

# Bill of Materials

 TI DESIGNS  
 TIDM-AC-LED-COM

Item	Macro #	Macro Name	Ref. Des	Type	Description	# needed per macro	# needed per board	Digikey Part #	Mouser Part #	Newark	Comments
Main Board											
[R4].8 - December 12, 2011											
1		Main	BS1, BS3, BS4, BS6	BS	Banana Connector and Screws - Red (remove crimping piece)	4	4			79K4791	
2		Main	BS2, BS5	BS	Banana Connector and Screws - Black (remove crimping piece)	2	2			79K4808	
3		Main	C4, C5	C	Elec. Cap - 47u, 100V, Alum, radial	2	2	493-1663-ND			
4		Main	C6-C16	C	Cer. Cap - 0.1uf, 50V, X7R, 0805	11	11	311-1140-1-ND			
5		Main	D1	D	Schottky Diode 30V, 200mA, BAT54S Dual, SC-70-6	1	1	BAT54SDW-FDICT-ND			
6		Main	D2, D3, +2	D	Zener Diode, 43V, SMB	4	4	SMBJ5367B-TPMSCT-ND			4 zeners total used; 2 are bluewired (see BuildInstructions ppt)
7		Main	J1	J	100 pin DIMM socket - Molex 0876301001	1	1		538-87630-1001		
8		Main	J2-J7, J11-J20	J	Standard 0.1" SIL headers, cut to fit, total needed 1x45						
9		Main	J8	J	XLR-5 (DMX) connector	1	1		568-NC5MBH		
10		Main	J9.1	J	Female 0.1" DIL headers, 2x9	1	1	S7112-ND			
11		Main	J9.2	J	Female 0.1" DIL headers, 2x4	1	1	S7072-ND			
12		Main	J10.1, J10.2	J	1.27mm SMD 20-pin connector	2	2	M50-4901045			
13		Main	P1	P	CONN AC RECEPT 7MM R/A RND PCB	1	1	Q218-ND			
14		Main	R1	R	Res. - 47R, 5%, 0.1W, 0805	1	1	RHM47ARCT-ND			
15		Main	R3	R	Res. - 0R, 5% - 0.1W, 0805	1	1	RHM0.0ARCT-ND			
16		Main	R4,R6,R7	R	<b>DO NOT POPULATE</b>						
17		Main	R5,R8,R10,R11	R	Res. - 10K, 5% - 0.1W, 0805	4	4	RHM10KARCT-ND			
18		Main	R9	R	Res. - 200R, 5% - 0.1W, 0805	1	1	RHM200ARCT-ND			
19		Main	R12,R13	R	Res. - 4K7, 5% - 0.1W, 0805	2	2	RHM4.7KARCT-ND			
20		Main	R14	R	Res. - 270R, 5% - 0.1W, 0805	1	1	RHM270ARCT-ND			
21		Main	TB1-TB6, TB7	TB	Terminal Blocks - 5.08mm, 2POS	7	7	ED1975-ND			
22		Main	U1, U6	U	Optocoupler, 80% current, 4SMD	2	2	751-1345-1-ND			
23		Main	U3	U	RS-485 Transceiver - 8SOIC	1	1	296-14640-5-ND			
24		Main	U4	U	Optorelay, Avago 1Ohm - 4SOP	1	1	516-2006-ND			
25		Main	U5	U	Schmitt-Trigger Buffer Hex, 74AC14 - 14SOIC	1	1	296-4300-1-ND			
26		Main	U7	U	EEPROM, 8Kbit - 8SOIC	1	1	CAT24C08WI-G-ND			
27		Main	U8	U	Isolator, ISO7221CDR	1	1	296-21956-1-ND			
28		Main	U9	U	MAX3221	1	1	296-19825-2			
29		Main	U10	U	DC/DC Isolated Supply, 3.3V in-3.3V out	1	1	811-1673-5-ND			
30		Main		Misc	Banana Cable, 4 inch, Red	2	2		565-B4-2		
31		Main		Misc	Black shorting jumpers	8	8	929950-00-ND			
32		Main		Misc	Nylon Standoff; 4-40; 0.5"-0.75" tall	8	8	4802K-ND or comparable			
33		Main		Misc	Nylon Screw; 4-40; 3/8" or 1/2"	2	2	H550-ND or comparable			
34		Main		Misc	Nylon Hex Nut; 4-40	10	10	H616-ND or comparable			
35		Main		Misc	Stickers; 0.5" x 0.5" High Voltage Safety Stickers	3	3				
36		Main		Misc	Stickers; 0.5" x 0.5" High Temperature Safety Stickers	1	1				
37	M1	PFC-1ph_300W[R2]	C1,C2	C	Film Cap - 2.2nF, Y2, 250VAC, 7.5mm spacing	2	2	490-4214-ND			

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38	M1	PFC-1ph_300W[R2]	C3, C14	C	Film Cap - .10uF 310VAC EMI SUPPRESSION	2	2	BC1601-ND			Alternate D/K part: BC1588-ND
39	M1	PFC-1ph_300W[R2]	C4	C	Film Cap - .56uF 450V	1	1	P14203-ND			
40	M1	PFC-1ph_300W[R2]	C5	C	Cer. Cap - 18pF , 25V, 0805	1	1	478-1307-1-ND			
41	M1	PFC-1ph_300W[R2]	C6	C	Elec Cap - 120uF , 450V	1	1	P13912-ND			
42	M1	PFC-1ph_300W[R2]	C7,C8,C13	C	Cer. Cap - 1nF , 25V, 0805	3	3	478-1328-1-ND			
43	M1	PFC-1ph_300W[R2]	C9	C	Cer. Cap - 2.2uF , 16V, 0805	1	1	490-3906-1-ND			
44	M1	PFC-1ph_300W[R2]	C10	C	Cer. Cap - 330nF , 16V, 0805	1	1	478-1402-1-ND			
45	M1	PFC-1ph_300W[R2]	C11	C	Cer. Cap - 1uF , 16V, 0805	1	1	490-4785-1-ND			
46	M1	PFC-1ph_300W[R2]	C12	C	Cer. Cap - 100nF , 25V, 0805	1	1	PCC1828CT-ND			
47	M1	PFC-1ph_300W[R2]	D1,D2,D3	D	Diode, RECTIFIER 600V 2A SMB	3	3	497-3776-1-ND			
48	M1	PFC-1ph_300W[R2]	D4	D	Diode, RECTIFIER 600V 8A TO-263-2	1	1	497-5263-1-ND			
49	M1	PFC-1ph_300W[R2]	D5	D	Diode, RECTIFIER 40V 2A SMA	1	1	B240A-FDICT-ND			
50	M1	PFC-1ph_300W[R2]	D6	D	Diode, RECTIFIER 80V 100mA SC-90	1	1	1SS355TE-17CT-ND			
51	M1	PFC-1ph_300W[R2]	D7	D	Diode, Zener 18V, SC-90	1	1	MM3Z18VBCT-ND			
52	M1	PFC-1ph_300W[R2]	DB1	DB	RECT BRIDGE 6A 600V, GBJ	1	1	GBJ606-FDI-ND			
53	M1	PFC-1ph_300W[R2]	F1	F	Fuse Holder	1	1	486-1159-ND			
54	M1	PFC-1ph_300W[R2]	Fuse-Cap	F	Fuse Cap for 5x20mm fuses flush mount	1	1	WK6234-ND			
55	M1	PFC-1ph_300W[R2]	Fuse-F1	F	250V, 3A fuse, 5x20mm	1	1	283-2899-ND			
56	M1	PFC-1ph_300W[R2]	HS1	HS	HEATSINK for DB1, 1.1"x1.1" BGA heatsink	1	1	345-1096-ND			
57	M1	PFC-1ph_300W[R2]	HS2	HS	HEATSINK for Q1, TO-220 VERT MT, 0.375" height from base	1	1	HS368-ND			
58	M1	PFC-1ph_300W[R2]	L1	L	Custom Inductor, Würth-Midcom, 750311932 Rev01	1	1				Würth-Midcom, 750311932 Rev01
59	M1	PFC-1ph_300W[R2]	L2	L	Inductor for Differential EMI filtering, 47uH	1	1	811-1237-ND			
60	M1	PFC-1ph_300W[R2]	Q1	Q	MOSFET N-CHAN 500V 8A TO-220-3, IPP60R250CP	1	1	IPP60R250CPIN-ND			
61	M1	PFC-1ph_300W[R2]	Q2	Q	Transistor NPN, 40V, SOT23-3	1	1	MMBT2222A-FDICT-ND			
62	M1	PFC-1ph_300W[R2]	R1,R2	R	Res. - 1M, 1%, 0.1W, 0805	2	2	RHM1.00MCRCT-ND			
63	M1	PFC-1ph_300W[R2]	R3	R	Res. - 24K3, 1%, 0.1W, 0805	1	1	RHM24.3KCRCT-ND			
64	M1	PFC-1ph_300W[R2]	R4	R	Res. - 21K5, 1%, 0.1W, 0805	1	1	RHM21.5KCRCT-ND			
65	M1	PFC-1ph_300W[R2]	R5	R	Res. - 47R5, 1%, 0.1W, 0805	1	1	RHM47.5CRCT-ND			
66	M1	PFC-1ph_300W[R2]	R6,R7	R	Res. - 511K, 1%, 0.1W, 0805	2	2	RHM511KCRCT-ND			
67	M1	PFC-1ph_300W[R2]	R8	R	Res. - 6K49, 1%, 0.1W, 0805	1	1	RHM6.49KCRCT-ND			
68	M1	PFC-1ph_300W[R2]	R9	R	Res. - 10R, 5%, 0.1W, 0805	1	1	RHM10ARCT-ND			
69	M1	PFC-1ph_300W[R2]	R10	R	Res. - 332R, 1%, 0.1W, 0805	1	1	RHM332CRCT-ND			

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70	M1	PFC-1ph_300W[R2]	R11,R12,R13	R	Res. - 0R75, 1%, 2W, 2512	3	3	CSRN2512FKR750CT-ND			
71	M1	PFC-1ph_300W[R2]	R14	R	Res. - 10K7, 1%, 0.1W, 0805	1	1	RHM10.7KCRCT-ND			
72	M1	PFC-1ph_300W[R2]	R15	R	Res. - 4K7, 5%, 0.1W, 0805	1	1	RHM4.7KARCT-ND			
73	M1	PFC-1ph_300W[R2]	R16	R	Res. - 6K81, 1%, 0.1W, 0805	1	1	RHM6.81KCCT-ND			
74	M1	PFC-1ph_300W[R2]	RT1	RT	CURRENT LIMITR INRSH 1.0 OHM 10A	1	1	570-1077-ND			
75	M1	PFC-1ph_300W[R2]	T1	T	Common-mode choke, 1mH, 10A	1	1	M8938CT-ND			
76	M1	PFC-1ph_300W[R2]	U1	U	UCC28810D, SOIC-8	1	1	296-23905-1-ND			
77	M1	PFC-1ph_300W[R2]	VAR1	VAR	VARISTOR 275V RMS 10MM RADIAL	1	1	495-1433-ND			
78	M1	PFC-1ph_300W[R2]		Misc	Heatsink Spacers; Washer Flat #4, 0.12*.275" Nylon	2	2	3118K-ND			Goes between PCB and Heatsink
79	M2	Resonant-HV [R1]	C1	C	CAP CER 1.0UF 25V X7R 10% 0805	1	1	445-1354-1-ND			
80	M2	Resonant-HV [R1]	C4,C5,C15,C17	C	CAP. Film, 15nF, 600VDC	4	4	493-3654-ND			
81	M2	Resonant-HV [R1]	C6	C	Cer. Cap - 0.1uf, 630V, 20% , 5mm lead spacing	1	1	490-4821-ND			
82	M2	Resonant-HV [R1]	C7,C8	C	CAP .10UF 50V CERAMIC X7R 1210	2	2	399-1267-1-ND			
83	M2	Resonant-HV [R1]	C9,C10,C11	C	CAP. 68uF, Polymer Alum, 50V	3	3	493-3871-1-ND			
84	M2	Resonant-HV [R1]	C12	C	CAP. 4.7nF, 50V, 0805, C0G	1	1	478-1379-1-ND			
85	M2	Resonant-HV [R1]	C16	C	CAP. 100pF, 100V, 0805, C0G	1	1	490-1599-1-ND			
86	M2	Resonant-HV [R1]	C18	C	CAP, 4.7nF, 630V, 5mm lead spacing	1	1	445-2640-ND			
87	M2	Resonant-HV [R1]	Cd1	C	CAP CER 2.2UF 16V X7R 10% 1206	1	1	445-1384-1-ND			
88	M2	Resonant-HV [R1]	D1	D	DIODE SCHOTTKY DUAL 30V SOT23-3	1	1	BAT54C-FDICT-ND			
89	M2	Resonant-HV [R1]	D2	D	DIODE SCHOTTKY 30V 200MW SOT23-3	1	1	BAT54A-FDICT-ND			
90	M2	Resonant-HV [R1]	D3,D4	D	SCHOTTKY RECT 40V 1A SOD323. <b>Populate these diodes backward! (populate such that anode goes to PCB's cathode marking)</b>	2	2	568-6523-1-ND			
91	M2	Resonant-HV [R1]	D5,D6	D	SCHOTTKY RECT 100V 20A TO-263AB	2	2	VB20100S-E3/8WGICT-ND			
92	M2	Resonant-HV [R1]	D11,D12	D	DIODE SW DUAL 75V 350MW SOT23-3	2	2	BAV99-FDICT-ND			
93	M2	Resonant-HV [R1]	HS1	HS	HEATSINK TO-220 VERT MT BLK 1.5"	1	1	345-1112-ND	567-637-15ABPE	83K8262	
94	M2	Resonant-HV [R1]	GND-P	J	Standard 0.1" SIL headers, cut to fit, 1x2	1	1				
95	M2	Resonant-HV [R1]	GND-S	J	Standard 0.1" SIL headers, cut to fit, 1x2	1	1				
96	M2	Resonant-HV [R1]	L1	L	Vitec 51PR5369, 60uH	1	1				order from Vitec
97	M2	Resonant-HV [R1]	Q1,Q2	Q	Place 3 ohm 0805 resistor across Q1.1 & Q1.3. Do nothing with Q1.5. Populate Q2 the same way.	2	2	RHM3.00CCT-ND			
98	M2	Resonant-HV [R1]	Q3,Q4	Q	MOSFET N-CH 500V 8A TO-220AB	2	2	IRF840APBF-ND			
99	M2	Resonant-HV [R1]	R1,R3,R10,R11	R	RES 10.0K OHM 1/8W 1% 0805 SMD	4	4	RHM10.0KCCT-ND			
100	M2	Resonant-HV [R1]	R2,R4	R	RES 10.0 OHM 1/8W 1% 0805 SMD	2	2	RHM10.0CRCT-ND			
101	M2	Resonant-HV [R1]	R5,R8,R9	R	RES 3.00 OHM 1/4W 1% 0805 SMD	3	3	RHM3.00CCT-ND			
102	M2	Resonant-HV [R1]	R6,R7	R	RES 0R0 OHM 1/8W 1% 0805 SMD	2	2	RHM0.0ARCT-ND			
103	M2	Resonant-HV [R1]	R16,R17	R	RES 4.99K OHM 1/8W 1% 0805 SMD	2	2	RHM4.99KCRCT-ND			
104	M2	Resonant-HV [R1]	R18	R	RES 680 OHM 1/8W 1% 0805 SMD	1	1	RHM680CCT-ND			
105	M2	Resonant-HV [R1]	R19	R	RES 49.9 OHM 1/8W 1% 0805 SMD	1	1	RHM49.9CRCT-ND			
106	M2	Resonant-HV [R1]	R20	R	RES 4.99K OHM 1/8W 1% 0805 SMD	1	1	RHM4.99KCRCT-ND			
107	M2	Resonant-HV [R1]	R21	R	RES 475 OHM 1/8W 1% 0805 SMD	1	1	RHM475CCT-ND			
108	M2	Resonant-HV [R1]	T1	T	WCM-701-6	1	1				order from West Coast Magnetics
109	M2	Resonant-HV [R1]	T2	T	Vitec 75PR8114; 250W, 6.5:1, 380uH LLC Transformer	1	1				order from Vitec
110	M2	Resonant-HV [R1]	T3	T	WCM-601-6	1	1				order from West Coast Magnetics

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111	M2	Resonant-HV [R1]	U1	U	IC MOSFET DVR DUAL HS 4A 8-SOIC, UCC27324	1	1	296-23486-1-ND			
112	M2	Resonant-HV [R1]		Misc	Thermal Interface Products THERMASIL INSULATOR	2	2		532-53-77-4G		Goes between MOSFET and Heatsink
113	M2	Resonant-HV [R1]		Misc	Mounting Hardware SHOULDER WASHER	2	2		749-SW-032-135		Goes between MOSFET and Screw/Nut
114	M2	Resonant-HV [R1]		Misc	Heatsink Spacers; Washer Flat #4, 0.12*.275" Nylon	2	2	3118K-ND			Goes between PCB and Heatsink
115	M3-M5	Led-Dimming-Dual	C1,C2	C	Cer. Cap - 470n, 25V, X5R, 0805	2	6	587-1290-1-ND			
116	M3-M5	Led-Dimming-Dual	C4,C5	C	Cer. Cap - 3n3, 100V, X7R, 0805	2	6	478-1355-1-ND			
117	M3-M5	Led-Dimming-Dual	Cd1, Cd2	C	Cer. Cap - 220n, 25V, X7R, 0805	2	6	490-1675-1-ND			
118	M3-M5	Led-Dimming-Dual	Cd3	C	Cer. Cap - 4u7, 16V, X7R, 0805	1	3	587-1294-1-ND			
119	M3-M5	Led-Dimming-Dual	R1,R2	R	Res. - 33R, 1%, 0.1W, 0805	2	6	RHM33.0CCT-ND			
120	M3-M5	Led-Dimming-Dual	R3,R4,R7,R8	R	Res. - 10K, 5%, 0.1W, 0805	4	12	RHM10KARCT-ND			
121	M3-M5	Led-Dimming-Dual	R5,R6	R	Res. - 5R, 5%, 0.1W, 0805	2	6	RHM5.1ACT-ND			
122	M3-M5	Led-Dimming-Dual	R9,R10	R	Res. - 0R25, 1%, 1W, 1206	2	6	CSR1/20.25FICT-ND			
123	M3-M5	Led-Dimming-Dual	R11,R12	R	Res. - 330R, 1%, 0.1W, 0805	2	6	RHM330CTR-ND			
124	M3-M5	Led-Dimming-Dual	R13-R16	R	Res. - 620R, 1%, 0.1W, 0805	4	12	RHM620CCT-ND			
125	M3-M5	Led-Dimming-Dual	R17-R20	R	Res. - 7K5, 1%, 0.1W, 0805	4	12	RHM7.50KCCT-ND			
126	M3-M5	Led-Dimming-Dual	U1	U	UCC27324, SOIC - 0.05"	1	3	296-12531-5-ND			
127	M3-M5	Led-Dimming-Dual	U2	U	OPA376AID, MSOP, Op-amp	1	3	296-22630-1-ND			
128	M3-M5	Led-Dimming-Dual	Q1,Q2	Q	MOSFET N-CHAN 100V 2A DPAK T0-2523	2	6	ZXMN10A11KTCCT-ND			
129	M3-M5	Led-Dimming-Dual	GP	J	Standard 0.1" SIL headers, cut to fit, total needed per macro 1x2						
130	M6	PR798-18VP		M	PR798-18VP - Isolated DC/DC supply - 400V to 18VPrim+12VSec	1	1				-Custom Part -Underneath the board, and aside from the 7 major pins, there are some leads that may need to be trimmed before module is placed
131	M7	DC-PwrEntry-SelVin-12V-5V-3V[R1]	C1	C	Cer. Cap - 22u, 25V, X5R, 1206	1	1	587-1433-1-ND			
132	M7	DC-PwrEntry-SelVin-12V-5V-3V[R1]	C2	C	Cer. Cap - 10u, 25V, X5R, 1206	1	1	PCC2326CT-ND			
133	M7	DC-PwrEntry-SelVin-12V-5V-3V[R1]	C3	C	Cer. Cap - 4u7, 25V, X5R, 0805	1	1	490-3335-1-ND			
134	M7	DC-PwrEntry-SelVin-12V-5V-3V[R1]	C4	C	Cer. Cap - 0.1uf, 25V, X5R, 0805	1	1	PCC1828CT-ND			
135	M7	DC-PwrEntry-SelVin-12V-5V-3V[R1]	C5,C6,C7	C	Elec. Cap - 330uf, 63V, Alum, radial	3	3	P5542-ND			
136	M7	DC-PwrEntry-SelVin-12V-5V-3V[R1]	R1	R	Res. - 340R, 1%, 0.1W, 0805	1	1	RHM340CRCT-ND			
137	M7	DC-PwrEntry-SelVin-12V-5V-3V[R1]	R2	R	Res. - 470R, 5%, 0.1W, 0805	1	1	RHM470ARCT-ND			
138	M7	DC-PwrEntry-SelVin-12V-5V-3V[R1]	LD1	LD	LED, green, 0805	1	1	404-1021-1			
139	M7	DC-PwrEntry-SelVin-12V-5V-3V[R1]	SW1	SW	Toggle Switch - SPDT	1	1	CKN1002-ND			
140	M7	DC-PwrEntry-SelVin-12V-5V-3V[R1]	M1	P	Power Module - PTH08080	1	1	296-20432-ND			
141	M7	DC-PwrEntry-SelVin-12V-5V-3V[R1]	U1	U	LDO - 3.3V - TPS79533	1	1	296-13810-1-ND			

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142	M7	DC-PwrEntry-SELVin-12V-5V-3V[R1]	JP1	J	Power jack 2.1 x 5.5 mm	1	1	CP-002AH-ND			
143	M8	USB-JTAG-ISO	C1, C4, C5	C	Cer. Cap - 1u, 6.3V, X5R, 0603	3	3	PCC2174CT-ND			
144	M8	USB-JTAG-ISO	C2	C	Cer. Cap - 2u2, 6.3V, X5R, 0603	1	1	490-1551-1-ND			
145	M8	USB-JTAG-ISO	C3, C6-C16	C	Cer. Cap - 100n, 16V, X7R, 0603	12	12	478-1239-1-ND			
146	M8	USB-JTAG-ISO	C17	C	Cer. Cap - 0.1uf, 100V, 20% , Axial	1	1	478-3154-1-ND			
147	M8	USB-JTAG-ISO	DA1	DA	Diode Array, Quad, SOT363	1	1	BAW567DW-FDICT-ND			
148	M8	USB-JTAG-ISO	J1, J3, J4, J5	J	Standard 0.1" SIL headers, cut to fit, total needed 1x8	4	4				
149	M8	USB-JTAG-ISO	J2	J	Standard 0.1" DIL header, cut to fit, remove pin 6, total needed 2x7	1	1				
150	M8	USB-JTAG-ISO	JP1	JP	Connector - USB Type B	1	1	ED90064-ND			
151	M8	USB-JTAG-ISO	L1, L2	L	Inductor, 22uH, 0805	2	2	490-4030-1			
152	M8	USB-JTAG-ISO	LD1	LD	LED, green, 0805	1	1	404-1021-1			
153	M8	USB-JTAG-ISO	R1	R	Res. - 470R, 5%, 0.1W, 0603	1	1	RHM470GCT-ND			
154	M8	USB-JTAG-ISO	R2, R3	R	Res. - 27R, 5%, 0.1W, 0603	2	2	RHM27GCT-ND			
155	M8	USB-JTAG-ISO	R4, R6, R9, R10, R14	R	Res. - 2K2, 5%, 0.1W, 0603	5	5	RHM2.2KGCT-ND			
156	M8	USB-JTAG-ISO	R5	R	Res. - 1M, 1%, 0.1W, 0603	1	1	RHM1.00MHCT-ND			
157	M8	USB-JTAG-ISO	R7	R	Res. - 10K, 5%, 0.1W, 0603	1	1	RHM10KGCT-ND			
158	M8	USB-JTAG-ISO	R8	R	Res. - 1K, 5%, 0.1W, 0603	1	1	RHM1.0KGCT-ND			
159	M8	USB-JTAG-ISO	R11	R	Res. - 680R, 5%, 0.1W, 0603	1	1	RHM680GCT-ND			
160	M8	USB-JTAG-ISO	R13	R	Res. - 47K, 5%, 0.1W, 0603	1	1	RHM47KGCT-ND			
161	M8	USB-JTAG-ISO	U1	U	FTDI UART/FIFO Dual, 48-LQFP	1	1	768-1010-1-ND			
162	M8	USB-JTAG-ISO	U2	U	EEPROM, SOT23-6	1	1	93LC46BT-I/OTCT-ND			
163	M8	USB-JTAG-ISO	U3	U	DFF - LVC2G74	1	1	296-13273-1-ND			
164	M8	USB-JTAG-ISO	U4	U	LDO - 3.3V - TPS73033	1	1	296-17580-1-ND			
165	M8	USB-JTAG-ISO	U5	U	Digital Isolator, Quad 4/0, 25Mbps	1	1		595-ISO7240C DW		
166	M8	USB-JTAG-ISO	U6	U	Digital Isolator, Quad 2/2, 25Mbps	1	1		595-ISO7242C DW		
167	M8	USB-JTAG-ISO	X1	X	Resonator - 6MHz	1	1	490-1218-1-ND			



Item	Macro #	Macro Name	Ref. Des	Type	Description	# needed per macro	# needed per board	Digikey Part #	Mouser Part #	Newark	Comments
<b>LED Panel [R1].4</b>											
1		Main	LD (see BuildInstructions)	LD	High Brightness Golden Dragon Osram LED (350mA)	60	<b>60</b>	475-2596-2-ND			
2		Main	R? (see BuildInstructions)	R	<b>DO NOT POPULATE</b>	0	<b>0</b>				
3		Main	HS1 (see BuildInstructions)	HS	Heatsink: Aavid 83210-3-U-02400-G, 60"x61"; needs to be tapped (see LEDPanelx6-BuildInstructions.ppt)	2	<b>2</b>				Aavid 83210-3-U-02400G
4		Main	Thermal pad (see BuildInstructions)	TPD	Thermal Pad 210mmx300mm (Two 60mm x 62.5mm pieces needed per panel; 1 sheet gives enough for 7.5 panels)			3M9605-ND			
5		Main	Rubber Feet (see BuildInstructions)	Feet	Rubber Feet (clear)	4	<b>4</b>	SJ5303-7-ND			
6		Main	wire (see BuildInstructions)	Wire	Red 22AWG, stranded; 6 ~5" pieces per panel	30"	<b>30"</b>				
7		Main	wire (see BuildInstructions)	Wire	Black 22AWG, stranded; 6 ~5" pieces per panel	30"	<b>30"</b>				
8		Main	Screws for heatsink	Screws	3x8mm metric machine screws	8	<b>8</b>				
9		Main	Fan		Exhaust Fan, 12VDC, 60x25mm, 36 CFM, solder on connector and connector housing; see below	1	<b>1</b>	259-1405-ND			
10		Main	Connector		Connector socket	2	<b>2</b>	A99620-ND			
11		Main	Connector Housing		Connector housing, 2 position	1	<b>1</b>	A99613-ND			
12		Main	Finger Guard		Fan Guard, 60mm square	1	<b>1</b>	CR221-ND			
13		Main	Hardware for Fan	Screws	6-32 x 1.25" screw, washer and nut	4	<b>4</b>				
14		Main	Plastic Enclosure		Custom from Envision Plastics	1	<b>1</b>				

Item Number	Quantity	Part Number	Part Type	Part Reference	Vendor	Vendor PN	Description	Value	PCB Footprint	Voltage	Tolerance	Distribut or	Distributor Part Number	Datasheet
PLC AFE Systems Module [R2.2] Version 4 12-December-2011														
1	1	300-00037	CAP	C1	AVX	06035C103KAT2A	Cap Ceramic SMT 0603	10nF	C0603	50V		digkey	478-1227-1-ND	
2	1	300-00028	CAP	C2			Cap Ceramic SMT 0402	33nf	C0402	25V		digkey	490-3253-1-ND	
3	1	300-00026	CAP	C3			Cap Ceramic SMT 0402	22nf	C0402	25V		digkey	490-3252-1-ND	
4	3	300-00039	CAP	C4 C14 C22	Taiyo Yuden	GMK316F106ZL-T	Cap Ceramic SMT 1206	10UF	C1206	35V		digkey	587-1352-1-ND	
5	1	300-00038	CAP	C5	PANASONIC	ECH-U1H332JX5	CAP .0033UF 50V PPS FILM 1206 5%	3n3F	C1206	50V		digkey	PCF1334CT-ND	
6	1	300-00033	CAP	C6			Cap Ceramic SMT 0603	910pf	C0603	25V				
7	1	300-00034	CAP	C7			Cap Ceramic SMT 0603	300pf	C0603	25V				
8	2	300-00013	CAP	C8 C27			Cap Ceramic SMT 0402	10nF	C0402	10V				
9	3	100-00107	CAP	C9 C10 C12	TI	CAP_0603_DNP	Capacitor, DNP, 0603	DNP	C0603					
10	1	300-00035	CAP	C11	Murata	GRM188R71H104KA93D	Cap Ceramic SMT 0603	100nF	C0603	50V		digkey	490-1519-1-ND	
11	4	300-00044	CAP	C13 C15 C16 C17	MURATA	GRM155R61A104KA01D	CAP CER .1UF 10V 10% X5R 0402	0.1uf	C0402	10V		digkey	490-1318-1-ND	
12	6	300-00041	CAP	C18 C19 C20 C21	MURATA	GRM155F51E104ZA01D	CAP CER .1UF (100nf) 25V Y5V 0402	100nF	C0402	25V		digkey	490-3271-1-ND	
13	2	300-00042	CAP	C23 C24	TDK	C5750Y5V1E476Z	CAP CER 47UF 25V Y5V 2220	47uf	C2220	25V		digkey	445-3486-2-ND	
14	1	300-00032	CAP	C26			Cap Ceramic SMT 0402 82pF	82pf	C0402	10V				
15	1	300-00025	CAP	C28			Cap Ceramic SMT 0402 150pF	150pf	C0402	10V				
16	1	100-00108	CAP	C29	KEMET	C0402C104K4RACTU	Capacitor,0.1UF, X7R, 16 V, 0402, 10%	0.1UF	C0402	16V	0.1			<a href="http://www.kemet.com/kemet/web/homepage/kechome.nsf/vapubfiles/F3102X7R.pdf/\$file/F3102X7R.pdf">http://www.kemet.com/kemet/web/homepage/kechome.nsf/vapubfiles/F3102X7R.pdf/\$file/F3102X7R.pdf</a>
17	1	300-00015	CAP	C30			Cap Ceramic SMT 0402 1uF	1uF	C0402	10V				
18	1	300-00031	CAP	C31			Cap Ceramic SMT 0402 820pF	820pf	C0402	10V				
19	1	300-00047	CAP	C32	PANASONIC	ECQ-E4474KF	.47 UF/400VDC METAL POLY CAP	470nF	Axial 15.00mm Spacing	400V		digkey	EF4474-ND	
20	1	300-00048	CAP	C33	KEMET	C0805C103KARACTU	CAP CERAMIC .01UF 250V X7R 080	10nf	C0805	250V		digkey	399-4669-1-ND	
21	1	100-00126	CAP	C35	Murata	GRM188R71C334KA01D	Capacitor,0.33uF,16V,10%,0603, X7R	0.33UF	C0603	16V	0.1	Digikey	490-3294-1-ND	
22	1	400-00010	FET_DIODE	D1	NXP Semi	PMLL4148L,115	DIODE STANDARD 200mA LL-34	200mA	LL-34			Digikey	568-1749-1-ND	
23	1	120-00070	CONN	J1	Molex Connector Corp	90130-1108	CONN HDR RECT MALE 8POS 0.1" THRU_HOLE	DILH-2x4	Male			Digikey	WM8234-ND	
24	1	120-00069	CONN	J2	Molex Connector Corp	90130-1216	CONN HDR RECT MALE 18POS 0.1" THRU_HOLE	DILH-2x9	Male			Digikey	WM8253-ND	
25	3			J3 J4 J5			CONN 1x2 HEADER; Std 0.1" JUMPER	SILH-1x2	Male					
26	1	330-00009	MAGNETICS	L1	Panasonic - ECG	ELJ-EA331KF	INDUCTOR 330UH 10% 1007 SMD	330uH	IND0805			Digikey	587-2518-1-ND	
27	1	330-00010	MAGNETICS	L2	Taiyo Yuden	CB2518T471K	INDUCTOR POWER 470UH 1007	470uH	IND0805			Digikey	587-2194-1-ND	
28	1	330-00011	MAGNETICS	L3	Taiyo Yuden	LB3218T1R0M	INDUCTOR 1.0UH 1.075A 20% 0805 SMD	1uH	IND0805			Digikey	732-2952-1-ND	
29	1			L4			INDUCTOR POWER SHIELD 15uH SMD	15uH	DR1040			Digikey	513-1400-1-ND	
30	1	330-00015	MAGNETICS	L5	Coiltronics/Cooper	DR1040-3R8-R	INDUCTOR POWER SHIELD 3.8UH SMD	3U8H	DR1040			Digikey	513-1395-1-ND	
31	1	330-00020	MAGNETICS	L6	Panasonic - ECG	ETQ-P5LR60XFA	COIL POWER CHOKE 600nH 27A SMD	600nH	0.571" L x 0.5" W x 0.2" H			Digikey	PCD2022CT-ND	
32	1	490-00001	Heat_Sink	P1	AAVID	573400D00000G	DNP, heatsink	DNP	custom					
33	1	200-00035	FET_DIODE	Q1	On Semi	BC817-40LT1G	BJT, NPN, Ic=500mA, SOT-23-3	BC817	SOT-23-3			Digikey	BC817-40LT1GOSCT-ND	
34	2	310-00051	RES	R1 R2			Resistor 150R 5% - SMD,0402	150R	R0402					
35	2	110-00179	RES	R3 R5	Panasonic	ERJ-3GEYJ104V	RESISTOR,100K, 0.1W, 5%, 0603	100K	R0603	0.1W	0.05			<a href="http://www.panasonic.com/industrial/components/pdf/AOA0000CE1.pdf">http://www.panasonic.com/industrial/components/pdf/AOA0000CE1.pdf</a>
36	3	310-00010	RES	R4 R25 R26			Resistors, 0R, 5% - SMD, 0805	0R	R0805		0.05			
37	6	310-00049	RES	R6 R7 R8 R9 R14 R15			Resistor 10K 5% - SMD,0402	10K	R0402					
38	1	110-00235	RES	R12	Rohm	MCR03EZPJ000	Resistors, 0R0, 0.1W, 5%, 0603	0R0	R0603	0.1W	0.05	Digikey	RHM0.0GCT-ND	
39	1	110-00230	RES	R13			Resistors DNP - SMD, 0603 (Do NOT populate)	DNP	R0603					
40	1	310-00063	RES	R16	vishay	CRCW0402330RJNED	RES 330 OHM 1/16W 5% 0402 SMD	330R	R0402					
41	1	310-00055	RES	R17			Resistor 2K67 5% - SMD,0402	2K67	R0402					
42	1	310-00057	RES	R18			Resistor 3K3 5% - SMD,0402	3K3	R0402					
43	1	310-00048	RES	R19			Resistor 1K47 5% - SMD,0402	1K47	R0402					
44	1	310-00052	RES	R20			Resistor 15K 5% - SMD,0402	15K	R0402					
45	2	310-00059	RES	R21 R23			Resistor 30K 5% - SMD,0402	30K	R0402					
46	1	310-00061	RES	R22			Resistor 6K8 5% - SMD,0402	6K8	R0402					
47	1	310-00075	RES	R28	Panasonic	ERJ-6GEYJ4R7V	RESISTOR 4.7 OHM 1/8W 5% 0805	4R7	R0805			digkey	P4.7ACT-ND	
48	1	110-00031	RES	R29	AVX	CR21-105J-*	RESISTOR,1M,0.125W,5 %,0805	1M	R0805	0.125W	0.05			<a href="http://www.avxcorp.com/docs/Catalogs/cr-cj.pdf">http://www.avxcorp.com/docs/Catalogs/cr-cj.pdf</a>
49	1	110-00238	RES	R30	Rohm	MCR10EZPJ271	Resistors 270R, 0.125W, 5%, 0805	270R	R0805	0.125W		Digikey	RHM270ARCT-ND	
50	3	110-00018	RES	R31 R32 R33	AVX	CR21-1003F-*	RESISTOR,100.0K,0.125 W,1 %,0805	100.0K	R0805	0.125W	0.01			<a href="http://www.avxcorp.com/docs/Catalogs/cr-cj.pdf">http://www.avxcorp.com/docs/Catalogs/cr-cj.pdf</a>
51	1	110-00048	RES	R34	AVX	CR21-1501F-*	RESISTOR,1.50K,0.125 W,1 %,0805	1.50K	R0805	0.125W	0.01			<a href="http://www.avxcorp.com/docs/Catalogs/cr-cj.pdf">http://www.avxcorp.com/docs/Catalogs/cr-cj.pdf</a>
52	1	110-00239	RES	R35	Rohm	MCR10EZPF2403	Resistors 240K, 0.125W, 1%, 0805	240k	R0805	0.125		Digikey	RHM240KCRCT-ND	
53	1	330-00016	MAGNETICS	T1	VITEC	AF5112	VITEC PLC Transformer AF5112	AF5112	See Datasheet			VITEC	AF5112	

Item Number	Quantity	Part Number	Part Type	Part Reference	Vendor	Vendor PN	Description	Value	PCB Footprint	Voltage	Tolerance	Distribut or	Distributor Part Number	Datasheet
54	6	280-00005	MTG_HOLE_TP	TP1 TP2 TP3 TP4 TP5 TP6	TI		TEST POINT 5002 .040"D WHITE THT	TP_CLIP_5015	TP_5015					
55	2	400-00003	FET_DIODE	U1 U2	Diodes Inc	B350A-13-F	DIODE SCHOTTKY 3A 50V SMA	B350A-13-F	DO-214AB			digkey	B350A-FDICT-ND	
56	2	400-00004	FET_DIODE	U3 U4	STMicroelectronics	STPS1L40A	DIODE SCHOTTKY PWR 40V 1A SMA	STPS1L40A	DO-214AC			digkey	497-3753-1-ND	
57	1	402-00028	IC	U5	TI	AFE031	AFE031 TI PLC Integrated AFE, 48 pin QFN RGZ	AFE031	RGZ					
58	1	400-00007	FET_DIODE	U6	On Semi	1SMB5931BT3	DIODE ZENER 3W 18V SMB	18V	DO-214AA			Digikey	1SMB5931BT3G OSCT-ND	
59	1	402-00031	IC	U7	TI	OPA2365	IC, dual, High-Speed, Rail-to-Rail OpAmp, SOIC-8	OPA2365AID	SOIC-8(D)			Mouser	595-OPA2365AID	www.ti.com
60	1	400-00008	FET_DIODE	U8	STMicroelectronics	SM15T6V8CA	TRANSIL 1500W 6.8V BIDIR SMC	6.8V	D0-214A			Digikey	497-6488-1-ND	
61	1	202-00164	IC	U9	Fairchild Opto	FOD817BSD	Optoisolator, 5000Vrms, 70V	FOD817BSD	4-SMD			Mouser	512-FOD817BSD	
62	1	400-00009	FET_DIODE	U10	NXP Semi	BZV55-C5V6,115	DIODE ZENER 500mW 5.6V LL-34	5.6V	LL-34			Digikey	568-3797-1-ND	
63	1			Sticker			0.5"x0.5" High Voltage Safety Sticker; 94V-0; see PLC-AFE-SystemsModule-BuildInstructions.ppt							



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