USB Eight Relay Board for Automation
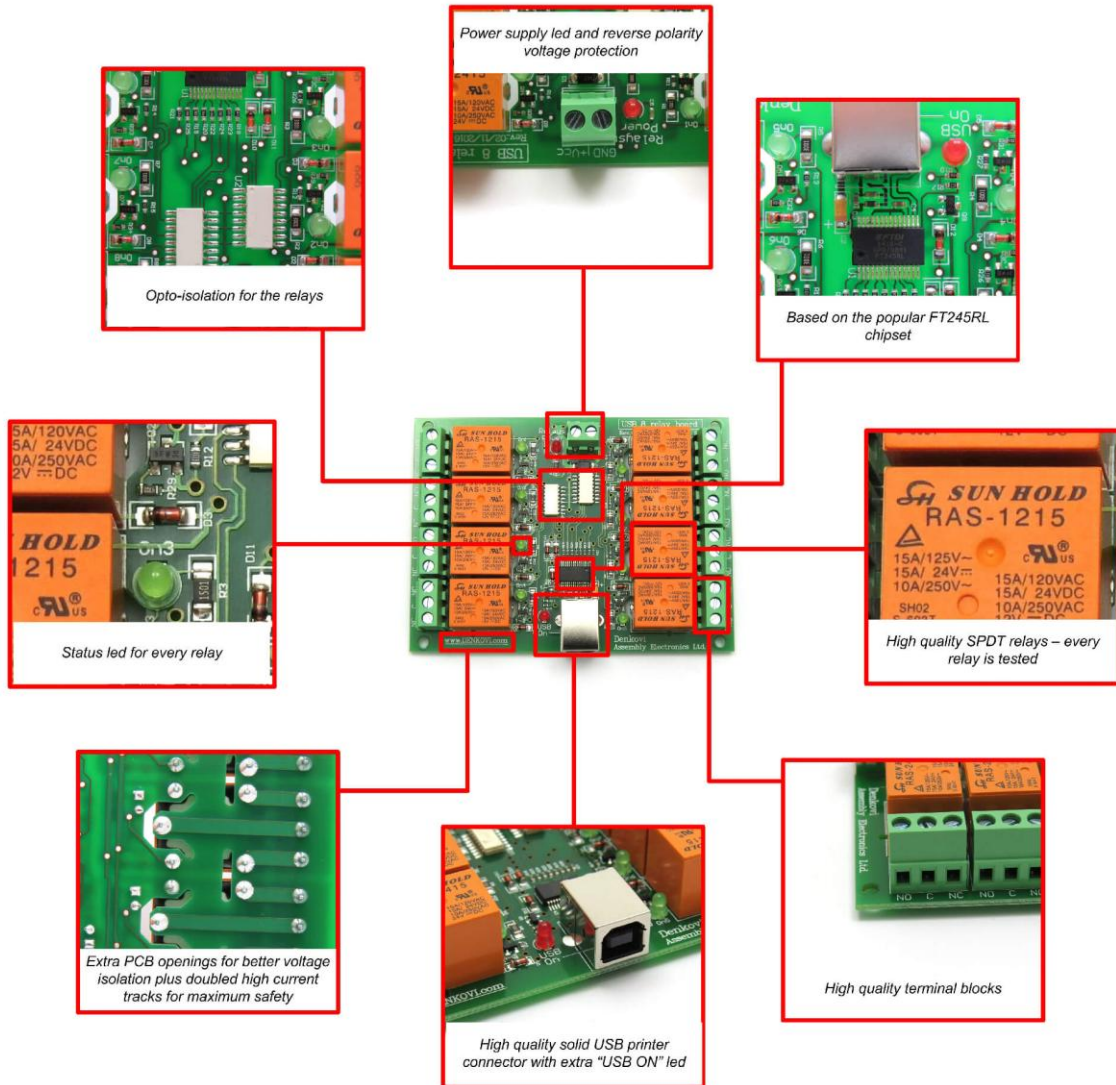
User Manual
Date: 04 Aug 2017
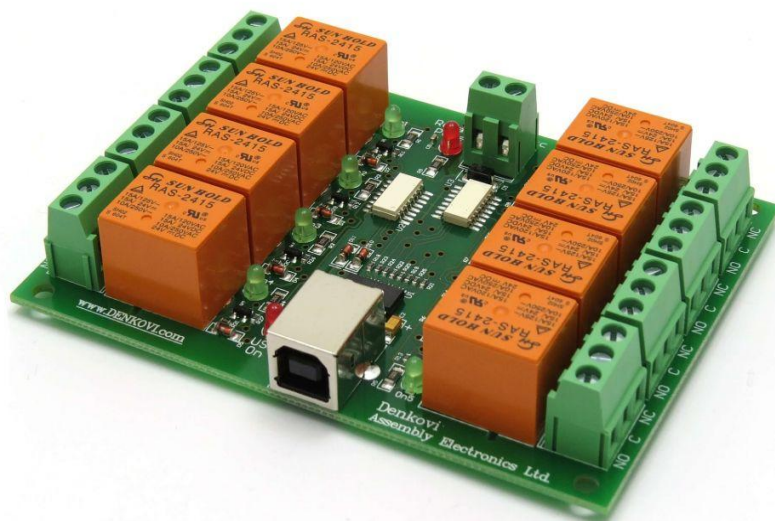
Content

1. Specification

- 8 x SPDT relays: 10A / 250VAC, 15A / 120VAC, 10A / 28VDC
- USB connector - type B
- Power supply requirements, selectable during purchase:
  - 12V DC / 300mA
  - 24V DC / 200mA
- Converter chipset: FT245RL
- FT245RL optical isolation against communication noises
- Communication: serial USB communication (Virtual Com Port)
- Led-s: Relay Led, Power ON Led, USB ON Led
- Operating temperature range: from -30 ºC to +80 ºC
- PCB parameters : FR4 / 1.5mm / two layers / metalized holes / HAL / white stamp / solder mask / Extra PCB openings for better voltage isolation / Doubled PCB tracks for better voltage isolation
- Dimensions: W=78mm x L=106mm x H=16mm
- SKU:
  - **DAE-CB/Ro8-12V-USB** for 12VDC version
  - **DAE-CB/Ro8-24V-USB** for 24VDC version

2. Applications examples

- Home automation
- Industrial automation
- Control electrical devices

3. Relay module overview

Power supply led and reverse polarity voltage protection

Opto-isolation for the relays

Based on the popular FT245RL chipset

Status led for every relay

High quality SPDT relays – every relay is tested

Extra PCB openings for better voltage isolation plus doubled high current tracks for maximum safety

High quality solid USB printer connector with extra "USB ON" led

High quality terminal blocks

4. USB port

The type of this USB port is shown on the image bellow. You can find suitable USB cables in our stock as well - http://denkovi.com/category/24/usb-cables.html

5. Relay contacts
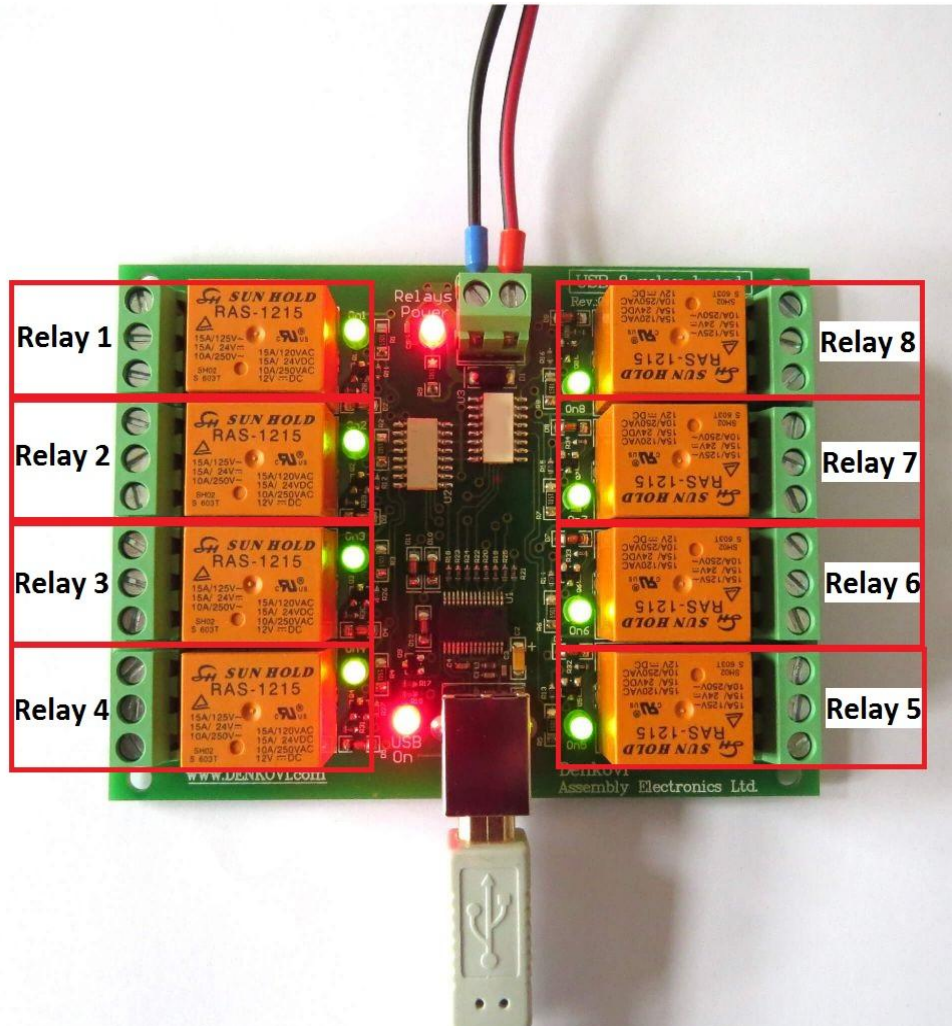
- Relays 1 - 8

6. Power connector

The power supply connector is shown on the image bellow. The supply voltage is **12 VDC** or **24VDC** depending on the relay type selected during purchase:

- Option JQC-3FC/T73 relays - supply voltage 12VDC
- Option RAS-12-15 relays - supply voltage 12VDC
- Option RAS-24-15 relays - supply voltage 24VDC

7. Drivers Installation

1. Be sure you have FTDI VCP drivers installed. In order to use the device, you have to install them first. If you don't have them installed, please go to FTDI official web page - http://www.ftdichip.com/Drivers/VCP.htm and download and install them.

2. Connect the USB relay board to your computer and see if it appears as virtual com port. If everything is ok with the drivers, you should see the some of the images bellow:

2.1. Windows (picture is from 7 x64)

2.2. Linux (picture is from Ubuntu x64)
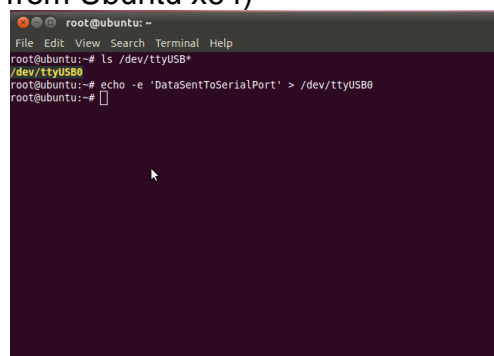

For installation guides:
http://www.ftdichip.com/Support/Documents/InstallGuides.htm.
A guide how to access USB Eight Relay Board in Linux without sudo is given here.

8. Software

8.1. DRM Software

This device is supported by ***DRM Software***. It is software for controlling all Denkovi relay boards. With this software you may simply turn off/on relays, set states and delays, make pulses or schedules.

For more information and download - http://denkovi.com/page/13/drm-software.html
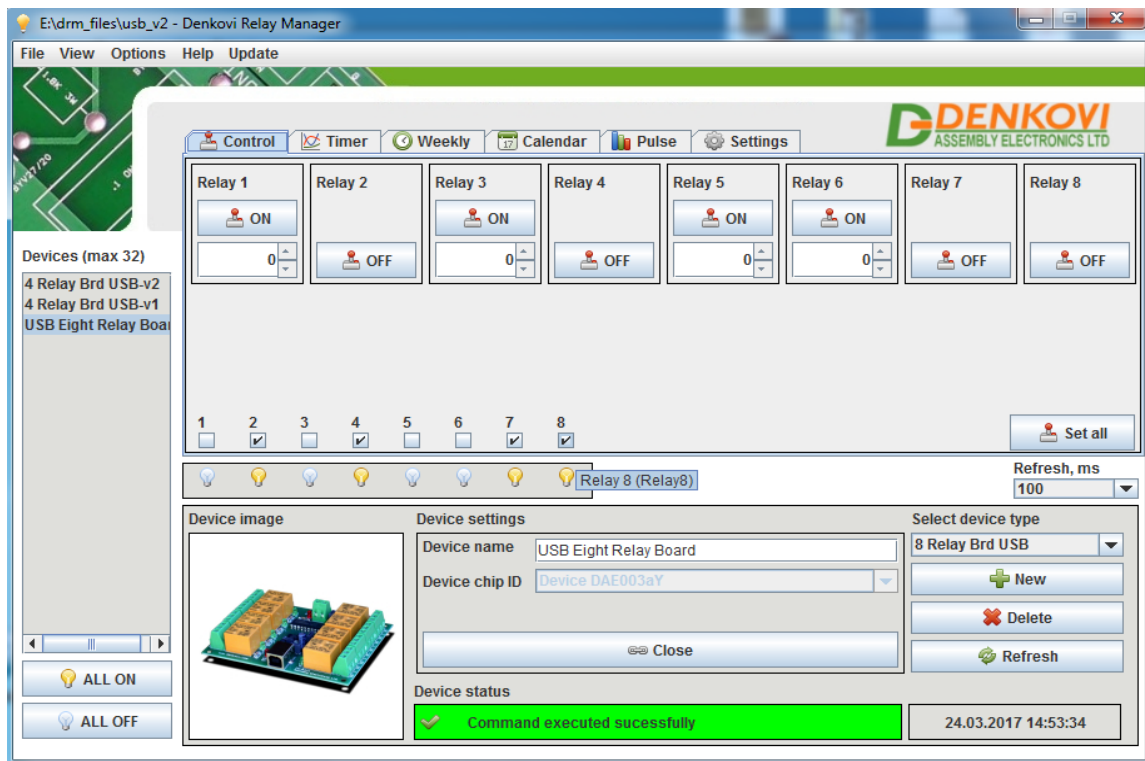
8.2. Denkovi Relay Command line tool

For more information and download - http://denkovi.com/page/48/denkovi-relay-command-line-tool.html

8.3. DAE USB Relays for Android

This Is a low cost but very useful application developed by iSwitch, LLC. The device is supported by this app and at the moment you can control up to 5 devices at a time with a single phone. Please note that connecting more devices may need additional USB hub.

8.4. Denkovi JExtraPack

Denkovi JExtraPack contains 3 applications. Each of these applications are written in Java so JVM is required. Each application can control up to 10 USB relay boards so you will need of course FTDI VCP drivers. We provide single installation file and everything is included in it. More information on http://denkovi.com/denkovi-jextrapack.

9. Protocol

There are a lot of examples in the net describing the protocol of FT245RL. Programming guide can be found here. Code examples in several languages are available here. FT245RL Bit Bang Mode is described here. Denkovi Assembly Electronics also provides some code examples on several programming languages. These could be viewed on http://denkovi.com/usb-eight-channel-relay-board-for-automation#examples.

10. Appendix 1. Connections

10.1. Connect lamp to relay
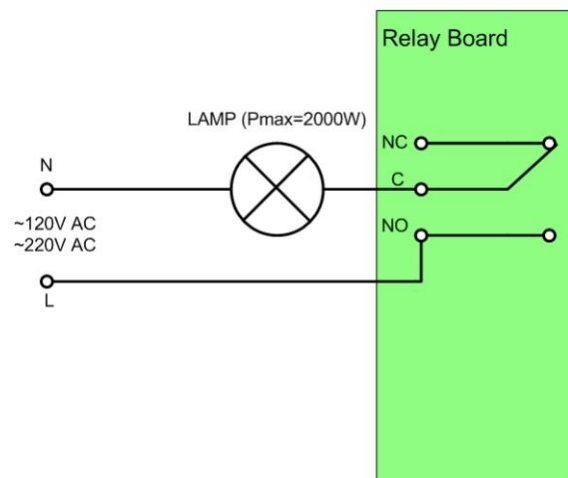
10.2. Connect inductive load to relay

See our tutorial for connecting inductive loads – http://denkovi.com/controlling-inductive devices.

11. Appendix 2. PCB dimensions