

For L :  
 $E \cdot T = (V_{IN} - V_{OUT}) \cdot (V_{OUT} / V_{IN}) \cdot (1000 / 52)$   
With  $V_{IN} = 20V$   
 $E \cdot T(\max) = 96.154 V \cdot \mu s$  at  $V_{OUT} = 10V$   
 $L = 150 \mu H$   
 $I_{MAX} = 1.15 \cdot 3 = 3.45A$

Check Python Notebook for Resistors calculations

Sheet: /SMPS 2/  
File: smps.kicad\_sch

**Title:**

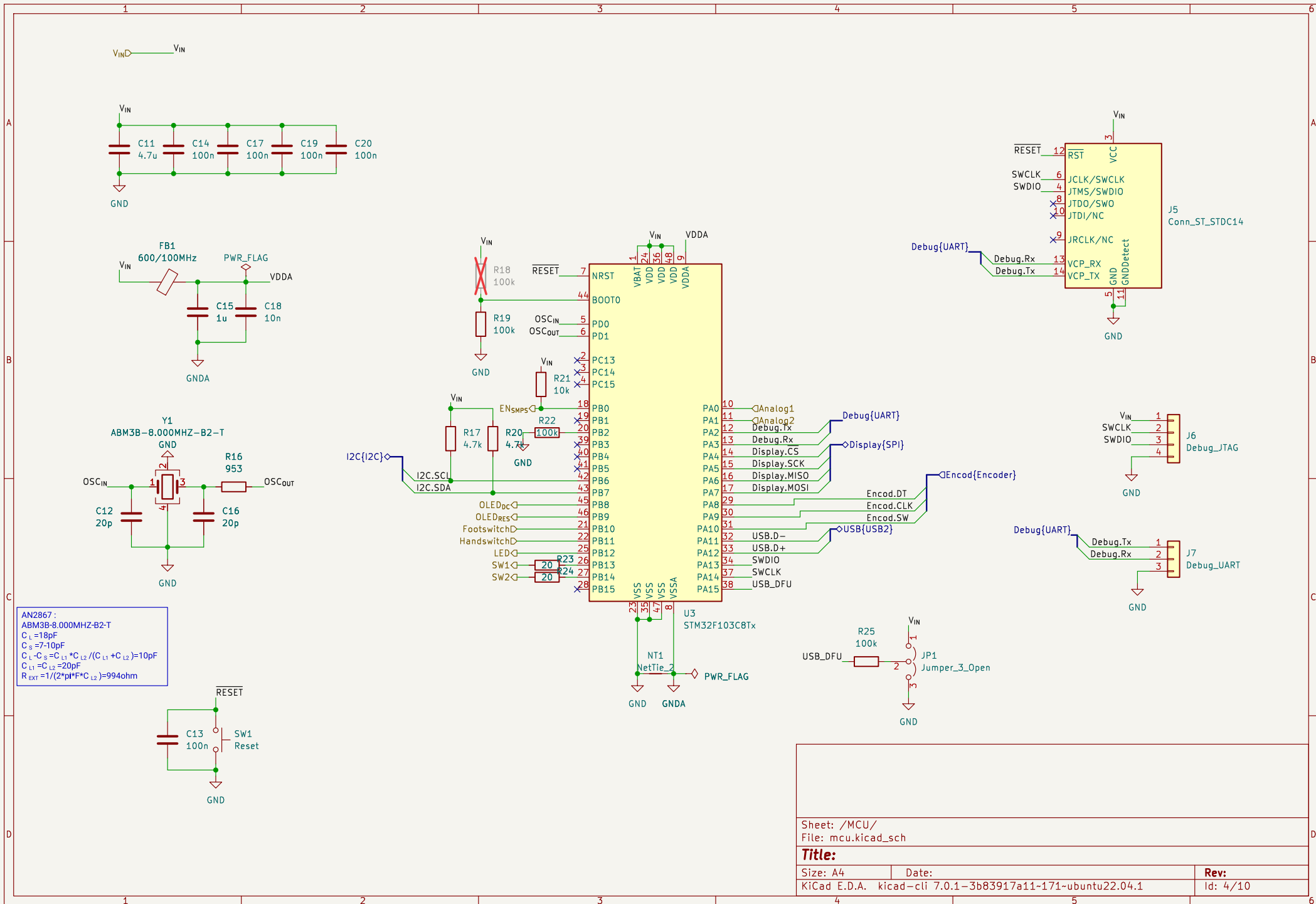
Size: A4

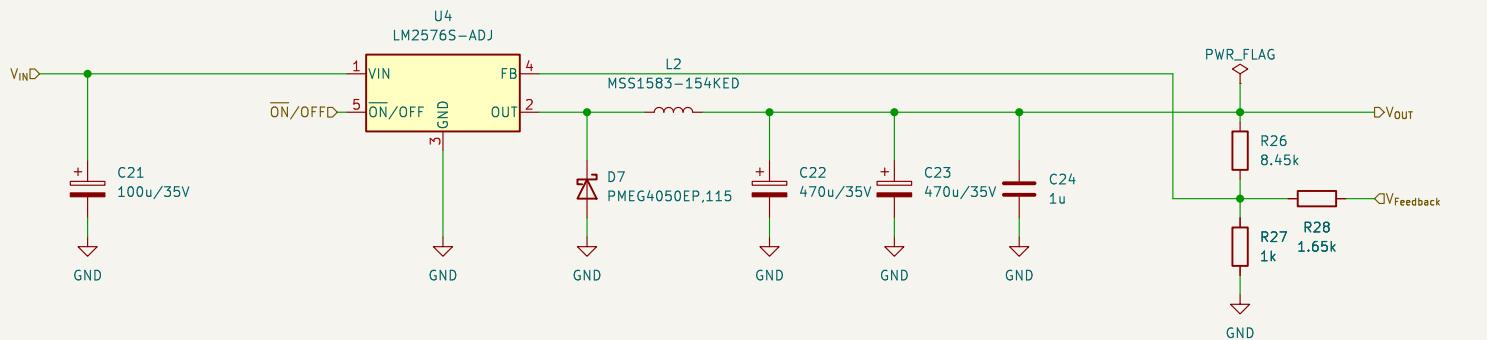
Date:

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**Rev:**

Id: 3/10





For L :  
 $E \cdot T = (V_{IN} - V_{OUT}) \cdot (V_{OUT} / V_{IN}) \cdot (1000 / 52)$   
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 $E \cdot T(\text{max}) = 96.154 \text{ V} \cdot \mu\text{s}$  at  $V_{OUT} = 10V$   
 $L = 150 \mu\text{H}$   
 $I_{MAX} = 1.15 \cdot 3 = 3.45A$

Check Python Notebook for Resistors calculations

Sheet: /SMPS 1/  
 File: smps.kicad\_sch

**Title:**

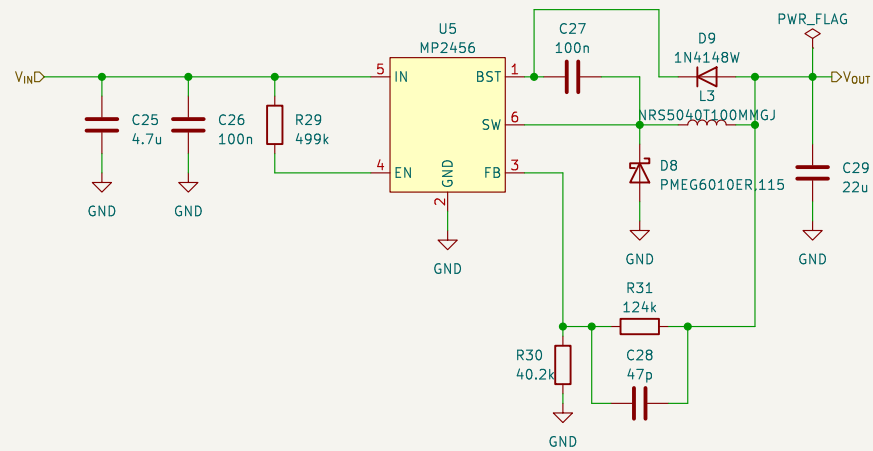
Size: A4

Date:

**Rev:**

KiCad E.D.A. kicad-cli 7.0.1-3b83917a11-171-ubuntu22.04.1

Id: 5/10



Sheet: /MCU DCDC/  
File: mcu\_dcdc.kicad\_sch

**Title:**

Size: A4

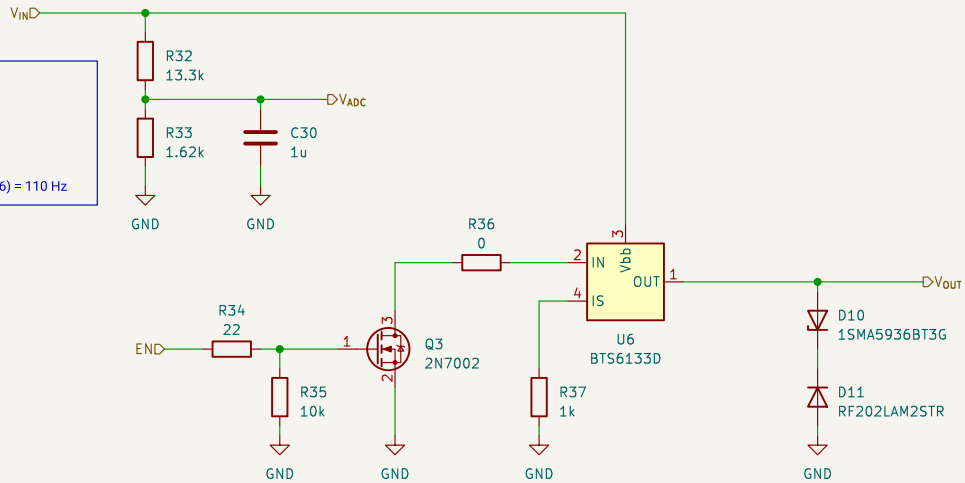
Date:

Rev:

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Id: 6/10

$V_{MAX} = 30V$   
For  $V_{ADC} = 3.3V$   
 $R_h = 13.3k$   
 $R_l = 1.62k$   
For  $C = 1\mu$   
 $f_{ADC} = 1/(2*\pi*(R_h/R_l)*1e-6) = 110\text{ Hz}$



Sheet: /Out Power Control 1/  
File: outpowercontrol.kicad\_sch

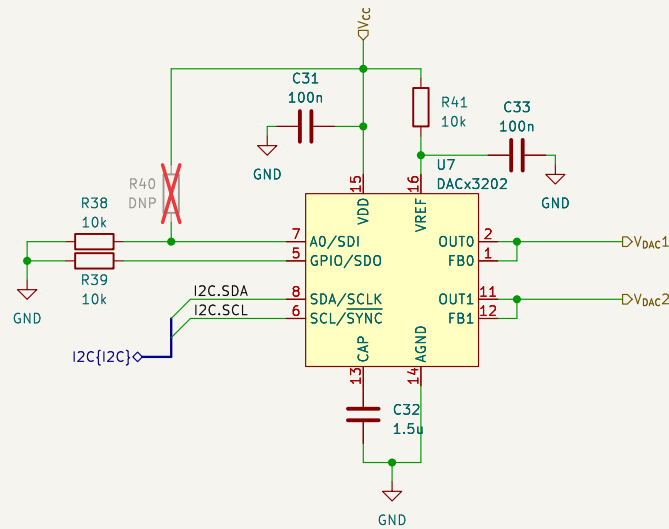
**Title:**

Size: A4  
KiCad E.D.A. kicad-cli 7.0.1-3b83917a11-171-ubuntu22.04.1

Date:  
Rev:  
Id: 6/10

4 DAC Possible :

- DAC53202 (10 bits)
- DAC63202 (12 bits)
- DAC53002 (10 bits ultra low-power)
- DAC63002 (12 bits ultra low-power)



Sheet: /DAC/  
File: dac.kicad\_sch

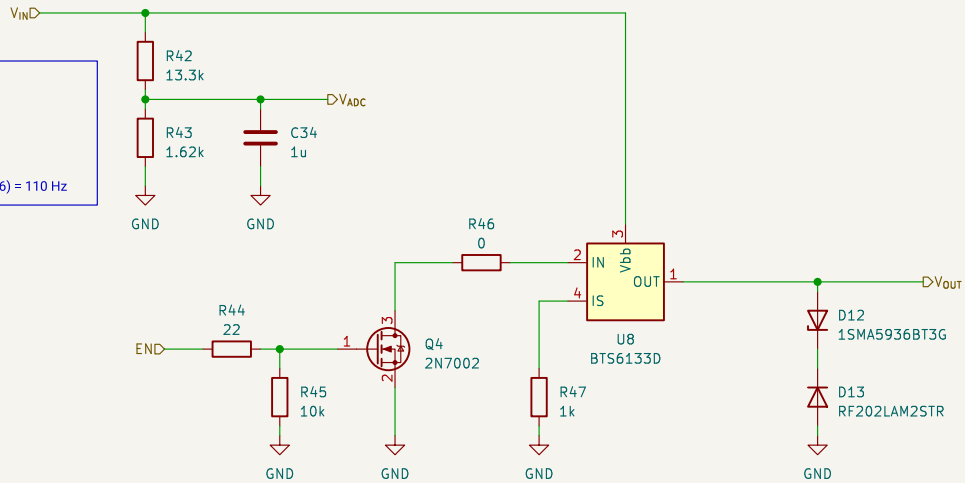
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Size: A4 Date: KiCad E.D.A. kicad-cli 7.0.1-3b83917a11-171-ubuntu22.04.1

Rev: Id: 7/10



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For  $C = 1\mu$   
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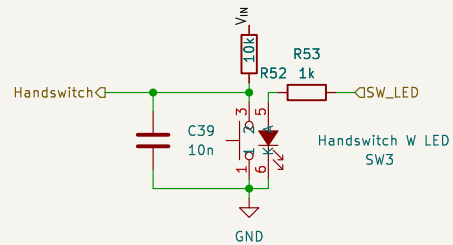
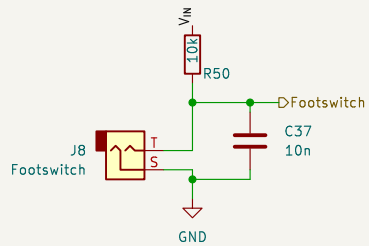
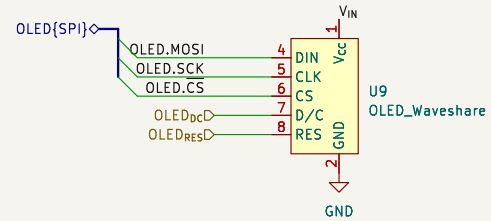
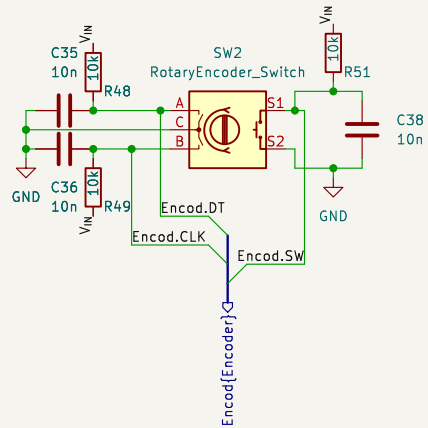


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File: outpowercontrol.kicad\_sch

**Title:**

Size: A4  
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Date:  
Rev: 8/10



Sheet: /10/  
File: io.kicad\_sch

**Title:**

Size: A4  
KiCad E.D.A. kicad-cli 7.0.1-3b83917a11-171-ubuntu22.04.1

Date:  
Id: 10/10