MikroTik RB951Ui-2nD

MikroTik RouterBoard RB951Ui-2nD hAP User Manual

Model: RB951Ui-2nD

1. Introduction

This manual provides essential information for the setup, operation, and maintenance of your MikroTik RouterBoard RB951Ui-2nD hAP device. The hAP is designed as a compact home access point suitable for small offices, offering wireless connectivity and multiple wired ports.

Figure 1.1: Key Features of the MikroTik hAP. This image highlights the main technical specifications and capabilities of the device, including its wireless standard, CPU, RAM, PoE output, and USB port.

Key features include a 2.4 GHz dual-chain wireless interface, a 650 MHz CPU, 64 MB of RAM, Passive PoE output on port 5, and a USB port for 3G/4G modems. The device is preconfigured for ease of use.

Figure 1.2: Overview of the MikroTik RouterBoard RB951Ui-2nD hAP. This image displays the device from a top-down angle, highlighting the five Ethernet ports, power input, USB port, and LED indicators.

2. Package Contents

Verify that your package contains the following items:

- MikroTik RouterBoard RB951Ui-2nD hAP device
- Power Adapter (24V 0.8A)
- Wire (Ethernet cable)

Figure 2.1: Included Power Adapter. This image shows the 24V 0.8A power adapter with its cable and barrel connector.

3. Setup Instructions

Follow these steps to set up your MikroTik hAP device:

3.1. Device Overview and Ports

The hAP can be powered from the power jack or with passive PoE from a PoE injector. The power adapter is included. The hAP is preconfigured, so all you need to do, is plug in the internet cable, the power, and start using the internet by connecting to the MikroTik network.

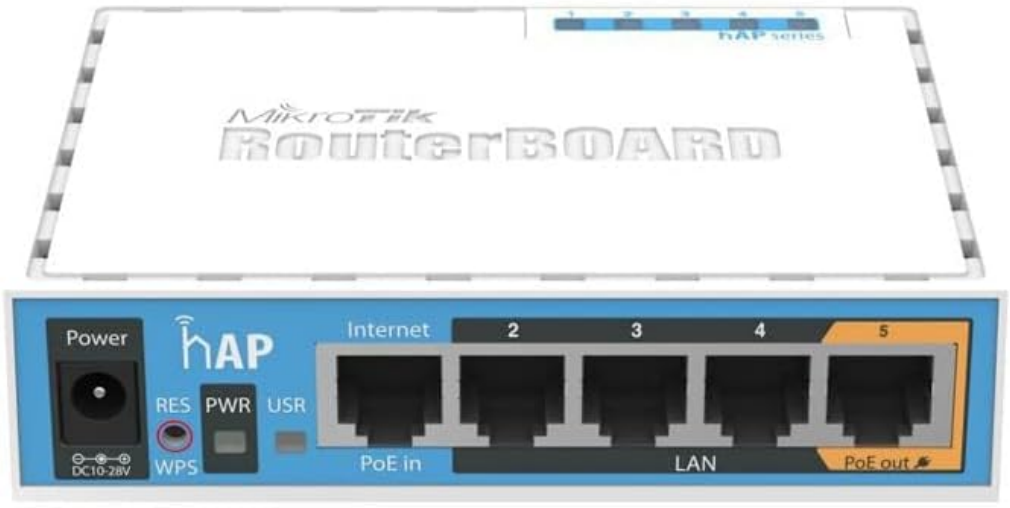

Figure 3.1: MikroTik hAP Port Layout. This image illustrates the front panel of the hAP device, clearly labeling the power input, reset button (RES), power indicator (PWR), user LED (USR), Internet port (Ether1), LAN ports (Ether2-4), and the PoE output port (Ether5).

- **Power Input:** DC 10-28V.
- **RES (Reset Button):** Used for resetting the device to factory defaults.
- **PWR (Power LED):** Indicates power status.
- **USR (User LED):** Programmable LED.
- **Internet (Ether1):** Connect your internet service provider's cable here. This port also supports Passive PoE input.
- **LAN (Ether2-4):** Connect your wired devices (computers, switches, etc.) to these ports.
- **PoE out (Ether5):** This port provides Passive PoE output, capable of powering other PoE-capable devices with the same voltage as applied to the unit. Maximum load is 500mA.
- **USB:** Connect a 3G/4G modem or other USB devices.

3.2. Initial Connection

1. **Connect Internet:** Plug your internet cable (from your modem or ISP) into the port labeled "Internet" (Ether1) on the hAP device.
2. **Connect Power:**
    - If using the included power adapter: Connect the power adapter to the "Power" jack on the device, then plug the adapter into a wall outlet.
    - If using Passive PoE: Connect a Passive PoE injector to the "Internet" (Ether1) port. The device can be powered via this port.
3. **Power On:** The device will power on automatically. Wait for the PWR LED to stabilize.
4. **Connect to Network:**
    - **Wired:** Connect a computer to any of the "LAN" ports (Ether2-4) using an Ethernet cable.
    - **Wireless:** Search for available Wi-Fi networks on your computer or mobile device. The hAP is preconfigured with a default MikroTik wireless network. Connect to this network.
5. **Access Configuration:** Once connected, open a web browser and navigate to the default IP address (usually http://192.168.88.1). You will be prompted to log in. The default username is *admin* with no password. It is highly recommended to set a strong password immediately after initial login.

4. Operating Instructions

The MikroTik hAP runs RouterOS, a powerful operating system that offers extensive configuration options.

4.1. Basic Network Functionality

- **Internet Access:** After connecting the internet cable and powering on, your devices connected to the hAP (wired or wireless) should automatically obtain an IP address and have internet access.
- **Wireless Access Point:** The hAP functions as a wireless access point, allowing Wi-Fi enabled devices to connect to your network. The default wireless network name (SSID) and password can be found on the device label or in the initial configuration.
- **Wired Connectivity:** Use the LAN ports (Ether2-4) to connect devices that require a stable wired connection, such as desktop computers, smart TVs, or network printers.

4.2. Advanced Configuration (RouterOS)

For advanced network configurations, such as setting up firewalls, VPNs, VLANs, or customizing wireless settings, you will need to use the RouterOS interface. This can be accessed via:

- **WebFig:** The web-based graphical user interface (GUI) accessible through your browser at the device's IP address.
- **WinBox:** A dedicated Windows application for managing MikroTik devices.

- **CLI (Command Line Interface):** Accessible via SSH for experienced users.

Detailed documentation and guides for RouterOS are available on the official MikroTik website.

5. Maintenance

Regular maintenance ensures optimal performance and security of your hAP device.

- **Firmware Updates:** Periodically check the MikroTik website for RouterOS updates. Keeping your firmware updated provides new features, performance improvements, and security patches.
- **Physical Cleaning:** Keep the device free from dust and debris. Use a soft, dry cloth for cleaning. Do not use liquid cleaners.
- **Environmental Conditions:** Ensure the device is placed in a well-ventilated area, away from direct sunlight, heat sources, and moisture.
- **Backup Configuration:** Regularly back up your device's configuration using the RouterOS interface. This allows for quick restoration in case of unexpected issues or device replacement.

6. Troubleshooting

If you encounter issues with your MikroTik hAP, refer to the following common troubleshooting steps:

- **No Power:**
  - Ensure the power adapter is securely connected to both the device and a working power outlet.
  - If using PoE, verify the PoE injector is functioning and connected correctly.
  - Check the PWR LED on the device; if it's off, there might be a power issue.
- **No Internet Access:**
  - Verify that the internet cable is securely plugged into the "Internet" (Ether1) port.
  - Check your modem or ISP connection to ensure it is active.
  - Log into RouterOS and check the status of the Ether1 interface.
- **Cannot Connect to Wi-Fi:**
  - Ensure the wireless interface is enabled in RouterOS.
  - Verify you are using the correct Wi-Fi network name (SSID) and password.
  - Check if the device is within range of the hAP.
- **Forgot Password / Device Unresponsive:**
  - You can reset the device to factory defaults by holding the RES button during power-up until the USR LED starts flashing, then release it. **Warning:** This will erase all your configurations.
- **Slow Performance:**
  - Check for network congestion or interference.
  - Ensure the device firmware is up to date.
  - Monitor CPU and memory usage in RouterOS.

For more detailed troubleshooting, consult the MikroTik documentation or support resources.

7. Specifications

Key technical specifications for the MikroTik RouterBoard RB951Ui-2nD hAP:

Feature	Detail
Product Code	RB951Ui-2nD
CPU Nominal Frequency	650 MHz
CPU Core Count	1
Size of RAM	64 MB
10/100 Ethernet Ports	5
Wireless	Built-in 2.4 GHz 802.11b/g/n, dual-chain
Antenna Gain	1.5 dBi
PoE In	Yes (Passive PoE)
PoE Out	Yes (Ether5, Passive PoE, max 500mA)
Supported Input Voltage	6 V - 30 V (Jack or Passive PoE)
USB Port	USB 2.0 Type A full size port, 1A
Operating System	RouterOS
Dimensions	113 x 89 x 28 mm
Max Power Consumption	5 W

Specifications

Product code	RB951Ui-2nD
CPU nominal frequency	650 MHz
CPU core count	1
Size of RAM	64 MB
10/100 Ethernet ports	5
Wireless	Built-in 2.4 GHz 802.11b/g/n, dual-chain
Wireless regulations	Specific frequency range may be limited by country regulations
Antenna gain	1.5 dBi
Antenna beam width	360°
Wireless chip model	QCA9531
PoE in	Yes
PoE out	Yes (Ether5)
Supported input voltage	6 V - 30 V (Jack or Passive PoE)
Extras	USB 2.0 Type A full size port, 1A
Dimensions	113 x 89 x 28mm
License level	4
Operating System	RouterOS
CPU	QCA9531
Max Power consumption	5 W

Included

24 V 0.8 A power adapter

Figure 7.1: Detailed Specifications. This image presents a table summarizing the technical specifications of the RB951Ui-2nD hAP.

8. Warranty and Support

For warranty information, please refer to the documentation provided with your purchase or visit the official MikroTik website.
For technical support, detailed documentation, and community forums, please visit the official MikroTik website: https://mikrotik.com/.