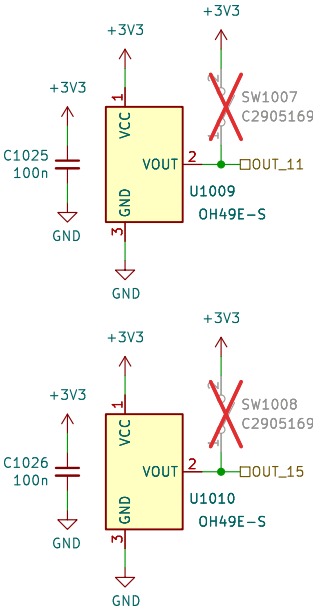
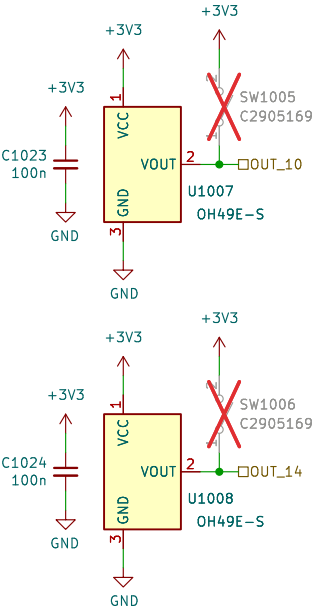
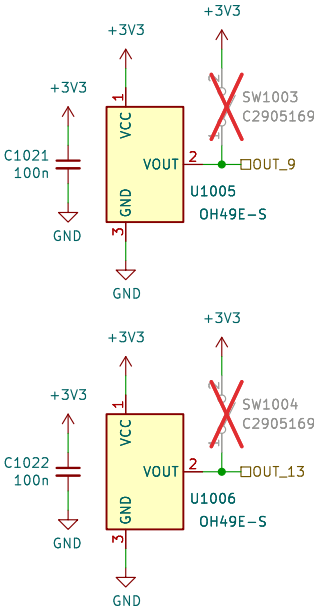
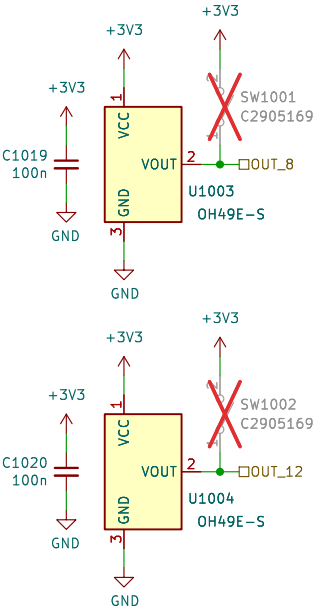


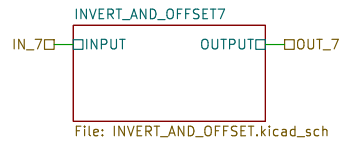
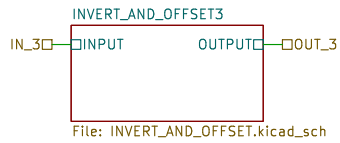
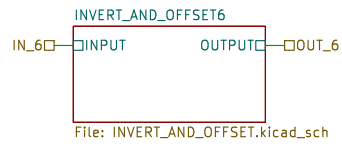
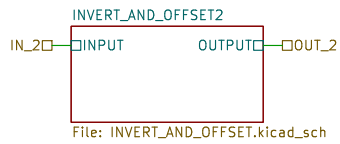
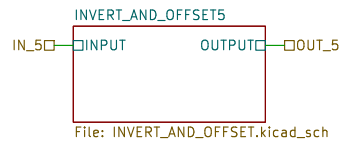
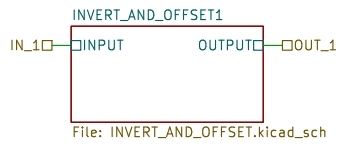
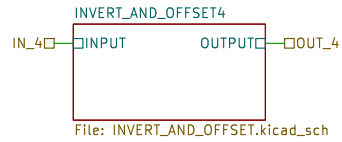
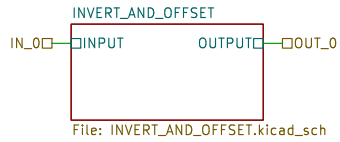
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Simulation:  
<http://tinyurl.com/y229mt4>



Sheet: /UI_BUTTON/ File: UI_BUTTON.kicad_sch		
Title:		
Size: A4	Date:	Rev:
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simulation



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

**Title:**

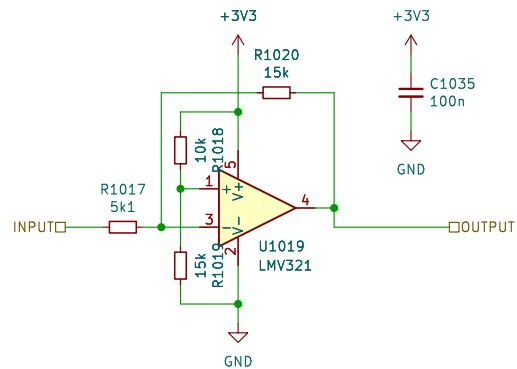
Size: A4	Date:
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KiCad E.D.A. 9.0.6

Date:

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Id: 3/28



Sheet: /UI\_HALL\_PREAMP/INVERT\_AND\_OFFSET7/  
File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

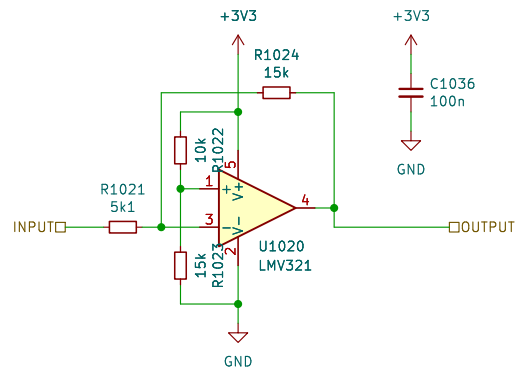
Size: A4

Date:

**Rev:**

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Sheet: /UI\_HALL\_PREAMP/INVERT\_AND\_OFFSET6/  
File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

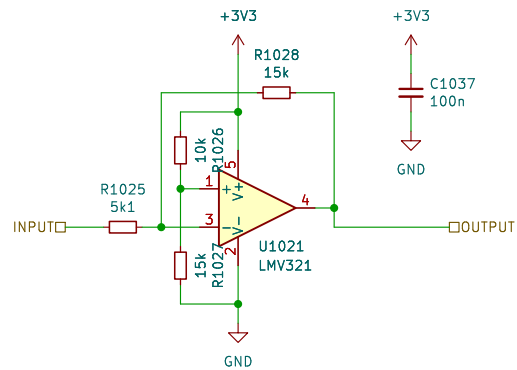
Size: A4

Date:

**Rev:**

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

**Title:**

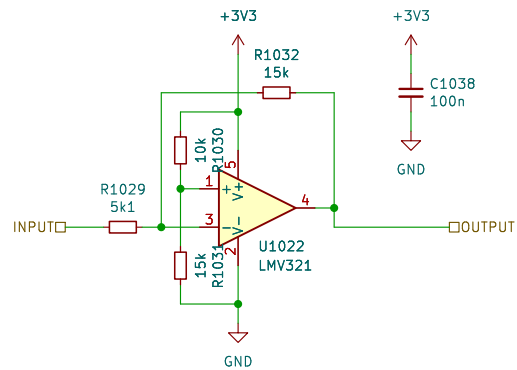
Size: A4

Date:

**Rev:**

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Id: 13/28



Sheet: /UI\_HALL\_PREAMP/INVERT\_AND\_OFFSET5/  
File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

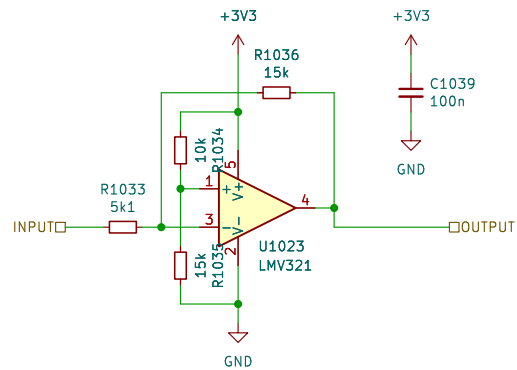
Size: A4

Date:

**Rev:**

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

**Title:**

Size: A4

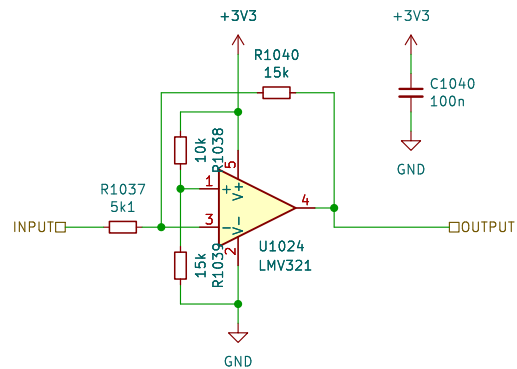
Date:

**Rev:**

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Id: 15/28





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

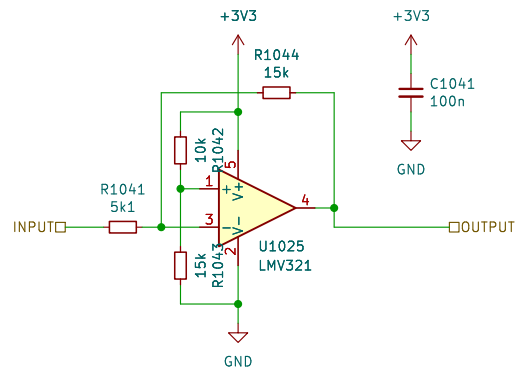
**Title:**

Size: A4  
KiCad E.D.A. 9.0.6

Date:

**Rev:**

Id: 16/28



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

**Title:**

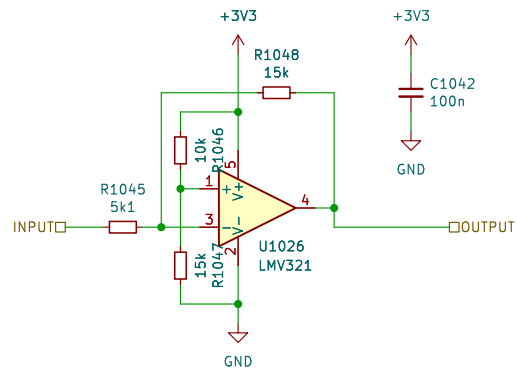
Size: A4

Date:

Rev:

KiCad E.D.A. 9.0.6

Id: 17/28



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

**Title:**

Size: A4

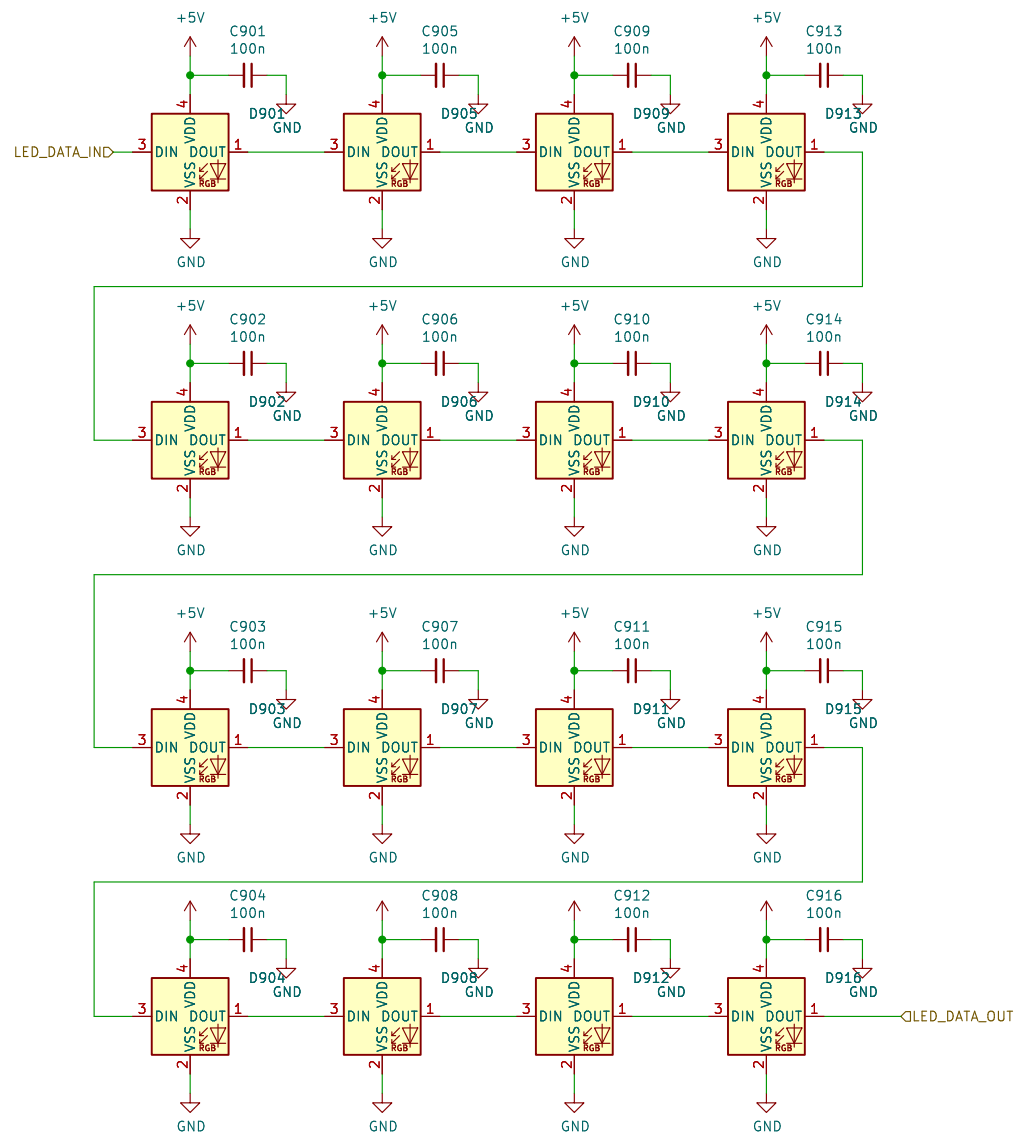
Date:

**Rev:**

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Id: 18/28

# 900



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

**Title:**

Size: A4

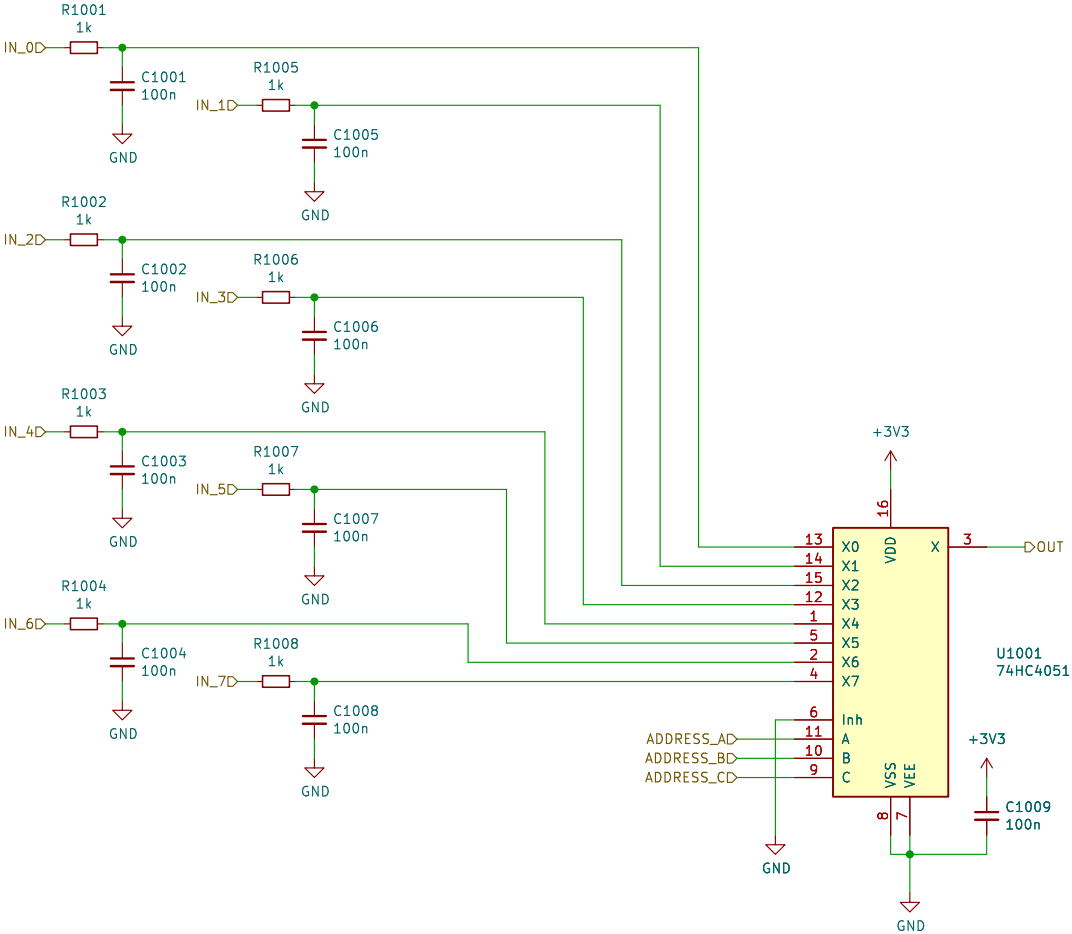
Date:

KiCad E.D.A. 9.0.6

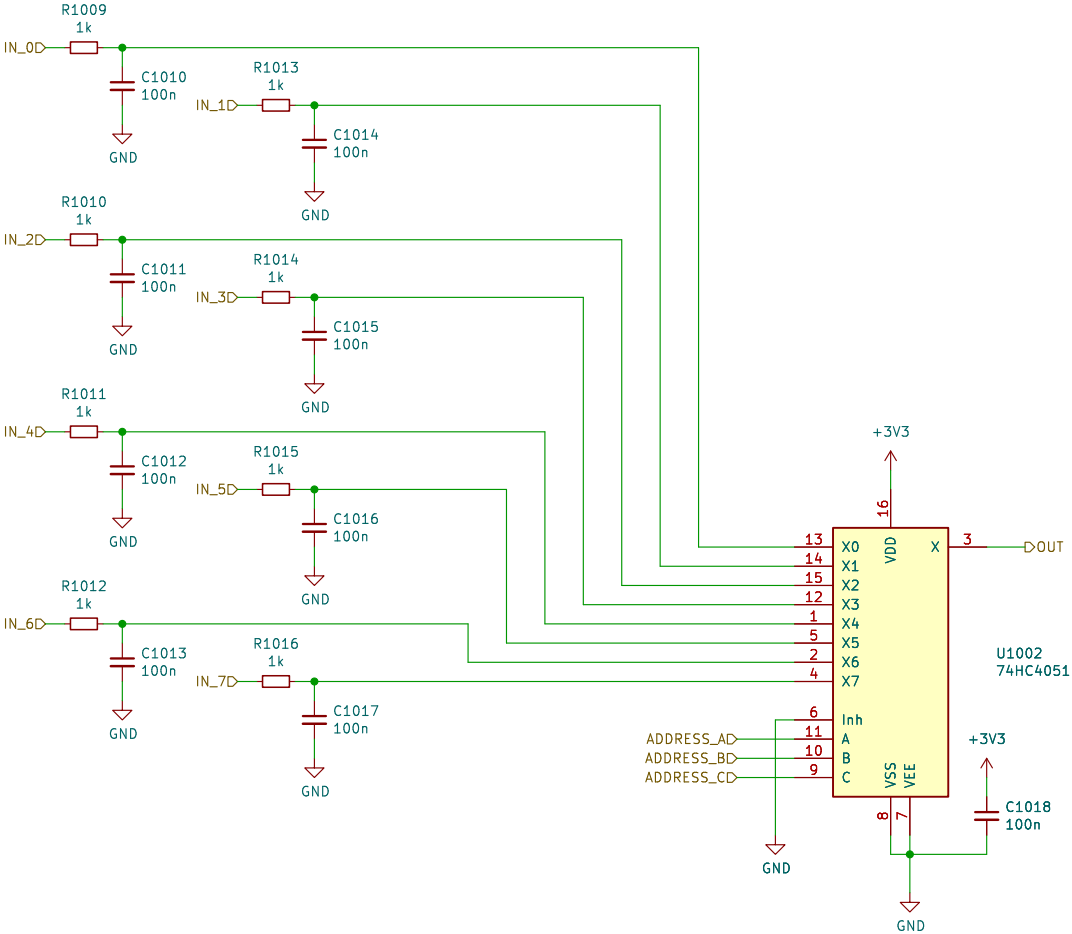
**Rev:**

Id: 4/28

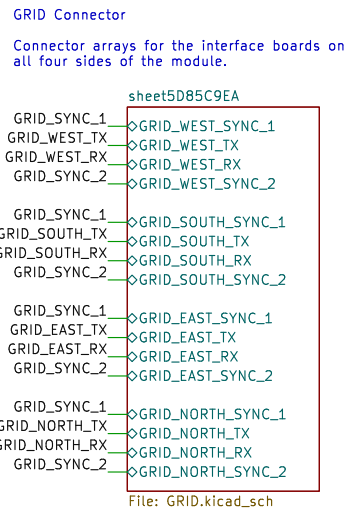
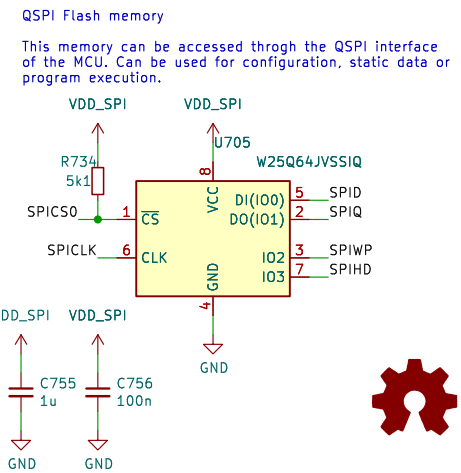
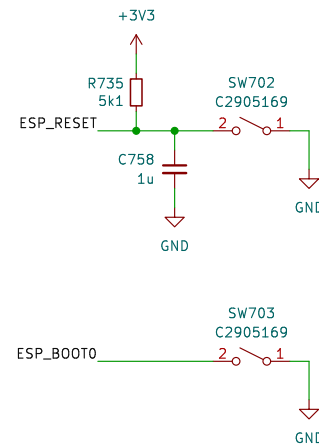
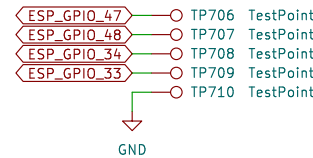
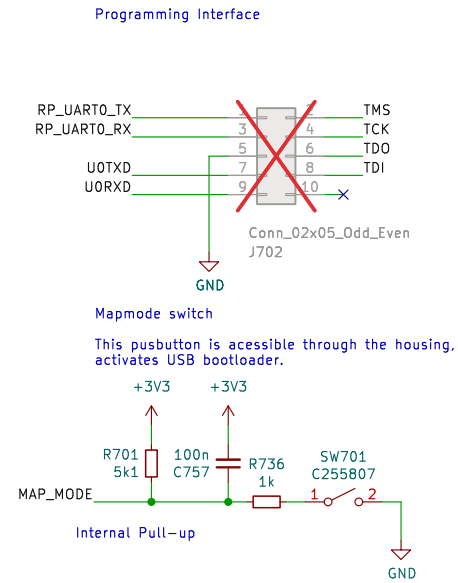
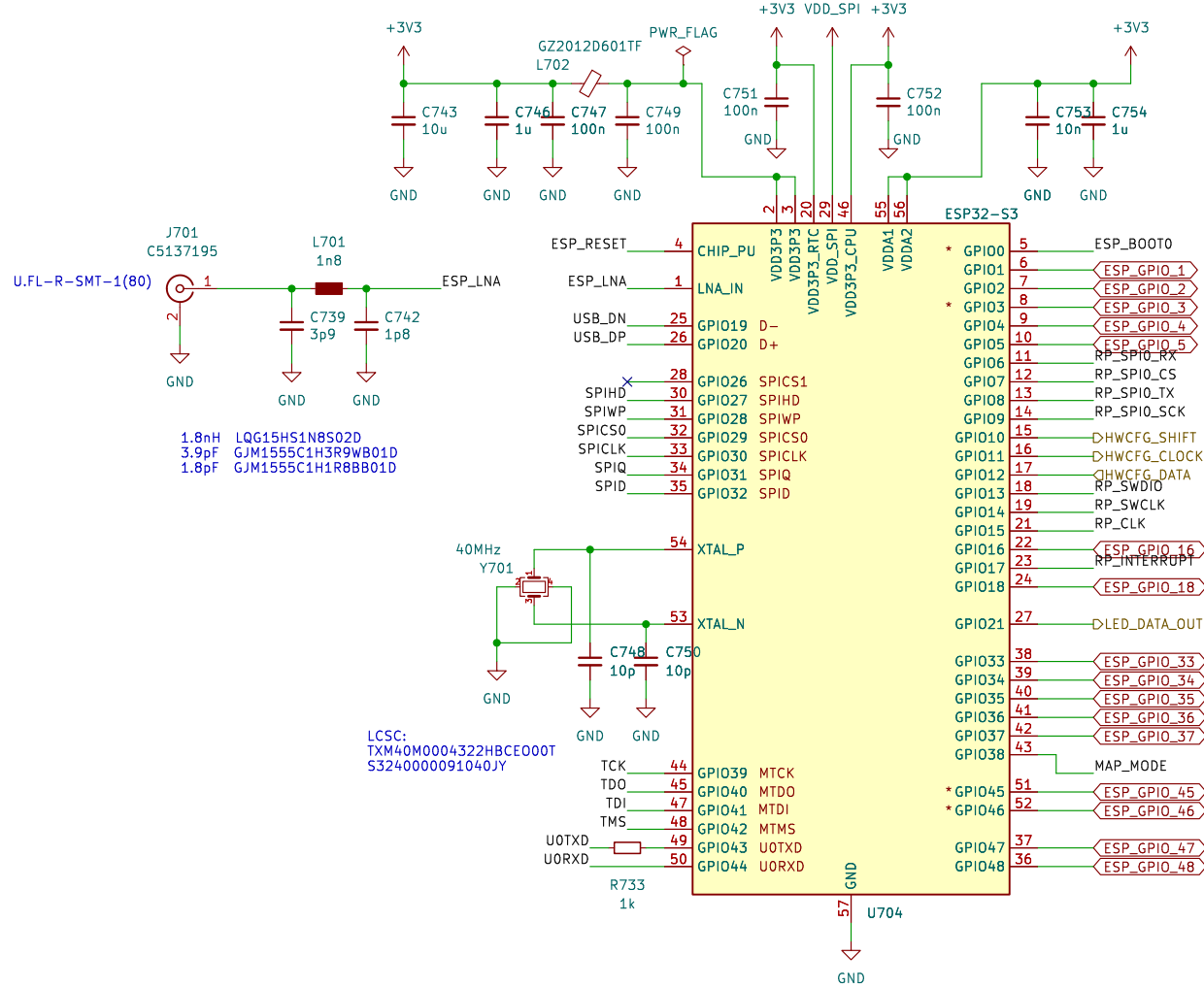
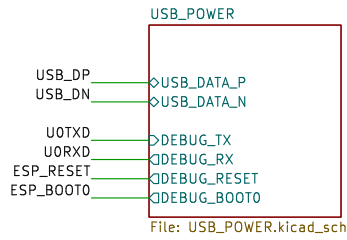
1000



1000



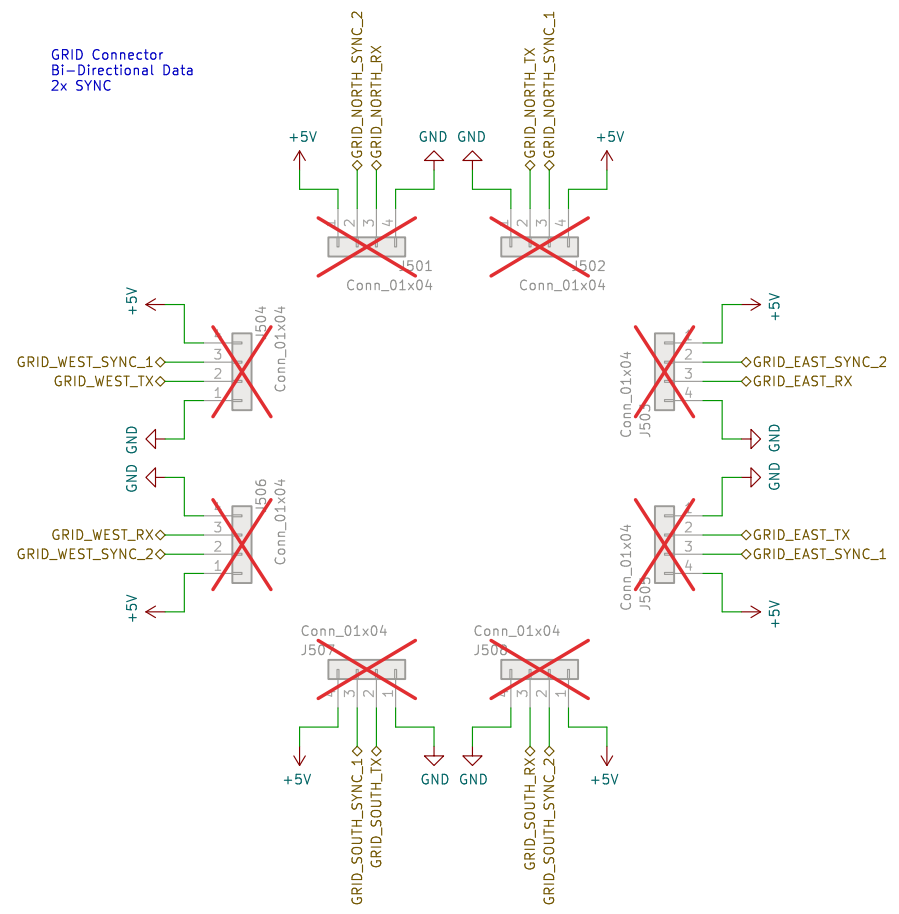
700



500

GRID Connector  
Bi-Directional Data  
2x SYNC

Board Mounting Pattern



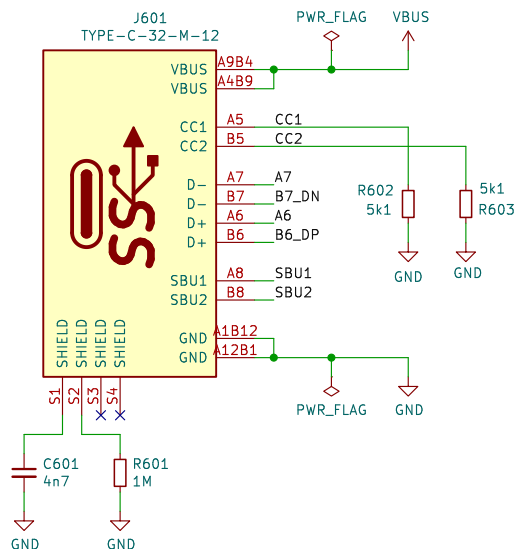
Sheet: /MCU/sheet5D85C9EA/ File: GRID.kicad_sch		
Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. 9.0.6	Id: 8/28	



600

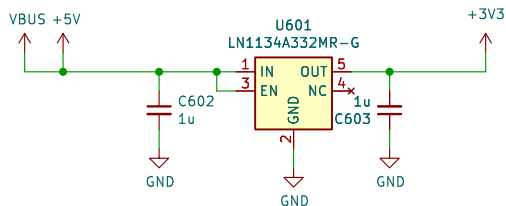
## USB Port

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



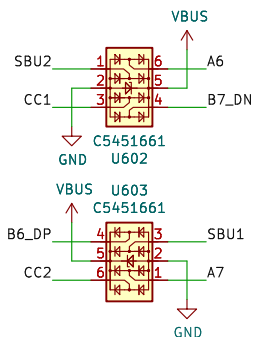
## 3V3 LDO

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



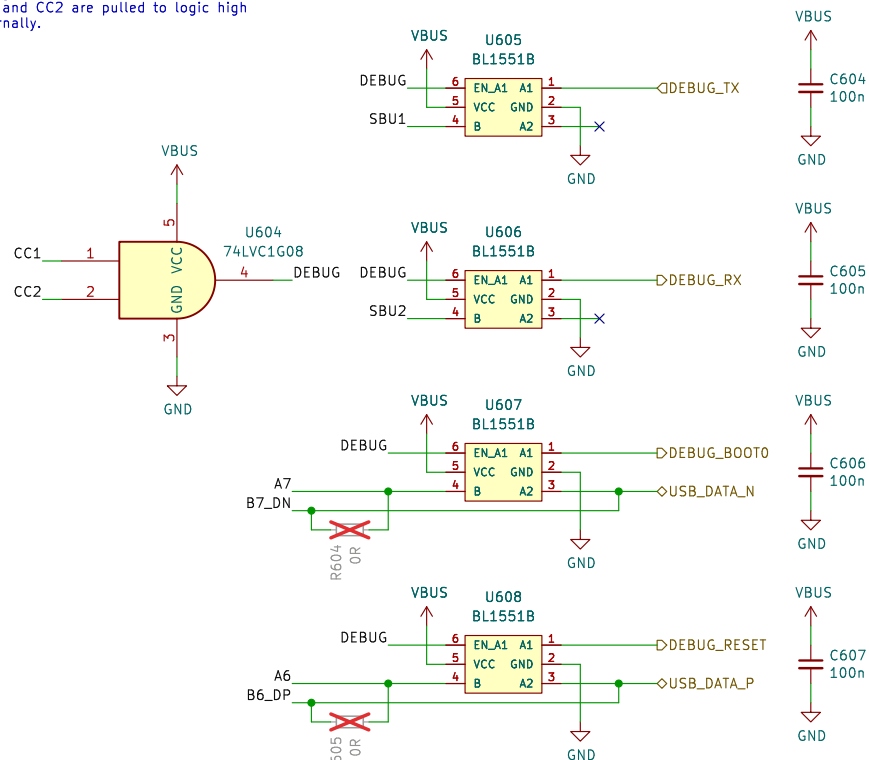
## ESD Prot.

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

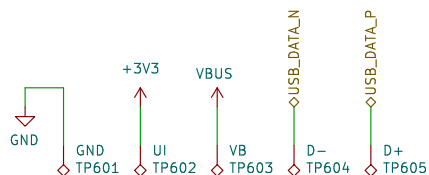


## Debug-Mode Multiplexing

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:

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800

U801  
74HC165

+3V3

VCC

16

9

Q

7

X

HWCFG\_DATA

+3V3

HWCFG\_HIGH

C801  
100n

HWCFG\_LOW

GND

8

GND

HWCFG\_HIGH

10

SI

11

D0

12

D1

13

D2

14

D3

3

D4

4

D5

5

D6

6

D7

2

CLK

15

INH

1

SH/LD

HWCFG\_CLOCKD

HWCFG\_SHIFTD

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. 9.0.6		Id: 10/28

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)

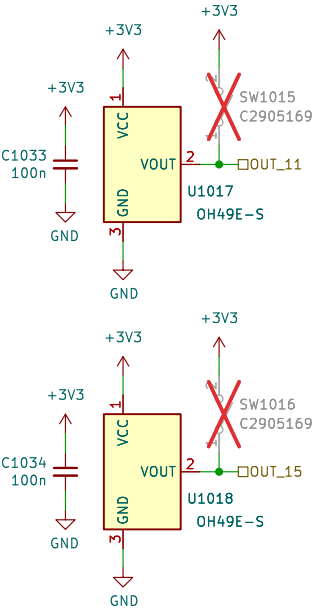
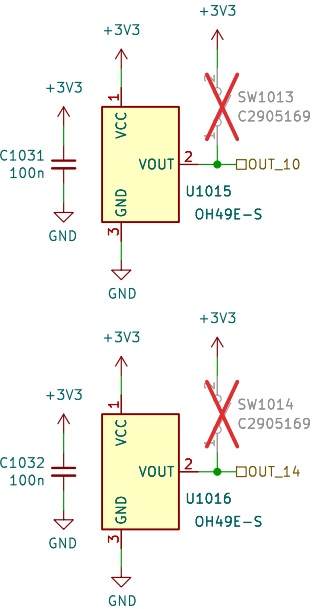
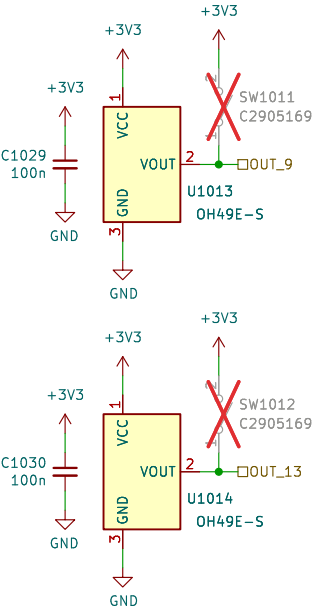
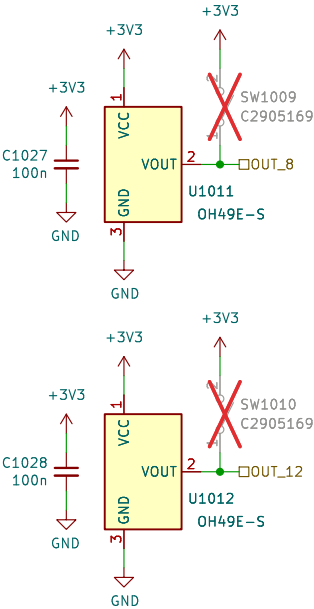
Po16	0000
Bo16	0001
PBF4	0010
EN16	0011
...	

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

Sheet: /HWCFG/ File: HWCFG.kicad_sch			
<b>Title:</b>			
Size: A4	Date:		<b>Rev:</b>
KiCad E.D.A. 9.0.6			Id: 10/28

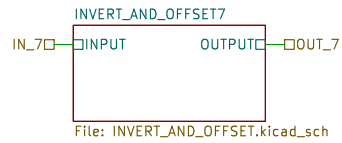
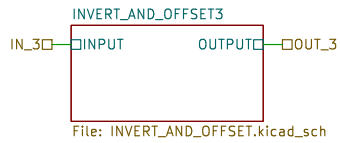
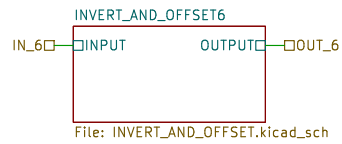
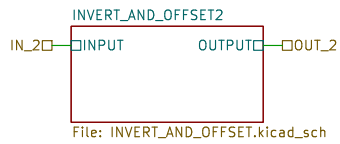
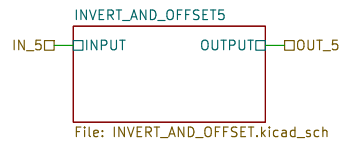
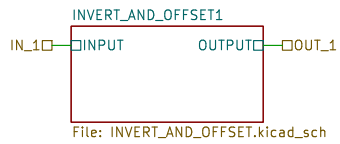
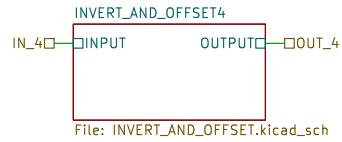
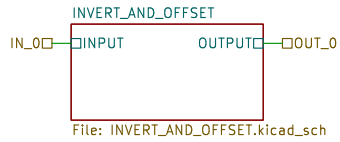
1000

Simulation:  
<http://tinyurl.com/y229mt4>



Sheet: /UI_BUTTON1/ File: UI_BUTTON.kicad_sch		
Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. 9.0.6	Id: 19/28	

simulation



Sheet: /UI\_HALL\_PREAMP1/  
File: UI\_HALL\_PREAMP.kicad\_sch

**Title:**

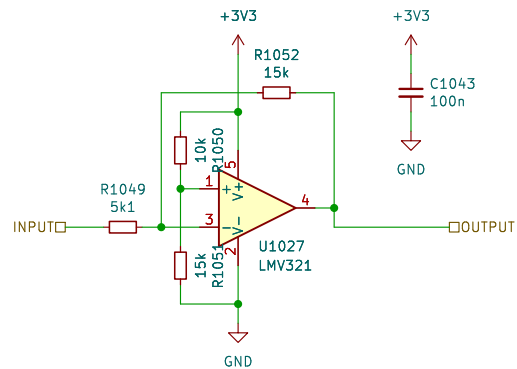
Size: A4	Date:
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Date:

Rev:

Id: 20/28



Sheet: /UI\_HALL\_PREAMP1/INVERT\_AND\_OFFSET7/  
File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

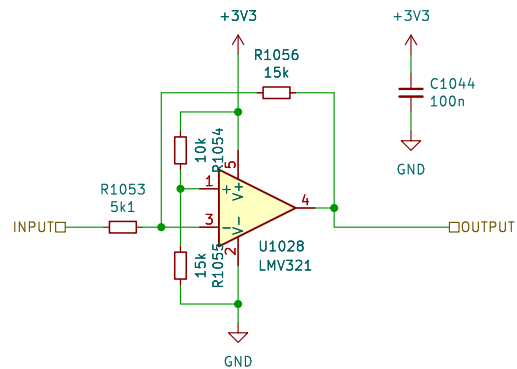
Size: A4

Date:

Rev:

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Sheet: /UI\_HALL\_PREAMP1/INVERT\_AND\_OFFSET6/  
File: INVERT\_AND\_OFFSET.kicad\_sch

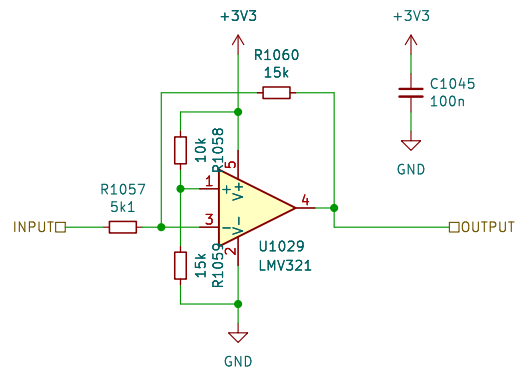
**Title:**

Size: A4  
KiCad E.D.A. 9.0.6

Date:

**Rev:**

Id: 22/28



Sheet: /UI\_HALL\_PREAMP1/INVERT\_AND\_OFFSET4/  
File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

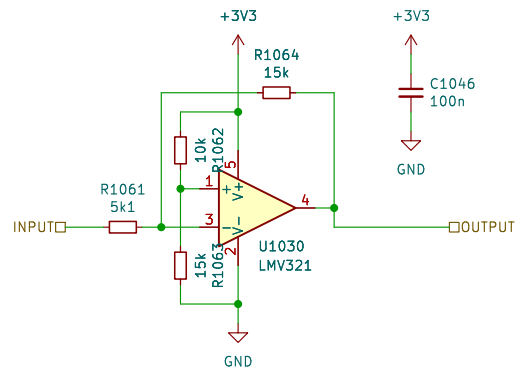
Size: A4

Date:

**Rev:**

KiCad E.D.A. 9.0.6

Id: 23/28



Sheet: /UI\_HALL\_PREAMP1/INVERT\_AND\_OFFSET5/  
File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

Size: A4

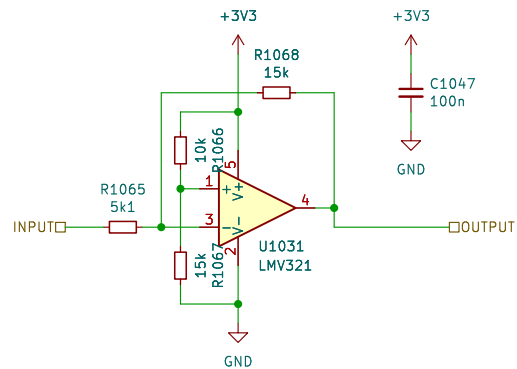
Date:

**Rev:**

KiCad E.D.A. 9.0.6

Id: 24/28





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

**Title:**

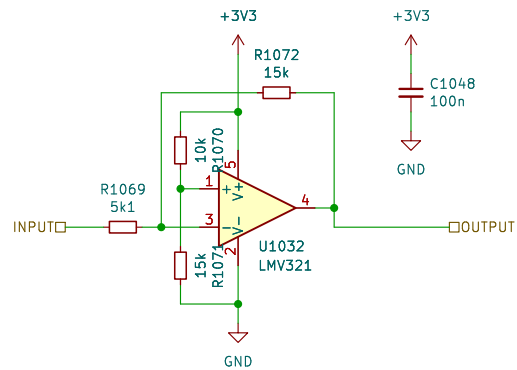
Size: A4

Date:

**Rev:**

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Id: 25/28



Sheet: /UI\_HALL\_PREAMP1/INVERT\_AND\_OFFSET1/  
File: INVERT\_AND\_OFFSET.kicad\_sch

**Title:**

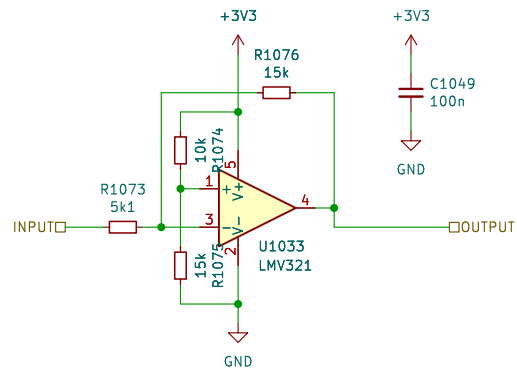
Size: A4

Date:

**Rev:**

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Id: 26/28



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

**Title:**

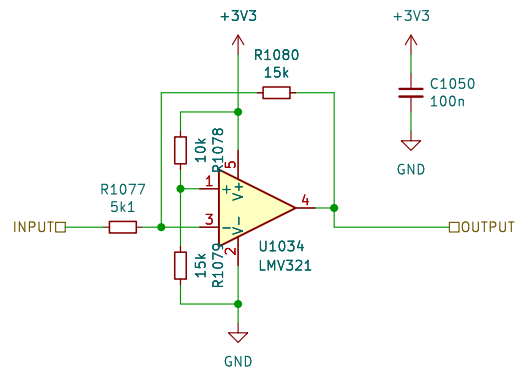
Size: A4

Date:

**Rev:**

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Id: 27/28



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

**Title:**

Size: A4

Date:

Rev:

KiCad E.D.A. 9.0.6

Id: 28/28