

<https://github.com/xtremespb/frank>

**Mikhail Matveev**

Sheet: /

File: turbofrank.kicad\_sch

**Title: TurboFRANK**

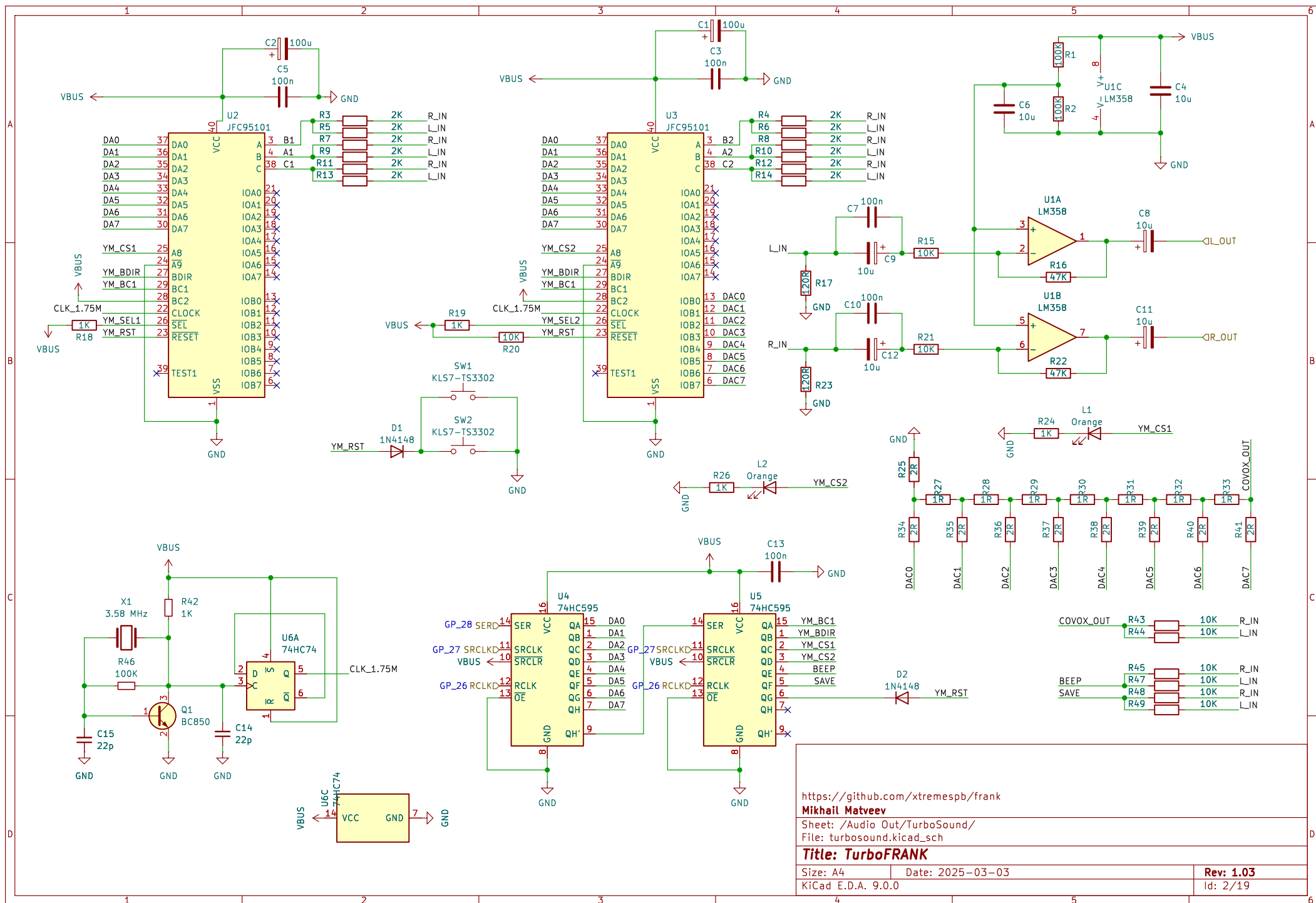
Size: A4

Date: 2025-03-03

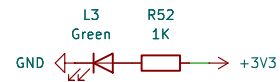
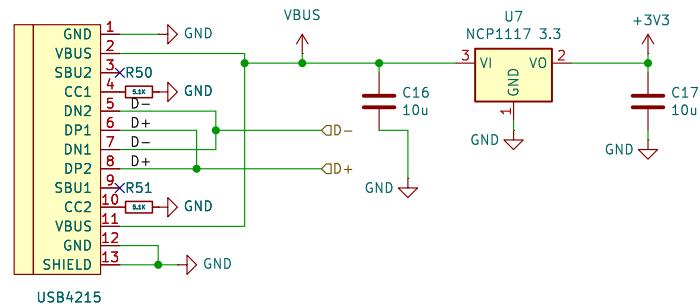
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**Rev: 1.03**

Id: 1/19



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 :-)

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Mikhail Matveev

Sheet: /Power/

File: power.kicad\_sch

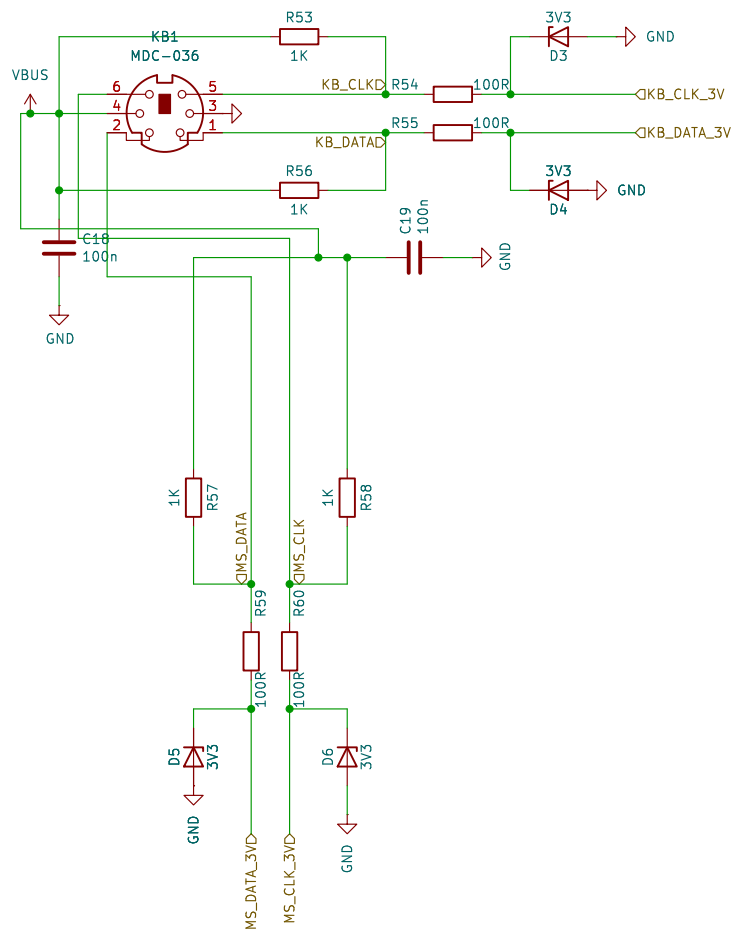
**Title:** TurboFRANK

Size: A4 Date: 2025-03-03

Size: A4	
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Rev: 1.03

Id: 3/19



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**Mikhail Matveev**

Sheet: /PS2/

File: ps2.kicad\_sch

**Title: TurboFRANK**

Size: A4

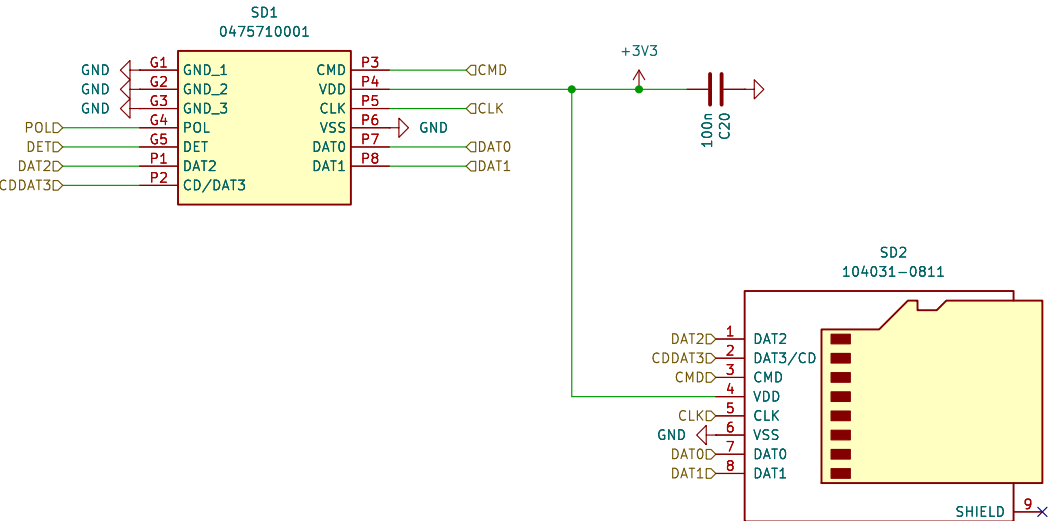
Date: 2025-03-03

**Rev: 1.03**

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Id: 4/19

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



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**Mikhail Matveev**

Sheet: /Micro SD/

File: sd.kicad\_sch

**Title: TurboFRANK**

Size: A4

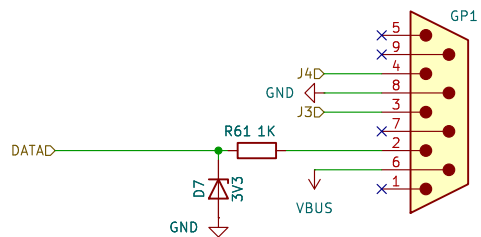
Date: 2025-03-03

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Id: 5/19

The gamepad uses standard DB9 male socket.



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**Mikhail Matveev**

Sheet: /Gamepad 1/

File: gamepad.kicad\_sch

**Title: TurboFRANK**

Size: A4

Date: 2025-03-03

**Rev: 1.03**

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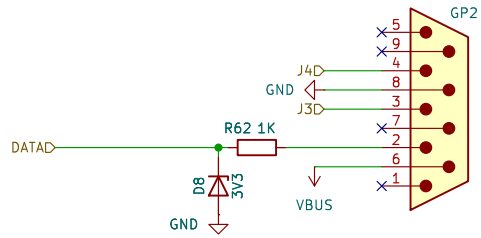
Id: 7/19

The gamepad uses standard DB9 male socket.

The diagram shows a DB9 male connector labeled GP2. The pins are numbered 1 through 9. The connections are as follows:

- PIN 1: VBUS
- PIN 2: DATAD
- PIN 3: GND
- PIN 4: GND
- PIN 5: GND
- PIN 6: DATAD
- PIN 7: GND
- PIN 8: GND
- PIN 9: GND

A 1K resistor (R62) is connected between PIN 2 and PIN 6. A diode (D8) is connected between PIN 2 and GND.



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Sheet: /Gamepad 2/		
File: gamepad.kicad_sch		
<b>Title: TurboFRANK</b>		
Size: A4	Date: 2025-03-03	Rev: <b>1.03</b>
KiCad E.D.A. 9.0.0		Id: 8/19

Sheet: /Gamepad 2/  
File: gamepad.kicad\_sch

File: gamepad.kicad\_sch

<b>Title:</b> TurboFRANK
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Size: A4	Date: 2025-03-03	Rev: 1.03
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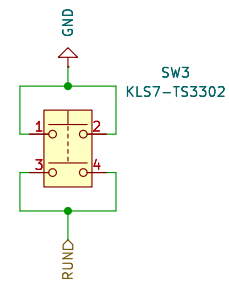
DATE: 2025-05-05	REV: 100
KiCad E.D.A. 9.0.0	Id: 8/19

Id: 8/19

Id: 8/19

6

This button connects RUN pin of RP2040  
and GND.



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**Mikhail Matveev**

Sheet: /Reset/

File: reset.kicad\_sch

**Title: TurboFRANK**

Size: A4

Date: 2025-03-03

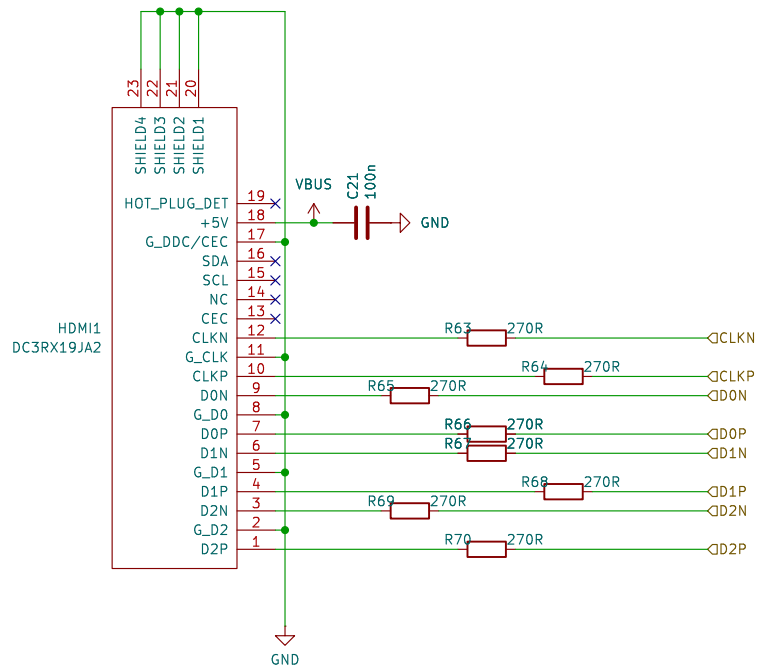
**Rev: 1.03**

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.



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Sheet: /HDMI/

File: hdmi.kicad\_sch

**Title: TurboFRANK**

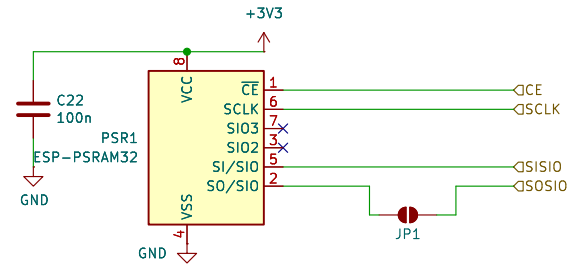
Size: A4 Date: 2025-03-03

Rev: 1.03

SIZE: A1	
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Id: 10/19

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



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**Mikhail Matveev**

Sheet: /PSRAM/

File: psram.kicad\_sch

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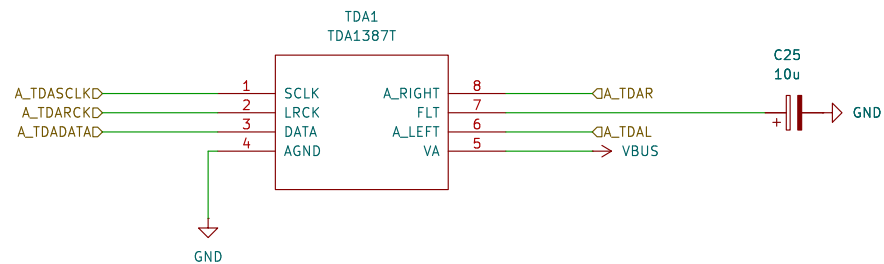
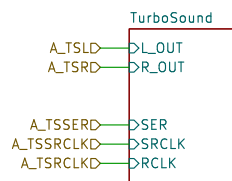
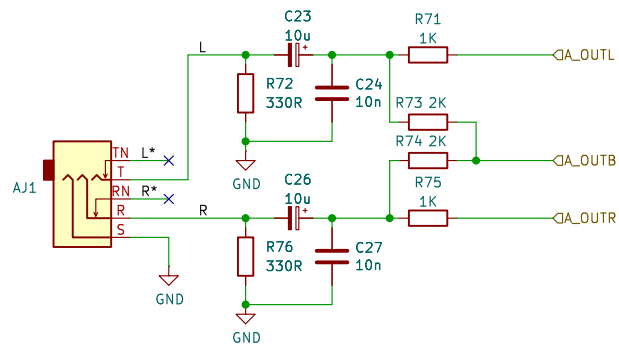
Size: A4

Date: 2025-03-03

**Rev: 1.03**

KiCad E.D.A. 9.0.0

Id: 11/19



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**Mikhail Matveev**

Sheet: /Audio Out/

File: audio.kicad\_sch

**Title: TurboFRANK**

Size: A4

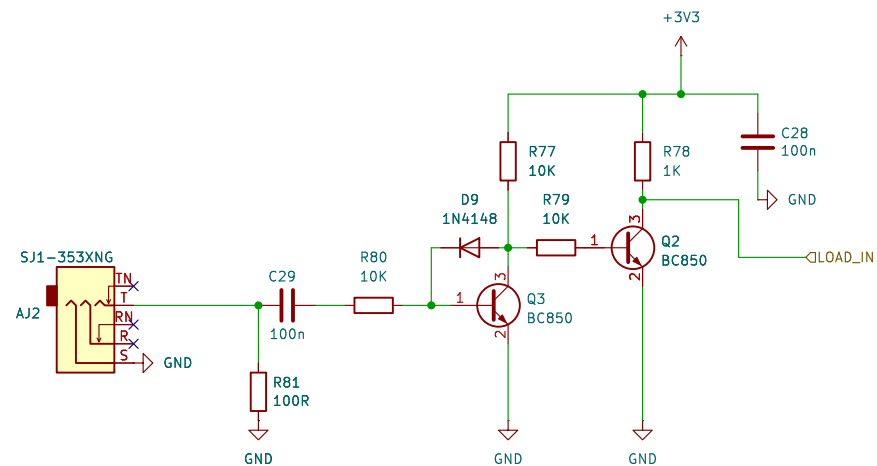
Date: 2025-03-03

**Rev: 1.03**

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Id: 12/19

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



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**Mikhail Matveev**

Sheet: /Tape In/

File: tape.kicad\_sch

**Title: TurboFRANK**

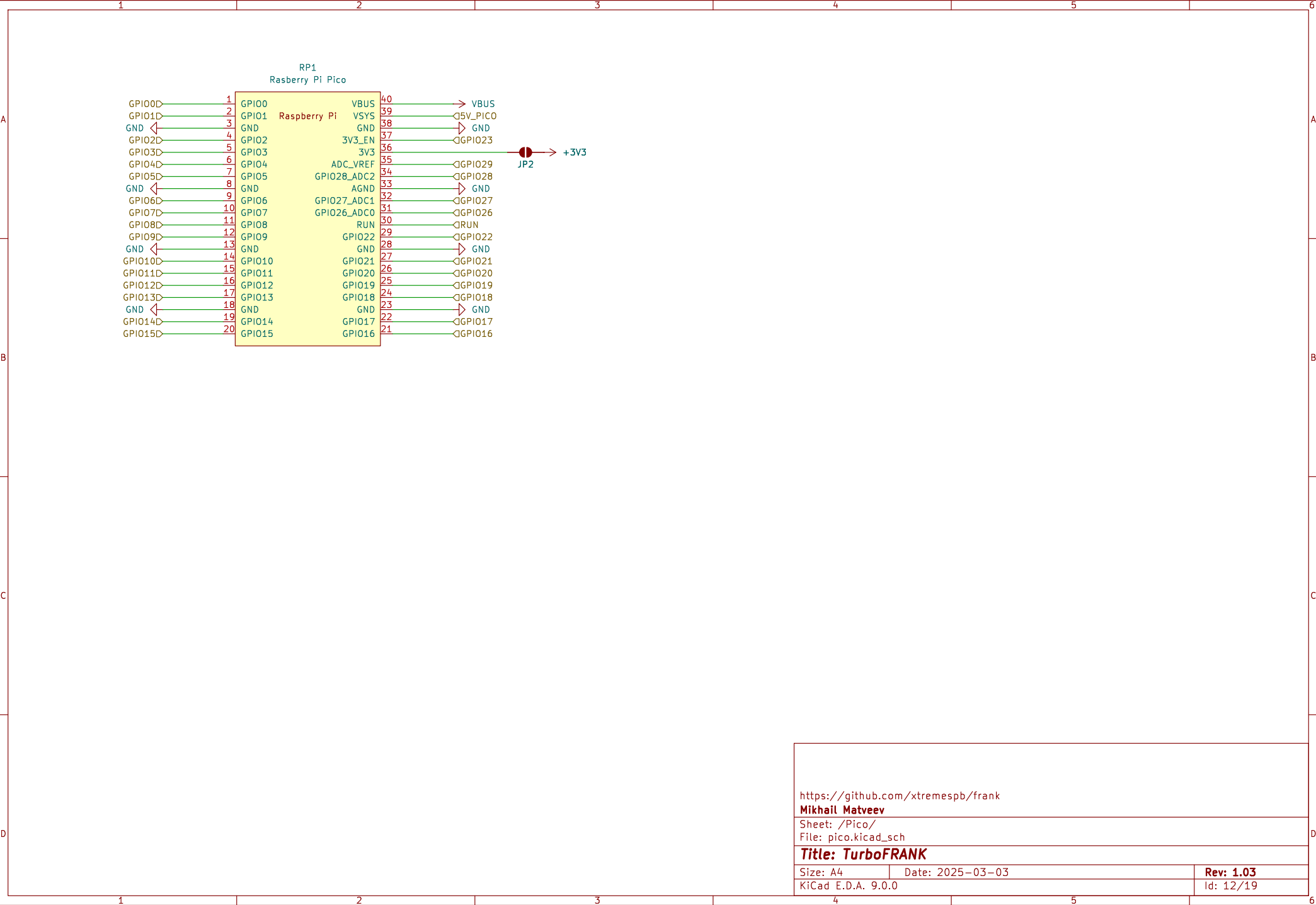
Size: A4

Date: 2025-03-03

**Rev: 1.03**

KiCad E.D.A. 9.0.0

Id: 12/19



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Mikhail Matveev

Sheet: /Pico/

File: pico.kicad\_sch

Title: TurboFRANK

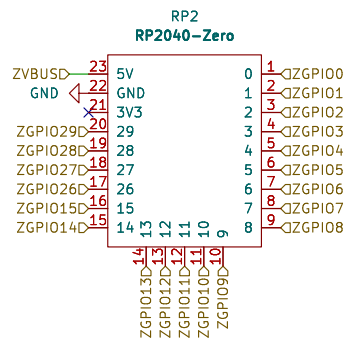
Size: A4

Date: 2025-03-03

Rev: 1.03

KiCad E.D.A. 9.0.0

Id: 12/19



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**Mikhail Matveev**

Sheet: /Zero/

File: zero.kicad\_sch

**Title: TurboFRANK**

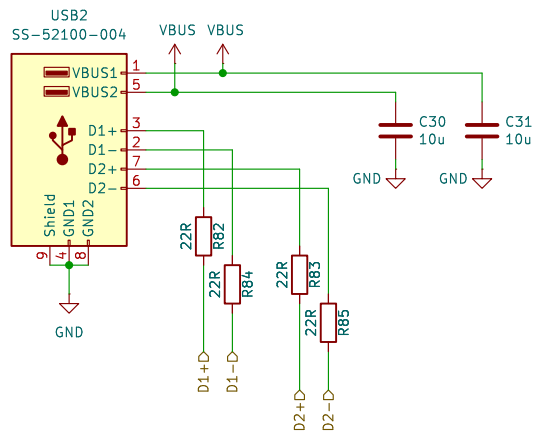
Size: A4

Date: 2025-03-03

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Id: 14/19



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**Mikhail Matveev**

Sheet: /USB Stacked/  
File: usbstack.kicad\_sch

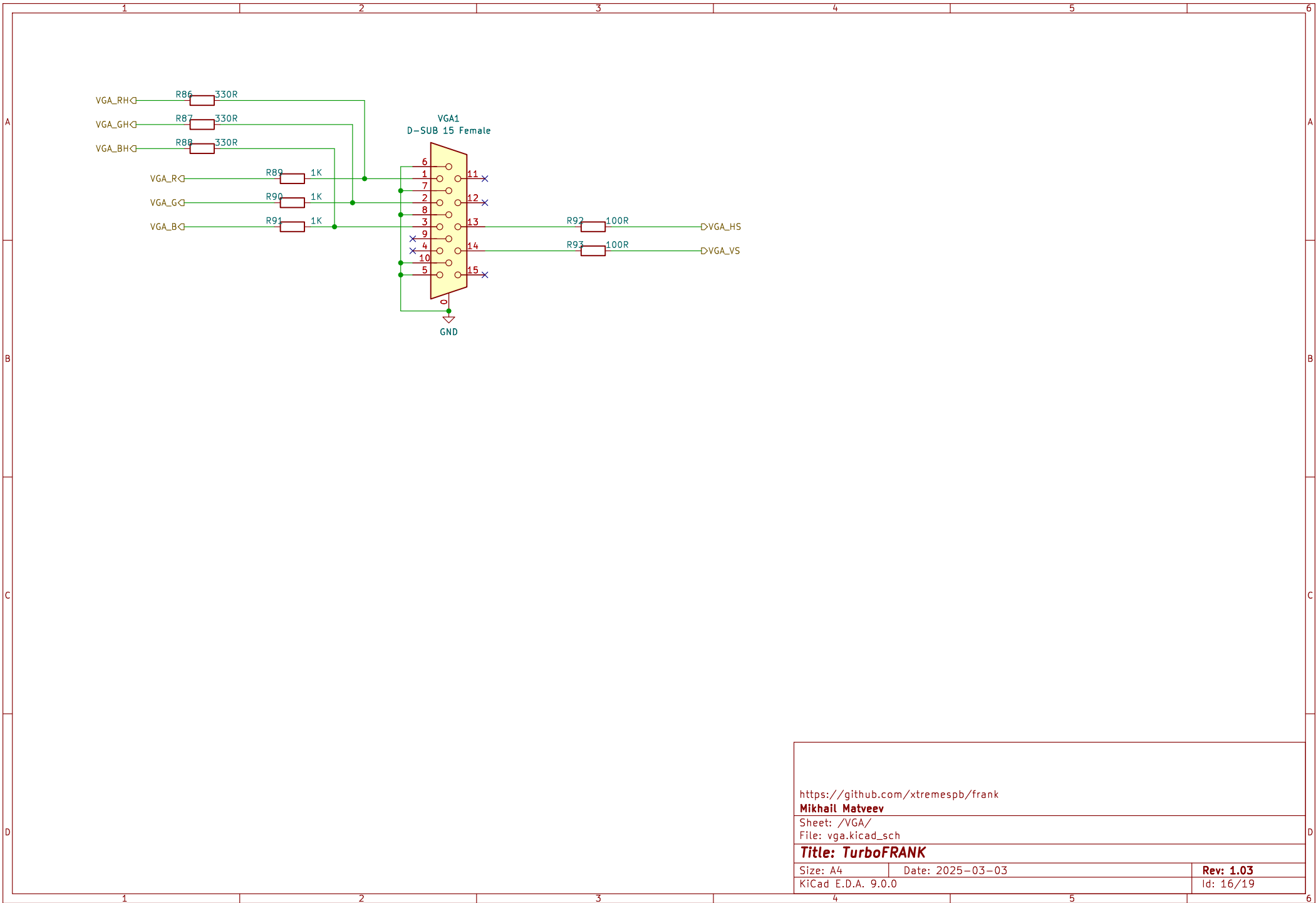
**Title: TurboFRANK**

Size: A4 Date: 2025-03-03

KiCad E.D.A. 9.0.0

**Rev: 1.03**

Id: 15/19



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**Mikhail Matveev**

Sheet: /VGA/

File: vga.kicad\_sch

**Title: TurboFRANK**

Size: A4

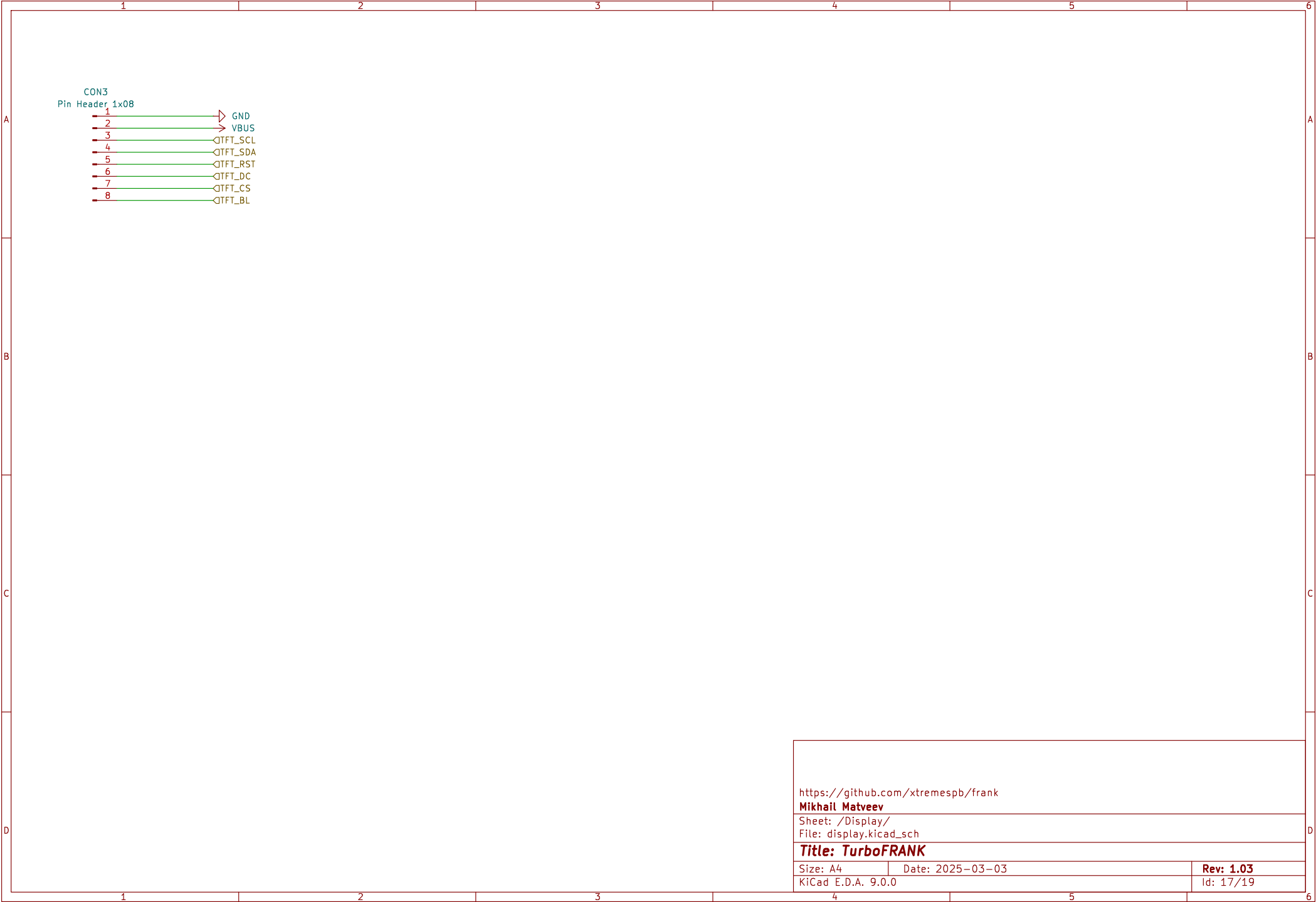
Date: 2025-03-03

**Rev: 1.03**

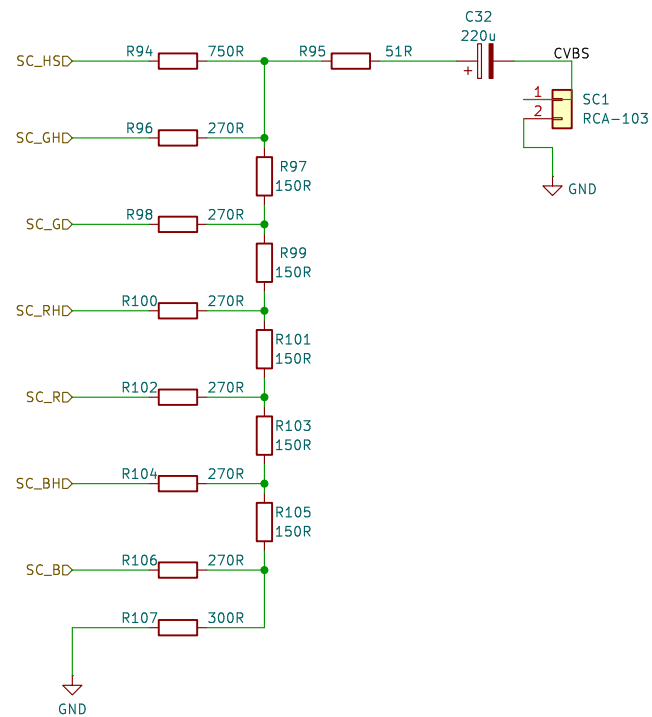
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Id: 16/19





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<b>Mikhail Matveev</b>		
Sheet: /Display/ File: display.kicad_sch		
<b>Title: TurboFRANK</b>		
Size: A4	Date: 2025-03-03	<b>Rev: 1.03</b>
KiCad E.D.A. 9.0.0		Id: 17/19



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**Mikhail Matveev**

Sheet: /Composite/

File: composite.kicad\_sch

**Title: TurboFRANK**

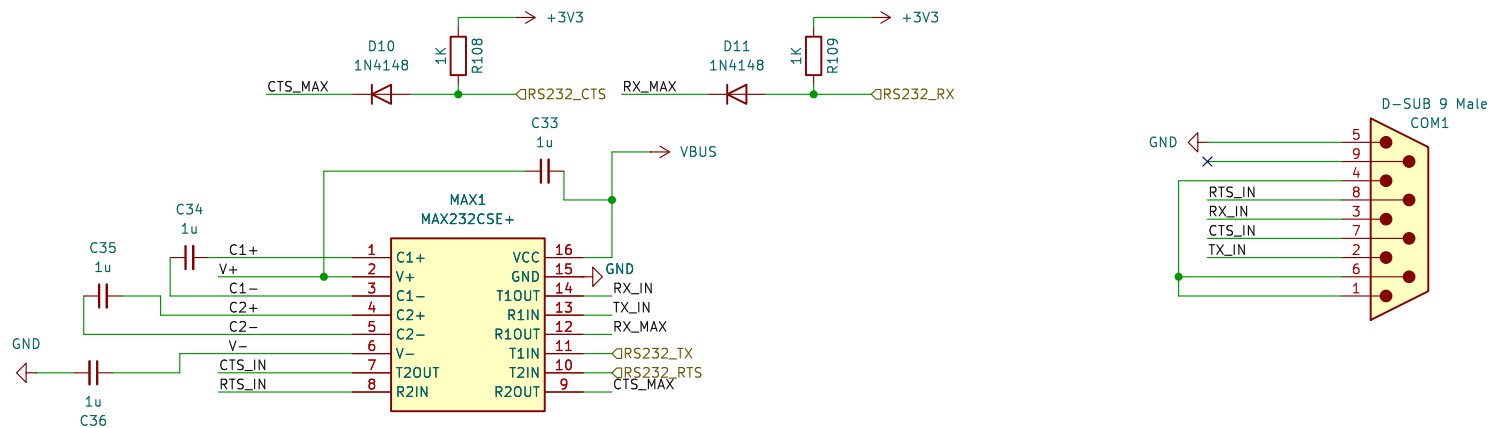
Size: A4

Date: 2025-03-03

**Rev: 1.03**

KiCad E.D.A. 9.0.0

Id: 18/19



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**Mikhail Matveev**

Sheet: /RS232/

File: rs232.kicad\_sch

**Title: TurboFRANK**

Size: A4

Date: 2025-03-03

KiCad E.D.A. 9.0.0

**Rev: 1.03**

Id: 19/19