

MACHINIST[®]

H81M-PRO-S1

User's Manual

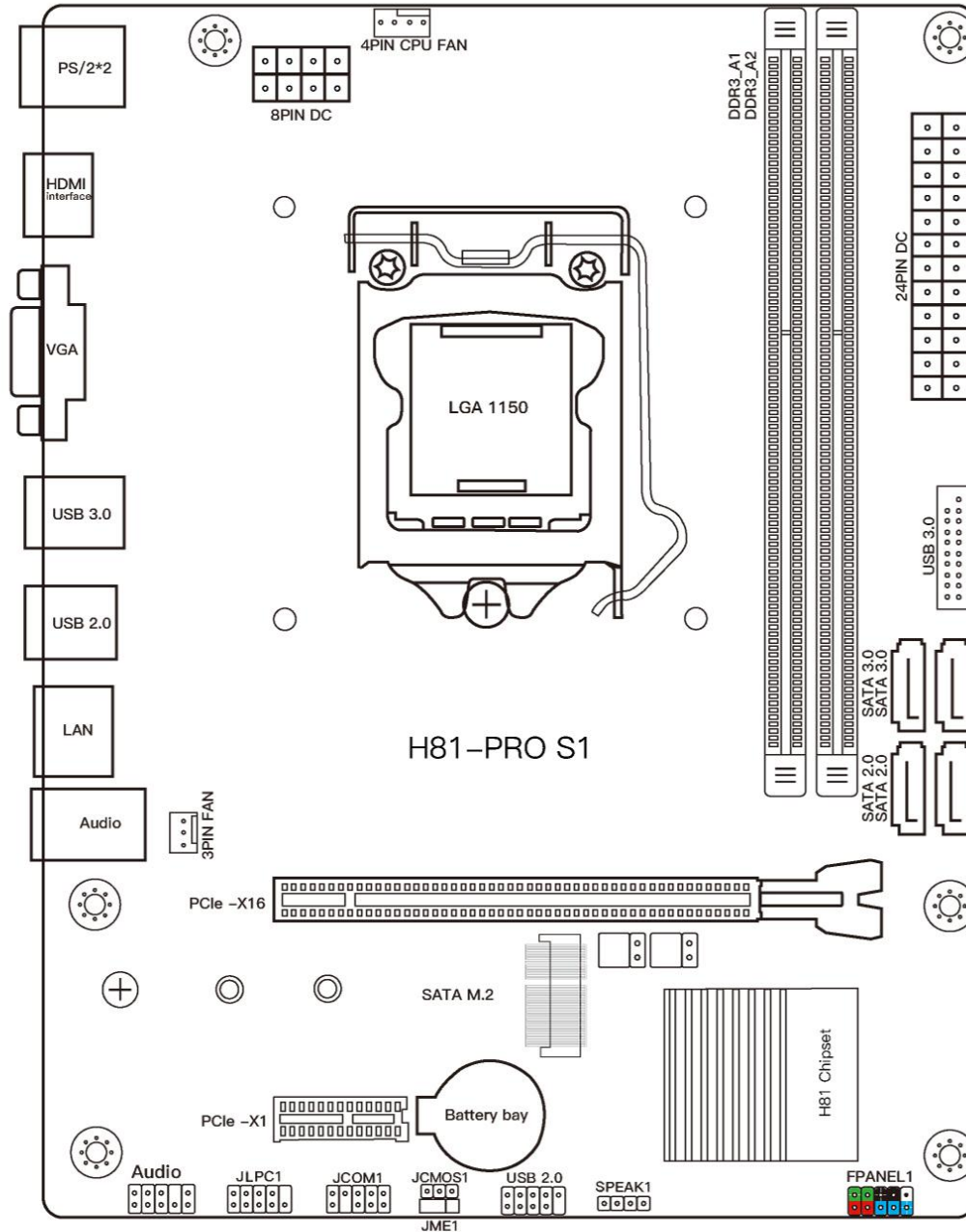
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Specifications

H81M PRO			
Processor	Supports Intel 4th generation Core i3/i5/i7, Xeon E3/V3 series, Celeron G series and Pentium G series processors.		
Southbridge	H81 Chipset		
RAM	Technology	Dual channel DDR3	
	Maximum Capacity	32GB (16GB*2)	
	Memory Slot	2 * DDR3	
Rear I/O	PS/2	Green: mouse. Purple: keyboard	
	Display Interface	1 * HDMI, 1 * VGA	
	USB	2 * USB 2.0; 2 * USB3.0	
	Ethernet	1 * Gigabit LAN	
	AUDIO	1 (Mic-in, Line-out、Line-in)	
Internal connector	CFAN	1 * 4PIN	
	SFAN	1 * 3PIN	
	ATXPWR Interface	1 * 8PIN Power Socket; 1 * 24PIN Power Socket	
	USB2.0(front)	1	
	USB3.0(front)	1	
	M.2(SATA)	1	
	SATA Interface	4 (2 * SATA3.0; 2 * SATA2.0)	
	JAUDIO(front)	1	
	JCOM (front)	1	
	JCMOS Port	1	
	PCIe	1 * PCIe x16; 1 * PCIe x1	
	JPEAK1	1	
Environment	Temperature Range	Working Environment	Storage Environment
		Temperature: 0~50°C Humidity: 5%~95%	Temperature: -20~70°C Humidity: 5%~95%
Physical Size	Size	220mm*170mm	

Overview of Components



Package List:

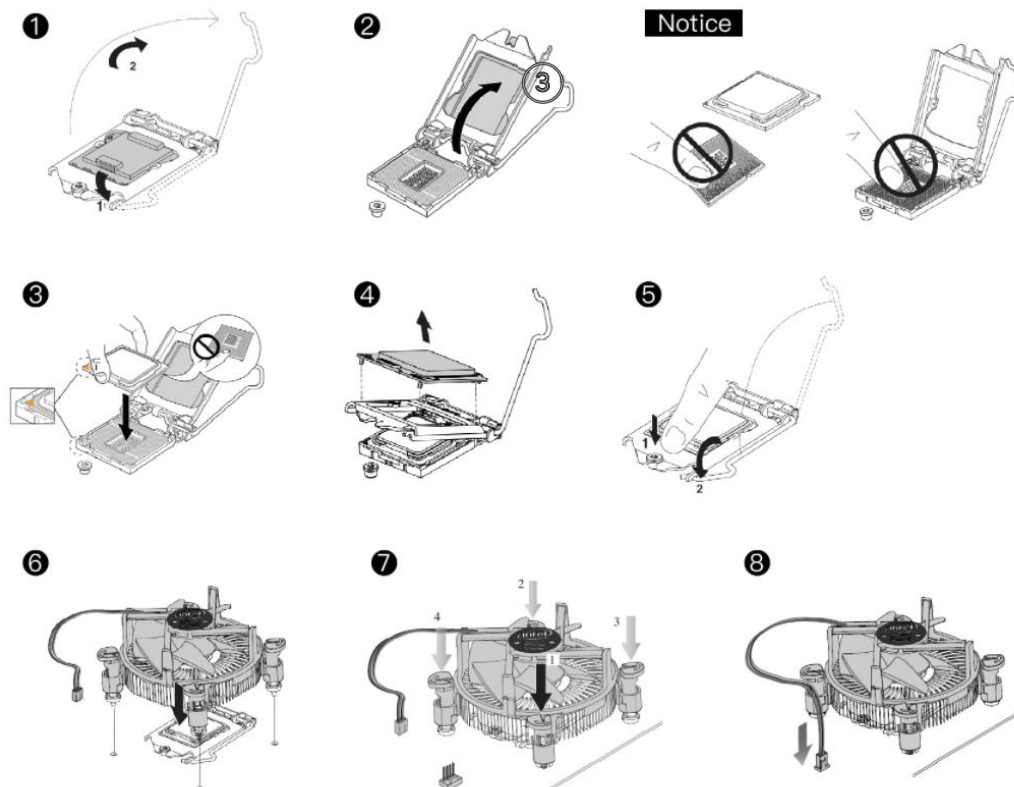
H81M Pro Motherboard * 1

SATA Cable * 1

I/O Blocking * 1

Install CPU & Fan

Please install the CPU into the CPU socket as shown below.



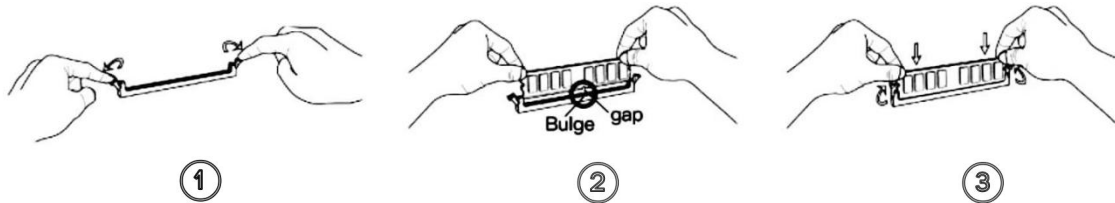
Important

- 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 heatsink 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 heatsink's 4pin fan power connector to the 4pin CPU fan header on the motherboard.

Install Memory

The motherboard provides 2 DDR3 DIMM slots 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.



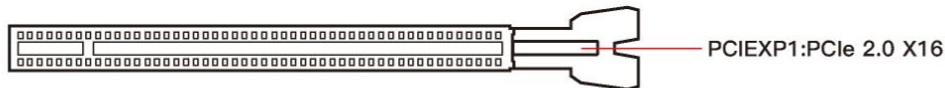
Important

- 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 two memory sockets and supports Dual Channel Technology. Dual-Channel mode cannot be enabled if only one memory module is installed.

Install Expansion Card

The motherboard provides a PCI Express 2.0 x16 expansion slot.

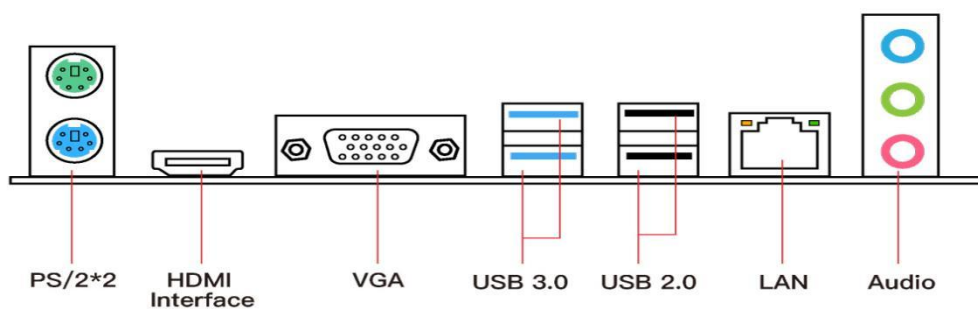
Place the expansion card in an available PCI Express slot and press the expansion card until it is fully inserted into the slot.



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 Connectors



USB 2.0 Port

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

VGA Port

VGA (Video Graphics Array) supports analog video signal transmission, high resolution, fast display rate and rich colors.

HDMI Port

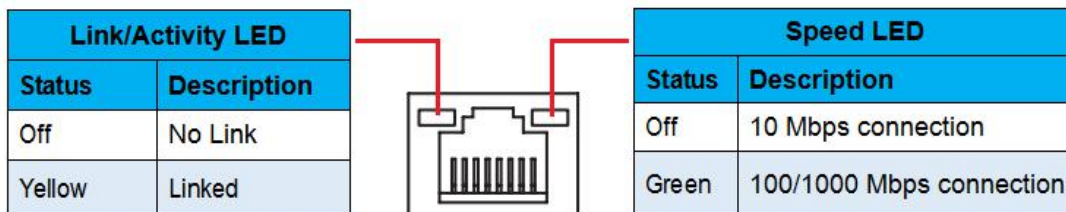
The HDMI port supports 4K and 1080px. You can use this port to connect your HDMI-supported monitor.

USB 3.0 Port

The USB 3.0 supports the USB 3.0 specification and is compatible to the USB 2.0 specification. Use this port for USB devices.

RJ45 LAN Port

The Gigabit Ethernet LAN port provides Internet connection at up to 1000Mbps/s data rate. The following describes the states of the LAN port LEDs.



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

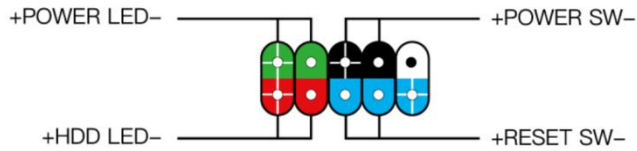
The Mic in jack.

PS/2 Port

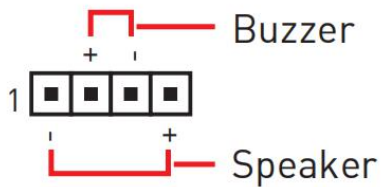
This PS/2 port can be connected to a keyboard or mouse. Green: mouse. Purple: keyboard

Internal Connectors

F_PANEL1 Connector



SPEAK1 Connector



JAUDIO1 Connector

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

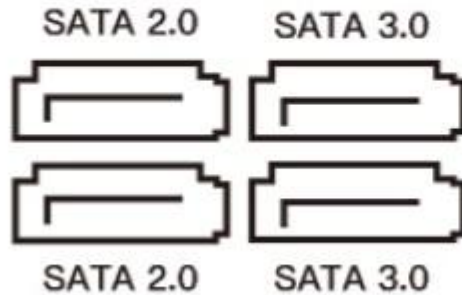
	1	MIC L	2	Ground
	3	MIC R	4	NC
	5	Head Phone R	6	MIC Detection
	7	SENSE_SEND	8	No Pin
	9	Head Phone L	10	Head Phone Detection

Important

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

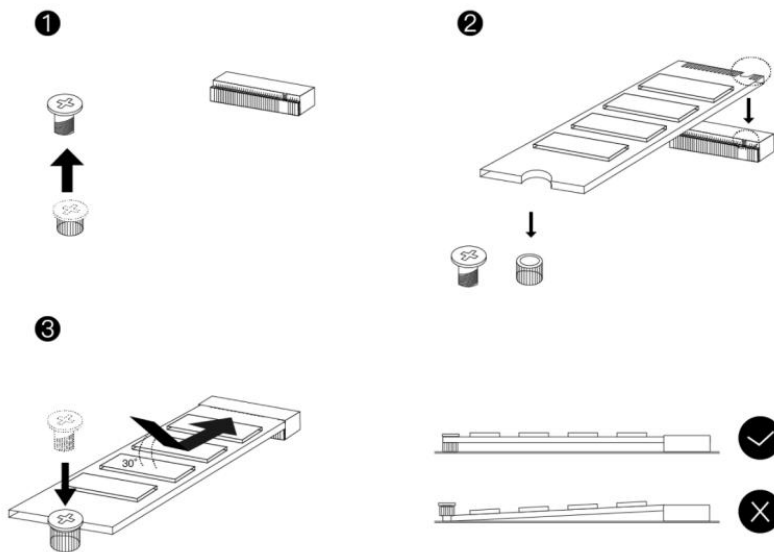
SATA1~2: SATA 3.0 Connectors; SATA3~4: SATA 2.0 Connectors

These SATA 3.0 connectors are SATA 6Gb/s interface ports. Each SATA connector supports a single SATA device.



M.2 Slot

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: CMOS Discharge



1.JCOMS1(Initial state)
The initial state covers "1" and "2". If you want to discharge, please go to the next step.



2.JCOMS1(Discharge)
Pull out the cap to cover "2" and "3", and wait for about 3 minutes for the discharge to complete.



3.JCOMS1(restitute)
After the discharge is completed, restore the initial state of the first step

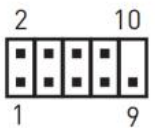


Important

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

JCOM1: Serial Port Connector

The COM connector can provide one serial port via an optional COM port cable.

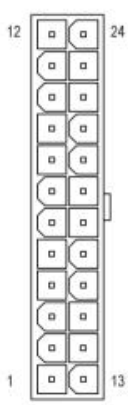
	1	DCD	2	SIN
	3	SOUT	4	DTR
	5	Ground	6	DSR
	7	RST	8	CTS
	9	RI	10	NC

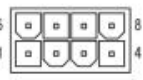
ATXPWR1, JATXPWR1: Power Connectors

With the use of the power connector, the power supply can provide enough stable power to all the components on the motherboard. Before connecting the power connector, make sure the power supply is turned off and all devices are properly installed.

Important

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

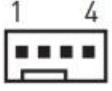
 <p>ATXPWR1</p>	1	+3.3V	13	+3.3V
	2	+3.3V	14	-12V
	3	Ground	15	Ground
	4	+5V	16	PS-ON
	5	Ground	17	Ground
	6	+5V	18	Ground
	7	Ground	19	Ground
	8	Power OK	20	NC
	9	5VSB	21	+5V
	10	+12V	22	+5V
	11	+12V	23	+5V
	12	+3.3V	24	Ground


 <p>JATXPWR1</p>	1	Ground	5	+12V
	2	Ground	6	+12V
	3	Ground	7	+12V
	4	Ground	8	+12V

CPU_FAN1, SYS_FAN1~3: Fan Connectors

CPU_FAN is a interface for CPU radiator. The 4pin fan has PWM intelligent speed regulation function, which can intelligently control the fan speed based on load and temperature changes.

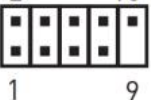
SYS_FAN is the system cooling fan interface, which is generally connected to the case fan. The 3pin fan has no PWM adjustment capability.

 CPU_FAN	1	Ground
	2	+12V
	3	Sense
	4	Speed Control

 SYS_FAN	1	Ground
	2	+12V
	3	Sense

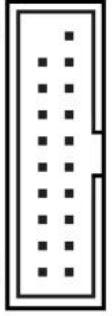
JUSB2, JUSB4: USB 2.0 Connectors

The headers conform to USB 2.0 specification. This connector 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

FUSB3: USB 3.0 Connector

The header conforms to USB 3.0 and USB 2.0 specification. This connector allows you to connect USB 3.0 ports on the front panel.

	1	VBUS	11	D2+
	2	SSRX1-	12	D2-
	3	SSRX1+	13	Ground
	4	Ground	14	SSTX2+
	5	SSTX1-	15	SSTX2-
	6	SSTX1+	16	Ground
	7	Ground	17	SST2+
	8	D-	18	SST2-
	9	D+	19	VBUS
	10	NC	20	No Pin

BIOS Setup

BIOS (Basic Input and Output System) records 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 and 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.

BIOS Setup

The default settings offer the optimal performance for system stability in normal conditions. It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in the system's failure to boot.



Important

- BIOS items are regularly updated for better system performance. The items may be slightly different from the latest BIOS; therefore, the description is for reference only.

Enter BIOS Setup

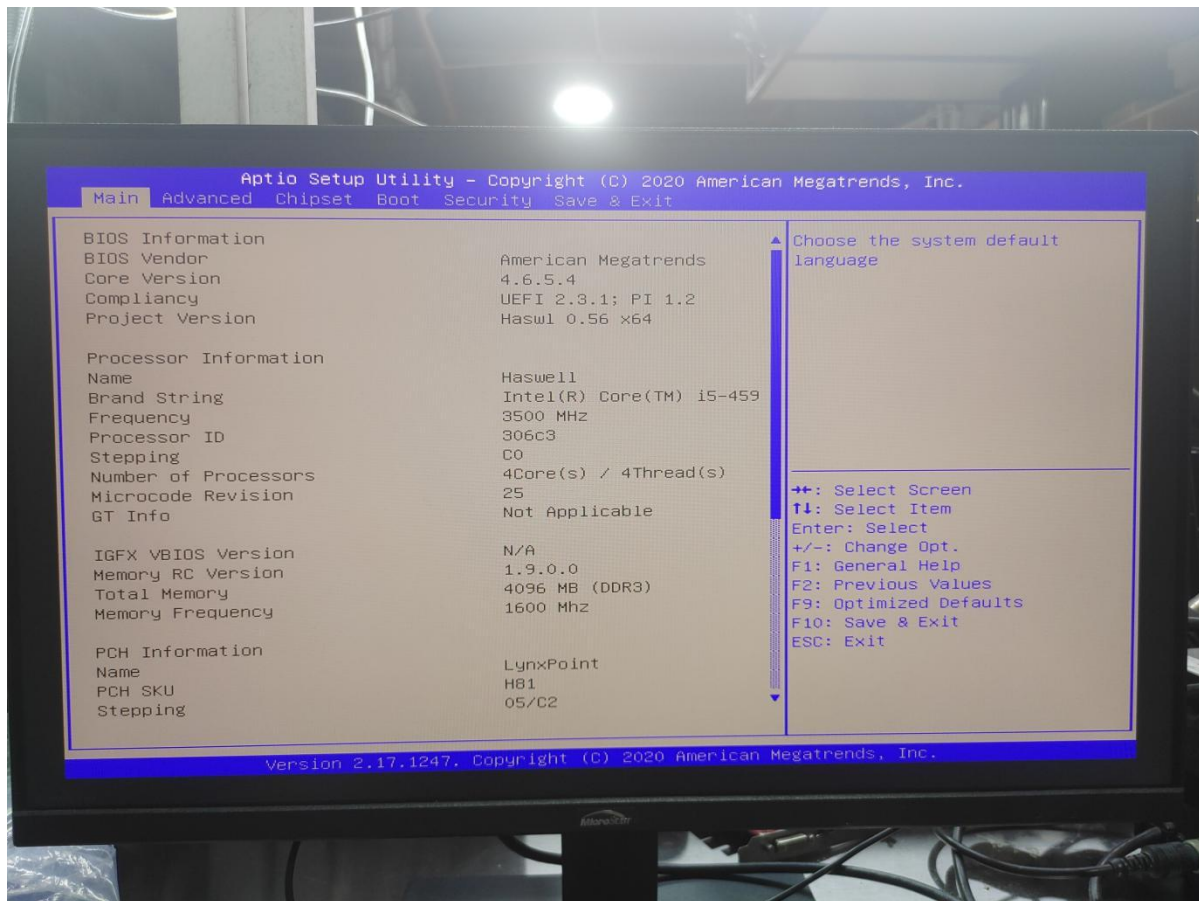
Entering BIOS Setup

When the computer starts up, BIOS enters the self-test process. When the self-test is completed, the following message is displayed: Press DEL key to enter Setup Menu. At this time, Press <Delete> key to enter the BIOS setup.

If this message disappears before you press 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.

It is recommended to repeatedly press the "Del" key immediately after starting the computer to ensure that the computer can enter BIOS mode.

Current Version



Important

- Functions may vary depending on the product you have.

Reset BIOS

When you need to restore the default BIOS settings to resolve certain issues, there are several ways to reset the BIOS:

- Go to BIOS and press F6 to load optimized defaults.
- 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.