Aideepen ESP32-WROOM-32

Aideepen NerdMiner V2 ESP32 Development Board User Manual

Model: ESP32-WROOM-32

1. INTRODUCTION

The Aideepen NerdMiner V2 ESP32 Development Board is a compact, open-source device designed for Bitcoin mining. It features an ESP32-D0WD-V3 WiFi MCU and a 2.8-inch touch screen for displaying operational status and related information. This manual provides instructions for setup, operation, maintenance, and troubleshooting.

Figure 1: NerdMiner V2 ESP32 Development Board and Accessories

2. PRODUCT COMPONENTS

The package includes the following items:

- NerdMiner V2 ESP32 Development Board with 2.8-inch Smart Display
- Acrylic Case (may require assembly)
- USB-C Cable
- Stylus
- Jumper Wires

Figure 2: Included Components

3. Setup Instructions

3.1. Case Assembly

If your device arrived unassembled, follow these steps to install the acrylic case:

1. Carefully place the ESP32 board into the bottom acrylic plate.
2. Align the top acrylic plate and secure it with the provided screws.
3. Ensure all ports and buttons are accessible.

Your browser does not support the video tag.

Video 1: Demonstration of how to install the acrylic case onto the NerdMiner V2 ESP32 Development Board.

3.2. Initial Configuration

The device operates independently via WiFi. Follow these steps for initial setup:

1. **Power On:** Connect the device to a power source using the USB-C cable. Upon powering on, the device attempts to connect to a previously configured WiFi network.

2. **Access Point Setup:** If WiFi connection fails after 15 seconds, the device automatically enters configuration mode. Search for the free access point named **nmap-2.4g** (no password required) on your mobile device or computer.

3. **Configuration Interface:**

   - **Mobile devices:** You will be automatically redirected to the configuration page.
   - **PC/Desktop:** Navigate to http://192.168.4.1 in your web browser.

4. **Enter Settings:** On the configuration page, you will need to input your WiFi password, primary and fallback pool URLs, and your Bitcoin address. You can also adjust settings like time zone, UI refresh interval, screen sleep timeout, and initial screen brightness.

Figure 3: Configuration Page Example

For detailed firmware activation and upgrade instructions, refer to the official GitHub repository: https://github.com/NMminer1024/NMMiner.
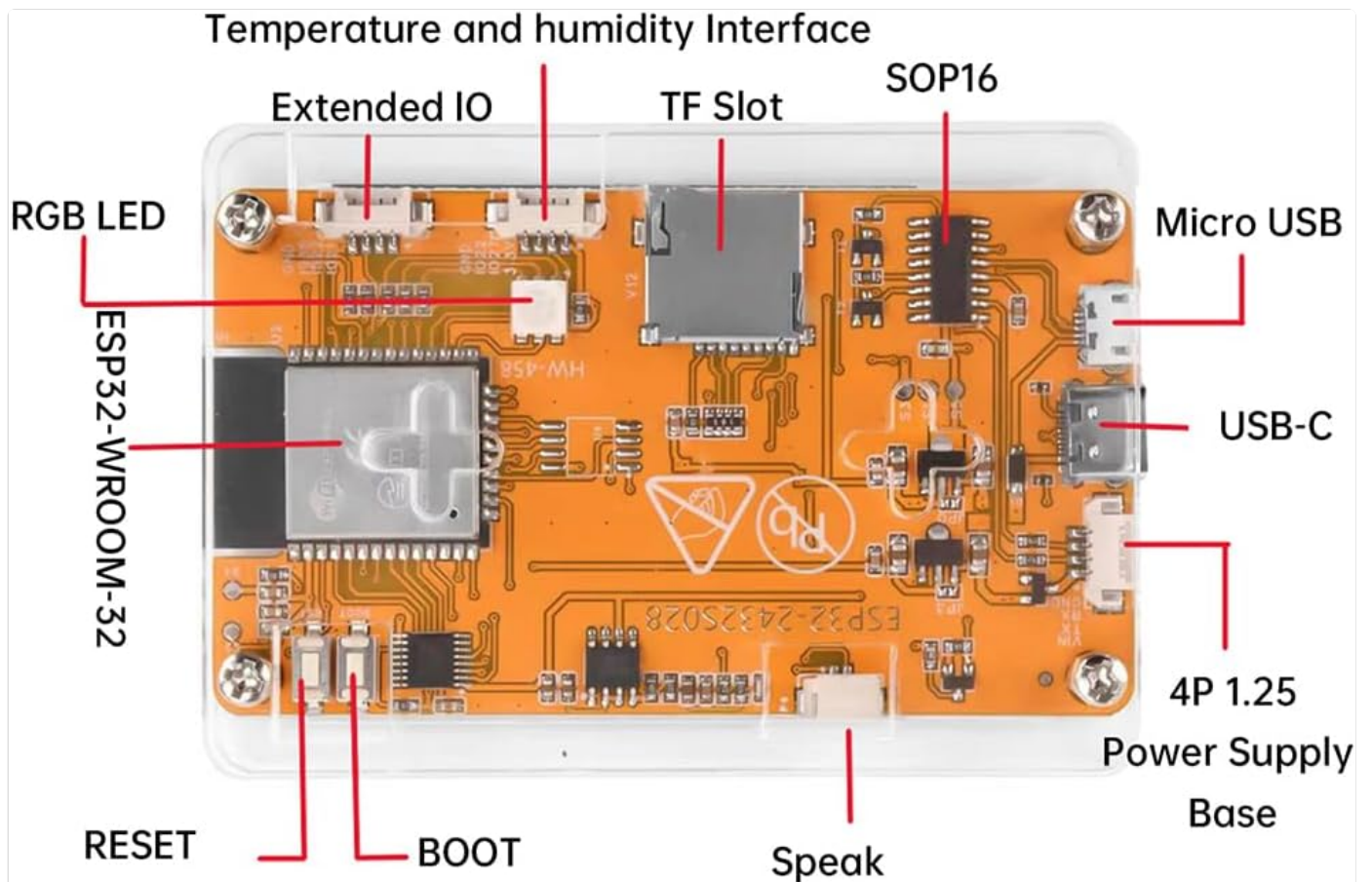
4. OPERATING THE DEVICE

Once configured, the NerdMiner V2 operates autonomously, displaying real-time mining statistics on its 2.8-inch touch screen.

4.1. Display Information

The display provides a comprehensive overview of the device's status and mining performance:

Figure 4: Display Elements Explained

- **Block Found:** Indicates if a Bitcoin block has been found.

- **Firmware Version:** Current software version.

- **Local IP:** Device's IP address on the local network.

- **Best Difficulty of Miners in LAN:** The highest difficulty achieved by miners on the local network.

- **Counter of Miners in LAN:** Number of active miners on the local network.

- **Hash Rate:** Current mining speed in KH/s.

- **Total Hash Rate of Miners in LAN:** Aggregate mining speed of all local miners.

- **WiFi RSSI:** Signal strength of the WiFi connection.

- **BTC Price:** Real-time Bitcoin price.

- **Job Receive Counter:** Number of mining jobs received.

- **Network Difficulty:** Current difficulty of the Bitcoin network.

- **Last Share Diff/Best Diff:** Difficulty of the last submitted share and the best difficulty achieved.

- **Share (rejective)** / **Share (accept):** Ratio of rejected to accepted shares.

4.2. Performance

The device is designed for optimal performance with an open-source, deeply optimized algorithm firmware, achieving a maximum computing power of 980KH/s to 1000KH/s.
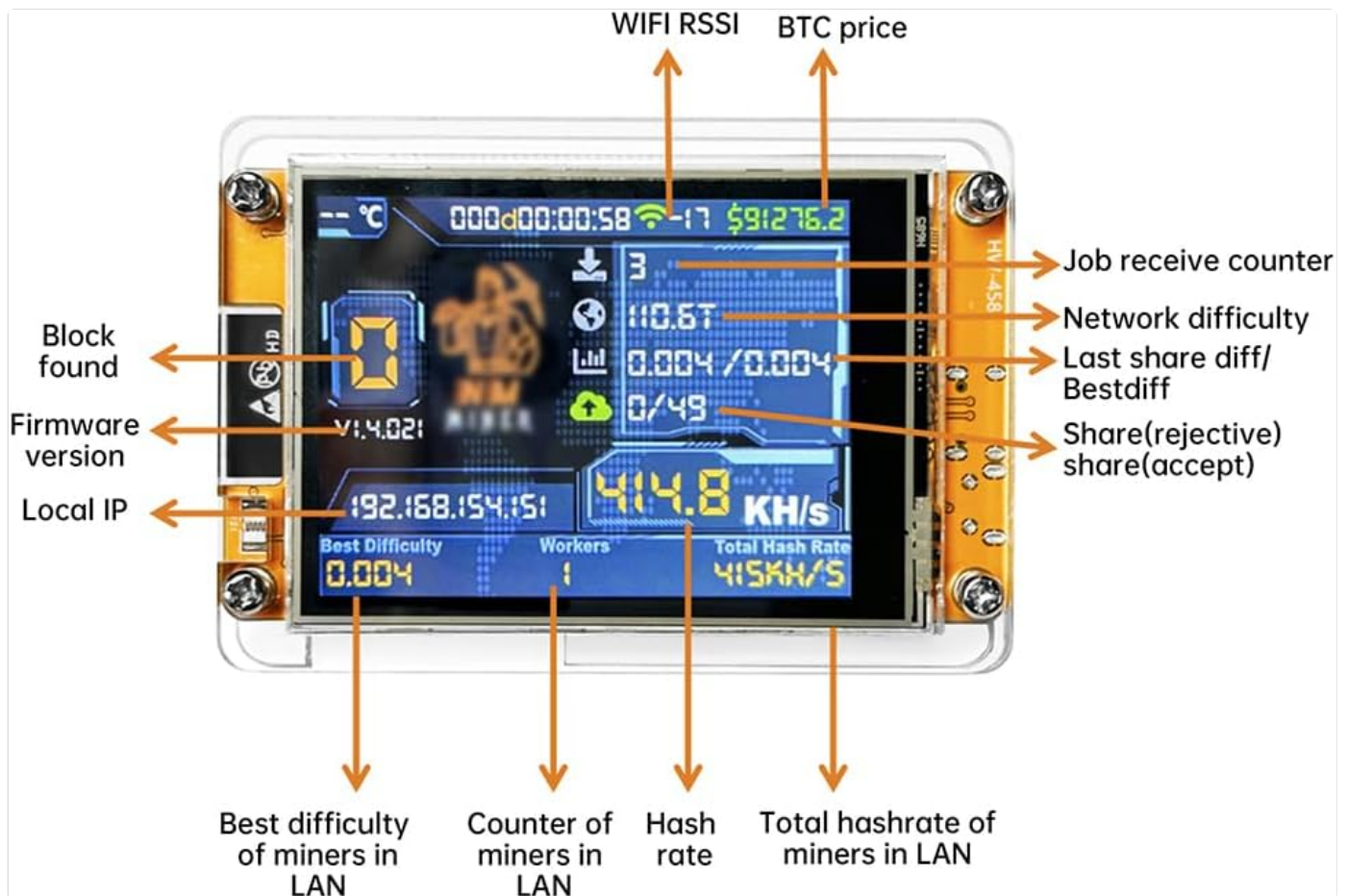
Figure 5: Hashrate Performance

5. MAINTENANCE

To ensure the longevity and optimal performance of your NerdMiner V2, consider the following maintenance tips:

- **Cleaning:** Gently wipe the screen and case with a soft, dry cloth. Avoid abrasive cleaners or solvents.
- **Environment:** Operate the device in a cool, dry environment away from direct sunlight and excessive dust.
- **Firmware Updates:** Regularly check the official GitHub repository for firmware updates to ensure the device runs with the latest optimizations and features.

6. TROUBLESHOOTING

If you encounter issues with your NerdMiner V2, refer to the following common problems and solutions:

- **Device Restarts Multiple Times Upon Powering On:**
  This may indicate an insufficient power supply. Try using an alternative power adapter, such as a 5V 2A model. Ensure the USB-C cable is securely connected.

- **Unable to Connect to WiFi or Configuration Page:**
  Ensure the device is in configuration mode (if not, power cycle it). Double-check that you are connecting to the correct access point (**nmap-2.4g**) and that your device's WiFi is enabled. If using a PC, verify the IP address 192.168.4.1 is entered correctly.

- **Device Keeps Cycling Through Settings / Not Saving Configuration:**
  This can also be related to power supply issues. Ensure you are using a stable 5V 2A power source. Re-enter your settings carefully and ensure you click 'Save' on the configuration page.

- **Firmware Activation or Upgrade Issues:**
  Refer to the official GitHub repository (https://github.com/NMminer1024/NMMiner) for detailed instructions and tools. If

issues persist, contact customer support for assistance.

- **Missing Acrylic Case Components:**
  While the product description states the board and shell are included, if you find components missing, contact Aideepen customer service for resolution.

7. SPECIFICATIONS

Key technical specifications of the Aideepen NerdMiner V2 ESP32 Development Board:

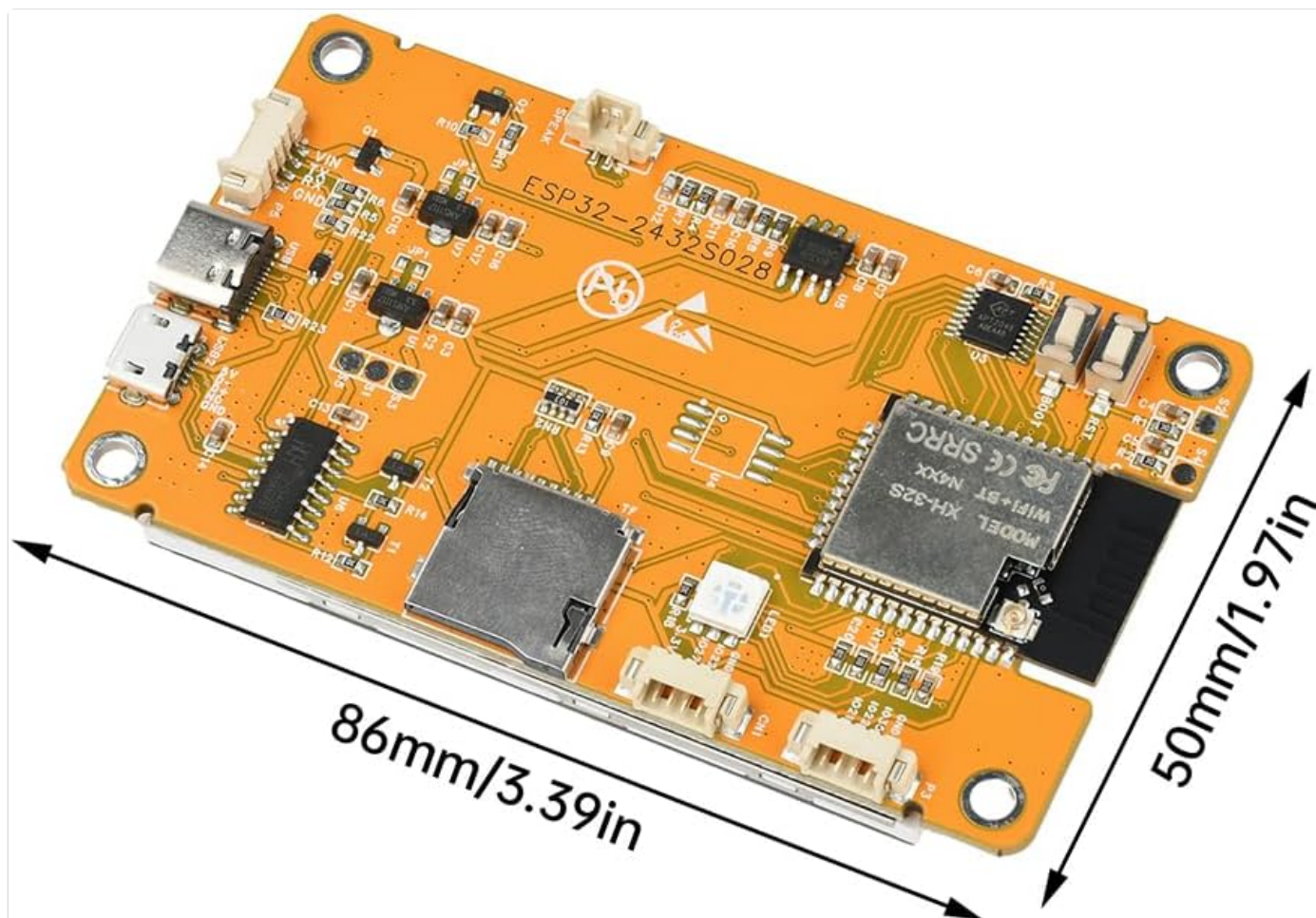| Feature	Detail
Processor	ESP32-D0WD-V3 WiFi MCU (2.4 GHz MediaTek_MT8125)
Model Name	ESP32-WROOM-32
Display	2.8-inch Touch Screen
Connectivity	WiFi, Bluetooth
Operating System	FreeRTOS
Memory Storage Capacity	520 KB
Max Hashrate	Up to 1000 KH/s (980 KH/s typical)
Power Input	USB-C (5V 2A recommended)
Item Weight	0.32 ounces
Package Dimensions	5.2 x 4.3 x 2.3 inches

Figure 6: Board Interfaces
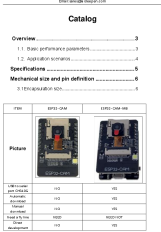
Figure 7: Device Dimensions
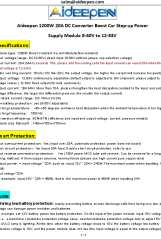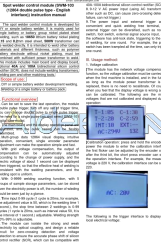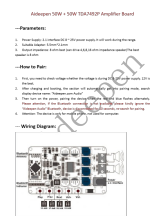
8. WARRANTY AND SUPPORT

8.1. Warranty Information

Each product purchased from Aideepen includes 24 months of service. In the event of any quality issues with your item, you are eligible for a new replacement.

8.2. Customer Support

For any questions, technical assistance, or after-sales guidance, please contact Aideepen customer service. We are committed to providing swift resolution and comprehensive support.

Related Documents - ESP32-WROOM-32

	[Aideepen ESP32-CAM Operation Instruction and Specifications](#) Explore the Aideepen ESP32-CAM, a versatile camera module with Wi-Fi and Bluetooth. This guide covers product introduction, features like dual-core processing and PSRAM, performance parameters, RF specifications, and initial usage instructions for IoT applications and smart device development.
	[Aideepen ESP32-CAM & ESP32-CAM-MB: IoT Camera Module Catalog](#) Detailed catalog for Aideepen's ESP32-CAM and ESP32-CAM-MB modules, featuring ESP32-S chip, OV2640 camera, Wi-Fi/Bluetooth connectivity, and specifications for IoT applications.
	[ESP32-CAM: Setting Up Arduino IDE for Video Streaming and Photography](#) A comprehensive guide to setting up the Arduino IDE for the ESP32-CAM module, enabling video streaming and photo capture. Covers installation, configuration, and basic usage.
	[Aideepen 1200W 20A DC-DC Boost Converter Module: Specifications and Guide](#) Detailed specifications, usage guide, and troubleshooting for the Aideepen 1200W 20A DC-DC Boost Converter Module, an adjustable voltage power supply module operating from 8-60V to 12-83V.
	[SWM-103 Spot Welder Control Module: Instruction Manual](#) Comprehensive instruction manual for the Aideepen SWM-103 spot welder control module, featuring double pulse trigger, voltage compensation, and parameter storage for DIY battery welding applications.
	[Aideepen 50W + 50W TDA7492P Amplifier Board: Specifications and Pairing Guide](#) Detailed information on the Aideepen 50W + 50W TDA7492P Amplifier Board, including technical parameters, Bluetooth pairing instructions, and a wiring diagram description for optimal audio setup.