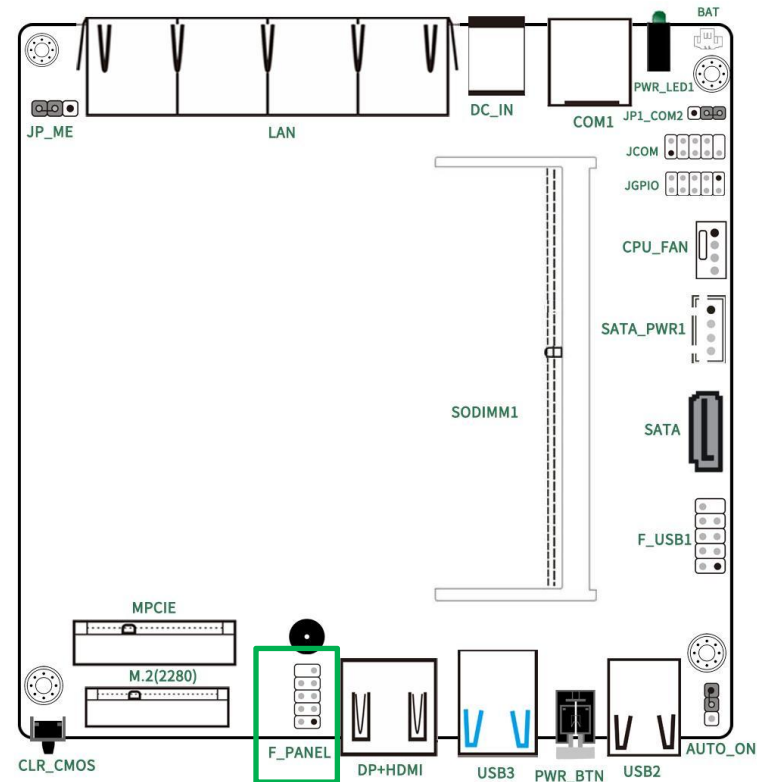
These cooling fan power sockets are not jumpers, please do not put jumper caps on the pins.

5、主板提供 1 个前置面板接口 (F_PANEL)。

The motherboard provides 1 front panel interface (F_PANEL).

该 9pin 插针包括上电，复位，硬盘指示灯，电源指示灯，允许用户连接系统的前面板开关功能。

The 9pin header includes power on, reset, hard disk indicator, power indicator, allowing users to connect the system's front panel switch functions.

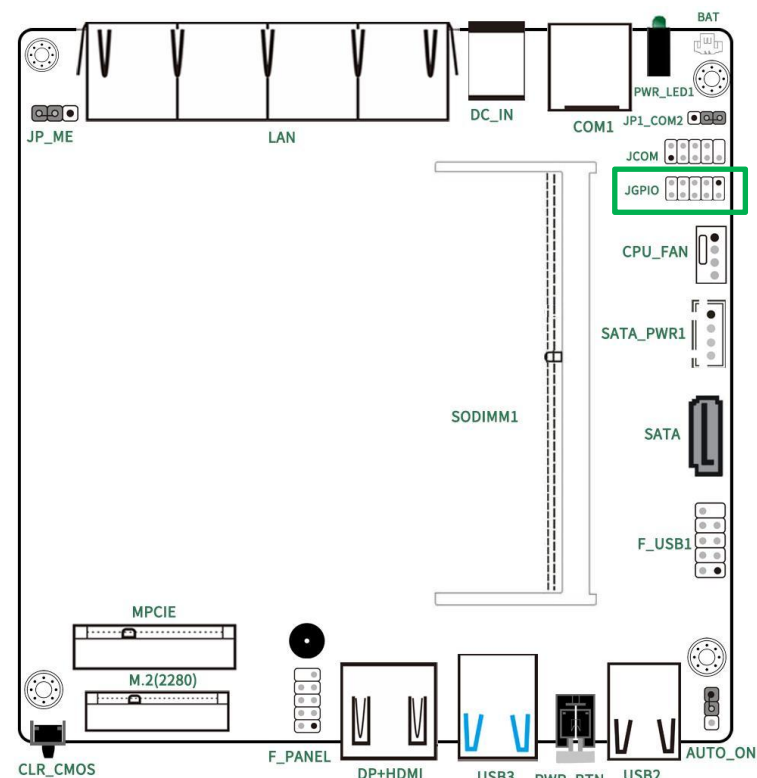


F_PANEL (2x5pin 间距 2.54mm 第 10pin 空)

F_PANEL (2x5pin pitch 2.54mm 10th pin empty)

F_PANEL	PIN	Definition	PIN	Definition
	1	HDD_LED +	2	PWR_LED+
	3	HDD_LED -	4	GND
	5	GND	6	GND
	7	RESET	8	PWR_ON
	9	GND	10	N/A

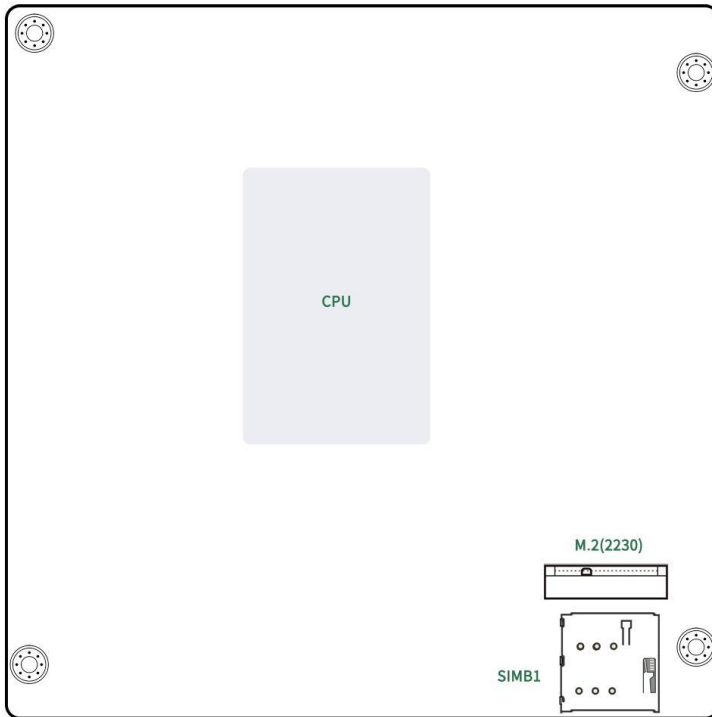
6、主板提供 1 个 GPIO (Programmable I/O)。
The motherboard provides 1 GPIO (Programmable I/O).



JGPIO	PIN	Definition	PIN	Definition
	1	GND	2	VCC
	3	GPIO1	4	GPIO5
	5	GPIO2	6	GPIO6
	7	GPIO3	8	GPIO7
	9	GPIO4	10	GPIO8

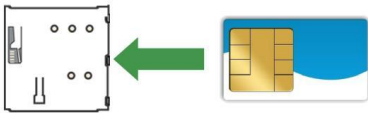
7、主板提供 1 个 SIM 卡插槽(SIMB)。

The motherboard provides 1 SIM card slot (SIMB).



本主板提供 1 个 SIM 卡插槽（主板背面），用于安装 SIM 卡。

This motherboard provides 1 SIM card slot (back of the motherboard) for installing SIM cards.



注意： SIM 卡装入时注意将芯片朝下

Note: When inserting the SIM card, be sure to put the chip facing down.

七、常见故障分析与解决方法 Common fault analysis and solutions

中文版

常见故障	检查方法
通电之后不开机	1. 请确认电源连接线是否连接正常 2. 请确认所用电源是否满足主板的供电要求 3. 尝试重新插拔内存条 4. 尝试更换内存条 5. 尝试根据主板说明书清除主板 CMOS 6. 请确认是否有外接卡, 移除外接卡后是否正常
开机后不显示	1. 查看显示器是否打开 2. 检查电源线是否正确连接到显示器和系统单元 3. 检查显示器电缆是否正确连接到系统单元和显示器 4. 查看显示屏亮度控件是否设置为黑暗状态, 可通过亮度控件提高亮度。(有关详细信息, 可参考显示器操作说明) 5. 检查显示器是否处于“节电”模式
BIOS Setup 设置不能保存	1. 请确认 CMOS 电池电压是否低于 2.8V, 如低于 2.8V, 请更换新电池, 重新设置保存。 2. BIOS 设置不正确, 根据开机画面提示的按键(DEL), 在 BIOS Setup 中调整时间和日期。
提示无法找到可引导设备	1. 请确认硬盘电源线、数据线是否连接正常 2. 请确认硬盘是否有物理损坏 3. 请确认硬盘中是否安装操作系统
进入系统过程中蓝屏或死机	1. 请确认内存条及外接卡是否松动 2. 尝试去掉新安装的硬件, 卸载驱动或软件 3. 尝试更换内存
进入操作系统缓慢	1. 尝试使用第三方软件检查硬盘是否有坏道 2. 请确认系统所在分区剩余空间是否过少 3. 请确认 CPU 散热风扇是否正常转动
系统自动重启	1. 请确认 CPU 散热风扇是否正常转动 2. 请确认是否误触发工控机复位按钮 3. 请使用杀毒软件确认系统是否感染病毒 4. 请确认内存条及外接卡是否松动 5. 请确认所用电源负载能力是否足够, 可尝试更换电源
无法检测到 USB 设备	1. 请确认 USB 设备是否需要单独供电 2. 请确认 USB 接口是否存在接触不良 3. 请确认 BIOS Setup 中 USB 控制器是否打开

English Edition

Common error	Inspection Method
Does not boot after power on	1. Please confirm whether the power cable is properly connected 2. Please confirm whether the power supply used meets the power supply requirements of the motherboard 3. Try to re-plug the memory module 4. Try to replace the memory module 5. Try to clear the motherboard CMOS according to the motherboard manual 6. Please confirm whether there is an external card, and whether it is normal after removing the external card
Not displayed after boot	1. Check to see if the display is turned on 2. Check whether the power cord is properly connected to the monitor and system unit. 3. Check whether the monitor cable is properly connected to the system unit and monitor. 4. Check whether the brightness control of the display screen is set to a dark state, and the brightness can be increased through the brightness control. (For details, refer to the display operating instructions) 5. The display is in "power saving" mode
BIOS Setup cannot be saved	1. Please confirm whether the voltage of the CMOS battery is lower than 2.8V. If it is lower than 2.8V, please replace it with a new battery and reset to save. 2. The BIOS settings are incorrect. Adjust the time and date in the BIOS Setup according to the key (DEL) prompted on the boot screen.
Prompt unable to find a bootable device	1. Please confirm whether the power cable and data cable of the hard disk are connected properly 2. Please check whether the hard disk is physically damaged 3. Please confirm whether the operating system is normally installed on the hard disk.
Blue screen or crash when entering the system	1. Please confirm whether the memory module and external card are loose 2. Try to remove the newly installed hardware, uninstall drivers or software 3. Try to replace the memory
slow to enter the operating system	1. Try to use software to check whether the hard disk has bad sectors 2. Please confirm whether the remaining space of the partition where the system resides is sufficient 3. Please confirm that the CPU cooling fan is running normally
System restarts automatically	1. Please confirm whether the CPU cooling fan is running normally 2. Please confirm whether the reset button is triggered by mistake 3. Please check if the system is infected with viruses 4. Please confirm whether the memory stick and external card are loose 5. Please confirm whether the load capacity of the power supply used is sufficient, 6. and try to replace the power supply
Unable to detect USB device	1. Please confirm whether the USB device needs a separate power supply 2. Please confirm whether there is any bad contact of the USB interface 3. Please confirm whether the USB controller is turned on in BIOS Setup