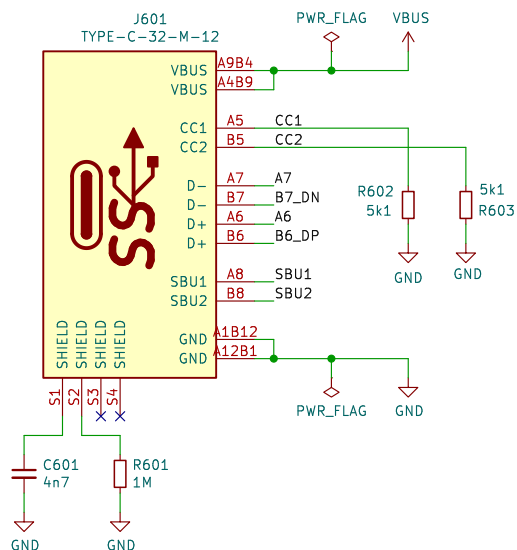


600

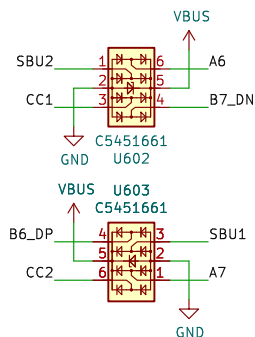
## USB Port

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



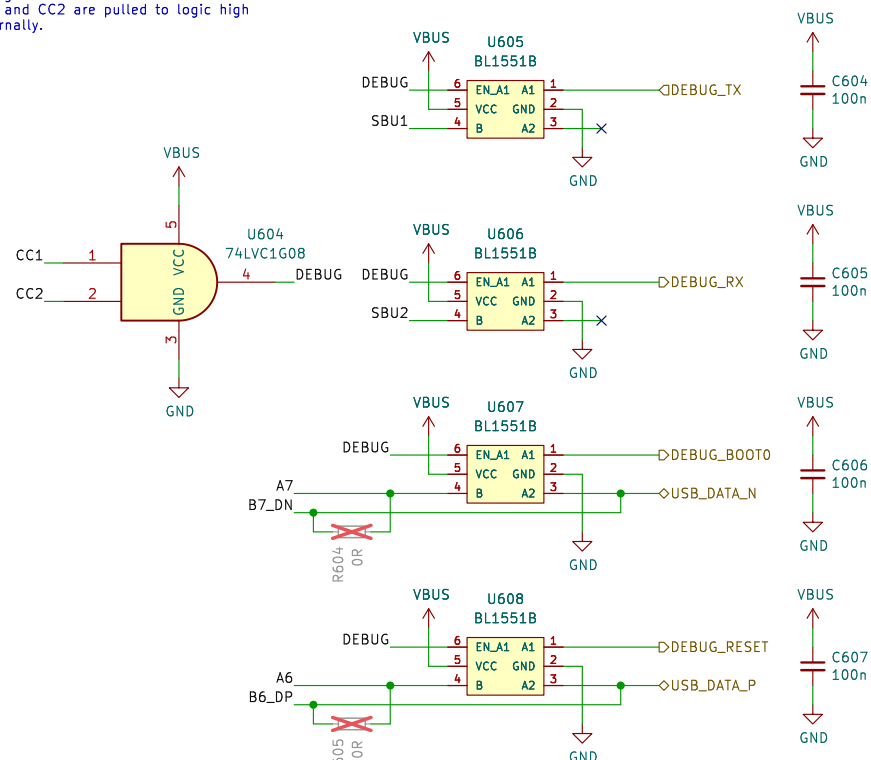
## ESD Prot.

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



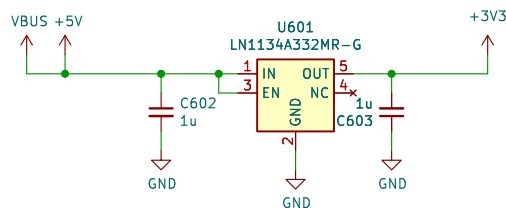
## Debug-Mode Multiplexing

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

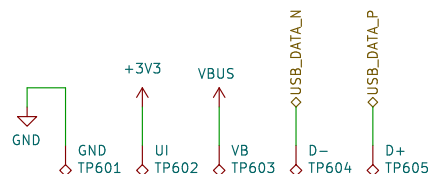


## 3V3 LDO

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



## Testpoints



Sheet: /MCU/USB\_POWER/  
File: USB\_POWER.kicad\_sch

**Title:**

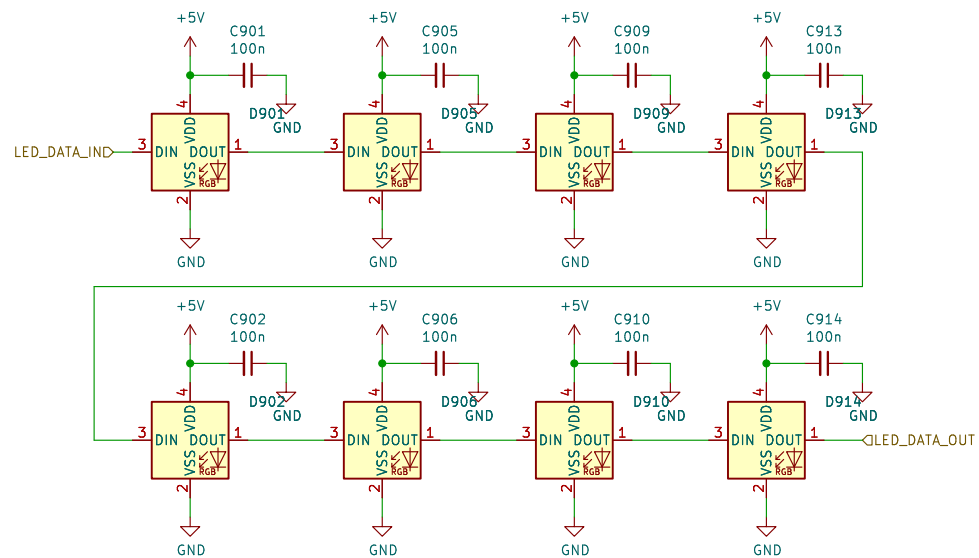
Size: A4	Date:
KiCad E.D.A. 8.0.8	

Date:

Rev:	
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Id: 2/11

# 900



Sheet: /UI\_LED/  
File: UI\_LED.kicad\_sch

**Title:**

Size: A4

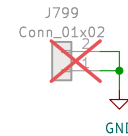
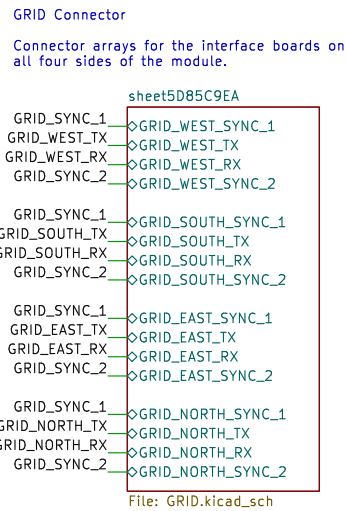
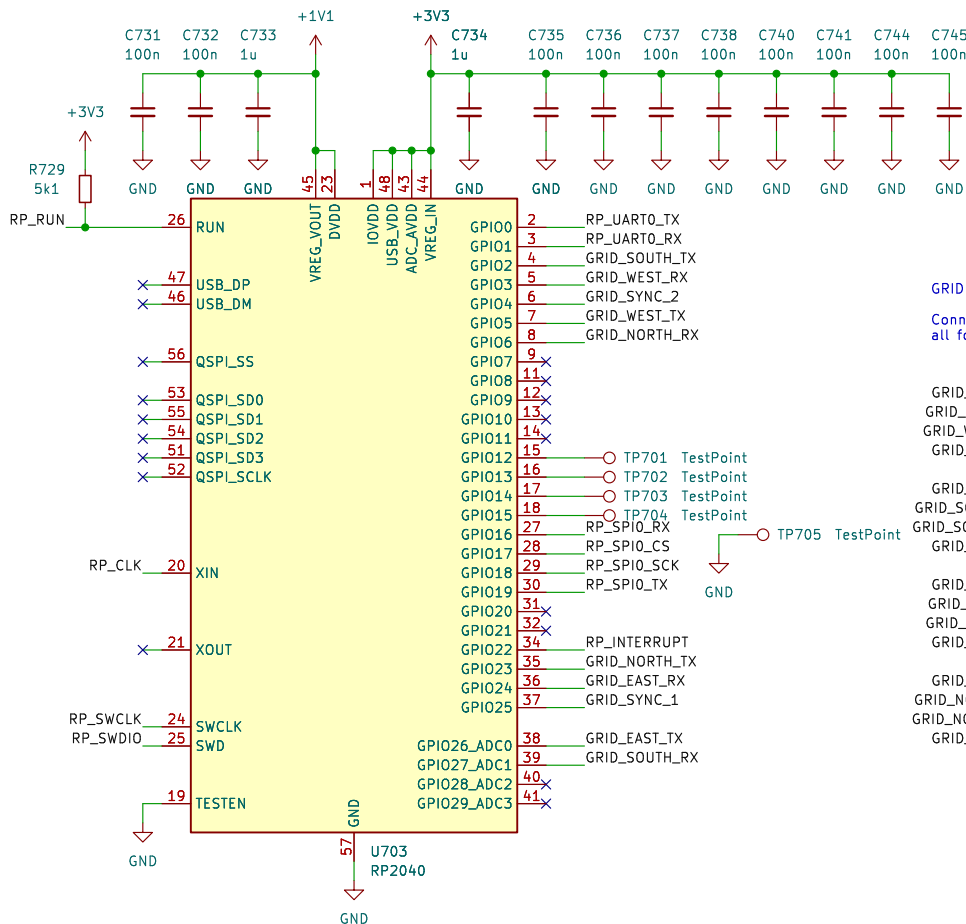
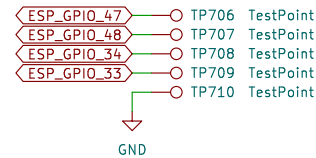
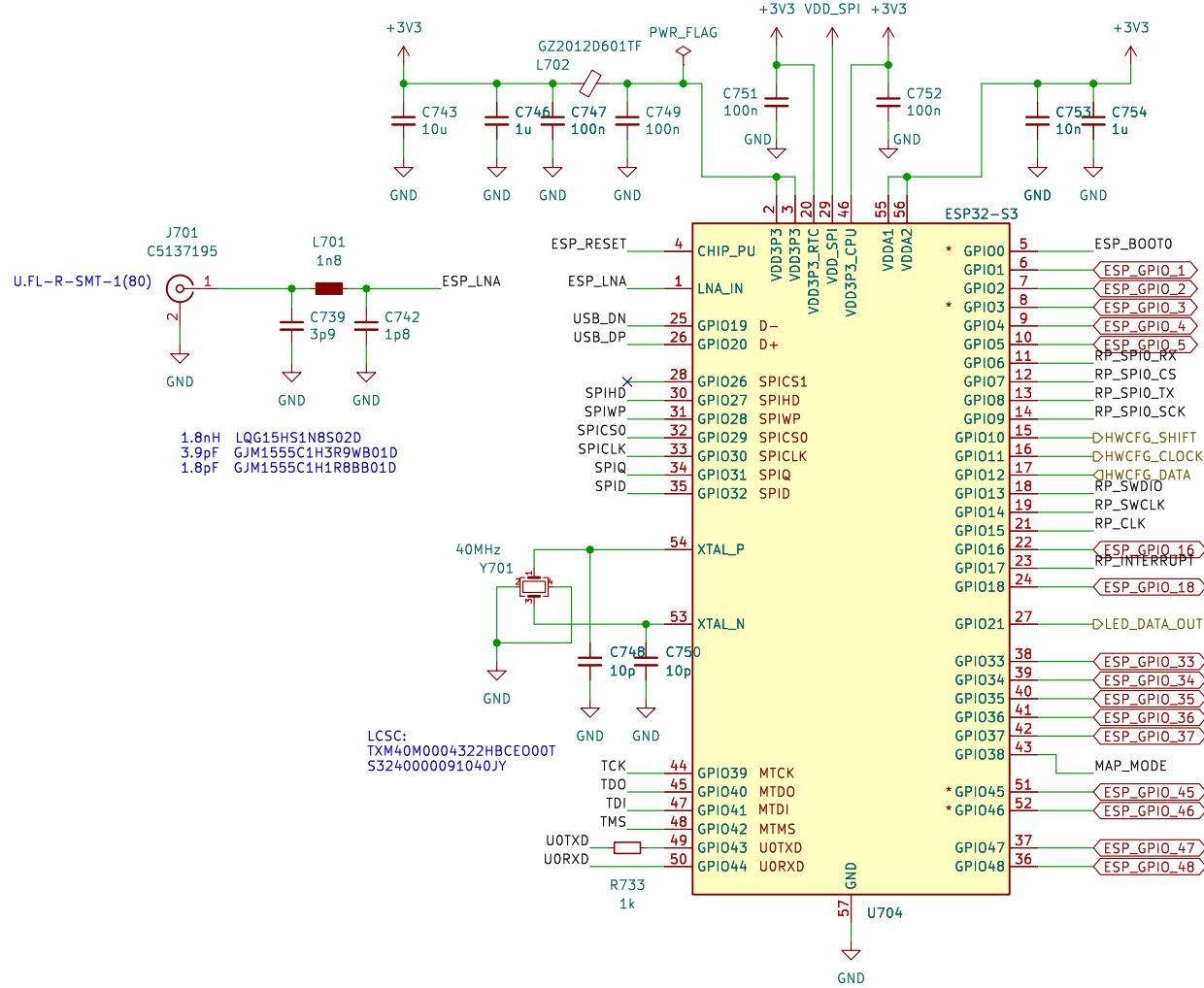
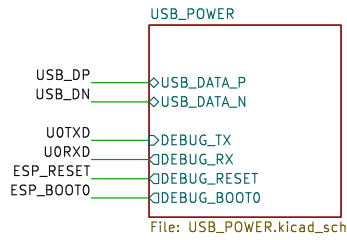
Date:

KiCad E.D.A. 8.0.8

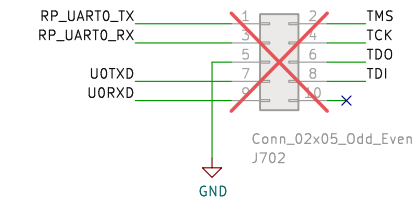
**Rev:**

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700

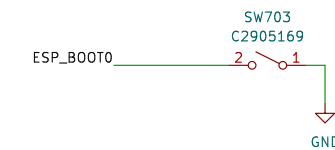
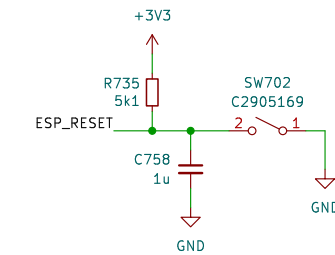
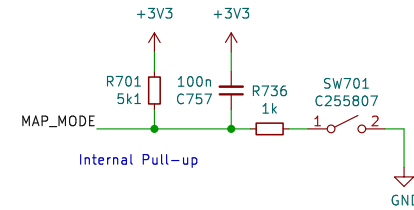


### Programming Interface



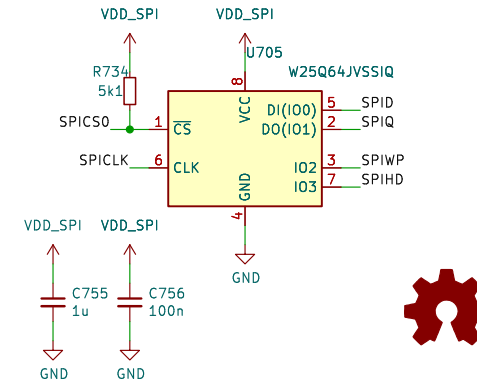
### Mapmode switch

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



### QSPI Flash memory

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

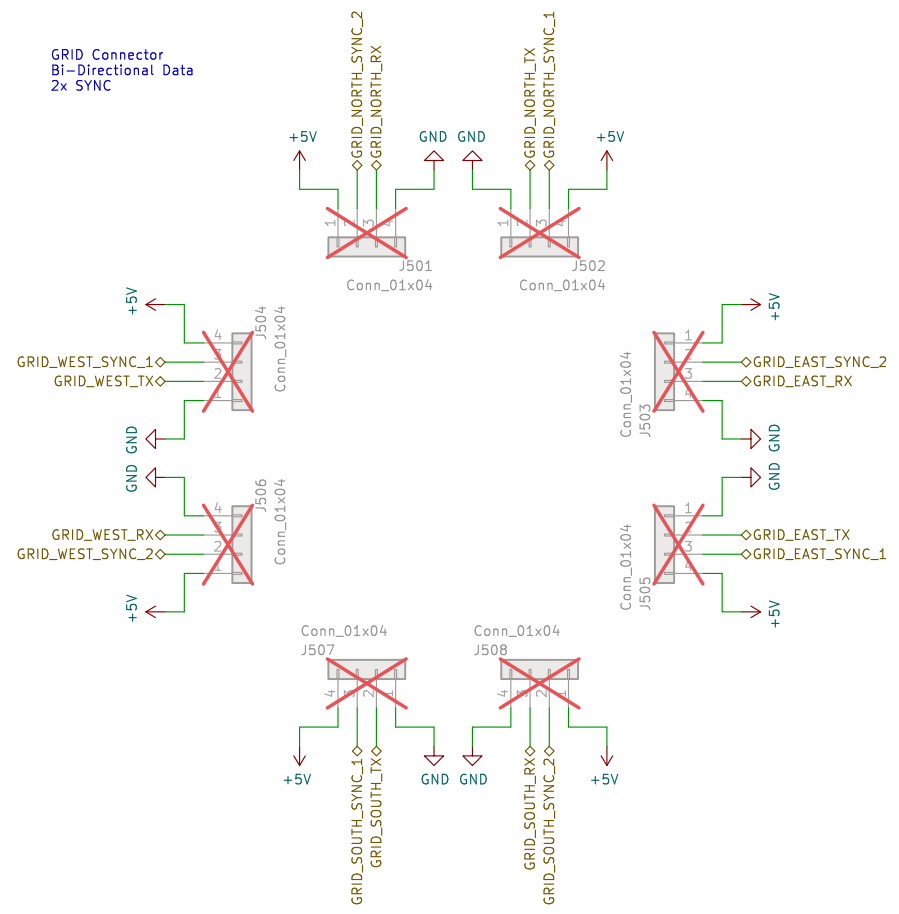
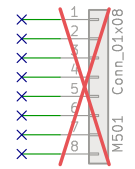


Sheet: /MCU/ File: MCU.kicad_sch		
<b>Title:</b>		
Size: A3	Date:	Rev:
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500

GRID Connector  
Bi-Directional Data  
2x SYNC

Board Mounting Pattern



Sheet: /MCU/sheet5D85C9EA/ File: GRID.kicad_sch		
<b>Title:</b>		
Size: A4	Date:	Rev:
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800

OPEN IF EN16  
CLOSED IF NO DETENT

JP801 (NF)

R801 5k1

+3V3

GND

DATA\_IND

U801 74HC165

HWCFG\_LOW

HWCFG\_LOW

HWCFG\_HIGH

HWCFG\_LOW

HWCFG\_LOW

HWCFG\_HIGH

HWCFG\_HIGH

HWCFG\_CLOCKD

HWCFG\_SHIFTD

+3V3

VCC

Q

HWCFG\_DATA

C801 100n

HWCFG\_HIGH

HWCFG\_LOW

GND

GND

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		
<b>Title:</b>		
Size: A4	Date:	Rev:
KiCad E.D.A. 8.0.8		Id: 10/11

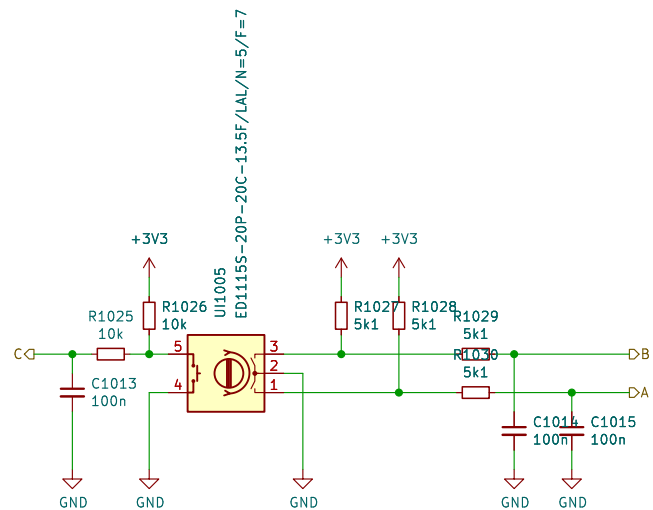
Grid firmware can identify the hardware and the board revision through a 3 wire serial interface using one or more shift register as read only memory. The content of the memory is defined by pulling the inputs high or low through pcb traces or solderable configuration jumpers.

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	
<b>Title:</b>	
Size: A4	Date:
KiCad E.D.A. 8.0.8	Id: 10/11



Sheet: /UI\_ENC/ENCODER\_0/  
File: UI\_ENC\_FILTER.kicad\_sch

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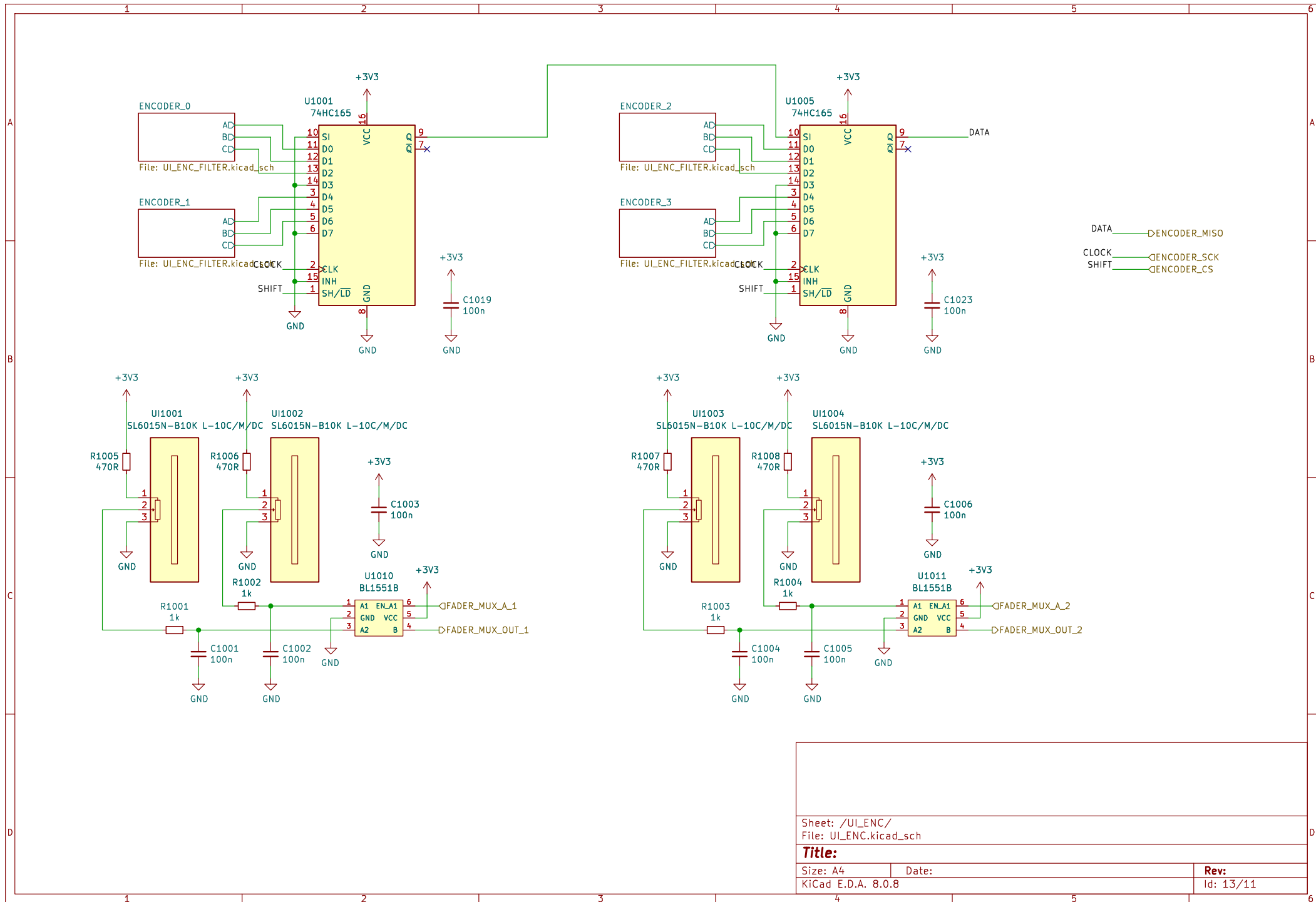
Size: A4

Date:

Rev:

KiCad E.D.A. 8.0.8

Id: 11/11



Sheet: /UI\_ENC/  
File: UI\_ENC.kicad\_sch

# **Title:**

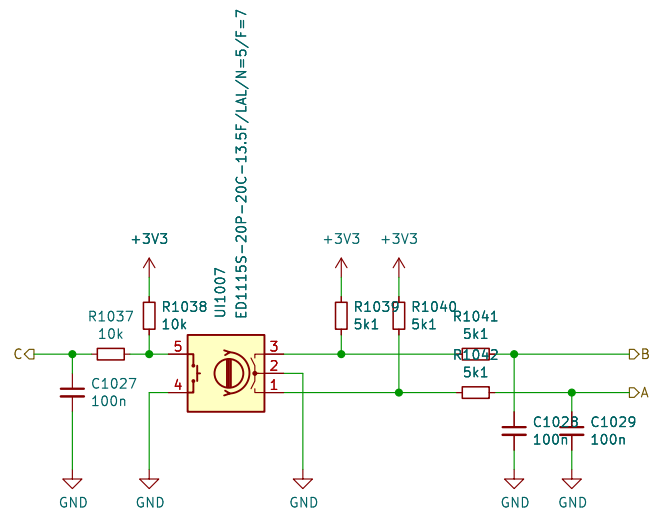
Size: A4  
KiCad E.D.A. 8.0.8

Date:

Rev:

Id: 13/11





Sheet: /UI\_ENC/ENCODER\_3/  
File: UI\_ENC\_FILTER.kicad\_sch

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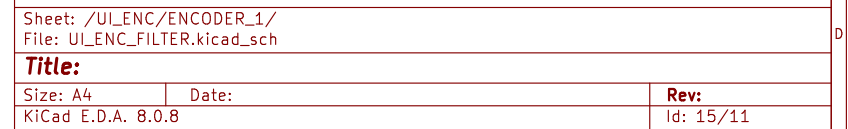
Size: A4

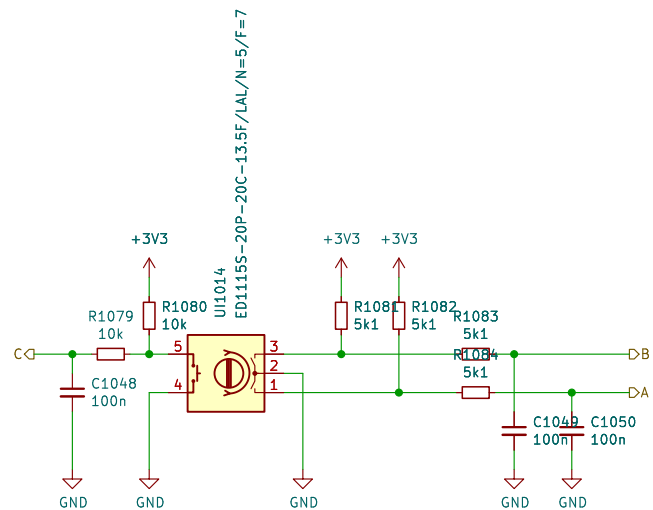
Date:

KiCad E.D.A. 8.0.8

**Rev:**

Id: 14/11





Sheet: /UI\_ENC/ENCODER\_2/  
File: UI\_ENC\_FILTER.kicad\_sch

**Title:**

Size: A4

Date:

KiCad E.D.A. 8.0.8

**Rev:**

Id: 21/11