

SCUTTLE BOM-USA LAST UPDATED: 6/1/2022

category	Store	Part	PN	cost (each)	qty needed	subtotal	Last updated
<b>Mechanical</b>							
chassis	amazon	Wheel, urethane 83mm, with bearings (pair)	B07531B4GK	\$16.23	1	\$16.23	2022.05
chassis	amazon	Bracket - 90deg aluminum, (for chassis) with M6 Screw (2) and 3030 T-nut(2)	B07BQR7WX8	\$2.75	4	\$10.99	2021.10
chassis	Mcmaster	Timing Belt, 5mm pitch, 245mm length, 9mm width	B08PW2HD81	\$6.43	2	\$12.86	2022.05
chassis	Mcmaster	Hex Nut, M8 (for axle)	90591A161	\$0.07	2	\$0.14	2021.10
chassis	Mcmaster	T-slot Framing Extrusion - 30mm x 1ft (for chassis)	5537T97	\$8.13	4	\$32.52	2022.05
chassis	amazon	Caster wheels (for front)	B01J4FED5E	\$1.83	2	\$3.67	2022.05
chassis	Mcmaster	Screws - M8x110mm screw (axles)	91290A470	\$0.97	2	\$1.95	2022.05
chassis	Mcmaster	Screws, M6 x 14mm (for motor plates)	91239A319	\$0.10	8	\$0.82	2019.11
chassis	Mcmaster	Screws - M6 x 10mm (for casters & chassis brackets)	91239A316	\$0.10	12	\$1.25	2019.11
chassis	McMaster	Screw, set screw, M5x0.6 (for motor pulley)	91390A118	0.04	2	\$0.08	2019.11
chassis	Mcmaster	Screw, Flat head, M3x10mm (for motors 6)	92010A120	\$0.04	6	\$0.27	2019.11
chassis	amazon	Screw, self-tapping, M2 x 6mm, for plastic (for encdr brkt 4, ultrsnc brkt 4)	B00GMQDSRI	0.01	8	\$0.07	2019.11
chassis	Mcmaster	Screw, M2.5x10mm countersunk (for battery case)	92010A020	0.04	6	\$0.23	2019.11
chassis	Mcmaster	Screw, M2.5x6mm pan head (for motor driver mount 2, bbb lid 1)	92005A066	0.04	3	\$0.13	2019.11
chassis	amazon	Nut, M6 nickel-plated steel for 3030 T-slot extrusion	B0772ZHX42	\$0.20	12	\$2.40	2019.11
chassis	Mcmaster	Washer, lock washer for M8 bolt (for axles)	92148A200	0.07	2	\$0.15	2019.11
chassis	Mcmaster	Washer, flat washer for M8 Bolt (for axles)	93475A270	0.08	2	\$0.16	2019.11
chassis	Mcmaster	Washer, 6x12mm (wheelBrackets)	93475A250	0.05	8	\$0.43	2019.11
chassis	Mcmaster	Washer, M6, split lock (for casters)	91202A234	0.03	6	\$0.17	2019.11
chassis	Mcmaster	Tubing, 1/2 in OD, 6063, aluminum, sold 8ft section, price per ft	1658T13	2.12	1.6	\$3.38	2019.11
chassis	Mcmaster	Threaded insert, M2.5 x 3.4 heat set (btry 2, whlplts 4, m.driver 2)	94180A321	0.12	9	\$1.11	2019.11
						<b>Subtotal</b>	<b>\$89.00</b>

<b>Electronics</b>							
SBC	mouser	Raspberry Pi 4, 2gb RAM	713-102991317	56.25	1	\$56.25	2022.05
actuator	amazon	Motor Driver Board with Twin MC33886 H-Bridges (HW-231 model)	B07VHFCYFQ	16.41	1	\$16.41	2022.05
actuator	amazon	Motor, DC 12v with 200 rpm gearbox (for drivetrain)	B072R5QSRG	14.99	2	\$29.98	2022.05
Sensors	amazon	Camera, USB, 2.1mm focal len, 150 deg FOV,	B07QSTPGR8	58.99	1	\$58.99	2022.05
power	amazon	Battery cell, Panasonic 18650 or other brand	B00GS48XRE	7.48	3	\$22.45	2019.11
Sensors	mouser	Encoder, AMS5048B, circuit boards	990600491	15.75	2	\$31.50	2022.05
connectors	powerwerx	Anderson PowerPole Connectors, 30amp	WP30-100	1.15	8	\$9.24	2019.11
power	digikey	Battery Tray, 3 cell li-ion (BK-18650-PC6 on digikey)	BK-18650-PC6	2.00	1	\$2.00	2019.11
power	mouser	Switch, rocker, SPST 10A BLK ON-OFF Symbols (for battery case)	SRB22A2FBBNN	0.95	1	\$0.95	2019.11
power	amazon	Terminals - 22-16 AWG Insulated Female Quick Connect Terminal	B06XCWFTJ9	0.13	2	\$0.26	2019.11
power	amazon	Power Wire - 18 AWG (black/red pair), price listed per meter	B07428NBCW	0.69	1	\$0.69	2019.11
Wiring	amazon	Cable, 20cm ribbon, with female Dupont terminals (i2c board ► encoders)	B07GCY6CH7	1.06	1	\$1.06	2022.06
Wiring Pi	amazon	Cable, 10cm ribbon, with female Dupont terminals (pi ► motor driver)	B07GD312VG	0.29	1	\$0.29	2022.06
Wiring BBB	amazon	Connector - JST SH 1.0mm 4-Pin with 100mm cable (for ultrasonic, encoders)	B01DUC1M2O	0.40	2	\$0.80	2019.11
Wiring BBB	amazon	Connector - JST ZH 1.5mm 2 pin (for motor driver)	B074CFF5MT	0.27	2	\$0.53	2019.11
Wiring BBB	amazon	Connector - JST SH 1.0mm 6-pin with 100mm cable (for ultrasonic sensor)	B0762K143K	0.73	1	\$0.73	2019.11
Wiring BBB	amazon	Connector - barrel, 5.5x2.1mm, power (for beaglebone)	B076JCNFMP	0.50	1	\$0.50	2019.11
power	amazon	battery management system (BMS) circuit board, 3S, 40A	B07JMY631D	10.69	1	\$10.69	2019.11
power	amazon	battery cell charger, 18650	B08DNQXB1C	13.99	1	\$13.99	2022.05
						<b>Subtotal</b>	<b>\$232.63</b>

<b>Custom</b>							
3D Print	Amazon	Filament, blue ABS Novamaker 1.75mm (1kg)	B07D6BG8FR	19.99	0.42	\$8.48	2022.05
Wiring	JLCPCB	Custom PCB (this is optional)	<a href="#">upload design</a>	1.99	1.00	\$1.99	2019.11
						<b>Subtotal</b>	<b>\$8.48</b>

**Grand Total \$330.10**

<b>Extras</b>							
off-the-shelf	amazon	EasySMX model 9101 2.4GHz Game Pad Controller, with USB dongle	B01KV7B2CG	29.99	1	29.99	2022.05
	amazon	audio driver adapter (for beaglebone setup)	B07L56C28R	10.50	1	10.50	2021.10
	amazon	Speaker, using USB for power and signal	B087D2BPBC	15.98	1	15.98	2021.10
	amazon	2s LiPo battery (to enhance servos on beagle), 400mAh	B072BH1XP6	8.50			2019.11
	amazon	m6 tslot nuts (drop-in nuts)	B08BHZ219C	7.99	1	7.99	2022.05
Sensors	amazon	Ultrasonic distance sensor	B06XBV54WF	1.599	1	1.60	2019.11
Sensors	amazon	lidar, Slamtec RPLidar, A1M8 (tested low-cost lidar)	B0923RYT8V	99.99	1	99.99	2022.05

**Extras Total \$166.05**

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