

Quantity	Part Number	Description	Designator	Value
1	63074-510-039 CM6-225 Bone Kit	Enclosures, Boxes & Cases KIT 6.08X6.25X2.5		
1	3589105-CUT-LENGTH	Fair Cables 065 10 COND. 28AWG ROUND 1PC=1FT		
3	BK-18650-PC4	Batt Holder 18650 2 Cell Pz Pin		
1	NHD-112865AR-FSW-GBW	LCD Graphic Display Modules & Accessories STN-GRAY 59.0 x 42.0 x 5.9	BT1, BT2, BT3	128x65
2	TX2SA-5V	Low Signal Relays - PCB 2A 5VDC DPDT NON-LATCHING SMD	K450, K550	
10	FSM4JH	Tactile Switches SPST OFF-(ON) Round pushbutton	S100, S150, S151, S152, S153, S154, S155, S156, S157, S250	
1	EN12-HS22AF20	Encoders 12mm	SW150	
1	LFXTAL003156B0uk	Crystals 8.0MHz 11.05 x 4.7 x 4.1mm	X251	8 MHz
1	LFXTAL009709B0uk	Crystals 32.7680KHz 3.2 x 1.5 x 0.8mm	X250	32.768 KHz
CAPACITORS				
5	EMZS350A0A331MH40G	Aluminum Electrolytic Capacitors - SMD 330uF 35V 20% AEC-Q200	C210, C504, C505, C604, C605	330 uF
3	RR71C151MDN1	Aluminum Organic Polymer Capacitors 16V 150uF 7Molms	C503, C603, C652	150 uF
12	UWV1V470MCL1GB	Aluminum Electrolytic Capacitors - SMD 35volts 47uF AEC-Q200	C201, C451, C454, C506, C554, C606, C650, C656, C680, C686, C670, C674	47 uF
4	APMA250A0A220MF30S	Aluminum Organic Polymer Capacitors 22uF 20% 25V Super Low ESR	C50, C51, C57, C59	22 uF
15	GRM21BR61E1D6MA73L	Multilayer Ceramic Capacitors MLCC - SMD/SMT 0805 10uF 25volts X5R 20%	C1, C2, C3, C4, C5, C59, C52, C60, C205, C206, C255, C658, C682, C672, C678	10 uF
38	CC0805ZRY5V8BB105	Multilayer Ceramic Capacitors MLCC - SMD/SMT 1.0uF 25V Y5V-20/+80%	C62, C65, C66, C67, C74, C75, C203, C207, C208, C209, C300, C302, C303, C304, C305, C400, C408, C462, C501, C508, C510, C512, C514, C524, C551, C552, C562, C601, C608, C609, C611, C613, C624, C653, C678, C680, C682, C687	1 uF
90	CC0805ZRY5V9BB104	Multilayer Ceramic Capacitors MLCC - SMD/SMT 100nF 50V Y5V-20/+80%	C6, C7, C8, C9, C10, C11, C12, C61, C100, C101, C102, C103, C104, C105, C151, C152, C153, C154, C155, C156, C157, C158, C159, C160, C200, C202, C204, C252, C256, C257, C258, C259, C260, C261, C301, C307, C308, C309, C310, C311, C314, C350, C351, C352, C353, C401, C402, C403, C404, C405, C407, C409, C410, C411, C412, C450, C455, C456, C457, C460, C461, C463, C511, C513, C515, C516, C517, C519, C550, C555, C556, C557, C560, C561, C563, C610, C612, C614, C615, C616, C619, C651, C657, C661, C667, C671, C675, C679, C681, C683	100 nF
4	C0805C473MSUACTU	Multilayer Ceramic Capacitors MLCC - SMD/SMT 50V 0.047uF Z5U 0805 20%	C53, C54, C453, C453	47 nF
25	C0805C153K5RACTU	Multilayer Ceramic Capacitors MLCC - SMD/SMT 50V 0.015uF X7R 0805 10%	C56, C306, C312, C313, C406, C413, C459, C500, C502, C509, C521, C559, C600, C602, C617, C621, C654, C569, C653, C654, C655, C668, C669, C673, C684	15 nF
2	YY2472M49Y5US6TV7	Safety Capacitors 4700pF Y440 300vac 20% Y5U	C518, C618	4.7 nF
12	885012207087	Multilayer Ceramic Capacitors MLCC - SMD/SMT WCAP-CSGP 1500pF 0805 10% 50V MLCC	C55, C63, C64, C69, C458, C507, C522, C558, C607, C622, C655, C685	1.5 nF
1	885012207085	Multilayer Ceramic Capacitors MLCC - SMD/SMT WCAP-CSGP 680pF 0805 10% 50V MLCC	C73	680 pF
5	885012007057	Multilayer Ceramic Capacitors MLCC - SMD/SMT WCAP-CSGP 100pF 0805 5% 50V MLCC	C71, C72, C523, C623, C677	100 pF
4	885012007054	Multilayer Ceramic Capacitors MLCC - SMD/SMT WCAP-CSGP 33pF 0805 5% 50V MLCC	C68, C520, C620, C686	33 pF
3	885012007052	Multilayer Ceramic Capacitors MLCC - SMD/SMT WCAP-CSGP 15pF 0805 5% 50V MLCC	C70, C253, C254	15 pF
2	885012006092	Multilayer Ceramic Capacitors MLCC - SMD/SMT WCAP-CSGP 100V 4.7pF 0603 25pFtol	C250, C251	5.6 pF
RESISTORS				
4	RC0805FR-101ML	Thick Film Resistors - SMD 1M OHM 1%	R3, R5, R6, R15	1 MQ
9	CR0805-FX-4703ELF	Thick Film Resistors - SMD 470K 1%	R72, R513, R514, R515, R613, R614, R615, R666, R671	470 KΩ
8	ER-J46NF1333V	Thick Film Resistors - SMD 0805 133Kohms 1% AEC-Q200	R61, R64, R69, R70, R112, R117, R510, R610	133 KΩ
24	CR0805-FX-1003ELF	Thick Film Resistors - SMD 100K 1%	R164, R167, R169, R170, R171, R172, R173, R174, R203, R302, R469, R508, R518, R520, R524, R569, R608, R618, R620, R624, R655, R669, R670, R673	100 KΩ
17	CR0805-FX-4022ELF	Thick Film Resistors - SMD 40.2K 1%	R2, R58, R62, R63, R67, R202, R204, R454, R459, R461, R467, R511, R554, R559, R561, R567, R611	40.2 KΩ
54	CR0805-FX-1002ELF	Thick Film Resistors - SMD 10K 1%	R4, R11, R12, R19, R20, R27, R28, R60, R68, R115, R116, R118, R119, R120, R121, R124, R165, R166, R168, R200, R250, R350, R351, R352, R353, R456, R457, R460, R462, R463, R503, R504, R506, R517, R521, R522, R523, R556, R557, R560, R562, R563, R603, R604, R606, R617, R621, R622, R623, R652, R654, R668, R672	10 KΩ
18	CR0805-FX-2201ELF	Thick Film Resistors - SMD 2.2K 1%	R65, R66, R100, R101, R102, R103, R104, R105, R106, R108, R109, R205, R206, R257, R258, R519, R619, R665	2.2 KΩ
48	CR0805-FX-1001ELF	Thick Film Resistors - SMD 1K 1%	R71, R101, R111, R113, R153, R154, R155, R156, R157, R158, R159, R160, R161, R162, R163, R300, R354, R355, R356, R357, R401, R403, R404, R405, R407, R409, R452, R453, R455, R458, R464, R465, R466, R468, R471, R516, R552, R553, R555, R556, R558, R564, R565, R566, R568, R571, R616, R674, R675	1 KΩ
60	CR0805-JW-101ELF	Thick Film Resistors - SMD 100ohm 5%	R1, R7, R8, R13, R14, R18, R22, R23, R24, R29, R30, R54, R55, R56, R57, R107, R114, R122, R123, R150, R151, R152, R207, R208, R251, R253, R254, R255, R256, R301, R303, R304, R305, R400, R472, R406, R470, R500, R501, R502, R509, R525, R570, R572, R600, R601, R602, R609, R625, R650, R651, R653, R656, R657, R659, R660, R661, R662, R663, R667	100 Ω
11	CR0805-JW-150ELF	Thick Film Resistors - SMD 150hm 5%	R58, R125, R201, R252, R402, R408, R450, R507, R550, R607, R654	15 Ω
6	CRM2512A-JW-100ELF	Thick Film Resistors - SMD 2512 10 ohms 5% 2W TC200 AEC-Q200	R9, R10, R16, R17, R25, R26	10 Ω
4	CR0805-J-1R0ELF	Thick Film Resistors - SMD 10HM 1/8WATT 5%	R51, R53, R505, R605	1 Ω
1	ERJ1JXSF7R20V	Thick Film Resistors - SMD 0805 0.25W 1% 20kOhms AEC-Q200	R658	200 mΩ
1	KR1-122K-C-R100-F-T1	Current Sense Resistors - SMD 1/2W 0.100 Ohm 1% 50ppm	R451, R551	100 mΩ
2	LVT12R0200FER	Current Sense Resistors - SMD 0.02 ohm 1% 1.0W Current Sense	R512, R612	20 mΩ
3	CRA2512-FZ-R010ELF	Current Sense Resistors - SMD 0.010ohms 1% +/- 50PPM	R21, R50, R52	10 mΩ
DIODES				
2	V8P6-M3W8A	Schottky Diodes & Rectifiers 8A, 50V TRENCH SKY RECT	D500, D600	
10	V55SP4H433X-M3H	Diodes - Schottky 5A, 120V, SLMMAV TRENCH SKY RECT	D1, D50, D500, D550, D650, D652, D656, D657, D659, D662	
5	BA516GVWX	Diodes - General Purpose, Power, Switching DIODE-GP POWER SWITCHING	D2, D201, D451, D452, D502, D551, D552, D602, D653	
2	UESD3.3D1TSG	ESD Suppressors / TVS Diodes ZEN ESD PROTECT	D107, D202	
1	D1213A-04TS-7	ESD Suppressors / TVS Diodes 4 Ch TVS Diode Array 3.3V 6.0A 300mW	D300	
1	SMAZ30-13-F	Zener Diodes 30V 1W	D400, D401, D501, D601, D651, D654, D655, D658, D660, D661	30 V
2	BZT52C5V1-7-F	Zener Diodes 500mW 5-V Zener AEC-Q101 Qualified	D108, D200	5.1 V
3	BZV49C12V1T1G	Zener Diodes 8 2V 250mW	D3, D4, D5	8.2 V
7	AP2012EC	Standard LEDs - SMD RED WATER CLEAR	D100, D101, D102, D103, D104, D105, D106	LED RED
3	151031Y906000	Standard LEDs - Through Hole WL-TMRC THT Mono Diffused Rnd 3mm Ylw	LED150, LED151, LED152	
TRANSISTORS				
2	NTMS4920NR2G	MOSFET 30V 136A 4.3 mOhm Single N-Chen SO-8	Q1, Q5	
2	BS34PH6433X-TMA1	MOSFET P-Ch 40V 170mA SOT-23-3	Q2, Q55, Q190	
6	DMG1012T0-7	MOSFET N-Ch 20V 630mA Vgs4.5V	Q3, Q4, Q6, Q7, Q8, Q9	
1	N7MF52C673N-WFAFT1G	MOSFET TRENCH 6 60V NFET	Q50, Q51, Q52, Q53, Q500, Q600, Q650	
1	SI1749ADP-T1-GE3	MOSFET -30V Vds 25V Vgs PowerPAK SO-8	Q54	
8	MMBT3904L1T1G	Bipolar Transistors - BJT NPN GENERAL PURPOSE	Q56, Q300, Q450, Q451, Q452, Q550, Q551, Q552	
2	MMBT3906L1T1G	Bipolar Transistors - BJT 200mA 40V PNP	Q501, Q601	
FUSES				
2	Q2CG0260BP2B	Resettable Fuses - PPTC	F1, F2	2.6 A
2	Q2CG0075FP2C	Resettable Fuses - PPTC	F3, F4	1.5 A
1	64600001223	Fuse Holder ACS 5X20MM BLOCK 3.2MM PINS	F50	
MAGNETIC COMPONENTS				
7	2944666631	Ferrite Beads 44 WOUND BEAD Z=690 OHM @100MHz	FB450, FB500, FB501, FB550, FB600, FB601, FB650	
7	2512061027Y0	Ferrite Beads MULTILAYER CHIP BEAD Z=1K OHM @100MHz 25%	FB100, FB651, FB652, FB653, FB654, FB655, FB656	
1	SRP5030CA-2R2M	Fixed Inductors 2.2uH±20% 9.7A	L50	2.2 uH
1	NRS4018T3R3MDGJ	Fixed Inductors 4018 3.3uH 66mOhms +/-20%Tol 2000mA	L200	3.3 uH
2	866308W-108100	Ferrite Cores & Accessories FERRITE CORES & ACCESS CF-E 16/8S-V-1S-8P	T500, T600	
4	866308A2010X000	Ferrite Cores & Accessories CLM5E16 2 PCS REQUIRED	T500, T600	
4	866307G0240X187	Ferrite Cores & Accessories E16/8S N87 GAP 0.24+-0.02MM	T500, T600	
1	866306C1010T010	Ferrite Cores & Accessories CF-E13/7 4-HSG-1S-10P	T650	
2	866305G0130X187	Ferrite Cores & Accessories CORE 112uH 0.7A	T650	
CONNECTORS				
1	CON-SOCJ-2155	DC Power Connectors Power Jack/Connector 2 1mm x 5.5mm	J50	
1	M20-9992046	Headers & Wire Housings 20 SIL VERTICAL PIN HEADER TIN	J100, J102, J250, J305, J450, J550	20 pin
1	1775470-2	Headers & Wire Housings 2 POS HDR VERT SMT 2.0mm	J301	
1	292304-1	USB Connectors 4P 'B' RECEPTACLE	J302	2 pin
1	54104-3031	FFC & FPC Connectors 0.5 FPC ZIP SMT R/AU prCon30CKEmbsTpPkg	J300	
2	53375-1010	Headers & Wire Housings 2.5 WTB WAFER ASSY WIKINK LOCKT	J101, J200	
2	51103-1000	Headers & Wire Housings 2.5 WTB REC HSG 10P POS LOCK	J101, J200	
20	50351-8000 (Cut Strip)	Headers & Wire Housings MN-LK TERM 22-28G F Cut Strip of 100	J101, J200	
4	35362-1050	Headers & Wire Housings 10 Ckt Vert. Hdr. Sherlock W-T-B	J150, J151, J303, J304	
4	35507-1000	Headers & Wire Housings 10 Ckt Housing Sherlock W-T-B	J150, J151, J303, J304	
40	50212-8000 (Cut Strip)	Headers & Wire Housings CRMP TERM 24-30G F Cut Strip of 100	J150, J151, J303, J304	
INTEGRATED CIRCUITS				
1	BQ7692006PWR	Battery Management Li-Ion, Li-Phosphate Battery Monitor	U1	
1	BQ25700ARSNR	Battery Management SMBus Battery Buck-Boost Charge Controller 32-QFN	U50	
2	MCP1703T-3302E/CB	LDO Voltage Regulators Low Iq 250mA LDO Vin 16V maxVout 3.3V	U51, U203	
1	TPS561251DDCR	Switching Voltage Regulator 4.5V to 17V Input, 1A Synchronous Step-Down	U200	
2	L78L44ACUTR	Linear Voltage Regulators 24V 0.1A Positive	U650, U653	24 V
2	L78L05ABUTR	Linear Voltage Regulators 5.0V 0.1A Positive	U651, U654	5 V
2	L78L05ABUTR	Linear Voltage Regulators 5.0V 0.1A Negative	U652, U655	-5V
1	TL431ACDB2R	Voltage References Adjustable Precision Shunt Regulator	U658	
8	LTV-816S	Transistor Output Optocouplers Optocoupler Phototrans	U52, U53, U101, U105, U352, U353, U354, U355	
3	HT1A1	Transistor Output Optocouplers Phototransistor Out	U502, U602, U657	
1	LM14903V1/2S16-13	Darlington Transistors 7-Ch Relay Load Sink 80V 100mA Driver	U100	
1	MAX1493AS5E	Digital Isolators 2 channel, each bidirectional, 2Mbps, 2.5Vrms digital isolator, NSOIC-16, -40C to +125C	U101, U104, U350, U351	
2	MIC2091-1YM5-TR	Power Switch ICs - Power Distribution 100mA Current Limiting Power Distribution Switch	U201, U202	
1	PIC16LF18345-1/50	8-bit Microcontrollers - MCU 8-BIT MCU 14KB Flash 1K RAM, 10-BIT ADC	U102	
1	PIC24F1024GB610T-VPT	16-bit Microcontrollers - MCU 16-Bit MCU, 16 MIPS 1024K Flash, 32K RAM	U250	
1	24CWR1280T-1/OT	EEPROM 128 Kbit I2C Serial EEPROM with Software Write Protection, Industrial Temp	U300	
1	MCP24160-1E/CH	Digital to Analog Converters - DAC 500K 108 NV DAC w/E-Vref & I2C interface	U400	
1	MCP24181A1T-E/CH	Digital to Analog Converters - DAC 500K 108 NV DAC w/E-Vref & I2C interface	U405	
2	MCP1501T1-40E/SN	Voltage References High Prec Buffered Voltage Reference	U401, U406	
2	INA230AIGRTR	Current Sense Amplifiers Prec Dig/Current/Vol/Power Monitor	U402, U404	
2	MAX5215GUA+T	Digital to Analog Converters - DAC 14 Bit LOW NOISE VERSION	U403, U407	
2	LT3606EQFPBF	LDO Voltage Regulators 1A Single Resistor Programmed Low Dropout Linear Regulator	U450, U550	
2	TL034CDR	Precision Amplifiers Quad Enhanced JFET Low-Power Precision	U451, U551	
3	MAX1900SAJAE+J	Switching Controllers 4.5V to 40V Input Automotive Flyback/Boost/SEPIC/Power-Supply Controllers	U500, U600, U656	
2	LM2904M8-13	Operational Amplifiers - Op Amps OpAmp General Purpose	U501, U601	