



A520M-HDV

- Supports AMD AM4 Socket Ryzen™ 3000, 4000 G-Series and 5000 and 5000 G-Series Desktop Processors*
- 6 Phase Power Design
- Supports DDR4 4733+ (OC)
- 1 x PCIe 3.0 x16, 1 x PCIe 3.0 x1
- Graphics Output Options: D-Sub, DVI-D, HDMI
- 7.1 CH HD Audio (Realtek ALC887 Audio Codec)
- 4 x SATA3, 1 x Ultra M.2 (Gen3 x4 & SATA3)
- 6 x USB 3.2 Gen1 (4 x Rear, 2 x Front)
- 6 x USB 2.0 (2 x Rear, 4 x Front)
- Realtek Gigabit LAN

*Not compatible with AMD Ryzen™ 5 3400G and Ryzen™ 3 3200G.

This model may not be sold worldwide. Please contact your local dealer for the availability of this model in your region.



Overview

Specification

Support

Where to Buy

Unique Feature

ASRock Super Alloy

- Premium 50A Power Choke
- Sapphire Black PCB

High Density Glass Fabric PCB

ASRock Ultra M.2 (PCIe Gen3 x4 & SATA3)

ASRock Full Spike Protection (for all USB, Audio, LAN Ports)

ASRock Live Update & APP Shop

CPU

- Supports AMD AM4 Socket Ryzen™ 3000, 4000 G-Series and 5000 and 5000 G-Series Desktop Processors*
- 6 Power Phase design

*Not compatible with AMD Ryzen™ 5 3400G and Ryzen™ 3 3200G.

Chipset

- AMD A520

Memory

- Dual Channel DDR4 Memory Technology
- 2 x DDR4 DIMM Slots
- AMD Ryzen series CPUs (Vermeer) support DDR4 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*
- 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 (Cezanne) 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*
- 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*
- Max. capacity of system memory: 64GB**
- Supports Extreme Memory Profile (XMP) memory modules



- 15μ Gold Contact in DIMM Slots

*For Ryzen Series APUs (Cezanne and Renoir), ECC is only supported with PRO CPUs.
Please refer to below table for AMD non-XMP memory frequency support. For more details.

Ryzen Series CPUs (Vermeer):

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

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 (Cezanne):

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

Ryzen Series CPUs:

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

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

**Due to the operating system limitation, the actual memory size may be less than 4GB for the reservation for system usage under Windows® 32-bit OS. For Windows® 64-bit OS with 64-bit CPU, there is no such limitation.

BIOS

- 128Mb 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

Graphics

- Integrated AMD Radeon™ Vega Series Graphics in Ryzen Series APU*
- DirectX 12, Pixel Shader 5.0
- Shared memory default 2GB. Max Shared memory supports up to 16GB.
- Three graphics output options: D-Sub, DVI-D and HDMI
- Supports Triple Monitor
- Supports HDMI 2.1 with max. resolution up to 4K x 2K (4096x2160) @ 60Hz
- Supports DVI-D with max. resolution up to 1920x1200 @ 60Hz
- Supports D-Sub with max. resolution up to 1920x1200 @ 60Hz
- Supports Auto Lip Sync, Deep Color (12bpc), xvYCC and HBR (High Bit Rate Audio) with HDMI 2.1 Port (Compliant HDMI monitor is required)
- Supports HDR (High Dynamic Range) with HDMI 2.1
- Supports HDCP 2.3 with DVI-D and HDMI 2.1 Ports
- Supports 4K Ultra HD (UHD) playback with HDMI 2.1 Port
- Supports Microsoft® PlayReady

*Actual support may vary by CPU

Audio	- <u>7.1 CH HD Audio (Realtek ALC887 Audio Codec)</u> - Supports Surge Protection
LAN	- <u>PCIe x1 Gigabit LAN 10/100/1000 Mb/s</u> - Realtek RTL8111H - Supports Wake-On-LAN - Supports Lightning/ESD Protection - Supports Energy Efficient Ethernet 802.3az - Supports PXE
Slots	- 1 x PCI Express 3.0 x16 Slot (PCIe2: x16 mode)* - 1 x PCI Express 3.0 x1 Slot *Supports NVMe SSD as boot disks
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)* - 2 x Chassis Fan Connectors (4-pin) (Smart Fan Speed Control)** - 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) *The CPU Fan Connector supports the CPU fan of maximum 1A (12W) fan power. **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.
Rear Panel I/O	- 1 x PS/2 Mouse/Keyboard Port - 1 x D-Sub Port - 1 x DVI-D Port - 1 x HDMI Port - 2 x USB 2.0 Ports (Supports ESD Protection) - 4 x USB 3.2 Gen1 Ports (Supports ESD Protection) - 1 x RJ-45 LAN Port with LED (ACT/LINK LED and SPEED LED) - HD Audio Jacks: Line in / Front Speaker / Microphone
Software and UEFI	Software - ASRock Motherboard Utility (A-Tuning) - ASRock XFast LAN UEFI - ASRock Full HD UEFI - ASRock Instant Flash *These utilities can be downloaded from ASRock Live Update & APP Shop.
Support CD	- Drivers, Utilities, AntiVirus Software (Trial Version), Google Chrome Browser and Toolbar
Accessories	- Quick Installation Guide, Support CD, I/O Shield - 2 x SATA Data Cables - 1 x Screw for M.2 Socket

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
Form Factor	- Micro ATX Form Factor: 9.0-in x 7.9-in, 23.0 cm x 20.1 cm - Solid Capacitor design
OS	- Microsoft® Windows® 10 64-bit / 11 64-bit
Certifications	- FCC, CE - ErP/EuP ready (ErP/EuP ready power supply is required)



The specification is subject to change without notice in advance. The brand and product names are trademarks of their respective companies. Any configuration other than original product specification is not guaranteed.

The above user interface picture is a sample for reference. The actual user interface may vary with the updated software version.



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