Eurorack Power Connector

J1

FB1 — STPS1L30 D5 — C20 22uF — C25 22uF — PWR_FLAG +5V

FB2 — STPS1L30 D4 — C21 22uF — C22 22uF — PWR_FLAG +12V

FB3 — STPS1L30 D3 — C23 22uF — C24 22uF — PWR_FLAG −12V

16 15
14 13
Euro+5 12 11 Euro+5
Euro+12 10 9   Euro+12
8   7
6   5
4   3
Euro−12 2   1   Euro−12

PWR_FLAG
GND

Power Rail Filtering

+12V U3 U4 +3.3V P U2 U5
C3 100nF C5 100nF C8 100nF C7 100nF
−12V C4 100nF C6 100nF

U5B MCP6002 — U3A TL074

+12V V+ 4 U3E TL074 −12V 11
+12V V+ 4 U4E TL074 −12V 11
+3.3V P V+ 8 U5C MCP6002 4
GND

DAC

U2 MCP4728 +3.3V P VDD
DAC_SCL 2 SCL   VOUTA 6 DACA
DAC_SDA 3 SDA   VOUTB 7 DACB
DAC_LDAC 4 LDAC VOUTC 8 DACC
DAC_RDY 5 RDY/BSY VOUTD 9 DACD
VSS 10
GND

Raspberry Pi Pico

RPI1 Raspberry_Pi_Pico
Raspberry Pi Pico

OLED SDA P 1 GPIO0   VBUS   40
OLED SCL P 2 GPIO1   VSYS   39
            3 GND   GND   38
GP2   4 GPIO2   3V3_EN 37
GP3   5 GPIO3   3V3   36
BUTTON 1 P 6 GPIO4   ADC_VREF 35
BUTTON 2 P 7 GPIO5   GPIO28_ADC2 34
            8 GND   AGND   33
            9 GPIO6   GPIO27_ADC1 32
            10 GPIO7   GPIO26_ADC0 31
            11 GPIO8   RUN   30
            12 GPIO9   GPIO22 29
            13 GND   GND   28
            14 GPIO10 GPIO21 27
            15 GPIO11 GPIO20 26
DAC_RDY_JP 16 GPIO12 GPIO19 25
DAC_LDAC   17 GPIO13 GPIO18 24
            18 GND   GND   23
DAC_SDA   19 GPIO14 GPIO17 22
DAC_SCL   20 GPIO15 GPIO16 21

STPS1L30 D2 +5V
+3.3V P
C1 10uF
KNOB 2 P
KNOB 1 P
AN_IN
DIG_IN
PWM1
PWM2

U1 LM4040LP−3
ADC_VREF
C2 1uF

J2

BUTTON 1 P 2 1 +3.3V P
OLED SDA P 3 8 BUTTON 2 P
OLED SCL P 4 7 KNOB 1 P
            5 6 KNOB 2 P

J3

OUTPUT 6 P 1 8 DIGITAL IN P
OUTPUT 5 P 2 7 OUTPUT 3 P
OUTPUT 4 P 3 6 OUTPUT 2 P
ANALOGUE IN P 4 5 OUTPUT 1 P

I2C Connector

1 GP2
2 GP3
3 +3.3V P
4
GND

DAC RDY enable

1 DAC_RDY
2 DAC_RDY_JP

Test power

1 +5V
2 +12V
3
4 −12V
GND

Digital Input Stage

+3.3V P
R26 10K
DIG_IN
DIGITAL IN P R27 100K Q1 MBT2222A
D1
GND

Buttons

+3.3V P
R24 10K
BUTTON 1 P

+3.3V P
R25 10K
BUTTON 2 P

Output Stage(s)

PWM1 R1 1K U3C TL074 10 9 8 OUTPUT 1 P
C9 100nF R35 220K R29 100K GND

PWM2 R2 1K U3D TL074 12 13 14 OUTPUT 2 P
C10 100nF R36 220K R30 100K GND

DACD R6 1K U4D TL074 12 13 14 OUTPUT 3 P
C14 100nF R40 220K R34 100K GND

DACB R4 1K U4B TL074 5 6 7 OUTPUT 4 P
C12 100nF R38 220K R32 100K GND

DACC R5 1K U4C TL074 10 9 8 OUTPUT 5 P
C13 100nF R39 220K R33 100K GND

DACA R3 1K U4A TL074 3 2 1 OUTPUT 6 P
C11 100nF R37 220K R31 100K GND

Analogue Input Stage
ALL CREDITS TO ÉMILIE GILLET
mutable−instruments.net

ANALOGUE IN P R28 100K U3B TL074 6 5 7
R21 22K
R22 22K U5A MCP6002 2 3 1 AN_IN
R23 22K
GND

François Georgy
Sheet: /
File: dac-board.kicad_sch
Title: DAC board for EuroPi
Size: A3   Date: 2023−05−28   Rev: 1
KiCad E.D.A. kicad 7.0.2−0   Id: 1/1