Common Sheets:
500 GRID
600 USB_POWER
700 MCU

Module Specific:
800 HWCFG
900 LED
1000 UI

UI_POT_BTN
ENDLESS_0_A — ANA_0
ENDLESS_0_B — ANA_1
ENDLESS_0_S — ANA_4
ENDLESS_1_A — ANA_2
ENDLESS_1_B — ANA_3
ENDLESS_1_S — ANA_6
File: UI_POT_BTN.kicad_sch

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

UI_DISPLAY
BACKLIGHT — RP_GPIO_10
CS1 — ESP_GPIO_16
CS0 — ESP_GPIO_18
D/C — ESP_GPIO_34
SDIO — ESP_GPIO_48
SCLK — ESP_GPIO_47
RESET — RP_GPIO_11
File: UI_DISPLAY.kicad_sch

HWCFG
HWCFG_SHIFT
HWCFG_CLOCK
HWCFG_DATA
DATA_IN
File: HWCFG.kicad_sch

LCDBUTTON
LCDBUTTON_SHIFT
LCDBUTTON_CLOCK
LCDBUTTON_DATA
File: LCDBUTTON.kicad_sch

UI_BUTTON
OUT_8 … OUT_15
File: UI_BUTTON.kicad_sch

UI_HALL_PREAMP
IN_0 … IN_7 — OUT_0 … OUT_7 — ANA_8 … ANA_15
File: UI_HALL_PREAMP.kicad_sch

Sheet5D7C8BFD
ANA_0, ANA_1, ANA_4, ANA_8, ANA_9, ANA_12, ANA_13 → IN_0 … IN_7
OUT — ESP_GPIO_1
ADDRESS_A, ADDRESS_B, ADDRESS_C
File: UI_MUX.kicad_sch

sheet5D8763D6
ANA_2, ANA_3, ANA_6, ANA_10, ANA_11, ANA_14, ANA_15 → IN_0 … IN_7
OUT — ESP_GPIO_2
ADDRESS_A — ESP_GPIO_5
ADDRESS_B — ESP_GPIO_4
ADDRESS_C — ESP_GPIO_3
File: UI_MUX.kicad_sch

ESP_GPIO_37 — TP906 TestPoint
ESP_GPIO_36 — TP904 TestPoint
ESP_GPIO_35 — TP905 TestPoint

J904 SMTSO1625MTJ — GND
J906 SMTSO1625MTJ — GND
J910 SMTSO1625MTJ — GND
J912 SMTSO1625MTJ — GND

AUDIO
ESP_GPIO_42 — SDATA
ESP_GPIO_41 — BCLK
ESP_GPIO_40 — LRCLK
ESP_GPIO_39
File: AUDIO.kicad_sch

Sheet: /
File: PCBA-VSNX.kicad_sch
Title:
Size: A3 | Date: | **Rev:**
KiCad E.D.A. 9.0.1 | Id: 1/22

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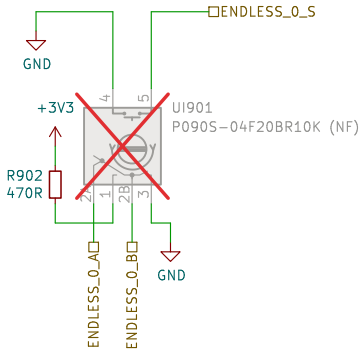

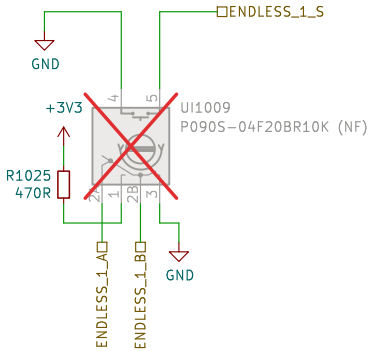

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File: UI_POT_BTN.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 2/22

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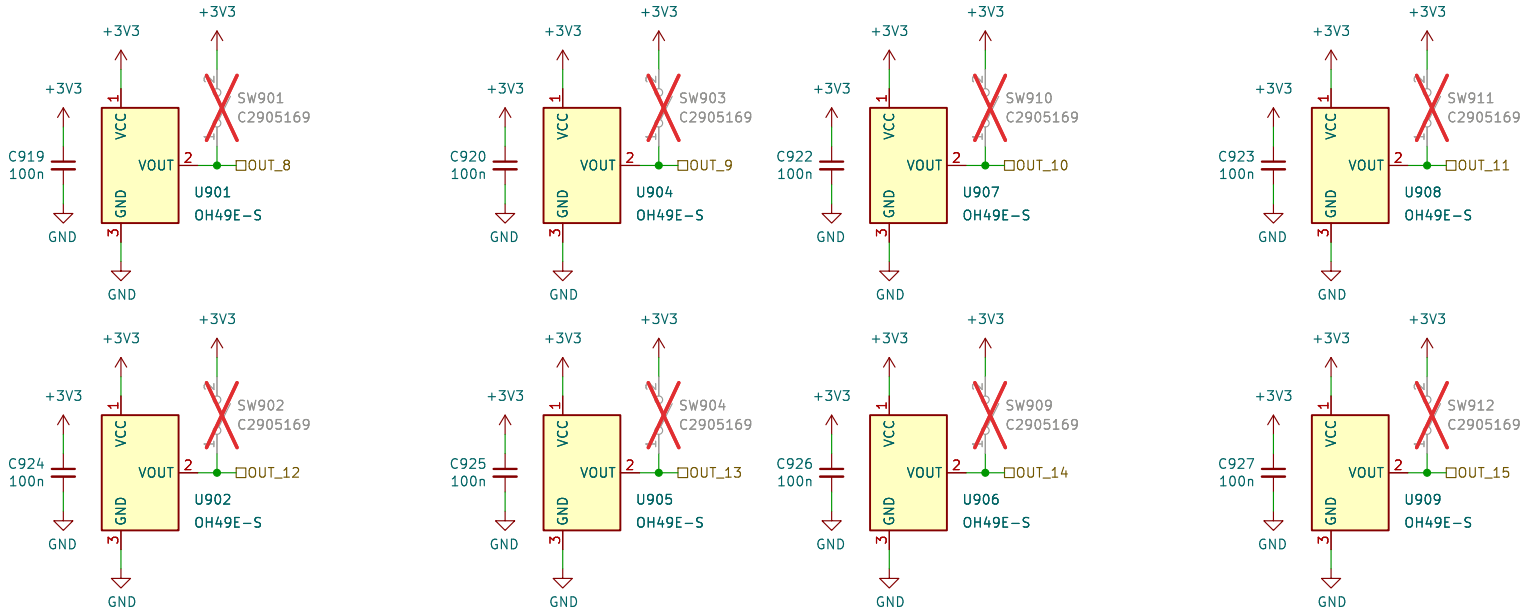
Simulation:

http://tinyurl.com/y229mty4



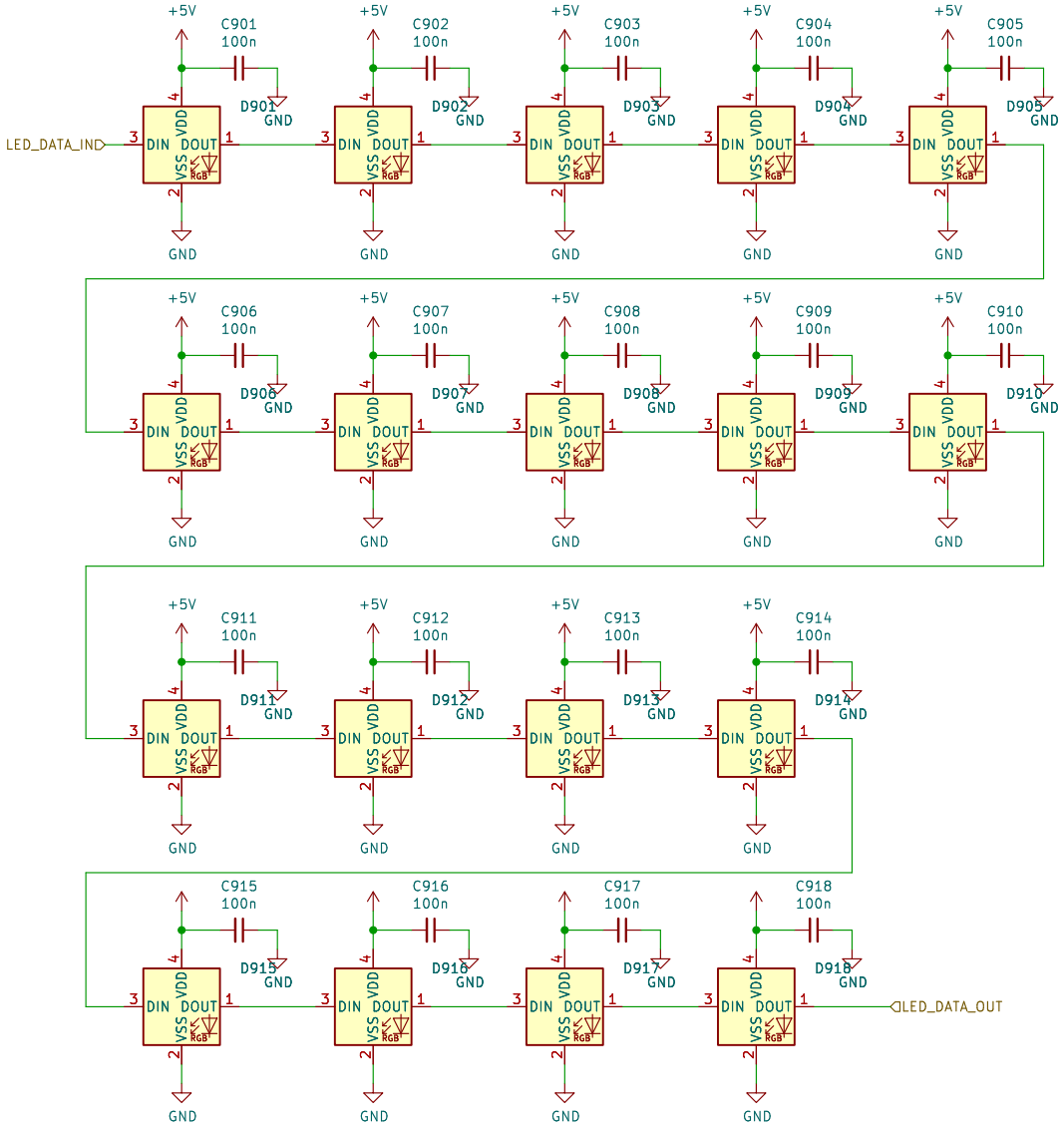
Sheet: /UI_BUTTON/
File: UI_BUTTON.kicad_sch

Title:

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

KiCad E.D.A. 9.0.1 | Id: 3/22

900



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Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 4/22

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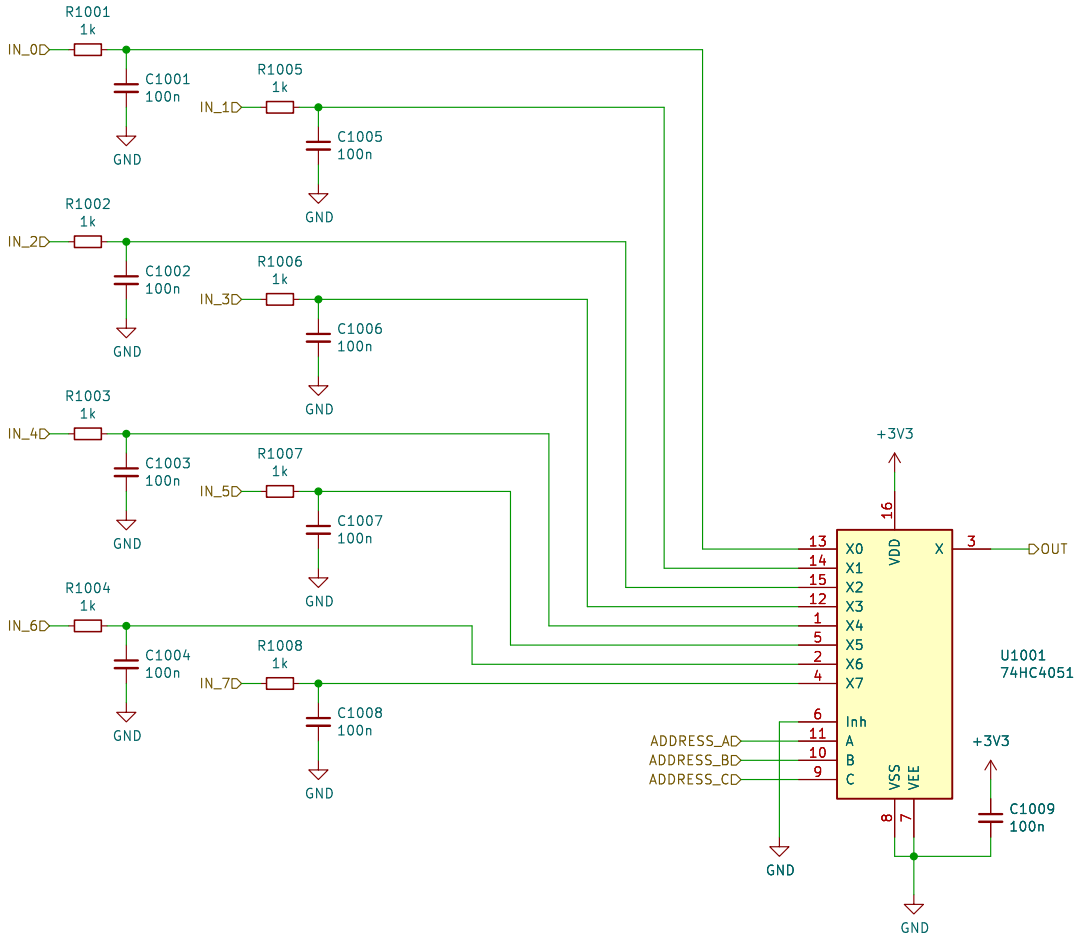

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Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 5/22

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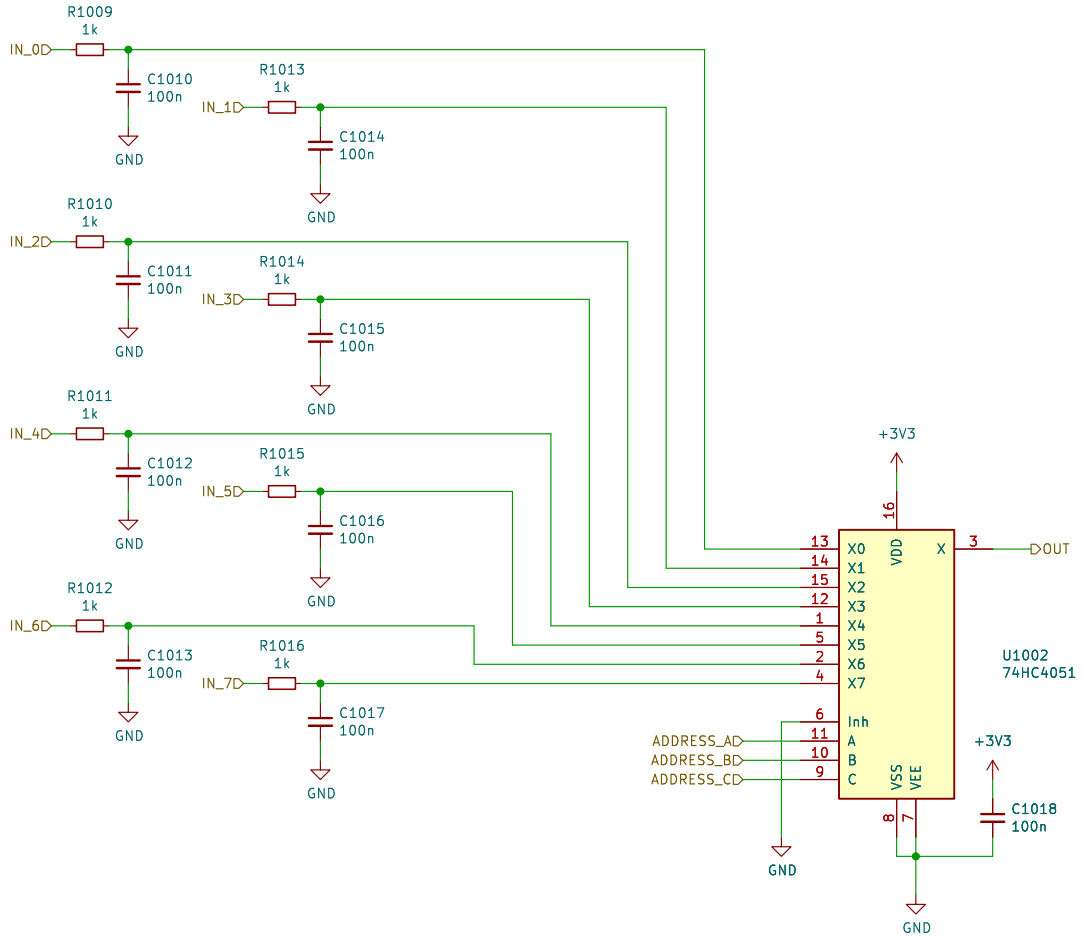

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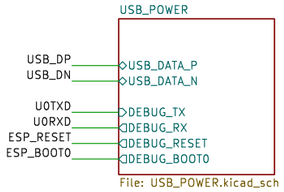
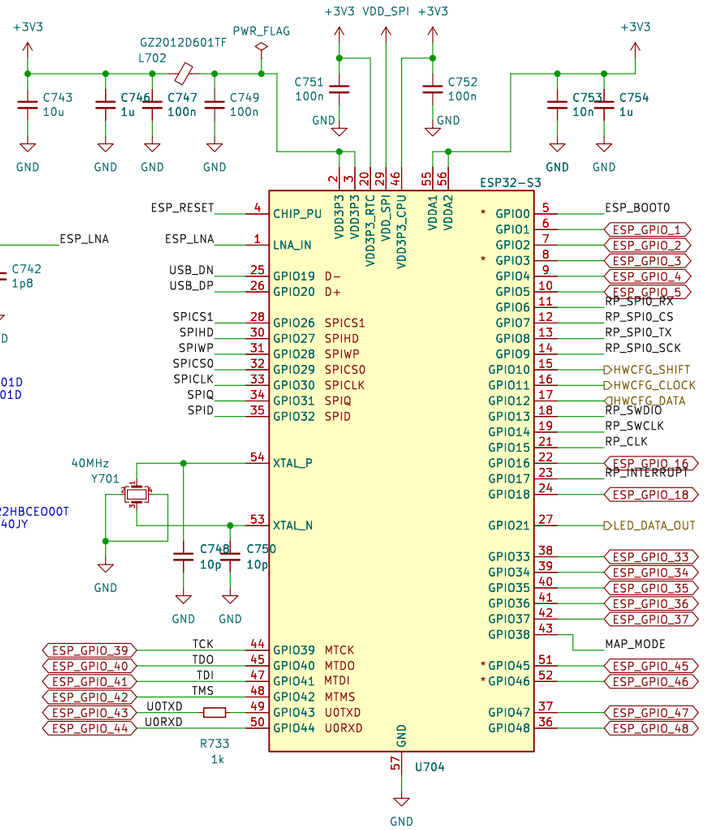
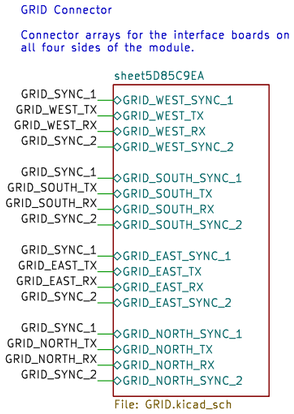
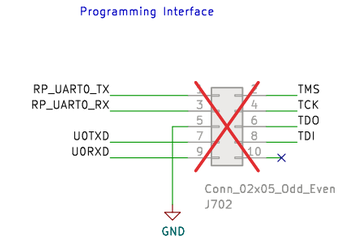
KiCad E.D.A. 9.0.1		Id: 6/22

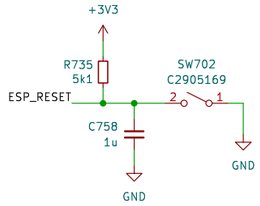
700

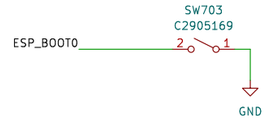


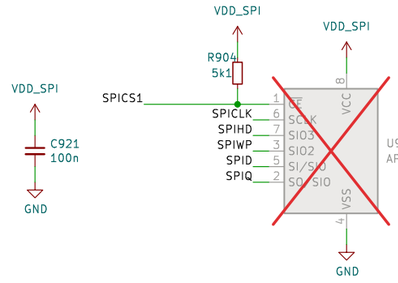


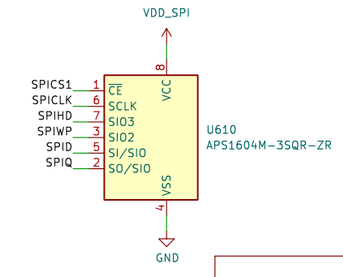


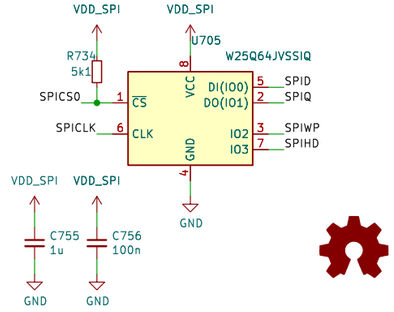










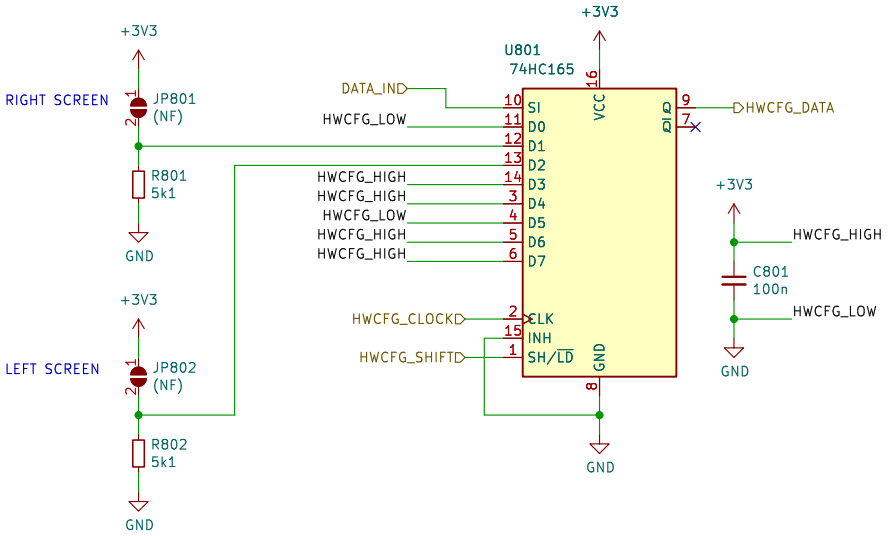


Sheet: /MCU/
File: MCU.kicad_sch

Title:

Size: A3	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 7/22

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: 10/22

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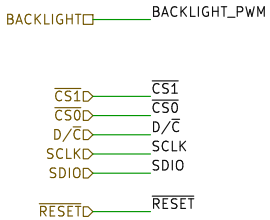
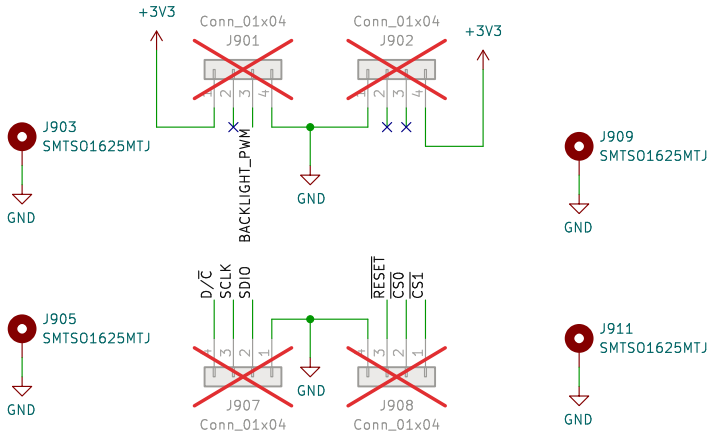




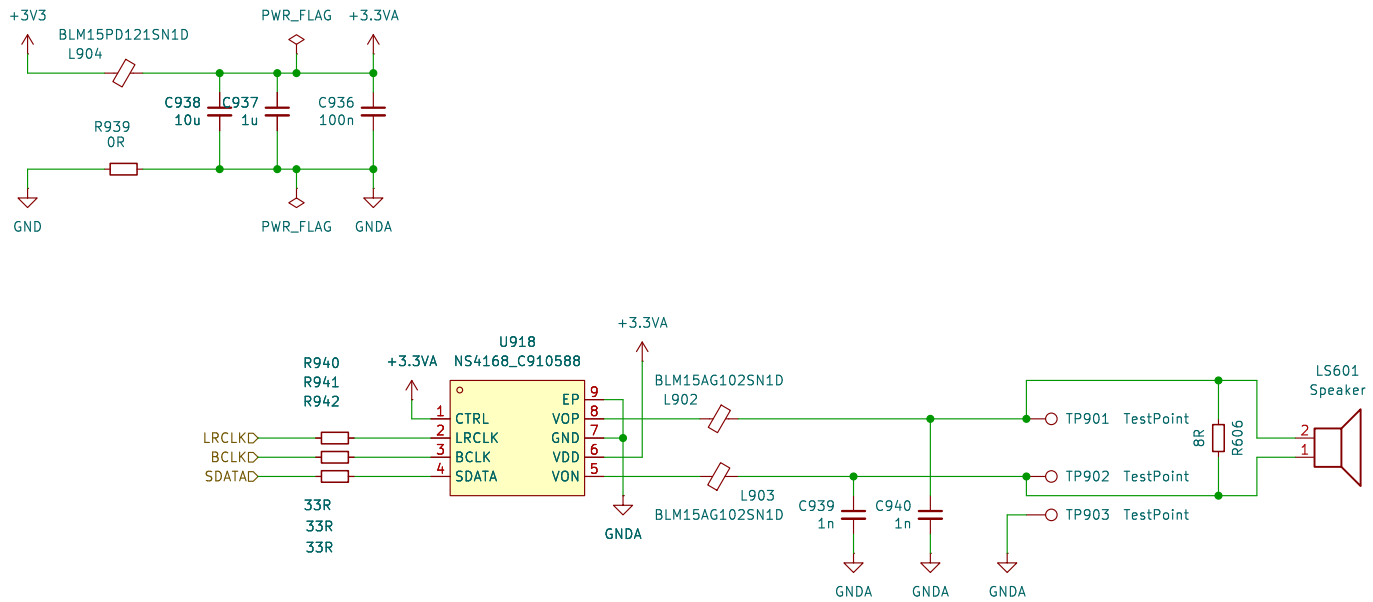
Sheet: /UI_DISPLAY/		
File: UI_DISPLAY.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 11/22

simulation

Sheet: /UI_HALL_PREAMP/
File: UI_HALL_PREAMP.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 12/22



Sheet: /AUDIO/		
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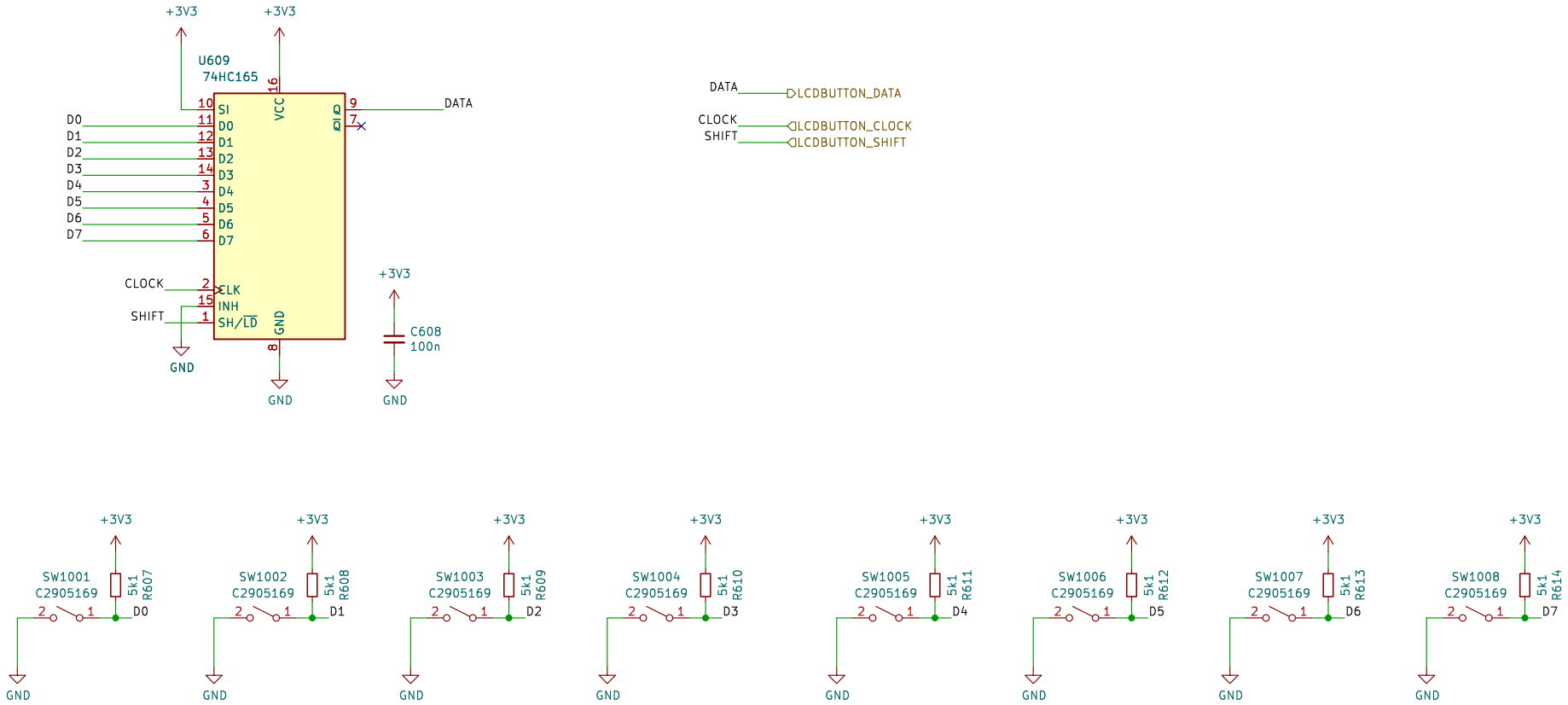
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 21/22



Sheet: /LCDBUTTON/		
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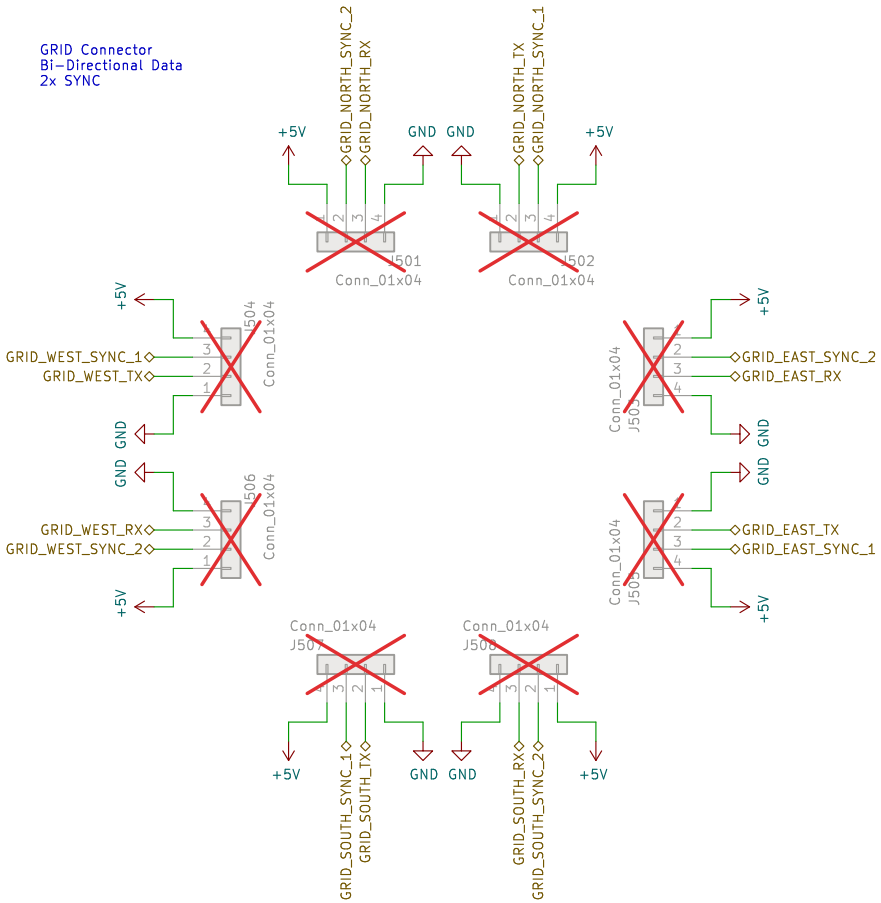
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 22/22



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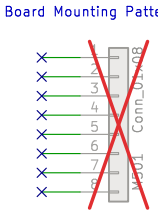

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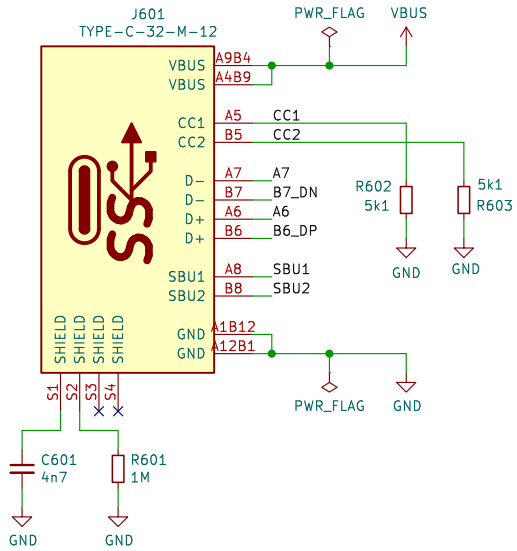
File: GRID.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 8/22

600

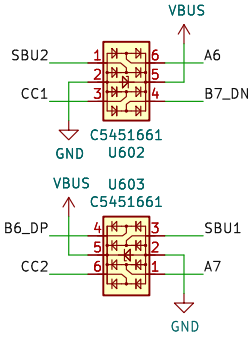
USB Port

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



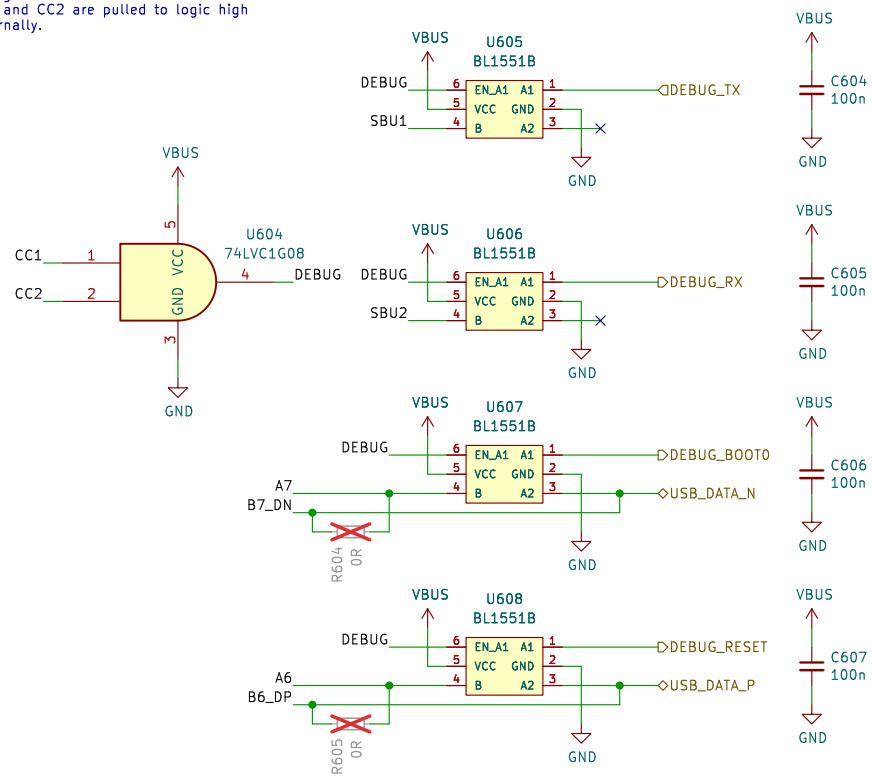
ESD Prot.

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



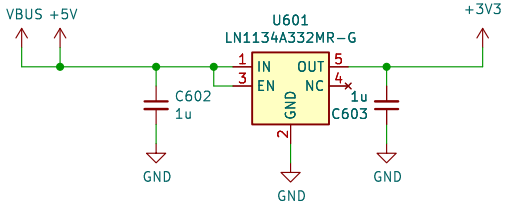
Debug-Mode Multiplexing

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

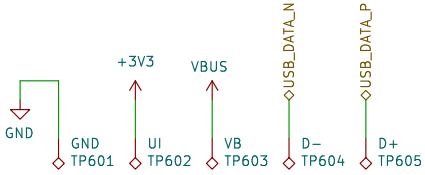


3V3 LDO

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



Testpoints



Sheet: /MCU/USB_POWER/
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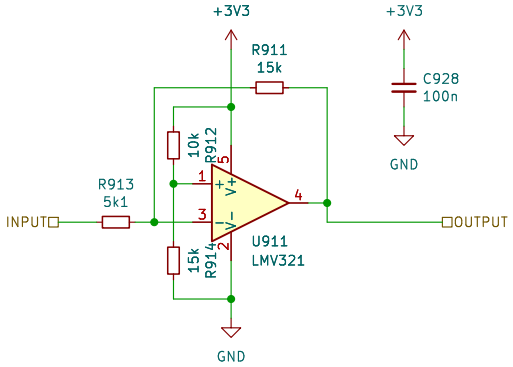
Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 9/22



Sheet: /UI_HALL_PREAMP/INVERT_AND_OFFSET/		
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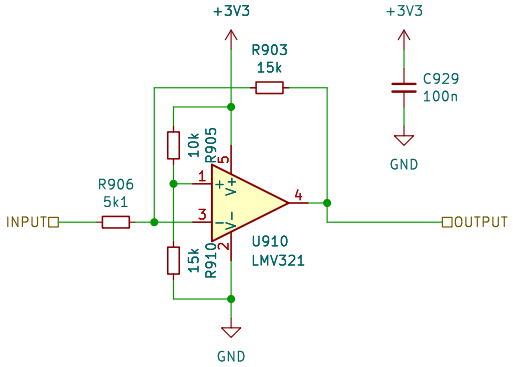
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 13/22



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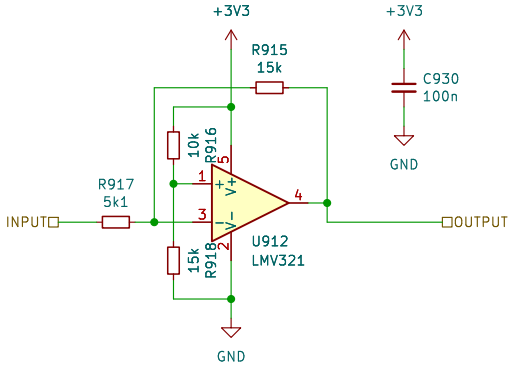
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 14/22



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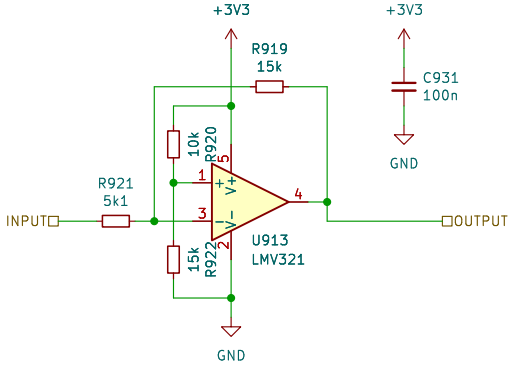
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 15/22



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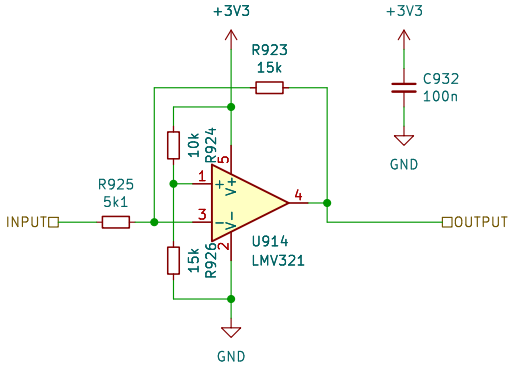
File: INVERT_AND_OFFSET.kicad_sch

Title:

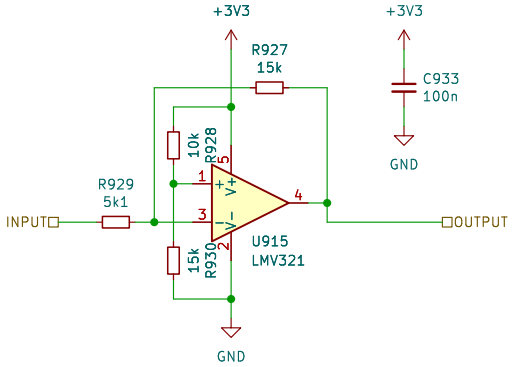
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 16/22



Sheet: /UI_HALL_PREAMP/INVERT_AND_OFFSET4/
File: INVERT_AND_OFFSET.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 17/22



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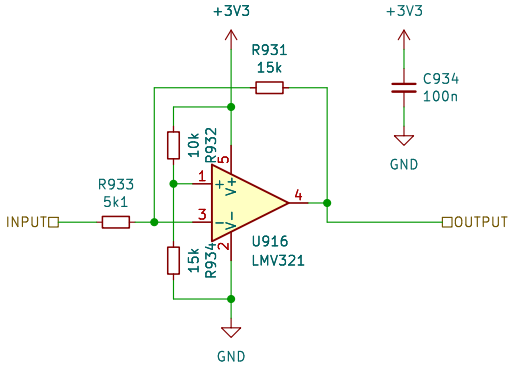
File: INVERT_AND_OFFSET.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 18/22



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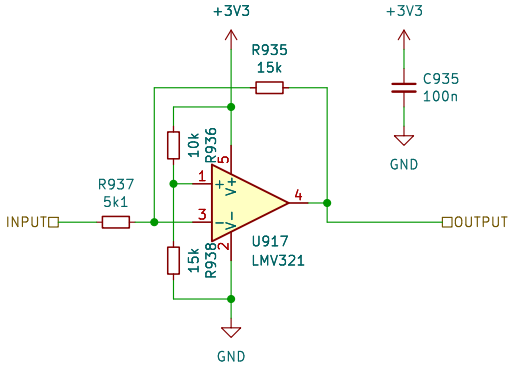
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 19/22



Sheet: /UI_HALL_PREAMP/INVERT_AND_OFFSET7/		
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Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.1		Id: 20/22