

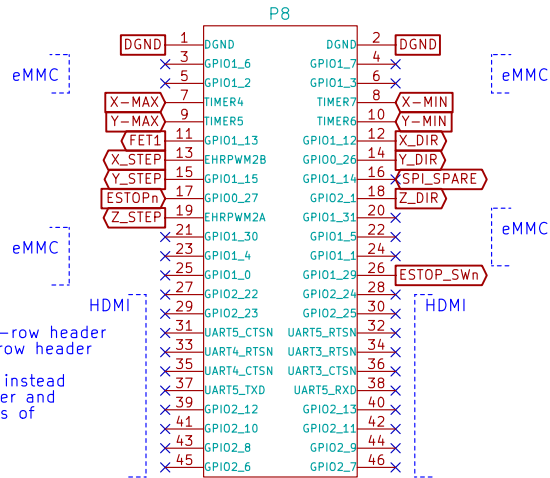
To save money on all the pin headers when buying parts for a few boards you can get large breakaway headers instead of the individual parts. You will need a total of:

18 pins of single-row header  
82 pins of dual-row header

Which you can get using

- (1) Harwin M20-9993645 36-pin single-row header
- (2) Harwin M20-9983645 72-pin dual-row header

If you want to use standard pin headers instead of the latching KK headers for the stepper and ESTOP headers, you need another 32 pins of single-row header



## Stepper Drivers

steppers.sch

## Emergency Stop

e-stop.sch

## Inputs

con\_inputs.sch

## Mosfet Outputs

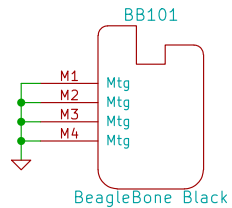
con\_outputs.sch

## Serial Console



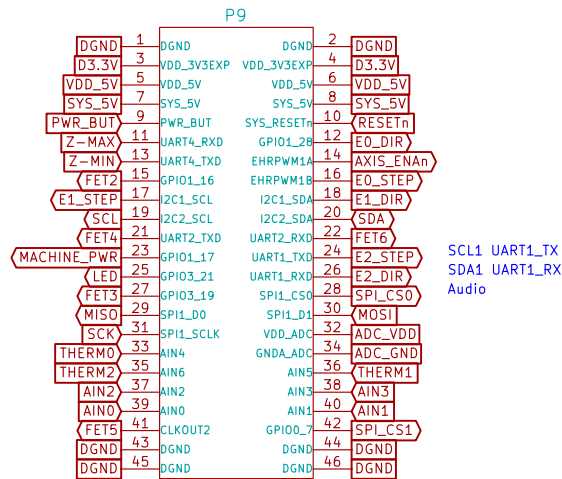
BeagleBone serial console pass-through header

Uses Arduino 6-pin stacking connector for low-cost



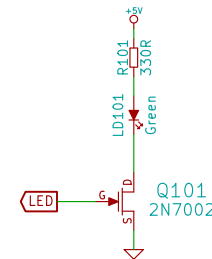
24.576MHz Audio

Audio

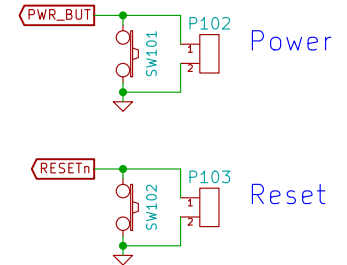


SCL1 UART1\_TX  
SDA1 UART1\_RX  
Audio

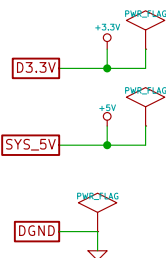
## Status LED



## BB Turned On

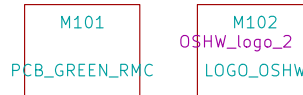


BeagleBone Logic supply is always 3.3V



D3.3V: Low-current supply from 500 mA LDO on BeagleBone

SYS\_5V: Low-current supply provided by BeagleBone PMIC Active when BeagleBone is running



CRAMPS by Charles Steinkuehler and Murray Lindeblom

Copyright 2014 GPL v3

Derived from RAMPS-FD by Bob Cousins

Derived from RAMPS 1.4 rewrap.org/wiki/RAMPS1.4

File: CRAMPS.sch

Sheet: /

Title: CRAMPS (Cape-RAMPS for BeagleBone)

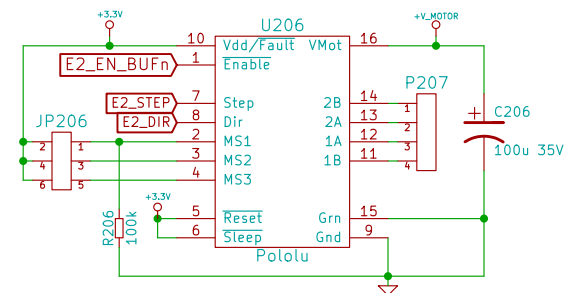
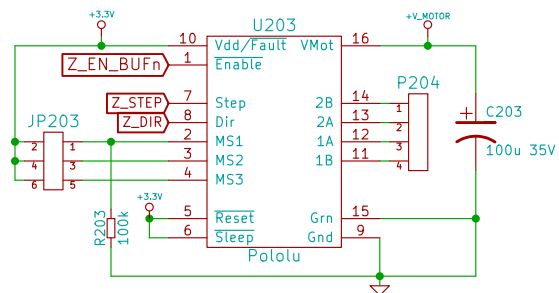
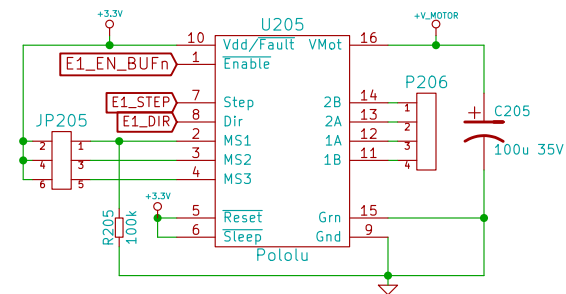
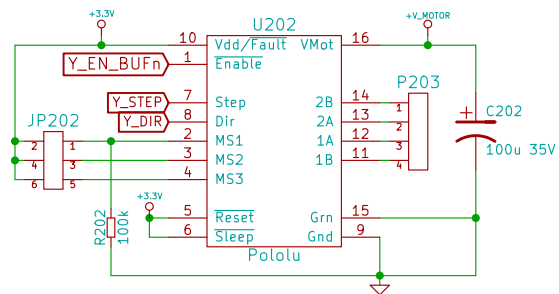
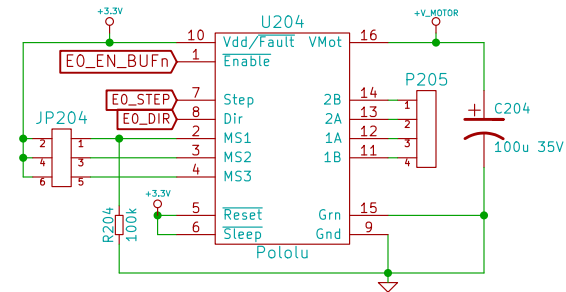
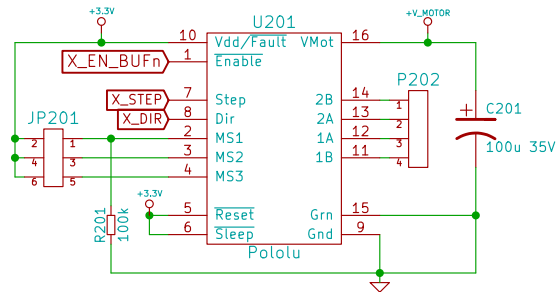
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Date: 1 may 2014

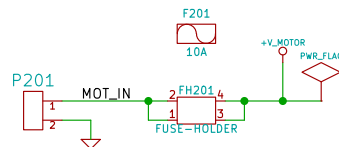
Rev: v1.0

KiCad E.D.A.

Id: 1/5



Motor Power  
12-24V, 10A



Shunts to set  
micro-stepping

S201	S207	S213
SHUNT	SHUNT	SHUNT
S202	S208	S214
SHUNT	SHUNT	SHUNT
S203	S209	S215
SHUNT	SHUNT	SHUNT
S204	S210	S216
SHUNT	SHUNT	SHUNT
S205	S211	S217
SHUNT	SHUNT	SHUNT
S206	S212	S218
SHUNT	SHUNT	SHUNT

24-pin Single-Row  
sockets for Pololu

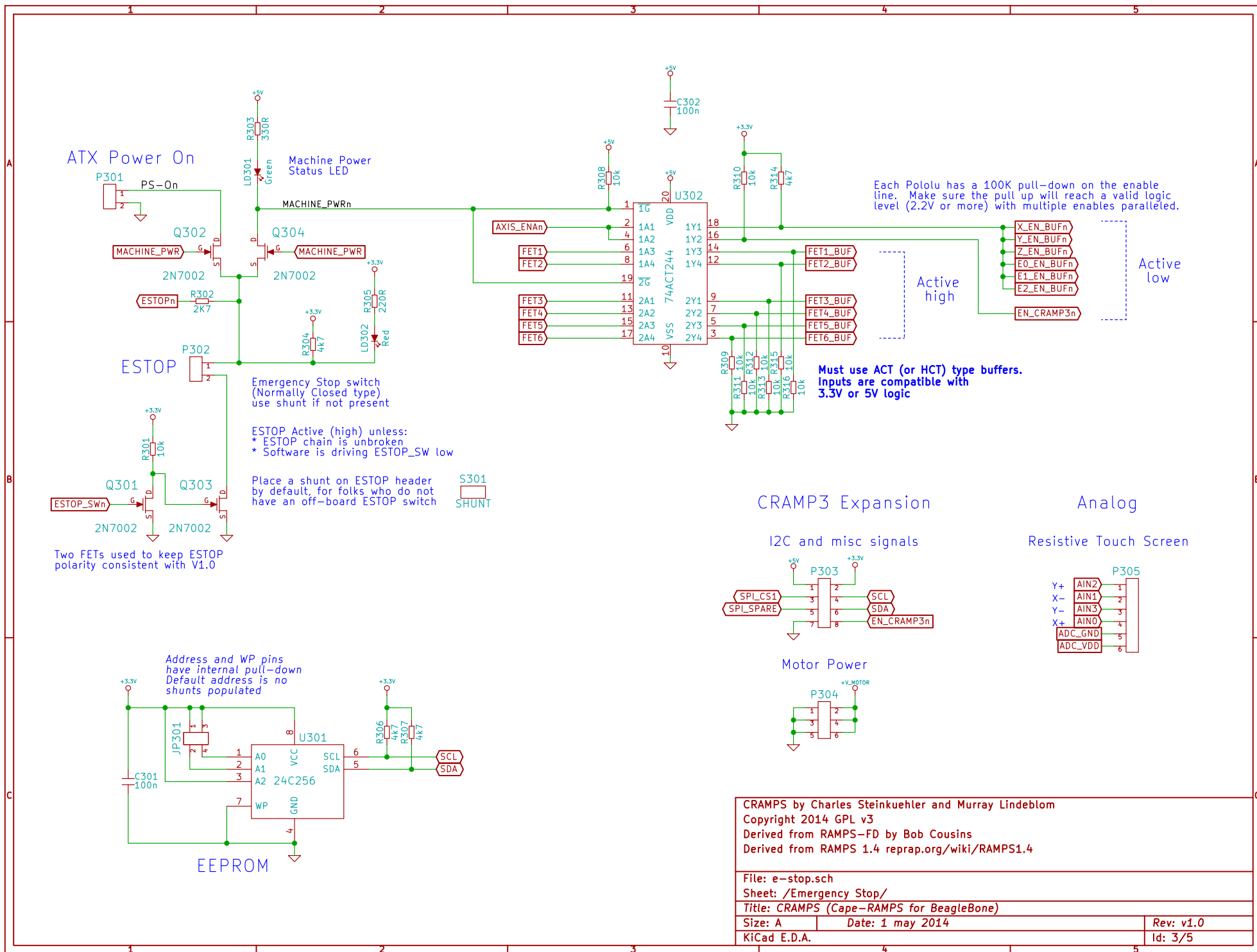
P208	P210
POLOLU_SOCKET	POLOLU_SOCKET
P209	P211
POLOLU_SOCKET	POLOLU_SOCKET

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Derived from RAMPS 1.4 [reprap.org/wiki/RAMPS1.4](http://reprap.org/wiki/RAMPS1.4)

File: steppers.sch  
Sheet: /Stepper Drivers/  
Title: CRAMPS (Cape-RAMPS for BeagleBone)

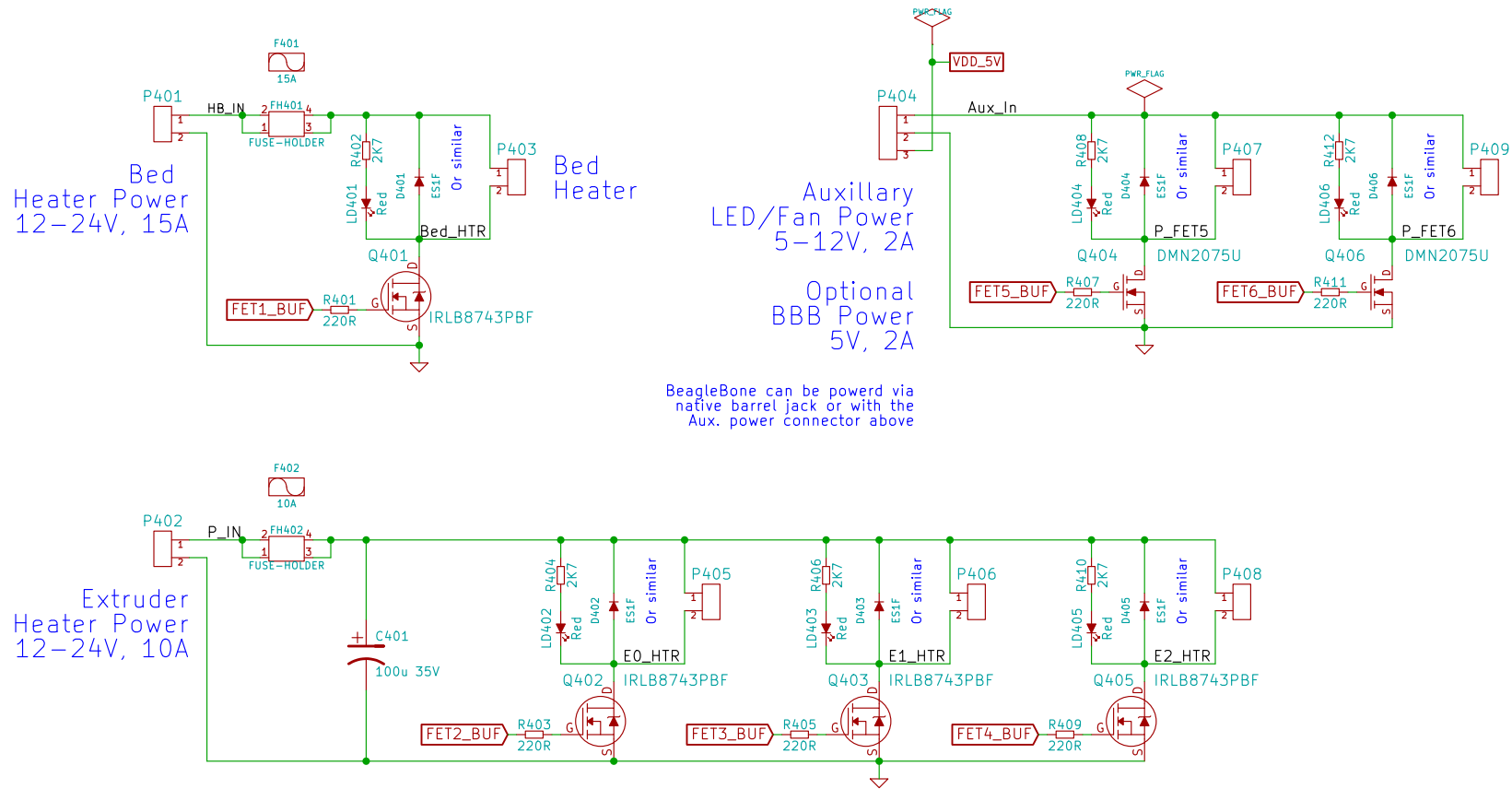
Size: A Date: 1 may 2014  
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Rev: v1.0  
Id: 2/5



# MOSFET Outputs

Non-inverting drivers



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File: con\_outputs.sch

Sheet: /Mosfet Outputs/

Title: CRAMPS (Cape-RAMPS for BeagleBone)

Size: A Date: 1 may 2014

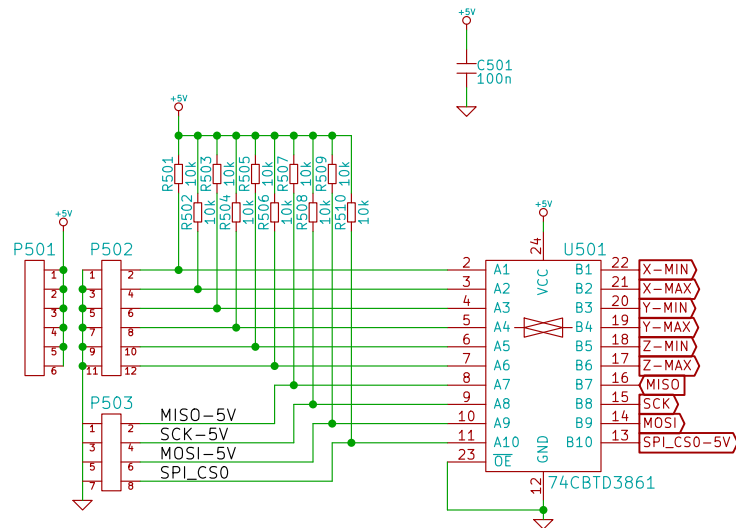
KiCad E.D.A.

Rev: v1.0

Id: 4/5

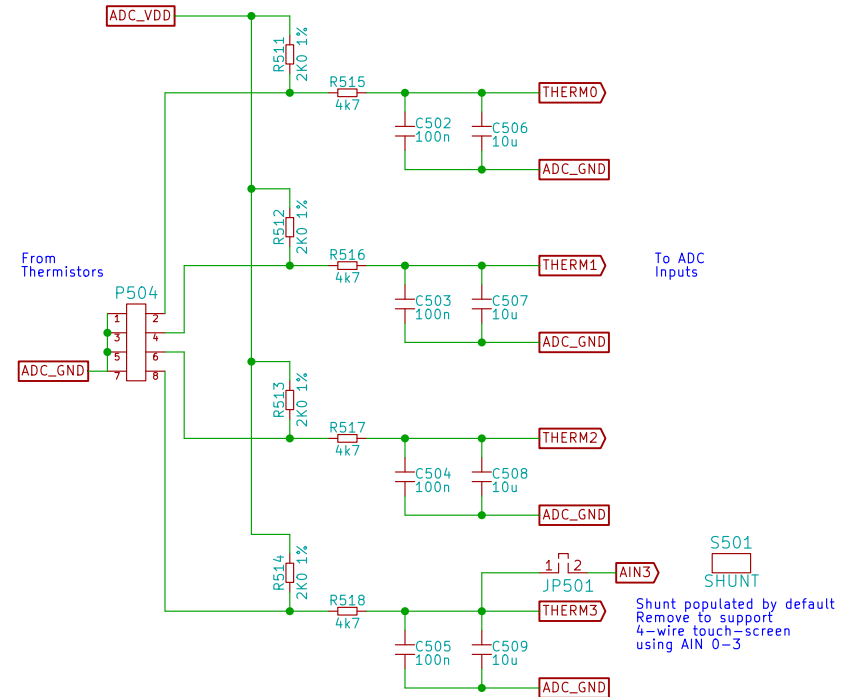
## Endstops

Endstop inputs are 5V tolerant and may also be used as 3.3V output signals if desired



P503 may be used for:  
 \* Additional digital I/O  
 \* CRAMP3 add-on board  
 \* SPI expansion

## Thermistor Inputs



Shunt populated by default  
 Remove to support  
 4-wire touch-screen  
 using AIN 0-3

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 Derived from RAMPS 1.4 [reprap.org/wiki/RAMPS1.4](http://reprap.org/wiki/RAMPS1.4)

File: con\_inputs.sch

Sheet: /Inputs/

Title: CRAMPS (Cape-RAMPS for BeagleBone)

Size: A Date: 1 may 2014

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Rev: v1.0

Id: 5/5