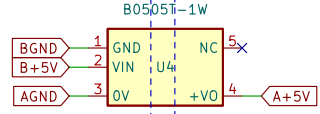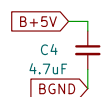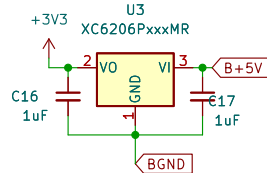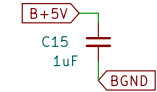# DAUGHTER BOARD

NOTE: use A+5V / B+5V convention maintain separate networks.

To MP2:
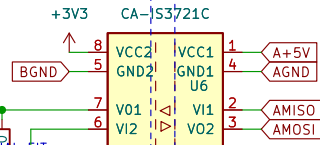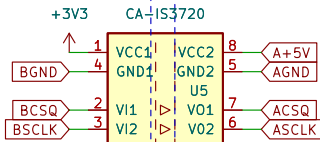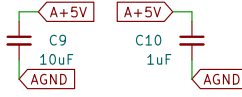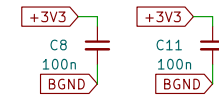
J4
1 B+5V
2 BTEMP
3 BCSQ
4 BSCLK
5 BMISO
6 BMOSI
7 BGND

Rail decoupler

B+5V
C15
1uF
BGND

+3V3
U3
XC6206PxxxMR
2 VO   VI 3   B+5V
GND
C16   C17
1uF   1uF
BGND

A SIDE: ISOLATED WITH ENCODER

B0505T-1W
B+5V
BGND 1 GND   NC 5 ✕
B+5V 2 VIN U4
AGND 3 0V   +VO 4 A+5V
BGND

Rail decouplers
A+5V   A+5V
C9   C10
10uF   1uF
AGND   AGND

+3V3   CA-IS3720
BGND 1 VCC1   VCC2 8 A+5V
      GND1   GND2 5 AGND
BCSQ 2 VI1 U5 VO1 7 ACSQ
BSCLK 3 VI2   VO2 6 ASCLK

+3V3   CA-IS3721C
BGND 8 VCC2   VCC1 1 A+5V
      GND2   GND1 4 AGND
BMISO 7 VO1 U6 VI1 2 AMISO
      6 VI2   VO2 3 AMOSI

OPTIONAL FIT,
DNP for full duplex & STM,
Fit for half duplex
BMOSI

+3V3   +3V3
C8   C11
100n   100n
BGND   BGND

J5
ASCLK 1
ACSQ 2
AMOSI 3
AMISO 4
ATRM1 5
ATRM2 6
AGND 7
A+5V 8

Isolator decouplers
C5   C6   A+5V
100n   100n
AGND   AGND
A+5V
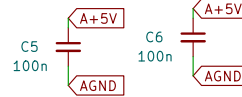
Differential opamp measuring the
voltage across the 10 thermistor
with gain 1 (check...) means that
the rest of the board is protected
by the 100m and 4k7 impedances.
Will be hard to kill anything through
these (the resistors may die...)

A SIDE
DMZ
ATRM1
+3V3
R9
4.7k
R14
100k
+3V3
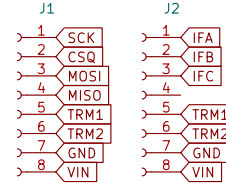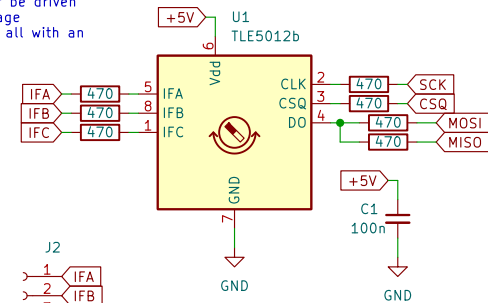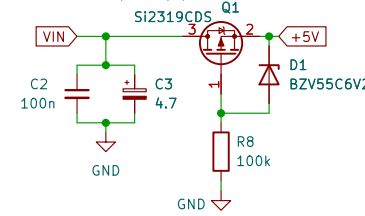R10
100k
BGND
R11   R12
100k   100k
MCP6L01Rx-xOT
U2
BTEMP
ATRM2
R13
4.7k
BGND
BGND
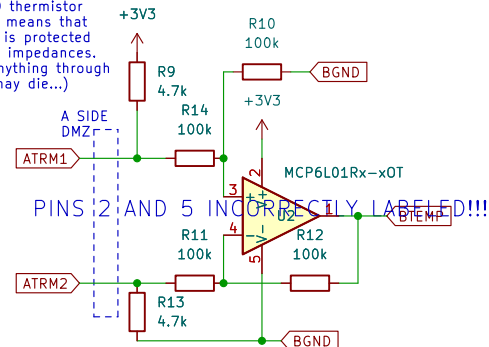
PINS 2 AND 5 INCORRECTLY LABELED!!!

MOTOR ENCODER

The 470R resitors allow the
data line to drive or be driven
without risk of damage
Could replace these all with an
Rpack e.g. C25510

+5V   U1
       TLE5012b
IFA 5 IFA 470   CLK 2 470 SCK
IFB 8 IFB 470   CSQ 3 470 CSQ
IFC 1 IFC 470   DO 4 470 MOSI
                          470 MISO
       Vpp 6
                      +5V
       GND 7   C1
       GND   100n
                      GND

J1   J2
1 SCK   1 IFA
2 CSQ   2 IFB
3 MOSI   3 IFC
4 MISO   4
5 TRM1   5 TRM1
6 TRM2   6 TRM2
7 GND   7 GND
8 VIN   8 VIN

reverse polarity protection
Si2319CDS
VIN   Q1   +5V
C2   C3   D1
100n 4.7   BZV55C6V2
GND   R8
                     100k
       GND

IFA,B,C need to go to 3 seperate
isolators, and perhaps leave on
other headers?

TRM1
TRM2
J3
motor thermistor
two wires lead from motor to PCB
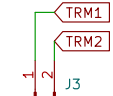
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File: encoder_driver.kicad_sch

Title:
Size: A4   Date:
KiCad E.D.A. kicad (6.0.7-1)-1

Rev:
Id: 1/1