MACHINIST®

X99 PR9-H

User Manual

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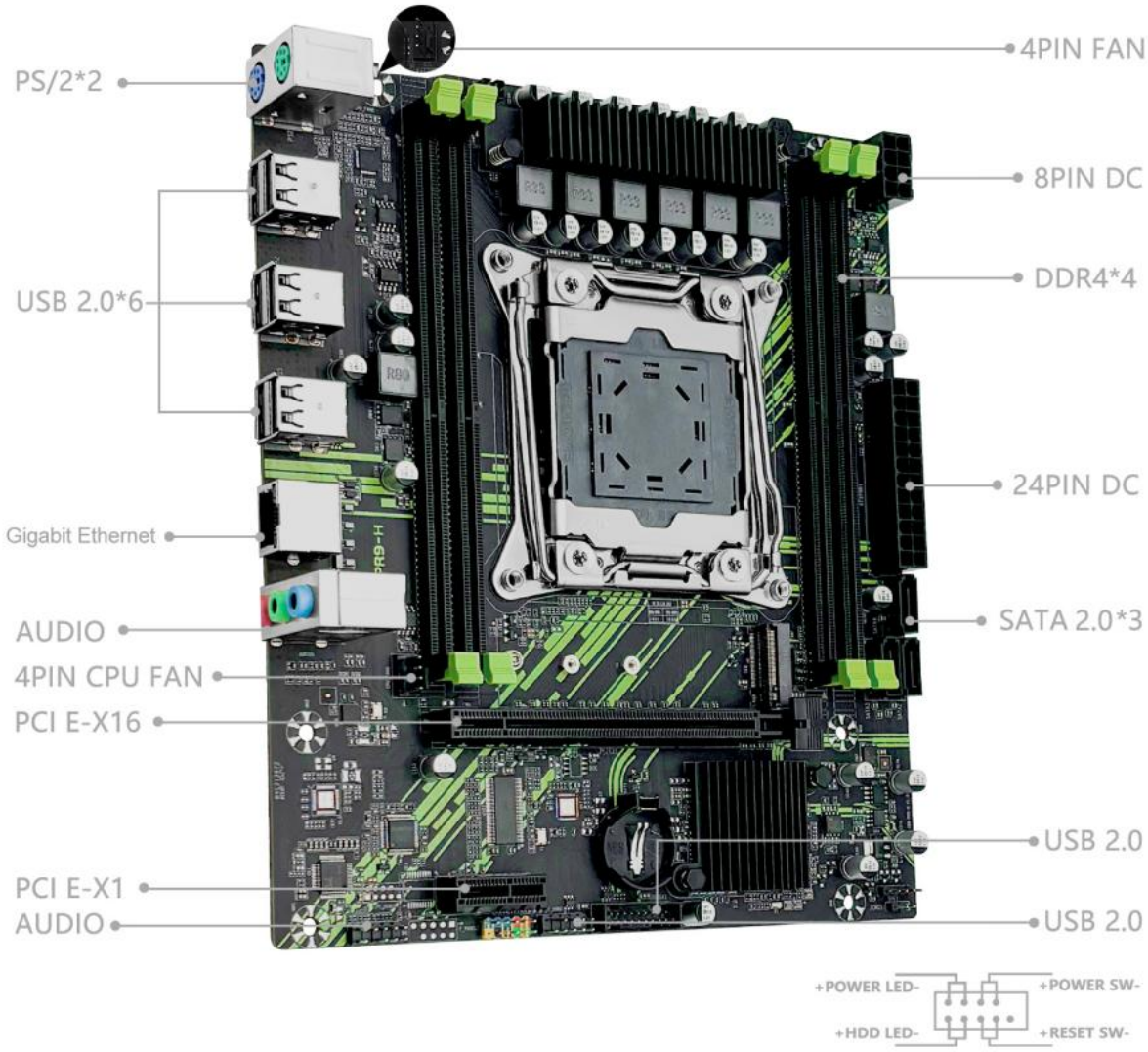
Contents

Item Specifications

X99 PR9-H Motherboard			
Processor	Support DDR4 memory with LGA 2011-3 pin series CPUs (e.g. Intel Xeon E5-XXXX-V3, E5-XXXX-V4, and Core i7 5820K/6800K series processors on LGA 2011-v3 socket, etc.)		
Southbridge	HM55 chipset (or other Intel 5 series chipset)		
RAM	Technology	Dual Channel DDR4 Desktop/ECC/RECC/NON-ECC RAM	
	Maximum Capacity	128GB (32GB*4)	
	Memory Slot	4* DDR4 DIMM (2133/2400MHz)	
Back Panel I/O Ports	Display Interface	0	
	USB	6* USB 2.0;	
	Ethernet	1 * Gigabits LAN Card	
	Audio Jacks	3* Audio jacks(Line-in、Line-out、Mic-in)	
Internal I/O Ports	USB	2* USB 2.0	
	F_Audio1	1* Front Front Audio pin	
	SATA Interface	3* SATA 2.0 (3Gb/s) connectors	
	ATXPWR Interface	1*24-pin Power connector； 1*8-pin CPU Power connector	
	CPU_FAN	2* 4-pin PWM CPU fan connector	
	P_FAN1	1* 2-pin MOS tube-cooling fan interface	
	M.2 Socket	1* M.2 socket (Support NGFF/NVME Protocol)	
	M.2 Switch Pin	1* M2_SEL	
	BAT1	1* Battery slot (Use the CR2032 battery)	
	JCMOS1	1 * 2-pin Clear CMOS button	
	SPK1	1* 4-pin SPEAK	
	F_PANEL1	1* System panel connector	
	PCIe Slot	1* PCIe 3.0 x16； 1* PCIe 2.0 x1	
Environment	Temperature Range	Working Environment	Storage Environment
		Temperature：0～50°C Humidity：5%~95%	Temperature: -20~70°C Humidity: 5%~95%
Physical Size	Size	215mm*185mm, M-ATX	

Structure of Motherboard

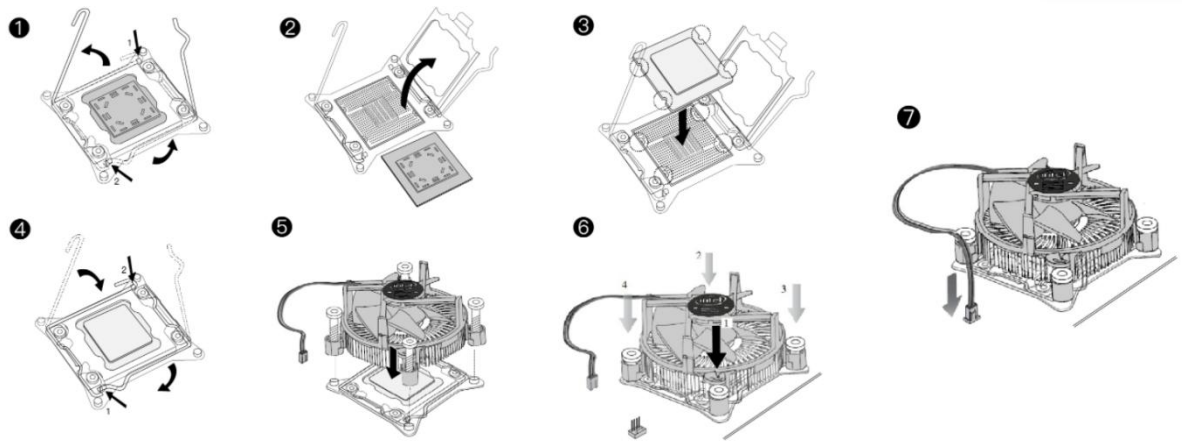


Package List:

X99 PR9-H Motherboard *1
CPU Cooling Fan Bracket *1
SATA Cable *1
I/O Shield *1

Install CPU & Fan

Please install the CPU into the CPU socket (LGA 2011-3) as shown below.



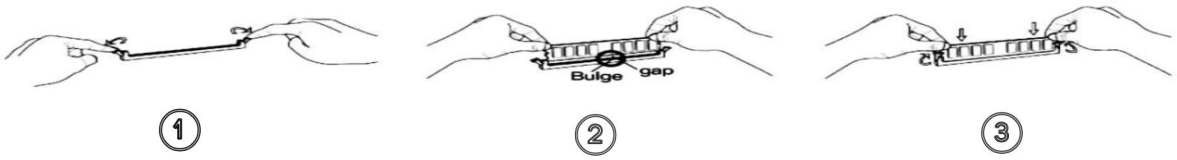
Important!

• Make sure that the motherboard supports the CPU.
• Always unplug the power cord from the power outlet before installing or removing the CPU to prevent hardware damage.
• Please retain the CPU protective cap after installing the processor.
• Do not turn on the computer if the CPU cooler is not installed, otherwise overheating and damage to the CPU may occur.
• Confirm that the CPU heat sink has formed a tight seal with the CPU before booting your system.
• Apply an even layer of thermal paste (or thermal tape) between the CPU and the heatsink to enhance heat dissipation.
• Whenever the CPU is not installed, always protect the CPU socket pins by covering the socket with a plastic cap.
• Locate the pin one of the CPU socket and the CPU. Once the CPU is positioned into its socket, place one finger down on the middle of the CPU, lowering the locking lever and latching it into the fully locked position.
• Do not force the CPU into the CPU socket before the CPU socket locking lever is lifted up, or damage to the CPU and CPU socket may occur.
• Connect the CPU 8-pin power connector to the 8-pin CPU power header on the motherboard.
• Please be sure to plug in the 8-PIN power supply to power the CPU.

Install Memory

The motherboard provides 4x DDR4 DIMM slots, each with a maximum capacity of 32GB.

1. Wrench the latches on both sides of the memory slot outwards.
2. Insert the memory into the slot by aligning it with the notch in the slot.
3. Flip the latches on both sides of the slot to lock the memory.



Important!

• Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.

• Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.

• Memory modules have a foolproof design. A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction.

• The stability and compatibility of the installed memory module depend on the installed CPU and devices when overclocking.

• This motherboard provides four memory sockets and supports Dual Channel Technology. Dual-Channel mode cannot be enabled if only one memory module is installed.

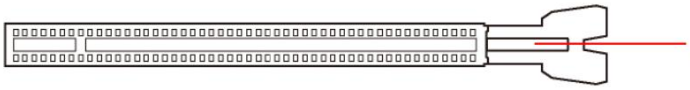
• When installing memory, please install the slot close to the CPU first, as following:

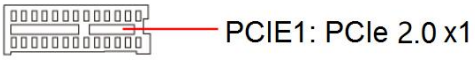
	DIMMD1	DIMMD2	DIMMB1	DIMMB2
1 Module	Y	--	--	--
2 Modules	Y	--	Y	--
4 Modules	Y	Y	Y	Y

("Y"=Install memory, "- -"=No Memory)

Install Expansion Card

The motherboard provides a PCI Express 3.0 x16 and PCI Express 2.0 x1 expansion slot. Place the expansion card in an available PCI Express slot and press the expansion card until it is fully inserted into the slot.

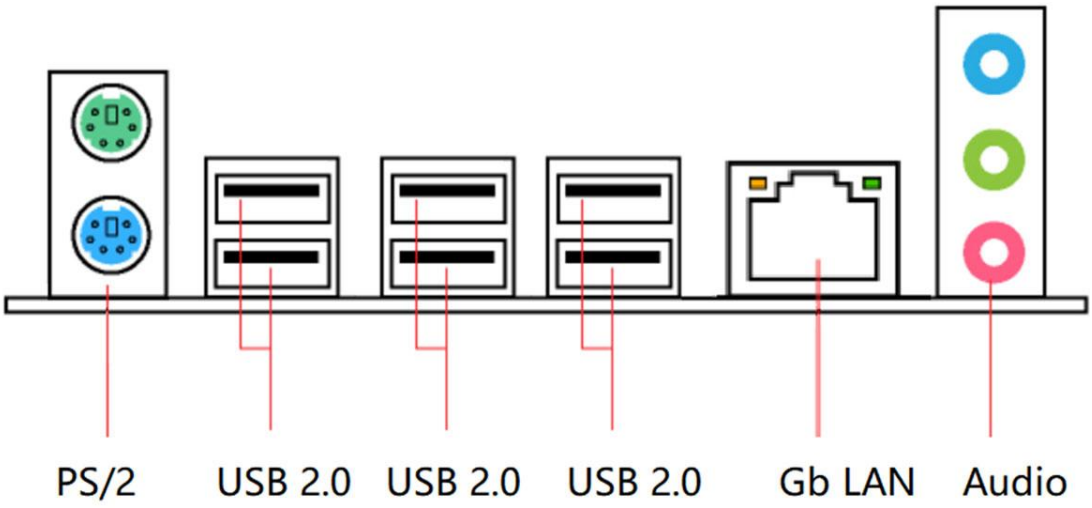




Important!

• When adding or removing expansion cards, always turn off the power supply and unplug the power supply power cable from the power outlet to prevent hardware damage.
• If the expansion card is not installed correctly, it may cause a short circuit throughout the metal pins, which could burn out the expansion card or the motherboard.

Back Panel Connector



PS/2 Port

The PS/2 port of the mouse is green, and the PS/2 port of the keyboard is blue..

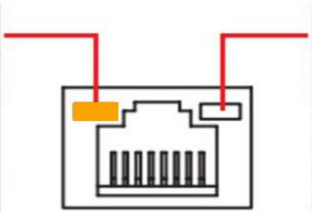
USB 2.0 Port

It comes with 6pcs USB 2.0 interfaces, those USB ports with 480Mbps fast speed and hot-swappable function allow you to connect multiple USB 2.0 devices.

RJ45 LAN Port

The RJ45 Ethernet port features a Realtek RTL8111H chip and provides internet connection at up to 1000Mbps/s data rate.
The following describes the states of how the LAN port LEDs work.

Link/Activity LED	
Status	**Description**
Off	No Link
Yellow	Linked



Speed LED	
Status	**Description**
Yellow	10 Mbps connection
Green	1000 Mbps connection

Audio Port

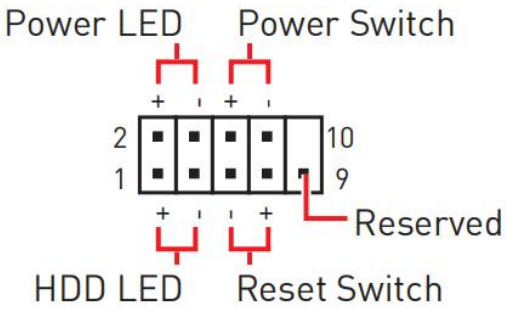
Line-in Port
The line in jack. Use this audio jack for line in devices such as an optical drive, walkman, etc.

Line-out Port
The line out jack.

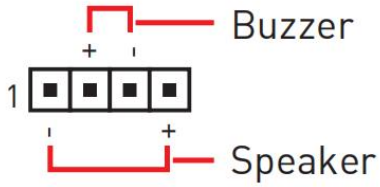
Mic-in Port
The Mic in jack.

Internal Connector

F_PANEL1 Connector

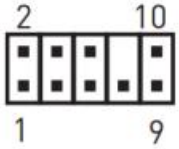


SPK1 Connector



F_AUDIO1 Connector

This audio connector allows you to connect audio jacks on the front panel.



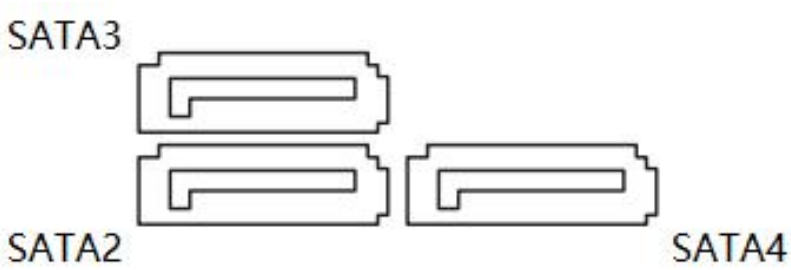
1	MIC L	2	Ground
3	MIC R	4	NC
5	Head Phone R	6	MIC Detection
7	SENSE_SEND	8	No Pin
9	Head Phone L	10	Head Phone Detection

Important!

• An incorrect connection between the module connector and the motherboard header will make the device unable to work or even damage it.

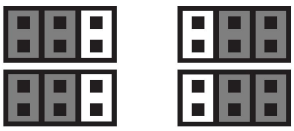
SATA2-SATA4: SATA Connector

SATA2-SATA4: 3Pcs SATA 2.0 Connectors; these SATA II connectors are SATA 3Gb/s interface ports. Each SATA connector supports a single SATA device.

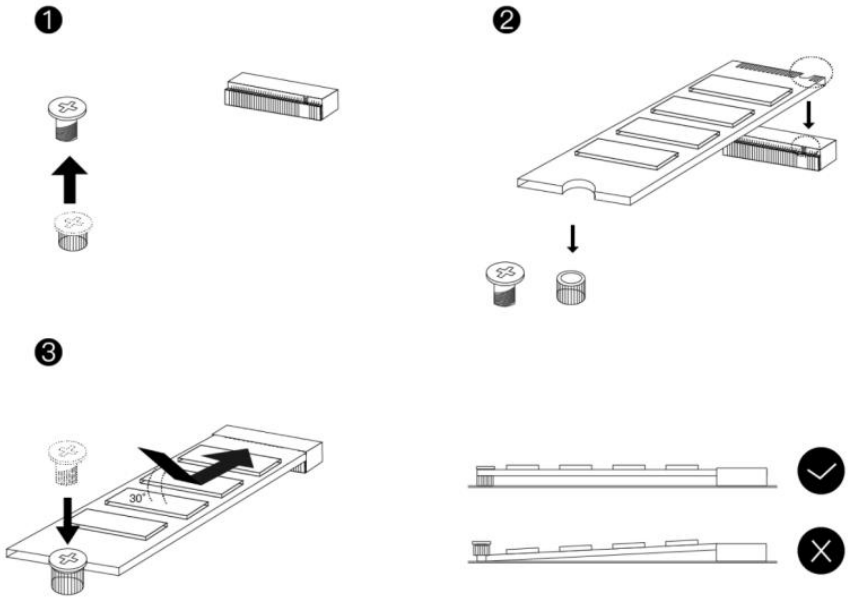


M.2 Slot

This motherboard has 1 M.2 slot, support NVME M.2/NGFF M.2 SSD. Adjust the position of the jumper cap to switch the M.2 mode.



Insert your M.2 SSD into the M.2 slot at a 30-degree angle. Secure the M.2 SSD in place with the screw.



JCMOS1: Clear CMOS

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


Open: Normal


Short: Clear CMOS

Important!

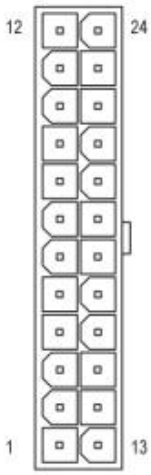
• Always turn off the computer and unplug the power cord from the power outlet before discharging.

ATXPWR1, PW1: Power Connector

Motherboard and CPU Power Connectors: With the use of the power connector, the power supply can provide enough stable power to all the components on the motherboard. Before plugging the power connector, make sure the power supply is turned off and all devices are properly installed.
24 PIN for motherboard power supply.
8 PIN for CPU power supply.

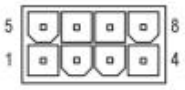
Important!

• It is recommended that a power supply that can withstand high power consumption be used (at least 500W). If a power supply does not provide the required power, the result can lead to an unstable or unbooted system.



ATXPWR1

1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	Ground
4	+5V	16	PS-ON
5	Ground	17	Ground
6	+5V	18	Ground
7	Ground	19	Ground
8	Power OK	20	NC
9	5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Ground

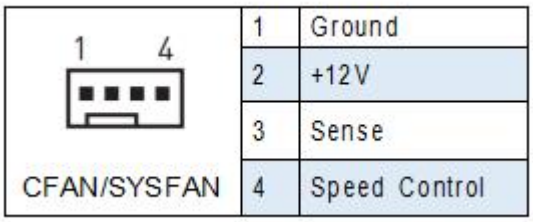


PW1

1	Ground	5	+12V
2	Ground	6	+12V
3	Ground	7	+12V
4	Ground	8	+12V

CPU_FAN1, CPU_FAN2, P_FANA: Fan Connector

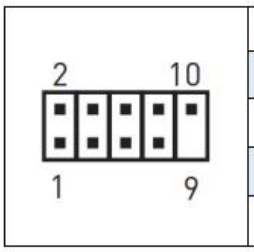
CPU_FAN1 and CPU_FAN2 is a interface for CPU Cooler. The 4pin fan has PWM intelligent speed regulation function, which can intelligently control the fan speed based on load and temperature changes.
P_FAN1 is a 2-pin MOS tube-cooling fan interface, and you can choose to use an extra 2-pin 5V cooling fan to enhance the cooling effect. (Fan not included)



1	Ground
2	+12V
3	Sense
4	Speed Control

F_USB2, JUSBA1: USB Connector

F_USB2: Front USB 2.0 Connector, with USB 2.0 specification. This header allows you to connect USB 2.0 ports on the front panel.



1	VCC	2	VCC
3	USB0-	4	USB1-
5	USB0+	6	USB1+
7	Ground	8	Ground
9	No Pin	10	NC

JUSBA1: It looks like USB 3.0, but it is USB 2.0 specification.

BIOS Setting

BIOS (Basic Input and Output System) records the hardware parameters of the system in the CMOS on the motherboard. BIOS identifies, configures, tests, and connects computer hardware to the OS immediately after a computer is turned on..
Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters, loading the operating system, etc. BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features.
When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS.

Important!

• Because BIOS flashing is potentially risky if you do not encounter problems using the current version of BIOS, it is recommended that you not flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction. We are not responsible for any motherboard issues caused by unauthorized BIOS Flashing.

BIOS Setup

The default settings offer optimal performance for system stability in normal conditions. Using the default settings is recommended (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in the system's failure to boot.

Important!

• As we know, the BIOS is regularly updated for better system performance. But it may be slightly different from the previous BIOS setting; therefore, we do not recommend updating immediately, the manual is just for reference.

Enter BIOS Setup

When the computer is turned on, BIOS enters the self-test process.
The following message will display after the self-test is completed: Press the " DEL " key to enter the BIOS Setup Menu. Or use the “ Quick Boot Key” to press the F11.

If this message disappears before you press the <DEL> key, you can turn it off and then turn on your computer or press <Reset> on the case to restart your computer. You can also press <Ctrl>+<Alt>+<Delete> at the same time to restart your computer.

Important!

• Functions may vary depending on the product you have. (If you have any troubles, please feel free to contact us.

Reset BIOS

When you need to restore the default BIOS settings to resolve certain issues, the following step for quick reset the BIOS:
· Short the Clear CMOS jumper on the motherboard.

Important!

• Be sure the computer is off before clearing CMOS data. Please refer to the Clear CMOS jumper section for resetting BIOS.

Frequently Asked Questions (FAQ)

Can't Boot

That means pressing the boot button, but the computer does not respond, the fan does not rotate, and the indicator light does not light. There are seven ways to troubleshoot as below:
1. Clear the CMOS jumper.
2. Check if the CPU is compatible with the motherboard.
3. Check if the motherboard's power and CPU power supply are plugged in, and if the case power switch is turned on or off.
4. Check if the system panel power-on cable is plugged in properly.
5. Check if the power supply you used is in good condition.
6. Remove the graphics card, hard disk, USB, and other devices, and then try to boot (it is best to use metal objects to directly short the switch pins so that you can rule out the chassis switch problem).
7. Replace other CPUs and try again.

Start-up and then Shutdown

That means pressing the power button and the fan will immediately turn off after rotating once only; And there are five ways to troubleshoot as below:
1. Clear the CMOS jumper;
2. The CPU model used is not compatible;
3. Replace and troubleshoot if the CPU is damaged ;
4. Replace other memory;
5. Remove the graphics card, hard drive, and USB device and test again.

Computer Keeps Restarting

That means your computer automatically restarts or endlessly falls into the reboot loop. There are five ways to troubleshoot as below:
1. Clear the CMOS jumper;
2. Check if the CPU is compatible with the motherboard.
3. To check if the CPU is defective or not. (Replace a new one);
4. Replace the RAM and check if the RAM is bad or not compatible;
5. Remove the graphics card, hard disk, USB, and other devices, and test again.

No Display

There are two states for monitor no display as below:
State①: The fan is rotating, press the Caps Lock key, but the Caps Lock indicator of the keyboard does not respond. And there are five ways to troubleshoot as below:
1. Clear the CMOS jumper;
2. Check if the motherboard's power supply and the CPU power supply are plugged in;
3. Check if the memory stick is installed in the wrong slot; cos some motherboard's memory slots can not be randomly inserted, contact us for help, please;
4. Check if the CPU and memory model is compatible with the motherboard;
5. Replace other CPUs;
6. Replace other memory.

State②: The fan is rotating, press the Caps Lock key, and the Caps Lock indicator of the keyboard lights up. And there are five ways to troubleshoot as below:
1. Check if the monitor is turned on;
2. Check if the monitor display cable is plugged in (DP, HDMI, DVI, and VGA);
3. In the absence of a graphics card, for example, CPUs with the suffix F and Intel Xeon series CPUs do not support integrated graphics, and to use them normally, a video graphics card needs to be installed;
4. Please check if the display data cable is plugged in the correct position; If a separate graphics card is not installed, the data cable is connected to the display interface of the motherboard; If an independent graphics card is installed, the data cable should be plugged into the display interface of the graphics card;
5. Replace the data cable connected to the monitor;
6. Replace a new graphics card and test again.

Have the Blue Screen or Crash

There are six ways to troubleshoot as below:
1. To check if the motherboard's heat dissipation is normal. (For example, if the CPU cooling fan is working normally? If the base of the cooler and the CPU are tightly fitted? If the thermal paste is applied, etc.)
2. Replace the new CPU.
3. Replace the new memory.
4. Replace the new hard disk.
5. Replace the new system.
6. Replace the new power supply and test again.