ComX Computers
Product Specification Sheet

MB-GA520MS2H

Gigabyte A520M S2H A520 Chipset AMD Ryzen AM4 Socket Motherboard

Product Overview

Gigabyte A520M S2H A520 Chipset AMD Ryzen AM4 Socket Motherboard, Support for DDR4 5000(O.C.)/ 4866(O.C.)/ 4600(O.C.)/ 4400(O.C.)/ 4000(O.C.)/ 3600(O.C.)/ 3333(O.C.)/ 3200/ 2933/ 2667/ 2400/ 2133 MHz memory modules, 1 x 24-pin ATX main power connector, 1 x 8-pin ATX 12V power connector, 1 x CPU fan header, 2 x system fan headers, 1 x addressable LED strip header, 1 x RGB LED strip header, 1 x M.2 Socket 3 connector, 4 x SATA 6Gb/s connectors, 1 x front panel header, 1 x front panel audio header, 1 x USB 3.2 Gen 1 header, 2 x USB 2.0/1.1 headers, 1 x Trusted Platform Module (TPM) header (2x6 pin, for the GC-TPM2.0_S module only), 1 x serial port header, 1 x speaker header, 1 x chassis intrusion header, 1 x Clear CMOS jumper, 1 x PS/2 keyboard/mouse port, 1 x D-Sub port, 1 x DVI-D port, 1 x HDMI port, 4 x USB 3.2 Gen 1 ports, 2 x USB 2.0/1.1 ports, 1 x RJ-45 port, 1 x Q-Flash Plus button, 3 x audio jacks, Micro ATX Form Factor, 24.4cm x 20.5cm



Specifications

Features:

4+3 Phases Pure Digital VRM Solution with Low RDS(on) MOSFETs
GIGABYTE UD series motherboards use a 4+3 phases pure digital PWM + Low RDS(on) MOSFETs design to support the 3rd Gen AMD Ryzen™ CPUs by offering incredible precision in delivering power to the motherboard's most power-hungry and energy-sensitive components as well as delivering enhanced system performance and ultimate hardware scalability.

Benefits of Low RDS(on) MOSFETs

- Optimized gate charge to minimize switching losses.
- Lower temperature, smaller size, better thermal characteristics.

NVMe PCIe Gen3 x4 M.2 Connector
GIGABYTE Motherboards are focused on delivering M.2 technology to enthusiasts who want to maximize their system's potential.

High Speed Gigabit LAN with Automatic Bandwidth Allocation
Realtek 8118 LAN is a high performance and friendly network chip for gaming players with automatic bandwidth allocation to ensure the highest network priority of the game or application. It can provide users the most comprehensive features and the fastest and smoothest Internet experience.

HDMI 2.1 for 4K / 60P / 21:9 / HDCP 2.3 Support

HDMI 2.1, which is backwards compatible with HDMI 2.0/ 1.4 and offering 48 Gb/s of bandwidth - twice times more than previous generation. This unlocks the potential for users to transfer multiple video streams, as well as a native cinematic 21:9 ratio (which most movies are shot in), Full HDR and HDCP 2.3 support, to offer the best visual experience for viewers.

The Industry's Leading LAN Static-Electricity & Surge Protection
GIGABYTE motherboards use ICs with up to 3 times the ESD resistance levels compared to traditional ICs. This helps to better protect the motherboard and its components against potential damage caused by static electricity. GIGABYTE motherboards also feature special anti-surge ICs that protect your motherboard, and your PC from any surge in power delivery that may occur, helping to ensure that your PC is equipped to deal with any potentially irregular and inconsistent power delivery.

High-End Audio Capacitors
GIGABYTE motherboards use high-end audio capacitors. These high quality capacitors help deliver high resolution and high fidelity audio to provide the most realistic sound effects for gamers.

Audio Noise Guard
GIGABYTE motherboards feature an audio noise guard that essentially separates the board's sensitive analog audio components from potential noise pollution at the PCB level.

Smart Fan 5
With Smart Fan 5 users can ensure that their gaming PC can maintain its performance while staying cool. Smart Fan 5 allows users to interchange their fan headers to reflect different thermal sensors at different locations on the motherboard. Not only that, with Smart Fan 5 more hybrid fan headers that support both PWM and Voltage mode fans have been introduced to make the motherboard more liquid cooling friendly.

FAN STOP
Achieve fan silence. With Fan Stop, map any fan to stop completely when temperatures drop below a specified threshold. Which fan stops, based on readings from which sensor, and at what temperature-all of it can be customized to your liking.

Hybrid Fan Pin Headers
Assume complete control over your liquid cooling setup! Smart Fan 5 receives up-to-the-second information on flow-rate and water-temperature through the Hybrid Fan Pin Headers or external thermistor sensors-giving you absolute mastery over your PC. All Hybrid Fan Headers can automatically detect the type of cooling device whether it be fan or pump with different PWM or Voltage mode.

New Smart Fan 5 Software
Choose from different modes, Quiet to Full Speed, to match your system usage preferences. For each fan or pump, you can use the intuitive fan curve to define trigger thresholds and corresponding fan speeds.

RGB FUSION 2.0
With A520 Motherboards, RGB Fusion 2.0 is even better with Addressable LEDs. RGB Fusion 2.0 offers users the option to control onboard RGB and external RGB / Addressable LED light strips* for their PC build. Already feature filled with colors and patterns, RGB Fusion 2.0 are now upgraded to improve the Addressable LED support. With external Addressable LED strips, where each LED is digitally addressable that users can experience even more patterns, styles, and illuminations. With A520 Motherboards support the external 5V Addressable LED lighting strips and up to 300 LED lights. RGB Fusion 2.0 with Addressable LEDs comes with new patterns and various speed settings with more to come.

RGB Fusion 2.0 Software
With an integrated intuitive user interface, the RGB Fusion 2.0 provides you a better solution for customizing the lighting effects across all supported devices. From motherboards, graphics cards to the peripheral products, you can personalize your gaming rig with your own style and show off your build by sharing the profiles. In addition, the new gaming mode makes the lighting effects interactive with selected games to bring you the most immersive gaming experience.

GIGABYTE RGB Fusion APP
Don't just make your PC shine, make it a work of art that friends will envy. With the GIGABYTE RGB Fusion mobile app users can watch as they control the lighting within their gaming PC. This gives users ease of access as they try and adjust colors and speeds for different modes, all this can be achieved away from the keyboard and monitor of their PC.

Update the BIOS easily without installing the CPU, memory and graphics card.
With GIGABYTE Q-Flash Plus, you don't need to install the CPU, memory and graphics card nor enter the BIOS menu to flash the BIOS. Just download and save a new BIOS file (rename to gigabyte.bin) on the USB flash drive, then press the dedicated Q-Flash Plus button and you're good to go!

Solid Pin Power Connectors
A520 motherboards feature solid plated ATX 12V 8pin power connectors for offering stable power supply while CPU overloading.

Solid Pin Power connector advantages

- Larger contact area for electricity
- More metal quantity to sustain higher power and generated heat
- Ultra durable and longer lifespan

START SULFURIZATION PROTECTION
Sulfur compounds in the air can penetrate tiny onboard resistors creating chemical change and causing these resistors to open or short. If either of these occurs the motherboard will fail to function. By equipping resistors with an Anti-Sulfur Design GIGABYTE gives Ultra Durable Motherboards a whole new meaning.

Refreshed BIOS
The BIOS is essential for users during initial setup to allow for the most optimal settings. With a new GUI and easier to use functionalities, GIGABYTE has been able to reinvent the BIOS to give users a better experience while setting up their new system.

APP CENTER
GIGABYTE APP CENTER is an useful portal of all GIGABYTE MB utilities and drivers, you can choose any utility you want to install from APP CENTER and keep you updated with latest utilities and drivers version.

EasyTune™
GIGABYTE's EasyTune™ is a simple and easy-to-use interface that allows users to fine-tune their system settings or adjust system and memory clocks and voltages in a Windows environment. With Smart Quick Boost, one click is all it takes to automatically overclock your system, giving an added performance boost when you need it the most.

@BIOS
The GIGABYTE @BIOS app allows you to update your system's BIOS from within Windows using a simple and slick graphical user interface. @BIOS can automatically download the latest version from the GIGABYTE servers or you can update your BIOS from a file on your computer. @BIOS also allows you to save your current BIOS to a file, recover your previous BIOS from an image and backup your BIOS to an image.

System Information Viewer
GIGABYTE System Information Viewer is a central location that gives you access to your current system status. Monitor components such as the clocks and processor, set your preferred fan speed profile, create alerts when temperatures get too high or record your system's behavior; these are the possibilities of the System Information Viewer.

Specifications:

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Specifications	
Product Code	MB-GA520MS2H
CPU	1. AMD Socket AM4, support for: 3rd Generation AMD Ryzen processors/ 3rd Generation AMD Ryzen with Radeon Graphics processors
Chipset	1. AMD A520
Memory	1. 2 x DDR4 DIMM sockets supporting up to 64 GB (32 GB single DIMM capacity) of system memory
	2. 3rd Gen AMD Ryzen Processors:
	Support for DDR4 5000(O.C.) / 4866(O.C.) / 4600(O.C.) / 4400(O.C.) / 4000(O.C.) / 3600(O.C.) / 3333(O.C.) / 3200 / 2933 / 2667 / 2400 / 2133 MHz memory modules
	3. 3rd Gen AMD Ryzen with Radeon Graphics processors:
	Support for DDR4 5000(O.C.) / 4866(O.C.) / 4600(O.C.) / 4400(O.C.) / 4000(O.C.) / 3600(O.C.) / 3333(O.C.) / 3200 / 2933 / 2667 / 2400 / 2133 MHz memory modules
	4. Dual channel memory architecture
	5. Support for ECC Un-buffered DIMM 1Rx8/2Rx8 memory modules
	6. Support for non-ECC Un-buffered DIMM 1Rx8/2Rx8/1Rx16 memory modules
	7. Support for Extreme Memory Profile (XMP) memory modules
Onboard Graphics	Integrated in the 3rd Generation AMD Ryzen with Radeon Graphics processors:
	1. 1 x D-Sub port, supporting a maximum resolution of 1920x1200@60 Hz
	2. 1 x DVI-D port, supporting a maximum resolution of 1920x1200@60 Hz
	* The DVI-D port does not support D-Sub connection by adapter.
	3. 1 x HDMI port, supporting a maximum resolution of 4096x2160@60 Hz
	* Support for HDMI 2.1 version, HDCP 2.3, and HDR.
	Support for up to 3 displays at the same time
	Maximum shared memory of 16 GB
Audio	1. Realtek ALC887 codec
	2. High Definition Audio
	3. 2/4/5.1/7.1-channel
	* To configure 7.1-channel audio, you need to open the audio software and select Device advanced settings > Playback Device to change the default setting first. Please visit GIGABYTE's website for details on configuring the audio software.
LAN	1. Realtek GbE LAN chip (1000 Mbit/100 Mbit)
Expansion Slots	CPU:
	1. 1 x PCI Express x16 slot, supporting PCIe 3.0 and running at x16
	Chipset:
	1. 2 x PCI Express x1 slots, supporting PCIe 3.0

Storage Interface	CPU:
	1. 1 x M.2 connector (Socket 3, M key, type 2242/2260/2280 SATA and PCIe 3.0 x4/x2 SSD support)
	Chipset:
	1. 4 x SATA 6Gb/s connectors
	2. Support for RAID 0, RAID 1, and RAID 10
USB	CPU:
	1. 4 x USB 3.2 Gen 1 ports on the back panel
	Chipset:
	1. 2 x USB 3.2 Gen 1 ports available through the internal USB header
	2. 6 x USB 2.0/1.1 ports (2 ports on the back panel, 4 ports available through the internal USB headers)
Internal I/O Connectors	1. 1 x 24-pin ATX main power connector
	2. 1 x 8-pin ATX 12V power connector
	3. 1 x CPU fan header
	4. 2 x system fan headers
	5. 1 x addressable LED strip header
	6. 1 x RGB LED strip header
	7. 1 x M.2 Socket 3 connector
	8. 4 x SATA 6Gb/s connectors
	9. 1 x front panel header
	10. 1 x front panel audio header
	11. 1 x USB 3.2 Gen 1 header
	12. 2 x USB 2.0/1.1 headers
	13. 1 x Trusted Platform Module (TPM) header (2x6 pin, for the GC-TPM2.0_S module only)
	14. 1 x serial port header
	15. 1 x speaker header
	16. 1 x chassis intrusion header
	17. 1 x Clear CMOS jumper

Back Panel Connectors	1. 1 x PS/2 keyboard/mouse port
	2. 1 x D-Sub port
	3. 1 x DVI-D port
	4. 1 x HDMI port
	5. 4 x USB 3.2 Gen 1 ports
	6. 2 x USB 2.0/1.1 ports
	7. 1 x RJ-45 port
	8. 1 x Q-Flash Plus button
	9. 3 x audio jacks
I/O Controller	1. iTE I/O Controller Chip
H/W Monitoring	1. Voltage detection
	2. Temperature detection
	3. Fan speed detection
	4. Overheating warning
	5. Fan fail warning
	6. Fan speed control
	* Whether the fan speed control function is supported will depend on the fan you install.
BIOS	1. 1 x 128 Mbit flash
	2. Use of licensed AMI UEFI BIOS
	3. PnP 1.0a, DMI 2.7, WfM 2.0, SM BIOS 2.7, ACPI 5.0
Unique Features	1. Support for APP Center
	* Available applications in APP Center may vary by motherboard model. Supported functions of each application may also vary depending on motherboard specifications.
	@BIOS
	EasyTune
	Fast Boot
	Game Boost
	ON/OFF Charge
	RGB Fusion
	Smart Backup
	System Information Viewer
	2. Support for Q-Flash Plus
	3. Support for Q-Flash
	4. Support for Xpress Install
Bundled Software	1. Norton Internet Security (OEM version)
	2. Realtek 8118 Gaming LAN Bandwidth Control Utility
Operating System	1. Support for Windows 10 64-bit

Form Factor	1. Micro ATX Form Factor; 24.4cm x 20.5cm
Remark	1. Due to different Linux support condition provided by chipset vendors, please download Linux driver from chipset vendors' website or 3rd party website.
	2. Most hardware/software vendors may no longer offer drivers to support Win9X/ME/2000/XP. If drivers are available from the vendors, we will update them on the GIGABYTE website.

Product Information Online

For the latest product information, availability and purchasing details, please visit the product page:

Product page:
https://www.comx-computers.co.za/MB-GA520MS2H-Gigabyte-A520M-S2H-A520-Chipset-AMD-Ryzen-AM4-Socket-Motherboard-p-246212.php

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