

A

B

C

D

E

F

A

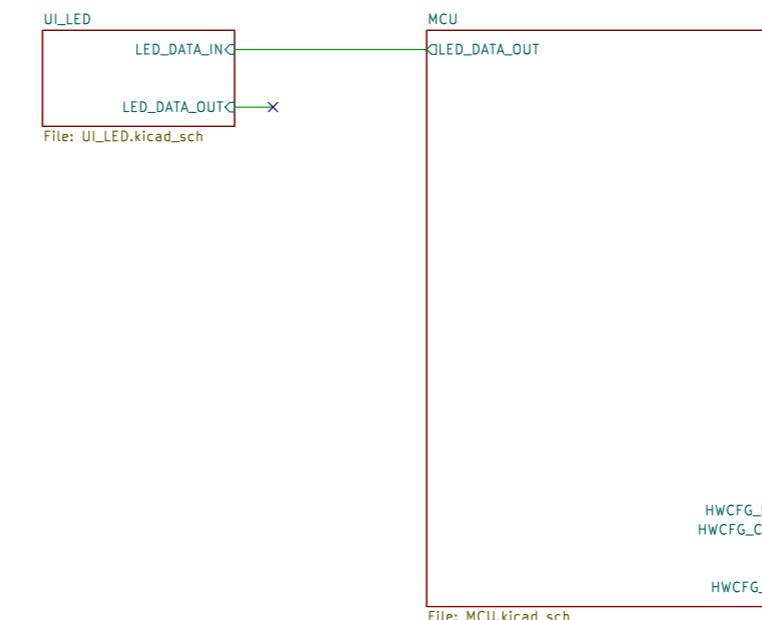
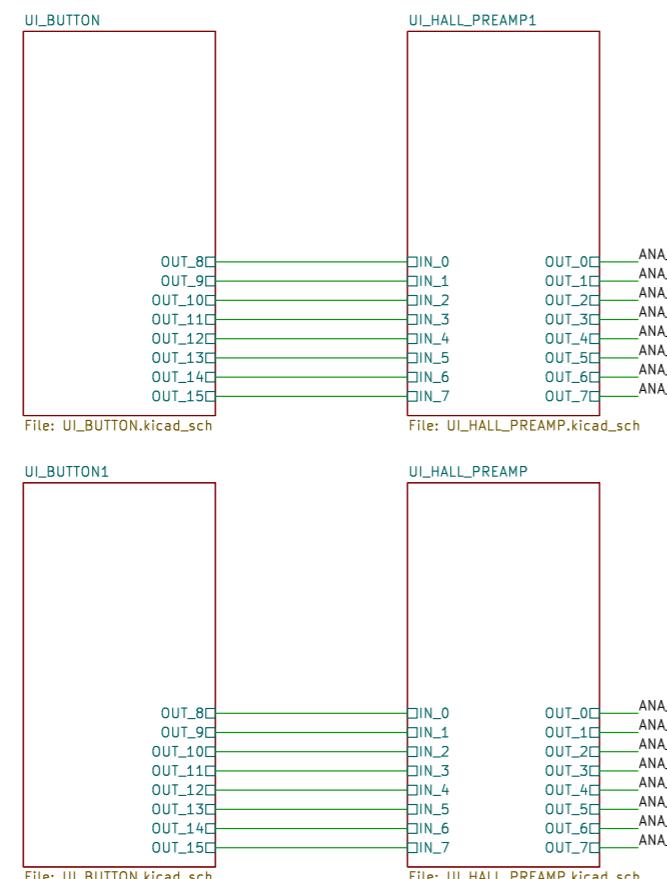
B

C

D

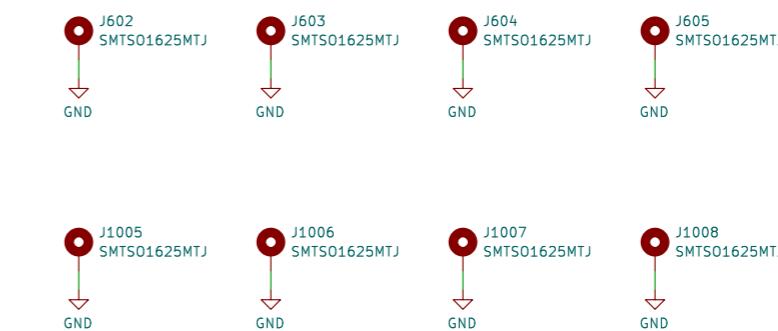
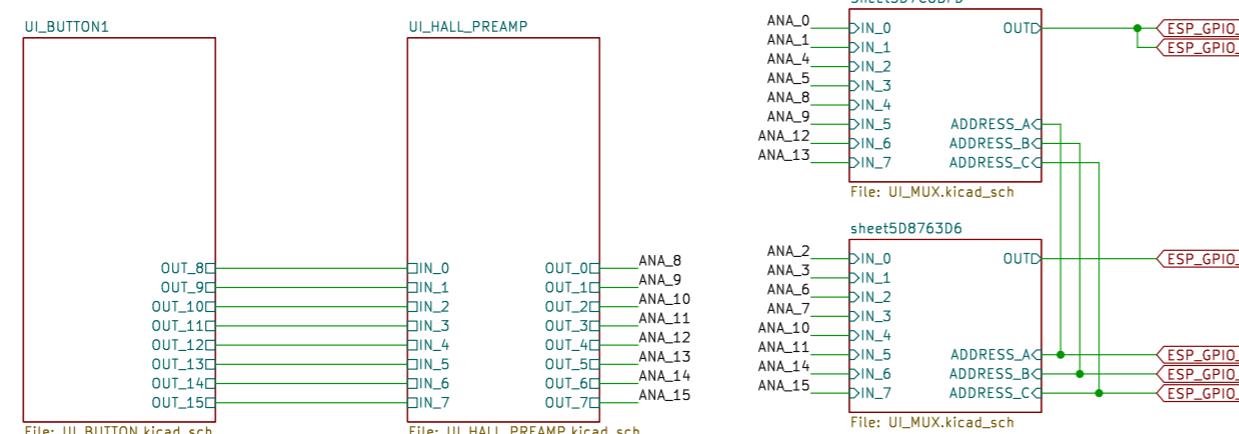
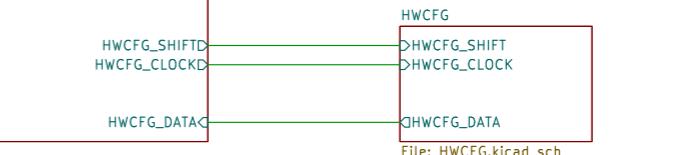
E

F



**Common Sheets:**  
500 GRID  
600 USB\_POWER  
700 MCU

**Module Specific:**  
800 HWCFG  
900 LED  
1000 UI



Sheet: /  
File: PCBA-BU16.kicad\_sch

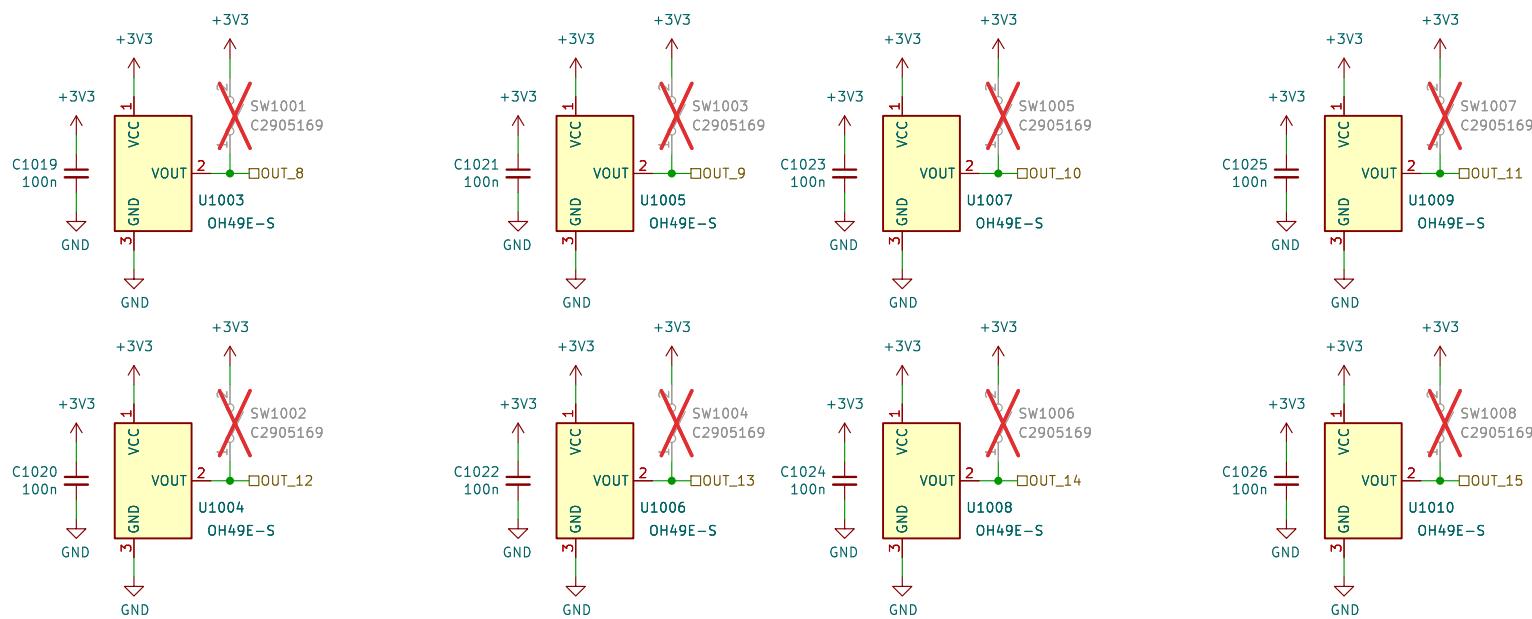
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Size: A3 Date:  
KiCad E.D.A. 9.0.6

Rev: 1/28

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Simulation:  
<http://tinyurl.com/y229mty4>



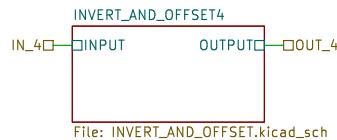
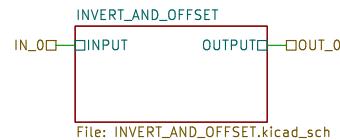
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File: UI\_BUTTON.kicad\_sch

Title:

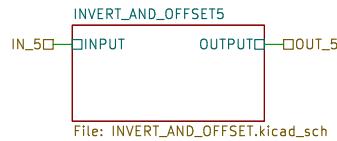
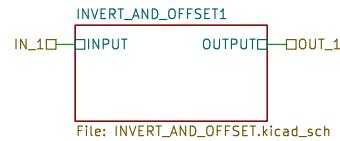
Size: A4 | Date:  
KiCad E.D.A. 9.0.6

Rev:  
Id: 2/28

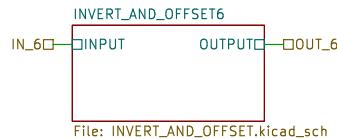
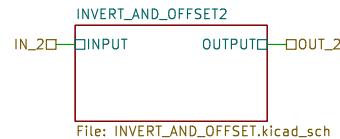
A

**simulation**

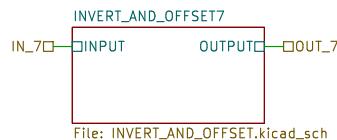
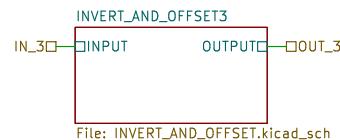
B



C



D



Sheet: /UI\_HALL\_PREAMP/  
File: UI\_HALL\_PREAMP.kicad\_sch

**Title:**

Size: A4      Date:  
KiCad E.D.A. 9.0.6

Rev:  
Id: 3/28

1 2 3 4 5 6

A

A

B

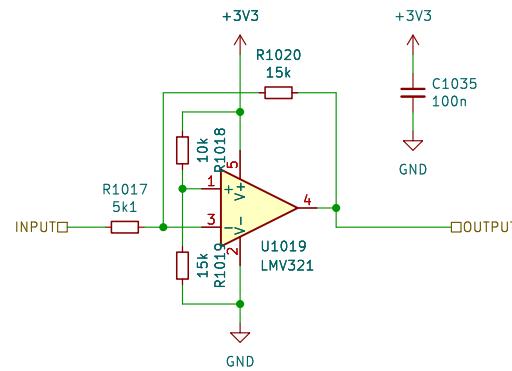
B

C

C

D

D



Sheet: /UI\_HALL\_PREAMP/INVERT\_AND\_OFFSET7/  
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**Title:**

Size: A4 Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 11/28

1 2 3 4 5 6

1 2 3 4 5 6

A

A

B

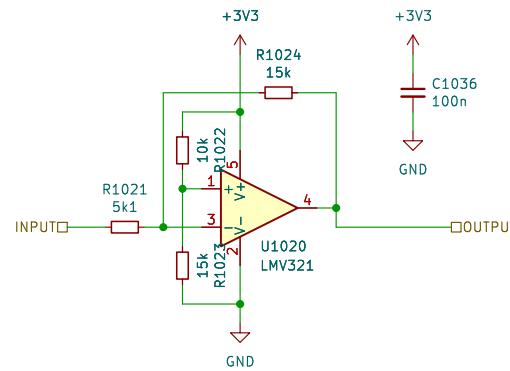
B

C

C

D

D



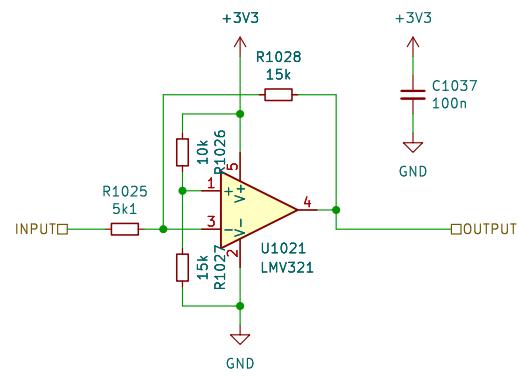
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File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

Size: A4 Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 12/28

1 2 3 4 5 6



Sheet: /UI\_HALL\_PREAMP/INVERT\_AND\_OFFSET4/  
File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

Size: A4 Date:  
KiCad E.D.A. 9.0.6

Rev:  
Id: 13/28

1 2 3 4 5 6

A

A

B

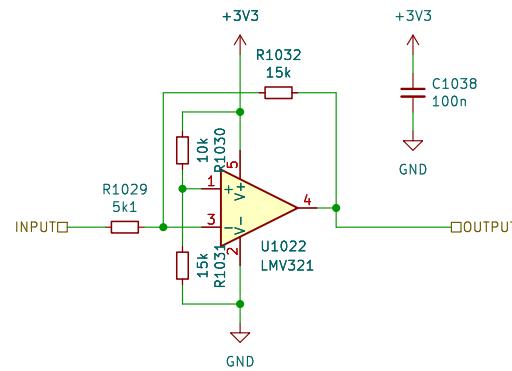
B

C

C

D

D



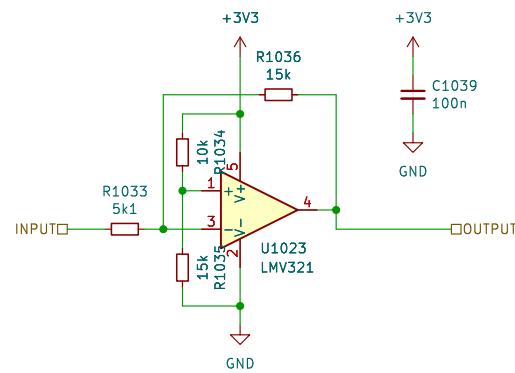
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File: INVERT\_AND\_OFFSET.kicad\_sch

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Size: A4 Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 14/28

1 2 3 4 5 6

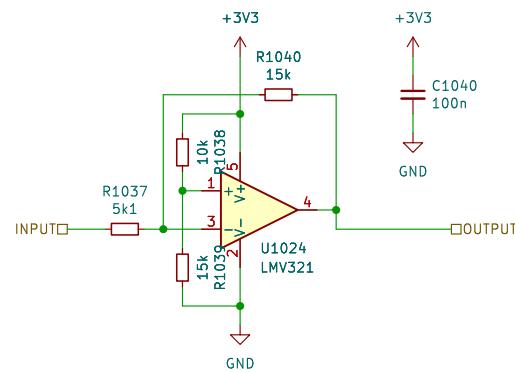


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**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 15/28



Sheet: /UI\_HALL\_PREAMP/INVERT\_AND\_OFFSET1/  
File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 16/28

1 2 3 4 5 6

A

A

B

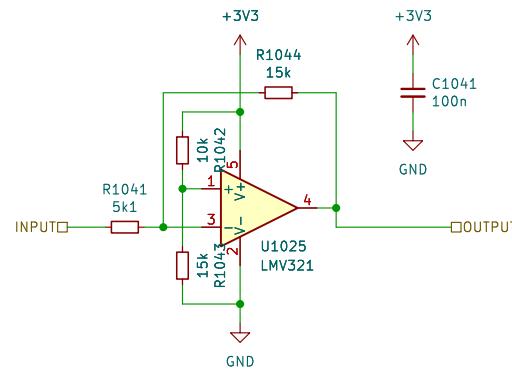
B

C

C

D

D



Sheet: /UI\_HALL\_PREAMP/INVERT\_AND\_OFFSET2/  
File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

Size: A4 Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 17/28

1 2 3 4 5 6

1 2 3 4 5 6

A

A

B

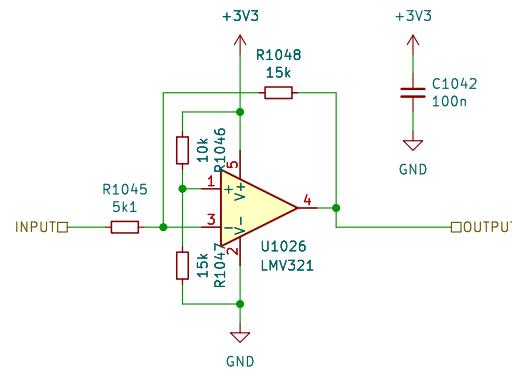
B

C

C

D

D



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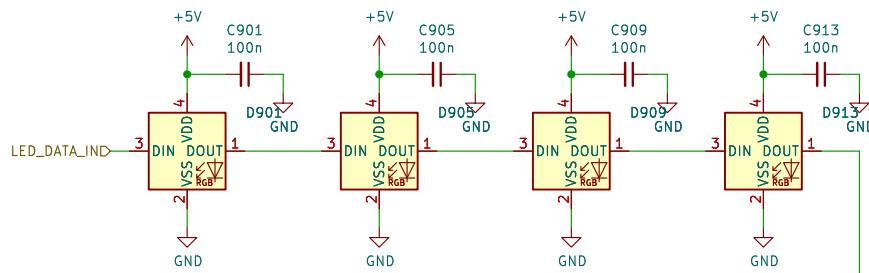
Size: A4 Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 18/28

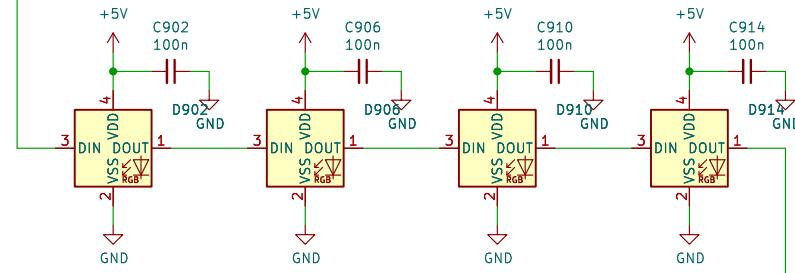
1 2 3 4 5 6

# 900

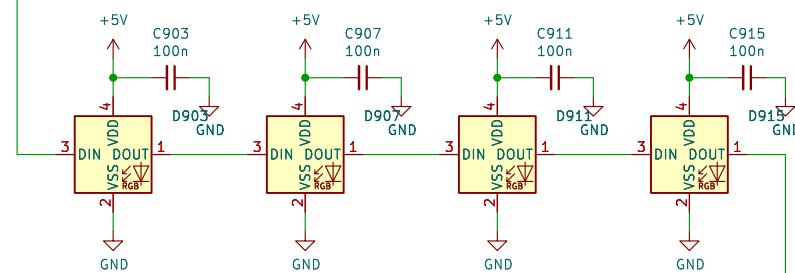
A



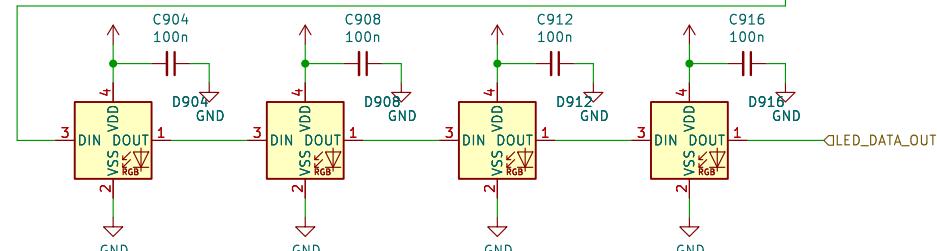
B



C



D



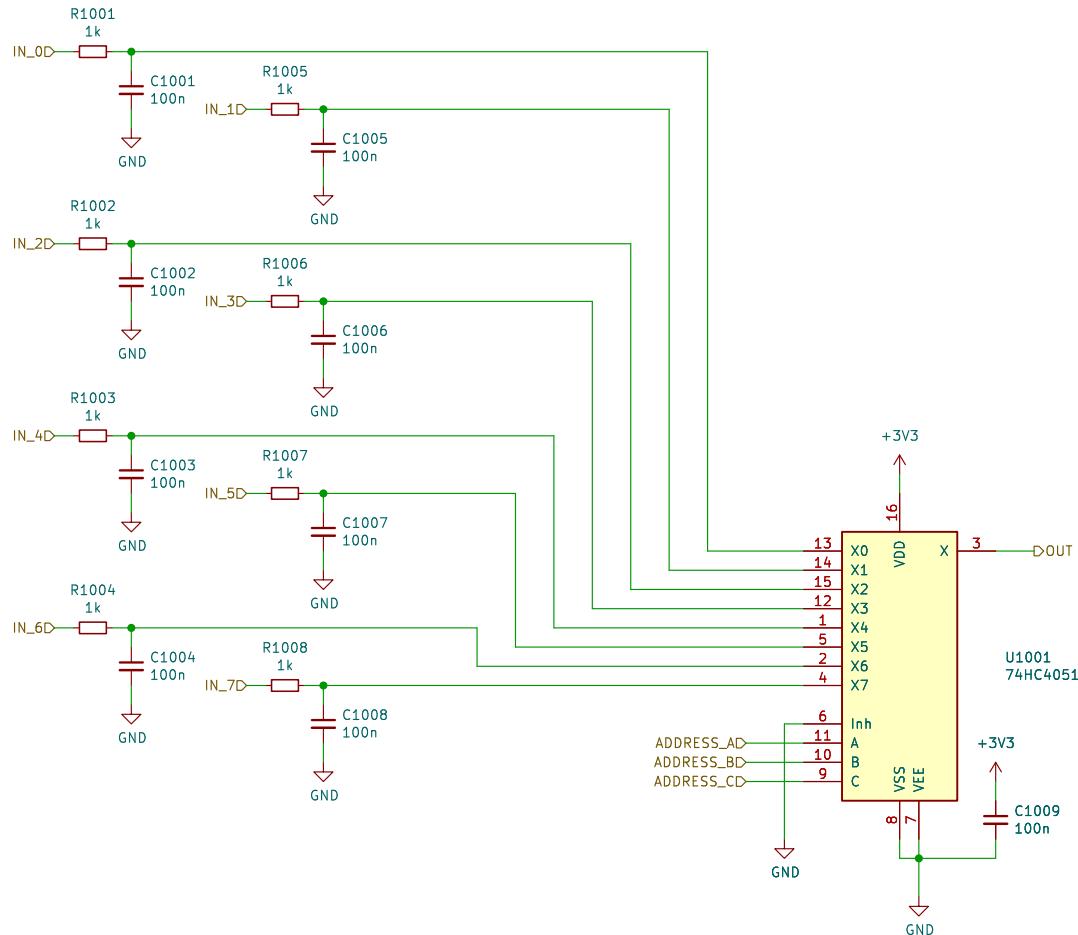
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KiCad E.D.A. 9.0.6

**Rev:**  
Id: 4/28

# 1000



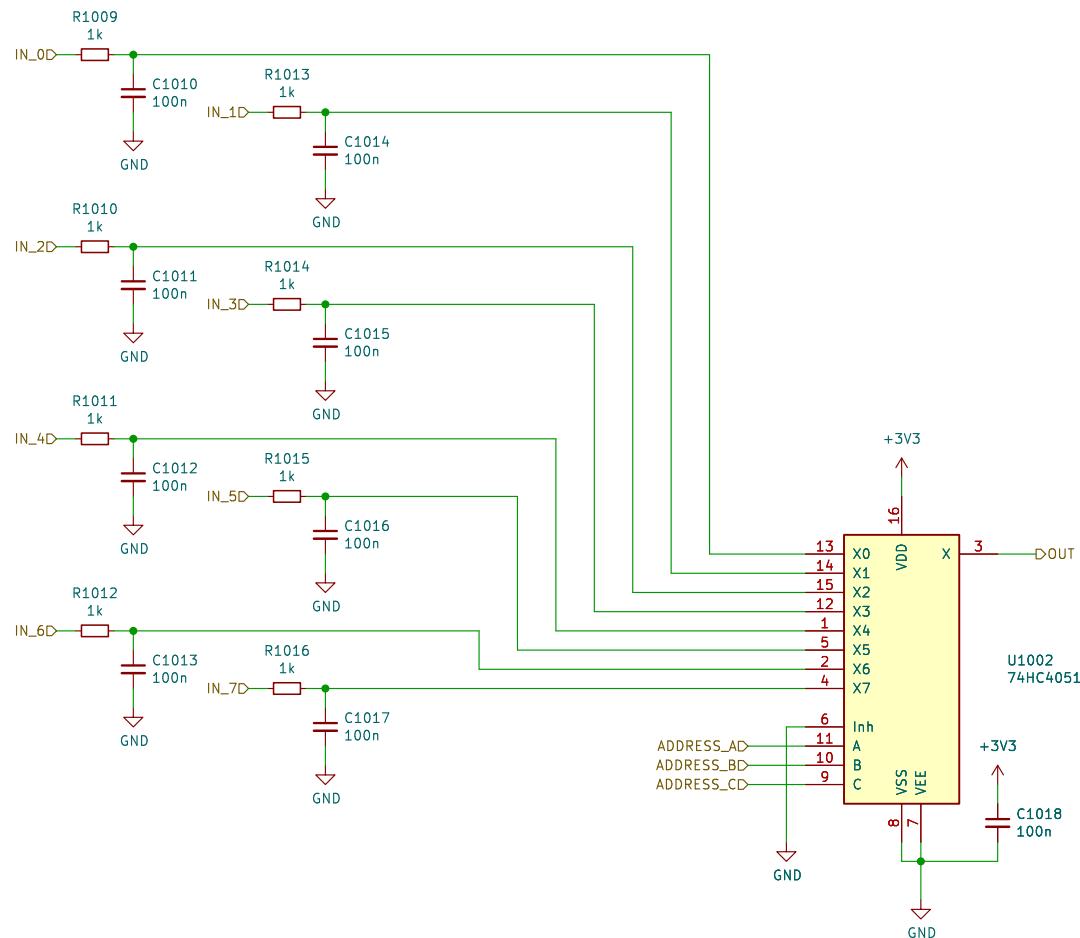
Sheet: /Sheet5D7C8BFD/  
File: UI\_MUX.kicad\_sch

**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 5/28

# 1000

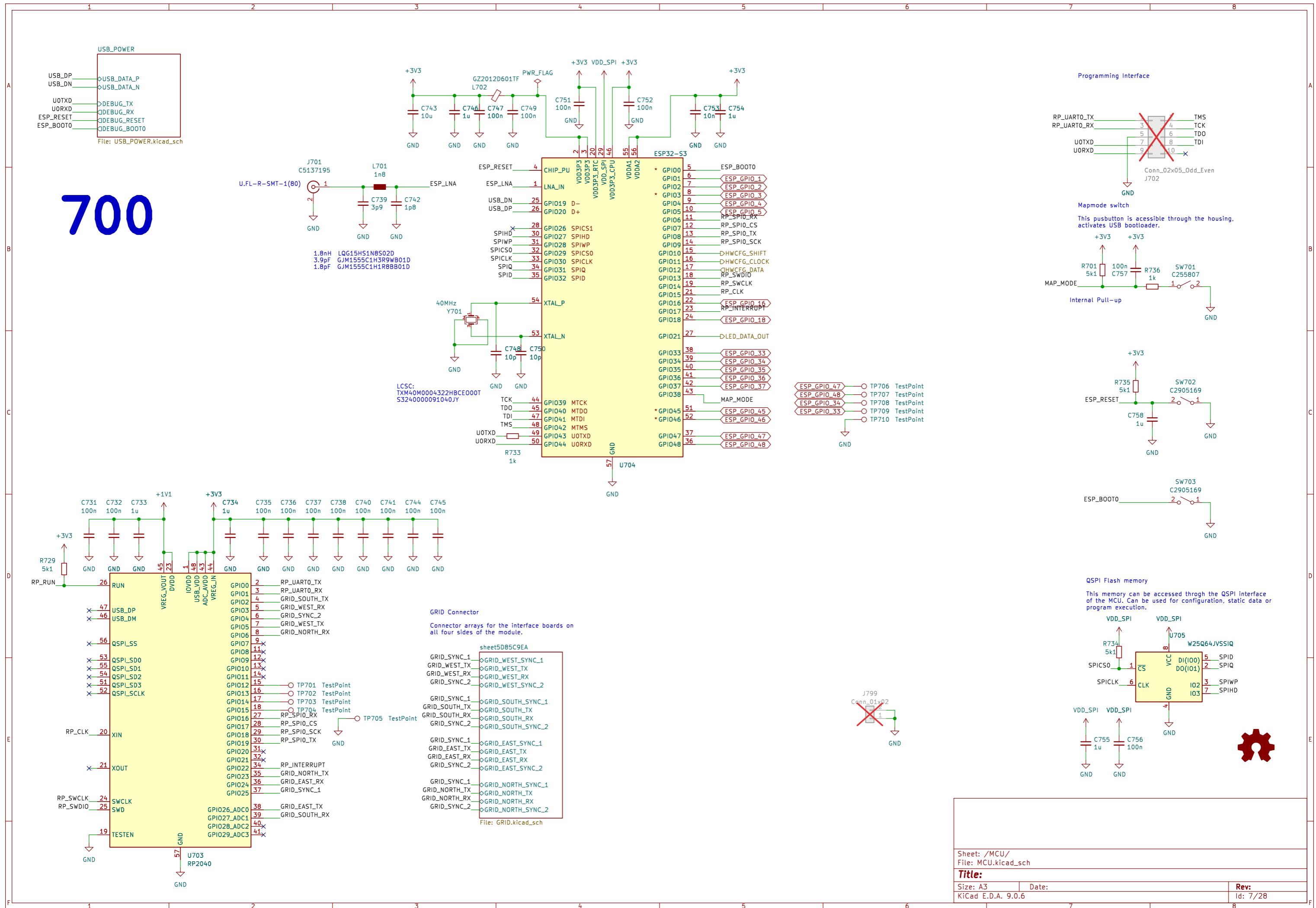


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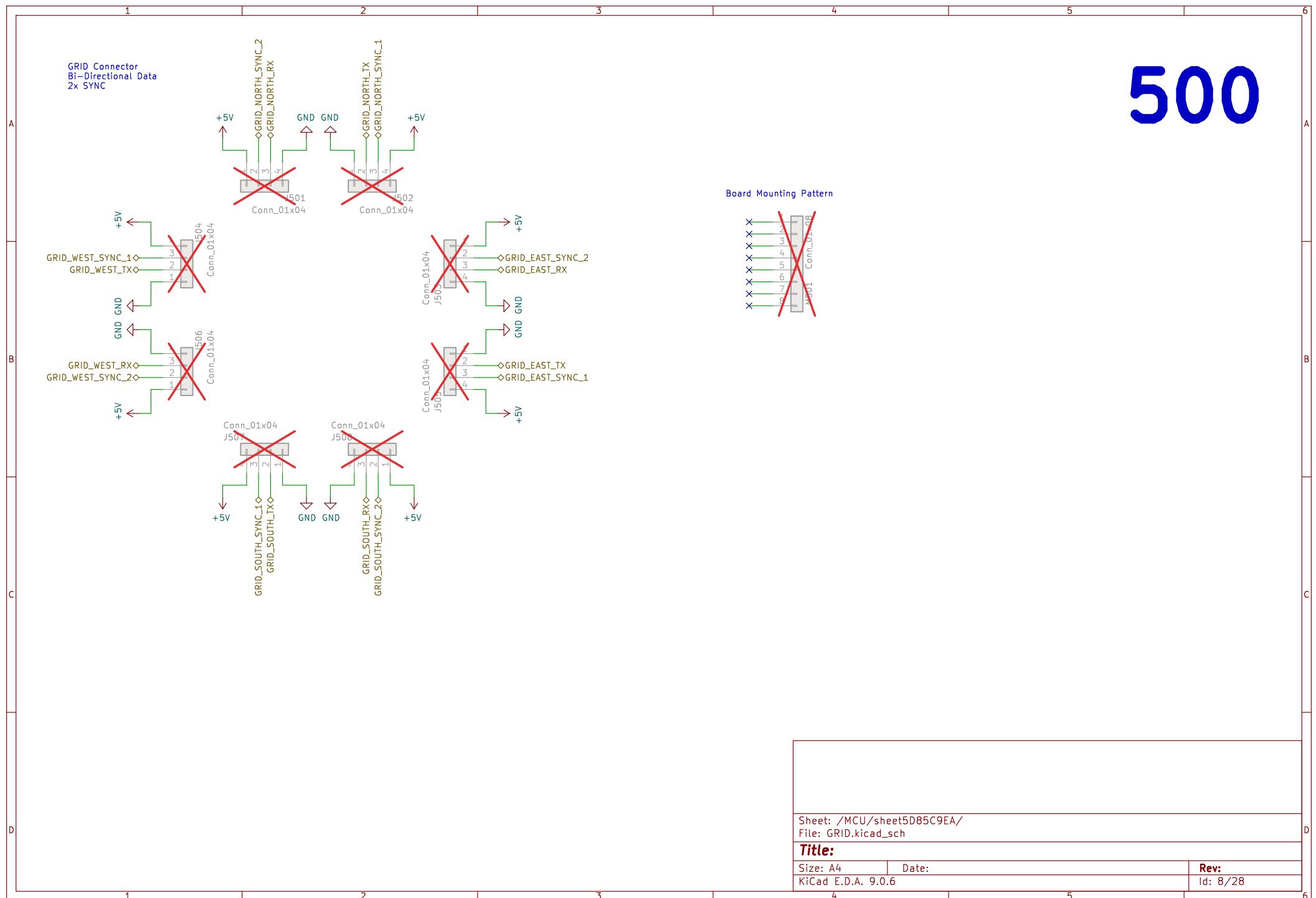
**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 6/28



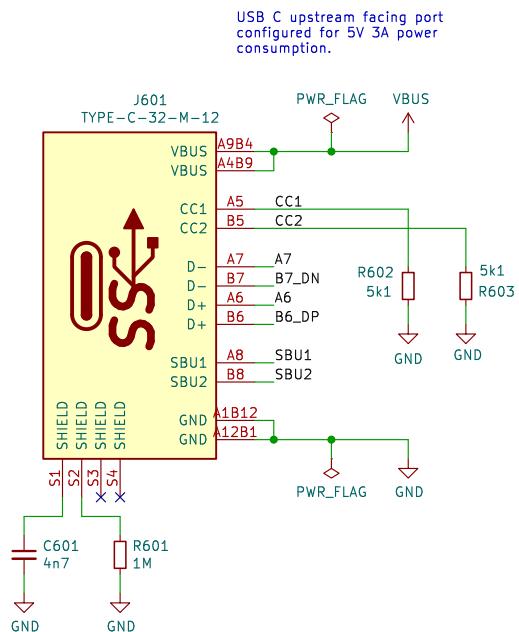
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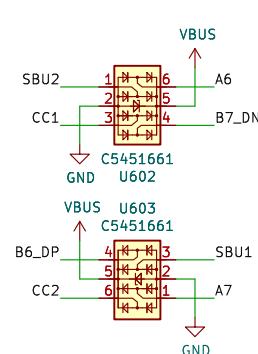
# 600

## USB Port

## ESD Prot.

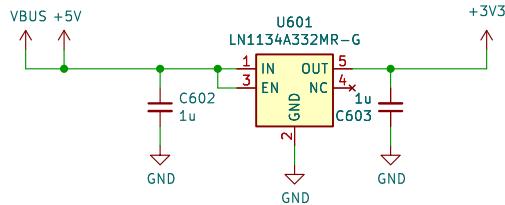


ESD protection for all 8 signals externally accessible via the USB C connector.

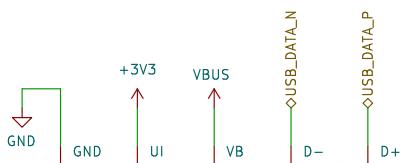


## 3V3 LDO

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

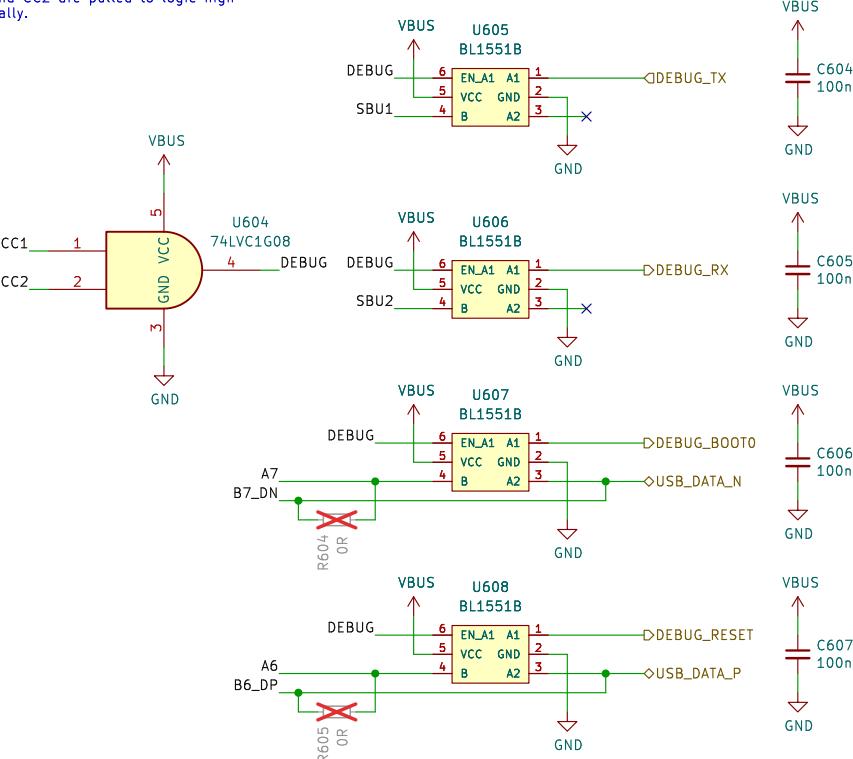


## Testpoints



## Debug-Mode Multiplexing

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



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

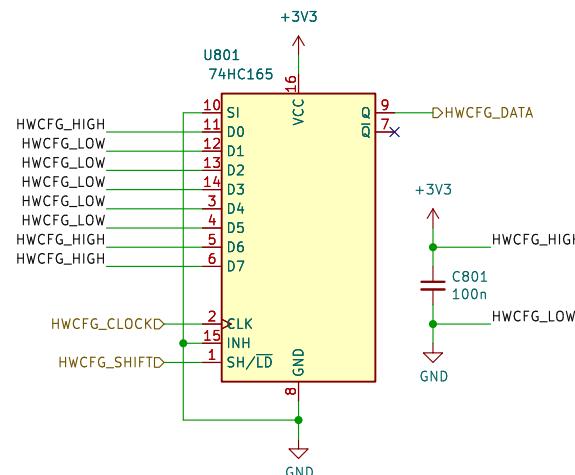
Title:

Size: A4 | Date:  
KiCad E.D.A. 9.0.6

Rev:  
Id: 9/28

# 800

1 2 3 4 5 6



#### 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 soldered 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:

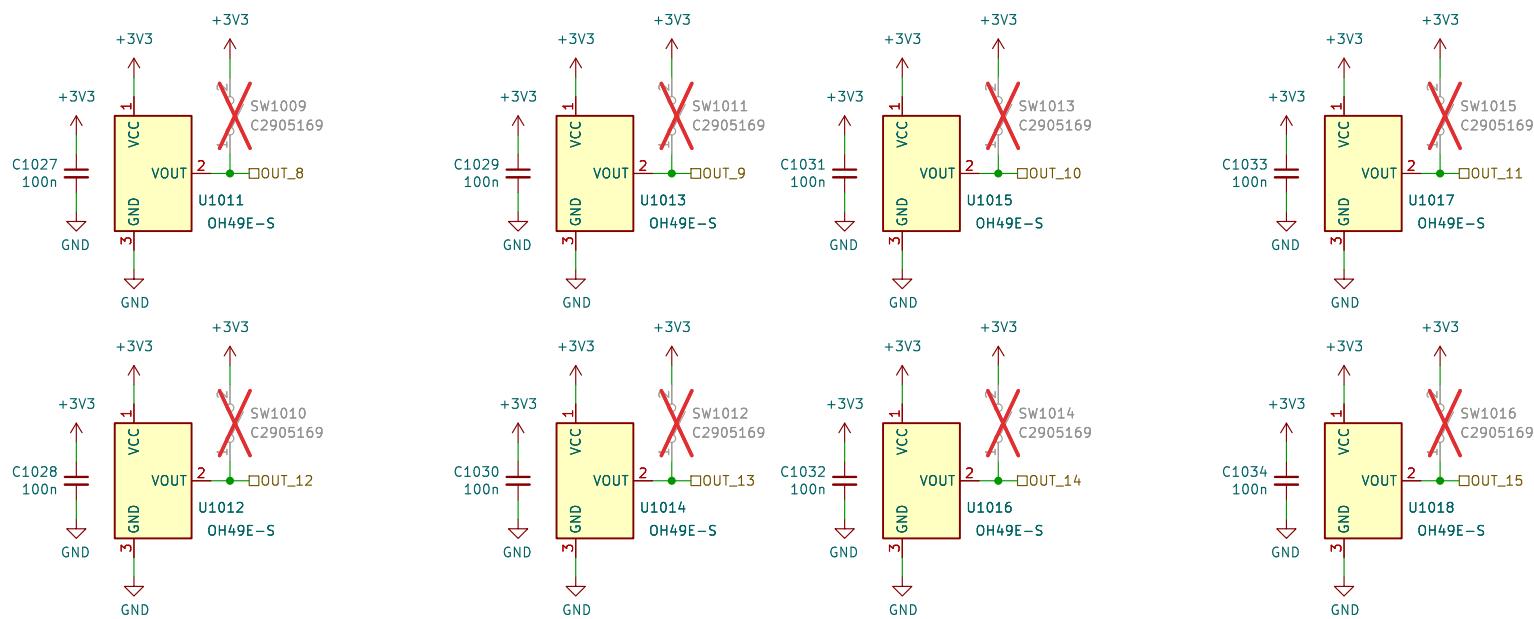
Size: A4 | Date:  
KiCad E.D.A. 9.0.6

Rev:  
Id: 10/28

1 2 3 4 5 6

# 1000

Simulation:  
<http://tinyurl.com/y229mty4>



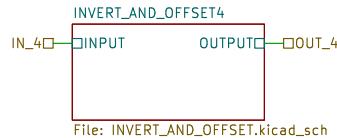
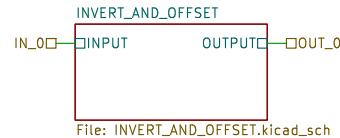
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File: UI\_BUTTON.kicad\_sch

**Title:**

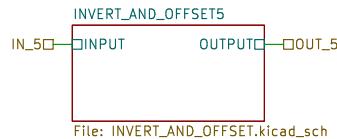
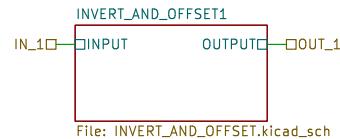
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KiCad E.D.A. 9.0.6

**Rev:**  
Id: 19/28

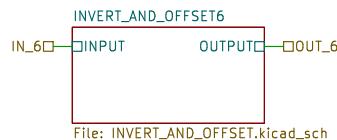
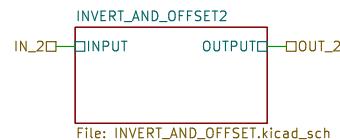
A

**simulation**

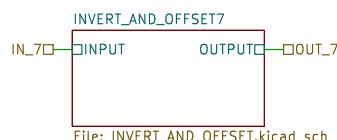
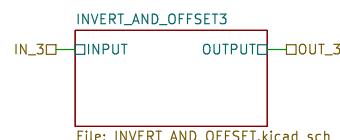
B



C



D

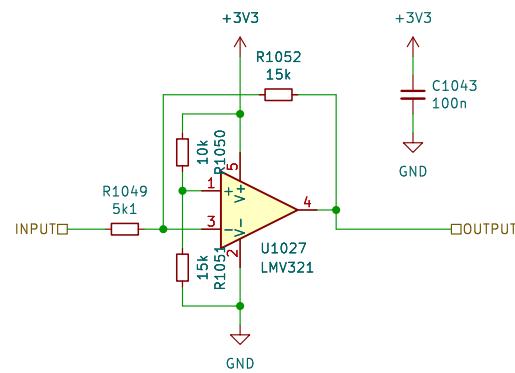


Sheet: /UI\_HALL\_PREAMP1/  
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**Title:**

Size: A4      Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 20/28

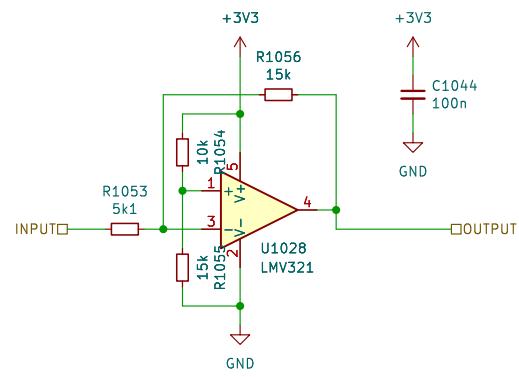


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**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 21/28

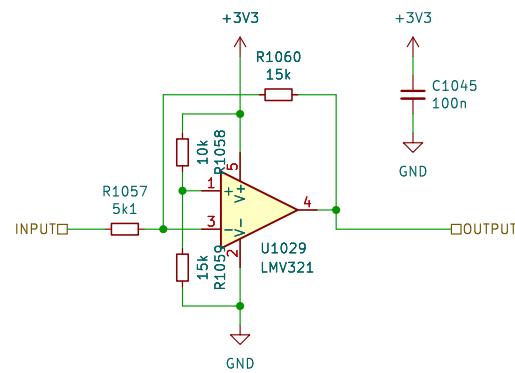


Sheet: /UI\_HALL\_PREAMP1/INVERT\_AND\_OFFSET6/  
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**Title:**

Size: A4 Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 22/28

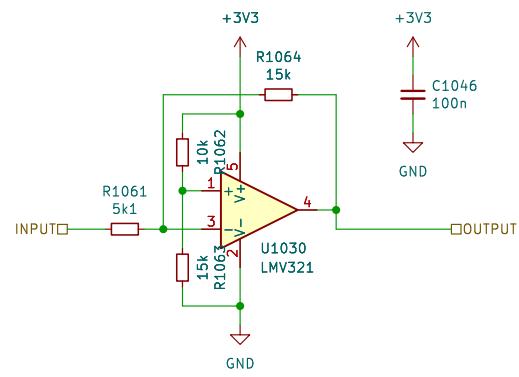


Sheet: /UI\_HALL\_PREAMP1/INVERT\_AND\_OFFSET4/  
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**Title:**

Size: A4 Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 23/28

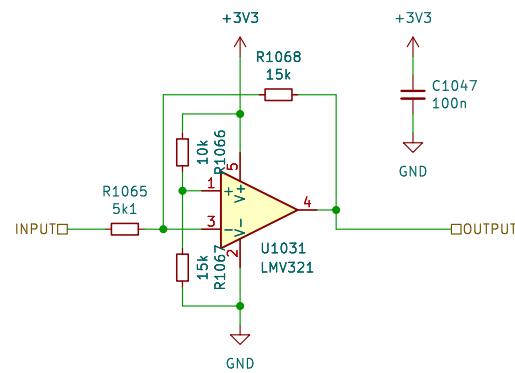


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**Title:**

Size: A4 Date:  
KiCad E.D.A. 9.0.6

Rev:  
Id: 24/28

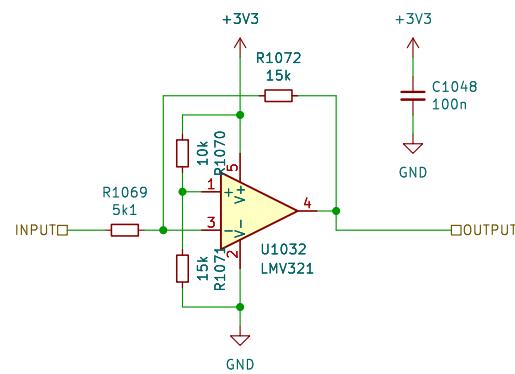


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**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 25/28

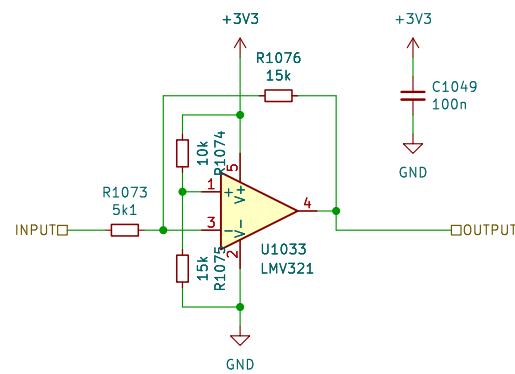


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**Title:**

Size: A4 Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 26/28

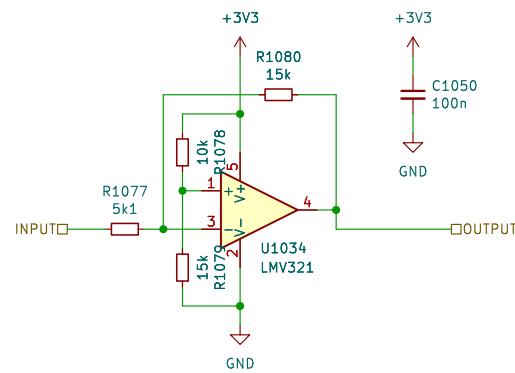


Sheet: /UI\_HALL\_PREAMP1/INVERT\_AND\_OFFSET2/  
File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

Size: A4 Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 27/28



Sheet: /UI\_HALL\_PREAMP1/INVERT\_AND\_OFFSET3/  
File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

Size: A4 Date:  
KiCad E.D.A. 9.0.6

**Rev:**  
Id: 28/28