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## GIGABYTE A520 AORUS ELITE

# GIGABYTE A520 AORUS Elite Motherboard User Manual

Model: A520 AORUS ELITE

## 1. Introduction

The GIGABYTE A520 AORUS Elite Motherboard is designed to support 3rd Gen AMD Ryzen Processors, offering a robust foundation for your personal computer build. It features an AMD AM4 Socket, dual-channel DDR4 memory support across 4 DIMMs, and a 5+3 Phases Digital PWM design for stable power delivery. This motherboard is engineered for performance and durability, incorporating advanced thermal designs with enlarged surface heatsinks to ensure optimal operating temperatures.
Key features include a PCIe 3.0 x16 slot for graphics cards, a fast NVMe PCIe 3.0 x4 M.2 slot for high-speed storage, and a Realtek ALC1200 Audio Codec for studio-grade audio. Connectivity is enhanced with blazing fast 1GbE LAN and versatile rear DVI & HDMI support. For user convenience, it includes Q-Flash Plus for easy BIOS updates without a CPU, and a pre-installed I/O Shield for quick installation. The integrated RGB FUSION 2.0 allows for personalized lighting synchronization.




Figure 1.1: GIGABYTE A520 AORUS Elite Motherboard and its retail packaging.

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Video 1.1: Official overview of GIGABYTE A520 Gaming Motherboards, highlighting key features and design elements.

## 2. Setup

### 2.1 Motherboard Layout

Familiarize yourself with the various components and connectors on the motherboard before beginning installation.




Figure 2.1: Top-down view of the GIGABYTE A520 AORUS Elite Motherboard, showing the CPU socket, RAM slots, PCIe slots, and heatsinks.

## 2.2 Component Installation

1. **CPU Installation:** Carefully align your AMD Ryzen processor with the AM4 socket. Ensure the triangle mark on the CPU matches the mark on the socket. Gently lower the CPU into place and secure it with the retention lever.
2. **RAM Installation:** Open the clips on the DDR4 DIMM slots. Align the memory modules with the slots, ensuring the notch on the module matches the key in the slot. Press firmly on both ends until the clips snap into place. For dual-

channel performance, install memory in matching colored slots (e.g., A2 and B2).

3. **M.2 SSD Installation:** Locate the NVMe PCIe 3.0 x4 M.2 slot. Insert your M.2 SSD at an angle and then gently push it down. Secure it with the provided screw.
4. **PCIe Card Installation:** Insert your graphics card or other PCIe expansion cards into the appropriate PCIe slots (e.g., PCIe 3.0 x16 for graphics). Ensure they are fully seated and secure them with a case screw.
5. **Power Connections:** Connect the 24-pin ATX main power connector and the 8-pin CPU power connector from your power supply to the motherboard.




Figure 2.2: Close-up angled view of the motherboard, highlighting the CPU socket and DDR4 memory slots for installation guidance.

### 2.3 Connecting Peripherals

Connect your display to the DVI or HDMI ports on the rear I/O panel. Connect USB devices, network cables, and audio devices to their respective ports.

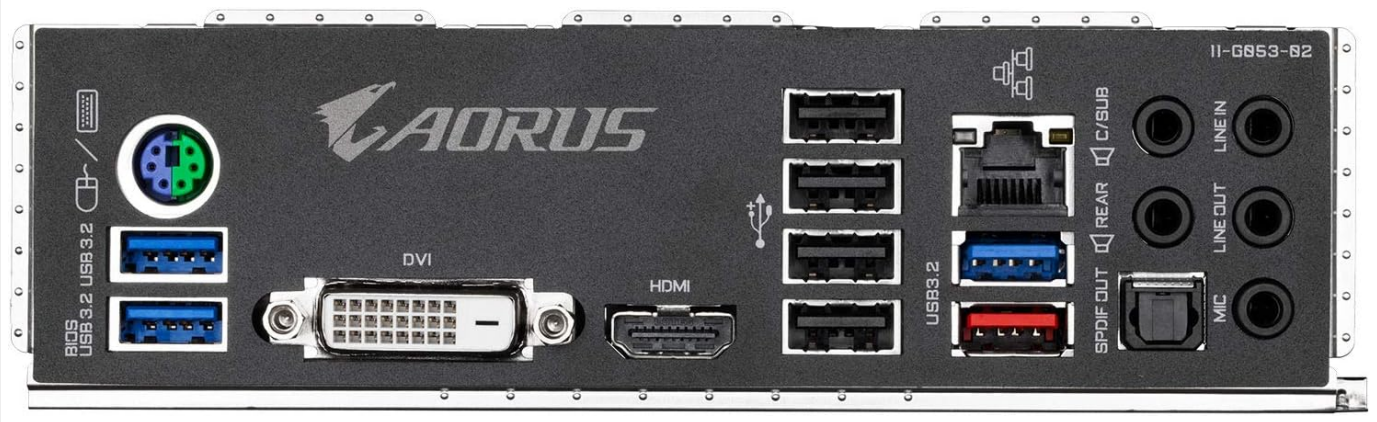



Figure 2.3: Detailed view of the rear I/O panel, showing various ports including USB 3.2 Gen 2, DVI, HDMI, Ethernet, and audio jacks.

## 3. Operating

### 3.1 BIOS/UEFI Setup

Upon initial boot, press the **DEL** key to enter the BIOS/UEFI setup. Here you can configure system settings, boot order, and enable features like XMP for memory or adjust fan curves.

### 3.2 Driver Installation

After installing your operating system, install the necessary drivers for the motherboard's components. These typically include chipset drivers, LAN drivers, audio drivers, and any other peripheral drivers. Drivers can usually be found on the GIGABYTE official website for your specific motherboard model.

### 3.3 Software Utilities

GIGABYTE provides various software utilities to enhance your experience, such as RGB FUSION 2.0 for controlling lighting effects and Smart Fan 5 for advanced fan control. These can be downloaded from the GIGABYTE website.

## 4. Maintenance

### 4.1 Cleaning

Regularly clean your computer's interior to prevent dust buildup, which can lead to overheating and reduced performance. Use compressed air to clear dust from heatsinks, fans, and other components. Ensure the system is powered off and unplugged before cleaning.

### 4.2 BIOS Updates (Q-Flash Plus)

The Q-Flash Plus feature allows you to update the BIOS without installing the CPU, memory, or graphics card. This is particularly useful for supporting newer CPUs that may not be compatible with the motherboard's factory-installed BIOS version. Refer to the detailed instructions on the GIGABYTE website for the Q-Flash Plus procedure.

## 5. Troubleshooting

If you encounter issues with your motherboard, consider the following common troubleshooting steps:

- **No Display:**
  - Ensure all power cables (24-pin ATX, 8-pin CPU, PCIe power for GPU) are securely connected.
  - Verify that the display cable is connected to the graphics card (if installed) or the motherboard's integrated graphics port (if your CPU has integrated graphics).
  - Try reseating the RAM modules.
  - If using a dedicated graphics card, try removing it and testing with integrated graphics (if available).
- **System Not Booting:**
  - Check all internal cable connections (SATA, front panel connectors).
  - Clear the CMOS by removing the CMOS battery for a few minutes or using the dedicated clear CMOS jumper/button.
  - Ensure your CPU is properly seated and the CPU cooler is installed correctly.
- **Peripheral Issues:**
  - Ensure all drivers are installed and up to date.
  - Test peripherals in different ports to rule out faulty ports.

For more complex issues, consult the detailed troubleshooting section in the full user manual available on the GIGABYTE support website or contact GIGABYTE technical support.

## 6. Specifications

| Feature | Detail |
|---|---|
| Brand | GIGABYTE |
| Model Name | A520 AORUS ELITE |
| CPU Socket | Socket AM4 |
| Compatible Processors | AMD 3rd Generation Ryzen |
| Chipset Type | AMD A520 |
| RAM Memory Technology | DDR4 |
| Memory Clock Speed | 4400 MHz |
| Memory DIMMs | 4 |
| Graphics Interface | 1*PCIe 3.0 x16 |
| Display Interface | HDMI, DVI |
| SATA / M.2 | 4*SATA3 / 1*M.2 for SSD |
| Audio | Realtek ALC1200 |
| LAN | GbE LAN |
| USB Ports | 1*USB 3.2 Gen 2 Type-A + 5*USB 3.2 Gen 1 + 8*USB 2.0 |
| Form Factor | ATX (305x244) |

| Feature | Detail |
| --- | --- |
| Item Weight | 3.3 pounds |
| Product Dimensions | 13.18 x 10.62 x 3.14 inches |

## 7. Warranty and Support

The GIGABYTE A520 AORUS Elite Motherboard typically comes with a manufacturer's warranty. For specific warranty terms and conditions, please refer to the documentation included with your product or visit the official GIGABYTE website.
In case of technical issues or inquiries, GIGABYTE provides customer support. You can find contact information and additional resources on their official support page. It is recommended to have your product model and serial number ready when contacting support.
This product is eligible for a 30-day return/replacement policy from the date of purchase, as per standard retail terms.

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**Question**

Example: How do I reset this device or fix this error?

**Details**

Model number, symptoms, what you tried, or the section of the manual you are using.

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