

J509 SMTS01625MTJ  
GND

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GND

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

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

Sheet: /  
File: PCBA-PBF4.kicad\_sch

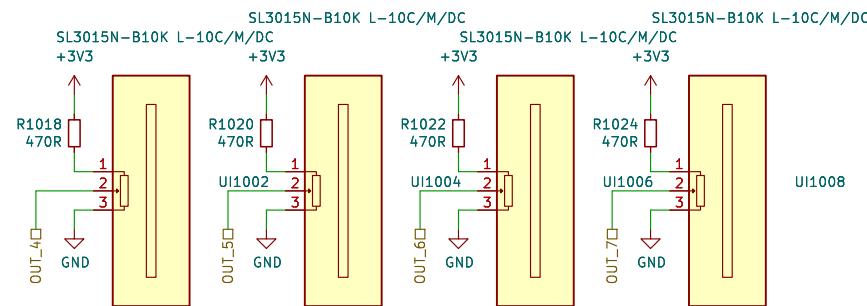
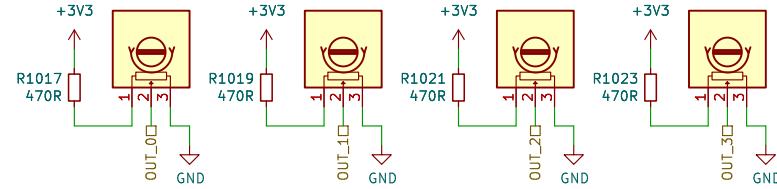
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KiCad E.D.A. 9.0.6	

Rev:
Id: 1/15

# 1000

RK0952N-B10K L-12.5F/RK0952N-B10K L-12.5F/RK0952N-B10K L-12.5F/RK0952N-B10K L-12.5F/LAL/N=5  
UI1001 UI1003 UI1005 UI1007



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

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

**Rev:**  
Id: 2/15

1000

1 2 3 4 5 6

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

A

A

B

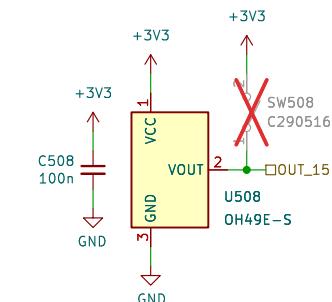
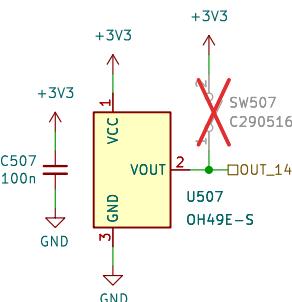
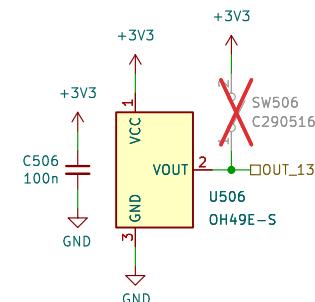
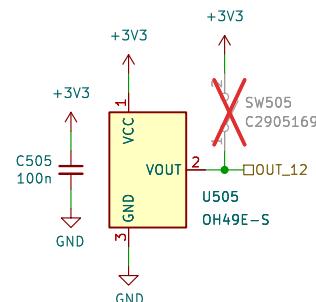
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C

C

D

D



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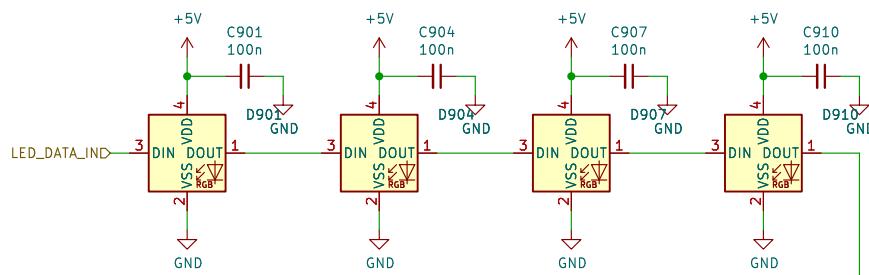
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Id: 3/15

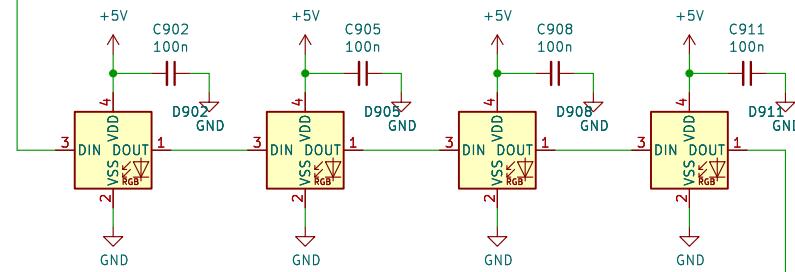
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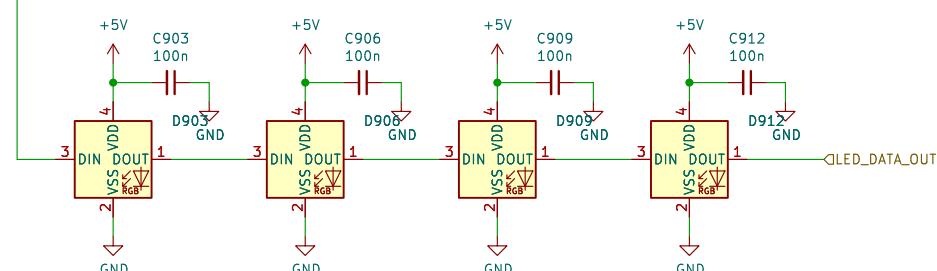
A



B



C



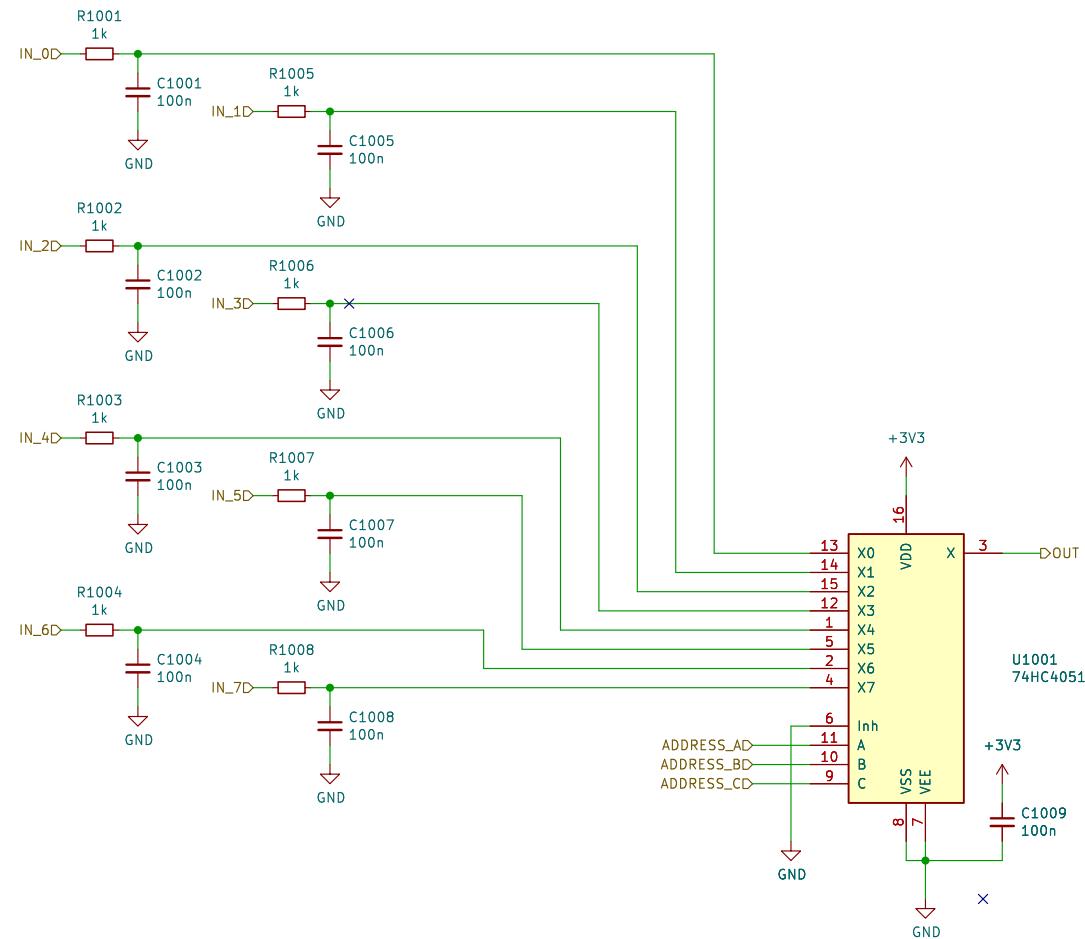
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**Rev:**  
Id: 4/15

# 1000



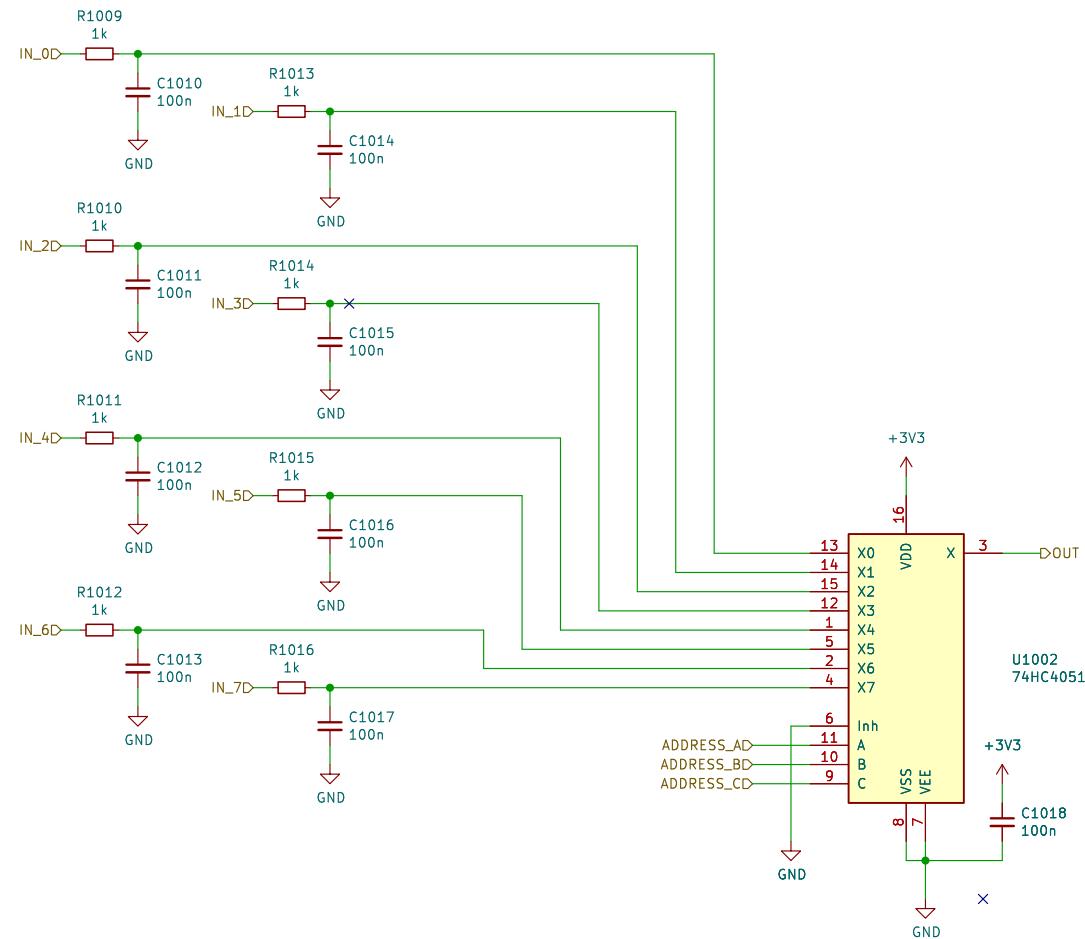
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Size: A4 | Date:  
KiCad E.D.A. 9.0.6

Rev:  
Id: 5/15

# 1000

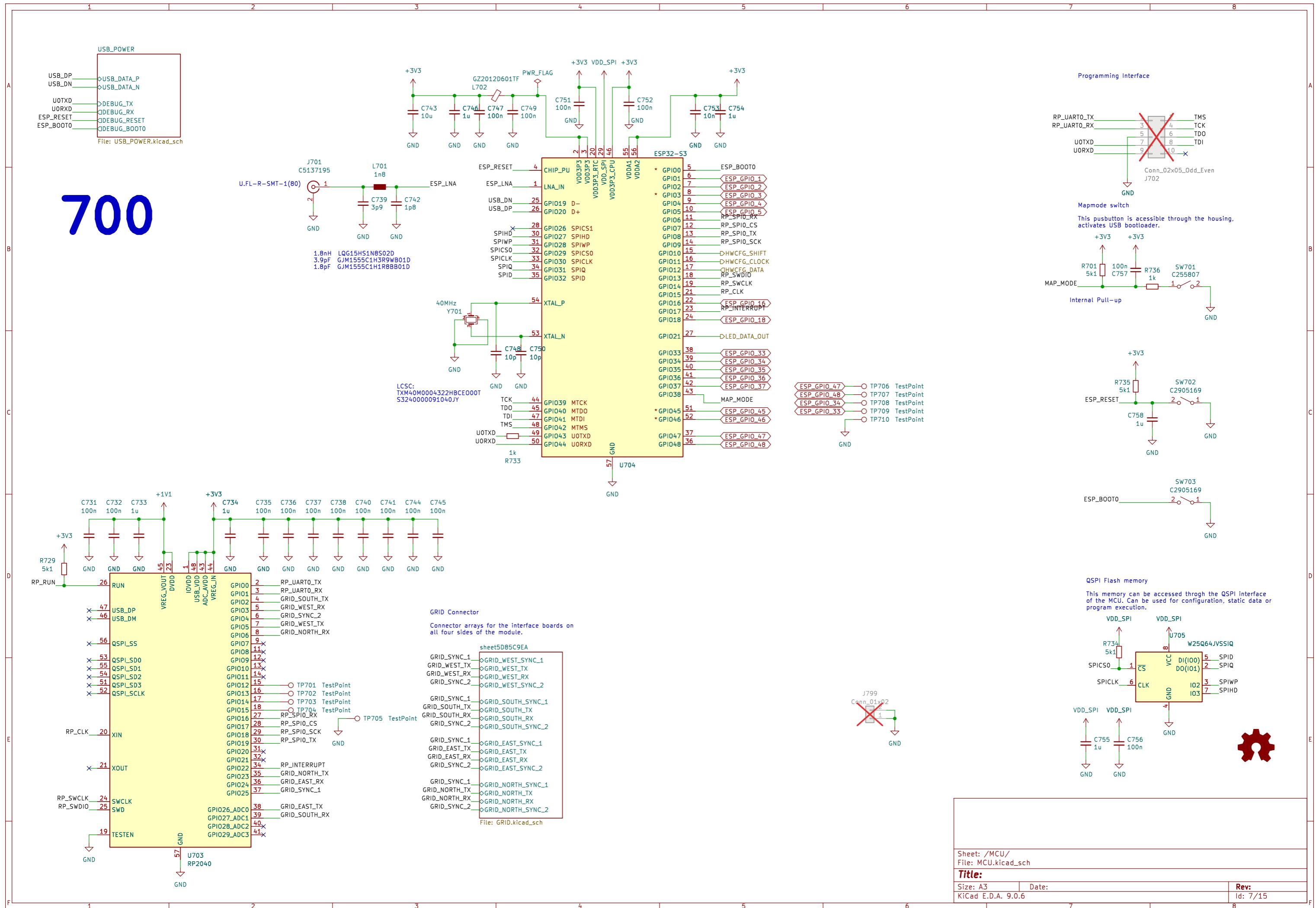


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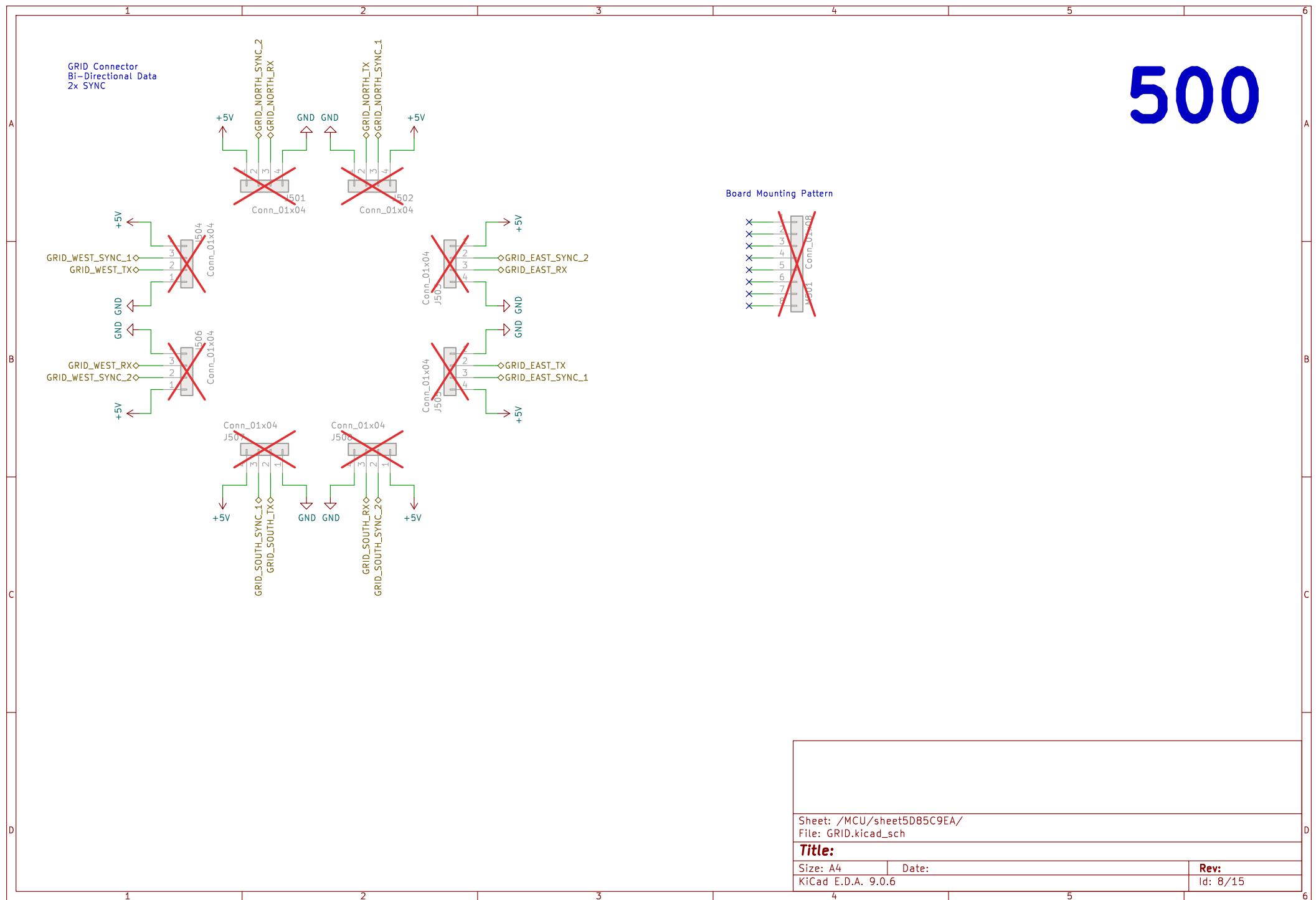
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**Rev:**  
Id: 6/15



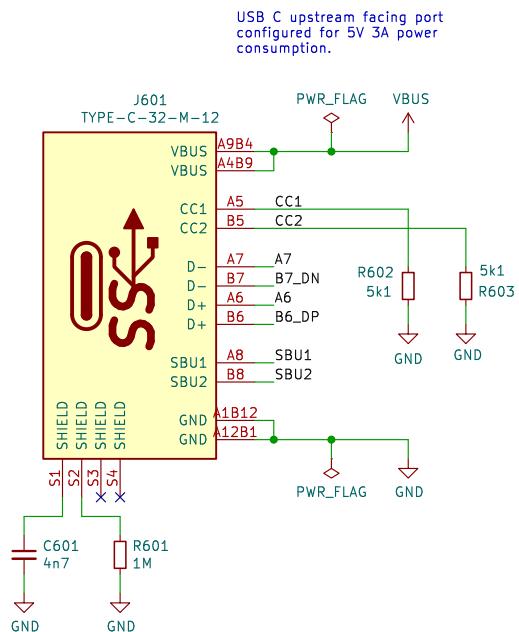
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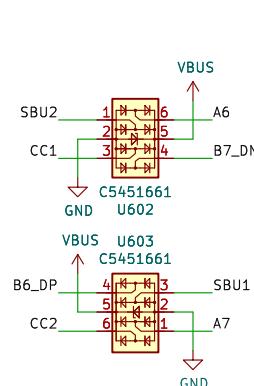
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## USB Port

## ESD Prot.

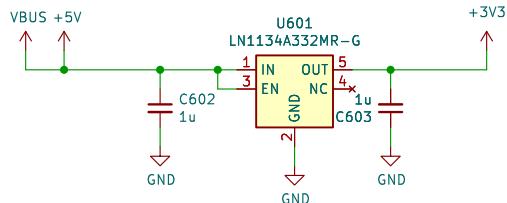


ESD protection for all 8 signals externally accessible via the USB C connector.

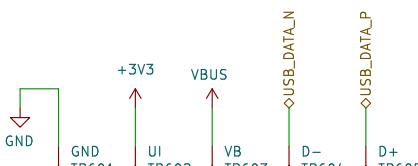


## 3V3 LDO

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

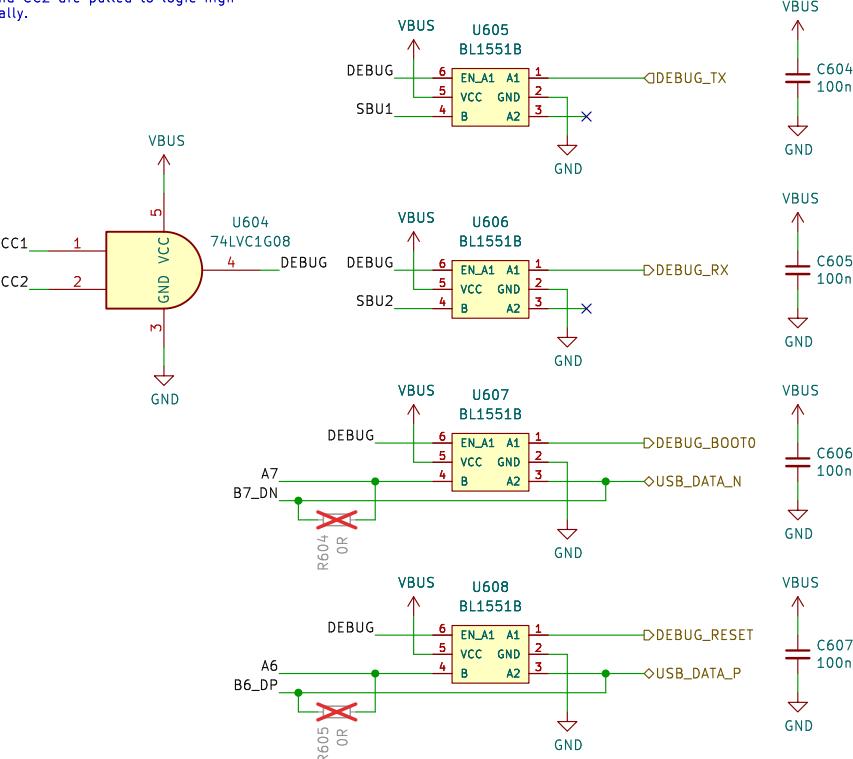


## Testpoints



## 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: 9/15

# 800

A

A

B

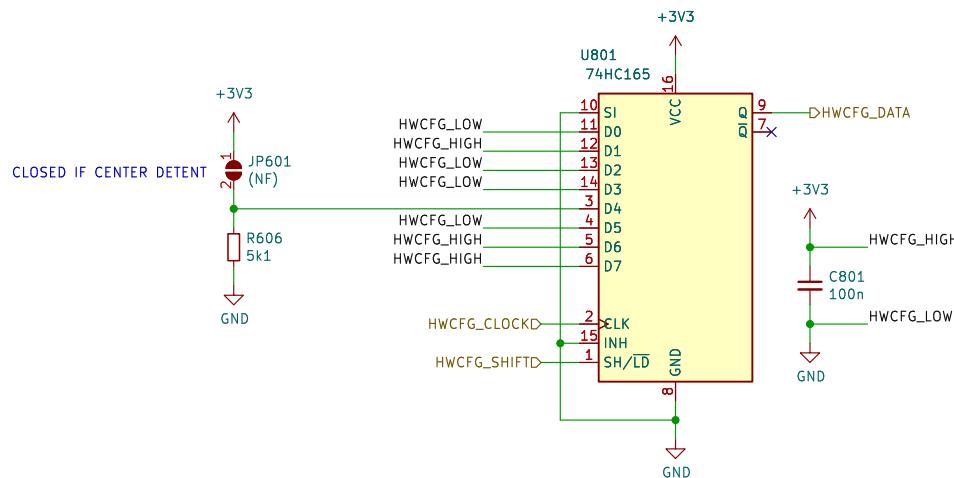
B

C

C

D

D



#### 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/  
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#### Title:

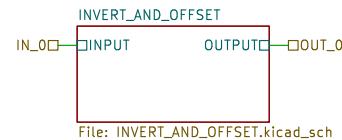
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KiCad E.D.A. 9.0.6

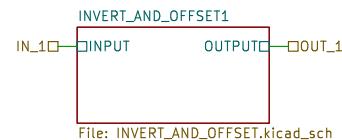
Rev:

Id: 10/15

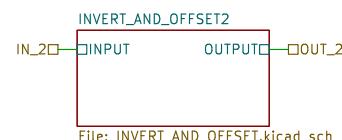
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**simulation**

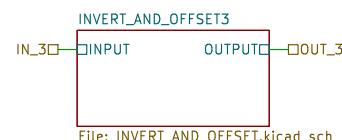
B



C



D

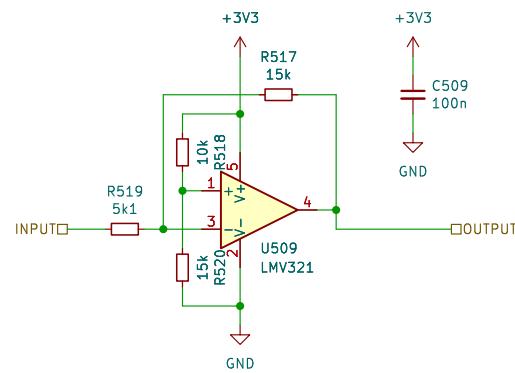


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**Title:**

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

Rev:  
Id: 11/15

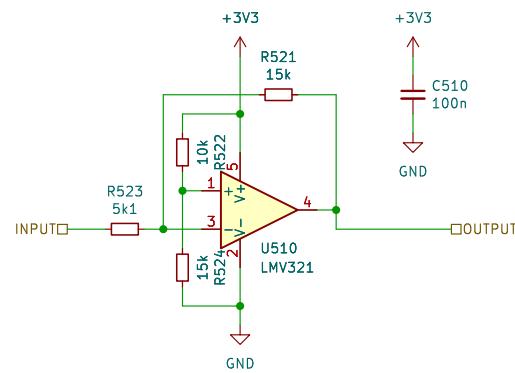


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**Title:**

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

**Rev:**  
Id: 16/15

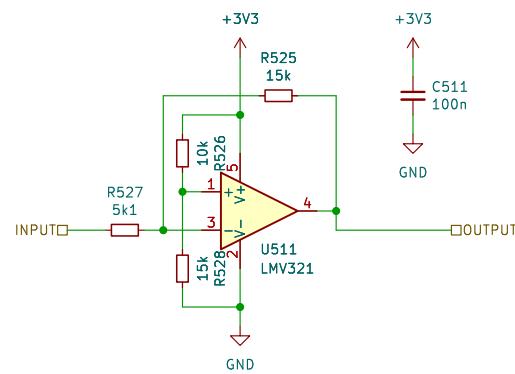


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**Title:**

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

**Rev:**  
Id: 17/15



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: 18/15

1 2 3 4 5 6

A

A

B

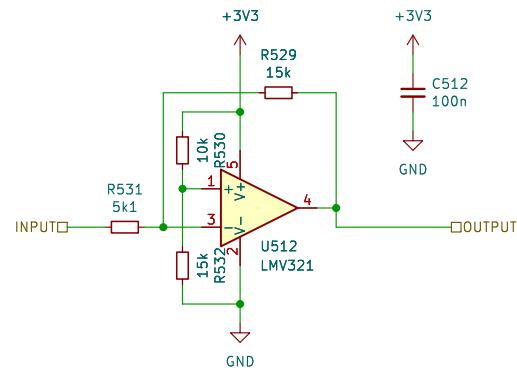
B

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

**Title:**

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

**Rev:**  
Id: 19/15

1 2 3 4 5 6