

MMB3 BoM						
Item	Qty	Ref Des	Value	Description	MFG	Part number
1	1	N/A		MMB3 PWB	Texas Instruments	6479992
2	2	C1, C2	270uF	Cap Aluminum Electolytic 270uF 10V 20% Radial	Nippon/United Chemi-Con	APS-100ELL271MHB5S
					Nippon/United Chemi-Con	APSA100ELL271MHB5S
3	23	C3-C18, C65, C72-C77	10uF	Cap Ceramic 10uF 25V X7R 20% 1210	TDK	C3225X7R1E106MT
4	2	C19, C20	1uF	Cap Ceramic 1.0uF 50V X7R 10% 1210	TDK	C3225X7R1H105KT
5	6	C21-C25, C66	1uF	Cap Ceramic 1.0uF 16V X7R 10% 0805	TDK	C2012X7R1C105KT
6	7	C26-C32	0.01uF	Cap Ceramic 0.01uF 100V X7R 10% 0805	TDK	C2012X7R2A103KT
7	1	C33	3300pF	Cap PPS Film 3300pF 50V 2% 1206	Panasonic	ECH-U1H332GX5
8	1	C34	0.022uF	Cap PPS Film 0.022uF 16V 2% 1206	Panasonic	ECH-U1C223GX5
9	1	C35	0.01uF	Cap PPS Film 0.01uF 50V 2% 1206	Panasonic	ECH-U1H103GX5
10	2	C36, C37	0.1uF	Cap PPS Film 0.1uF 50V 2% 1913	Panasonic	ECH-U1H104GX9
11	4	C38, C39, C40, C41	22pF	Cap Ceramic 22pF 50V C0G 5% 0603	TDK	C1608C0G1H220JT
12	2	C42, C43	33pF	Cap Cermaic 33pF 50V C0G 5% 0603	TDK	C1608C0G1H330JT
13	1	C44	1000pF	Cap Ceramic 1000pF 100V X7R 10% 0805	TDK	C2012X7R2A102KT
14	25	C45-C64, C67-C71	0.1uF	Cap Ceramic 0.1uF 50V X7R 10% 0805	TDK	C2012X7R1H104KT
15	4	D1, D2, D3, D4		DIODE SCHOTTKY 20V 1A TO236AB	NXP Semiconductors	PMEG2010AET,215
16	1	J1		USB Type B Connector	Mill-Max	897-43-004-90-000000
17	1	J2		2 x 5 x 0.1in Shrouded Header Through-Hole	Samtec	TSS-105-01-L-D
18	3	J3, J4,J8		2 x 10 x 0.1in Header Through-Hole	Samtec	HTSW-110-07-L-D
19	0	J5		NI		
20	0	J6		NI		
21	0	J7		NI		
22	1	J9		2 x 3 x 0.1in Header Through-Hole	Samtec	TSW-103-07-L-D
23	0	JTAG		NI		
24	2	L1, L2	10uH	High Current Power Inductor 1.4A	API/Delevan	SPD62R-103M
					Toko	#A920CY-100M=P3
25	1	L3	1mH	High Current Choke 7.9 DCR 160mA	Caddell-Burns	7130-37 LF
26	4	L4, L5, L6, L7	10mH	High Current Choke 75 DCR 52mA	Caddell-Burns	7130-49 LF
27	7	L8 - L14		Ferrite Bead SMD 1206	Murata	BLM31PG601SN1L
28	1	LCD1		LCD Display 7 Digit 14 Segment 3V	Softbaugh	SBLCDA2
				only available from Softbaugh (see softbaugh.com)		SBLCDA2T
29	1	LED1		LED Green 5mm Short Lens Thru-Hole	Lumex	SSL-LX5063GD
30	2	R1, R17	33K	Chip Resistor 33K Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-333-D
31	1	R2	240K	Chip Resistor 240K Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-244-D
32	6	R3-R8	10.0K	Chip Resistor 10.0K Ohm, 1/10W, 0.5%, 0805 SMD	Susumu Co., Ltd	RR1220P-103-D
33	1	R9	100	Chip Resistor 100 Ohm, 1/10W, 0.5%, 0805 SMD	Susumu Co., Ltd	RR1220P-101-D
34	3	R10, R11, R12	100	Chip Resistor 100 Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-101-D
35	2	R13, R14	33	Chip Resistor 33 Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816Q-330-D
36	1	R15	1.5K	Chip Resistor 1.5K Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-152-D
37	1	R16	91K	Chip Resistor 91K Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-913-D
38	3	R18, R19, R20	220K	Chip Resistor 220K Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-224-D
39	3	R21, R22, R23	1K	Chip Resistor 1K Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-102-D
40	8	R24-R29, R39, R40	10K	Chip Resistor 10K Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-103-D
41	7	R30, R32-R37	100K	Chip Resistor 100K Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-104-D
42	1	R31	15K	Chip Resistor 15K Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-153-D

43	1	R38	330	Chip Resistor 330 Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-331-D
44	1	R41	75.0K	Chip Resistor 75K Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-753-D
45	1	R42	23.2K	Chip Resistor 23.2K Ohm, 1/16W, 0.5%, 0603 SMD	Susumu Co., Ltd	RR0816P-2322-D
46	2	SW1, SW2		Switch Tactile Pushbutton	Alps	SKHMPUE010
47	1	SW3		Joystick with Pushbutton Switch	Alps	SKQUCAA010
48	1	SW4		DIP Switch SPST, Single Position	C&K	BD01
49	1	SW5		DPDT Slide Switch, Top Actuator	NKK	SS22SDP2
50	1	U1		3.3V 500mA LDO with PG Output	Texas Instruments	TPS77633DG4
					Texas Instruments	TPS77633D
34	1	U2		Low Power DC/DC Boost Converter	Texas Instruments	TPS61040DBVRG4
					Texas Instruments	TPS61040DBVR
35	1	U3		Voltage Reference 5V	Texas Instruments	REF02BU
36	3	U4, U5, U6		Precision Op-Amp	Texas Instruments	OPA277UG4
					Texas Instruments	OPA277U
37	1	U7		20-bit Low Power DAC	Texas Instruments	DAC1220EG4
					Texas Instruments	DAC1220E
38	1	U8		USB to Serial Port Converter	Texas Instruments	TUSB3410VFG4
					Texas Instruments	TUSB3410VF
39	1	U9		Microcontroller 16-bit 60KB Flash	Texas Instruments	MSP430F449IPZ
40	1	U10		Dual Bit Dual Supply Bus Transceiver	Texas Instruments	SN74LVC2T45DCTR
41	1	U11		1.8V 500mA LDO with PG Output	Texas Instruments	TPS77618DG4
					Texas Instruments	TPS77618D
42	4	U12, U13, U14, U15		Single Gate Buffer, Tri-State	Texas Instruments	SN74LVC1G125DBVRG4
					Texas Instruments	SN74LVC1G125DBVR
43	1	U16		Negative Output 200mA LDO	Texas Instruments	TPS72301DBVTG4
					Texas Instruments	TPS72301DBVT
44	1	VR1	500	Trimpot 500 Ohm, 3/8 in, 500mW, Top Adj, Thru-Hole	Bourns	3296Y-1-501LF
45	1	VR2	200	Trimpot 200 Ohm, 3/8 in, 500mW, Top Adj, Thru-Hole	Bourns	3296Y-1-201LF
46	1	VR3	200K	Trimpot 200K Ohm, 1/4 in, 500mW, Top Adj, Thru-Hole	Bourns	3362P-1-204LF
47	1	X1	2.4576 MHz	Crystal HC-49U 50ppm 32pF	ECS	ECS-24-32-1X
48	1	X2	12 MHz	Crystal HC-49/US 30ppm 18pF	Citizen	HC49US12.000MABJ-UB
49	1	X3	32.768 KHz	Crystal Thru-Hole	Epson	C-002RX 32.7680K-E:PBFREE
50	13			.375/4-40 Brass Hex Spacer	Keystone Electronics	1803
51	13			4-40 X 1/4 Machine Screw PH SS	Building Fasteners	PMSSS 440 0025 PH