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 7.0 Test	Designation on Mouse 7.0 PCB
	Amazon	B096G4D6ZX	URGENEX 7.4V	2	$19.99	1	$19.99	https://www.ama		- 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)		
	Amazon	B09DP9FZTX	CQRobot 50 Set	50	$7.99	1	$7.99	https://www.ama		- JST PH 2.0 pitch 2 position pack both male and female TH - 50 male, 50 female		
	Digikey	CMS04(TE12LQ	DIODE SCHOTT	1	$0.76	4	$3.04	https://www.digik	https://app.ultralibrar	- 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		
	Digikey	296-53563-1-ND	DC DC CONVER	1	$3.48	1	$3.48	https://www.digik	https://app.ultralibrar	- 3.7V 2A regulator for vacuum motor - schematic generated w/ TI tool: HERE HERE		
	Digikey	445-7665-1-ND	CAP CER 22UF	1	$0.39	2	$0.78	https://www.digik	n/a	- Cin for vacuum fan regulator circuit - 0805 package - 22uF		
	Digikey	445-8239-1-ND	CAP CER 47UF	1	$0.79	3	$2.37	https://www.digik	n/a	- Cout for vacuum fan regulator circuit - 0805 package - 47uF		
	Digikey	399-C0402C331	CAP CER 330PF	1	$0.24	1	$0.24	https://www.digik	n/a	- Cff for vacuum fan regulator circuit - 0402 package - 330pF		
	Digikey	541-10.0KLCT-N	RES SMD 10K C	1	$0.10	1	$0.10	https://www.digik	n/a	- Rfbt for vacuum fan regulator circuit - 0402 package - 10k Ohm resistor		
	Digikey	541-1.91KLCT-N	RES SMD 1.91K	1	$0.10	1	$0.10	https://www.digik	n/a	- Rfbb for vacuum fan regulator circuit - 0402 package - 1.91k Ohm resistor		
	Digikey	296-TPS61288R	IC REG BOOST	1	$5.89	1	$5.89	https://www.digik	https://app.ultralibrar	- 12V 3A regulator for wheel motor driver - schematic generated w/ TI tool: https://webench.ti.com/appinfo/webench/scripts/SDP.cgi?ID=AA1204		
	Digikey	445-4042-1-ND	CAP CER 10UF	1	$0.30	1	$0.30	https://www.digik	n/a	- Cin for wheel motor regulator circuit - 1206 package - 10uF		
	Digikey	445-1314-1-ND	CAP CER 0.1UF	1	$0.10	1	$0.10	https://www.digik	n/a	- Cinx for wheel motor regulator circuit - 0603 package - 0.1uF		
	Coilcraft	XAL7070-332	XAL7070-332ME	1	$3.25	1	$3.25	https://www.coilc	https://app.ultralibrar	- L1 for wheel motor regulator circuit		
	Digikey	445-4952-1-ND	CAP CER 0.1UF	1	$0.10	1	$0.10	https://www.digik	n/a	- Cbst for wheel motor regulator circuit - 0402 package - 0.1uF		
	Digikey	445-9097-1-ND	CAP CER 2.2UF	1	$0.29	1	$0.29	https://www.digik	n/a	- Cvcc for wheel motor regulator circuit - 0402 package - 2.2uF		
	Digikey	541-34.0KLCT-N	RES SMD 34K C	1	$0.10	1	$0.10	https://www.digik	n/a	- Rcomp for wheel motor regulator circuit - 0402 package - 34k Ohms		
	Digikey	490-16432-1-ND	CAP CER 0.039U	1	$0.10	1	$0.10	https://www.digik	n/a	- Ccomp for wheel motor regulator circuit - 0402 package - 39nF		
Power	Digikey	399-11256-1-ND	CAP CER 82PF	1	$0.49	1	$0.49	https://www.digik	n/a	- Ccomp2 for wheel motor regulator circuit - 0402 package - 82pF		
	Digikey	541-931KLCT-NI	RES SMD 931K	1	$0.10	1	$0.10	https://www.digik	n/a	- Rfbt for wheel motor regulator circuit - 0402 package - 931k Ohms		
	Digikey	541-48.7KLCT-N	RES SMD 48.7K	1	$0.10	1	$0.10	https://www.digik	n/a	- Rfbb for wheel motor regulator circuit - 0402 package - 48.7k Ohms		
	Digikey	490-16309-1-ND	CAP CER 47UF	1	$0.52	3	$1.56	https://www.digik	n/a	- Cout for wheel motor regulator circuit - 1210 package - 47uF		
	Digikey	EG5554-ND	SWITCH ROCKE	1	$1.64	1	$1.64	https://www.digik	- https://www.mouser.	- switch for on/off of entire mouse - rated for 15A (AC), can hopefully handle 9A DC		
	Digikey	283-5179-1-ND	FUSE BRD MNT	1	$0.91	1	$0.91	https://www.digik	https://www.mouser.c	- 10A fuse for entire mouse - 3A for wheels + 2A for vacuum + 1A for 3.3V + 1A for 5V = 7A		Extra new
	Digikey	P122314CT-ND	CAP ALUM 1200	1	$0.49	1	$0.49	https://www.digik	https://www.mouser.c	- 1.2mF 16V bulk cap for entire mouse		Extra new
	Digikey	296-39450-1-ND	IC REG BUCK 5	1	$1.36	1	$1.36	https://www.digik	https://app.ultralibrar	- 5V, 500mA switching regulator - used to power Sharp sensors		
	Digikey	296-39449-1-ND	IC REG BUCK 3.	1	$1.36	1	$1.36	https://www.digik	https://app.ultralibrar	- 3.3V, 500mA switching regulator - used to power MCU		
	Digikey	445-6857-1-ND	CAP CER 10UF	1	$0.31	2	$0.62	https://www.digik	n/a	- 10uF ceramic cap needed for 5V and 3.3V switching regulator - between VIN and PGND (pg 21 pdf of datasheet) - 0805 package		

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	Digikey	445-7665-1-ND	CAP CER 22UF	1	$0.39	2	$0.78	https://www.digik	n/a	- 22uF ceramic cap needed for 5V and 3.3V switching regulator - between SW and FB (pg 21 pdf of datasheet)		
	Digikey	541-100KHCT-N	RES SMD 100K	1	$0.10	2	$0.20	https://www.digik	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		
	Digikey	732-2613-1-ND	FIXED IND 2.2UI	1	$1.64	2	$3.28	https://www.digik	https://www.mouser.c	- 2.2uH inductor needed for 5V and 3.3V switching regulator - between SW and 100k Ohm resistor (pg 21 pdf of datasheet)	(NEW, old dupe)	
	Digikey	296-TLV9301IDB	IC OPAMP GP 1	1	$0.58	1	$0.58	https://www.digik	https://app.ultralibra	- low battery voltage indicator op amp - to be used as comparator to turn on/off regulators		
	Digikey	P118KLCT-ND	RES SMD 118K	1	$0.10	1	$0.10	https://www.digik	n/a	- R2 for low battery voltage comparator circuit - 0402 package - 118k Ohms		
	Digikey	541-100KLCT-N	RES SMD 100K	1	$0.10	1	$0.10	https://www.digik	n/a	- R1 for low battery voltage comparator circuit - 0402 package - 100k Ohms		
	Digikey	541-10.0KLCT-N	RES SMD 10K C	1	$0.10	1	$0.10	https://www.digik	n/a	- R1 for comparator output divider - 0402 package - 10k ohms	(NEW, dupe)	
	Digikey	P3.74KLCT-ND	RES SMD 3.74K	1	$0.10	1	$0.10	https://www.digik	n/a	- R2 for comparator output divider - 0402 package - 3.74k ohms	NEW	
Wheel Motor Related	Digikey	61FG8ELCT-ND	IC MOTOR DRIV	1	$3.51	1	$3.51	https://www.digik	https://app.ultralibra	- H bridge PWM interface brushed motor driver - 10-36V supply, 3A output max, 30-BSOP		
	Digikey	445-7456-1-ND	CAP CER 0.1UF	1	$0.11	1	$0.11	https://www.digik	n/a	- C2 0.1uF cap for 5V output from motor driver - datasheet pg 8: HERE - 0603 package		
	Digikey	P121394CT-ND	CAP ALUM HYB	1	$1.45	1	$1.45	https://www.digik	https://www.mouser.c	- C1 47uF polymer cap for motor driver supply - datasheet pg 8		
	Servocity	638103	Gear Motor with	1	$19.99	2	$39.98	https://www.servo		- Gear motors, 4900rpm w/ encoders - 6 position 1.5 pitch ZH JST		
	Pololu	1087	Black plastic whe	2	$4.95	1	$4.95	https://www.polol		- Wheels, 32mm diameter, 3mm D output shaft - we'll use just the rubber tire and make a custom wheel		
	Amazon	B09NCCXPGM	CQRobot 100 Se	100	$9.58	1	$9.58	https://www.ama	https://www.jst-mfg.c https://app.ultralibra	- JST ZH 6 position male (receptacle) TH connector		
	Amazon	B07FW18RQY	uxcell 683ZZ Bal	20	$7.99	1	$7.99	https://www.ama		- 3mm ball bearings to be embedde into custom wheels		
	Servocity	1500-0010-0003	1500 Series Plas	12	$1.87	1	$1.87	https://www.servo		- 3mm plastic spacers to put between wheel and mount		
	Amazon	B0BKRQSMFL	FOLIV 700PCS	10-50	$15.29	1	$15.29	https://www.ama		- M3 button head screws to serve as wheel axels		
	Digikey	1727-7806-1-ND	DIODE SCHOTT	1	$0.39	8	$3.12	https://www.digik	https://app.ultralibra	- Flyback diodes for EMF protection		
Vacuum Fan Related	Amazon	B08RMQP6YP	1.25mm Male an	20	$18.99	1	$18.99	https://www.ama	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		
	Digikey	DMN3200U-7DIC	MOSFET N-CH 3	1	$0.45	1	$0.45	https://www.digik	https://www.mouser.c	- 2.2A 30V MOSFET to switch on/off regulator power to vacuum fan	NEW	
	Digikey	P17216CT-ND	RES 47 OHM 1%	1	$0.23	1	$0.23	https://www.digik	n/a	- 47 Ohm gate resistor for MOSFET to limit surge curernt	NEW	
	Digikey	541-10.0KLCT-N	RES SMD 10K C	1	$0.10	1	$0.10	https://www.digik	n/a	- 10k Ohm resistor for pulling down input to MOSFET to ensure low - 0402 package	(NEW, dupe)	
	Digikey	493-3813-1-ND	RNE1C101MDS	1	$0.76	1	$0.76	https://www.digik	https://app.ultralibra	100uF capacitor for vacuum fan driver		
	Digikey	4988-NMC0805X	CAP SMT08050	1	$0.24	1	$0.24	https://www.digik	n/a	- 0.1uF cap for brushless motor driver - 0805 package		
	Amazon	B07CFQMF1M	8pcs 8520 Motor	8	$18.99	1	$18.99	https://www.ama	n/a	- 15000KV brushed DC motor for vacuum fan - 2p 1.25mm pitch picoblade connector		
	Digikey	WM1731-ND	CONN HEADER	1	$0.23	1	$0.23	https://www.digik	- https://app.ultralibra - https://www.molex.c	- motor to board connector for vacuum fan - 2p 1.25mm pitch picoblade connector		
	Digikey	1727-7806-1-ND	DIODE SCHOTT	1	$0.39	2	$0.78	https://www.digik	https://app.ultralibra	- Flyback diodes for EMF protection		
Ball Caster, nuts, screws	Amazon	B0BTYDZVM8	1 Oz (23 Grams)	1	$6.99	1	$6.99	https://www.ama		- superglue to attach 3D printed mounts to PCB		

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IR Sensing	Digikey	1855-1027-ND	SENSOR OPTIC	1	$8.45	4	$33.80	https://www.digik	https://www.mouser.c	- Sharp IR distance sensor 2-15cm - shortest range sharp IR sensor available - connects w/ 3 position ZH JST connector - needs 10uF cap		
	Amazon	B09NC8Y2PK	CQRobot 100 Se	50	$11.99	1	$11.99	https://www.ama	https://www.jst-mfg.co	- JST ZH 1.5 pitch 3 position pack both male and female TH - 50 male, 50 female		
	Digikey	490-GRM155R6	CAP CER 10UF	1	$0.13	4	$0.52	https://www.digik	n/a	- 10uF ceramic capacitor, SMD 0402 - needed for Sharp IR sensors	NEW	
	Digikey	CAY16-1001F4LI	RES ARRAY 4 R	1	$0.10	1	$0.10	https://www.digik	https://app.ultralibraria	- R1 resistor array to drop 2.5V max from IR sensor output to 1.8V - 1k Ohm resistor array, 4 resistors		
	Digikey	CAY16-2201F4LI	RES ARRAY 4 R	1	$0.10	1	$0.10	https://www.digik	https://app.ultralibraria	- 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		
MCU	Digikey	1175-1733-ND	CONN HEADER	1	$0.68	1	$0.68	https://www.digik	https://www.arrow.con	- 2x5 TH JTAG programming header - small 1.27 pitch w/ key slot and shroud		
	Digikey	2151-RT3215-32	CRYSTAL 32.768	1	$0.42	1	$0.42	https://www.digik	https://app.ultralibraria	- 32.768kHz external crystal		
	Digikey	490-GQM1555C	CAP CER 22PF	1	$0.61	2	$1.22	https://www.digik	https://app.ultralibraria	- 22pF caps for external crystal - needed on each crystal terminal - 0402 package	NEW	
	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		
	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		
	Digikey	AT32UC3L0256-	IC MCU 32BIT 2	1	$10.19	1	$10.19	https://www.digik	https://app.ultralibraria	- 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		
	Digikey	490-GRM155R6	CAP CER 10UF	1	$0.13	1	$0.13	https://www.digik	n/a	- 10uF capacitor for AT32UC3L0256 VDDin - page 4 of schematic checklist - small 0402 package	NEW	
	Digikey	445-4952-1-ND	CAP CER 0.1UF	1	$0.10	3	$0.30	https://www.digik	n/a	- 0.1uf ceramic cap for AT32UC3L0256 VDDin, VDDio, and VDDcore - page 4 of schematic checklist - 0402 package	(NEW, dupe)	
	Digikey	445-9097-1-ND	CAP CER 2.2UF	1	$0.29	1	$0.29	https://www.digik	n/a	- 2.2uF ceramic cap for AT32UC3L0256 VDDio, and VDDcore - page 4 of schematic checklist - 0402 package	(NEW, dupe)	
	Digikey	445-4952-1-ND	CAP CER 0.1UF	1	$0.10	1	$0.10	https://www.digik	n/a	- 0.1uF ceramic cap for AT32UC3L0256 VDDana and ADVREF - page 5 of schematic checklist - 0402 package	(NEW, dupe)	
	Digikey	732-7426924115	WE-TMSB SMT	1	$0.13	1	$0.13	https://www.digik	https://app.ultralibraria	- ferrite bead for for AT32UC3L0256 VDDana and ADVREF - page 5 of schematic checklist, and page 15 on xplained dev board schematic: HERE - 0402 package	NEW	
	Digikey	445-4952-1-ND	CAP CER 0.1UF	1	$0.10	1	$0.10	https://www.digik	n/a	- 0.1uF ceramic cap for JTAG on AT32UC3L0256 - 0402 package	(NEW, dupe)	
	Digikey	541-10.0KLCT-N	RES SMD 10K C	1	$0.10	1	$0.10	https://www.digik	n/a	- 10k resistor for pulling down enable signal - 0402 package	(NEW, dupe)	
Bluetooth	Digikey	1965-ESP32-PIC	RF TXRX MOD E	1	$3.50	1	$3.50	https://www.digik	https://www.mouser.c https://app.ultralibraria	- ESP32 bluetooth module to serve as a serial bridge between mouse and laptop - perfect for our application- Sparkfun has a dev board doing exactly what we want		Extra Extra new
	Digikey	445-9077-1-ND	CAP CER 22UF	1	$0.34	1	$0.34	https://www.digik	n/a	- 22uF cap to decouple ESP32 module power - 0603 package		Extra Extra new
	Digikey	445-4952-1-ND	CAP CER 0.1UF	1	$0.10	1	$0.10	https://www.digik	n/a	- 0.1uF cap to decouple ESP32 module power - 0402 package	(NEW, dupe)	
	Digikey	541-10.0KLCT-N	RES SMD 10K C	1	$0.10	1	$0.10	https://www.digik	n/a	- 10k resistor to slow down ESP32 module power up - 0402 package	(NEW, dupe)	
	Digikey	445-9086-1-ND	CAP CER 1UF 1	1	$0.10	1	$0.10	https://www.digik	n/a	- 1uF cap to slow down ESP32 module power up - 0402 package		Extra Extra new
	Digikey	2449-CS1213AG	SWITCH TACTIL	1	$0.40	1	$0.40	https://www.digik	https://app.ultralibraria	- pushbutton for ESP32 module boot option	(NEW, dupe)	
	Digikey	PPPC041LGBN-	CONN HDR 4PC	1	$0.68	1	$0.68	https://www.digik	https://octopart.com/p	- female 2.54mm pitch connector to connect to mouse		Extra Extra new
Misc	Digikey	2449-CS1213AG	SWITCH TACTIL	1	$0.40	1	$0.40	https://www.digik	https://app.ultralibraria	- 3.9mm x 2.9mm smd pushbutton for config - 2mm high	NEW	Extra new
	Digikey	754-1105-1-ND	LED YELLOW C	1	$0.41	1	$0.41	https://www.digik	https://app.ultralibraria	- yellow SMD LED 0402 package for debug	NEW	
	Digikey	754-2123-1-ND	LED RED CLEAF	1	$0.52	1	$0.52	https://www.digik	https://app.ultralibraria	- red SMD LED 0402 package for error indication	NEW	
	Digikey	754-1503-1-ND	LED GREEN CLI	1	$0.70	1	$0.70	https://www.digik	https://app.ultralibraria	- green SMD LED 0402 package for debug	NEW	
	Digikey	754-1504-1-ND	LED BLUE CLEA	1	$0.51	1	$0.51	https://www.digik	https://app.ultralibraria	- blue SMD LED 0402 package for debug	NEW	
	Digikey	CAY16-1001F4LI	RES ARRAY 4 R	1	$0.10	1	$0.10	https://www.digik	https://app.ultralibraria	- 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		

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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		
					total cost:		#REF!					
						116						

resistors:	https://www.digikey.com/en/products/filter/chip-resistor-surface-mount/52?s=N4IgjCBcoExaBjKAzAhgGwM4FMA0IB7KAbXADYBWAFgGYQBdfABwBcoQBlFgJwEsA7AOYgAvvjBl4IJJDRY8hEiBoBOGjBUNmbSJx4DhYkDAAMADgpSZcnPiKRSYEwAlA1gHkAFgFtMWkKzsAKr8vCzuyACy2KiYBJDTYBJ		
headers:	https://www.digikey.com/en/products/filter/rectangular-connectors/headers-receptacles-female-sockets/315?s=N4IgjCBcoGwJxVAYygMwIYBsDOBTANCAPZQDaIAIGLGGABxwDsIAuoQA4AuUIAyuwE4BLAHYBzEAF9CNGohApIGHAWJkQDAKxyAzMzadIPfsLGSQAWAgBMMs%2BfwCuykphHLrmp		
ceramic caps:	https://www.digikey.com/en/products/filter/ceramic-capacitors/60?s=N4IgjCBcpgbFoDGUBmBDANgZwKYBoQB7KAbRAGYBOcgJkpAF0CAHAFyhGVANGGAVoSWb2AcxBfAgFoaCEMki8ArviKkQVkbiQE%2BBNFlRFy4pDLlNk%2BBnrmGCxshAait0k7Jw80AWz6lABljRmNEQ%2BBVkIeTSA		
electrolytic caps:	https://www.digikey.com/en/products/filter/aluminum-electrolytic-capacitors/58?s=N4IgjCBcoGwJxVAYygMwIYBsDOBTANCAPZQDaIAIGLGGABxwDsIAuoQA4AuUIAyuwE4BLAHYBzEAF9CAVgGbiMCkj8ArgWJkQVmaSQUmPMUq1JSOQDMO6OQmgKoxwqflQm43XLML0rdEgHsiPmZCA1sBA		
motor drivers:	https://www.digikey.com/en/products/filter/motor-drivers-controllers/744?s=N4IgjCBcoEwKxygAxlAZgQwGwYDYgGcMANCAPZQDaIAzHDACwDsIIAukQA4AuUIAyhwE4BLAHYBZiAWhhIzQBOQSAcuESfJIEBQLc1PkkGJQBOQ1GNTFFTCNp1yzIALbEOxfgAIAIEyEANzkvDD1		
linear regulators:	https://www.digikey.com/en/products/filter/voltage-regulators-linear/699?s=N4IgjCBcpgTAnFUBjKAzAhgGwM4FMAaEAeygZ1wA2AdgFZ4AWEI2ABjHqZdrmYH|mYhYmDatVaUQAXSIAHAC5QQAZTkAnJ9TkAnJYA5WAJYBVAYvkxJLkh8Wh2q0DjrWiIAcg6g0e1BHq2qJgZtX8g0XkT8tAgBHpQOQMISAe		
to-220 heatsinks:	https://www.digikey.com/en/products/filter/thermal/heat-sinks/to-220/219?s=N4IgjCBcoMwKwHYqgMZQGYEMA2BnAppGDQgBuAdlAC4BOArkSAPZQDaIAlGDGAAwBMIALrEADpSggAyjVAgCWZZAvCQ0A6CDSQa9Ys0hs4QlSFUA2ZFqp0GBtjByPBNMhg		
screws:	https://www.digikey.com/en/products/filter/screws-bolts/572?s=N4IgjCBcoLQExVAYygFwE4FcCmAaEA9IANogCsIAugL74wBsiIKkGO%2BBRkpAzFbSDACcTFmzyES4PtWpA		
nuts:	https://www.digikey.com/en/products/filter/nuts/573?s=N4IgjCBcoLQExVAYygFwE4FcCmAaEA9IANogCsIAugL74wBsiIKkGO%2BBRkpAzFbSDACcTFmzyES4PtWpA		
MCUs:	https://www.digikey.com/en/products/filter/microcontrollers/685?s=N4IgjCBcoGwJxVAYygMwIYBsDOBTANCAPZQDaIALAAxwDmIdIh1cFtVIAuoQA4AuUIAMq8ATgEsAdgHMQAX0JhWiECkgYcBYmXABGg1eBTv36DjclcPGr%2BnfUtg4VWqHZ2hAEyl9Ly15eOnS3mGGoB0JTPgpgNAE6brT6MAEwY		
more MCUs:	https://www.digikey.com/en/products/filter/microcontrollers/685?s=N4IgjCBcpgbFoDGUBmBDANgZwKYBoQB7KAbRACZyBWATjAAYQDLYGJnzZ6aAOJizmDj8WQgQwjBPKiAC6BAA4AXKKCADKSgE4BLAHYBzEAF8CsGghDJI6bPiKKkQAFm4BmGi7mKVdvVr2GTcEcPaEtUTFwCYkgyMCpHHHRpLQhfSDjIAaRgKQAWPjhMgHZM2VyDAyQGooAZSqQAfhBkvhEK4rK%2BPgBGHoMNToEtWuyGjuy2zuV%2B%2Fi1g2XXFgcaBzZ		
IMUs:	https://www.digikey.com/en/products/filter/imus-inertial-measurement-units/567?s=N4IgjCBcoLQExVAYygFwE4FcCmAaEA9IANogCsIAugL74wBsiIKkGO%2BBRkpAzFbSDACcTFmzyES4PvwRcQASQCyAVSr4K0EAAcoYfTFp2QwABmP9Gmg4JYATKAJMR9qOyHyoAnlux2AhgGcUamogA		
rectifier diodes:	https://www.digikey.com/en/products/filter/single-diodes/280?s=N4IgjCBcpgnAHLKoDGUBmBDANgZwKYA0IA9IANogAMIAugL7EC0ATMiGpAC4BOArkVIUQAVjgMQTAGztOvAcTKKRKAZnHMk0DlHmCllCA2ZtznLHj3c2sGSmKdC0C2ZitnLHj3c2sGSmKdC2ZitnLHj3c2sGSmKdCiLlHvhRcAS3JsQA-B46N3YAgMoMCWloMT7qC		
inductors:	https://www.digikey.com/en/products/filter/fixed-inductors/71?s=N4IgjCBcoLQExVAYygFwE4FcCmAaEA9IANogCsIAugL74wBsiIKkGO%2BBRkpAzFbSDACcTFmzyES4PvwRcQASwB2AE0xJUBdA		
switching regulat	https://www.digikey.com/en/products/filter/voltage-regulators-dc-dc-switching-regulators/739?s=N4IgjCBcpgnAHLKoDGUBmBDANgZwKYA0IA9IANogAMIAugL7EC0ATMiGpAC4BOArkVIUQAVjgMQTAGztOvAcTKKRKAZnHMk0DlHmCllCAwIltIIXAHcAllxQALSwDsA5gAIe%2BBJ32yYYyuJJnWIZLLUs		

	Vendor	Item Number	Item Description	Qty	Cost Per Package	No. Pkgs	Item Total Cost	Part Link	Symbol, Layout, & 3D Model Link	Comments	Designation on Mouse 7.0 Test	
	Digikey	CAY16-3300F4L	RES ARRAY 4 R	1	$0.10	1	$0.10	https://www.digik	https://app.ultralibrari	- 330 Ohm resistor array, 4 resistors		
	Digikey	732-6406-1-ND	CAP ALUM POLY	1	$0.50	1	$0.50	https://www.digik	https://www.mouser.c	- C1 47uF polymer cap for motor driver supply - datasheet pg 8	C2 - dupe C	
	Digikey	CKN12306-ND	TACT 6.0 X 3.5,	1	$0.11	1	$0.11	https://www.digik	https://www.mouser.c https://www.ckswitche	- TH reset switch		
	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		
	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		
	Coilcraft	XAL5030-222	XAL5030-222ME	1	$2.49	2	$4.98	https://www.coilc	https://app.ultralibrari	- 2.2uH inductor needed for 5V and 3.3V switching regulator - between SW and 100k Ohm resistor (pg 21 pdf of datasheet)		
	Digikey	BD62130AEFJ-E	BUILT-IN 1 CHA	1	$1.78	1	$1.78	https://www.digik				
	Mouser	755-BD62130AE	Motor / Motion /	1	$1.78	1	$1.78	https://www.mous	https://app.ultralibrari	3A 3.7V brushed DC motor driver for vacuum fan		
	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		
	Digikey	445-C1608X5R1	CAP CER 10UF	1	$0.36	4	$1.44	https://www.digik	n/a	- 10uF ceramic capacitor, SMD 0603 - needed for Sharp IR sensors		
	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		
	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		
	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		
Other parts that were considered (mouse 6)	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 AT32UC3L0256 VDDana and ADVREF - page 5 of schematic checklist - small 0603 package		
	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 - small 0603 package		
	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		

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 7.0 Test	Designation on Mouse 7.0 PCB
	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		
	Digikey	CKN12306-ND	TACT 6.0 X 3.5,	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		
	Digikey	3147-B1911UD-	LED ORANGE C	1	$0.10	1	$0.10	https://www.digik	https://app.ultralibraria	- orange SMD LED 0603 package for debug		
	Digikey	3147-B1911USD	LED RED CLEAI	1	$0.10	1	$0.10	https://www.digik	https://app.ultralibraria	- red SMD LED 0603 package for error indication		
	Digikey	3147-B1911NG-	LED GREEN CLI	1	$0.10	1	$0.10	https://www.digik	https://app.ultralibraria	- green SMD LED 0603 package for debug		
	Digikey	3147-B1931NB-	LED BLUE CLEA	1	$0.10	1	$0.10	https://www.digik	https://app.ultralibraria	- blue SMD LED 0603 package for debug		