



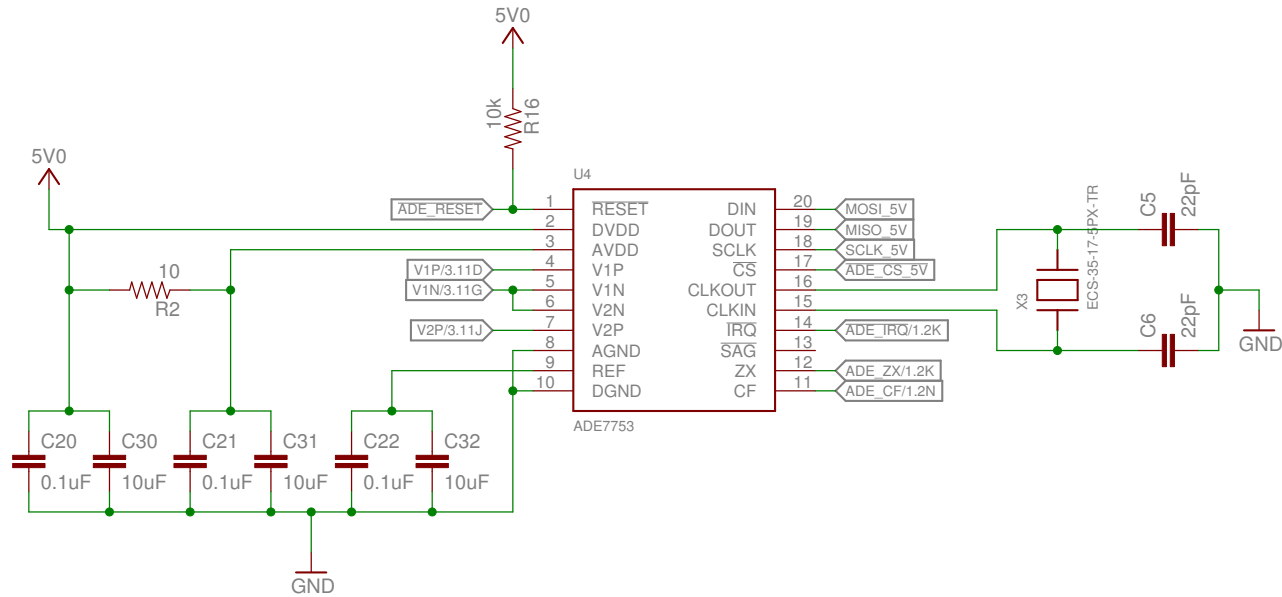
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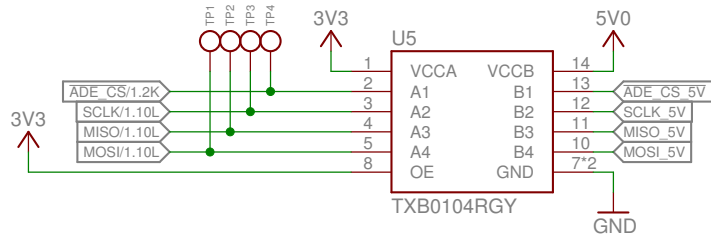
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Sheet: 1/4

ADE7753 Power Measurement



Level Converter 5V SPI



TITLE: ACme++

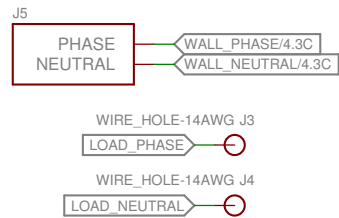
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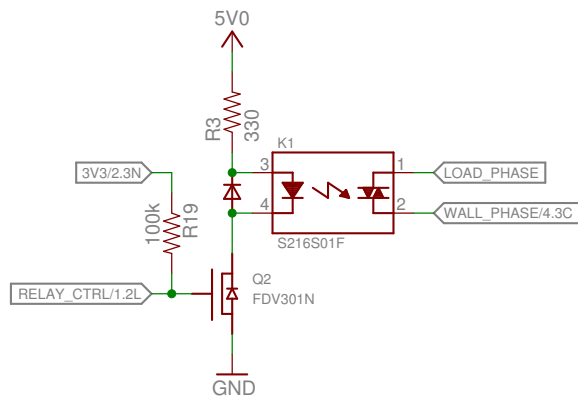
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Sheet: 2/4

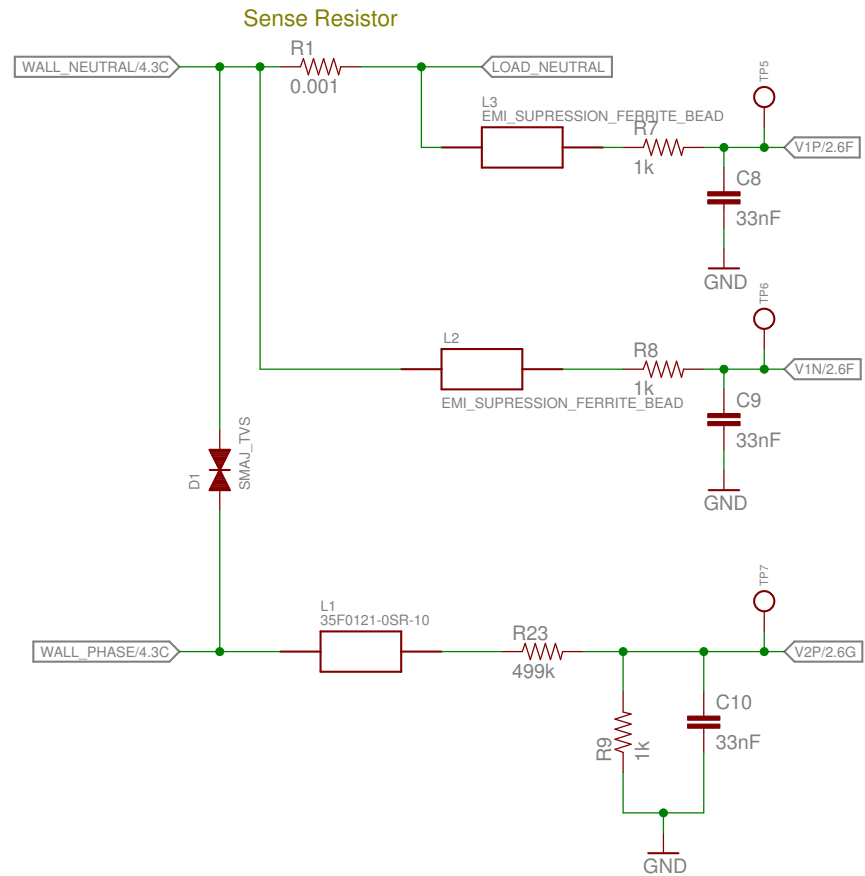
AC Plugs



Load Control Relay



Metering Conditioning



TITLE: ACme++

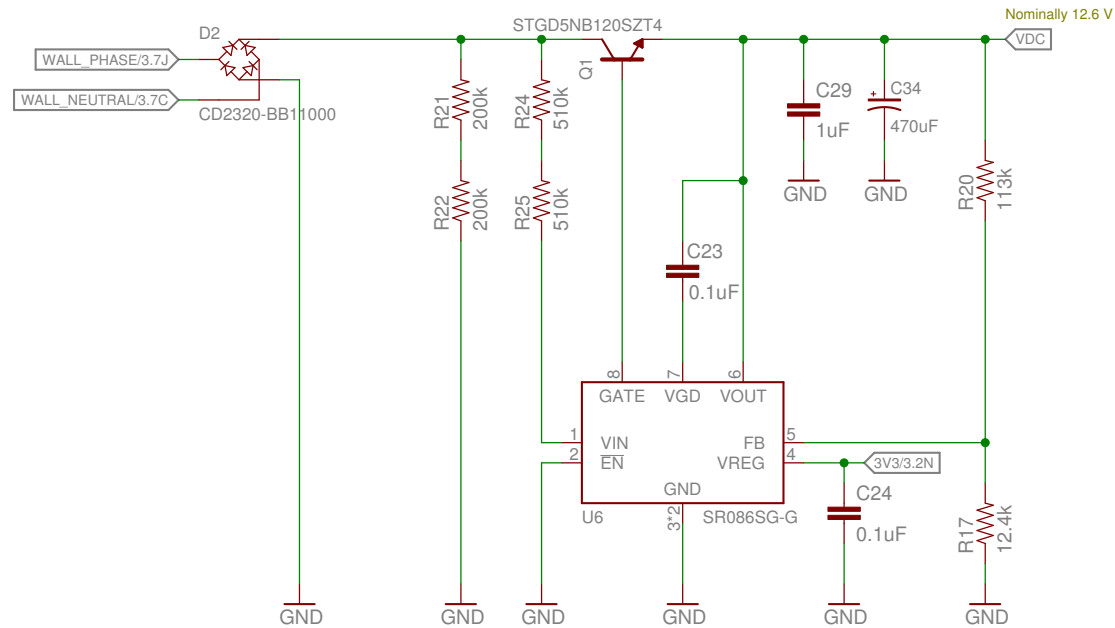
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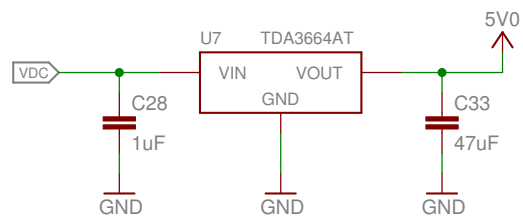
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Sheet: 3/4

AC-DC Converter



5V Regulator



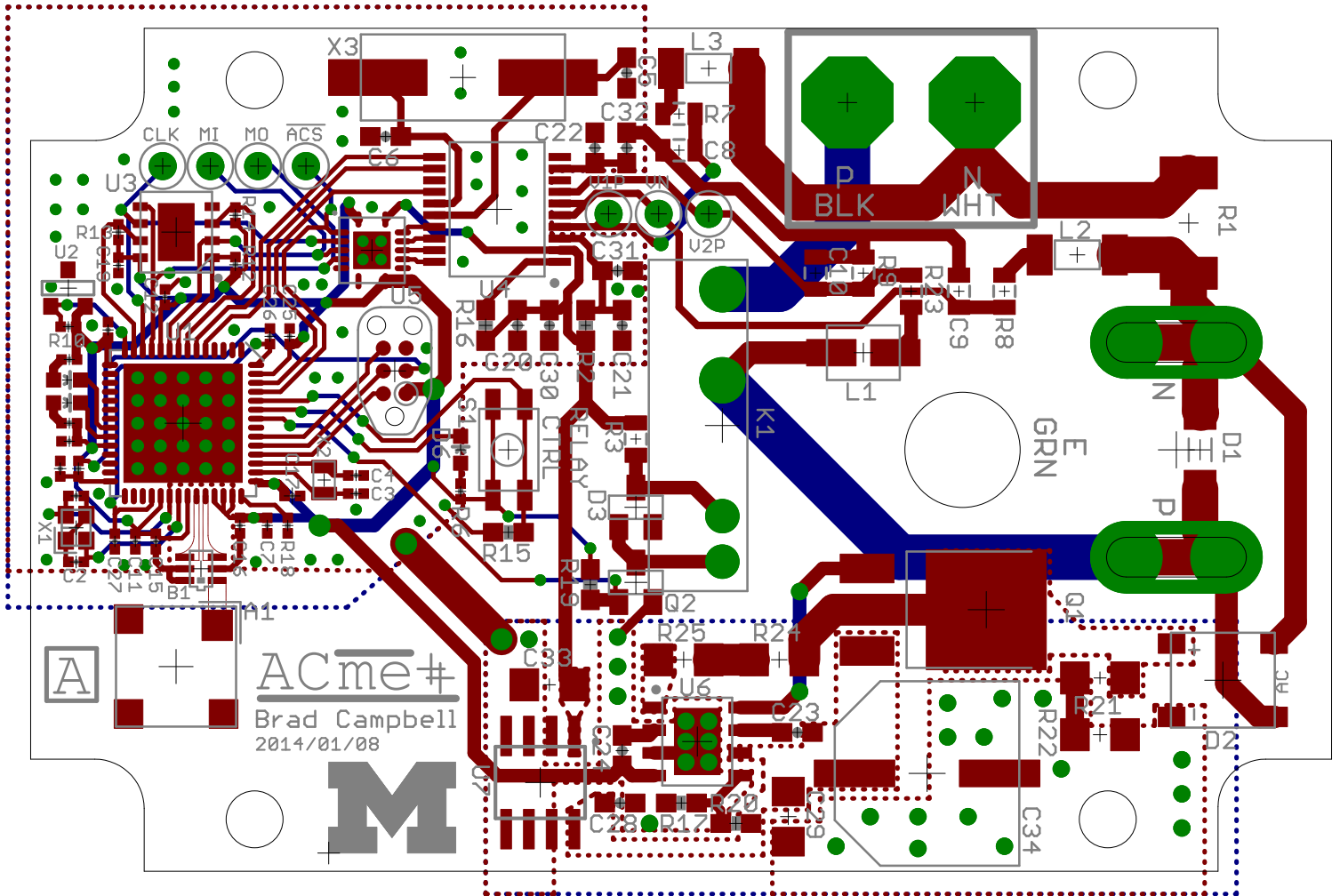
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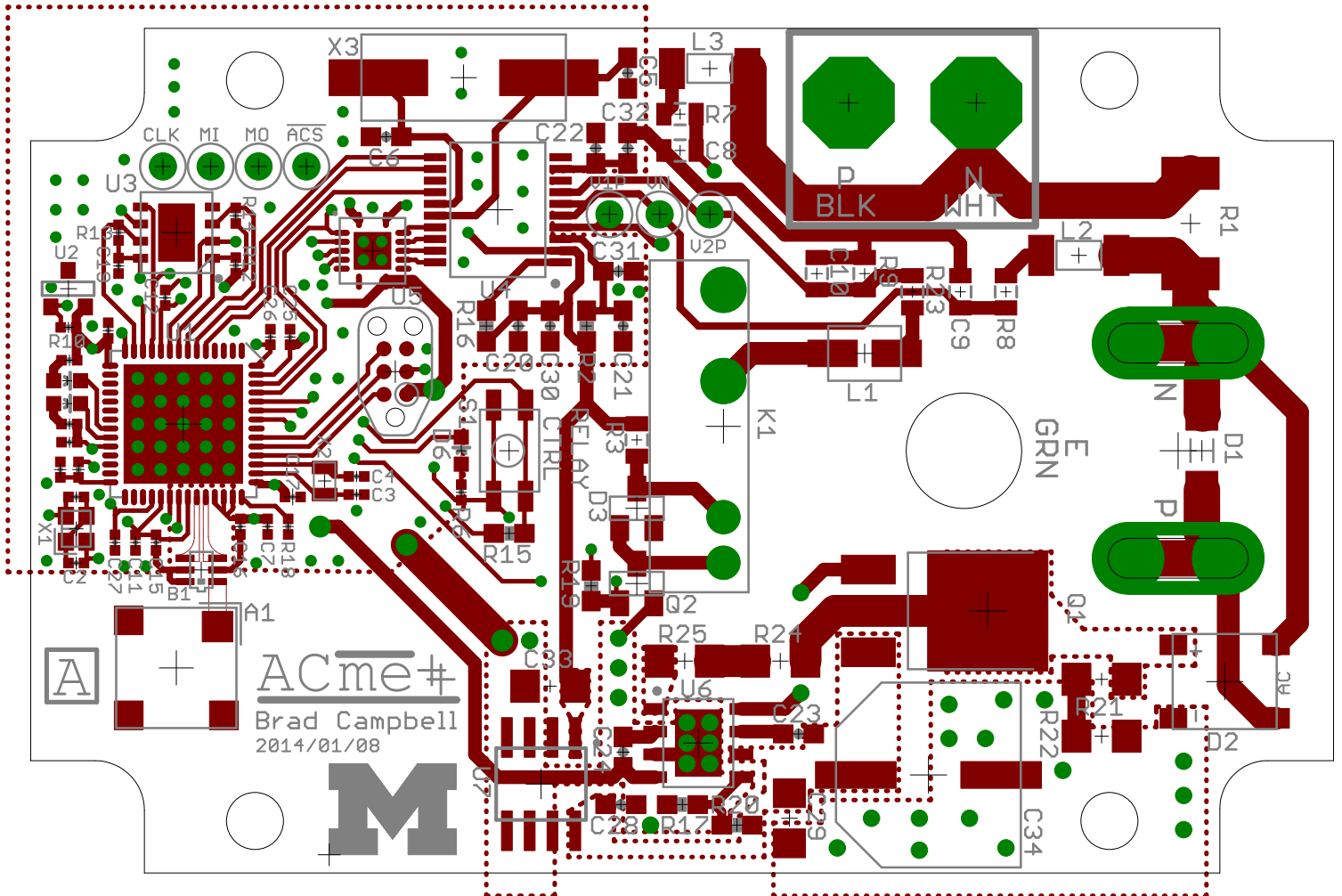
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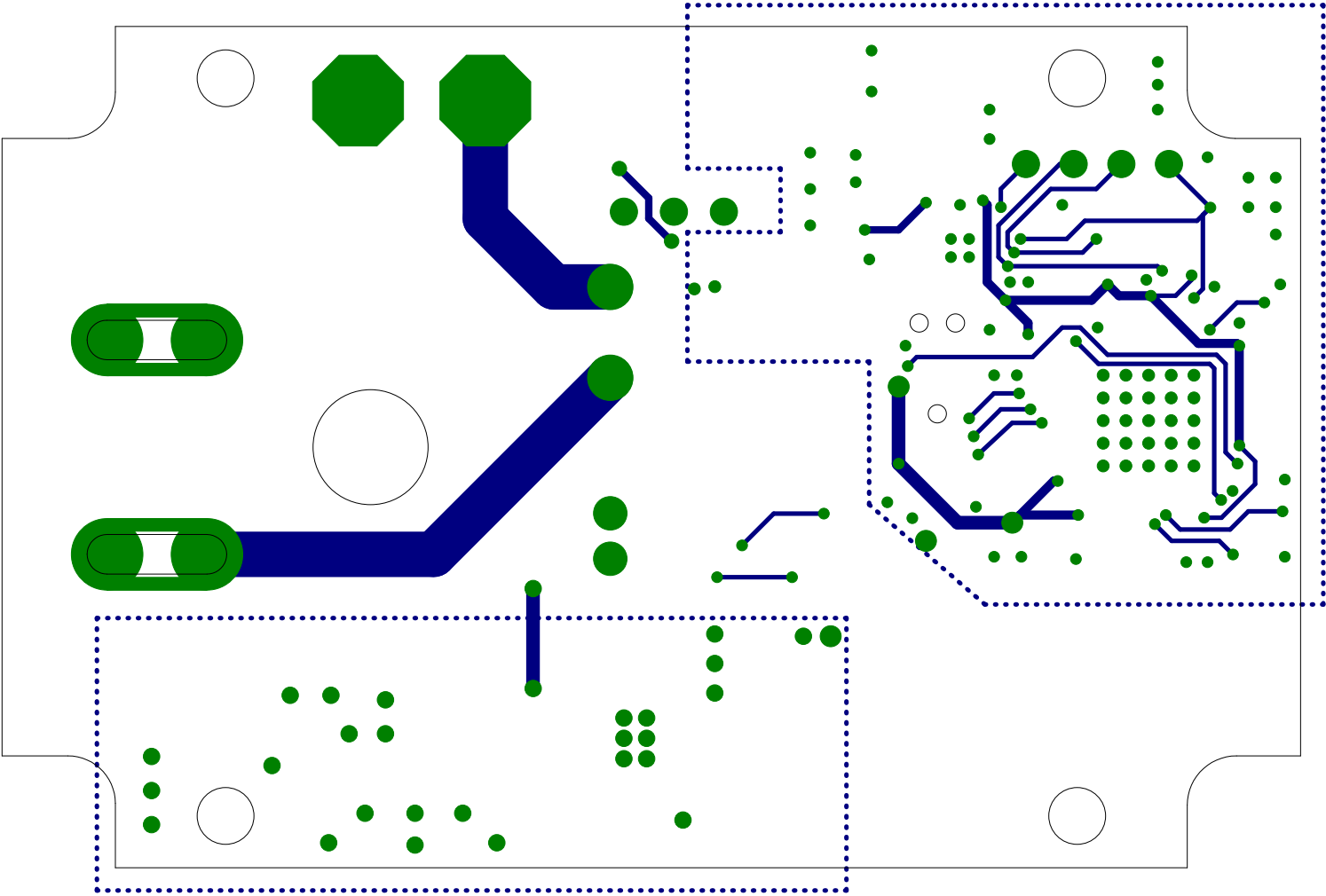
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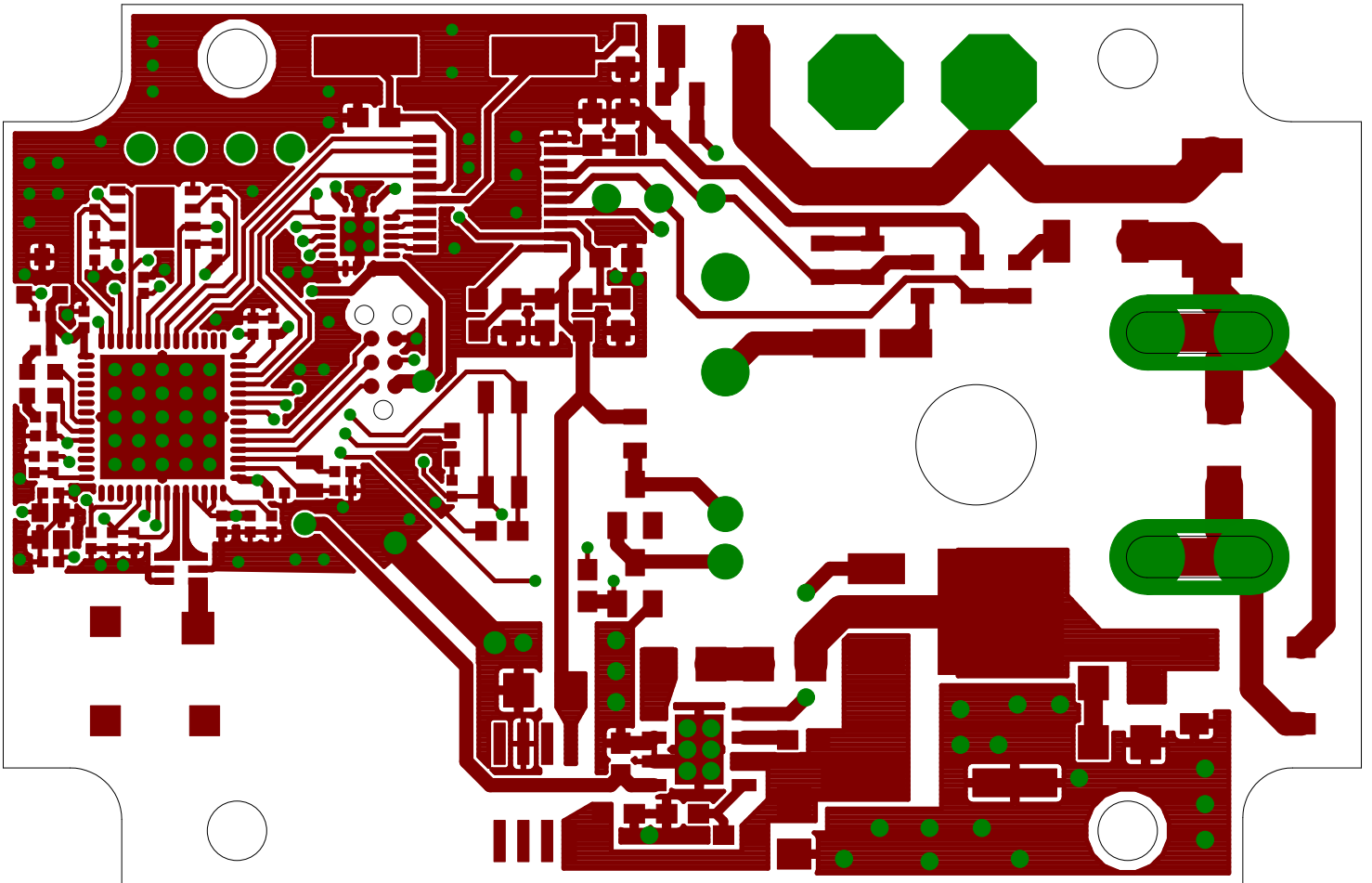
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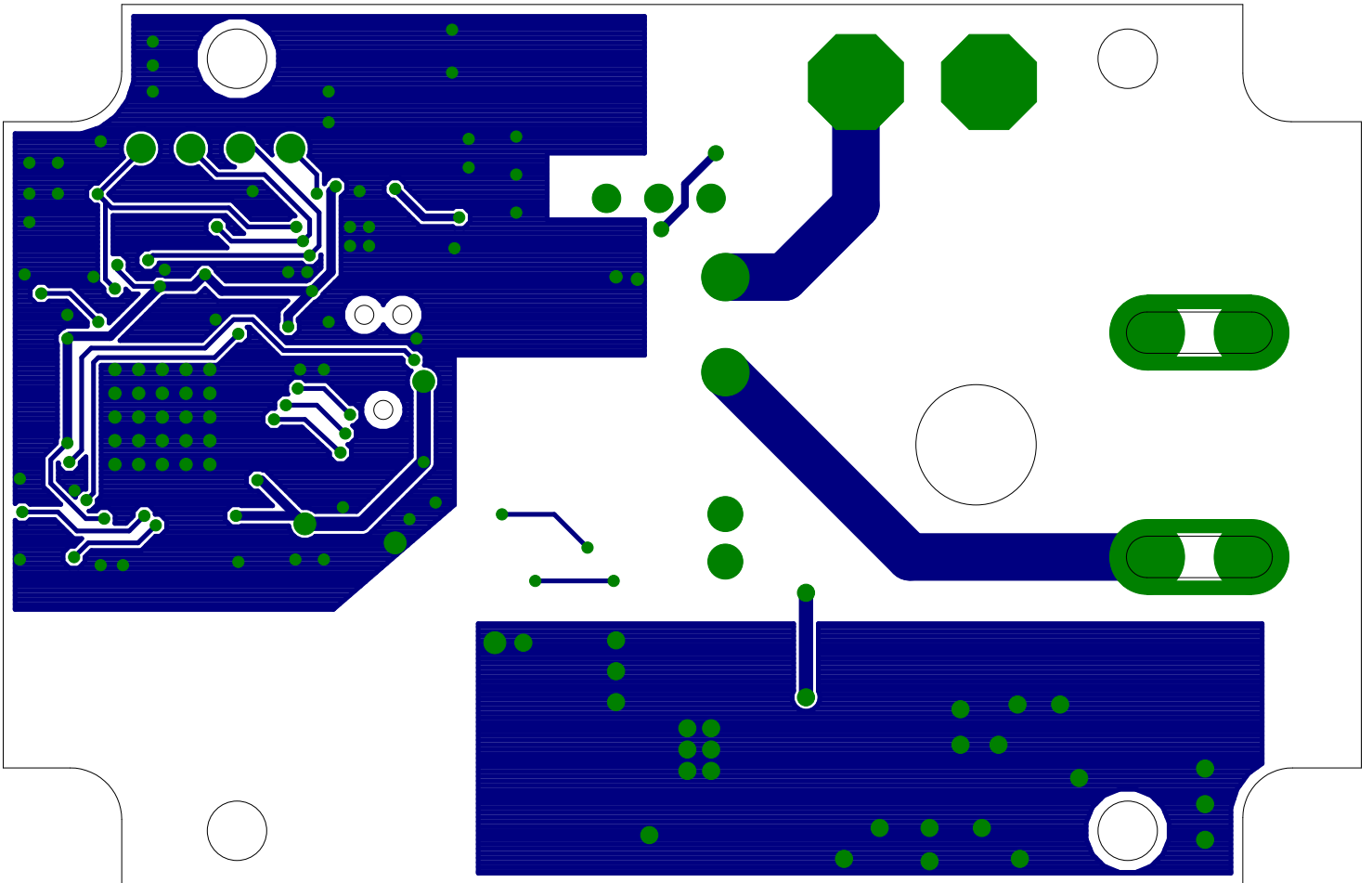


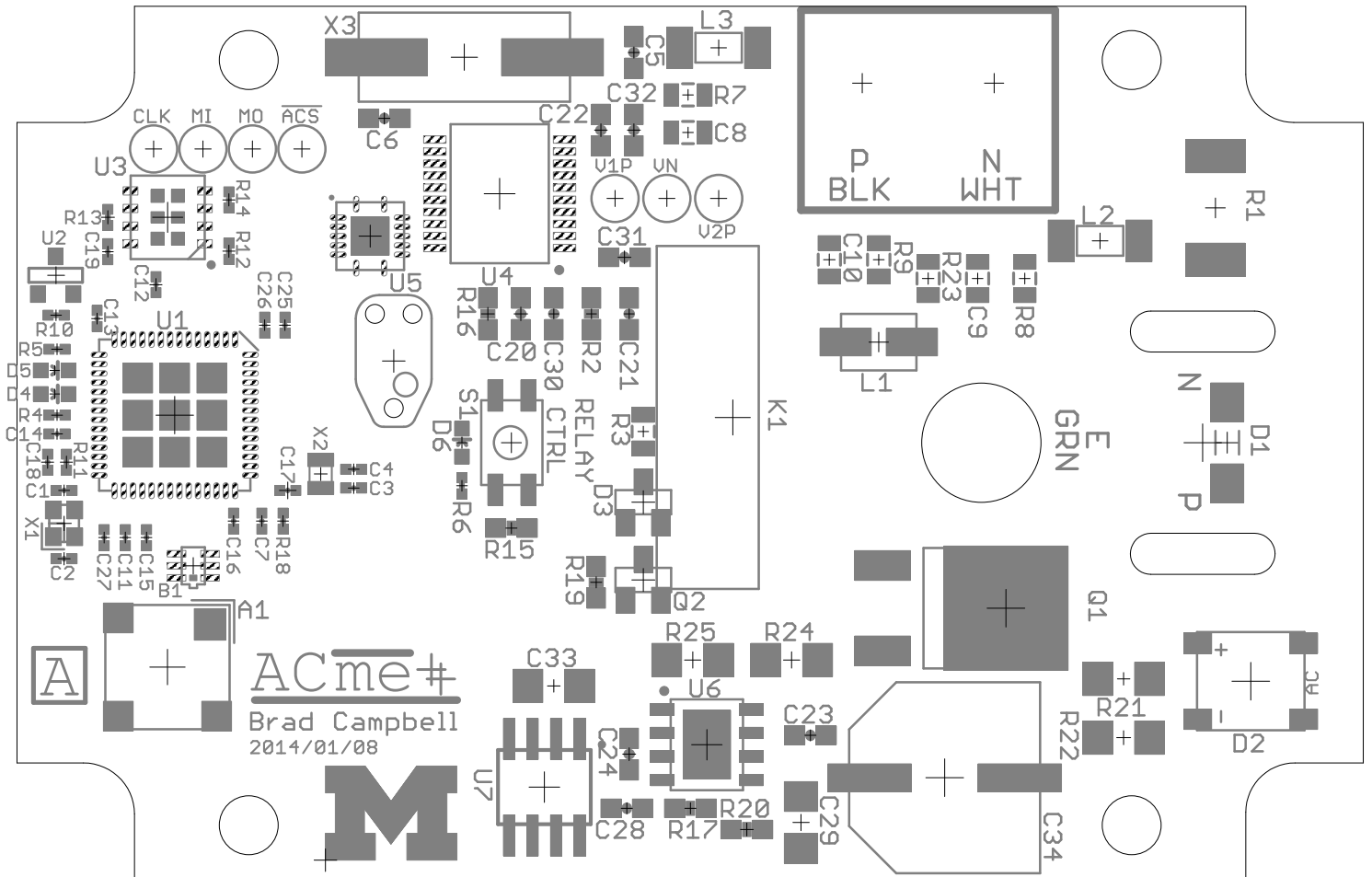




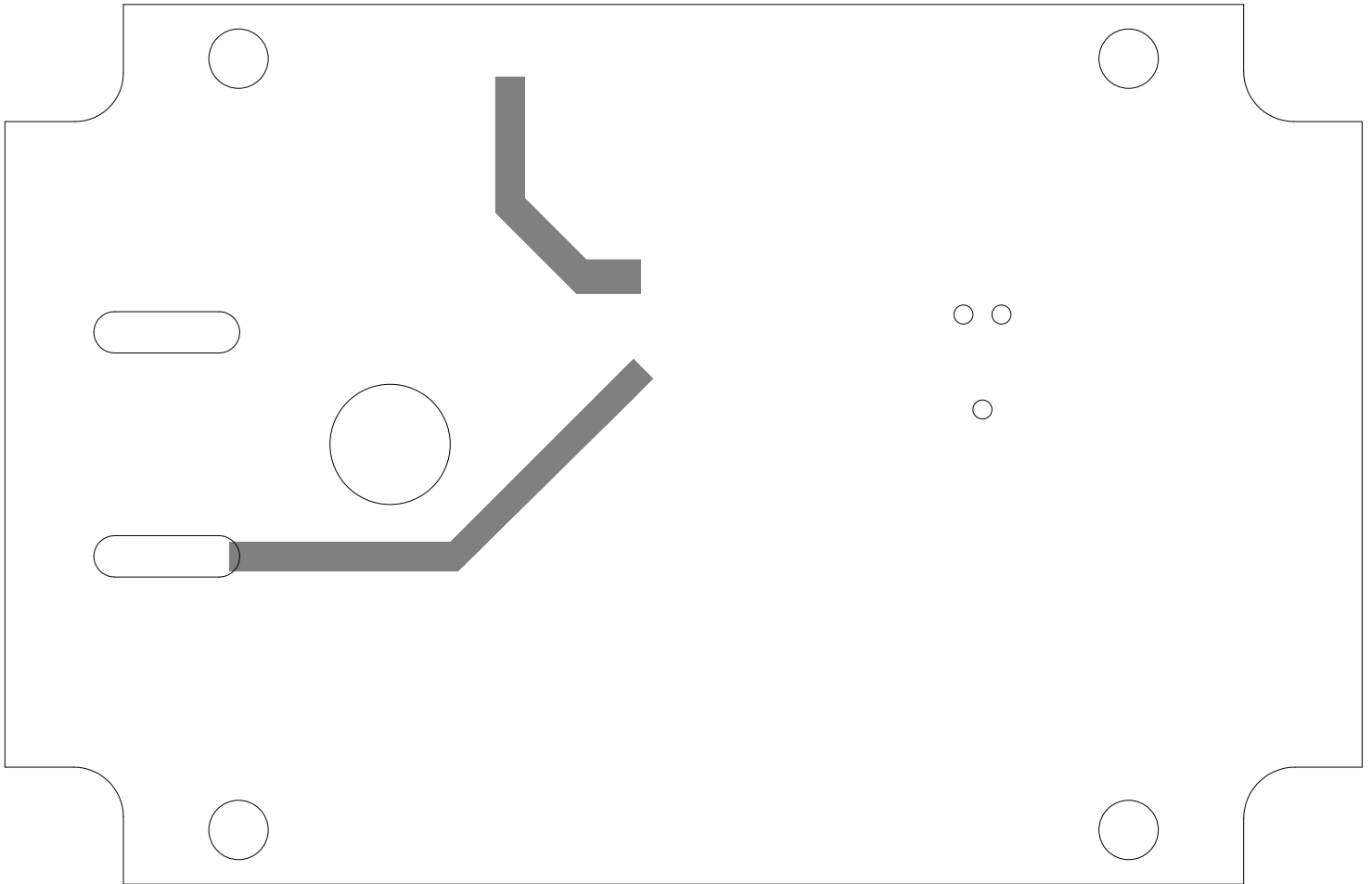


Bottom Copper Layer

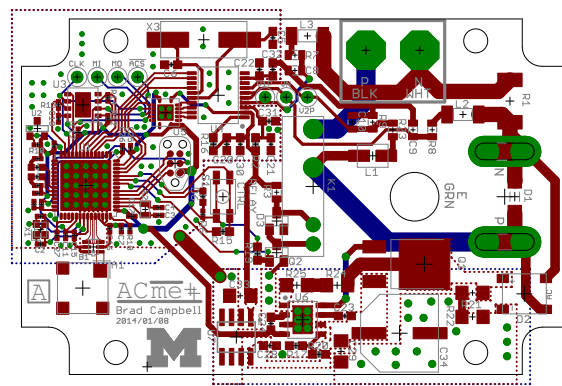




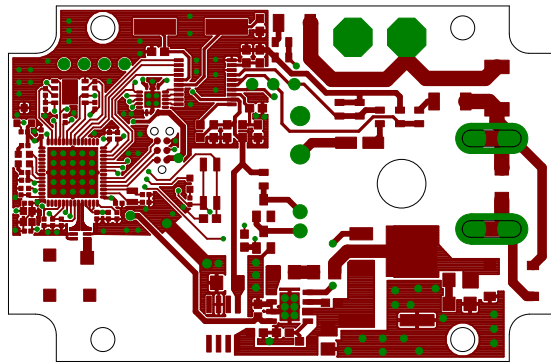
Bottom Paste Layer with Silkscreen



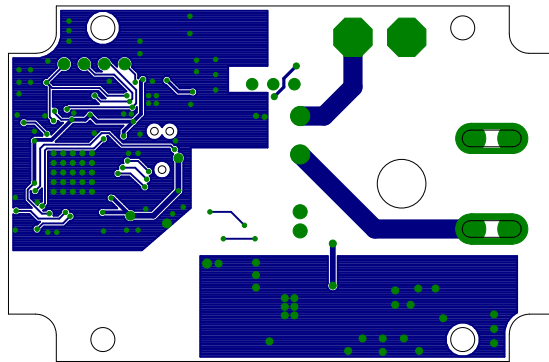
Top and Bottom Layers 1:1 Scale



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	
1	2450BM15A0002	2450BM15A0002	2450BM	B1	BALUN JTI MATCHED ZIGBEE	712-1536-1-ND				
2	122pF	CAPACITOR	0402-CAP	C1, C2	Capacitor	445-1236-1-ND				
2	222pF	CAPACITOR	0402-CAP	C3, C4	Capacitor	490-5868-1-ND				
2	222pF	CAPO603-CAP	0603-CAP	C5, C6	Capacitor	445-1273-1-ND				
1	1220pF	CAPACITOR	0402-CAP	C7	Capacitor	445-1251-1-ND				
3	333nF	CAPO805	0805-CAP	C8, C9, C10	Capacitor	478-1389-1-ND				
9	0.1uF	CAPACITOR	0402-CAP	C11, C12, C13, C14, C15, C16, C17, C18, C19	Capacitor	445-1265-1-ND				
5	0.1uF	CAPO603-CAP	0603-CAP	C20, C21, C22, C23, C24	Capacitor	445-1316-1-ND				
3	1uF	CAPACITOR	0402-CAP	C25, C26, C27	Capacitor	445-4998-1-ND				
1	1uF	CAPO603-CAP	0603-CAP	C28	Capacitor	445-5956-1-ND				
1	1uF	CAP1206	1206-CAP	C29	Capacitor	445-1381-1-ND				
3	10uF	CAPO603-CAP	0603-CAP	C30, C31, C32	Capacitor	1276-1119-1-ND				
1	147uF	CAP1206	1206-CAP	C33	Capacitor	399-5508-1-ND				
1	1470uF	CAP_EEE-FP1E471AP	CAP_SM_10MM	C34	Surface mount low ESR cap.	PCE4440CT-ND				
1	5MAJ_TVS	SMAJ_TVS	DO214_TVS	D1		SMAJ250CALFCT-ND				
1	CD2320-BB11000	CD2320-BB11000	CD2320	D2	Bridge rectifier	CD2320-B11000CT-ND				
1	DIODE_MM8D914	DIODE_MM8D914	SOT-23	D3	DIODE SML SIG 100V 0.2A SOT23-3	MM8D914F5CT-ND				
1	RED	LED0603	LED-0603	D4	LEDs	160-1835-1-ND				
1	GREEN	LED0603	LED-0603	D5	LEDs	160-1834-1-ND				
1	BLUE	LED0603	LED-0603	D6	LEDs	160-1837-1-ND				
1	AC-PLUG	AC-PLUG	AC_MALE_PINS	J1	For use with Bud Industries Box: 377-1709-ND					
1	TC2030-CTX-NL	TC2030-CTX-NL	TC2030-IDC-NL	J2	Tag Connect footprint for ARM JTAG.					
3	WIRE_HOLE-14AWG	WIRE_HOLE-14AWG	WIRE_HOLE-14AWG	J3, J4, J5	Solder point for 14AWG wire					
1	S216501F	S216501F	RELAY_SX1650X	K1	RELAY SSR 240VAC 16A TRIAC 4-SIP	425-2413-5-ND	852-S216501F	14N9591		
1	35F0121-OSR-10	35F0121-OSR-10	35F0102	L1	FERRITE 10A 42 OHMS @ 10 MHZ SMD	240-2520-1-ND				
2	EMI_SUPPRESSION_FERRITE_BEAD	EMI_SUPPRESSION_FERRITE_BEAD	L1806	L2, L3	FERRITE 300MA 150 OHM 1806 SMD	240-2418-1-ND				
1	1STD5NB120SZT4	1STD5NB120SZT4	DPAK	Q1	5 A - 1200 V - low drop internally clamped IGBT	497-4352-1-ND				
1	FDV0301W	FDV0301W	SOT-23	Q2		FDV301NCT-ND				
1	0.001	RESISTOR2512	R2512	R1	Resistor	P1.0TCT-ND				
1	10	RESISTOR0603-RES	0603-RES	R2	Resistor	RHM10.0CFCT-ND				
1	1330	RESISTOR0805-RES	0805-RES	R3	Resistor	RHM330KCT-ND				
1	3470	RESISTOR	0402-RES	R4, R5, R6	Resistor	RHM470BHCT-ND				
1	31k	RESISTOR0805-RES	0805-RES	R7, R8, R9	Resistor	P16058CT-ND				
2	2.2k	RESISTOR	0402-RES	R10, R11	Resistor	RHM2.2KCECT-ND				
1	34.7k	RESISTOR	0402-RES	R12, R13, R14	Resistor	RHM4.7KCECT-ND				
2	210k	RESISTOR0603-RES	0603-RES	R15, R16	Resistor	RHM10.0KCFCT-ND				
1	12.4k	RESISTOR0603-RES	0603-RES	R17	Resistor	RHM12.4KCFCT-ND				
1	156k	RESISTOR	0402-RES	R18	Resistor	RHM56KBHCT-ND				
1	100k	RESISTOR0603-RES	0603-RES	R19	Resistor	RHM100KCGCT-ND				
1	1113k	RESISTOR0603-RES	0603-RES	R20	Resistor	RHM113KCFCT-ND				
2	220k	RESISTOR1206	1206-RES	R21, R22	Resistor	P200KALCT-ND				
1	1499k	RESISTOR0805-RES	0805-RES	R23	Resistor	P499KCCT-ND				
2	2510k	RESISTOR1206	1206-RES	R24, R25	Resistor	P510KALCT-ND				
1	1EVQP2	EVQP2	EVQP2	S1		P11084SCT-ND				
7	TEST_POINT_0.040IN	TEST_POINT_0.040IN	TESTPOINT_0.040IN	TP1, TP2, TP3, TP4, TP5, TP6, TP7	0.040in Test Point	5001K-ND				
1	CC2538	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		
1	DS2411	DS2411	SOT-23	U2	Maxim DS2411	DS2411R+CT-ND				
1	FM25LBTDNFN-8	FM25LBTDNFN-8	TDFN-8	U3	IC FRAM 4KBIT 10MHZ 8SOIC	FM25L04B-DGRA-ND	877-FM25L04B-DG			
1	ADE7753	ADE7753	SSOP-20	U4	Single-Phase Multifunction Metering IC	ADE7753ARSZRLCT-ND	584-ADE7753ARSZR	59K0984		
1	TXB0104RGY	TXB0104RGY	S-PVQFN-N14	U5	4-BIT BIDIRECTIONAL VOLTAGE-LEVEL TRANSLATOR	296-21930-1-ND				
1	SR086SG-G	SR086SG-G	SR086	U6	Adjustable Off-Line Inductorless Switching Regulator		689-SR086SG-G			
1	TDA3664AT	TDA3664AT	SOIC_8	U7	Very low dropout voltage/quiescent current 5 V voltage regulator	568-3310-1-ND	771-TDA3664ATN1118			
1	EPSON-FA-128	EPSON-FA-128	FA-128	X1	MHz RANGE CRYSTAL UNIT	SER3800CT-ND	732-FA128-32F20X-K3			
1	FC-12M32.7680KA-A3	FC-12M32.7680KA-A3	FC-12M	X2	kHz RANGE CRYSTAL UNIT	SER3672CT-ND				
1	ECS-35-17-5PX-TR	ECS-35-17-5PX-TR	CSM-7X	X3	CRYSTAL 3.579545MHZ 17PF SMD	XC1234CT-ND				
1	ENCLOSURE	PPB-11860-BK			BOX ABS 3.09X2.09X1.65" BLK	377-1709-ND				
0	ENCLOSURE	PPB-11860-WT			BOX ABS 3.09X2.09X1.65" WHT	377-1710-ND				
1	SOCKET	739W-X2/O3			OUTLET PWR NEMA 5-15R SNAPIN/IDC	Q228-ND				
0	14AWG Black	6717 BK005			HOOK-UP STRND 14AWG BLACK 100'	6717 BK005-ND				
0	14AWG Green	6717 GR005			HOOK-UP STRND 14AWG GREEN 100'	6717 GR005-ND				
0	14AWG 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 RHM2.2KCr10, R11
3 RHM4.7KCr12, R13, R14
2 RHM10.0K(R15, R16
1 RHM12.4K(R17
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