Waveshare MK10

Waveshare MK10 Multi-Functional AI Voice Control Panel

Model: MK10

1. PRODUCT OVERVIEW

The Waveshare MK10 is a multi-functional AI Voice Control Panel designed to enhance productivity and control across various applications. It features a dual-system architecture combining Linux for complex logic processing and QMK for zero-latency mechanical input. The device includes 10 programmable 0.85-inch mechanical LCD macro keys and a 2.01-inch secondary screen, offering extensive customization and real-time data display capabilities. It supports AI speech recognition, smart home integration, and is compatible with both Windows and macOS systems.
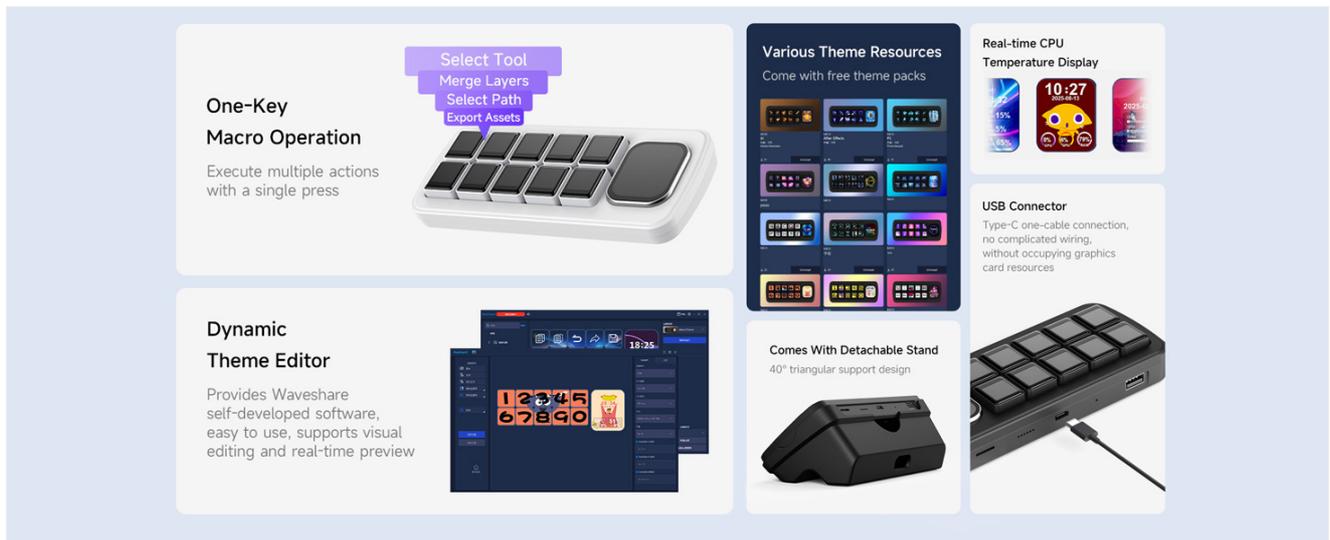

Image: Overview of the Waveshare MK10 AI Voice Control Panel, showcasing its LCD macro keys, QMK response, flexible configuration, and AI/HA support.

2. SETUP GUIDE

2.1 Package Contents

Before proceeding with the setup, please verify that all items are present in the package:

- Waveshare MK10 Unit (White) x1
- USB Type-C Cable x1

- USB Dongle x1
- Detachable Stand x1

Waveshare MK10

Multi-Functional AI Voice Control Panel

LCD Macro Keys
Full Color Display

QMK Response
No Output Delay

Highly Flexible Configuration
10 Mechanical Display Keys

Supports AI / HA
Wireless Function Access

Image: The package contents for the Waveshare MK10, including the device, USB cable, USB dongle, and detachable stand.

2.2 Physical Connection

Connect the Waveshare MK10 to your computer using the provided USB Type-C cable. The device features a Type-C interface for a simple one-line connection, ensuring it does not occupy additional GPU resources.

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Video: Demonstration of connecting the Waveshare MK10 via its Type-C interface and the immediate display of key functions.

2.3 Placement Options

The MK10 offers flexible placement to suit various desk setups and user preferences:

- **40° Detachable Stand:** Use the included triangular stand for an ergonomic 40-degree viewing and interaction angle, ideal for prolonged use.
- **5.5° Desktop Flat Placement:** For a lower profile, the device can be placed flat on the desktop at a 5.5-degree angle.

Supports 10-Screen Splicing Display

The Background Supports Images / Videos And Allows Multi-Layer Overlay

Supports gif / png / jpg

Supports mp4 / gif

Mechanical Switches For Better Tactile Experience

ACTUATION FORCE	50±10gf
ACTUATION TRAVEL	1.2±0.30mm
SPRING LENGTH	15.5mm
BOTTOM-OUT FORCE	55±10gf
TOTAL TRAVEL	2.8±0.25mm
LIFESPAN	50 million times

* for reference only, please refer to the package content for the detailed part list.

Image: Illustrates the two available placement methods for the Waveshare MK10: using the detachable stand for a 40-degree angle or flat on the desktop at 5.5 degrees.

3. OPERATING THE DEVICE

3.1 Key Functionality and Customization

The MK10's 10 mechanical LCD macro keys are highly customizable, supporting a wide range of operations natively through QMK without requiring PC software:

- **Single Key Presses:** Assign individual functions to each key.
- **Key Combinations:** Program keys to execute multiple key presses simultaneously (e.g., Ctrl+C).
- **Macro Operations:** Create complex sequences of actions with a single press.
- **Mouse Control:** Assign mouse movements or clicks to keys.
- **Multi-Command Chaining:** Execute a series of commands in sequence.

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Video: Demonstrates various key functionalities including single key, key combination, macro mouse control, and multi-command chaining on the Waveshare MK10.

3.2 Theme Editor and Dynamic Display

The built-in theme editor allows for easy drag-and-drop customization of key displays and the secondary screen. No coding is required, and real-time dynamic preview ensures immediate visual feedback. Users can import and export configurations and themes for sharing.

The device supports 10-screen splicing display, enabling dynamic layering of multiple images and videos across the keys for a flexible and rich visual presentation.

Image: The theme editor interface, demonstrating dynamic preview and custom macro plugin settings for personalized operation scenarios.

3.3 AI Voice Control and Smart Home Integration

The MK10 integrates AI speech recognition and interaction capabilities, supporting connection to mainstream AI models such as DeepSeek and XiaoZhi. This allows for natural and smooth voice control experiences, executing preset commands via AI.

Additionally, the product is compatible with the Home Assistant (HA) platform, enabling one-click linkage with smart home devices for comprehensive scene control.

Image: Illustration of the Waveshare MK10's AI speech recognition and interaction features, including sending commands to large language models and receiving replies.

4. ADVANCED FEATURES

4.1 Dual-System Architecture

The MK10 operates on a robust Linux + QMK dual-system architecture:

- **Main Controller (T113-S3, Dual-core A7, 1.2GHz):** Runs Linux for complex logic processing and advanced functionalities.
- **Sub-Controller (GD32 MCU):** Runs QMK to deliver a zero-latency, true mechanical input experience for the macro keys.

Image: Detailed diagram explaining the Linux + QMK dual-system architecture, highlighting the main and sub-controllers.

4.2 Real-Time Data Integration

The device supports real-time data integration into its themes, providing immediate access to critical system information:

- **LibreHardwareMonitor:** Displays CPU temperature, fan speed, and other hardware information.
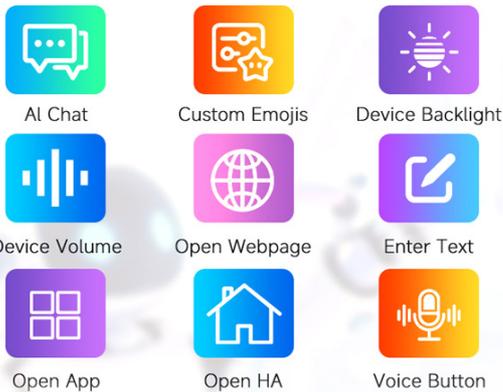- **OpenWeather:** Integrates live weather data for dynamic background updates.

Image: The Waveshare MK10 displaying real-time data such as CPU usage, GPU usage, SSD usage, and weather information on its screens.

4.3 Cross-Platform Support

The Waveshare MK10 is designed for broad compatibility, seamlessly working with both Windows and macOS operating systems, offering versatility for users across different computing environments.
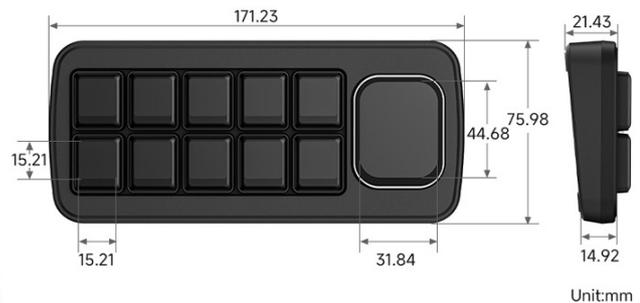

Image: The Waveshare MK10 shown operating efficiently with both Windows and macOS systems, highlighting its cross-platform compatibility.

5. MAINTENANCE

5.1 Cleaning Instructions

To maintain the appearance and functionality of your Waveshare MK10, follow these cleaning guidelines:

- Disconnect the device from its power source before cleaning.
- Use a soft, dry, lint-free cloth to wipe the exterior surfaces.
- For stubborn smudges, lightly dampen the cloth with water or a mild, non-abrasive cleaner. Avoid spraying liquids directly onto the device.
- Do not use harsh chemicals, solvents, or abrasive materials, as these can damage the finish and screens.

5.2 Software Updates

The Waveshare MK10 benefits from continuous online updates for its themes and plugins. Regularly check for and install updates to ensure optimal performance, access new features, and maintain the cutting-edge functional experience. Refer to

the official Waveshare website or the device's companion software for update procedures.

6. TROUBLESHOOTING

If you encounter issues with your Waveshare MK10, please refer to the following common troubleshooting steps:

- **Device Not Responding:** Ensure the USB Type-C cable is securely connected to both the device and your computer. Try connecting to a different USB port or using a different cable.
- **Software Not Detecting Device:** Verify that the latest drivers and companion software are installed. Restart your computer and the MK10.
- **Keys Not Functioning Correctly:** Check your key assignments in the theme editor. Ensure no conflicting macros are active.
- **Display Issues:** If screens are blank or flickering, ensure the device is properly powered. Check theme settings for any display configurations that might be causing issues.
- **AI Voice Control Problems:** Ensure your internet connection is stable and that the device has access to the necessary AI models. Check microphone settings.

For further assistance, please visit the official Waveshare support website or contact customer service.

7. SPECIFICATIONS

Feature	Detail
Manufacturer	Waveshare
Model	MK10
Item Weight	1.5 pounds
Package Dimensions	7.8 x 7.8 x 2.7 inches
ASIN	B0FPLWGRXK
Color	White
Material	Metal Or High-Quality Plastic
Display Type	LCD
Main Controller	T113-S3 (Dual-core A7, 1.2GHz)
Sub-Controller	GD32 MCU
Key Type	Mechanical LCD Macro Keys (10x 0.85-inch)
Secondary Screen	2.01-inch
Operating Systems	Windows, macOS

8. WARRANTY AND SUPPORT

8.1 Product Support

For technical support, product inquiries, or assistance with your Waveshare MK10, please visit the official Waveshare website or contact the seller directly. Ensure you have your product model and ASIN (B0FPLWGRXK) available when seeking support.

8.2 Warranty Information

Specific warranty details may vary by region and retailer. Please refer to the warranty documentation included with your purchase or consult the Waveshare official website for the most current warranty policy applicable to your product.