Version 1.0
Published January 2021

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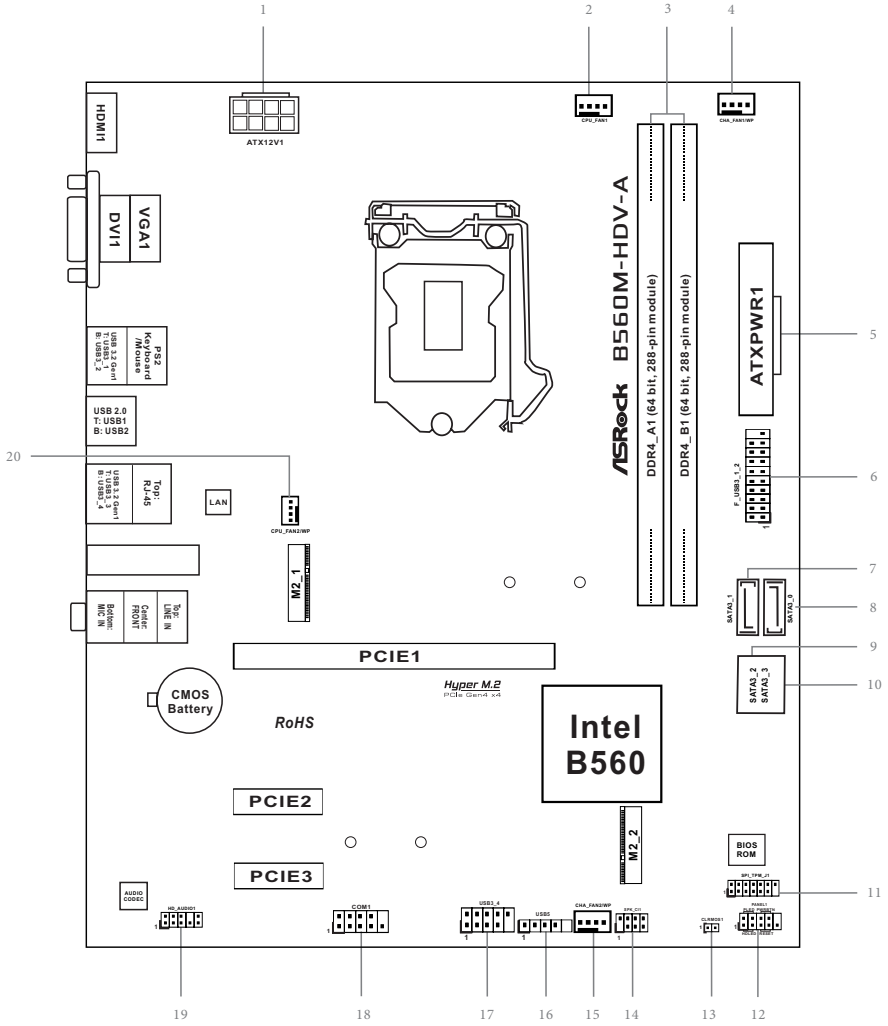
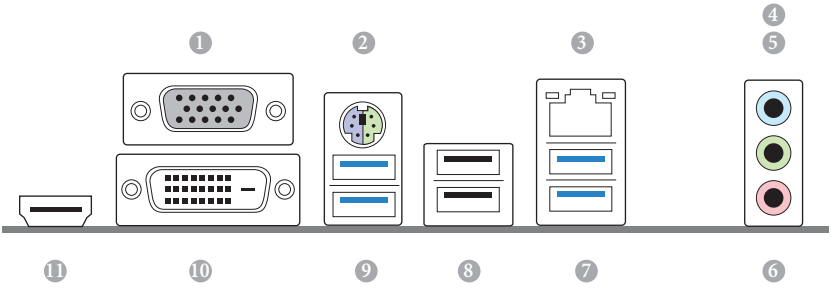
Motherboard Layout



English

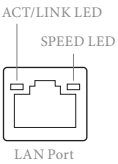
No.	Description
1	ATX 12V Power Connector (ATX12V1)
2	CPU Fan Connector (CPU_FAN1)
3	2 x 288-pin DDR4 DIMM Slots (DDR4_A1, DDR4_B1)
4	Chassis/Water Pump Fan Connector (CHA_FAN1/WP)
5	ATX Power Connector (ATXPWR1)
6	USB 3.2 Gen1 Header (F_USB3_1_2)
7	SATA3 Connector (SATA3_1)
8	SATA3 Connector (SATA3_0)
9	SATA3 Connector (SATA3_2)(Upper)
10	SATA3 Connector (SATA3_3)(Lower)
11	SPI TPM Header (SPI_TPM_J1)
12	System Panel Header (PANEL1)
13	Clear CMOS Jumper (CLRMOS1)
14	Chassis Intrusion and Speaker Header (SPK_CI1)
15	Chassis/Water Pump Fan Connector (CHA_FAN2/WP)
16	USB 2.0 Header (USB5)
17	USB 2.0 Header (USB3_4)
18	COM Port Header (COM1)
19	Front Panel Audio Header (HD_AUDIO1)
20	CPU/Water Pump Fan Connector (CPU_FAN2/WP)

I/O Panel



No.	Description	No.	Description
1	D-Sub Port	7	USB 3.2 Gen1 Ports (USB3_3_4)
2	PS/2 Mouse/Keyboard Port	8	USB 2.0 Ports (USB1_2)
3	LAN RJ-45 Port*	9	USB 3.2 Gen1 Ports (USB3_1_2)
4	Line In (Light Blue)**	10	DVI-D Port
5	Front Speaker (Lime)**	11	HDMI Port
6	Microphone (Pink)**		

** There are two LEDs on each LAN port. Please refer to the table below for the LAN port LED indications.*



Activity / Link LED		Speed LED	
Status	Description	Status	Description
Off	No Link	Off	10Mbps connection
Blinking	Data Activity	Orange	100Mbps connection
On	Link	Green	1Gbps connection

English

** ***Function of the Audio Ports in 7.1-channel Configuration***:

Port	Function
Light Blue (Rear panel)	Rear Speaker Out
Lime (Rear panel)	Front Speaker Out
Pink (Rear panel)	Central /Subwoofer Speaker Out
Lime (Front panel)	Side Speaker Out

Chapter 1 Introduction

Thank you for purchasing ASRock B560M-HDV-A motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.

Because the motherboard specifications and the BIOS software might be updated, the content of this documentation will be subject to change without notice. In case any modifications of this documentation occur, the updated version will be available on ASRock's website without further notice. If you require technical support related to this motherboard, please visit our website for specific information about the model you are using. You may find the latest VGA cards and CPU support list on ASRock's website as well. ASRock website http://www.asrock.com.

1.1 Package Contents

- ASRock B560M-HDV-A Motherboard (Micro ATX Form Factor)
- ASRock B560M-HDV-A Quick Installation Guide
- ASRock B560M-HDV-A Support CD
- 2 x Serial ATA (SATA) Data Cables (Optional)
- 2 x Screws for M.2 Sockets (Optional)
- 1 x I/O Panel Shield

1.2 Specifications

Platform	• Micro ATX Form Factor • Solid Capacitor design
CPU	• Supports 10th Gen Intel® Core™ Processors and 11th Gen Intel® Core™ Processors (LGA1200) • Digi Power design • 6 Power Phase design • Supports Intel® Turbo Boost Max 3.0 Technology
Chipset	• Intel® B560
Memory	• Dual Channel DDR4 Memory Technology • 2 x DDR4 DIMM Slots • 11th Gen Intel® Core™ Processors support DDR4 non-ECC, un-buffered memory up to 5000+(OC)* • 10th Gen Intel® Core™ Processors support DDR4 non-ECC, un-buffered memory up to 4600+(OC)* * 11th Gen Intel® Core™ (i9/i7/i5) support DDR4 up to 2933; Core™ (i3), Pentium® and Celeron® support DDR4 up to 2666. * 10th Gen Intel® Core™ (i9/i7) support DDR4 up to 2933; Core™ (i5/i3), Pentium® and Celeron® support DDR4 up to 2666. * Please refer to Memory Support List on ASRock's website for more information. (http://www.asrock.com/) • Supports ECC UDIMM memory modules (operate in non-ECC mode) • Max. capacity of system memory: 64GB • Supports Intel® Extreme Memory Profile (XMP) 2.0
Expansion Slot	**11th Gen Intel® Core™ Processors** • 1 x PCI Express 4.0 x16 Slot* **10th Gen Intel® Core™ Processors** • 1 x PCI Express 3.0 x16 Slot* * Supports NVMe SSD as boot disks • 2 x PCI Express 3.0 x1 Slots • 1 x Vertical M.2 Socket (Key E), supports type 2230 WiFi/BT module (Integrated WiFi/BT) (on the rear I/O)

English

Graphics	• Intel® UHD Graphics Built-in Visuals and the VGA outputs can be supported only with processors which are GPU integrated. • 11th Gen Intel® Core™ Processors support Intel® Xe Graphics Architecture (Gen 12). 10th Gen Intel® Core™ Processors support Gen 9 Graphics • Graphics, Media & Compute: Microsoft DirectX 12, OpenGL 4.5, Intel® Built In Visuals, Intel® Quick Sync Video, Hybrid / Switchable Graphics, OpenCL 2.1 • Display & Content Security: Rec. 2020 (Wide Color Gamut), Microsoft PlayReady 3.0, UHD/HDR Blu-ray Disc • Three graphics output options: D-Sub, DVI-D and HDMI • Supports Triple Monitor • Supports HDMI 2.0 with max. resolution up to 4K x 2K (4096x2160) @ 60Hz • Supports DVI-D with max. resolution up to 1920x1200 @ 60Hz • Supports D-Sub with max. resolution up to 1920x1200 @ 60Hz • Supports Auto Lip Sync, Deep Color (12bpc), xvYCC and HBR (High Bit Rate Audio) with HDMI 2.0 Port (Compliant HDMI monitor is required) • Supports HDCP 2.3 with DVI-D and HDMI 2.0 Ports • Supports 4K Ultra HD (UHD) playback with HDMI 2.0 Port * 11th Gen Intel® Core™ Processors support HDMI 2.0. 10th Gen Intel® Core™ Processors support HDMI 1.4.
Audio	• 7.1 CH HD Audio (Realtek ALC897 Audio Codec) • Supports Surge Protection
LAN	• Gigabit LAN 10/100/1000 Mb/s • Giga PHY Intel® I219V • Supports Wake-On-LAN • Supports Lightning/ESD Protection • Supports Energy Efficient Ethernet 802.3az • Supports PXE

Rear Panel I/O	• 1 x PS/2 Mouse/Keyboard Port • 1 x D-Sub Port • 1 x DVI-D Port • 1 x HDMI Port • 2 x USB 2.0 Ports (Supports ESD Protection) • 4 x USB 3.2 Gen1 Ports (Supports ESD Protection) • 1 x RJ-45 LAN Port with LED (ACT/LINK LED and SPEED LED) • HD Audio Jacks: Line in / Front Speaker / Microphone
Storage	• 4 x SATA3 6.0 Gb/s Connectors, support Intel Rapid Storage Technology 18, NCQ, AHCI and Hot Plug • 1 x Hyper M.2 Socket (M2_1), supports M Key type 2260/2280 M.2 PCI Express module up to Gen4x4 (64 Gb/s) (Only supported with 11th Gen Intel® Core™ Processors)* • 1 x Ultra M.2 Socket (M2_2), supports M Key type 2260/2280 M.2 SATA3 6.0 Gb/s module and M.2 PCI Express module up to Gen3 x4 (32 Gb/s)* * Supports Intel® Optane™ Technology (M2_2) * Supports NVMe SSD as boot disks * Supports ASRock U.2 Kit
Connector	• 1 x COM Port Header • 1 x SPI TPM Header • 1 x Chassis Intrusion and Speaker Header • 1 x CPU Fan Connector (4-pin) * The CPU Fan Connector supports the CPU fan of maximum 1A (12W) fan power. • 1 x CPU/Water Pump Fan Connector (4-pin) (Smart Fan Speed Control) * The CPU/Water Pump Fan supports the water cooler fan of maximum 2A (24W) fan power. • 2 x Chassis/Water Pump Fan Connectors (4-pin) (Smart Fan Speed Control) * The Chassis/Water Pump Fan supports the water cooler fan of maximum 2A (24W) fan power. * CPU_FAN2/WP, CHA_FAN1/WP and CHA_FAN2/WP can auto detect if 3-pin or 4-pin fan is in use.

	• 1 x 24 pin ATX Power Connector • 1 x 8 pin 12V Power Connector • 1 x Front Panel Audio Connector • 2 x USB 2.0 Headers (Support 3 USB 2.0 ports) (Supports ESD Protection) • 1 x USB 3.2 Gen1 Header (Supports 2 USB 3.2 Gen1 ports) (Supports ESD Protection)
BIOS Feature	• AMI UEFI Legal BIOS with multilingual GUI support • ACPI 6.0 Compliant wake up events • SMBIOS 2.7 Support • CPU Core/Cache, GT, DRAM, VPPM, VCCIN_AUX, VCCST, VCCSA Voltage Multi-adjustment
Hardware Monitor	• Fan Tachometer: CPU, CPU/Water Pump, Chassis/Water Pump Fans • Quiet Fan (Auto adjust chassis fan speed by CPU temperature): CPU, CPU/Water Pump, Chassis/Water Pump Fans • Fan Multi-Speed Control: CPU, CPU/Water Pump, Chassis/Water Pump Fans • CASE OPEN detection • Voltage monitoring: +12V, +5V, +3.3V, CPU Vcore, DRAM, VPPM, VCCIN_AUX, VCCSA, VCCST, ATX_5VSB
OS	• Microsoft® Windows® 10 64-bit
Certifications	• FCC, CE • ErP/EuP Ready (ErP/EuP ready power supply is required)

** For detailed product information, please visit our website: http://www.asrock.com*

Please realize that there is a certain risk involved with overclocking, including adjusting the setting in the BIOS, applying Untied Overclocking Technology, or using third-party overclocking tools. Overclocking may affect your system's stability, or even cause damage to the components and devices of your system. It should be done at your own risk and expense. We are not responsible for possible damage caused by overclocking.

Chapter 2 Installation

This is a Micro ATX form factor motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

Pre-installation Precautions

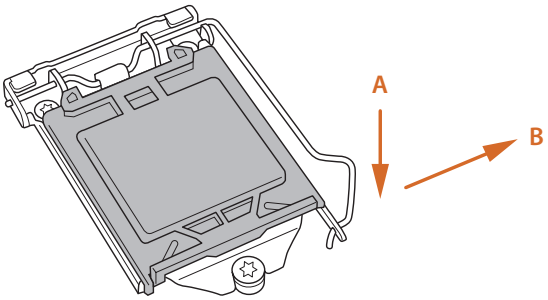
Take note of the following precautions before you install motherboard components or change any motherboard settings.

- Make sure to unplug the power cord before installing or removing the motherboard components. Failure to do so may cause physical injuries and damages to motherboard components.
- In order to avoid damage from static electricity to the motherboard's components, NEVER place your motherboard directly on a carpet. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle the components.
- Hold components by the edges and do not touch the ICs.
- Whenever you uninstall any components, place them on a grounded anti-static pad or in the bag that comes with the components.
- When placing screws to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard.

2.1 Installing the CPU

1. *Before you insert the 1200-Pin CPU into the socket, please check if the **PnP cap** is on the socket, if the CPU surface is unclean, or if there are any **bent pins** in the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.*
2. *Unplug all power cables before installing the CPU.*

1



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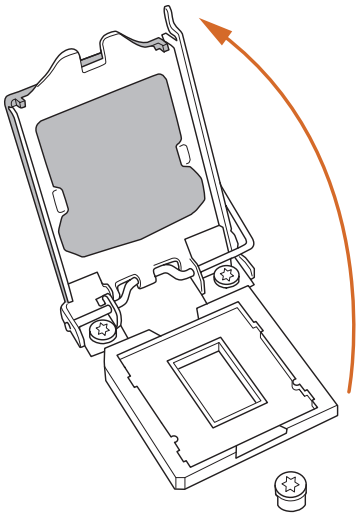

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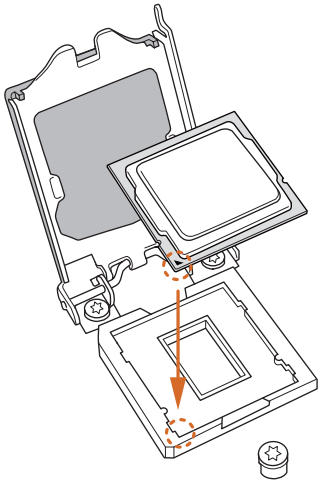

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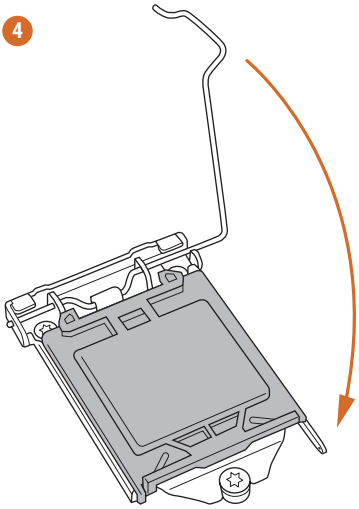

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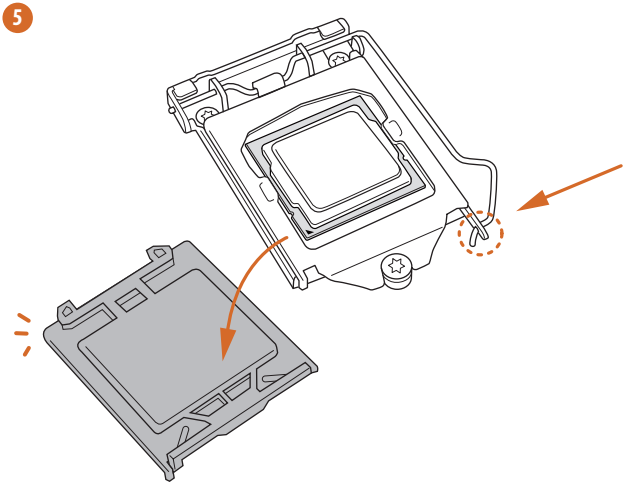
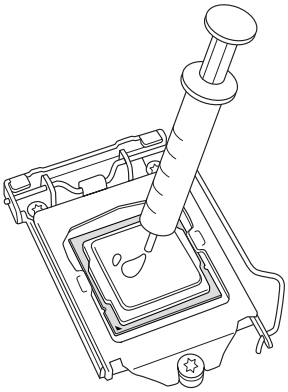
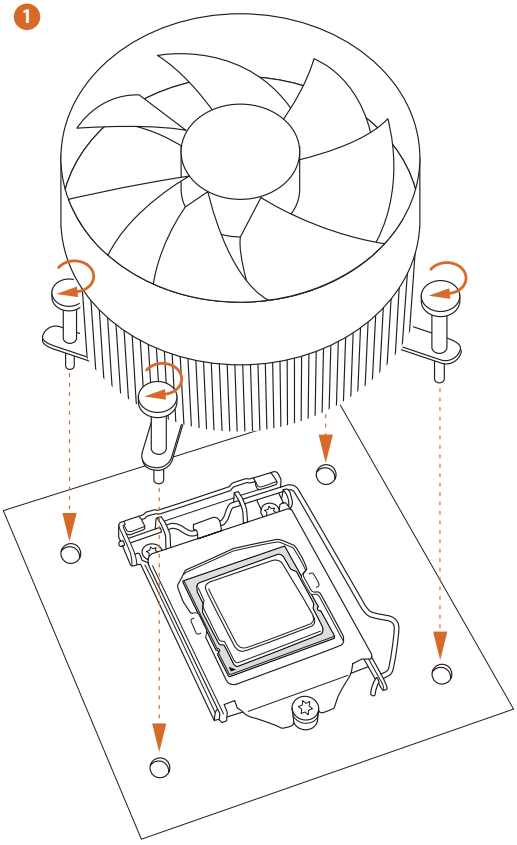


Please save and replace the cover if the processor is removed. The cover must be placed if you wish to return the motherboard for after service.

2.2 Installing the CPU Fan and Heatsink





2.3 Installing Memory Modules (DIMM)

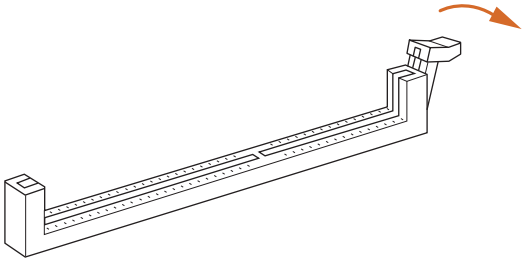
This motherboard provides two 288-pin DDR4 (Double Data Rate 4) DIMM slots, and supports Dual Channel Memory Technology.

1. *For dual channel configuration, you always need to install identical (the same brand, speed, size and chip-type) DDR4 DIMM pairs.*
2. *It is unable to activate Dual Channel Memory Technology with only one memory module installed.*
3. *It is not allowed to install a DDR, DDR2 or DDR3 memory module into a DDR4 slot; otherwise, this motherboard and DIMM may be damaged.*

The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

English

1



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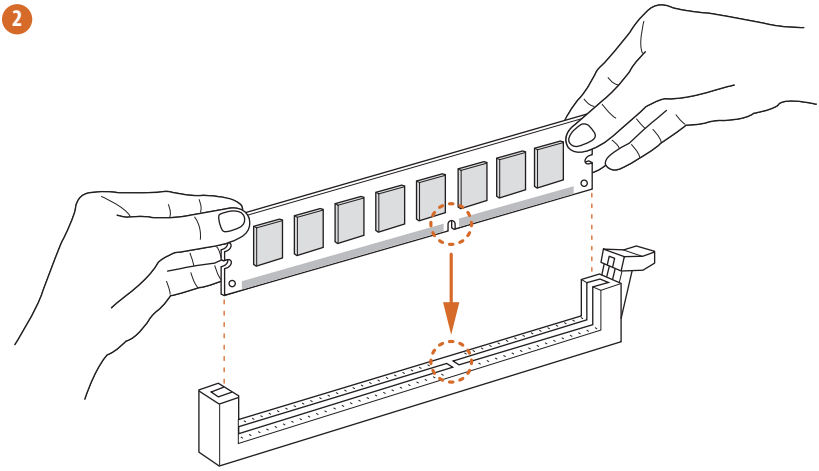

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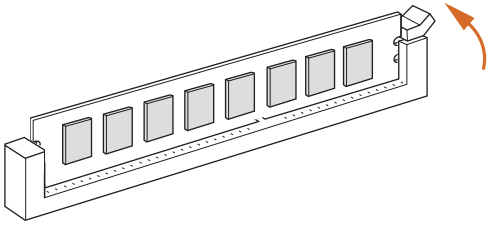


2.4 Expansion Slots (PCI Express Slots)

There are 3 PCI Express slots on the motherboard.

Before installing an expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.

PCIe slots:

11th Gen Intel® Core™ Processors:

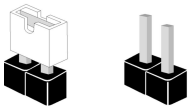
PCIE1 (PCIe 4.0 x16 slot) is used for PCI Express x16 lane width graphics cards.
PCIE2 (PCIe 3.0 x1 slot) is used for PCI Express x1 lane width cards.
PCIE3 (PCIe 3.0 x1 slot) is used for PCI Express x1 lane width cards.

10th Gen Intel® Core™ Processors:

PCIE1 (PCIe 3.0 x16 slot) is used for PCI Express x16 lane width graphics cards.
PCIE2 (PCIe 3.0 x1 slot) is used for PCI Express x1 lane width cards.
PCIE3 (PCIe 3.0 x1 slot) is used for PCI Express x1 lane width cards.

2.5 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on the pins, the jumper is “Short”. If no jumper cap is placed on the pins, the jumper is “Open”.



Clear CMOS Jumper (CLRMOS1) (see p.1, No. 13)	2-pin Jumper

CLRMOS1 allows you to clear the data in CMOS. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short the pins on CLRMOS1 for 5 seconds. However, please do not clear the CMOS right after you update the BIOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action. Please be noted that the password, date, time, and user default profile will be cleared only if the CMOS battery is removed. Please remember toremove the jumper cap after clearing the CMOS.

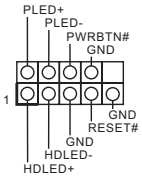
If you clear the CMOS, the case open may be detected. Please adjust the BIOS option “Clear Status” to clear the record of previous chassis intrusion status.

English

2.6 Onboard Headers and Connectors

Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage to the motherboard.

System Panel Header
(9-pin PANEL1)
(see p.1, No. 12)



Connect the power switch, reset switch and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.

PWRBTN (Power Switch):
Connect to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch.

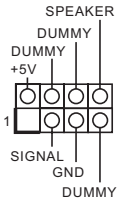
RESET (Reset Switch):
Connect to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.

PLED (System Power LED):
Connect to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED keeps blinking when the system is in S1/S3 sleep state. The LED is off when the system is in S4 sleep state or powered off (S5).

HDLED (Hard Drive Activity LED):
Connect to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.

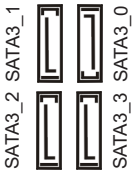
The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

Chassis Intrusion and Speaker Header
(7-pin SPK_CI1)
(see p.1, No. 14)



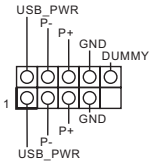
Please connect the chassis intrusion and the chassis speaker to this header.

Serial ATA3 Connectors
Vertical:
(SATA3_0:
see p.1, No. 8)
(SATA3_1:
see p.1, No. 7)
Right Angle:
(SATA3_2:
see p.1, No. 9)(Upper)
(SATA3_3:
see p.1, No. 10)(Lower)



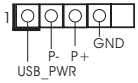
These four SATA3 connectors support SATA data cables for internal storage devices with up to 6.0 Gb/s data transfer rate.

USB 2.0 Headers
(9-pin USB3_4)
(see p.1, No. 17)

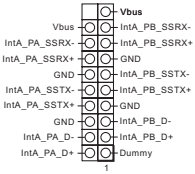


There are two USB 2.0 headers on this motherboard.

(9-pin USB5)
(see p.1, No. 16)



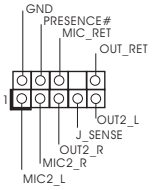
USB 3.2 Gen1 Header
(19-pin F_USB3_1_2)
(see p.1, No. 6)



There is one header on this motherboard. This USB 3.2 Gen1 header can support two ports.

English

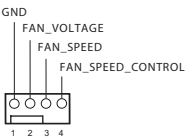
Front Panel Audio Header
(9-pin HD_AUDIO1)
(see p.1, No. 19)



This header is for connecting audio devices to the front audio panel.

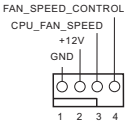
1. *High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instructions in our manual and chassis manual to install your system.*
2. *If you use an AC'97 audio panel, please install it to the front panel audio header by the steps below:*
   A. Connect Mic_IN (MIC) to MIC2_L.
   B. Connect Audio_R (RIN) to OUT2_R and Audio_L (LIN) to OUT2_L.
   C. Connect Ground (GND) to Ground (GND).
   D. MIC_RET and OUT_RET are for the HD audio panel only. You don't need to connect them for the AC'97 audio panel.
   E. To activate the front mic, go to the "FrontMic" Tab in the Realtek Control panel and adjust "Recording Volume".

Chassis/Water Pump Fan Connectors
(4-pin CHA_FAN1/WP)
(see p.1, No. 4)
(4-pin CHA_FAN2/WP)
(see p.1, No. 15)



This motherboard provides three 4-Pin water cooling chassis fan connectors. If you plan to connect a 3-Pin chassis water cooler fan, please connect it to Pin 1-3.

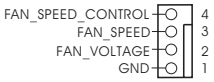
CPU Fan Connector
(4-pin CPU_FAN1)
(see p.1, No. 2)



This motherboard provides a 4-Pin CPU fan (Quiet Fan) connector. If you plan to connect a 3-Pin CPU fan, please connect it to Pin 1-3.

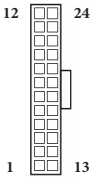
English

CPU/Water Pump Fan Connector (4-pin CPU_FAN2/WP) (see p.1, No. 20)



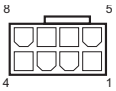
This motherboard provides a 4-Pin water cooling CPU fan connector. If you plan to connect a 3-Pin CPU water cooler fan, please connect it to Pin 1-3.

ATX Power Connector (24-pin ATXPWR1) (see p.1, No. 5)



This motherboard provides a 24-pin ATX power connector. To use a 20-pin ATX power supply, please plug it along Pin 1 and Pin 13.

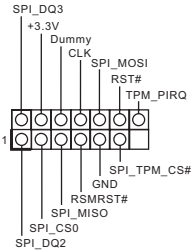
ATX 12V Power Connector (8-pin ATX12V1) (see p.1, No. 1)



This motherboard provides a 8-pin ATX 12V power connector. To use a 4-pin ATX power supply, please plug it along Pin 1 and Pin 5.

***Warning: Please make sure that the power cable connected is for the CPU and not the graphics card. Do not plug the PCIe power cable to this connector.**

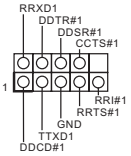
SPI TPM Header (13-pin SPI_TPM_J1) (see p.1, No. 11)



This connector supports SPI Trusted Platform Module (TPM) system, which can securely store keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protects digital identities, and ensures platform integrity.

English

Serial Port Header
(9-pin COM1)
(see p.1, No. 18)

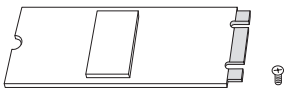


This COM1 header supports a serial port module.

2.7 M.2_SSD (NGFF) Module Installation Guide

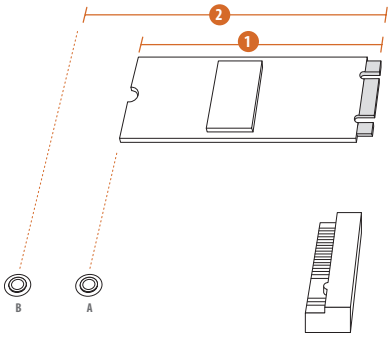
The M.2, also known as the Next Generation Form Factor (NGFF), is a small size and versatile card edge connector that aims to replace mPCIe and mSATA. The Hyper M.2 Socket (M2_1) supports M Key type 2260/2280 M.2 PCI Express module up to Gen4x4 (64 Gb/s) (Only supported with 11th Gen Intel® Core™ Processors). The Ultra M.2 Socket (M2_2), supports M Key type 2260/2280 M.2 SATA3 6.0 Gb/s module and M.2 PCI Express module up to Gen3 x4 (32 Gb/s).

Installing the M.2_SSD (NGFF) Module



Step 1

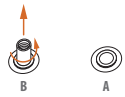
Prepare a M.2_SSD (NGFF) module and the screw.

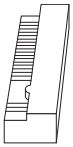


Step 2

Depending on the PCB type and length of your M.2_SSD (NGFF) module, find the corresponding nut location to be used.

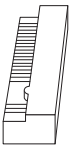
No.	1	2
Nut Location	A	B
PCB Length	6cm	8cm
Module Type	Type2260	Type 2280





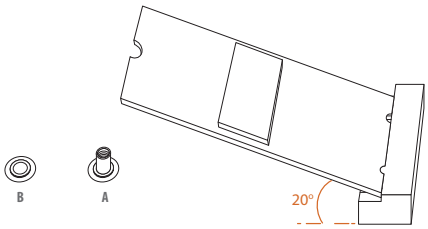
Step 3

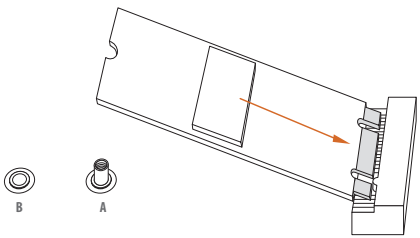
Move the standoff based on the module type and length.
The standoff is placed at the nut location B by default. Skip Step 3 and 4 and go straight to Step 5 if you are going to use the default nut. Otherwise, release the standoff by hand.



Step 4

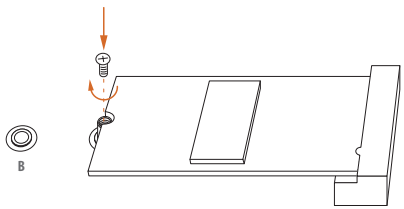
Peel off the yellow protective film on the nut to be used. Hand tighten the standoff into the desired nut location on the motherboard.





Step 5

Align and gently insert the M.2 (NGFF) SSD module into the M.2 slot. Please be aware that the M.2 (NGFF) SSD module only fits in one orientation.



Step 6

Tighten the screw with a screwdriver to secure the module into place. Please do not overtighten the screw as this might damage the module.

M.2_SSD (NGFF) Module Support List (M2_1)

Vendor	Interface	P/N
ADATA	PCIe3 x4	ASX7000NP-128GT-C
ADATA	PCIe3 x4	ASX8000NP-256GM-C
ADATA	PCIe3 x4	ASX7000NP-256GT-C
ADATA	PCIe3 x4	ASX8000NP-512GM-C
ADATA	PCIe3 x4	ASX7000NP-512GT-C
Apacer	PCIe3 x4	AP240GZ280
Corsair	PCIe3 x4	CSSD-F240GBMP500
Intel	PCIe3 x4	SSDPEKKF256G7
Intel	PCIe3 x4	SSDPEKKF512G7
Kingston	PCIe3 x4	SKC1000/480G
Kingston	PCIe2 x4	SH2280S3/480G
OCZ	PCIe3 x4	RVD400 -M2280-512G (NVME)
PATRIOT	PCIe3 x4	PH240GPM280SSDR NVME
Plextor	PCIe3 x4	PX-128M8PeG
Plextor	PCIe3 x4	PX-1TM8PeG
Plextor	PCIe3 x4	PX-256M8PeG
Plextor	PCIe3 x4	PX-512M8PeG
Plextor	PCIe	PX-G256M6e
Plextor	PCIe	PX-G512M6e
Samsung	PCIe3 x4	SM961 MZVPW128HEGM (NVM)
Samsung	PCIe3 x4	PM961 MZVLW128HEGR (NVME)
Samsung	PCIe3 x4	960 EVO (MZ-V6E250) (NVME)
Samsung	PCIe3 x4	960 EVO (MZ-V6E250BW) (NVME)
Samsung	PCIe3 x4	SM951 (NVME)
Samsung	PCIe3 x4	SM951 (MZHPV256HDGL)
Samsung	PCIe3 x4	SM951 (MZHPV512HDGL)
Samsung	PCIe3 x4	SM951 (NVME)
Samsung	PCIe x4	XP941-512G (MZHPU512HCGL)
SanDisk	PCIe	SD6PP4M-128G
SanDisk	PCIe	SD6PP4M-256G
TEAM	PCIe3 x4	TM8FP2240G0C101
TEAM	PCIe3 x4	TM8FP2480GC110
WD	PCIe3 x4	WDS256G1X0C-00ENX0 (NVME)
WD	PCIe3 x4	WDS512G1X0C-00ENX0 (NVME)

For the latest updates of M.2_SSD (NFGG) module support list, please visit our website for details: http://www.asrock.com

M.2_SSD (NGFF) Module Support List (M2_2)

Vendor	Interface	P/N
ADATA	SATA3	AXNS330E-32GM-B
ADATA	SATA3	AXNS381E-128GM-B
ADATA	SATA3	AXNS381E-256GM-B
ADATA	SATA3	ASU800NS38-256GT-C
ADATA	SATA3	ASU800NS38-512GT-C
ADATA	PCIe3 x4	ASX7000NP-128GT-C
ADATA	PCIe3 x4	ASX8000NP-256GM-C
ADATA	PCIe3 x4	ASX7000NP-256GT-C
ADATA	PCIe3 x4	ASX8000NP-512GM-C
ADATA	PCIe3 x4	ASX7000NP-512GT-C
Apacer	PCIe3 x4	AP240GZ280
Corsair	PCIe3 x4	CSSD-F240GBMP500
Crucial	SATA3	CT120M500SSD4
Crucial	SATA3	CT240M500SSD4
Intel	SATA3	Intel SSDSCKGW080A401/80G
Intel	PCIe3 x4	SSDPEKKF256G7
Intel	PCIe3 x4	SSDPEKKF512G7
Kingston	SATA3	SM2280S3
Kingston	PCIe3 x4	SKC1000/480G
Kingston	PCIe2 x4	SH2280S3/480G
OCZ	PCIe3 x4	RVD400 -M2280-512G (NVME)
PATRIOT	PCIe3 x4	PH240GPM280SSDR NVME
Plextor	PCIe3 x4	PX-128M8PeG
Plextor	PCIe3 x4	PX-1TM8PeG
Plextor	PCIe3 x4	PX-256M8PeG
Plextor	PCIe3 x4	PX-512M8PeG
Plextor	PCIe	PX-G256M6e
Plextor	PCIe	PX-G512M6e
Samsung	PCIe3 x4	SM961 MZVPW128HEGM (NVM)
Samsung	PCIe3 x4	PM961 MZVLW128HEGR (NVME)
Samsung	PCIe3 x4	960 EVO (MZ-V6E250) (NVME)
Samsung	PCIe3 x4	960 EVO (MZ-V6E250BW) (NVME)
Samsung	PCIe3 x4	SM951 (NVME)
Samsung	PCIe3 x4	SM951 (MZHPV256HDGL)
Samsung	PCIe3 x4	SM951 (MZHPV512HDGL)
Samsung	PCIe3 x4	SM951 (NVME)
Samsung	PCIe x4	XP941-512G (MZHPU512HCGL)
SanDisk	PCIe	SD6PP4M-128G
SanDisk	PCIe	SD6PP4M-256G
Team	SATA3	TM4PS4128GMC105
Team	SATA3	TM4PS4256GMC105
Team	SATA3	TM8PS4128GMC105
Team	SATA3	TM8PS4256GMC105

TEAM	PCIe3 x4	TM8FP2240G0C101
TEAM	PCIe3 x4	TM8FP2480GC110
Transcend	SATA3	TS256GMTS400
Transcend	SATA3	TS512GMTS600
Transcend	SATA3	TS512GMTS800
V-Color	SATA3	VLM100-120G-2280B-RD
V-Color	SATA3	VLM100-240G-2280RGB
V-Color	SATA3	VSM100-240G-2280
V-Color	SATA3	VLM100-240G-2280B-RD
WD	SATA3	WDS100T1B0B-00AS40
WD	SATA3	WDS240G1G0B-00RC30
WD	PCIe3 x4	WDS256G1X0C-00ENX0 (NVME)
WD	PCIe3 x4	WDS512G1X0C-00ENX0 (NVME)

For the latest updates of M.2_SSD (NFGG) module support list, please visit our website for details: http://www.asrock.com

1 简介

感谢您购买华擎 B560M-HDV-A 主板，这是按照华擎一贯严格质量控制标准生产的性能可靠的主板。它提供符合华擎质量和耐久性承诺的精良设计和卓越性能。

由于主板规格和 BIOS 软件可能已更新，因此，本文档的内容可能会随时更改，恕不另行通知。如果本文档有任何修改，则更新的版本将发布在华擎网站上，我们不会另外进行通知。如果您需要与此主板相关的技术支持，请访问我们的网站以具体了解所用型号的信息。您也可以在华擎网站上找到最新 VGA 卡和 CPU 支持列表。华擎网站 http://www.asrock.com。

1.1 包装清单

- 华擎 B560M-HDV-A 主板（Micro ATX 规格尺寸）
- 华擎 B560M-HDV-A 快速安装指南
- 华擎 B560M-HDV-A 支持光盘
- 2 x 串行 ATA (SATA) 数据线（选购）
- 2 x 螺丝（供 M.2 插座使用）（选购）
- 1 x I/O 面板

1.2 规格

平台	• Micro ATX 规格尺寸 • 稳固的电容器设计
CPU	• 支持第 10 代 Intel® Core™ 处理器及 11 代 Intel® Core™ 处理器 (LGA1200) • Digi Power design • 6 电源相设计 • 支持 Intel® Turbo Boost Max Technology 3.0
芯片集	• Intel® B560
内存	• 双通道 DDR4 内存技术 • 2 x DDR4 DIMM 槽 • 第 11 代 Intel® Core™ 处理器支持 DDR4 非 ECC、非缓冲内存，最高支持 5000+(OC)* • 第 10 代 Intel® Core™ 处理器支持 DDR4 非 ECC、非缓冲内存，最高支持 4600+(OC)* * 第 11 代 Intel® Core™ (i9/i7/i5) 可支持的 DDR4 的最高频率为 2933；Core™ (i3)、Pentium® 和 Celeron® 可支持的 DDR4 的最高频率为 2666。 * 第 10 代 Intel® Core™ (i9/i7) 可支持的 DDR4 的最高频率为 2933；Core™ (i5/i3)、Pentium® 和 Celeron® 可支持的 DDR4 的最高频率为 2666。 * 请参阅华擎网站上的 Memory Support List（内存支持列表）了解详情。(http://www.asrock.com/) • 支持 ECC UDIMM 内存模块（非 ECC 模式操作） • 支持系统内存最大容量：64GB • 支持 Intel® Extreme Memory Profile (XMP) 2.0
扩充槽	第 11 代 Intel® Core™ 处理器 • 1 x PCI Express 4.0 x16 槽 * 第 10 代 Intel® Core™ 处理器 • 1 x PCI Express 3.0 x16 槽 * * 支持 NVMe SSD 用作启动盘 • 2 x PCI Express 3.0 x1 槽 • 1 x 垂直 M.2 Socket (Key E)，支持类型 2230 WiFi/BT 模块 (集成 WiFi/BT)（在后 I/O 上）

图形	• 只有 GPU 集成的处理器才支持 Intel® UHD Graphics 内置视效和 VGA 输出。 • 第 11 代 Intel® Core™ 处理器支持 Intel® Xᵉ 图形架构 (Gen 12) 第 10 代 Intel® Core™ 处理器支持 Gen 9 图形 • 显卡、媒体和计算：Microsoft DirectX 12、OpenGL 4.5、Intel® Built In Visuals、Intel® 高速视频同步、混合 / 可切换显卡、OpenCL 2.1 • 显示和内容安全: Rec.2020（广色域）、Microsoft PlayReady 3.0、UHD/HDR 蓝光光盘 • 3 个图形输出选项：D-Sub、DVI-D 和 HDMI • 支持三台显示器 • 支持 HDMI 2.0，60Hz 时最大分辨率达 4K x 2K (4096x2160) • 支持 DVI-D，60Hz 时最大分辨率达 1920x1200 • 支持 D-Sub，60Hz 时最大分辨率达 1920x1200 • 通过 HDMI 2.0 端口（需要兼容的 HDMI 显示器）支持 Auto Lip Sync、Deep Color (12bpc)、xvYCC 和 HBR（高位速率音频） • 通过 DVI-D 和 HDMI 2.0 端口支持 HDCP 2.3 • 通过 HDMI 2.0 端口支持 4K 超高清 (UHD) 播放 * 第 11 代 Intel® Core™ 处理器支持 HDMI 2.0。第 10 代 Intel® Core™ 处理器支持 HDMI 1.4。
音频	• 7.1 CH 高清音频（Realtek ALC897 音频编解码器） • 支持电涌保护
LAN	• Gigabit LAN 10/100/1000 Mb/s • Giga PHY Intel® I219V • 支持 Wake-On-LAN（网上唤醒） • 支持雷电 /ESD 保护 • 支持高能效以太网 802.3az • 支持 PXE
后面板 I/O	• 1 x PS/2 鼠标 / 键盘端口 • 1 x D-Sub 端口 • 1 x DVI-D 端口 • 1 x HDMI 端口 • 2 x USB 2.0 端口（支持 ESD 保护） • 4 x USB 3.2 Gen1 端口（支持 ESD 保护） • 1 x RJ-45 LAN 端口，带 LED（ACT/LINK LED 和 SPEED LED） • 高清音频插孔： 线路输入 / 前扬声器 / 麦克风

存储	• 4 x SATA3 6.0 Gb/s 接口，支持 Intel Rapid Storage Technology 18、NCQ、AHCI 和热插拔 • 1 x Hyper M.2 接口 (M2_1)，最高支持 Gen4x4 (64 Gb/s) M Key 类型 2260/2280 M.2 PCI Express 模块（仅 11 代 Intel® Core ™ 处理器可支持）* • 1 x 超级 M.2 接口 (M2_2)，支持 M Key 类型 2260/2280 M.2 SATA3 6.0 Gb/s 模块和 M.2 PCI Express 模块（最高 Gen3 x4 (32 Gb/s)）* * 支持 Intel® Optane™ Technology (M2_2) * 支持 NVMe SSD 用作启动盘 * 支持华擎 U.2 套件
接口	• 1 x COM 端口接脚 • 1 x SPI TPM 接脚 • 1 x 机箱侵入和扬声器接脚 • 1 x CPU 风扇接口（4 针） * CPU 风扇接口支持最高 1A (12W) 功率的 CPU 风扇。 • 1 x CPU/ 水泵风扇接口（4 针）（智能风扇速度控制） * CPU/ 水泵风扇支持最高 2A (24W) 功率的水冷风扇。 • 2 x 机箱 / 水泵风扇接口（4 针）（智能风扇速度控制） * 机箱 / 水泵风扇支持最高 2A (24W) 功率的水冷风扇。 * CPU_FAN2/WP、CHA_FAN1/WP 和 CHA_FAN2/WP 可以自动检测 3 针脚或 4 针脚风扇是否在使用。 • 1 x 24 针 ATX 电源接口 • 1 x 8 针 12V 电源接口 • 1 x 前面板音频接口 • 2 x USB 2.0 接脚（支持 3 个 USB 2.0 端口，支持 ESD 保护） • 1 x USB 3.2 Gen1 接脚（支持 2 个 USB 3.2 Gen1 端口，支持 ESD 保护） • AMI UEFI Legal BIOS，支持多语言 GUI • ACPI 6.0 兼容唤醒事件 • 支持 SMBIOS 2.7 • CPU 内核 / 缓存、GT、DRAM、VPPM、VCCIN_AUX、VCCST、VCCSA 电压多次调整

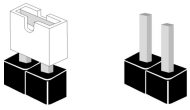
BIOS 功能特点	• AMI UEFI Legal BIOS，支持多语言 GUI • ACPI 6.0 兼容唤醒事件 • 支持 SMBIOS 2.7 • CPU 内核 / 缓存、GT、DRAM、VPPM、VCCIN_AUX、VCCST、VCCSA 电压多次调整
硬件监控	• 风扇转速计：CPU、CPU/ 水泵、机箱 / 水泵风扇 • 静音风扇（根据 CPU 温度自动调整机箱风扇速度）：CPU、CPU/ 水泵、机箱 / 水泵风扇 • 风扇多种速度控制：CPU、CPU/ 水泵、机箱 / 水泵风扇 • CASE OPEN（机箱打开）检测 • 电压监控: +12V、+5V、+3.3V、CPU Vcore、DRAM、VPPM、VCCIN_AUX、VCCSA、VCCST、ATX_5VSB
操作系统	• Microsoft® Windows® 10 64-bit
认证	• FCC、CE • ErP/EuP 支持（需要支持 ErP/EuP 的电源）

** 有关详细产品信息，请访问我们的网站：http://www.asrock.com*

须认识到超频会有一定风险，包括调整 BIOS 设置，应用“自由超频技术”，或使用第三方超频工具。超频可能会影响到系统的稳定性，甚至对系统的组件和设备造成损坏。执行这项工作您应自担风险和费用。我们对由于超频而造成的损坏概不负责。

1.3 跳线设置

此图显示如何设置跳线。将跳线帽装到这些针脚上时，跳线 “短接”。如果这些针脚上没有装跳线帽，跳线 “开路”。



清除 CMOS 跳线 (CLRMOS1) （见第 1 页，第 13 个）	2 针跳线

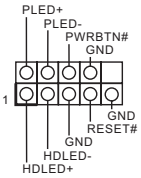
CLRMOS1 允许您清除 CMOS 中的数据。要清除和重置系统参数到默认设置，请关闭计算机，从电源上拔下电源线插头。等候 15 秒后，使用跳线帽将 CLRMOS1 上的针脚短接 5 秒。但是，请勿在更新 BIOS 后立即清除 CMOS。如果您需要在刚完成 BIOS 更新后清除 CMOS，则必须先启动系统，并在关闭后再执行清除 CMOS 操作。请注意，密码、日期、时间和用户默认配置文件只在卸下 CMOS 电池后才会被清除。请记住在清除 CMOS 后取下跳线帽。

如果您清除 CMOS，机箱打开会被检测到。请将 BIOS 选项“Clear Status”（清除状态）调整为清除前一个机箱侵入状态的记录。

1.4 板载接脚和接口

板载接脚和接口不是跳线。不要将跳线帽装到这些接脚和接口上。将跳线帽装到这些接脚和接口上将会对主板造成永久性损坏。

系统面板接头
（9 针 PANEL1）
（见第 1 页， 第 12 个）



按照下面的针脚分配，将机箱上的电源开关、重置开关和系统状态指示灯连接到此接脚。在连接线缆前请记下正负针脚。

PWRBTN（电源开关）：
连接到机箱前面板上的电源开关。您可以配置使用电源开关关闭系统的方式。

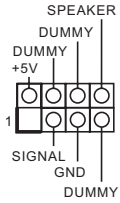
RESET（重置开关）：
连接到机箱前面板上的重置开关。如果计算机死机，无法执行正常重新启动，按重置开关重新启动计算机。

PLED（系统电源 LED）：
连接到机箱前面板上的电源状态指示灯。系统操作操作时，此 LED 亮起。系统处在 S1/S3 睡眠状态时，此 LED 闪烁。系统处在 S4 睡眠状态或关机 (S5) 时，此 LED 熄灭。

HDLED（硬盘活动 LED）：
连接到机箱前面板上的硬盘活动 LED 指示灯。硬盘正在读取或写入数据时，此 LED 亮起。

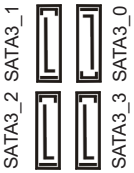
前面板设计根据机箱不同而有所差异。前面板模块主要包括电源开关、重置开关、电源 LED、硬盘活动 LED 指示灯、扬声器等。将机箱前面板模块连接到此接头时，确保连线分配和针脚分配正确匹配。

机箱侵入和扬声器接脚
（7 针 SPK_CI1）
（见第 1 页，第 14 个）



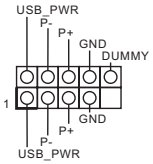
请将机箱侵入和机箱扬声器连接到到此接脚。

串行 ATA3 接口
垂直：
（SATA3_0:
见第 1 页， 第 8 个）
（SATA3_1:
见第 1 页， 第 7 个）
直角：
（SATA3_2:
见第 1 页，第 9 个）（上）
（SATA3_3:
见第 1 页，第 10 个）（下）



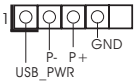
这四个 SATA3 接口支持最高 6.0 Gb/s 数据传输速率的内部存储设备的 SATA 数据线。

USB 2.0 接脚
（9- 针 USB3_4）
（见第 1 页，第 17 个）

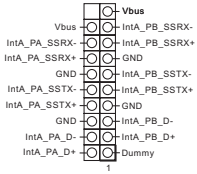


此主板上有 2 个 USB 2.0 接脚。每个 USB 2.0 接头可以支持两个端口。

（9- 针 USB5）
（见第 1 页，第 16 个）

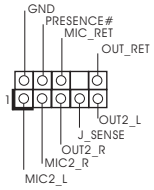


USB 3.2 Gen1 接脚
（19 针 F_USB3_1_2）
（见第 1 页，第 6 个）



此主板上有一个接脚。此 USB 3.2 Gen1 接脚可以支持两个端口。

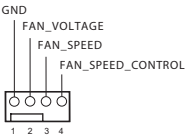
前面板音频接头
（9 针 HD_AUDIO1）
（见第 1 页，第 19 个）



此接头用于将音频设备连接到前音频面板。

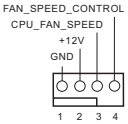
1. 高清音频支持插孔感测，但机箱上的面板连线必须支持 HDA 才能正常工作。请按照我们的手册和机箱手册的说明安装系统。
2. 如果您使用 AC'97 音频面板，请按照以下步骤将它安装到前面板音频接脚：
A. 将 Mic_IN (MIC) 连接到 MIC2_L。
B. 将 Audio_R (RIN) 连接到 OUT2_R，将 Audio_L (LIN) 连接到 OUT2_L。
C. 将接地端 (GND) 连接到接地端 (GND)。
D. MIC_RET 和 OUT_RET 只用于高清音频面板。您不需要针对 AC'97 音频面板连接它们。
E. 要启用前麦克风，请转到 Realtek 控制面板上的“FrontMic”（前麦克风）选项卡，调整 “Recording Volume”（录音音量）。

机箱 / 水泵风扇接口
（4 针 CHA_FAN1/WP）
（见第 1 页， 第 4 个）
（4 针 CHA_FAN2/WP）
（见第 1 页， 第 15 个）



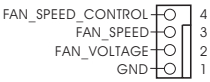
此主板提供两个 4 针水冷机箱风扇接口。如果您打算连接 3 针机箱水冷风扇，请将它连接到针脚 1-3。

CPU 风扇接口
（4 针 CPU_FAN1）
（见第 1 页， 第 2 个）



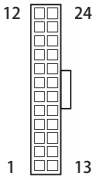
此主板提供 4 针 CPU 风扇（静音风扇）接口。如果您打算连接 3 针 CPU 风扇，请将它连接到针脚 1-3。

CPU/ 水泵风扇接口
（4 针 CPU_FAN2/WP）
（见第 1 页， 第 20 个）



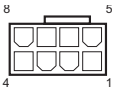
此主板提供 4 针水冷风扇接口。如果您打算连接 3 针 CPU 水冷风扇，请将它连接到针脚 1-3。

ATX 电源接口
（24 针 ATXPWR1）
（见第 1 页，第 5 个）



此主板提供 24 针 ATX 电源接口。要使用 20 针 ATX 电源，请沿针脚 1 和针脚 13 插接它。

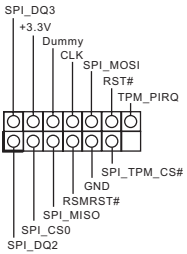
ATX 12V 电源接口
（8 针 ATX12V1）
（见第 1 页，第 1 个）



此主板提供 8 针 ATX 12V 电源接口。要使用 4 针 ATX 电源，请沿针脚 1 和针脚 5 插接它。

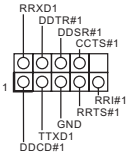
*** 警告 : 请确保连接的电源线用于 CPU，而非图形卡。不要将 PCIe 电源线插接到此接口。**

SPI TPM 接脚
（13 针 SPI_TPM_J1）
（见第 1 页，第 11 个）



此接口支持 SPI Trusted Platform Module（信任平台模块，TPM）系统，可以安全地存储密钥、数字证书、密码和数据。TPM 系统也可以帮助增强网络安全，保护数字身份和确保平台完整性。

串行端口接头
（9 针 COM1）
（见第 1 页，第 18 个）



此 COM1 接头支持串行端口模块。

电子信息产品污染控制标示

依据中国发布的「电子信息产品污染控制管理办法」及 SJ/T 11364-2006「电子信息产品污染控制标示要求」，电子信息产品应进行标示，藉以向消费者揭露产品中含有的有毒有害物质或元素不致发生外泄或突变从而对环境造成污染或对人身、财产造成严重损害的期限。依上述规定，您可于本产品之印刷电路板上看见图一之标示。图一中之数字为产品之环保使用期限。由此可知此主板之环保使用期限为 10 年。

图一

有毒有害物质或元素的名称及含量说明

若您欲了解此产品的有毒有害物质或元素的名称及含量说明，请参照以下表格及说明。

部件名称	有害物质或元素					
	铅 (Pb)	镉 (Cd)	汞 (Hg)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板及电子组件	X	O	O	O	O	O
外部信号连接头及线材	X	O	O	O	O	O

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求，然该部件仍符合欧盟指令 2002/95/EC 的规范。

备注 : 此产品所标示之环保使用年限，系指在一般正常使用状况下。

Contact Information

If you need to contact ASRock or want to know more about ASRock, you're welcome to visit ASRock's website at http://www.asrock.com; or you may contact your dealer for further information. For technical questions, please submit a support request form at https://event.asrock.com/tsd.asp

ASRock Incorporation

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Phone: +1-909-590-8308

Fax: +1-909-590-1026

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)

Responsible Party Name: ASRock Incorporation

Address: 13848 Magnolia Ave, Chino, CA91710

Phone/Fax No: +1-909-590-8308/+1-909-590-1026

hereby declares that the product

Product Name : Motherboard

Model Number : B560M-HDV-A

Conforms to the following specifications:

☒ FCC Part 15, Subpart B, Unintentional Radiators

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Representative Person's Name: **James**

Signature :

Date : **May 12, 2017**

EU Declaration of Conformity

For the following equipment:

Motherboard

(Product Name)

B560M-HDV-A / ASRock

(Model Designation / Trade Name)

ASRock Incorporation

(Manufacturer Name)

2F., No.37, Sec. 2, Jhongyang S. Rd., Beitou District, Taipei City 112, Taiwan (R.O.C.)

(Manufacturer Address)

☒ **EMC —Directive 2014/30/EU (from April 20th, 2016)**

☐ EN 55022:2010/AC:2011 Class B
☒ EN 55024:2010/A1:2015
☒ EN 55032:2012+AC:2013 Class B
☒ EN 61000-3-3:2013
☒ EN 61000-3-2:2014

☐ **LVD —Directive 2014/35/EU (from April 20th, 2016)**

☐ EN 60950-1 : 2011+ A2: 2013
☐ EN 60950-1 : 2006/A12: 2011

☒ RoHS — Directive 2011/65/EU
☒ CE marking

(EU conformity marking)

CE

ASRock EUROPE B.V.

(Company Name)

Bijsterhuizen 1111 6546 AR Nijmegen The Netherlands

(Company Address)

Person responsible for making this declaration:

(Name, Surname)

A.V.P

(Position / Title)

January 29, 2021

(Date)

P/N: 15G062288000AK V1.0