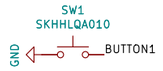
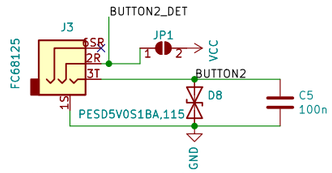
Button 1 (internal)

long button, length: 8.35mm (from pin)



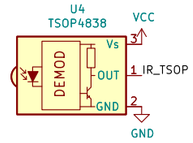
Button 2 (ext. with ADC)



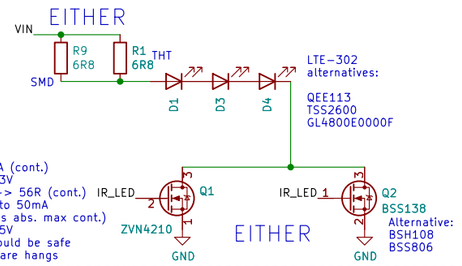
D8–9 & C5–6 might be DNP in construction kit

Note: if external power supply is needed (e.g. sensor connected via jack plug), bridge JP1. Via pin D3 (input_pulldown) the voltage can be detected.
Button 2 is connected to D1 (v2 & v3 board) and D15/A1 (v3 board only).

IR (infrared) RX

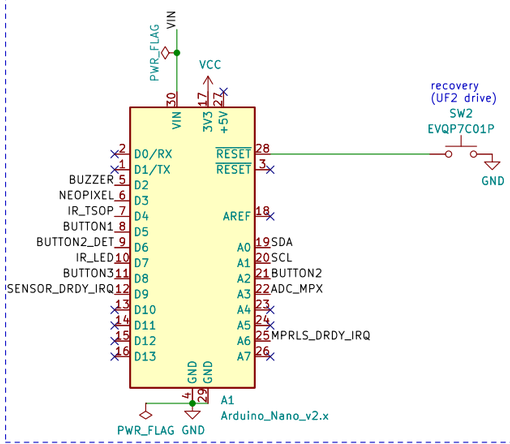


IR (infrared) TX

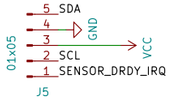


If=40mA (cont.)
Vf=~1.33V
58.5R -> 56R (cont.)
Pulsed to 50mA
(50mA is abs. max cont.)
Vf=~1.45V
39R should be safe
if firmware hangs

Arduino Nano Connect RP2040

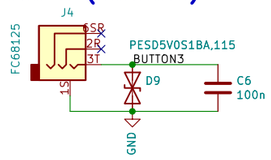


Sensors



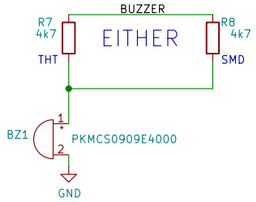
Note: this is a different connector than in FM2! (short/long edge are different; this one is much cheaper and is a better spacer in the case)

Button 3 (external)



Jacks (same as on FAB!)
Cliff FC68125
RS Pro 805-1655
Lumberg 1503 19
Aliexpress: "PJ321C" hard to find, here is a link: www.aliexpress.com/item/32665420060.html
Note: might not fit that well!

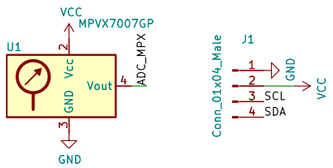
Buzzer

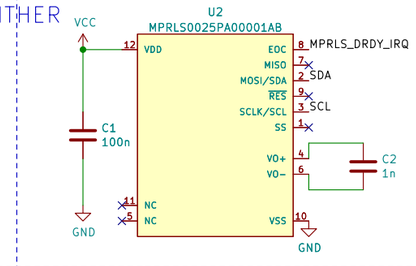


Mechanical

LOGO1 Logo_FM
LOGO2 Logo_KiCAD
LOGO3 Logo_CE
LOGO4 Logo_WEEE
H1 MountingHole
H2 MountingHole
FID1 Fiducial
FID2 Fiducial
FID3 Fiducial
FID4 Fiducial
FID5 Fiducial
FID6 Fiducial

Pressure sensor

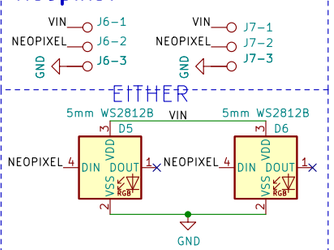




OLED – SSD1306

Note: there are different pinnings available, take care when ordering!

Neopixel



Notes on Button2:
* D6/GPIO18 can be used to detect if there are 3V3 on button 2
* If JP1 is closed, a 3pin Jackplug can be connected, which carries 3V3, GND and a GPIO pin

Notes on pressure sensor:
* An MPRLS sensor is used on the mainboard normally
* Alternative: use MPXV sensor
* Alternative 2: attach sensor board with I2C
* If no MPRLS sensor is found on I2C, analog values from MPXV are read.

Orders in addition to BOM

FLipMouse
* Silicon tube, 2x4mm, ~5cm length
* LuerLock with M5 screw
* Sensor board PCB (see second KiCAD project & BOM)
* screws according to case (4x M2x12; 2x M2x20)
* Mouthpiece

FLipPad
* Glide adapter PCB (see addons folder for KiCAD project & BOM)

Both:
* Neopixel Strip (two LEDs needed)
* 3D printed case (depending on type)
* HotShoe Adapter
* USB cable with magnetic plug
* Packaging

These parts should be placed in the .xls BOM file.

v3.1

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Benjamin Aigner
AsTeRICS Foundation

Sheet: /
File: FM3_mainboard.kicad_sch

Title: FLipMouse (FLipPad) Mainboard

Size: A3	Date: 2022-09-29	Rev: v3.1
KiCad E.D.A. kicad 6.0.7+dfsg-3		Id: 1/1