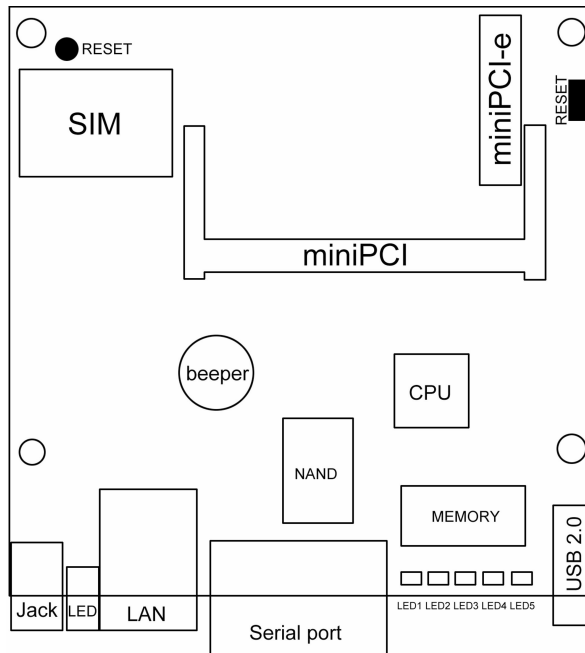
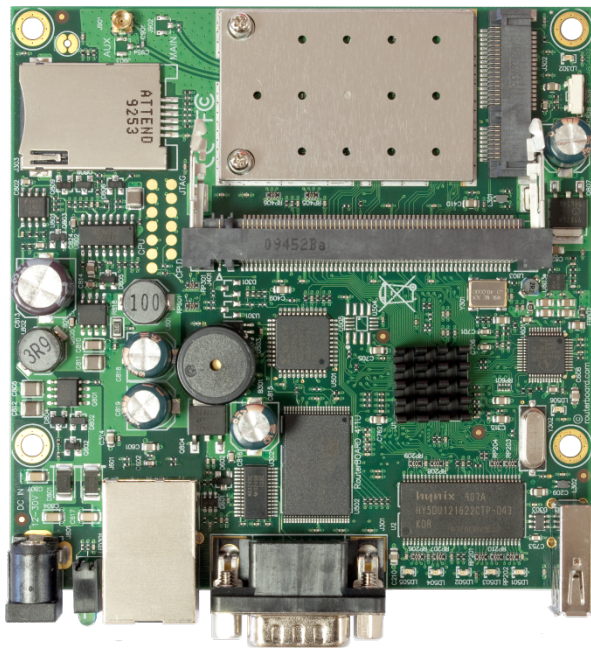


RouterBOARD 411UAHR

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 a 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.



CE Declaration of Conformity

Full Declaration of Conformity (DoC) may be obtained by visiting this web page: <http://routerboard.com/doc/>

[EN] English	Hereby, MIKROTĪKLS SIA declares that this ROUTERBOARD is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
[BG] Bulgarian	С настоящето, MIKROTĪKLS SIA декларира, че ROUTERBOARD е в съответствие със съществените изисквания и другите приложими разпоредби на Директива 1999/5/EC.
[CZ] Czech	MIKROTĪKLS SIA tímto prohlašuje, že ROUTERBOARD splňuje základní požadavky a všechna příslušná ustanovení Směrnice 1999/5/ES.
[DK] Danish	Undertegnede MIKROTĪKLS SIA erklærer herved, at følgende udstyr ROUTERBOARD overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
[DE] German	Hiermit erklärt MIKROTĪKLS SIA dass sich das Gerät ROUTERBOARD in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
[EE] Estonian	Käesolevaga kinnitab MIKROTĪKLS SIA seadme ROUTERBOARD vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
[GR] Greek	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Ο ΚΑΤΑΣΚΕΥΑΣΤΗΣ ΜΙΚΡΟΤΙΚΛΣ ΣΙΑ ΔΗΛΩΝΕΙ ΟΤΙ ROUTERBOARD ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ
[ES] Spanish	Por la presente, MIKROTĪKLS SIA declara que este ROUTERBOARD cumple con los requisitos esenciales y otras exigencias relevantes de la Directiva 1999/5/EC.
[IT] Italian	Con la presente MIKROTĪKLS SIA dichiara che questo ROUTERBOARD è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
[LV] Latvian	Ar šo MIKROTĪKLS SIA deklarē, ka ROUTERBOARD atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
[LT] Lithuanian	Šiuo MIKROTĪKLS SIA deklaruoją, kad šis ROUTERBOARD atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas
[HU] Hungarian	A MIKROTĪKLS SIA ezzennel kijelenti, hogy a ROUTERBOARD típusú beren-dezés teljesíti az alapvető követelményeket és más 1999/5/EK irányelvben meghatározott vonatkozó rendelkezéseket.
[NL] Dutch	Hierbij verklaart MIKROTĪKLS SIA dat het toestel I ROUTERBOARD in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
[PL] Polish	Niniejszym MIKROTĪKLS SIA deklaruje że ROUTERBOARD jest zgodny z zasadniczymi wymaganiami i innymi właściwymi postanowieniami Dyrektywy 1999/5/EC.
[PT] Portuguese	Eu, MIKROTĪKLS SIA declaro que o ROUTERBOARD cumpre os requisitos essenciais e outras provisões relevantes da Directiva 1999/5/EC.
[RO] Romanian	Prin prezenta, MIKROTĪKLS SIA declară că aparatul ROUTERBOARD este în conformitate cu cerințele esențiale și cu alte prevederi pertinente ale Directivei 1999/5/CE..
[SK] Slovak	MIKROTĪKLS SIA týmto vyhlasuje, že ROUTERBOARD spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
[SI] Slovenian	MIKROTĪKLS SIA izjavlja, da je ta ROUTERBOARD v skladu z bistvenimi zahtevami in drugimi relevantnimi določili direktive 1999/5/ES.
[FI] Finnish	MIKROTĪKLS SIA vakuuttaa täten että ROUTERBOARD tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
[SE] Swedish	Härmed intygar MIKROTĪKLS SIA att denna RouterBOARD är i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
[NO] Norwegian	MIKROTĪKLS SIA Erklærer herved at ROUTERBOARD er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.

BG. Инструкция: Свържете адаптера на захранване, за да включите устройството. Отворете 192.168.88.1 в уеб браузър, за да настроите продукта. Повече информация в <http://wiki.mikrotik.com>

CZ. Návod k použití: Připojte napájecí adaptér k zapnutí přístroje. Otevřete 192.168.88.1 ve webovém prohlížeči pro konfiguraci produktu. Více informací najdete v <http://wiki.mikrotik.com>

DK. Instruktionsbog: Tilslut strømadapteren for at tænde for enheden. Åbn 192.168.88.1 i en webbrowser til at konfigurere produktet. Mere information i <http://wiki.mikrotik.com>

FR. Mode d'emploi: Connectez l'adaptateur d'alimentation pour allumer l'appareil. Ouvrez 192.168.88.1 dans un navigateur Web pour configurer le produit. Plus d'informations dans <http://wiki.mikrotik.com>

DE. Bedienungsanleitung: Verbinden Sie das Netzteil, um das Gerät einzuschalten. Öffnen Sie 192.168.88.1 in einem Web-Browser, um das Produkt zu konfigurieren. Weitere Informationen im <http://wiki.mikrotik.com>

EE. Kasutusjuhend: Ühendage toiteadapter seadme sisselülitamiseks. Avatud 192.168.88.1 in veebilehitseja seadistada toodet. Rohkem teavet <http://wiki.mikrotik.com>

ES. Manual de instrucciones: Conecte el adaptador de alimentación para encender la unidad. Abra 192.168.88.1 en un navegador web para configurar el producto. Más información en <http://wiki.mikrotik.com>

IT. Manuale di istruzioni: Collegare l'adattatore di alimentazione per accendere l'unità. Aprire 192.168.88.1 in un browser Web per configurare il prodotto. Maggiori informazioni in <http://wiki.mikrotik.com>

LV. Lietošanas instrukcija: Pievienojiet Strāvas adapteri, lai ieslēgtu ierīci. Atvērt 192.168.88.1 ar interneta pārlūku, lai konfigurētu produktu. Plašāka informācija <http://wiki.mikrotik.com>

LT. Naudojimosi instrukcija: Prijunkite maitinimo adapterį jįjunkite įrenginį. Į interneto naršyklę 192.168.88.1 Atidarykite galite konfigūruoti gaminį. Daugiau informacijos rasite <http://wiki.mikrotik.com>

HU. Használati utasítás: Csatlakoztassa a hálózati adaptert a készülék bekapcsolásához. Megnyitása 192.168.88.1 egy webböngészőben beállítani a terméket. Több információ <http://wiki.mikrotik.com>

NL. Handleiding: Sluit voedingsadapter aan op het apparaat in te schakelen. Open 192.168.88.1 in een webbrowser om het product te configureren. Meer informatie in <http://wiki.mikrotik.com>

PL. Instrukcja obsługi: Podłącz adapter zasilania, aby włączyć urządzenie. Otwórz 192.168.88.1 w przeglądarce internetowej, aby skonfigurować urządzenie. Więcej informacji w <http://wiki.mikrotik.com>

PT. Manual de instruções: Conecte o adaptador de alimentação para ligar o aparelho. Abra 192.168.88.1 em um navegador da web para configurar o produto. Mais informações em <http://wiki.mikrotik.com>

RO. Instrucțiuni de utilizare: Conectați adaptorul de alimentare pentru a porni aparatul. Deschide 192.168.88.1 într-un browser web pentru a configura produsul. Mai multe informații în <http://wiki.mikrotik.com>

SK. Návod na použitie: Pripojte napájací adaptér k zapnutiu prístroja. Otvorte 192.168.88.1 vo webovom prehliadači pre konfiguráciu produktu. Viac informácií nájdete v <http://wiki.mikrotik.com>

SI. Navodila: Priključite napajalnik za vklop naprave. Odprite 192.168.88.1 v spletnem brskalniku nastaviti izdelek. Več informacij v <http://wiki.mikrotik.com>

FI. Käyttöohje: Kytke virtalähde päälle laitteen. Avaa 192.168.88.1 in selaimen määrittää tuotteen. Lisää tietoa <http://wiki.mikrotik.com>

SE. Instruktionsmanual: Anslut nätadaptern för att slå på enheten. Öppna 192.168.88.1 i en webbläsare för att konfigurera produkten. Mer information på <http://wiki.mikrotik.com>

NO. Bruksanvisningen: Koble strømadapteren for å slå på enheten. Åpne 192.168.88.1 i en nettleser for å konfigurere produktet. Mer informasjon på <http://wiki.mikrotik.com>

GR. εγχειρίδιο οδηγιών: Συνδέστε τον προσαρμογέα τροφοδοσίας για να ενεργοποιήσετε τη μονάδα. Ανοίξτε 192.168.88.1 σε ένα πρόγραμμα περιήγησης στο Web για να διαμορφώσετε το προϊόν. Περισσότερες πληροφορίες στο <http://wiki.mikrotik.com>