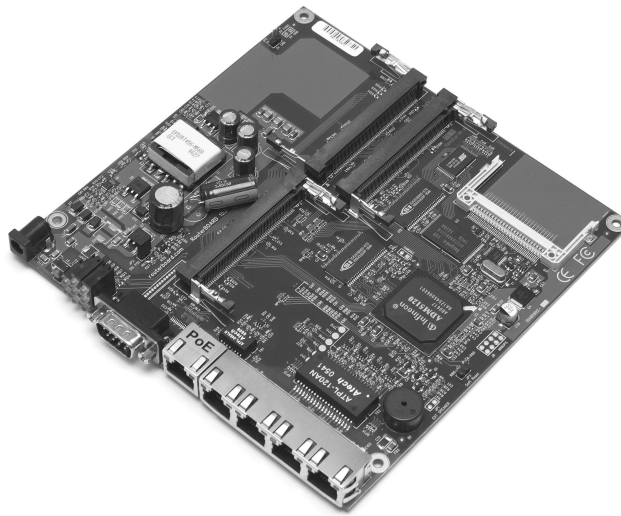
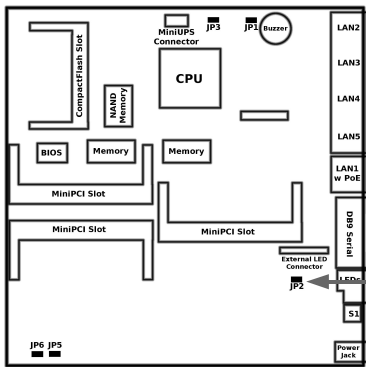


# RouterBOARD 153

## Quick Setup Guide and Warranty Information



### Assembling the Hardware



First to use the board:

- Install the MiniPCI cards. There are three MiniPCI sockets on the top side of the board.
- Insert a CompactFlash module if needed (optional as the device has a 64MB NAND storage onboard). Microdrive hard drives are supported as well. Note that the RouterBOARD platform **does not** support hot insert of CompactFlash/Microdrive devices.
- In case it is planned to power the board up from a standard 48V DC PoE injector (note that the RouterBOARD supports power over datalines), the **JP2** jumper should be opened.
- Install the board in a case and connect other peripherals and cables.
- Plug in power cable to turn on the board.

### Powering

The board's power supply is capable of accepting 11..60 V DC from either power jack or the first Ethernet port (marked with "PoE" sticker, the one closest to the DB9 console port):

- direct-input power jack **J7** – 5.5mm outside and 2mm inside diameter, female, pin positive plug; supports 11.60V DC.
- Passive (non-standard) PoE input from the LAN1 Ethernet port. Should provide 11..60V DC at the board, at least 18V recommended.
- PoE compliant with IEEE802.3af Power over Ethernet standard (power over datalines is supported), 48V DC powering. In this case the **JP2** jumper must be opened.

Note that the "Disable PoE controller" jumper **JP2** should be opened only in case the board is powered from the the standard-compliant IEEE802.3af 48V DC PoE controller. **CAUTION! Only LAN1 port supports PoE, you will seriously damage the board by connecting PoE injector to the other 4 ports.**

The maximum output of the power supply is normally 4.0A, but the efficiency is decreased on lower voltages, so it is about 2.5A when powered from 12V DC.

### Booting process

First, RouterBOOT loader is started. It displays some useful information on the onboard RS232C asynchronous serial port. The serial port is set to 115200bit/s, 8 data bits, 1 stop bit, no parity by default. **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, CompactFlash module, 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 500 series computer 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 purpose. 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).

## Extension Slots and Ports

All Ethernet ports support 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 can be used to power the board from a PoE power supply. The other 4 Ethernet ports (the four-port assembly) **do not** support PoE powering and you will damage the board if you connect powered lines to them.

The board has 3 MiniPCI Type IIIA/IIIB ports with 3.3V power signals, CompactFlash slot with Microdrive support, DB9 RS232C asynchronous serial port and a speaker port.

## Operating System Support

Currently tested operating systems are MikroTik RouterOS (starting from version 2.9.12) and GNU/Linux (kernel 2.4). Linux kernel patch required to boot up the board is downloadable from [www.routerboard.com](http://www.routerboard.com).

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**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.

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