

**NOTE: This is a "Work In Progress"; implement at your own risk.**

Sheet: OSv4\_logic

Logic

File: OSv4\_logic.sch

Sheet: OSv4\_H-bridge

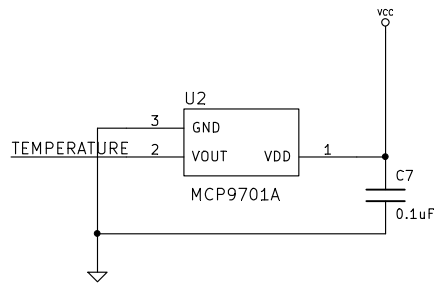
H-bridge

File: OSv4\_H-bridge.sch

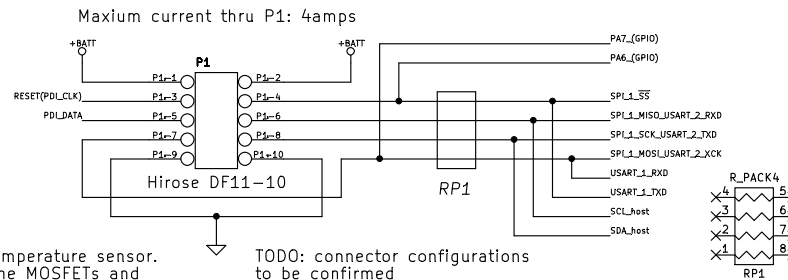
**NOTE: This is most definitely a "Work In Progress" that is in a state of flux... It is presented for review purposes only and does not represent an end product!**

File: OSv4.sch		
Sheet: /		
Title: OpenServo v4 preliminary work-up, © OpenServo project 2010		
Size: A4	Date: 28 jun 2010	Rev:
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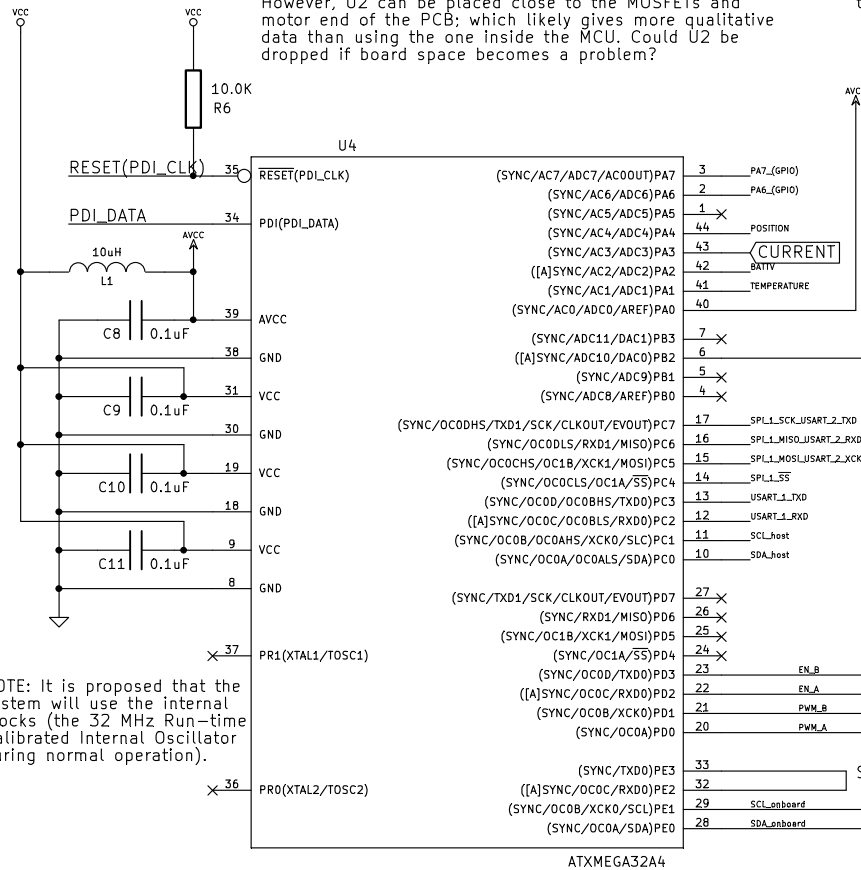
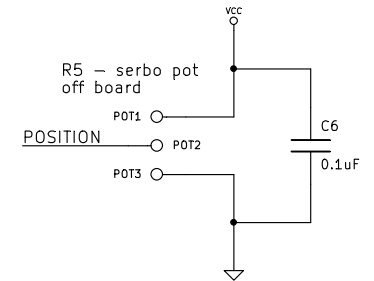


NOTE: The XMEGA has an integrated temperature sensor. However, U2 can be placed close to the MOSFETs and motor end of the PCB; which likely gives more qualitative data than using the one inside the MCU. Could U2 be dropped if board space becomes a problem?



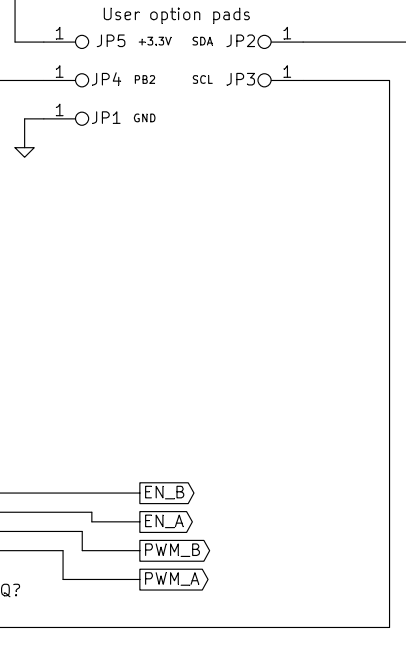
TODO: connector configurations to be confirmed

RP1 would have provided some limited protection against connection and programming errors; however design considerations on the PCB mean that this is one of the items that probably has to be dropped.



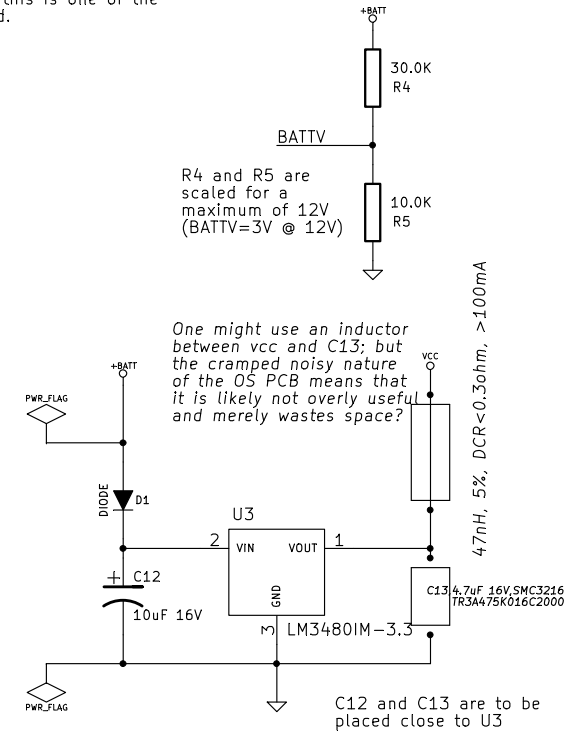
NOTE: It is proposed that the system will use the internal clocks (the 32 MHz Run-time Calibrated Internal Oscillator during normal operation).

NOTE: Decoupling capacitors to be placed close to the device for each supply pin pair in a signal group.



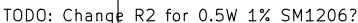
R4 and R5 are scaled for a maximum of 12V (BATTV=3V @ 12V)

One might use an inductor between vcc and C13; but the cramped noisy nature of the OS PCB means that it is likely not overly useful and merely wastes space?



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NOTE: According to the docs, pin 5 on U5 has "no internal connection"; it has been used for routing purposes on the PCB.

TODO: TEST!

The schematic shows a motor driver circuit. It consists of two TC4428A MOSFET drivers (U5 and U6) and two MOSFETs (U7A and U8A). The input signals are PWM\_A and EN\_B. The output signals are PWM\_B and EN\_A. The circuit includes a resistor network (RP2, R\_PACK4) and a feedback loop (M1, M2, M3). The MOSFETs are labeled U7A and U8A. The TC4428A drivers are labeled U5 and U6. The feedback loop is labeled M1, M2, and M3. The output signals are PWM\_B and EN\_A. The input signals are PWM\_A and EN\_B. The resistor network is labeled RP2 and R\_PACK4. The MOSFETs are labeled U7A and U8A. The TC4428A drivers are labeled U5 and U6. The feedback loop is labeled M1, M2, and M3.

Potential MOSFETs for U7 & U8:  
 SP8M4  
 FDS8858CZ  
 FDS9934C??

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