

GMKtec M3 Ultra

GMKtec Mini PC M3 Ultra User Manual

Model: M3 Ultra with Intel Core i7-12700H

1. INTRODUCTION

This manual provides essential information for setting up, operating, maintaining, and troubleshooting your GMKtec Mini PC M3 Ultra. Please read this manual thoroughly before using the device to ensure proper functionality and longevity.

The GMKtec Mini PC M3 Ultra is a compact desktop computer powered by an Intel Core i7-12700H processor, featuring 14 cores and 20 threads with a maximum turbo frequency of 4.7 GHz. It includes Intel Iris Xe Graphics, 16GB DDR4 RAM, and a 1TB NVMe SSD, designed for various computing tasks from daily use to demanding applications.



Image: Front and side view of the GMKtec Mini PC M3 Ultra, showcasing its compact design and ventilation.

2. PACKAGE CONTENTS

Verify that all items listed below are included in your package:

- 1 x Nucbox M3 Ultra Mini PC
- 1 x Power Supply & Cable
- 1 x User Manual (this document)
- 1 x HDMI Cable
- 1 x VESA Mount with Screws

Retail Boxed Packaging



1. Nucbox M3 Ultra Mini PC

2. Power Supply & Cable

3. User Manual

4. HDMI Cable

5. VESA Mount with Screws

Image: Contents of the GMKtec Mini PC M3 Ultra retail package, including the mini PC, power adapter, cables, user manual, and VESA mount.

3. PRODUCT OVERVIEW

The GMKtec Mini PC M3 Ultra features a comprehensive set of ports for connectivity and expansion.

Front Panel

- **Power Button:** To turn the device on or off.
- **USB 3.2 (x2):** High-speed data transfer ports.

Rear Panel

- **DC IN (20V/5A 100W):** Power input port.
- **HDMI (4K@60Hz) (x2):** Video output ports for connecting displays.
- **2.5G LAN (Intel I226-V):** High-speed Ethernet port for network connectivity.
- **USB 3.2 (x1):** High-speed data transfer port.
- **USB 2.0 (x1):** Standard data transfer port.
- **Type-C (DP1.4/DATA):** Multi-function port supporting DisplayPort 1.4 video output and data transfer.
- **3.5mm CTIA:** Audio jack for headphones or speakers.

Rich Interface

For Business, Office, Gaming, Home

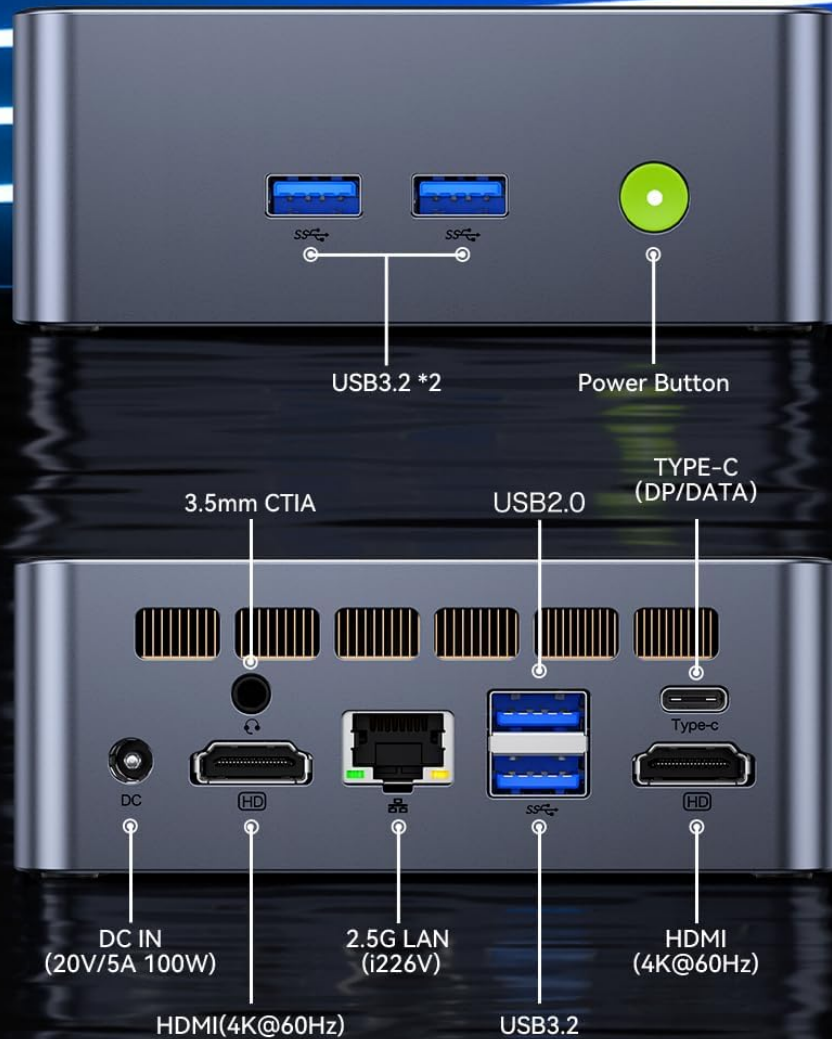


Image: Detailed view of the front and rear ports on the GMKtec Mini PC M3 Ultra, indicating their functions.

4. INITIAL SETUP

Follow these steps to set up your Mini PC:

1. **Connect Display:** Connect your monitor(s) to the HDMI ports or the Type-C port using appropriate cables.
2. **Connect Peripherals:** Plug in your keyboard, mouse, and other USB devices into the available USB ports.
3. **Connect Network (Optional):** For a wired connection, connect an Ethernet cable from your router or modem

to the 2.5G LAN port. For wireless, ensure your WiFi network is available.

4. **Connect Power:** Plug the power adapter into the DC IN port on the Mini PC, then connect the power cable to an electrical outlet.
5. **Power On:** Press the power button on the front of the Mini PC. The system will boot up.

5. OPERATING INSTRUCTIONS

Operating System

The Mini PC comes with an operating system pre-installed (OS POR). Follow the on-screen instructions for initial setup, including language, region, and user account creation. The device is compatible with various operating systems, including Windows 10, Linux, and Ubuntu.

Basic Operation

- **Power On/Off:** Press the power button once to turn on. To turn off, use the operating system's shutdown function or press and hold the power button for 5 seconds.
- **Restart:** Use the operating system's restart function.
- **Sleep Mode:** Use the operating system's sleep function.

Auto Power On and Wake-on-LAN

The Mini PC supports 'Auto Power On' and 'Wake-on-LAN' features. These can typically be configured within the system's BIOS settings. Refer to your operating system or BIOS documentation for detailed instructions on enabling and configuring these features.

6. HARDWARE EXPANSION (RAM & SSD)

The GMKtec Mini PC M3 Ultra is designed for easy upgrades of its RAM and storage components.

Memory (RAM) Expansion

The device is equipped with dual 16GB DDR4 RAM and supports expansion up to 64GB (via two SO-DIMM slots).

Storage (SSD) Expansion

The Mini PC includes a 1TB M.2 PCIe 2280 SSD. It supports expansion up to 16TB. Additionally, there is support for a second M.2 SATA/PCIEX4 2242 drive, also expandable up to 16TB.

To upgrade or install additional components, carefully open the chassis as per the instructions provided in the full user manual (if available) or by a qualified technician. Ensure the device is powered off and unplugged before performing any hardware modifications.

Easy Installation

Disassembled design, upgrade RAM and SSD easy and convenient



SSD

M.2 2280 PCIe **Max.8TB**

M.2 2242 SATA/PCIEX4 **Max.8TB**



DDR4 3200MT/s

Dual Channel SO-DIMM*2

MAX.64GB



Image: Internal view of the GMKtec Mini PC M3 Ultra, highlighting the M.2 2280 PCIe SSD slot, M.2 2242 SATA/PCIEX4 slot, and dual DDR4 SO-DIMM slots for memory expansion.

7. COOLING SYSTEM

The M3 Ultra Mini PC incorporates an upgraded quiet cooling fan system designed for efficient heat dissipation. It features copper cooling pipes and multiple exhaust vents to maintain optimal operating temperatures and ensure

stable performance.

- **Dual Turbo Cooling:** Enhances airflow and heat removal.
- **Two-way Convection Air Inlet:** Optimizes air circulation within the chassis.
- **Quiet Cooling Design:** Minimizes operational noise.

Upgrade Quiet Cooling Fan

Copper Cooling Fan & Multiple Exhaust Vents



Dual Turbo Cooling



Two-way Convection Air Inlet



Quiet Cooling Design



Image: Diagram illustrating the dual turbo cooling, two-way convection air inlet, and quiet cooling design of the GMKtec Mini PC M3 Ultra.

8. CONNECTIVITY

Wired Network (2.5GbE NIC LAN)

The built-in Intel Ethernet Controller I226-V provides a 2.5 Gbit/s connection speed, offering significantly faster network performance compared to traditional Gigabit Ethernet. This is beneficial for large data transfers, online gaming, and streaming.

2.5G HIGH SPEED ETHERNET

Intel i226v RJ45 Network

Read-write Speed



Transmission Speed



2500 MB/S



Image: Visual representation of 2.5G high-speed Ethernet performance on the GMKtec Mini PC M3 Ultra, showing read-write and transmission speeds compared to 1000Mbps.

Wireless Connectivity (WiFi 6 + Bluetooth 5.2)

The Mini PC supports WiFi 6 (802.11ax) and Bluetooth 5.2 technologies. WiFi 6 offers faster internet speeds, lower latency, and improved network efficiency for stable and quick connections. Bluetooth 5.2 enables seamless connection with wireless peripherals such as keyboards, mice, and audio devices.

9. TRIPLE 4K DISPLAY SETUP

The GMKtec M3 Ultra supports up to three 4K displays simultaneously, enhancing productivity and providing an extended workspace. This is achieved through its dual HDMI ports and one Type-C (DP1.4/DATA) port.

Connecting Multiple Displays

1. Connect your primary monitor to one of the HDMI ports.
2. Connect a second monitor to the other HDMI port.
3. Connect a third monitor to the Type-C port using a compatible USB-C to DisplayPort cable or adapter.
4. Once connected, configure your display settings within your operating system to extend or duplicate your desktop across the monitors.

Triple Screens 4K Display



HDMI (4K@60Hz)



HDMI (4K@60Hz)



TYPE-C (DP1.4/DATA)



Image: A user enjoying a triple 4K display setup powered by the GMKtec Mini PC M3 Ultra, demonstrating its multi-monitor capabilities for gaming and productivity.

10. MAINTENANCE

To ensure the longevity and optimal performance of your Mini PC, follow these maintenance guidelines:

- **Keep Clean:** Regularly clean the exterior of the Mini PC with a soft, dry cloth. Use compressed air to clear dust from ventilation openings.
- **Proper Ventilation:** Ensure the Mini PC is placed in a well-ventilated area, away from direct sunlight or heat sources. Do not block the air vents.
- **Software Updates:** Keep your operating system and drivers updated to ensure security and performance.
- **Power Off Safely:** Always shut down the system properly through the operating system before unplugging the power.
- **Avoid Liquids:** Keep the Mini PC away from liquids to prevent damage.

11. TROUBLESHOOTING

If you encounter issues with your GMKtec Mini PC, refer to the following common troubleshooting steps:

No Power

- Ensure the power adapter is securely connected to both the Mini PC and a working power outlet.
- Verify the power outlet is functional by plugging in another device.

No Display

- Check that the display cable (HDMI, USB-C) is securely connected to both the Mini PC and the monitor.
- Ensure the monitor is powered on and set to the correct input source.
- Try connecting to a different display or using a different cable.

No Internet Connection

- **Wired:** Check the Ethernet cable connection. Verify your router/modem is working.
- **Wireless:** Ensure WiFi is enabled in the operating system. Check if you are connected to the correct network and entered the password correctly. Restart your router/modem.

System Slowdown or Freezing

- Close unnecessary applications running in the background.
- Check for sufficient free storage space on your SSD.
- Ensure the Mini PC has adequate ventilation and is not overheating.
- Update drivers and operating system.

If these steps do not resolve your issue, please contact customer support.

12. TECHNICAL SPECIFICATIONS

| Component | Specification |
|--------------|--|
| Processor | Intel Core i7-12700H (14 Cores/20 Threads, up to 4.7 GHz, 24 MB Cache) |
| Graphics | Intel Iris Xe Graphics (up to 1.45GHz) |
| Memory (RAM) | 16GB DDR4 (Dual Channel SO-DIMM, expandable up to 64GB) |
| Storage | 1TB M.2 PCIe 2280 SSD (expandable up to 16TB) |

| | |
|------------------------|---|
| Secondary Storage Slot | M.2 SATA/PCIEX4 2242 (expandable up to 16TB) |
| Video Output | 2 x HDMI (4K@60Hz), 1 x Type-C (DP1.4/DATA) - Triple 4K Display Support |
| Ethernet | 2.5GbE NIC LAN (Intel I226-V) |
| Wireless Connectivity | WiFi 6 (802.11ax), Bluetooth 5.2 |
| USB Ports | 3 x USB 3.2, 1 x USB 2.0, 1 x Type-C (DP1.4/DATA) |
| Audio | 3.5mm CTIA Audio Jack |
| Power Supply | 20V/5A (100W) |
| Operating System | OS Pre-installed (Compatible with Windows 10, Linux, Ubuntu) |
| Dimensions | Approximately 6.46 x 6.22 x 4.69 inches (Package Dimensions) |
| Weight | Approximately 3.27 pounds |

GMKtec Nucbox M3 Ultra intel i7-12700H



Triple Screens 4K Display

HDMI*2 + Type-C*1



Intel Iris Xe Graphics

1400MHz



Twin Cooling Pipes Turbofan System



M.2 2280 PCIE4.0 M.2 2242 SATA/PCIEX4



WiFi 6

Bluetooth 5.2



DDR4 RAM 3200MT/s

SO-DIMM*2 (MAX 64GB)

Additional Function

- 1.Auto Power On
- 2.Wake On LAN
- 3.Compatible with Linux,
Win 10, Ubuntu

Image: Summary of key features for the GMKtec Nucbox M3 Ultra, including CPU, GPU, display, storage, cooling, and connectivity.

Intel Core i7-12700H

4.7 GHz
Max Frequency

14
Cores

20
Threads

24 MB
Smart Cache



Cinebench R23 Multi-Core

Intel Core i7-12700H

15453 pts

AMD Ryzen 9 6900HX

14670 pts

AMD Ryzen 7 6800H

13891 pts

Intel Core i7-12650H

13189 pts

Image: Detailed specifications of the Intel Core i7-12700H processor, including core count, threads, max frequency, and Cinebench R23 multi-core performance comparison.

13. WARRANTY INFORMATION

GMKtec provides a **1-year limited warranty** for each Mini PC, effective from the date of purchase. This warranty covers all defects attributed to design and workmanship. For warranty claims or service, please retain your proof of

purchase.

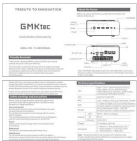
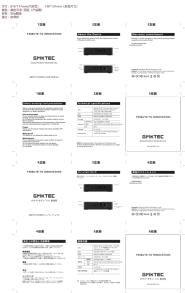

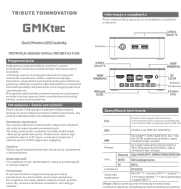
14. CUSTOMER SUPPORT

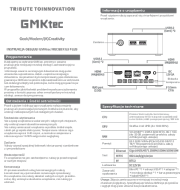
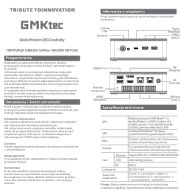
Should you require assistance, have questions, or encounter issues not covered in this manual, please contact the GMKtec professional after-sales support team. Refer to the contact information provided with your product packaging or visit the official GMKtec website for support details.



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Related Documents - M3 Ultra

| | |
|---|--|
|  | <p>GMKtec EVO-T1 Mini PC User Manual: Specifications and Setup Guide</p> <p>Comprehensive user manual for the GMKtec EVO-T1 Mini PC, detailing technical specifications, connection steps, BIOS settings, power modes, safety precautions, and compliance information.</p> |
|  | <p>GMKTEC NUCBOX3 User Manual: Features, Specifications, and Safety</p> <p>Comprehensive user manual for the GMKTEC NUCBOX3 mini PC, covering device features, technical specifications, safety precautions, FCC compliance, and warranty information.</p> |
|  | <p>GMKtec NUCBOX7/7S User Manual</p> <p>User manual for the GMKtec NUCBOX7 and NUCBOX7S mini PCs, detailing specifications, safety precautions, connection steps, and after-sales support.</p> |
|  | <p>GMKtec NUCBOX G3 PLUS User Manual and Specifications</p> <p>Comprehensive user manual for the GMKtec NUCBOX G3 PLUS mini PC, covering setup, specifications, safety precautions, and warranty information. Includes detailed descriptions of hardware interfaces and technical details.</p> |

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|  | <p>Instrukcja Obsługi GMKtec NUCBOX G3 PLUS - Mini PC</p> <p>Szczegółowa instrukcja obsługi dla mini PC GMKtec NUCBOX G3 PLUS. Zawiera informacje o specyfikacjach, podłączeniu, bezpieczeństwie i konserwacji.</p> |
|  | <p>GMKtec NUCBOX M5 PLUS User Manual and Safety Guide</p> <p>Comprehensive user manual for the GMKtec NUCBOX M5 PLUS mini PC, detailing setup, specifications, safety precautions, and warranty information. Learn how to connect your device, access BIOS, and ensure safe operation.</p> |