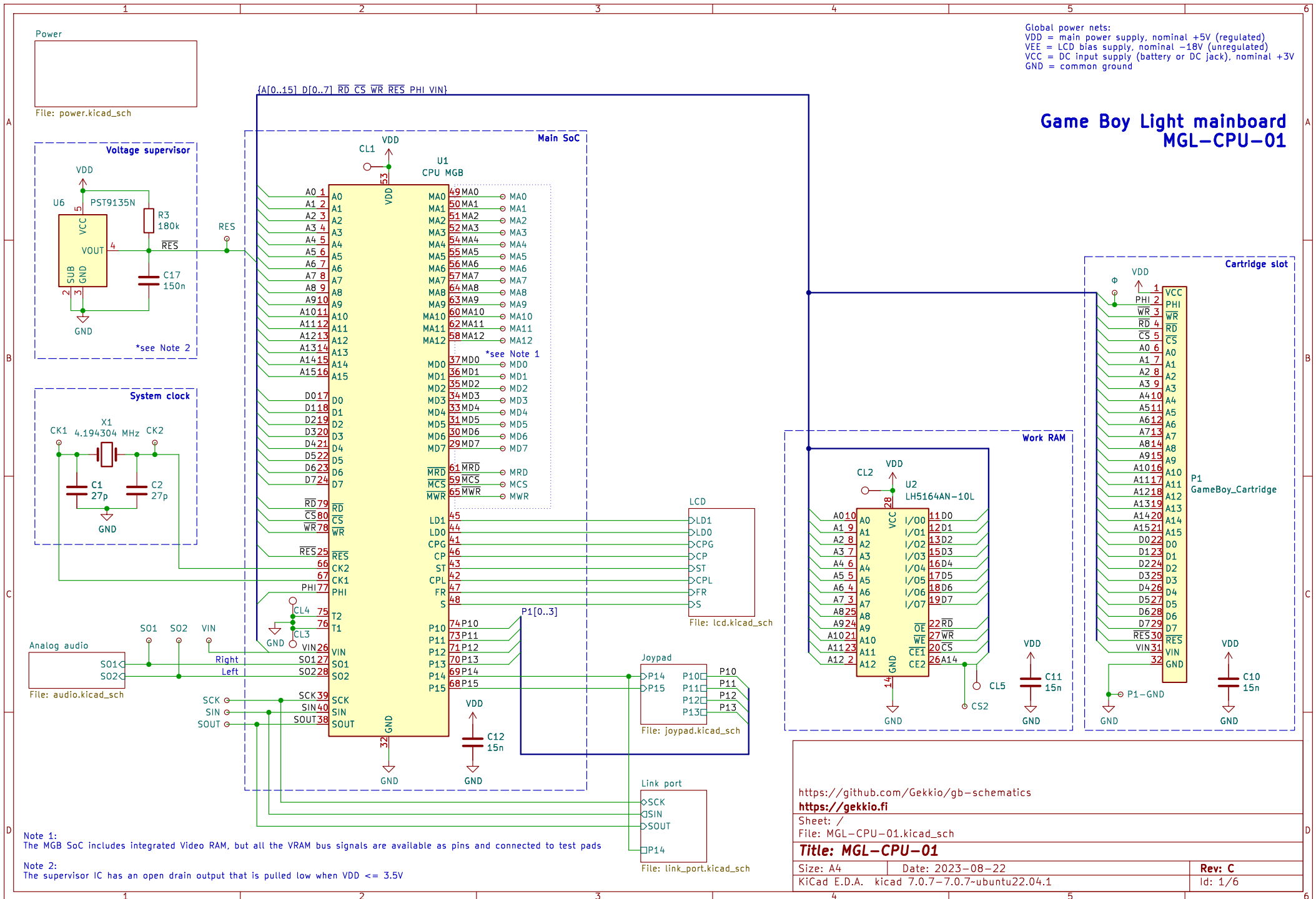
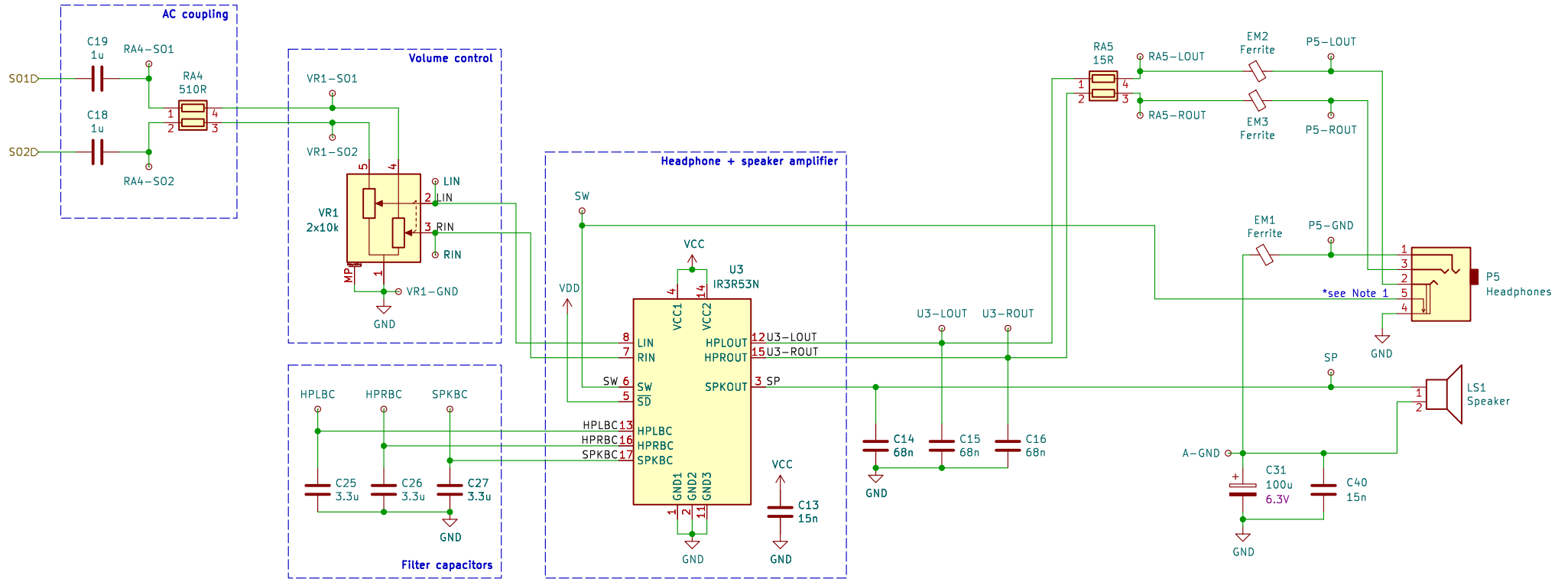


Global power nets:
VDD = main power supply, nominal +5V (regulated)
VEE = LCD bias supply, nominal -18V (unregulated)
VCC = DC input supply (battery or DC jack), nominal +3V
GND = common ground

Game Boy Light mainboard MGL-CPU-01





Note 1:
Pins 4 (GND) and 5 (SW) are normally connected, and inserting a plug disconnects SW from GND.

<https://github.com/Gekkio/gb-schematics>

<https://gekkio.fi>

Sheet: /Analog audio/

File: audio.kicad_sch

Title: MGL-CPU-01

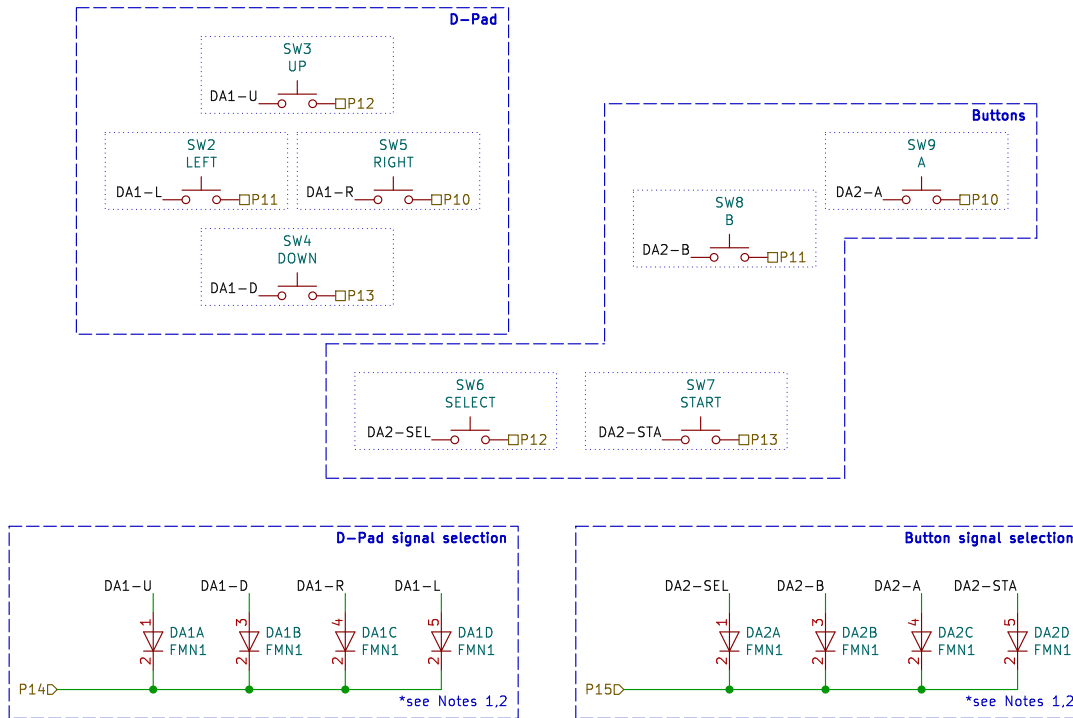
Size: A4

Date: 2023-08-22

KiCad E.D.A. kicad 7.0.7-7.0.7-ubuntu22.04.1

Rev: C

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Note 1:
Some boards use Panasonic MA6X124 (SOT-23-6 footprint) instead of Rohm FMN1 (SOT-23-5 footprint)
The SOT-23-6 footprint on the board is compatible with both

Note 2:
Warning: MA6X124 and FMN1 datasheets use non-standard pin numbering!
This schematic uses standard SOT-23-5/SOT-23-6 numbering

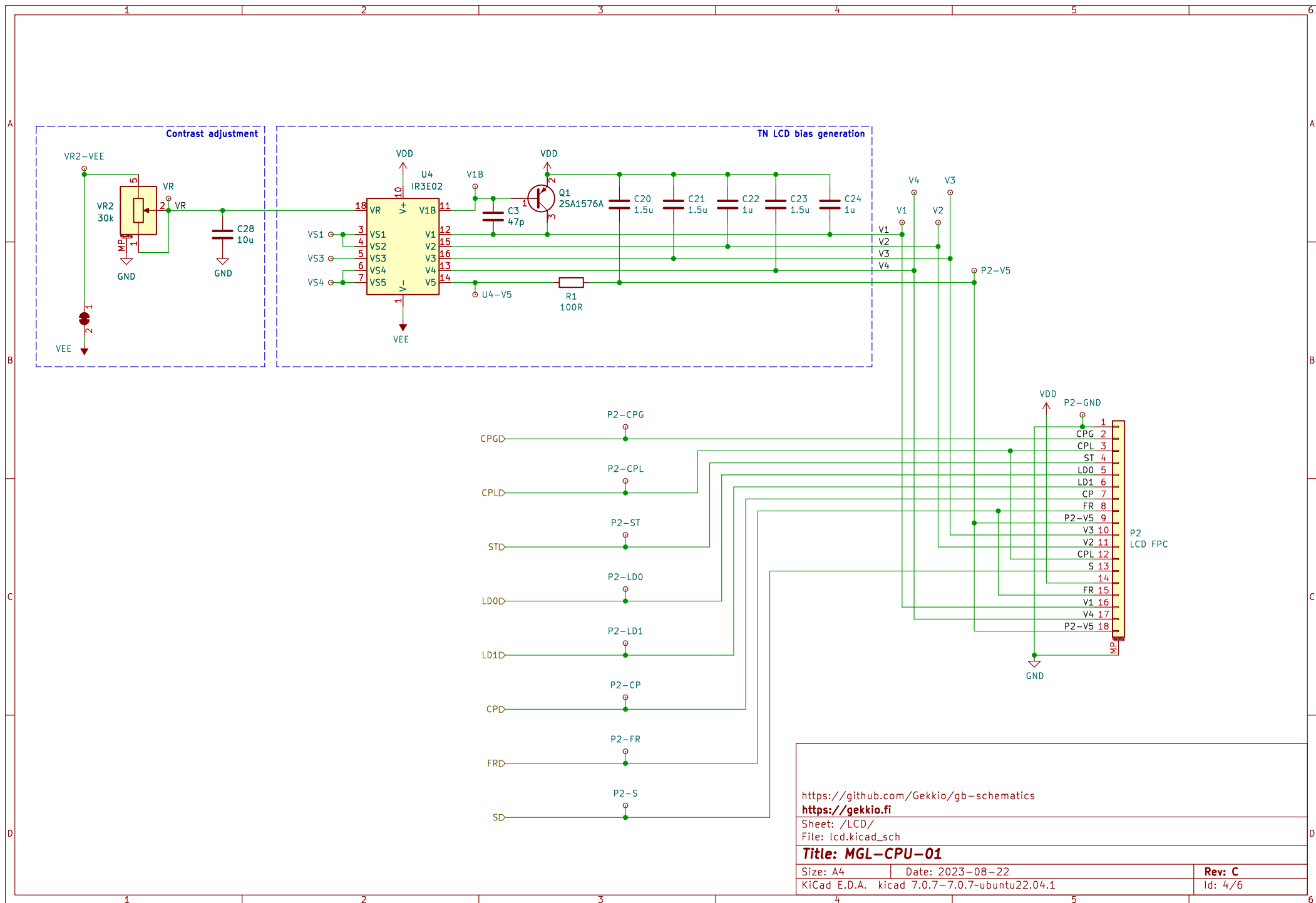
<https://github.com/Gekkio/gb-schematics>
<https://gekkio.fi>

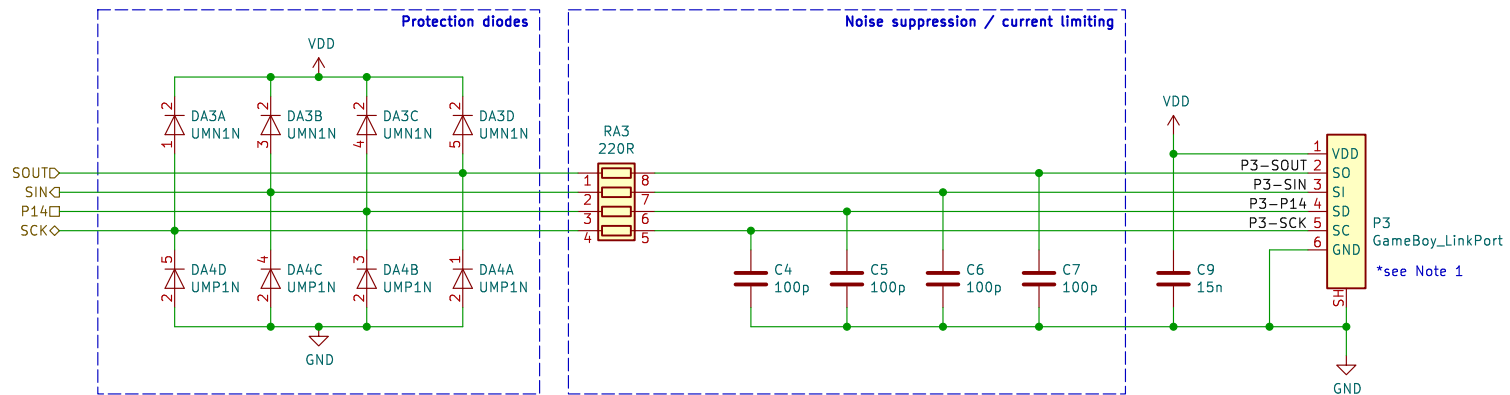
Sheet: /Joypad/
File: joypad.kicad_sch

Title: MGL-CPU-01

Size: A4 Date: 2023-08-22
KiCad E.D.A. kicad 7.0.7-7.0.7-ubuntu22.04.1

Rev: C
Id: 3/6





Note 1:
Official link cables omit pin 1 (VDD) and pin 4 (P14/SD), but unofficial cables usually have all 6 signals with VDD/SD crossed

<https://github.com/Gekkio/gb-schematics>
<https://gekkio.fi>

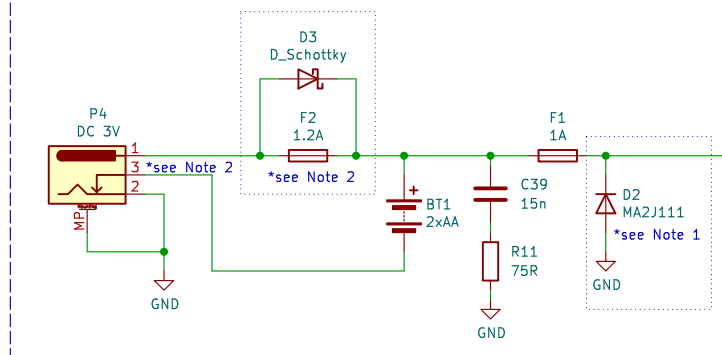
Sheet: /Link port/
File: link_port.kicad_sch

Title: MGL-CPU-01

Size: A4 Date: 2023-08-22
KiCad E.D.A. kicad 7.0.7-7.0.7-ubuntu22.04.1

Rev: C
Id: 5/6

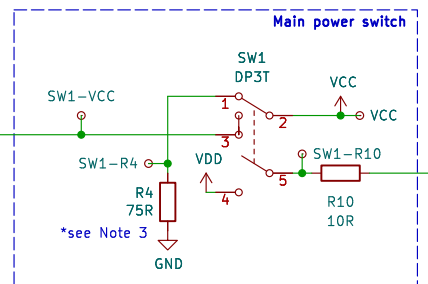
Main power inputs (DC jack, battery) 0.7W



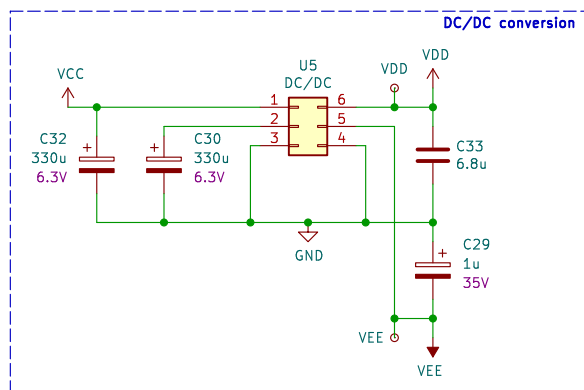
Plug: 2.35 mm x 0.75 mm
Center positive polarity

VCC
PWR_FLAG
VDD
PWR_FLAG
VEE
GND

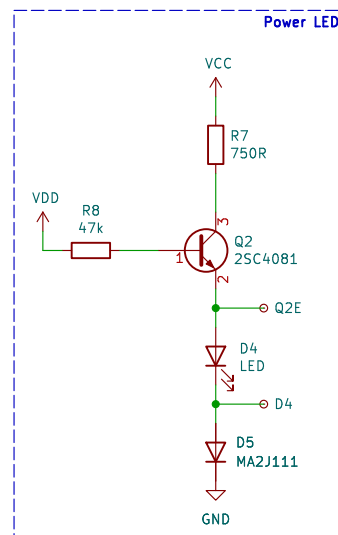
Main power switch



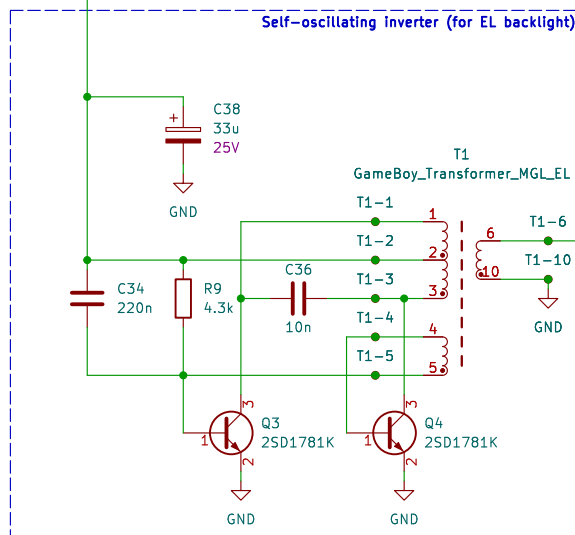
DC/DC conversion



Power LED



Self-oscillating inverter (for EL backlight)



Warning:
high voltage

Note 1:
D3/F2 share the same footprint, and the actual device can be only one of them
D2 is also optional and not used in all cases.
Known combinations:
1) D2 + F2 populated

Note 2:
Pins 2 (GND) and 3 (BT-) are normally connected, and inserting a DC plug disconnects GND from BT-

Note 3:
R4 provides a discharge path from VCC to GND when the power switch is in the off position

<https://github.com/Gekkio/gb-schematics>

<https://gekkio.fi>

Sheet: /Power/

File: power.kicad_sch

Title: MGL-CPU-01

Size: A4 Date: 2023-08-22

KiCad E.D.A. kicad 7.0.7-7.0.7-ubuntu22.04.1

Rev: C

Id: 6/6