USB 4 Relay Board - v2

User Manual
Date: 10 Oct 2022

Content

1. Features

- High quality
- 4 SPDT Relay channels - selectable by user:
  - JQC-3FC/T73 DC5V (7A / 250VAC, 10A / 125VAC, 12A / 120VAC, 10A / 28VDC)
  - RAS-05-15 (10A / 250VAC, 15A / 120VAC, 15A / 24VDC)
- 4 Digital I/O lines
- Power supply: from USB port
- Max. current consumption: 400 mA (when all relays are on)
- Chipset: MCP2200
- Significant resistance against USB interference
- Keeps the relay states in internal EEPROM on every toggle
- Power led
- Relay leds
- Size: 77mm x 56mm x 17mm
- Temp Range: -40 to +80 °C
- PCB parameters: Extra PCB openings for better voltage isolation and doubled high voltage tracks
- Footprint is fully compatible with our previous USB 4 Relay Board with FT245RL for easy integration or replacement
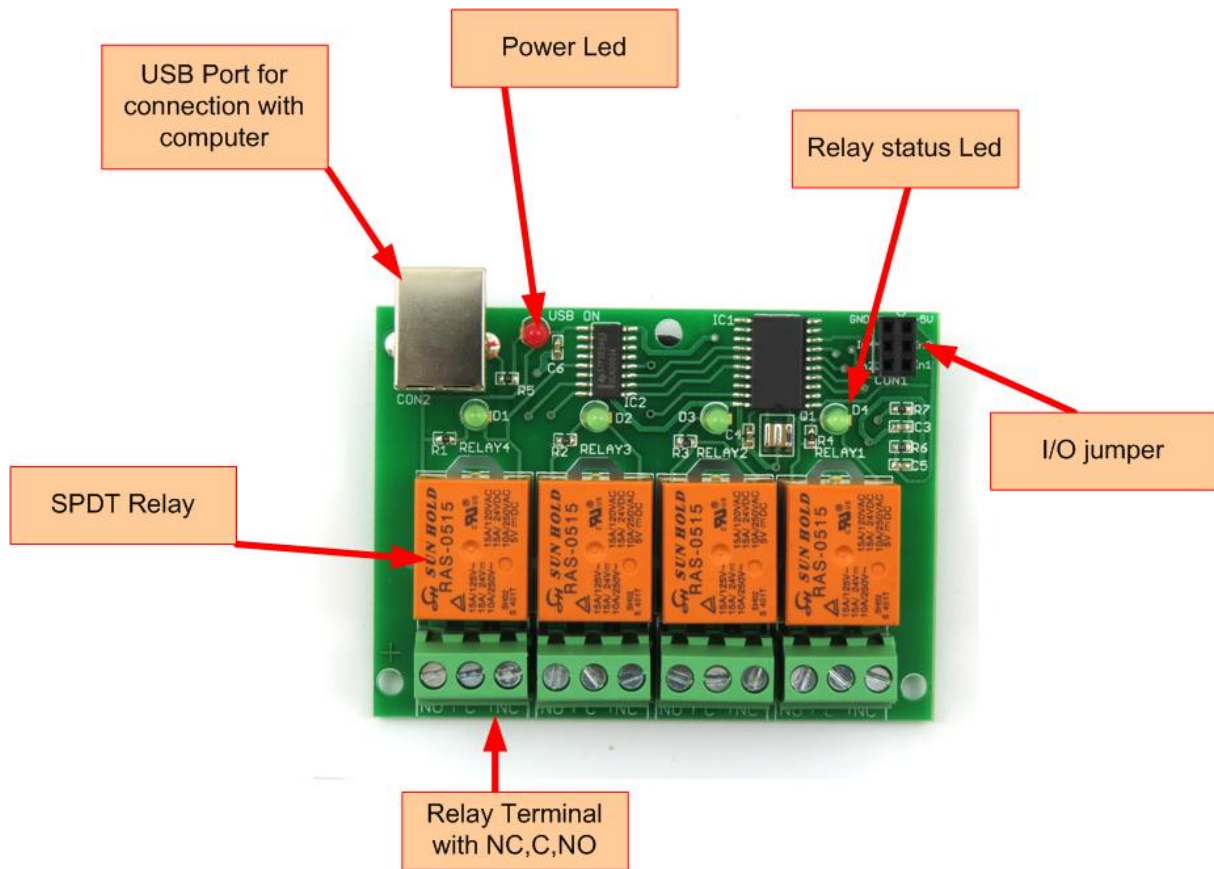
2. USB Relay Board Overview

Figure 1. USB relay board overview

3. MCP2200 I/O Mapping
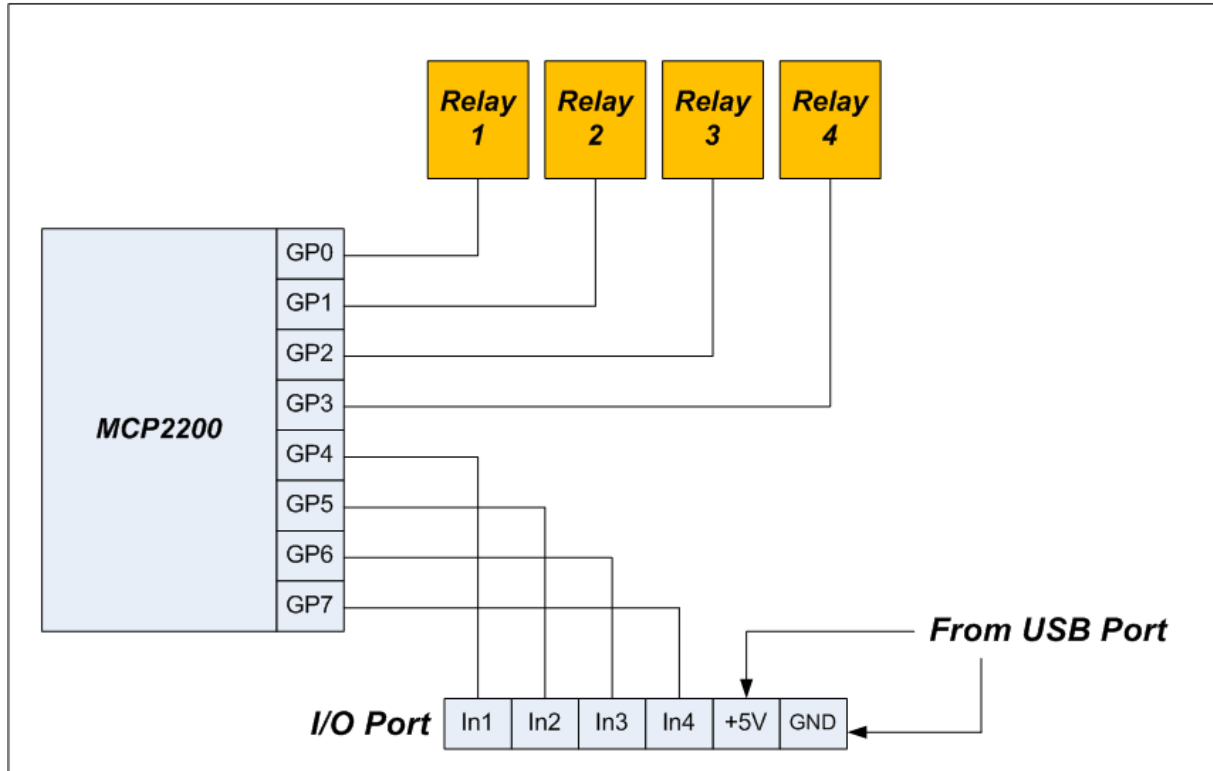
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Figure 2. I/O mapping

4. Drivers Installation

The device is based on MCP2200 chipset. The drivers are usually built in the operating system. However if the device is still not recognized, they must be installed from the bellow link: http://www.microchip.com/wwwproducts/en/MCP2200

After successful installation, the relay board will be shown as USB Serial Port. For example in Windows you can see it on the device manager:

Figure 3. USB Serial Port

5. Software

The relay board is supported by:

- DRM Software - http://denkovi.com/drm-software
- Denkovi Relay Command Line Tool: http://denkovi.com/denkovi-relay-command-line-tool

6. Appendix 1. Connections

6.1.   Connecting inductive loads

Although MCP2200 is significant resistive against USB interference, it is possible in some very noisy environments to have issues with the communication (very often caused by inductive loads). In such cases, you can refer to our guides how to prevent USB interference: http://denkovi.com/controlling-inductive-devices

6.2.   Example for connecting switch button to the I/O Port

💡 MCP2200 doesn't have any pull resistors for the i/o lines which requires such in case of using them as inputs.
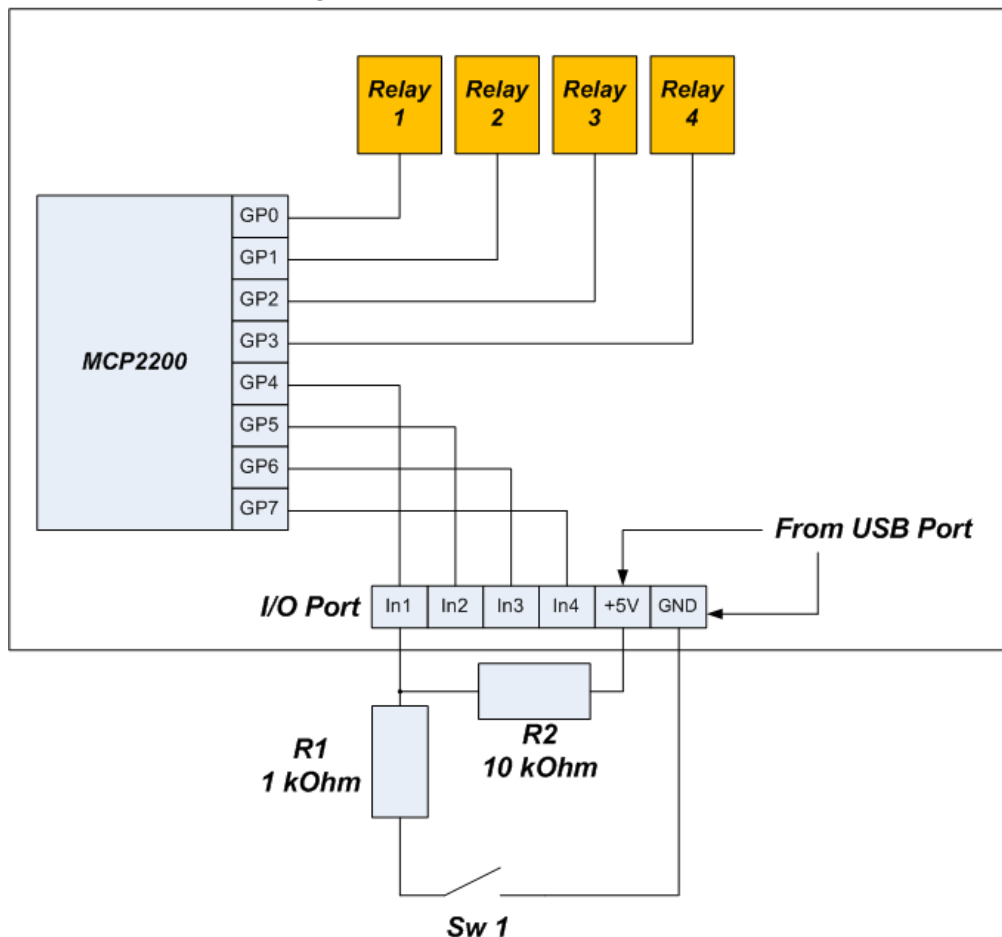

Figure 4. Connecting switch: pull-up

GP4 must be configured as input. The protection resistor R1 is recommend in case GP4 pin is configured as output in order to prevent short cut. R2 is pull-up. R1 and R2 values may differ according to the user's application.
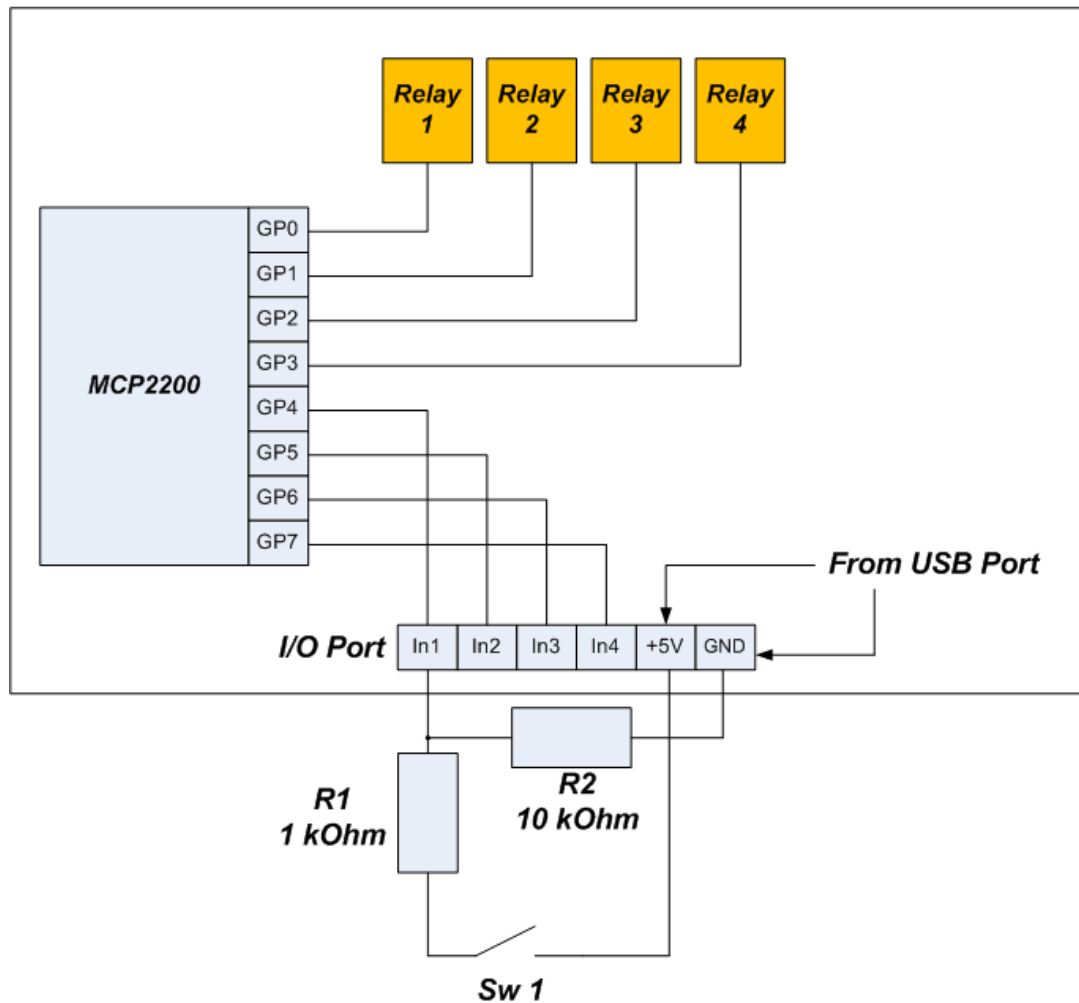
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Figure 5. Connecting switch: pull-down

GP4 must be configured as input. The protection resistor R1 is recommend in case GP4 pin is configured as output in order to prevent short cut. R2 is pull-down. R1 and R2 values may differ according to the user's application.
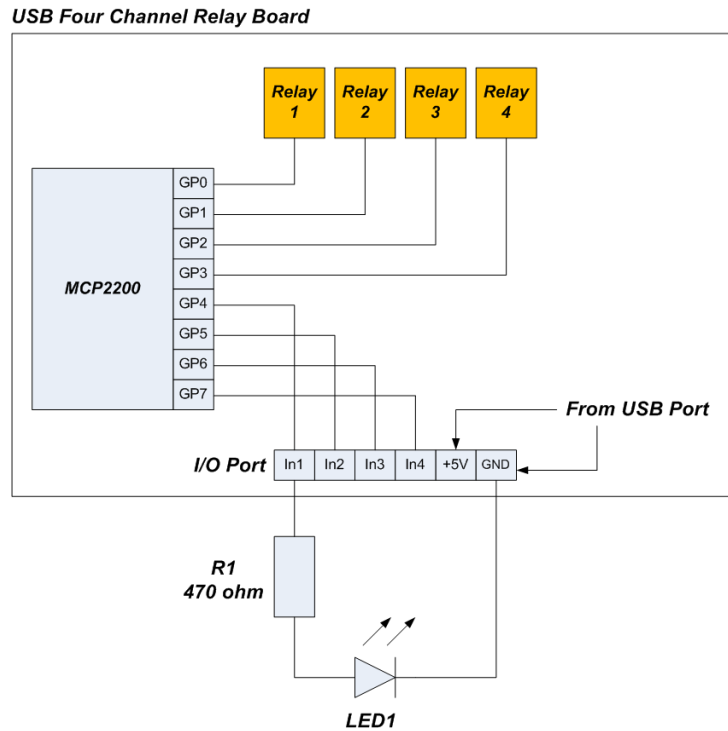
6.3. Example for connecting led to the I/O Port

Figure 6. Connecting led

The GP4 must be configured as output.

7. Appendix 2. Warnings

o The USB 4 Relay module can not work without computer.
o The USB 4 Relay module does not have any protection against short cut or over voltage on its I/O port!
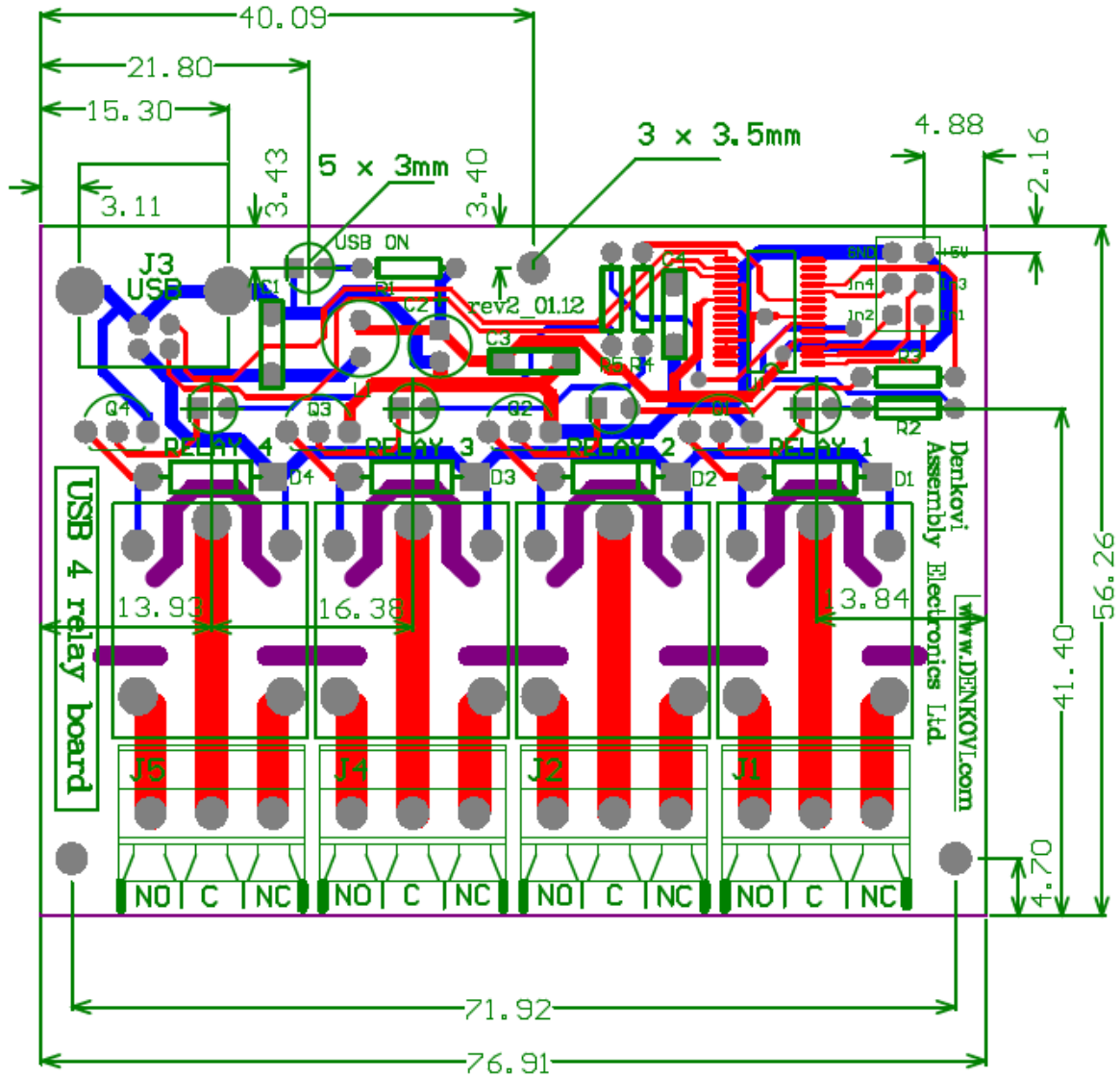
8. Appendix 3. PCB drawings

Figure 7. PCB