



Nano-N13 L2 Fanless Computer

product specification



Low-power, fanless
embedded complete system

To ensure your personal safety and prevent property damage, please pay attention to the instructions contained in this manual. Instructions relating to property damage do not bear a warning triangle. Warning instructions are listed below, arranged in descending order of hazard level.

 warn

This indicates that failure to take appropriate measures may result in irreparable damage to the machine.

 pay attention to

This indicates that ignoring the relevant warnings may lead to undesirable outcomes or situations.

The products or systems covered by this document may only be operated by qualified personnel who meet all relevant operational requirements. Operation must comply with the instructions provided in the accompanying documentation, particularly the safety and warning sections. Qualified personnel, possessing the requisite training and experience, can identify the risks associated with this product/system and mitigate any potential hazards.

 warn

Yanling Industrial Control products are intended for use only in the applications specified in the product catalog and related technical documentation. If products or components from other manufacturers are to be used, the recommendation and authorization from Yanling Industrial Control must be obtained. Proper transportation, storage, assembly, fitting, installation, commissioning, operation, and maintenance are essential

prerequisites for the safe and proper functioning of the products. The permitted environmental conditions must be ensured, and the instructions contained in the relevant documentation should be carefully followed.

disclaimer

The Company reserves the right to make amendments to this manual without prior notice should any subsequent changes to the product occur. The Company shall not be liable for any direct, indirect, intentional or negligent damage or hazards arising from improper installation or use of this product.

Before placing an order, please consult your distributor to confirm whether the product's specifications meet your requirements.

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Warranty Clause:

The product warranty period is one year. Should the user have any additional requirements, such requirements shall be governed by the contract signed by both parties.

For more information, please visit:

Yanling Website: <http://www.ylgkdn.com>

Free Customer Service Hotline: 400-8848-966

catalogue

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1.1 Product Overview

The Nano-N13 L2 is a compact, low-power, fanless embedded computer equipped with Intel® 7th-and 8th-generation Core™ i3/i5 processors. It supports various operating systems, including Windows 7/8/10 and Linux, and accommodates both M.2 interface hard drives (supporting both SATA and NVME protocols) as well as 2.5-inch HDDs, offering user-friendly operation.

The entire unit is manufactured using full-aluminum alloy mold forming technology, featuring a simple structure with excellent dust-proofing, heat dissipation, vibration resistance, and EMC performance; it offers high system reliability and strong environmental adaptability.

1.2 Product Specifications

ho st Ye s fin ge r M ar k	processor	Built-in Intel Core i3-8130U or i5-7200U processor
	Graphics Card Chip	Integrates an Intel HD Graphics 620 core graphics card
	internal storage	Supports one DDR4-2133 MHz SODIMM memory slot; maximum supported capacity: 32 GB
	Network Function	Two RTL8111H 10/100/1000M Ethernet ports are onboard.
	Hard drive	1 M.2 slot (supports both SATA and NVMe protocols), 1 × 2.5-inch HDD
	Extended Interface	Supports one Mini PCIe slot (with optional Wi-Fi/3G/4G connectivity) and one SIM card slot.
	Display Interface	Equipped with an Intel HD Graphics core GPU, supporting DP and HDMI display connections.
	USB port	Supports 4 USB 3.0 ports and 2 USB 2.0 ports.
	COMmou th	Supports two RS232 COM ports
	outline	179 * 127 * 55.5mm

	dimension	
	weight	1.13 kg
	supply electricity	DC 12V direct current power supply
	working temperature	0°C – +40°C (机械硬盘); -10°C – +50°C (solid-state drives); surface air flow

2.1 Transportation

Packaged products may be transported by any means of transport to any destination; however, during long-haul transportation, they shall not be loaded into open ship compartments or cargo holds; during intermediate transshipment, they shall not be stored in open-air warehouses; during transportation, they shall not be transported together with flammable, explosive, or corrosive materials (whether by the same vehicle or any other means of transport); furthermore, the products shall not be exposed to rain, snow, liquid substances, or mechanical damage.

2.2 Storage

Products shall be stored in their original packaging boxes. The warehouse environment for storing products shall have an ambient temperature ranging from 0°C to 40°C and a relative humidity ranging from 20% to 85%. The warehouse shall be free from any harmful gases, flammable or explosive materials, or corrosive chemicals; furthermore, it shall be free from strong mechanical vibration, impact, or strong magnetic fields. The packaging boxes shall be placed at least 10 cm above the ground and at least 50 cm away from walls, heat sources, cold sources, windows, or air intake openings.

Be cautious of the risk of damaging the equipment! When transporting machinery in cold weather conditions, be mindful of extreme temperature fluctuations. In such cases, ensure that no water droplets (condensation) have formed on or inside the equipment. If condensation has formed on the equipment, wait at least 12 hours before powering on the device.

2.3 Unboxing and Inspection of Delivered Equipment

When unpacking the equipment, please note the following points:

- We recommend not discarding the original packaging materials; please keep them for future use when transporting the equipment again.
- Please store the document in a secure location; it will be required during the initial device debugging process.
- Inspect the delivered equipment to determine whether any significant damage has occurred during transportation.
- Verify whether the goods shipped include the complete equipment and any accessories you have ordered separately. In the event of any discrepancies or issues, Transportation damage – please contact our customer service team.

2.4 Installation Method

☐ 19-inch shelved ☒ Desktop ☒ Embedded ☒ Wall-mounted ☐ Portable handheld

3.1 Pre-connection Precautions



Connected or built-in peripheral devices shall not be connected to devices with opposite polarity.



This equipment shall only be operated on a properly grounded power supply network; operating it on a non-grounded or impedance-grounded power supply network is strictly prohibited.

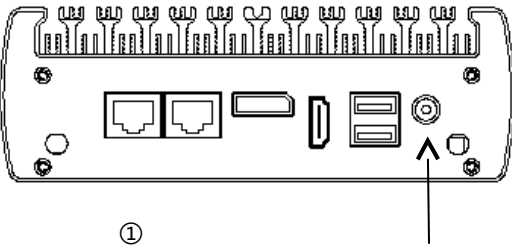
 warn

The rated voltage of the equipment in use must comply with the power supply characteristics of this product.

 pay attention to

Only peripheral devices that are certified as suitable for industrial applications may be connected. During machine operation, hot-swappable I/O modules (USB) may be connected; I/O devices without hot-swap functionality may only be connected after the device has been disconnected from power.

3.2 Connect the device to a power source

How to connect the device to a power source	diagrammatic sketch
Connect the DC 12V power adapter to Power Input Interface ①, then press the power switch on the front panel of the device; the device will boot up, and the blue power indicator light will illuminate.	

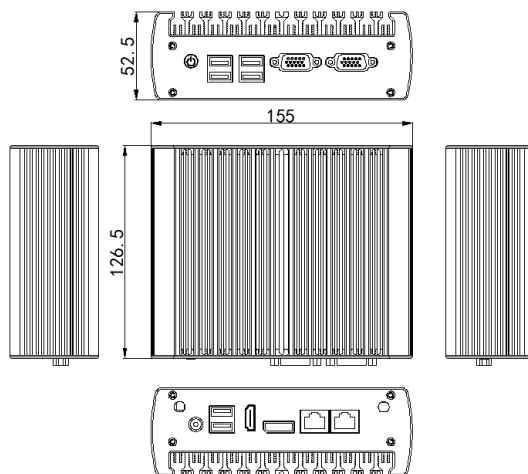
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The ON/OFF button signal does not cut off the PC power supply!

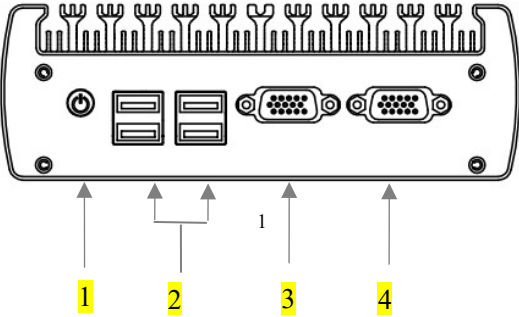
4.1 Product Appearance Diagram

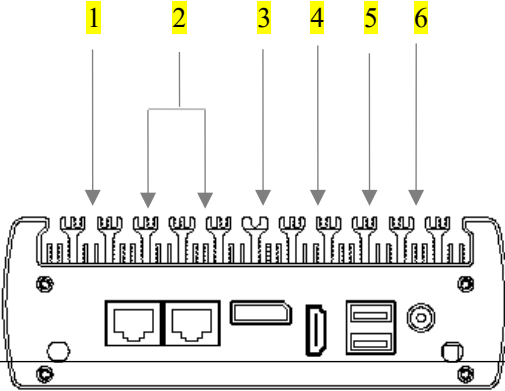


4.2 Product Dimension Drawing



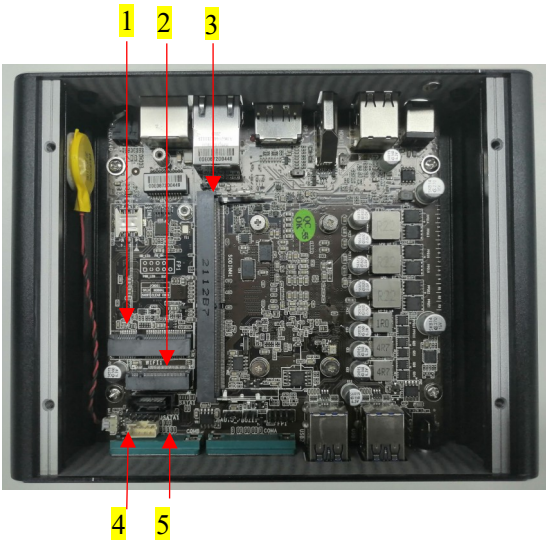
4.3 External Interfaces

Machine Front View	number	Interface Name
	Power switch button	
	2	USB3.0
	3	COM2
	4	COM1
	remarks	

Machine Rear View	number	Interface Name
	1	Audio Dual-Function Interface
	2	2 RJ45 network interfaces
	3	DP Interface
	4	HDMI port
	5	2 USB 2.0 ports
	6	DC 12V power supply interface

	remarks	
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4.4 Internal Expansion Interface

Internal Expansion Interface	number	Interface Name
	1	Mini PCIe interface
	2	M.2 interface
	3	Laptop memory slot
	4	SATA Power interface
	5	SATA interface
	remarks	

4.5 Status Indicator Light

show	meaning	LED	description
POWER	Machine Status Display	Not lit	Device turned off or power supply disconnected

		Always On	Machine in operation
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4.6 Install Internal Components

1. Remove the four M3×6 screws from the chassis base plate (as shown in the figure below), then take off the base plate to install components such as RAM, the Wi-Fi module, or an M.2 SSD.

1. Remove the four M3×6 screws from the chassis base plate (as shown in the figure below), then take off the base plate to install components such as RAM, the Wi-Fi module, or an M.2 SSD.



2. After installing the internal components (as shown in the figure below), cover the chassis base plate and secure it with four M3×6 screws.



This operation is only suitable for customers purchasing the Nano N13 L2 semi-system; customers who have already installed the internal components should not disassemble or assemble the chassis without authorization.

4.7 Pin Definition

Screen printing label	pin	explain	remarks
 FP1	1	HDD_LED+	
	2	PWR_LED+	
	3	HDD_LED-	
	4	PWR_LED-	
	5	RST_GND	
	6	PW_ON	
	7	RST	
	8	PWON_GND	
	9	empty	
 SATA Power	1	+12V	SATA supply electricity
	2	GND	
	3	GND	
	4	+5V	
 USB	1	+5V	Built-in USB connector
	2	Data -	
	3	Data +	
	4	GND	
	5	GND	



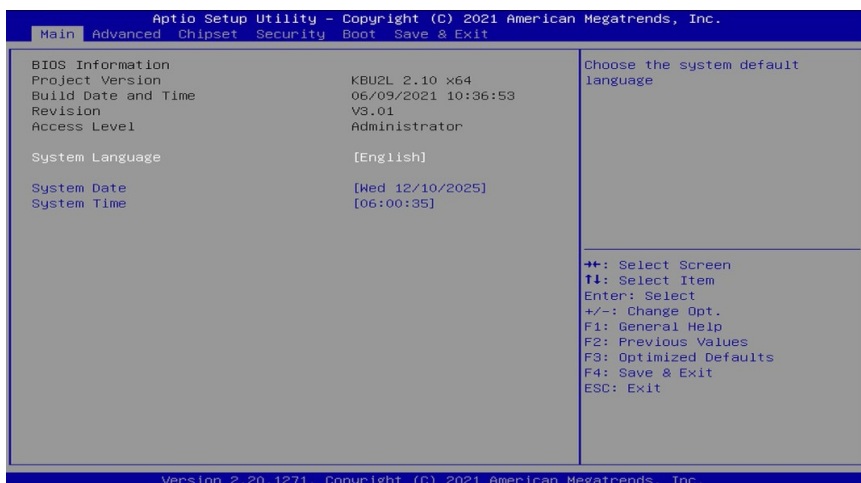
The internal machine wiring has been installed; the cable plugs and screws have been securely fastened with adhesive. Please avoid disassembling the motherboard or making arbitrary jumper settings, as this may cause damage to the motherboard.

V. BIOS Settings

5.1 BIOS Overview

BIOS (Basic Input Output System) contains the most critical basic input/output routines, the POST (Power-On Self-Test) routine, and the system boot routine for the computer. It can read from and write to the CMOS chip to store specific system configuration information; its primary function is to provide the computer with the lowest-level, most direct hardware configuration and control capabilities. As product BIOSes are updated and optimized periodically, the configuration interfaces may vary slightly; the following interface is for reference only.

The BIOS configuration menu includes the following options (for specific BIOS settings, please contact the Yanling Industrial Control Customer Service Hotline):



After powering on the device, press the "Delete" key to access the BOIS configuration interface.

Main: BIOS Information and Date/Time

Advanced: BIOS Advanced Menu Settings

Chipset: Chipset Configuration

Security: Security Settings

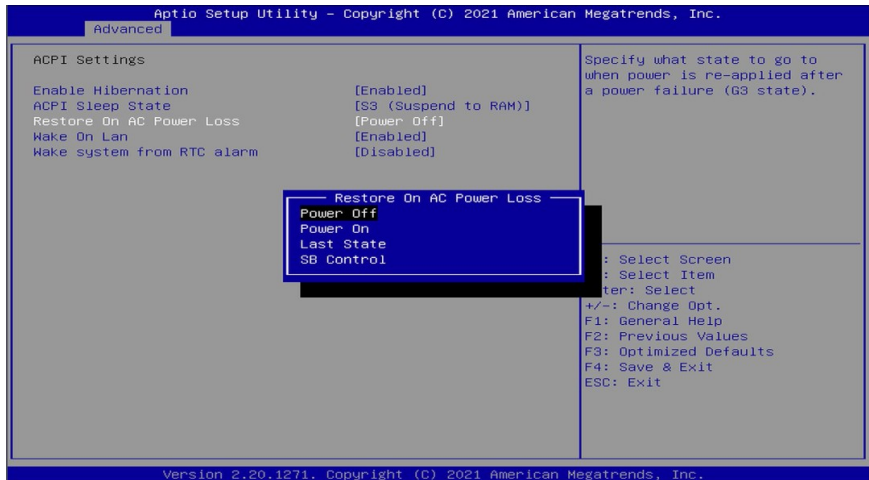
Boot: Boot Options Configuration

Save & Exit: Save & Exit BIOS Settings

5.2 Equipment Power-On Startup Settings

"Advanced" → "ACPI Settings" → "Restore On AC Power Loss" ,

As shown in the figure below



Restore on AC Power Loss – Function Description:

Power Off: After connecting the device to a 12V power supply, press the power button to turn it on;

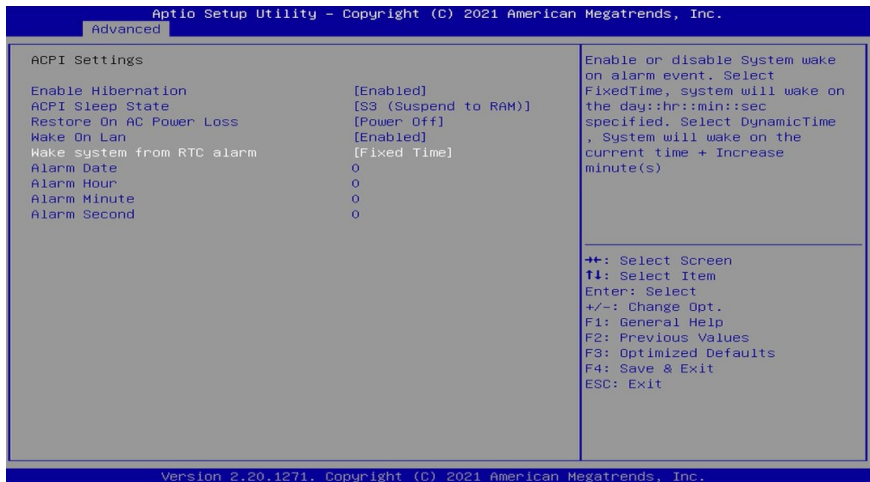
Power On: The device will automatically power on upon being connected to a 12V power supply;

Last State: When the device is powered on with a 12V supply, it determines whether to power on based on the device's previous state value.

5.3 Scheduled Power-On Setting

"Advanced" → "ACPI Settings" → "Wake System From RTC Alarm" → "Fixed Time"

As shown in the figure below



Wake System – RTC Alarm Function Description:

Alarm Date: The wake-up time unit (date); setting it to 0 means "every day".

Alarm Hour: The wake-up time is measured in hours.

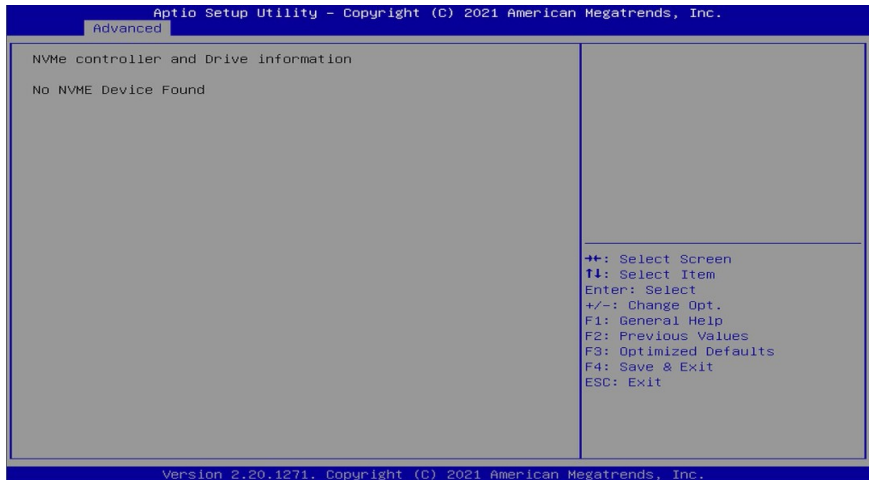
Alarm Minute: The wake-up time is measured in minutes.

Alarm Second: Wake-up time unit – seconds

5.4 NVME Configuration

"Advanced" → "NVME Configuration"

As shown in the figure below

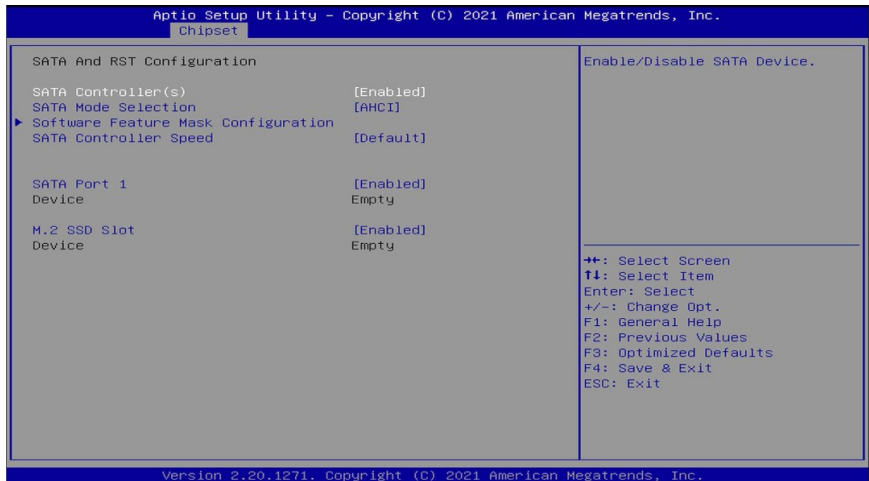


Note: Storage information is displayed only when an NVMe storage device is installed.

5.5 SATA Configuration

"Chipset " → "PCH - IO Configuration" → "SATA And RST Configuration"

As shown in the figure below

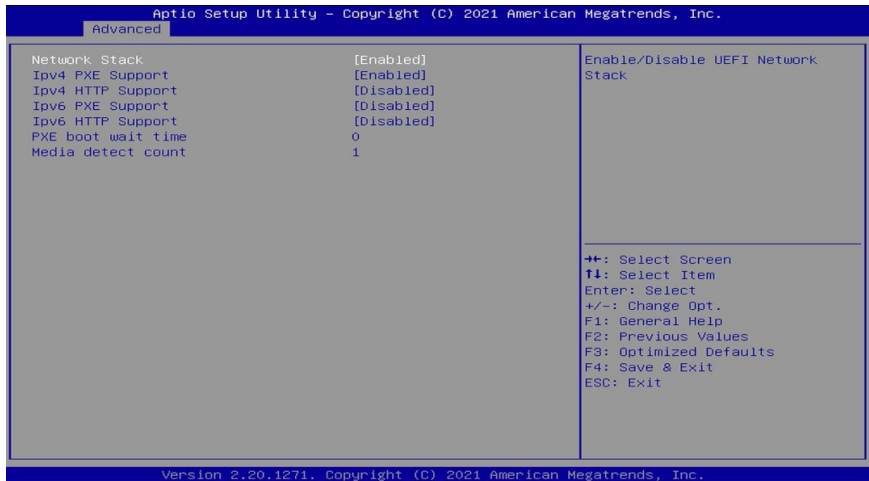


Note: Storage information will only be displayed for storage devices that support the SATA protocol.

5.6 PXE

"Advanced" → "Network Stack Configuration" → "Network Stack"

As shown in the figure below



Network Stack:

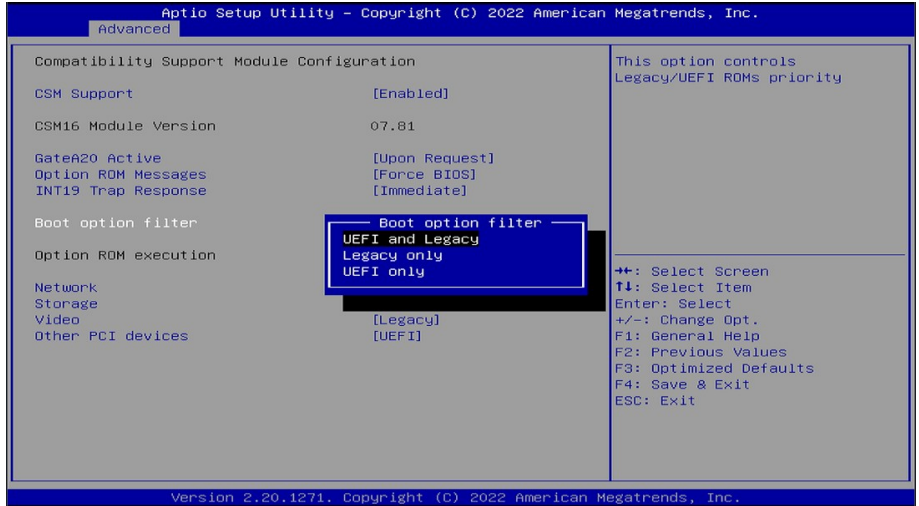
Disabled: Disable PXE

Enabled: Enable PXE

5.7 CSM Compatibility Boot Configuration

"Advanced" → "CSM Configuration" → "Boot option filter"

As shown in the figure below



UEFI and Legacy (Dual Mode):

Supports both UEFI and traditional BIOS boot modes, ensuring compatibility with both new and legacy systems and hardware.

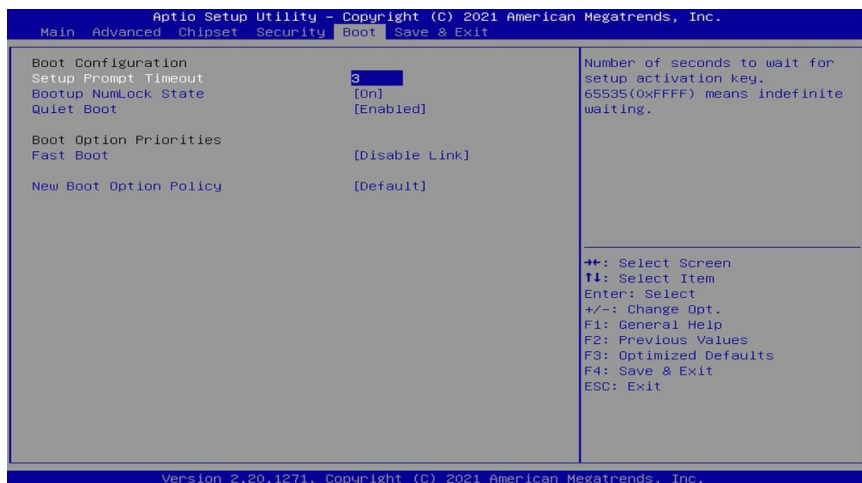
Legacy only (Traditional Mode only):

Only supports traditional BIOS booting; compatible with older systems (e.g., Windows 7) and requires an MBR partition.

UEFI only (UEFI mode only):

Only UEFI booting is supported; this provides fast booting and supports hard drives up to 2 TB in capacity. It requires GPT partitioning and a 64-bit operating system.

5.8 BOOT Boot Configuration



Boot Configuration Function Description:

Setup Prompt Timeout: The duration of the startup logo wait period; time unit: seconds

Bootup NumLock State: The state of the NumLock key on the keyboard at startup.

Quiet Boot: Set to "Enabled" – Turn on the startup logo

Set to "Disabled" to turn off the startup logo



BIOS settings directly impact your computer's performance; incorrect configuration can cause damage to the computer or even prevent it from booting up. Please do not modify BIOS settings arbitrarily, as this may render your computer unusable.

1. When using the machine under normal operating conditions, please ensure it is operated in a vibration-free environment to prevent damage to the hard drive and internal components. 1.

When using the machine under normal operating conditions, please ensure it is operated in a vibration-free environment to prevent damage to the hard drive and internal components.

2. When using the machine, please ensure that the ambient temperature is between -10°C and 50°C.

3. This machine utilizes a housing-based cooling system; to ensure optimal cooling performance, we strongly recommend cleaning the machine's surface every three months. In environments with high dust accumulation, we recommend cleaning the machine's surface once per month.3. This machine utilizes a housing-based cooling system; to ensure optimal cooling performance, we strongly recommend cleaning the machine's

surface every three months. In environments with high dust accumulation, we recommend cleaning the machine's surface once per month. 3. This machine utilizes a housing-based cooling system; to ensure optimal cooling performance, we strongly recommend cleaning the machine's surface every three months. In environments with high dust accumulation, we recommend cleaning the machine's surface once per month.

4. To ensure the efficient and reliable operation of your device, we recommend performing a disk cleanup and defragmentation every three months (for mechanical hard drives). 4. To ensure the efficient and reliable operation of your device, we recommend performing a disk cleanup and defragmentation every three months (for mechanical hard drives).

5. When using the machine's internal slots, we strongly recommend avoiding plugging or unplugging the device while it is powered on to prevent static electricity damage. In the event of

a power outage due to non-human factors, to ensure the machine continues to operate reliably, we strongly advise you to immediately disconnect the power supply and verify that the power grid is stable before restoring power and restarting the machine.

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6. We recommend that machinery be used exclusively for specific purposes and be under the dedicated management of designated personnel.

VI. Common Hardware Faults and Troubleshooting

Methods

order number	fault phenomenon	analysis of causes	Maintenance Method
1	The device does not turn on when the power button is pressed.	The power adapter is not supplying power.	Please securely plug in the three-core power cord or replace the socket position; Replace the power adapter;
		Mainboard damaged	Return to the factory for repair;
2	The monitor shows no image.	The signal input may not be properly connected.	Check whether the computer has booted normally; verify whether the power indicator light on the monitor is lit; check whether the display cable connections are correct;
		The monitor is in power-saving mode.	Press any key on the keyboard
3	Unable to boot into the system upon startup	Hard drive mode is incorrect.	Press the DEL key when powering on to enter the BIOS, change the hard drive mode to the one selected during the system installation, then press F4 to save and exit.
4		Hard drive power cable or data cable damaged	Check whether the power cable and data cable for the hard drive (the hard drive must be pre-installed with a bootable

			operating system) are loose or disconnected.
		Hard drive system files are corrupted.	Use a bootable CD (typically the WINPE system) to boot the computer and check whether the hard drive's operating system is damaged; if necessary, it is advisable to reinstall the operating system.
5	A continuous "beep" sound occurs upon powering on.	No memory detected.	Open the chassis and re-seat the memory modules;
 warn When you need to open the chassis or access the BIOS settings, non-professional users should follow the steps under the guidance of a qualified technician.			