



## Bill of Materials

PCB Name: PX-HERO Board  
PCB Number: P0012  
PCB Revision: G  
BOM Number: P0012  
BOM Revision: G  
Variant: lite edition  
Date: 2020-04-10  
Engineer: Pieter Conradie  
Template revision: 05

#	Part ID	Quantity	Fitted	Group	Designator	Description	Footprint ID	Value	Manufacturer 1	Manufacturer Part Number 1	Supplier 1	Supplier Part Number 1	Supplier 2	Supplier Part Number 2
1	CAP00001	13	Fitted	Electronics SMT	C1, C2, C3, C4, C6, C8, C12, C13, C18, C21, C27, C29, C38	Capacitor 0603 100n 10% X7R 16V	0603	100n	SAMSUNG	CL10B104K08NNWC	Digi-Key	1276-1939-1-ND	Mouser	603-CC603KRX7R7BB104
2	CAP00006	3	Fitted	Electronics SMT	C5, C28, C36	Capacitor 0805 10u 10% X5R 16V	0805	10u	SAMSUNG	CL21A106K0QNNNG	Digi-Key	1276-6455-1-ND	Mouser	603-CC805KKX5R7BB106
3	CAP00002	3	Fitted	Electronics SMT	C7, C22, C23	Capacitor 0603 1u 10% X5R 16V	0603	1u	SAMSUNG	CL10A105K08NNNC	Digi-Key	1276-1034-1-ND	Mouser	603-CC603KRX5R7BB105
4	CAP00014	2	Fitted	Electronics SMT	C9, C10	Capacitor 0603 18p 5% COG 50V	0603	18p	Samsung	CL10C180JB8NNC	Digi-Key	1276-1089-1-ND	Mouser	603-CC603JRNPO9BB180
5	CAP00003	1	Fitted	Electronics SMT	C34	Capacitor 0603 10n 10% X7R 50V	0603	10n	SAMSUNG	CL10B103KB8NCNC	Digi-Key	1276-1921-1-ND	Mouser	603-CC603KRX7R9BB103
6	CAP00008	1	Fitted	Electronics SMT	C35	Capacitor 0805 4u7 10% X5R 16V	0805	4u7	SAMSUNG	CL21A475KOFNNNE	Digi-Key	1276-1065-1-ND	Mouser	603-CC805KKX5R7BB475
7	OPT00020	1	Fitted	Electronics SMT	D4	LED,SMD,0603,Red,99mcd,130deg	0603	LTST-C190KRKT	LITE-ON	LTST-C190KRKT	Digi-Key	160-1436-1-ND	Mouser	859-LTST-C190KRKT
8	OPT00019	1	Fitted	Electronics THT	DS1	128x64 Monochrome LCD with backlight	SMD	JHD12864-G176BSW	JHDLCD	JHD12864-G176BSW	Alibaba	positive replacement lcd display		
9	IND00001	3	Fitted	Electronics SMT	FB1, FB3, FB4	Ferrite Bead 0603 BLM188B151SN1D 20% 0.5A 150R	0603	BLM18AG151SN1D	Murata	BLM18AG151SN1D	Digi-Key	490-5244-1-ND	Mouser	81-BLM18AG151SN1D
10	CON00050	1	Fitted	Kit	H1	Header, 2x20, male THT, 2.54mm pitch, Vert/Straight, Gold Flash Overall, 6mm height (mating)	Loaded	61304021121	Würth	61304021121	Digi-Key	732-5310-ND	Mouser	710-61304021121
11	CON00039	1	Fitted	Electronics SMT	H2	Connector, 1x4, SMD, 1mm pitch, Wire to board connector	SMD	BM04B-SRSS-TB(LF)SN	JST	BM04B-SRSS-TB(LF)SN	Digi-Key	455-1790-1-ND		
12	CON00040	1	Fitted	Kit	H3	Connector, 1x4, Leaded, 2mm pitch, Wire to board connector	Loaded	110990030	Sealed	110990030	Sealed	110990030	Digi-Key	1597-1082-ND
13	CON00043	1	Fitted	Electronics SMT	H4	Header, 1x4, SMD, 2.54mm pitch, Vertical	SMD	M20-8770442	Harwin	M20-8770442	Digi-Key	952-2353-ND	Mouser	855-M20-8770442
14	CON00051	1	Fitted	Electronics SMT	H6	Header, 2x5, SMD, 1.27mm pitch, Vertical, Semi-shrouded with polarity	SMD	FTSH-105-01-L-DV-K-TR	Samtec	FTSH-105-01-L-DV-K-TR	Digi-Key	SAM13165CT-ND	Digi-Key	609-3729-ND
15	CON00032	1	Fitted	Electronics SMT	J1	Connector, 1x5, SMD&TH, 0.65mm pitch, Micro USB Receptacle type B	SMD	10118194-0001LF	FCI	10118194-0001LF	Digi-Key	609-4618-1-ND	Mouser	649-10118194-0001LF
16	CON00046	1	Fitted	Electronics SMT	J3	Connector, 1x10, SMD, 1.1mm pitch, Micro SD Push-push connector	SMD	TF-01	Shenzhen Best Electric	TF-01	seed	320090008		
17	CON00037	1	Fitted	Electronics SMT	J4	Connector, 1x10, SMD, 1mm pitch, Bot contact	SMD	979-34-51061A	Samtec	ZF1-10-01-T-WT	Digi-Key	SAM10877-ND	Mouser	200-ZF10011WT
18	IND00012	1	Fitted	Electronics SMT	L1	Inductor Polarized SMD 10u 20% 1.2A 0.18R	SMD	10u	TAIYO YUDEN	NRS4018T100MOGJ	Digi-Key	587-2886-1-ND	Mouser	963-NRS4018T100MOGJ
19	SEN00012	1	Fitted	Electronics SMT	LS1	Speaker Leaded PS1240PQ2BT	Loaded	PS1240PQ2BT	TDK	PS1240PQ2BT	Digi-Key	445-2525-1-ND	Mouser	810-PS1240PQ2BT
20	MEC00021	1	Fitted	PCB	PCB1	P0014 ST STM32L072RB Hero Board	P0014							
21	RES00004	3	Fitted	Electronics SMT	R1, R2, R4	Resistor SMD Metal Film 0603 4k7 1% 100mW	0603	4k7	YAGEO	RC0603FR-074K7L	Digi-Key	311-4.70KHRCT-ND	Mouser	603-RC0603FR-074K7L
22	RES00005	2	Fitted	Electronics SMT	R3, R37	Resistor SMD Metal Film 0603 10k 1% 100mW	0603	10k	YAGEO	RC0603FR-0710KL	Digi-Key	311-10.0KHRCT-ND	Mouser	603-RC0603FR-0710KL
23	RES00006	5	Fitted	Electronics SMT	R5, R12, R13, R20, R36	Resistor SMD Metal Film 0603 56k 1% 100mW	0603	56k	YAGEO	RC0603FR-0756KL	Digi-Key	311-56KHRCT-ND	Mouser	603-RC0603FR-0756KL
24	RES00009	1	Fitted	Electronics SMT	R6	Resistor SMD Metal Film 0603 270R 1% 100mW	0603	270R	YAGEO	RC0603FR-07270RL	Digi-Key	311-270HRCT-ND	Mouser	603-RC0603FR-07270RL
25	RES00003	1	Fitted	Electronics SMT	R19	Resistor SMD Metal Film 0603 27R 1% 100mW	0603	27R	YAGEO	RC0603FR-0727RL	Digi-Key	311-27.0HRCT-ND	Mouser	603-RC0603FR-0727RL
26	RES00002	1	Fitted	Electronics SMT	R25	Resistor SMD Metal Film 0603 1k 1% 100mW	0603	1k	YAGEO	RC0603FR-071KL	Digi-Key	311-1.00KHRCT-ND	Mouser	603-RC0603FR-071KL
27	RES00001	2	Fitted	Electronics SMT	R26, R27	Resistor SMD Metal Film 0603 0R 1% 100mW	0603	0R	YAGEO	RC0603FR-070RL	Digi-Key	311-0.0HRCT-ND		
28	RES00015	1	Fitted	Electronics SMT	R40	Resistor SMD Metal Film 0603 1M 1% 100mW	0603	1M	YAGEO	RC0603FR-071ML	Digi-Key	311-1.00MHRCT-ND	Mouser	603-RC0603FR-071ML
29	MEC00028	7	Fitted	Electronics SMT	S1, S2, S3, S4, S5, S6, S7	Push Button, SMD Gull Wing, SPST-NO, 6mm x 6mm outline, 5mm height; 130g force	SMD	PTS645SL50SMTR92 LF	CAK	PTS645SL50SMTR92 LFS	Digi-Key	CKN9088CT-ND	Mouser	611-PTS645SL50SMTR92
30	IC00042	1	Fitted	Electronics SMT	U1	Ultra-low-power 32-bit MCU ARM Cortex-M0+, up to 128 KB Flash memory; 20 KB SRAM, 2	LQFP64	STM32L072RBT6	ST Microelectronics	STM32L072RBT6	Digi-Key	497-17504-ND	Mouser	511-STM32L072RBT6
31	IC00046	1	Fitted	Electronics SMT	U2	4-Mbit 2.5V SPI Serial Flash Memory	SOT23-5	LM3670MF-3.3NOPB	Texas Instruments	LM3670MF-3.3NOPB	Digi-Key	LM3670MF-3.3NOPBCT-ND		
32	IC00045	1	Fitted	Electronics SMT	U4	Crystal SMD 32.768kHz 20ppm -40/85C 12.5pF	S08	AT25SF041-SSHD-B	adeste	AT25SF041-SSHD-B	Digi-Key	1265-1174-5-ND	Mouser	988-AT25SF041-SSHD-B
33	OSC00003	1	Fitted	Electronics SMT	Y1	Crystal SMD 32.768kHz 20ppm -40/85C 12.5pF	SMD	32.768kHz	WTL	WTL1M32122	Digi-Key	1908-1341-1-ND	Digi-Key	G83270021CT-ND
34	CAP00001	0	Not Fitted	Electronics SMT	C11, C14, C15, C24	Capacitor 0603 100n 10% X7R 16V	0603	100n	SAMSUNG	CL10B104K08NNWC	Digi-Key	1276-1939-1-ND	Mouser	603-CC603KRX7R7BB104
35	CAP00003	0	Not Fitted	Electronics SMT	C16, C37	Capacitor 0603 10n 10% X7R 50V	0603	10n	SAMSUNG	CL10B103KB8NCNC	Digi-Key	1276-1921-1-ND	Mouser	603-CC603KRX7R9BB103
36	CAP00008	0	Not Fitted	Electronics SMT	C17, C32, C33	Capacitor 0805 4u7 10% X5R 16V	0805	4u7	SAMSUNG	CL21A475KOFNNNE	Digi-Key	1276-1065-1-ND	Mouser	603-CC805KKX5R7BB475
37	CAP00004	0	Not Fitted	Electronics SMT	C19, C20	Capacitor 0603 47p 5% COG 50V	0603	47p	Kemet	C0603C470J5GAC	Digi-Key	399-1056-1-ND	Mouser	603-CC201JRNPO9BB470
38	CAP00012	0	Not Fitted	Electronics SMT	C25, C26, C30, C31	Capacitor 0805 100n 10% X7R 16V	0805	100n	Kemet	C0805X104K4RACTU	Digi-Key	399-5331-1-ND	Mouser	603-CC805KRX7R7BB104
39	OPT00020	0	Not Fitted	Electronics SMT	D1, D2, D7	LED,SMD,0603,Red,99mcd,130deg	0603	LTST-C190KRKT	LITE-ON	LTST-C190KRKT	Digi-Key	160-1436-1-ND	Mouser	859-LTST-C190KRKT
40	DIO00002	0	Not Fitted	Electronics SMT	D3	Diode Schottky Dual Common Anode-Cathode SOT23 BAS40-04 0.12A 40V	SOT23	BAS40-04	Diodes Inc.	BAS40-04-F	Digi-Key	BAS40-04FDICT-ND	Digi-Key	BAS40-04HMEHT116CT-ND
41	DIO00007	0	Not Fitted	Electronics SMT	D5, D8, D9	Diode Schottky Dual Common Anode SOT23 BAS40-05 0.12A 40V	SOT23	BAS40-05	ROHM	BAS40-05HMEHT116	Digi-Key	BAS40-05HMEHT116CT-ND	Mouser	621-BAS40-05-F
42	DIO00001	0	Not Fitted	Electronics SMT	D6	Diode Schottky SMA B140-13F 1A 40V	SMA	B140-13-F	Diodes Inc.	B140-13-F	Digi-Key	B140-FDICT-ND	Mouser	512-S314
43	IND00001	0	Not Fitted	Electronics SMT	FB2	Ferrite Bead 0603 BLM188B151SN1D 20% 0.5A 150R	0603	BLM18AG151SN1D	Murata	BLM18AG151SN1D	Digi-Key	490-5244-1-ND	Mouser	81-BLM18AG151SN1D
44	CON00012	0	Not Fitted	Electronics THT	H5	Header, 1x5, Leaded, 2.54mm pitch, Vertical	Loaded	210-71-05GB01	Pinrex	210-71-05GB01	Digi-Key	732-5318-ND	Mouser	120-9990546
45	CON00007	0	Not Fitted	Kit	H7, H11, H12, H13, H18	Header, 1x2, Vertical, 2.54mm pitch	Loaded	210-71-02GB01	Pinrex	210-71-02GB01	Digi-Key	732-5315-ND		
46	CON00011	0	Not Fitted	Kit	H8	Connector, 1x3, Leaded Vertical, 2mm pitch, Wire to board connector	Loaded	53253-0370	Molex	53253-0370	Digi-Key	WM19005-ND	RSComponents	688-3283
47	CON00014	0	Not Fitted	Kit	H9	Connector, 1x2, Leaded Vertical, 2mm pitch, Wire to board connector	Loaded	B2B-PH-K-S	JST	B2B-PH-K-S	Digi-Key	455-1704-ND	RSComponents	546-8883
48	CON00033	0	Not Fitted	Kit	H10	Header, 1x3, Leaded, 2.54mm pitch, Vertical	Loaded	210-71-03GB01	Pinrex	210-71-03GB01	Digi-Key	732-5316-ND		
49	CON00032	0	Not Fitted	Electronics SMT	J2	Connector, 1x5, SMD&TH, 0.65mm pitch, Micro USB Receptacle type B	SMD	10118194-0001LF	FCI	10118194-0001LF	Digi-Key	609-4618-1-ND	Mouser	649-10118194-0001LF
50	CON00029	0	Not Fitted	Kit	JP7, JP10, JP11, JP12	Jumper, 2 Way, 2.54mm		QPC025XGN-RC	Sullins	QPC025XGN-RC	Digi-Key	S9337-ND	Communica	7021JBK
51	SEN00007	0	Not Fitted	Electronics SMT	LS2	Speaker SMD PKLCS1212E4001-R1	SMD	PKLCS1212E4001-R1	Murata	PKLCS1212E4001-R1	Digi-Key	490-4683-1-ND	RSComponents	754-1980
52	TRA00004	0	Not Fitted	Electronics SMT	Q1	MOSFET P SOT23 DMP2305U-7 4.2A 20V	SOT23	DMP2305U-7	Diodes Inc.	DMP2305U-7	Digi-Key	DMP2305U-DICT-ND	Mouser	621-DMP2305U-7
53	TRA00003	0	Not Fitted	Electronics SMT	Q2, Q3	MOSFET P SOT23 BSS84 0.13A 50V	SOT23	BSS84	Diodes Inc.	BSS84-F	Digi-Key	BSS84-FDICT-ND	Mouser	621-BSS84-F
54	TRA00009	0	Not Fitted	Electronics SMT	Q4	MOSFET N SOT23 BSS138 0.2A 50V	SOT23	BSS138	Diodes Inc.	BSS138-F	Digi-Key	BSS138-FDICT-ND	Mouser	621-BSS138-F
55	RES00003	0	Not Fitted	Electronics SMT	R7, R8	Resistor SMD Metal Film 0603 27R 1% 100mW	0603	27R	YAGEO	RC0603FR-0727RL	Digi-Key	311-27.0HRCT-ND	Mouser	603-RC0603FR-0727RL
56	RES00002	0	Not Fitted	Electronics SMT	R9, R10, R11, R28, R29	Resistor SMD Metal Film 0603 1k 1% 100mW	0603	1k	YAGEO	RC0603FR-071KL	Digi-Key	311-1.00KHRCT-ND	Mouser	603-RC0603FR-071KL
57	RES00006	0	Not Fitted	Electronics SMT	R14, R30, R32, R34, R38	Resistor SMD Metal Film 0603 56k 1% 100mW	0603	56k	YAGEO	RC0603FR-0756KL	Digi-Key	311-56KHRCT-ND	Mouser	603-RC0603FR-0756KL
58	RES00008	0	Not Fitted	Electronics SMT	R17, R18, R23, R24	Resistor SMD Metal Film 0805 1k 1% 125mW	0805	1k	YAGEO	RC0805FR-071KL	Digi-Key	311-1.00KCRTR-ND		
59	RES00019	0	Not Fitted	Electronics SMT	R31	Resistor SMD Metal Film 0603 36k 1% 100mW	0603	36k	YAGEO	RC0603FR-0736KL	Digi-Key	311-36.0KHRCT-ND	Mouser	603-RC0603FR-0736KL
60	RES00005	0	Not Fitted	Electronics SMT	R33, R35, R39	Resistor SMD Metal Film 0603 10k 1% 100mW	0603	10k	YAGEO	RC0603FR-0710KL	Digi-Key	311-10.0KHRCT-ND	Mouser	603-RC0603FR-0710KL
61	IC00012	0	Not Fitted	Electronics SMT	U3	Single-Chip, Fully Integrated Li-Ion Li-Polymer Charge Management Controller	SOT23-5	MCP73831T-2ATU/OT	Microchip	MCP73831T-2ATU/OT	Digi-Key	MCP73831T-2ATU/OTCT-ND	Mouser	579-MCP73831T-2ATU/OT
62	IC00044	0	Not Fitted	Electronics SMT	U5	Very low capacitance ESD protection for USB	SOT23-6	82400102	Würth	82400102	Digi-Key	732-4473-1-ND		
63	IC00002	0	Not Fitted	Electronics SMT	U6	USB to BASIC UART IC (Rev D+)	SSOP16	FT230XS-*	FTDI Chip	FT230XS-*	Digi-Key	768-1135-1-ND	Mouser	895-FT230XS-R
64	IC00050	0	Not Fitted	Electronics SMT	U7	Bus buffer/line driver; 3-state	SC70	74LVC1G125GW.125	NXP	74LVC1G125GW.125	Digi-Key	1727-3488-1-ND	Mouser	595-SN74LVC1G125DCKR