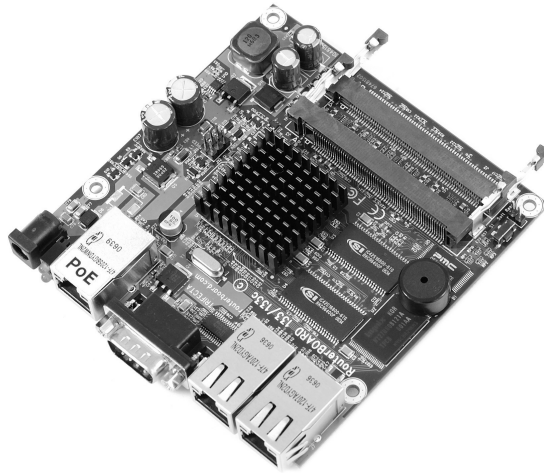


# RouterBOARD 133

## Quick Setup Guide and Warranty Information



### Board Build Versions

- **RB133** – complete build
- **RB133c** – only one (top) MiniPCI slot, one Ethernet port, 16MB of RAM, no heatsink, no fan header

### Assembling the Hardware

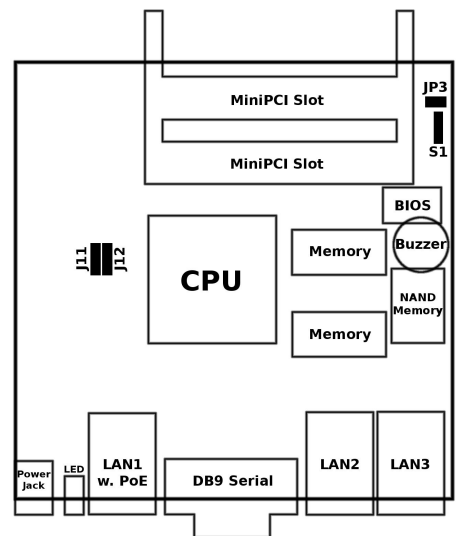
First use of the board:

- Insert the MiniPCI cards. RouterBOARD 133 provides three MiniPCI slots: two on the top of the board, and one additional on the bottom side of the board. RouterBOARD 133c has only one top MiniPCI slot.
- Connect antenna cables to the MiniPCI cards.
- Install the board in a case and connect other peripherals and cables.
- Plug in power cable to turn on the board.

### 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..28 V DC (overvoltage protection starts at 30V).
- LAN1 Ethernet port **J8** accepts 9..28 V 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 datalines). 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 loader 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.

DHCP or BOOTP (configurable in loader) protocols allow the RouterBOARD 133 series board 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

- Three Ethernet ports, 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 first Ethernet port accepts 9..28 V DC powering from a passive PoE injector. The other two Ethernet ports **do not** support PoE powering.
- Three MiniPCI Type IIIA/IIIB ports with 3.3V power signaling.
- DB9 RS232C asynchronous serial port.

## Operating System Support

Currently tested operating system is MikroTik RouterOS (starting from version 2.9.38).

## Copyright and Warranty Information

**Copyright and Trademarks.** Copyright 2004-2006 MikroTiks SIA. This manual contains information protected by copyright law. No part of it may be reproduced or transmitted in any form without prior written permission from the copyright holder. RouterBOARD, RouterOS, RouterBOOT and MikroTik are trademarks of MikroTiks SIA. All trademarks and registered trademarks appearing in this manual are the property of their respective holders.

**Hardware.** MikroTiks SIA warrants all RouterBOARD series equipment for the term of one year from the shipping date to be free of defects in materials and workmanship under normal use and service. All parts will be repaired or replaced with similar or functionally equivalent parts by MikroTiks SIA during the warranty term, except in case the returned parts have mechanical, electrical or other accidental or intended damages caused by improper use or due to wind, rain, fire or other acts of nature.

Parts (or systems) must be shipped pre-paid to our facility in Riga, Latvia. All items must have a Return Material Authorization (RMA) which you can get by contacting us via email, telephone or fax. RMA must be printed, signed, and enclosed with the shipment, also the RMA number must be written on the package itself. Parts sent without following the proper procedure will be treated as those not to be repaired or replaced due to the above mentioned conditions. Items proved to be free of defects in our lab will be returned to the customer at the customer's expense. Those that do meet the warranty repair requirements will be repaired or replaced, and returned to the customer's location at our expense, extending the warranty term for the time the items are being shipped to and from our facility and replaced or repaired.

**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 [docs@mikrotik.com](mailto:docs@mikrotik.com).