GMKtec M6 Ultra JPCX

GMKtec M6 Ultra Mini PC User Manual
Model: M6 Ultra JPCX

1. INTRODUCTION

The GMKtec M6 Ultra Mini PC is a high-performance, compact desktop computer designed for a wide range of tasks, from daily productivity to demanding creative work and gaming. It features an AMD Ryzen 5 7640HS processor, integrated Radeon 760M graphics, and extensive connectivity options, all within a small form factor.

2. PACKAGE CONTENTS

Please verify that all items are present in your package:

- GMKtec M6 Ultra Mini PC Unit
- Power Adapter
- HDMI Cable
- User Manual (this document)
- VESA Mount Bracket (with screws)

Image: Contents of the GMKtec M6 Ultra Mini PC package, including the PC, power adapter, HDMI cable, VESA mount, and manual.

3. PRODUCT OVERVIEW

The GMKtec M6 Ultra is designed for efficiency and versatility. Below is a visual representation of the device and its key features.

Image: Front and rear views of the GMKtec M6 Ultra Mini PC, showcasing its compact design and various ports.
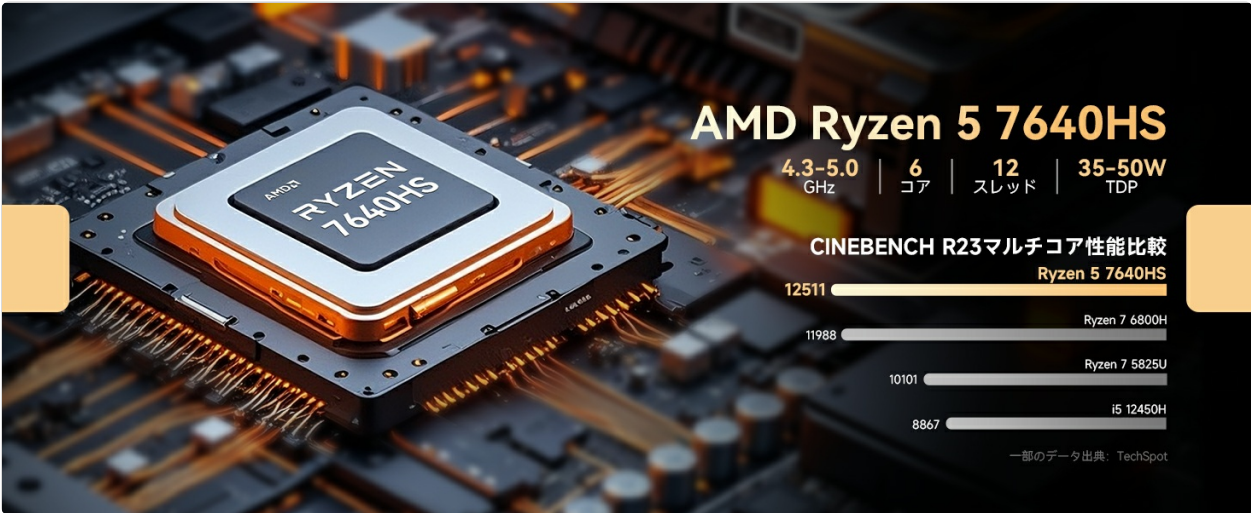

Image: An overview of the GMKtec M6 Ultra's specifications, including AMD Ryzen 5 7640HS, PCIe 3.0 M.2 2280 SSD, DDR5 RAM, USB4.0, WiFi 6E, Bluetooth 5.2, and triple display output.

4. SETUP GUIDE

Follow these steps to set up your GMKtec M6 Ultra Mini PC:

1. **Connect Power:** Plug the power adapter into the DC IN port on the back of the Mini PC, then connect it to a power outlet.
2. **Connect Display:** Connect your monitor(s) to the Mini PC using an HDMI, DisplayPort, or USB4.0 Type-C cable. The device supports up to three displays simultaneously.
3. **Connect Peripherals:** Connect your keyboard, mouse, and other USB devices to the available USB ports.
4. **Network Connection:** For wired internet, connect an Ethernet cable to one of the 2.5GbE LAN ports. For wireless, ensure your Wi-Fi network is available.
5. **Power On:** Press the power button on the front of the Mini PC. The system will boot up.
6. **Initial Setup:** Follow the on-screen instructions to complete the Windows 11 Pro (or Linux) initial setup,

including language, region, and network settings.

5. OPERATING INSTRUCTIONS

5.1 Power On/Off

- **Power On:** Press the power button once.
- **Shut Down:** From the operating system, select 'Shut down'. Alternatively, press and hold the power button for 5 seconds for a forced shutdown (use only when necessary).

5.2 Performance Modes

The Mini PC offers three performance modes to optimize for power efficiency or maximum performance:

- **Silent Mode (35W TDP):** Ideal for light tasks, offering quiet operation and reduced power consumption.
- **Balanced Mode (45W TDP):** Suitable for everyday use, balancing performance and noise.
- **Performance Mode (50W TDP):** Maximizes CPU and GPU performance for demanding applications and gaming.

Image: Illustration of the three performance modes: Silent (35W), Balanced (45W), and Performance (50W).

5.3 Multi-Display Output

The GMKtec M6 Ultra supports simultaneous output to up to three displays, enhancing productivity for various applications.

- **HDMI 2.0:** Supports up to 4K@60Hz.
- **DisplayPort:** Supports up to 8K@60Hz.
- **USB4.0 Type-C:** Supports DP Alt Mode for video output and Power Delivery.

次世代ワイヤレス進化

Wi-Fi 6E & Bluetooth 5.2 搭載
6GHz帯でより広帯域かつ低遅延のワイヤレス体験

規格	Wi-Fi 5	Wi-Fi 6	Wi-Fi 6E
IEEE規格	802.11ac	802.11ax	802.11ax Extended
周波数帯域	5GHz	2.4GHz / 5GHz	2.4GHz / 5GHz / 6GHz
レイテンシ	中程度	低遅延	超低遅延（VR/ARやゲーム向け）
主な用途	高速通信	IoT・大容量通信	高速・低遅延・高密度環境

Image: A visual demonstrating the capability of the GMKtec M6 Ultra to connect to three monitors simultaneously via HDMI, DisplayPort, and USB4.0, supporting up to 8K resolution.

6. MAINTENANCE AND UPGRADES

6.1 Memory and Storage Expansion

The GMKtec M6 Ultra offers flexible upgrade options for RAM and SSD storage:

- **RAM:** The device comes with 32GB DDR5 RAM (2x16GB SO-DIMM) and can be expanded up to 128GB (2x64GB SO-DIMM).
- **SSD:** It includes a 1TB NVMe SSD (PCIe 3.0 M.2 2280) and features an additional PCIe 4.0 compatible M.2 slot, allowing for expansion up to 8TB (4TB x 2).

Caution:

- When adding an SSD, ensure it does not interfere with the heatsink or internal components. Some larger SSD heatsinks may prevent the case from closing properly.
- Always power off and disconnect the power adapter before performing any internal upgrades.

小型で持ち運びに便利なミニPC

47.8mm

129mm

127mm

Image: Internal view of the GMKtec M6 Ultra showing the dual DDR5 RAM slots and dual M.2 2280 SSD slots for easy upgrades.

6.2 Cooling System

The Mini PC features an advanced dual-fan cooling system with 360-degree airflow design to maintain stable operation even under high loads. The fan noise is optimized to be quiet (38dB) during normal operation.

先進的なデュアルファン
冷却システム

✓ 超伝導銅デュアルタービン+ デュアルファン
従来設計より30%冷却性能向上

✓ 360°エアフロー
スマート吸気口で最大限の冷却効果

✓ 静音かつ高効率
高負荷時でも安定した冷却を維持

✓ 全方位対流エアフローデザイン スマートシステムファン搭載
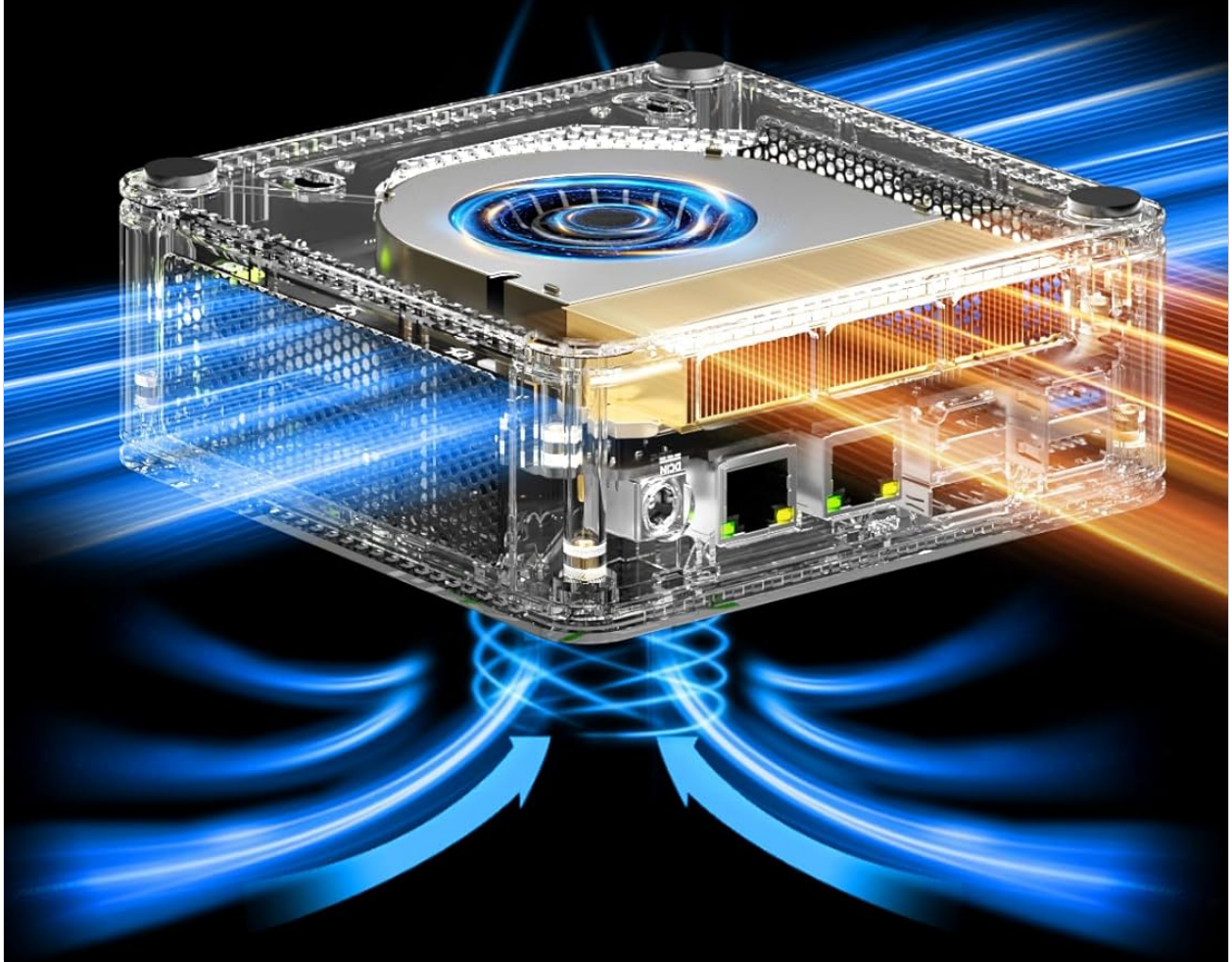38db超静音ファンSSDメ・モリ 動作効率を最適化

Image: An X-ray view illustrating the internal dual-fan cooling system and airflow within the GMKtec M6 Ultra Mini PC.

6.3 General Cleaning

To ensure optimal performance and longevity, regularly clean the exterior of the Mini PC with a soft, dry cloth. Ensure ventilation openings are free from dust accumulation.

7. TROUBLESHOOTING

This section addresses common issues you might encounter:

- **No Display Output:**
  Ensure all display cables (HDMI, DP, USB4.0) are securely connected to both the Mini PC and the monitor. Try a different cable or monitor if possible. Verify the monitor input source is correctly selected.

- **Fan Noise is Loud:**
  The fan speed adjusts based on system load. If the fan is excessively loud during light use, check for dust accumulation in the vents. Ensure the Mini PC is placed in a well-ventilated area. Consider switching to 'Silent Mode' if high performance is not required.

- **Keyboard Layout Issues:**
  If your keyboard layout is incorrect after initial setup, navigate to your operating system's settings (e.g., Windows Settings > Time & Language > Language & Region) to adjust the keyboard layout to your preference.

- **SSD Heatsink Clearance:**
  When installing an additional SSD, be aware that some SSDs with large heatsinks may not fit due to limited internal space. Choose a low-profile SSD or one without an integrated heatsink if you encounter this issue.

- **Accessing BIOS:**
  To enter the BIOS/UEFI settings, power on the Mini PC and repeatedly press the `ESC` key during startup.

- **External GPU (eGPU) via Oculink:**
  While the M.2 slot can be converted to Oculink for eGPU, this is an advanced configuration. Compatibility may vary depending on the Oculink board version and eGPU. Issues with recognition or stability may occur, potentially requiring multiple reboots or power cycles. It is recommended to use the M.2 slot on the side where the WiFi card is located for better lane allocation.

8. SPECIFICATIONS

Brand	GMKtec
Model Name	M6 Ultra JPCX
Product Dimensions	12.3 x 11.2 x 4.32 cm
Product Weight	1.61 kg
CPU Brand	AMD
CPU Type	AMD R Series (Ryzen 5 7640HS)
CPU Speed	5 GHz
RAM Capacity	32 GB
Memory Type	DDR5 SO-DIMM
Memory Clock Speed	4800 MHz
Max Memory Capacity	128 GB
Storage Capacity	1 TB SSD
Storage Interface	PCIE x 4 (NVMe)

Max Storage Expansion	8 TB (via 2 M.2 slots)
GPU Brand	AMD (Integrated Radeon 760M)
Graphics Card Type	Integrated
VRAM Type	SODIMM (Shared)
Operating System	Windows 11 Pro, Linux
USB 2.0 Ports	1
USB 3.0 Ports	3
USB4.0 Type-C Ports	1 (Full-function, 40Gbps, PD/DP)
HDMI Ports	1
DisplayPort	1
LAN Ports	Dual 2.5GbE (Intel i226V)
Wireless Connectivity	Wi-Fi 6E, Bluetooth 5.2
Optical Drive Type	None
Product Use	Gaming, Business, Multimedia

Image: Detailed diagram of the GMKtec M6 Ultra's various ports and interfaces, including USB, HDMI, DisplayPort, USB4.0 Type-C, and dual 2.5G LAN ports.

9. WARRANTY AND SUPPORT

GMKtec provides the following support for your M6 Ultra Mini PC:

- **Manufacturer's Warranty:** A 1-year manufacturer's warranty covers defects in materials and workmanship.
- **Customer Support:** 24-hour customer support is available to assist with any inquiries or issues. Please refer to the contact information provided in your purchase documentation or on the official GMKtec website.

10. ADDITIONAL FEATURES

10.1 Powerful Processor and Graphics

The GMKtec M6 Ultra is equipped with the AMD Ryzen 5 7640HS processor, built on TSMC's 4nm FinFET process with Zen4 architecture. This delivers superior processing power for tasks ranging from document creation to 4K video editing and creative production. The integrated Radeon 760M graphics, based on the latest RDNA 3 architecture, offers performance comparable to a dedicated GTX 1650 Ti GPU, enabling smooth gaming and 3D design.

Image: A benchmark comparison showing the multi-core performance of the AMD Ryzen 5 7640HS against other processors in Cinebench R23.

Image: Demonstrates the gaming performance of the AMD Radeon 760M integrated graphics, showing frame rates in various titles at 1080p resolution.

10.2 High-Speed Connectivity

Experience seamless networking with dual 2.5GbE LAN ports, offering 2.5 times the speed of standard Gigabit Ethernet for fast file transfers and NAS setups. Wi-Fi 6E support provides stable and less congested wireless communication on the 6GHz band, ideal for online gaming, streaming, and remote work. Bluetooth 5.2 ensures reliable connections with your wireless peripherals.
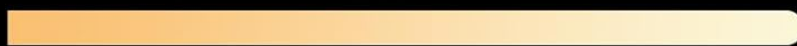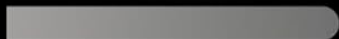
Image: Visual representation of the dual 2.5GbE LAN ports and their high-speed data transfer capabilities compared to 1Gbps LAN.

Image: Highlights the next-generation wireless capabilities of the GMKtec M6 Ultra, featuring Wi-Fi 6E and Bluetooth 5.2, with a comparison table of Wi-Fi standards.

10.3 Ultra-Compact and Portable Design

With dimensions of just 128.8 x 127 x 47.8mm and a weight of approximately 523g, the M6 Ultra occupies minimal desk space. It can also be smartly mounted behind a monitor using the included VESA bracket, transforming your workspace into a minimalist and refined environment.
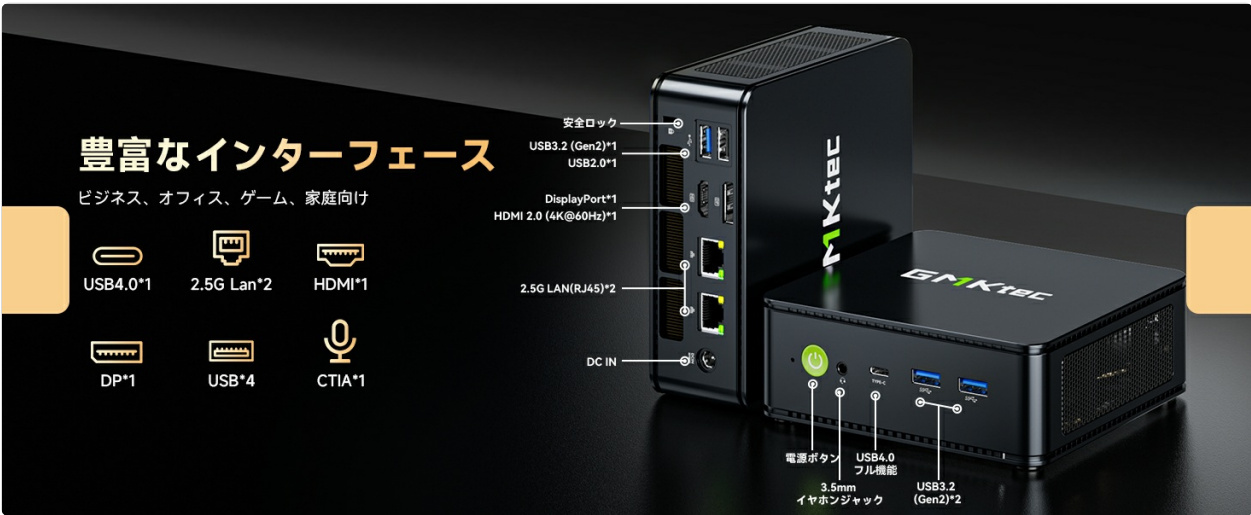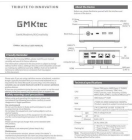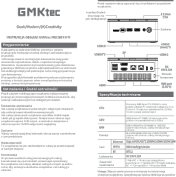

Image: Shows the compact size of the GMKtec M6 Ultra Mini PC, demonstrating its portability and how it can be mounted behind a monitor.

Related Documents - M6 Ultra JPCX

	[GMKtec M6 Ultra User Manual: Features, Specifications, and Setup Guide](#) Comprehensive user manual for the GMKtec M6 Ultra Mini PC, detailing its features, technical specifications, safety precautions, connection steps, BIOS settings, power management, and compliance information.
	[GMKtec NUCBOX M5 PLUS User Manual](#) User manual for the GMKtec NUCBOX M5 PLUS mini PC, detailing its features, specifications, connection steps, and basic settings. Includes safety precautions and warranty information.
	[GMKtec NUCBOX M5 PLUS User Manual and Safety Guide](#) 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.
	[Instrukcja obsługi GMKtec NUCBOX K11](#) Kompleksowa instrukcja obsługi mini PC GMKtec NUCBOX K11, zawierająca szczegółowe informacje o konfiguracji, specyfikacjach technicznych, środkach ostrożności, gwarancji i zgodności z normami środowiskowymi. Idealna dla użytkowników poszukujących wsparcia technicznego i optymalizacji urządzenia.
	[GMKtec NUCBOX M7 Mini PC User Manual](#) Comprehensive user manual for the GMKtec NUCBOX M7 Mini PC, detailing setup, connection steps, technical specifications, safety precautions, and warranty information for optimal performance.
	[GMKtec NUCBOX K1/K2 Mini PC User Manual - Setup, Specifications, and Support](#) Comprehensive user manual for the GMKtec NUCBOX K1 and K2 Mini PCs, detailing setup procedures, technical specifications for both models, connectivity options, warranty information, and customer support contacts.