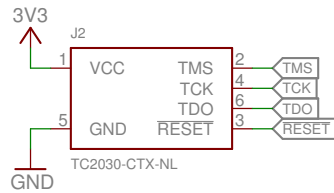
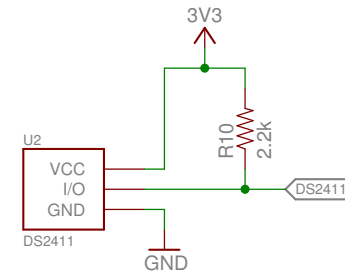




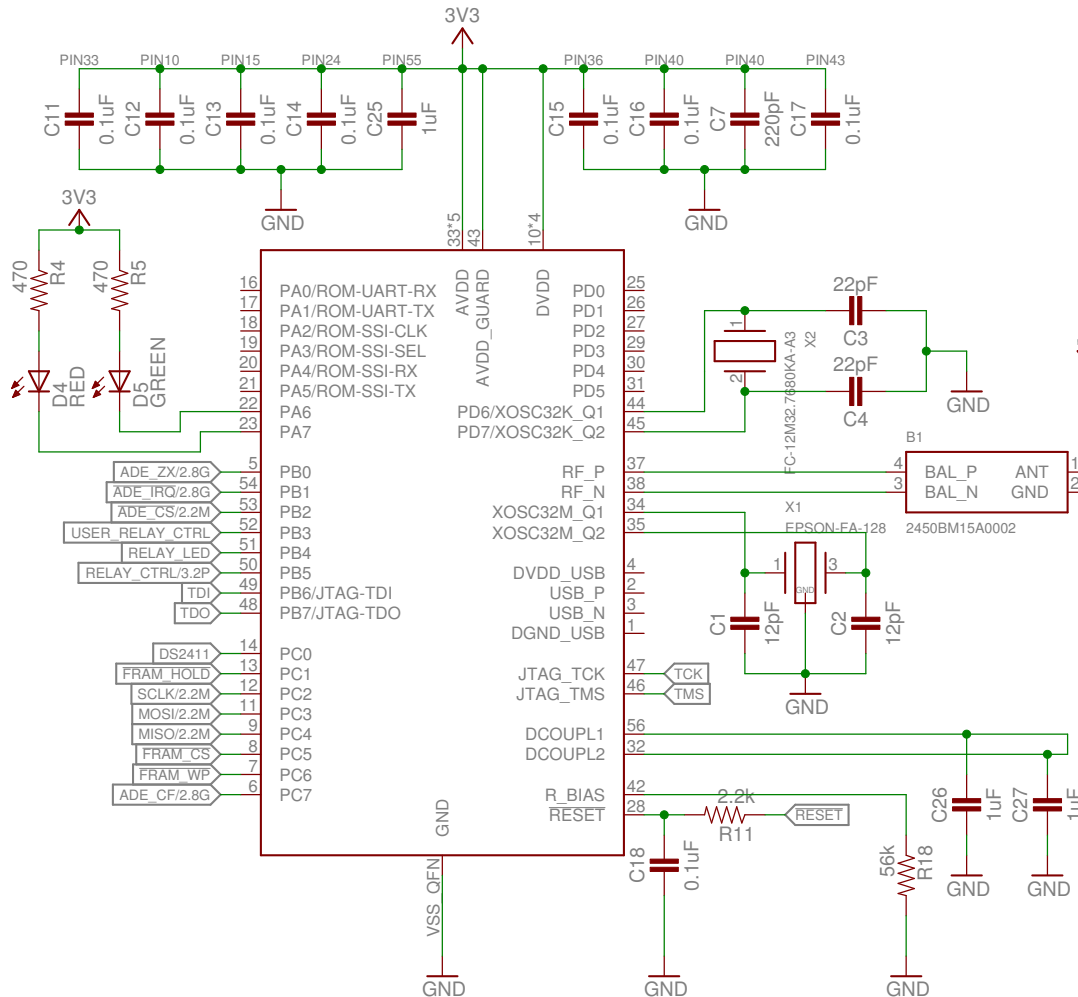
### Programmer Header



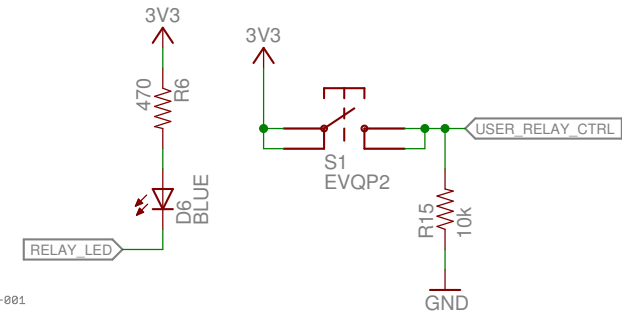
### DS2411



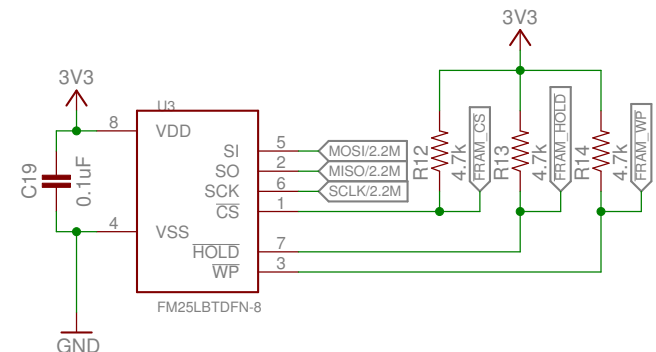
### CC2538



### Relay Control Switch and LED



### FRAM



TITLE: ACme++

Document Number:

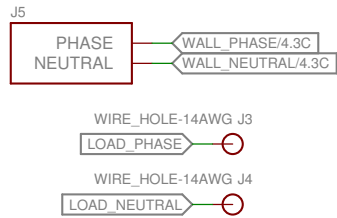
REV:

Date: 1/7/14 2:36 PM

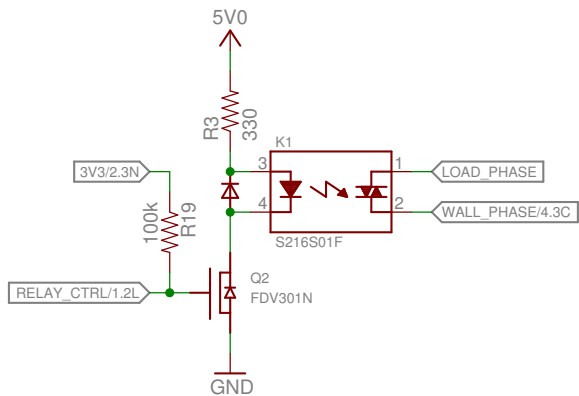
Sheet: 1/4



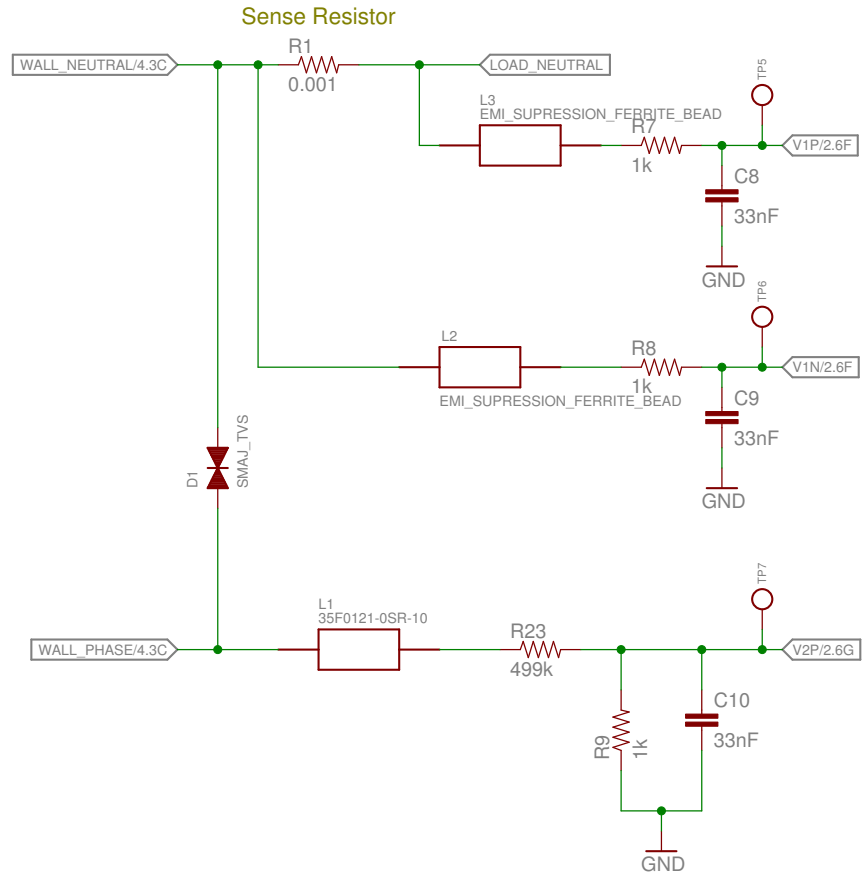
## AC Plugs



## Load Control Relay

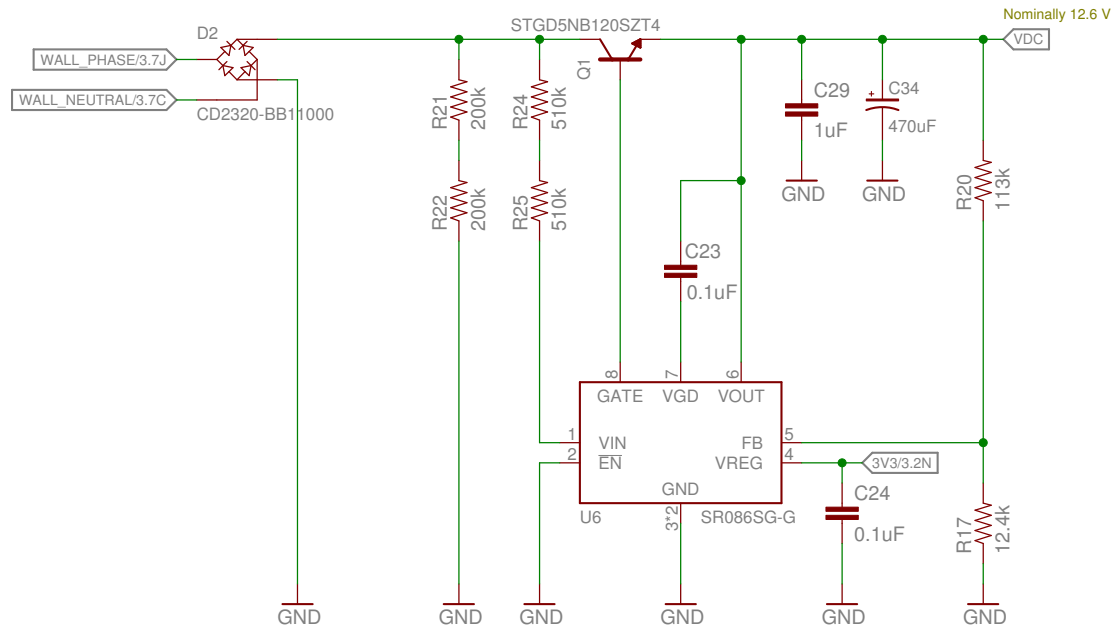


## Metering Conditioning

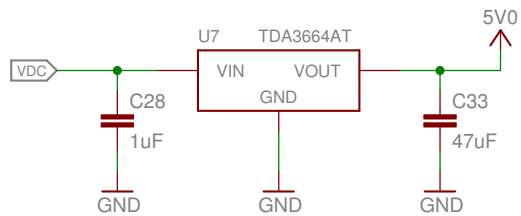


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Document Number:	REV:
Date: 1/7/14 2:36 PM	Sheet: 3/4

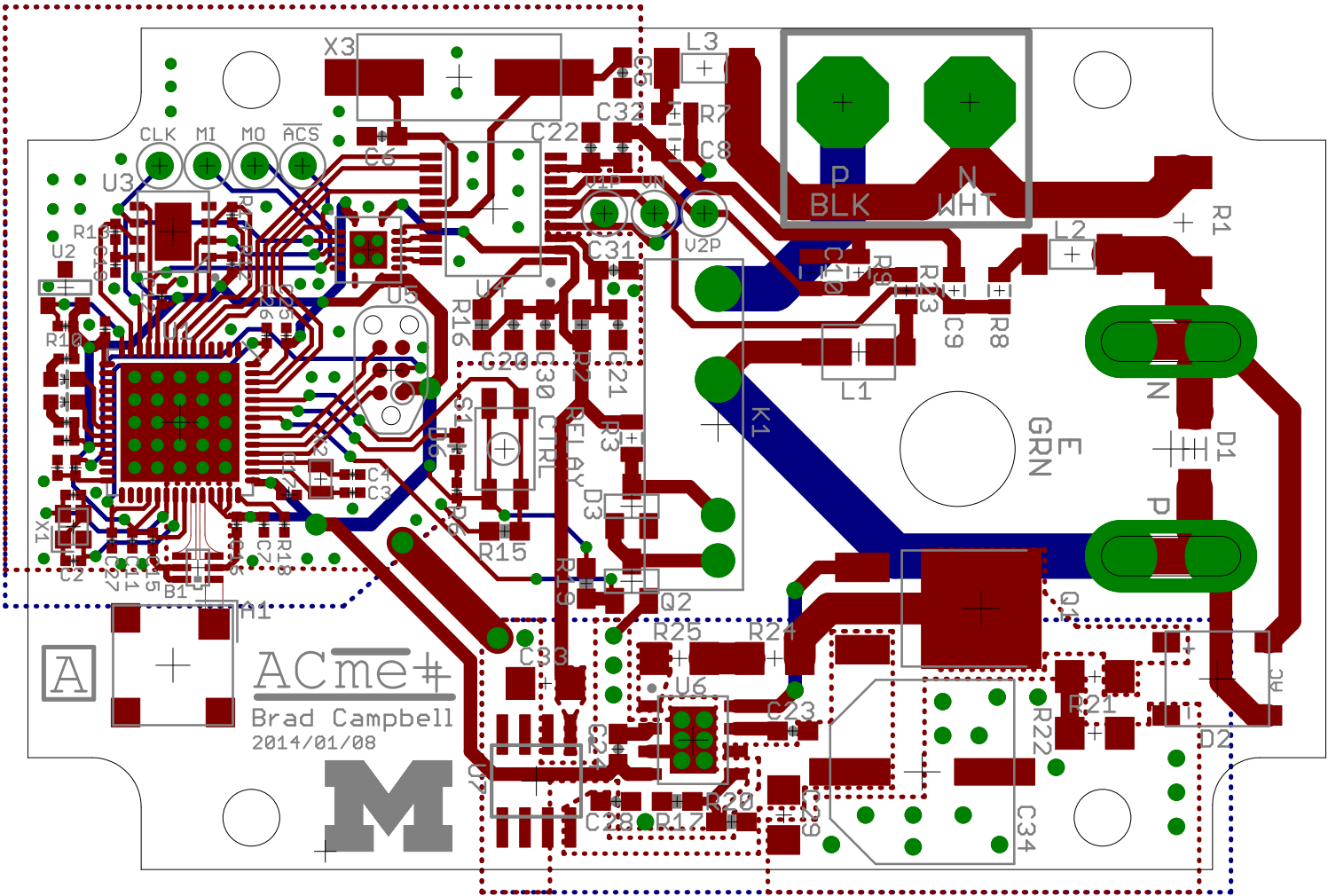
## AC-DC Converter

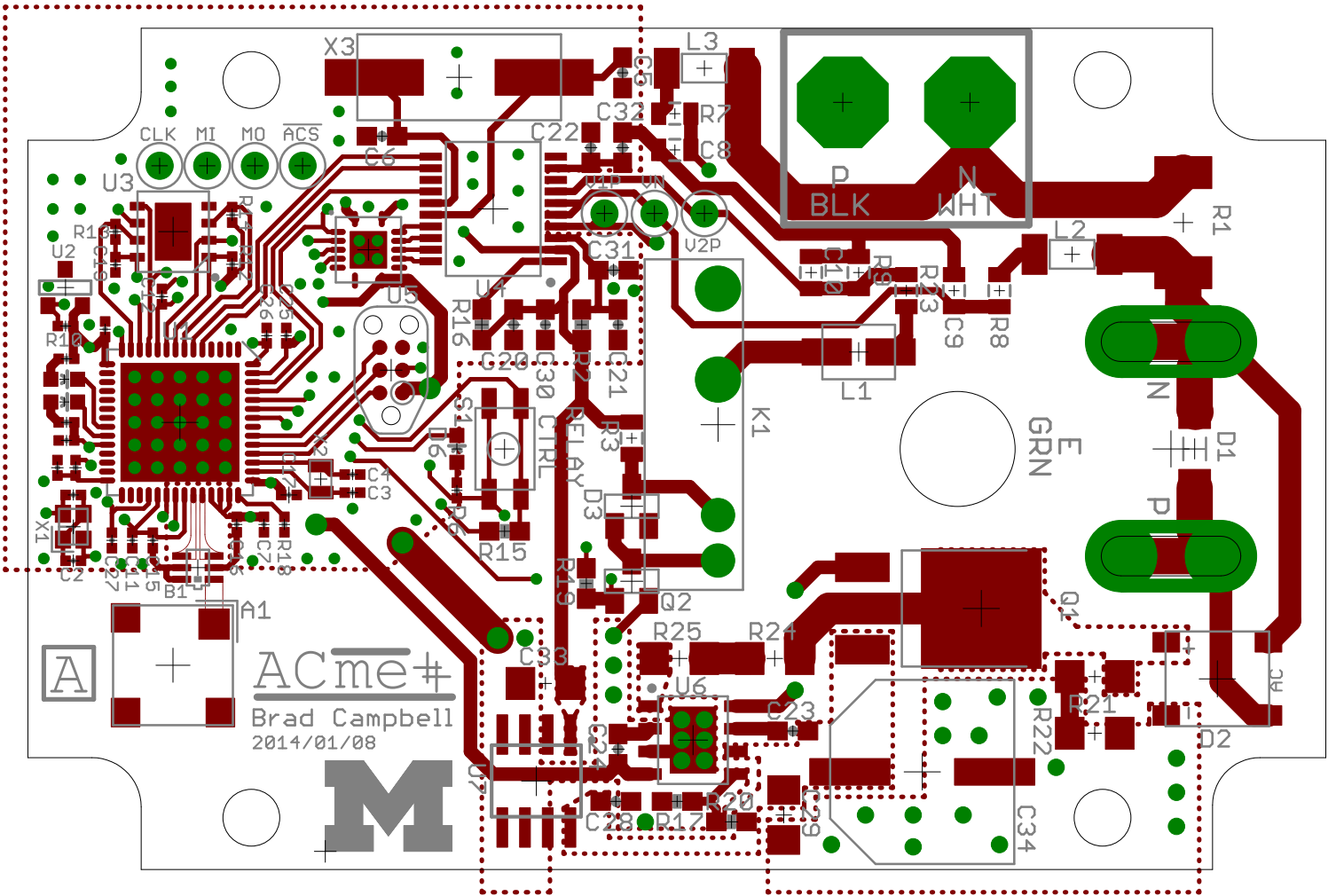


## 5V Regulator

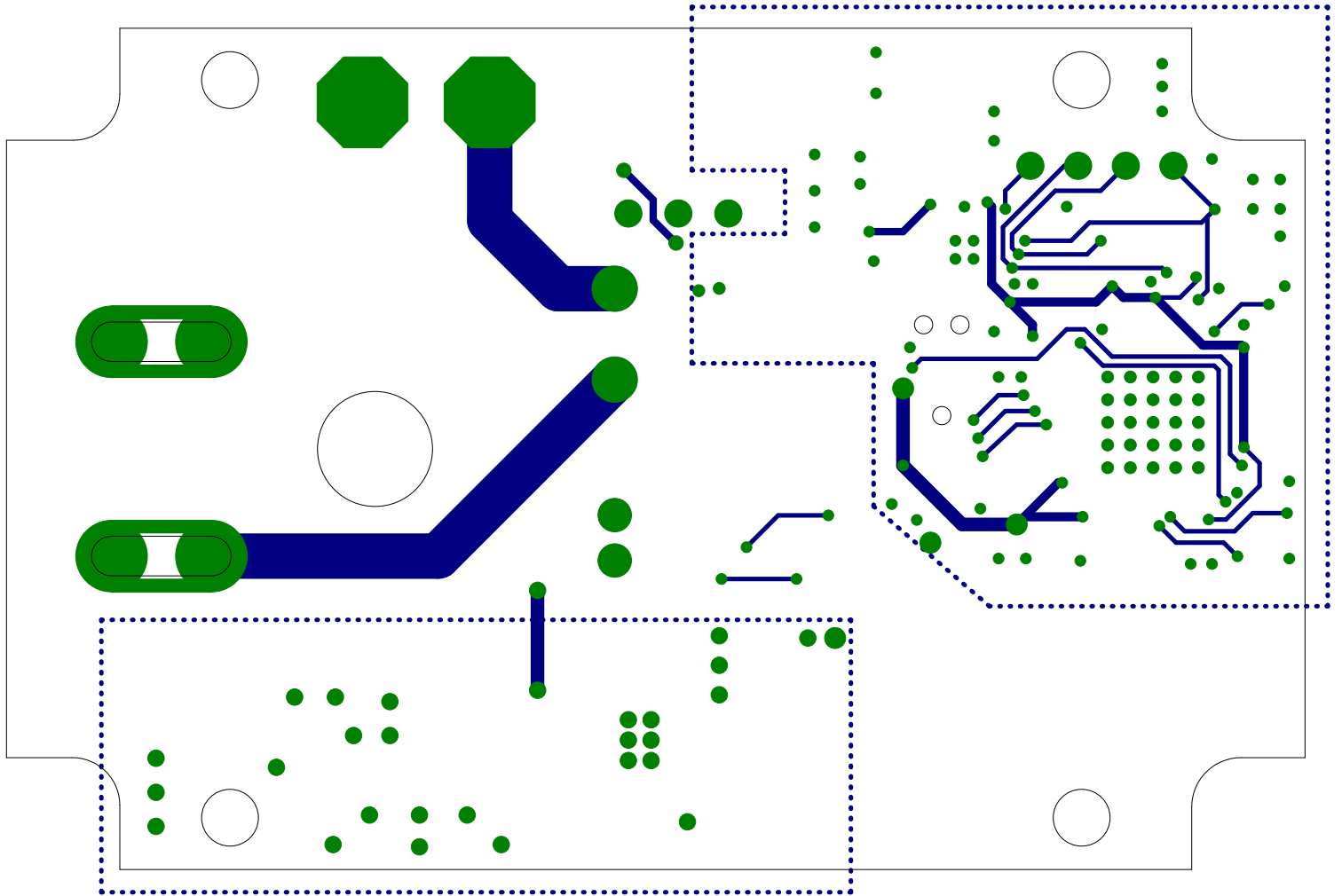


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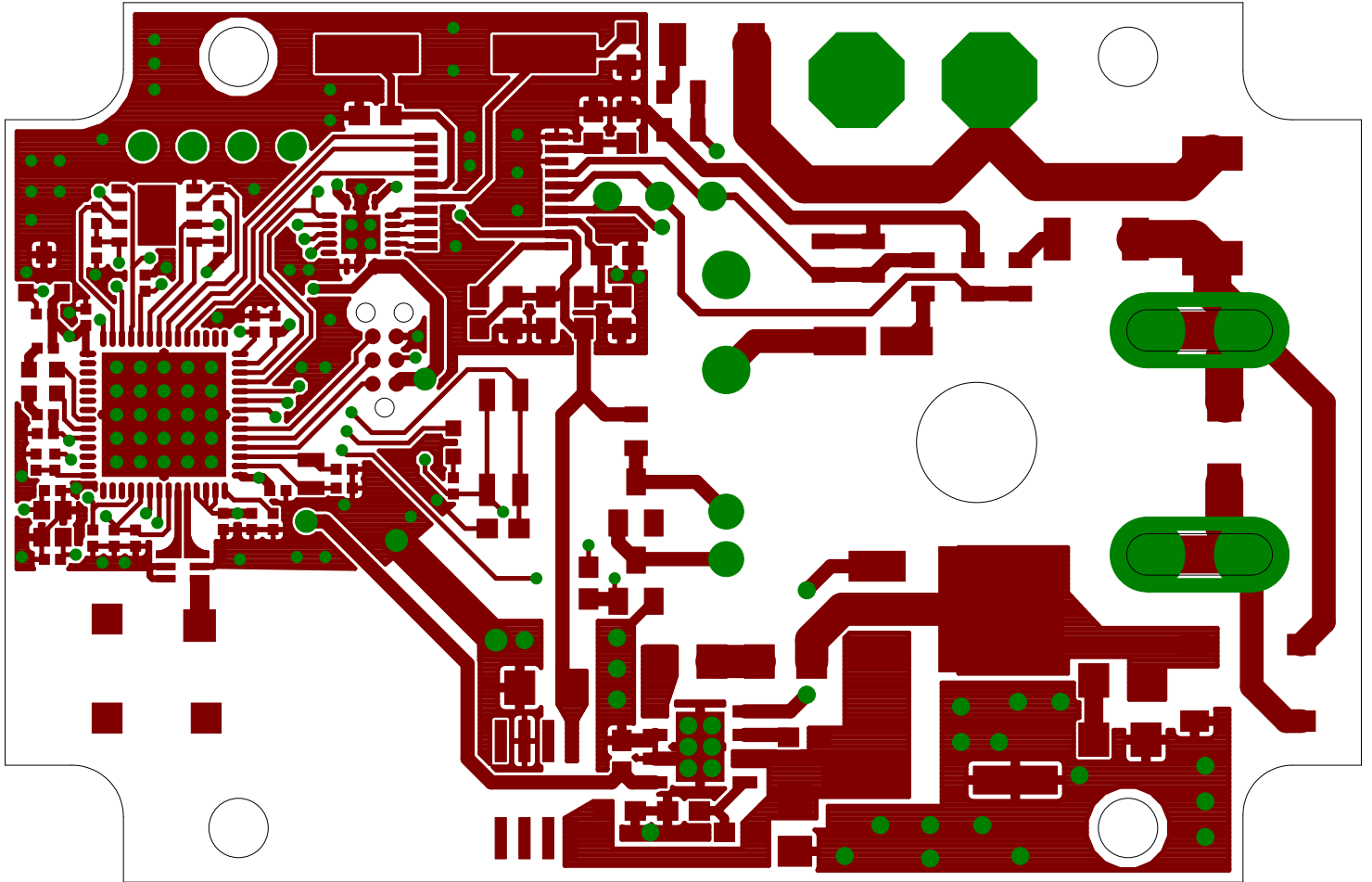




Bottom Layer

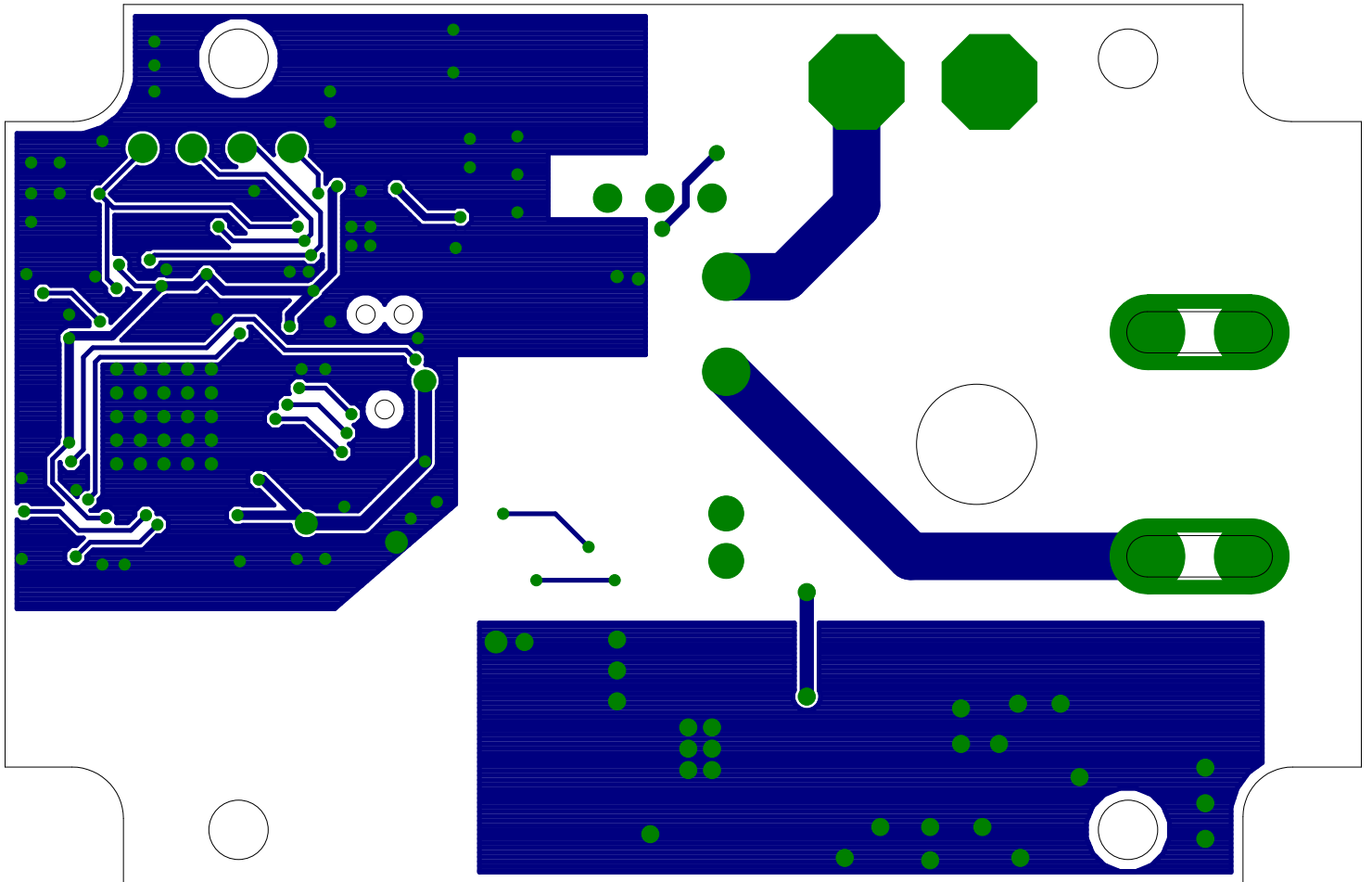


Top Copper Layer

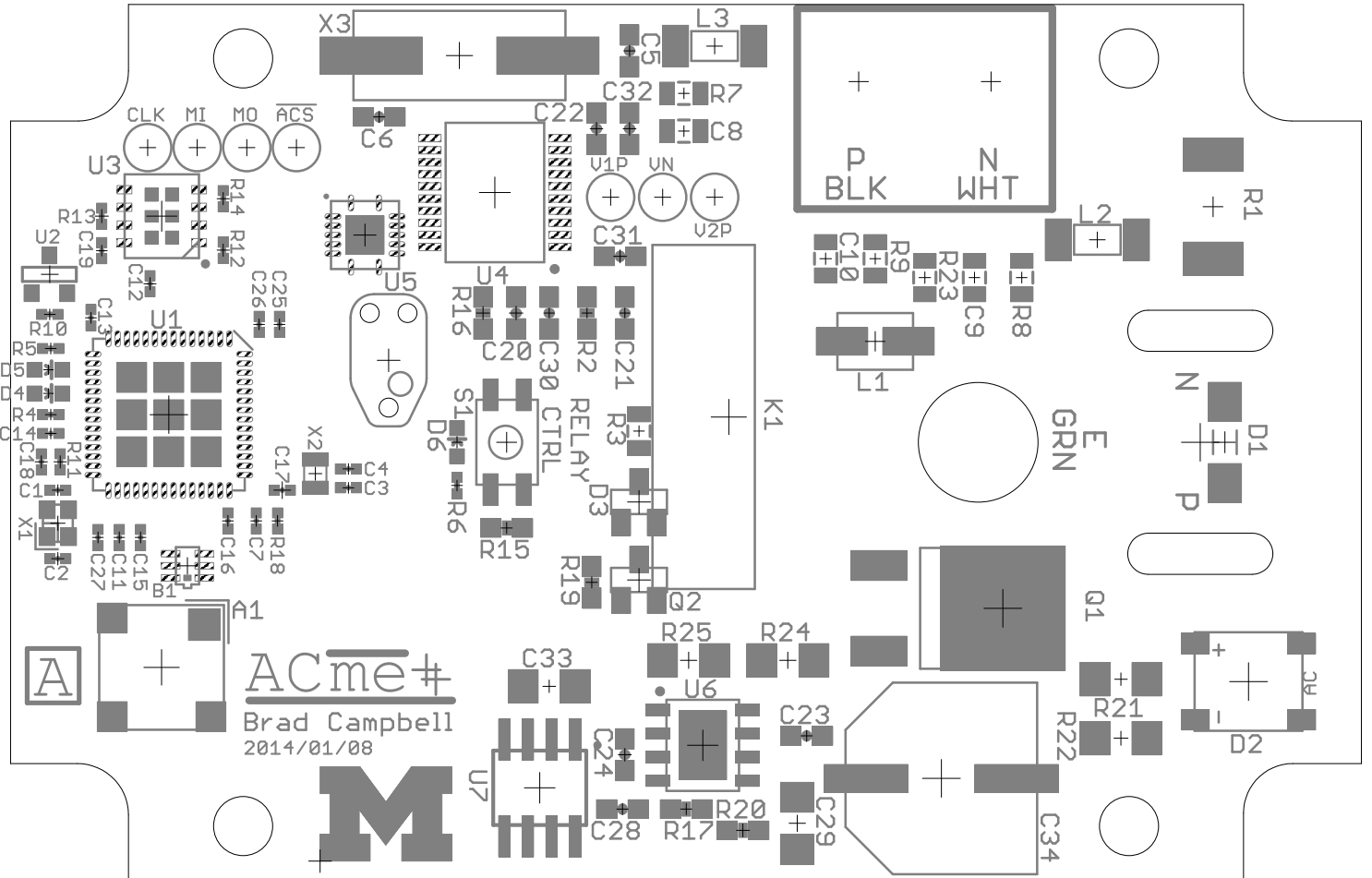




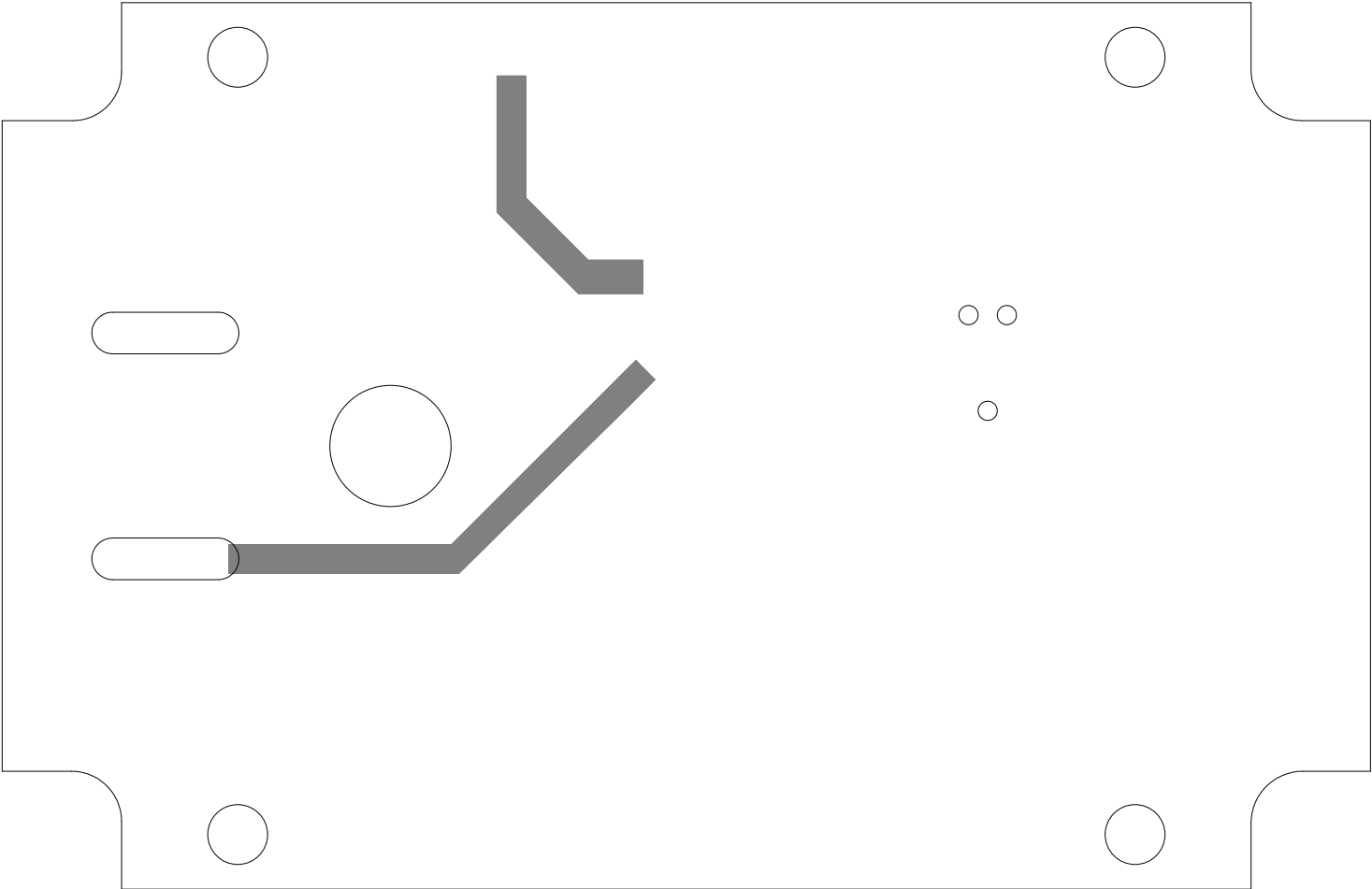
Bottom Copper Layer



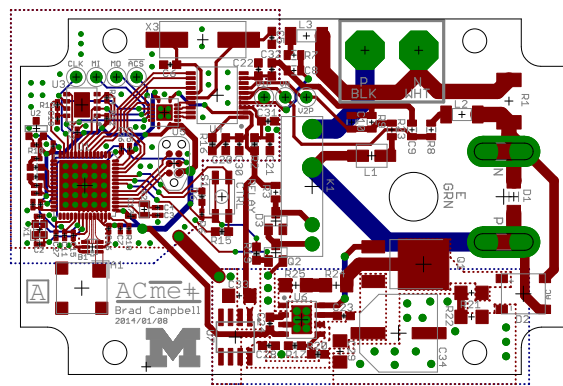
Top Paste Layer with Silkscreen



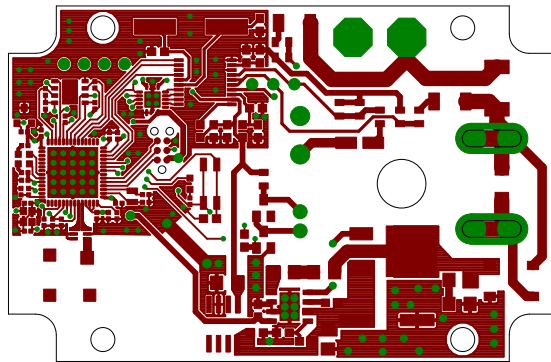
Bottom Paste Layer with Silkscreen



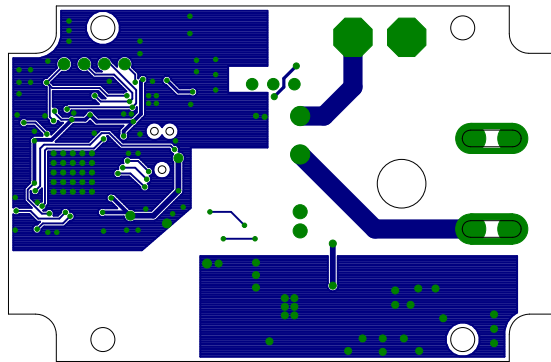
Top and Bottom Layers 1:1 Scale



Top Layer 1:1 Scale



Bottom Copper Layer 1:1 Scale



Qty	Value	Device	Package	Parts	Description	DIGIKEY	MOUSER	NEWARK	RICHARDSON_RFPD	McMASTER-CARR
1	FRACTUS-2.4GHZ-FR05-S1-N-0-001	FRACTUS-2.4GHZ-FR05-S1-N-0-001	FRACTUS-ANTENNA-FR05-S1-N-0-001	A1	Fractus Reach Xtend					FR05-S1-N-0001B
	12450BM15A0002	2450BM15A0002	2450BM	B1	BALUN JTI MATCHED ZIGBEE	712-1536-1-ND				
	212pF	CAPACITOR	0402-CAP	C1, C2	Capacitor	445-1236-1-ND				
	222pF	CAPACITOR	0402-CAP	C3, C4	Capacitor	490-5868-1-ND				
	222pF	CAPO603-CAP	0603-CAP	C5, C6	Capacitor	445-1273-1-ND				
	1220pF	CAPACITOR	0402-CAP	C7	Capacitor	445-1251-1-ND				
	333nF	CAPO805	0805-CAP	C8, C9, C10	Capacitor	478-1389-1-ND				
	90.1uF	CAPACITOR	0402-CAP	C11, C12, C13, C14, C15, C16, C17, C18, C19	Capacitor	445-1265-1-ND				
	50.1uF	CAPO603-CAP	0603-CAP	C20, C21, C22, C23, C24	Capacitor	445-1316-1-ND				
	31uF	CAPACITOR	0402-CAP	C25, C26, C27	Capacitor	445-4098-1-ND				
	11uF	CAPO603-CAP	0603-CAP	C28	Capacitor	445-5956-1-ND				
	11uF	CAP1206	1206-CAP	C29	Capacitor	445-1381-1-ND				
	310uF	CAPO603-CAP	0603-CAP	C30, C31, C32	Capacitor	1276-1119-1-ND				
	147uF	CAP1206	1206-CAP	C33	Capacitor	399-5508-1-ND				
	1470uF	CAP_EEE-FP1E471AP	CAP_SM_10MM	C34	Surface mount low ESR cap.	PCE4440CT-ND				
	1SMAJ_TVS	SMAJ_TVS	DO214_TVS	D1		SMAJ250CALFCT-ND				
	1CD2320-BB11000	CD2320-BB11000	CD2320	D2	Bridge rectifier	CD2320-B11000CT-ND				
	1DIODE_MMBD914	DIODE_MMBD914	DIODE_SML	D3	DIODE SML SIG 100V 0.2A SOT23-3	MMBD914F5CT-ND				
	1RED	LED0603	LED-0603	D4	LEDs	160-1835-1-ND				
	1GREEN	LED0603	LED-0603	D5	LEDs	160-1834-1-ND				
	1BLUE	LED0603	LED-0603	D6	LEDs	160-1837-1-ND				
	1AC-PLUG	AC-PLUG	AC_MALE_PINS	J1	For use with Bud Industries Box: 377-1709-ND					
	1TC2030-CTX-NL	TC2030-CTX-NL	TC2030-IDC-NL	J2	Tag Connect footprint for ARM JTAG.					
	3WIRE_HOLE-14AWG	WIRE_HOLE-14AWG	WIRE_HOLE-14AWG	J3, J4, J5	Solder point for 14AWG wire					
	1S216501F	S216501F	RELAY_SX1650X	K1	RELAY SSR 240VAC 16A TRIAC 4-SIP	425-2413-5-ND	852-S216501F			
	135F0121-OSR-10	35F0121-OSR-10	35F0102	L1	FERRITE 10A 42 OHMS @ 10 MHZ SMD	240-2520-1-ND			14N9591	
	2EMI_SUPPRESSION_FERRITE_BEAD	EMI_SUPPRESSION_FERRITE_BEAD	L1806	L2, L3	FERRITE 300MA 150 OHM 1806 SMD	240-2418-1-ND				
	1STGD5NB120SZT4	STGD5NB120SZT4	DPAK	Q1	FERRITE 300MA 150 OHM 1806 SMD	497-4352-1-ND				
	1FDV010IN	FDV010IN	SOT-23	Q2	5 A - 1200 V - low drop internally clamped IGBT	FDV301NCT-ND				
	10.001	RESISTOR2512	R2512	R1	Resistor	P1.0TCT-ND				
	110	RESISTOR0603-RES	0603-RES	R2	Resistor	RHM10.0KCFCT-ND				
	1330	RESISTOR0805-RES	0805-RES	R3	Resistor	RHM330KCT-ND				
	3470	RESISTOR	0402-RES	R4, R5, R6	Resistor	RHM470BHCT-ND				
	31k	RESISTOR0805-RES	0805-RES	R7, R8, R9	Resistor	P16058CT-ND				
	2.22k	RESISTOR	0402-RES	R10, R11	Resistor	RHM2.2KCECT-ND				
	34.7k	RESISTOR	0402-RES	R12, R13, R14	Resistor	RHM4.7KCECT-ND				
	210k	RESISTOR0603-RES	0603-RES	R15, R16	Resistor	RHM10.0KCFCT-ND				
	112.4k	RESISTOR0603-RES	0603-RES	R17	Resistor	RHM12.4KCFCT-ND				
	156k	RESISTOR	0402-RES	R18	Resistor	RHM56KBHCT-ND				
	1100k	RESISTOR0603-RES	0603-RES	R19	Resistor	RHM100KCGCT-ND				
	1113k	RESISTOR0603-RES	0603-RES	R20	Resistor	RHM113KCFCT-ND				
	2200k	RESISTOR1206	1206-RES	R21, R22	Resistor	P200KALCT-ND				
	1499k	RESISTOR0805-RES	0805-RES	R23	Resistor	P499KCT-ND				
	2510k	RESISTOR1206	1206-RES	R24, R25	Resistor	P510KALCT-ND				
	1EVQP2	EVQP2	EVQP2	S1		P11084SCT-ND				
	7TEST_POINT_0.040IN	TEST_POINT_0.040IN	TESTPOINT_0.040IN	TP1, TP2, TP3, TP4, TP5, TP6, TP7	0.040in Test Point	5001K-ND				
	1CC2538	CC2538	S-PVQFN-N56	U1	A Powerful System-On-Chip for 2.4-GHz IEEE 802.15.4, 6LoWPAN	296-35797-1-ND	595-CC2538F53RTQT	87W7713		
	1DS2411	DS2411	SOT-23	U2	Maxim DS2411	DS2411R-CT-ND				
	1FM25LBTFDN-8	FM25LBTFDN-8	TDFN-8	U3	IC FRAM 4KBT 10MHZ BSOIC	FM25L04B-DG	877-FM25L04B-DG			
	1ADE7753	ADE7753	SSOP-20	U4	Single-Phase Multifunction Metering IC	ADE7753ARSZRLCT-ND	584-ADE7753ARSZR	59K0984		
	1TXB0104RGY	TXB0104RGY	S-PVQFN-N14	U5	4-BIT BIDIRECTIONAL VOLTAGE-LEVEL TRANSLATOR	296-21930-1-ND				
	1SR086SG-G	SR086SG-G	SR086	U6	Adjustable Off-Line Inductorless Switching Regulator		689-SR086SG-G			
	1TDA3664AT	TDA3664AT	SOIC_8	U7	Very low dropout voltage/quiescent current 5 V voltage regulator	568-3310-1-ND	771-TDA3664ATN1118			
	1EPSON-FA-128	EPSON-FA-128	FA-128	X1	MHz RANGE CRYSTAL UNIT	SER3800CT-ND	732-FA128-32F20X-K3			
	1FC-12M32.7680KA-A3	FC-12M32.7680KA-A3	FC-12M	X2	kHz RANGE CRYSTAL UNIT	SER3672CT-ND				
	1ECS-35-17-5PX-TR	ECS-35-17-5PX-TR	CSM-7X	X3	CRYSTAL 3.579545MHZ 17PF SMD	XC1234CT-ND				
	1ENCLOSURE	PPB-11860-BK			BOX ABS 3.09X2.09X1.65" BLK	377-1709-ND				
	0ENCLOSURE	PPB-11860-WT			BOX ABS 3.09X2.09X1.65" WHT	377-1710-ND				
	1SOCKET	739W-X2/03			OUTLET PWR NEMA 5-15R SNAPIN/IDC	Q228-ND				
	014AWG Black	6717 BK005			HOOK-UP STRND 14AWG BLACK 100'	6717 BK005-ND				
	014AWG Green	6717 GR005			HOOK-UP STRND 14AWG GREEN 100'	6717 GR005-ND				
	014AWG White	6717 WH005			HOOK-UP STRND 14AWG WHITE 100'	6717 WH005-ND				
	4 #4 Screw				#4 3/16" Panhead Self-Tapping Screws					

92470a106

1 712-1536-1B1  
2 445-1236-1C1, C2  
2 490-5868-1C3, C4  
2 445-1273-1C5, C6  
1 445-1251-1C7  
3 478-1389-1C8, C9, C10  
9 445-1265-1C11, C12, C13, C14, C15, C16, C17, C18, C19  
5 445-1316-1C20, C21, C22, C23, C24  
3 445-4998-1C25, C26, C27  
1 445-5956-1C28  
1 445-1381-1C29  
3 1276-1119-C30, C31, C32  
1 399-5508-1C33  
1 PCE4440C1C34  
1 SMAJ250CAD1  
1 CD2320-B1D2  
1 MMBD914FD3  
1 160-1835-1D4  
1 160-1834-1D5  
1 160-1837-1D6  
1 425-2413-5K1  
1 240-2520-1L1  
2 240-2418-1L2, L3  
1 497-4352-1Q1  
1 FDV301NC-Q2  
1 P1.0TCT-N1R1  
1 RHM10.0CFR2  
1 RHM330KCR3  
3 RHM470BHR4, R5, R6  
3 P16058CT-R7, R8, R9  
2 RHM2.2KCFR10, R11  
3 RHM4.7KCFR12, R13, R14  
2 RHM10.0KCR15, R16  
1 RHM12.4KCR17  
1 RHM56KBHR18  
1 RHM100KCR19  
1 RHM113KCR20  
2 P200KALCTR21, R22  
1 P499KCCT-R23  
2 P510KALCTR24, R25  
1 P11084SCTS1  
1 296-35797-U1  
1 DS2411R+U2  
1 FM25L04B-U3  
1 ADE7753AIU4  
1 296-21930-U5  
1 568-3310-U7  
1 SER3800C1X1