Common Sheets:
500 GRID
600 USB_POWER
700 MCU

Module Specific:
800 HWCFG
900 LED
1000 UI

UI_LED
LED_DATA_IN
LED_DATA_OUT
File: UI_LED.kicad_sch

MCU
LED_DATA_OUT
HWCFG_SHIFT
HWCFG_CLOCK
HWCFG_DATA
File: MCU.kicad_sch

HWCFG
HWCFG_SHIFT
HWCFG_CLOCK
HWCFG_DATA
File: HWCFG.kicad_sch

UI_BUTTON
OUT_8
OUT_9
OUT_10
OUT_11
OUT_12
OUT_13
OUT_14
OUT_15
File: UI_BUTTON.kicad_sch

UI_HALL_PREAMP1
IN_0
IN_1
IN_2
IN_3
IN_4
IN_5
IN_6
IN_7
OUT_0
OUT_1
OUT_2
OUT_3
OUT_4
OUT_5
OUT_6
OUT_7
ANA_0
ANA_1
ANA_2
ANA_3
ANA_4
ANA_5
ANA_6
ANA_7
File: UI_HALL_PREAMP.kicad_sch

UI_BUTTON1
OUT_8
OUT_9
OUT_10
OUT_11
OUT_12
OUT_13
OUT_14
OUT_15
File: UI_BUTTON.kicad_sch

UI_HALL_PREAMP
IN_0
IN_1
IN_2
IN_3
IN_4
IN_5
IN_6
IN_7
OUT_0
OUT_1
OUT_2
OUT_3
OUT_4
OUT_5
OUT_6
OUT_7
ANA_8
ANA_9
ANA_10
ANA_11
ANA_12
ANA_13
ANA_14
ANA_15
File: UI_HALL_PREAMP.kicad_sch

Sheet5D7C8BFD
ANA_0
ANA_1
ANA_4
ANA_5
ANA_8
ANA_9
ANA_12
ANA_13
IN_0
IN_1
IN_2
IN_3
IN_4
IN_5
IN_6
IN_7
OUT
ADDRESS_A
ADDRESS_B
ADDRESS_C
ESP_GPIO_1
ESP_GPIO_18
File: UI_MUX.kicad_sch

sheet5D8763D6
ANA_2
ANA_3
ANA_6
ANA_7
ANA_10
ANA_11
ANA_14
ANA_15
IN_0
IN_1
IN_2
IN_3
IN_4
IN_5
IN_6
IN_7
OUT
ADDRESS_A
ADDRESS_B
ADDRESS_C
ESP_GPIO_2
ESP_GPIO_5
ESP_GPIO_4
ESP_GPIO_3
File: UI_MUX.kicad_sch

J602 SMTSO1625MTJ
J603 SMTSO1625MTJ
J604 SMTSO1625MTJ
J605 SMTSO1625MTJ
J1005 SMTSO1625MTJ
J1006 SMTSO1625MTJ
J1007 SMTSO1625MTJ
J1008 SMTSO1625MTJ
GND

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File: PCBA-BU16.kicad_sch
Title:
Size: A3 | Date: | **Rev:**
KiCad E.D.A. 9.0.1 | Id: 1/28

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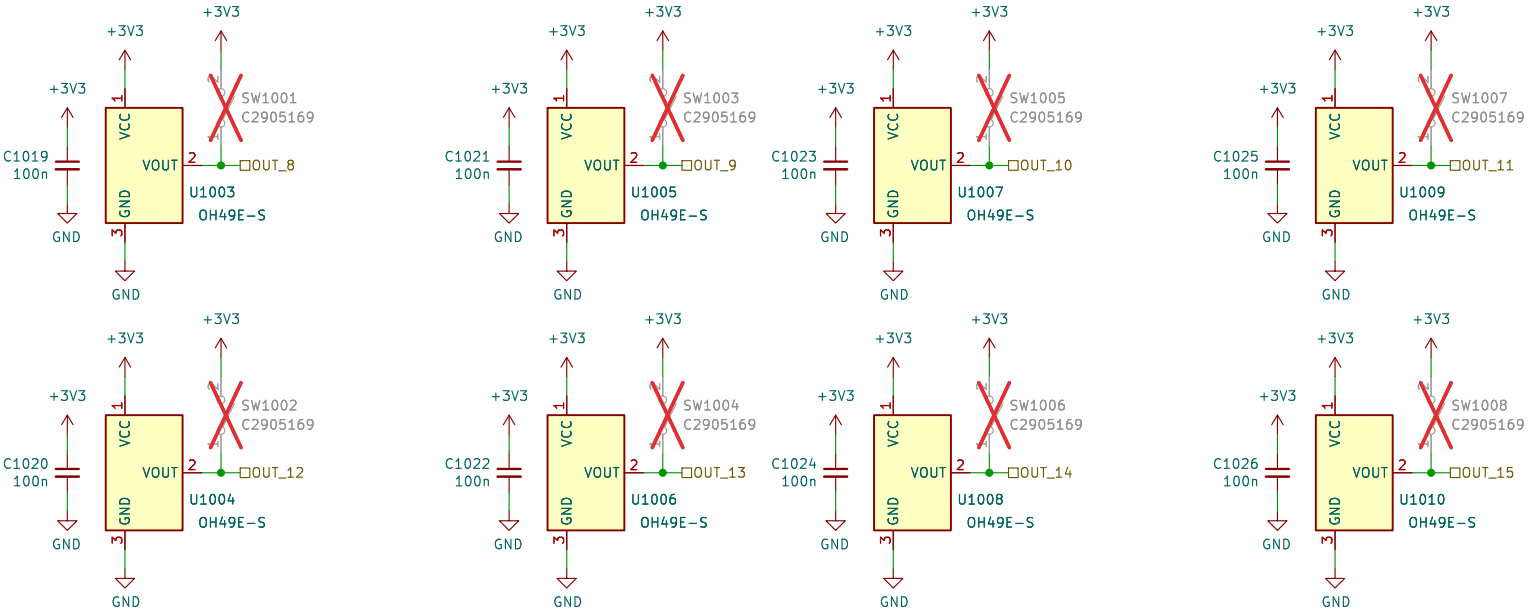
Simulation:

http://tinyurl.com/y229mty4



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File: UI_BUTTON.kicad_sch

Title:

Size: A4 | Date: | **Rev:**

KiCad E.D.A. 9.0.1 | Id: 2/28

simulation

Sheet: /UI_HALL_PREAMP/
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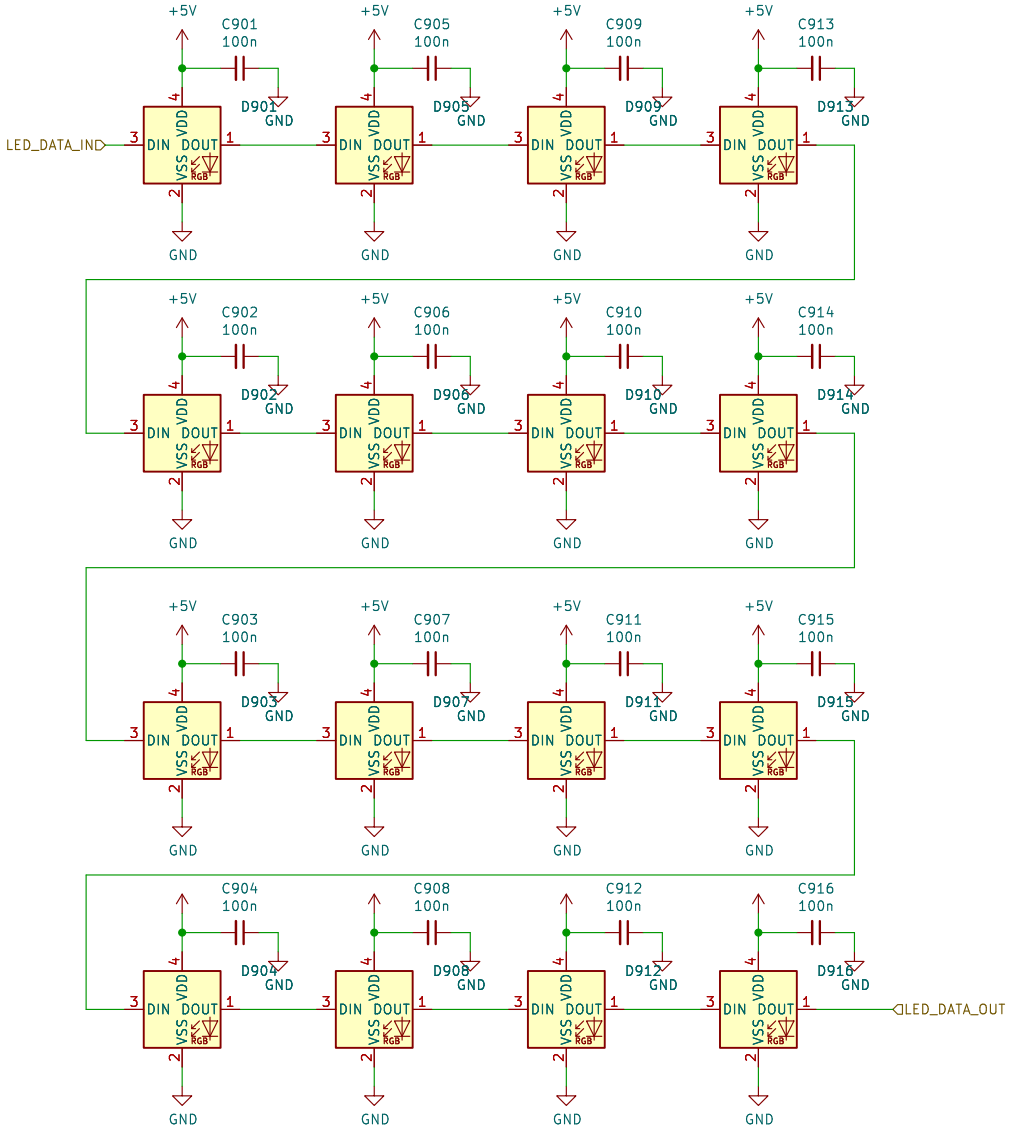
Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 3/28

900



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Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 4/28

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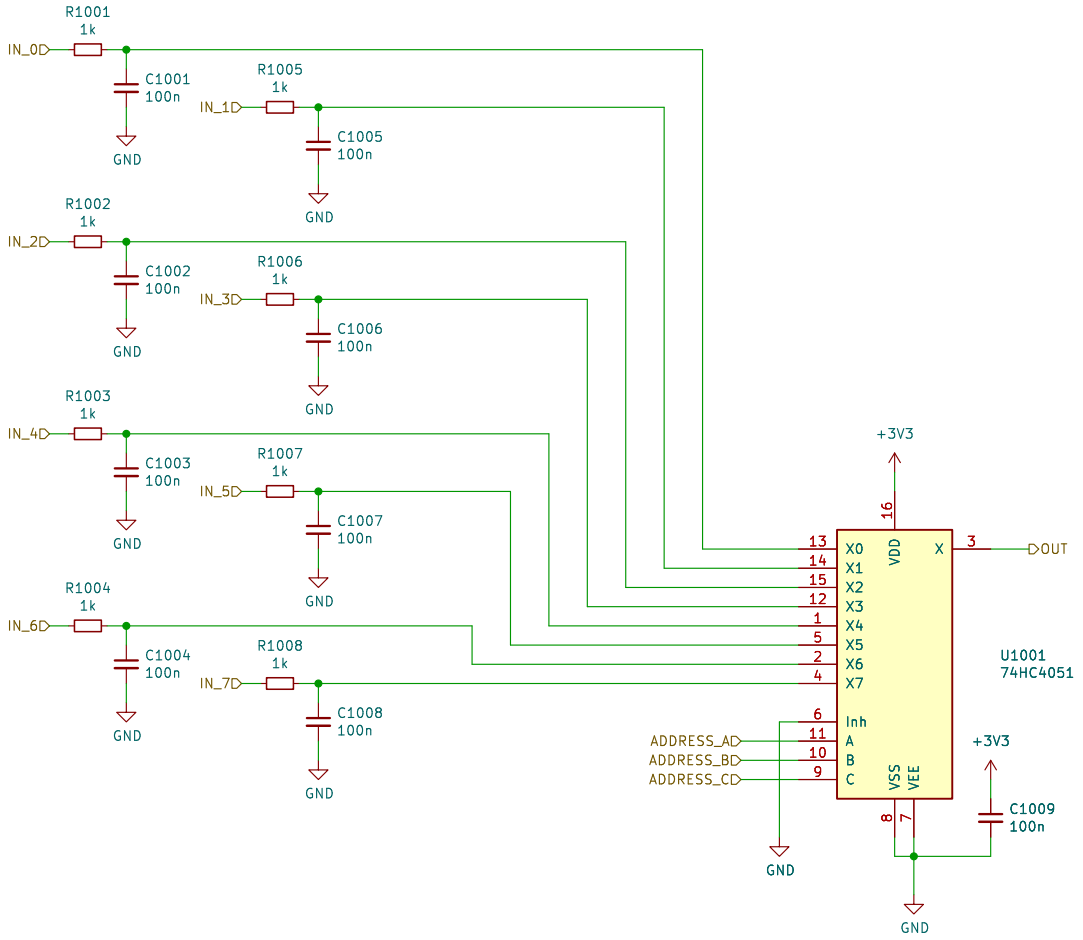

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Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 5/28

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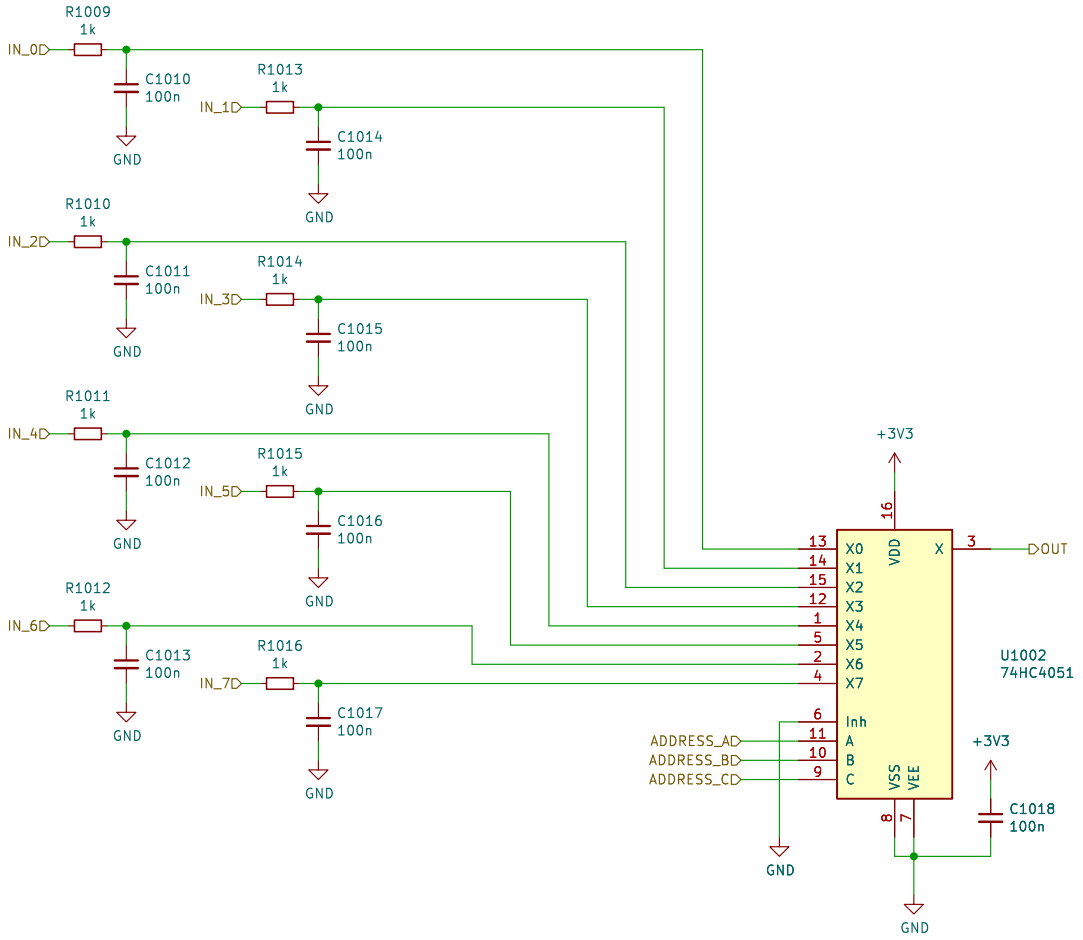

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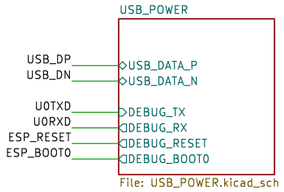
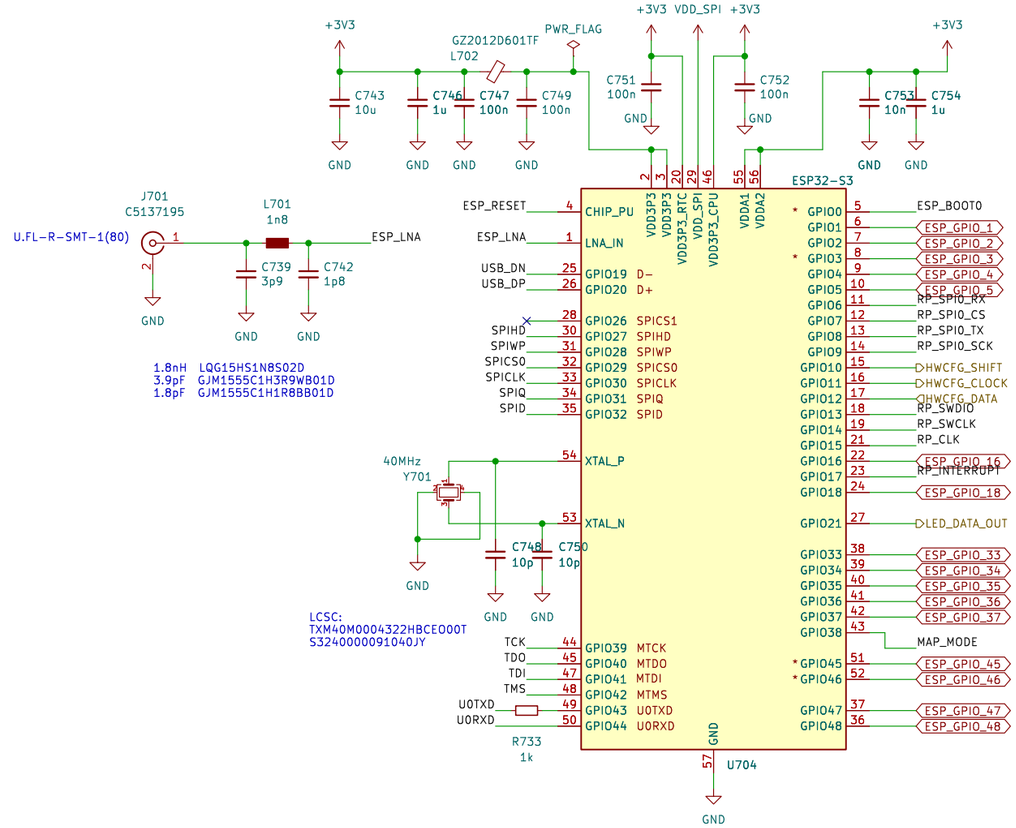
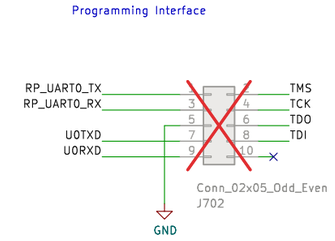
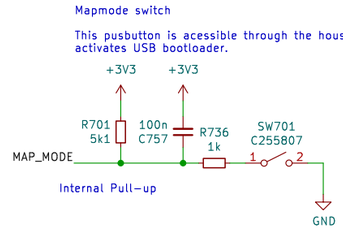
KiCad E.D.A. 9.0.1		Id: 6/28

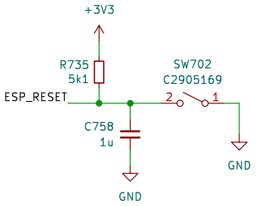
700

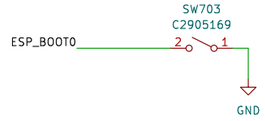


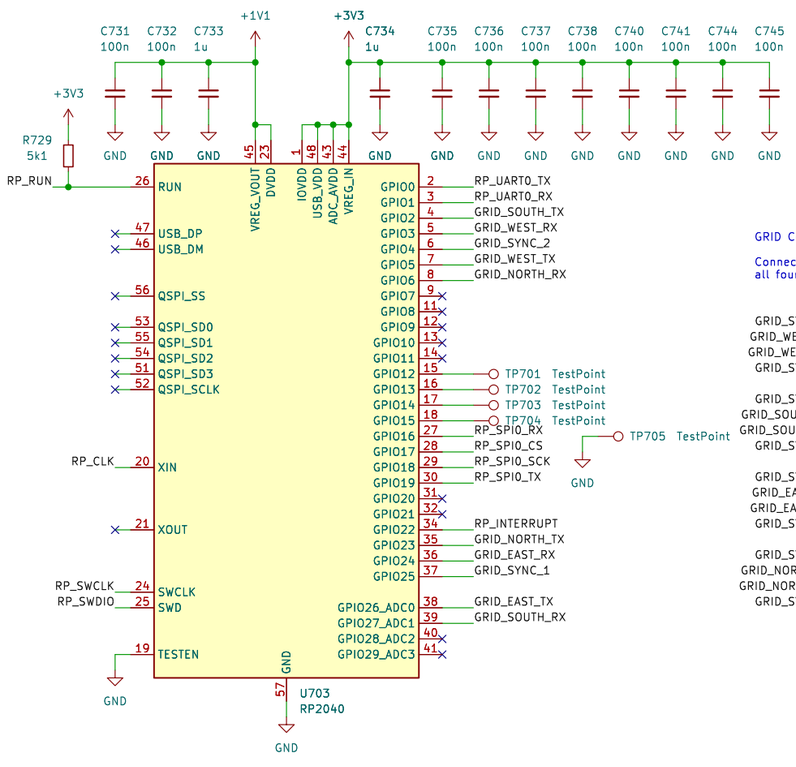


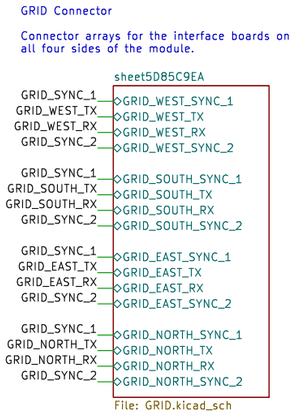


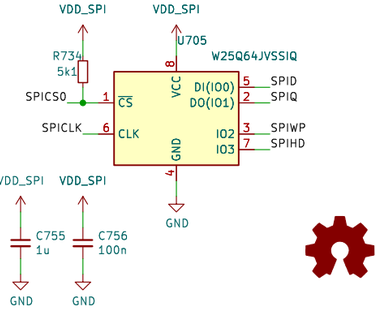












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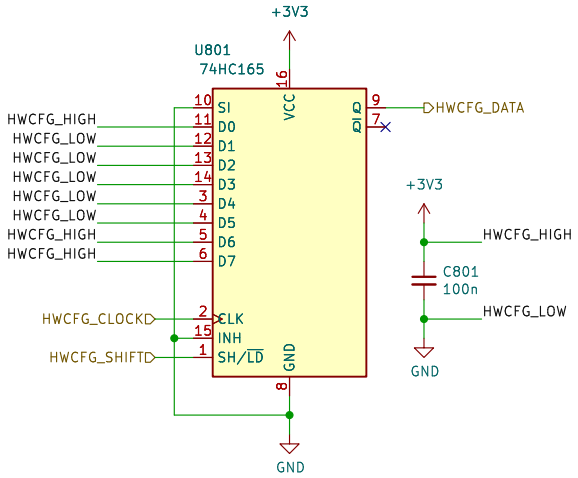
File: MCU.kicad_sch		
Title:		
Size: A3	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 7/28

800



Board Identification

Grid firmware can identify the hardware and the board revision thorugh 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. 9.0.1		Id: 10/28

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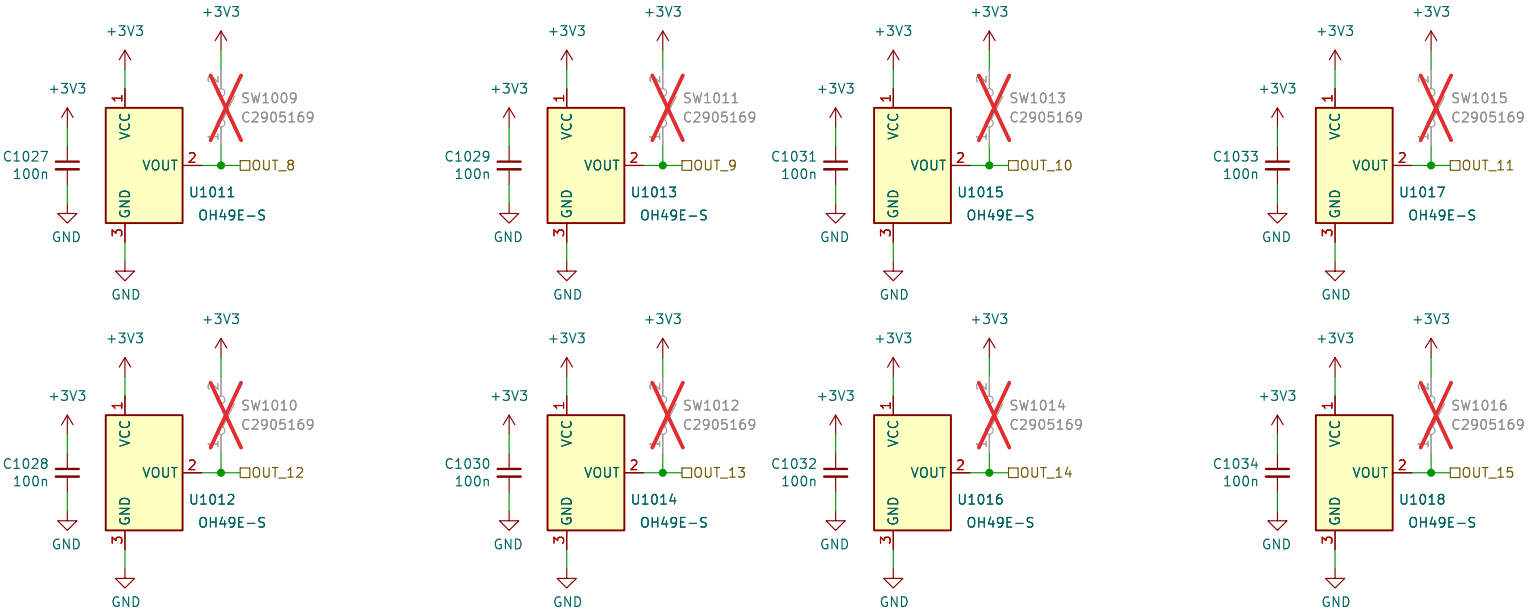
Simulation:

http://tinyurl.com/y229mty4



Sheet: /UI_BUTTON1/
File: UI_BUTTON.kicad_sch

Title:

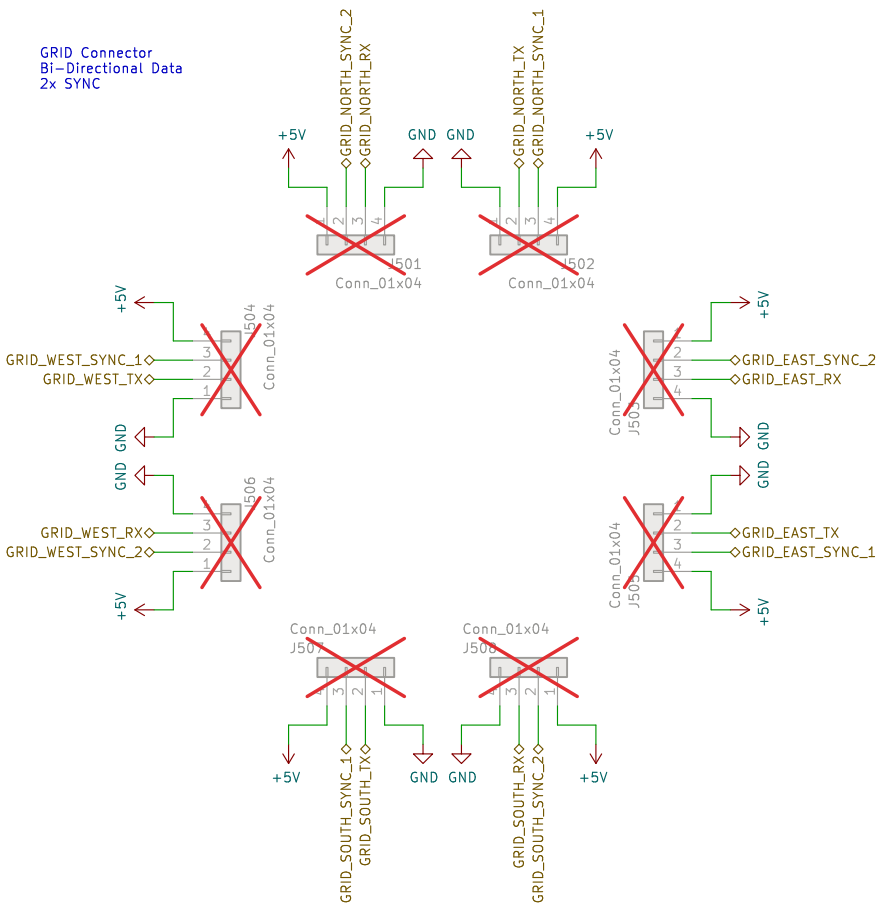
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 19/28

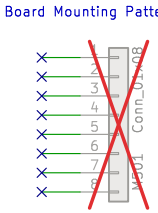
simulation

Sheet: /UI_HALL_PREAMP1/
File: UI_HALL_PREAMP.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 20/28





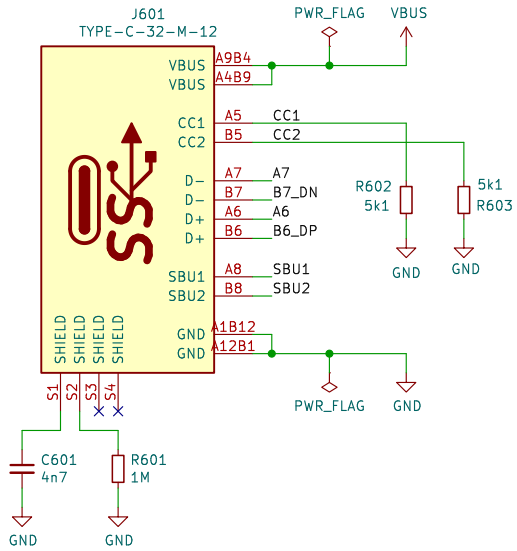
500

Sheet: /MCU/sheet5D85C9EA/		
File: GRID.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 8/28

600

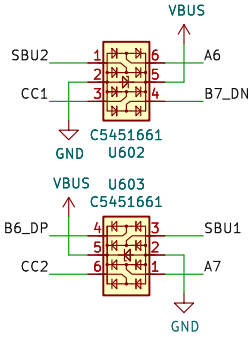
USB Port

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



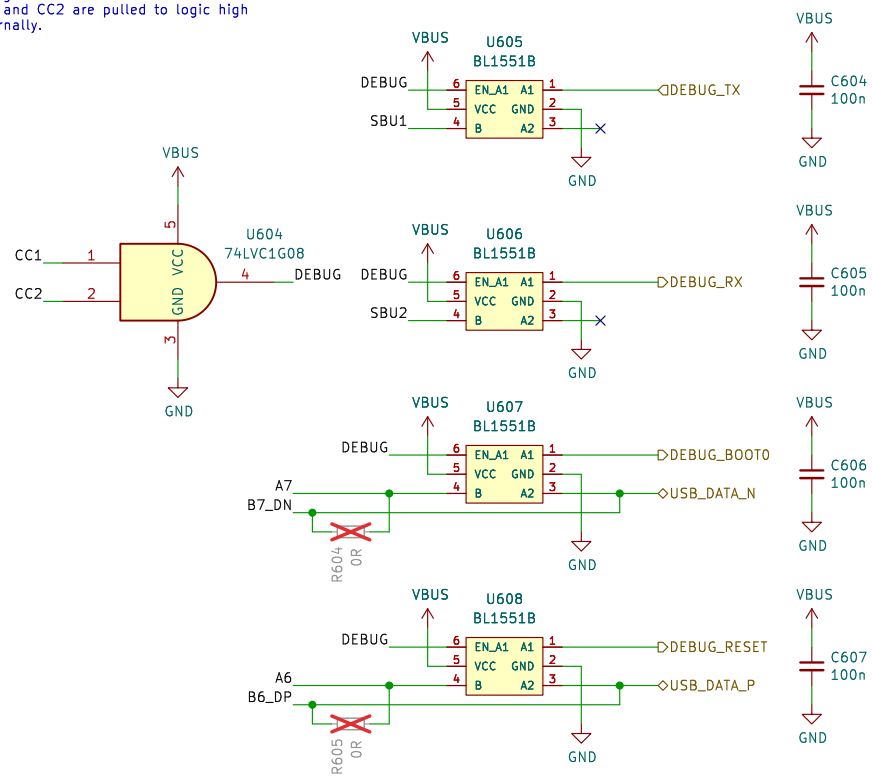
ESD Prot.

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



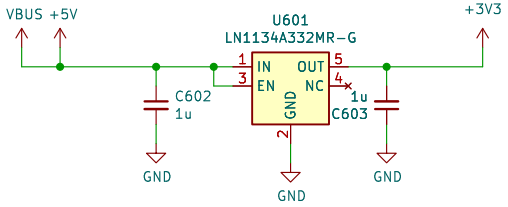
Debug-Mode Multiplexing

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

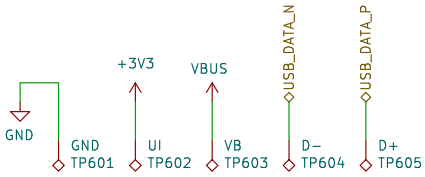


3V3 LDO

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



Testpoints



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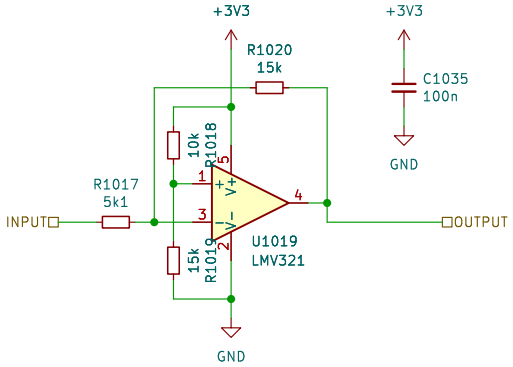
Title:

Size: A4 | Date: | **Rev:**

KiCad E.D.A. 9.0.1 | Id: 9/28



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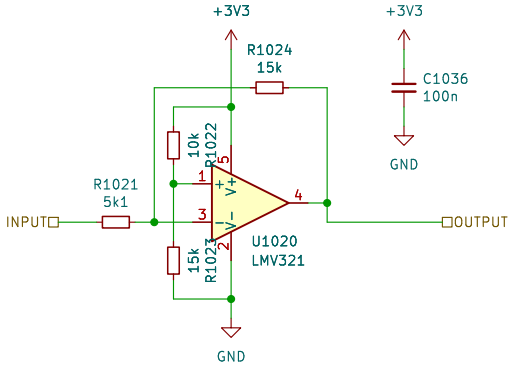
File: INVERT_AND_OFFSET.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 11/28



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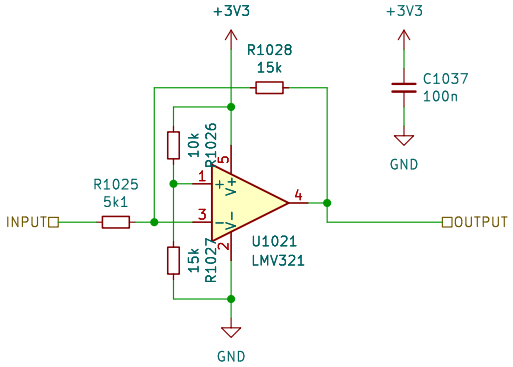
File: INVERT_AND_OFFSET.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 12/28



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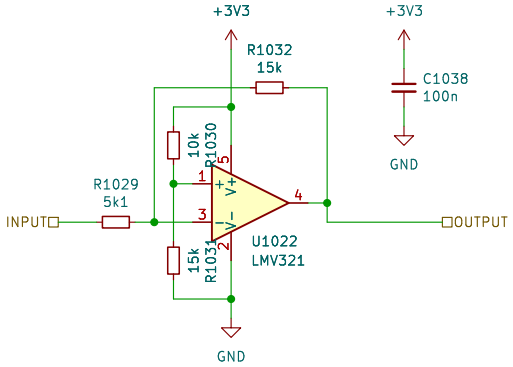
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 13/28



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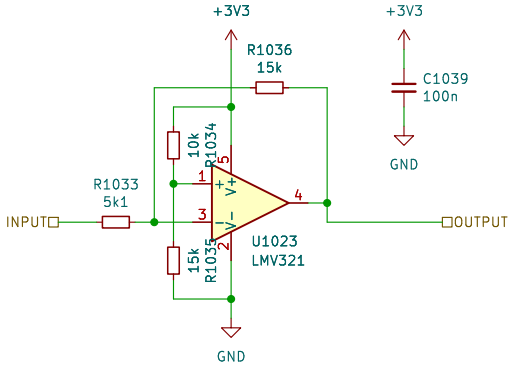
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 14/28



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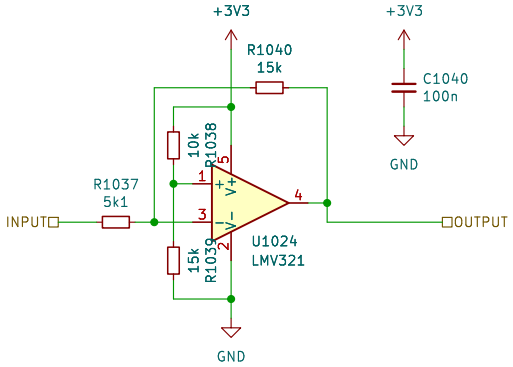
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 15/28



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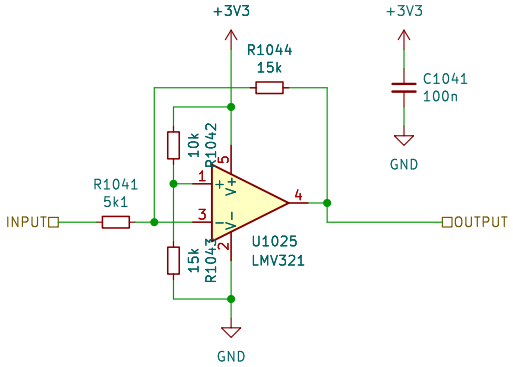
KiCad E.D.A. 9.0.1		Id: 16/28



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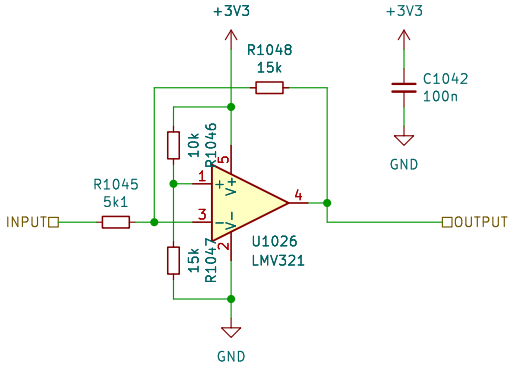
Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 17/28



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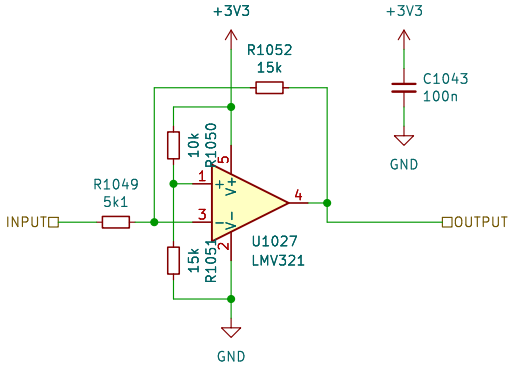
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 18/28



Sheet: /UI_HALL_PREAMP1/INVERT_AND_OFFSET7/		
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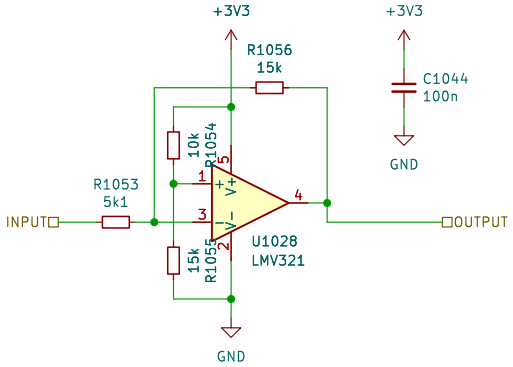
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 21/28



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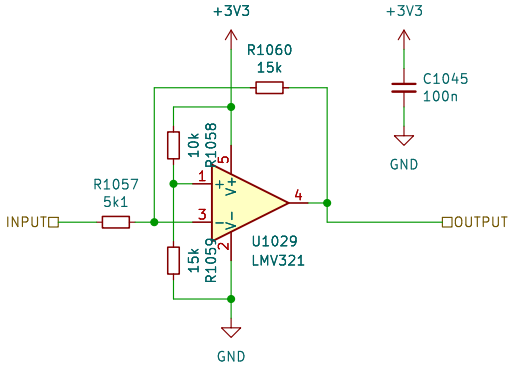
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 22/28



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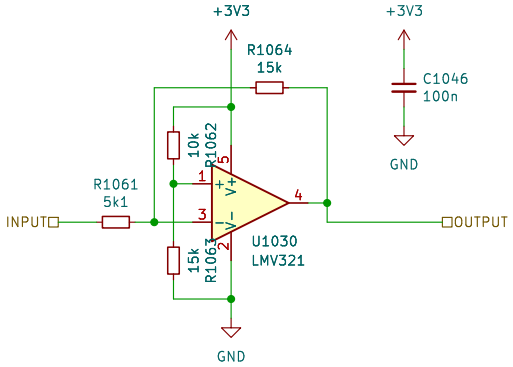
File: INVERT_AND_OFFSET.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 23/28



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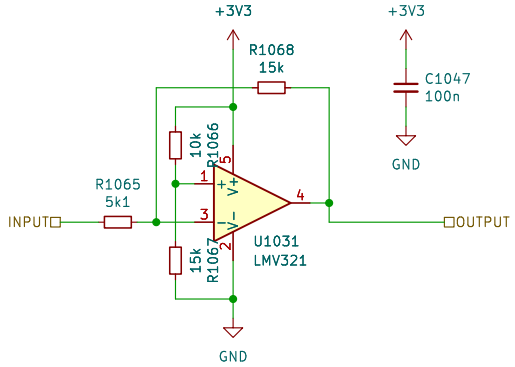
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 24/28



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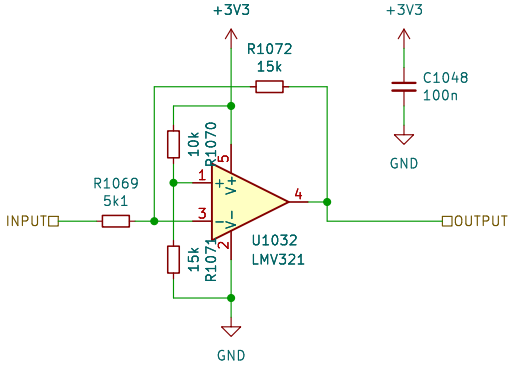
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 25/28



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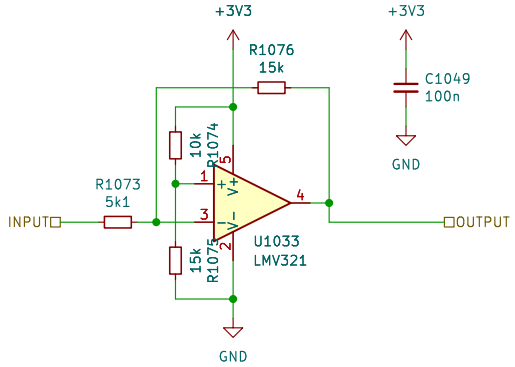
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 26/28



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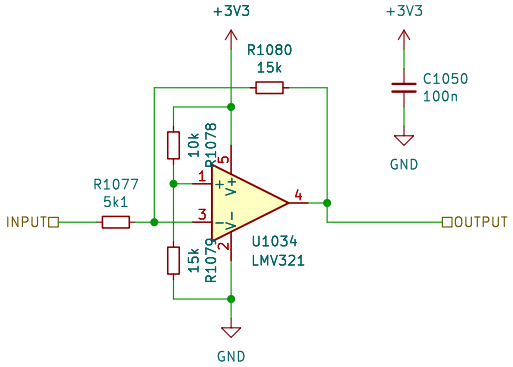
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 27/28



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Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 28/28