Caveatron SV Rev C - Wire Harness Assembly

Version: 2024-01-02

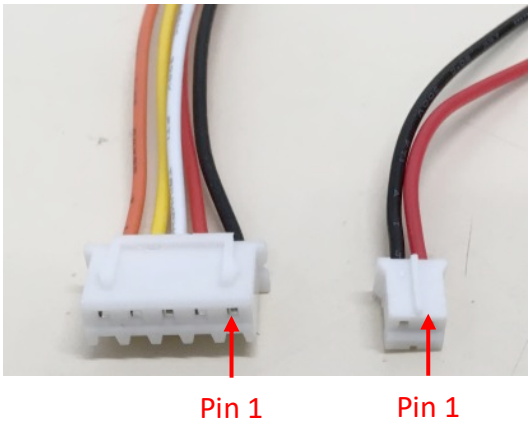
CAUTION: Do not pay attention to wire colors except where noted below. Pre-wired connectors are usually wired with arbitrary wire colors so will not be consistent. Be especially careful with two wire connectors to be sure you are not wiring it backwards (sometimes the black wire on these pre-wired connectors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

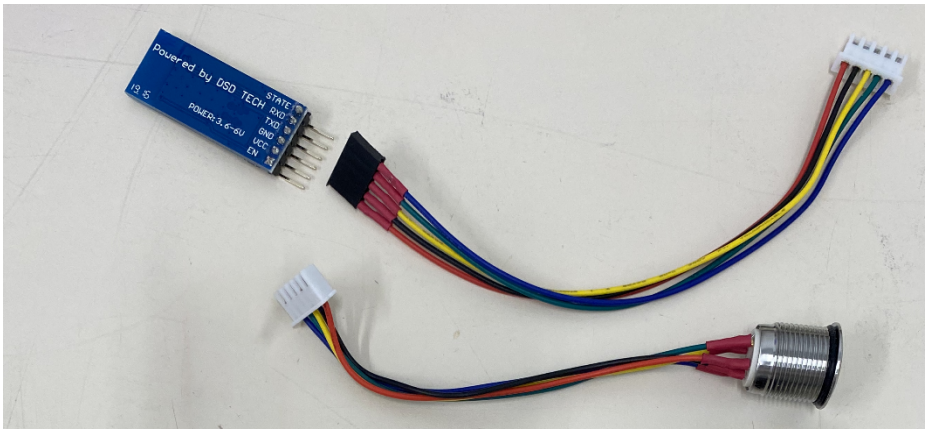
- JST XH 2.54 5-pin connectors are used on the Laser Rangefinder (LRF), the Power Switch, and the Bluetooth module.
- JST XH 2.54 2-pin connectors are used for USB Power, USB Data, the Piezo Buzzer, and the Battery.

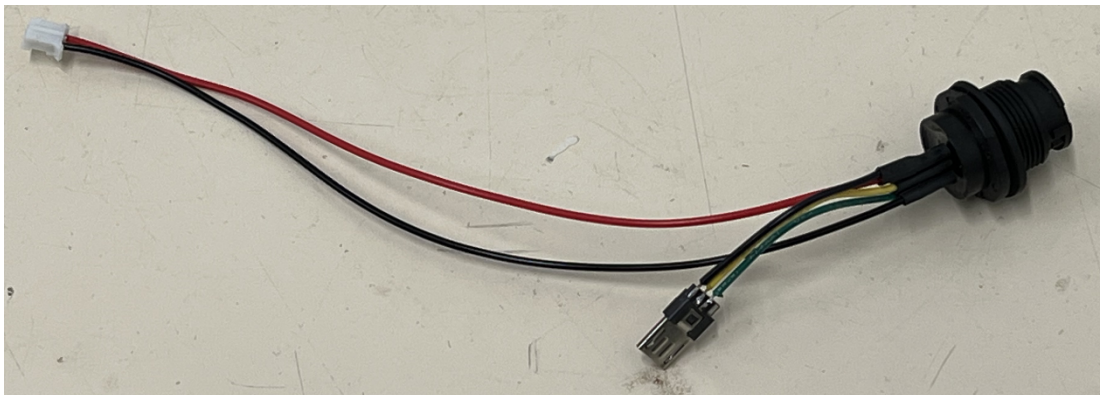
JST XH (2.54 mm)



The photos on the next page show examples of the wiring harnesses used in the Caveatron SV. It is highly recommended that heat shrink tubing be used on all solder interfaces and as strain relief on soldered pins. Kapton tape and/or small cable ties can be used for additional strain relief. Be extra careful when wiring the battery to avoid allowing the wires to touch.

Also note that using a coin cell for the Teensy RTC battery backup is no longer recommended due to the short battery life (45 days). Instead, use the RTC regulator retrofit modification described in the separate document entitled “RTC regulator retrofit” (found with the regular Rev C Caveatron documentation.)


Powered by DSD TECH
STATE
RXD
TXD
GND
VCC
EN
POWER:3.6~6V




P/N: L37A26-1-0-3WA3
Li-ion 18650 3.7V 2600mAh 9.6Wh
1 CELL (1S1P) SERIES PACK W/ PCB
DO NOT DISPOSE OF IN FIRE, DO NOT
INCINERATE, CRUSH, DISASSEMBLE,
PUNCTURE, OR SHORT CIRCUIT.
MADE IN CHINA
Compliant
Cells

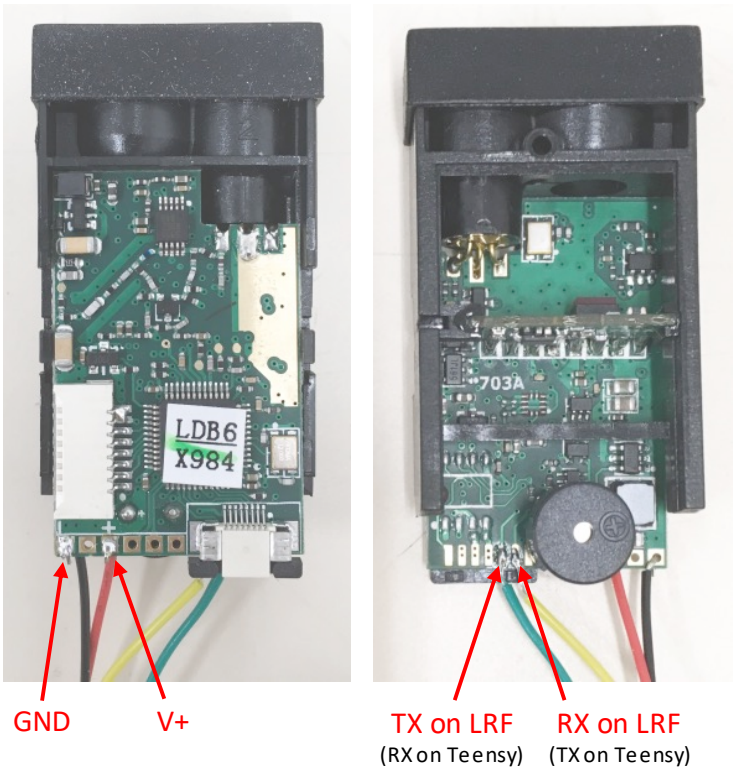
Laser Rangefinder

Pin on PCB Connector	Description
1	+3.0 V
2	GND
3	RX on Teensy / TX on LRF
4	TX on Teensy / RX on LRF
5	-

Length of Wire Harness: 7.5” for V+/GND, 7.75” for RX/TX, 7” for Power On.

JRT 40m LRF Module (Small)

Top View **Bottom View**



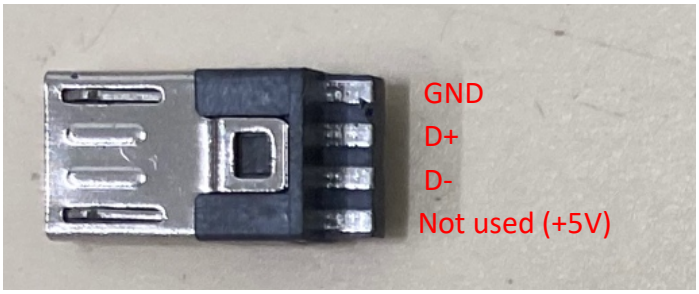
Battery

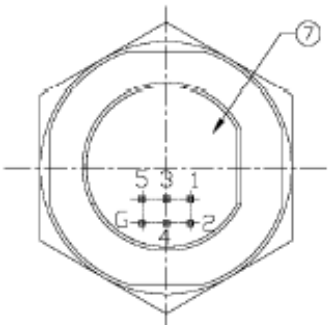
Pin on PCB Connector	Description	Battery Wire Color
1	+V	Red
2	GND	Black

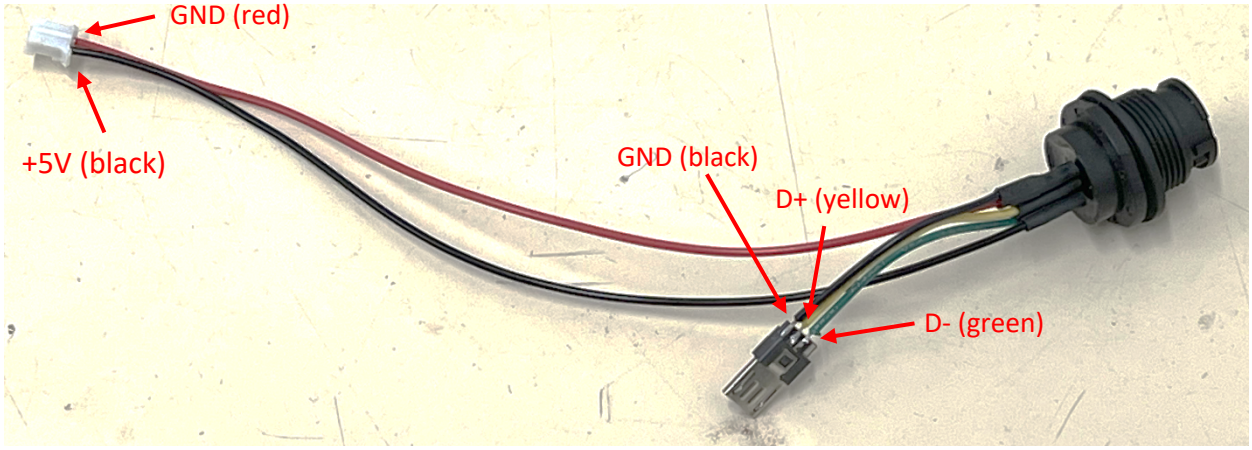
Length of Wire Harness: 2.75”

USB Connector

This Y-cable goes from the USB mini/micro external jack to a 2 pin JST and to a USB micro male connector.







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

Length of USB Micro leg of Wire Harness: 2.25”

Length of power leg leg of Wire Harness: 7.0”

Piezo Buzzer

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

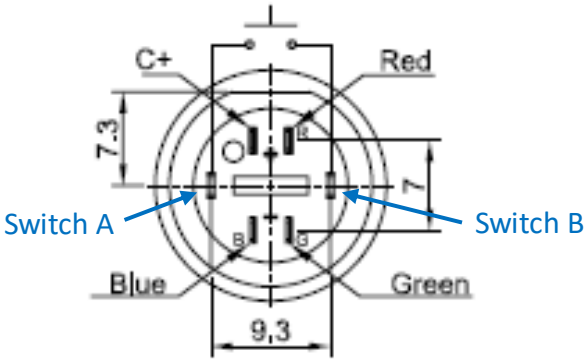
Length of Wire Harness: 6.5”

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

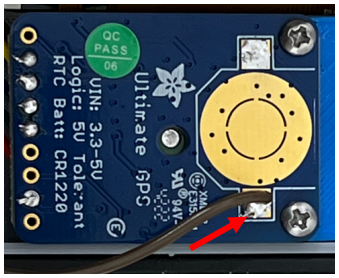
(Switch A and B do not have a polarity and can be reversed)

Length of Wire Harness: 2.5”



GPS Module (optional)

Pin on PCB Connector	Description
1	Enable
2	+5V
3	GND
4	RX on Teensy / TX on GPS
5	TX on Teensy / RX on GPS



An additional wire can be run between the positive battery pad on the rear of the GPS module (red arrow above) and the Teensy RTC +power pad to keep the GPS clock active so that it acquires satellites more quickly.

Bluetooth Module (optional)

Pin on PCB Connector	Description
1	Enable (on HC-05 only)*
2	+5V
3	GND
4	RX on Teensy / TX on Bluetooth
5	TX on Teensy / RX on Bluetooth

* Note: The enable pin is only used with the HC-05 bluetooth module. On the HM-10, this pin is not wired.