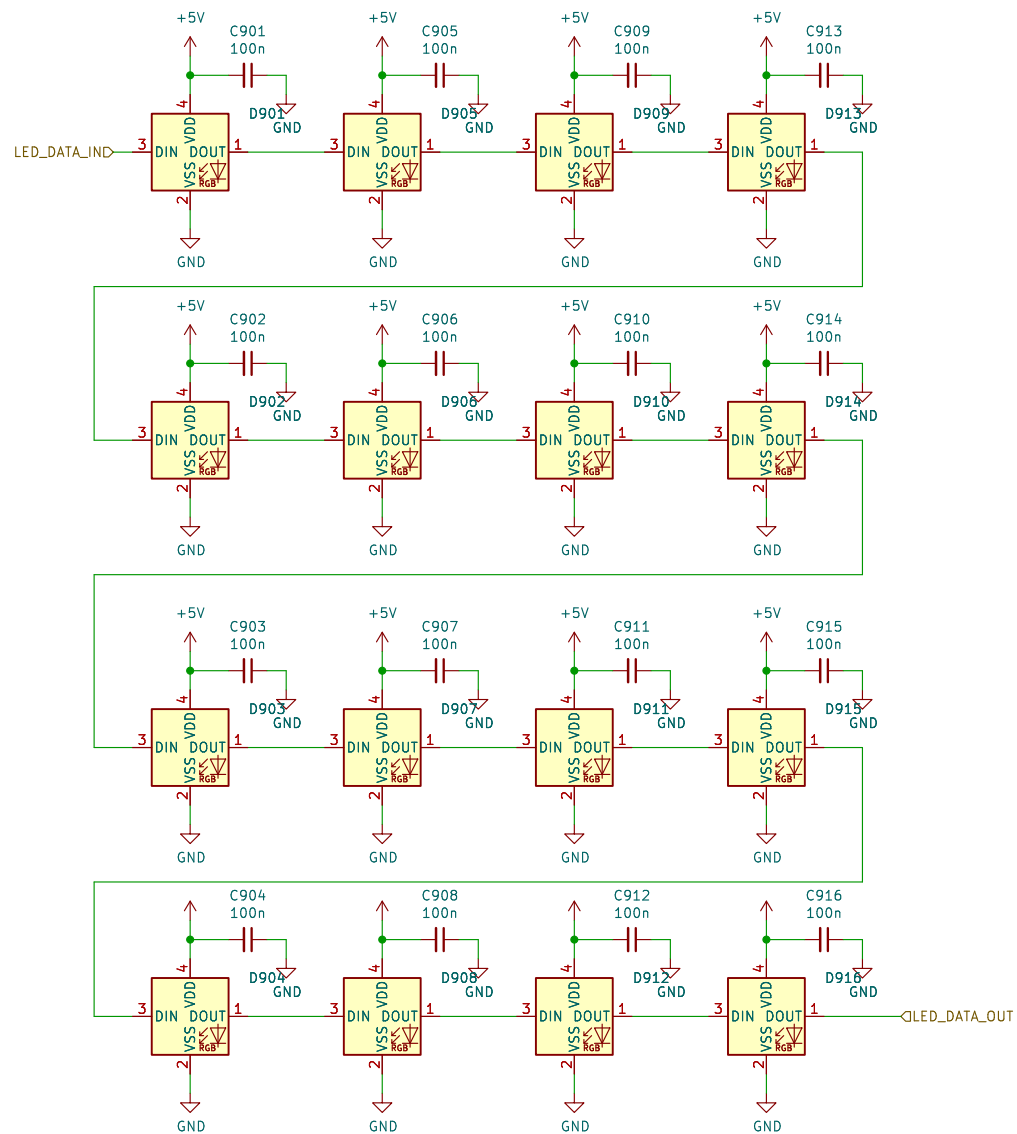


900



Sheet: /UI_LED/
File: UI_LED.kicad_sch

Title:

Size: A4

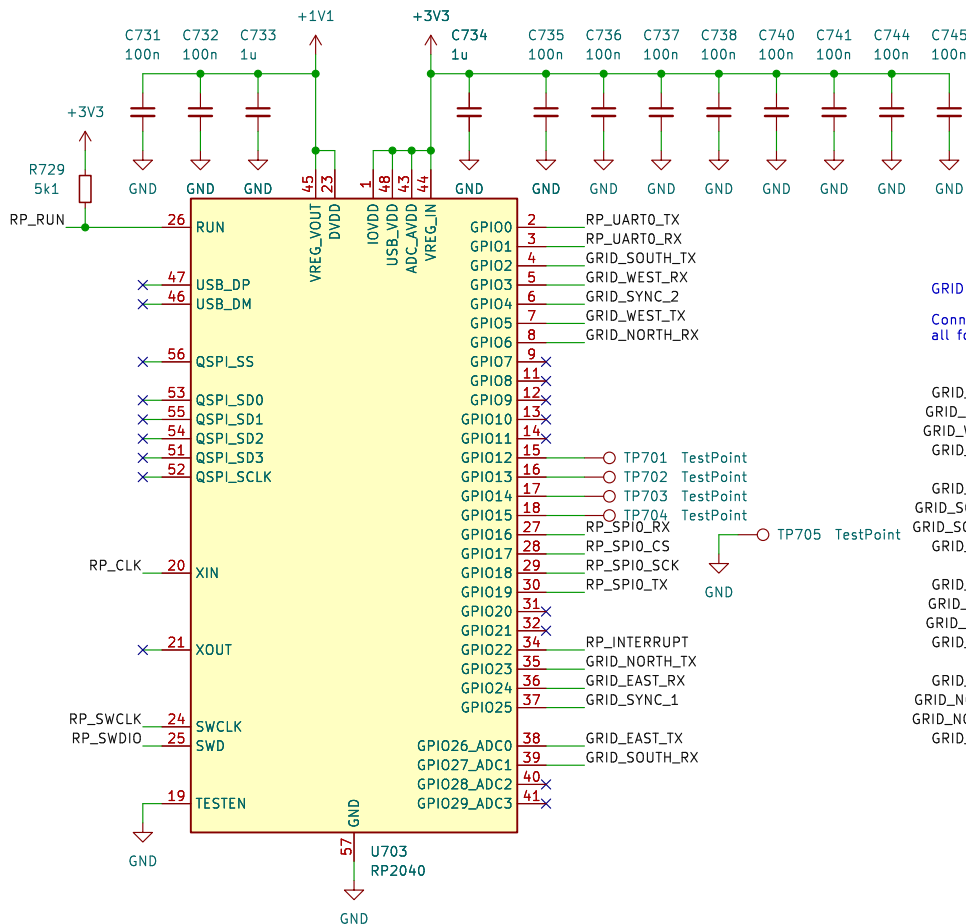
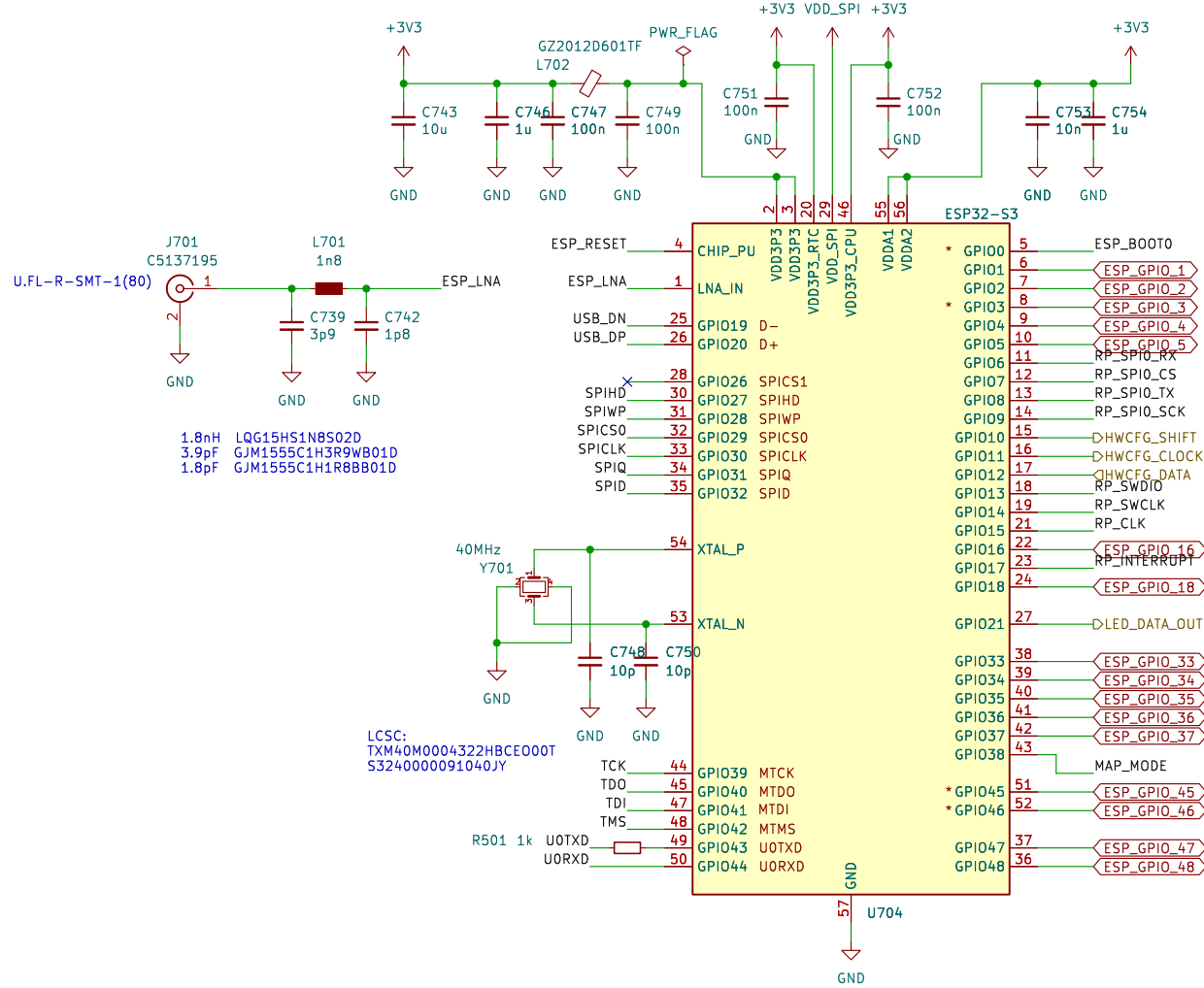
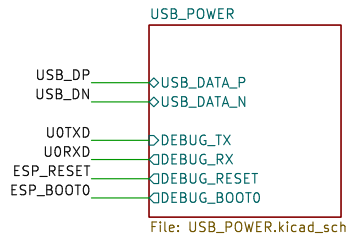
Date:

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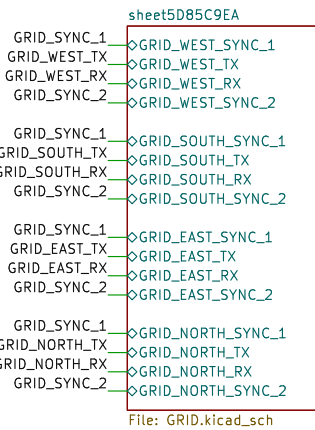
Id: 4/23

700

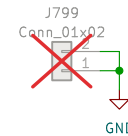
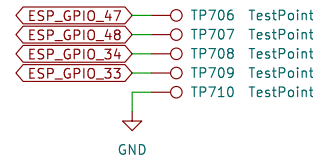


GRID Connector

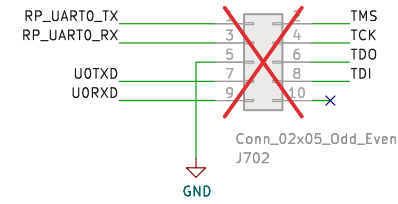
Connector arrays for the interface boards on all four sides of the module.



File: GRID.kicad_sch

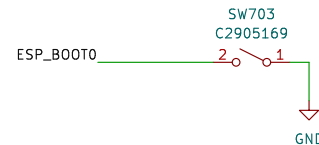
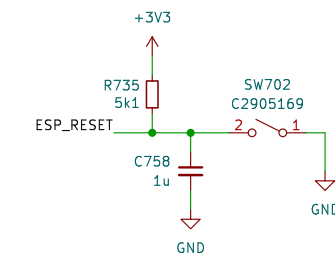
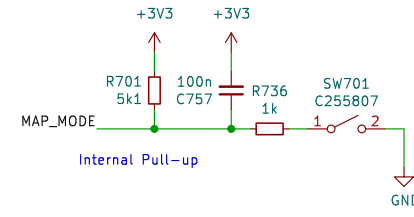


Programming Interface



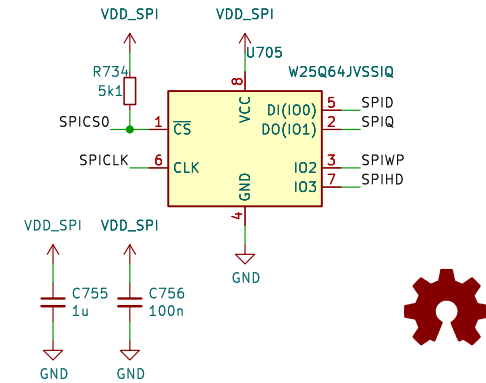
Mapmode switch

This pusbutton is accessible through the housing, activates USB bootloader.



QSPI Flash memory

This memory can be accessed through the QSPI interface of the MCU. Can be used for configuration, static data or program execution.



800

OPEN IF EN16
CLOSED IF NO DETENT

DATA_IND

U801
74HC165

+3V3

VCC

HWCFG_HIGH

HWCFG_LOW

HWCFG_CLOCKD

HWCFG_SHIFTD

R801
5k1

JP801
(NF)

GND

HWCFG_DATA

C801
100n

HWCFG_HIGH

HWCFG_LOW

GND

Board Identification

Grid firmware can identify the hardware and the board revision through a 3 wire serial interface using one or more shift register as read only memory. The content of the memory is defined by pulling the inputs high or low through pcb traces or solderable configuration jumpers.

4b'Model + 4b'Revision + nb'Reserved (Multiple shift registers)

D0: MODEL (LSB)
D1: MODEL
D2: MODEL
D3: MODEL (MSB)
D4: REVISION (LSB)
D5: REVISION
D6: REVISION
D7: REVISION (MSB)

Model Codes (D3–D0):

Po16 0000
Bo16 0001
PBF4 0010
EN16 0011
...

Revision Codes (D7–D4):

RevA 0000
RevB 0001
RevC 0010
RevD 0011
...

| | | |
|---|-------|-----------|
| Sheet: /HWCFG/ File: HWCFG.kicad_sch | | |
| Title: | | |
| Size: A4 | Date: | Rev: |
| KiCad E.D.A. 9.0.1 | | Id: 10/23 |

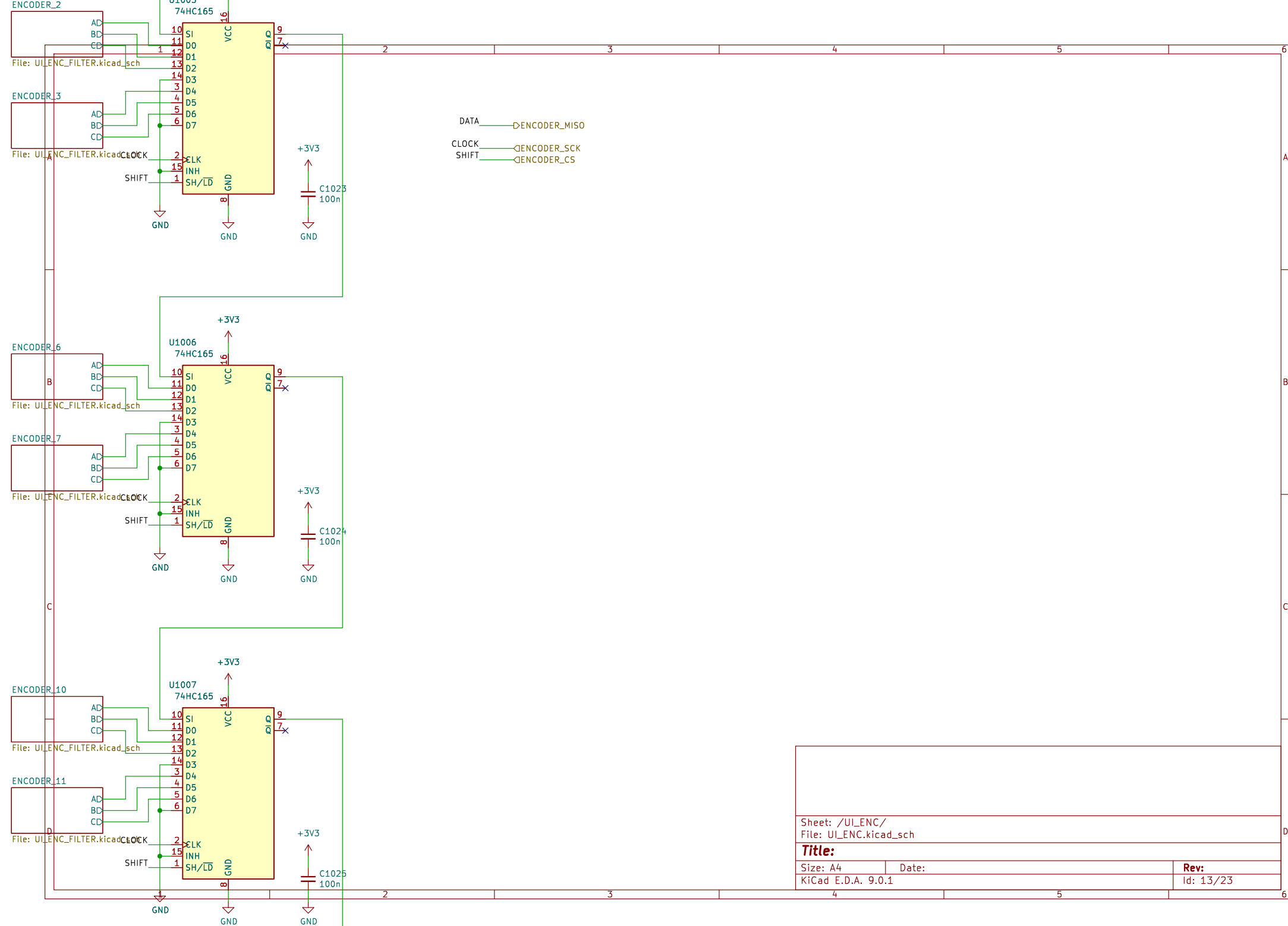
Grid firmware can identify the hardware and the board revision through a 3 wire serial interface using one or more shift register as read only memory. The content of the memory is defined by pulling the inputs high or low through pcb traces or solderable configuration jumpers.

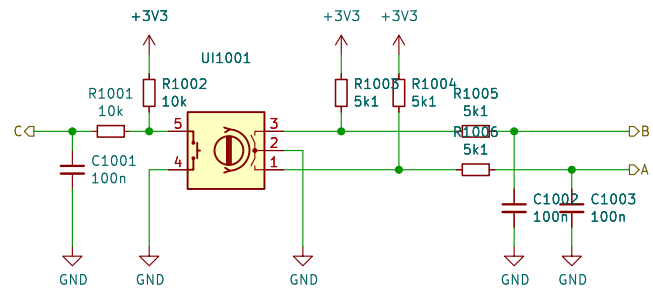
D0: MODEL (LSB)
D1: MODEL
D2: MODEL
D3: MODEL (MSB)
D4: REVISION (LSB)
D5: REVISION
D6: REVISION
D7: REVISION (MSB)

| | |
|------|------|
| Po16 | 0000 |
| Bo16 | 0001 |
| PBF4 | 0010 |
| EN16 | 0011 |
| ... | |

```
RevA 0000
RevB 0001
RevC 0010
RevD 0011
...
```

| | |
|---|-----------|
| | |
| Sheet: /HWCFG/ File: HWCFG.kicad_sch | |
| Title: | |
| Size: A4 | Date: |
| KiCad E.D.A. 9.0.1 | Id: 10/23 |





Sheet: /UI_ENC/ENCODER_8/
File: UI_ENC_FILTER.kicad_sch

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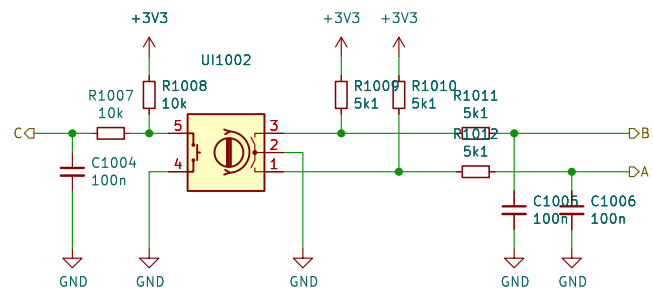
Size: A4

Date:

Rev:

KiCad E.D.A. 9.0.1

Id: 2/23



Sheet: /UI_ENC/ENCODER_11/
File: UI_ENC_FILTER.kicad_sch

Title:

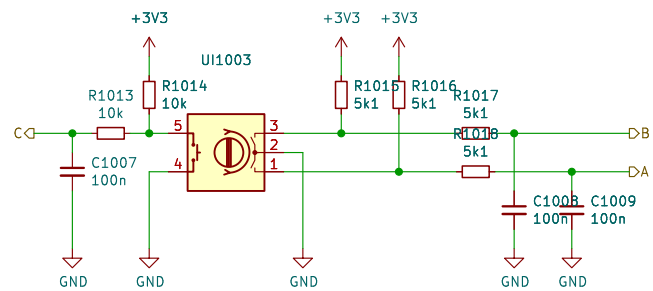
Size: A4

Date:

Rev:

KiCad E.D.A. 9.0.1

Id: 3/23



Sheet: /UI_ENC/ENCODER_5/
File: UI_ENC_FILTER.kicad_sch

Title:

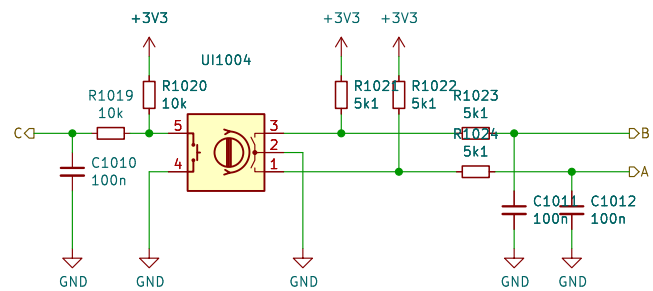
Size: A4

Date:

Rev:

KiCad E.D.A. 9.0.1

Id: 5/23



Sheet: /UI_ENC/ENCODER_12/
File: UI_ENC_FILTER.kicad_sch

Title:

Size: A4

Date:

Rev:

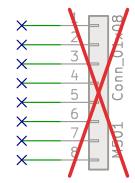
KiCad E.D.A. 9.0.1

Id: 6/23

500

GRID Connector
Bi-Directional Data
2x SYNC

Board Mounting Pattern



Sheet: /MCU/sheet5D85C9EA/
File: GRID.kicad_sch

Title:

Size: A4

Date:

Rev:

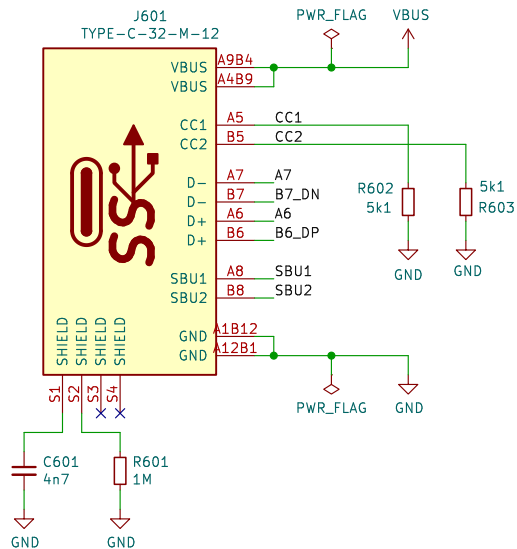
KiCad E.D.A. 9.0.1

Id: 8/23

600

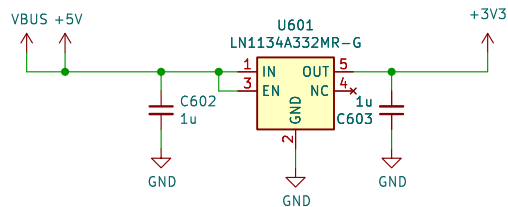
USB Port

USB C upstream facing port configured for 5V 3A power consumption.



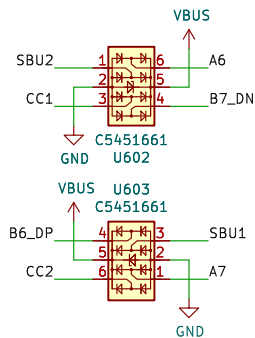
3V3 LDO

LDO regulator for generating the +3V3 power rail for the microcontroller and UI.



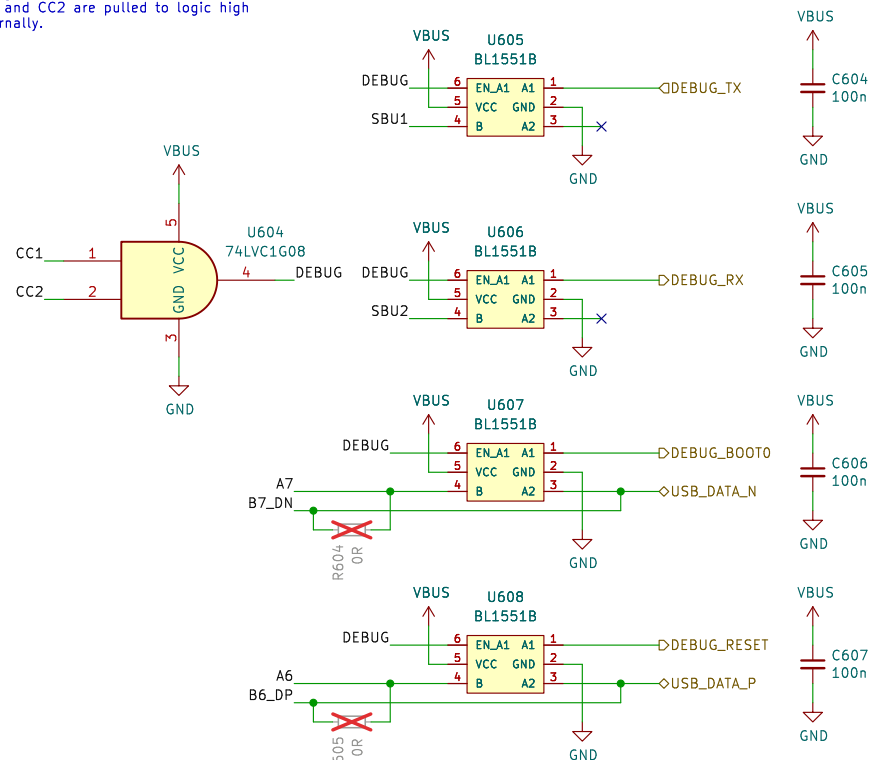
ESD Prot.

ESD protection for all 8 signals externally accessible via the USB C connector.

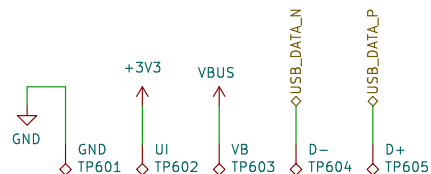


Debug-Mode Multiplexing

Debug mode is activated when both CC1 and CC2 are pulled to logic high externally.



Testpoints



Sheet: /MCU/USB_POWER/
File: USB_POWER.kicad_sch

Title:

Size: A4

Date:

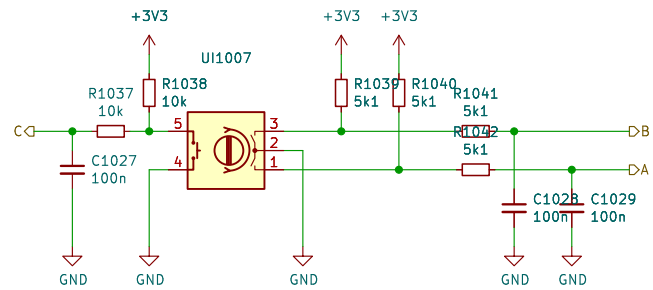
KiCad E.D.A. 9.0.1

Rev:

Id: 9/23







Sheet: /UI_ENC/ENCODER_3/
File: UI_ENC_FILTER.kicad_sch

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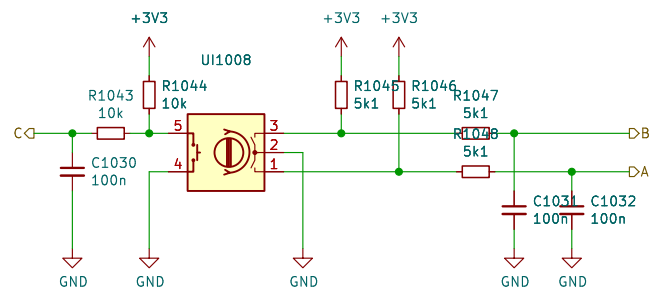
Size: A4

Date:

Rev:

KiCad E.D.A. 9.0.1

Id: 14/23



Sheet: /UI_ENC/ENCODER_1/
File: UI_ENC_FILTER.kicad_sch

Title:

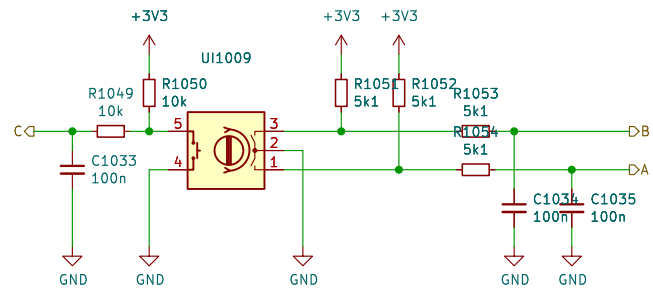
Size: A4

Date:

Rev:

KiCad E.D.A. 9.0.1

Id: 15/23



Sheet: /UI_ENC/ENCODER_7/
File: UI_ENC_FILTER.kicad_sch

Title:

Size: A4

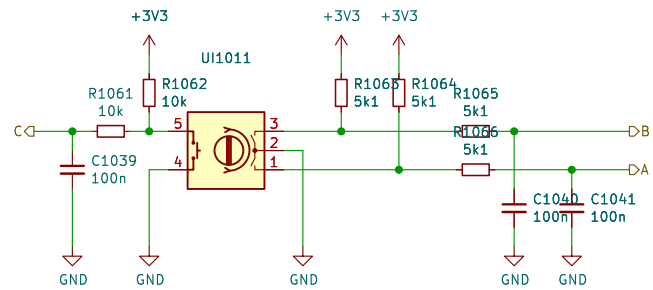
Date:

Rev:

KiCad E.D.A. 9.0.1

Id: 16/23





Sheet: /UI_ENC/ENCODER_13/
File: UI_ENC_FILTER.kicad_sch

Title:

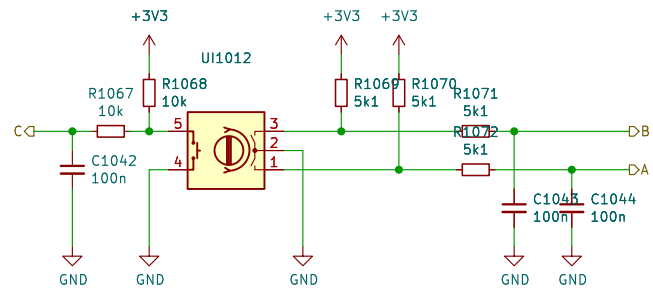
Size: A4

Date:

Rev:

KiCad E.D.A. 9.0.1

Id: 18/23



Sheet: /UI_ENC/ENCODER_10/
File: UI_ENC_FILTER.kicad_sch

Title:

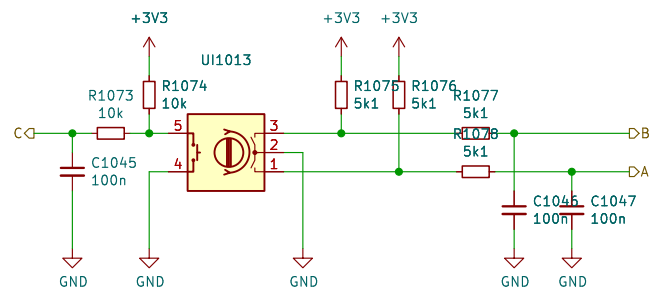
Size: A4

Date:

Rev:

KiCad E.D.A. 9.0.1

Id: 19/23



Sheet: /UI_ENC/ENCODER_15/
File: UI_ENC_FILTER.kicad_sch

Title:

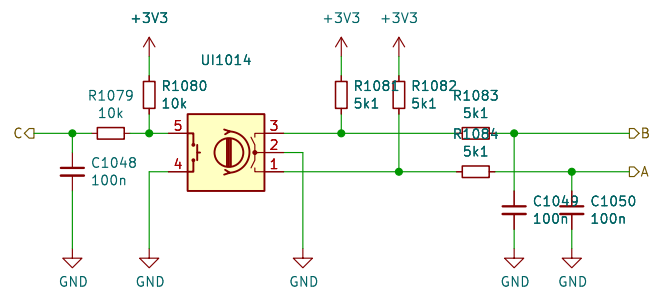
Size: A4

Date:

Rev:

KiCad E.D.A. 9.0.1

Id: 20/23



Sheet: /UI_ENC/ENCODER_2/
File: UI_ENC_FILTER.kicad_sch

Title:

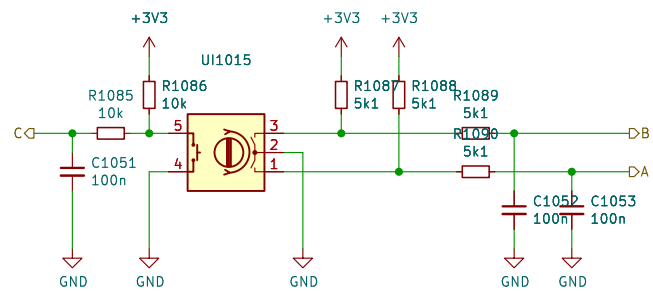
Size: A4

Date:

Rev:

KiCad E.D.A. 9.0.1

Id: 21/23



Sheet: /UI_ENC/ENCODER_4/
File: UI_ENC_FILTER.kicad_sch

Title:

Size: A4

Date:

Rev:

KiCad E.D.A. 9.0.1

Id: 22/23

