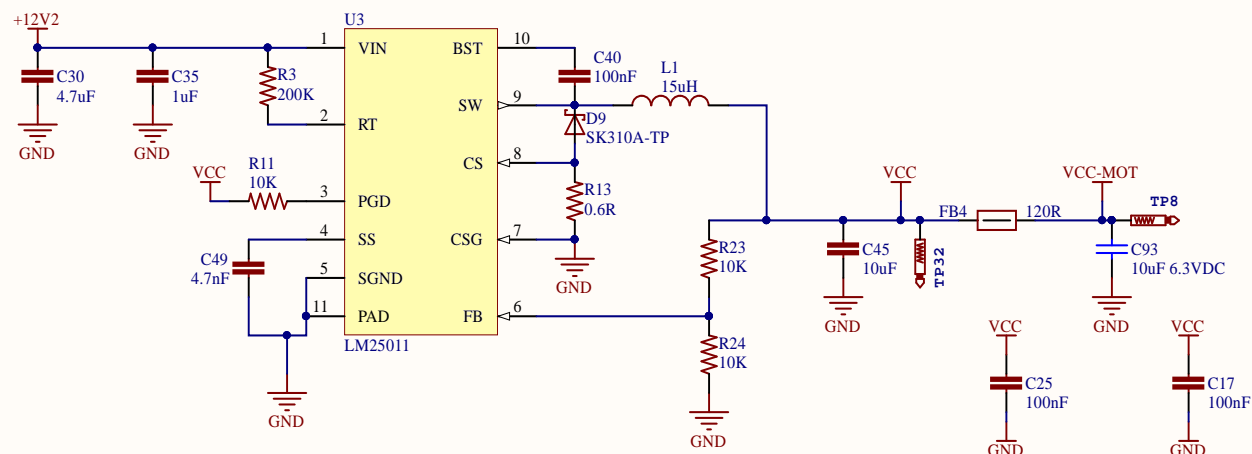
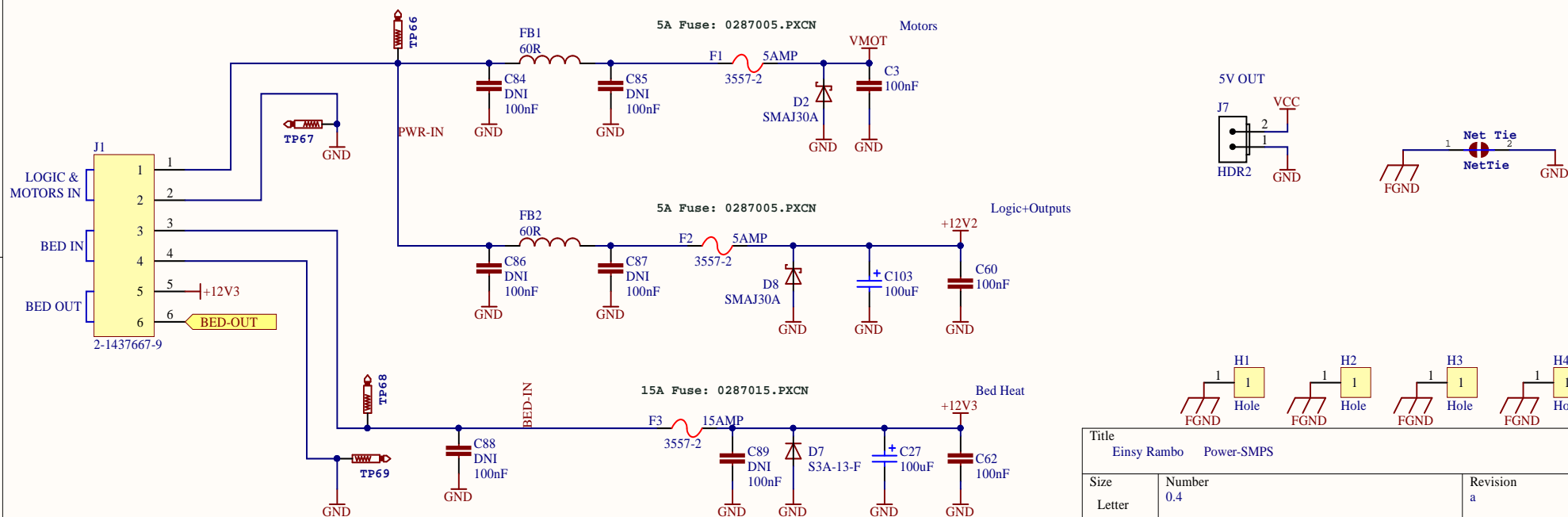


	1	2	3	4																			
A	<div>Einsy Rambo 0.3a UltiMachine 3/8/2017</div>				A																		
B					B																		
C	<div>0.3a Revision Summary (for detailed infomation goto: https://github.com/ultimachine/Einsy-Rambo/tree/0.3a)</div> <div><div>- Added TVS and over-voltage protection to select nets</div><div>- Added and corrected testpoints</div><div>- Added "XTRA0" net between 32U2 and 2560</div><div>- Removed via tenting underneath QFNs and other flat solder lug/heatsink primitives</div><div>- Added teardrops to vias</div><div>- Standardized via sizes to 10/22 and 15/30 (mils)</div><div>- New footprint for 5V SMPS inductor (fits two inductors now)</div><div>- Added I2C pullup footprints (resistors are "DNI")</div><div>- Fan connectors now have a 3rd pin for reading the TACH signal</div><div>- Added 100R to the gate of each FET</div><div>- Adjusted the stackup to better reflect a standard 4-layer stack</div></div>				C																		
D	<div>Notes:</div> <div>DNI = Do Not Include = No Populate</div>			<table><tr><td colspan="3">Title</td></tr><tr><td colspan="3">Einsy Rambo Title Page</td></tr><tr><td>Size</td><td>Number</td><td>Revision</td></tr><tr><td>A</td><td>0.4</td><td>a</td></tr><tr><td>Date:</td><td>6/6/2017</td><td>Sheet 1 of 11</td></tr><tr><td>File:</td><td>C:\Users\...\Title.SchDoc</td><td>Drawn By: AWS</td></tr></table>	Title			Einsy Rambo Title Page			Size	Number	Revision	A	0.4	a	Date:	6/6/2017	Sheet 1 of 11	File:	C:\Users\...\Title.SchDoc	Drawn By: AWS	D
Title																							
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Size	Number	Revision																					
A	0.4	a																					
Date:	6/6/2017	Sheet 1 of 11																					
File:	C:\Users\...\Title.SchDoc	Drawn By: AWS																					
	1	2	3	4																			

Voltage Regulator

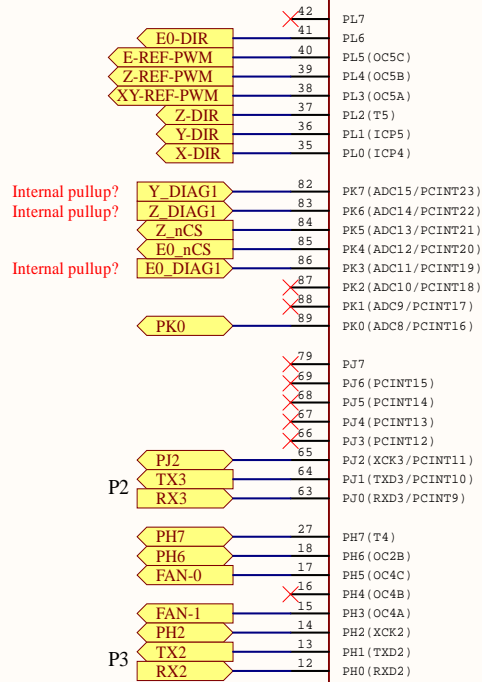
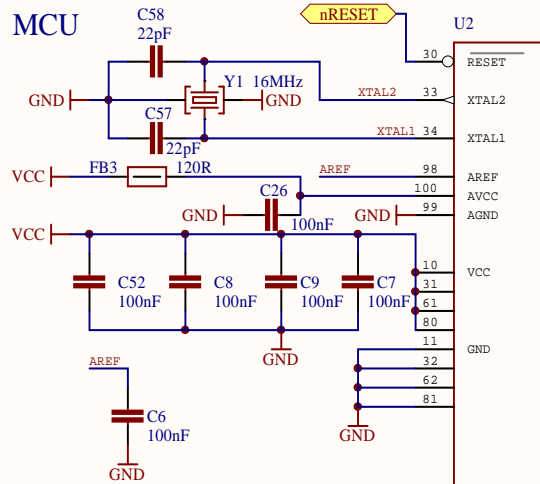


Power Input

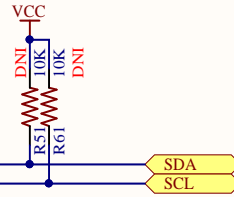
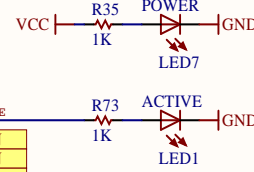
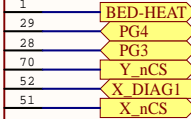
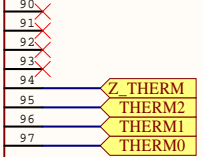
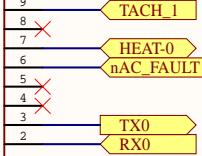
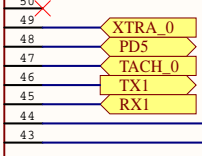
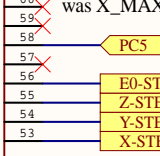
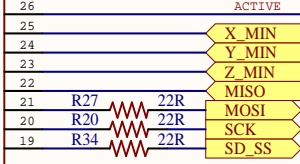
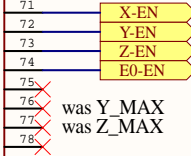
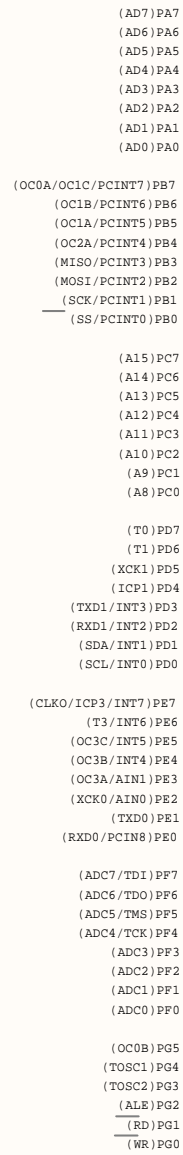


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Size	Number	Revision	
Letter	0.4	a	
Date:	6/6/2017	Sheet 2 of	11
File:	C:\Users\...Power-SMPS.SchDoc	Drawn By:	AWS

MCU

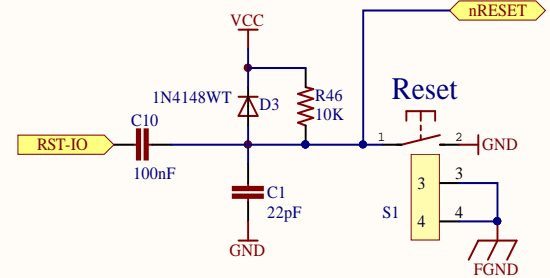


Atmega2560



PROC_nCS

Not assigned yet

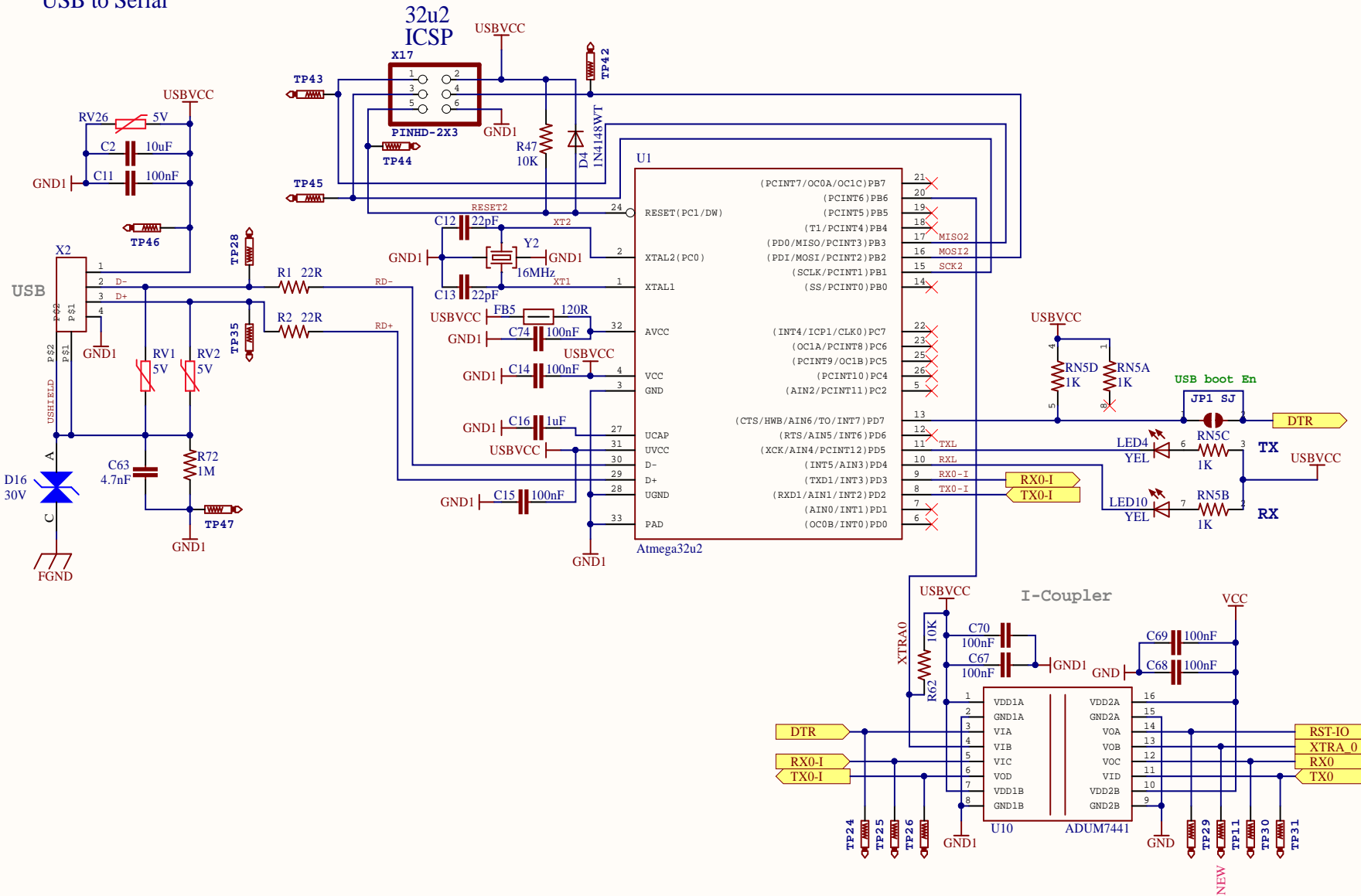


Title Einsy Rambo MCU		
Size Letter	Number 0.4	Revision a
Date:	6/6/2017	Sheet 3 of 11
File:	C:\Users\...\MCU.SchDoc	Drawn By: AWS

- Added nAC_FAULT to pin_6 of Atmega2560
- Added R73
- Removed RN4

Atmega 32u2 USB

USB to Serial



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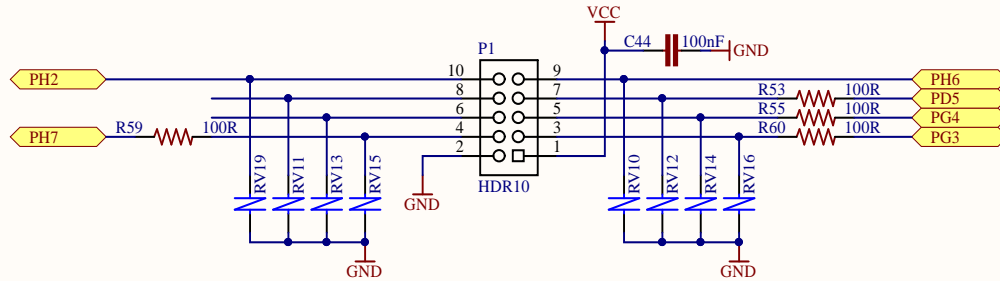
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Logo  Fiducials 

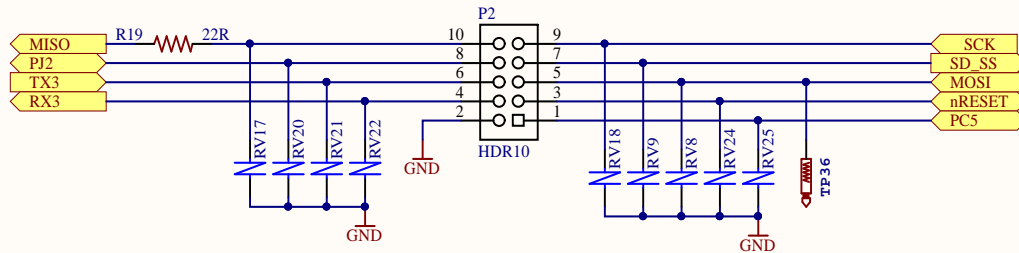
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Title Einsy Rambo USB-Serial		
Size Letter	Number 0.4	Revision a
Date:	6/6/2017	Sheet 4of 11
File:	C:\Users\...\USB-Serial.SchDoc	Drawn By: AWS

Expansion Connectors

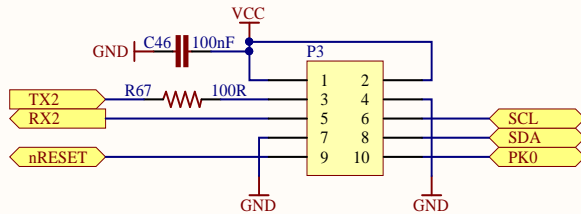


Add connector diagram

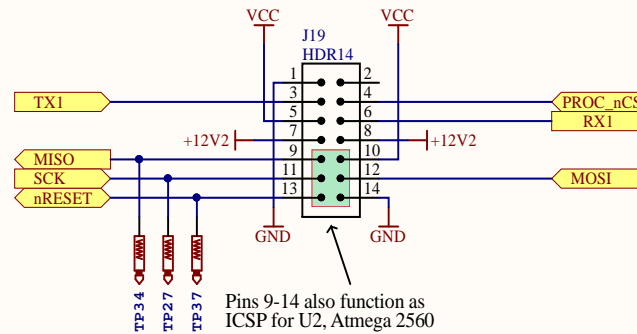
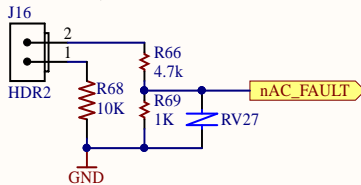


Hardware Chip Select

Swap these??



Power Fault Relay
Connector
12-24V

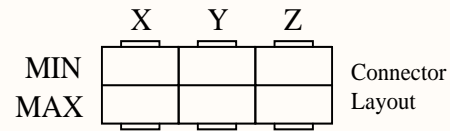


Software (GPIO) Chip Select

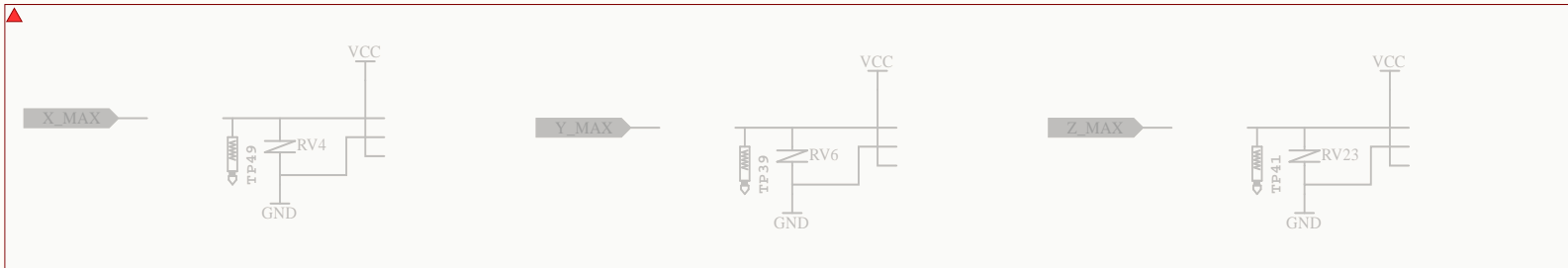
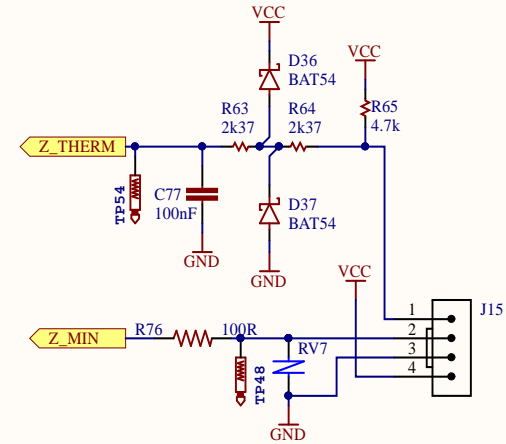
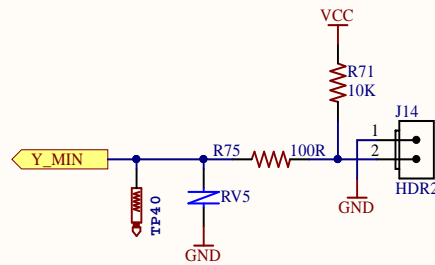
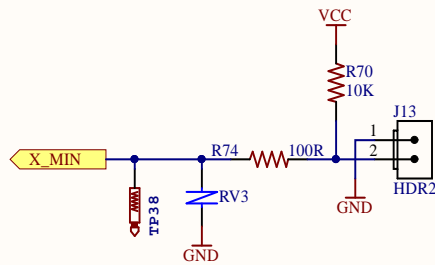
Pins 9-14 also function as
ICSP for U2, Atmega 2560

Title Einsy Rambo Connectors		
Size A	Number 0.4	Revision a
Date:	6/6/2017	Sheet 5 of 11
File:	C:\Users\...\Connectors.SchDoc	Drawn By: AWS

- Added J7, power failure relay input.
- Stole RX1 and TX1 from P1, moved to J19
- Combined 2560 ICSP (X18) with pins_9-14 of J19



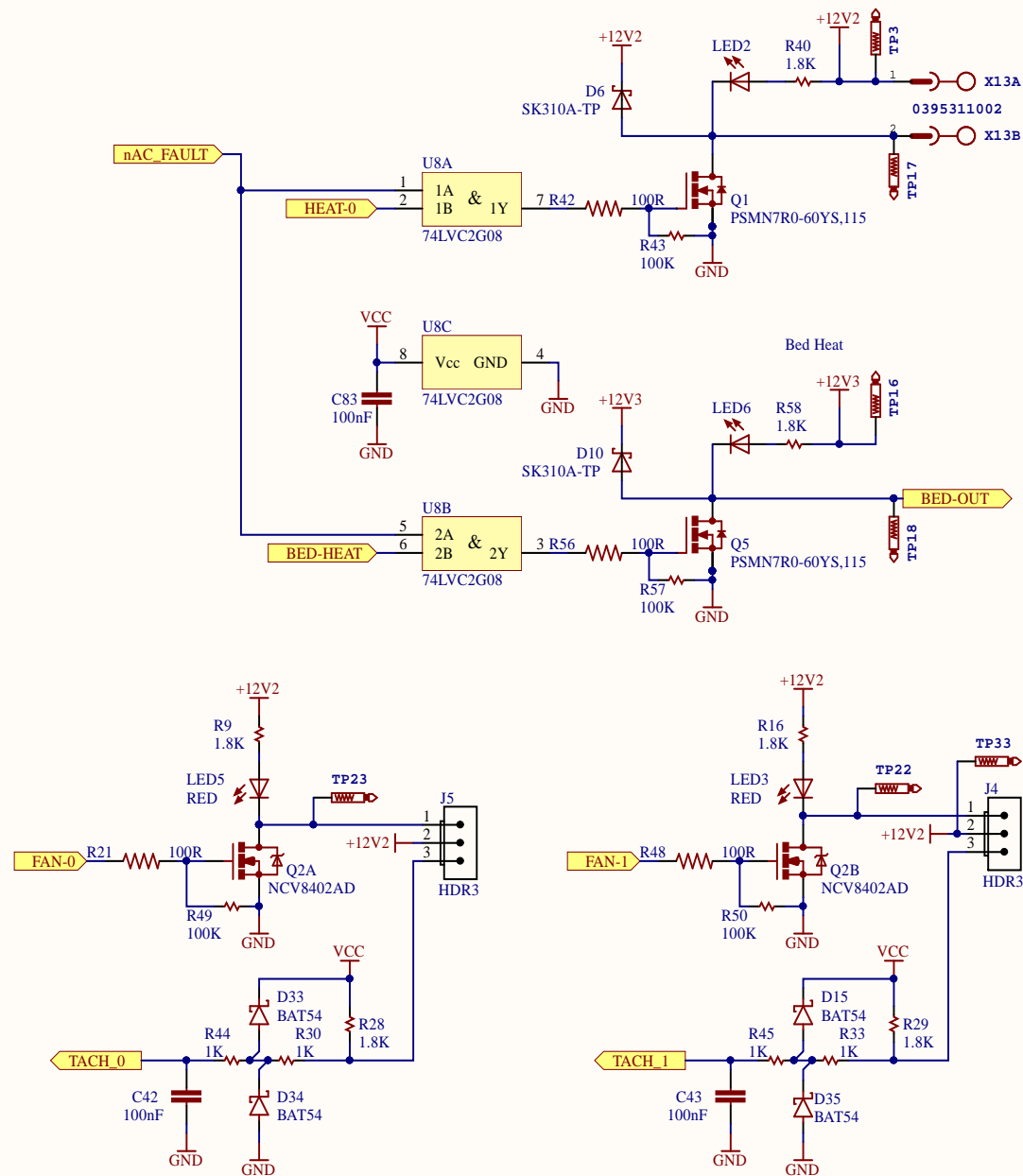
Redo connector diagram



Title Einsy Rambo Endstops		
Size A	Number 0.4	Revision a
Date:	6/6/2017	Sheet 6 of 11
File:	C:\Users\...\Endstops.SchDoc	Drawn By: AWS

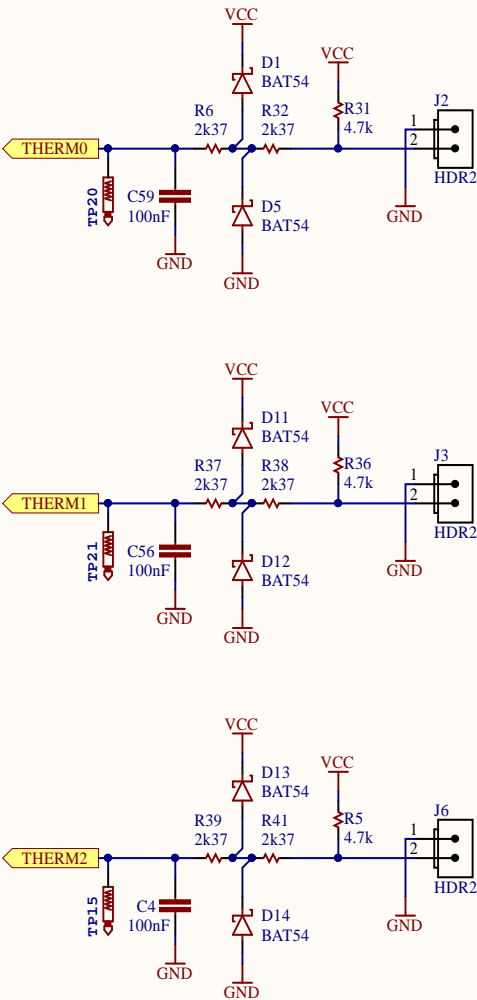
- Removed J16-J18, X_MAX, Y_MAX, Z_MAX (respectively)

Heater Outputs



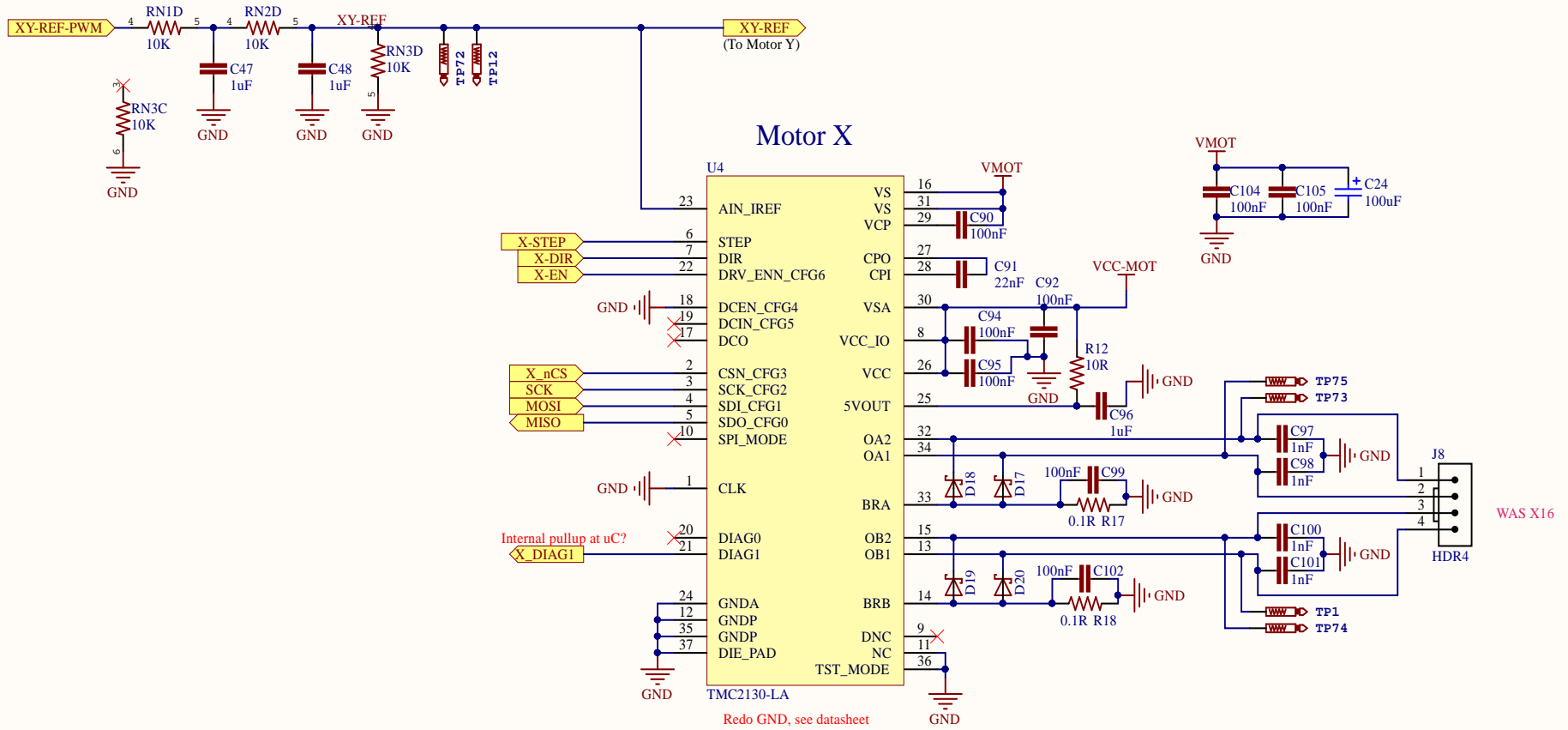
Add connector diagram

Thermistors



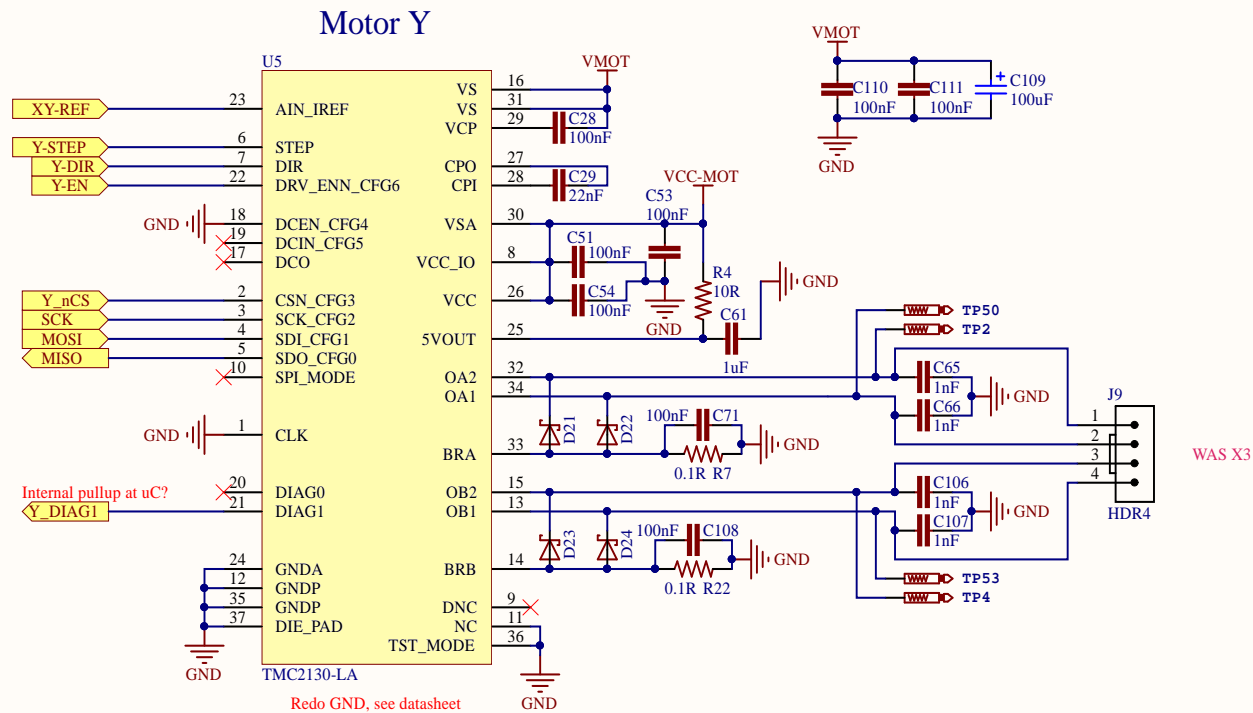
Title Einsy Rambo Heaters		
Size Letter	Number 0.4	Revision a
Date:	6/6/2017	Sheet 7 of 11
File:	C:\Users\...\Heaters.SchDoc	Drawn By: AWS

Add connector diagram



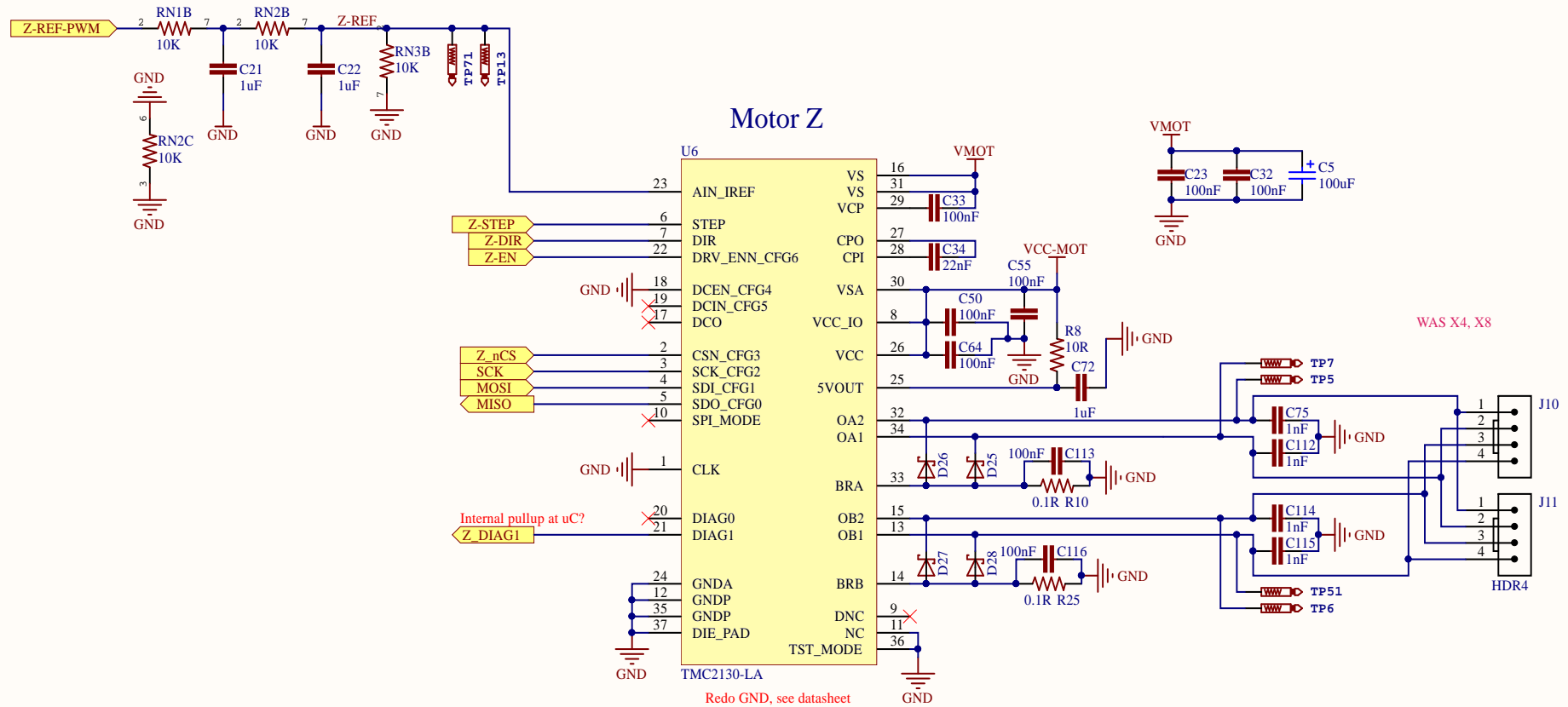
Title Einsy Rambo Motor-X		
Size Letter	Number 0.4	Revision a
Date:	6/6/2017	Sheet 8 of 11
File:	C:\Users\...\Motor-X.SchDoc	Drawn By: AWS

Add connector diagram



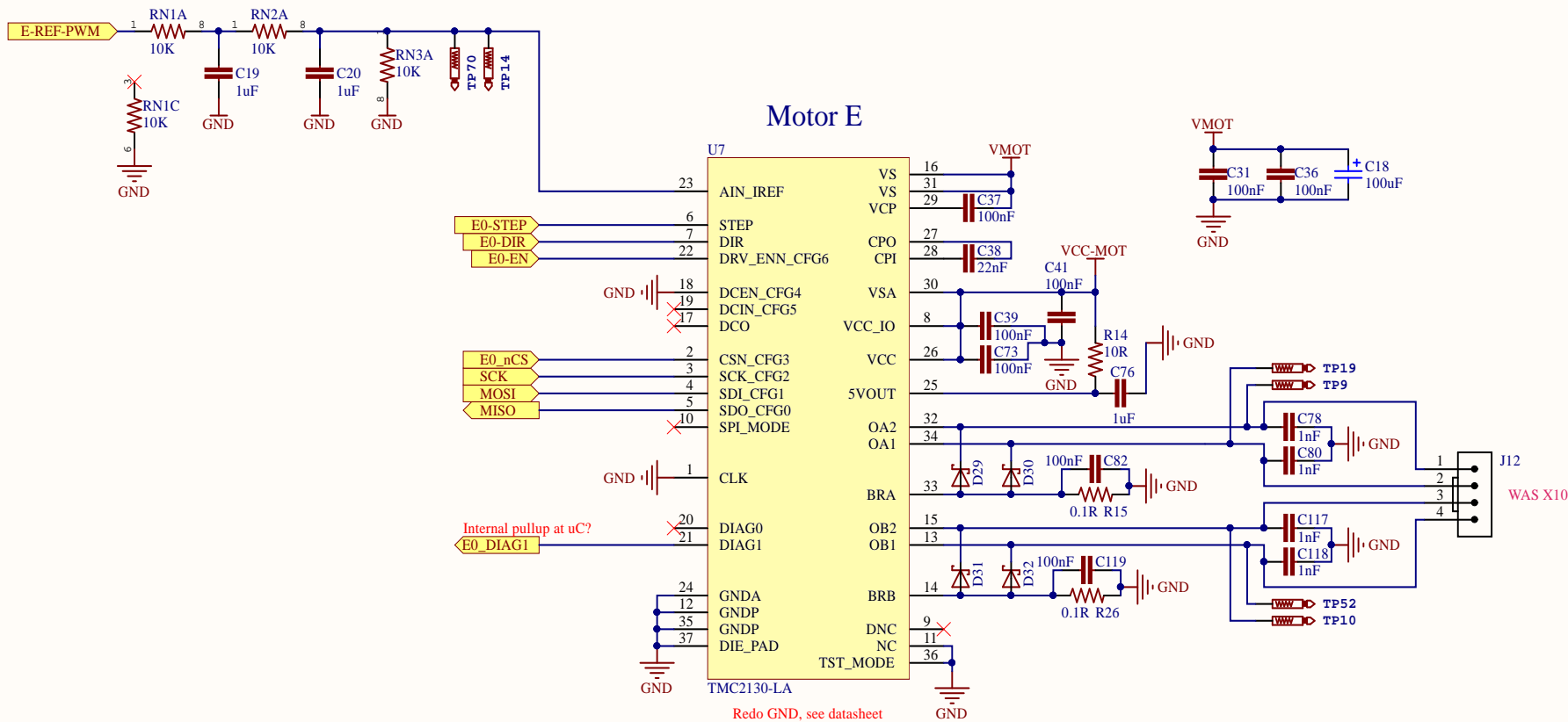
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Einsy Rambo Motor-Y		
Size	Number	Revision
Letter	0.4	a
Date:	6/6/2017	Sheet 9 of 11
File:	C:\Users\...\Motor-Y.SchDoc	Drawn By: AWS

Add connector diagram



Title Einsy Rambo Motor-Z			
Size Letter	Number 0.4	Revision a	
Date:	6/6/2017	Sheet 10 of	11
File:	C:\Users\...\Motor-Z.SchDoc	Drawn By:	AWS

Add connector diagram



Title			
Einsy Rambo Motor-E			
Size	Number	Revision	
Letter	0.4	a	
Date:	6/6/2017	Sheet 11 of	11
File:	C:\Users\...\Motor-E.SchDoc	Drawn By:	AWS