Sheet: PeripheralBoard

File: PeripheralBoard.sch

Sheet: MainBoard

File: MainBoard.sch

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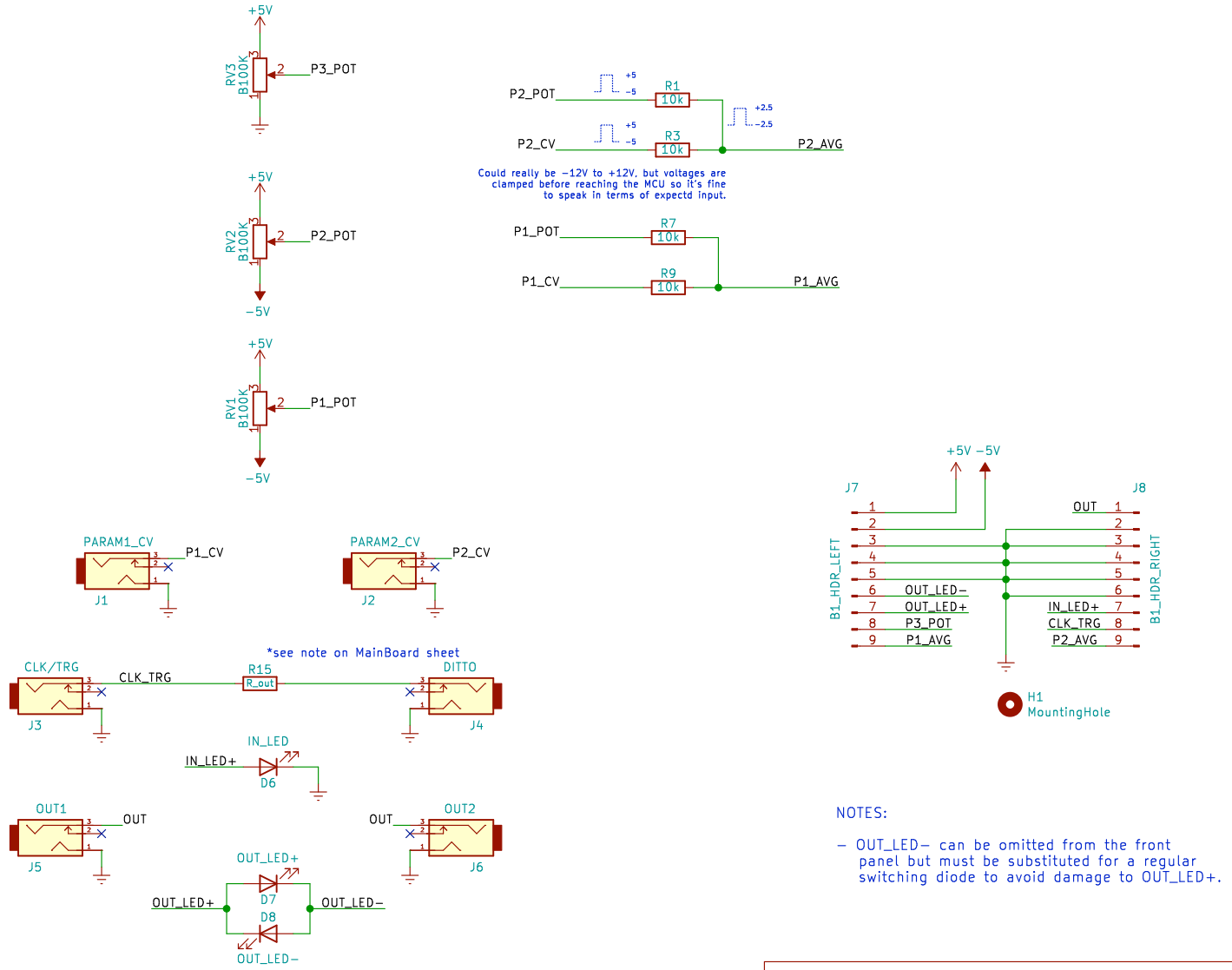
Sheet: /

File: JNTUB.sch

Title: JoyfulNoise Tiny Utility Board

Size: USLetter	Date: 2020-12-31	**Rev: 0.1**
KiCad E.D.A. kicad (5.1.9-0-10_14)		Id: 1/3



NOTES:

– OUT_LED− can be omitted from the front panel but must be substituted for a regular switching diode to avoid damage to OUT_LED+.

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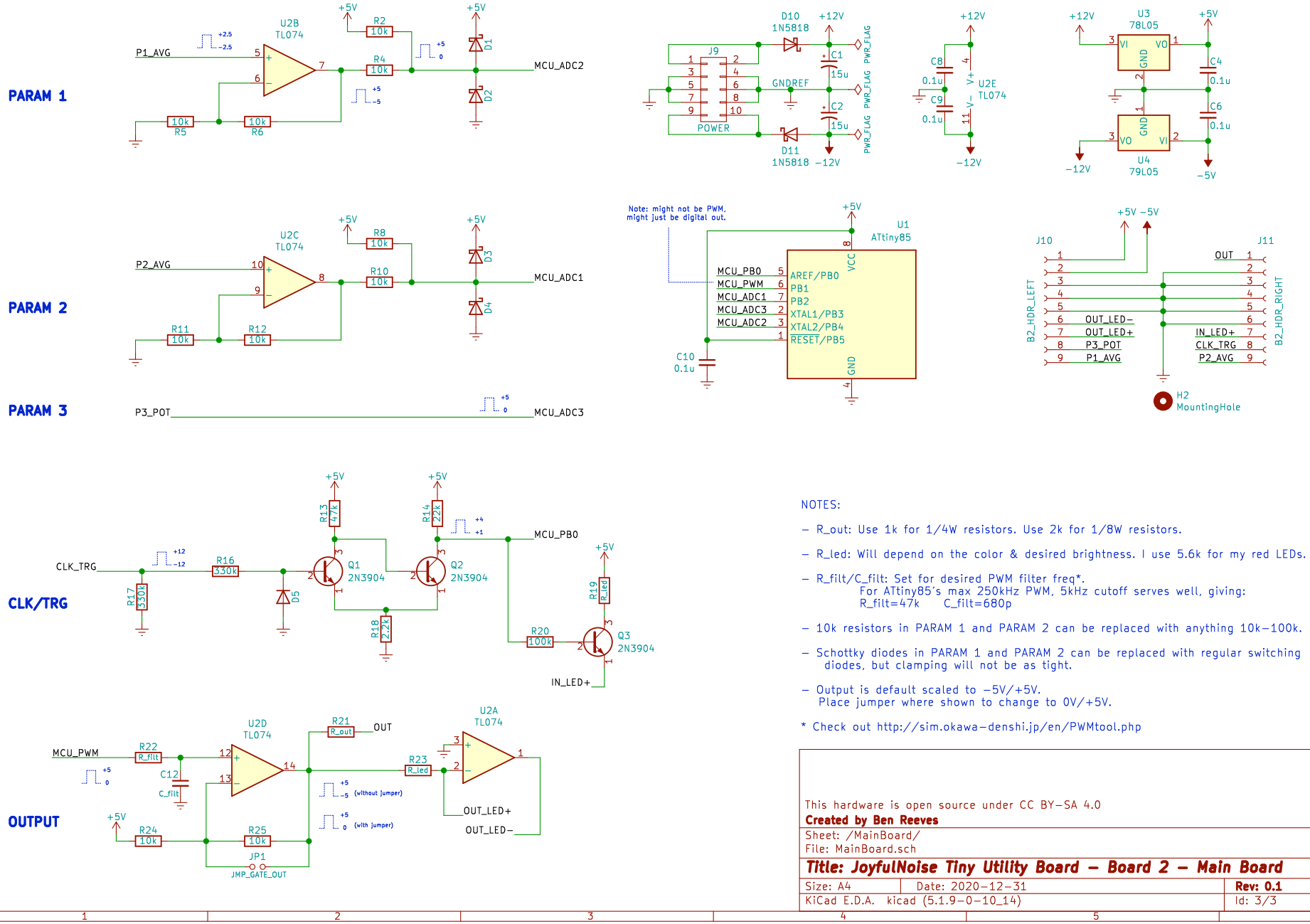
Sheet: /PeripheralBoard/

File: PeripheralBoard.sch

Title: JoyfulNoise Tiny Utility Board – Board 1 – Peripheral Board

Size: USLetter	Date: 2020−12−31	**Rev: 0.1**
KiCad E.D.A. kicad (5.1.9−0−10_14)		Id: 2/3



NOTES:

- R_out: Use 1k for 1/4W resistors. Use 2k for 1/8W resistors.
- R_led: Will depend on the color & desired brightness. I use 5.6k for my red LEDs.
- R_filt/C_filt: Set for desired PWM filter freq*.
  For ATtiny85's max 250kHz PWM, 5kHz cutoff serves well, giving:
  R_filt=47k C_filt=680p
- 10k resistors in PARAM 1 and PARAM 2 can be replaced with anything 10k–100k.
- Schottky diodes in PARAM 1 and PARAM 2 can be replaced with regular switching diodes, but clamping will not be as tight.
- Output is default scaled to −5V/+5V.
  Place jumper where shown to change to 0V/+5V.

* Check out http://sim.okawa-denshi.jp/en/PWMtool.php

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Sheet: /MainBoard/
File: MainBoard.sch

Title: JoyfulNoise Tiny Utility Board – Board 2 – Main Board

Size: A4	Date: 2020-12-31	**Rev: 0.1**
KiCad E.D.A. kicad (5.1.9-0-10_14)		Id: 3/3