

Caveatron Rev B - Wire Harness Assembly

Version: 2020-05-28

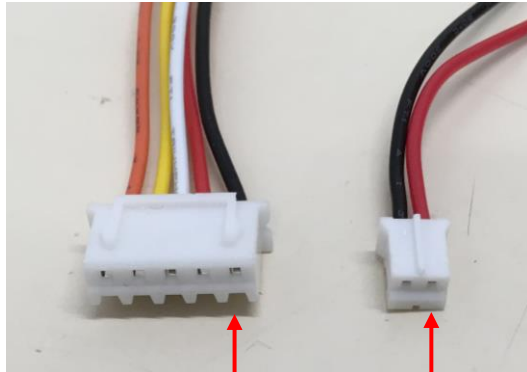
CAUTION: Do not pay attention to wire colors except where noted below. Pre-wired connectors are usually wired with arbitrary wire colors so will not be consistent. Be especially careful with two wire connectors to be sure you are not wiring it backwards (sometimes the black wire on these pre-wired connectors is in the positive position!)

Connectors, Pin Conventions, and General Notes

These connectors are used in the wire harnesses and the pin number convention is shown below:

- JST XH 2.54 5-pin connectors are used on the Laser Rangefinder, the LIDAR, and the Power Switch.
- JST XH 2.54 2-pin connectors are used on the Piezo Buzzer and the Battery.
- JST GH 1.25 4-pin connector is used on the LIDAR main PCB connector.
- JST GH 1.25 3-pin connector is used on the LIDAR main motor connector.

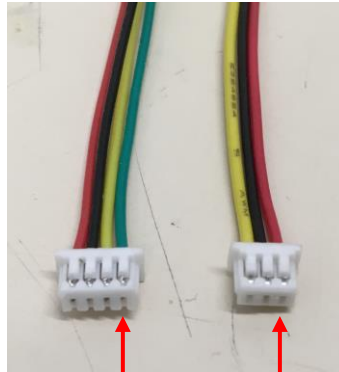
JST XH (2.54 mm)



Pin 1

Pin 1

JST Micro GH (1.25 mm)



Pin 1

Pin 1



The photo at left shows examples of the wiring harnesses used in the Caveatron. It is highly recommended that heat shrink tubing be used on all solder interfaces and as strain relief on soldered pins and cable splits where appropriate. Kapton tape is used for additional strain relief on the LRF. Be extra careful when wiring the battery to avoid allowing the wires to touch.

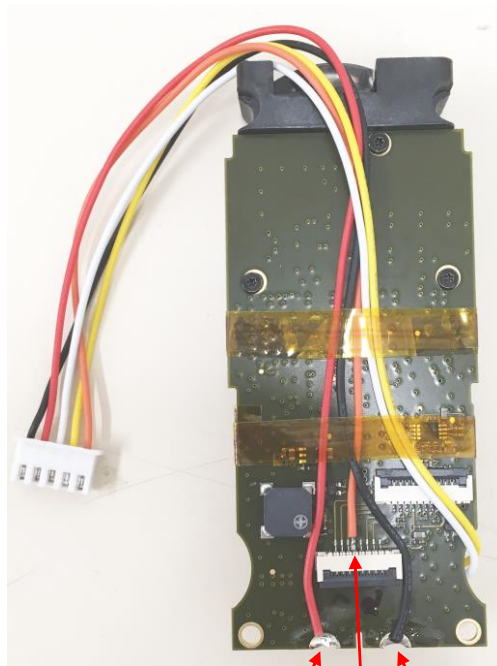
Laser Rangefinder

Pin on PCB Connector	Description
1	+3 V
2	GND
3	RX on Teensy / TX on LRF
4	TX on Teensy / RX on LRF
5	Power On (used on UT390B only)

Length of Wire Harness (for UT390B): 7.5" for V+/GND, 7.75" for RX/TX, 7" for Power On.

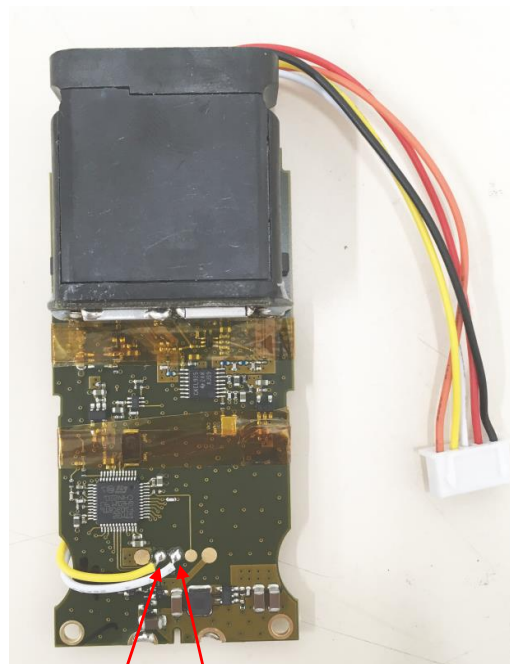
UT390B

Top View



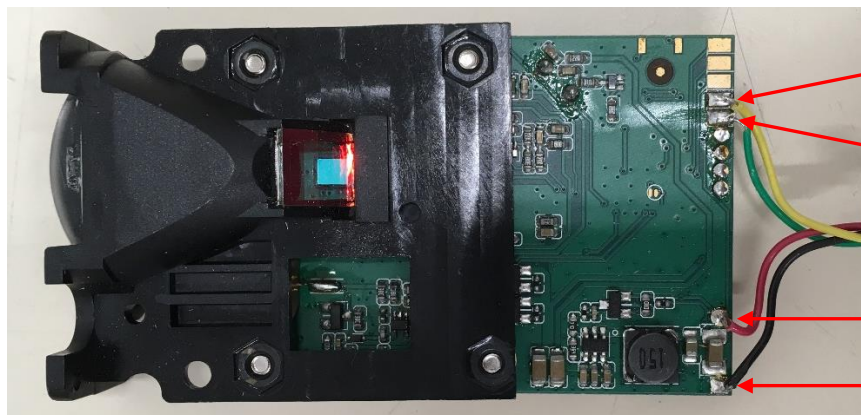
GND
Power On
V+

Bottom View



RX on LRF
(TX on Teensy)
TX on LRF
(RX on Teensy)

JRT 100m LIDAR Module (Large)



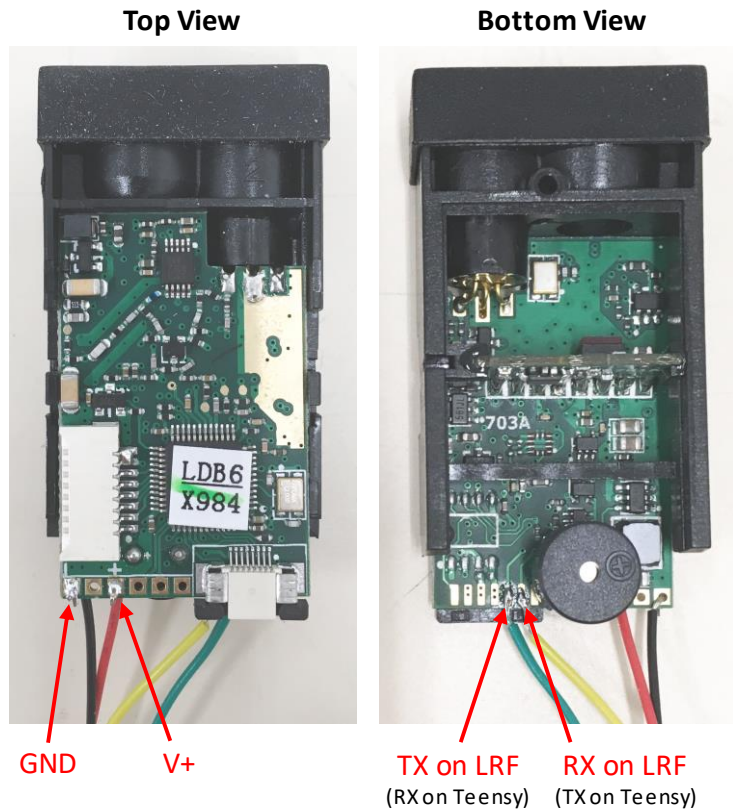
RX on LRF
(TX on Teensy)

TX on LRF
(RX on Teensy)

V+

GND

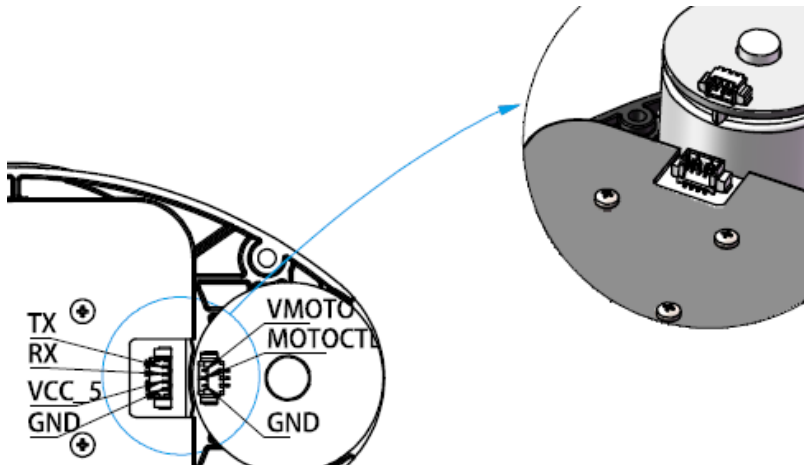
JRT 40m LIDAR Module (Small)



LIDAR

Pin on PCB Connector	Description	4-Pin Connector on RPLIDAR	3-Pin Connector on RPLIDAR
1	+5 V (VCC_5, VMOTO)	2	1
2	GND	1	3
3	RX on Teensy / TX on LIDAR	4	-
4	TX on Teensy / RX on LIDAR	3	-
5	PWM Motor Controller (MOTOCTL)	-	2

Length of Wire Harness: 7.5"

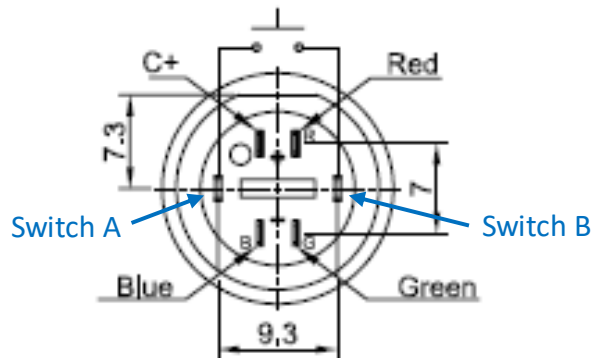


Power Switch

Pin on PCB Connector	Description
1	+5 V (C+)
2	Red LED Cathode
3	Green LED Cathode
4	Switch A
5	Switch B

(Switch A and B do not have a polarity and can be reversed)

Length of Wire Harness: 2.5"



Piezo Buzzer

Pin on PCB Connector	Description	Piezo Buzzer Wire Color
1	+V	Red
2	GND	Black

Length of Wire Harness: 6.5"

Battery

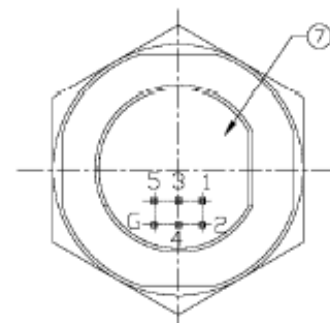
Pin on PCB Connector	Description	Battery Wire Color
1	+V	Red
2	GND	Black

Length of Wire Harness: 2.75"

USB Connector

(Only needed if you use the solder terminal version of the connector)

Pin on USB Connector	Description
1	+5 V (VCC)
2	D-
3	D+
4	-
5	GND
G	GND



Length of Wire Harness (including USB Micro): 4.25"