



Freescale						
BILL OF MATERIALS		PRINTED WIRING BOARD ASSEMBLY P/N BOM-20380			Revision C	
ITEM	QTY	REFERENCE	DESCRIPTION	MFGR	PART NUMBER	NOTES
1	1	N/A	BARE PWB ; RE Rev C for M523XEVB	RapidPCB	170-20380	
2	46	C1, C2, C3, C4, C12, C13, C14, C15, C18, C19, C24, C25, C26, C27, C37, C34, C39, C70, C71, C72, C73, C74, C75, C76, C77, C98, C99, C110, C111, C112, C113, C118, C124, C133, C134, C135, C136, C153, C155, C157, C168, C171, C173, C175, C182, C183	1nF 50V 0805, 5% COG Surface Mount Caps	KOA	AVX 08051C102KAT2A	
3	77	C5, C6, C7, C8, C9, C10, C11, C16, C17, C28, C29, C30, C31, C33, C35, C36, C38, C40, C42, C43, C44, C46, C47, C48, C49, C52, C53, C55, C57, C78, C79, C80, C81, C82, C83, C84, C85, C100, C101, C114, C115, C116, C117, C119, C120, C122, C123, C127, C130, C137, C138, C139, C140, C141, C142, C143, C144, C145, C146, C147, C148, C149, C150, C151, C152, C154, C156, C158, C166, C169, C172, C174, C176, C184, C185, C186, C187	0.1uF 25V 0805, 10% X7R Surface Mount Caps	KOA	AVX 08055C104KAT2A	
4	6	C20, C21, C22, C23, C180, C181	100pF 50V 0805 NPO or COG Surface Mount Caps	Venkel		
5	2	C32, C128	10uF 16V 10% B Case Tant.	AVX	TA016TCM106KBR	
6	2	C41, C45	47uF 16V C Case Tant.	AVX	TPSC476K016R0350	
7	9	C50, C66, C94, C95, C102, C103, C104, C105, C170	10nF 25V X7R 0805 Surface Mount Caps	Venkel	C0805X7R250-103KNE	
8	3	C51, C54, C56	10uF D Case 7343. Tant.	AVX	TPSD106K035R0300	
9	8	C58, C59, C60, C61, C62, C63, C64, C179	2.2nF 25V NPO	Venkel		
10	7	C65, C67, C68, C69, C86, C88, C89	0.1uF 25V X7R 0805, 10%	AVX	AVX 08055C104KAT2A	
11	1	C87	2.2uF 10V A Case Tant.	AVX	T494A225K010AS	
12	10	C90, C91, C92, C93, C96, C97, C106, C107, C108, C109	470pF 50V NPO or COG 0805, 5%	Venkel		
14	3	C121, C126, C129	330uF 10V D Case Tant	AVX	TPSE337K010R0100	
15	1	C125	1000uF 35V	Panasonic	ECA-1VM102 or UVZ1H102MHH	
16	3	C159, C165, C167	10uF 16V 10% B Case Tant.	Venkel	TA016TCM106KBR	
17	2	C131, C132	10pF SMD 50V 0805 5%	KOA or Philips		
18	4	C160, C161, C163, C164	47pF SMD 50V 0805 5%	KOA or Philips		
19	1	C162	22nF SMD 50V 0805 5%	KOA or Philips		
20	2	C178, C177	22pF SMD 50V 0805 5%	KOA or Philips		
21	12	D1, D2, D3, D4, D6, D7, D9, D11, D14, D17, D33	GREEN LED	Kingbright	AA3528SGC	
22	3	D5, D23, D24	RED LED	Kingbright	AA3528SRC	



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23	3	D8, D10, D12	YELLOW LED	Kingbright	AA3528YC	
24	5	D13, D15, D16, D20, D22	Shottky Power Diodes	Motorola	MBRS340T3	
25	2	D18, D19	SMA	Motorola	MRA4003T3	
26	8	D25, D26, D27, D28, D29, D30, D31, D32	BLUE LED	Kingbright	AA3528MBC	
27	6	FB1, FB2, FB3, FB4, FB5, FB6	Ferrite Beads	STEWART	HI1206T500R-00	
28	1	F1	5A Fast Blow FUSE	Keystone	4527K Fuse Holder by KEYSTONE +0216005.H : Fuse by Littlefuse, 5A, 250V, 5 x 20mm glass	
29	33	JP1, JP2, JP3, JP4, JP27, JP28, JP29, JP30, JP33, JP34, JP37, JP38, JP39, JP40, JP41, JP42, JP43, JP44, JP45, JP46, JP47, JP48, JP49, JP53, JP54, JP55, JP57, JP58, JP59, JP60, JP61, JP62, JP63	2-way Jumper	Sullins or Harwin	S2105-02 or M22-2510205	
30	30	JP5, JP6, JP7, JP8, JP9, JP10, JP11, JP12, JP13, JP14, JP15, JP16, JP17, JP18, JP19, JP20, JP21, JP22, JP23, JP24, JP25, JP26, JP31, JP32, JP35, JP36, JP50, JP51, JP52, JP56	3-way Jumper	Sullins or Harwin	S2105-03 or M22-2510305	
31	1	J1	2 x 13 BDM Connector - Shrouded Headers	Thomas & Betts	609-2627	
32	1	J2	RJ45 Connector	Halo	HFJ11-2450E	
33	1	J3	1 x 12 ADC Header 0.1 Male	Molex	22-10-7128	
34	1	J4	2 x 20 shrd. UNI3 Connector Male	Molex	39-26-7405	
35	1	J5	2 x 20 eTPU Header 0.1 Male	Molex	10-89-6404	
36	1	J6	1 x 6 HS/ENCO Header Male	Molex	22-27-2061	
37	4	J7, J8, J9, J10	60 way Fine Pitch Surface Mount Connector	AMP	177983-2	
38	1	J11	External Clock Input SMA Connector	AMP	1053378-1	
39	1	J12	1 x 10 QSPI Header Male	Molex	22-10-2101	
40	1	J13	1 x 4 I2C Header 0.1 Male	Molex	22-10-2041	
41	1	J14	USB MiniAB Connector	AMP	440479-1	A
42	1	J15	USB "series B" Connector	AMP	787780-1	
43	1	J16	USB "series A" Connector	AMP	787616-1	
44	1	L1	10uH Inductor	Central Technologies or Delaven	CT1210LSC-100_ or 1210-103J	
45	2	L2, L3	Power Inductor Thru Hole	Siemens	B82111-B-C24	
46	4	P1, P4, P5, P6	DB9 RS232 Port Thru Hole	AMP	747844-3	
47	1	P2	2.1mm Barrel Power Connector	Switchcraft	RAPC722	
48	2	P3	2-way Bare Wire Power Connector	Augat	2SV-02	
49	18	RP1, RP2, RP8, RP9, RP10, RP11, RP12, RP14, RP15, RP16, RP17, RP20, RP21, RP22, RP23, RP24, RP25, RP26	ARV241, 4 x 4.7K ohm resistor pack	KOA or Philips	4 X 4.7K, 4 X 0603	
50	1	RP3	ARV241, 4 x 22 ohm resistor pack	KOA or Philips	4 X 22	
51	4	RP4, RP5, RP6, RP7	ARV241, 4 x 51 ohm resistor pack	KOA or Philips	4 X 51	
52	1	RP13	ARV241, 4 x 10 K ohm resistor pack	KOA or Philips	4 X 10K	
53	2	RP18, RP19	ARV241, 4 x 10 ohm resistor pack	KOA or Philips	4 X 10	



54	8	R1, R3, R52, R56, R59, R63, R80, R89	1K ohm 0805 Surface Mount Resistor	KOA or Philips	1K	
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<div style="text-align: center;"> <b>Freescle</b>  <b>BILL OF MATERIALS</b>                      <b>PRINTED WIRING BOARD ASSEMBLY P/N BOM-20380</b>                      <b>Revision C</b> </div>						
ITEM	QTY	REFERENCE	DESCRIPTION	MFGR	PART NUMBER	NOTES
55	2	R2, R4	62 ohm 0805 Surface Mount Resistor	KOA or Philips	62	
55	8	R5, R6, R74, R83, R84, R87, R88	22R ohm 0805 Surface Mount Resistor	KOA or Philips	22.1R, 1%	
56	1	R41	SMT POT	Bourns	Bourns 3314J-1 or Spectral Vishay 4G-103	
57	7	R7, R14, R76, R81, R82, R90, R91	10K ohm 0805 Surface Mount Resistor	KOA or Philips	10K	
58	4	R8, R9, R10, R11	49.9R ohm 0805 Surface Mount Resistor	KOA or Philips	49.9R, 1%	
59	8	R12, R49, R55, R60, R66, R67, R68, R69	4.7K ohm 0805 Surface Mount resistor	KOA or Philips	4.7K	
60	1	R13	6.49K ohm 0805 Surface Mount Resistor	KOA or Philips	6.49K	
61	4	R15, R16, R17, R18	220R ohm 0805 Surface Mount Resistor	KOA or Philips	220R	
62	8	R19, R20, R21, R22, R23, R24, R25, R32	0 ohm 0805 Surface Mount Resistor	KOA or Philips	330	
63	9	R26, R27, R30, R31, R33, R34, R35, R36, R73	120 ohm 0805 Surface Mount Resistor	KOA or Philips	120	
64	2	R37, R93	1M ohm 0805 Surface Mount Resistor	KOA or Philips	1M	
65	1	R38	22.1K ohm Surface Mount Resistor	KOA or Philips	22.1K, 1%	
66	2	R39	150 ohm 0805 Surface Mount Resistor	KOA or Philips	150	
67	11	R42, R43, R44, R45, R46, R47, R48, R50, R70, R75, R78	270R ohm 0805 Surface Mount Resistor	KOA or Philips	270R	
68	5	R51, R54, R58, R62, R65	1.8K ohm 0805 Surface Mount Resistor	KOA or Philips	1.8K	
69	4	R53, R57, R61, R64	24R ohm 0805 Surface Mount Resistor	KOA or Philips	24.9R, 1%	
70	1	R71	560R ohm 0805 Surface Mount Resistor	KOA or Philips	560R	
71	2	R40, R77, R79	100 ohm 0805 Surface Mount Resistor	KOA or Philips	100	
72	3	R85, R86, R92	100K ohm 0805 Surface Mount Resistor	KOA or Philips	100K	
73	1	SW1	Toggle Switch	Apem	108-2MS1T1B1M2QE	
74	3	SW2, SW3, SW5	Surface Mount Switch - Black	C & K	KS11R22CQD	
75	1	SW4	Slide Switch	Apem	25546NA6 (silver preferred) or 25546NLD (gold plate)	
76	1	SW6	Surface Mount Switch - Red	C & K	KS11R23CQD	
77	1	SW7	Configuration DIP switch 10 position SPDT	Grayhill	78RB12	
78	13	TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13	Surface Mount Test Points	Keystone	5015K	
79	2	U1, U2	ASRAM	Cypress	CY7C1041CV3310ZC	<b>A</b>
80	3	U3, U4, U6	Buffers	Motorola	MC74LCX16245DT	
81	2	U5, U26	AND Gate	TI	SN74LVC1G11DBVR	
82	1	U7	Buffers	Motorola	MC74LCX245DT	
83	2	U8, U9	CAN Transceivers	TI	SN65HVD230D	
84	1	U10	ColdFire MCF5235 microprocessor	Motorola	MCF5235CVM150	
85	1	U11	Ethernet Transceiver	Micrel	KS8721BL	
86	1	U12	A to D Converter	Analog Devices	AD9728BRU	
87	1	U13	Voltage Regulator	Analog Devices	AD780BR	
88	1	U14	AND Gate	On-Semi	NL17SZ08DFT2	
89	1	U15	Comparator		LM393M	
90	1	U16	2 Gate Inverter	On-Semi	NL27WZ04DFT2	
91	1	U17	6 Gate Inverter		SN74HC04D	
92	1	U18	EXOR Logic Gate	On-Semi	NL27WZ86US	
93	1	U19	16-bit Flash memory	AMD	Am29PL160CB-65RS	



94	1	U20	3.3V Regulator	National	LM2596S-3.3	
95	1	U21	5V Regulator	National	LM2596S-5	
96	1	U22	1.5V Regulator	Linear Tech.	LT1086CM	
97	1	U23	OSC. 3.3V 25MHz 4-pin Thru Hole	FOX or Pletronics	H5C-2E3 or F5C-2E3 or P1100-HCV or P1145-HCV	
98	2	U24, U25	Voltage Monitoring uP Supervisory Circuit	Analog Devices	ADM708SAR	
99	1	U27	Buffer	Motorola	MC74LCX541DT	



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100	2	U28, U29	SDRAM	Micron	MT48LC4M16A2TG75L							
101	3	U30, U31, U32	RS232 Transceiver	Maxim	MAX3225CAP or ICL3225CA							
102	1	U33	USB OTG controller	Philips	ISP1362BD							
103	1	U34	Power Distribution Switch	Micrel	MIC2026-2BM							
104	1	U35	32-bit Flash memory	AMD or Fujitsu	Am29PL320DB60RWP or MBM29PL3200BE70PBT	<b>A</b>						
105	2	VIA1, VIA2	SMTF									
106	1	Y1	25MHz Crystal	FOX	FOXS/250F-20							
107	1	Y2	12MHz Crystal	FOX	FOXS/120-20							
<b>Motor Assembly</b>												
<b>BILL OF MATERIALS</b> <span style="float: right;"><b>Revision</b></span>												
ITEM	QTY	REFERENCE	DESCRIPTION	MFGR	PART NUMBER	NOTES						
109	1	n/a	BLDC Motor Part	Pittman	N2311A176	<b>B</b>						
110	1	n/a	1 x 3 3-Phase Motor Connectors Female	Molex	26-11-2033	<b>B</b>						
111	1	n/a	1 x 6 HS/ENCO Connectors Female	Molex	22-01-3067	<b>B</b>						
112	9	n/a	small metal crimp connectors	Farnell	467-598	<b>B</b>						
113	1	n/a	Blue-wire jumper	FCI ELECTRONICS	47067-000	<b>B</b>						
<b>Notes:</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;"></td> <td style="width: 10%; text-align: center;"><b>A</b></td> <td style="width: 70%;"><b>Not Populated at assembly</b></td> </tr> <tr> <td></td> <td style="text-align: center;"><b>B</b></td> <td><b>Populated on Motor assembly</b></td> </tr> </table>								<b>A</b>	<b>Not Populated at assembly</b>		<b>B</b>	<b>Populated on Motor assembly</b>
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