MIDI

USB_DP
USB_DN

INT_MIDI_TX
INT_MIDI_RX

RGB_DATA

File: pico.kicad_sch

Audio

INT_MIDI_RX
INT_MIDI_TX

File: audio.kicad_sch

Connectivity

USB2_N
USB2_P

File: connect.kicad_sch

LEDs

RGB_DATA

File: leds.kicad_sch

Power Supply

File: psu.kicad_sch

H7
MountingHole

H9
MountingHole

FID1
Fiducial

FID2
Fiducial

Sheet: /
File: pedalboard-hw.kicad_sch

Title: Open Pedalboard

| Size: A4 | Date: 2023-09-10 | **Rev: 3.0.0-RC1** |
| KiCad E.D.A. kicad-cli 7.0.7-7.0.7~ubuntu23.04.1 | | Id: 1/6 |

Title: Open Pedalboard

MIDI Bites allow to remove some of the board material that is used to hold the DIN5 or 3.5mm Jack connectors and instead mount the connectors to the case and wire them up with J15

Alternative to USB connection between CM4 and Pico (Can be used for MIDI)

CM4A — ComputeModule4-CM4

GPIO

Pin	Signal
2	GND
4	Ethernet_Pair1_P
6	Ethernet_Pair1_N
8	GND
10	Ethernet_Pair0_N
12	Ethernet_Pair0_P
14	GND
16	Ethernet_SYNC_IN(1.8v)
18	Ethernet_SYNC_OUT(1.8v)
20	EEPROM_nWP
22	GND
24	GPIO26 — audio_out_stereo
26	GPIO19 — audio_pcm_fs
28	GPIO13 — CM4_GPIO13
30	GPIO6 — CM4_GPIO6
32	GND
34	GPIO5 — CM4_GPIO5
36	ID_SD — CM4_ID_SD
38	GPIO11 — CM4_GPIO11
40	GPIO9 — CM4_GPIO9
42	GND
44	GPIO10 — CM4_GPIO10
46	GPIO22 — CM4_GPIO22
48	GPIO27 — audio_in_stereo
50	GPIO17 — CM4_GPIO17
52	GND
54	GPIO3 — conf_i2c_scl
56	GPIO3 — conf_i2c_sda
58	GPIO2
60	GND
62	SD_CMD
64	SD_DAT5
66	GND
68	SD_DAT4
70	SD_DAT7
72	SD_DAT6
74	GND
76	Reserved
78	GPIO_VREF(1.8v/3.3v_Input)
80	SCL0
82	SDA0
84	+3.3v_(Output) 600mA Max — CM4_3V3
86	+3.3v_(Output)
88	+1.8v_(Output) 600mA Max
90	+1.8v_(Output)
92	RUN_PG
94	AnalogIP1
96	AnalogIP0
98	GND
100	nEXTRST

Pin	Signal
1	GND
3	Ethernet_Pair3_P
5	Ethernet_Pair3_N
7	GND
9	Ethernet_Pair2_N
11	Ethernet_Pair2_P
13	GND
15	Ethernet_nLED3(3.3v)
17	Ethernet_nLED2(3.3v)
19	Ethernet_nLED1(3.3v)
21	PI_nLED_Activity — CM4_LED_ACT
23	GND
25	GPIO21 — audio_pcm_dout
27	GPIO20 — audio_pcm_din
29	GPIO16 — CM4_GPIO16
31	GPIO12 — CM4_GPIO12
33	GND
35	ID_SC — CM4_ID_SC
37	GPIO7 — CM4_GPIO7
39	GPIO8 — CM4_GPIO8
41	GPIO25 — CM4_GPIO25
43	GND
45	GPIO24 — CM4_GPIO24
47	GPIO23 — CM4_GPIO23
49	GPIO18 — audio_pcm_clk
51	GPIO15 — CM4_GPIO15 / INT_MIDI_RX
55	GPIO14 — CM4_GPIO14 / INT_MIDI_TX
57	SD_CLK
59	GND
61	SD_DAT3
63	SD_DAT0
65	GND
67	SD_DAT1
69	SD_DAT2
71	GND
73	SD_VDD_Override — GND
75	SD_PWR_ON
77	+5v_(Input) — +5VP
79	+5v_(Input)
81	+5v_(Input)
83	+5v_(Input)
85	+5v_(Input)
87	+5v_(Input)
89	WiFi_nDisable
91	BT_nDisable
93	nRPIBOOT
95	nPI_LED_PWR — CM4_LED_PWR
97	Camera_GPIO
99	Global_EN

NB SD signals are only available on modules without eMMC

Serial Debug

J6 Debug
CM4_GPIO14
CM4_GPIO15
GND

Activity

D5 LED Y   R2 1k
CM4_LED_ACT
CM4_3V3

U4
74AHCT1G32SE-7

Pin	Signal
5	VCC
1	A — CM4_3V3
2	B — CM4_LED_PWR
3	GND
4	Y — R6 1K

D6 LED G
GND

J8 — HiFi Berry

Pin	Signal	Net
17	3V3	CM4_3V3
1	3V3	
4	5V	+5VP
2	5V	
27	ID_SD/GPIO0	CM4_ID_SD
28	ID_SC/GPIO1	CM4_ID_SC
3	SDA/GPIO2	conf_i2c_sda
5	SCL/GPIO3	conf_i2c_scl
7	GCLK0/GPIO4	CM4_GPIO4
29	GCLK1/GPIO5	CM4_GPIO5
31	GCLK2/GPIO6	CM4_GPIO6
26	CE1/GPIO7	CM4_GPIO7
24	CE0/GPIO8	CM4_GPIO8
21	MISO0/GPIO9	CM4_GPIO9
19	MOSI0/GPIO10	CM4_GPIO10
23	SCLK0/GPIO11	CM4_GPIO11
32	PWM0/GPIO12	CM4_GPIO12
33	PWM1/GPIO13	CM4_GPIO13
8	GPIO14/TXD	CM4_GPIO14
10	GPIO15/RXD	CM4_GPIO15
36	GPIO16	CM4_GPIO16
11	GPIO17	CM4_GPIO17
12	GPIO18/PWM0	audio_pcm_clk
35	GPIO19/MISO1	audio_pcm_fs
38	GPIO20/MOSI1	audio_pcm_din
40	GPIO21/SCLK1	audio_pcm_dout
15	GPIO22	CM4_GPIO22
16	GPIO23	CM4_GPIO23
18	GPIO24	CM4_GPIO24
22	GPIO25	CM4_GPIO25
37	GPIO26	audio_out_stereo
13	GPIO27	audio_in_stereo
41	in_R-	
42	in_R+	
43	in_GND	
44	in_GND	
45	in_L+	
46	in_L-	
47	out_5V	
48	out_R	
49	out_GND	
50	out_GND	
51	out_5V	
52	out_L	

GND pins: 39, 34, 30, 25, 20, 14, 9, 6 — GND

J11 — Audio OUT Right
J12 — Audio OUT Left
J9 — Audio IN Right
J10 — Audio IN Left

audio_in_stereo
SJP JP2 — 1 2
audio_out_stereo
SJP JP1 — 1 2

in_R+
in_R-
GND_in_R
in_L+
in_L-
GND_in_L
GND_out

Mounting Holes

H10 MountingHole
H8 MountingHole
H11 MountingHole
H13 MountingHole

5.5mm x 2.1mm, Center Negative.

Revese
Polarity
Protection
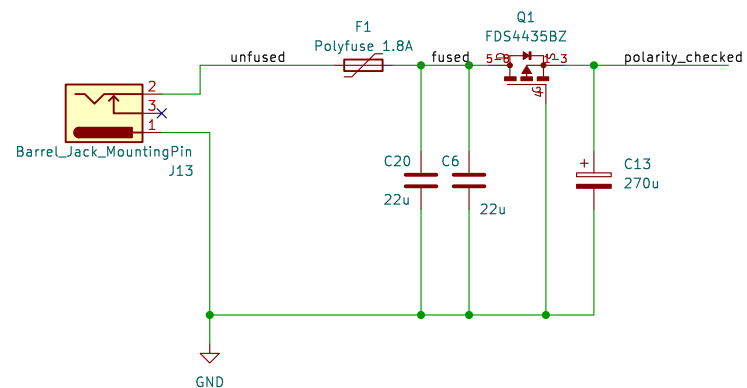
F1
Polyfuse_1.8A

Q1
FDS4435BZ

unfused   fused   polarity_checked

Barrel_Jack_MountingPin
J13

C20   C6   C13
22u   22u   270u

GND

Buckconverter

U5
TPS54331

C11
100n

+5VP

polarity_checked

VIN   BOOT
EN   PH   ph   L5 12u   out
SS   VSENSE
COMP   GND

C7
10n

C8
10n

D7
SS34HF

C12   C14   C15   C16   R8
22u   22u   22u   22u   10k

C9   C10
2n2   22p

R7
12k1

GND   R9
           1k91

GND

GND   GND
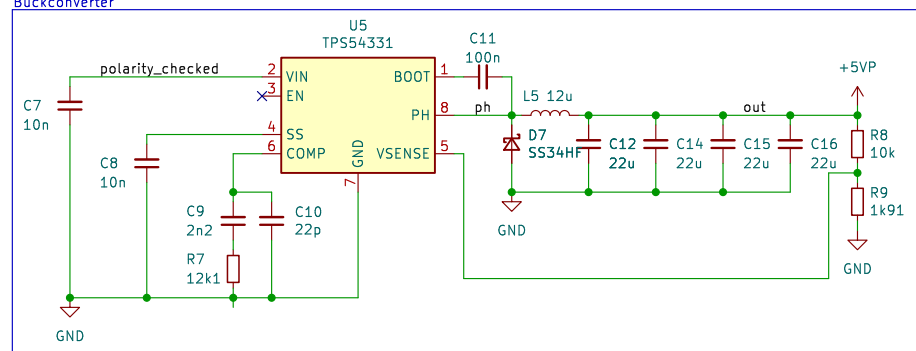
Sheet: /Power Supply/
File: psu.kicad_sch

Title: Open Pedalboard

Size: A4   Date: 2023-09-10   Rev: 3.0.0-RC1
KiCad E.D.A.   kicad-cli 7.0.7-7.0.7~ubuntu23.04.1   Id: 4/6

+5VP

C2 100n C3 100n C4 100n C5 100n

GND

RGB_DATA

R5
220

U3
74AHCT1G32SE-7

VCC
5
Y
4

1
A
2
B
GND
3

GND

+5VP

D1 SK6812   D2 SK6812   D3 SK6812   D4 SK6812

VDD 3   VDD 3   VDD 3   VDD 3
DIN   DOUT   DIN   DOUT   DIN   DOUT   DIN   DOUT
VSS   RGB   VSS   RGB   VSS   RGB   VSS   RGB

GND

+5VP

J18
LED-Ring

J19
LED-Ring

J20
LED-Ring

GND

+5VP

J21
LED-Ring

J22
LED-Ring

J23
LED-Ring

RGB_LED_EXT

3
2
1

J4

GND

Either the single LEDs or the LED rings can be populated.

Sheet: /LEDs/
File: leds.kicad_sch

Title: Open Pedalboard

Size: A4   Date: 2023-09-10   Rev: 3.0.0-RC1
KiCad E.D.A. kicad-cli 7.0.7-7.0.7~ubuntu23.04.1   Id: 5/6

CM4B
ComputeModule4-CM4

Pin	Signal		Signal	Pin
102	PCIe_CLK_nREQ		USB_OTG_ID	101
104	Reserved		USB2_N	103
106	Reserved		USB2_P	105
108	GND		GND	107
110	PCIe_CLK_P		PCIe_nRST	109
112	PCIe_CLK_N		VDAC_COMP	111
114	GND		GND	113
116	PCIe_RX_P		CAM1_D0_N	115
118	PCIe_RX_N		CAM1_D0_P	117
120	GND		GND	119
122	PCIe_TX_P		CAM1_D1_N	121
124	PCIe_TX_N		CAM1_D1_P	123
126	GND		GND	125
128	CAM0_D0_N		CAM1_C_N	127
130	CAM0_D0_P		CAM1_C_P	129
132	GND		GND	131
134	CAM0_D1_N		CAM1_D2_N	133
136	CAM0_D1_P		CAM1_D2_P	135
138	GND		GND	137
140	CAM0_C_N		CAM1_D3_N	139
142	CAM0_C_P		CAM1_D3_P	141
144	GND		HDMI1_HOTPLUG	143
146	HDMI1_TX2_P		HDMI1_SDA	145
148	HDMI1_TX2_N		HDMI1_SCL	147
150	GND		HDMI1_CEC	149
152	HDMI1_TX1_P		HDMI0_CEC	151
154	HDMI1_TX1_N		HDMI0_HOTPLUG	153
156	GND		GND	155
158	HDMI1_TX0_P		DSI0_D0_N	157
160	HDMI1_TX0_N		DSI0_D0_P	159
162	GND		GND	161
164	HDMI1_CLK_P		DSI0_D1_N	163
166	HDMI1_CLK_N		DSI0_D1_P	165
168	GND		GND	167
170	HDMI0_TX2_P		DSI0_C_N	169
172	HDMI0_TX2_N		DSI0_C_P	171
174	GND		GND	173
176	HDMI0_TX1_P		DSI1_D0_N	175
178	HDMI0_TX1_N		DSI1_D0_P	177
180	GND		GND	179
182	HDMI0_TX0_P		DSI1_D1_N	181
184	HDMI0_TX0_N		DSI1_D1_P	183
186	GND		GND	185
188	HDMI0_CLK_P		DSI1_C_N	187
190	HDMI0_CLK_N		DSI1_C_P	189
192	GND		GND	191
194	DSI1_D3_N		DSI1_D2_N	193
196	DSI1_D3_P		DSI1_D2_P	195
198	GND		GND	197
200	HDMI0_SCL		HDMI0_SDA	199

High Speed Serial

USB2_N
USB2_P

GND

GND