**Designing a 9-channel relay board**

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Content

[1 Introduction 1](#_Toc68450560)

[2 Material and methods 2](#_Toc68450561)

[3 Results 3](#_Toc68450562)

[3.1 Subtitle 1 3](#_Toc68450563)

[3.1.1 Subtitle 3](#_Toc68450564)

[3.1.2 Subtitle 3](#_Toc68450565)

[3.2 Subtitle 2 3](#_Toc68450566)

[3.2.1 Subtitle 3](#_Toc68450567)

[3.2.2 Subtitle 3](#_Toc68450568)

[4 Discussion 3](#_Toc68450569)

[5 Reference List 3](#_Toc68450570)

# Introduction

Designing a 9-channel relay board. The main parts of the board are 9 buttons, 9 relays and an LCD. With the press of a button, a relay can be switched on or off. The state of the relay will then be displayed on the LCD. The decision to build this came to me particularly because of the relays. Relays can be useful in many other projects. In chapter 2 is a component list and the methods I used. The result of this project can be seen in chapter 3. In chapter 4 are the difficulties that I encountered.

# Material and methods

I searched all the components from the article. If there was that exact component with the right footprint in Altium Designer then I would you that. If there wasn’t an identical component, I searched for another with the same specifications. Price wasn’t of the essence for all the small and mass-produced components like resistors, those only costs a few cents. The components in table 1 with index 1 through 7 are all resistors that were picked because they provide the same specifications and already had a footprint in Altium Designer and are mass-produced. Index 8 through 10 are transistors with the same specifications and their delivery time is very short. On Index 26 is the heatsink for the IC MC7805CTG, comma splicethis heatsink is merely different in its designcomma but this one is available on the contrary what do you mean? to the heatsink from the article.is the heatsink for the IC MC7805CTG, this heatsink is merely different in its design but this one is available on the contrary to the heatsink from the article. The LCD has a different colour commabut has the same specifications and better price. All the remaining components are exactly the same as in the article. Most of the components were bought on [Digikey](https://www.digikey.be/nl),comma splice they had the cheapestSTinf and most available components with the shortest delivery date. Some items were not available on Digikey,comma splice the second-best option for this situation was [Sinuss](https://sinuss.be/).

Tabel 1 component list



In table 1 is a list of all the components used in this project. There is also a column for the prices and the supplier of the component. Goes above table: check slides!

To test if the LCD could fit the preferred socket and if it had the same pin-out, I searched the datasheet of the display. The datasheet shows that it has the exact pinout. To be certain, it was also test-fitted into the socket. BV??

# Results

[Describe the end result you accomplished.

* Describe every aspect of your device. How does it function?
* Add an image of the electrical schematic, PCB design, finalized mechanical design, and finalized product

Write a well-structured text using subtitles and paragraphs.

**+/-500**]

## Subtitle 1

### Subtitle

### Subtitle

## Subtitle 2

### Subtitle

### Subtitle

# Discussion

[Reflect on and discuss your project.

* Which difficulties did you encounter during the design process and why? How did you solve these issues?
* Reflect on the process: did things go as expected? Would you choose the same approach if you had to do the project all over again? Are there issues that still need to be fixed? How come?

**+/-300 words**]

# Reference List

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| [2] | E. Labs, „elektormagazine,” 11 January 2019. [Online]. Available: https://www.elektormagazine.com/labs/9-channel-relay-control-board-with-pc-interface-130549#&gid=1&pid=4. [Geopend 2 April 2021]. |