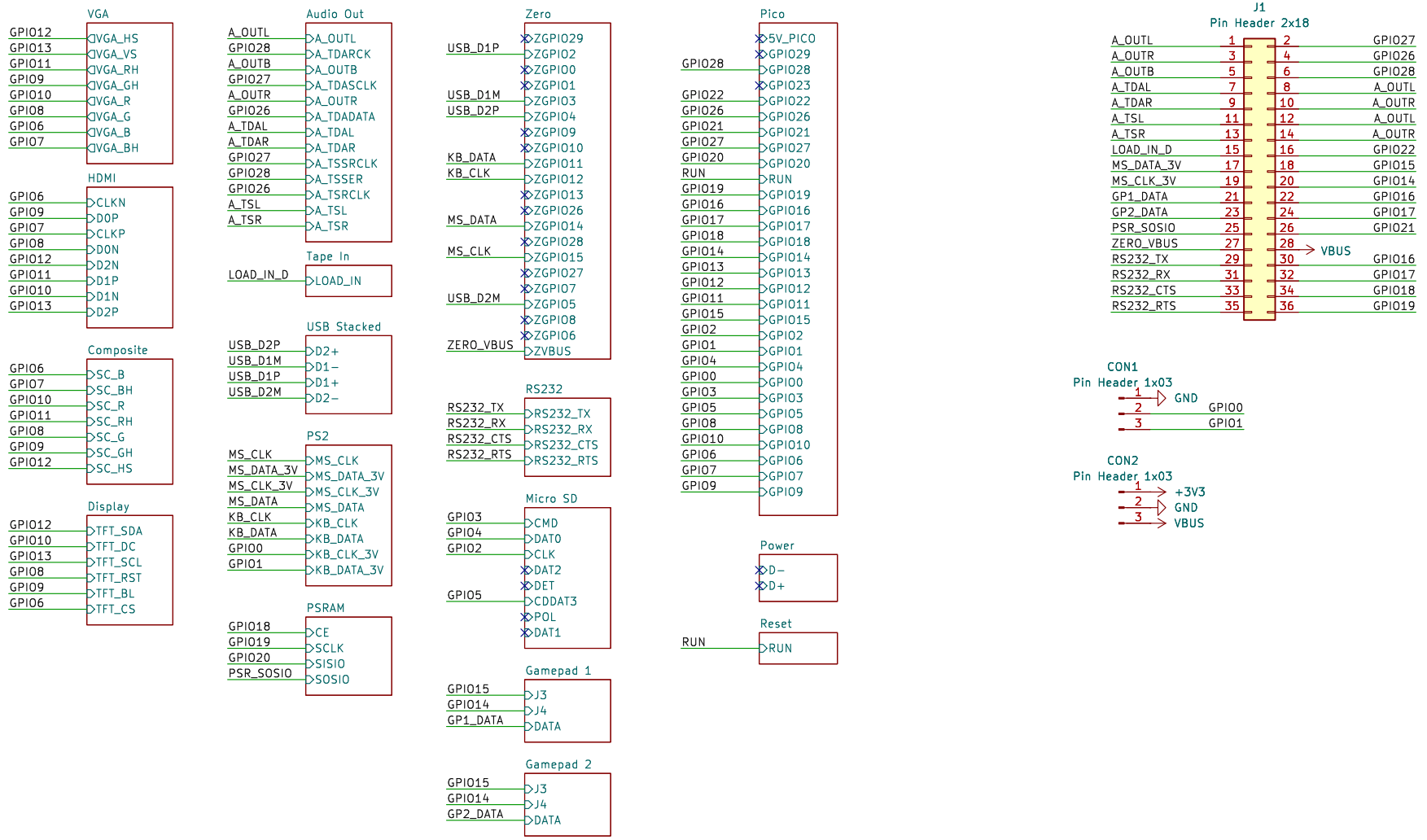


https://github.com/xtremespb/frank

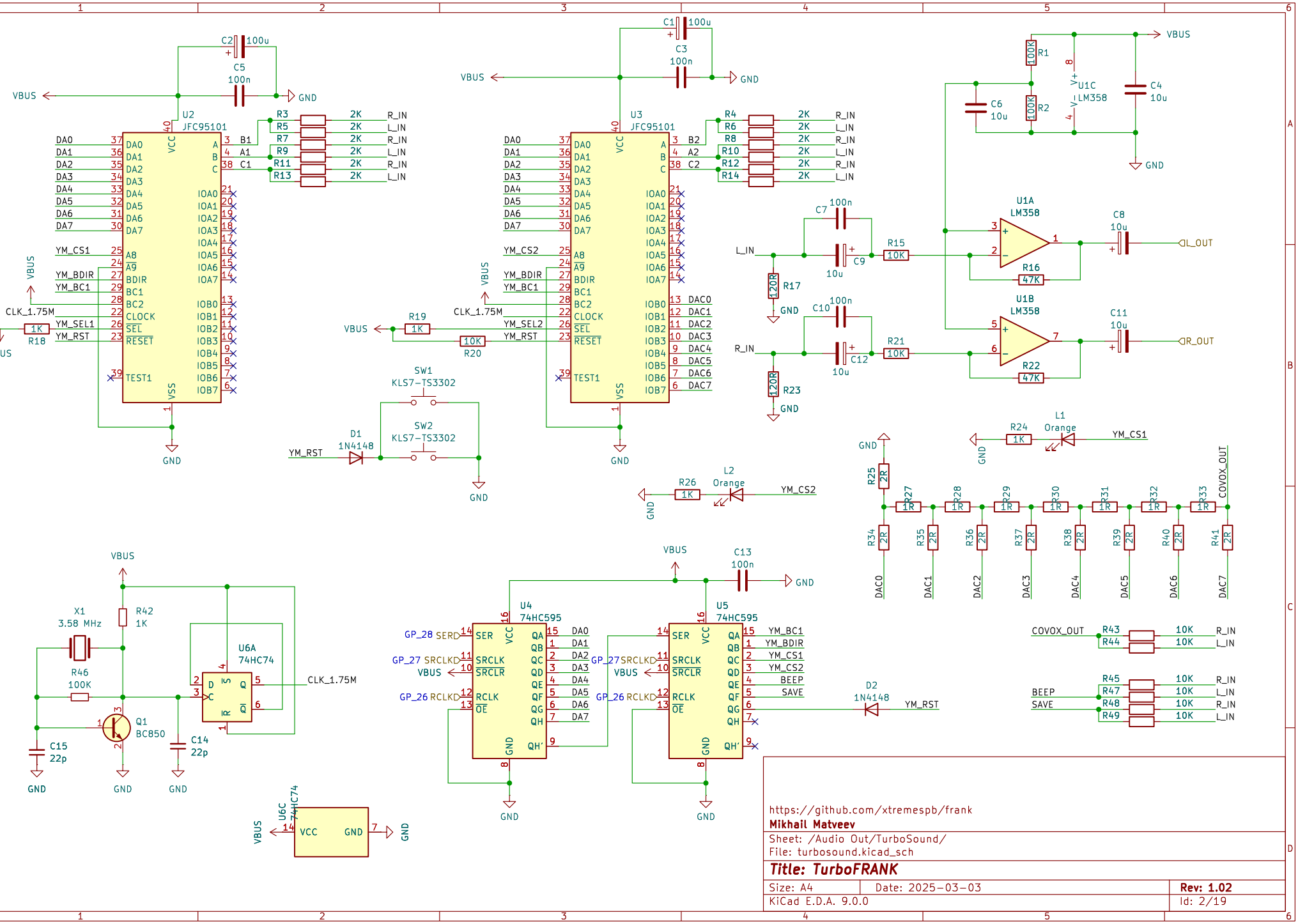
Mikhail Matveev

Sheet: /

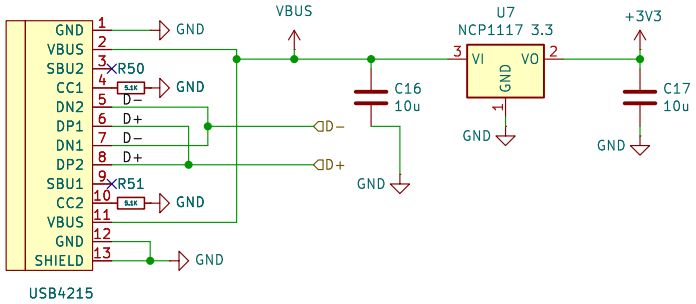
File: turbofrank.kicad_sch

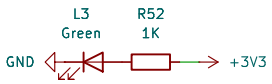
Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 1/19


C2 100u
C5 100n
VBUS
GND
U2
JFC95101
R3 2K R_IN
R5 2K L_IN
R7 2K R_IN
R9 2K L_IN
R11 2K R_IN
R13 2K L_IN
DA0 DA1 DA2 DA3 DA4 DA5 DA6 DA7
YM_CS1
YM_BDIR
YM_BC1
CLK_1.75M
YM_SEL1
YM_RST
R18 1K
C1 100u
C3 100n
U3
JFC95101
R4 2K R_IN
R6 2K L_IN
R8 2K R_IN
R10 2K L_IN
R12 2K R_IN
R14 2K L_IN
YM_CS2
YM_SEL2
R19 1K
R20 10K
SW1 KLS7-TS3302
SW2 KLS7-TS3302
D1 1N4148
R26 1K
L2 Orange
YM_CS2
R1 100K
R2 100K
C6 10u
U1C LM358
C4 10u
U1A LM358
C7 100n
C9 10u
R15 10K
R16 47K
C8 10u
L_OUT
L_IN
R17 120R
C10 100n
C12 10u
R21 10K
U1B LM358
R22 47K
C11 10u
R_OUT
R_IN
R23 120R
R24 1K
L1 Orange
YM_CS1
R25 2R
R27 1R
R28 1R
R29 1R
R30 1R
R31 1R
R32 1R
R33 1R
COVOX_OUT
R34 2R
R35 2R
R36 2R
R37 2R
R38 2R
R39 2R
R40 2R
R41 2R
DAC0 DAC1 DAC2 DAC3 DAC4 DAC5 DAC6 DAC7
X1 3.58 MHz
R42 1K
R46 100K
U6A 74HC74
CLK_1.75M
Q1 BC850
C15 22p
C14 22p
U6C 74HC74
C13 100n
U4 74HC595
U5 74HC595
GP_28 SER
GP_27 SRCLKD
GP_26 RCLKD
DA0 DA1 DA2 DA3 DA4 DA5 DA6 DA7
YM_BC1 YM_BDIR YM_CS1 YM_CS2 BEEP SAVE
D2 1N4148
YM_RST
R43 10K R_IN
R44 10K L_IN
R45 10K R_IN
R47 10K L_IN
R48 10K R_IN
R49 10K L_IN
https://github.com/xtremespb/frank
Mikhail Matveev
Sheet: /Audio Out/TurboSound/
File: turbosound.kicad_sch
Title: TurboFRANK
Size: A4
Date: 2025-03-03
Rev: 1.02
KiCad E.D.A. 9.0.0
Id: 2/19

The power source is USB-C connector.
The NCP1117 transforms +5V to +3V3.





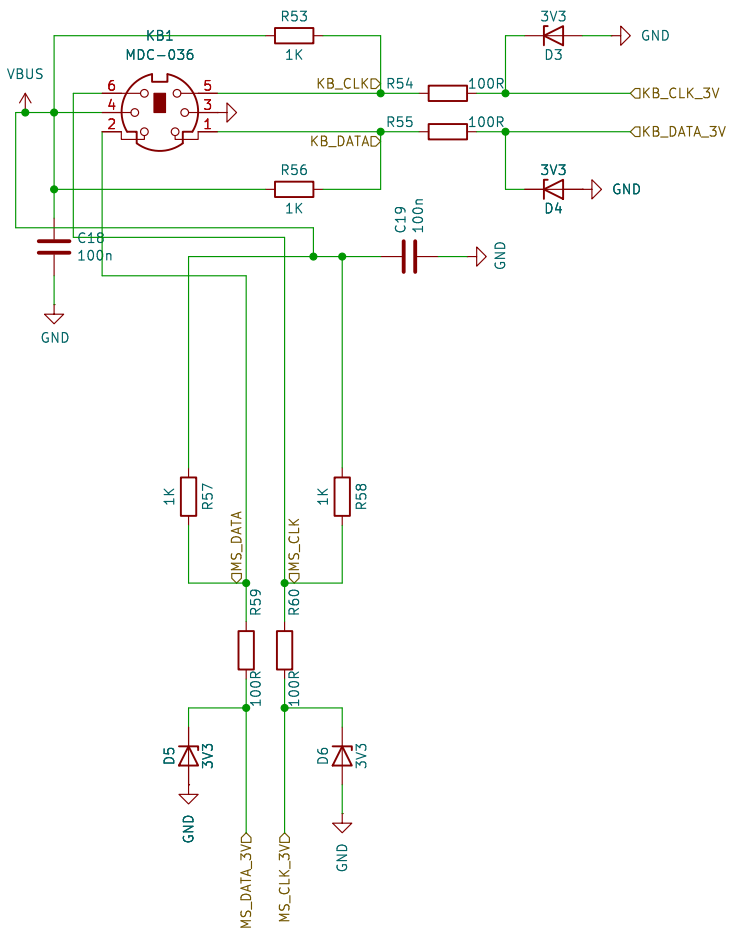
The LED indicates +3V power availability.
Usually it's green, but you decide ;-)

https://github.com/xtremespb/frank
Mikhail Matveev

Sheet: /Power/
File: power.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 3/19



https://github.com/xtremespb/frank

Mikhail Matveev

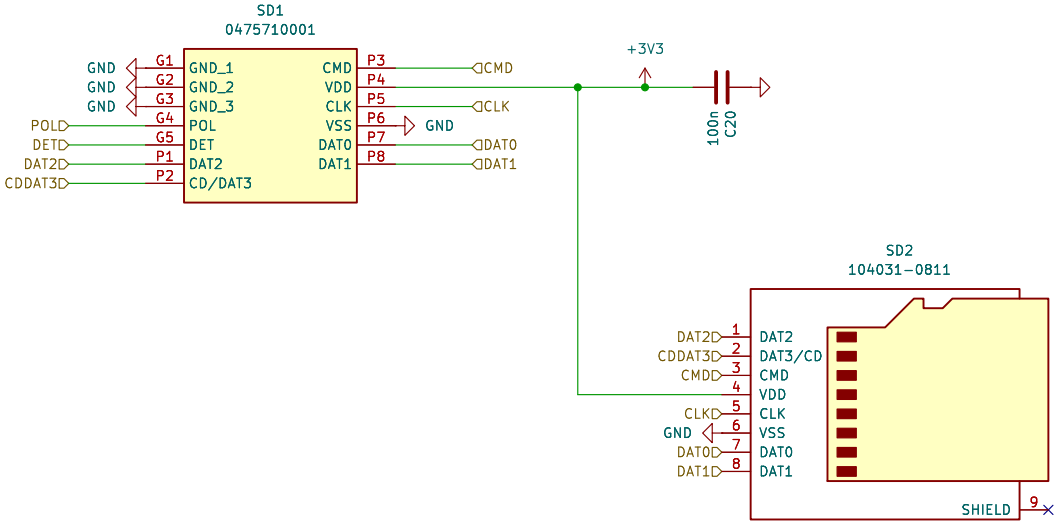
Sheet: /PS2/

File: ps2.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 4/19

Short TF Card slot is used to save some space on the PCB.



https://github.com/xtremespb/frank

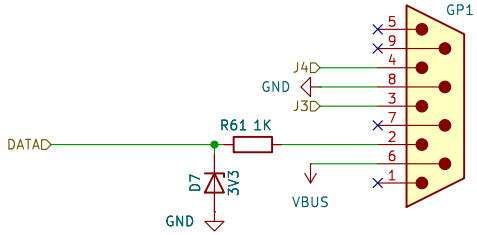
Mikhail Matveev

Sheet: /Micro SD/
File: sd.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 5/19

The gamepad uses standard DB9 male socket.



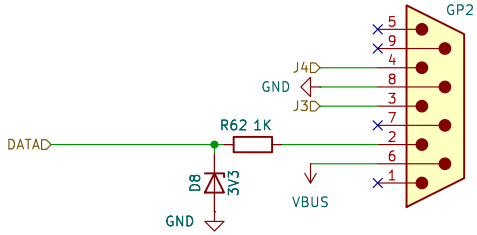
https://github.com/xtremespb/frank
Mikhail Matveev

Sheet: /Gamepad 1/
File: gamepad.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 7/19

The gamepad uses standard DB9 male socket.



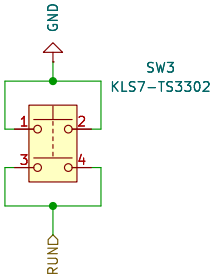
https://github.com/xtremespb/frank
Mikhail Matveev

Sheet: /Gamepad 2/
File: gamepad.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 8/19

This button connects RUN pin of RP2040
and GND.



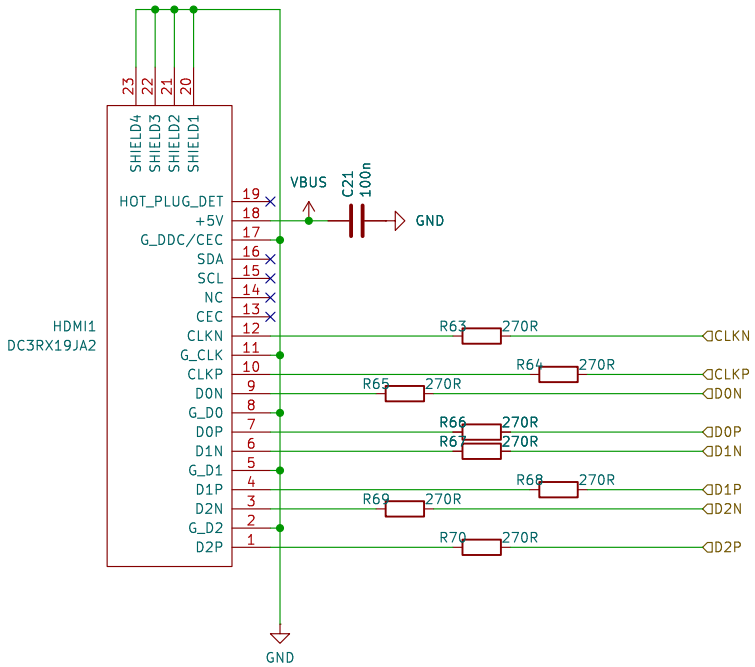
https://github.com/xtremespb/frank
Mikhail Matveev

Sheet: /Reset/
File: reset.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 9/19

HDMI video output requires the resistors to be close to the HDMI socket in order to work properly.



https://github.com/xtremespb/frank

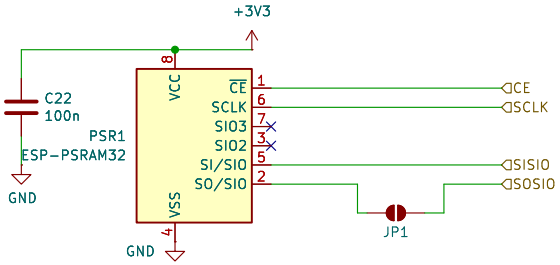
Mikhail Matveev

Sheet: /HDMI/
File: hdmi.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 10/19

As PSRAM is optional, you need to solder the jumper
if you are going to use it.

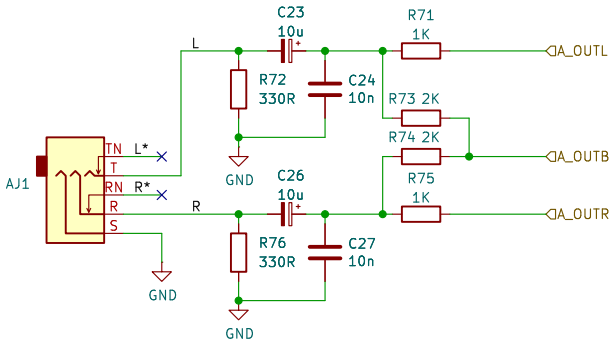


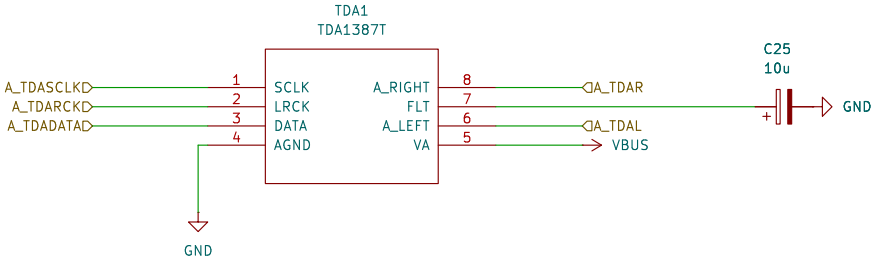
https://github.com/xtremespb/frank
Mikhail Matveev

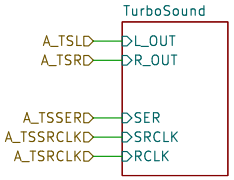
Sheet: /PSRAM/
File: psram.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 11/19







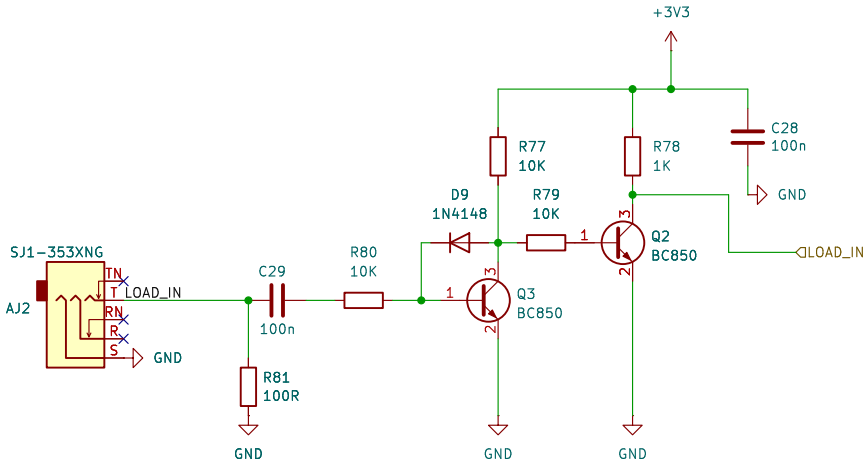
https://github.com/xtremespb/frank
Mikhail Matveev

Sheet: /Audio Out/
File: audio.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 12/19

This schematics is used to load data from external audio source, e.g. tape.



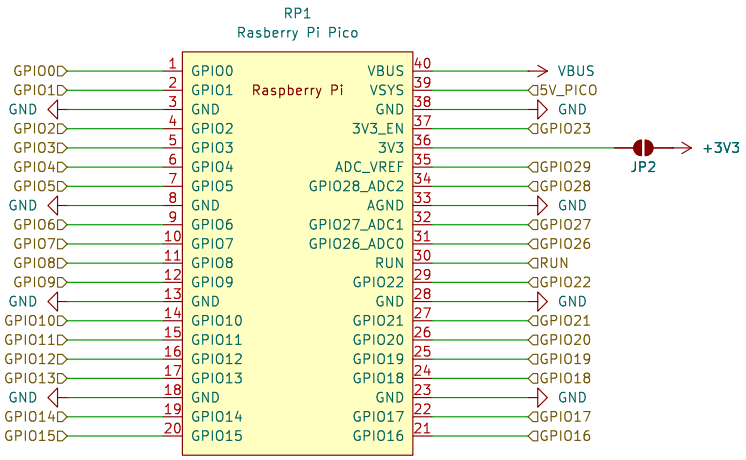
https://github.com/xtremespb/frank

Mikhail Matveev

Sheet: /Tape In/
File: tape.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 12/19



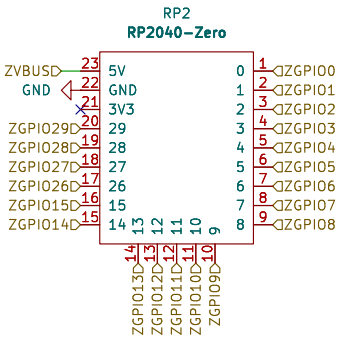
https://github.com/xtremespb/frank

Mikhail Matveev

Sheet: /Pico/
File: pico.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 12/19



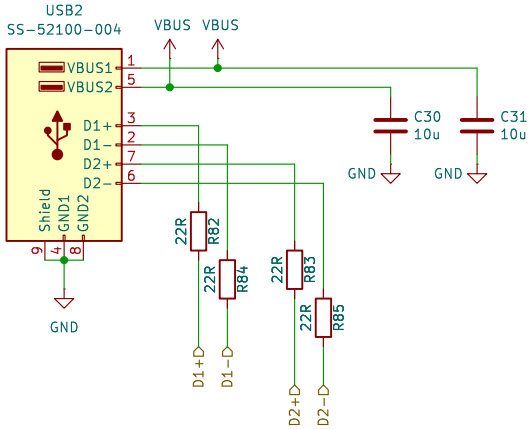
https://github.com/xtremespb/frank

Mikhail Matveev

Sheet: /Zero/
File: zero.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 14/19



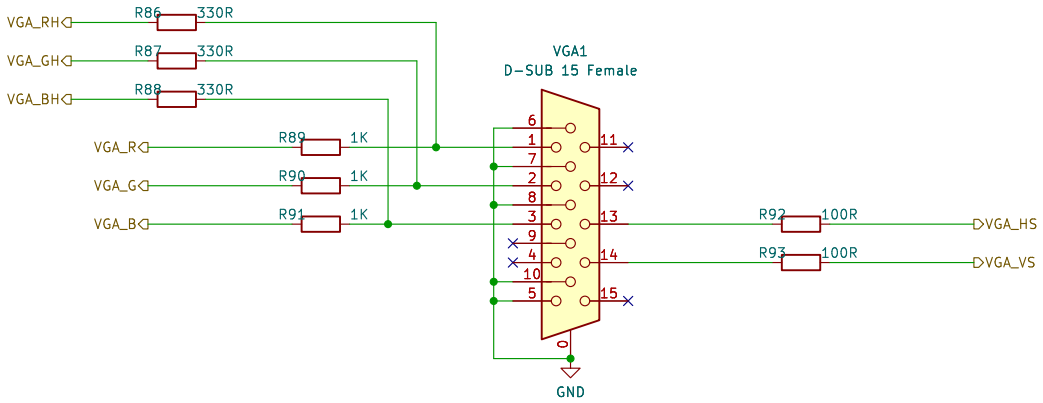
https://github.com/xtremespb/frank

Mikhail Matveev

Sheet: /USB Stacked/
File: usbstack.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 15/19



https://github.com/xtremespb/frank

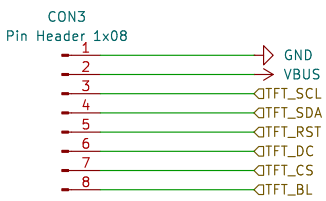
Mikhail Matveev

Sheet: /VGA/

File: vga.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 16/19



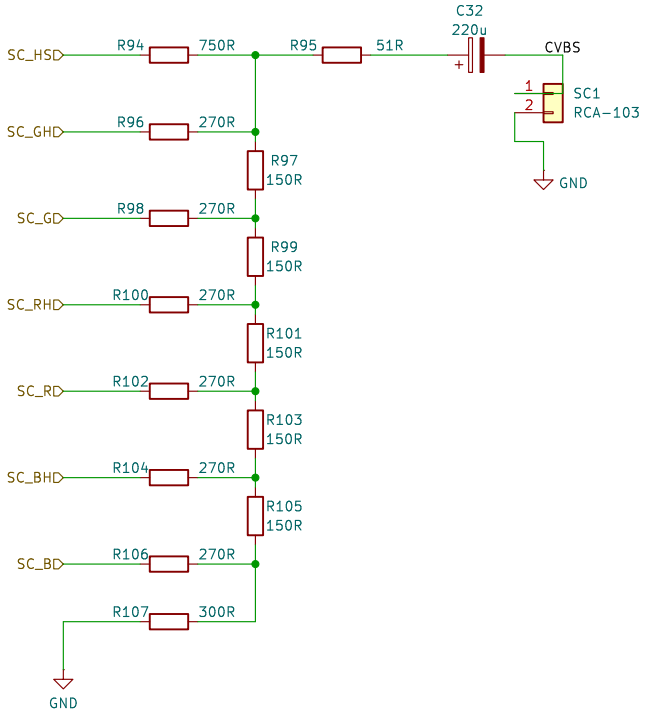
https://github.com/xtremespb/frank

Mikhail Matveev

Sheet: /Display/
File: display.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 17/19



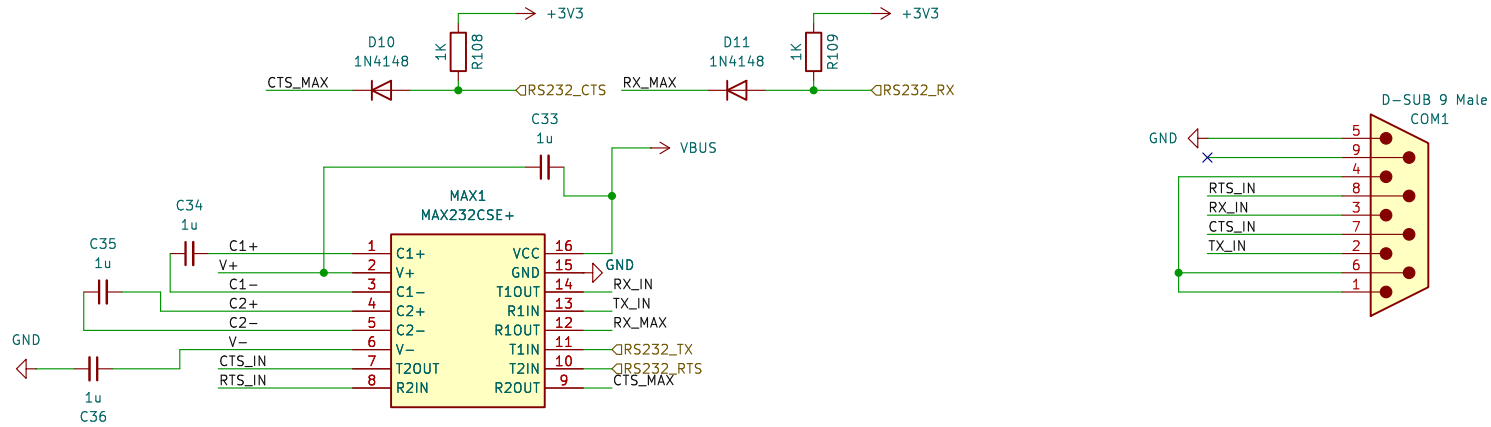
https://github.com/xtremespb/frank

Mikhail Matveev

Sheet: /Composite/
File: composite.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025-03-03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 18/19



https://github.com/xtremespb/frank

Mikhail Matveev

Sheet: /RS232/

File: rs232.kicad_sch

Title: TurboFRANK

Size: A4	Date: 2025−03−03	**Rev: 1.02**
KiCad E.D.A. 9.0.0		Id: 19/19