MikroTik RB912UAG-5HPnD

MikroTik RB912UAG-5HPnD Wireless Router Instruction Manual

1. INTRODUCTION

This manual provides detailed instructions for the installation, configuration, and operation of the MikroTik RB912UAG-5HPnD wireless router. The RB912UAG-5HPnD is a versatile device designed for various networking applications, featuring an integrated high-power wireless card and an additional miniPCIe slot for expanded functionality.

2. KEY FEATURES

- Integrated high-power 5GHz 802.11a/n wireless card.

- Additional miniPCIe slot for 802.11 wireless or 3G/LTE card expansion.

- One Gigabit Ethernet port for high-speed wired connectivity.

- Built-in 16kV ESD protection on Ethernet and MMCX ports.

- 600MHz CPU and 64MB RAM for efficient performance.

- USB port and SIM slot for enhanced connectivity options.

- Powered by MikroTik RouterOS Level 4.

- Compact dimensions: 105x105mm.

- Supports Passive PoE input.

3. HARDWARE OVERVIEW

The MikroTik RB912UAG-5HPnD features a compact circuit board design with various components for network connectivity and processing. Understanding the layout is crucial for proper installation and troubleshooting.
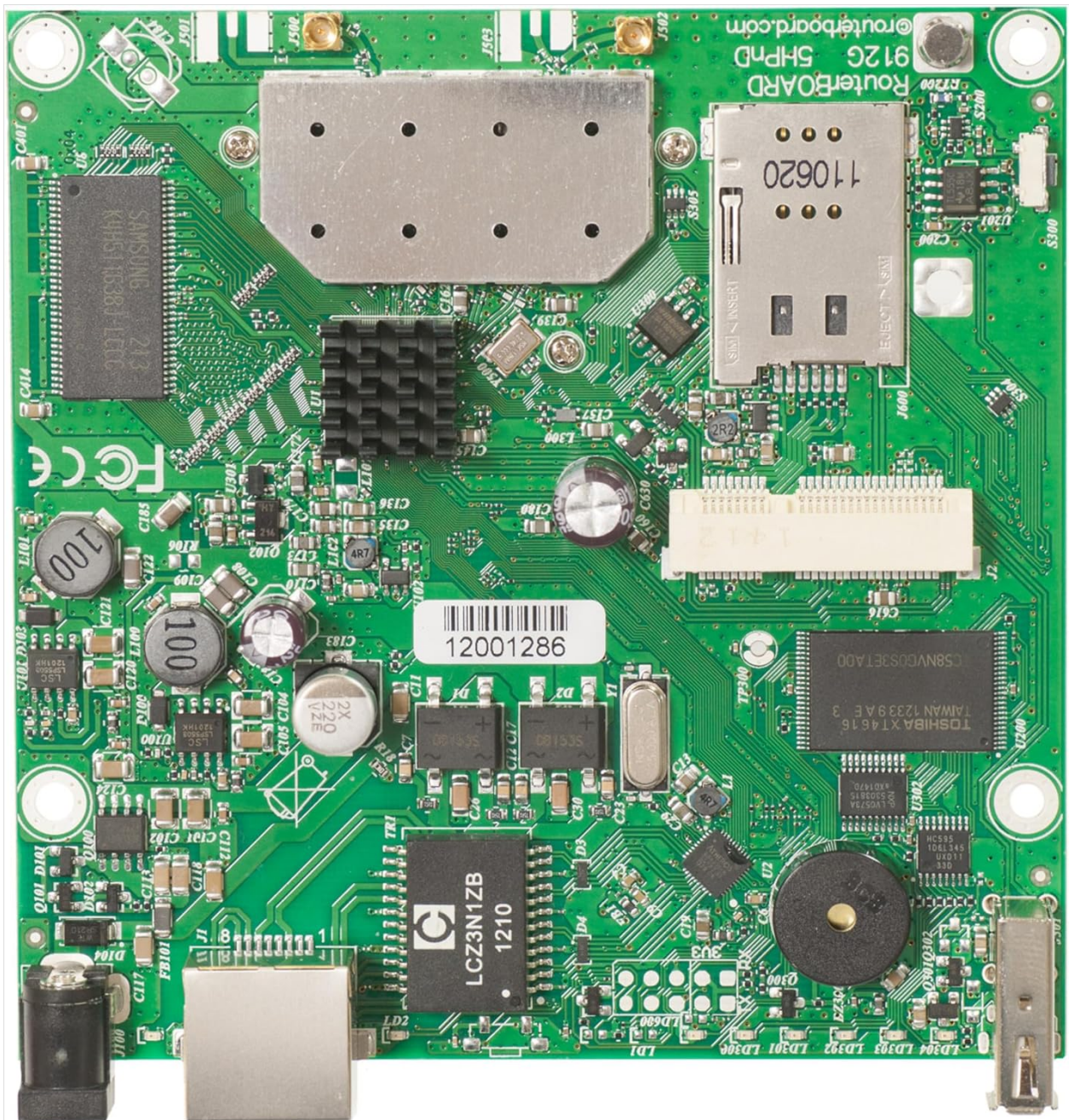
Figure 1: Top-down view of the MikroTik RB912UAG-5HPnD router board. This image displays the main components including the CPU, RAM, wireless module, Gigabit Ethernet port, miniPCIe slot, and SIM card slot. The board is green with various integrated circuits and connectors.

3.1. Main Components

- **CPU and RAM:** Central processing unit and memory modules are located on the board, responsible for device operations.

- **Integrated Wireless Card:** A 5GHz 802.11a/n wireless module is integrated, providing high-power wireless connectivity.

- **miniPCIe Slot:** An expansion slot for adding an additional wireless card (e.g., 2.4GHz) or a 3G/LTE modem.

- **Gigabit Ethernet Port:** Provides a single wired network connection with 10/100/1000 Mbps speeds.

- **USB Port:** Located on the edge of the board, used for connecting external storage or other USB devices.

- **SIM Slot:** Allows for the insertion of a SIM card when a 3G/LTE miniPCIe modem is installed.

- **Power Input:** A DC jack for power input, supporting Passive PoE.

- **Reset Button:** Used to reset the device to factory defaults or enter RouterBOOT loader mode.

4. SETUP

4.1. Powering On

1. Connect a compatible power adapter (not included) to the DC power jack on the RB912UAG-5HPnD. The device supports 8-30V DC input.

2. Alternatively, connect an Ethernet cable from a Passive PoE injector to the Gigabit Ethernet port. The device supports Passive PoE input from 8-30V DC.

3. Once power is supplied, the device will begin to boot up.

4.2. Initial Access

1. Connect your computer directly to the Gigabit Ethernet port of the RB912UAG-5HPnD using an Ethernet cable.

2. Configure your computer's network adapter to obtain an IP address automatically (DHCP).

3. Open a web browser and navigate to the default IP address:http://192.168.88.1.

4. Log in using the default credentials: Username **admin**, with no password.

5. Upon first login, you will be prompted to change the default password. It is highly recommended to do so for security.

4.3. Basic Configuration

After initial access, you can begin configuring the device using the RouterOS web interface (WinBox utility is also available). Basic steps include:

- Setting up WAN (Internet) connection parameters.
- Configuring LAN network settings and DHCP server.
- Enabling and configuring the integrated 5GHz wireless interface.
- Updating RouterOS firmware to the latest stable version.

5. OPERATING INSTRUCTIONS

5.1. RouterOS Interface

The RB912UAG-5HPnD operates on MikroTik's RouterOS, a powerful operating system with extensive configuration options. The interface can be accessed via WebFig (web browser) or WinBox (Windows utility). Familiarize yourself with the menu structure for network, wireless, firewall, and system settings.

5.2. Wireless Configuration

To configure the 5GHz wireless interface:

1. Navigate to the 'Wireless' menu in RouterOS.
2. Select the 'wlan1' interface (typically the integrated 5GHz radio).
3. Set the 'Mode' to 'ap bridge' for access point functionality.
4. Configure 'Band', 'Channel Width', 'Frequency', and 'SSID' (network name).
5. Set up wireless security (e.g., WPA2-PSK) under the 'Security Profiles' tab.

5.3. Network Settings

Manage IP addresses, routing, and firewall rules:

- **IP Addresses:** Assign static IP addresses to interfaces or configure DHCP client/server.
- **Routing:** Configure static routes or dynamic routing protocols as needed.
- **Firewall:** Implement firewall rules to secure your network and control traffic flow.
- **NAT:** Configure Network Address Translation for Internet access.

6. MAINTENANCE

6.1. Firmware Updates

Regularly update RouterOS firmware to ensure optimal performance, security, and access to new features. Download the latest firmware package from the official MikroTik website and upload it to the device using WinBox or WebFig. Reboot the device after the update.

6.2. Configuration Backup and Restore

It is recommended to regularly back up your device configuration. This allows for quick restoration in case of misconfiguration or hardware replacement. Configuration files can be saved to your computer and restored via WinBox or WebFig.

6.3. Physical Care

Keep the device in a clean, dry environment. Ensure proper ventilation to prevent overheating. Avoid exposing the device to extreme temperatures, humidity, or direct sunlight.

7. TROUBLESHOOTING

7.1. Common Issues

- **No Power:** Verify power adapter connection and voltage. Check PoE injector if using PoE.
- **Cannot Access Web Interface:** Ensure your computer's IP address is in the same subnet as the router (e.g., 192.168.88.x). Try pinging 192.168.88.1. Clear browser cache or try a different browser.
- **No Internet Connection:** Check WAN configuration, cable connections, and ISP status. Verify DNS settings.
- **Wireless Not Working:** Ensure the wireless interface is enabled and configured correctly (SSID, security, frequency). Check for channel interference.

7.2. Factory Reset

If the device becomes unresponsive or you forget the password, a factory reset can restore it to its default configuration:

1. Disconnect power from the device.
2. Press and hold the reset button.
3. Reconnect power while continuing to hold the reset button.
4. Release the button when the user LED starts flashing. The device will then boot with default settings.

8. TECHNICAL SPECIFICATIONS

Feature	Specification
Product Model	RB912UAG-5HPnD
Brand	MikroTik
CPU Nominal Frequency	600 MHz
RAM	64 MB
Ethernet Ports	1x Gigabit Ethernet
Wireless Standards	802.11a/n (5 GHz)
Wireless Chains	2
miniPCIe Slots	1
USB Port	Yes
SIM Slot	Yes
Operating System	RouterOS Level 4
PoE Input	Passive PoE (8-30V DC)
Dimensions	105 x 105 mm
ESD Protection	16kV on Ethernet and MMCX ports
Recommended Uses	Home, Personal Computer
Connectivity Technology	Ethernet, USB

9. WARRANTY AND SUPPORT

MikroTik products are covered by a limited warranty. For specific warranty terms and conditions, please refer to the official MikroTik website or the documentation included with your purchase. In case of technical issues or questions not covered in this manual, please visit the MikroTik support portal or contact their authorized support channels for assistance.

For the latest documentation, software downloads, and support resources, please visit:
https://mikrotik.com/support