

Category	Vendor	Item Number	Item Description	Quantity Per Package	Cost Per Package	Number of Packages	Item Total Cost	Part Link	Symbol, Layout, & 3D Model Link	Comments	Designation on Mouse 6.0 Test	Designation on Mouse 6.0 PCB
Power	Amazon	B096G4D6ZX	URGENEX 7.4V	2	\$19.99	1	\$19.99	https://www.amazon.com/dp/B096G4D6ZX		- 7.4V LiPo battery, 900mAh, 46g, 30C - JST PH 2.0 pitch 2 position for power, 3 position for charging - 53mm x 16mm x 29mm (l x h x w)	not on pcb	
	Amazon	B09DP9FZTX	CQRobot 50 Set	50	\$7.99	1	\$7.99	https://www.amazon.com/dp/B09DP9FZTX		- JST PH 2.0 pitch 2 position pack both male and female TH - 50 male, 50 female	J1	J4
	Digikey	CMS04(TE12LQI	DIODE SCHOTT	1	\$0.76	4	\$3.04	https://www.digikey.com/product-detail/en/1N4148WS-7-F/295-1437-ND	https://app.ultralibrary.com/part/CMS04(TE12LQI	- schottky diode for everything except vacuum that needs 5A - prevents up to 30V and allows 5A to pass for 3.3V, 5V, 12V, and 3.2V regulators - small 370mV forward drop	CR1, CR2, CR3	CR1, CR2, CR3, CR4
	Digikey	296-53563-1-ND	DC DC CONVER	1	\$3.48	1	\$3.48	https://www.digikey.com/product-detail/en/296-53563-1-ND/296-53563-1-ND	https://app.ultralibrary.com/part/296-53563-1-ND	- 3.7V 2A regulator for vacuum motor - schematic generated w/ TI tool: HERE HERE	U4	U6
	Digikey	445-7665-1-ND	CAP CER 22UF	1	\$0.39	2	\$0.78	https://www.digikey.com/product-detail/en/445-7665-1-ND/445-7665-1-ND	n/a	- Cin for vacuum fan regulator circuit - 0805 package - 22uF	NEW, we have - dupe H	C27
	Digikey	445-8239-1-ND	CAP CER 47UF	1	\$0.79	3	\$2.37	https://www.digikey.com/product-detail/en/445-8239-1-ND/445-8239-1-ND	n/a	- Cout for vacuum fan regulator circuit - 0805 package - 47uF	NEW, we have - dupe I	C28
	Digikey	399-C0402C331	CAP CER 330PF	1	\$0.24	1	\$0.24	https://www.digikey.com/product-detail/en/399-C0402C331/399-C0402C331	n/a	- Cff for vacuum fan regulator circuit - 0402 package - 330pF	C16	C29
	Digikey	541-10.0KLCT-N	RES SMD 10K C	1	\$0.10	1	\$0.10	https://www.digikey.com/product-detail/en/541-10.0KLCT-N/541-10.0KLCT-N	n/a	- Rfbl for vacuum fan regulator circuit - 0402 package - 10k Ohm resistor	R3	R4
	Digikey	541-1.91KLCT-N	RES SMD 1.91K	1	\$0.10	1	\$0.10	https://www.digikey.com/product-detail/en/541-1.91KLCT-N/541-1.91KLCT-N	n/a	- Rfbb for vacuum fan regulator circuit - 0402 package - 1.91k Ohm resistor	NEW	R8
	Digikey	296-TPS61288R	IC REG BOOST	1	\$5.89	1	\$5.89	https://www.digikey.com/product-detail/en/296-TPS61288R/296-TPS61288R	https://app.ultralibrary.com/part/296-TPS61288R	- 12V 3A regulator for wheel motor driver - schematic generated w/ TI tool: https://webench.ti.com/appinfo/webench/scripts/SDP.cgi?ID=AA120	U3	U5
	Digikey	445-4042-1-ND	CAP CER 10UF	1	\$0.30	1	\$0.30	https://www.digikey.com/product-detail/en/445-4042-1-ND/445-4042-1-ND	n/a	- Cin for wheel motor regulator circuit - 1206 package - 10uF	C5	C18
	Digikey	445-1314-1-ND	CAP CER 0.1UF	1	\$0.10	1	\$0.10	https://www.digikey.com/product-detail/en/445-1314-1-ND/445-1314-1-ND	n/a	- Cinx for wheel motor regulator circuit - 0603 package - 0.1uF	C6- (dupe A)	C19
	Coilcraft	XAL7070-332	XAL7070-332ME	1	\$3.25	1	\$3.25	https://www.coilcraft.com/product-detail/en/XAL7070-332ME/XAL7070-332ME	https://app.ultralibrary.com/part/XAL7070-332ME	- L1 for wheel motor regulator circuit	L3 (dupe B)	L3
	Digikey	445-4952-1-ND	CAP CER 0.1UF	1	\$0.10	1	\$0.10	https://www.digikey.com/product-detail/en/445-4952-1-ND/445-4952-1-ND	n/a	- Cbst for wheel motor regulator circuit - 0402 package - 0.1uF	C8 - dupe G	C21
	Digikey	445-9097-1-ND	CAP CER 2.2UF	1	\$0.29	1	\$0.29	https://www.digikey.com/product-detail/en/445-9097-1-ND/445-9097-1-ND	n/a	- Cvcc for wheel motor regulator circuit - 0402 package - 2.2uF	C9	C22
	Digikey	541-34.0KLCT-N	RES SMD 34K C	1	\$0.10	1	\$0.10	https://www.digikey.com/product-detail/en/541-34.0KLCT-N/541-34.0KLCT-N	n/a	- Rcomp for wheel motor regulator circuit - 0402 package - 34k Ohms	R5	R5
	Digikey	490-16432-1-ND	CAP CER 0.039F	1	\$0.10	1	\$0.10	https://www.digikey.com/product-detail/en/490-16432-1-ND/490-16432-1-ND	n/a	- Ccomp for wheel motor regulator circuit - 0402 package - 39nF	C10	C23
	Digikey	399-11256-1-ND	CAP CER 82PF	1	\$0.49	1	\$0.49	https://www.digikey.com/product-detail/en/399-11256-1-ND/399-11256-1-ND	n/a	- Ccomp2 for wheel motor regulator circuit - 0402 package - 82pF	C11	C24
	Digikey	541-931KLCT-N	RES SMD 931K	1	\$0.10	1	\$0.10	https://www.digikey.com/product-detail/en/541-931KLCT-N/541-931KLCT-N	n/a	- Rfbl for wheel motor regulator circuit - 0402 package - 931k Ohms	R6	R6
	Digikey	541-48.7KLCT-N	RES SMD 48.7K	1	\$0.10	1	\$0.10	https://www.digikey.com/product-detail/en/541-48.7KLCT-N/541-48.7KLCT-N	n/a	- Rfbb for wheel motor regulator circuit - 0402 package - 48.7k Ohms	R7	R7
	Digikey	490-16309-1-ND	CAP CER 47UF	1	\$0.52	3	\$1.56	https://www.digikey.com/product-detail/en/490-16309-1-ND/490-16309-1-ND	n/a	- Cout for wheel motor regulator circuit - 1210 package - 47uF	C7, C12, C13	C20, C25, C26
	Digikey	EG5554-ND	SWITCH ROCKE	1	\$1.64	1	\$1.64	https://www.digikey.com/product-detail/en/EG5554-ND/EG5554-ND	https://www.mouser.com/product-detail/en/EG5554-ND/EG5554-ND	- switch for on/off of entire mouse - rated for 15A (AC), can hopefully handle 9A DC		S1
	Digikey	296-39450-1-ND	IC REG BUCK 5V	1	\$1.36	1	\$1.36	https://www.digikey.com/product-detail/en/296-39450-1-ND/296-39450-1-ND	https://app.ultralibrary.com/part/296-39450-1-ND	- 5V, 500mA switching regulator - used to power Sharp sensors	U1	U3
	Digikey	296-39449-1-ND	IC REG BUCK 3.3V	1	\$1.36	1	\$1.36	https://www.digikey.com/product-detail/en/296-39449-1-ND/296-39449-1-ND	https://app.ultralibrary.com/part/296-39449-1-ND	- 3.3V, 500mA switching regulator - used to power MCU	U2	U4
	Digikey	445-6857-1-ND	CAP CER 10UF	1	\$0.31	2	\$0.62	https://www.digikey.com/product-detail/en/445-6857-1-ND/445-6857-1-ND	n/a	- 10uF ceramic cap needed for 5V and 3.3V switching regulator - between VIN and PGND (pg 21 pdf of datasheet) - 0805 package	C1, C3	C14, C16
	Digikey	445-7665-1-ND	CAP CER 22UF	1	\$0.39	2	\$0.78	https://www.digikey.com/product-detail/en/445-7665-1-ND/445-7665-1-ND	n/a	- 22uF ceramic cap needed for 5V and 3.3V switching regulator - between SW and FB (pg 21 pdf of datasheet)	C2, C4 (dupe H)	C15, C17
	Digikey	541-100KHCT-N	RES SMD 100K	1	\$0.10	2	\$0.20	https://www.digikey.com/product-detail/en/541-100KHCT-N/541-100KHCT-N	n/a	- 100k Ohm resistor needed for 5V and 3.3V switching regulator - between SW/VOS and PG (pg 21 pdf of datasheet) - smaller 0603 package	R1, R2	R2, R3

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	Coilcraft	XAL5030-222	XAL5030-222ME	1	\$2.49	2	\$4.98	https://www.coilcraft.com/	https://app.ultralibrarian.com/	- 2.2uH inductor needed for 5V and 3.3V switching regulator - between SW and 100k Ohm resistor (pg 21 pdf of datasheet)	L1, L2	L2, L4
	Digikey	296-TLV9301IDB	IC OPAMP GP 1	1	\$0.58	1	\$0.58	https://www.digikey.com/	https://app.ultralibrarian.com/	- low battery voltage indicator op amp - to be used as comparator to turn on/off regulators	U5	U7
	Digikey	P118KLCT-ND	RES SMD 118K	1	\$0.10	1	\$0.10	https://www.digikey.com/	n/a	- R2 for low battery voltage comparator circuit - 0402 package - 118k Ohms	R9	R10
	Digikey	541-100KLCT-ND	RES SMD 100K	1	\$0.10	1	\$0.10	https://www.digikey.com/	n/a	- R1 for low battery voltage comparator circuit - 0402 package - 100k Ohms	R8	R9
Wheel Motor Related	Digikey	61FG8ELCT-ND	IC MOTOR DRIV	1	\$3.51	1	\$3.51	https://www.digikey.com/	https://app.ultralibrarian.com/	- H bridge PWM interface brushed motor driver - 10-36V supply, 3A output max, 30-BSOP	U1	U2
	Digikey	445-7456-1-ND	CAP CER 0.1uF	1	\$0.11	1	\$0.11	https://www.digikey.com/	n/a	- C2 0.1uF cap for 5V output from motor driver - datasheet pg 8: HERE - 0603 package	C1 - dupe F	C12
	Digikey	732-6406-1-ND	CAP ALUM POL	4	\$0.60	4	\$0.60	https://www.digikey.com/	https://www.mouser.com/	- C1 47uF polymer cap for motor driver supply - datasheet pg 8	C2 - dupe C	
	Digikey	P121394CT-ND	CAP ALUM HYB	1	\$1.45	1	\$1.45	https://www.digikey.com/	https://www.mouser.com/	- C1 47uF polymer cap for motor driver supply - datasheet pg 8	NEW C2	C13
	Servocity	638103	Gear Motor with	1	\$19.99	2	\$39.98	https://www.servocity.com/		- Gear motors, 4900rpm w/ encoders - 6 position 1.5 pitch ZH JST	not on pcb	
	Pololu	1087	Black plastic whe	2	\$4.95	1	\$4.95	https://www.pololu.com/		- Wheels, 32mm diameter, 3mm D output shaft - we'll use just the rubber tire and make a custom wheel	not on pcb	
	Amazon	B09NCCXPGM	CQRobot 100 Se	100	\$9.58	1	\$9.58	https://www.amazon.com/	https://www.jst-mfg.com/	- JST ZH 6 position male (receptacle) TH connector	J1, J2	J2, J3
	Amazon	B07FW18RQY	uxcell 683ZZ Bal	20	\$7.99	1	\$7.99	https://www.amazon.com/		- 3mm ball bearings to be embedde into custom wheels	not on pcb	
	Servocity	1500-0010-0003	1500 Series Plas	12	\$1.87	1	\$1.87	https://www.servocity.com/		- 3mm plastic spacers to put between wheel and mount	not on pcb	
	Amazon	B0BKQSQMFL	FOLIV 700PCS f	10-50	\$15.29	1	\$15.29	https://www.amazon.com/		- M3 button head screws to serve as wheel axels	not on pcb	
	Digikey	1727-7806-1-ND	DIODE SCHOTT	1	\$0.39	8	\$3.12	https://www.digikey.com/	https://app.ultralibrarian.com/	- Flyback diodes for EMF protection	NEW (dupe J)	CR5, CR6, CR7, CR8, CR9, CR10, CR11, CR12
Vacuum Fan Related	Amazon	B08RMQP6YP	1.25mm Male an	20	\$18.99	1	\$18.99	https://www.amazon.com/	n/a	- Molex picoblade connector various positions, - includes 3 position 1.25mm pitch male and female connector, 20 of each - includes 10cm precrimped wire - to be used to extend HGLRC wire	not on pcb	
	Digikey	BD62130AEFJ-E	BUILT-IN 4-GHAI	4	\$4.78	4	\$4.78	https://www.digikey.com/				
	Mouser	755-BD62130AE	Motor / Motion / I	1	\$1.78	1	\$1.78	https://www.mouser.com/	https://app.ultralibrarian.com/	3A 3.7V brushed DC motor driver for vacuum fan	NEW	U9
	Digikey	493-3813-1-ND	RNE1C101MDS	1	\$0.76	1	\$0.76	https://www.digikey.com/	https://app.ultralibrarian.com/	100uF capacitor for vacuum fan driver	NEW	C31
	Digikey	4988-NMC0805X	CAP SMT08050	1	\$0.24	1	\$0.24	https://www.digikey.com/	n/a	- 0.1uF cap for brushless motor driver - 0805 package	NEW, we have - dupe D	C30
	Amazon	B07CFQMF1M	8pcs 8520 Motor	8	\$18.99	1	\$18.99	https://www.amazon.com/	n/a	- 15000KV brushed DC motor for vacuum fan - 2p 1.25mm pitch picoblade connector	n/a	
	Digikey	WM1731-ND	CONN HEADER	1	\$0.23	1	\$0.23	https://www.digikey.com/	https://app.ultralibrarian.com/ https://www.molex.com/	- motor to board connector for vacuum fan - 2p 1.25mm pitch picoblade connector	n/a	J9
	Digikey	1727-7806-1-ND	DIODE SCHOTT	1	\$0.39	4	\$1.56	https://www.digikey.com/	https://app.ultralibrarian.com/	- Flyback diodes for EMF protection	NEW - dupe J	CR13, CR14, CR15, CR16
Ball Caster, nuts, screws	Amazon	B0BTYDZVM8	1 Oz (23 Grams)	1	\$6.99	1	\$6.99	https://www.amazon.com/		- superglue to attach 3D printed mounts to PCB		
IR Sensing	Digikey	1855-1027-ND	SENSOR OPTIC	1	\$8.45	4	\$33.80	https://www.digikey.com/	https://www.mouser.com/	- Sharp IR distance sensor 2-15cm - shortest range sharp IR sensor available - connects w/ 3 position ZH JST connector - needs 10uF cap	(not on schematic)	
	Amazon	B09NC8Y2PK	CQRobot 100 Se	50	\$11.99	1	\$11.99	https://www.amazon.com/	https://www.jst-mfg.com/	- JST ZH 1.5 pitch 3 position pack both male and female TH - 50 male, 50 female	J2, J3, J4, J5	J5, J6, J7, J8
	Digikey	445-C1608X5R1	CAP CER 10uF	1	\$0.36	4	\$1.44	https://www.digikey.com/	n/a	- 10uF ceramic capacitor, SMD 0603 - needed for Sharp IR sensors	- (dupe E)	C32, C33, C34, C35
	Digikey	CAY16-1001F4LI	RES ARRAY 4 R	1	\$0.10	1	\$0.10	https://www.digikey.com/	https://app.ultralibrarian.com/	- R1 resistor array to drop 2.5V max from IR sensor output to 1.8V - 1k Ohm resistor array, 4 resistors	NEW, RN2 (dupe K)	RN2

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	Digikey	CAY16-2201F4L	RES ARRAY 4 R	1	\$0.10	1	\$0.10	https://www.digik	https://app.ultralibrari	- R2 resistor to drop 2.5V max from IR sensor output to 1.8V - 2.2k Ohms calculated w/ voltage divider equation - resistor array, 4 resistors	NEW, RN1	RN1
MCU	Digikey	CKN12306-ND	TACT 6.0 X 3.5, 1	1	\$0.11	1	\$0.11	https://www.digik	https://www.mouser.c	- TH reset switch	SW1	SW1
	Digikey	541-10.0KHCT-N	RES SMD 10K C	1	\$0.10	1	\$0.10	https://www.digik	n/a	- 10k resistor for reset switch on AT32UC3L0256 - small 0603 package	R1	R1
	Digikey	1175-1733-ND	CONN HEADER	1	\$0.68	1	\$0.68	https://www.digik	https://www.arrow.com	- 2x5 TH JTAG programming header - small 1.27 pitch w/ key slot and shroud	J1	J1
	Digikey	2151-RT3215-32	CRYSTAL 32.768	1	\$0.42	1	\$0.42	https://www.digik	https://app.ultralibrari	- 32.768kHz external crystal	XTAL1	XTAL1
	Digikey	478-KGQ15ACG	CAP CER 22PF	1	\$0.31	2	\$0.62	https://www.digik	n/a	- 22pF caps for external crystal - needed on each crystal terminal - small 0603 package	C9, C10	C9, C10
	Amazon	B07BJJC3R6	NOYITO TTL to f	1	\$7.99	1	\$7.99	https://www.ama	not needed	- TTL to DB-9 (DE-9) translator for serial out	not on pcb	
	Amazon	B0759HSLP1	OIKWAN USB to	1	\$11.99	1	\$11.99	https://www.ama	not needed	- DB-9 (DE-9) to USB A for serial out	not on pcb	
	Digikey	AT32UC3L0256-	IC MCU 32BIT 2	1	\$10.19	1	\$10.19	https://www.digik	https://app.ultralibrari	- AT32UC3L0256 AVR MCU to replace Arduino - 50MHz, faster than controller above, operates on 3.3V - 12b ADC, PWM, programmed via JTAG and aWire - schematic checklist: HERE	U1	U1
	Digikey	445-C1608X5R1	CAP CER 10UF	1	\$0.36	1	\$0.36	https://www.digik	n/a	- 10uF capacitor for AT32UC3L0256 VDDin - page 4 of schematic checklist - small 0603 package	C7- (dupe E)	C7
	Digikey	445-7456-1-ND	CAP CER 0.1UF	1	\$0.11	3	\$0.33	https://www.digik	n/a	- 0.1uF ceramic cap for AT32UC3L0256 VDDin, VDDio, and VDDcore - page 4 of schematic checklist - small 0603 package	C2- (dupe F)	C3, C4, C5
	Digikey	445-8025-1-ND	CAP CER 2.2UF	1	\$0.25	1	\$0.25	https://www.digik	n/a	- 2.2uF ceramic cap for AT32UC3L0256 VDDio, and VDDcore - page 4 of schematic checklist - small 0603 package	C1	C1
	Digikey	445-7456-1-ND	CAP CER 0.1UF	1	\$0.11	3	\$0.30	https://www.digik	n/a	- 0.1uF ceramic cap for AT32UC3L0256 VDDana and ADVREF - page 5 of schematic checklist - small 0603 package	C3, C4, C5- (dupe F)	C2, C6
	Digikey	490-5216-1-ND	FERRITE BEAD	1	\$0.19	1	\$0.19	https://www.digik	https://app.ultralibrari	- ferrite bead for for AT32UC3L0256 VDDana and ADVREF - page 5 of schematic checklist, and page 15 on xplained dev board schematic: HERE	L1	L1
	Digikey	445-7456-1-ND	CAP CER 0.1UF	1	\$0.11	1	\$0.30	https://www.digik	n/a	- 0.1uF ceramic cap for reset switch on AT32UC3L0256 - small 0603 package	C8- (dupe F)	C8
	Digikey	445-7456-1-ND	CAP CER 0.1UF	1	\$0.11	1	\$0.30	https://www.digik	n/a	- 0.1uF ceramic cap for JTAG on AT32UC3L0256 - small 0603 package	C11- (dupe F)	C11
	Digikey	541-10.0KHCT-N	RES SMD 10K C	1	\$0.10	1	\$0.10	https://www.digik	n/a	- 10k resistor for pulling down enable signal - small 0603 package		R11
Misc	Digikey	CKN12306-ND	TACT 6.0 X 3.5, 1	1	\$0.11	1	\$0.11	https://www.digik	https://www.mouser.c	- same switch as reset switch for software configuration - to go on MCU interrupt pin		SW2
	Digikey	3147-B1911UD-	LED ORANGE C	1	\$0.10	1	\$0.10	https://www.digik	https://app.ultralibrari	- orange SMD LED 0603 package for debug		D1
	Digikey	3147-B1911USD	LED RED CLEAR	1	\$0.10	1	\$0.10	https://www.digik	https://app.ultralibrari	- red SMD LED 0603 package for error indication		ERR
	Digikey	3147-B1911NG-	LED GREEN CL	1	\$0.10	1	\$0.10	https://www.digik	https://app.ultralibrari	- green SMD LED 0603 package for debug		D2
	Digikey	3147-B1931NB-	LED BLUE CLEAR	1	\$0.10	1	\$0.10	https://www.digik	https://app.ultralibrari	- blue SMD LED 0603 package for debug		D3
	Digikey	CAY16-3300F4L	RES ARRAY 4 R	4	\$0.10	4	\$0.40	https://www.digik	https://app.ultralibrari	- 330-Ohm resistor array, 4 resistors	NEW - dupe K	RN3
	Digikey	CAY16-1001F4L	RES ARRAY 4 R	1	\$0.10	1	\$0.10	https://www.digik	https://app.ultralibrari	- 1k Ohm resistor array, 4 resistors		
Digikey	952-2664-1-ND	PC TEST POINT	1	\$0.31		\$0.00	https://www.digik	https://www.mouser.c	- TH testpoint to probe mouse			
PCB	JLC PCB	n/a	PCB prototype:Y	5	\$2.00	1	\$2.00	https://jlcpcb.com		- solid and cheap PCB vendor - no issues so far, purple nice and deep purple		
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	Digikey	2129-NJM7806F	IC REG LINEAR	1	\$0.88	1	\$0.88	https://www.digikey.com		- 6V voltage regulator, 1.5A output max, TH - needed to regulate 7.4V down to 6V - will supply steady 6V to MCU and motor driver IC - pins that needs 5V (IR sensors, motor encoders) will get it from MCU		
	Digikey	1276-1123-1-ND	CAP CER 0.33UF	1	\$0.10	1	\$0.10	https://www.digikey.com		- 0.33uF ceramic capacitor, SMD 0805 - needed for 6V voltage regulator input		
	Digikey	1276-1003-1-ND	CAP CER 0.1UF	1	\$0.10	1	\$0.10	https://www.digikey.com		- 0.1uF ceramic capacitor, SMD 0805 - needed for 6V voltage regulator output		
	Digikey	HS105-ND	HEAT SINK TO-220	1	\$0.33	1	\$0.33	https://www.digikey.com		- TO-220 heatsink for 6V voltage regulator - screws on to regulator		
	Digikey	335-1148-ND	MACH SCREW	1	\$0.71	1	\$0.71	https://www.digikey.com		- TO-220 10mm M3 screw for 6V voltage regulator & heatsink - metal screw		
	Digikey	RPC3082-ND	HEX NUT 0.220"	1	\$0.28	1	\$0.28	https://www.digikey.com		- TO-220 M3 nut for 6V regulator & heatsink - polycarbonate nut		
	Amazon	B09QJT6T2N	10 Pairs HobbyP	1	\$8.98	1	\$8.98	https://www.amazon.com		- XT30 male connector (receptacle for LiPo battery plug) - connects battery to PCB - pcb files: HERE		
	Digikey	296-TPS565242	IC REG BUCK-A	4	\$0.68	4	\$0.68	https://www.digikey.com	https://app-ultralibrari.com	- 3.7V 5A regulator for vacuum motor - schematic generated w/ TI tool: https://webench.ti.com/appinfo/webench/scripts/SDP.cgi?ID=193884	U4	
	Digikey	446-14428-1-ND	CAP CER 22UF	4	\$0.82	4	\$0.82	https://www.digikey.com	n/a	- Cin for vacuum fan regulator circuit - 0805 package - 22uF	C14	
	Digikey	446-1314-1-ND	CAP CER 0.1UF	4	\$0.10	4	\$0.10	https://www.digikey.com	n/a	- Cinx for vacuum fan regulator circuit - 0603 package - 0.1uF	C15 - dupe A	
	Digikey	641-100KLCT-NE	RES-SMD 100K	4	\$0.10	4	\$0.10	https://www.digikey.com	n/a	- Rext for vacuum fan regulator circuit - 0402 package - 100k Ohms	R8 - dupe B	
	Digikey	641-2416-1-ND	RES-32K-OHM 0	4	\$0.67	4	\$0.67	https://www.digikey.com	n/a	- Renb for vacuum fan regulator circuit - 0402 package - 32k Ohms	R9	
	Coilcraft	XAL5030-222	XAL5030-222ME	4	\$2.49	4	\$2.49	https://www.coilcraft.com	https://app-ultralibrari.com	- L1 for vacuum fan regulator circuit	L4	
	Digikey	399-CBR04C560J5GACAUTOCT		4	\$0.26	4	\$0.26	https://www.digikey.com	n/a	- Cff for vacuum fan regulator circuit - 0402 package - 56pF	C16	
	Digikey	641-154KLCT-NE	RES-SMD 154K	4	\$0.10	4	\$0.10	https://www.digikey.com	n/a	- Rftb for vacuum fan regulator circuit - 0402 package - 154k Ohms	R10	
	Digikey	311-30.0KHRCT	RES-30K-OHM 1	4	\$0.10	4	\$0.10	https://www.digikey.com	n/a	- Rftb for vacuum fan regulator circuit - 0603 package - 30k Ohms	R11	
	Digikey	446-8239-1-ND	CAP CER 47UF	4	\$0.79	3	\$2.37	https://www.digikey.com	n/a	- Cout for vacuum fan regulator circuit - 0805 package - 47uF	C17, C18, C19 (dupe I)	
	Digikey	446-1314-1-ND	CAP CER 0.1UF	4	\$0.10	4	\$0.10	https://www.digikey.com	n/a	- Coutx for vacuum fan regulator circuit - 0603 package - 0.1uF	C20- (dupe A)	
	Digikey	296-DRV8311HR	24V ABS MAX-3	4	\$2.29	4	\$2.29	https://www.digikey.com	https://app-ultralibrari.com	- 5A 20V 3-phase brushless motor driver for vacuum fan	U1	
	Digikey	4988-NMC0805X	CAP-SMT08050-	4	\$0.24	4	\$0.24	https://www.digikey.com	n/a	- Cvm1 for brushless motor driver - 0805 package - 0.1uF	C3 - dupe D	
	Digikey	732-6406-1-ND	CAP-ALUM-POL	4	\$0.60	4	\$0.60	https://www.digikey.com	https://www.mouser.com	- Cvm2 for brushless motor driver	C1- (dupe C)	
	Digikey	4988-NMC0805X	CAP-SMT08050-	4	\$0.24	4	\$0.24	https://www.digikey.com	n/a	- Cvin_avdd1 for brushless motor driver - 0805 package - 0.1uF	C2- (dupe D)	
	Digikey	446-C1608X5R1	CAP CER 10UF	4	\$0.36	4	\$0.36	https://www.digikey.com	n/a	- Cvin_avdd2 for brushless motor driver - 0603 package - 10uF	C4 - dupe E	
	Digikey	1276-1005-1-ND	CAP CER 0.1UF	4	\$0.10	4	\$0.10	https://www.digikey.com	n/a	- Cep for brushless motor driver - 0603 package - 0.1uF	C5	
	Digikey	4988-NMC0603X	CAP-SMT06034	4	\$0.13	4	\$0.13	https://www.digikey.com	n/a	- Cavdd for brushless motor driver - 0603 package - 1uF	C6	
	Digikey	641-5.10KSCT-N	RES-SMD 5.1K	4	\$0.15	4	\$0.15	https://www.digikey.com	n/a	- Rnfaul for brushless motor driver - 0603 package - 5.1k Ohms	R1	
	Digikey	446-1314-1-ND	CAP CER 0.1UF	4	\$0.10	4	\$0.10	https://www.digikey.com	n/a	- Ccsaref for brushless motor driver - 0603 package - 0.1uF	C7- (dupe A)	
	HGLRC	SPECTER-0802	HGLRC-SPECTE	4	\$9.69	4	\$9.69	https://www.hgirc.com	https://www.molex.com	- 5A brushless motor - uses 3 position 1.25 pitch JST connector- confirmed w/ purchase	not on pcb	
	Digikey	630470310	CONN-HEADER	4	\$0.27	4	\$0.27	https://www.digikey.com	https://app-ultralibrari.com	- Molex picoblade connector- wire to board- 3 position- TH connector- connects extended wire to pcb	J1	

Category	Vendor	Item Number	Item Description	Quantity Per Package	Cost Per Package	Number of Packages	Item Total Cost	Part Link	Symbol, Layout, & 3D Model Link	Comments	Designation on Mouse 6.0 Test	Designation on Mouse 6.0 PCB
	Digikey	SMLJ60S6-TPM	DIODE GEN PUR	4	\$0.03	4	\$0.03	https://www.digikey.com	https://app-ultralibrary.com https://www.mouser.com	-standard rectifier diode to prevent current in reverse direction through regulators into other ICs -prevents up to 600V and allows 5A to pass -Just for vacuum fan motor driver -1V forward drop	CR4	
	Digikey	R1966IBLKLKE	SWITCH ROCKE	4	\$2.55	4	\$2.55	https://www.digikey.com	https://www.mouser.com https://app-ultralibrary.com https://www.snapeda.com	-switch for on/off of entire mouse -rated for 16A (AC); can hopefully handle 9A DC	SW4	
	Digikey	445-9050-1-ND	CAP CER 4.7UF	4	\$0.32	4	\$0.32	https://www.digikey.com	n/a	-Cin for vacuum fan regulator circuit -0603 package -4.7uF	C14	
	Digikey	445-8238-1-ND	CAP CER 33UF	4	\$0.88	4	\$0.88	https://www.digikey.com	n/a	-Cout for vacuum fan regulator circuit -0805 package -33uF	C15	
	Digikey	641-2-26KLCT-N	RES SMD 2.26K	4	\$0.10	4	\$0.10	https://www.digikey.com	n/a	-Rfbb for vacuum fan regulator circuit -0402 package -2.26k Ohm resistor	R4	
	Digikey	296-DRV8210DS	11V, 1A BRUSHE	4	\$0.04	4	\$0.04	https://www.digikey.com	https://app-ultralibrary.com	-1A 3.2V brushed DC motor driver for vacuum fan		
	Digikey	445-4952-1-ND	CAP CER 0.1UF	2	\$0.10	2	\$0.20	https://www.digikey.com	n/a	-Cvcc/Cvm1 for vacuum brushed motor driver -0402 package -0.1uF	C2, C3 (dupe G)	
	Digikey	732-6406-1-ND	CAP ALUM POL	4	\$0.50	4	\$0.50	https://www.digikey.com	https://www.mouser.com	-Cvm2 for vacuum brushed motor driver	C1 (dupe C)	
	Digikey	CAY16-3300F4LI	RES ARRAY 4 R	4	\$0.10	4	\$0.10	https://www.digikey.com	https://app-ultralibrary.com	-R1 resistor array to drop 2.5V max from IR sensor output to 1.8V -330 Ohm array, 4 resistors	RN2	
	Digikey	118-CAY16-7500	RES ARRAY 4 R	4	\$0.17	4	\$0.17	https://www.digikey.com	https://www.snapeda.com	-R2 resistor to drop 2.5V max from IR sensor output to 1.8V -750 Ohms calculated w/ voltage divider equation -resistor array, 4 resistors	RN1	
	Digikey	641-115KLCT-NE	RES SMD 115K	4	\$0.10	4	\$0.10	https://www.digikey.com	n/a	-Rnt for wheel motor regulator circuit -0402 package -115k Ohms	R3	
	Digikey	641-100KLCT-NE	RES SMD 100K	4	\$0.10	4	\$0.10	https://www.digikey.com	n/a	-Renb for wheel motor regulator circuit -0402 package -100k Ohms	R4 (dupe B)	