Version 1.0
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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.

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"

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CE Warning

This device complies with directive 2014/53/EU issued by the Commision of the European Community.

This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Operations in the 5.15-5.35GHz band are restricted to indoor usage only.



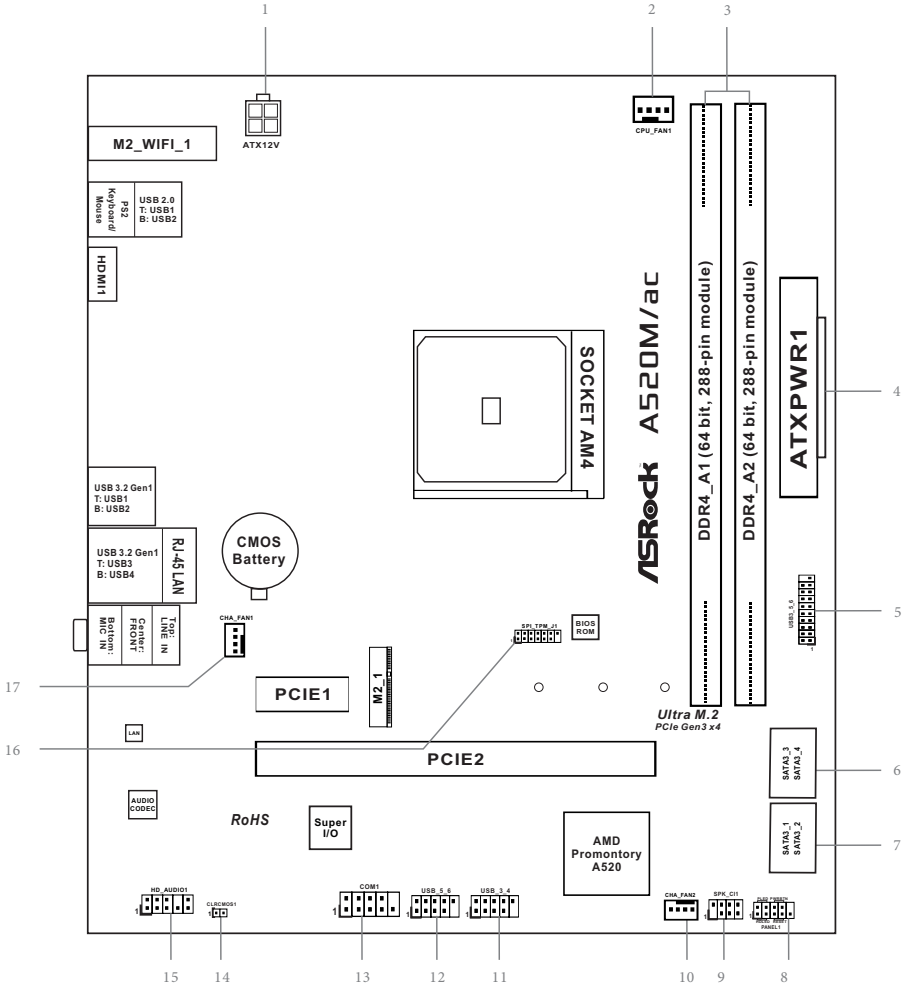
	AT	BE	BG	CH	CY	CZ	DE
	DK	EE	EL	ES	FI	FR	HR
	HU	IE	IS	IT	LI	LT	LU
	LV	MT	NL	NO	PL	PT	RO
	SE	SI	SK	TR	UK		

CE

Radio transmit power per transceiver type

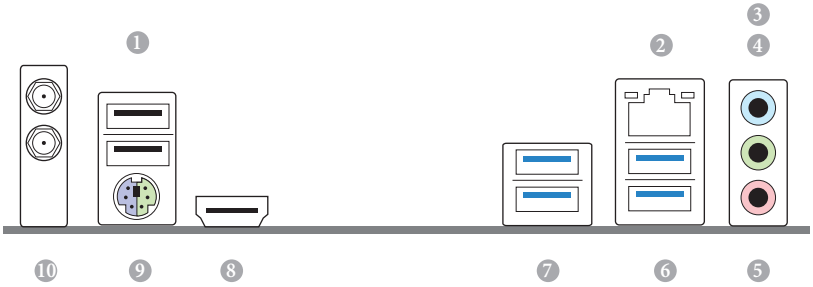
Function	Frequency	Maximum Output Power (EIRP)
WiFi	2400-2483.5 MHz	18.5 + / -1.5 dbm
	5150-5250 MHz	21.5 + / -1.5 dbm
	5250-5350 MHz	18.5 + / -1.5 dbm (no TPC) 21.5 + / -1.5 dbm (TPC)
	5470-5725 MHz	25.5 + / -1.5 dbm (no TPC) 28.5 + / -1.5 dbm (TPC)
Bluetooth	2400-2483.5 MHz	8.5 + / -1.5 dbm

Motherboard Layout



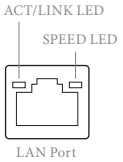
No.	Description
1	ATX 12V Power Connector (ATX12V1)
2	CPU Fan Connector (CPU_FAN1)
3	2 x 288-pin DDR4 DIMM Slots (DDR4_A1, DDR4_B1)
4	ATX Power Connector (ATXPWR1)
5	USB 3.2 Gen1 Header (USB3_5_6)
6	SATA3 Connector (SATA3_3) (Upper), SATA3 Connector (SATA3_4) (Lower)
7	SATA3 Connector (SATA3_4) (Upper), SATA3 Connector (SATA3_2) (Lower)
8	System Panel Header (PANEL1)
9	Chassis Intrusion and Speaker Header (SPK_CI1)
10	Chassis Fan Connector (CHA_FAN2)
11	USB 2.0 Header (USB_3_4)
12	USB 2.0 Header (USB_5_6)
13	COM Port Header (COM1)
14	Clear CMOS Jumper (CLRCMOS1)
15	Front Panel Audio Header (HD_AUDIO1)
16	SPI TPM Header (SPI_TPM_J1)
17	Chassis Fan Connector (CHA_FAN1)

I/O Panel



No.	Description	No.	Description
1	USB 2.0 Ports (USB_12)	6	USB 3.2 Gen1 Ports (USB3_34)
2	LAN RJ-45 Port*	7	USB 3.2 Gen1 Ports (USB3_12)
3	Line In (Light Blue)**	8	HDMI Port***
4	Front Speaker (Lime)**	9	PS/2 Mouse/Keyboard Port
5	Microphone (Pink)**	10	Antenna Ports

** 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

*** **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

**** Please note that using a HDMI to DVI adapter cable may affect the stability of 5G network connection.*

WiFi-802.11ac Module and ASRock WiFi 2.4/5 GHz Antennas

WiFi-802.11ac + BT Module

This motherboard comes with an exclusive WiFi 802.11 a/b/g/n/ac + BT v4.2 module (pre-installed on the rear I/O panel) that offers support for WiFi 802.11 a/b/g/n/ac connectivity standards and Bluetooth v4.2. WiFi + BT module is an easy-to-use wireless local area network (WLAN) adapter to support WiFi + BT. Bluetooth v4.2 standard features Smart Ready technology that adds a whole new class of functionality into the mobile devices. BT 4.2 also includes Low Energy Technology and ensures extraordinary low power consumption for PCs.

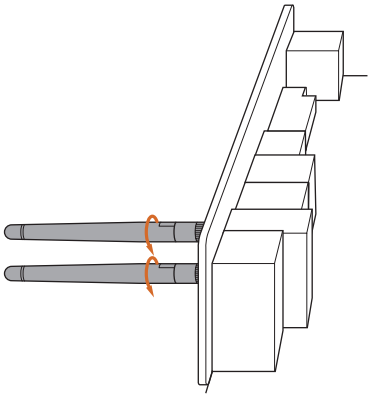
* The transmission speed may vary according to the environment.

WiFi Antennas Installation Guide



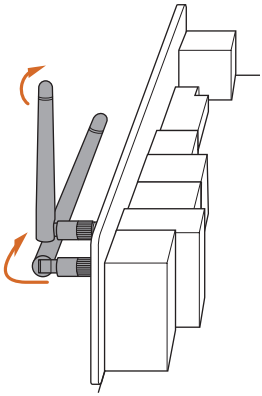
Step 1

Prepare the WiFi 2.4/5 GHz Antennas that come with the package.



Step 2

Connect the two WiFi 2.4/5 GHz Antennas to the antenna connectors. Turn the antenna clockwise until it is securely connected.



Step 3

Set the WiFi 2.4/5 GHz Antenna as shown in the illustration.

*You may need to adjust the direction of the antenna for a stronger signal.

Chapter 1 Introduction

Thank you for purchasing ASRock A520M/ac 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 A520M/ac Motherboard (Micro ATX Form Factor)
- ASRock A520M/ac Quick Installation Guide
- 1 x I/O Panel Shield
- 2 x Serial ATA (SATA) Data Cables (Optional)
- 2 x ASRock WiFi 2.4/5 GHz Antennas (Optional)
- 1 x Screw for M.2 Socket (Optional)

1.2 Specifications

Platform	• Micro ATX Form Factor • Solid Capacitor design
CPU	• Supports 3rd Gen AMD AM4 Ryzen™ / future AMD Ryzen™ Processors (3000 and 4000 Series Processors)* * Not compatible with AMD Ryzen™ 5 3400G and Ryzen™ 3 3200G. • 6 Power Phase design
Chipset	• AMD A520
Memory	• Dual Channel DDR4 Memory Technology • 2 x DDR4 DIMM Slots • AMD Ryzen series CPUs (Matisse) support DDR4 4600+(OC)/4533(OC)/4466(OC)/4400(OC)/4333 (OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000 (OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466| (OC)/3200/2933/2667/2400/2133 ECC & non-ECC, un-buffered memory* • AMD Ryzen series APUs (Renoir) support DDR4 4733+ (OC)/4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/ 4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866 (OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/ 2667/2400/2133 ECC & non-ECC, un-buffered memory* * Please refer to Memory Support List on ASRock's website for more information. (http://www.asrock.com/) * Please refer to page 21 for DDR4 UDIMM maximum frequency support. • Max. capacity of system memory: 64GB • Supports Extreme Memory Profile (XMP) memory modules • 15µ Gold Contact in DIMM Slots
Expansion Slot	• 1 x PCI Express 3.0 x16 Slot (PCIE2: x16 mode)* * Supports NVMe SSD as boot disks • 1 x PCI Express 3.0 x1 Slot • 1 x Vertical M.2 Socket (Key E) with the bundled WiFi-802.11ac module (on the rear I/O)

Graphics	• Integrated AMD Radeon™ Vega Series Graphics in Ryzen 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. • Supports HDMI 2.1 with max. resolution up to 4K x 2K (4096x2160) @ 60Hz • Supports Auto Lip Sync, Deep Color (12bpc), xvYCC and HBR (High Bit Rate Audio) with HDMI 2.1 Port (Compliant HDMI monitor is required) • Supports HDR (High Dynamic Range) with HDMI 2.1 • Supports HDCP 2.3 with HDMI 2.1 Port • Supports 4K Ultra HD (UHD) playback with HDMI 2.1 Port • Supports Microsoft PlayReady®
Audio	• 7.1 CH HD Audio (Realtek ALC887 Audio Codec) • Supports Surge Protection
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
Wireless LAN	• Intel® 802.11ac WiFi Module • Supports IEEE 802.11a/b/g/n/ac • Supports Dual-Band (2.4/5 GHz) • Supports high speed wireless connections up to 433Mbps • Supports Bluetooth 4.2 / 3.0 + High speed class II

Rear Panel I/O	• 2 x Antenna Ports • 1 x PS/2 Mouse/Keyboard 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)* * Supports NVMe SSD as boot disks * Supports ASRock U.2 Kit
Connector	• 1 x SPI TPM Header • 1 x COM Port 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) (Smart Fan Speed Control) * The Chassis Fan supports the water cooler fan of maximum 1A (12W) fan power. * CHA_FAN2 can auto detect if 3-pin or 4-pin fan is in use. • 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 • CPU, CPU VDDCR_SOC, DRAM, VDDP Voltage Multi-adjustment
Hardware Monitor	• Temperature Sensing: CPU, Chassis Fans • Fan Tachometer: CPU, Chassis Fans • Quiet Fan (Auto adjust chassis fan speed by CPU temperature): CPU, Chassis Fans • Fan Multi-Speed Control: CPU, Chassis Fans • CASE OPEN detection • Voltage monitoring: +12V, +5V, +3.3V, CPU 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

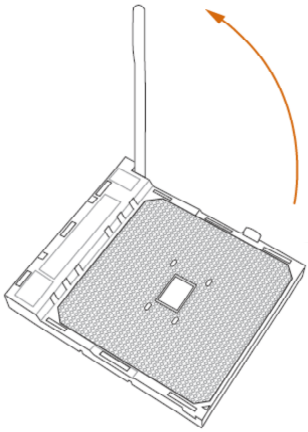
Take note of the following precautions before you install motherboard components or change any motherboard settings.

- 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.

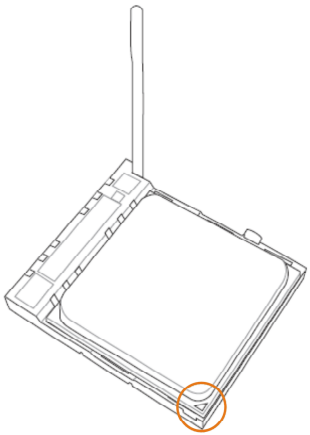
2.1 Installing the CPU

Unplug all power cables before installing the CPU.

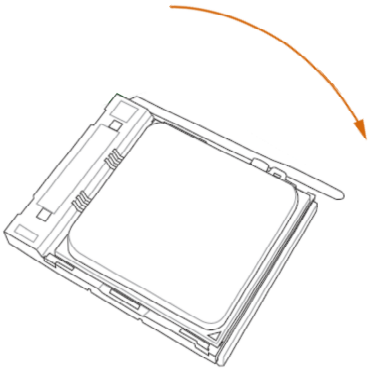
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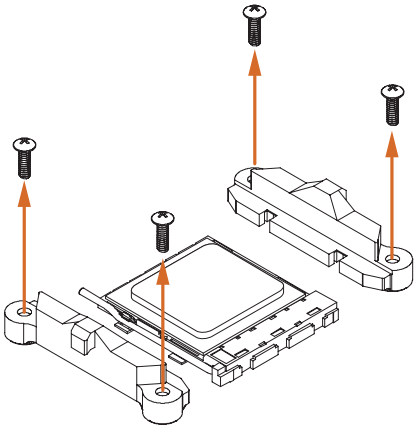
2.2 Installing the CPU Fan and Heatsink

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.

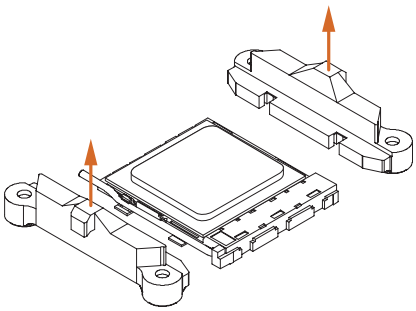
Please turn off the power or remove the power cord before changing a CPU or heatsink.

Installing the CPU Box Cooler SR1

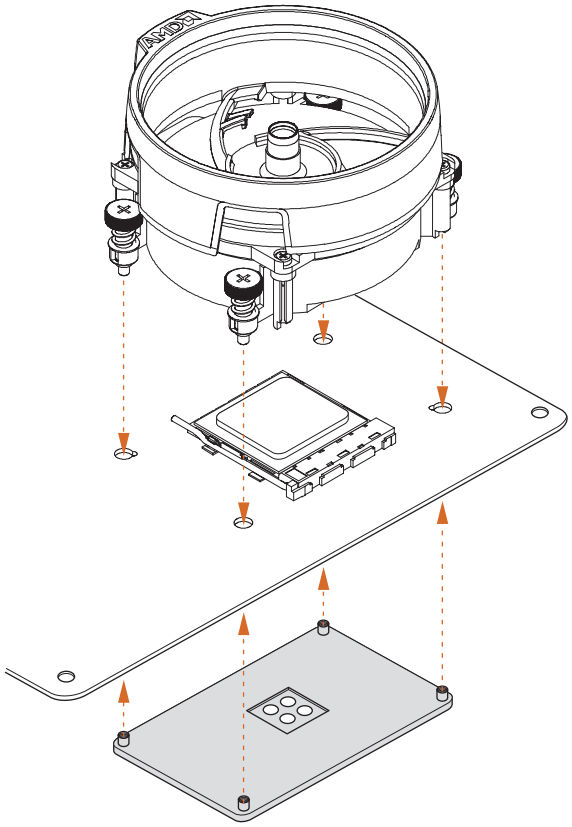
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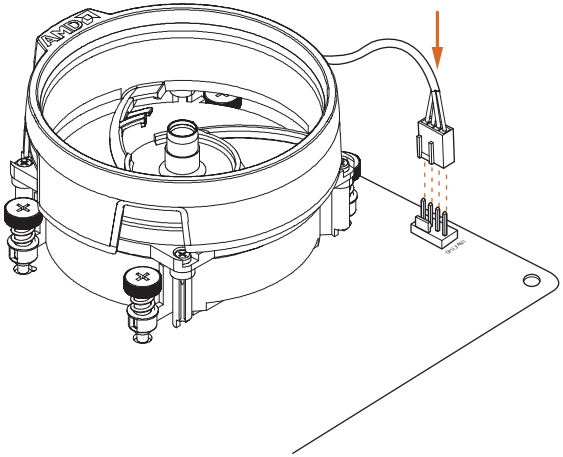
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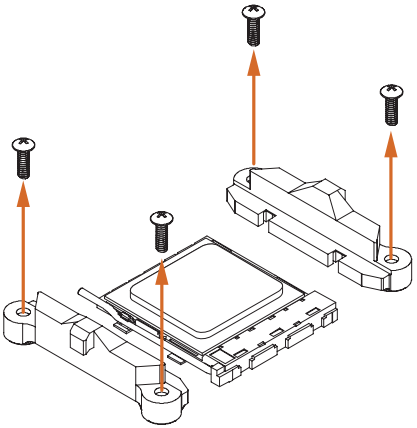
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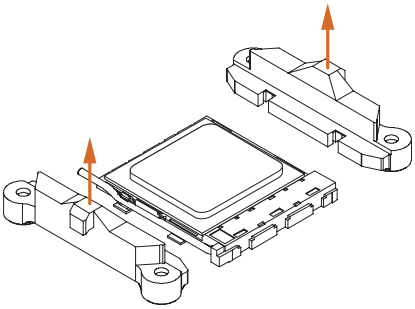
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Installing the AM4 Box Cooler SR2

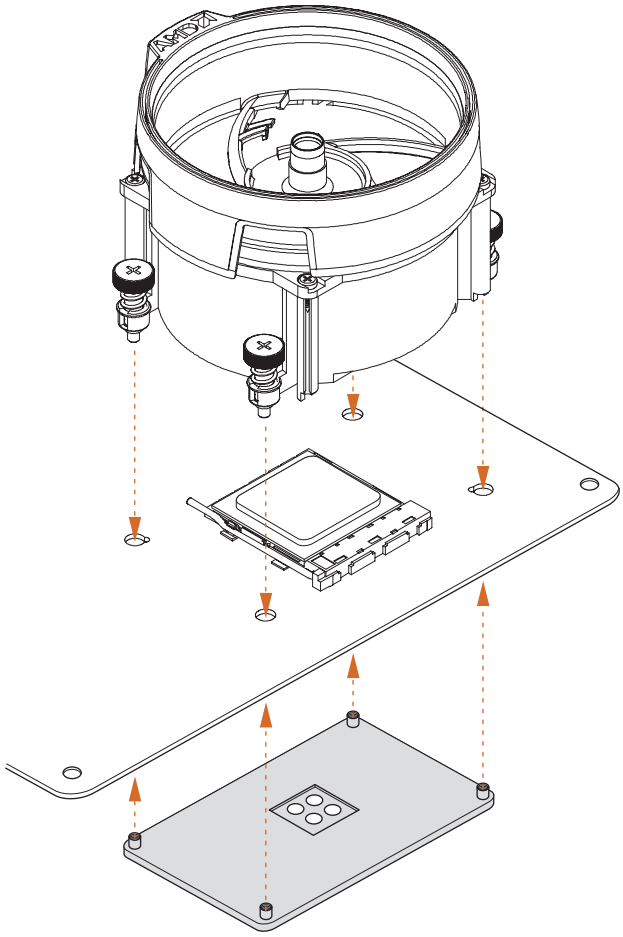
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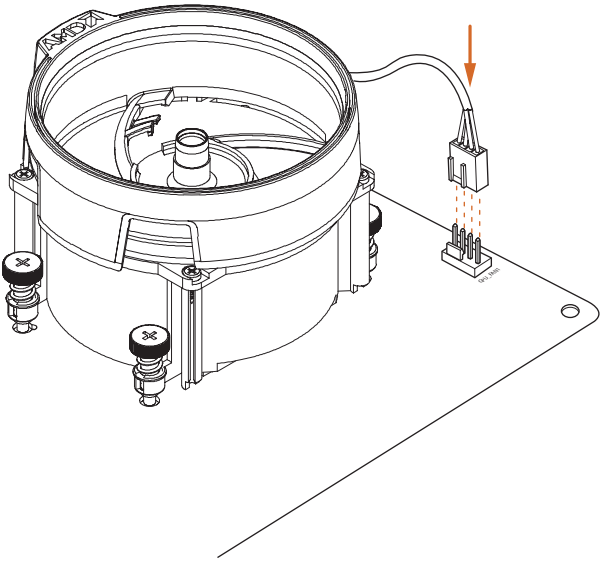
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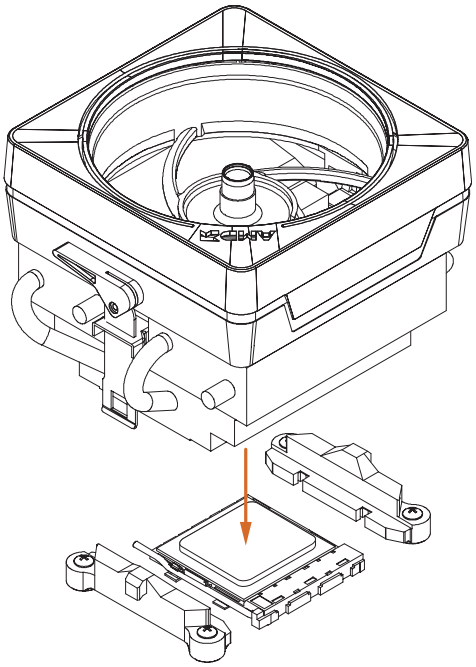
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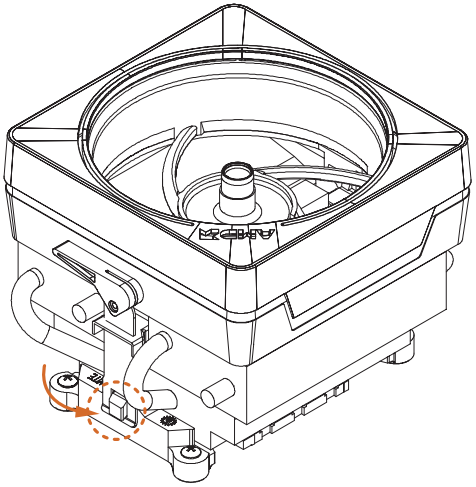
*The diagrams shown here are for reference only. The headers might be in a different position on your motherboard.

Installing the AM4 Box Cooler SR3

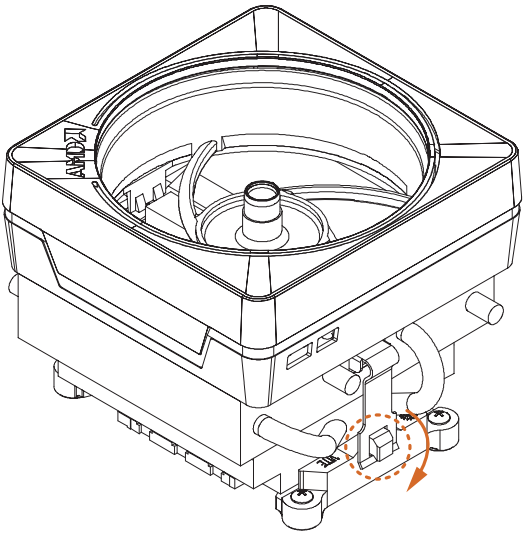
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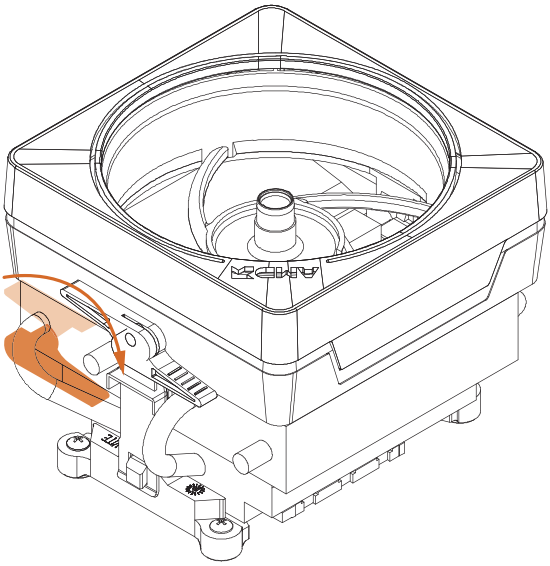
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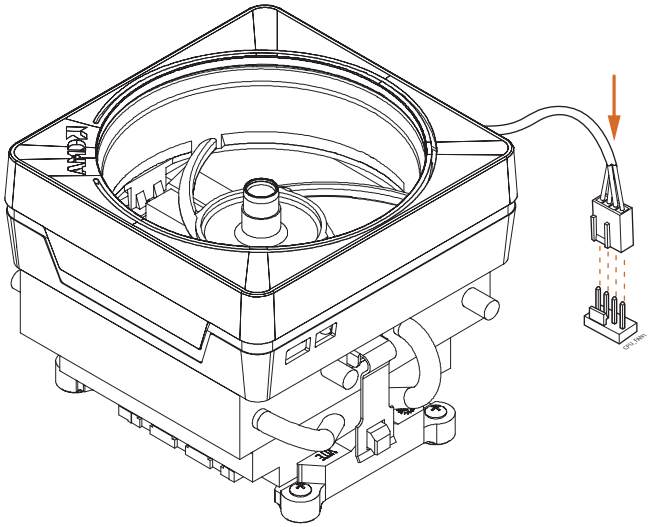
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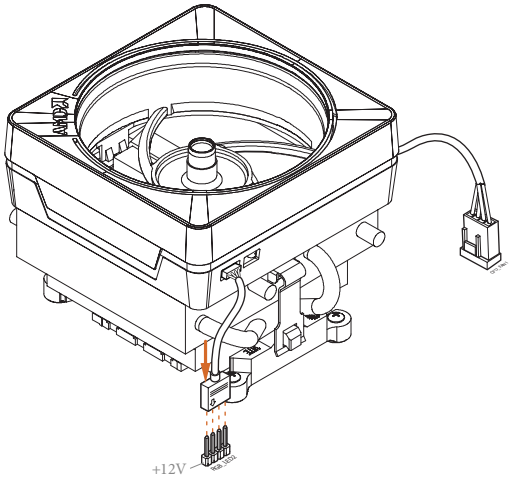
4



5



6



*The diagrams shown here are for reference only. The headers might be in a different position on your motherboard.

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.*

AMD non-XMP Memory Frequency Support

Ryzen Series CPUs (Matisse):

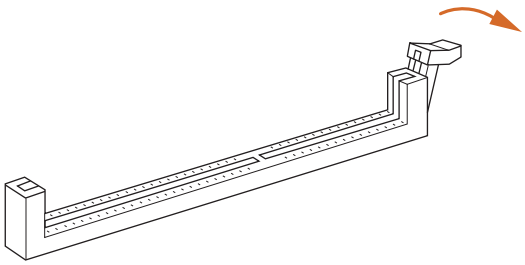
UDIMM Memory Slot		Frequency (Mhz)
A1	B1	
SR	-	3200
-	SR	3200
DR	-	3200
-	DR	3200
SR	SR	3200
DR	DR	3200

Ryzen Series APUs (Renoir):

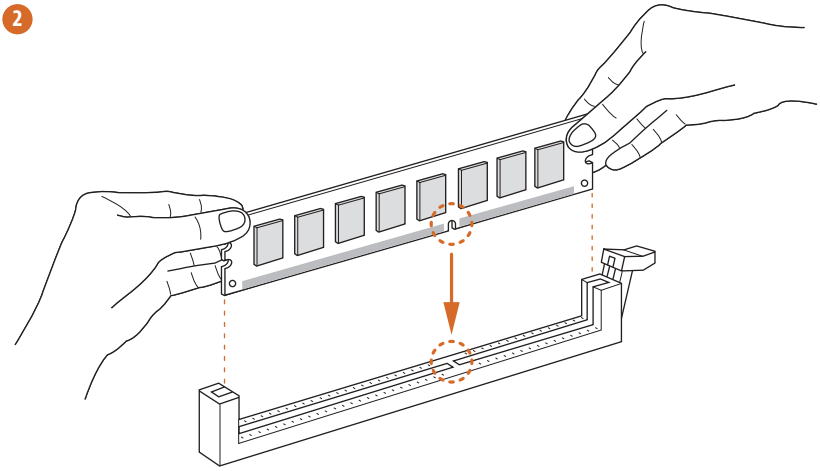
UDIMM Memory Slot		Frequency (Mhz)
A1	B1	
SR	-	3200
-	SR	3200
DR	-	3200
-	DR	3200
SR	SR	3200
DR	DR	3200

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.

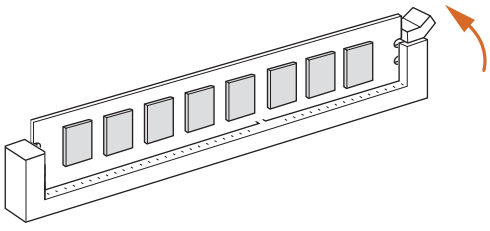
1



2



3



2.4 Expansion Slots (PCI Express Slots)

There are 2 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.

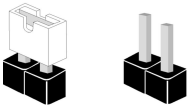
PCIe slots:

PCIE1 (PCIe 3.0 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.

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 Jumper (CLRMOS1) (see p.1, No. 14)	2-pin Jumper	Short: Clear CMOS Open: Default

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.

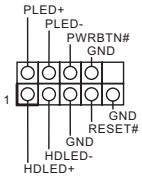
If you clear the CMOS, the case open may be detected. Please adjust the BIOS option "Clear Status" to clear the record of previous chassis intrusion status.

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. 8)



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.

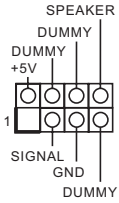
RESET (Reset Switch):
Connect to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.

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 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.

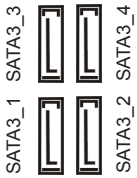
The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

Chassis Intrusion and Speaker Header
(7-pin SPK_CI1)
(see p.1, No. 9)



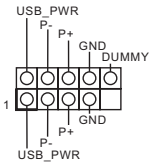
Please connect the chassis intrusion and the chassis speaker to this header.

Serial ATA3 Connectors
Vertical:
(SATA3_1:
see p.1, No. 7) (Upper)
(SATA3_2:
see p.1, No. 7) (Lower)
(SATA3_3:
see p.1, No. 6) (Upper)
(SATA3_4:
see p.1, No. 6) (Lower)



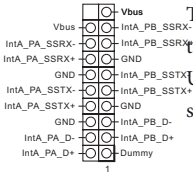
These four SATA3 connectors support SATA data cables for internal storage devices with up to 6.0 Gb/s data transfer rate.

USB 2.0 Headers
(9-pin USB_3_4)
(see p.1, No. 11)
(9-pin USB_5_6)
(see p.1, No. 12)



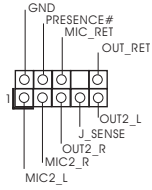
There are two headers on this motherboard. Each USB 2.0 header can support two ports.

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



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

Front Panel Audio Header
(9-pin HD_AUDIO1)
(see p.1, No. 15)



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

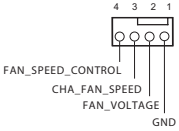
English

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 Connectors
(4-pin CHA_FAN1)
(see p.1, No. 17)

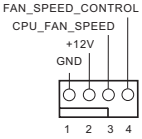


(4-pin CHA_FAN2)
(see p.1, No. 10)



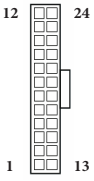
Please connect fan cables to the fan connectors and match the black wire to the ground pin.

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



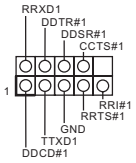
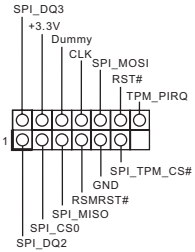
This motherboard provides a 4-Pin CPU fan (Quiet Fan) connector. If you plan to connect a 3-Pin CPU fan, please connect it to Pin 1-3.

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.

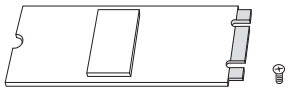
English

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 COM1) (see p.1, No. 13)		This COM1 header supports a serial port module.
SPI TPM Header (13-pin SPI_TPM_J1) (see p.1, No. 16)		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.

2.7 M.2_SSD (NGFF) Module Installation Guide

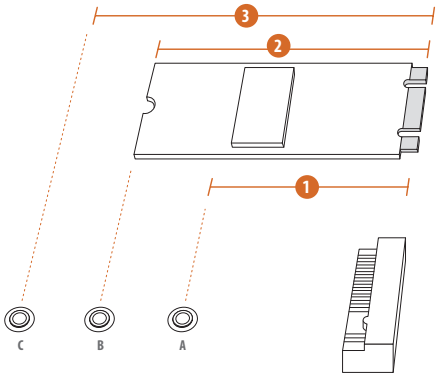
The M.2, also known as the Next Generation Form Factor (NGFF), is a small size and versatile card edge connector that aims to replace mPCIe and mSATA. The Ultra M.2 Socket supports M Key type 2242/2260/2280 M.2 SATA3 6.0 Gb/s module and M.2 PCI Express module up to Gen3 x4 (32 Gb/s).

Installing the M.2_SSD (NGFF) Module



Step 1

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

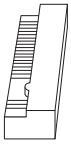


Step 2

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

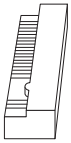




Step 3

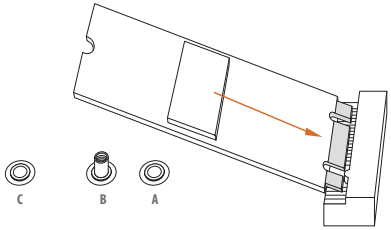
Move the standoff based on the module type and length.
The standoff is placed at the nut location C by default. Skip Step 3 and 4 and go straight to Step 5 if you are going to use the default nut. Otherwise, release the standoff by hand.

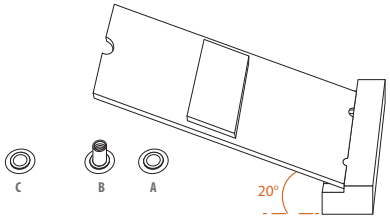




Step 4

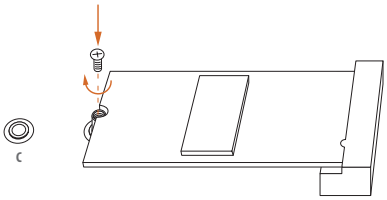
Peel off the yellow protective film on the nut to be used. Hand tighten the standoff into the desired nut location on the motherboard.





Step 5

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

Vendor	Interface	P/N
SanDisk	PCIe	SanDisk-SD6PP4M-128G(Gen2 x2)
Intel	PCIe	INTEL 6000P-SSDPEKKF256G7 (nvme)
Intel	PCIe	INTEL 6000P-SSDPEKKF512G7 (nvme)
Kingston	PCIe	Kingston SHPM2280P2 / 240G (Gen2 x4)
Samsung	PCIe	Samsung XP941-MZHPU512HCGL(Gen2x4)
ADATA	SATA	ADATA - AXNS381E-128GM-B
Crucial	SATA	Crucial-CT240M500SSD4-240GB
ezlink	SATA	ezlink P51B-80-120GB
Intel	SATA	INTEL 540S-SSDSCKKW240H6-240GB
Kingston	SATA	Kingston SM2280S3G2/120G - Win8.1
Kingston	SATA	Kingston-RBU-SNS8400S3 / 180GD
LITEON	SATA	LITEON LJH-256V2G-256GB (2260)
PLEXTOR	SATA	PLEXTOR PX-128M6G-2260-128GB
PLEXTOR	SATA	PLEXTOR PX-128M7VG-128GB
SanDisk	SATA	SanDisk X400-SD8SN8U-128G
SanDisk	SATA	Sandisk Z400s-SD8SNAT-128G-1122
SanDisk	SATA	SanDisk-SD6SN1M-128G
Transcend	SATA	Transcend TS256GMTS800-256GB
V-Color	SATA	V-Color 120G
V-Color	SATA	V-Color 240G
WD	SATA	WD GREEN WDS240G1G0B-00RC30

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 AM4 Ryzen™ der 3. Generation / AMD Ryzen™-Prozessoren und höher (Prozessoren der 3000er- und 4000er-Serie)* * Nicht kompatibel mit AMD Ryzen™ 5 3400G und Ryzen™ 3 3200G • 6-Leistungsphasendesign
Chipsatz	• AMD A520
Speicher	• Dualkanal-DDR4-Speichertechnologie • 2 x DDR4-DIMM-Steckplätze • Prozessoren der AMD-Ryzen-Serie (Matisse) unterstützen DDR4 4600+(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC und non-ECC, ungepufferter Speicher* • APUs (Renoir) der AMD-Ryzen-Serie unterstützen DDR4 4733+(OC)/4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC und non-ECC, ungepufferter Speicher* * Weitere Informationen finden Sie in der Speicherkompatibilitätsliste auf der ASRock-Webseite. (http://www.asrock.com/) * Bitte beachten Sie Seite 21 für die maximal unterstützte Frequenz von DDR4-UDIMM. • Systemspeicher, max. Kapazität: 64GB • Unterstützt Extreme-Memory-Profile- (XMP) Speichermodule • 15-µ-Goldkontakt in DIMM-Steckplätze
Erweiterungssteckplatz	1 x PCI-Express 3.0-x16-Steckplatz (PCIE2: x16-Modus)* * Unterstützt NVMe-SSD als Bootplatte • 1 x PCI-Express 3.0-x1-Steckplatz • 1 x vertikaler M.2-Sockel (Key E) mit dem mitgelieferten 802.11ac-WLAN-Modul (an den rückseitigen I/O)

Grafikkarte	• Integrierte Grafikkarte der AMD-Radeon™-Vega-Serie in APU der Ryzen-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. • Unterstützt HDMI 2.1 mit maximaler Auflösung von 4K x 2K (4096 x 2160) bei 60Hz • Unterstützt Auto-Lippensynchronizität, hohe Farbtiefe (12 bpc), xvYCC und HBR (Audio mit hoher Bitrate) mit HDMI 2.1-Port (konformer HDMI-Monitor erforderlich) • Unterstützt HDR (High Dynamic Range) mit HDMI 2.1 • Unterstützt HDCP 2.3 mit HDMI 2.1-Port • Unterstützt 4K-Ultra-HD- (UHD) Wiedergabe mit HDMI 2.1-Port • Unterstützt Microsoft PlayReady®
Audio	• 7.1-Kanal-HD-Audio (Realtek ALC887-Audiocodec) • Unterstützt Überspannungsschutz
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
Wireless LAN	• Intel®-802.11ac-WLAN-Modul • Unterstützt IEEE 802.11a/b/g/n/ac • Unterstützt Dualband (2,4/5 GHz) • Unterstützt drahtlose Hochgeschwindigkeitsverbindungen bis 433 Mb/s • Unterstützt Bluetooth 4.2 / 3.0 + High-Speed, Klasse II

Rückblende, E/A

- 2 x Antennenanschluss
- 1 x PS/2-Maus-/Tastaturanschluss
- 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 x4 (32 Gb/s)*

* Unterstützt NVMe-SSD als Bootplatte

* Unterstützt ASRock U.2-Kit

Anschluss

- 1 x SPI-TPM-Stiftleiste
- 1 x COM-Anschluss-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) (intelligente Lüftergeschwindigkeitssteuerung)

* Der Gehäuselüfteranschluss unterstützt einen Wasserkühlerlüfter mit einer maximalen Lüfterleistung von 1 A (12 W).

* CHA_FAN2 können automatisch erkennen, ob ein 3- oder 4-poliger Lüfter verwendet wird.

- 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)

BIOS-Funktion	• AMI-UEFI-Legal-BIOS mit Unterstützung grafischer Benutzerschnittstellen • Unterstützt „Plug-and-Play“ • ACPI 5.1-konforme Aufweckereignisse • Unterstützt Jumper-frei • SMBIOS 2.3-Unterstützung • CPU, CPU VDDCR_SOC, DRAM, VDDP Mehrfachspannungsanpassung
Hardware überwachung	• Temperaturerkennung: CPU, Gehäuselüfter • Lüftertachometer: CPU, Gehäuselüfter • Lautloser Lüfter (automatische Anpassung der Gehäuselüftergeschwindigkeit durch CPU-Temperatur): CPU, Gehäuselüfter • Mehrfachgeschwindigkeitssteuerung: CPU, Gehäuselüfter • Gehäuse-offen-Erkennung • Spannungsüberwachung: +12 V, +5 V, +3,3 V, CPU Vcore
Betriebssystem	• Microsoft® Windows® 10, 64 Bit
Zertifizierungen	• FCC, CE • ErP/EuP ready (ErP/EuP ready-Netzteil erforderlich)

Spécifications

Plateforme	• Facteur de forme Micro ATX • Conception à condensateurs solides
Processeur	• Prend en charge la 3ème AMD AM4 Ryzen™ / AMD Ryzen™ prochaine génération (processeurs séries 3000 et 4000)* * Non compatible avec AMD Ryzen™ 5 3400G et Ryzen™ 3 3200G • Alimentation à 6 phases
Chipset	• AMD A520
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 4600+(OC)/ 4533(OC)/4466(OC)/4400(OC)/4333(OC)/4333(OC)/4266(OC)/ 4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/ 3600(OC)/3466(OC)/3200/2933/2667/2400/2133* • Les APU AMD série Ryzen (Renoir) prennent en charge les mémoires sans tampon ECC et non ECC DDR4 4733+(OC)/ 4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/ 4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/ 3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133* * 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 21 pour connaître la prise en charge de la fréquence maximale de l'UDIMM DDR4. • Capacité max. de la mémoire système : 64 Go • Prend en charge les modules mémoire Extreme Memory Profile (XMP) • Contacts dorés 15µ sur fentes DIMM
Fente d'expansion	1 x fente PCI Express 3.0 x 16 (PCIE2 : mode x16)* * Prend en charge les SSD NVMe comme disques de démarrage • 1 x fente PCI Express 3.0 x 1 • 1 x socket M.2 vertical (touche E) avec le module Wi-Fi 802.11ac fourni (sur l'E/S arrière)

Graphiques	• Carte graphique AMD Radeon™ série Vega intégrée dans APU série Ryzen* * 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. • Prend en charge la technologie HDMI 2.1 avec résolution maximale de 4K x 2K (4096x2160) @ 60Hz • Prend en charge les technologies Auto Lip Sync, Deep Color (12bpc), xvYCC et HBR (High Bit Rate Audio) avec port HDMI 2.1 (un écran compatible HDMI est requis) • Prend en charge HDR (Plage dynamique étendue) avec HDMI 2.1 • Prend en charge HDCP 2.3 via ports HDMI 2.1 • Prend en charge la lecture 4K Ultra HD (UHD) avec le port HDMI 2.1 • Prend en charge Microsoft PlayReady®
Audio	• Audio 7.1 CH HD (Codec audio Realtek ALC887) • Prend en charge la protection contre les surtensions
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
Réseau sans-fil	• Module Wi-Fi 802.11ac Intel® • Prend en charge IEEE 802.11a/b/g/n/ac • Prend en charge le mode Dual-Band (2,4/5 GHz) • Prend en charge la connexion sans-fil à haute vitesse jusqu'à 433Mbps • Prend en charge Bluetooth 4.2 / 3.0 + haute vitesse classe II

Connectique du panneau arrière

- 2 x ports antenne
- 1 x port souris/clavier PS/2
- 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 Gb/s)*

* Prend en charge les SSD NVMe comme disques de démarrage

* Prend en charge le kit ASRock U.2

Connecteur

- 1 x embase SPI TPM
- 1 x embase pour port COM
- 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 du châssis (4 broches) (contrôle de vitesse de ventilateur intelligent)
-

* Le connecteur pour ventilateur de châssis prend en charge un ventilateur de refroidisseur d'eau d'une puissance maximale de 1 A (12 W).

* CHA_FAN2 peuvent détecter automatiquement si un ventilateur 3 broches ou 4 broches est utilisé.

- 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)

Caractéristiques du BIOS	• BIOS UEFI AMI avec prise en charge d'interface graphique • Prend en charge la fonction « Plug and Play » • Compatible ACPI 5.1 Wake Up Events • Prend en charge la configuration Jumpfree • Compatible SMBIOS 2.3 • Réglage de la tension CPU, CPU VDDCR_SOC, DRAM, VDDP
Surveillance du matériel	• Détection de température : CPU, Ventilateur du châssis • Tachymètre de ventilateur : CPU, Ventilateur du châssis • Ventilateur silencieux (réglage automatique de la vitesse du ventilateur du châssis d'après la température du CPU) : CPU, Ventilateur du châssis • Contrôle simultané des vitesses du ventilateur : CPU, Ventilateur du châssis • Détection CHÂSSIS OUVERT • Surveillance de la tension d'alimentation : +12V, +5V, +3,3V, CPU Vcore
Système d'exploitation	• Microsoft® Windows® 10 64 bits
Certifications	• FCC, CE • ErP/EuP Ready (alimentation ErP/EuP ready requise)

Specifiche

Piattaforma	• Fattore di forma Micro ATX • Design condensatore solido
CPU	• Supporta AMD AM4 Ryzen™/AMD Ryzen™ di terza generazione e successive generazioni (processori serie 3000 e 4000) * * Non compatibile con AMD Ryzen™ 5 3400G e Ryzen™ 3 3200G. • Potenza a 6 fasi
Chipset	• AMD A520
Memoria	• Tecnologia memoria DDR4 Dual Channel • 2 x alloggi DIMM DDR4 • Le CPU serie AMD Ryzen (Matisse) supportano DDR4 4600+(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC e non ECC, senza buffer* • Le APU AMD Ryzen (Renoir) supportano DDR4 4733+(OC)/4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC e non ECC, senza buffer* * Per maggiori informazioni fare riferimento all'elenco dei supporti di memoria sul sito di ASRock. (http://www.asrock.com/) * Fare riferimento a pagina 21 per il supporto della frequenza massima DDR4 UDIMM. • Capacità max. della memoria di sistema: 64GB • Supporta moduli di memoria Extreme Memory Profile (XMP) • Contatti d'oro 15µ negli alloggi DIMM
Alloggio d'espansione	• 1 x alloggio PCI Express 3.0 x16 (PCIE2: modalità x16)* * Supporto di SSD NVMe come disco d'avvio • 1 x alloggio PCI Express 3.0 x1 • 1 x Socket M.2 verticale (Key E) con il modulo WiFi-802.11ac fornito (sul pannello I/O posteriore)

Grafica	• Grafica AMD Radeon™ serie Vega integrata nelle APU serie Ryzen* * 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. • Supporta HDMI 2.1 con risoluzione massima fino a 4K x 2K (4096 x 2160) a 60 Hz • Supporto delle funzioni Auto Lip Sync, Deep Color (12bpc), xvYCC e HBR (High Bit Rate Audio) con porta HDMI 2.1 (è necessario un monitor compatibile HDMI) • Supporta HDR (High Dynamic Range) con HDMI 2.1 • Supporto di HDCP 2.3 con le porte HDMI 2.1 • Supporto riproduzione 4K Ultra HD (UHD) sulla porta HDMI 2.1 • Supporto Microsoft PlayReady®
Audio	• Audio HD 7.1 CH (codec audio Realtek ALC887) • Supporta protezione da sovratensione
LAN	• 1 x PCIE LAN Gigabit 10/100/1000 Mb/s • Realtek RTL8111H • Supporto WOL (Wake-On-LAN) • Supporta protezione da fulmini/scariche elettrostatiche • Supporto Energy Efficient Ethernet 802.3az • Supporto PXE
LAN wireless	• Modulo Intel® 802.11ac WiFi • Supporta IEEE 802.11a/b/g/n/ac • Supporta Dual-Band (2,4/5 GHz) • Supporta la connessione wireless ad alta velocità fino a 433 Mbps • Supporto di Bluetooth 4.2 / 3.0 + High speed Classe II
I/O pannello posteriore	• 2 x porte antenna • 1 x porta mouse/tastiera PS/2 • 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)* * Supporto di SSD NVMe come disco d'avvio * Supporta kit ASRock U.2
Connettore	• 1 x connettore SPI TPM • 1 x connettore porta COM • 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 telaio (4 pin) (Controllo intelligente della velocità della ventola) * Il cventola chassis supporta ventole di sistemi di raffreddamento ad acqua di potenza massima di 1A (12W). * CHA_FAN2 sono in grado di rilevare se è in uso una ventola a 3 pin o 4 a pin. • 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)
Funzionalità BIOS	• AMI UEFI Legal BIOS con interfaccia di supporto • Supporta "Plug and Play" • Eventi di riattivazione conformi a ACPI 5.1 • Supporta jumperfree • Supporto di SMBIOS 2.3 • Regolazione variabile tensione CPU, CPU VDDCR_SOC, DRAM, VDDP

Hardware Monitor	• Sensore di temperatura: CPU, Ventola chassis • Tachimetro ventola: CPU, Ventola chassis • Ventola silenziosa (regolazione automatica velocità in base alla temperatura della CPU): CPU, Ventola chassis • Controllo velocità ventola: CPU, Ventola chassis • Rilevamento CASE OPEN • Monitoraggio tensione: +12 V, +5 V, +3,3 V, CPU Vcore
SO	• Microsoft® Windows® 10 64 bit
Certificazioni	• FCC, CE • ErP/EuP Ready (è necessaria alimentazione ErP/EuP ready)

Especificaciones

Plataforma
- Factor de forma Micro ATX
- Diseño de condensador sólido

CPU
- Admite AMD AM4 Ryzen™ / Ryzen™ de 3ª generación y posteriores Procesadores (Procesadores de las Series 3000 y 4000)*

* No es compatible con AMD Ryzen™ 5 3400G o Ryzen™ 3 3200G.
- Diseño de 6 fases de alimentación

Conjunto de chips
- AMD A520

Memoria
- Tecnología de memoria DDR4 de doble canal
- 2 x ranuras DIMM DDR4
- Las CPU de la serie AMD Ryzen (Matisse) admiten memoria sin búfer DDR4 4600+(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC y no ECC*
- Las APU de la serie AMD Ryzen (Renoir) admiten memoria sin búfer DDR4 4733+(OC)/4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC y no ECC*

* Para obtener más información, consulte la lista de memorias compatibles en el sitio web de ASRock. (http://www.asrock.com/)
* Consulte la página 21 para conocer las frecuencias máximas compatibles de DDR4 UDIMM.
- Capacidad máxima de memoria del sistema: 64GB
- Admite módulos de memoria Extreme Memory Profile (XMP)
- Contacto 15µ Gold en ranuras DIMM

Ranura de expansión

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

* Admite unidad de estado sólido de NVMe como disco de arranque
- 1 x ranura PCI Express 3.0 x1
- 1 x Zócalo M.2 vertical (clave E) con el módulo WiFi-802.11ac integrado (en la E/S trasera)

Gráficos	• Tarjeta gráfica de la serie AMD Radeon™ Vega integrada en APU de la serie Ryzen* * 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 16 GB. * La memoria compartida máxima de 16GB requiere que haya una memoria del sistema de 32GB instalada. • Compatible con HDMI 2.1 con una resolución máxima de 4K x 2K (4096x2160) a 60Hz • Admite HDR (alto rango dinámico) con HDMI 2.1 • Compatible con función HDCP 2.3 con puertos HDMI 2.1 • Admite reproducción 4K Ultra HD (UHD) con puerto HDMI 2.1 • Compatible con Microsoft PlayReady®
Audio	• 7.1 Audio CH HD (Códec de audio Realtek ALC887) • Admite protección contra sobretensiones
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
LAN inalámbrica	• Módulo WiFi Intel® 802.11ac • Compatible con IEEE 802.11a/b/g/n/ac • Compatible con Banda Dual (2,4/5 GHz) • Compatible con conexión inalámbrica de alta velocidad hasta 433 Mbps • Compatible con Bluetooth 4.2 / 3.0 + Alta velocidad clase II
E/S en panel posterior	• 2 x Puertos de antena • 1 x puerto de ratón/teclado PS/2 • 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

Almacena-miento	• 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)* * Admite unidad de estado sólido de NVMe como disco de arranque * Admite el Kit U.2 de ASRock
Conector	• 1 x Conector SPI TPM • 1 x Base de conexiones de puerto COM • 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 (4 contactos) para el ventilador del chasis (control de velocidad de ventilador inteligente) * El ventilador del chasis admiten ventilador del disipador por agua con una potencia de ventilador máxima de 1 A (12 W).
	* CHA_FAN2 se pueden detectar automáticamente si se usa el ventilador de 3 o 4 pines. • 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)
Función de la BIOS	• BIOS legal UEFI AMI compatible con interfaz gráfica de usuario • Compatible con “Plug and Play” • Eventos de reactivación conformes con ACPI 5.1 • Compatible con Jumper FREE • Admite SMBIOS 2.3 • Multi-ajuste de voltaje de CPU, CPU VDDCR_SOC, DRAM, VDDP

Monitor de hardware	• Detección de temperatura: CPU, ventiladores del chasis • Tacómetro del ventilador: CPU, ventiladores del chasis • Ventilador silencioso (ajuste automático de la velocidad del ventilador del chasis por temperatura de la CPU): CPU, ventiladores del chasis • Control de varias velocidades del ventilador: CPU, ventiladores del chasis • Detección de CARCASA ABIERTA • Supervisión del voltaje: +12 V, +5 V, +3,3 V, Vcore de CPU
SO	• Microsoft® Windows® 10 64 bits
Certificaciones	• FCC y CE • Preparado para ErP/EuP (se necesita una fuente de alimentación preparada para ErP/EuP)

Технические характеристики

Платформа	• Форм-фактор Micro ATX • Схема на основе твердотельных конденсаторов
ЦП	• Поддержка процессоров AMD AM4 Ryzen™ / AMD Ryzen™ 3-го и будущих поколений (процессоры серии 3000 и 4000)* * Несовместимо с процессорами AMD Ryzen™ 5 3400G и Ryzen™ 3 3200G • Система питания 6
Чипсет	• AMD A520
Память	• Двухканальная память DDR4 • 2 гнезда DDR4 DIMM • ЦП серии AMD Ryzen (Matisse) поддерживают модули памяти DDR4 4600+(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/ 4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/ 3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/ 2400/2133 с ECC и без ECC, небуферизованной памяти* • Гибридные процессоры AMD серии Ryzen (Renoir) поддерживают модули памяти DDR4 4733+(OC)/4666(OC)/ 4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/ 4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/ 3600(OC)/3466(OC)/3200/2933/2667/2400/2133 с ECC и без ECC, небуферизованной памяти* * 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. 21. • Максимальный объем ОЗУ: 64 Гб • Поддержка модулей памяти XMP (Extreme Memory Profile) • Позолоченные (15 мкм) контакты слотов DIMM
Слоты расширения	1 слот PCI Express 3.0 x16 (PCIE2: режим x16)* * Поддерживаются в качестве загрузочных SSD-диски типа NVMe • 1 слот PCI Express 3.0 x1 • 1 вертикальный слот M.2 (ключ E) с входящим в комплект поставки модулем WiFi-802.11ac (на задней панели ввода-вывода)

Графическая подсистема	• Встроенный видеоадаптер AMD Radeon™ серии Vega в процессорах APU серии Ryzen* *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. • Поддержка HDMI 2.1 с максимальным разрешением до 4K × 2K (4096x2160) при 60 Гц • Поддерживаются Auto Lip Sync, Deep Color (12 бит/цвет), xvYCC и HBR (High Bit Rate Audio) через порт HDMI 2.1 (требуется соответствующий HDMI-монитор) • Поддерживается расширенный динамический диапазон (HDR) в режиме HDMI 2.1 • Поддержка функции HDCP 2.3 через порты HDMI 2.1 • Поддержка вывода видео с разрешением 4K Ultra HD (UHD) на порт HDMI 2.1 • Поддержка Microsoft PlayReady®
Звук	• 7.1-канальный звук высокой четкости (аудиокодек Realtek ALC887) • Защита от перепадов напряжения в электрической сети
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
Беспроводная ЛВС	• Модуль WiFi Intel® 802.11ac • Поддержка IEEE 802.11a/b/g/n/ac • Поддержка двух диапазонов (2,4/5 ГГц) • Поддержка высокоскоростного беспроводного подключения до 433 Мбит/с • Поддержка Bluetooth 4.2 / 3.0 + High speed class II

Тыловые порты ввода-вывода

- 2 антенных порта
- 1 порт PS/2 для мыши/клавиатуры
- 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 x 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 и ключом M и модуль M.2 PCI Express до версии Gen3 x4 (32 Gb/s)*

* Поддерживаются в качестве загрузочных SSD-диски типа NVMe

* Поддерживается комплект ASRock U.2

Разъемы

- 1 колодка SPI TPM
- 1 колодка COM-порта
- 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 корпусных вентиляторов (4-контактные) (смарт-регулятор скорости вентилятора)

* вентилятора корпуса поддерживает вентилятор с потребляемым током не более 1 A (12 Вт).

* Для разъемов CHA_FAN2 автоматически определяется тип подключенного вентилятора: 3- или 4-контактный.

- 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)

Параметры BIOS	• AMI UEFI Legal BIOS с поддержкой графического интерфейса • Поддержка технологии «Plug and Play» • Совместимость с управлением энергопотреблением по ACPI 5.1 • Поддержка функции JumperFree • Поддерживается SMBIOS 2.3 • Регулировка напряжений CPU, CPU VDDCR_SOC, DRAM, VDDP
Контроль оборудования	• Контроль температуры: CPU, вентиляторы корпуса • Тахометр: CPU, вентиляторы корпуса • Бесшумная работа (с автоматической регулировкой скорости вращения в зависимости от температуры ЦП): CPU, вентиляторы корпуса • Регулировка скорости вращения: CPU, вентиляторы корпуса • Датчик вскрытия корпуса • Контроль напряжений: +12 В, +5 В, +3,3 В, Vcore ЦП
Операционные системы	• Microsoft® Windows® 10 (64-разрядная)
Сертификация	• FCC, CE • Совместимость с ErP/EuP (необходим блок питания, соответствующий стандарту ErP/EuP)

Especificações

Plataforma	• Micro ATX Form Factor • Design de condensador sólido
CPU	• Suporta 3ª Ger AMD AM4 Ryzen™ / Ryzen™ futuras gerações de Processadores (Processadores Série 3000 e 4000)* * Não compatível com AMD Ryzen™ 5 3400G e Ryzen™ 3 3200G. • Design com 6 fases de alimentação
Chipset	• AMD A520
Memória	• Tecnologia de memória DDR4 de dois canais • 2 x Slots DIMM DDR4 • CPUs série AMD Ryzen (Matisse) suporta DDR4 4600+(OC)/ 4533(OC)/4466(OC)/4400(OC)/4333(OC)/4333(OC)/4266(OC)/ 4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/ 3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC & não-ECC, memória sem buffer* • AMD Ryzen série APUs (Renoir) suporta DDR4 4733+ (OC)/ 4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/ 4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/ 3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC & não-ECC, memória sem buffer* * 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 21 para suporte de frequência máxima DDR4 UDIMM. • Capacidade máxima da memória do sistema: 64GB • Suporta módulos de memória Extreme Memory Profile (XMP) • Contato em Ouro 15µ nos slots DIMM
Slot de expansão	1 x Slot PCI Express 3.0 x16 (PCIE2: modo x16)* * Suporta NVMe SSD nos discos de inicialização • 1 x slots PCI Express 3.0 x1 • 1 x Soquete M.2 Vertical (Tecla E) com módulo Wi-Fi-802.11ac incluído (na I/O traseira)

Gráficos	• AMD Radeon™ Integrado Série Vega Gráficas na Série Ryzen 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. • Suporta HDMI 2.1 com resolução máx. até 4K x 2K (4096x2160) @ 60Hz • Suporta Auto sincronização labial, Deep Color (12bpc), xvYCC e HBR (High Bit Rate Audio) com porta HDMI 2.1 (É necessário um monitor compatível com HDMI) • Suporta HDR (High Dynamic Range – Ampla Faixa Dinâmica) com HDMI 2.1 • Suporta HDCP 2.3 com Portas HDMI 2.1 • Suporta reprodução HD Ultra (UHD) 4K com Porta HDMI 2.1 • Suporta Microsoft PlayReady®
Áudio	• Áudio 7.1 CH HD com proteção de conteúdo (Codec de áudio Realtek ALC887) • Suporta Proteção de Sobretensão
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
LAN sem fios	• Módulo Intel® 802.11ac WiFi (Pacote Gratuito) • Suporta IEEE 802.11a/b/g/n/ac • Suporta banda dupla (2,4/5 GHz) • Suporta conexão sem fio de alta velocidade até 433Mbps • Suporta Bluetooth 4.2 / 3.0 + Classe II de alta velocidade
E/S do painel posterior	• 2 x Portas de Antena • 1 x Porta PS/2 para mouse/teclado • 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 Key tipo módulo 2242/2260/2280 M.2 SATA3 6,0 Gb/s e módulo M.2 PCI Express até Gen3 x4 (32 Gb/s)* * Suporta NVMe SSD nos discos de inicialização * Suporta Kit U.2 ASRock
Conector	• 1 x Plataforma SPI TPM • 1 x Suporte porta COM • 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 de Ventoinha de Chassi (4 pinos) (Controle de Velocidade de Ventoinha Inteligente) * O Ventilador do Chassi suporta o ventilador de refrigerador a água de 1A máximo (12W) potência do ventilador. * CHA_FAN2 podem detectar automaticamente se ventoinha de 3 pinos ou 4 pinos está em uso. • 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)
Funções da BIOS	• AMI UEFI Legal BIOS com suporte GUI • Suporta "Plug and Play" • ACPI 5.1 compatível com eventos de despertar • Suporta jumperfree • Suporte SMBIOS 2.3 • Multi-ajuste de tensão de CPU, CPU VDDCR_SOC, DRAM, VDDP
Monitor de hardware	• Sensor de Temperatura: CPU, Ventoinha do Chassi • Tacômetro da ventoinha: CPU, Ventoinha do Chassi • Ventoinha Silenciosa (Auto ajusta velocidade da ventoinha do chassi pela temperatura da CPU): CPU, Ventoinha do Chassi • Controle multi-velocidade da ventoinha: CPU, Ventoinha do Chassi • Detecção de ABERTURA da CAIXA • Monitoramento da tensão: +12V, +5V, +3,3V, CPU Vcore

SO	• Microsoft® Windows® 10 64-bit
Certificações	• FCC, CE • Preparada para ErP/EuP (é necessária uma fonte de alimentação preparada para ErP/EuP)

Specyfikacje

Platforma	• Współczynnik kształtu Micro ATX • Konstrukcja kondensatorami stałymi
CPU	• Obsługa 3-ciej generacji procesorów AMD AM4 Ryzen™ / Ryzen™ z przyszłym procesorem (Procesory serii 3000 i 4000)* * Brak zgodności z AMD Ryzen™ 5 3400G i Ryzen™ 3 3200G. • Sekcja zasilania 6 Power Phase Design
Chipset	• AMD A520
Pamięć	• Technologia pamięci Dual Channel DDR4 • 2 x gniazda DDR4 DIMM • Seria CPU AMD Ryzen (Matisse) z obsługą niebuforowanej pamięci DDR4 4600+(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC i nie-ECC* • Seria APU AMD Ryzen (Renoir) z obsługą niebuforowanej pamięci DDR4 4733+(OC)/4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466 (OC)/3200/2933/2667/2400/2133 ECC i nie-ECC* * Sprawdź listę obsługiwanej pamięci na stronie internetowej ASRock w celu uzyskania dalszych informacji. (http://www.asrock.com/) * Sprawdź stronę 21 w celu uzyskania informacji o maksymalnej obsługiwanej częstotliwości DDR4 UDIMM. • Maks. wielkość pamięci systemowej: 64GB • Obsługa modułów pamięci Extreme Memory Profile (XMP) • 15µ pozłacane styki w gniazdach DIMM
Gniazdo rozszerzenia	1 x gniazdo PCI Express 3.0 x 16 (tryb PCIE2: x16)* * Obsługa SSD NVMe, jako dysków rozruchowych • 1 x gniazdo PCI Express 3.0 x 1 • 1 x pionowe gniazdo M.2 (Key E) z wbudowanym modułem WiFi-802.11ac (z tyłu Wejścia/Wyjścia)

Grafika	• Zintegrowana karta graficzna AMD Radeon™ serii Vega w APU serii Ryzen* * 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. • Obsługa HDMI 2.1 z maks. rozdzielczością do 4K x 2K (4096x2160) przy 60Hz • Obsługa Auto Lip Sync, Deep Color (12bpc), xvYCC i HBR (High Bit Rate Audio) z portami HDMI 2.1 (Wymagany monitor zgodny z HDMI) • Obsługa HDR (High Dynamic Range) z HDMI 2.1 • Obsługa HDCP 2.3 z portami HDMI 2.1 • Obsługa odtwarzania 4K Ultra HD (UHD) z portem HDMI 2.1 • Obsługa Microsoft PlayReady®
Audio	• Dźwięk HD 7.1 CH (kodek audio Realtek ALC887) • Obsługa zabezpieczenia przed przepięciami
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
Bezprzewodowa sieć LAN	• Moduł WiFi Intel® 802.11ac • Obsługa IEEE 802.11a/b/g/n/ac • Obsługa dwóch pasm (2,4/5 GHz) • Obsługa wysokiej szybkości połączeń bezprzewodowych do 433 Mbps • Obsługa Bluetooth 4.2 / 3.0 + Wysokiej szybkości klasa II

Tylny panel Wejścia/ Wyjścia	• 2 x porty anteny • 1 x port myszy/klawiatury PS/2 • 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
Przechowywanie	• 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)* * Obsługa SSD NVMe, jako dysków rozruchowych * Obsługa ASRock U.2 Kit
Złącze	• 1 x złącze główkowe SPI TPM • 1 x złącze główkowe portu COM • 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 złącza wentylatora obudowy (4-pinowe) (Inteligentne sterowanie prędkością obrotową wentylatora) * Złącze wentylatora obudowy obsługuje wentylator układu chłodzenia maksymalnym prądem zasilania wentylatora 1A (12W). * CHA_FAN2 może automatycznie wykrywać, jeśli używany jest wentylator 3-pinowy lub 4-pinowy. • 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)

Funkcja BIOS	• Obsługa starszych wersji BIOS AMI UEFI z GUI • Obsługa “Plug and Play” • Zgodność zdarzeń wybudzania z ACPI 5.1 • Obsługa bezzworkowa • Obsługa SMBIOS 2.3 • Wiele regulacji napięcia CPU, CPU VDDCR_SOC, DRAM, VDDP
Monitor sprzętu	• Wykrywanie temperatury: CPU, Złącza wentylatora obudowy • Obrotomierz wentylatora: CPU, Złącza wentylatora obudowy • Cichy wentylator (Automatyczna regulacja prędkości obrotowej wentylatora obudowy przez temperaturę CPU): CPU, Złącza wentylatora obudowy • Kontrola wielu prędkości obrotowych wentylatora: CPU, Złącza wentylatora obudowy • Wykrywanie OTWARCIA OBUDOWY • Monitorowanie napięcia: Napięcie rdzenia CPU Vcore +12 V, +5 V, +3,3 V
System operacyjny	• Microsoft® Windows® 10 64-bitowy
Certyfikaty	• FCC, CE • Gotowość do obsługi ErP/EuP (Wymagane zasilanie z gotowością obsługi ErP/EuP)

규격

플랫폼

- Micro ATX 폼 팩터
- 솔리드 콘덴서 구조

CPU

- Ryzen™ 그래픽 프로세서 (3000 및 4000 시리즈 프로세서) 를 탑재한 3 세대 AMD AM4 Ryzen™/Ryzen™ 지원 이상을 지원합니다 *

* AMD Ryzen™ 5 3400G 및 Ryzen™ 3 3200G 와 호환되지 않음

- 6 개 전원 위상 구조

칩세트

- AMD A520

메모리

- 듀얼 채널 DDR4 메모리 기술
- DDR4 DIMM 슬롯 2 개
- AMD Ryzen 시리즈 CPU (Matisse) 는 DDR4 4600+(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 및 비 ECC, 비버퍼링 메모리를 지원합니다 *
- AMD Ryzen 시리즈 APU(Renoir) 는 DDR4 4733+(OC)/4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 및 비 ECC, 비버퍼링 메모리를 지원합니다 *

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

* DDR4 UDIMM 최대 주파수 지원은 21 페이지를 참조하십시오 .

- 시스템 메모리 최대 용량 : 64GB
- Extreme Memory Profile(XMP) 메모리 모듈 지원
- DIMM 슬롯에 15μ Gold Contact 장착

확장 슬롯

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

* NVMe SSD 를 부팅 디스크로 사용 가능하도록 지원

- PCI Express 3.0 x1 슬롯 1 개
- 수직 M.2 소켓 (키 E) 1 개 (번들로 제공되는 후면 I/O 의 WiFi-802.11ac 모듈 포함)

그래픽	• Ryzen Series APU 의 통합형 AMD Radeon™ Vega Series 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 . • HDMI 2.1 지원 (최대 해상도 4K x 2K (4096x2160) @ 60Hz) • Auto Lip Sync, Deep Color (12bpc), xvYCC 및 HBR (High Bit Rate Audio)(HDMI 2.1 포트 포함) 지원 (HDMI 호환 모니터 필요) • HDMI 2.1 에서 HDR(높은 동적 범위) 를 지원합니다 . • HDMI 2.1 포트를 이용한 HDCP 2.3 지원 • HDMI 2.1 포트를 이용한 4K Ultra HD(UHD) 재생 지원 • Microsoft PlayReady® 지원
오디오	• 7.1 CH HD 오디오 (Realtek ALC887 오디오 코덱) • 서비 보호 지원
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
무선 LAN	• Intel® 802.11ac WiFi 모듈 • IEEE 802.11a/b/g/n/ac 지원 • 듀얼 밴드 (2.4/5 GHz) 지원 • 최대 433Mbps 의 고속 무선 연결 지원 • Bluetooth 4.2 / 3.0 + 고속 클래스 II 지원
후면 패널 I/O	• 안테나 포트 2 개 • PS/2 마우스 / 키보드 포트 1 개 • HDMI 포트 1 개 • USB 2.0 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 하이퍼 1 개 , M 키 타입 2242/2260/2280 M.2 SATA3 6.0 Gb/s 모듈 및 Gen4 M.2 PCI Express 모듈 Gen3 x4 (32 Gb/s) *

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

커넥터

- SPI TPM 헤더 1 개
- COM 포트 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 (4 핀) 2 개 (스마트 팬 속도 제어)

* 섀시 팬 전력이 최대 1A (12W) 인 수냉식 쿨러 팬을 지원합니다 .
* 3 핀 또는 4 핀 팬이 사용 중인 경우 , CHA_FAN2 가 자동으로 감지할 수 있습니다 .

- 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)

BIOS 기능

- GUI 지원을 제공하는 AMI UEFI 적합형 BIOS
- “ 플러그 앤드 플레이 ” 지원
- ACPI 5.1 준수 웨이크 업 이벤트
- 점퍼 프리 지원
- SMBIOS 2.3 지원
- CPU, CPU VDDCR_SOC, DRAM, VDDP 전압 다중 조정

하드웨어 모니터

- 온도 감지 : CPU, 커넥터
- 팬 타코미터 : CPU, 커넥터
- 저소음 팬 (CPU 온도에 의한 섀시 팬 속도 자동 조절): CPU, 커넥터
- 팬 다중 속도 제어 : CPU, 커넥터
- 케이스 열림 감지
- 전압 모니터링 : +12V, +5V, +3.3V, CPU Vcore

하드웨어 모니터	• 온도 감지 : CPU, 커넥터 • 팬 타코미터 : CPU, 커넥터 • 저소음 팬 (CPU 온도에 의한 섀시 팬 속도 자동 조절): CPU, 커넥터 • 팬 다중 속도 제어 : CPU, 커넥터 • 케이스 열림 감지 • 전압 모니터링 : +12V, +5V, +3.3V, CPU Vcore
OS	• Microsoft® Windows® 10 64- 비트
인증	• FCC, CE • ErP/EuP 사용 가능 (ErP/EuP 사용 가능 전원공급장치 필요)

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
- Ryzen™ グラフィックスプロセッサー（3000 および 4000 シリーズプロセッサー）と共に第 3 世代以降の AMD AM4 Ryzen™/Ryzen™ に対応します *

* AMD Ryzen™ 5 3400G および Ryzen™ 3 3200G と互換性はありません
- 6 電源フェーズ設計

チップセット
- AMD A520

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 4600+(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/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 APU (Renoir) は、DDR4 4733+(OC)/4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/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 *

* 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 21 ページを参照してください。
- システムメモリの最大容量：64GB
- Extreme Memory Profile (XMP) メモリモジュールに対応します
- DIMM スロットに 15µ ゴールドコンタクトを採用

拡張スロット
1 x PCI Express 3.0 x16 スロット（PCIE2: x16 モード）*

* 起動ディスクとして NVMe SSD に対応
- 1 x PCI Express 3.0 x1 スロット
- 1 x 垂直 M.2 ソケット (Key E)、WiFi-802.11ac モジュールがバンドルされています（リア I/O）

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 * * 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。 • HDMI 2.1 テクノロジーに対応、最大解像度 4K x 2K (4096x2160) @ 60Hz • HDMI 2.1 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） • HDMI 2.1 の高ダイナミックレンジ (HDR) に対応 • HDMI 2.1 ポートで HDCP 2.3 に対応 • HDMI 2.1 ポートで 4K Ultra HD (UHD) 再生に対応 • Microsoft PlayReady® 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
LAN	• PCIE x1 ギガビット LAN 10/100/1000 Mb/s • 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
ワイヤレス LAN	• Intel® 802.11ac WiFi モジュール • IEEE 802.11a/b/g/n/ac をサポート • デュアルバンド (2.4/5 GHz) をサポート • 最高 433 Mbps の高速ワイヤレス接続をサポート • ブルートゥース 4.2/3.0 + ハイスピードクラス II をサポート
リアパネル I/O	• 2 x アンテナポート • 1 x PS/2 マウス / キーボードポート • 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） • LED 付き 1 x 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 Ultra M.2 Socket は、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) までの M.2 PCI Express モジュール *

* 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 SPI TPM ヘッダー
- 1 x COM ポートヘッダー
- 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）（スマートファン速度制御）

* シャーシファンは最大 1A (12W) の出力のウォータークーラーに対応します。
* CHA_FAN2 は 3 ピンまたは 4 ピンファンが使用されているかどうかを自動検出できます。

- 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）

BIOS 機能

- AMI UEFI Legal BIOS、GUI サポート付き
- 「プラグアンドプレイ」をサポート
- ACPI 5.1 準拠のウェイクアップイベント
- ジャンパーフリーをサポート
- SMBIOS 2.3 サポート
- CPU、CPU、VDDCR_SOC、DRAM、VDDP 電圧マルチ調整

ハードウェアモニター	• 温度センシング：CPU、シャーシファン • ファンタコメータ：CPU、シャーシファン • 静音ファン（CPU 温度に従ってシャーシファン速度を自動調整）：CPU、シャーシファン • ファンマルチ速度制御：CPU、シャーシファン • ケース開閉検知 • 電圧監視：+12V、+5V、+3.3V、CPU Vcore
OS	• Microsoft® Windows® 10 64-bit
認証	• FCC、CE • ErP/EuP Ready（ErP/EuP 対応電源供給装置が必要です）

规格

平台

- Micro ATX 规格尺寸
- 稳固的电容器设计

CPU

- 支持第 3 代 AMD AM4 Ryzen™ / 将来的 AMD Ryzen™ 处理器（3000 和 4000 系列处理器）*

* 不兼容 AMD Ryzen™ 5 3400G 和 Ryzen™ 3 3200G

- 6 电源相设计

芯片集

- AMD A520

内存

- 双通道 DDR4 内存技术
- 2 x DDR4 DIMM 槽
- AMD Ryzen 系列 CPU (Matisse) 支持 DDDR4 4600+(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC 及非 ECC，非缓冲内存 *
- AMD Ryzen 系列 APU (Renoir) 支持 DDR4 4733+(OC)/4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC 及非 ECC，非缓冲内存 *

* 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 21 页了解 DDR4 UDIMM 最大支持频率。

- 支持系统内存最大容量：64GB
- 支持 Extreme Memory Profile (XMP) 内存模块
- DIMM 插槽中 15μ 金触点

扩充槽

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

* 支持 NVMe SSD 用作启动盘

- 1 x PCI Express 3.0 x1 槽
- 1 x 垂直 M.2 Socket (Key E)，捆绑有 WiFi-802.11ac 模块（在后 I/O 上）

图形	• Ryzen 系列 APU 中的集成 AMD Radeon™ Vega 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。 • 支持 HDMI 2.1，60Hz 时最大分辨率达 4K x 2K (4096x2160) • 通过 HDMI 2.1 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 HDMI 2.1 支持 HDR（高动态范围） • 通过 HDMI 2.1 端口支持 HDCP 2.3 • 通过 HDMI 2.1 端口支持 4K 超高清 (UHD) 播放 • 支持 Microsoft PlayReady®
音频	• 7.1 CH 高清音频（Realtek ALC887 音频编解码器） • 支持电涌保护
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
无线 LAN	• Intel® 802.11ac WiFi 模块 • 支持 IEEE 802.11a/b/g/n/ac • 支持双频段 (2.4/5 GHz) • 支持最高 433Mbps 的高速无线连接 • 支持 Bluetooth 4.2 / 3.0 + 高速 Class II
后面板 I/O	• 2 x 天线端口 • 1 x PS/2 鼠标 / 键盘端口 • 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 Ultra M.2 Socket，支持 M Key 类型 2242/2260/2280 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 NVMe SSD 用作启动盘
* 支持华擎 U.2 套件

接口

- 1 x SPI TPM 接脚
- 1 x COM 端口接脚
- 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）（智能风扇速度控制）

* 机箱风扇接口支持功率最高 1A (12W) 功率的水冷风扇。
* CHA_FAN2 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 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）

BIOS 功能特点

- AMI UEFI Legal BIOS，支持 GUI
- 支持“即插即用”
- ACPI 5.1 兼容唤醒事件
- 支持免跳线 (jumperfree)
- 支持 SMBIOS 2.3
- CPU、CPU VDDCR_SOC、DRAM、VDDP 电压多次调整 (Voltage Multi-adjustment)

硬件监控

- 温度感测：CPU、机箱风扇
- 风扇转速计：CPU、机箱风扇
- 静音风扇（根据 CPU 温度自动调整机箱风扇速度）：CPU、机箱风扇
- 风扇多种速度控制：CPU、机箱风扇
- CASE OPEN（机箱打开）检测
- 电压监控：+12V、+5V、+3.3V、CPU Vcore

硬件监控	• 温度感测：CPU、机箱风扇 • 风扇转速计：CPU、机箱风扇 • 静音风扇（根据 CPU 温度自动调整机箱风扇速度）：CPU、机箱风扇 • 风扇多种速度控制：CPU、机箱风扇 • CASE OPEN（机箱打开）检测 • 电压监控：+12V、+5V、+3.3V、CPU Vcore
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）

規格

平台	• Micro ATX 尺寸 • 固態電容設計
CPU	• 支援第 3 代 AMD AM4 Ryzen™ / 未來的 AMD Ryzen™ 處理器（3000 與 4000 系列處理器）* * 不相容於 AMD Ryzen™ 5 3400G 與 Ryzen™ 3 3200G • 6 電源相位設計
晶片組	• AMD A520
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 4600+(OC)/ 4533(OC)/4466(OC)/4400(OC)/4333(OC)/4333(OC)/4266(OC)/ 4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/ 3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC、無緩衝記憶體 * • AMD Ryzen 系列 APU (Renoir) 支援 DDR4 4733+ (OC)/ 4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400 (OC)/4333(OC)/ 4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/ 3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC & 非 ECC、無緩衝記憶體 * * 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 21 頁。 • 最大系統記憶體容量：64GB • 支援 Extreme Memory Profile (XMP) 記憶體模組 • 15μ 特厚鍍金插槽
擴充插槽	1 x PCI Express 3.0 x16 插槽（PCIE2: x16 模式）* * 支援 NVMe SSD 作為開機磁碟 • 1 x PCI Express 3.0 x1 插槽 • 1 x 垂直 M.2 插座 (Key E)，搭售 WiFi-802.11ac 模組（在後置 I/O 上）

顯示卡	• 整合式 AMD Radeon™ Vega Series Graphics 內建於 Ryzen 系列 APU* * 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。 • 最高支援 4K x 2K (4096x2160) @ 60Hz 解析度的 HDMI 2.1 • 支援使用 HDMI 2.1 連接埠（需相容於 HDMI 顯示器）的 Auto Lip Sync、Deep Color (12bpc)、xvYCC 及 HBR（高位元率音訊） • 使用 HDMI 2.1 支援 HDR（高動態範圍） • 支援含 HDMI 2.1 連接埠的 HDCP 2.3 • 支援使用 HDMI 2.1 連接埠進行 4K Ultra HD (UHD) 播放 • 支援 Microsoft PlayReady®
音訊	• 7.1 CH HD 音訊（Realtek ALC887 音訊轉碼器） • 支援突波保護
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
無線 LAN	• Intel® 802.11ac WiFi 模組 • 支援 IEEE 802.11a/b/g/n/ac • 支援雙頻 (2.4/5 GHz) • 支援高達 433Mbps 的高速無線連線 • 支援 Bluetooth 4.2 / 3.0 + 高速級別 II
後面板 I/O	• 2 x 天線連接埠 • 1 x PS/2 滑鼠／鍵盤連接埠 • 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)* * 支援 NVMe SSD 作為開機磁碟 * 支持華擎 U.2 套件
接頭	• 1 x SPI TPM 排針 • 1 x COM 連接埠排針 • 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)（智慧型風扇速度控制） * 機殼風扇接頭支援最高 1A (12W) 風扇功率的水冷風扇。 * 如果 3-pin 或 4-pin 風扇使用中，可自動偵測 CHA_FAN2。 • 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）
BIOS 功能	• AMI UEFI Legal BIOS 含 GUI 支援 • 支援「隨插即用」 • ACPI 5.1 符合喚醒自動開機 • 支援免跳線模式 • 支援 SMBIOS 2.3 • CPU、CPU VDDCR_SOC、DRAM、VDDP 電壓多重調整
硬體顯示器	• 溫度感應：CPU、機殼風扇 • 風扇轉速計：CPU、機殼風扇 • 靜音風扇（依 CPU 溫度自動調整機殼風扇速度）：CPU、機殼風扇 • 風扇多重速度控制：CPU、機殼風扇 • 機殼開啟偵測 • 電壓監控：+12V、+5V、+3.3V、CPU Vcore
作業系統	• Microsoft® Windows® 10 64-bit

認證	• FCC、CE • ErP/EuP ready（須具備 ErP/EuP ready 電源供應器）

Spesifikasi

Platform

- Bentuk dan Ukuran Micro ATX
- Desain Kapasitor Solid

CPU

- Mendukung AMD AM4 Ryzen™ Gen 3 / AMD Ryzen™ Prosesor masa depan (Prosesor Seri 3000 dan 4000)*

* Tidak kompatibel dengan AMD Ryzen™ 5 3400G dan Ryzen™ 3 3200G

- Desain 6 Fase Daya

Chipset

- AMD A520

Memori

- Teknologi Memori DDR4 Dua Saluran
- 2 x Slot DIMM DDR4
- CPU seri AMD Ryzen (Matisse) yang mendukung memori ECC & non-ECC, tanpa buffering DDR4 4600+(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133*
- APU seri AMD Ryzen (Renoir) yang mendukung memori ECC & non-ECC, tanpa buffering DDR4 4733+(OC)/4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133*

* Lihat Daftar Dukungan Memori di situs web ASRock untuk informasi selengkapnya. (http://www.asrock.com/)

* Lihat halaman 21 untuk dukungan frekuensi maksimum DDR4 UDIMM.

- Kapasitas maksimum memori sistem: 64GB
- Mendukung modul memori Extreme Memory Profile (XMP)
- 15μ Bidang Kontak Berwarna Emas di Slot DIMM

Slot Ekspansi

1 x Slot PCI Express 3.0 x16 (PCIE2: x16 mode)*

* Mendukung SSD NVMe sebagai disk boot

- 1 x Slot PCI Express 3.0 x1
- 1 x Soket M.2 Vertikal (tombol E) dengan paket modul WiFi-802.11ac (di bagian belakang I/O)

Grafis	• Grafis AMD Radeon™ Terpadu Seri Vega dalam APU Seri Ryzen* * 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. • Mendukung HDMI 2.1 dengan resolusi maksimum hingga 4K x 2K (4096x2160) @ 60Hz • Mendukung Auto Lip Sync, Kedalaman Warna (12bpc), xvYCC, dan HBR (Audio High Bit Rate) dengan Port HDMI 2.1 (memerlukan monitor yang kompatibel dengan HDMI) • Mendukung HDR (High Dynamic Range) dengan HDMI 2.1 • Mendukung HDCP 2.3 dengan port HDMI 2.1 • Mendukung pemutaran Ultra HD 4K (UHD) dengan Port HDMI 2.1 • Mendukung Microsoft PlayReady®
Audio	• Audio HD 7.1 CH (Realtek ALC887 Audio Codec) • Mendukung Perlindungan dari Lonjakan Arus
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
LAN Nirkabel	• Intel® 802.11ac WiFi Modul • Mendukung IEEE 802.11a/b/g/n/ac • Mendukung Dual-Band (2,4/5 GHz) • Mendukung Sambungan nirkabel berkecepatan tinggi hingga 433Mbps • Mendukung Bluetooth 4.2 / 3.0 + Kecepatan tinggi kelas II

I/O Panel Belakang

- 2 x Port Antena
- 1 x Port Mouse/Keyboard PS/2
- 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

Penyimpanan

- 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)*

* Mendukung SSD NVMe sebagai disk boot
* Mendukung Kit U.2 ASRock

Konektor

- 1 x Header SPI TPM
- 1 x Header Port COM
- 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 Sasis (4-pin) (Kontrol Kecepatan Kipas Pintar)

* Kipas Chassis mendukung kipas berpendingin air dengan daya kipas maksimum 1A (12W).
* CHA_FAN2 dapat mendeteksi otomatis jika kipas 3-pin atau 4-pin sedang digunakan.

- 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)

Fitur BIOS	• AMI UEFI Legal BIOS dengan dukungan GUI • Mendukung “Plug and Play” • ACPI 5.1 kompatibel dengan aktivitas pengaktifan • Mendukung jumperfree • Dukungan SMBIOS 2.3 • CPU, CPU VDDCR_SOC, DRAM, VDDP, Penyesuaian Multi Voltase
Monitor Perangkat Keras	• Deteksi Suhu: CPU, Kipas Chassis • Takometer Kipas: CPU, Kipas Chassis • Kipas Hening (Penyesuaian otomatis kecepatan kipas sasis berdasarkan suhu CPU): CPU, Kipas Chassis • Kontrol Multikecepatan Kipas: CPU, Kipas Chassis • Deteksi CASE OPEN • Pemantauan tegangan: +12V, +5V, +3,3V, CPU Vcore
OS	• Microsoft® Windows® 10 64-bit
Sertifikasi	• FCC, CE • Mendukung ErP/EuP (memerlukan catu daya untuk ErP/EuP)

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

2F., No.37, Sec. 2, Jhongyang S. Rd., Beitou District,

Taipei City 112, Taiwan (R.O.C.)

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ASRock America, Inc.

13848 Magnolia Ave, Chino, CA91710

U.S.A.

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 : A520M/ac

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)

A520M/ac / 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

☒ **RED—Directive 2014/53/EU**

- ☐ EN 300 328 V2.1.1
- ☒ EN 301 489-17 V3.1.1
- ☐ EN 301 893 V2.1.1
- ☐ EN 301 489-3 V2.1.1
- ☐ EN 300 220 V3.1.1

☐ **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

CE

(EU conformity marking)

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)

July 21, 2020

(Date)

P/N: 15G062244000AK V1.0