	1	2	3	4	

VIN

U3

| A3 | VIN | VOUT | B3 |
| A4 | VIN | VOUT | B4 |

L2
0.47uH

10uF C3

GND

C1
22uF

C2
22uF

VOUT

GND

	PGND	D2
	PGND	D3
SW_BO C3	PGND	D4
C4	SW	AGND	D1
	SW		

GND

R1
37K4 C1

A1	BYP	PG	A2
B1	EN	NC	B2
	VSEL	NC	C2

POW_EN

R2
37K4

VOLREG_FAN48623

POW_GOOD

GND

GND

1	2	3	4

A

B

+3V3

+3V3

1
2

J5

SW3 BOOT

R4
3K9

R7
10K

SW1

D7

R5
3K9

D8

SW2

SW1

GND   GND

GND

C

D

	1	2	3	4	

VCC

R8
330R

R9
330R

B G R D2

B G R D1

4

4

2

2

LED1_B LED1_B Q1B

LED2_B LED2_B Q2B

LED1_G LED1_G Q1A

LED2_G LED2_G Q2A

LED1_R LED1_R

LED2_R LED2_R Q3A

Q3B

GND

GND

PiJuice Top Schematic

U1A — STM32F030CCT6

Pin	Label		Pin	Label
10	PA0 (CS1)		18	PB0 (LED2_B) T3C3
11	PA1 (CS2)		19	PB1 (BGINT) T3C4
12	PA2 (BAT_SEN)		20	PB2 (SW3) TP17
13	PA3 (3K9)		39	PB3 (EE_AD)
14	PA4 (POW_DET_SEN)		40	PB4 (LED2_R) T3C1
15	PA5 (CHG_CUR)		41	PB5 (LED2_G) T3C2
16	PA6 (TS_CTR1)		42	PB6 (SCL1)
17	PA7 (100R)		43	PB7 (SDA1)
30	PA8		45	PB8 (EE_WP) T16C1
31	PA9 (POW_EN)		46	PB9 (LED1_B) T17C1
32	PA10 (POW_DET_EN)		21	PB10 (SCL2) 10K
33	PA11 (EXTVS_EN)		22	PB11 (SDA2)
34	PA12 (SWDIO)		25	PB12 (SW1)
37	PA13(SWDIO) (SWDCLK)		26	PB13 (RUN)
38	PA14(SWCLK) (TS_CTR2)		27	PB14 (LED1_R) T15C1
	PA15		28	PB15 (LED1_G) T15C2
2	PC13 (WKUP SW2)			
3	PC14-OSC32_IN(PC14)			
4	PC15-OSC32_OUT(PC15)			
5	PF0-OSC_IN(PF0) (CH_INT)	44	BOOT0 (BOOT0)	
6	PF1-OSC_OUT(PF1) (ESYSLIM)	7	NRST	

U2 — BQ24160RGET

Pin	Label		Pin	Label
21	IN (CHIN)		18	SW (CHSW)
20	PMIDI (PMIDI)		19	BOOT
22	USB		13	SYS
23	PMIDU (PMIDU)		14	SYS
	D+		10	BGATE
	D-		11	BAT (VBAT)
6	DRV (VDRV)		12	BAT
8	STAT		9	TS
	SCL		25	EP
4	SDA (SDA2)		5	PGND
7	INT (CH_INT)		15	PGND
24	CD		16	SGND
			17	PGND

U8 — LC709203FQH-01TWG

Pin	Label		Pin	Label
1	TEST		8	SCL (SCL2)
2	VSS		7	SDA (SDA2)
3	VDD (VBAT)		6	TSENSE
4	ALARMB (BGINT)		5	TSW
9	TP			

U9 — NCP380LMUAJAATBG

Pin	Label		Pin	Label
6	IN (VSYS)		1	OUT
3	FLAG		2	ILIM
4	EN (EXTVS_EN)		5	GND
			7	TP

U4 — 3V3
OUT / IN / GND / NR / EN

U_Boost_DCDC_+5V_FAN48623
VIN / VOUT (+5VB) / POW_EN / POW_GOOD

U_Power_detect
VOUT / VIN / POW_DET_SEN EN / POW_DET_EN

U_LEDS
VCC (VOR_BAT_5) / LED1_R / LED1_G / LED1_B / LED2_R / LED2_G / LED2_B

U_Buttons
SW1 / SW2 / SW3_BOOT (SW1, SW2, BOOT0)

U1B
VDD (1,24,36,48,9) / VSS (23,47,35,8) / VDDA / VSSA

P1
3V3 (1,17) / 5V (2,4) / GPIO2/SDA1 (3) / GND / GPIO3/SCL1 (5) / GPIO4/GCLK (7) / GPIO15/TxD (8) / GPIO16/RxD (10) / GPIO17/GEN0 (11) / GPIO18/PCM_CLK (12) / GPIO27/GEN2 (13) / GPIO22/GEN3 (15) / GPIO23/GEN4 (16) / GPIO24/GEN5 (18) / GPIO10/MOSI (19) / GPIO25/GEN6 (21) / GPIO/MISO (22) / GPIO8/CE0 (23) / GPIO11/CLK (24) / GPIO7/CE1 (26) / ID_SD (27) / ID_SC (28) / GPIO5 (29) / GPIO6 (31) / GPIO12 (32) / GPIO13 (33) / GPIO16 (35) / GPIO19/PCM_FS/PWM1 (36) / GPIO20/PCM_DIN (37) / GPIO26 (38) / GPIO21/PCM_DOUT (39) / GND (40)

J2 — 3 / 2 / 1 (VBAT, NTC)

P2 — VBUS / D- / D+ / ID / GND / SHIELD

P3 — VSYSE / PI_5V / GND / +3V3 / IO1 / IO2

X1 — 32.768KHz

Crystal/capacitors: C12 6.8pF, C13 6.8pF

EMI1 — EMMETAL_CAN

M1 / M2 / M3 / M4

Test points: TP1–TP24, TP4, TP5 (STAT), TP6, TP8, TP9, TP12, TP14, TP15, TP16, TP17, TP18, TP19, TP24

L1 1.5uH

Q4 / Q5 (MOSFETs)

D4 / D10 / D12 / D13

NTC R16 10K, R19 10K, R51 N.P. 240K, R13 0R N.P., R22 VDRV_N.P.(1K69), R23 1.69KOhm,0.1W,0.1%. 14K (2.67KOhm,0.1%, Alt)

R30 100R, R31 10K, R34 37K4, R37 100K, R35 100pF, R32 100K, R33 100K, R36 100K

R38 3K9, R39 37K4, R28 3K9, R29 3K9, R17 37K4, R15/R18 10K, R3 1M1, R10 3K9, R11 100R, R27 100R

Capacitors: C5 1uF, C7 4.7uF+5V, C8 1uF, C9 4.7uF, C4 10nF, C6 10uF, C10 1uF, C11 1uF, C14 47uF, C19 4.7uF, C22 1uF, C23 10uF, C24 47uF, C25 47uF, C26 1uF, C30 4.7uF, C31, C15 1uF, C16 100nF, C17 100nF, C18 1uF, C20 100nF, C21 1uF, C32 10nF, C33 10nF

FB1, FB2, FB3

Title	PiJuice Top Schematic
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Number	
Revision	1.1
Date:	18.8.2017.
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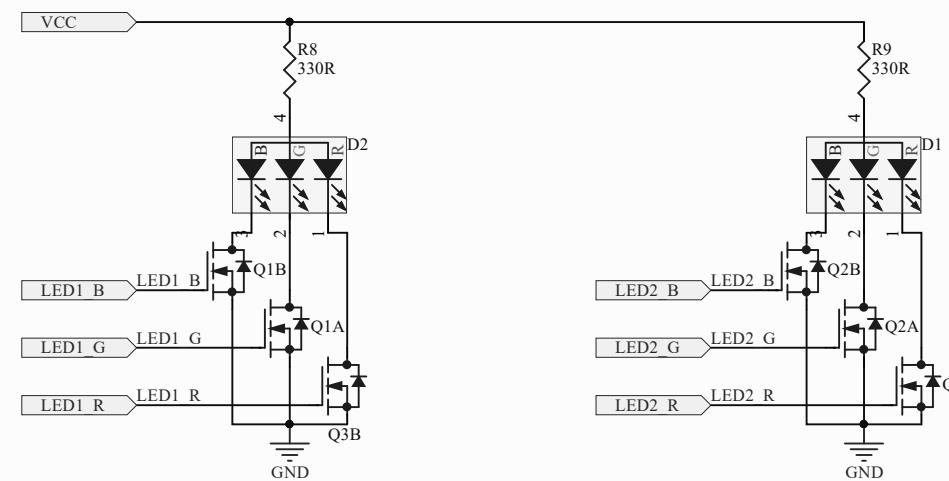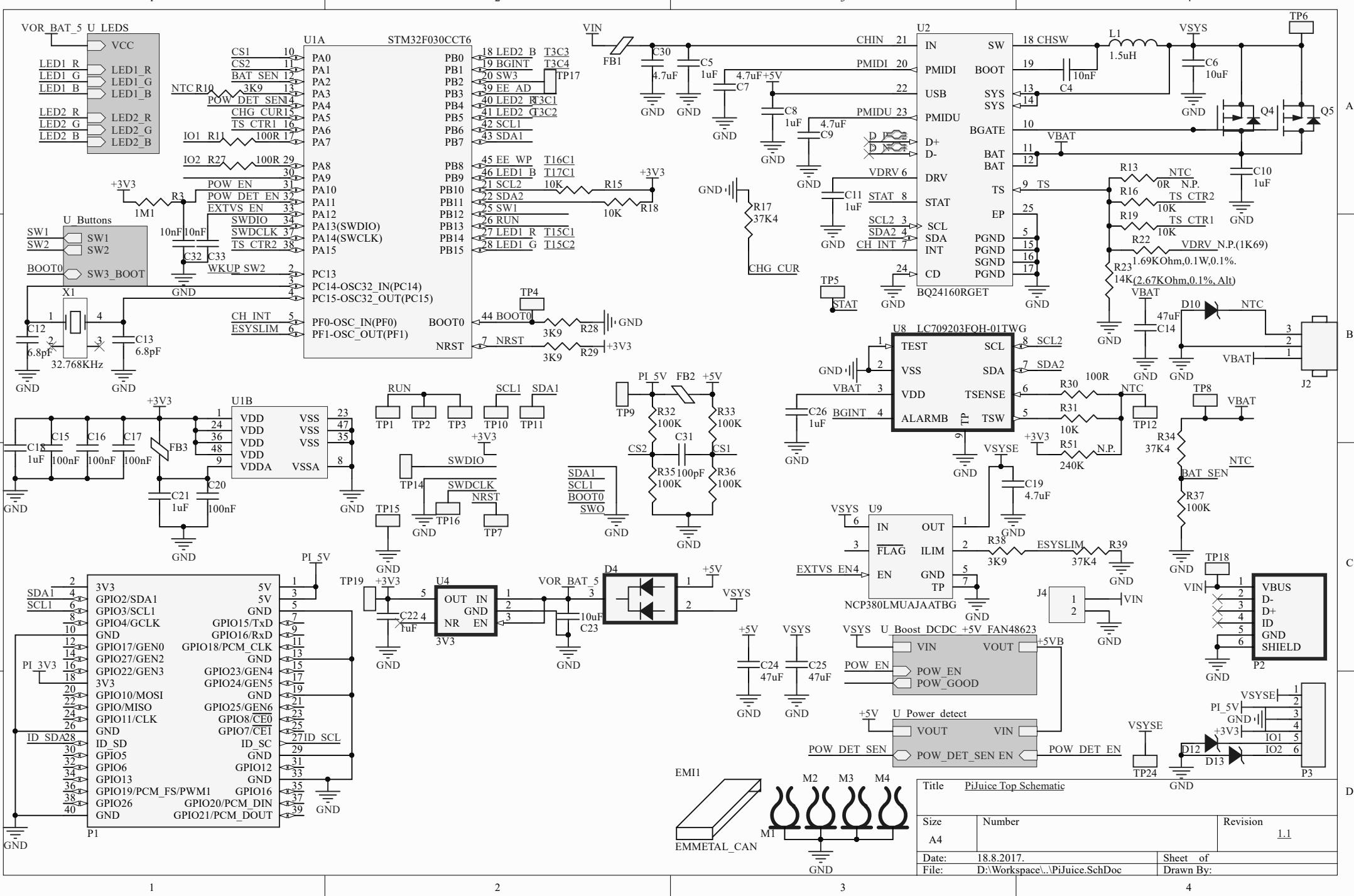
1	2	3	4

VIN

VOUT

POW_DET_SEN

Q6

R45 37K4

R47 37K4

GND

EN

R50 1M1

GND

C28 100pF

GND

C27 100pF

U6

6

4 +

1

3

5 2

−

R43 100K

R44 1M1

R46 100K

GND

GND

R48 1K

R49 37K4

C29 1uF

GND

U7 2.5V

1 V+

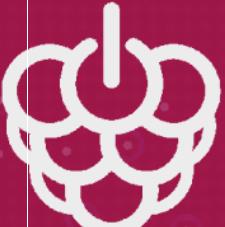V− 2

NC 3

ADR5041AKSZ

GND
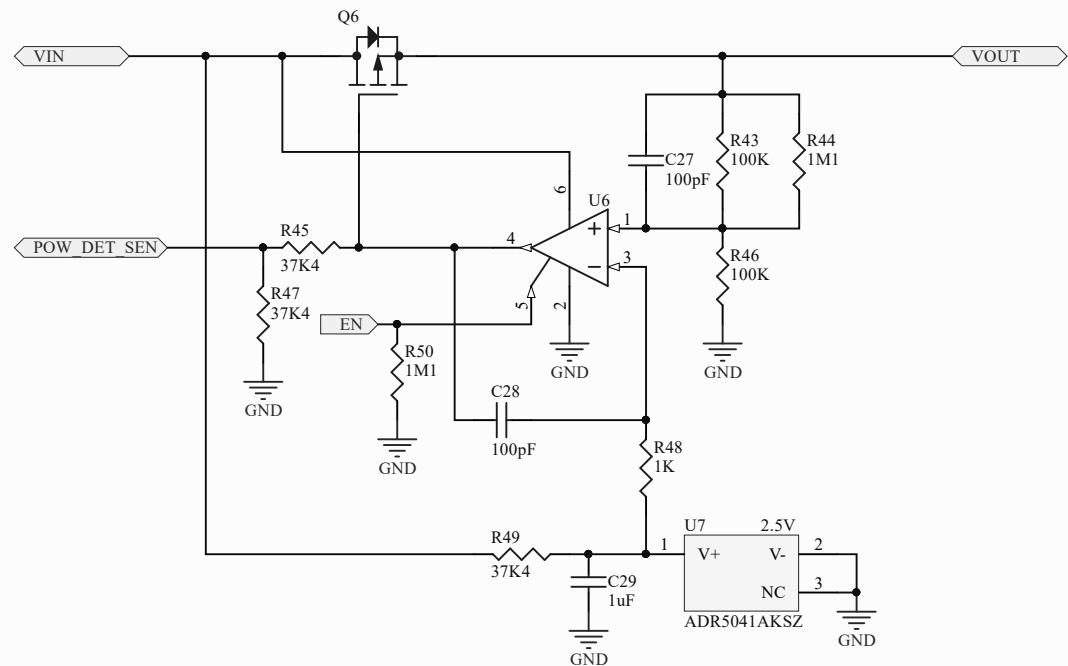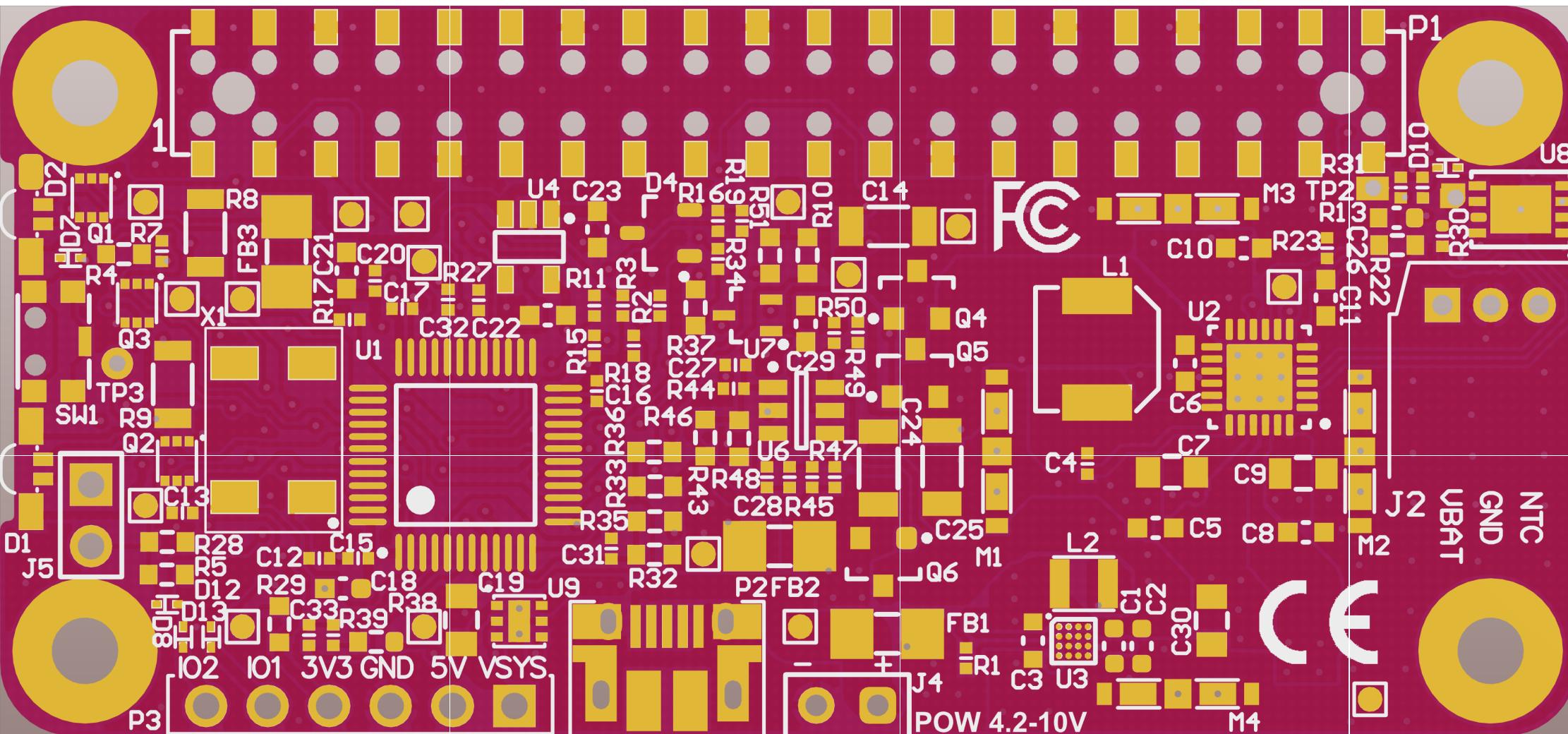
PiJuice Zero V1.0
www.pijuice.com
www.pi-supply.com

Pi Supply
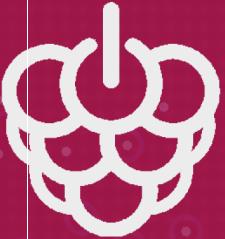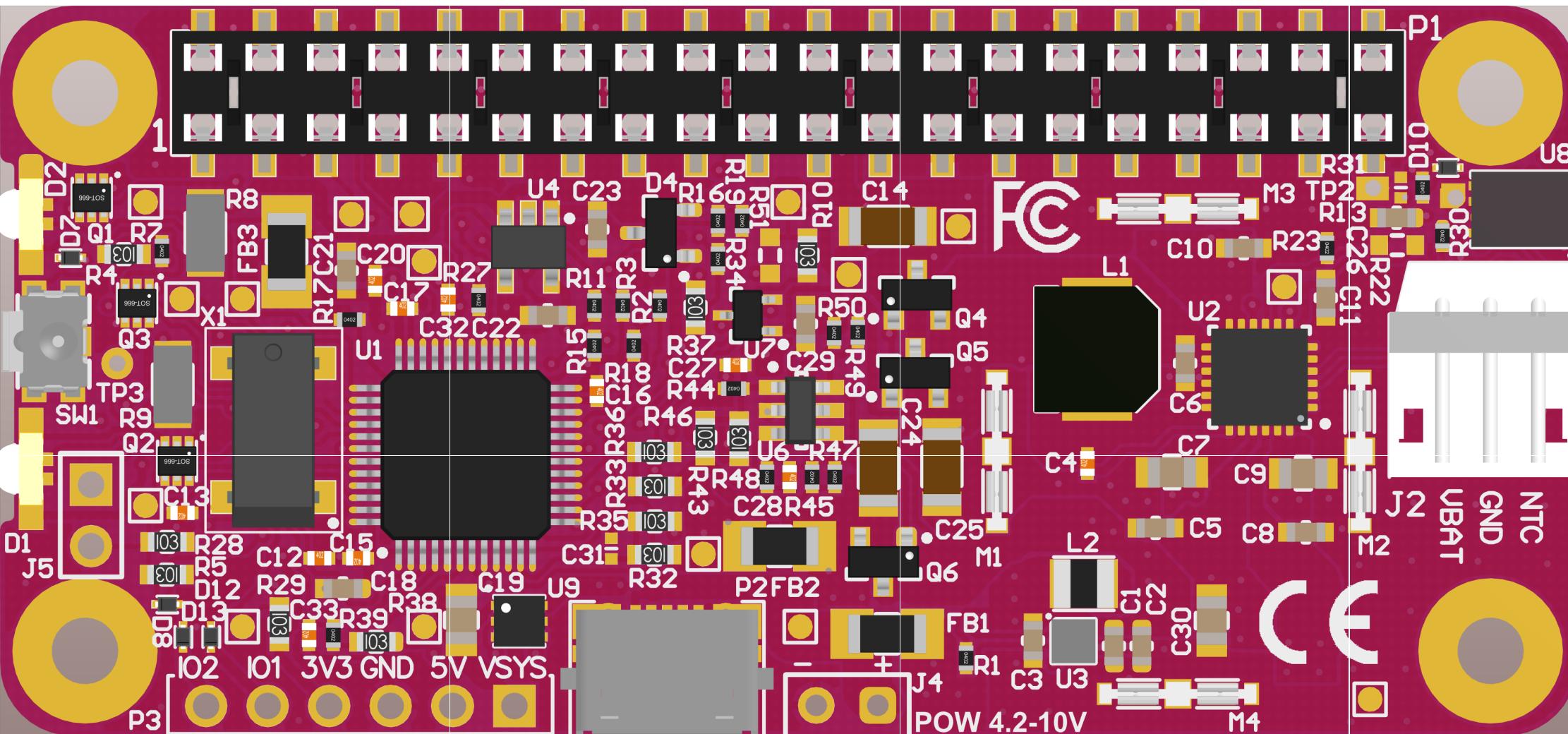
PiJuice

Industry
Canada

Industrie
Canada

P1

1

FC

CE

FCC

D2
D7
Q1
R4
R7
R8
FB3
R17
C21
C20
C17
C27
X1
TP3
SW1
R9
Q2
Q3
C13
D1
J5
R28
R5
D12
R29
C12
C33
R39
R38
C18
C19
U9
IO2
IO1
3V3
GND
5V
VSYS
P3

U4
C23
D4
R16
R19
R51
D10
C14
R11
R3
R34
R2
R15
U7
R37
C16
R44
R18
R46
R33
R36
R35
R43
R48
R32
C31
U6
R47
C28
R45
P2
FB2
C15
U1
C32
C22
C26
R27
R50
R49
C29
Q4
Q5
C24
C25
M1
Q6
L2
C1
C2
C30
FB1
R1
C3
U3
M4

R31
D10
M3
TP2
R13
R23
C10
R30
U8
L1
C11
R22
U2
C6
C7
C4
C9
C5
C8
M2
J2
GND
UBAT
NTC

R1
C11

L2
C1 C2
C30
FB1
R1
C3 U3
M4

_
+
J4
POW 4.2-10V

SOT-666
SOT-666
SOT-666