

Einsy Rambo 0.4a
UltiMachine
6/14/2017

0.3a Revision Summary (for detailed infomation goto: <https://github.com/ultimachine/Einsy-Rambo/tree/0.3a>)

- Added TVS and over-voltage protection to select nets
- Added and corrected testpoints
- Added "XTRA0" net between 32U2 and 2560
- Removed via tenting underneath QFNs and other flat solder lug/heatsink primitives
- Added teardrops to vias
- Standardized via sizes to 10/22 and 15/30 (mils)
- New footprint for 5V SMPS inductor (fits two inductors now)
- Added I2C pullup footprints (resistors are "DNI")
- Fan connectors now have a 3rd pin for reading the TACH signal
- Added 100R to the gate of each FET
- Adjusted the stackup to better reflect a standard 4-layer stack

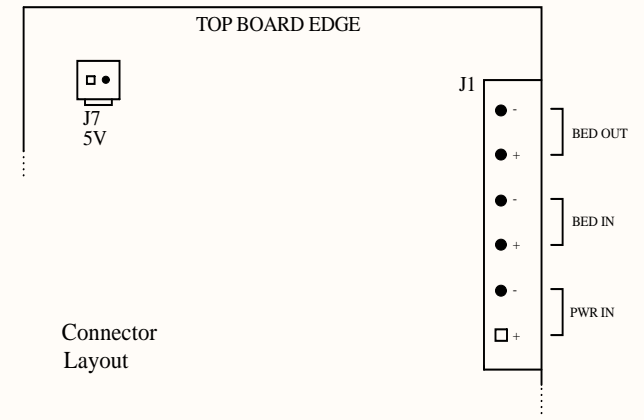
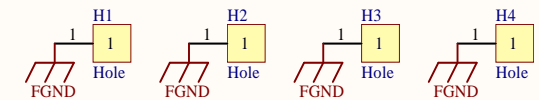
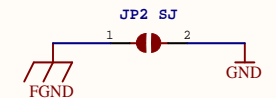
0.4a Revision Summary

- Touchup diode polarity markings in silkscreen
- New footprint for P3
- Moved thermistor TPs to connector pin
- Increased GND stitching
- Increased copper pour coverage
- Updated paste mask apertures on QFNs
- Added nAC_FAULT to pin_6 of Atmega2560
- Added J7, power failure relay input.
- Added R73
- Removed RN4
- Stole RX1 and TX1 from P1, moved to J19
- Combined 2560 ICSP (X18) with pins_9-14 of J19
- Removed J16-J18, X_MAX, Y_MAX, Z_MAX
- Changed X_MIN and Y_MIN endstops to 2-pin headers
- Changed Z_MIN endstop to Z_PROBE, 4-pin header
- Combined DIAG_0 and DIAG_1 on TMC2130 drivers
- TP40 moved 0.1" to the left
- TP32 moved 0.1" to the left

Notes:
DNI = Do Not Include = No Populate

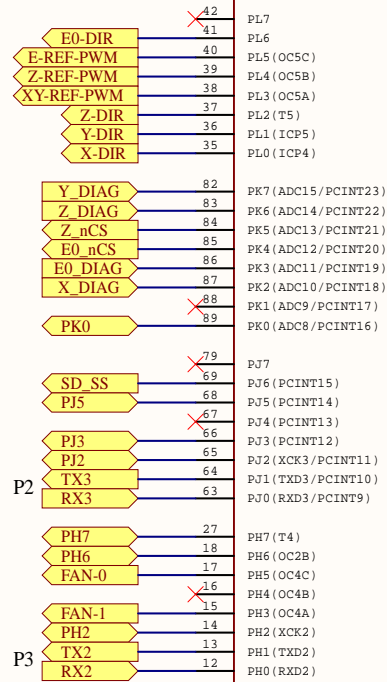
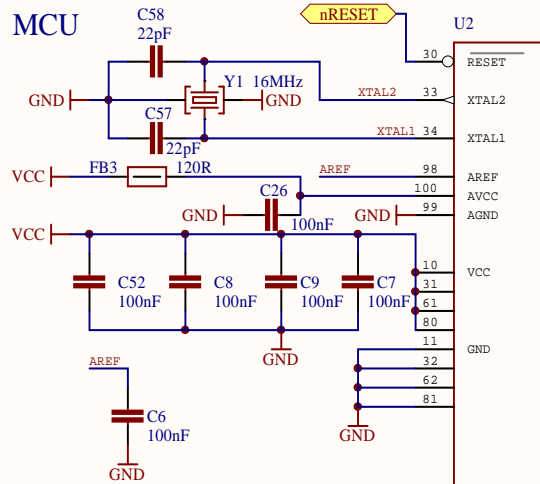
Title Einsy Rambo Title Page			
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The schematic diagram illustrates the LM25011 buck converter circuit. The input voltage is +12V2. The circuit includes a feedback network with resistors R23 and R24, a switching MOSFET M1, a diode D1, and various passive components like capacitors C30, C35, C40, C45, C49, C93 and inductor L1. The LM25011 IC is shown with its pins labeled VIN, RT, PGD, SS, SGND, PAD, BST, SW, CS, CSG, and FB. The output is connected to a load through a 120R resistor and a 10uF capacitor C93.

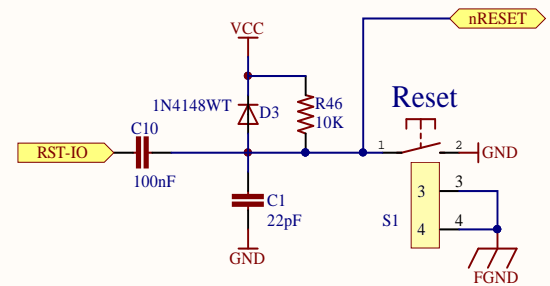
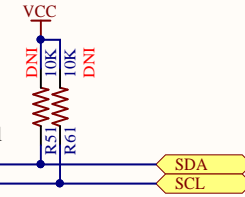
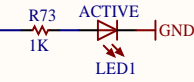
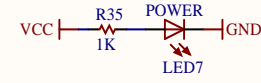
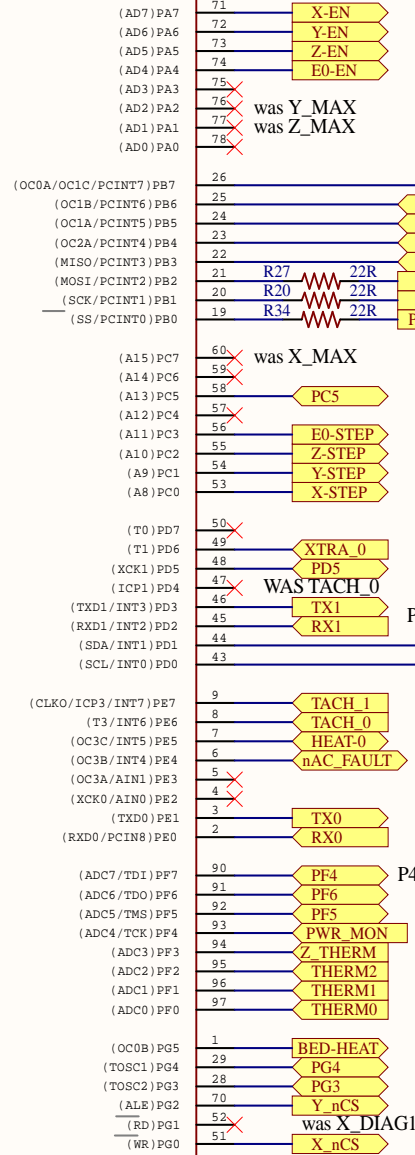
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MCU



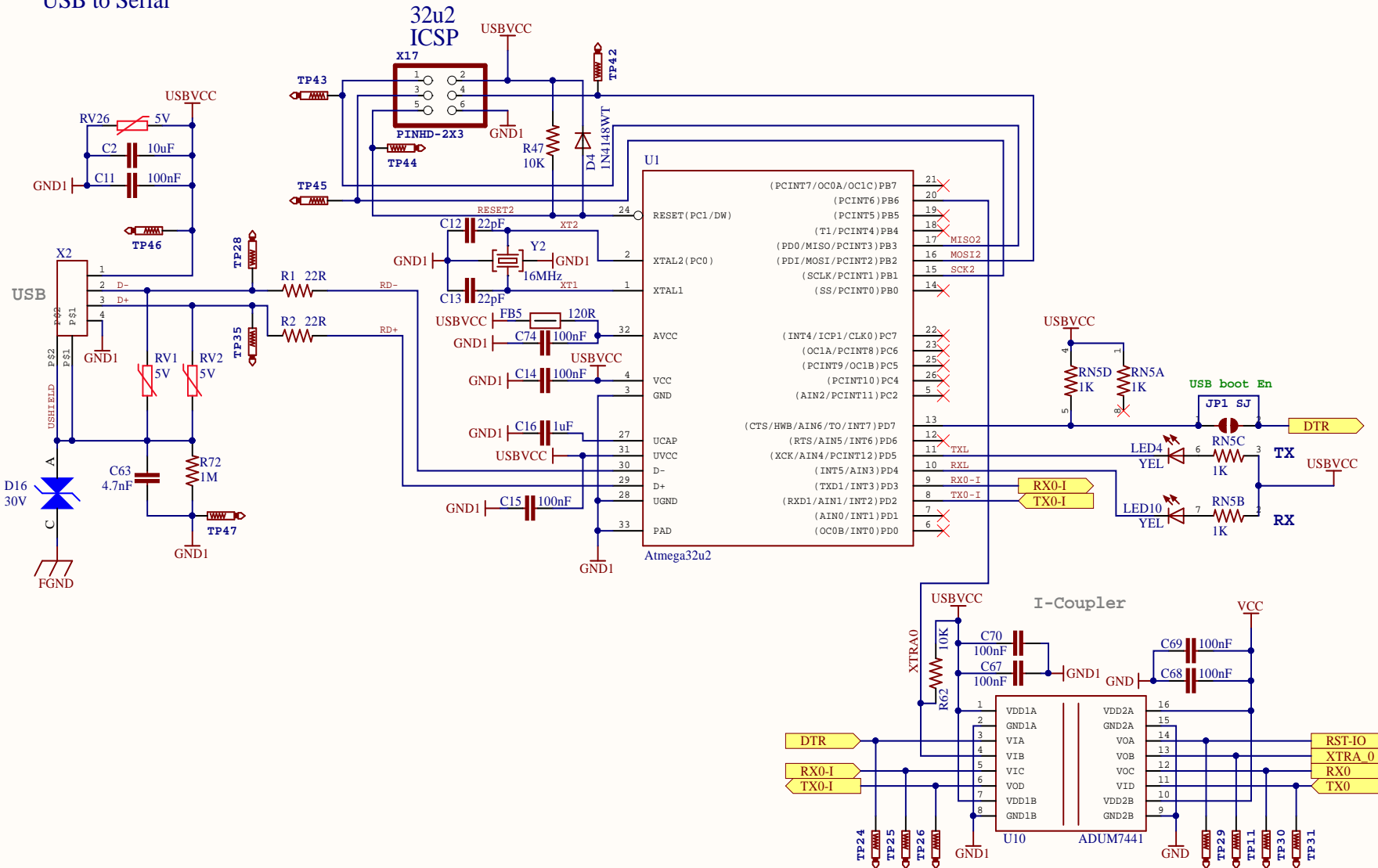
Atmega2560



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Atmega 32u2 USB

USB to Serial



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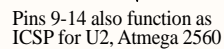
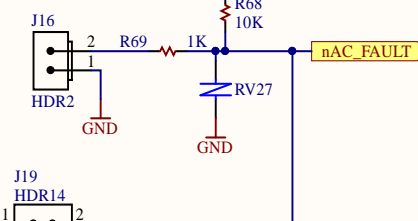
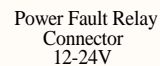
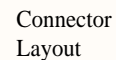
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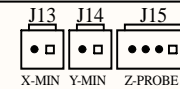
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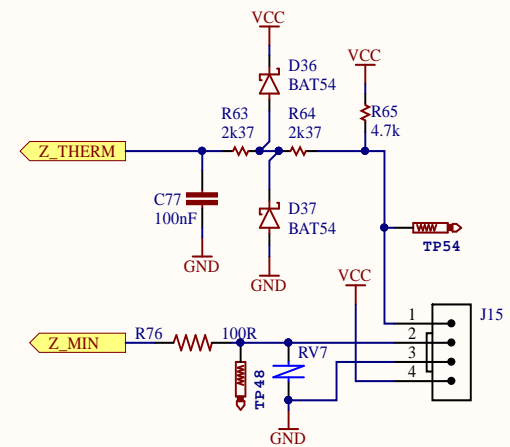
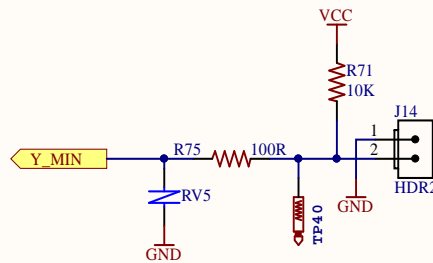
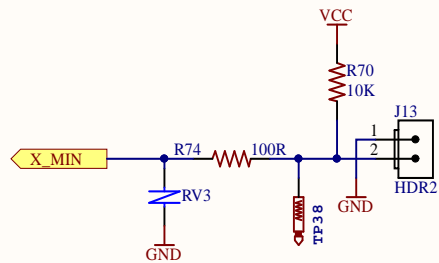
TP27  Deplicated SCLK TP

4

TOP BOARD EDGE

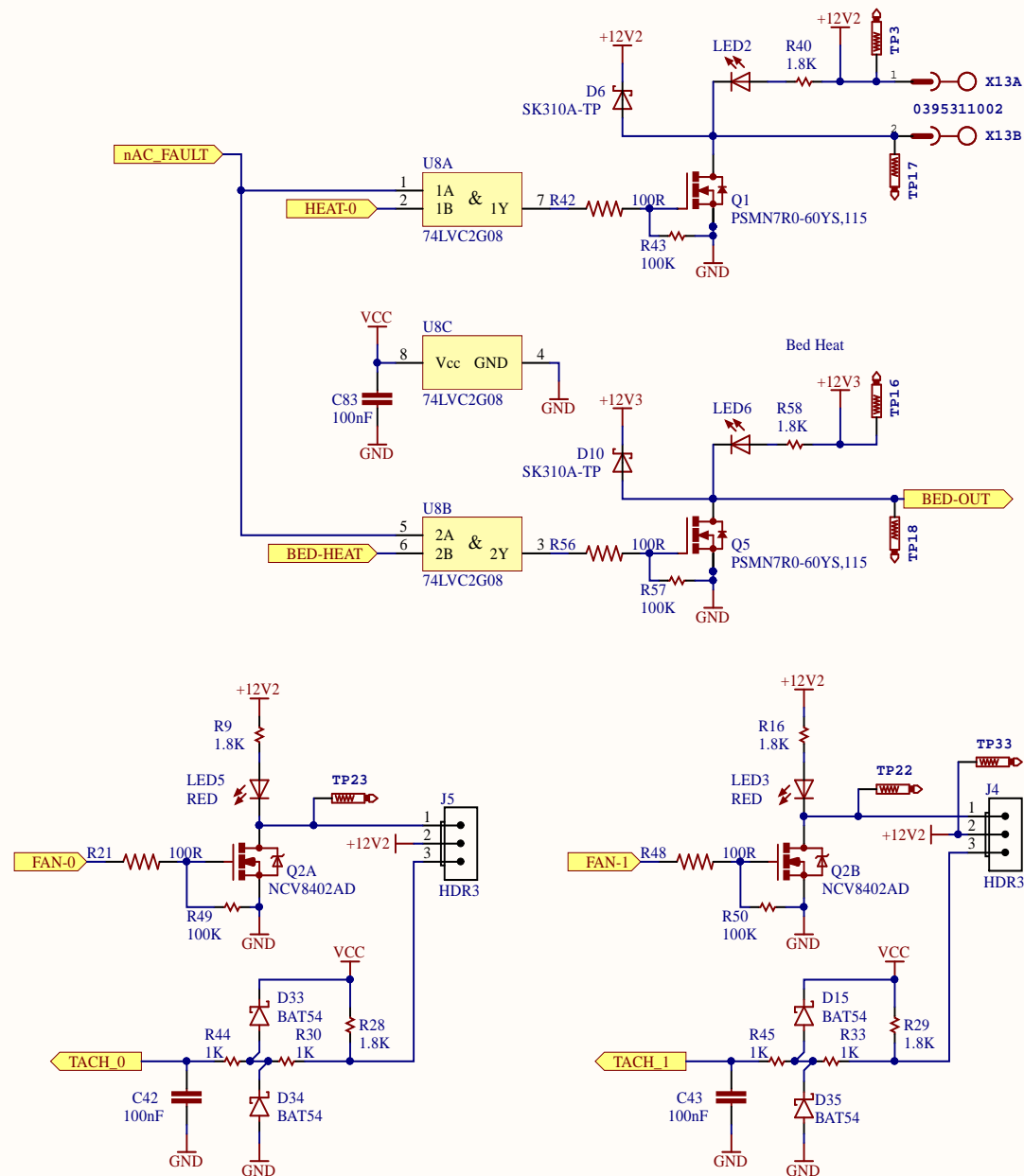
Connector
Layout

End Stops



Title Einsy Rambo Endstops			
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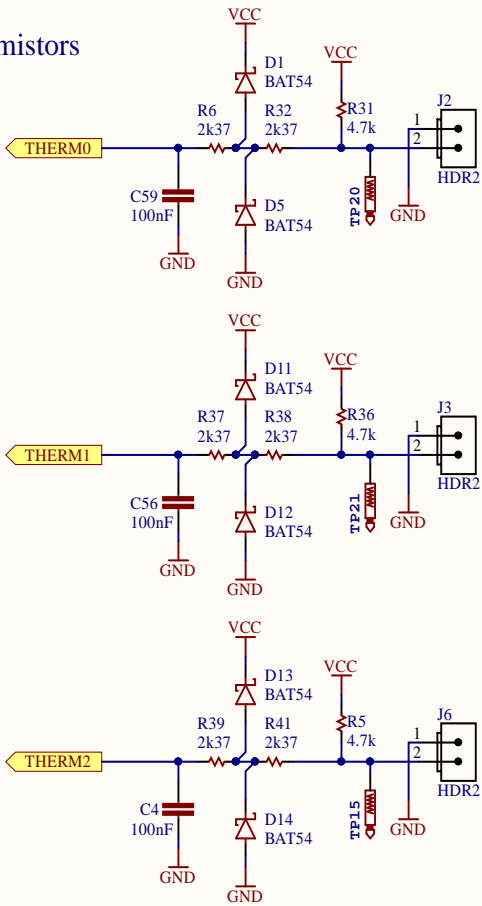
Heater Outputs



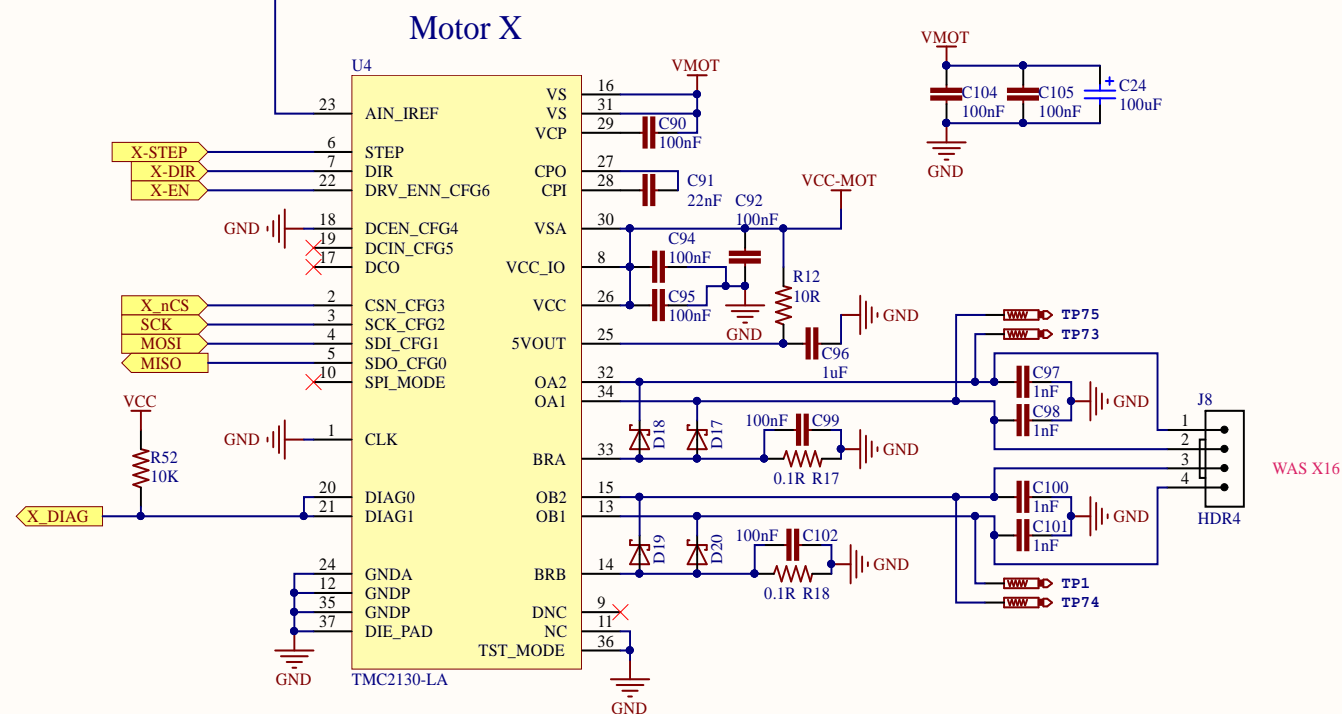
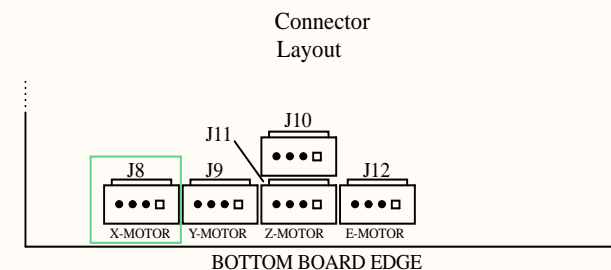
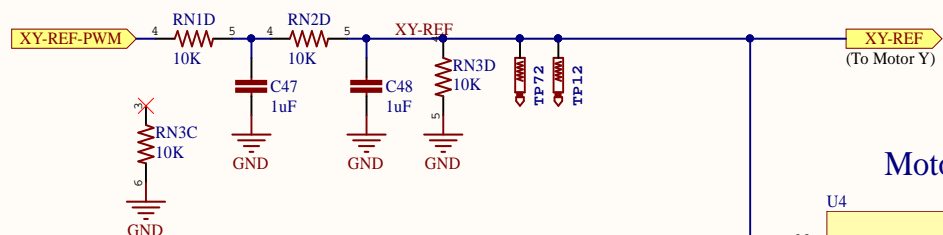
TOP BOARD EDGE

Connector
Layout

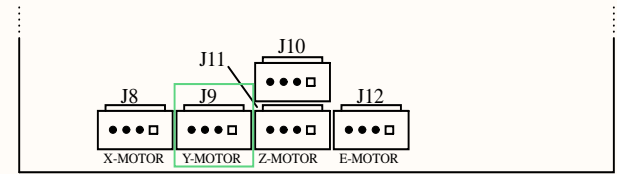
Thermistors



Title Einsy Rambo Heaters		
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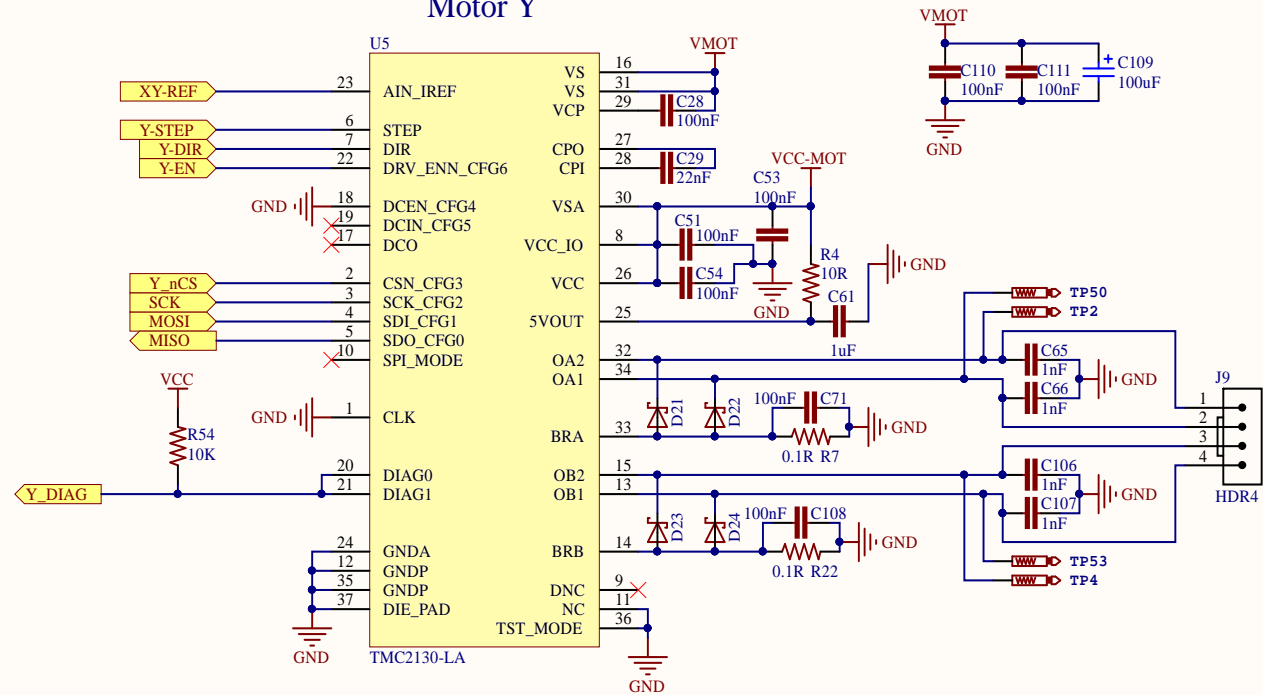


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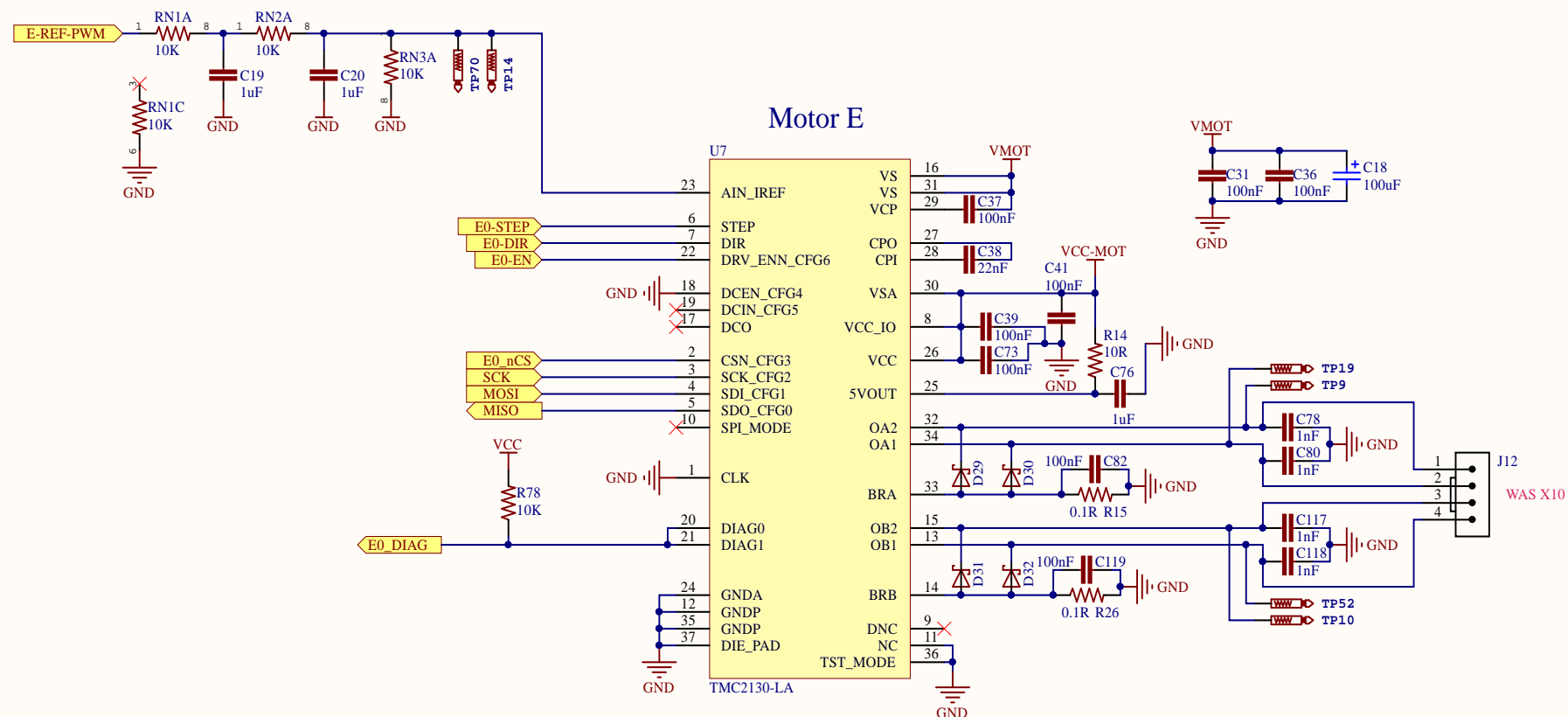
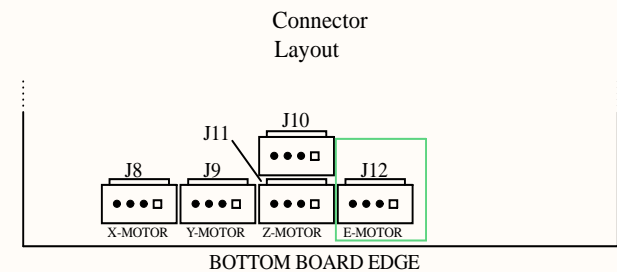
Connector
Layout

BOTTOM BOARD EDGE

Motor Y



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