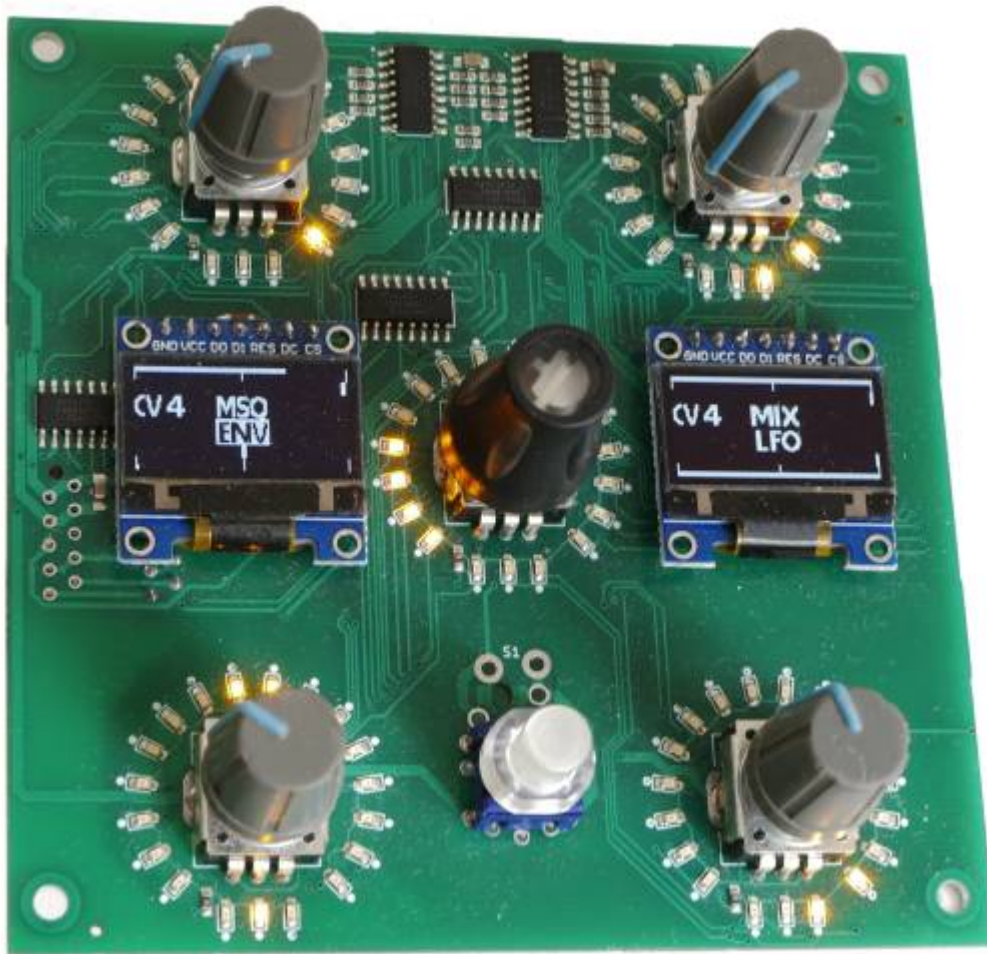
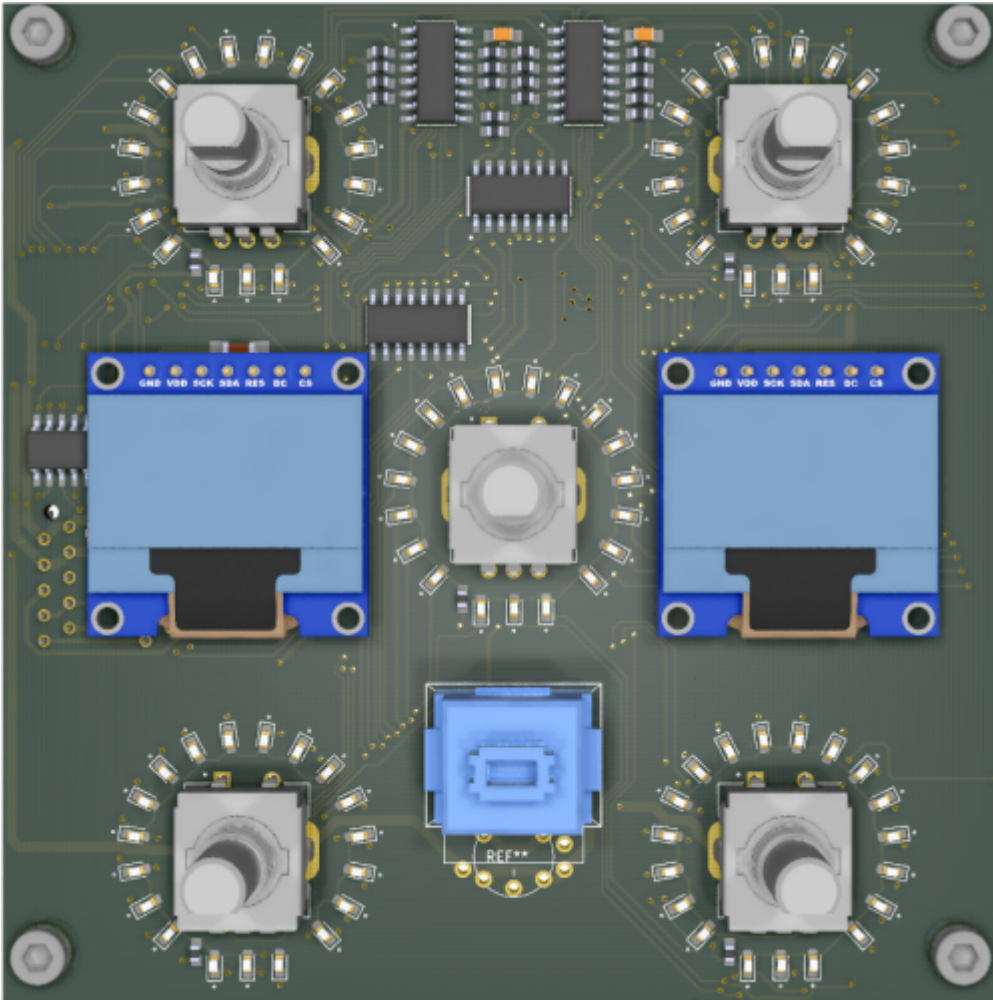


# LRE5-LCD2





- \* **5 Encoders**
- \* **5 Ledring**s
- \* **5 ENC-Switch**s
- \* **5 3LEDS** for ENC-Switches
- \* **1 Shift-Switch**
- \* **2 1306 7Pin- OLED-LCDs**  
controlled from a STM32F4 Microcontroller [dipcoref4,CV1](#)  
build for CV1 as UI-Expansion-PCB.

ready for Pick and Place



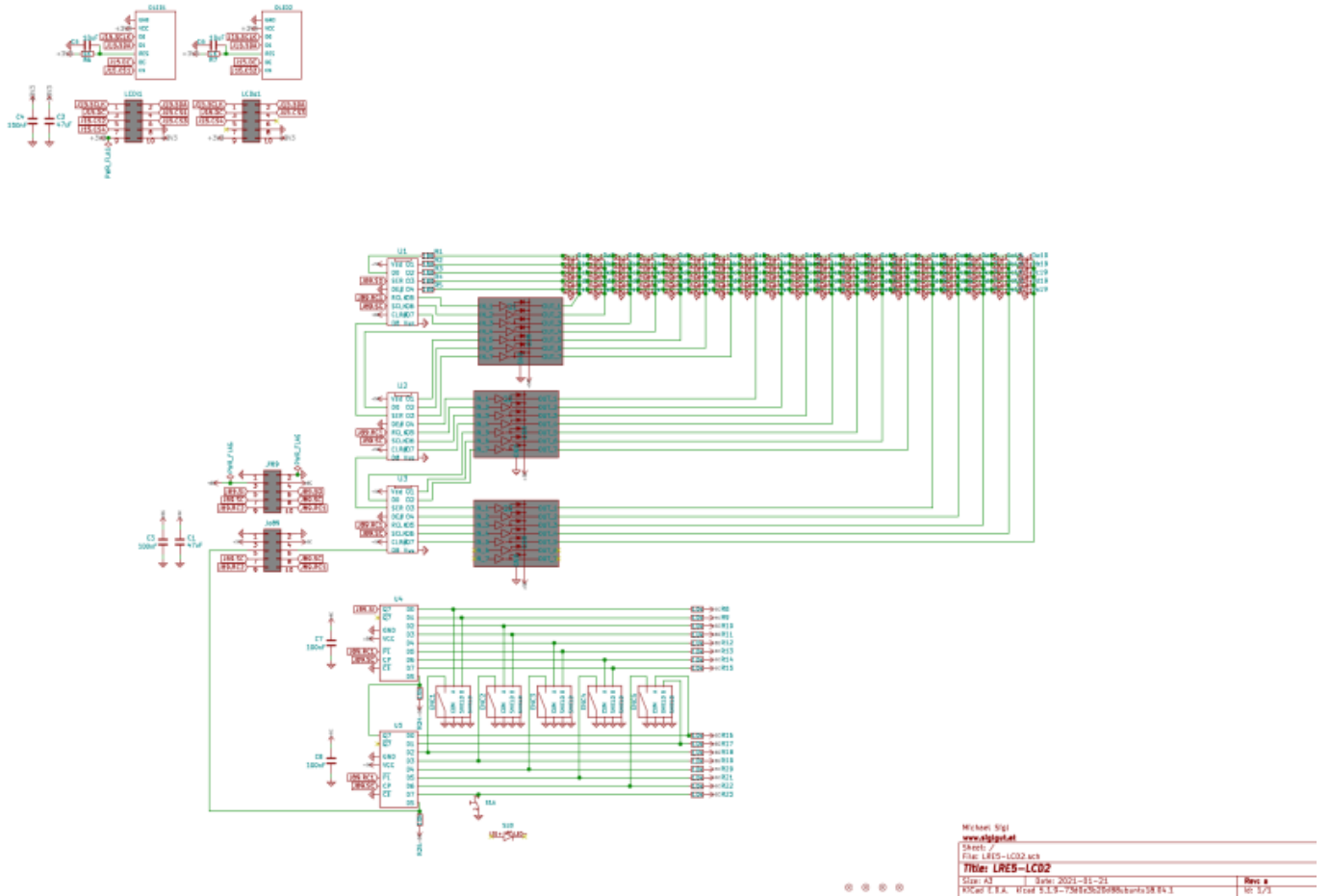
-all Parts except the ULN-Driver-ICs are on the Top-Side, and are presoldered..

## Hardware Requirements

- [CV1](#) or other MIO32 Cores
- Soldering Iron - with a Dip that can Handle Thruhole-Parts, solder Paste...
- dont forget the Micromatch connectors, and Ribbon cables

## Schematic

[lre5-lcd2-schematic.pdf](#)



# Building

The Design is optimized for Pick and Place > almost all SMD Parts are on the Top-PCB  
The Rest is Thruhole > easy, the ULN Driver are SMD and has to be handsoldered

now waiting for Presoldered PCBs



## BOM LCSC

these are the parts which must be handsoldered

| Comment             | Designator            | Footprint      | LCSC Part Number                                  | Lot |
|---------------------|-----------------------|----------------|---|-----|
| ULN2003ADRW         | Q1-Q3                 | SOIC-18_300mil | C9683 a`ca.0,8€ exclTaxes                         | 3   |
| PEC11R-4015F-S24    | ENC1-ENC5             | tht            | C143789 <a href="#">mouser-a`1,94€ exclTaxes</a>  | 5   |
| Micromatch-2x5-fema | LCDi1,LCDo1,ji89,Jo89 | tht            | C590954 <a href="#">mouser-a`0,774€ exclTaxes</a> | 4   |
| Micromatch-2x5-male | LCDi1,LCDo1,ji89,Jo89 | tht            | C590954 <a href="#">mouser-a`0,882€ exclTaxes</a> | 4   |
| Switch              | S1                    | tht            | C273513   | 1   |

**S1 can be stuffed with:** Matias, CherryMX, MEC-3FTH9, TL1265

[Matias@midiphy](#) 5pcs = 3,49€ incl Tax excl shipping

[Caps@midipy](#) 5pcs = 10€ incl tax excl shipping

Also you will need one ultrabright LED to illuminate the Matias Switch, the mounting at the moment is a bit diy (hot glue gun)...

# BOM AliExpress

[2xSSD1306-7Pin](#) - a`1,47€ excl import taxes and shipping.

# BOM LCSC

these are the parts which are presoldered by the Pick and Place Machine

| Comment    | Designator                                   | Footprint | LCSC Part Number |
|------------|--|-----------|------------------|
| 47uF       | C1,C2  | 1206      | C96123           |
| 100nF      | C3,C4,C7,C8                                  | 0805      | C49678           |
| 10uF       | C5,C6  | 1206      | C13585           |
| LED-Yellow | Da1,Db1,Dc1,Dd1,De1-Da19,Db19,Dc19,Dd19,De19 | 0603      | C72038           |
| 180        | R1-R5  | 0603      | C22828           |
| 1K         | R6,R7  | 1206      | C4410            |
| 10k        | R8-R25                                       | 0603      | C25804           |
| 74HC595    | U1-U3  | SOIC-16   | C5947            |
| 74HC165    | U4,U5  | SOIC-16   | C5613            |

+ Ribbon Cables for example (MOUSER):  
710-63911015521CAB|1

# Frontpanel



I made a DXF File which you can send to [Formulor in Germany](#)

Here a DXF with one Frontplate, ready to upload to Formulor:  
I paid 20€ incl taxes and shipping from Germany to Austria

[formulor-p1-1xlre5lcd2.dxf.zip](#)

**Recommend Material from Formulor:**

3mm Acrylglas GS 181x181mm, mittelgrau transparent(7C83)

If you plan to build a MSQ-CC-LRE wit your LRE5LCD2, then you may save money by use this panalized DXF, where 2x LRE5LCD Panels + 2x MSQ-CC-LRE Panels are placed:

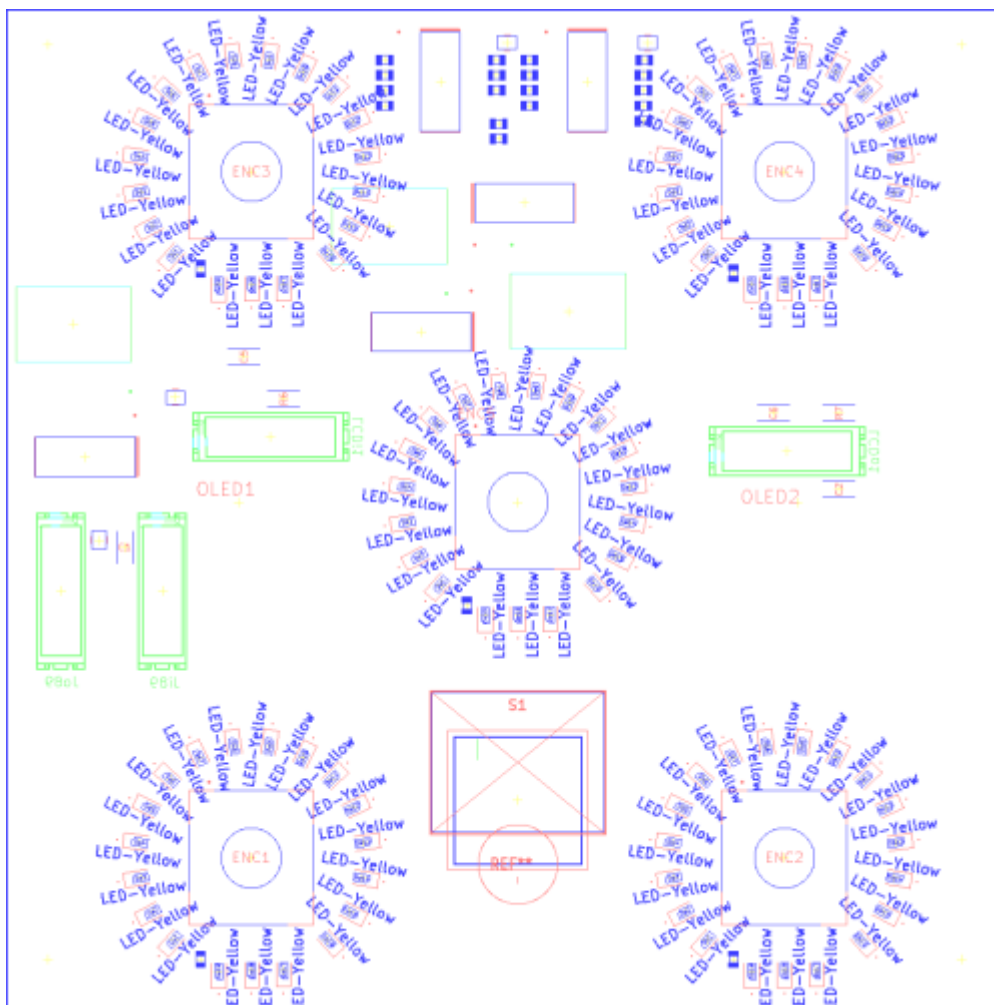
[formulor-p1-1xlre5lcd2.dxf.zip](#) ready to upload to Formulor:

I paid 45€ incl taxes and shipping from Germany to Austria

**Recommend Material from Formulor:**

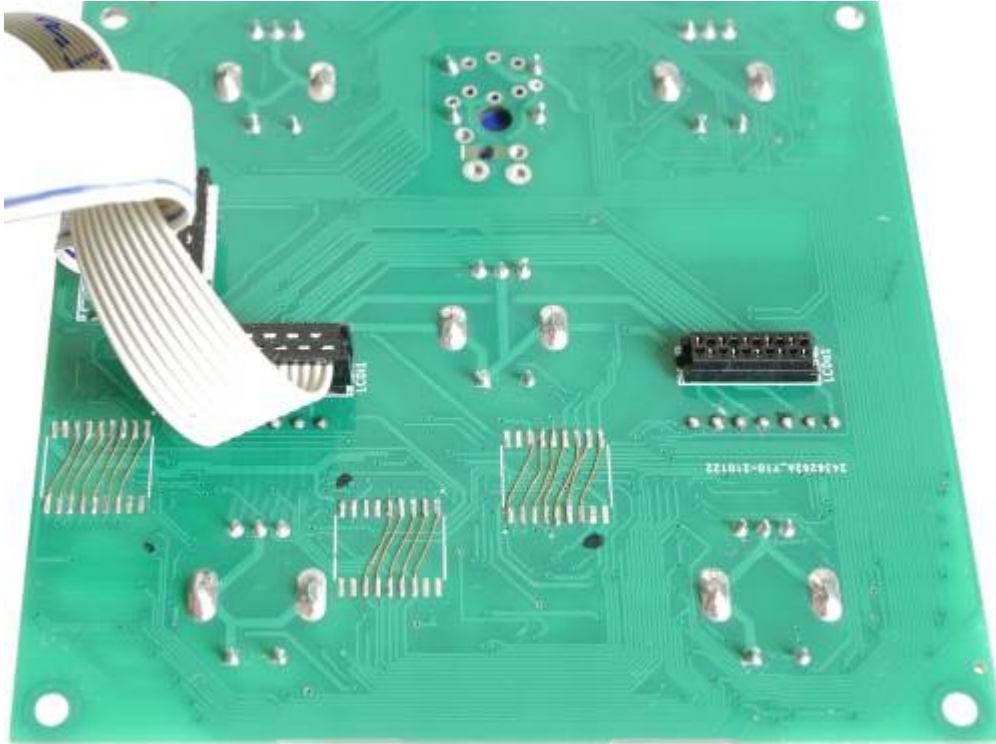
3mm Acrylglas GS 384x384mm, mittelgrau transparent(7C83)

## PART Locations



# To Do

making Revision 2, because in 1 the Transistor-Array-Fottprint is wrong and had to bridged



## Community users working on it

- **Phatline** = PCB & Schematic, UI-Programming, Documentation...

Just let a Private message on the forum to user already involved.

From:  
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