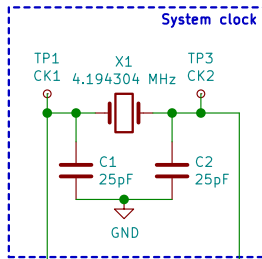
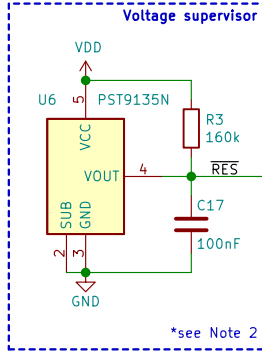


Sheet: Power

File: power.sch

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 Pocket mainboard
MGB-CPU-01
MGB-ECPU-01
MGB-LCPU-01
MGB-LCPU-02

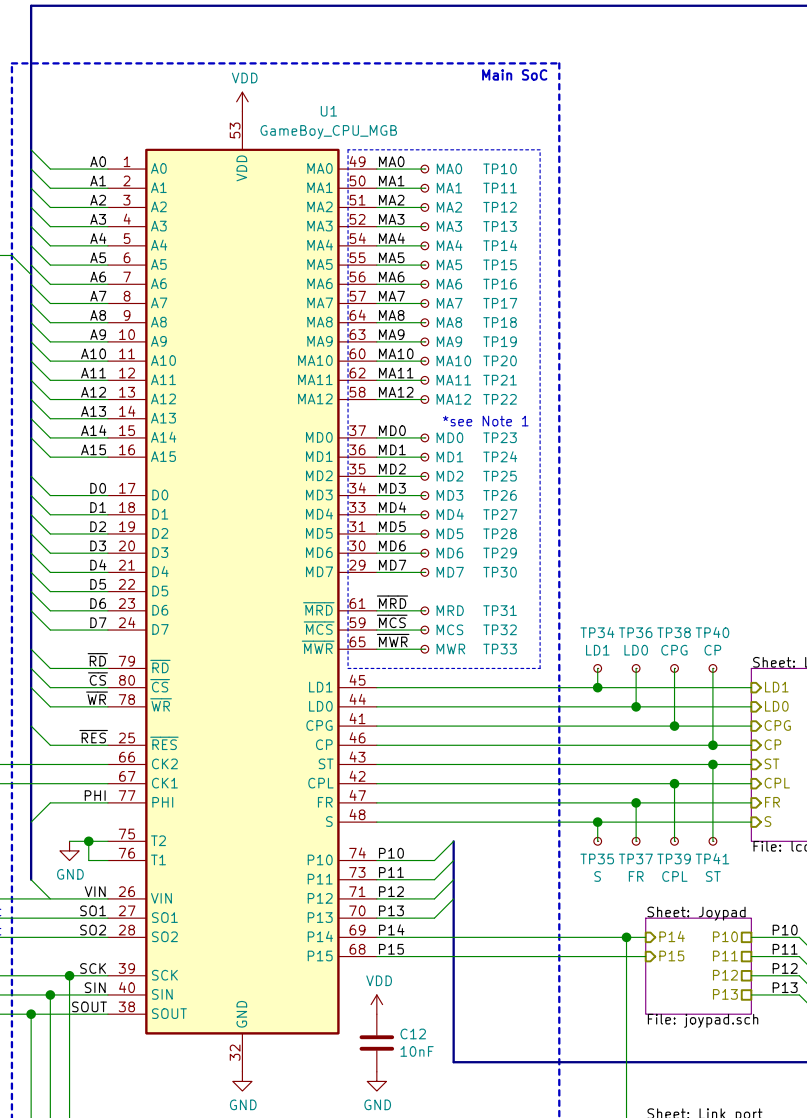


Sheet: Analog audio

File: audio.sch

Note 1:
The MGB SoC includes integrated Video RAM, but all the VRAM bus signals are available as pins and connected to test pads

Note 2:
The supervisor IC has an open drain output that is pulled low when VDD <= 3.5V



Sheet: LCD

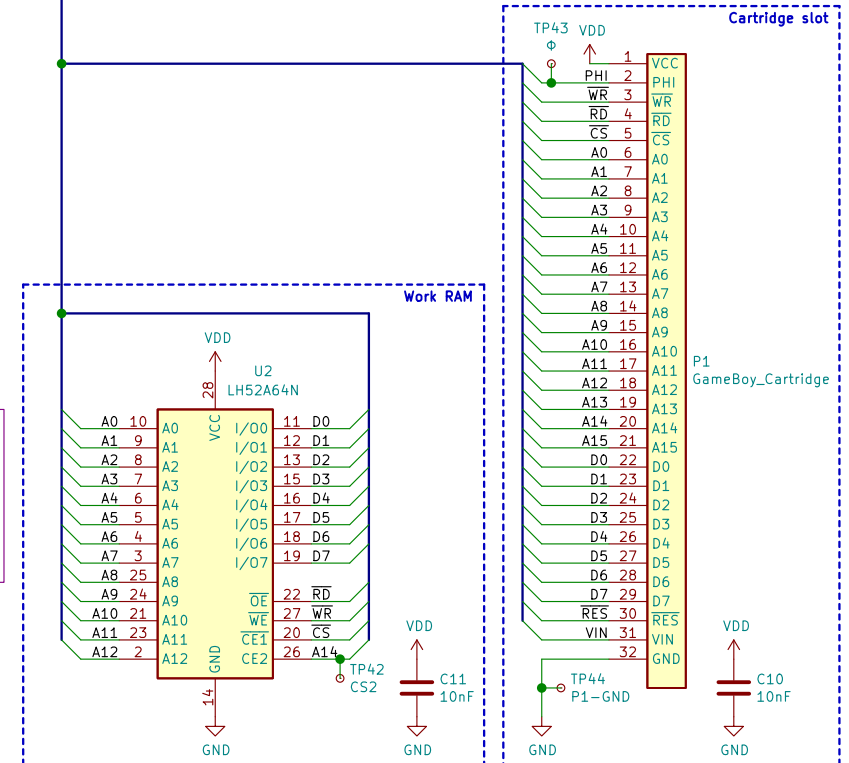
File: lcd.sch

Sheet: Joypad

File: joypad.sch

Sheet: Link port

File: link_port.sch



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

<https://gekkio.fi>

Sheet: /

File: MGB-xCPU.sch

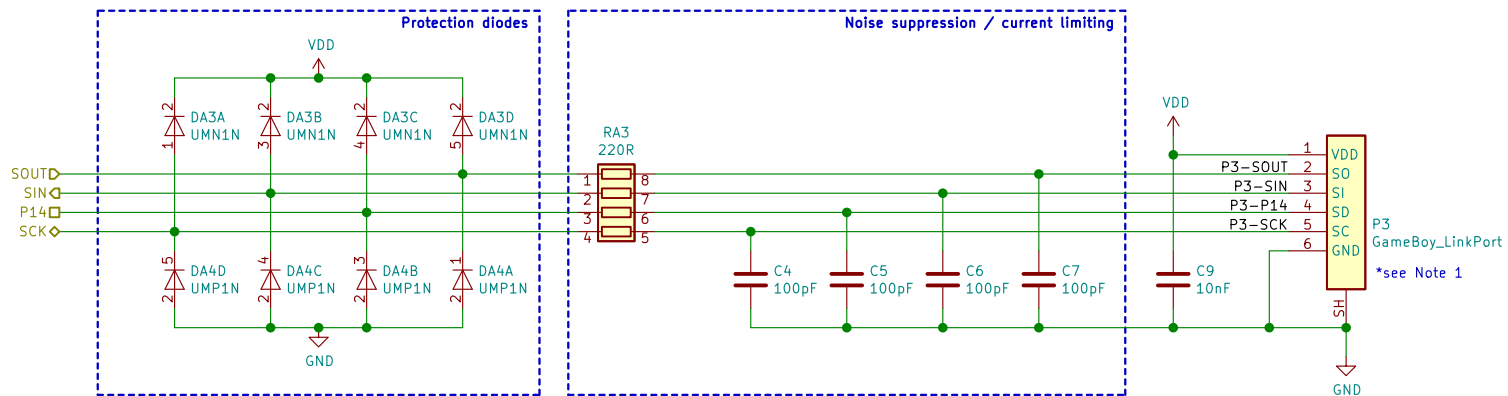
Title: MGB-xCPU

Size: A4 Date: 2020-05-27

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Rev: A

Id: 1/6



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>

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Sheet: /Link port/

File: link_port.sch

Title: MGB-xCPU - Link port

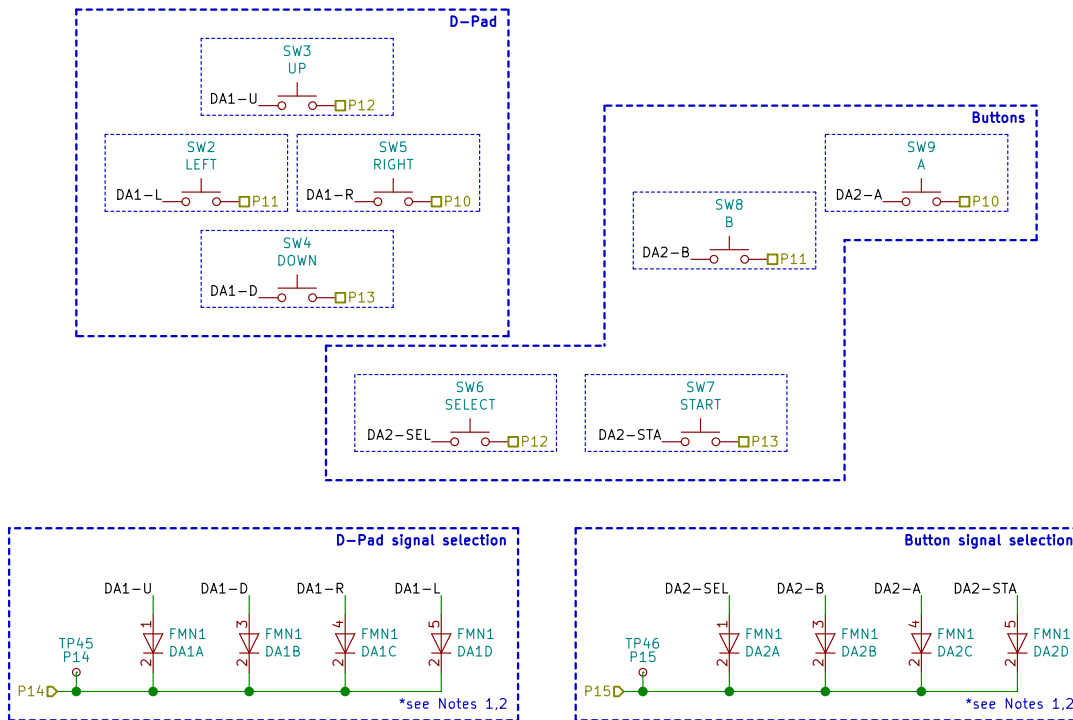
Size: A4

Date: 2020-05-27

Rev: A

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Id: 2/6



Note 1:
Earlier 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

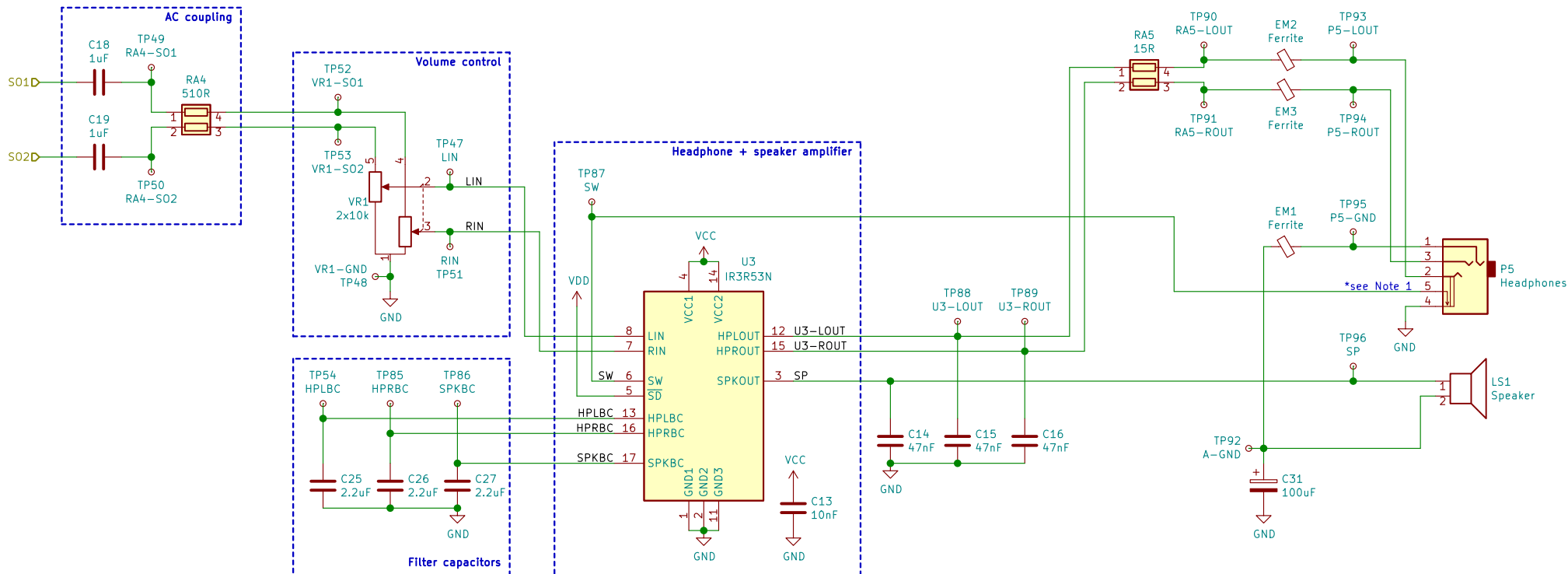
<https://github.com/gekkio/gb-schematics>
<https://gekkio.fi>

Sheet: //Joypad/
File: joypad.sch

Title: MGB-xCPU - Joypad

Size: A4 Date: 2020-05-27
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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>

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Sheet: /Analog audio/

File: audio.sch

Title: MGB-xCPU - Analog audio

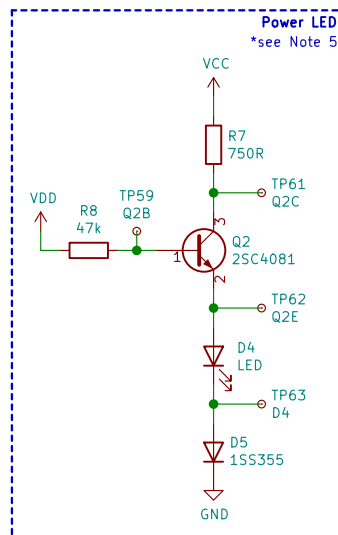
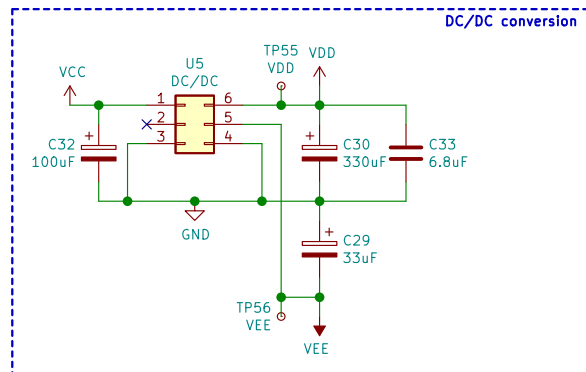
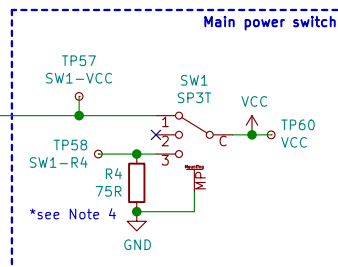
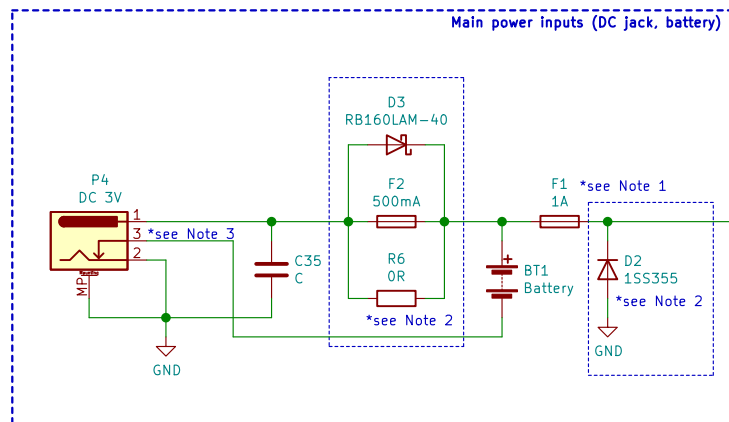
Size: A4

Date: 2020-05-27

Rev: A

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Id: 4/6



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

Note 1:
F1 is 600mA on earlier boards

Note 2:
D3/F2/R6 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) only D2 populated, no D3/F2/R6
2) D2 + R6 populated
3) D2 + F2 populated
4) only D3 populated, no D2

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

Note 4:
R4 provides a discharge path from VCC to GND when the power switch is in the off position

Note 5:
Power LED circuit is not present on early MGB-CPU-01 boards

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

<https://gekkio.fi>

Sheet: /Power/

File: power.sch

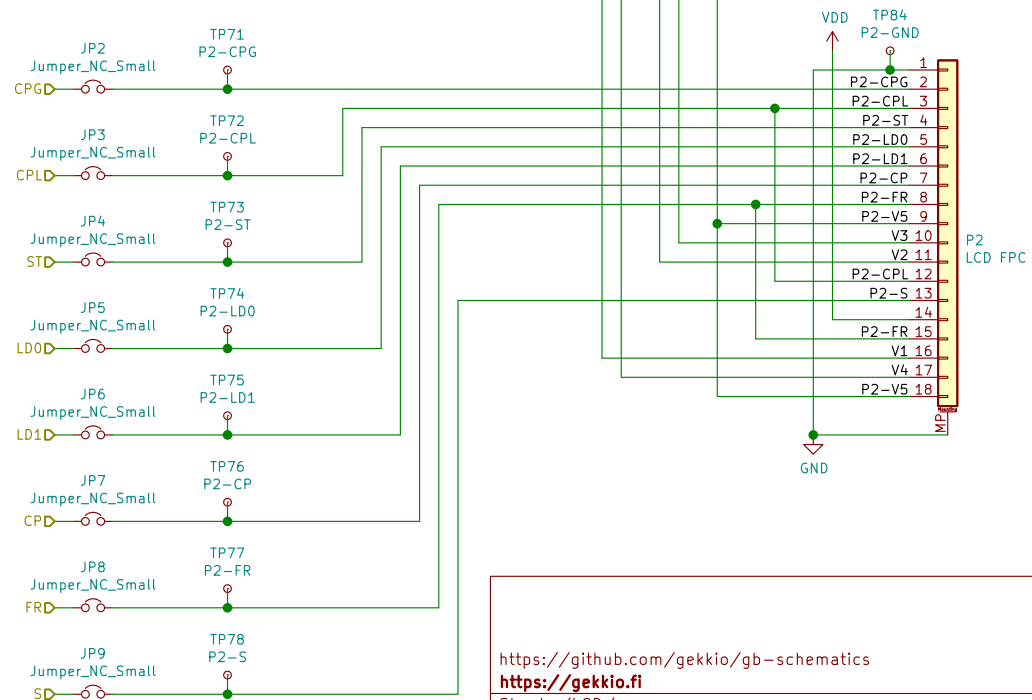
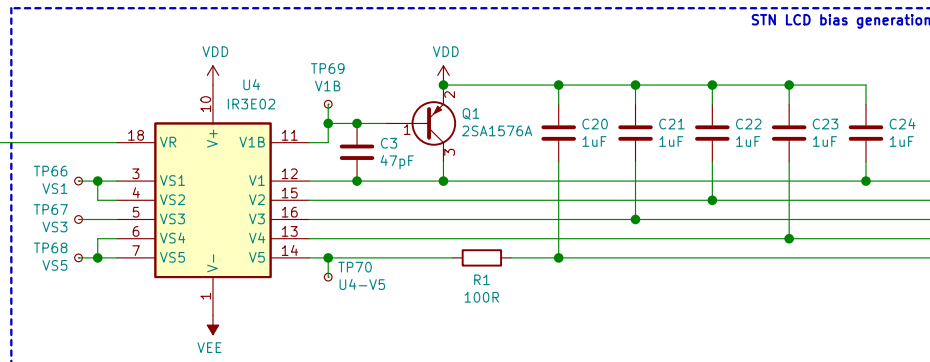
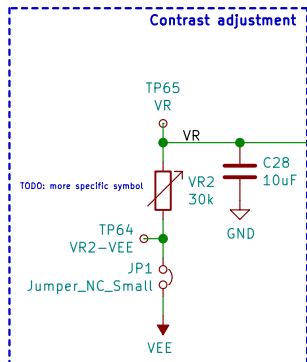
Title: MGB-xCPU - Power

Size: A4 Date: 2020-05-27

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Rev: A

Id: 5/6



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

Sheet: /LCD/
 File: lcd.sch

Title: MGB-xCPU - LCD

Size: A4 Date: 2020-05-27

KiCad E.D.A. kicad 5.1.6-c6e7f7d86ubuntu20.04.1

Rev: A
 Id: 6/6