

MINISFORUM MS-A2

MINISFORUM AMD Ryzen 9 9955HX MS-A2 Mini PC Instruction Manual

Model: MS-A2 | Brand: MINISFORUM

1. INTRODUCTION

This manual provides comprehensive instructions for the setup, operation, maintenance, and troubleshooting of your MINISFORUM MS-A2 Mini PC. Please read this guide thoroughly to ensure optimal performance and longevity of your device.

Video: Overview of the MINISFORUM MS-A2 Mini PC, highlighting its compact design and key features.

2. PRODUCT FEATURES

- **Powerful AMD Ryzen 9 9955HX Processor:** Equipped with a 16-core/32-thread AMD Ryzen 9 9955HX processor (Zen5 architecture, up to 5.4 GHz) for excellent multi-threaded performance and HD graphics processing. Ideal for 3D modeling, video rendering, and graphic design.
- **Fast Memory & Expandable Storage:** Supports DDR5 SODIMM up to 96 GB (5600 MT/s). Features three M.2 NVMe SSD slots (M.2 2280/22110/U.2 NVMe) with PCIe 4.0 speeds up to 7000 MB/s. Supports U.2 HDDs up to 15 TB (max total capacity 23 TB) and RAID 0/1.
- **Efficient Cooling System:** Incorporates three pure copper heat pipes, phase-change thermal materials, and turbo-accelerated fans (30% increased airflow) with a direct exhaust, reactor-type design for effective temperature control and 24/7 operation.
- **PCIe x16 Expansion Slot:** Enables expansion with high-performance network cards or professional graphics cards. Supports splitting into two PCIe x4 slots for half-height professional graphics cards or dual 10G network cards, suitable for AI inference and GPU-accelerated computing.
- **Triple Display & Ultra-Fast Network:** Dual HDMI and USB-C ports support up to 8K@60Hz/4K@144Hz. Features dual 2.5Gb LAN, dual 10G Ethernet ports for high data transfer rates, Wi-Fi 6E, and Bluetooth 5.2 for impressive wired and wireless network speeds.

3. PACKAGE CONTENTS

Upon unboxing your MINISFORUM MS-A2 Mini PC, please verify that all the following items are included:

- MINISFORUM MS-A2 Mini PC Unit
- Power Adapter
- HDMI Cable
- OcuLink Adapter (Optional, may vary by configuration)
- VESA Mounting Bracket & Screws
- User Manual / Documentation

Video: Unboxing the MINISFORUM MS-A2 Mini PC and reviewing its contents.

4. HARDWARE OVERVIEW

4.1. External Ports and Buttons

Familiarize yourself with the external interfaces of your MS-A2 Mini PC:

- **Front Panel:** Power Button, 2x USB 3.2 Gen1 (5Gbps), 1x USB4 Type-C, 3.5mm Audio Jack, Microphone, Fingerprint Reader.
- **Side Panel:** SD Card Reader.
- **Rear Panel:** 2x 2.5G LAN, 2x 10G SFP+, 1x USB-C (8K@60Hz), 1x HDMI (8K@60Hz), 1x DisplayPort (8K@60Hz), 1x USB4 Type-C (8K@60Hz), 1x USB 3.2 Gen1 (5Gbps), 1x USB 2.0, OcuLink, Kensington Lock, BIOS Reset, DC Power Input.

Rich I/O Interfaces Meet various needs

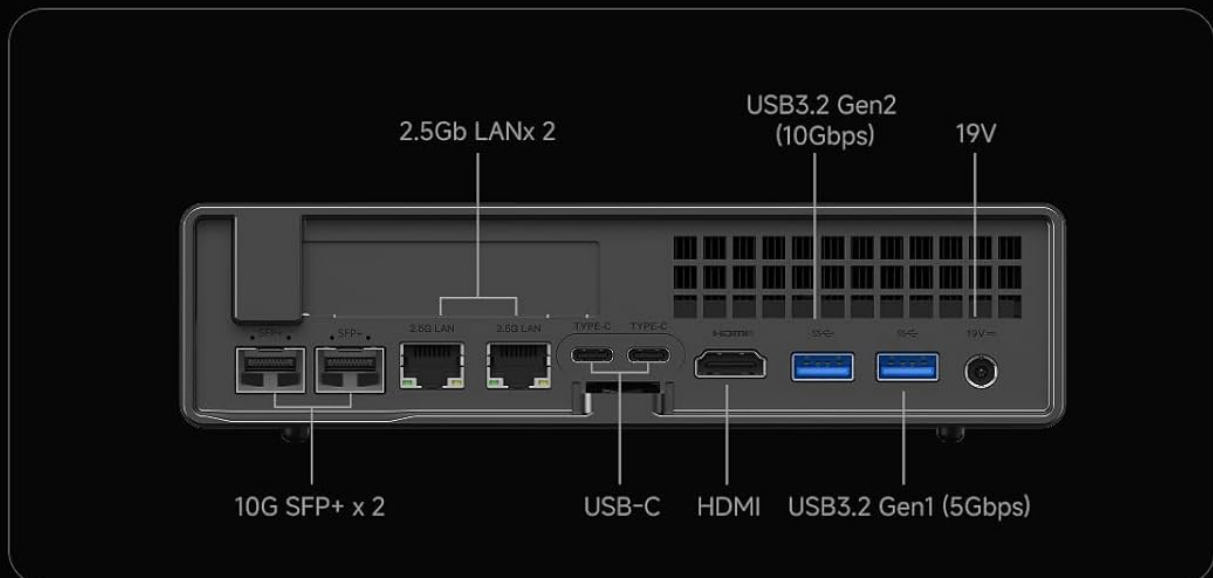
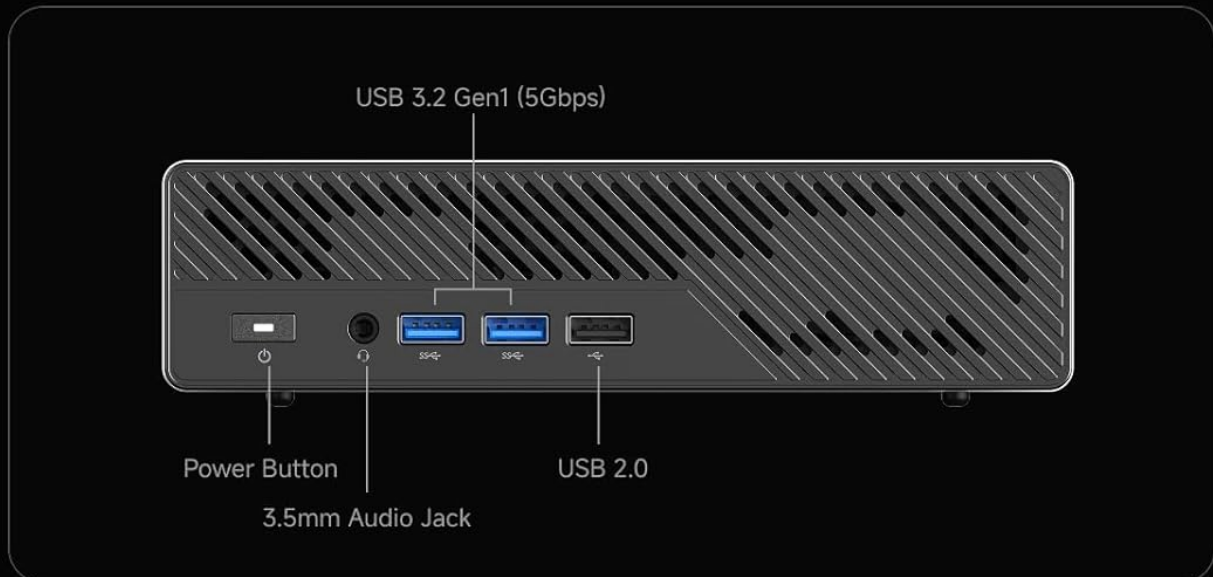


Image: Detailed view of the front and rear I/O interfaces on the MINISFORUM MS-A2 Mini PC.

4.2. Internal Components

The MS-A2 Mini PC offers flexible internal expansion:

- **RAM:** 2x DDR5 SODIMM slots, supporting up to 96GB.
- **Storage:** 3x M.2 NVMe SSD slots (M.2 2280/22110/U.2 NVMe) and support for U.2 HDDs.

- **Expansion Slot:** 1x PCIe x16 slot (bandwidth PCIe 4.0 x8), splittable into 2x PCIe 4.0 x4.

Flexible Expansion

Drawer-type body, multiple SSD slots



3×M.2 NVME SSD slots
Supports consumer-grade SSDs
with capacities up to 12TB

7000MB/s
up to

12TB
up to

Two slots default to PCIe 3.0×4; configurable to
PCIe 4.0×4 via BIOS

Supports U.2 NVME/M.2 22110
enterprise storage
Single up to 15TB, total
capacity up to 23 TB.



U.2
Enterprise SSD

15TB
Max single disk

23TB
Max support

Image: Internal layout of the MS-A2, illustrating the placement of RAM and M.2 SSDs.

5. SETUP GUIDE

5.1. Initial Connection

1. Connect your monitor(s) to the HDMI, DisplayPort, or USB-C video output ports.
2. Plug in your keyboard and mouse to the available USB ports.
3. Connect the power adapter to the DC Power Input port on the rear panel, then plug it into a power outlet.
4. Press the Power Button on the front panel to turn on the Mini PC.

5.2. BIOS Setup

To access the BIOS setup, press the designated key (usually Delete or F2) repeatedly during startup. The BIOS interface allows for advanced configuration:

- **Main:** View system information, memory frequency, and set system date/time.
- **Advanced:** Configure CPU, onboard devices (e.g., VMD for RAID), hardware monitor (fan speeds, temperatures), and network stack.
- **Security:** Set administrator/user passwords and configure Secure Boot.
- **Boot:** Adjust boot order and Quiet Boot settings.
- **MEBx:** Access Intel Management Engine BIOS Extension for remote management settings (for advanced users/corporate environments).

5.3. Component Installation/Upgrade

The MS-A2 Mini PC is designed for easy component upgrades. To access internal components:

1. Ensure the device is powered off and unplugged.
2. Carefully remove the bottom cover by unscrewing the retaining screws.
3. Install or upgrade DDR5 SODIMM modules into the available slots.
4. Install or upgrade M.2 NVMe SSDs into the available slots.
5. For OcuLink expansion, remove the grommet from the rear panel and connect the OcuLink adapter.
6. Replace the bottom cover and secure the screws.

6. OPERATING INSTRUCTIONS

6.1. Power On/Off

- **Power On:** Press the Power Button on the front panel.
- **Power Off:** From the operating system, select Shut Down. Alternatively, press and hold the Power Button for 5 seconds to force shut down (not recommended for regular use).

6.2. Fan Mode Adjustment

You can adjust the fan behavior via the BIOS settings under