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(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

CALIFORNIA, USA ONLY

The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.
"Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate"

ASRock Website: http://www.asrock.com

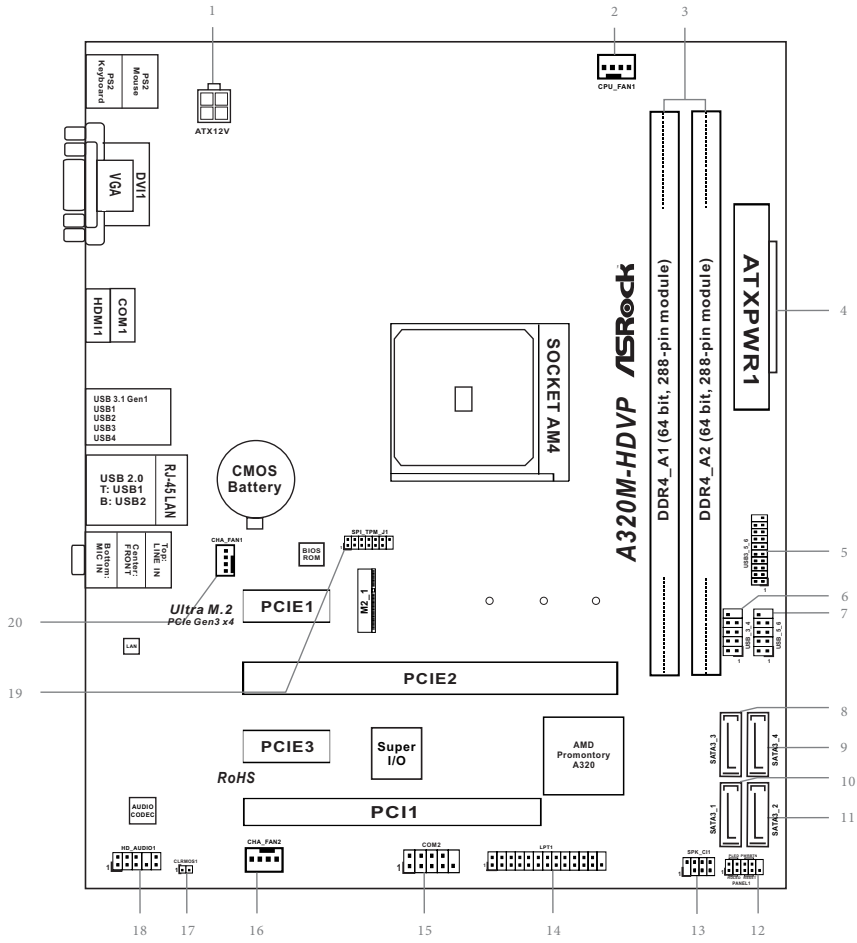
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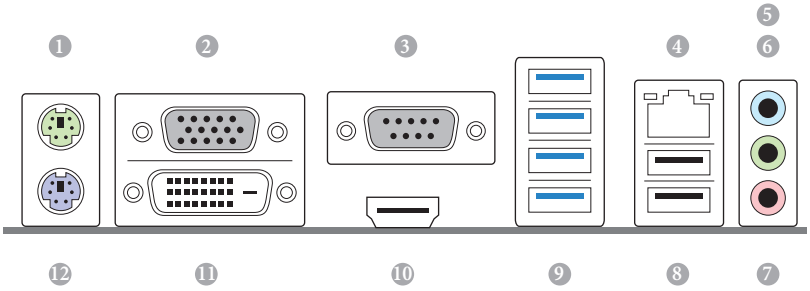


Motherboard Layout



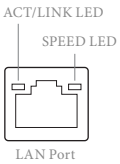
No.	Description
1	ATX 12V Power Connector (ATX12V1)
2	CPU Fan Connector (CPU_FAN1)
3	2 x 288-pin DDR4 DIMM Slots (DDR4_A1, DDR4_A2)
4	ATX Power Connector (ATXPWR1)
5	USB 3.2 Gen1 Header (USB3_5_6)
6	USB 2.0 Header (USB_3_4)
7	USB 2.0 Header (USB_5_6)
8	SATA3 Connector (SATA3_3)
9	SATA3 Connector (SATA3_4)
10	SATA3 Connector (SATA3_1)
11	SATA3 Connector (SATA3_2)
12	System Panel Header (PANEL1)
13	Chassis Intrusion and Speaker Header (SPK_CI1)
14	Print Port Header (LPT1)
15	COM Port Header (COM2)
16	Chassis Fan Connector (CHA_FAN2)
17	Clear CMOS Header (CLRCMOS1)
18	Front Panel Audio Header (HD_AUDIO1)
19	SPI TPM Header (SPI_TPM_J1)
20	Chassis Fan Connector (CHA_FAN1)

I/O Panel



No.	Description	No.	Description
1	PS/2 Mouse Port	7	Microphone (Pink)
2	D-Sub Port	8	USB 2.0 Ports (USB_1_2)
3	COM Port	9	USB 3.2 Gen1 Ports (USB3_1_4)
4	LAN RJ-45 Port*	10	HDMI Port
5	Line In (Light Blue)	11	DVI-D Port
6	Front Speaker (Lime)	12	PS/2 Keyboard Port

** 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

Chapter 1 Introduction

Thank you for purchasing ASRock A320M-HDVP 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.

In this manual, Chapter 1 and 2 contains the introduction of the motherboard and step-by-step installation guides. Chapter 3 contains the operation guide of the software and utilities. Chapter 4 contains the configuration guide of the BIOS setup.

Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual 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 A320M-HDVP Motherboard (Micro ATX Form Factor)
- ASRock A320M-HDVP Quick Installation Guide
- ASRock A320M-HDVP Support CD
- 1 x I/O Panel Shield
- 2 x Serial ATA (SATA) Data Cables (Optional)
- 1 x Screw for M.2 Socket (Optional)

English

1.2 Specifications

Platform	• Micro ATX Form Factor • Solid Capacitor design
CPU	• Supports AMD Socket AM4 A-Series APUs (Bristol Ridge) and Ryzen Series CPUs (Matisse, Picasso, Summit Ridge, Raven Ridge and Pinnacle Ridge) • 6 Power Phase design • Supports CPU up to 105W
Chipset	• AMD Promontory A320
Memory	• Dual Channel DDR4 Memory Technology • 2 x DDR4 DIMM Slots • AMD Ryzen series CPUs (Matisse) support DDR4 3200/2933/2667/2400/2133 ECC & non-ECC, un-buffered memory* • AMD Ryzen series CPUs (Pinnacle Ridge) support DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC & non-ECC, un-buffered memory* • AMD Ryzen series CPUs (Picasso) support DDR4 2933/2667/2400/2133 non-ECC, un-buffered memory* • AMD Ryzen series CPUs (Summit Ridge) support DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC & non-ECC, un-buffered memory* • AMD Ryzen series CPUs (Raven Ridge) support DDR4 3200+(OC)/2933/2667/2400/2133 non-ECC, un-buffered memory* • AMD 7th Gen A-Series APUs support DDR4 2400/2133 non-ECC, un-buffered memory* * For Ryzen Series CPUs (Picasso and Raven Ridge), ECC is only supported with PRO CPUs. * Please refer to Memory Support List on ASRock's website for more information. (http://www.asrock.com/) * Please refer to page 12 for DDR4 UDIMM maximum frequency support. • Max. capacity of system memory: 32GB • 15µ Gold Contact in DIMM Slots

Expansion Slot	**AMD Ryzen series CPUs (Matisse, Summit Ridge and Pinnacle Ridge)** • 1 x PCI Express 3.0 x16 Slot (PCIE2: x16 mode)* **AMD 7th A-Series APUs** • 1 x PCI Express 3.0 x16 Slot (PCIE2: x8 mode)* **AMD Ryzen series CPUs (Picasso, Raven Ridge)** • 1 x PCI Express 3.0 x16 Slot (PCIE2: x8 mode)* **AMD Athlon series CPUs** • 1 x PCI Express 3.0 x16 Slot (PCIE2: x4 mode)* * Supports NVMe SSD as boot disks • 2 x PCI Express 2.0 x1 Slots • 1 x PCI Slot
Graphics	• Integrated AMD Radeon™ Vega Series Graphics in Ryzen Series APU* • Integrated AMD Radeon™ R-Series Graphics in A-series APU* * Actual support may vary by CPU • DirectX 12, Pixel Shader 5.0 • Shared memory default 2GB. Max Shared memory supports up to 16GB. * The Max shared memory 16GB requires 32GB system memory installed. • Three graphics output options: D-Sub, DVI-D and HDMI • Supports Triple Monitor • Supports HDMI 1.4 with max. resolution up to 4K x 2K (4096x2160) @ 24Hz / (3840x2160) @ 30Hz • Supports DVI-D with max. resolution up to 1920x1200 @ 60Hz • Supports D-Sub with max. resolution up to 2048x1536 @ 60Hz • Supports Auto Lip Sync, Deep Color (12bpc), xvYCC and HBR (High Bit Rate Audio) with HDMI 1.4 Port (Compliant HDMI monitor is required) • Supports HDCP 1.4 with DVI-D and HDMI 1.4 Ports • Supports Full HD 1080p Blu-ray (BD) playback with DVI-D and HDMI 1.4 Ports
Audio	• 7.1 CH HD Audio (Realtek ALC887 Audio Codec) r. • Supports Surge Protection • ELNA Audio Caps

LAN	• PCIE x1 Gigabit LAN 10/100/1000 Mb/s • Realtek RTL8111H • 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 Port • 1 x PS/2 Keyboard Port • 1 x Serial Port: COM1 • 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 RAID (RAID 0, RAID 1 and RAID 10), NCQ, AHCI and Hot Plug • 1 x Ultra M.2 Socket, supports M Key type 2242/2260/2280 M.2 SATA3 6.0 Gb/s module and M.2 PCI Express module up to Gen3 x4 (32 Gb/s) (with Matisse, Picasso, Summit Ridge, Raven Ridge and Pinnacle Ridge) or Gen3 x2 (16 Gb/s) (with A-Series APU and Athlon 2xxGE series APU)* * Supports NVMe SSD as boot disks * Supports ASRock U.2 Kit
Connector	• 1 x Print Port Header • 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. • 2 x Chassis Fan Connectors (4-pin) * The Chassis Fan Connector supports the chassis fan of maximum 1A (12W) fan power. • 1 x 24 pin ATX Power Connector

	• 1 x 4 pin 12V Power Connector • 1 x Front Panel Audio Connector • 2 x USB 2.0 Headers (Support 4 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 GUI support • Supports "Plug and Play" • ACPI 5.1 compliance wake up events • Supports jumperfree • SMBIOS 2.3 support • DRAM Voltage multi-adjustment
Hardware Monitor	• CPU/Chassis temperature sensing • CPU/Chassis Fan Tachometer • CPU/Chassis Quiet Fan • CPU/Chassis Fan multi-speed control • CASE OPEN detection • Voltage monitoring: +12V, +5V, +3.3V, Vcore
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.

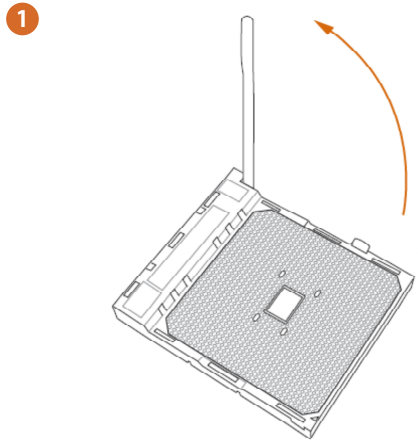
Pre-installation Precautions

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

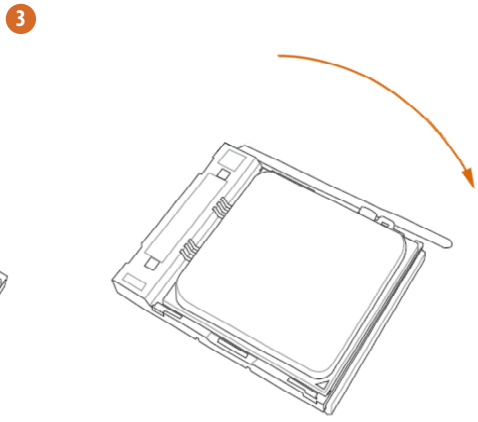
- Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause physical injuries to you and damages to motherboard components.
- In order to avoid damage from static electricity to the motherboard's components, NEVER place your motherboard directly on a 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

Unplug all power cables before installing the CPU.







2.2 Installing the CPU Fan and Heatsink

After you install the CPU into this motherboard, it is necessary to install a larger heatsink and cooling fan to dissipate heat. You also need to spray thermal grease between the CPU and the heatsink to improve heat dissipation. Make sure that the CPU and the heatsink are securely fastened and in good contact with each other.



Please turn off the power or remove the power cord before changing a CPU or heatsink.

For the instruction on installing a CPU cooler, please refer to the user manual on ASRock's website for more information. (http://www.asrock.com/)

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.*

DDR4 UDIMM Maximum Frequency Support

A-Series APUs:

UDIMM Memory Slot		Frequency (Mhz)
A1	B1	
SR	-	2400
-	SR	2400
DR	-	2400
-	DR	2400
SR	SR	2400
DR	DR	2400

Ryzen Series CPUs (Matisse):

UDIMM Memory Slot		Frequency (Mhz)
A1	B1	
SR	-	3200
-	SR	3200
DR	-	3200
-	DR	3200
SR	SR	3200
DR	DR	3200

Ryzen Series CPUs (Pinnacle Ridge):

UDIMM Memory Slot		Frequency (Mhz)
A1	B1	
SR	-	2933
-	SR	2933
DR	-	2933
-	DR	2933
SR	SR	2933
DR	DR	2933

Ryzen Series CPUs (Summit Ridge):

UDIMM Memory Slot		Frequency (Mhz)
A1	B1	
SR	-	2667
-	SR	2667
DR	-	2667
-	DR	2667
SR	SR	2667
DR	DR	2667

Ryzen Series CPUs (Picasso):

UDIMM Memory Slot		Frequency (Mhz)
A1	B1	
SR	-	2933
-	SR	2933
DR	-	2667
-	DR	2667
SR	SR	2933
DR	DR	2667

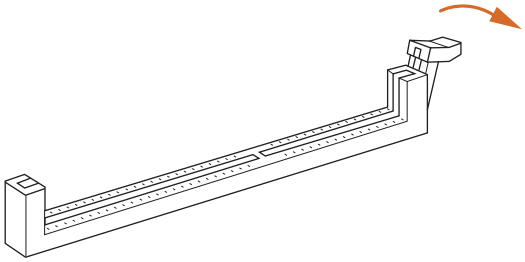
Ryzen Series CPUs (Raven Ridge):

UDIMM Memory Slot		Frequency (Mhz)
A1	B1	
SR	-	2933
-	SR	2933
DR	-	2667
-	DR	2667
SR	SR	2933
DR	DR	2667

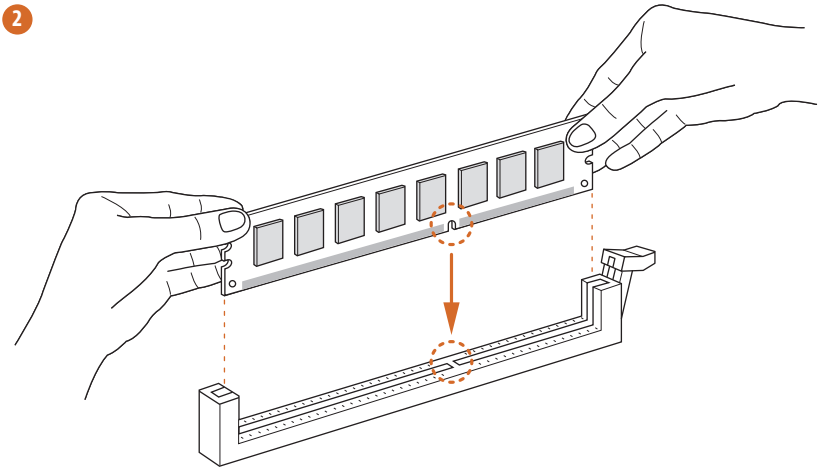
SR: Single rank DIMM, 1Rx4 or 1Rx8 on DIMM module label
DR: Dual rank DIMM, 2Rx4 or 2Rx8 on DIMM module label

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.

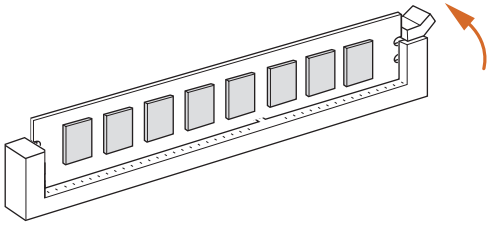
1



2



3



2.4 Expansion Slots (PCI and PCI Express Slots)

There is 1 PCI slot and 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.

PCI slot:

The PCI1 slot is used to install expansion cards that have 32-bit PCI interface.

PCIe slots:

PCIE1 (PCIe 2.0 x1 slot) is used for PCI Express x1 lane width cards
PCIE2 (PCIe 3.0 x16 slot) is used for PCI Express x16 lane width graphics cards.
PCIE3 (PCIe 2.0 x1 slot) is used for PCI Express x1 lane width cards

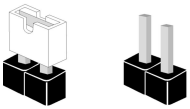
PCIe Slot Configurations

CPU	PCIE2
Ryzen series CPUs (Matisse)	x16
Ryzen series CPUs (Pinnacle Ridge)	x16
Ryzen series CPUs (Summit Ridge)	x16
Ryzen series CPUs (Picasso)	x8
Ryzen series CPUs (Raven Ridge)	x8
7th A-Series APUs	x4

For a better thermal environment, please connect a chassis fan to the motherboard's chassis fan connector (CHA_FAN1 or CHA_FAN2) when using multiple graphics 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 Header (CLRCMOS1) (see p.1, No. 17)	2-pin Jumper	Short: Clear CMOS Open: Default

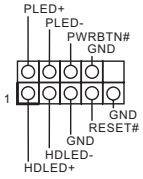
CLRCMOS1 allows you to clear the data in CMOS. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord, then use a jumper cap to short the pins on CLRCMOS1 for 3 seconds. Please remember to remove the jumper cap after clearing the CMOS. 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.

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.

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 button, reset button 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 Button):
Connect to the power button on the chassis front panel. You may configure the way to turn off your system using the power button.

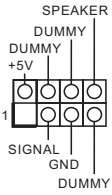
RESET (Reset Button):
Connect to the reset button on the chassis front panel. Press the reset button to restart the computer if the computer freezes and fails to perform a normal restart.

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.

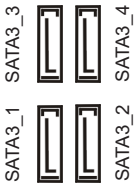
The front panel design may differ by chassis. A front panel module mainly consists of power button, reset button, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

Chassis Intrusion and Speaker Header
(7-pin SPK_CI1)
(see p.1, No. 13)



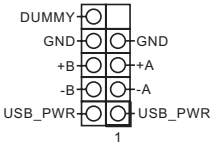
Please connect the chassis intrusion and the chassis speaker to this header.

Serial ATA3 Connectors
(SATA3_1:
see p.1, No. 10)
(SATA3_2:
see p.1, No. 11)
(SATA3_3:
see p.1, No. 8)
(SATA3_4:
see p.1, No. 9)



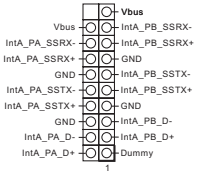
These four SATA3 connectors support SATA data cables for internal storage devices with up to 6.0 Gb/s data transfer rate.

USB 2.0 Header
(9-pin USB_3_4)
(see p.1, No. 6)
(9-pin USB_5_6)
(see p.1, No. 7)



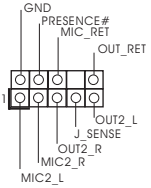
There are two headers on this motherboard. Each USB 2.0 header can support two ports.

USB 3.2 Gen1 Header
(19-pin USB3_5_6)
(see p.1, No. 5)



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

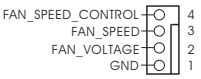
Front Panel Audio Header
(9-pin HD_AUDIO1)
(see p.1, No. 18)



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

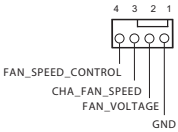
1. *High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instructions in our manual and chassis manual to install your system.*
2. *If you use an AC'97 audio panel, please install it to the front panel audio header by 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 Fan Connector
(4-pin CHA_FAN1)
(see p.1, No. 20)

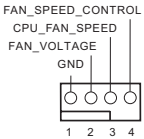


Please connect fan cables to the fan connectors and match the black wire to the ground pin.

(4-pin CHA_FAN2)
(see p.1, No. 16)

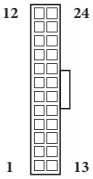


CPU Fan Connector
(4-pin CPU_FAN1)
(see p.1, No. 2)



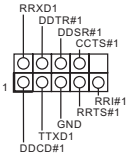
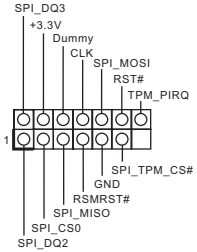
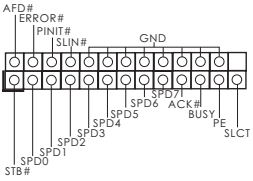
This motherboard provides a 4-Pin CPU fan (Quiet Fan) connector. If you plan to connect a 3-Pin CPU fan, please connect it to Pin 1-3.

ATX Power Connector
(24-pin ATXPWR1)
(see p.1, No. 4)



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.

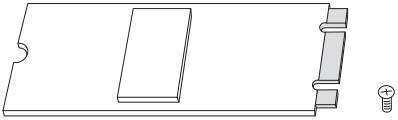
English

ATX 12V Power Connector (4-pin ATX12V1) (see p.1, No. 1)		Please connect an ATX 12V power supply to this connector. *The power supply plug fits into this connector in only one orientation.
Serial Port Header (9-pin COM2) (see p.1, No. 15)		This COM2 header supports a serial port module.
SPI TPM Header (13-pin SPI_TPM_J1) (see p.1, No. 19)		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.
Print Port Header (25-pin LPT1) (see p.1, No. 14)		This is an interface for print port cable that allows convenient connection of printer devices.

2.7 M.2_SSD (NGFF) Module Installation Guide

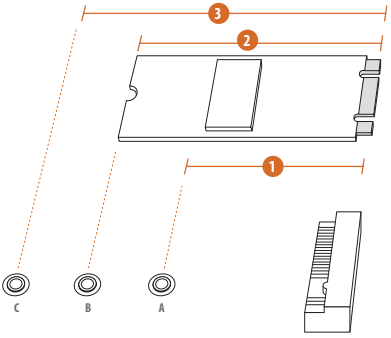
The M.2, also known as the Next Generation Form Factor (NGFF), is a small size and versatile card edge connector that aims to replace mPCIe and mSATA. The Ultra M.2 Socket (M2_1) supports SATA3 6.0 Gb/s module and M.2 PCI Express module up to Gen3 x4 (32 Gb/s) (with Matisse, Picasso, Summit Ridge, Raven Ridge and Pinnacle Ridge) or Gen3 x2 (16 Gb/s) (with A-Series APU and Athlon 2xxGE series APU).

Installing the M.2_SSD (NGFF) Module



Step 1

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

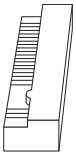


Step 2

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	3
Nut Location	A	B	C
PCB Length	4.2cm	6cm	8cm
Module Type	Type 2242	Type2260	Type 2280

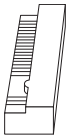




Step 3

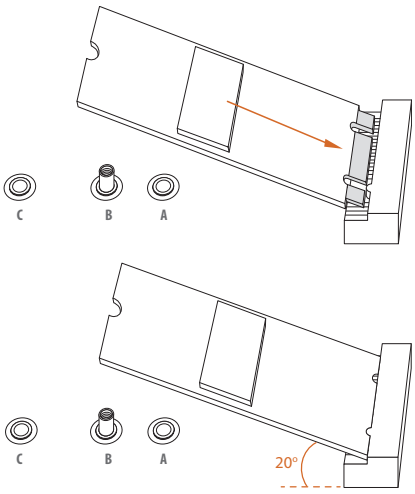
Move the standoff based on the module type and length.
The standoff is placed at the nut location D by default. Skip Step 3 and 4 and go straight to Step 5 if you are going to use the default nut. Otherwise, release the standoff by hand.





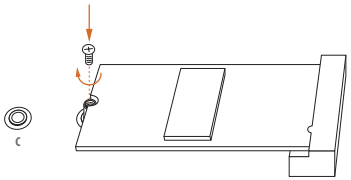
Step 4

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.

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

Technische Daten

Plattform	• Micro-ATX-Formfaktor • Feststoffkondensator-Design
Prozessor	• Unterstützt AMD-Sockel-AM4-APUs der A-Serie (Bristol Ridge) und Prozessoren der Ryzen-Serie (Matisse, Picasso, Summit Ridge, Raven Ridge und Pinnacle Ridge) • 6-Leistungsphasendesign • Unterstützt CPU bis 105W
Chipsatz	• AMD Promontory A320
Speicher	• Dualkanal-DDR4-Speichertechnologie • 2 x DDR4-DIMM-Steckplätze • Prozessoren der AMD-Ryzen-Serie (Matisse) unterstützen DDR4 3200/2933/2667/2400/2133 ECC und non-ECC, ungepufferter Speicher* • Prozessoren der AMD-Ryzen-Serie (Pinnacle Ridge) unterstützen DDR4 3200+(OC)/2933 (OC)/2667/2400/2133 ECC und non-ECC, ungepufferter Speicher* • Prozessoren der AMD-Ryzen-Serie (Picasso) unterstützen DDR4 2933/2667/2400/2133 non-ECC, ungepufferter Speicher* • Prozessoren der AMD-Ryzen-Serie (Summit Ridge) unterstützen DDR4 3200+(OC)/2933 (OC)/2667/2400/2133 ECC und non-ECC, ungepufferter Speicher* • Prozessoren der AMD-Ryzen-Serie (Raven Ridge) unterstützen DDR4 3200+(OC)/2933/2667/2400/2133 non-ECC, ungepufferter Speicher* • APUs von AMDs A-Serie der 7. Generation unterstützen DDR4 2400/2133 non-ECC, ungepufferter Speicher* * Für Prozessoren der Ryzen-Serie (Picasso und Raven Ridge), ECC wird nur mit PRO-Prozessoren unterstützt. * Weitere Informationen finden Sie in der Speicherkompatibilitätsliste auf der ASRock-Webseite. (http://www.asrock.com/) * Bitte beachten Sie Seite 12 für die maximal unterstützte Frequenz von DDR4-UDIMM. • Systemspeicher, max. Kapazität: 32 GB • 15-µ-Goldkontakt in DIMM-Steckplätze
Erweiterungssteckplatz	**CPUs der AMD-Ryzen-Serie (Matisse, Summit Ridge und Pinnacle Ridge)** • 1 x PCI-Express 3.0-x16-Steckplatz (PCIE2:x16-Modus)*

Erweiterungssteckplatz	**APUs von AMDs A-Serie der 7.Generation** • 1 x PCI-Express 3.0-x16-Steckplatz (PCIE2: x8-Modus)* **CPUs der AMD-Ryzen-Serie (Picasso, Raven Ridge)** • 1 x PCI-Express 3.0-x16-Steckplatz (PCIE2: x8-Modus)* **Prozessoren der AMD-Athlon-Serie** • 1 x PCI-Express 3.0-x16-Steckplatz (PCIE2: x4-Modus)* * Unterstützt NVMe-SSD als Bootplatte • 2 x PCI-Express-2.0-x1-Steckplatz • 1 x PCI-Steckplatz
Grafikkarte	• Integrierte Grafikkarte der AMD-Radeon™-Vega-Serie in APU der Ryzen-Serie* • Integrierte Grafikkarte der AMD-Radeon™-R-Serie in APU der A-Serie* * Tatsächliche Unterstützung kann je nach Prozessor variieren • DirectX 12, Pixel Shader 5.0 • Freigabespeicher von standardmäßig 2GB. Max. Freigabespeicher unterstützt bis zu 16GB. * Der max. Freigabespeicher von 16GB erfordert die Installation von 32GB Systemspeicher. • Drei Grafikkarten-Ausgangsoptionen: D-Sub, DVI-D und HDMI • Unterstützt drei Monitore • Unterstützt HDMI 1.4 mit maximaler Auflösung von 4K x 2K (4096 x 2160) bei 24 Hz / (3840 x 2160) bei 30 Hz • Unterstützt DVI-D mit maximaler Auflösung von 1920 x 1200 bei 60 Hz • Unterstützt D-Sub mit maximaler Auflösung von 2048 x 1536 bei 60 Hz • Unterstützt Auto-Lippensynchronizität, hohe Farbtiefe (12 bpc), xvYCC und HBR (Audio mit hoher Bitrate) mit HDMI 1.4-Port (konformer HDMI-Monitor erforderlich) • Unterstützt HDCP 1.4 mit DVI-D- und HDMI 1.4-Ports • Unterstützt Blu-ray- (BD) Wiedergabe (Full HD/1080p) mit DVI-D- und HDMI 1.4-Ports
Audio	• 7.1-Kanal-HD-Audio (Realtek ALC887-Audiocodec) • Unterstützt Überspannungsschutz • ELNA-Audiokondensatoren
LAN	• PCIE-x1-Gigabit-LAN 10/100/1000 Mb/s • Realtek RTL8111H • Unterstützt Wake-On-LAN • Unterstützt Schutz gegen Blitzschlag/elektrostatische Entladung • Unterstützt energieeffizientes Ethernet 802.3az • Unterstützt PXE

Rückblende, E/A	• 1 x PS/2-Mausanschluss • 1 x PS/2-Tastaturanschluss • 1 x Serieller Port COM1 • 1 x D-Sub-Port • 1 x DVI-D-Port • 1 x HDMI-Port • 2 x USB-2.0-Ports (unterstützt Schutz gegen elektrostatische Entladung) • 4 x USB-3.2-Gen1-Ports (unterstützt Schutz gegen elektrostatische Entladung) • 1 x RJ-45-LAN-Port mit LED (Aktivität/Verbindung-LED und Geschwindigkeit-LED) • HD-Audioanschlüsse: Line-in / Vorderer Lautsprecher / Mikrofon
Speicher	• 4 x SATA-III-6,0-Gb/s-Anschlüsse, unterstützt RAID (RAID 0, RAID 1 und RAID 10), NCQ, AHCI und Hot-Plugging • 1 x Ultra-M.2-Sockel, unterstützt M-Key-Typ-2242/2260/2280-M.2-SATA-III-6,0-Gb/s-Modul und M.2-PCI-Express-Modul bis Gen3 x 4 (32 Gb/s) (mit Matisse, Picasso, Summit Ridge, Raven Ridge und Pinnacle Ridge) oder Gen3 x 2 (16 Gb/s) (mit APU der A-Serie und Athlon 2xxGE)* * Unterstützt NVMe-SSD als Bootplatte * Unterstützt ASRock U.2-Kit
Anschluss	• 1 x Druckerport-Anschlussleiste • 1 x COM-Anschluss-Stiftleiste • 1 x SPI-TPM-Stiftleiste • 1 x Gehäuseeingriff- und Lautsprecher-Stiftleiste • 1 x CPU-Lüfteranschluss (4-polig) * Der CPU-Lüfteranschluss unterstützt einen CPU-Lüfter mit einer maximalen Lüfterleistung von 1 A (12 W). • 2 x Gehäuselüfteranschlüsse (4-polig) * Der Gehäuselüfteranschluss unterstützt einen Gehäuselüfter mit einer maximalen Lüfterleistung von 1 A (12 W). • 1 x 24-poliger ATX-Netzanschluss • 1 x 4-poliger 12-V-Netzanschluss • 1 x Audioanschluss an Frontblende • 2 x USB 2.0-Stiftleisten (unterstützt 4 USB 2.0-Ports) (unterstützt Schutz gegen elektrostatische Entladung) • 1 x USB 3.2 Gen1-Stiftleiste (unterstützt zwei USB 3.2 Gen1-Ports) (unterstützt Schutz gegen elektrostatische Entladung)
Betriebssystem	• Microsoft® Windows® 10, 64 Bit

Spécifications

Plateforme	• Facteur de forme Micro ATX • Conception à condensateurs solides
Processeur	• Prend en charge les APU série A (Bristol Ridge) et les CPU série Ryzen (Matisse, Picasso, Summit Ridge, Raven Ridge et Pinnacle Ridge) AM4 à socket AMD • Alimentation à 6 phases • Prend en charge les unités centrales jusqu'à 105W
Chipset	• AMD Promontory A320
Mémoire	• Technologie mémoire double canal DDR4 • 2 x fentes DIMM DDR4 • Les processeurs AMD série Ryzen (Matisse) prennent en charge les mémoires sans tampon ECC et non ECC DDR4 3200/2933/2667/2400/2133* • Les processeurs AMD série Ryzen (Pinnacle Ridge) prennent en charge les mémoires sans tampon ECC et non ECC DDR4 3200+(OC)/2933(OC)/2667/2400/2133* • Les processeurs AMD série Ryzen (Picasso) prennent en charge les mémoires sans tampon non ECC DDR4 2933/2667/2400/2133* • Les processeurs AMD série Ryzen (Summit Ridge) prennent en charge les mémoires sans tampon* ECC et non ECC DDR4 3200+(OC)/2933(OC)/2667/2400/2133 • Les processeurs AMD série Ryzen (Raven Ridge) prennent en charge les mémoires sans tampon* non ECC DDR4 3200+(OC)/2933/2667/2400/2133 • Les APU AMD série A de 7ème génération prennent en charge les mémoires sans tampon* ECC et non ECC DDR4 2400/2133* * Sur les processeurs série Ryzen (Picasso et Raven Ridge), ECC est pris en charge uniquement avec les processeurs PRO. * Veuillez consulter la liste de prise en charge des mémoires sur le site Web d'ASRock pour de plus amples informations. (http://www.asrock.com/) * Veuillez consulter la page 12 pour connaître la prise en charge de la fréquence maximale de l'UDIMM DDR4. • Capacité max. de la mémoire système : 32Go • Contacts dorés 15µ sur fentes DIMM
Fente d'expansion	**Processeurs AMD série Ryzen (Matisse, Summit Ridge et Pinnacle Ridge)** • 1 x fente PCI Express 3.0 x 16 (PCIE2 :mode x16)*

Fente d'expansion	**APU AMD série A de 7ème génération** • 1 x fente PCI Express 3.0 x 16 (PCIE2 :mode x8)* **Processeurs AMD série Ryzen (Picasso, Raven Ridge)** • 1 x fente PCI Express 3.0 x 16 (PCIE2 :mode x8)* **Processeurs AMD Athlon série** • 1 x fente PCI Express 3.0 x 16 (PCIE2 :mode x4)* * Prend en charge les SSD NVMe comme disques de démarrage • 2 x fentes PCI Express 2.0 x 1 • 1 x fente PCI
Graphiques	• Carte graphique AMD Radeon™ série Vega intégrée dans APU série Ryzen* • Carte graphique AMD Radeon™ série R intégrée dans APU série A* * La prise en charge réelle peut varier selon le processeur • DirectX 12, Pixel Shader 5.0 • Mémoire partagée par défaut 2 Go. Mémoire partagée maximum prise en charge 16 Go. * La mémoire partagée maximum de 16 Go nécessite 32 Go de mémoire système installée. • Trois options de sortie graphique : D-Sub, DVI-D et HDMI • Prend en charge la configuration à triple moniteurs • Prend en charge la technologie HDMI 1.4 avec résolution maximale de 4K x 2K (4096 x 2160) @ 24Hz / (3840 x 2160) @ 30Hz • Prend en charge le mode DVI-D avec une résolution maximale de 1920 x 1200 @ 60Hz • Prend en charge le mode D-Sub avec une résolution maximale de 2048 x 1536 @ 60 Hz • Prend en charge les technologies Auto Lip Sync, Deep Color (12bpc), xvYCC et HBR (High Bit Rate Audio) avec port HDMI 1.4 (un écran compatible HDMI est requis) • Prend en charge HDCP 1.4 via ports DVI-D et HDMI 1.4 • Prend en charge la lecture Blu-ray (BD) Full HD 1080p via ports DVI-D et HDMI 1.4
Audio	• Audio 7.1 CH HD (Codec audio Realtek ALC887) • Prend en charge la protection contre les surtensions • Capuchons ELNA Audio
Réseau	• PCIE x1 Gigabit LAN 10/100/1000 Mo/s • Realtek RTL8111H • Prend en charge la fonction Wake-On-LAN • Prend en charge la protection contre la foudre/les décharges électrostatiques • Prend en charge la fonction d'économie d'énergie Ethernet 802.3az • Prend en charge PXE

Connectique du panneau arrière	• 1 x port souris PS/2 • 1 x port clavier PS/2 • 1 x port série COM1 • 1 x port D-Sub • 1 x port DVI-D • 1 x port HDMI • 2 x ports USB 2.0 (Protection contre les décharges électrostatiques) • 4 x ports USB 3.2 Gen1 (Protection contre les décharges électrostatiques) • 1 x port RJ-45 LAN avec LED (LED ACT/LIEN et LED VITESSE) • Connecteurs jack audio HD : Entrée ligne / haut-parleur avant / microphone
Stockage	• 4 x connecteurs SATA3 6,0 Go/s, prise en charge de RAID (RAID 0, RAID 1 et RAID 10), NCQ, AHCI et branchement à chaud • 1 x socket Ultra M.2, prend en charge les modules M.2 SATA3 6,0 Go/s type 2242/2260/2280 touche M et M.2 PCI Express jusqu'à Gen3 x4 (32 Go/s) (avec Matisse, Picasso, Summit Ridge, Raven Ridge et Pinnacle Ridge) ou Gen3 x2 (16 Go/s) (avec APU série A et APU série Athlon 2xxGE)* * Prend en charge les SSD NVMe comme disques de démarrage * Prend en charge le kit ASRock U.2
Connecteur	• 1 x embase pour port d'impression • 1 x embase pour port COM • 1 x embase SPI TPM • 1 x prise DEL d'alimentation et emplacement sur châssis • 1 x connecteur pour ventilateur de CPU (4 broches) * Le connecteur pour ventilateur de CPU prend en charge un ventilateur de CPU d'une puissance maximale de 1 A (12 W). • 2 x connecteurs pour ventilateur de châssis (4 broches) * Le connecteur pour ventilateur de châssis prend en charge un ventilateur de châssis d'une puissance maximale de 1 A (12 W). • 1 x connecteur d'alimentation ATX 24 broches • 1 x connecteur d'alimentation 12 V 4 broches • 1 x connecteur audio panneau frontal • 2 x embases USB 2.0 (4 ports USB 2.0 pris en charge) (Protection contre les décharges électrostatiques) • 1 x embase USB 3.2 Gen1 (2 ports USB 3.2 Gen1 pris en charge) (Protection contre les décharges électrostatiques)
Système d'exploitation	• Microsoft® Windows® 10 64 bits

Specifiche

Piattaforma

- Fattore di forma Micro ATX
- Design condensatore solido

CPU

- Supporta APU serie A (Bristol Ridge) e CPU serie Ryzen (Matisse, Picasso, Summit Ridge, Raven Ridge e Pinnacle Ridge) AMD Socket AM4
- Potenza a 6 fasi
- Supporto di CPU fino a 105 W

Chipset

- AMD Promontory A320

Memoria

- Tecnologia memoria DDR4 Dual Channel
- 2 x alloggi DIMM DDR4
- Le CPU serie AMD Ryzen (Matisse) supportano DDR4 3200/2933/2667/2400/2133 ECC e non ECC, senza buffer*
- Le CPU serie AMD Ryzen (Pinnacle Ridge) supportano DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC e non ECC, senza buffer*
- Le CPU serie AMD Ryzen (Picasso) supportano DDR4 2933/2667/2400/2133 non ECC, senza buffer*
- Le CPU serie AMD Ryzen (Summit Ridge) supportano DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC e non ECC, senza buffer*
- Le CPU serie AMD Ryzen (Raven Ridge) supportano DDR4 3200+(OC)/2933/2667/2400/2133 non ECC, senza buffer*
- Le APU serie AMD 7ª Gen A supportano DDR4 2400/2133 non ECC, senza buffer*

* Per le CPU serie Ryzen (Picasso e Raven Ridge), è supportata solo la memoria ECC senza CPU PRO.

* Per maggiori informazioni fare riferimento all'elenco dei supporti di memoria sul sito di ASRock. (http://www.asrock.com/)

* Fare riferimento a pagina 12 per il supporto della frequenza massima DDR4 UDIMM.

- Capacità max. della memoria di sistema: 32 GB
- Contatti d'oro 15µ negli alloggi DIMM

Alloggio d'espansione

CPU serie AMD Ryzen (Matisse, Summit Ridge e Pinnacle Ridge)

- 1 x Alloggio PCI Express 3.0 x16 (PCIE2: modalità x16)*

Alloggio d'espansione	**APU serie AMD 7th A** • 1 x Alloggio PCI Express 3.0 x16 (PCIE2: modalità x8)* **CPU serie AMD Ryzen (Picasso, Raven Ridge)** • 1 x Alloggio PCI Express 3.0 x16 (PCIE2: modalità x8)* **CPU serie AMD Athlon** • 1 x Alloggio PCI Express 3.0 x16 (PCIE2: modalità x4)* * Supporto di SSD NVMe come disco d'avvio • 2 x alloggi PCI Express 2.0 x1 • 1 x slot PCI
Grafica	• Grafica AMD Radeon™ serie Vega integrata nelle APU serie Ryzen* • Grafica AMD Radeon™ serie R in APU serie A* * Il supporto effettivo può variare in base alla CPU • DirectX 12, Pixel Shader 5.0 • Memoria condivisa predefinita 2GB. Memoria condivisa massima supporta fino a 16GB. * La memoria condivisa massima di 16GB richiede che sia installata una memoria di sistema da 32GB. • Tre opzioni di output grafico: D-Sub, DVI-D e HDMI • Supporto di tre monitor • Supporta HDMI 1.4 con risoluzione massima fino a 4K x 2K (4096 x 2160) a 24Hz / (3840 x 2160) a 30Hz • Supporta DVI-D con una risoluzione max. fino a 1920 x 1200 a 60 Hz • Supporta D-Sub con una risoluzione max. fino a 2048 x 1536 a 60 Hz • Supporto delle funzioni Auto Lip Sync, Deep Color (12bpc), xvYCC e HBR (High Bit Rate Audio) con porta HDMI 1.4 (è necessario un monitor compatibile HDMI) • Supporto di HDCP 1.4 con le porte DVI-D e HDMI 1.4 • Supporto di riproduzione Full HD 1080p Blu-ray (BD) con le porte DVI-D e HDMI 1.4
Audio	• Audio HD 7.1 CH (codec audio Realtek ALC887) • Supporta protezione da sovratensione • Cappucci audio ELNA
LAN	• 1 x PCIE LAN Gigabit 10/100/1000 Mb/s • Realtek RTL8111H • Supporto Wake-On-LAN • Supporta protezione da fulmini/scariche elettrostatiche • Supporto Energy Efficient Ethernet 802.3az • Supporto PXE

I/O pannello posteriore	• 1 x porta mouse PS/2 • 1 x porta tastiera PS/2 • 1 x porta seriale: COM1 • 1 x porta D-Sub • 1 x porta DVI-D • 1 x porta HDMI • 2 x porte USB 2.0 (supporto protezione da scariche elettrostatiche) • 4 x porte USB 3.2 Gen1 (supporto protezione da scariche elettrostatiche) • 1 x porta LAN RJ-45 con LED (ACT/LINK LED e SPEED LED) • Connettori audio HD: Ingresso linea / altoparlante frontale / microfono
Archiviazione	• 4 x connettori SATA3 6,0 Gb/s, supporto RAID (RAID 0, RAID 1, e RAID 10), NCQ, AHCI e Hot Plug • 1 x socket Ultra M.2, supporta il modulo M.2 SATA3 6,0 Gb/s di tipo M Key 2242/2260/2280 ed il modulo M.2 PCI Express fino a Gen3 x4 (32 Gb/s) (con Matisse, Picasso, Summit Ridge, Raven Ridge e Pinnacle Ridge) o Gen3 x2 (16 Gb/s) (con APU serie A e Athlon 2xxGE)* * Supporto di SSD NVMe come disco d'avvio * Supporta kit ASRock U.2
Connettore	• 1 x connettore porta stampa • 1 x connettore porta COM • 1 x connettore SPI TPM • 1 x collegamento altoparlante e intrusione telaio • 1 x connettore ventola CPU (4-pin) * Il connettore ventola CPU supporta ventole CPU con potenza massima di 1 A (12 W). • 2 x connettori ventola chassis (4 pin) * Il connettore ventola telaio supporta ventole telaio con potenza massima di 1 A (12 W). • 1 x connettore alimentazione ATX 24 pin • 1 x connettore alimentazione 12 V 4-pin • 1 x connettore audio pannello frontale • 2 x connettori USB 2.0 (supporto di 4 porte USB 2.0) (supporta protezione da scariche elettrostatiche) • 1 x connettore USB 3.2 Gen1 (supporto di 2 porte USB 3.2 Gen1) (supporto protezione da scariche elettrostatiche)
SO	• Microsoft® Windows® 10 64 bit

Especificaciones

Plataforma

- Factor de forma Micro ATX
- Diseño de condensador sólido

CPU

- Admite APU de la serie A AM4 con zócalo AMD (Bristol Ridge) y CPU de la serie Ryzen (Matisse, Picasso, Summit Ridge, Raven Ridge y Pinnacle Ridge)
- Diseño de 6 fases de alimentación
- Admite CPU de hasta 105 W

Conjunto de chips

- AMD Promontory A320

Memoria

- Tecnología de memoria DDR4 de doble canal
- 2 x ranuras DIMM DDR4
- Las CPU de la serie AMD (Matisse) admiten memoria sin búfer DDR4 3200/2933/2667/2400/2133 ECC y no ECC *
- Las CPU de la serie AMD Ryzen (Pinnacle Ridge) admiten memoria sin búfer DDR4 3200+ (OC)/2933 (OC)/2667/2400/2133 ECC y no ECC*
- Las CPU de la serie AMD (Picasso) admiten memoria sin búfer DDR4 2933/2667/2400/2133 no ECC *
- Las CPU de la serie AMD (Summit Ridge) admiten memoria sin búfer DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC y no ECC*
- Las CPU de la serie AMD Ryzen (Raven Ridge) admiten memoria sin búfer DDR4 3200+(OC)/2933/2667/2400/2133 no ECC*
- APU de la serie Gen A de la 7ª generación AMD admiten memoria sin bufer DDR4 2400/2133 no ECC*

* Para CPU de la serie Ryzen (Picasso y Raven Ridge), ECC solamente se admite con CPU PRO.

* Para obtener más información, consulte la lista de memorias compatibles en el sitio web de ASRock. (http://www.asrock.com/)

* Consulte la página 12 para conocer las frecuencias máximas compatibles de DDR4 UDIMM.

- Capacidad máxima de memoria del sistema: 32GB
- Contacto 15µ Gold en ranuras DIMM

Ranura de expansión

CPU de la serie AMD Ryzen (Matisse, Summit Ridge y Pinnacle Ridge)

- 1 ranura PCI Express 3.0 x16 (PCIE2: modo x16)*

Ranura de expansión	**APU de la serie A AMD 7**[a] • 1 ranura PCI Express 3.0 x16 (PCIE2: modo x8)* **CPU de la serie AMD Ryzen (Picasso, Raven Ridge)** • 1 ranura PCI Express 3.0 x16 (PCIE2: modo x8)* **CPU de la serie AMD Athlon** • 1 ranura PCI Express 3.0 x16 (PCIE2: modo x4)* * Admite unidad de estado sólido de NVMe como disco de arranque • 2 x Ranuras PCI Express 2.0 x1 • 1 x ranura PCI
Gráficos	• Tarjeta gráfica de la serie AMD Radeon™ Vega integrada en APU de la serie Ryzen* • Gráficos de la serie R de AMD Radeon™ integrados en APU de las series A* * El soporte real puede variar según la CPU • DirectX 12, Pixel Shader 5.0 • Memoria compartida predeterminada de 2 GB. Memoria máxima compartida admite hasta 16GB. * La memoria compartida máxima de 16GB requiere que haya una memoria del sistema de 32GB instalada. • Tres opciones de salida de gráficos: D-Sub, DVI-D y HDMI • Compatible con tres monitores • Admite la tecnología HDMI 1.4 con una resolución máxima de 4K x 2K (4096 x 2160) a 24Hz / (3840 x 2160) a 30Hz • Admite DVI-D con una resolución máxima de 1920 x 1200 a 60 Hz • Admite D-Sub con una resolución máxima de 2048 x 1536 a 60 Hz • Admite Sincronización automática entre audio y vídeo, color profundo (12 bpc), xvYCC y HBR (audio de alta tasa de bits) con puerto HDMI 1.4 (se necesita un monitor compatible con HDMI) • Compatible con función HDCP 1,4 con puertos DVI-D y HDMI 1.4 • Compatible con reproducción Blu-ray (BD) Full HD de 1080p con puertos DVI-D y HDMI 1.4
Audio	• 7.1 Audio CH HD (Códec de audio Realtek ALC887) • Admite protección contra sobretensiones • Tapas de audio ELNA
LAN	• PCIE x1 Gigabit LAN 10/100/1000 Mb/s • Realtek RTL8111H • Admite la función Reactivación de LAN • Admite protección contra rayos y descargas electrostáticas (ESD) • Admite Ethernet 802.3az de eficiencia energética • Admite PXE

E/S en panel posterior	• 1 x puerto de ratón PS/2 • 1 x puerto de teclado PS/2 • 1 Puerto serie: COM1 • 1 x puerto D-Sub • 1 x puerto DVI-D • 1 x puerto HDMI • 2 x Puertos USB 2.0 (admite protección contra descargas electrostáticas) • 4 x Puertos USB 3.2 Gen1 (admite protección contra descargas electrostáticas) • 1 x Puerto LAN RJ-45 con LED (LED DE ACTIVIDAD/ENLACE y LED DE VELOCIDAD) • Conector de audio HD: Entrada de línea / Altavoz frontal / Micrófono
Almacenamiento	• 4 x conectores SATA3 de 6,0 Gb/s, compatible con RAID (RAID 0, RAID 1 y RAID 10), NCQ, AHCI y conexión en caliente • 1 x Zócalo Ultra M.2 que admite el módulo SATA3 6,0 Gb/s M.2 de tipo 2242/2260/2280 con clave M y el módulo PCI Express M.2 hasta Gen3 x4 (32 Gb/s) (con Matisse, Picasso, Summit Ridge, Raven Ridge y Pinnacle Ridge) o Gen3 x2 (16 Gb/s) (con APU de la serie A y Athlon 2xxGE)* * Admite unidad de estado sólido de NVMe como disco de arranque * Admite el Kit U.2 de ASRock
Conector	• 1 x Base de conexiones de puerto de impresión • 1 x Base de conexiones de puerto COM • 1 x Conector SPI TPM • 1 x Cabezal de intrusión de chasis y de altavoces • 1 x Conector para ventilador de la CPU (4 contactos) * El conector para ventilador de la CPU admite ventilador de la CPU con una potencia de ventilador de 1 A (12 W) máxima. • 2 x conectores de ventilador del chasis (de 4 contactos) * El conector para ventilador del chasis admite el ventilador del chasis con una potencia de ventilador máxima de 1 A (12 W). • 1 x conector de alimentación ATX de 24 contactos • 1 x conector de alimentación de 12V de 4 contactos • 1 x Conector de audio en el panel frontal • 2 x Bases de conexiones USB 2.0 (admite 4 puertos USB 2.0) (Admite protección contra descargas electrostáticas) • 1 x base de conexiones USB 3.2 Gen1 (admite 2 puertos USB 3.2 Gen1) (Admite protección contra descargas electrostáticas)
SO	• Microsoft® Windows® 10 64 bits

Технические характеристики

Платформа

- Форм-фактор Micro ATX
- Схема на основе твердотельных конденсаторов

ЦП

- Поддерживаются процессоры AMD APU серии A (Bristol Ridge) и ЦП серии Ryzen (Matisse, Picasso, Summit Ridge, Raven Ridge и Pinnacle Ridge) под сокет AM4
- Система питания 6
- Поддерживаются ЦП мощностью до 105 Вт.

Чипсет

- AMD Promontory A320

Память

- Двухканальная память DDR4
- 2 гнезда DDR4 DIMM
- Процессоры AMD серии Ryzen (Matisse) поддерживают модули памяти DDR4 3200/2933/2667/2400/2133 с ECC и без ECC, небуферизованной памяти*
- Процессоры AMD серии Ryzen (Pinnacle Ridge) поддерживают модули памяти DDR4 3200+(OC)/2933(OC)/2667/2400/2133, ECC, non-ECC и Unbuffered*
- Процессоры AMD серии Ryzen (Picasso) поддерживают модули памяти DDR4 2933/2667/2400/2133 с без ECC, небуферизованной памяти*
- Процессоры AMD серии Ryzen (Summit Ridge) поддерживают модули памяти DDR4 3200+(OC)/2933(OC)/2667/2400/2133, ECC, non-ECC и Unbuffered*
- Процессоры AMD серии Ryzen (Raven Ridge) поддерживают модули памяти DDR4 3200+(OC)/2933/2667/2400/2133, non-ECC и Unbuffered*
- Гибридные процессоры AMD 7го поколения серии A с поддержкой DDR4 2400/2133 non-ECC небуферизованной памяти*

*Для процессоров серии Ryzen (Picasso и Raven Ridge) модуль памяти ECC поддерживается только процессорами PRO.

* Дополнительная информация представлена в Списке совместимой памяти (Memory Support List) на веб-сайте ASRock. (http://www.asrock.com/)

* Максимальные поддерживаемые частоты DDR4 UDIMM см на стр. 12.

- Максимальный объем ОЗУ: 32 ГБ
- Позолоченные (15 мкм) контакты слотов DIMM

Слоты расширения

ЦП серии AMD Ryzen (Matisse, Summit Ridge и Pinnacle Ridge)

- 1 слот PCI Express 3.0 x16 (PCIE2: режим x16)*

Слоты расширения	**Гибридные процессоры AMD 7го поколения серии A** • 1 слот PCI Express 3.0 x16 (PCIE2: режим x8)* **ЦП серии AMD Ryzen (Picasso, Raven Ridge)** • 1 слот PCI Express 3.0 x16 (PCIE2: режим x8)* **ЦП серии AMD Athlon** • 1 слот PCI Express 3.0 x16 (PCIE2: режим x4)* * Поддерживаются в качестве загрузочных SSD-диски типа NVMe • 2 слота PCI Express 2.0 x1 • 1 слот PCI
Графическая подсистема	• Встроенный видеоадаптер AMD Radeon™ серии Vega в процессорах APU серии Ryzen* • Встроенный видеоадаптер AMD Radeon™ R в процессорах APU серий A* *Фактическая поддержка зависит от процессора • DirectX 12, пиксельные шейдеры 5.0 • Общий объем памяти по умолчанию 2 ГБ. Поддерживается максимальный общий объем памяти до 16 ГБ. * Для максимального общего объема памяти 16 ГБ требуется установить системную память емкостью 32 ГБ. • Три видеовыхода: D-Sub, DVI-D и HDMI • Поддержка работы с тремя мониторами • Поддерживается HDMI 1.4 с максимальным разрешением до 4K x 2K (4096 x 2160) при частоте обновления 24 Гц (3840 x 2160 при 30 Гц) • Поддерживается DVI-D с максимальным разрешением до 1920 x 1200 при 60 Гц • Поддержка D-Sub с максимальным разрешением до 2048 x 1536 при 60 Гц • Поддерживаются Auto Lip Sync, Deep Color (12 бит/цвет), xvYCC и HBR (High Bit Rate Audio) через порт HDMI 1.4 (требуется соответствующий HDMI-монитор) • Поддержка функции HDCP 1.4 через порты DVI-D и HDMI 1.4 • Поддержка воспроизведения в режиме Full HD 1080p Blu-ray (BD) через порты DVI-D и HDMI 1.4
Звук	• 7.1-канальный звук высокой четкости (аудиокодек Realtek ALC887) • Защита от перепадов напряжения в электрической сети • Конденсаторы для аудиосистем ELNA
LAN	• PCIE x1 Gigabit LAN 10/100/1000 Мбит/с • Realtek RTL8111H • Поддерживается пробуждение по ЛВС • Молниезащита и защита от электростатических разрядов • Поддерживается Energy Efficient Ethernet 802.3az • Поддерживается PXE

Тыловые порты ввода-вывода	• 1 порт PS/2 для мыши • 1 порт PS/2 для клавиатуры • 1 порт Последовательный порт: COM1 • 1 порт D-Sub • 1 порт DVI-D • 1 порт HDMI • 2 порта USB 2.0 (с защитой от электростатических разрядов) • 4 портов USB 3.2 Gen1 (с защитой от электростатических разрядов) • 1 порт ЛВС RJ-45 с индикаторами («Активность/Соединение» и «Скорость») • Разъемы HD Audio: линейный вход / фронтальные AC / микрофон
Запоминающие устройства	• 4 порта SATA3 со скоростью передачи данных 6,0 Гб/с, поддержка RAID (RAID 0, RAID 1 и RAID 10), NCQ, AHCI и «горячего подключения». • 1 слот Ultra M.2, поддерживает модуль M.2 SATA3 типа 2242/2260/2280 со скоростью обмена данными 6,0 Гбит/с с ключом M и модуль M.2 PCI Express до версии Gen3 x4 (32 Гбит/с с ЦП Matisse, Picasso, Summit Ridge, Raven Ridge и Pinnacle Ridge) или Gen3 x 2 (16 Гбит/с с Гибридным процессором серии A и Athlon 2xxGE)* * Поддерживаются в качестве загрузочных SSD-диски типа NVMe * Поддерживается комплект ASRock U.2
Разъемы	• 1 колодка порта принтера • 1 колодка COM-порта • 1 колодка SPI TPM • 1 колодка с разъемами датчика вскрытия корпуса и динамика • 1 разъем для вентилятора охлаждения ЦП, 4-контактный * Разъем процессорного вентилятора поддерживает вентилятор с потребляемым током не более 1 A (12 Вт). • 2 разъема для вентилятора корпуса, 4-контактные * Разъем корпусного вентилятора поддерживает вентилятор с потребляемым током не более 1 A (12 Вт). • 1 разъем питания ATX, 24-контактный • 1 разъем питания 12 В, 4-контактный • 1 аудиоразъем для передней панели • 2 колодки USB 2.0 (4 порта USB 2.0, с защитой от электростатических разрядов) • 1 колодка USB 3.2 Gen1 (2 порта USB 3.2 Gen1) (с защитой от электростатических разрядов)
Операционные системы	• Microsoft® Windows® 10 (64-разрядная)

Especificações

Plataforma	• Micro ATX Form Factor • Design de condensador sólido
CPU	• Suporta soquete AMD série-A AM4 APUs (Bristol Ridge) e CPUs série Ryzen (Matisse, Picasso, Summit Ridge, Raven Ridge e Pinnacle Ridge) • Design com 6 fases de alimentação • Suporta CPU até 105W
Chipset	• AMD Promontory A320
Memória	• Tecnologia de memória DDR4 de dois canais • 2 x Slots DIMM DDR4 • CPUs série AMD (Matisse) suporta DDR4 3200/2933/2667/2400/2133 ECC & não-ECC, memória un-buffered* • CPUs série AMD Ryzen (Pinnacle Ridge) suporta DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC & não ECC, memória un-buffered* • CPUs série AMD (Picasso) suporta DDR4 2933/2667/2400/2133 não-ECC, memória un-buffered* • CPUs série AMD (Summit Ridge) suporta DDR4 3200+(OC)/2933 (OC)/2667/2400/2133 ECC & não ECC, memória un-buffered* • CPUs série AMD (Raven Ridge) suporta DDR4 3200+(OC)/2933/2667/2400/2133 não ECC, memória un-buffered* • APUs AMD 7° Ger Série A suportam DDR4 2400/2133 não ECC, sem memória intermediária* * Para CPUs série Ryzen (Picasso e Raven Ridge), ECC só é suportado com CPUs PRO. * Por favor, consulte a Lista de Suporte de Memória no site da ASRock para obter mais informação. (http://www.asrock.com/) * Por favor consulte a página 12 para suporte de frequência máxima DDR4 UDIMM. • Capacidade máxima da memória do sistema: 32GB • Contato em Ouro 15µ nos slots DIMM
Slot de expansão	**CPUs AMD Série Ryzen (Matisse, Summit Ridge e Pinnacle Ridge)** • 1 x Slot PCI Express 3.0 x16 (PCIE2: modo x16)*

Slot de expansão	**APUs AMD 7° Série A** • 1 x Slot PCI Express 3.0 x16 (PCIE2: modo x8)* **CPUs AMD Série Ryzen (Picasso, Raven Ridge)** • 1 x Slot PCI Express 3.0 x16 (PCIE2: modo x8)* **CPU AMD Athlon séries** • 1 x Slot PCI Express 3.0 x16 (PCIE2: modo x4)* * Suporta NVMe SSD nos discos de inicialização • 2 x Slots PCI Express 2.0 x1 • 1 x Slots PCI
Gráficos	• AMD Radeon™ Integrado Série Vega Gráficas na Série Ryzen APU* • AMD Radeon™ Integrado Série R Gráfica em Séries A APU* * Suporte atual pode vairar por CPU • DirectX 12, Pixel Shader 5.0 • Memória compartilhada padrão 2GB. Memória compartilhada máx suporta até 16GB. * A memória compartilhada máx de 16GB requer 32GB de memória de sistema instalado. • Três opções de saída de gráficos: D-Sub, DVI-D e HDMI • Suporta configuração com três monitores • Suporta HDMI 1.4 com resolução máx. até 4K x 2K (4096 x 2160) @ 24Hz / (3840 x 2160) @ 30Hz • Suporta DVI-D com resolução máxima de até 1920 x 1200 @ 60Hz • Suporta D-Sub com resolução máxima de até 2048 x 1536 @ 60Hz • Suporta Auto sincronização labial, Deep Color (12bpc), xvYCC e HBR (High Bit Rate Audio) com porta HDMI 1.4 (É necessário um monitor compatível com HDMI) • Suporta HDCP 1.4 com Portas DVI-D e HDMI 1.4 • Suporta reprodução Full HD 1080p Blu-ray (BD) com Portas DVI-D e HDMI 1.4
Áudio	• Áudio 7.1 CH HD com proteção de conteúdo (Codec de áudio Realtek ALC887) • Suporta Proteção de Sobretensão • Fones de Áudio ELNA
LAN	• LAN Gigabit 10/100/1000 Mb/s PCIE x1 • Realtek RTL8111H • Suporta Wake-On-LAN • Oferece Suporte à Proteção de Relâmpago/ESD • Suporta Energy Efficient Ethernet 802.3az • Suporta PXE

E/S do painel posterior	• 1 x Porta PS/2 para mouse • 1 x Porta PS/2 para Teclado • 1 x Porta Serial: COM1 • 1 x Porta D-Sub • 1 x Porta DVI-D • 1 x Porta HDMI • 2 x Portas USB 2.0 (Suporta Proteção ESD) • 4 x Portas USB 3.2 Gen1 (Suporta Proteção ESD) • 1 x Porta LAN RJ-45 com LED (LED ACT/LINK e LED DE VELOCIDADE) • Fichas de áudio HD: Entrada de Linha / Autofalante Frontal / Microfone
Armazenamento	• 4 x Conectores SATA3 6,0 Gb/s, suporta RAID (RAID 0, RAID 1, e RAID 10), NCQ, AHCI e Conexão a Quente • 1 x Soquete Ultra M.2, suporta M chave digite 2242/2260/2280 módulo M.2 SATA3 6,0 Gb/s e M.2 PCI Express até Gen3 x4 (32 Gb/s) (com Matisse, Picasso, Summit Ridge, Raven Ridge e Pinnacle Ridge) ou Gen3 x2 (16 Gb/s) (com APU Série-A e Athlon 2xxGE)* * Suporta NVMe SSD nos discos de inicialização * Suporta Kit U.2 ASRock
Conector	• 1 x Suporte Porta Impressão • 1 x Suporte porta COM • 1 x Plataforma SPI TPM • 1 x Intrusão do Chassi e Cabeçote de Autofalante • 1 x Conector da ventoinha da CPU (4 pinos) * O Conector do Ventilador de CPU suporta o ventilador de CPU de alimentação máxima 1A do ventilador (12W). • 2 x Conectores da ventoinha do Gabinete (4 pinos) * O Conector do Ventilador do Chassi suporta o ventilador do chassi de potência do ventilador máxima de 1A (12W). • 1 x Conector alimentação ATX 24 pinos • 1 x Conector de energia 4-pinos 12V • 1 x Conector de áudio do painel frontal • 2 x Plataformas USB 2.0 (Suporta 4 portas USB 2.0) (Suporta Proteção ESD) • 1 x Plataforma USB 3.2 Gen1 (Suporta 2 portas USB 3.2 Gen1) (Suporta Proteção ESD)
SO	• Microsoft® Windows® 10 64-bit

Specyfikacje

Platforma

- Współczynnik kształtu Micro ATX
- Konstrukcja kondensatorami stałymi

CPU

- Obsługa APU serii AMD Socket AM4 A (Bristol Ridge) i CPU serii Ryzen (Matisse, Picasso, Summit Ridge, Raven Ridge oraz Pinnacle Ridge)
- Sekcja zasilania 6 Power Phase Design
- Obsługa CPU do 105W

Chipset

- AMD Promontory A320

Pamięć

- Technologia pamięci Dual Channel DDR4
- 2 x gniazda DDR4 DIMM
- Seria CPU AMD Ryzen (Matisse) z obsługą DDR4 3200/2933/2667/2400/2133 ECC i nie-ECC, pamięć niebuforowana*
- Seria CPU AMD Ryzen (Pinnacle Ridge) z obsługą DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC i nie-ECC, pamięć niebuforowana*
- Seria CPU AMD Ryzen (Picasso) z obsługą DDR4 2933/2667/2400/2133 nie-ECC, pamięć niebuforowana*
- Seria CPU AMD Ryzen (Summit Ridge) z obsługą DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC i nie-ECC, pamięć niebuforowana*
- Seria CPU AMD Ryzen (Raven Ridge) z obsługą DDR4 3200+(OC)/2933/2667/2400/2133 nie-ECC, pamięć niebuforowana*
- Seria APU A AMD 7-ej generacji z obsługą DDR4 2400/2133 nie-ECC, pamięć niebuforowana*

* Dla serii CPU Ryzen (Picasso i Raven Ridge), ECC jest obsługiwana tylko z CPU PRO.

* Sprawdź listę obsługiwanej pamięci na stronie internetowej ASRock w celu uzyskania dalszych informacji. (http://www.asrock.com/)

* Sprawdź stronę 12 w celu uzyskania informacji o maksymalnej obsługiwanej częstotliwości DDR4 UDIMM.

- Maks. wielkość pamięci systemowej: 32GB
- 15µ pozłacane styki w gniazdach DIMM

Gniazdo rozszerzenia

Procesor serii AMD Ryzen (Matisse, Summit Ridge oraz Pinnacle Ridge)

- 1 x gniazdo PCI Express 3.0 x16 (tryb PCIE2: x16)*

Gniazdo rozszerzenia	**Seria APU A AMD 7-ej generacji** • 1 x gniazdo PCI Express 3.0 x 16 (tryb PCIE2: x8)* **Procesor serii AMD Ryzen (Picasso, Raven Ridge)** • 1 x gniazdo PCI Express 3.0 x 16 (tryb PCIE2: x8)* **Procesor serii AMD Athlon** • 1 x gniazdo PCI Express 3.0 x 16 (tryb PCIE2: x4)* * Obsługa SSD NVMe, jako dysków rozruchowych • 2 x gniazda PCI Express 2.0 x1 • 1 x gniazdo PCI
Grafika	• Zintegrowana karta graficzna AMD Radeon™ serii Vega w APU serii Ryzen* • Zintegrowana karta graficzna AMD Radeon™ serii R w APU serii A* * Rzeczywista obsługa zależy od CPU • DirectX 12, Pixel Shader 5.0 • Pamięć współdzielona, domyślnie 2GB. Maksymalnie pamięć współdzielona obsługuje do 16GB. * Maksymalna pamięć współdzielona 16GB wymaga zainstalowania 32GB pamięci systemowej. • Opcje trzech wyjść graficznych: D-Sub, DVI-D i HDMI • Obsługa trzech monitorów • Obsługa HDMI 1.4 z maks. rozdzielczością do 4K x 2K (4096 x 2160) przy 24Hz / (3840 x 2160) przy 30Hz • Obsługa DVI-D z maks. rozdzielczością do 1920 x 1200 przy 60Hz • Obsługa D-Sub z maks. rozdzielczością do 2048 x 1536 przy 60Hz • Obsługa Auto Lip Sync, Deep Color (12bpc), xvYCC i HBR (High Bit Rate Audio) z portami HDMI 1.4 (Wymagany monitor zgodny z HDMI) • Obsługa HDCP 1.4 z portami DVI-D i HDMI 1.4 • Obsługa odtwarzania Blu-ray (BD) Full HD 1080p z portami DVI-D i HDMI 1.4
Audio	• Dźwięk HD 7.1 CH (kodek audio Realtek ALC887) • Obsługa zabezpieczenia przed przepięciami • Nasadki audio ELNA
LAN	• 1 x PCIE Gigabit LAN 10/100/1000 Mb/s • Realtek RTL8111H • Obsługa Wake-On-LAN • Obsługa zabezpieczenia przed wyładowaniami atmosferycznymi/ESD • Obsługa Energy Efficient Ethernet 802.3az • Obsługa PXE

Tylny panel Wejścia/ Wyjścia	• 1 x port myszy PS/2 • 1 x port klawiatury PS/2 • 1 x port szeregowy: COM1 • 1 x port D-Sub • 1 x port DVI-D • 1 x port HDMI • 2 x porty USB 2.0 (Obsługa zabezpieczenia ESD) • 4 x porty USB 3.2 Gen1 (Obsługa zabezpieczenia ESD) • 1 x port LAN RJ-45 z LED (LED ACT/LINK i LED SPEED) • Gniazda audio HD: Wejście liniowe / Głośnik przedni / Mikrofon
Przechowy-wanie	• 4 x złącza SATA3 6,0 Gb/s, obsługa RAID (RAID 0, RAID 1 i RAID 10), NCQ, AHCI i Hot Plug • 1 x gniazdo Ultra M.2, obsługa M Key typu 2242/2260/2280 modułu M.2 SATA3 6,0 Gb/s i modułu M.2 PCI Express do Gen3 x4 (32 Gb/s) (z Matisse, Picasso, Summit Ridge, Raven Ridge oraz Pinnacle Ridge) lub Gen3 x2 (16 Gb/s) (z APU serii A i Athlon 2xxGE)* * Obsługa SSD NVMe, jako dysków rozruchowych * Obsługa ASRock U.2 Kit
Złącze	• 1 x złącze główkowe portu drukarki • 1 x złącze główkowe portu COM • 1 x złącze główkowe SPI TPM • 1 x złącze główkowe naruszenia obudowy i głośnika • 1 x złącze wentylatora CPU (4-pinowe) * Złącze wentylatora CPU obsługuje wentylator CPU maksymalnym prądem zasilania wentylatora 1A (12W). • 2 x złącze wentylatora obudowy (4-pinowe) * Złącze wentylatora obudowy obsługuje wentylator obudowy maksymalnym prądem zasilania wentylatora 1 A (12 W). • 1 x 24 pinowe złącze zasilania ATX • 1 x 4 pinowe złącze zasilania 12 V • 1 x złącze audio na panelu przednim • 2 x złącza główkowe USB 2.0 (Obsługa 4 portów USB 2.0) (Obsługa zabezpieczenia ESD) • 1 x porty główkowe USB 3.2 Gen1 (obsługa 2 portów USB 3.2 Gen1) (obsługa zabezpieczenia ESD)
System operacyjny	• Microsoft® Windows® 10 64-bitowy

규격

플랫폼

- Micro ATX 폼 팩터
- 솔리드 콘덴서 구조

CPU

- AMD Socket AM4 A 시리즈 APU (Bristol Ridge) 및 Ryzen 시리즈 CPU (Matisse, Picasso, Summit Ridge, Raven Ridge 및 Pinnacle Ridge) 지원
- 6 개 전원 위상 구조
- 최대 105W 의 CPU 지원

칩세트

- AMD Promontory A320

메모리

- 듀얼 채널 DDR4 메모리 기술
- DDR4 DIMM 슬롯 2 개
- AMD Ryzen 시리즈 CPU (Matisse) 는 DDR4 3200/2933/2667/2400/2133 ECC 및 비 ECC, 비버퍼링 메모리를 지원합니다 .*
- AMD Ryzen 시리즈 CPU (Pinnacle Ridge) 는 DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC 및 비 ECC, 비버퍼링 메모리를 지원합니다 .*
- AMD Ryzen 시리즈 CPU (Picasso) 는 DDR4 2933/2667/2400/2133 비 ECC, 비버퍼링 메모리를 지원합니다 .*
- AMD Ryzen 시리즈 CPU (Summit Ridge) 는 DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC 및 비 ECC, 비버퍼링 메모리를 지원합니다 .*
- AMD Ryzen 시리즈 CPU (Raven Ridge) 는 DDR4 3200+(OC)/2933/2667/2400/2133 비 ECC, 비버퍼링 메모리를 지원합니다 .*
- AMD 7th Gen A- 시리즈 APU 는 DDR4 2400/2133 비 ECC, 비버퍼링 메모리를 지원합니다 .*

* Ryzen Series CPU (Picasso 및 Raven Ridge) 의 경우 , ECC 는 PRO CPU 에서만 지원합니다 .

* 추가 정보를 원하시면 ASRock 웹사이트에 있는 메모리 지원 목록을 참조하십시오 . (http://www.asrock.com/)

* DDR4 UDIMM 최대 주파수 지원은 12 페이지를 참조하십시오 .

- 시스템 메모리 최대 용량 : 32GB
- DIMM 슬롯에 15μ Gold Contact 장착

확장 슬롯

AMD Ryzen 시리즈 CPU (Matisse, Summit Ridge 및 Pinnacle Ridge)

- PCI Express 3.0 x16 슬롯 1 개 (PCIE2: x16 모드)*

확장 슬롯

AMD 7th A- 시리즈 APU

- PCI Express 3.0 x16 슬롯 1 개 (PCIE2: x8 모드)*

AMD Ryzen 시리즈 CPU (Picasso, Raven Ridge)

- PCI Express 3.0 x16 슬롯 1 개 (PCIE2: x8 모드)*

AMD Athlon 시리즈 CPU

- PCI Express 3.0 x16 슬롯 1 개 (PCIE2: x4 모드)*

* NVMe SSD 를 부팅 디스크로 사용 가능하도록 지원

- PCI Express 2.0 x1 슬롯 2 개
- PCI 슬롯 1 개

그래픽

- Ryzen Series APU 의 통합형 AMD Radeon™ Vega Series 그래픽 *
- A- 시리즈 APU 의 경우 통합된 AMD Radeon™ R 시리즈 그래픽 *

* 실제 지원은 CPU 에 따라 다를 수 있음

- DirectX 12, Pixel Shader 5.0
- 기본 공유 메모리는 2GB 입니다 . 최대 공유 메모리는 16GB 까지 지원됩니다 .

* 최대 공유 메모리로 16GB 를 사용하려면 32GB 의 시스템 메모리가 설치되어 있어야 합니다 .

- 그래픽 출력 옵션 세 개 : D-Sub, DVI-D 및 HDMI
- 삼중 모니터 지원
- HDMI 1.4 지원 (최대 해상도 4K x 2K (4096 x 2160) @ 24Hz / (3840 x 2160) @ 30Hz)
- DVI-D 지원 (최대 해상도 1920 x 1200 @ 60Hz)
- D-Sub 지원 (최대 해상도 2048 x 1536 @ 60Hz)
- Auto Lip Sync, Deep Color (12bpc), xvYCC 및 HBR (High Bit Rate Audio) (HDMI 1.4 포트 포함) 지원 (HDMI 호환 모니터 필요)
- DVI-D 및 HDMI 1.4 포트를 이용한 HDCP 1.4 지원
- DVI-D 및 HDMI 1.4 포트를 이용한 Full HD 1080p Blu-ray (BD) 재생 지원

오디오

- 7.1 CH HD 오디오 (Realtek ALC887 오디오 코덱)
- 서비 보호 지원
- ELNA 오디오 캡

LAN

- PCIE 1 개 , Gigabit LAN 10/100/1000 Mb/s
- Realtek RTL8111H
- Wake-On-LAN 지원
- 번개 /ESD 보호 지원
- 절전형 이더넷 802.3az 지원
- PXE 지원

후면 패널 I/O

- PS/2 마우스 포트 1 개
- PS/2 키보드 포트 1 개
- 직렬 포트 1 개 COM1
- D-Sub 포트 1 개
- DVI-D 포트 1 개
- HDMI 포트 1 개
- USB 2 포트 2 개 (ESD 보호 지원)
- USB 3.2 Gen1 포트 4 개 (ESD 보호 지원)
- LED 장착 RJ-45 LAN 포트 1 개 (ACT/LINK LED 및 SPEED LED)
- HD 오디오 잭 : 라인 입력 / 전면 스피커 / 마이크

저장 장치

- SATA3 6.0 Gb/s 커넥터 4 개가 RAID (RAID 0, RAID 1 및 RAID 10), NCQ, AHCI 및 핫 플러그를 지원합니다 .
- 울트라 M.2 소켓 1 개 , M 키 타입 2242/2260/2280 M.2 SATA3 6.0 Gb/s 모듈 및 Gen3 M.2 PCI Express 모듈 (Matisse, Picasso, Summit Ridge, Raven Ridge 및 Pinnacle Ridge 탑재) 을 4 개 (32 Gb/s) 까지 또는 Gen3(A 시리즈 APU 및 Athlon 2xxGE 시리즈 APU 의 경우) 의 경우 2 개 (16 Gb/s) 까지 지원 *

* NVMe SSD 를 부팅 디스크로 사용 가능하도록 지원
* ASRock U.2 키트 지원

커넥터

- 인쇄 포트 헤더 1 개
- COM 포트 헤더 1 개
- SPI TPM 헤더 1 개
- 섀시 침입 및 스피커 헤더 1 개
- CPU 팬 커넥터 (4 핀) 1 개

* CPU 팬 커넥터는 팬 전력이 최대 1A (12W) 인 CPU 팬을 지원합니다 .

- 섀시 팬 커넥터 2 개 (4 핀)

* 섀시 팬 커넥터는 팬 전력이 최대 1A (12W) 인 섀시 팬을 지원합니다 .

- 24 핀 ATX 전원 커넥터 1 개
- 4 핀 12V 전원 커넥터 1 개
- 전면 패널 오디오 커넥터 1 개
- USB 2.0 헤더 2 개 (USB 2.0 포트 4 개 지원) (ESD 보호 지원)
- USB 3.2 Gen1 헤더 1 개 (USB 3.2 Gen1 포트 2 개 지원) (ESD 보호 지원)

OS

- Microsoft® Windows® 10 64- 비트

仕様

プラットフォーム
- マイクロ ATX フォームファクター
- 固体コンデンサ設計

CPU
- AMD ソケット AM4 A シリーズ APU（Bristol Ridge）および Ryzen シリーズ CPU（Matisse, Picasso, Summit Ridge, Raven Ridge および Pinnacle Ridge）に対応
- 6 電源フェーズ設計
- 最大 105W までの CPU に対応

チップセット
- AMD Promontory A320

メモリ
- デュアルチャンネル DDR4 メモリ機能
- 2 x DDR4 DIMM スロット
- AMD Ryzen シリーズ CPU（Matisse）は、DDR4 3200/2933/2667/2400/2133 ECC および非 ECC、アンバッファードメモリに対応します *
- AMD Ryzen シリーズ CPU (Pinnacle Ridge) は DDR4 3200+(OC)/2933 (OC)/2667/2400/2133 ECC、および、ノン ECC、アンバッファードメモリに対応します。*
- AMD Ryzen シリーズ CPU（Picasso）は、DDR4 2933/2667/2400/2133 非 ECC、アンバッファードメモリに対応します *
- AMD Ryzen シリーズ CPU (Summit Ridge) は DDR4 3200+(OC)/2933 (OC)/2667/2400/2133 ECC、および、ノン ECC、アンバッファードメモリに対応します。*
- AMD Ryzen シリーズ CPU (Raven Ridge) は DDR4 3200+(OC)/2933/2667/2400/2133 ノン ECC、アンバッファードメモリに対応します。*
- AMD 第 7 世代 A シリーズ APU は DDR4 2400/2133 ノン ECC、アンバッファードメモリに対応します。*

* Ryzen シリーズ CPU（Picasso と Raven Ridge）の場合、ECC は PRO CPU のみに対応します。
* 詳細については、ASRock ウェブサイトのメモリーサポート一覧を参照してください。 (http://www.asrock.com/)
* DDR4 UDIMM 最大周波数サポートについては 12 ページを参照してください。
- システムメモリの最大容量： 32GB
- DIMM スロットに 15 μ ゴールドコンタクトを採用

拡張スロット

AMD Ryzen シリーズ CPU (Matisse、Summit Ridge および Pinnacle Ridge)
- 1 x PCI Express 3.0 x16 スロット（PCIE2: x16 モード）*

日本語

拡張スロット	**AMD 第 7 世代 A シリーズ APU** • 1 x PCI Express 3.0 x16 スロット（PCIE2: x8 モード）* **AMD Ryzen シリーズ CPU (Picasso、Raven Ridge)** • 1 x PCI Express 3.0 x16 スロット（PCIE2: x8 モード）* **AMD Athlon シリーズ CPU** • 1 x PCI Express 3.0 x16 スロット（PCIE2: x4 モード)* * 起動ディスクとして NVMe SSD に対応 • 2 x PCI Express 2.0 x1 スロット • 1 x PCI スロット
グラフィックス	• AMD Radeon™ Vega シリーズグラフィックスを Ryzen シリーズ APU に統合 * • 統合された AMD Radeon™ R シリーズグラフィックス（A シリーズ APU）* * 実際のサポートは CPU によって異なることがあります • DirectX 12、Pixel Shader 5.0 • 共有メモリはデフォルトでは 2GB に設定されています。 最大共有メモリは 16GB まで対応します。 * 最大共有メモリが 16GB の場合は、32GB のシステムメモリがインストールされていなければなりません。 • 3 つのグラフィックス出力オプション : D-Sub、DVI-D、HDMI • 3 台のモニターに対応 • HDMI 1.4 に対応、最大解像度 4K x 2K (4096 x 2160) @ 24Hz / (3840 x 2160) @ 30Hz • DVI-D に対応、最大解像度 1920 x 1200 @60Hz • D-Sub をサポート。最大解像度 2048 x 1536 @60Hz • HDMI 1.4 ポートでオートリップシンク、ディープカラー（12bpc）、xvYCC、および、HBR（高ビットレートオーディオ）に対応（HDMI 対応モニターが必要です） • DVI-D ポートと HDMI 1.4 ポートで HDCP 1.4 に対応 • DVI-D ポートと HDMI 1.4 ポートで Full HD 1080p Blu-ray (BD) 再生に対応
オーディオ	• 7.1 CH HD オーディオ (Realtek ALC887 Audio Codec) • サージ保護に対応 • ELNA 製オーディオコンデンサ
LAN	• PCIE x1 ギガビット LAN 10/100/1000 Mb/ 秒 • Realtek RTL8111H • Wake-On-LAN（ウェイク オン ラン）に対応 • 雷 / 静電気放電（ESD）保護に対応 • エネルギー効率のよいイーサネット 802.3az をサポート • PXE をサポート

リアパネル I/O

- 1 x PS/2 マウスポート
- 1 x PS/2 キーボードポート
- 1 x シリアルポート : COM1
- 1 x D-Sub ポート
- 1 x DVI-D ポート
- 1 x HDMI ポート
- 2 x USB 2.0 ポート（静電気放電（ESD）保護に対応）
- 4 x USB 3.2 Gen1 ポート（静電気放電（ESD）保護に対応）
- 1 x LED 付き RJ-45 LAN ポート（ACT/LINK LED と SPEED LED）
- HD オーディオジャック : ラインイン / フロントスピーカー / マイク

ストレージ

- 4 x SATA3 6.0 Gb/s コネクタ、RAID（RAID 0、RAID 1、RAID 10）、NCQ、AHCI およびホットプラグ機能に対応
- 1 x ウルトラ M.2 ソケット、M Key タイプ 2242/2260/2280 M.2 SATA3 6.0 Gb/s モジュール、および、最大 Gen3 x4（32 Gb/s）（Matisse、Picasso、Summit Ridge、Raven Ridge および Pinnacle Ridge の場合）または最大 Gen3 x2（16 Gb/s）（A シリーズ APU および Athlon 2xxGE の場合）までの M.2 PCI Express モジュールに対応 *

* 起動ディスクとして NVMe SSD に対応
* ASRock U.2 キットに対応

コネクタ

- 1 x プリントポートヘッダー
- 1 x COM ポートヘッダー
- 1 x SPI TPM ヘッダー
- 1 x シャーシイントルージョンとスピーカーヘッダー
- 1 x CPU ファンコネクタ（4 ピン）

* CPU ファンコネクタは最大 1A (12W) の電力の CPU ファンに対応します。

- 2 x シャーシファンコネクタ（4 ピン）

* シャーシファンコネクタは最大 1A (12W) の出力のシャーシファンに対応します。

- 1 x 24 ピン ATX 電源コネクタ
- 1 x 4 ピン 12V 電源コネクタ
- 1 x 前面パネルオーディオコネクタ
- 2 x USB 2.0 ヘッダー（4 つの USB 2.0 ポートに対応）（静電気放電（ESD）保護に対応）
- 1 x USB 3.2 Gen1 ヘッダー（2 つの USB 3.2 Gen1 ポートに対応）（静電気放電（ESD）保護に対応）

OS

- Microsoft® Windows® 10 64-bit

规格

平台

- Micro ATX 规格尺寸
- 稳固的电容器设计

CPU

- 支持 AMD Socket AM4 A 系列 APU (Bristol Ridge) 和 Ryzen 系列 CPU (Matisse, Picasso, Summit Ridge, Raven Ridge 和 Pinnacle Ridge)
- 6 电源相设计
- 支持最高 105W 的 CPU

芯片集

- AMD Promontory A320

内存

- 双通道 DDR4 内存技术
- 2 x DDR4 DIMM 槽
- AMD Ryzen 系列 CPU (Matisse) 支持 DDR4 3200/2933/2667/2400/2133 ECC 及非 ECC，非缓冲内存 *
- AMD Ryzen 系列 CPU (Pinnacle Ridge) 支持 DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC 及非 ECC，非缓冲内存 *
- AMD Ryzen 系列 CPU (Picasso) 支持 DDR4 2933/2667/2400/2133 非 ECC，非缓冲内存 *
- AMD Ryzen 系列 CPU (Summit Ridge) 支持 DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC 及非 ECC，非缓冲内存 *
- AMD Ryzen 系列 CPU (Raven Ridge) 支持 DDR4 3200+(OC)/2933/2667/2400/2133 非 ECC，非缓冲内存 *
- AMD 7 代 A 系列 APU 支持 DDR4 2400/2133 非 ECC，非缓冲内存 *

* 对于 Ryzen 系列 CPU (Picasso 及 Raven Ridge)，仅 PRO CPU 支持 ECC。

* 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/)

* 请参考第 12 页了解 DDR4 UDIMM 最大支持频率。

- 支持系统内存最大容量： 32GB
- DIMM 插槽中 15μ 金触点

扩充槽

AMD Ryzen 系列 CPU (Matisse、Summit Ridge 和 Pinnacle Ridge)

- 1 x PCI Express 3.0 x16 插槽（PCIE2：x16 模式)*

扩充槽	**AMD 7 代 A 系列 APU** • 1 x PCI Express 3.0 x16 插槽（PCIE2：x8 模式)* **AMD Ryzen 系列 CPU (Picasso、Raven Ridge)** • 1 x PCI Express 3.0 x16 插槽（PCIE2：x8 模式)* **AMD Athlon 系列 CPU** • 1 x PCI Express 3.0 x16 插槽（PCIE2：x4 模式)* * 支持 NVMe SSD 用作启动盘 • 2 x PCI Express 2.0 x1 槽 • 1 x PCI 槽
图形	• Ryzen 系列 APU 中的集成 AMD Radeon™ Vega 系列图形 * • A 系列 APU 中的集成 AMD Radeon™ R 系列图形 * * 实际支持可能视 CPU 而变化 • DirectX 12、Pixel Shader 5.0 • 默认共享内存 2GB。 最大共享内存达 16GB。 * 最大共享内存 16GB 需要安装 32GB 系统内存。 • 3 个图形输出选项： D-Sub、DVI-D 和 HDMI • 支持三台显示器 • 支持 HDMI 1.4，24Hz 时最大分辨率可达 4K x 2K (4096 x 2160)/ 30Hz 时可达 (3840 x 2160) • 支持 DVI-D，60Hz 时最大分辨率达 1920 x 1200 • 支持 D-Sub，60Hz 时最大分辨率达 2048 x 1536 • 通过 HDMI 1.4 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 1.4 端口支持 HDCP 1.4 • 通过 DVI-D 和 HDMI 1.4 端口支持全高清 1080p Blu-ray (BD) 播放
音频	• 7.1 CH 高清音频 (Realtek ALC887 音频编解码器) • 支持电涌保护 • ELNA 音频电容
LAN	• PCIE x1 Gigabit LAN 10/100/1000 Mb/s • Realtek RTL8111H • 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 鼠标端口
- 1 x PS/2 键盘端口
- 1 x 串行端口： COM1
- 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 RAID (RAID 0、RAID 1 和 RAID 10)、NCQ、AHCI 和热插拔
- 1 x 超级 M.2 接口，支持 M Key 类型 2242/2260/2280 M.2 SATA3 6.0 Gb/s 类型模块和 M.2 PCI Express 模块（最高 Gen3 x4 (32 Gb/s) (Matisse、Picasso、Summit Ridge、Raven Ridge 和 Pinnacle Ridge) 或 Gen3 x2 (16 Gb/s)（A 系列 APU 和 Athlon 2xxGE 系列 APU）*

* 支持 NVMe SSD 用作启动盘
* 支持华擎 U.2 套件

接口

- 1 x 打印端口接脚
- 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。

- 2 x 机箱风扇接口 (4 针)

* 机箱风扇接口支持功率最大为 1A (12W) 的机箱风扇。

- 1 x 24 针 ATX 电源接口
- 1 x 4 针 12V 电源接口
- 1 x 前面板音频接口
- 2 x USB 2.0 接脚（支持 4 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）

操作系统

- Microsoft® Windows® 10 64-bit

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。

規格

平台

- Micro ATX 尺寸
- 固態電容設計

CPU

- 支援 AMD Socket AM4 A 系列 APU (Bristol Ridge) 與 Ryzen 系列 CPU（Matisse, Picasso, Summit Ridge, Raven Ridge 及 Pinnacle Ridge）
- 6 電源相位設計
- 支援最高 105W CPU

晶片組

- AMD Promontory A320

記憶體

- 雙通道 DDR4 記憶體技術
- 2 x DDR4 DIMM 插槽
- AMD Ryzen 系列 CPU (Matisse) 支援 DDR4 3200/2933/2667/2400/2133 ECC & 非 ECC、無緩衝記憶體 *
- AMD Ryzen 系列 CPU (Pinnacle Ridge) 支援 DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC & 非 ECC、無緩衝記憶體 *
- AMD Ryzen 系列 CPU (Picasso) 支援 DDR4 2933/2667/2400/2133 ECC & 非 ECC、無緩衝記憶體 *
- AMD Ryzen 系列 CPU (Summit Ridge) 支援 DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC & 非 ECC、無緩衝記憶體 *
- AMD Ryzen 系列 CPU (Raven Ridge) 支援 DDR4 3200+(OC)/2933/2667/2400/2133 非 ECC、無緩衝記憶體 *
- AMD 第 7 代 A 系列 APU 支援 DDR4 2400/2133 非 ECC、無緩衝記憶體 *

* 若使用 Ryzen 系列 CPU（Picasso 及 Raven Ridge），僅 PRO CPU 支援 ECC。

* 如需更多資訊，請參閱華擎網站上的記憶體支援表。(http://www.asrock.com/)

* 關於 DDR4 UDIMM 最高頻率支援，請參閱第 12 頁。

- 最大系統記憶體容量： 32GB
- 15 μ 特厚鍍金插槽

擴充插槽

AMD Ryzen 系列 CPU（Matisse、Summit Ridge 及 Pinnacle Ridge）

- 1 x PCI Express 3.0 x16 插槽（PCIE2：x16 模式）*

擴充插槽	AMD 第 7 代 A 系列 APU • 1 x PCI Express 3.0 x16 插槽（PCIE2：x8 模式）* AMD Ryzen 系列 CPU (Picasso、Raven Ridge) • 1 x PCI Express 3.0 x16 插槽（PCIE2：x8 模式）* AMD Athlon 系列 CPU • 1 x PCI Express 3.0 x16 插槽（PCIE2：x4 模式）* * 支援 NVMe SSD 作為開機磁碟 • 2 x PCI Express 2.0 x1 插槽 • 1 x PCI 插槽
顯示卡	• 整合式 AMD Radeon™ Vega Series Graphics 內建於 Ryzen 系列 APU* • 整合 A 系列 APU 的 AMD Radeon™ R 系列顯示卡 * * 實際支援可能隨 CPU 改變 • DirectX 12、Pixel Shader 5.0 • 預設共用記憶體 2GB。最大共用記憶體達 16GB。 * 最大共用記憶體 16GB 需要安裝 32GB 系統記憶體。 • 三個圖形輸出選項：D-Sub、DVI-D 及 HDMI • 支援三台顯示器 • 支援最高可達 4K x 2K (4096 x 2160) @ 24Hz / (3840 x 2160) @ 30Hz 解析度的 HDMI 1.4 • 最高支援 1920 x 1200 @ 60Hz 解析度的 DVI-D • 最高支援 2048 x 1536 @ 60Hz 解析度的 D-Sub • 支援使用 HDMI 1.4 連接埠（需相容於 HDMI 監視器）的 Auto Lip Sync、Deep Color (12bpc)、xvYCC 及 HBR（高位元率音訊） • 支援含 DVI-D 及 HDMI 1.4 連接埠的 HDCP 1.4 • 支援透過 DVI-D 及 HDMI 1.4 連接埠的 Full HD 1080p 藍光 (BD) 播放
音訊	• 7.1 CH HD 音訊（Realtek ALC887 音訊轉碼器） • 支援突波保護 • ELNA 音響級電容
LAN	• PCIE x1 Gigabit LAN 10/100/1000 Mb/s • Realtek RTL8111H • 支援網路喚醒 • 支援雷擊／靜電保護 • 支援 802.3az EEE 節能乙太網路 • 支援 PXE

後面板 I/O	• 1 x PS/2 滑鼠連接埠 • 1 x PS/2 鍵盤連接埠 • 1 x 序列連接埠：COM1 • 1 x D-Sub 連接埠 • 1 x DVI-D 連接埠 • 1 x HDMI 連接埠 • 2 x USB 2.0 連接埠（支援靜電保護） • 4 x USB 3.2 Gen1 連接埠（支援靜電保護） • 1 x RJ-45 LAN 連接埠，含 LED（ACT/LINK LED 及 SPEED LED） • HD 音訊插孔： 線路輸入／前置喇叭／麥克風
儲存裝置	• 提供 4 x SATA3 6.0 Gb/s 接頭，支援 RAID（RAID 0、RAID 1、與 RAID 10）、NCQ、AHCI 及熱插拔 • 1 x Ultra M.2 插座，支援 M Key 型 2242/2260/2280 M.2 SATA3 6.0 Gb/s 模組與 M.2 PCI Express 模組（最高可達 Gen3 x4 (32 Gb/s)）類型（配備 Matisse、Picasso、Summit Ridge、Raven Ridge 及 Pinnacle Ridge），或使用 A 系列 APU 及 Athlon 2xxGE 系列時，最高可達 Gen3 x2 (16 Gb/s)* * 支援 NVMe SSD 作為開機磁碟 * 支持華擎 U.2 套件
接頭	• 1 x 列印連接埠排針 • 1 x COM 連接埠排針 • 1 x SPI TPM 排針 • 1 x 機殼防護及喇叭排針 • 1 x CPU 風扇接頭 (4-pin) * CPU 風扇接頭支援最高 1A (12W) 風扇功率的 CPU 風扇。 • 2 x 機殼風扇接頭 (4-pin) * 機殼風扇接頭支援最高 1A (12W) 風扇功率的機殼風扇。 • 1 x 24 pin ATX 電源接頭 • 1 x 4 pin 12V 電源接頭 • 1 x 前面板音訊接頭 • 2 x USB 2.0 排針（支援 4 個 USB 2.0 連接埠）（支援靜電保護） • 1 x USB 3.2 Gen1 排針（支援 2 個 USB 3.2 Gen1 連接埠）（支援靜電保護）
作業系統	• Microsoft® Windows® 10 64-bit

Spesifikasi

Platform	• Bentuk dan Ukuran Micro ATX • Desain Kapasitor Solid
CPU	• Mendukung Soket AMD APU Seri AM4 A (Bristol Ridge) dan CPU Seri Ryzen (Matisse, Picasso, Summit Ridge, Raven Ridge, dan Pinnacle Ridge) • Desain 6 Fase Daya • Mendukung CPU hingga 105W
Chipset	• AMD Promontory A320
Memori	• Teknologi Memori DDR4 Dua Saluran • 2 x Slot DIMM DDR4 • CPU seri AMD Ryzen (Matisse) mendukung DDR4 3200/2933/2667/2400/2133 ECC & non-ECC, memori tanpa buffer* • CPU seri AMD Ryzen (Pinnacle Ridge) mendukung DDR4 3200+(OC)/2933(OC)/2667/2400/2133 ECC & non-ECC, memori tanpa buffer* • CPU seri AMD Ryzen (Picasso) mendukung DDR4 2933/2667/2400/2133 non-ECC, memori tanpa buffer* • CPU seri AMD Ryzen (Summit Ridge) mendukung DDR4 3200+(OC)/2933 (OC)/2667/2400/2133 ECC & non-ECC, memori tanpa buffer* • CPU seri AMD Ryzen (Raven Ridge) mendukung DDR4 3200+(OC)/2933/2667/2400/2133 non-ECC, memori tanpa buffer* • APU AMD 7th Seri Gen A mendukung DDR4 2400/2133 non-ECC, memori tanpa buffer* * Untuk CPU Seri Ryzen (Picasso dan Raven Ridge), ECC hanya didukung dengan CPU PRO. * Lihat Daftar Dukungan Memori di situs web ASRock untuk informasi selengkapnya. (http://www.asrock.com/) * Lihat halaman 12 untuk dukungan frekuensi maksimum DDR4 UDIMM. • Kapasitas maksimum memori sistem: 32GB • 15µ Bidang Kontak Berwarna Emas di Slot DIMM
Slot Ekspansi	**CPU Seri AMD Ryzen (Matisse, Summit Ridge, dan Pinnacle Ridge)** • 1 x Slot PCI Express 3.0 x16 (PCIE2: x16 mode)*

Slot Ekspansi	**APU AMD 7th Seri A** • 1 x Slot PCI Express 3.0 x16 (PCIE2: x8 mode)* **CPU Seri AMD Ryzen (Picasso, Raven Ridge)** • 1 x Slot PCI Express 3.0 x16 (PCIE2: x8 mode)* **CPU seri AMD Athlon** • 1 x Slot PCI Express 3.0 x16 (PCIE2: x4 mode)* * Mendukung SSD NVMe sebagai disk boot • 2 x Slot PCI Express 2.0 x1 • 1 x Slot PCI
Grafis	• Grafis AMD Radeon™ Terpadu Seri Vega dalam APU Seri Ryzen* • Grafis AMD Radeon™ Seri R terpadu dalam APU seri A* * Dukungan sebenarnya mungkin beragam berdasarkan CPU • DirectX 12, Pixel Shader 5.0 • Default memori bersama 2GB. Memori bersama maksimum mendukung hingga 16GB. * Memori bersama maksimum 16GB mengharuskan memori sistem 32GB terpasang. • Tiga pilihan output grafis: D-Sub, DVI-D, dan HDMI • Mendukung Tiga Monitor • Mendukung HDMI 1.4 dengan resolusi maksimum hingga 4K x 2K (4096 x 2160) @ 24Hz/ (3840 x 2160) @ 30Hz • Mendukung DVI-D dengan resolusi maksimum hingga 1920 x 1200 @ 60Hz • Mendukung D-Sub dengan resolusi maksimum hingga 2048 x 1536 @ 60Hz • Mendukung Auto Lip Sync, Kedalaman Warna (12bpc), xvYCC, dan HBR (Audio High Bit Rate) dengan Port HDMI 1.4 (memerlukan monitor yang kompatibel dengan HDMI) • Mendukung HDCP 1.4 dengan port DVI-D dan HDMI 1.4 • Mendukung pemutaran 1080p Blu-ray (BD) Full HD dengan port DVI-D dan HDMI 1.4
Audio	• Audio HD 7.1 CH (Realtek ALC887 Audio Codec) • Mendukung Perlindungan dari Lonjakan Arus • ELNA Audio Caps
LAN	• 1 x PCIE Gigabit LAN 10/100/1000 Mb/s • Realtek RTL8111H • Mendukung Wake-On-LAN • Mendukung Perlindungan dari Petir/ESD • Mendukung Ethernet 802.3az Hemat Energi • Mendukung PXE

I/O Panel Belakang	• 1 x Port Mouse PS/2 • 1 x Port Keyboard PS/2 • 1 x Port Seri: COM1 • 1 x Port D-Sub • 1 x Port DVI-D • 1 x Port HDMI • 2 x Port USB 2.0 (Mendukung Perlindungan dari ESD) • 4 x Port USB 3.2 Gen1 (Mendukung Perlindungan dari ESD) • 1 x Port LAN RJ-45 dengan LED (LED ACT/LINK dan LED SPEED) • Soket Audio HD: Saluran Masuk/Speaker Depan/Mikrofon
Penyim-panan	• 4 x Konektor SATA3 6,0 Gb/s, mendukung RAID (RAID 0, RAID 1, dan RAID 10), NCQ, AHCI dan Hot Plug • 1 x Soket Ultra M.2, mendukung modul M Key tipe 2242/2260/2280 M.2 SATA3 6,0 Gb/s dan modul M.2 PCI Express hingga Gen3 x4 (32 Gb/s) (dengan Matisse, Picasso, Summit Ridge, Raven Ridge dan Pinnacle Ridge) atau Gen3 x2 (16 Gb/s) (dengan APU seri A dan Athlon 2xxGE)* * Mendukung SSD NVMe sebagai disk boot * Mendukung Kit U.2 ASRock
Konektor	• 1 x Header Port Printer • 1 x Header Port COM • 1 x Header SPI TPM • 1 x Intrusi Chassis dan Header Speaker • 1 x Konektor Kipas CPU (4-pin) * Konektor Kipas CPU mendukung kipas CPU dengan daya kipas maksimum 1A (12W). • 2 x Konektor Kipas Chassis (4-pin) * Konektor Kipas Sasis mendukung kipas sasis dengan daya kipas maksimum 1A (12W). • 1 x Konektor Daya ATX 24 pin • 1 x Konektor Daya 4 pin 12V • 1 x Konektor Audio Panel Depan • 2 x Header USB 2.0 (Mendukung 4 port USB 2.0) (Mendukung Perlindungan dari ESD) • 1 x Header USB 3.2 Gen1 (Mendukung 2 port USB 3.2 Gen1) (Mendukung Perlindungan dari ESD)
OS	• Microsoft® Windows® 10 64-bit

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 http://www.asrock.com/support/tsd.asp

ASRock Incorporation

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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 : A320M-HDVP

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)

A320M-HDVP / 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)

November 19, 2019

(Date)

P/N: 15G062188000AK V1.0