

XXX### REV E1 Bill of Materials



Item #	Designator	Quantity	Value	PartNumber	Manufacturer	Description	Package/Reference
1	PCB	1		000000	Any	Printed Circuit Board	
2	Subassembly module1-HTRN, Subassembly module2-HTRN, BND_sec_battery 1, BND_sec_battery 2, HV_SW1_battery1 HV_SW1_battery2 HV_SW2_battery1 HV_SW2_battery2	18		0332-0-15-15-34-27-10-D	M&M Mac		Ptn Receptacle
3	C1, C3	2	0.001uF	ECM555P7E10KBA17D	MuRata	CAP. CERAM. 0.01 uF, 25 V, +/- 10%, X7R, 0402	0402
4	C2, C3	2	1mF	EGPO0001002LM384	United Chem-Con	1000 uF 80 V Aluminum Electrolytic Capacitors Radial, Can 27mm Dia	RADIAL
5	C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14	11	2.2uF	CGA8L3X752A229K160AB	TDK	CAP. CERAM. 2.2 uF, 100 V, +/- 10%, X7S, AEC-Q200 Grade 1, 1206	1206
6	C15, C16, C46, C50, C115	5	4uF	CL10B105K4RNP02C	Samsung	Cap Ceramic 1uF 25V X7R 4.150mF PinD SMD 0603 +/-125°C T/R	0603
7	C16, C17, C47, C54, C116	5	0.1uF	9603C104KAT3A	AVX	CAP. CERAM. 0.1 uF, 25 V, +/- 10%, X7R, 0603	0603
8	C17, C18, C16, C19	4	100uF	EEEC02E02	Panasonic	CAP. AL. 100 uF, 250 V, +/- 20%, 0.343756 ohm, TH	16,031.5
9	C18, C20, C21, C22, C23, C24, C40, C41, C42, C45, C44, C45	12	0.1uF	GRM32CR7E104KX0LL	MuRata	CAP. CERAM. 0.1 uF, 250 V, +/- 10%, X7R, 1210	1210
10	C25, C26, C27, C28, C29, C30, C31, C32, C33, C34	10	10uF	CGA8L3KSR1406M160AB	TDK	CAP. CERAM. 10 uF, 50 V, +/- 20%, X5R, AEC-Q200 Grade 3, 1206	1206
11	C46, C49, C50, C51, C52, C55, C56, C57, C58, C59	10	2.2uF	C3012GR1H25K125AB	TDK	CAP. CERAM. 2.2 uF, 50 V, +/- 10%, X5R, 0805	0805
12	C60, C61, C113	3	300uF	GRM1885C1H301J001D	MuRata	CAP. CERAM. 300 uF, 50 V, +/- 5%, C0G/NP0, 0603	0603
13	C62, C63, C66, C47, C60, C64, C67, C69, C64, C68, C104, C106, C108	13	1uF	C680C100K3PACTU	Kemet	CAP. CERAM. 1 uF, 25 V, +/- 10%, X7R, 0805	0805
14	C66, C68, C63, C68, C103, C105, C107	7	0.1uF	9603C104KAT3A	AVX	CAP. CERAM. 0.1 uF, 15 V, +/- 10%, X7R, 0603	0603
15	C68, C68, C63, C68, C103, C105, C107	7	0.1uF	9603C104KAT3A	AVX	CAP. CERAM. 0.1 uF, 15 V, +/- 10%, X7R, 0603	0603
16	C70	1	2.2uF	CGA6L1X752A229K06AC	TDK	CAP. CERAM. 2.2 uF, 16 V, +/- 20%, X7S, AEC-Q200 Grade 1, 0603	0603
17	C71	1	6.8uF	C3005GR1H68K06AC	TDK	CAP. CERAM. 6.8 uF, 25 V, +/- 10%, X5R, 0603	0603
18	C72, C110	2	0.1uF	GRM1885C1H104K06AC	MuRata	CAP. CERAM. 0.1 uF, 10 V, +/- 10%, X7R, 0603	0603
19	C73, C111	2	0.1uF	CGA6L1X752A229K06AC	TDK	CAP. CERAM. 0.1 uF, 16 V, +/- 20%, X7S, 0603	0603
20	C74, C112	2	0.1uF	CGA6L3P7E104K0608B	TDK	CAP. CERAM. 0.1 uF, 25 V, +/- 20%, X7R, AEC-Q200 Grade 1, 0402	0402
21	C75, C76	2	1000uF	CL02A0100K0608AC	Samsung Electro-Mechanics	CAP. CERAM. 1000 uF, 20 V, +/- 10%, X7R, 0402	0402
22	C76, C77, C79, C80, C81, C96, C100, C101, C102	9	0.1uF	GRM1885C1H104K14D	MuRata	CAP. CERAM. 0.1 uF, 25 V, +/- 10%, X7R, 0402	0402
23	C50, C65	2	2200uF	GRM1885C1H221J001D	MuRata	CAP. CERAM. 2200 uF, 50 V, +/- 5%, C0G/NP0, 0603	0603
24	C68, C69	2	47uF	PM92SER6LCA7N013L	MuRata	CAP. CERAM. 47 uF, 16 V, +/- 10%, X5R, 1210	1210
25	C70, C80, C109	3	0.1uF	C312A0100K0608AC	Samsung Electro-Mechanics	CAP. CERAM. 0.1 uF, 16 V, +/- 10%, X5R, 0603	0603
26	C92, C93, C96, C97	4	47uF	C316L81E147M160AC	TDK	CAP. CERAM. 47 uF, 25 V, +/- 20%, 38, 1206	1206
27	C114, C136	2	100uF	C1608C01H103J10B0AA	TDK	CAP. CERAM. 330 uF, 50 V, +/- 1%, C0G/NP0, 0603	0603
28	C117, C118, C122	3	4.7uF	GRM18827E1C47K82J2D	MuRata	CAP. CERAM. 4.7 uF, 16 V, +/- 10%, X7R, 0603	0603
29	C119, C120, C121	3	0.1uF	9402YC104KAT3A	AVX	CAP. CERAM. 0.1 uF, 16 V, +/- 10%, X7R, 0402	0402
30	C123, C130, C131	3	22uF	GRM1885C3A220J001D	MuRata	CAP. CERAM. 22 uF, 100 V, +/- 5%, C0G/NP0, 0603	0603
31	C124	1	22uF	EEE-04H220WP	Panasonic	22 uF 50 V Aluminum Electrolytic Capacitors Radial, Can - SMD - 1000 H	RADIAL
32	C125, C129, C134	3	0.1uF	C1608Y75A104K080AB	TDK	CAP. CERAM. 0.1 uF, 100 V, +/- 10%, X7S, 0603	0603
33	C126, C127, C128, C132, C133, C137, C138, C139	8	10uF	PM92SER6LH106K12L	MuRata	CAP. CERAM. 10 uF, 50 V, +/- 10%, X7R, 1210	1210
34	C135	1	4700uF	C680C470K3PACTU	Kemet	CAP. CERAM. 4700 uF, 50 V, +/- 10%, X7R, 0603	0603
35	C140, C141, C144	3	0.1uF	C3012YR1H104K085AA	TDK	CAP. CERAM. 0.1 uF, 50 V, +/- 10%, X7R, 0805	0805
36	C142, C148	2	22uF	C132A229KAR00NE	Samsun Electro-Mechanics	CAP. CERAM. 22 uF, 25 V, +/- 10%, X5R, 1210	1210
37	C6, C9	2	0.01uF	ELC12-1-F	Diodes Inc.	Diode, Schottky, 80 V, 1.4, SMA	SMA
38	C7, C141	2	0.01uF	MSM52525L8-7-F	Diodes, Inc.	Diode, Schottky, 25 V, 500 mW, SMD-123	SMD-123
39	C8	1	100uF	PM9A10000R10L	Maxim Commercial Components	Diode, Zener, 20 V, 3 W, SMA	SMA
40	C10	1	0.01uF	PM9A010000C10-115	Maxim	Diode, Schottky, 60 V, 1.5, SMD-123P	SMD-123P
41	H1, H2, H3, H4	4	0.001uF	BY PFR 40 000S PH	BYF Fastener Supply	Machine Screw, Round, #4-40 x 1/4, Nylon, Phillips panhead	Screw
42	H5, H6, H7, H8	4	0.001uF	1802	Gooding	Resistor, Hrs, 0.1, 1/4, 400 Ohm	Resistor
43	H9, H10, H11, H12	4	0.15303	(CLEAR)	3M	Bumper, Hemisphere, 0.44 x 0.30, Clear	Transparent Bumper
44	J1	1	1	FTSH-105-01-L-DV-K	Samtec	Header(Shrouded), 1.27mm, 5x2, Gold, SMT	Header(Shrouded), 1.27mm, 5x2, SMT
45	J2	1	1	SECS-103-01-L-DV-A-BL	Samtec	C2000 controlCARD-120HSEC connector, SMT	C2000 pin headers
46	J3, J5	2	1	FTSH-103-01-F-DV	Samtec	Header, 1.27mm, 5x2, Gold, SMT	Header, 1.27mm, 2x2, SMT
47	J4, J6, J7	3	1	HTSW-102-09-G-S	Samtec	Header, 10mm, 2x1, Gold, TH	Header, 2x1, 2.54mm, TH
48	J8, J9	2	1	MSD-300046	Heats	Coin Socket Reg. SCKT 8 POS 1.27mm Solder ST Thru-Hole	DOWN SOCKT ST08P8
49	K1	1	1	PT0000303C-RC	Wurth Connector Solutions	Receptacle, 1.27mm, 6x1, Gold, SMT	Receptacle, 1.27mm, 6x1, SMT
50	L3	1	0.004uF	FA83555220	Wurth Elektronik	Inductor, Shielded, 22 uH, 1.7 x 0.28 mm, SMD	0.144 1mm
51	L3, L4, L5	3	1	FA83555220	Wurth Elektronik	2-Port Precision Modem Voltage 1.44 V, 0.75mm Max 2-SMD	0.144 1mm
52	LBL1	1	1	THF-14-423-10	Brady	Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	PCB Label 0.650 x 0.200 1000
53	Q1, Q2, Q3, Q4, Q5, Q6	6	60V	ICSU84540Q58	Texas Instruments	MOSFET, N-CH, 60 V, 100 A, DPAK008A (VSON-CLIP-6)	DPAK008A
54	R1, R2, R3, R4, R5, R6, R7, R8	8	4.7k	RC0402FR-074K7L	Vago America	RES, 4.7 k, 1%, 0.0625 W, 0402	0402
55	R9, R10	2	50.0k	PT100SBR07070KRL	Vago America	RES, 50.0 k, 0.1%, 0.125 W, 0603	0603
56	R11	1	0.30k	PT100SBR07070KRL	Vago America	RES, 3.3 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
57	R12, R13, R14, R15	4	1.5k	PT100SBR07070KRL	Vago America	RES, 3.3 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
58	R16, R17	2	10m	FLR84PFT100L0F	ROA Spec	10 mOhms 41% 5W Chip Resistor 2512 (8432 Metric) Automotive AEC-Q200, Current Sense Metal Element	2512
59	R18, R46	2	0	PM100E2P2000	Bosch	RES, 0.0%, W, AEC-Q200 Grade 0, 0603	0603
60	R19	1	48.8k	PT100SBR07070KRL	Vago America	RES, 48.8 k, 0.8%, 0.1 W, 0603	0603
61	R20, R21, R22, R23, R24, R25, R26, R27, R28, R40, R41	11	100	CTCH0402100P4VED	Vishay Dale	RES, 100, 1%, 0.063 W, 0402	0402
62	R27, R38, R36	3	100k	RC0402FP-154-B-15	Samsun Co Ltd	RES, 150 k, 0.1%, 0.125 W, 0805	0805
63	R29, R35	2	100k	PT100SBR07070KRL	Vago America	RES, 150 k, 0.1%, 0.125 W, 0805	0805
64	R20, R71	2	0.001uF	RC0402FP-154-B-15	Samsun Co Ltd	RES, 3.3 k, 0.1%, 0.125 W, 0805	0805
65	R30, R31, R32	3	100k	RC0402FP-154-B-15	Panasonic	RES, 100, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
66	R33	1	330k	PT100SBR07070KRL	Vago America	RES, 330 k, 0.1%, 0.1 W, 0603	0603
67	R42	1	0.001uF	PT100SBR07070KRL	Vago America	RES, 100 k, 0.1%, 0.1 W, 0603	0603
68	R43	1	243k	PT100SBR07070KRL	Vago America	RES, 243 k, 0.1%, 0.1 W, 0603	0603
69	R49	1	0.001uF	PT100SBR07070KRL	Vago America	RES, 50.0 k, 0.1%, 0.1 W, 0603	0603
70	R49	1	10.1k	PT100SBR07070KRL	Vago America	RES, 10.1 k, 0.1%, 0.1 W, 0603	0603
71	R47	1	100k	PT100SBR07070KRL	Vago America	RES, 100 k, 0.1%, 0.1 W, 0603	0603
72	R48	1	0.001uF	PT100SBR07070KRL	Vago America	RES, 5.22 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
73	R49	1	0	PT100SBR07070KRL	Vago America	RES, 0.1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
74	T1	1	1	TC4420P00	Microchip	TRANSFORMER, 1:1, 3024 1:3-6:1 4Ht, 20%, 117mOhm DCR, 14HP	14HP
75	T2	1	1	TC4420P00	Microchip	TRANSFORMER, 1:1, 3024 1:3-6:1 4Ht, 20%, 117mOhm DCR, 14HP	14HP
76	U1, U2, U3, U4	4	1	TMCS1128B400Q0R	Texas Instruments	TMCS1128B400Q0R	SOIC18
77	U5	1	1	AMC1141DWA	Texas Instruments	High CMTI Reinforced Isolated Amplifier for Current Sensing in ultra-wide-body SOIC package	SOIC18
78	U6	1	1	TC4420P00	Texas Instruments	Automotive High-Speed CAN Transceiver	SOI28-B
79	U7, U14	2	1	TC4420P00	Texas Instruments	Highest isolation rating, dual-channel, 1:1, reinforced digital isolator 16-ZQML, 55 to 125	16-ZQML
80	U8	1	1	TLV9002DR	Texas Instruments	10-MHz, Low-Noise, RRIO, CMOS Operational Amplifier for Cost-Sensitive Systems, 00080A (DSCT-0)	00080A
81	U9, U10, U11	3	1	TPS6126DSGR	Texas Instruments	Buck-Step Down Regulator with 3 to 17 V Input and 5 V Output, -40 to 85	DSG0008A
82	U12	1	1	SDR74P00WR	Texas Instruments	General-purpose, quad channel, 400 digital isolator, 50-100 to 125	SOIC16
83	U13, U18	2	1	TLV1133PQUBVRQ1	Texas Instruments	Charge Pump, 1.0-MHz, LDO Regulator w/ Feedback Current Limit, 00V0005A (DSOT-23-5)	DSV0005A
84	U15	1	1	SDS42AND40R	Texas Instruments	24 V, 2-Channel ESD Protection Diode for 10-Voltage Networks	DSOT-23-3
85	U16	1	1	SDS74AP00WR	Texas Instruments	High-Performance, 800-VIN, Reinforced Quad-Channel Digital Isolator	SOI16
86	U17	1	1	SDS74AP00WR	Texas Instruments	42-VIN PSR Flyback DC/DC Converter with 65-V, 4-A Integrated MOSFET	WS0N8
87	U19	1	1	TPSI1100Q0VXRQ1	Texas Instruments	Automotive Reinforced Isolated Switch Driver with Integrated 15-A Gate	DSOPI16
88	U20	1	1	TLV9002Q000RQ1	Texas Instruments	Automotive-grade, single, 0.5-V, 1-MHz, RRIO operational amplifier	DSOT-5
89	U21	1	1	TPS7918LADCR	Texas Instruments	1.2V, 1V, 3A, PPA, High-Input Load Switch w/ Level Shift & Ag. Slow-Rate Control, DS00000A (DSOT-23-1-6)	DS00000A
90	W1D1, W1R2, W1D3	0	0	N/A	N/A	Physical mark. There is nothing to buy or mount	N/A