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WAVLINK WL-UTD45

WAVLINK Thunderbolt 4 Hub WL-UTD45 User Manual

Model: WL-UTD45 | Brand: WAVLINK

1. Introduction

The WAVLINK Thunderbolt 4 Hub WL-UTD45 is a versatile docking station designed to expand the connectivity of your laptop or desktop computer. It provides a comprehensive solution for connecting multiple displays, high-speed peripherals, network, and charging your host device through a single Thunderbolt 4 or USB4 port.

This manual provides detailed instructions for setting up, operating, and maintaining your Thunderbolt 4 Hub to ensure optimal performance and longevity.

2. Key Features

- **Thunderbolt 4 Certified:** Ensures compatibility and optimal performance with Thunderbolt 4 and USB4 hosts.
- **Dual Display Output:** Supports dual 4K@60Hz HDMI displays or a single 8K@60Hz display on Windows systems.
- **High Power Delivery:** Provides up to 96W charging to the host laptop.
- **High-Speed Data Transfer:** Features 40 Gbps Thunderbolt 4 upstream and downstream ports, 10 Gbps USB-C and USB-A ports, and 5 Gbps USB-A ports.
- **Fast Network Connectivity:** Includes a 2.5G Ethernet port, backward compatible with 10/100/1000Mbps.
- **Integrated Card Readers:** Equipped with SD/MicroSD V4.0 card readers offering 312MB/s transfer speeds.
- **Audio Connectivity:** Features a 3.5mm audio jack.

3. Product Diagram and Port Layout

Familiarize yourself with the ports and indicators on your WAVLINK Thunderbolt 4 Hub.

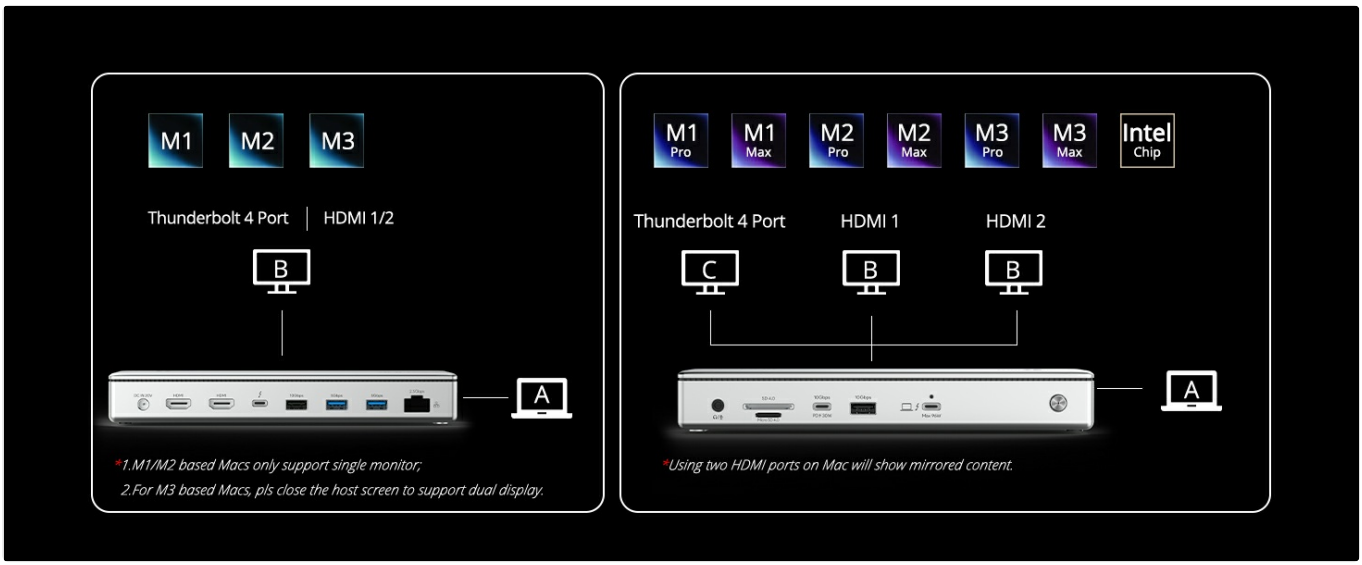

Image: Front and rear view of the WAVLINK Thunderbolt 4 Hub WL-UTD45 with all ports clearly labeled for identification.

Front Panel Ports:

- **4-Pole Audio Jack:** For connecting headphones or headsets with microphone functionality.
- **SD/TF Card Slots (312MB/s):** High-speed card readers for SD and MicroSD cards.
- **USB-C (10Gbps, PD 30W):** USB-C port for data transfer and power delivery to devices.
- **USB-A (10Gbps):** USB-A port for high-speed data transfer.
- **Thunderbolt 4 Host (40Gbps, 96W):** Connects to your host laptop for data, video, and power.
- **ON/OFF Button:** Power button for the docking station.

Rear Panel Ports:

- **DC IN (20V/8A, 160W):** Power input for the docking station.
- **Dual 4K@60Hz HDMI:** Two HDMI ports for connecting external displays.
- **Downstream Thunderbolt 4 Port (8K, 40Gbps, 15W):** Additional Thunderbolt 4 port for daisy-chaining devices or connecting an external display.
- **USB-A (10Gbps):** USB-A port for high-speed data transfer.
- **USB-A (5Gbps):** USB-A port for standard data transfer.
- **RJ45 (2.5Gbps):** Ethernet port for wired network connection.

4. Setup Instructions

1. **Connect Power:** Connect the provided 160W power adapter to the DC IN port on the rear of the docking station and then plug it into a power outlet. The power LED on the hub should illuminate.
2. **Connect to Host Device:** Use the included Thunderbolt 4 cable to connect the Thunderbolt 4 Host port on the front of the docking station to a Thunderbolt 4 or USB4 port on your laptop or computer.
3. **Connect Peripherals:** Connect your external monitors to the HDMI ports or the downstream Thunderbolt 4 port. Connect USB devices, Ethernet cable, and SD/MicroSD cards as needed.
4. **Power On:** Press the ON/OFF button on the front panel to power on the docking station.

5. Operating Instructions

5.1 Display Configuration

The WAVLINK Thunderbolt 4 Hub supports various display configurations depending on your host system.



Image: Illustration of triple display configurations for Windows and Mac operating systems.

Windows Systems:

- **Dual 4K@60Hz Displays:** Connect two monitors to the HDMI ports for extended desktop mode.
- **Single 8K@60Hz Display:** Connect one 8K monitor to the downstream Thunderbolt 4 port or one of the HDMI ports (if supported by the monitor and host).
- **Triple 4K@60Hz Displays:** Possible with specific configurations involving the Thunderbolt 4 downstream port and HDMI ports, depending on host capabilities.

Mac Systems:



Image: Diagram illustrating display output capabilities for various Mac processor types (M1, M2, M3, M1 Pro/Max, M2 Pro/Max, M3 Pro/Max, M4/Pro/Max, Intel).

- **Base M1, M2, or M3 Macs:** These models support only a single external display.
- **M1 Pro/Max, M2 Pro/Max, M3 Pro/Max, M4/Pro/Max, and Intel Macs:** These models support two external extended monitors. To achieve this, you must connect one monitor via an HDMI port and the other via the downstream Thunderbolt 4 port. If both monitors are connected to the two HDMI ports, they will mirror content.

5.2 Power Delivery

The hub provides power to your host laptop and connected devices.



Image: Illustration of the power flow, showing 160W input, 96W output to laptop, 30W output via USB-C, and 15W output via Thunderbolt 4 downstream port.

- **Host Charging:** The hub can deliver up to 96W of power to charge your connected laptop.
- **Device Charging:** The USB-C port on the front panel provides up to 30W Power Delivery, and the downstream Thunderbolt 4 port provides up to 15W.

5.3 Data Transfer

- **Thunderbolt 4 Ports:** Both upstream and downstream Thunderbolt 4 ports support data transfer speeds of up to 40 Gbps.
- **USB Ports:** The 10Gbps USB-C and USB-A ports offer high-speed data transfer for external drives and peripherals. The 5Gbps USB-A port is suitable for standard USB devices.
- **SD/MicroSD Card Readers:** The integrated card readers support V4.0 standards, providing data transfer speeds up to 312 MB/s.

5.4 Network Connection

The 2.5G Ethernet port provides a stable and high-speed wired network connection, superior to standard Gigabit Ethernet.



Image: Comparison illustrating the speed advantage of a 2.5 Gigabit wired connection (2500 Mbps) over typical Wi-Fi (30 Mbps).

6. Compatibility

The WAVLINK Thunderbolt 4 Hub is compatible with a wide range of devices and operating systems.



Image: Overview of compatible operating systems and example host devices.

- **Operating Systems:**
  - Windows 10 or later (with Thunderbolt 4 or USB4 port)
  - macOS 11 or later (with Thunderbolt 3, Thunderbolt 4, or USB4 port)
- **Compatible Host Devices (Examples):**
  - MacBook Pro/Air (M1 Pro/Max, M2 Pro/Max, M3 Pro/Max, M4/Pro/Max, M3 MacBook Air requires clamshell mode for dual displays)
  - HP ProBook / EliteBook / Spectre x360 series
  - Dell XPS
  - Lenovo ThinkPad / IdeaPad / Yoga
  - Microsoft Surface Pro 9, 8 / Surface Laptop Studio / Surface Laptop 5
  - Other USB4 & MFDP Hosts (full-functional USB-C)

7. Specifications

Feature	Specification
Model Number	WL-UTD45
Dimensions	10.63 x 5.43 x 4.09 inches
Item Weight	2.2 pounds (approx. 1 Kilogram)
Color	Sliver
Hardware Interface	3.5mm Audio, MicroSD, Thunderbolt 4, USB, USB 3.1 Type C, USB 3.2 Gen 2
Total USB Ports	4 (various speeds)
Total HDMI Ports	2
Number of Ports	13-in-1
Power Delivery (Host)	Up to 96W
Power Adapter Input	160W (20V/8A)
Ethernet Speed	2.5 Gigabit (2500Mbps)
Card Reader Speed	312MB/s (SD/MicroSD V4.0)

8. Troubleshooting

If you encounter issues with your WAVLINK Thunderbolt 4 Hub, please refer to the following common troubleshooting steps:

1. **No Power:**
   - Ensure the 160W power adapter is securely connected to both the hub and a working power outlet.
   - Verify the ON/OFF button on the hub is pressed.
2. **No Display Output:**
   - Confirm the Thunderbolt 4 cable is firmly connected between the hub and your host device.
   - Check that display cables (HDMI, Thunderbolt) are securely connected to both the hub and the monitors.
   - Ensure your host device's display drivers are up to date.
   - For Mac users, review the specific display compatibility notes in Section 5.1, especially regarding M1/M2/M3 base models and dual HDMI mirroring.
   - Try connecting one monitor at a time to isolate the issue.
3. **Peripherals Not Recognized:**
   - Reconnect the peripheral device to a different USB port on the hub.
   - Ensure the peripheral's drivers are installed on your host device.
   - Test the peripheral by connecting it directly to your host device to rule out a device-specific issue.
4. **Network Connectivity Issues:**
   - Verify the Ethernet cable is securely connected to the RJ45 port on the hub and your router/modem.

- Check your host device's network settings and ensure the Ethernet adapter is enabled.
- Restart your router/modem and the host device.

5. **Laptop Not Charging:**
   - Ensure the hub is powered on and the Thunderbolt 4 cable is connected to a Thunderbolt 4 or USB4 port on your laptop that supports power delivery.
   - Confirm your laptop requires 96W or less for charging.

9. Maintenance

Proper maintenance ensures the longevity and optimal performance of your WAVLINK Thunderbolt 4 Hub.

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the hub. Avoid using liquid cleaners or solvents.
- **Storage:** Store the hub in a cool, dry place away from direct sunlight and extreme temperatures when not in use.
- **Handling:** Avoid dropping the device or subjecting it to strong impacts.
- **Ventilation:** Ensure the hub's ventilation openings are not blocked to prevent overheating.

10. Warranty and Support

For warranty information, please refer to the documentation provided with your purchase or contact your retailer. WAVLINK offers customer support for technical assistance.

Contact Information:

- **Email:** Contact@wavlink.com
- **Phone:** +1 8889730883 (UTC -5) Mon - Fri 9AM - 6PM
- **Website:** Visit the official WAVLINK website for additional resources and FAQs.

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