

FOAPAL:		PROJECT: John Sullivan - Noisebox rev3			
Quantity	Description	Part number/Supplier ID	URL	Price	(All prices are CAD)
<b>ABRA ELECTRONICS</b>					
3	Battery 5V 2.4A	<a href="#">BAT-PB-01</a>	<a href="https://abra-electronics.com/batteries-holders/battery-packs-rechargeable/bat-pb-01-8000-mah-rapid-charge-power-bank-with-14-integrated-leds-for-iphone-samsung-mobile-devices-and-raspberry-pi-2-3.html">https://abra-electronics.com/batteries-holders/battery-packs-rechargeable/bat-pb-01-8000-mah-rapid-charge-power-bank-with-14-integrated-leds-for-iphone-samsung-mobile-devices-and-raspberry-pi-2-3.html</a>	\$ 39.94	\$ 119.82
3	WiFi dongle	<a href="#">PI-WIFI-M</a>	<a href="https://abra-electronics.com/robotics-embedded-electronics/beagle-bone/pi-wifi-m-usb-wireless-miniature-module-pi-wifi-m.html">https://abra-electronics.com/robotics-embedded-electronics/beagle-bone/pi-wifi-m-usb-wireless-miniature-module-pi-wifi-m.html</a>	\$ 10.57	\$ 31.71
3	microSD card 8gb	<a href="#">BBB-8GB-10</a>	<a href="https://abra-electronics.com/robotics-embedded-electronics/beagle-bone/bbb-8gb-4-micro-sdhc-memory-card-8gb-class-4-bbb-8gb-4.html">https://abra-electronics.com/robotics-embedded-electronics/beagle-bone/bbb-8gb-4-micro-sdhc-memory-card-8gb-class-4-bbb-8gb-4.html</a>	\$ 13.93	\$ 41.79
3	Buttons - mom (power)	<a href="#">PBS-33MM-BL</a>	<a href="https://abra-electronics.com/robotics-embedded-electronics/sparkfun/components/buttons-switches/pbs-33mm-bl-push-button-33mm-blue-pbs-33mm-bl.html">https://abra-electronics.com/robotics-embedded-electronics/sparkfun/components/buttons-switches/pbs-33mm-bl-push-button-33mm-blue-pbs-33mm-bl.html</a>	\$ 2.09	\$ 6.27
10	LED - Power (Blue)	<a href="#">LED-5B</a>	<a href="https://abra-electronics.com/opto-illumination/leds-bare/5mm/13-4-leds/led-5b-5mm-blue-led-led-5b.html">https://abra-electronics.com/opto-illumination/leds-bare/5mm/13-4-leds/led-5b-5mm-blue-led-led-5b.html</a>	\$ 1.11	\$ 11.10
3	Switch - Power	<a href="#">COM-11155</a>	<a href="https://abra-electronics.com/robotics-embedded-electronics/sparkfun/components/buttons-switches/com-11155-rocker-switch-round-w-blue-led-com-11155.html">https://abra-electronics.com/robotics-embedded-electronics/sparkfun/components/buttons-switches/com-11155-rocker-switch-round-w-blue-led-com-11155.html</a>	\$ 2.10	\$ 6.30
3	USB sound card	<a href="#">1475-ADA</a>	<a href="https://abra-electronics.com/computer-accessories/usb-adapters-cables-hubs-other/1475-ada-usb-audio-adaptor-works-with-raspberry-pi-1475-ada.html">https://abra-electronics.com/computer-accessories/usb-adapters-cables-hubs-other/1475-ada-usb-audio-adaptor-works-with-raspberry-pi-1475-ada.html</a>	\$ 6.93	\$ 20.79
6	Speaker 4Ω 3W	<a href="#">1314-ADA</a>	<a href="https://abra-electronics.com/audible-devices/speakers/1314-ada-speaker-3-diameter-4-ohm-3-watt-1314-ada.html">https://abra-electronics.com/audible-devices/speakers/1314-ada-speaker-3-diameter-4-ohm-3-watt-1314-ada.html</a>	\$ 2.73	\$ 16.38
3	3.5mm TRS male	<a href="#">867-ADA</a>	<a href="https://abra-electronics.com/robotics-embedded-electronics/adafruit/wires-cables/876-ada-stereo-35mm-plug-plug-audio-cable-6-feet-876-ada.html">https://abra-electronics.com/robotics-embedded-electronics/adafruit/wires-cables/876-ada-stereo-35mm-plug-plug-audio-cable-6-feet-876-ada.html</a>	\$ 4.13	\$ 12.39
1	USB powered speakers	<a href="#">1363-ADA</a>	<a href="https://abra-electronics.com/audible-devices/speakers/1363-ada-usb-powered-speakers-1363-ada.html">https://abra-electronics.com/audible-devices/speakers/1363-ada-usb-powered-speakers-1363-ada.html</a>	\$ 13.93	\$ 13.93
3	USB cable panel mount	<a href="#">937-ADA</a>	<a href="https://abra-electronics.com/robotics-embedded-electronics/adafruit/raspberry-pi-en-2/cables/937-panel-mount-usb-cable-b-female-to-micro-b-male-937-ada.html">https://abra-electronics.com/robotics-embedded-electronics/adafruit/raspberry-pi-en-2/cables/937-panel-mount-usb-cable-b-female-to-micro-b-male-937-ada.html</a>	\$ 5.53	\$ 16.59
3	Ethernet cable panel mount	<a href="#">909-ADA</a>	<a href="https://abra-electronics.com/robotics-embedded-electronics/adafruit/raspberry-pi-en-2/cables/909-panel-mount-ethernet-extension-cable-909-ada.html">https://abra-electronics.com/robotics-embedded-electronics/adafruit/raspberry-pi-en-2/cables/909-panel-mount-ethernet-extension-cable-909-ada.html</a>	\$ 6.85	\$ 20.55
1	Protoboard (3pk)	<a href="#">571-ADA</a>	<a href="https://abra-electronics.com/boards/printed-circuit-boards/571-ada-adafruit-perma-proto-half-sized-breadboard-pcb-3-pack.html">https://abra-electronics.com/boards/Printed-circuit-boards/571-ada-adafruit-perma-proto-half-sized-breadboard-pcb-3-pack.html</a>	\$ 17.50	\$ 17.50
8	headers female 2x20 (1pk)	<a href="#">1037-POLOLU</a>	<a href="https://abra-electronics.com/connectors/headers/female/1037-pololu-0.100-2.54-mm-female-header-2x20-pin-straight.html">https://abra-electronics.com/connectors/headers/female/1037-pololu-0.100-2.54-mm-female-header-2x20-pin-straight.html</a>	\$ 1.75	\$ 14.00
1	Button quick connect wires (5pk)	<a href="#">1152-ADA</a>	<a href="https://abra-electronics.com/robotics-embedded-electronics/adafruit/components-parts/buttons/1152-ada-arcade-button-quick-connect-wire-pair-set-of-10-pairs-1152-ada.html">https://abra-electronics.com/robotics-embedded-electronics/adafruit/components-parts/buttons/1152-ada-arcade-button-quick-connect-wire-pair-set-of-10-pairs-1152-ada.html</a>	\$ 6.93	\$ 6.93
10	JST connectors	<a href="#">PRT-09749</a>	<a href="https://abra-electronics.com/connectors/jst-connectors/prt-09749-jst-right-angle-connector-through-hole-2-pin-prt-09749.html">https://abra-electronics.com/connectors/jst-connectors/prt-09749-jst-right-angle-connector-through-hole-2-pin-prt-09749.html</a>	\$ 1.53	\$ 15.30
3	2.5mm standoffs (4pack set)	<a href="#">1952P</a>	<a href="https://abra-electronics.com/hardware/standoffs/standoffs-aluminum-m-f/1952p-aluminum-standoff-for-raspberry-pi-11mm-length-m2.5-thread-m-f-4-pack.html">https://abra-electronics.com/hardware/standoffs/standoffs-aluminum-m-f/1952p-aluminum-standoff-for-raspberry-pi-11mm-length-m2.5-thread-m-f-4-pack.html</a>	\$ 1.95	\$ 5.85
2	M2.5 spacers (25pk)	<a href="#">1975P</a>	<a href="https://abra-electronics.com/hardware/spacers/1975p-nylon-spacer-12mm-length-4mm-od-2.7mm-id-25-pack.html">https://abra-electronics.com/hardware/spacers/1975p-nylon-spacer-12mm-length-4mm-od-2.7mm-id-25-pack.html</a>	\$ 2.09	\$ 4.18
2	M2.5 Machine hex nut (25pk)	<a href="#">1967P</a>	<a href="https://abra-electronics.com/hardware/metric-hardware-nickel-plated-nuts/1967p-machine-hex-nut-m2.5-25-pack.html">https://abra-electronics.com/hardware/metric-hardware-nickel-plated-nuts/1967p-machine-hex-nut-m2.5-25-pack.html</a>	\$ 1.39	\$ 2.78
2	M2.5 Machine screw (25pk)	<a href="#">1968P</a>	<a href="https://abra-electronics.com/hardware/metric-hardware-round-phillips-head-screws/1968p-machine-screw-m2.5-6mm-length-phillips-25-pack.html">https://abra-electronics.com/hardware/metric-hardware-round-phillips-head-screws/1968p-machine-screw-m2.5-6mm-length-phillips-25-pack.html</a>	\$ 1.39	\$ 2.78
25	LED holder	<a href="#">LMH-1</a>	<a href="https://abra-electronics.com/opto-illumination/led-mounting-hardware/lmh-1-led-holder-5mm-lmh-1.html">https://abra-electronics.com/opto-illumination/led-mounting-hardware/lmh-1-led-holder-5mm-lmh-1.html</a>	\$ 0.15	\$ 3.75
				<b>SUBTOTAL</b>	\$ 390.69
				<b>Shipping</b>	\$ 13.99
				<b>Taxes</b>	\$ 60.62
				<b>Total:</b>	<b>\$ 465.30</b>
<b>ROBOTSHOP</b>					
3	Raspberry Pi 3	<a href="#">RB-Ras-12</a>	<a href="http://www.robotshop.com/ca/en/raspberry-pi-3-computer-board.html">http://www.robotshop.com/ca/en/raspberry-pi-3-computer-board.html</a>	\$ 51.99	\$ 155.97
3	Teensy 3.2	<a href="#">RB-Pir-04</a>	<a href="http://www.robotshop.com/ca/en/teensy-32-usb-microcontroller-development-board.html">http://www.robotshop.com/ca/en/teensy-32-usb-microcontroller-development-board.html</a>	\$ 25.38	\$ 76.14
3	Button - grn	<a href="#">RB-Spa-674</a>	<a href="http://www.robotshop.com/ca/en/concave-button-red.html">http://www.robotshop.com/ca/en/concave-button-red.html</a>	\$ 2.50	\$ 7.50
3	Button - red	<a href="#">RB-Spa-324</a>	<a href="http://www.robotshop.com/ca/en/sfe-concave-button-green.html">http://www.robotshop.com/ca/en/sfe-concave-button-green.html</a>	\$ 2.50	\$ 7.50
3	Analog accelerometer	<a href="#">RB-lte-11</a>	<a href="http://www.robotshop.com/ca/en/3-axis-accelerometer-module.html">http://www.robotshop.com/ca/en/3-axis-accelerometer-module.html</a>	\$ 3.77	\$ 11.31
3	Stereo Class-D amp	<a href="#">RB-Dfr-419</a>	<a href="http://www.robotshop.com/ca/en/3w-audio-stereo-amplifier.html">http://www.robotshop.com/ca/en/3w-audio-stereo-amplifier.html</a>	\$ 7.56	\$ 22.68
3	headers male 1x40 (10pk)	<a href="#">RB-Cvt-53</a>	<a href="http://www.robotshop.com/ca/en/break-away-headers-straight.html">http://www.robotshop.com/ca/en/break-away-headers-straight.html</a>	\$ 2.31	\$ 6.93
20	headers female 1x40 (1pk)*	<a href="#">RB-Cvt-58</a>	<a href="http://www.robotshop.com/ca/en/straight-female-headers.html">http://www.robotshop.com/ca/en/straight-female-headers.html</a>	\$ 0.41	\$ 8.20
				<b>SUBTOTAL</b>	\$ 296.23
				<b>Shipping</b>	\$ -
				<b>GST</b>	\$ 14.81
				<b>PST</b>	\$ 29.55
				<b>Total:</b>	<b>\$ 340.59</b>
<b>DIGIKEY</b>					
3	Linear SoftPot - 200mm	<a href="#">905-1051-ND</a>	<a href="http://www.digikey.ca/product-search/en?keywords=905-1051-ND">http://www.digikey.ca/product-search/en?keywords=905-1051-ND</a>	\$ 16.66	\$ 49.98
6	Rotary potentiometer (volume)*	<a href="#">PDB182-E420K-103A-ND</a>	<a href="https://www.digikey.ca/product-detail/en/bourns-inc/PDB182-E420K-103A/PDB182-E420K-103A-ND/3780709">https://www.digikey.ca/product-detail/en/bourns-inc/PDB182-E420K-103A/PDB182-E420K-103A-ND/3780709</a>	\$ 2.70	\$ 16.20
				<b>SUBTOTAL</b>	\$ 66.18
				<b>Shipping</b>	\$ 8.00
				<b>GST</b>	\$ 3.29
				<b>QST</b>	\$ 6.57
				<b>Total:</b>	<b>\$ 84.04</b>
<b>Order details and totals</b>					
				<b>Total for order:</b>	<b>\$ 889.93</b>

Shopping cart: Noisebox rev3 - 2016  
Web ID: 159006097  
Access ID: 1407

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## Cart contents

[Continue shopping](#)[Clear cart](#)[Recalculate](#)[Proceed to checkout](#)**LMH-1 LED Holder 5mm** ✕

CODE: LMH-1

**CAD\$0.15**

25

+

-

**CAD\$3.85**



1968P Machine Screw: M2.5, 6mm Length, Phillips (25-pack) ✕

CODE: 1968P

CAD\$1.39

2

CAD\$2.77



1967P Machine Hex Nut: M2.5 (25-pack) ✕

CODE: 1967P

CAD\$1.39

2

CAD\$2.77



1975P Nylon Spacer: 12mm Length, 4mm OD, 2.7mm ID (25-Pack) ✕

CODE: 1975P

CAD\$2.09

2



CAD\$4.17



1952P Aluminum Standoff for Raspberry Pi: 11mm Length, M2.5 Thread, M-F (4-Pack) ✕

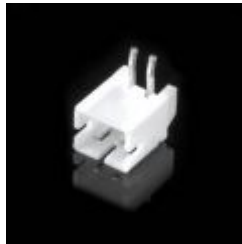
CODE: 1952P

CAD\$1.95

3



CAD\$5.84



PRT-09749 JST Right-Angle Connector - Through-Hole 2-Pin ✕

CODE: PRT-09749

CAD\$1.53

10



CAD\$15.26



1152-ADA Arcade/Button Quick-Connect Wire Pair - Set of 10 pairs ✕

CODE: 1152-ADA

CAD\$6.93

1

+

-

CAD\$6.93

**1037-POLOLU 0.100" (2.54 mm) Female Header: 2x20-Pin, Straight** ✕

CODE: 1037-POLOLU

CAD\$1.75

8

+

-

CAD\$14.00

**571-ADA Adafruit Perma-Proto Half-sized Breadboard PCB - 3 Pack!** ✕

CODE: 571-ADA

CAD\$17.50

1

+

-

CAD\$17.50

**909 Panel Mount Ethernet Extension Cable** ✕

CODE: 909-ADA

CAD\$6.85

3

+

-

CAD\$20.54

**937 Panel Mount USB Cable - B Female to Micro-B Male** ✕

CODE: 937-ADA

CAD\$5.53

3

+

-

CAD\$16.59

**1363-ADA USB Powered Speakers** ✕

CODE: 1363-ADA

CAD\$13.93

1

+

-

CAD\$13.93



**876-ADA Stereo 3.5mm Plug/Plug Audio Cable - 6 feet** ✕

CODE: 876-ADA

CAD\$4.13

3

+

-

CAD\$12.39

**1314-ADA Speaker - 3" Diameter - 4 Ohm 3 Watt** ✕

CODE: 1314-ADA

CAD\$2.73

6

+

-

CAD\$16.38

**1475-ADA USB Audio Adapter - Works with Raspberry Pi** ✕

CODE: 1475-ADA

CAD\$6.93

3

+

-

CAD\$20.79

**COM-11155 Rocker Switch - Round w/ Blue LED** ✕

CODE: COM-11155

CAD\$2.10

3

+

-

CAD\$6.30

**LED-5B 5mm Blue LED** ✕

CODE: LED-5B

CAD\$1.11

10

+

-

CAD\$11.06

**PBS-33MM-BL Push Button 33mm - Blue** ✕

CODE: PBS-33MM-BL



CAD\$2.09

3

+

-

CAD\$6.26

BBB-8GB-10 microSDHC Memory Card with adapter 8GB Class 10 

CODE: BBB-8GB-10

CAD\$13.93

3

+

-

CAD\$41.79

PI-WIFI-M USB Wireless Miniature Module 

CODE: PI-WIFI-M

CAD\$10.57

3

+

-

CAD\$31.71



BAT-PB-01 8000 mAh Rapid Charge Power Bank with 14 Integrated LEDs for Iphone/Samsung Mobile Devices & Raspberry Pi 2/3 ✕

CODE: BAT-PB-01

CAD\$39.94

3

CAD\$119.83

Subtotal	CAD\$390.65
Purolator Ground (✈ <a href="#">CHANGE</a> )	CAD\$13.99
<b>Taxes</b>	
Tax (14.98%)	CAD\$60.62

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<b>Total cost</b>	<b>CAD\$465.26</b>
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# Shopping Cart



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Del	Product Name	Qty	Unit Price	Status	Subtotal
	<u>Raspberry Pi 3 Computer Board</u> Product Code : RB-Ras-12	3	x CAD \$51.99	✓ In stock	CAD \$155.97
	<u>Teensy 3.2 USB Microcontroller Development Board</u> Product Code : RB-Pjr-04	3	x CAD \$25.38	✓ In stock	CAD \$76.14
	<u>Concave Button - Red</u> Product Code : RB-Spa-674 * This product is not available in the requested quantity. 1 of the items will be backordered.	3	x CAD \$2.50	? 1 out of stock Approximate arrival date: 2016-09-16	CAD \$7.50
	<u>Concave Button - Green</u> Product Code : RB-Spa-324	3	x CAD \$2.50	✓ In stock	CAD \$7.50
	<u>ADXL335 3-Axis Accelerometer Module</u> Product Code : RB-lte-11	3	x CAD \$3.77	✓ In stock	CAD \$11.31
	<u>3W Audio Stereo Amplifier</u> Product Code : RB-Dfr-419 * This product is not available in the requested quantity. 1 of the items will be backordered.	3	x CAD \$7.56	? 1 out of stock Approximate arrival date: 2016-09-23	CAD \$22.68
	<u>Break Away Headers - Straight (10 pack)</u> Product Code : RB-Cyt-53	3	x CAD \$2.31	✓ In stock	CAD \$6.93
	<u>Straight Female Headers (1 x 40)</u> Product Code : RB-Cyt-58	20	x CAD \$0.41	✓ In stock	CAD \$8.20

Estimate Shipping and Tax

Subtotal **CAD \$296.23**

Enter your destination to get a shipping estimate.

**Country**

Canada

[You don't see your country?](#)

**State/Province**

Quebec

**Zip/Postal Code**

H3A 1E3

**Canada Post**

☒ Expedited **CAD \$0.00**

Estimated delivery date: 2016-09-02

**United Parcel Service**

☐ UPS Standard **CAD \$18.68**

☐ UPS Next Day Air Saver **CAD \$20.57**

☐ UPS Next Day Air **CAD \$25.20**

**Discount Codes**

Enter your coupon code if you have one.

**Price Match** \* Subject to approval

Price Match lets you match the price of any item we sell with a competitor's price! Enter the competitor's price and the url where you found it and we will do our best to match this competitor's price.

**Gift Cards**

Enter your gift card code

[Check Gift Card balance](#)

Shipping & Handling (Canada **CAD \$0.00**

Post - Expedited)

Grand Total Excl. Tax **CAD \$296.23**

GST (5%) **CAD \$14.81**

PST (9.5%) **CAD \$29.55**

**Grand Total CAD \$340.59**



Shopping Cart

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Shipping

Payment

Preview

Finish

**Shopping Cart:** Noisebox rev3 - 2016

**Web ID** 159006097 **Access ID** 1407 **Salesorder Number** Uncommitted

**Shipping Address**

JOHN SULLIVAN  
MCGILL UNIVERSITY/CIRMMT  
527 SHERBROOKE ST W STE A715  
MONTREAL, QC H3A1E3  
CANADA  
**Email** JOHNNY@JOHNNYVENOM.COM  
**Telephone** 5056907746

**Billing Address**

John Sullivan  
21 Quebec St.  
Apt 1  
Portland, ME 04101  
USA

**Shipping Method** FedEx International Priority

**Customer Number** 7993718

**Backorder Shipping Method** FedEx International Priority



**Shipment Type** Standard

**Payment Method** MasterCard

**Purchase Order**
**Backorder Hold Days** 60

 By clicking on the Submit Order button you agree to our [Terms and Conditions](#) and [Privacy Statement](#).

All prices are in Canadian dollars.

Index	Quantity	Image	Part Number	Description	Customer Reference	Available Quantity	Backorder Quantity	Unit Price	Extended Price
1	3		<a href="#">905-1051-ND</a>	SENSOR SOFTPOT 10K OHM 200MM		3 Immediate	0	16.56000	\$49.68
2	6		<a href="#">PDB182-E420K-103A-ND</a>	POT 10K OHM 0.06W CARBON LOG		0 Immediate	6 <a href="#">Lead Time</a>	2.70000	\$16.20
								<b>Subtotal</b>	<b>\$65.88</b>
								<b>Shipping</b>	<b>\$8.00</b>
								<b>GST</b>	<b>\$3.29</b>
								<b>HST</b>	<b>\$0.00</b>
								<b>QST</b>	<b>\$6.57</b>
								<b>Total</b>	<b>\$83.74</b>

**Information:**

Fields marked unknown cannot be determined at this time.

Free shipping is offered on all orders over \$200 CAD\*, with no additional charge for each backorder shipment.

A shipping charge of \$8.00 CAD will be billed on all orders less than \$200 CAD\*, with an additional \$8.00 CAD charge for each back order shipment.

\* If unique circumstances require deviation from this charge, customers will be contacted prior to shipping an order.

Packages will be shipped via FedEx.

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Note: If your package is of excessive weight and size, someone will contact you prior to shipping and notify you of shipping costs. Shipping charges will be prepaid and added to your order.

**Order Notes**

N/A

**Questions?** Give us a call at 1-800-344-4539 or 218-681-6674, chat with us now on [Live Chat](#).

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701 Brooks Avenue South,

Thief River Falls, MN 56701 USA

Noisebox rev3 materials list  
2016-08-01 John Sullivan - IDMIL

Item #	Description	Vendor	Item ID	Cost/Unit	Quant	Cost/Instr.	Notes	Use
Processing								
1	Raspberry Pi 3	RobotShop	<a href="#">RB-Ras-12</a>	CAD 51.99	1	CAD 51.99		Core processor
2	Teensy 3.2	RobotShop	<a href="#">RB-Pjr-04</a>	CAD 25.38	1	CAD 25.38		Sensor processing and filtering
3	Battery 5V 2.4A	Abra	<a href="#">BAT-PB-01</a>	CAD 39.94	1	CAD 39.94	Have at least 4 at IDMIL... enough to start	Wireless power supply
4	Sensor I/O cape	in house	Ivan		1			Sensor I/O
5	WiFi dongle	Abra	<a href="#">PI-WIFI-M</a>	CAD 10.57	1			Wireless communication
6	microSD card 8gb	Abra	<a href="#">BBB-8GB-10</a>	CAD 13.93	1	CAD 13.93		RPi storage
Sensors and controls								
7	Buttons - mom (power)	Abra	<a href="#">PBS-33MM-B</a>	CAD 2.09	1	CAD 2.09		RPi soft shutdown
8	LED - Power (Blue)	Abra	<a href="#">LED-5B</a>	CAD 1.11	1	CAD 1.11		Power indicator (optional)
9	Switch - Power	Abra	<a href="#">COM-11155</a>	CAD 2.10	1	CAD 2.10		Power supply switch (after soft shutdown)
10	Buttons (voice on - grn)	RobotShop	<a href="#">RB-Spa-674</a>	CAD 2.50	1	CAD 2.50		Voice(s) on
11	Buttons (voice off - red)	RobotShop	<a href="#">RB-Spa-324</a>	CAD 2.50	1	CAD 2.50		Voice(s) off
12	Linear SoftPot - 200mm	Digikey	<a href="#">905-1051-ND</a>	CAD 16.66	1	CAD 16.66		Dynamic pitch control
13	Analog accelerometer	RobotShop	<a href="#">RB-lte-11</a>	CAD 3.77	1	CAD 3.77		Motion acquisition
14	Knob (volume)	Digikey	<a href="#">PDB182-E42C</a>	CAD 2.70	1		50K 2 gang (not in stock). Check part #.	Volume knob
Sound output								
15	USB sound card OPTION 1	Abra	<a href="#">1475-ADA</a>	CAD 6.93	1	CAD 6.93		Audio I/O
16	Stereo Class-D amp	RobotShop	<a href="#">RB-Dfr-419</a>	CAD 7.56	1	CAD 7.56		Audio amplifier
17	Speaker 4Ω 3W	Abra	<a href="#">1314-ADA</a>	CAD 2.73	2	CAD 5.46		Audio output
18	3.5mm TRS male OPTION 2	Abra	<a href="#">867-ADA</a>	CAD 4.13	1	CAD 4.13		Audio cable - sound card to amp
19	USB powered speakers	Abra	<a href="#">1363-ADA</a>	CAD 13.93	1			Alternative to Option 1 but not as good
Hardware, cables, accessories								
20	Acrylic housing	in house	Ivan		1			Instrument body
21	USB cable panel mount	Abra	<a href="#">937-ADA</a>	CAD 5.53	1	CAD 5.53		Panel mount battery charging port
22	Ethernet cable panel mount	Abra	<a href="#">909-ADA</a>	CAD 6.85	1	CAD 6.85		Panel mount ethernet port
23	Protoboard (3pk)	Abra	<a href="#">571-ADA</a>	CAD 5.83	1	CAD 5.83	misc bulk hardware; 3pack for 17.95	Wiring hub
24	headers male 1x40 (10pk)	RobotShop	<a href="#">RB-Cyt-53</a>	CAD 0.23	3	CAD 0.69	misc bulk hardware; 10 pack = \$2.31	Wiring connections
25	headers female 1x40 (1pk)	RobotShop	<a href="#">RB-Cyt-58</a>	CAD 0.44	1	CAD 0.44	misc bulk hardware	Wiring connections - Teensy
26	headers female 2x20 (1pk)	Abra	<a href="#">1037-POLOLI</a>	CAD 1.75	1	CAD 1.75	misc bulk hardware	RPi to cape connector
27	Button quick connect wires (5pk)	Abra	<a href="#">1152-ADA</a>	CAD 1.39	1		misc bulk hardware; 5 pack = \$6.93	Button wiring connectors
28	JST connectors	Abra	<a href="#">PRT-09749</a>	CAD 1.53	4		misc bulk hardware	Button wire to protoboard
29	2.5mm standoffs (4pack set)	Abra	<a href="#">1952P</a>	CAD 1.95	1		misc bulk hardware	Mounting hardware
30	M2.5 spacers (25pk)	Abra	<a href="#">1975P</a>	CAD 0.08	4	CAD 0.33	misc bulk hardware; 25 pack = \$2.09	Mounting hardware
31	M2.5 Machine hex nut (25pk)	Abra	<a href="#">1967P</a>	CAD 0.06	4	CAD 0.22	misc bulk hardware; 25 pack = \$1.39	Mounting hardware
32	M2.5 Machine screw (25pk)	Abra	<a href="#">1968P</a>	CAD 0.06	4	CAD 0.22	misc bulk hardware; 25 pack = \$1.39	Mounting hardware
33	LED holder	Abra	<a href="#">LMH-1</a>	CAD 0.15	1		misc bulk hardware	Mounting hardware

TOTAL INSTRUMENT COST: CAD 207.93

#	Description	Quantity per inst.	DigiKey	Cost per unit	Cost per instrument	RobotShop	Cost per unit	Cost per instrument	Abra	Cost per unit	Cost per instrument	Adafruit	Cost (USD)	Cost (CAD)	Other	Item	Cost	Quantity in lab	Notes	Use			
Processing																							
1	Raspberry Pi 3	1	<a href="#">1690-1000-ND</a>	CAD	67.54	<a href="#">RB-Ras-12</a>	CAD	51.99	CAD	51.99	<a href="#">RASPERRY PI 3</a>	CAD	62.71	<a href="#">3055</a>	USD	39.95	CAD	52.32	0		Core processor		
2	Teensy 3.2	1	<a href="#">1568-1231-ND</a>	CAD	31.99	<a href="#">RB-Pir-04</a>	CAD	25.38	CAD	25.38	<a href="#">TEENSY-3.2</a>	CAD	29.33	<a href="#">2756</a>	USD	19.95	CAD	26.13	2	Adafruit out of stock	Sensor processing and filtering		
3	Battery 5V 2.4A	1	n/a			n/a					<a href="#">BAT-PB-01</a>	CAD	39.94	CAD	39.94	n/a		4	Have at least 4 at IDMI... enough to start	Wireless power supply			
4	Sensor I/O cape	1	n/a			n/a					n/a						<a href="#">Pi Muxi Contivan</a>	Ivan		Sensor I/O			
5	WiFi dongle	1	<a href="#">1528-1439-ND</a>	CAD	16.99	<a href="#">RB-Ada-67</a>	CAD	15.32			<a href="#">PI-WIFI-M</a>	CAD	10.57	CAD	10.57	<a href="#">814</a>	USD	11.95	CAD	15.65	Wireless communication		
6	microSD card 8Gb	1	<a href="#">P17033-ND</a>	CAD	14.72						<a href="#">888-8GB-10</a>	CAD	13.93	CAD	13.93	<a href="#">1294</a>	USD	9.95	CAD	13.03	1	RPI storage	
Sensors and controls																							
7	Buttons - mom (power)	1	<a href="#">EG1900-ND</a>	CAD	2.73						<a href="#">PRS-33MM-B</a>	CAD	2.09	CAD	2.09				0	DigiKey unit cost: 2.73	RPI soft shutdown		
8	LED - Power (Blue)	1									<a href="#">LED-S8</a>	CAD	1.11	CAD	1.11						Power indicator (optional)		
9	Switch - Power	1									<a href="#">COM-11155</a>	CAD	2.10	CAD	2.10	<a href="#">481</a>	USD	4.95	CAD	6.48		Power supply switch (after soft shutdown)	
10	Buttons (voice on - grn)	1	<a href="#">EG1930-ND</a>	CAD	5.46	<a href="#">RB-Soa-674</a>	CAD	2.50	CAD	2.50	<a href="#">COM-90341</a>	CAD	2.73	<a href="#">1504</a>	USD	0.95	CAD	1.24	0	Also black and yellow from Adafruit	Voice(s) on		
11	Buttons (voice off - red)	1	<a href="#">EG1930-ND</a>	CAD	5.46	<a href="#">RB-Soa-324</a>	CAD	2.50	CAD	2.50	<a href="#">COM-09336</a>	CAD	2.73	<a href="#">1445</a>	USD	0.95	CAD	1.24	0		Voice(s) off		
12	Linear SoftPot - 200mm	1	<a href="#">805-1051-ND</a>	CAD	16.66	CAD	16.66				<a href="#">SEN-08679</a>	CAD	30.73					0		Dynamic pitch control			
13	Analog accelerometer	1	<a href="#">1568-1044-ND</a>	CAD	21.13	<a href="#">RB-Ite-11</a>	CAD	3.77	CAD	3.77	<a href="#">SENS-33</a>	CAD	11.19	<a href="#">163</a>	USD	14.95	CAD	19.58	0		Motion acquisition		
14	Knob (volume)	1	<a href="#">PDB182-F420K</a>	CAD	2.70	CAD	2.70											4	50K double stack / not currently in stock.... check part #.	Volume knob			
Sound output																							
15	USB sound card	1									<a href="#">1475-ADA</a>	CAD	6.93	CAD	6.93	<a href="#">1475</a>	USD	4.95	CAD	6.48	4		Audio I/O
OPTION 1																							
16	Stereo Class-D amp	1	<a href="#">1528-1380-ND</a>	CAD	12.65	<a href="#">RB-Dfr-419</a>	CAD	7.56	CAD	7.56	<a href="#">1552-ADA</a>	CAD	13.93	<a href="#">987</a>	USD	8.95	CAD	11.72	2	Ref: <a href="https://goo.gl/4Ec353">https://goo.gl/4Ec353</a>	Audio amplifier		
17	Speaker 40 3W	2	n/a								<a href="#">1314-ADA</a>	CAD	2.73	CAD	5.46	<a href="#">1314</a>	USD	3.90	CAD	5.11	3	Unit cost: USD 1.95	Audio output
18	3.5mm TRS male	1									<a href="#">867-ADA</a>	CAD	4.13	CAD	4.13	<a href="#">876</a>	USD	2.95	CAD	3.86	0	Addison	Audio cable - sound card to amp
OPTION 2																							
19	USB powered speakers	1									<a href="#">1363-ADA</a>	CAD	13.93	<a href="#">1363</a>	USD	9.95	CAD	13.03	0		Sound output		
Hardware, cables, accessories																							
20	Acrylic housing	1																Ivan			Instrument body		
21	USB cable panel mount	1	<a href="#">SC1837-ND</a>	CAD	17.61						<a href="#">937-ADA</a>	CAD	5.53	CAD	5.53	<a href="#">937</a>	USD	3.95	CAD	5.17	0		Panel mount battery charging port
22	Ethernet cable panel mount	1	<a href="#">FHR145P6S-ND</a>	CAD	14.67						<a href="#">909-ADA</a>	CAD	6.85	CAD	6.85	<a href="#">909</a>	USD	4.95	CAD	6.48	0		Panel mount ethernet port
23	Protoboard (3pk)	1									<a href="#">571-ADA</a>	CAD	5.83	CAD	5.83	<a href="#">571</a>	USD	12.50	CAD	16.37	2/0	*3 pack from Abra 17.50	Wiring hub
24	headers male 1x40 (10pk)	3				<a href="#">RB-Cyt-53</a>	CAD	2.31	CAD	0.69	<a href="#">SH-2</a>	CAD	2.91					0	RS = 10 pack; Abra unit price = .97	Wiring connections			
25	headers female 1x40 (1pk)	1				<a href="#">RB-Cyt-58</a>	CAD	0.44	CAD	0.44	<a href="#">FH-1</a>	CAD	0.97					0	1-pack: order multiples	Wiring connections - Teensy			
26	headers female 2x20 (1pk)	1				<a href="#">RB-Ada-27</a>	CAD	3.78			<a href="#">1037-POLOU</a>	CAD	1.75	CAD	1.75			0	RobotShop = 5 pack; Abra = 2x20 block	RPI to cape connector			
27	Button quick connect wires (5pk)	1									<a href="#">1152-Ada</a>	CAD	6.93	CAD	6.93	<a href="#">1152</a>	USD	4.95	CAD	6.48			Button wiring connectors
28	JST connectors	4	<a href="#">455-2247-ND</a>	CAD	2.9						<a href="#">PRT-09749</a>	CAD	1.53	CAD	6.12						Unit price (Abra): \$1.53		
29	2.5mm standoffs (4pack set)	1									<a href="#">1952P</a>	CAD	1.95	CAD	1.95	<a href="#">2336</a>	USD	1.50	CAD	1.96	optional	***MUST BE 2.5M not 3M	
30	M2.5 spacers (25pk)	4									<a href="#">1975P</a>	CAD	2.09							multipack	Mounting hardware		
31	M2.5 Machine hex nut (25pk)	4									<a href="#">1967P</a>	CAD	1.39							multipack	Mounting hardware		
32	M2.5 Machine screw (25pk)	4									<a href="#">1968P</a>	CAD	1.39							multipack	Mounting hardware		
33	LED holder	1									<a href="#">1MH-1</a>	CAD	0.15	CAD	0.15					multipack	Mounting hardware		

\* Should get M2.5 screws 20mm