

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

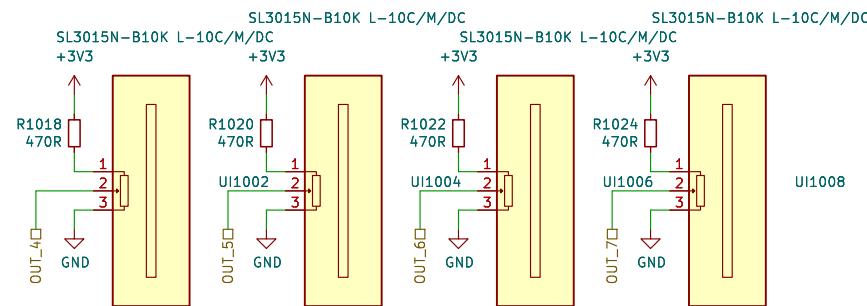
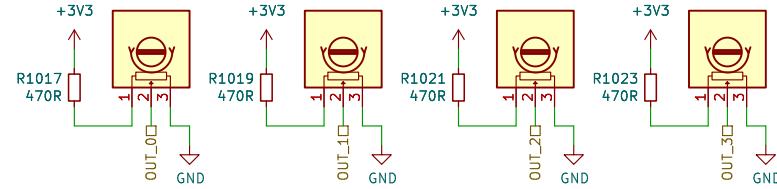
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Size: A3	Date:
KiCad E.D.A. 9.0.6	

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

Title:

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

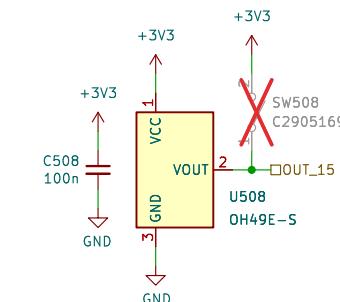
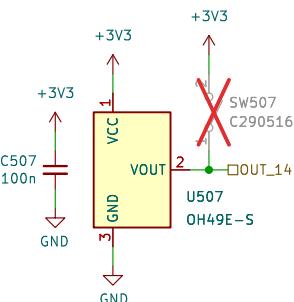
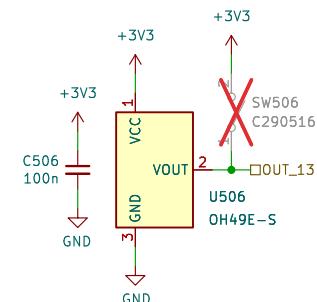
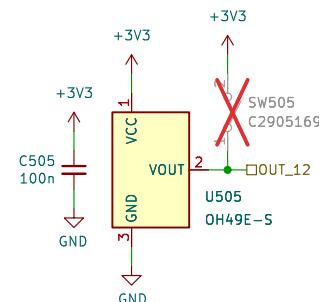
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C

C

D

D



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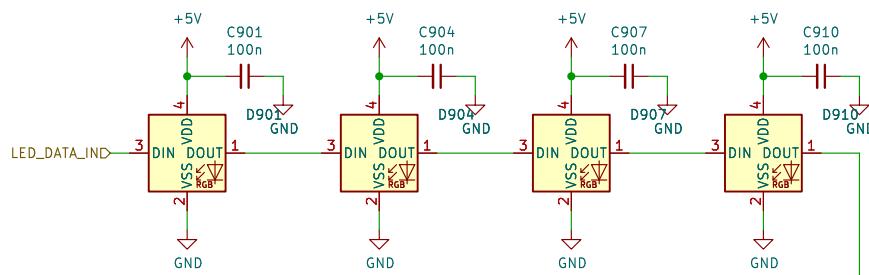
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Rev:
Id: 3/15

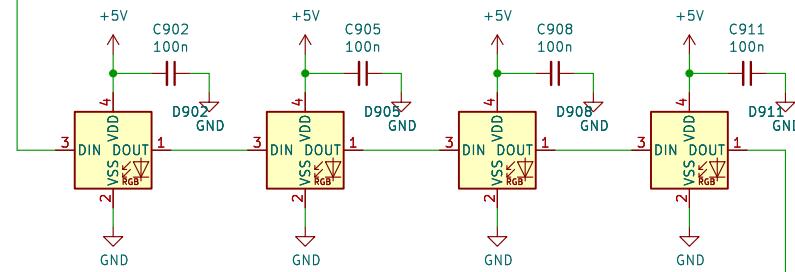
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900

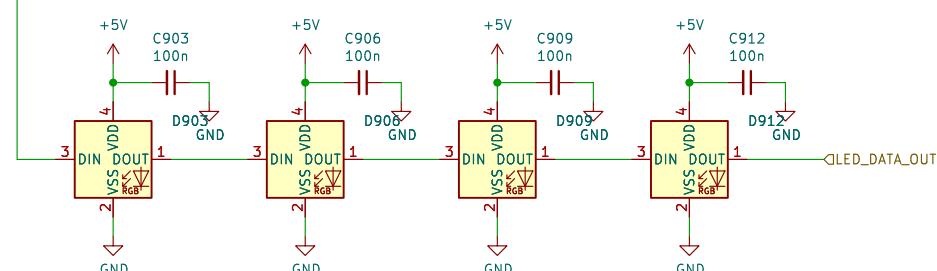
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B



C



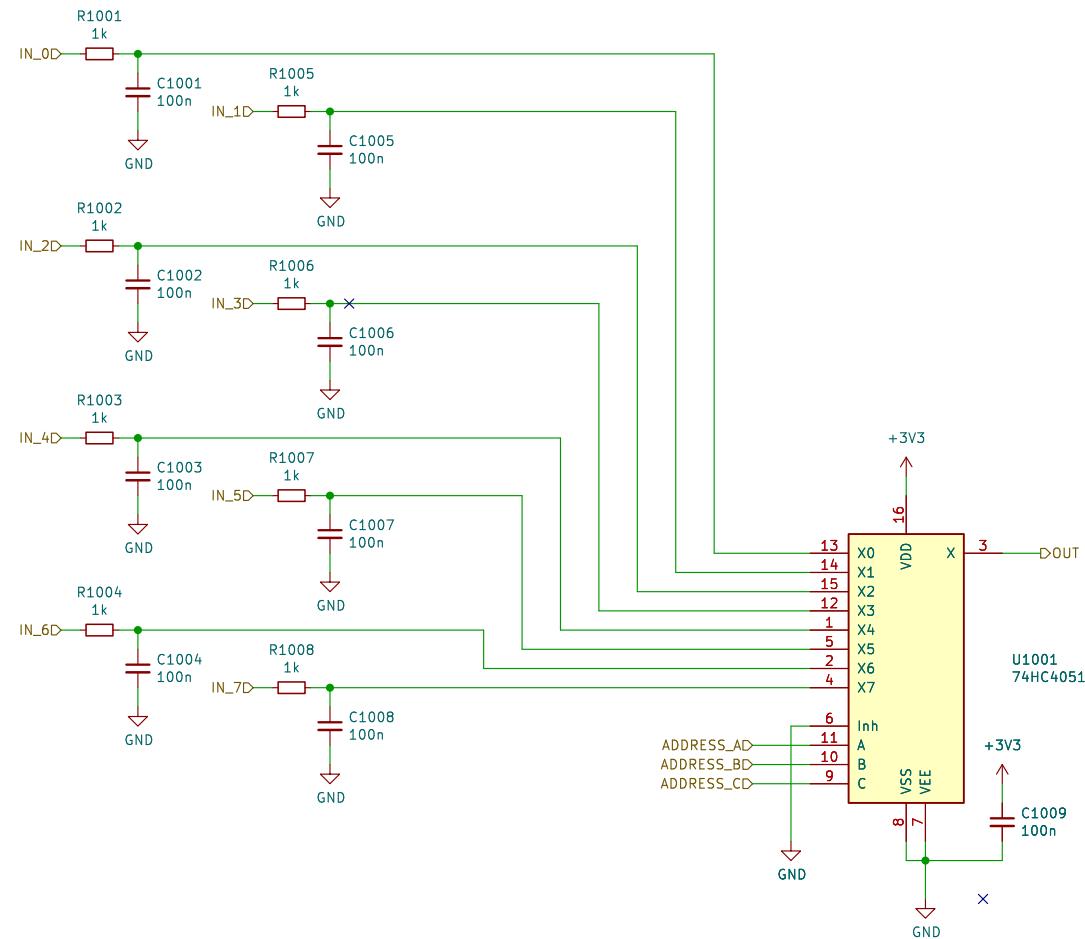
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Rev:
Id: 4/15

1000



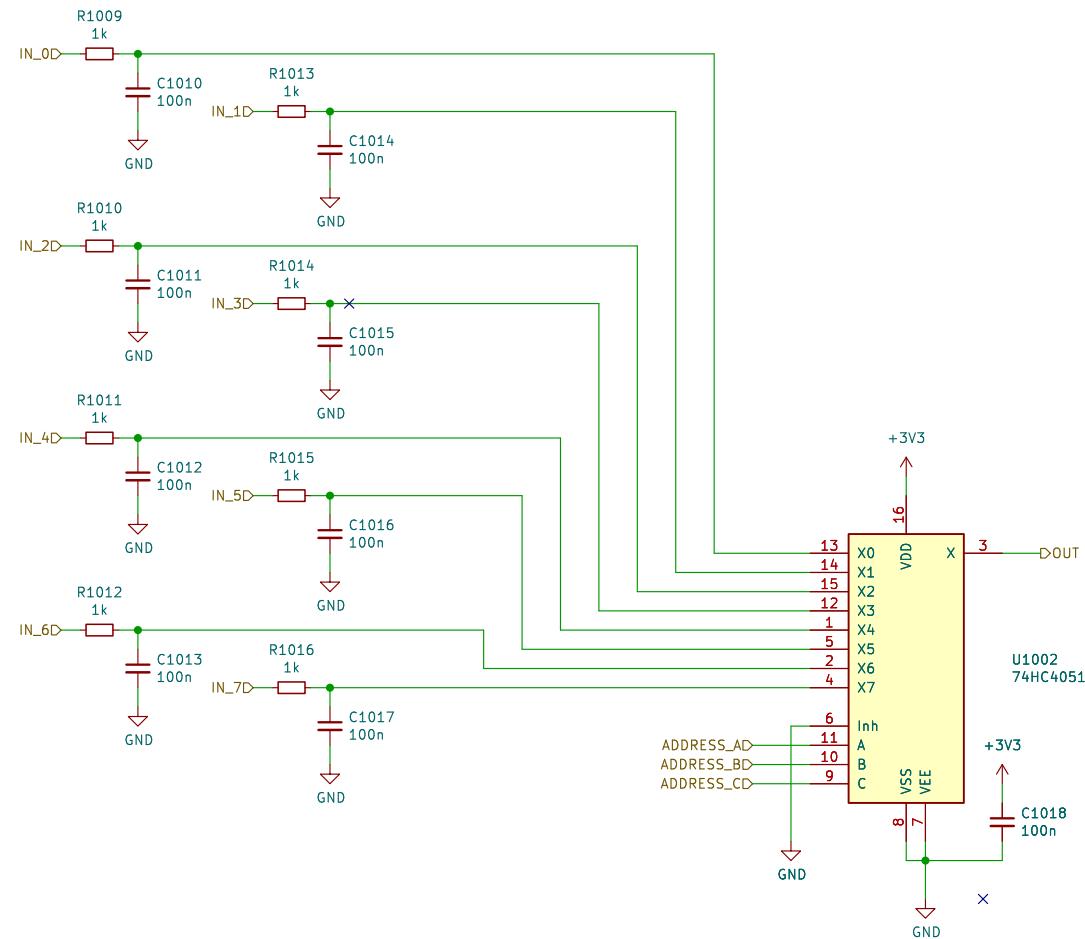
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Size: A4 | Date:
KiCad E.D.A. 9.0.6

Rev:
Id: 5/15

1000

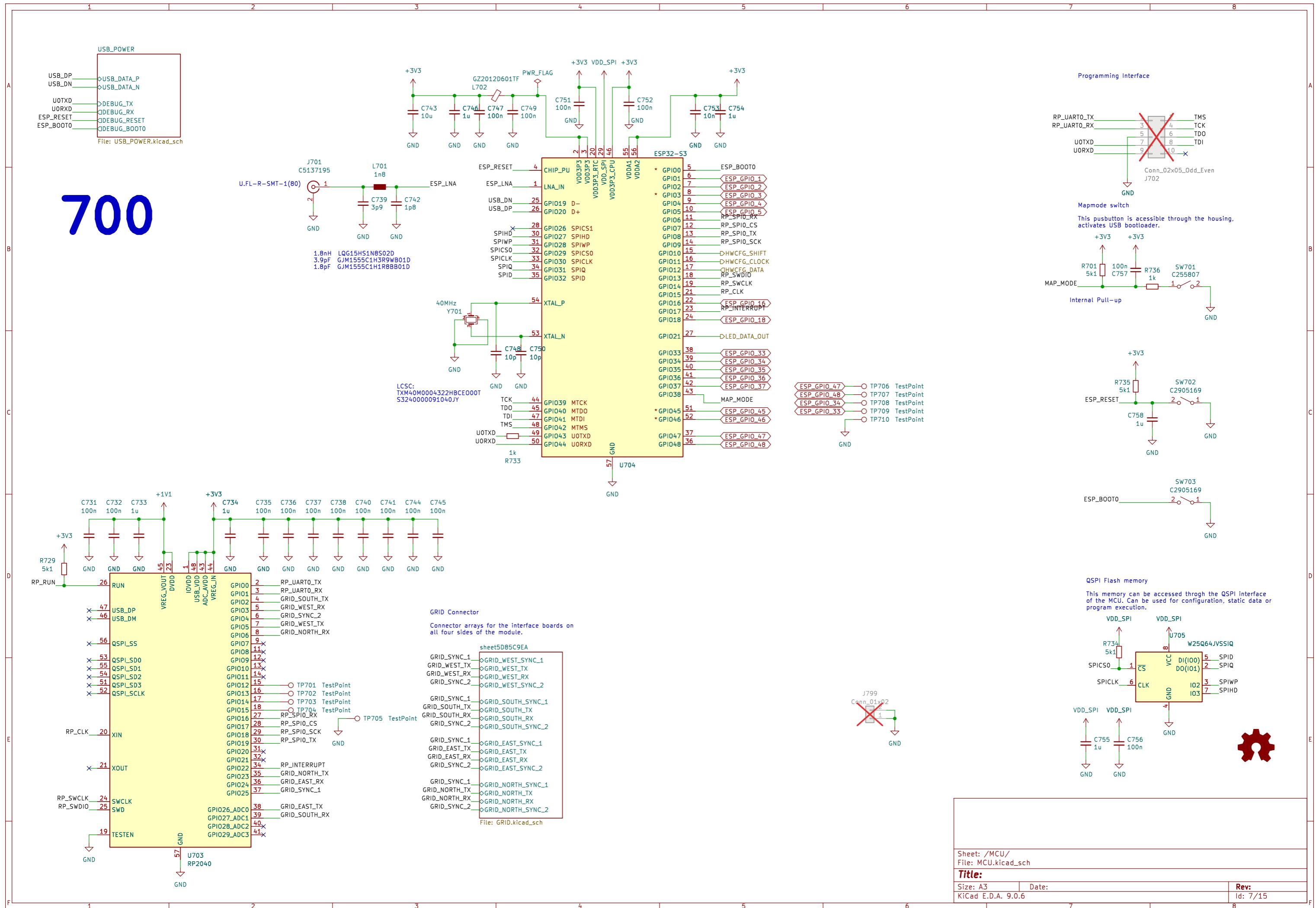


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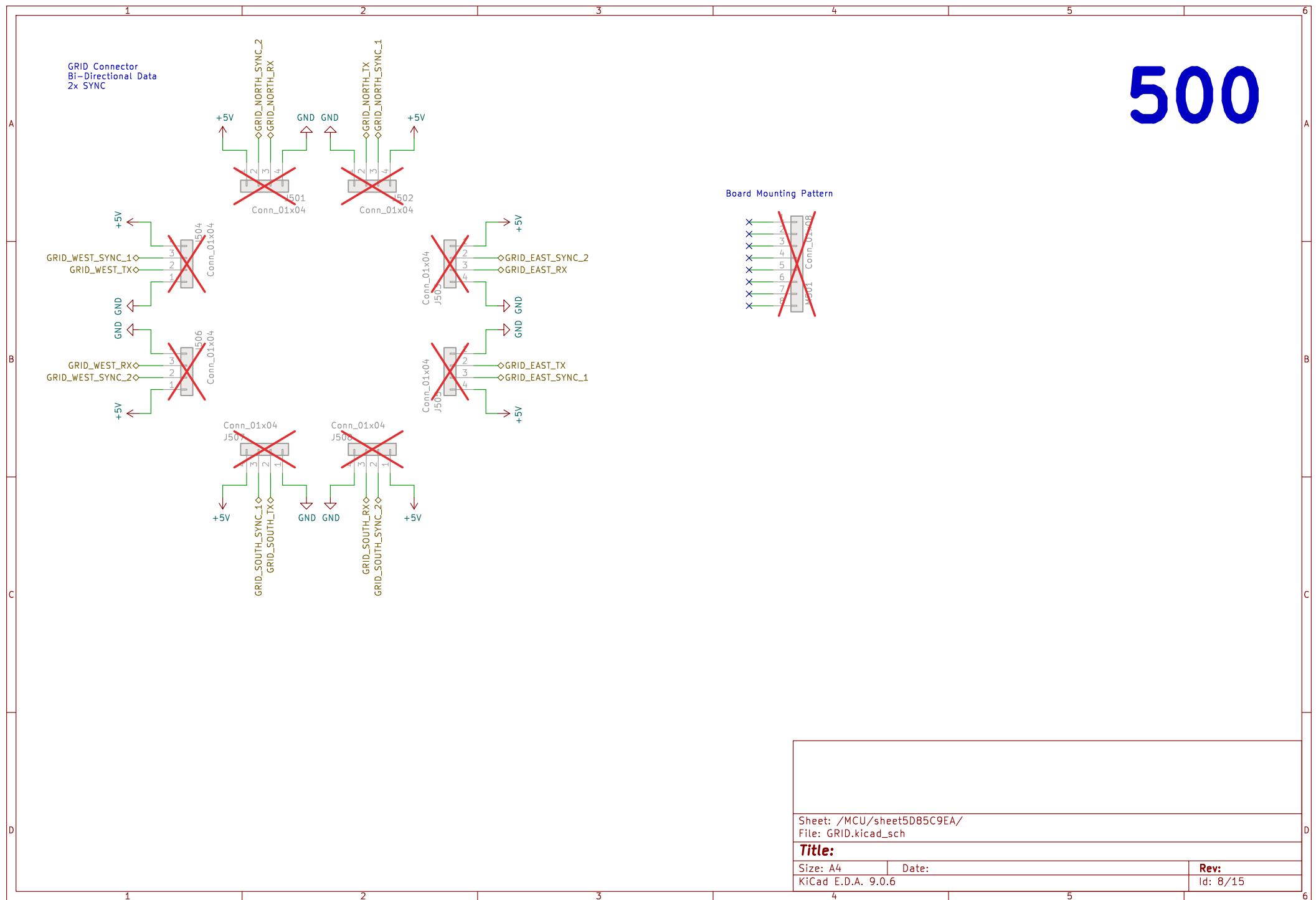
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Size: A4 Date:
KiCad E.D.A. 9.0.6

Rev:
Id: 6/15



500



600

USB Port | ESD Prot.

A

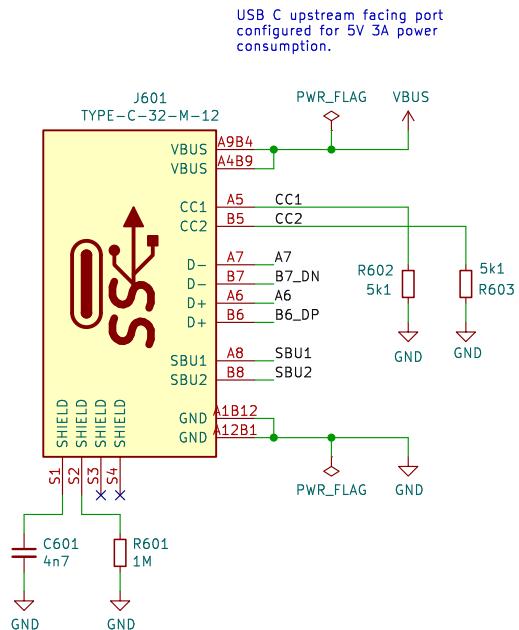
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5

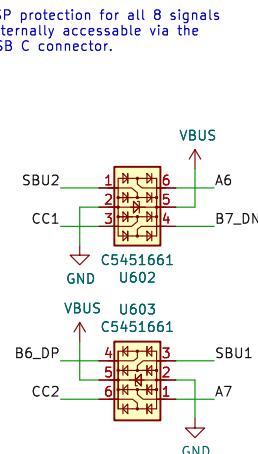
D

1

A



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



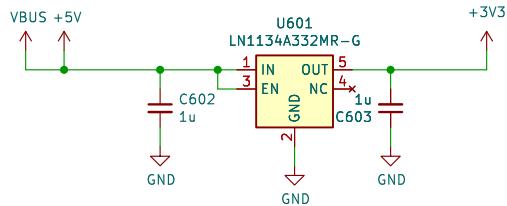
ESP protection for all 8 signals externally accessible via the USB C connector.

3V3 LDO

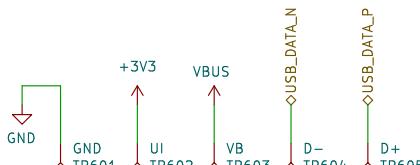
5

D

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

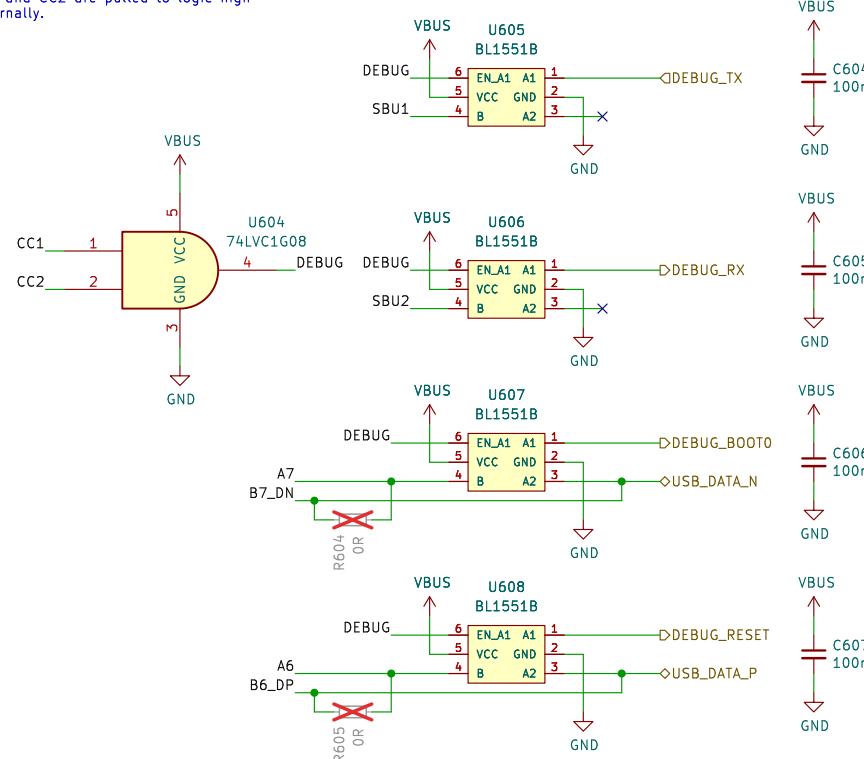


Testpoints



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: 9/15

800

A

A

B

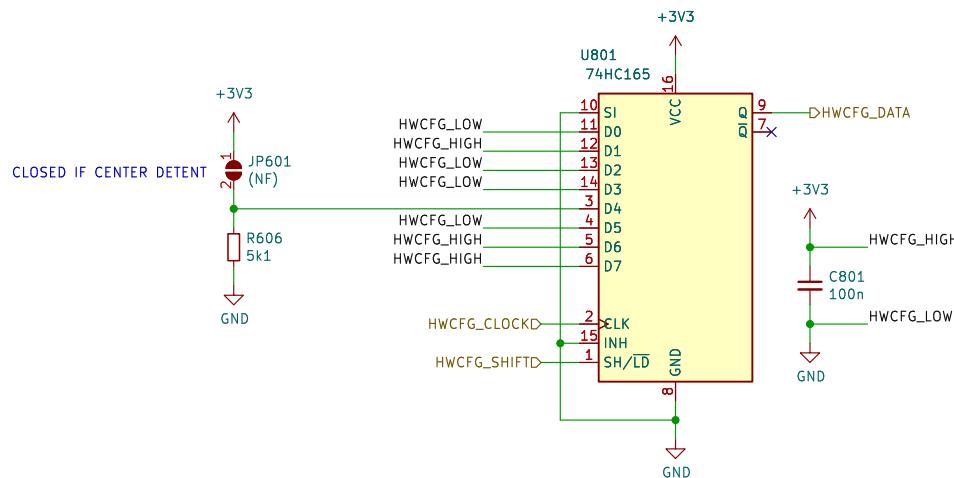
B

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/
File: HWCFG.kicad_sch

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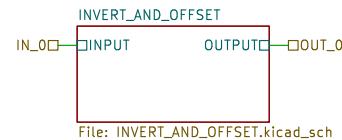
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KiCad E.D.A. 9.0.6

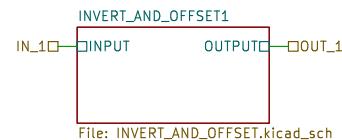
Rev:

Id: 10/15

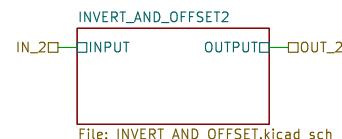
A

simulation

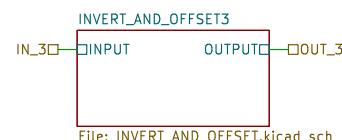
B



C



D

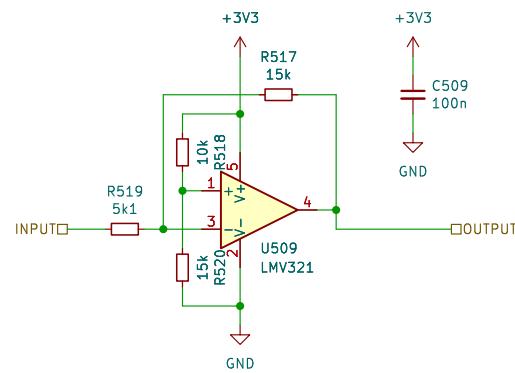


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Title:

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

Rev:
Id: 11/15

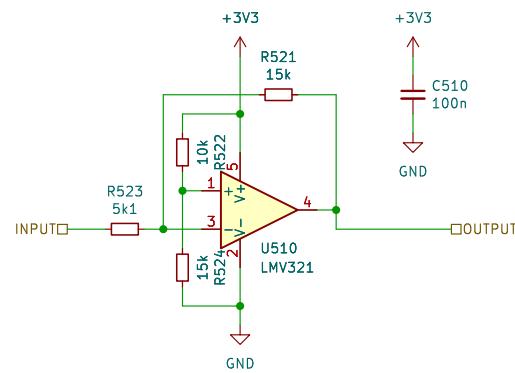


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Title:

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

Rev:
Id: 16/15

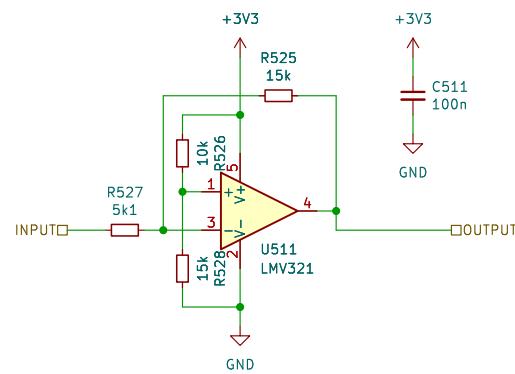


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File: INVERT_AND_OFFSET.kicad_sch

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

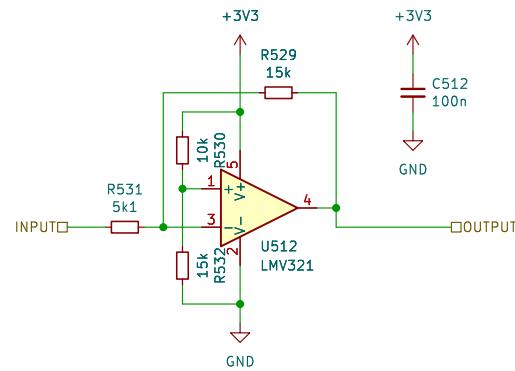
B

C

C

D

D



Sheet: /UI_HALL_PREAMP/INVERT_AND_OFFSET3/
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Title:

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

Rev:
Id: 19/15

1 2 3 4 5 6