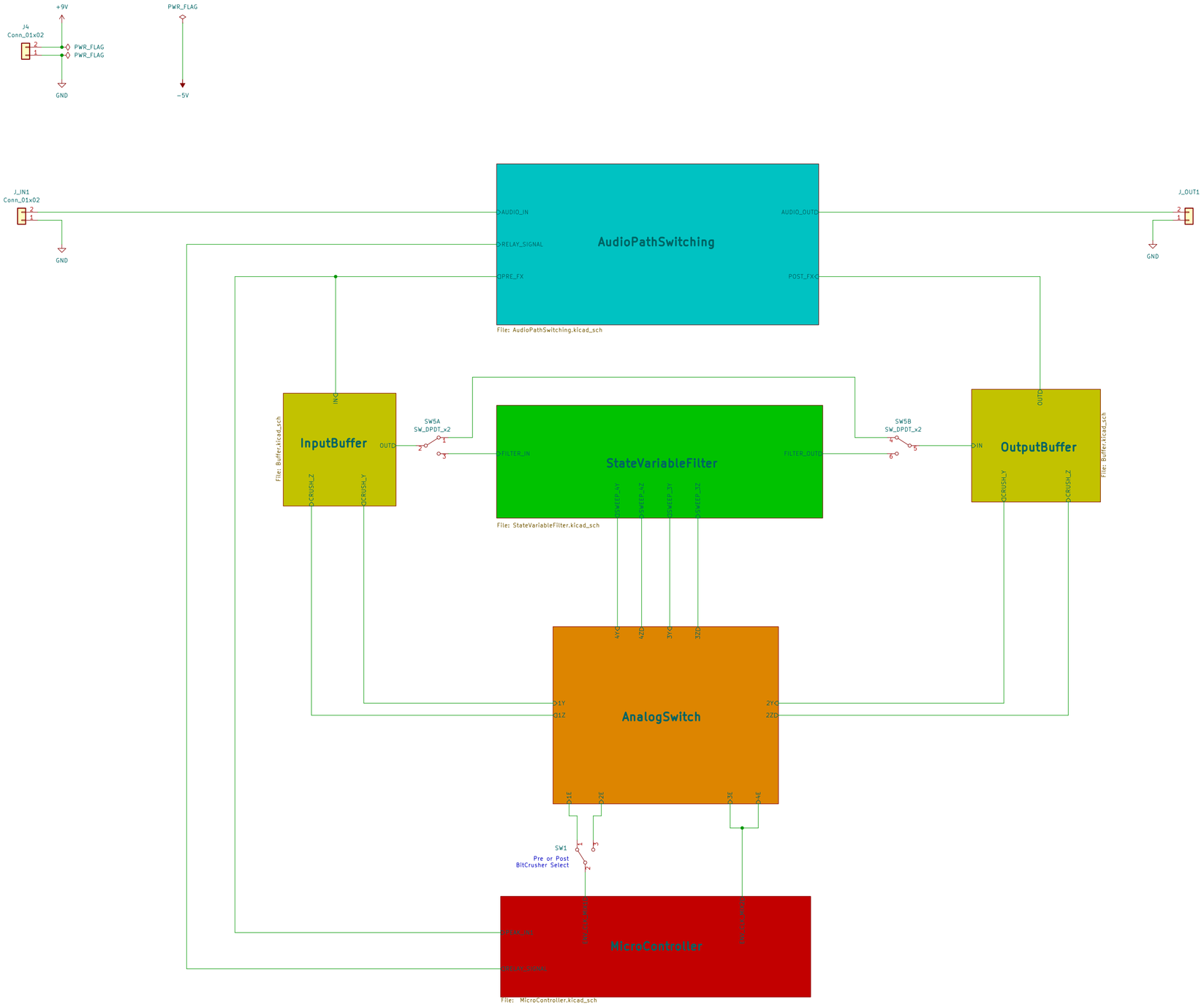
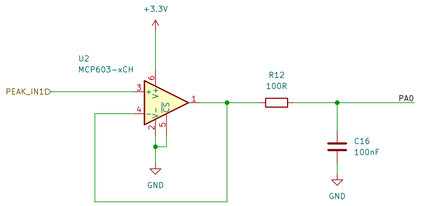
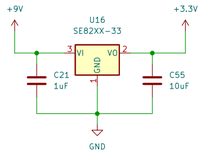

J4
Conn_01x02
+9V
PWR_FLAG
PWR_FLAG
PWR_FLAG
GND
−5V
J_IN1
Conn_01x02
GND
AUDIO_IN
RELAY_SIGNAL
PRE_FX
AUDIO_OUTD
POST_FX
AudioPathSwitching
File: AudioPathSwitching.kicad_sch
J_OUT1
GND
INC
OUTD
InputBuffer
File: Buffer.kicad_sch
SW5A
SW_DPDT_x2
SW5B
SW_DPDT_x2
FILTER_IN
FILTER_OUTD
StateVariableFilter
File: StateVariableFilter.kicad_sch
IN
OUTD
OutputBuffer
File: Buffer.kicad_sch
DCRUSH_Z
DCRUSH_Y
4YC
4ZD
3YC
3ZD
1Y
1Z
2YC
2ZD
AnalogSwitch
1OE
2OE
3OE
4OE
SW1
Pre or Post
BitCrusher Select
CRUSH_CTRL
CRUSH_CTRL
MicroController
File: MicroController.kicad_sch
Sheet: /
File: EnvelopeCrusher.kicad_sch
Title:
Size: A2
Date:
Rev:
KiCad E.D.A. kicad (6.0.5-0)
Id: 1/14

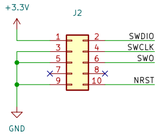
Peak Detector Input Buffer for ADC



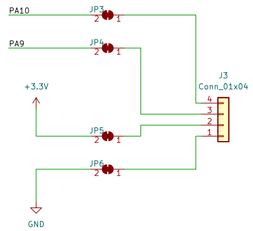
Dedicated Voltage Regulator



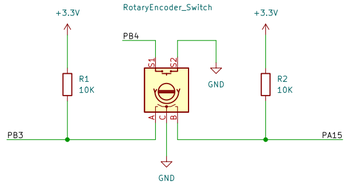
10-Pin ARM Programming Header



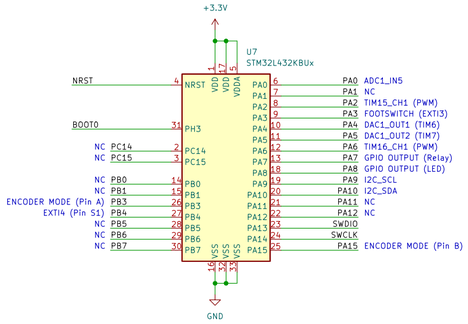
OLED Display Connector



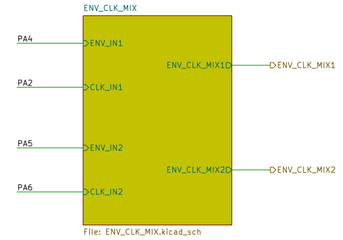
Rotary Encoder



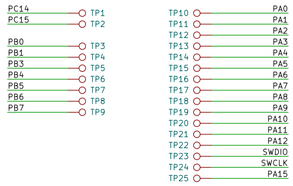
Microcontroller



Envelope/Clock Mixer Output Stage

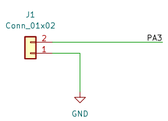


Testpoints

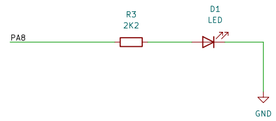


Signal Path Relay

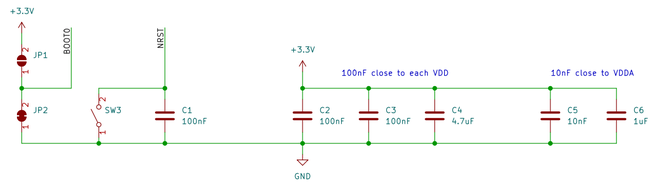
Signal Path Footswitch Connector



Signal Path LED



Decoupling Capacitors

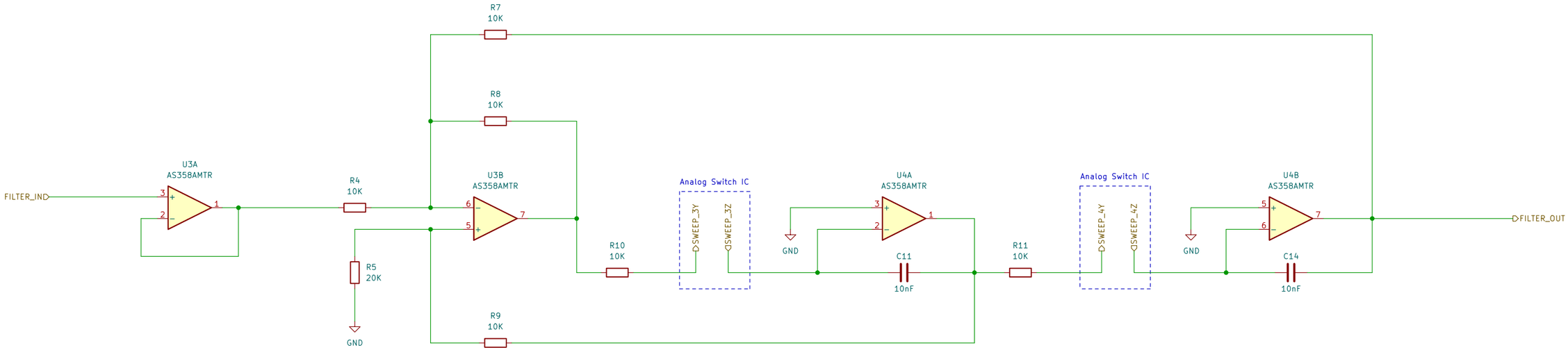


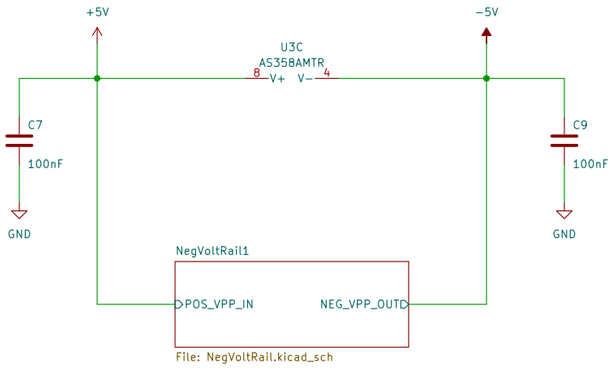
Sheet: /MicroController/
File: MicroController.kicad_sch

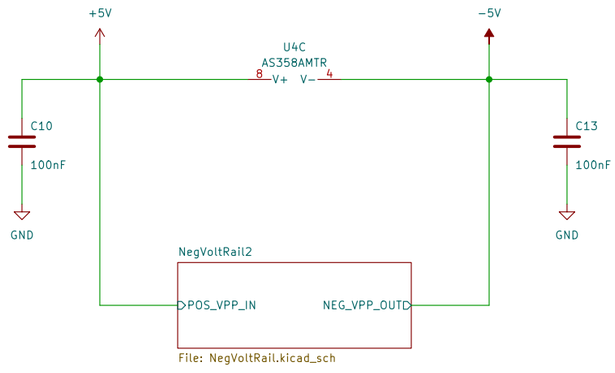
Title:

Size: A2	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5-0)		Id: 2/14

This is based on a traditional 2nd order, state-variable filter.
More information can be found here: https://sound-au.com/articles/state-variable.htm







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Size: A3	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5-0)		Id: 3/14

This is an experimental "bit crusher" circuit. The signal is switched on/off at high frequency using the analog switch IC. This will reduce the resolution of the input signal in the time domain
(as opposed to the normal bit crushing effect of reducing the amplitude resolution)

The addition of capacitors after the analog switch IC, allows the block to function as a kind of Sample and Hold circuit. This should cause a smoothing effect on the output signal, which may or may not be desirable.

Capacitor Position:

Only one capacitor should be used, with the other footprint bridged. When using the lower capacitor, droop rate (during hold mode) will be directly related by the input voltage.
When using the upper capacitor, the capacitor is connected to opamp virtual ground and the droop rate is constant. This is the recommended option.

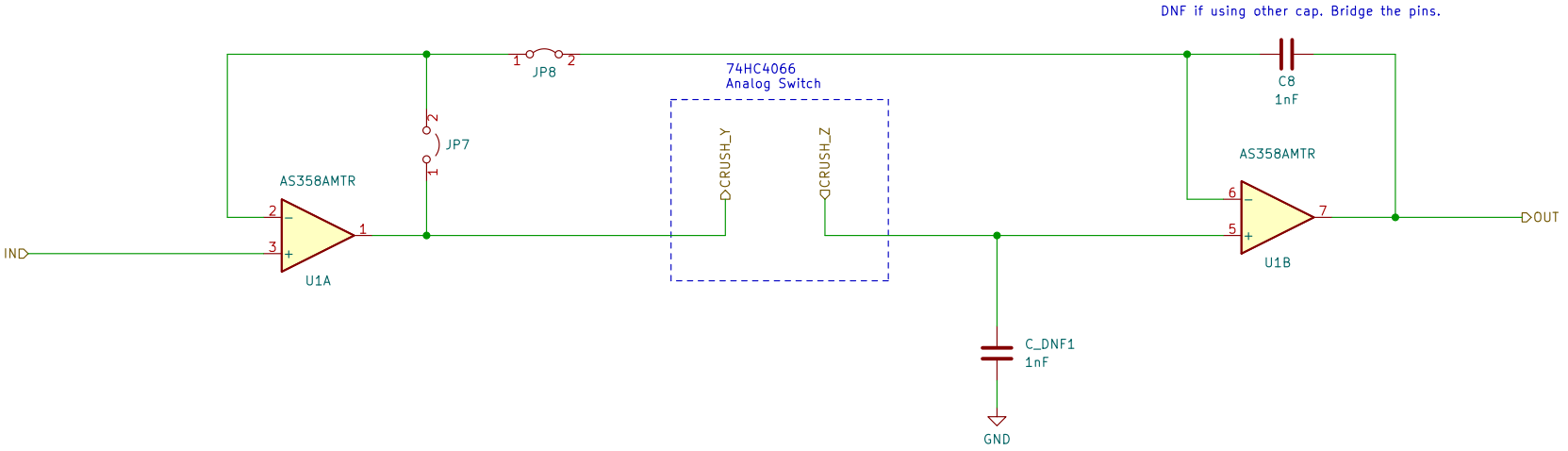
Feedback Loop:

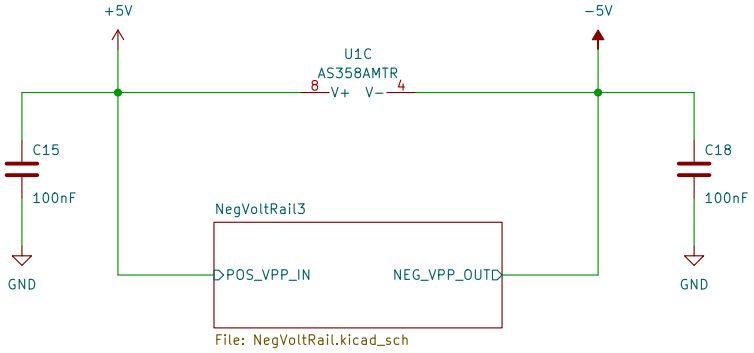
"The feedback significantly improves the accuracy of the S/H relative to the open−loop configuration, although the speed is somewhat
less". Closed Loop is recommended option.

Capacitor Value:

"The acquisition time can be reduced by choosing a smaller hold capacitance; however, this will increase the hold step and droop rate."
Default to 1nF but try other values: 1pF, 100nF, 1uF.

https://www.ti.com/lit/an/snoa223/snoa223.pdf





Sheet: /InputBuffer/ File: Buffer.kicad_sch		
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Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5−0)		Id: 4/14

This is an experimental "bit crusher" circuit. The signal is switched on/off at high frequency using the analog switch IC. This will reduce the resolution of the input signal in the time domain
(as opposed to the normal bit crushing effect of reducing the amplitude resolution)

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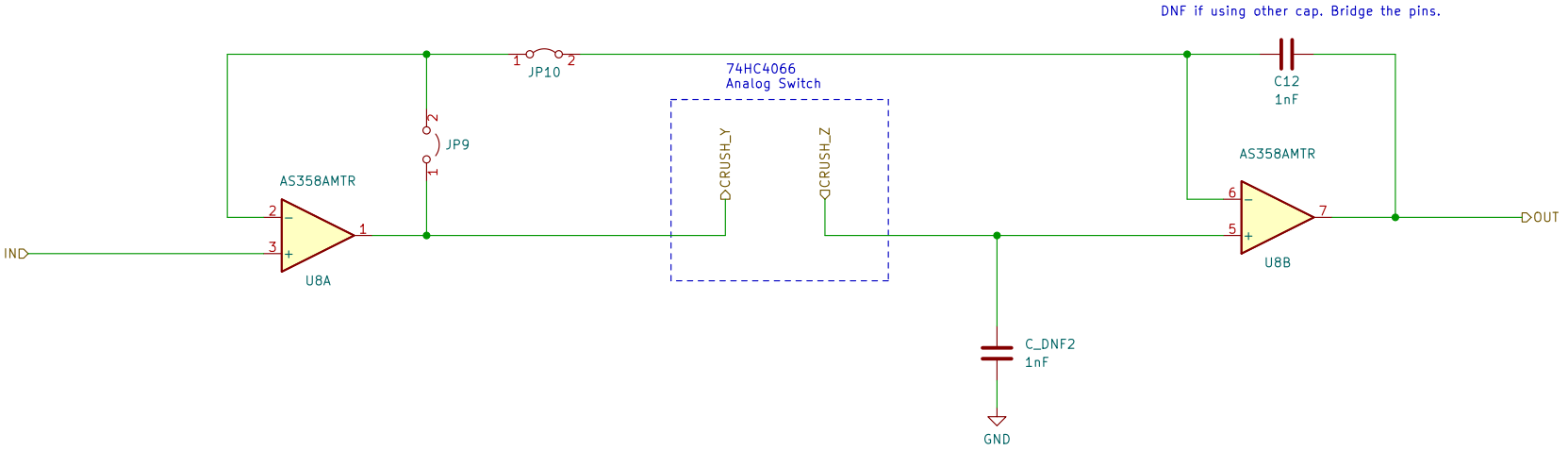
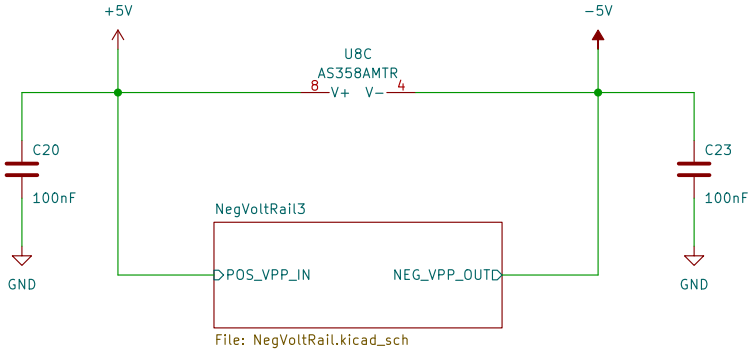
https://www.ti.com/lit/an/snoa223/snoa223.pdf





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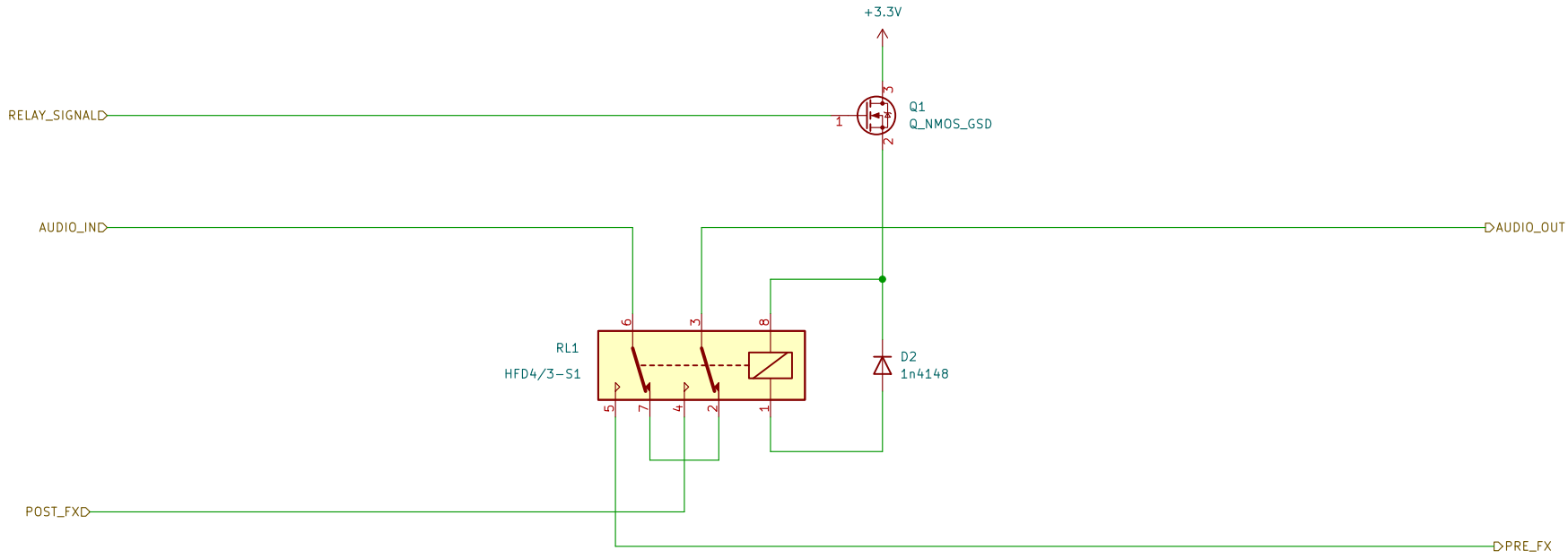
KiCad E.D.A. kicad (6.0.5−0)		Id: 5/14



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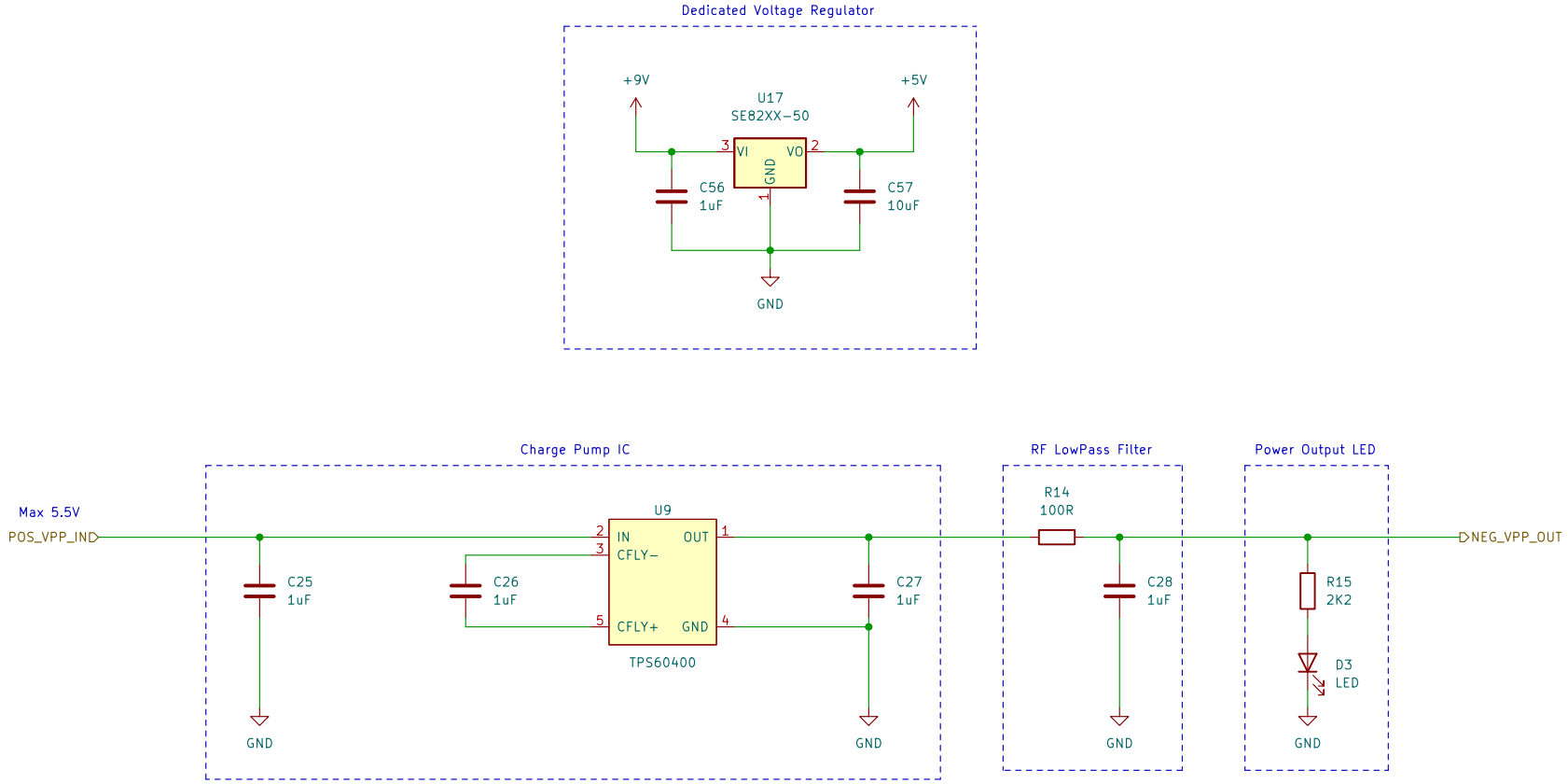

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Size: A4	Date:	**Rev:**
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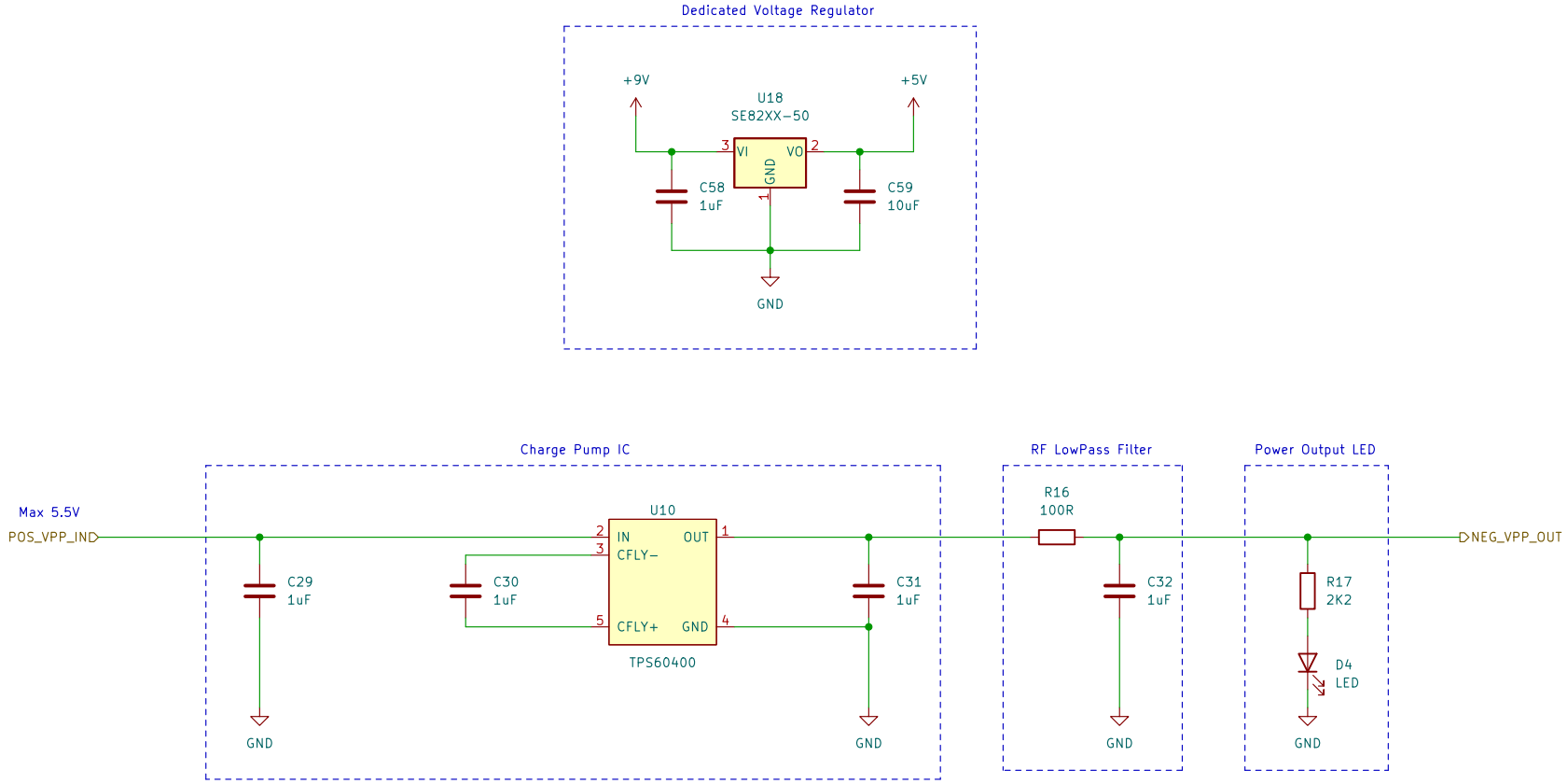

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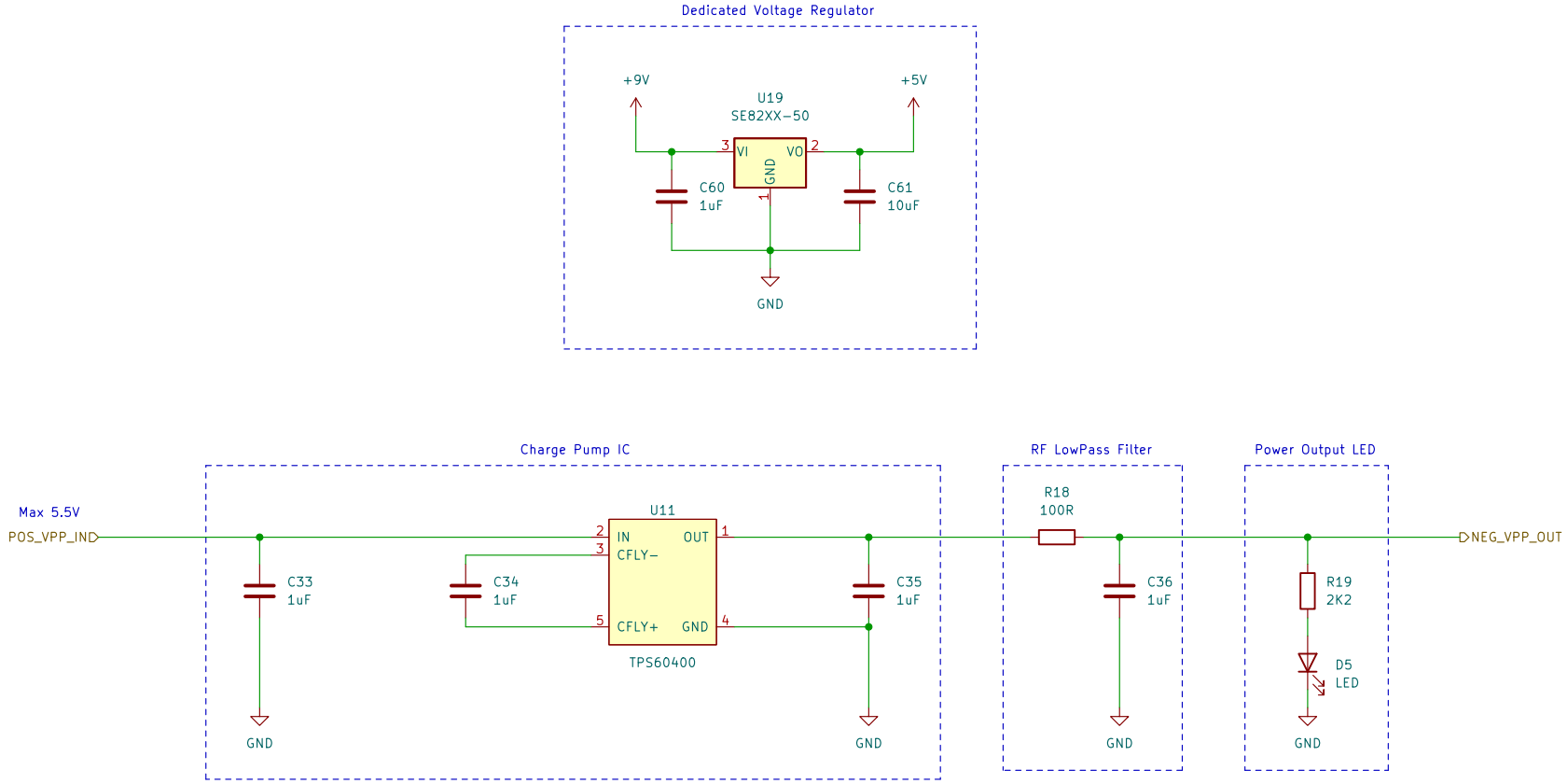
KiCad E.D.A. kicad (6.0.5-0)		Id: 8/14



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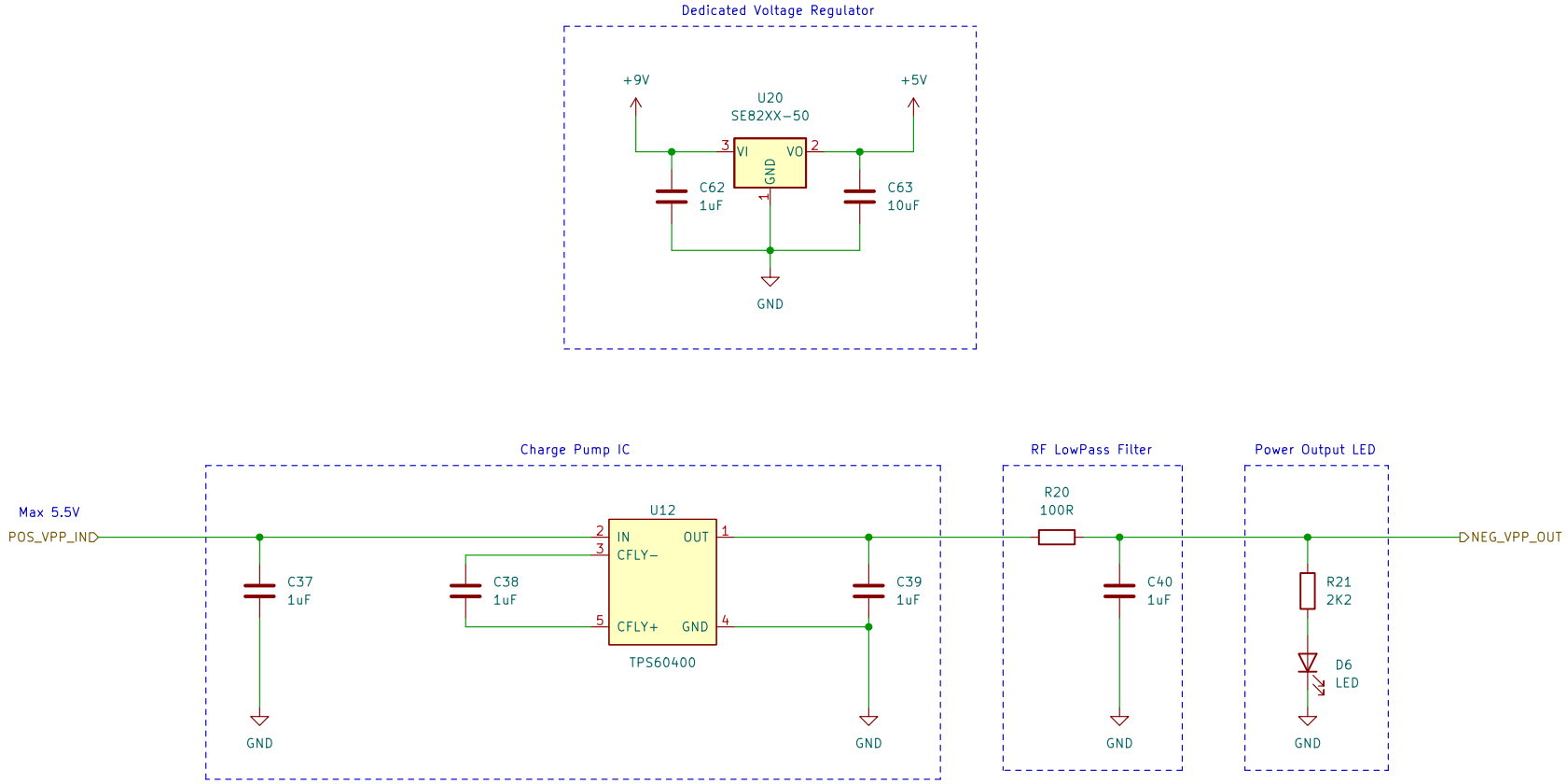

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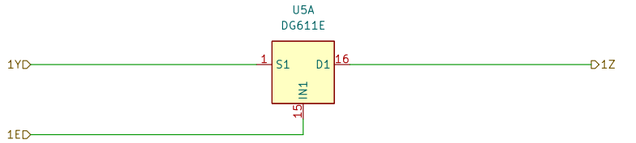

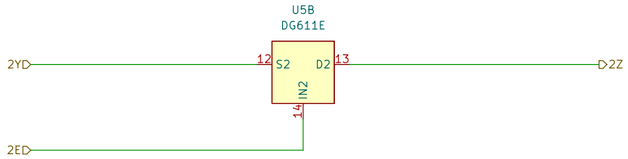

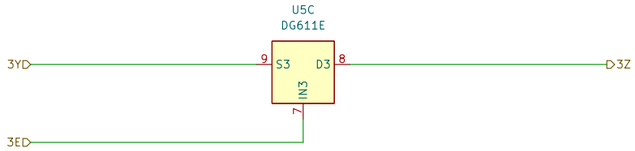

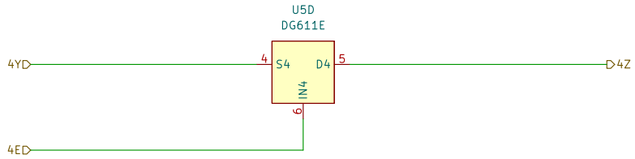

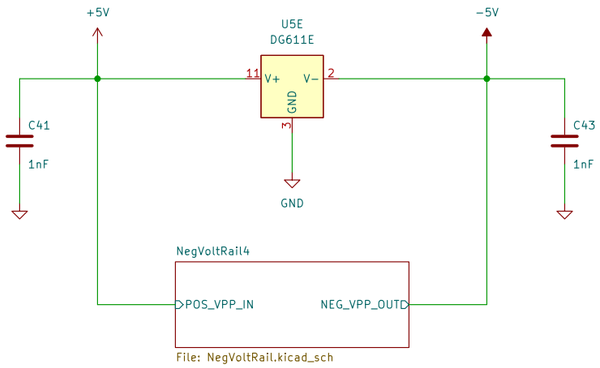

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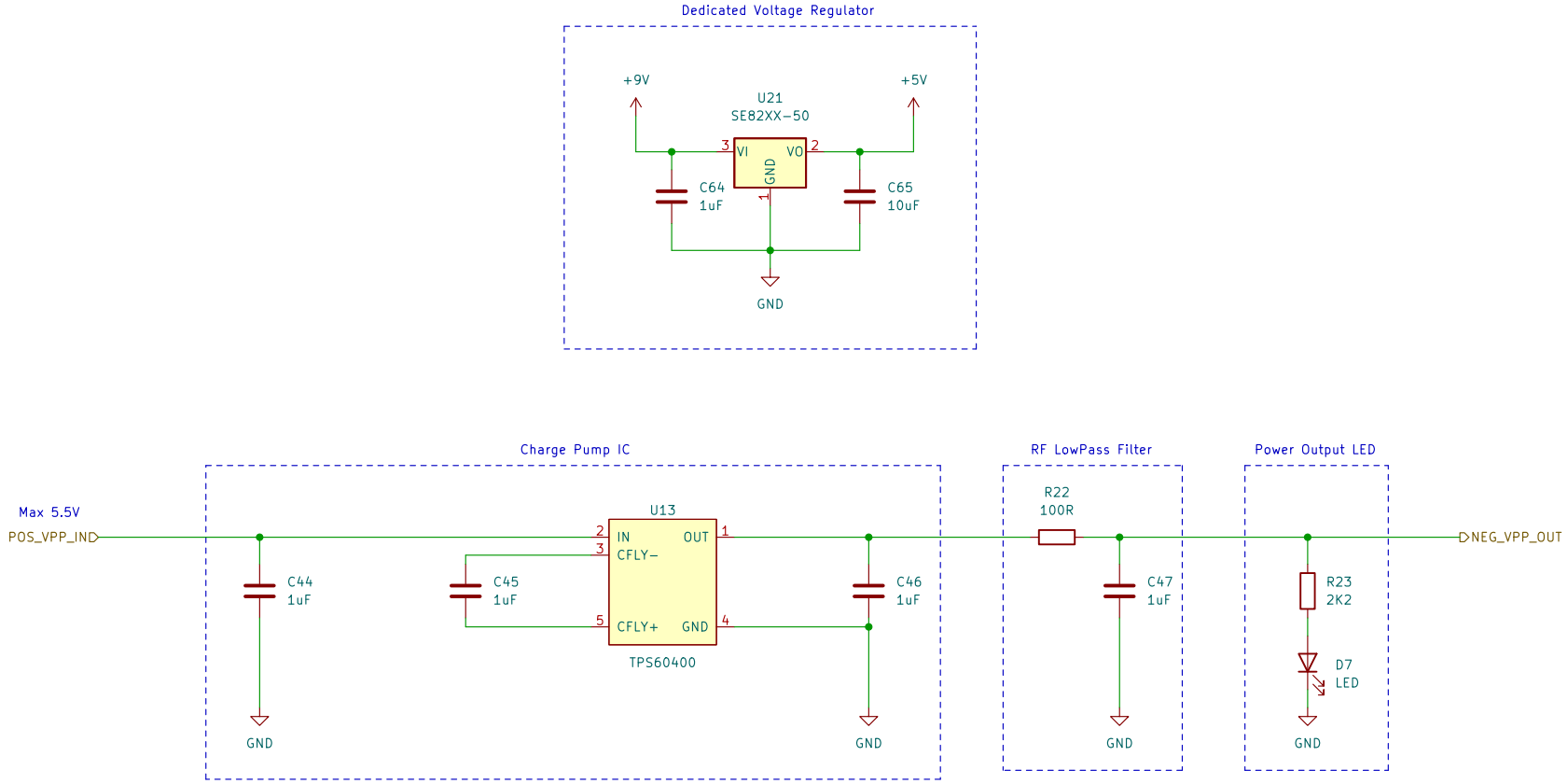
Size: A3	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5-0)		Id: 11/14



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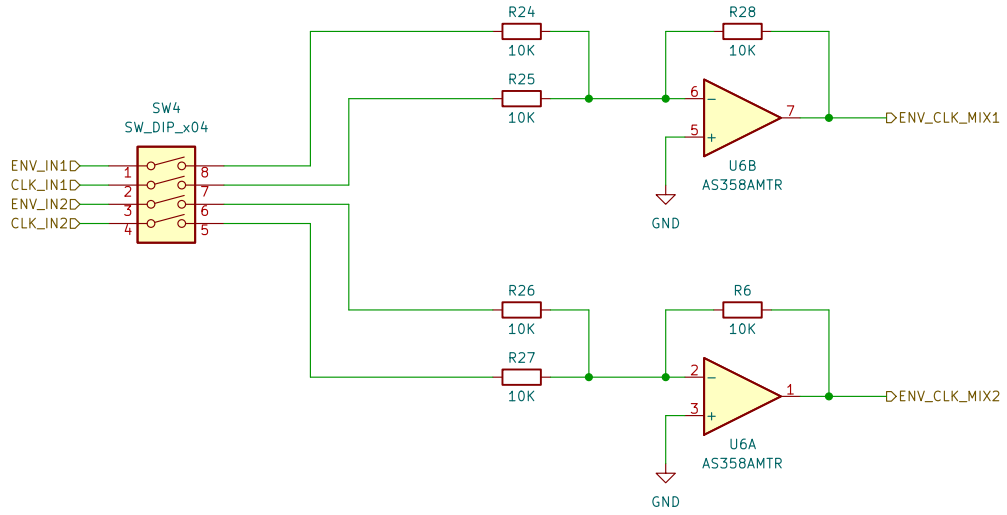
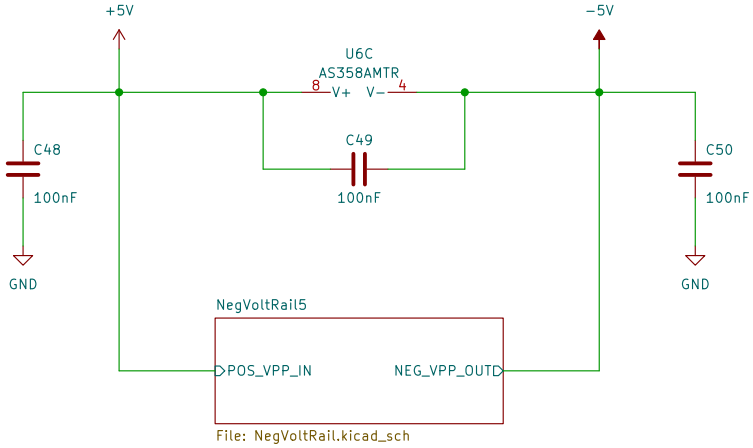
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5-0)		Id: 12/14

Use DIPSW to isolate the enveloper signal
or clock signal from the mixed output





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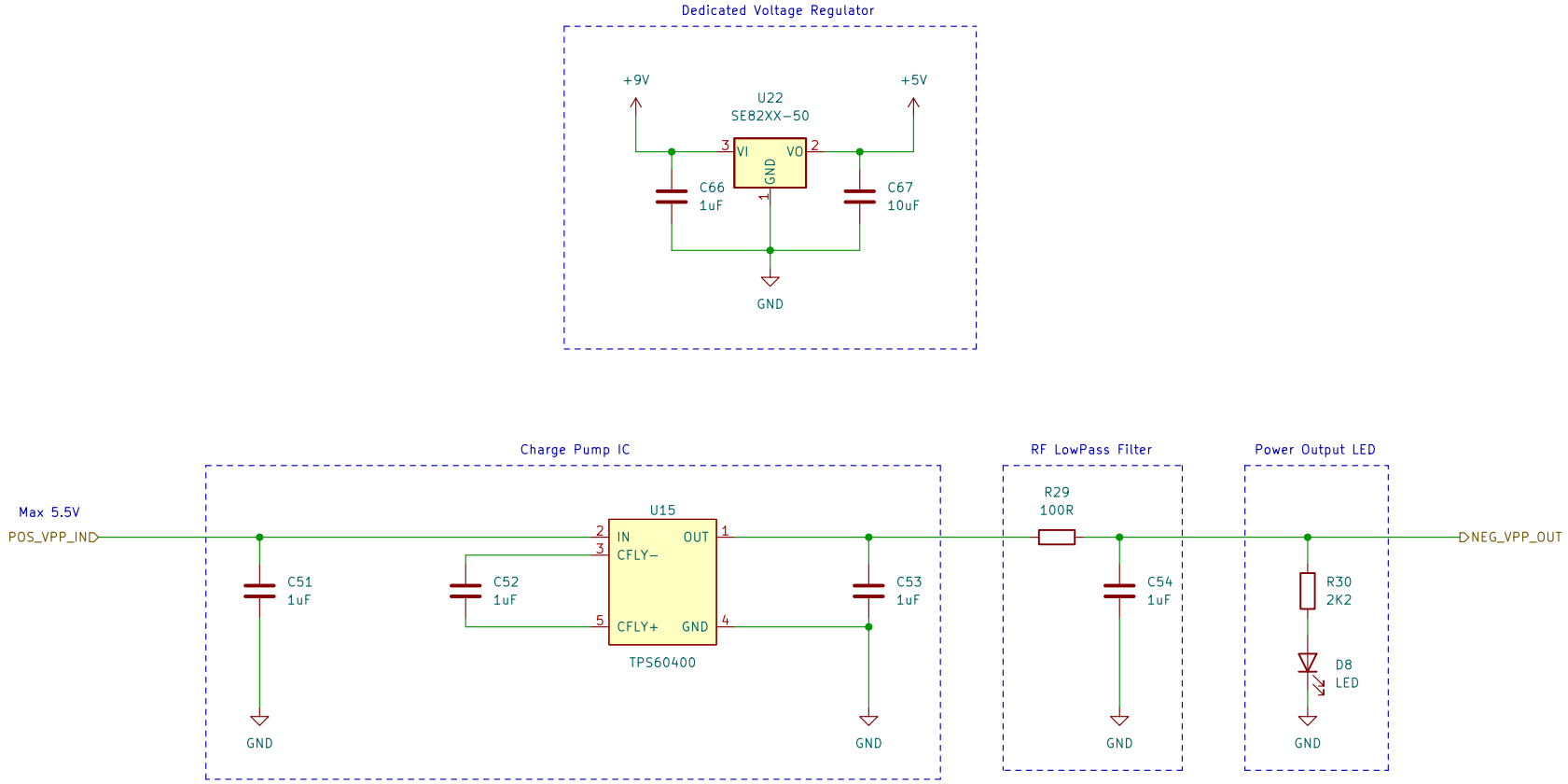
Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5−0)		Id: 13/14



Sheet: /MicroController/ENV_CLK_MIX/NegVoltRail5/		
File: NegVoltRail.kicad_sch		
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Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5-0)		Id: 14/14