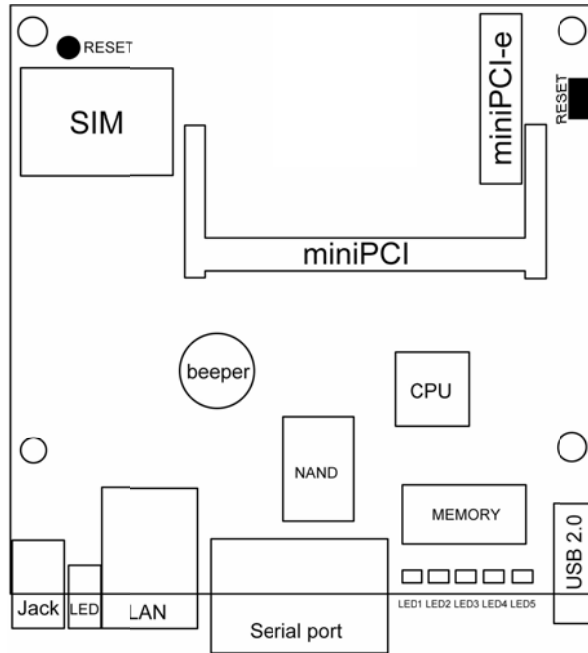


RouterBOARD 411UAHR

Quick Setup Guide and Warranty Information



Assembling the Hardware

First use of the board:

- Optional: Insert a miniPCI card into the miniPCI slot
- Optional: Insert a 3G miniPCI-e card (WLAN cards won't work in this slot) into the miniPCI-e slot, and the Phone's SIM card into the SIM slot. The SIM slot is only used in combination with the miniPCI-e card, it has no function without it.
- Install the board in a case and connect other peripherals (USB) and cables (Ethernet, Antenna cable).
- If using the USB port, you must attach the USB powering cable to the USB port, as the RB411UAHR does not have built in power for USB. USB powered HUB won't work, a special USB power injector is needed. Sold separately.
- Plug in power cable to turn on the board (If not using PoE power over LAN). Please do not power on the device before the antenna cables are connected to avoid possible damage to the wireless card.

Powering

The board accepts powering from either the power jack or the LAN1 Ethernet port:

- direct-input power jack **J7** (5.5mm outside and 2mm inside diameter, female, pin positive plug) accepts 9..28V DC (overvoltage protection starts at 28V).
- LAN1 Ethernet port **J8** accepts 9..28V DC input (at the board; higher voltage needed to compensate for power loss on long cables; at least 18V suggested) from non-standard (passive) Power over Ethernet injectors (no power over data-lines). The board **does not** work with IEEE802.3af compliant 48V power injectors.

The maximum output of the power supply available for extension cards is normally 10W (3.0A).

Booting process

First, RouterBOOT is started. It displays some useful information on the onboard RS232C asynchronous serial port. The serial port is set by default to 115200bit/s, 8 data bits, 1 stop bit, no parity. **Note** that the device does not fully implement the hardware (RTS/CTS) flow control, so it is suggested to try to disable hardware flow control in the terminal emulation program in case the serial console does not work as expected, and if it does not help, make a new cable using the pinout given in the User's manual. The loader may be configured to boot the system from the onboard NAND, and/or from network. See the respective section of User's manual on how to configure booting sequence and other BIOS parameters.

http://wiki.mikrotik.com/wiki/First_time_startup

DHCP or BOOTP (configurable in loader) protocols allow the RouterBOARD 411UAHR device to get an initial IP address, and provide the address of a TFTP server to download an ELF boot image from. It is especially useful for software installation. See the User's manual for more information and protocol details. Note that you must connect the RouterBOARD you want to boot and the BOOTP/DHCP and TFTP servers to the same broadcast domain (i.e., there must not be any routers between them – they must be on the same Ethernet switch).

Extension Slots and Ports

- One Ethernet port, supporting automatic cross/straight cable correction (Auto MDI/X), so you can use either straight or cross-over cables for connecting to other network devices. The Ethernet port accepts 9..28 V DC powering from a passive PoE injector.
- One miniPCI Type IIIA/IIIB port with 3.3V power signaling.
- One miniPCI-e slot for 3G modem (onboard SIM connector for use exclusively with a miniPCI-e modem plugged in)
- USB 2.0 port without a power supply (external USB power injector is needed, sold separately)
- DB9 RS232C asynchronous serial port.

Buttons and Jumpers

- RouterOS reset jumper hole (RESET) – resets RouterOS software to defaults. Must short circuit the metallic sides of the hole (with a screwdriver, for example) and boot the device. Hold screwdriver in place until RouterOS configuration is cleared.
- RouterBOOT reset button (S301) – loads backup RouterBOOT Loader firmware. Must hold button while booting. Use in case operating system can't be booted and no useful information on Serial console output.

Operating System Support

Currently tested operating system is MikroTik RouterOS (starting from version 3.28).

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Hardware. MikroTik warrants all RouterBOARD series equipment for the term of fifteen (15) months from the shipping date to be free of defects in materials and workmanship under normal use and service, except in case of damage caused by mechanical, electrical or other accidental or intended damages caused by improper use or due to wind, rain, fire or other acts of nature.

To return failed units to MikroTik, you must perform the following RMA (Return Merchandise Authorization) procedure. Follow the instructions below to save time, efforts, avoid costs, and improve the speed of the RMA process.

1. If you have purchased your product from a MikroTik Reseller, please contact the Reseller Company regarding all warranty and repair issues, the following instructions apply ONLY if you purchased your equipment directly from MikroTik in Latvia.
2. We do not offer repairs for products that are not covered by warranty. Exceptions can be made for RB1000, RB1100 and RB1200.
3. Out-of-warranty devices and devices not covered by warranty sent to MikroTiks will be returned to the sender at sender's cost.

RMA Instructions are located on our webpage here: <http://rma.mikrotik.com>

Manual. This manual is provided "as is" without a warranty of any kind, expressed or implied, including, but not limited to, the implied warranty of merchantability and fitness for a particular purpose. The manufacturer has made every effort to ensure the accuracy of the contents of this manual; however, it is possible that it may contain technical inaccuracies, typographical or other errors. No liability is assumed for any inaccuracy found in this publication, nor for direct or indirect, incidental, consequential or other damages that may result from such an inaccuracy, including, but not limited to, loss of data or profits. Please report any inaccuracies found to support@mikrotik.com

Federal Communication Commission Interference Statement (FCC ID: TV7RB411UAHR)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter. IMPORTANT: Exposure to Radio Frequency Radiation. 20 cm minimum distance has to be maintained between the antenna and the occupational user and 45 cm to general public. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

MODIFICATIONS

The FCC requires the user to be notified that any changes or modifications to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The correction of interference caused by unauthorized modification, substitution or attachment will be the responsibility of the user. The manufacturer and its authorized resellers or distributors are not liable for any damage or violation of government regulations that may arise from failing to comply with these guidelines.

PROFESSIONAL INSTALLATION ATTESTATION

MIKROTIKLS SIA addresses the following items to ensure that the above referenced equipment is professionally installed:

- 1) The TV7RB411UAHR will only be sold by MIKROTIKLS SIA or one of its authorized dealers. MIKROTIKLS SIA and its authorized dealers will be under strict marketing control and will only market and sell the TV7RB411UAHR to professionals.
- 2) Professional installation is required for the TV7RB411UAHR and will be performed only by someone knowledgeable of its use. MIKROTIKLS SIA will ensure that the TV7RB411UAHR is only marketed and sold to professionals.
- 3) The TV7RB411UAHR is not sold to the general public and is sold only for industrial or commercial use by professional installers.

LIST OF APPROVED ANTENNAS

- 13 dBi Omni Pacific Wireless ODH 24-13
- 17 dBi Sector Pacific Wireless SA 24-90-17-WB
- 24 dBi Grid Dish Pacific Wireless DC 24-HD-PFIP

Antennas of same type and lower gain than those listed above may be used in compliance with certification.