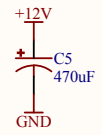
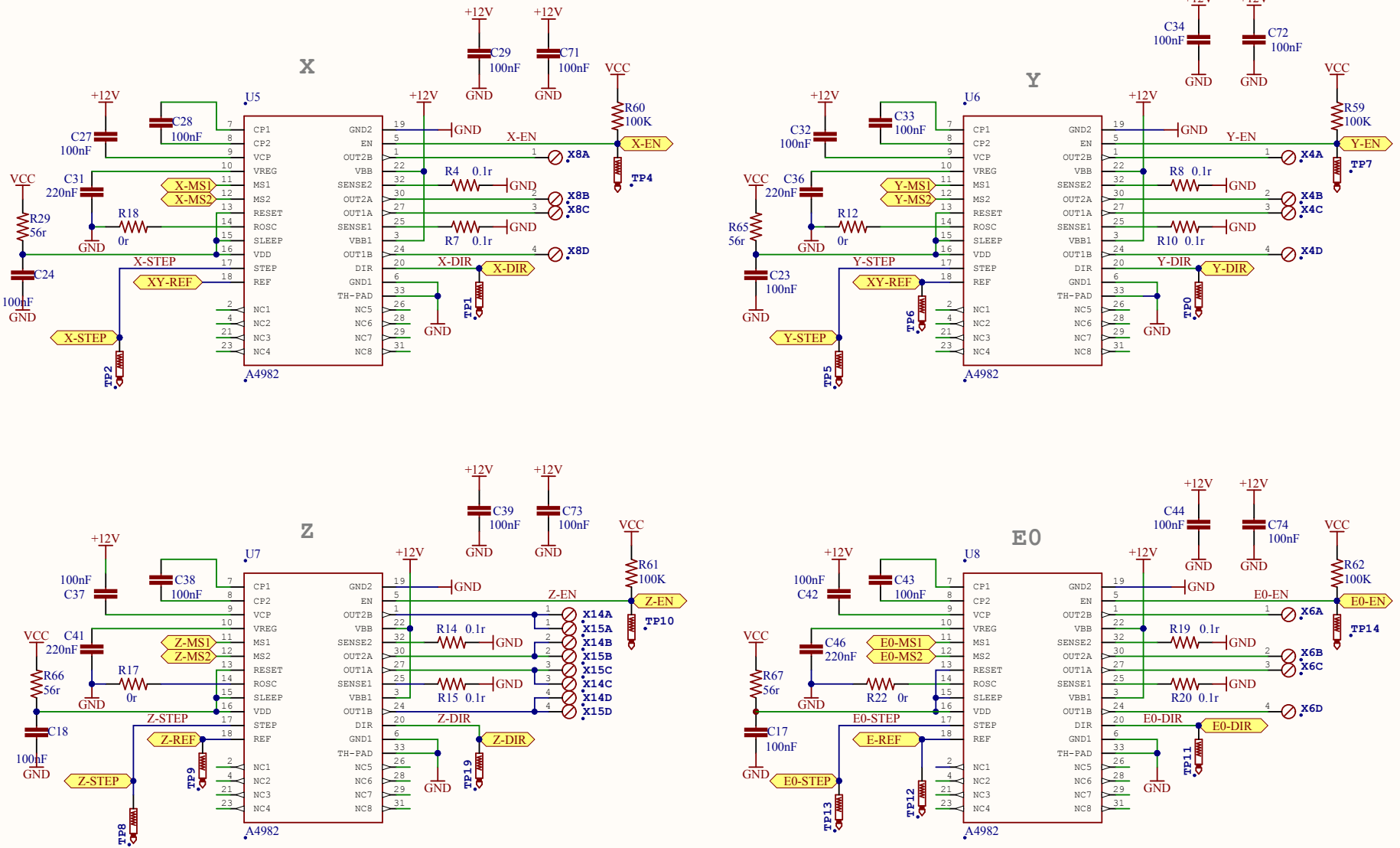


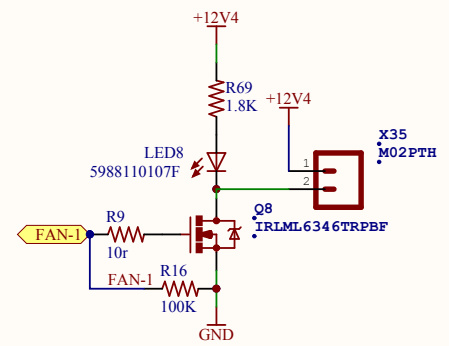
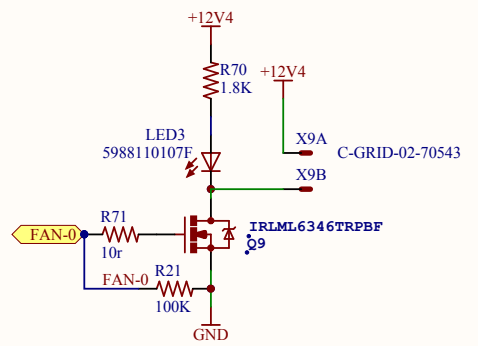
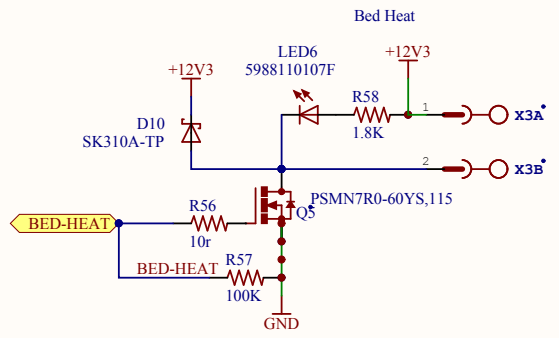
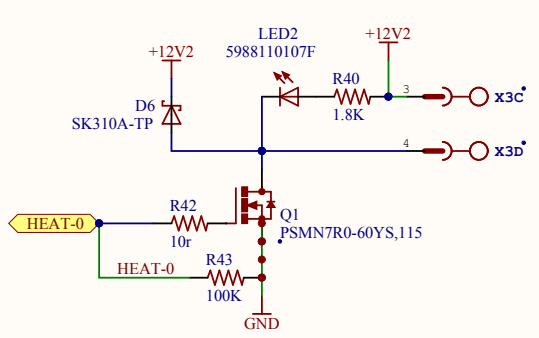
Title			Mini-Rambo-ATX		
Size	Number	Revision			
Letter	0.3	a			
Date:	7/26/2014	Sheet 2 of 5			
File:	C:\Users\...MCU.SchDoc	Drawn By: UltiMachine			

Stepper Motor Drivers

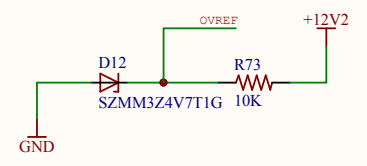
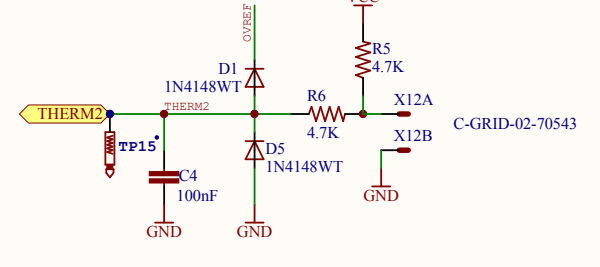
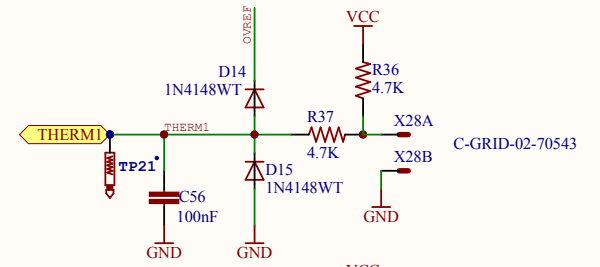
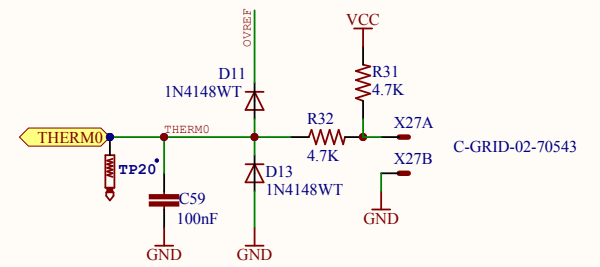


Title		
Mini-Rambo-ATX		
Size	Number	Revision
Letter	0.3	a
Date:	7/26/2014	Sheet 3 of 5
File:	C:\Users\...Motors.SchDoc	Drawn By: UltiMachine

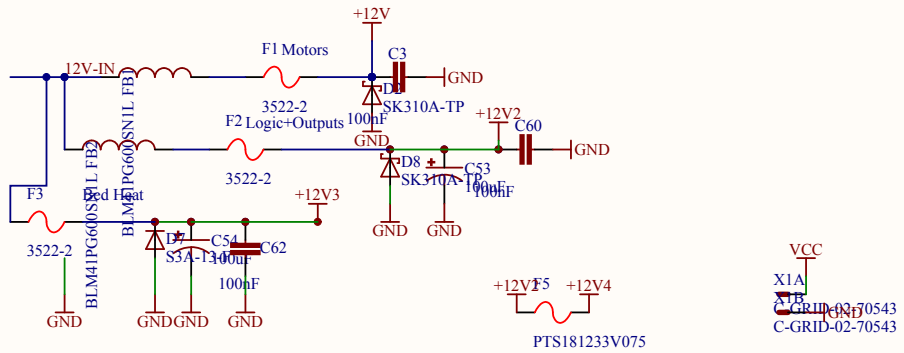
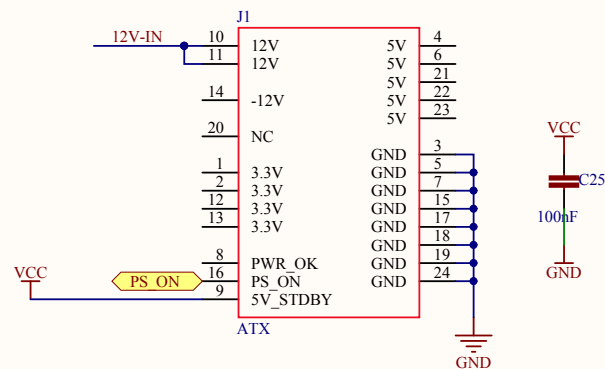
Power Outputs



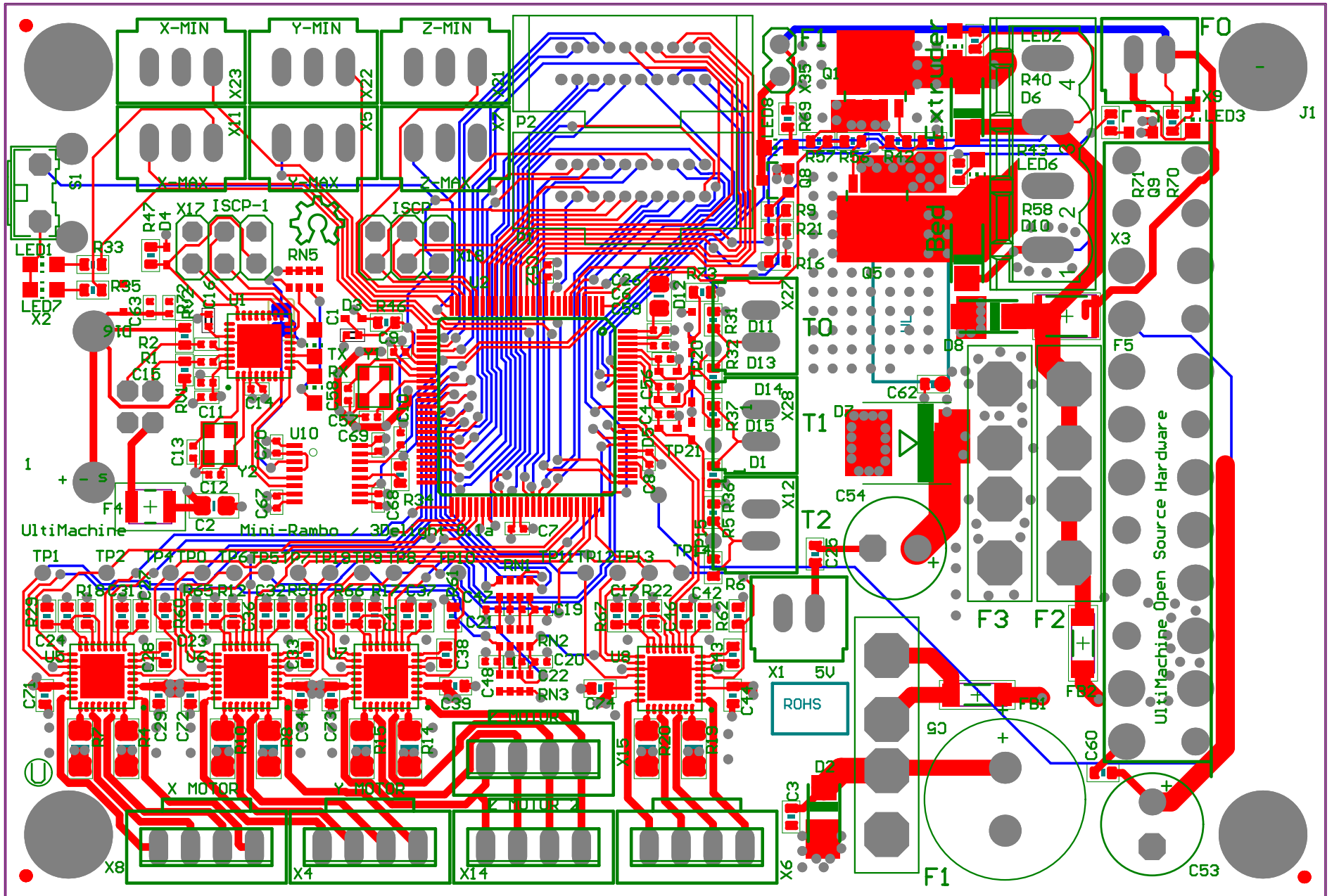
Thermistors



Title		
Mini-Rambo-ATX		
Size	Number	Revision
Letter	0.3	a
Date:	7/26/2014	Sheet 4 of 5
File:	C:\Users\...\Heaters.SchDoc	Drawn By: UltiMachine



Title Mini-Rambo-ATX		
Size Letter	Number 0.3	Revision a
Date:	7/26/2014	Sheet 5 of 5
File:	C:\Users\...Power-ATX.SchDoc	Drawn By: UltiMachine



Designator	DesignItemid	Description	Comment	Quantity	Manufacturer 1	Manufacturer Part Number 1
C1, C12, C13, C57, C58	04025A220AT2A	CAP CER 0402 22pF 50V 5% COG	22pF	5		
C2	C0805C106K8PACTU	CAP CER 0805 10uF 10V 10% XSR	10uF	1		
C3, C17, C18, C23, C24, C25, C27, C28, C29, C32, C33, C34, C37, C38, C39, C42, C43, C44, C60, C62, C71, C72, C73, C74	C0603C104K5RACTU	CAP CER 0603 100nF 50V 10% X7R	100nF	24		
C4, C6, C7, C8, C9, C10, C11, C14, C15, C26, C52, C56, C59, C67, C68, C69, C70	GRM155R71C104K A88D	CAP CER 0402 100nF 16V 10% X7R	100nF	17		
C5	UPW1H471MHDT10	CAP ALU 470uF 50V 20%	470uF	1		
C16, C19, C20, C21, C22, C47, C48	GRM155R60J105KE19D	CAP CER 0402 1uF 6.3V 10% XSR	1uF	7		
C31, C36, C41, C46	CC0603KRX7R7BB224	CAP CER 0603 220nF 10V 10% X7R	220nF	4		
C53, C54	UVZ1H101MPD1TD	CAP ALU 100uF 50V 20% 105C	100uF	2		
C63	CC0402KRX7R8BB472	CAP CER 0402 4.7nF 25V 10% X7R	4.7nF	1		
D1, D3, D4, D5, D11, D13, D14, D15	1N4148WT	DIODE SOD523	1N4148WT	8		
D2, D8	SMAJ30A	DIODE TVS 30V SMA	SK310A-TP	2		
D6, D10	SK310A	DIODE Schottky 3A SMA	SK310A-TP	2		
D7	S3A-13-F	DIODE DO-214AB	S3A-13-F	1		
D12	ZENER-DIODE	Z-Diode	SZMM3Z4V7T1G	1		
D16	RSB39VTE-17	DIODE TVS	RSB39VTE-17	1		
F1, F2, F3	3522-2	FUSE PTH ATO	3522-2	3		
F4	MF-USMF075	FUSE 1210 PTC 750mA	MF-USMF075	1		
F5	PTS181233V075	FUSE 1812 PTC 750mA 6V	PTS181233V075	1		
FB1, FB2	BLM41PG600SN1L	FERRITE BEAD 1806 60ohm	BLM41PG600SN1L	2		
FID1, FID2, FID3	FIDUCIAL	Fiducial	FIDUCIAL	3		
J1	ATX24		ATX	1		
L2	CB2012T100M	IND 0805 10uH 240mA 20%	CB2012T100M	1		
LED1, LED4, LED10	5988140107F	LED 0805 Yellow	5988140107F	3		
LED2, LED3, LED6, LED8	5988110107F	LED 0805 Red	5988110107F	4		
LED7	5988170107F	LED 0805 Yellow	5988170107F	1		
P1, P2	5-104068-1	HDR 20pos Vert Dual Row	5-104068-1	2		
Q1, Q5	PSMN7R0-60VS,115	Mosfet N-channel 60V 356A 117W 9.3mOhms	PSMN7R0-60VS,115	2		
Q8, Q9	IRLML6346TRPBF	Mosfet N-Channel 30V 3.4A 63mOhm	IRLML6346TRPBF	2		
R1, R2	RC0402FR-0722RL	RES 0402 22r 62.5mW 1%	22r	2		
R4, R7, R8, R10, R14, R15, R19, R20	CRM1206-FX-R100ELF	RES 1206 0.1r 0.5w 1%	0.1r	8		
R5, R6, R31, R32, R36, R37	ERJ3EKF4701V	RES 0603 4.7K 100mW 1%	4.7K	6		
R9, R42, R56, R71	CRCW060310R0FK EA	RES 0603 10r 100mW 1%	10r	4		
R12, R17, R18, R22	CR0603J000ELF	RES 0603 0r 100mW 1%	0r	4		
R16, R21, R43, R57, R59, R60, R61, R62	RC0603FR-07100KL	RES 0603 10r 100mW 1%	100K	8		
R29, R65, R66, R67	CRCW060356R0JN EA	RES 0603 56r 100mW 5%	56r	4		
R33, R34, R35	ERJ-3EKF1001V	RES 0603 1K 100mW 1%	1K	3		
R40, R58, R69, R70	RC0603JR-071K8L	RES 0603 1.8K 100mW 5%	1.8K	4		
R46, R47, R73	ERJ-3EKF1002V	RES 0603 10K 100mW 1%	10K	3		
R72	ERJ2GEJ105X	RES 0402 1M 100mW 5%	1M	1		
RN1, RN2, RN3	CAY16-103J4LF	RES ARRAY 4 RES 10K 1206 62.5mW 5%	10K	3		
RN5	CAY16-102J4LF	RES ARRAY 4 RES 1K 1206 62.5mW 5%	1K	1		
RV1, RV2	CG0603MLC-05E	VAR 0603 5V	CG0603MLC-05E	2		
S1	1571610-2	SWTCH Momentary Washable	1571610-2	1	TE Connectivity	1571610-2
U1	ATMEGA32U2-MU2	Atmega32u2	Atmega32u2	1	Atmel	ATMEGA32U2-MUR
U2	ATMEGA2560AU	Atmega2560	Atmega2560	1	Atmel	ATMEGA2560-16AUR
U5, U6, U7, U8	A4982QFN32	Stepper Driver - Fully Integrated, Control and Power Stage	A4982	1	Allegro MicroSystems, LLC	A4982SE TTR-T
U10	ADUM7441	4ch iCoupler	ADUM7441	1		
X1, X9, X12, X27, X28	C-GRID-02-70543	Connector 2pos 2.54mm locking	C-GRID-02-70543	5		
X2	USB-B	USB connector B PTH	USB-B	1		
X3	MSTBV4	PHOENIX	0395311004	1		
X4, X6, X8, X14, X15	MPT4	PHOENIX CONNECTOR	MPT4	5		
X5, X7, X11, X21, X22, X23	C-GRID-03-70543	Connector 2pos 2.54mm locking	C-GRID-03-70543	6		
X17, X18	PINHD-2X3	PIN HEADER	PINHD-2X3	2		
X35	M02PTH	Connector 2x1 2.54mm PTH	M02PTH	1		
Y1, Y2	7M-16.000MEEQ-T	Crystal 16MHz 10ppm 10pf	7M-16.000MEEQ-T	2		