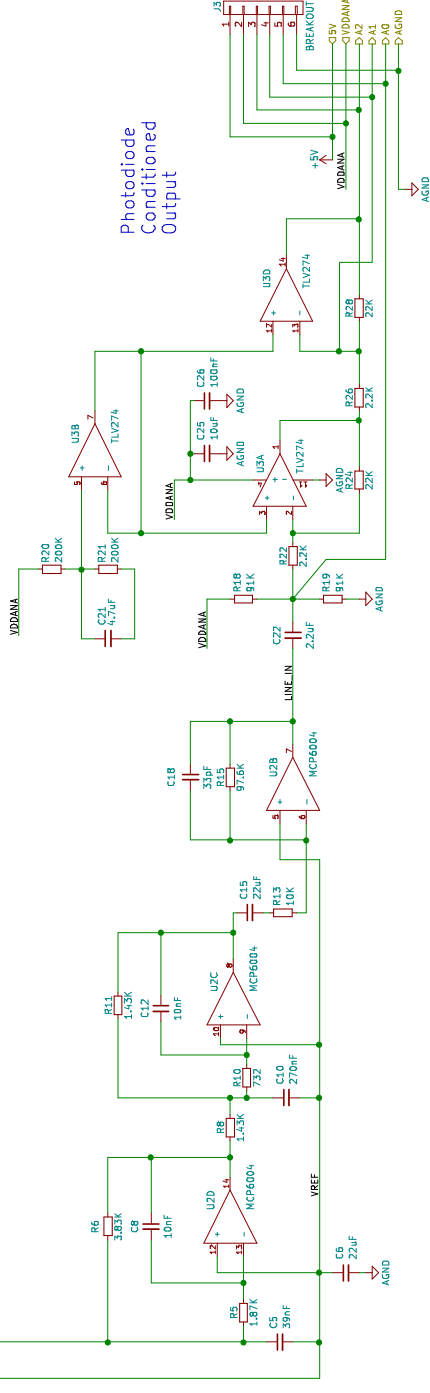


Wickerbox Electronics
<http://wickerbox.net>
jenner@wickerbox.net
CERN Open Hardware License v1.2
Sheet: /
File: mcphail-main-board.sch

Title: McPhail Trap Main Board

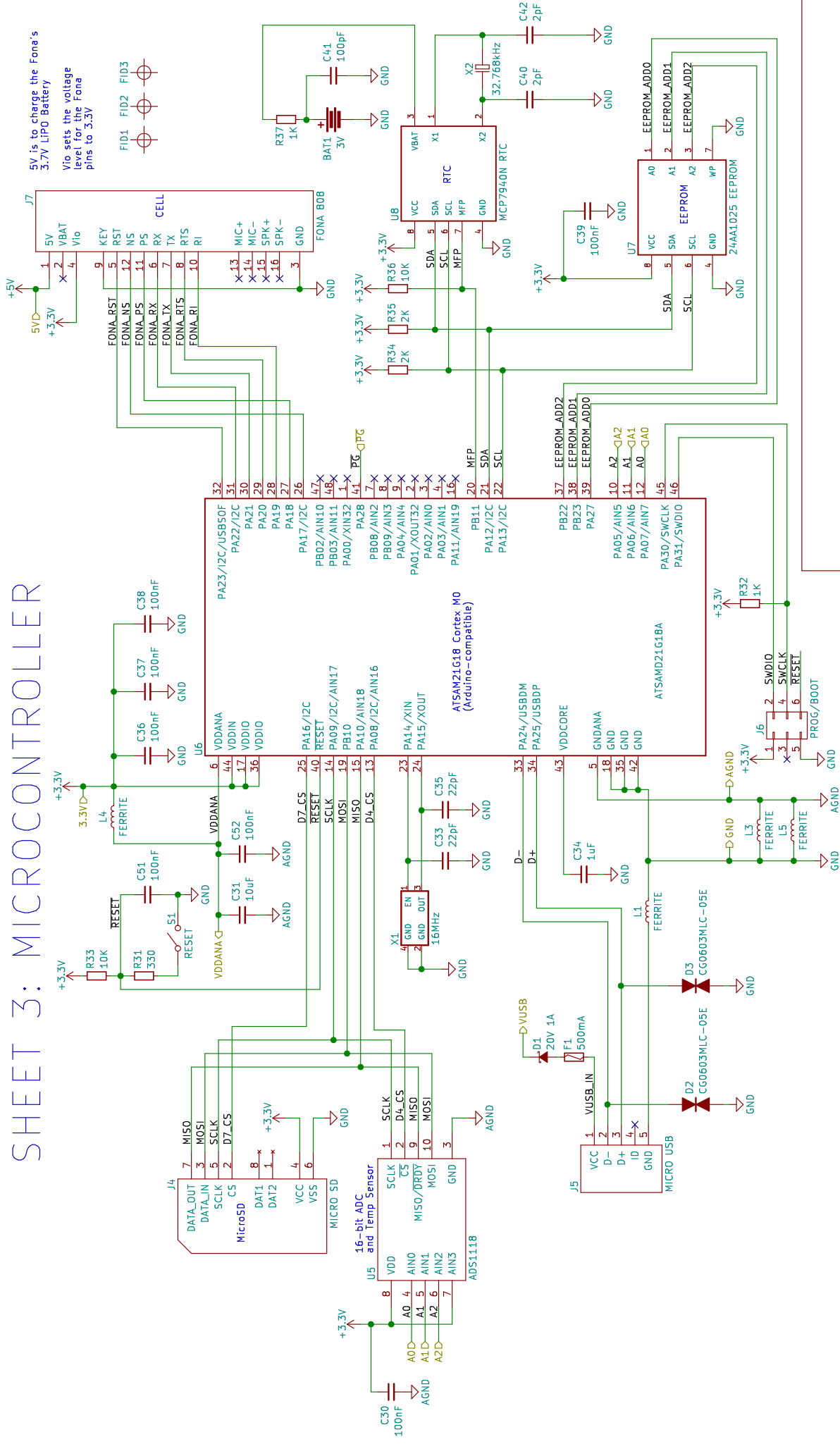
Size: USLetter	Date: 18 Jul 2017	Rev: 1.0
KiCad E.D.A.	KiCad 4.0.5-e0-633749ubuntu16.04.1	

SHEET 2: SIGNAL CONDITIONING

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SHEET 3: MICROCONTROLLER



Sheet: /Microcontroller/
File: microcontroller.sch

Title:

Size: A4 Date:

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Id: 3/4

SHEET 4: POWER INPUT

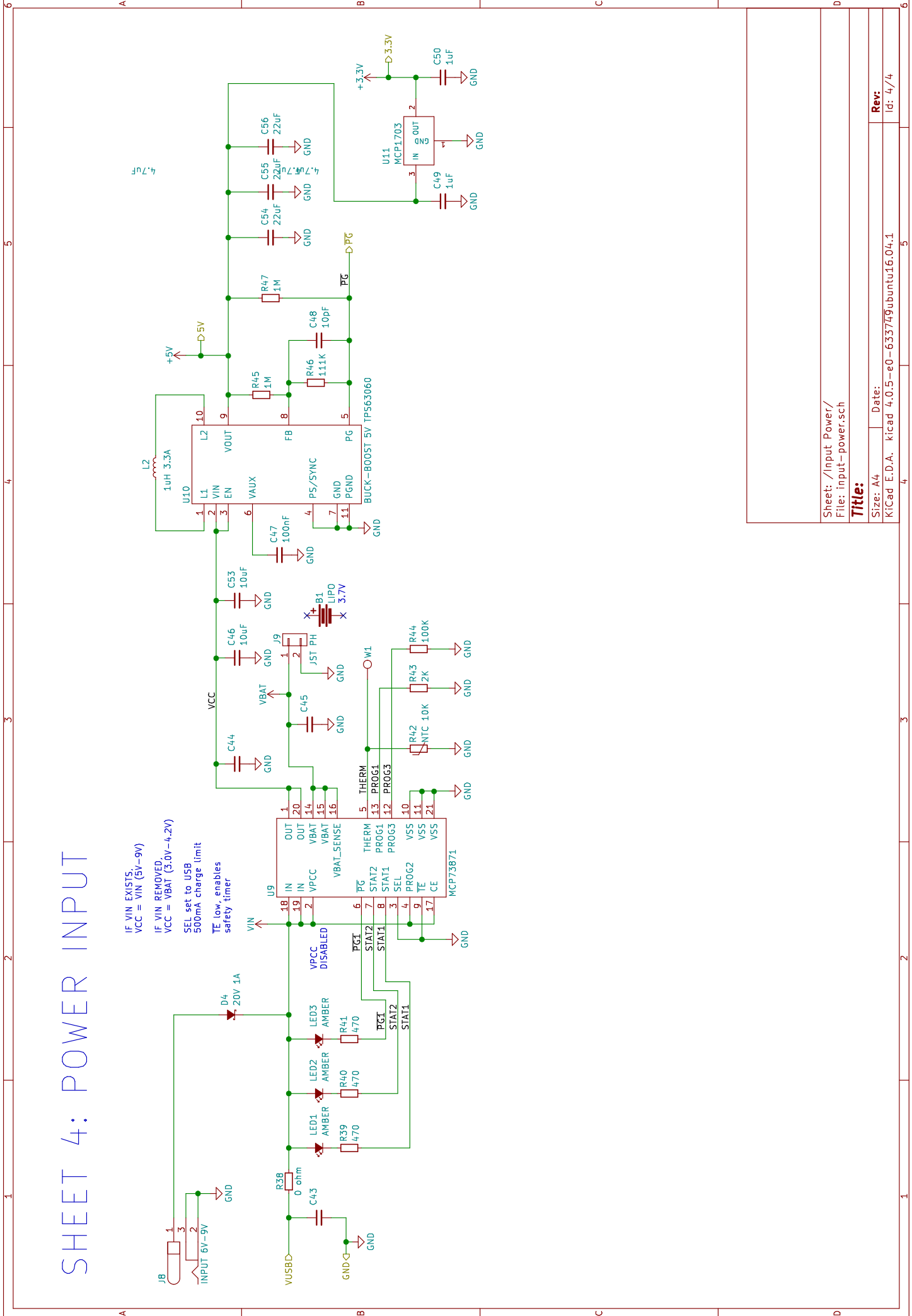
IF VIN EXISTS,
VCC = VIN (5V–9V)

IF VIN REMOVED,
VCC = VBAT (3.0V–4.2V)

SEL set to USB
500mA charge limit

TE low enables
safety timer

Sheet: /Input Power/
File: input-power.sch
Title:
Size: A4 Date:
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[illegible][illegible]

SHEET 4: POWER INPUT

IF VIN EXISTS,
VCC = VIN (5V-9V)
IF VIN REMOVED,
VCC = VBAT (3.0V-4.2V)
SEL set to USB
500mA charge limit
TE low, enables
safety timer

The diagram illustrates the power input section of a device. It features a USB input (J8) connected to a 6V-9V source. The input is protected by a 20V 1A diode (D4) and a 0 ohm resistor (R38). The input voltage is monitored by a 4.7uF capacitor (C43). The input is connected to the VIN pin of the U9 microcontroller. The U9 microcontroller has several pins connected to LEDs (LED1, LED2, LED3) and resistors (R39, R40, R41) for status indication. The U9 also controls the VBAT pin of the U10 buck-boost converter. The U10 converter is configured to output 5V (VOUT) and is connected to a 1uH 3.3A inductor (L2) and a 4.7uF capacitor (C56). The output of the converter is connected to the VCC pin of the U11 microcontroller. The U11 microcontroller has several pins connected to resistors (R42, R43, R44) and capacitors (C44, C45, C46, C47, C48, C49, C50) for various functions. The U11 also controls the PG pin of the U10 converter. The U10 converter is connected to a 3.3V source (C50) and a 1uF capacitor (C49). The U11 microcontroller is connected to a 3.3V source (C50) and a 1uF capacitor (C49).

Sheet: /Input Power/
File: input-power.sch

Title:

Size: A4

Date:

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Rev:

Id: 4/4

[illegible][illegible][illegible]

SHEET 4: POWER INPUT

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Sheet: /Input Power/
File: input-power.sch

Title:

Size: A4

Date:

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Rev:

Id: 4/4