



# ULTRAUSB HUB

## QUICK START GUIDE

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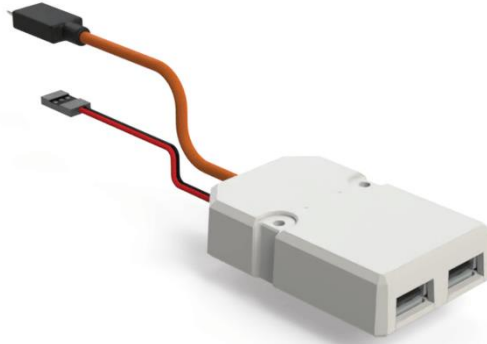
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## Revision History

Revision	Date	Description
1	12/3/2019	Initial Release

# 1 ULTRAUSB HUB OVERVIEW

The UltraUSB Hub is designed specifically for use in competitive robotics and gives you the ability to connect multiple USB devices to each other as well as replacing cables when damaged instead of needing to replace the whole hub. The UltraUSB Hub can also be powered externally, allowing for USB peripherals like the [Logitech C270 UVC USB Camera](#) to operate with the power they need.



**Figure 1-1 UltraUSB Hub**

## 1.1 FEATURES

The REV Robotics UltraUSB Hub includes the following features:

- 2-port USB 2.0 hub
  - 2 downstream USB A ports
  - 1 configurable upstream port
    - USB Micro-B OTG
    - USB A
- Powered and un-powered operation
  - External power through JST-PH 2-pin power port
  - Upstream power through upstream port
- Removable JST to USB cables for easy replacement
  - Cables retained within case for strain relief

## 1.2 KIT CONTENTS




The REV Robotics UltraUSB Hub comes with the following:


- QTY 1 - UltraUSB Hub
- QTY 1 - JST-PH 4-pin to USB-A Cable
- QTY 1 - JST-PH 4-pin to USB Micro-B OTG Cable
- QTY 1 - JST-PH 2-pin to 3-pin 0.1" (PWM/Dupont) Connector Cable
- QTY 1 - JST-PH 2-pin to USB-A Cable

# 2 USING THE ULTRAUSB HUB

This section of the guide will cover cable types, how to connect and swap cables, and details on the powering options.


## 2.1 CABLE TYPES AND INFORMATION

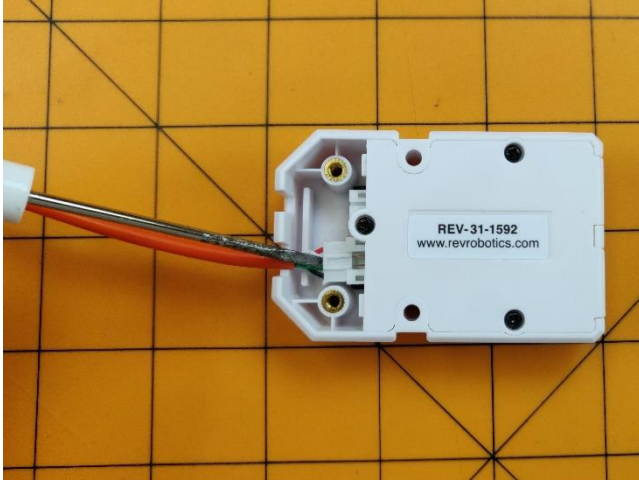
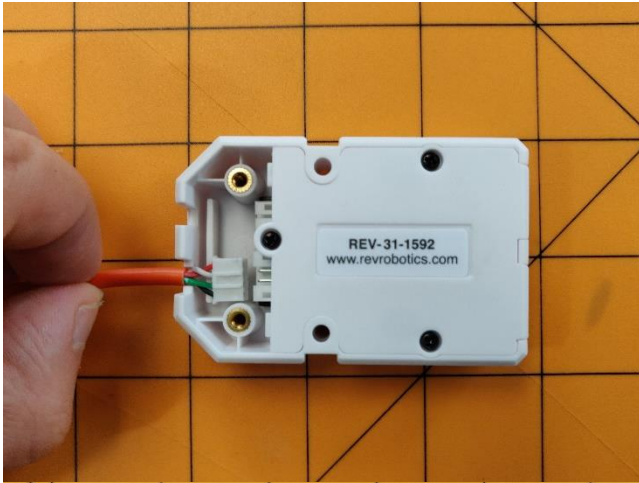
Cable	Type	Uses
 An orange cable with a USB-A connector on one end and a 4-pin JST-PH connector on the other, laid out on a black grid background.	JST-PH 4-pin to USB-A Cable	Data Connecting to any USB-A Device (i.e. a laptop)
 An orange cable with a USB Micro-B connector on one end and a 4-pin JST-PH connector on the other, laid out on a black grid background.	JST-PH 4-pin to USB Micro-B OTG Cable	Data Connecting to a Micro-USB Phone (OTG)
 An orange cable with a 2-pin JST-PH connector on one end and a 3-pin 0.1\"	JST-PH 2-pin to 3-pin 0.1\" (PWM/Dupont) Connector Cable	Power Powering the hub off the 5V rail on the Expansion Hub/Control Hub

	<p>JST-PH 2-pin to USB-A Cable</p>	<p>Power</p>	<p>Powering the hub off a 5V external battery pack with USB A connectors</p>
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## 2.2 INSERTING CABLES

In addition to the materials included in the kit, you will also need a [5.5mm Nut Driver](#) (or equivalent sized tool)

	<p><b>Step 1</b></p> <p>Using a 5.5mm Nut Driver (or equivalent tool), remove the cable cover.</p>
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### Step 2

Insert the data cable into the hub. If you have trouble inserting the connector, you can use a small flathead screwdriver to push the connector in.



### Step 3

If you are using a power cable, insert the power cable into the hub.



#### Step 4

Screw the cable cover back into place.



## 2.3 POWERING THE ULTRAUSB HUB

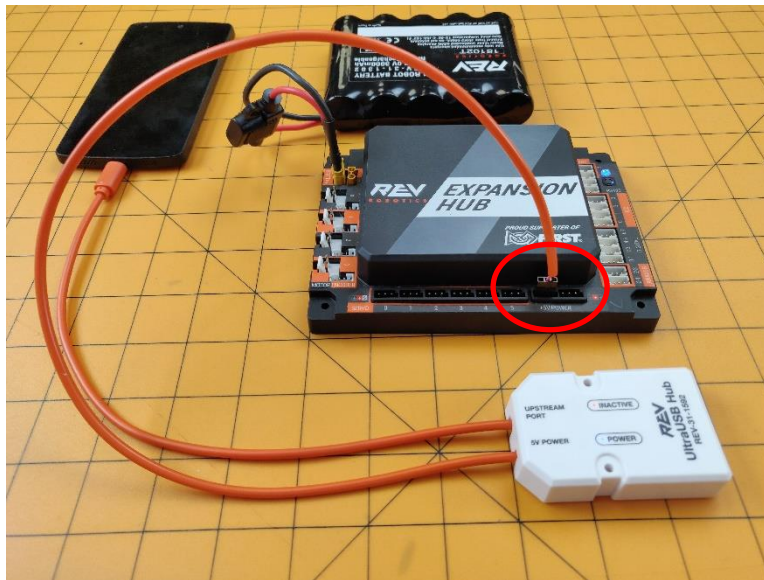
There are two ways to power the UltraUSB Hub. You can power the hub straight off the host device or externally power with a 5V supply. The maximum downstream current is 500mA per port when the hub is externally powered. When the hub is not externally powered, then the maximum downstream current is host dependent.

### 2.3.1 POWERING OFF THE HOST DEVICE

The UltraUSB Hub can operate without the use of external power. However, the maximum downstream current will be dependent on the electrical characteristics of the host device. If your host device is powering devices such as an UVC Camera, it is recommended to use an external power source.

### 2.3.2 POWERING WITH AN EXPANSION/CONTROL HUB

Using the JST-PH 2-pin to 3-pin 0.1" (PWM/DuPont) Connector Cable, connect the power cable to the "+5V POWER" ports.



### 2.3.3 POWERING WITH A 5V EXTERNAL BATTERY PACK

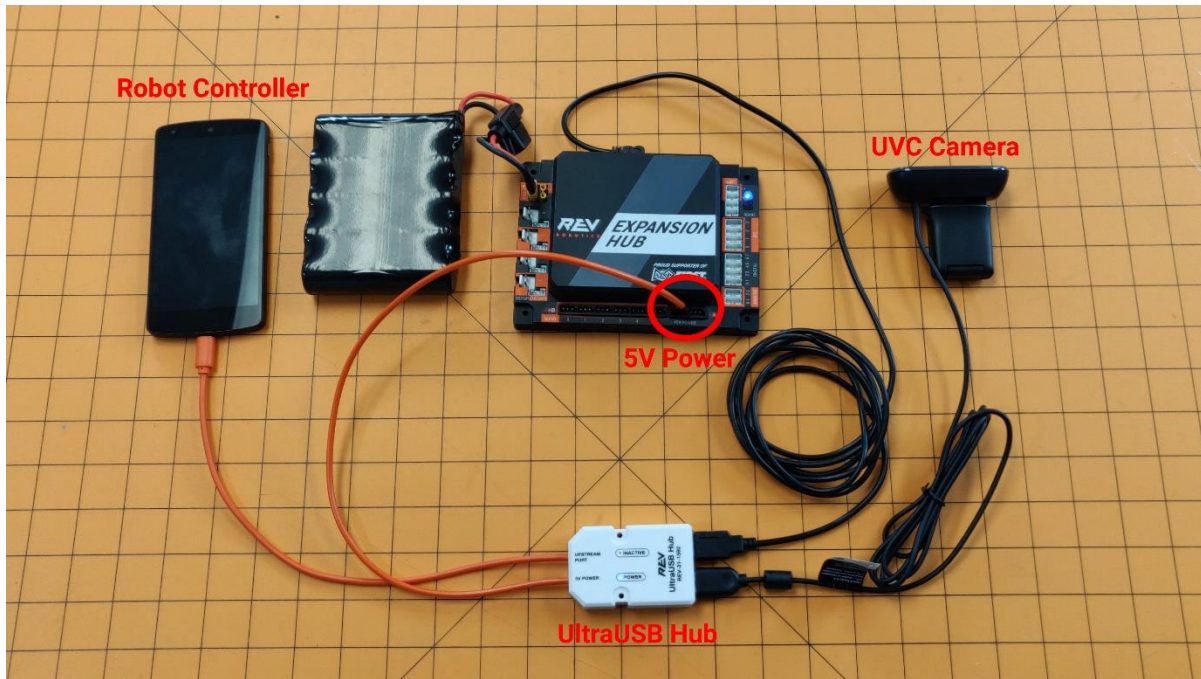
Using the JST-PH 2-pin to USB-A Cable, connect the power cable to a USB-A port on a 5V external battery pack.





# APPENDIX A SETUP EXAMPLES

## APPENDIX A.1 OPERATING A UVC CAMERA ON YOUR ROBOT



## APPENDIX A.2 USING TWO GAMEPADS WITH YOUR DRIVER STATION

