



Charger Charm - 3D Printed holder for Micro LiPo USB Charger

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<https://learn.adafruit.com/usb-charger-charm-3d-printed-holder-for-micr-lipo-usb-charger>

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Overview

Our Adafruit micro Lipo USB chargers are great for charging your projects that use our Lithium Polymer Batteries. They're so small and light, it's a easy to bring take them with you but you wouldn't want to lose one!

Parts

- [Micro Lipo USB Charger](#) ()
- [JST Connector](http://adafru.it/1769) (<http://adafru.it/1769>) / [Extension Cable](#) ()
- Split/Keychain Ring
- Lanyard/Necklace

Tools & Supplies

- [3D Printer](#) ()
- [Soldering Iron](#) ()
- [Lead rosin-core solder](http://adafru.it/145) (<http://adafru.it/145>)
- [Third-Helping Hand](http://adafru.it/291) (<http://adafru.it/291>)
- ABS/PLA Filament



3D Printing



[Download STLs](#)

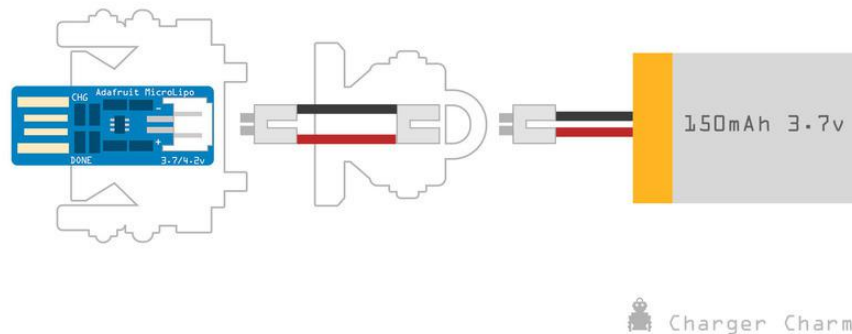
The STL files are designed to work best on a Makerbot Replicator 2 and sliced with Makerware using PLA filament.

lipobot-left-arm.stl lipobot-right-arm.stl lipobot-head.stl lipobot-body.stl lipobot-nub.stl	PLA @230 2 Shells Infill %10 90/150 Speeds	1-2 Hours
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Will it Print on a Printrbot or Reprap?

Yes! But the tolerance may be a bit different, cause the snap-fit parts not to fit properly. You can how ever make minor adjustments to the solids in 123D by modify our design.

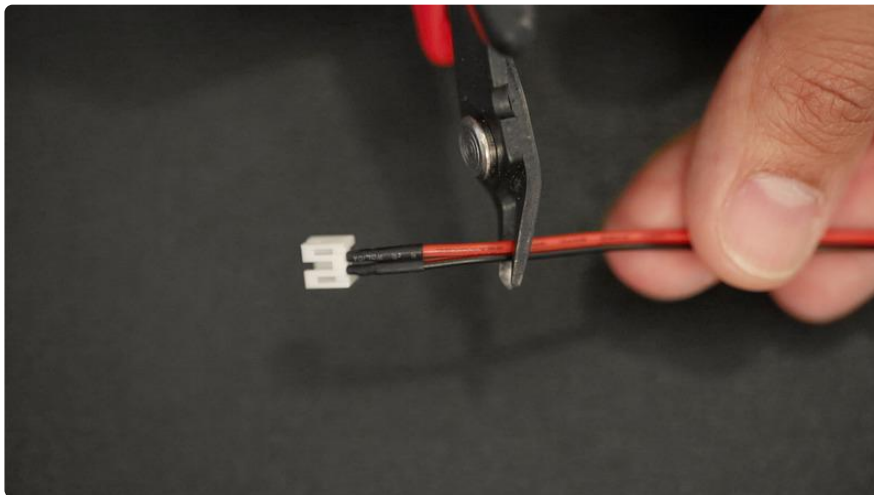
Circuit Diagram



A short JST cable fits inside the cavity of the head cap with the female connector accessible from the back of the cap. The male connector extends out through the bottom of the cap and connects to the Micro Lipo USB Charger.

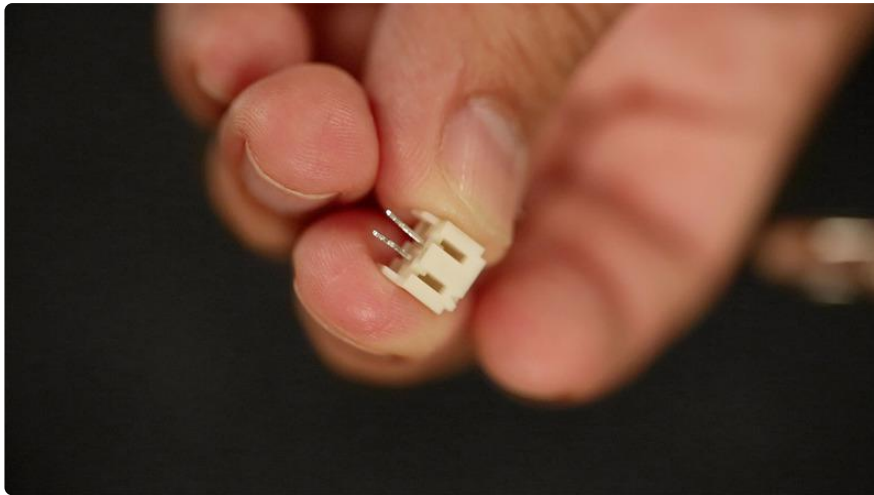
For use with Adafruit LiPoly/Lilon batteries only! Other batteries may have different voltage, chemistry, polarity or pinout.

Assembly

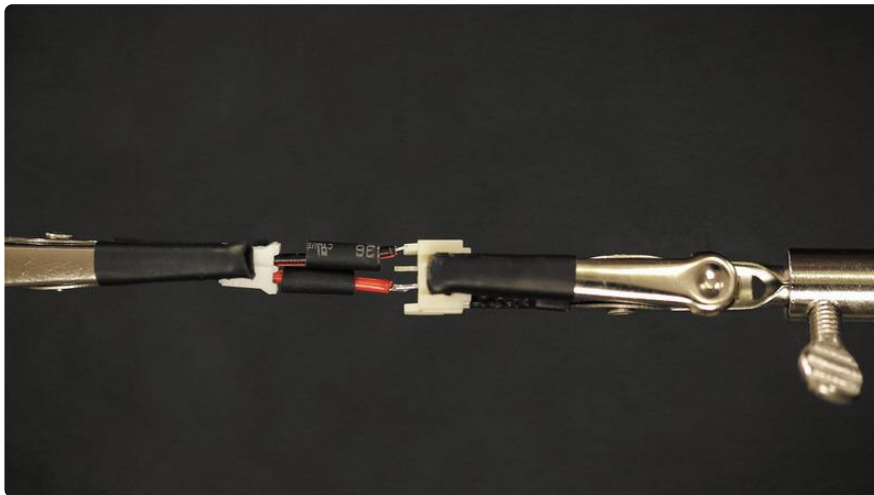


Shorten JST Cable

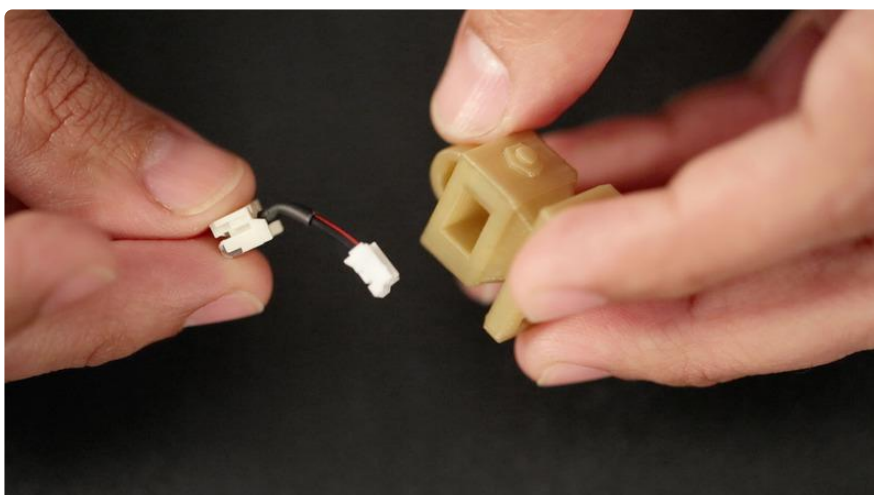
The JST cable will need to be proximity 29mm long. If you have the original JST cable that was included with the Micr Lipo Charger, you can use that instead of a JST Extension cable.



Bend the two terminals from the end of the JST connect so they protrude straight out. Tin the terminals and solder them to the ground and positive wires of the JST cable. Use heat shrink tubing to secure the connections.

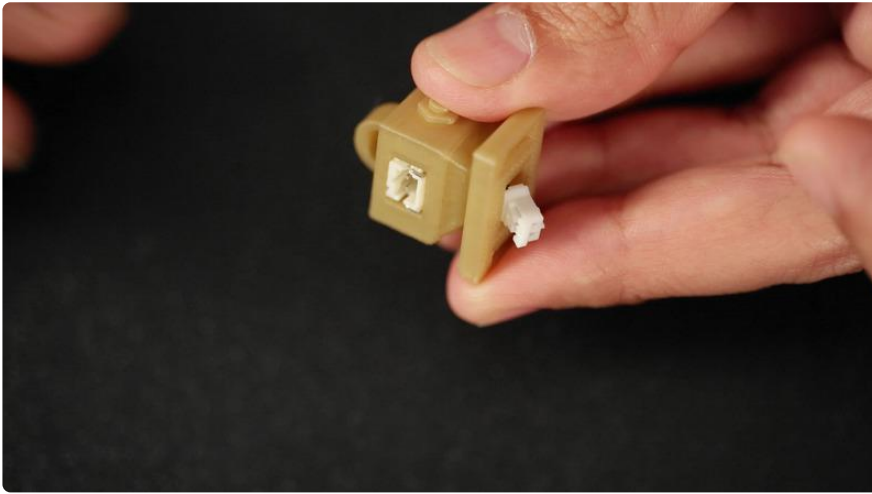


Use a third-helping hand to assist you in soldering the JST cable to the JST connector. Solder the tinned ends of the ground and positive wires of the shortened JST cable.

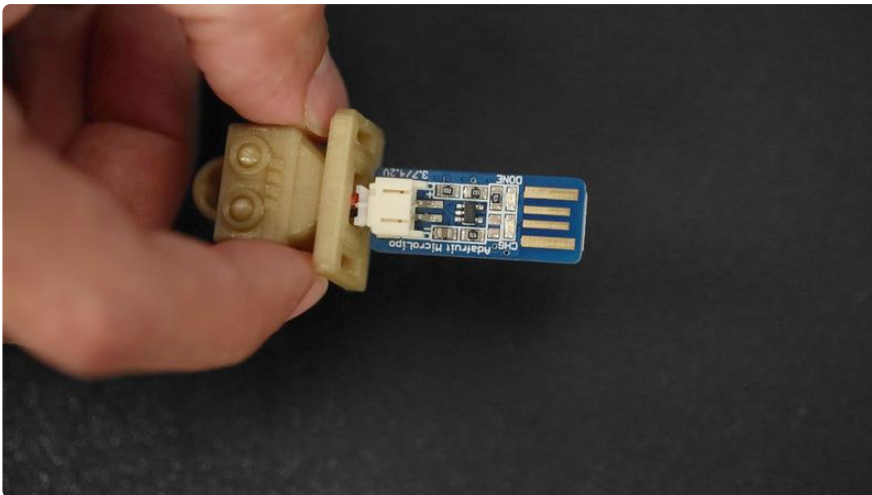


Test Fit JST Cable

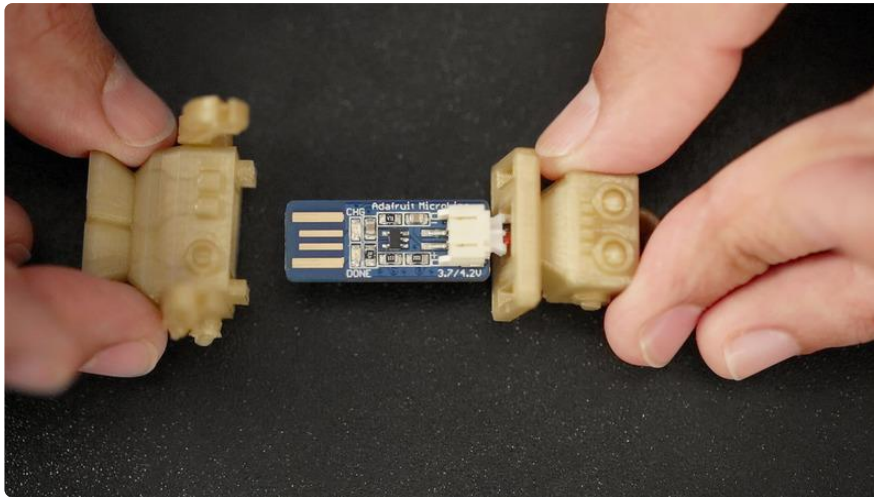
Insert the shortened JST cable into the lipobot-head.stl part with the male JST port first.



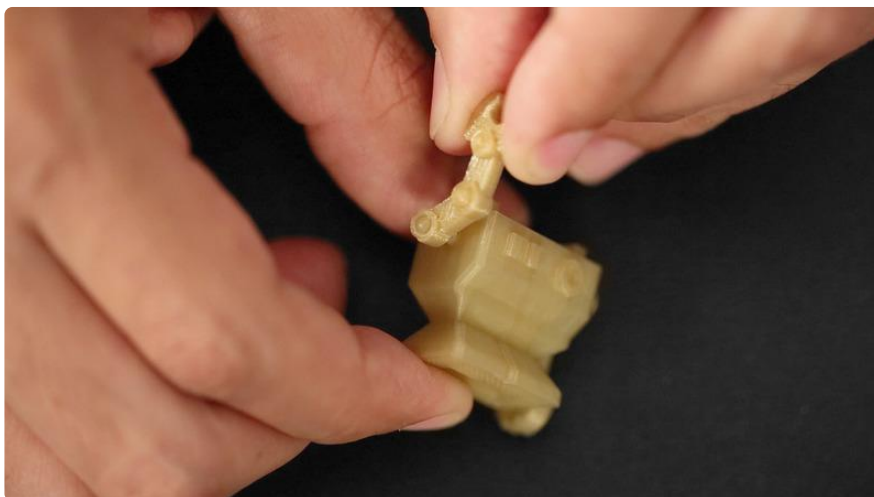
The female port should tight fit inside the lipobot-head.stl and be flush with the part.



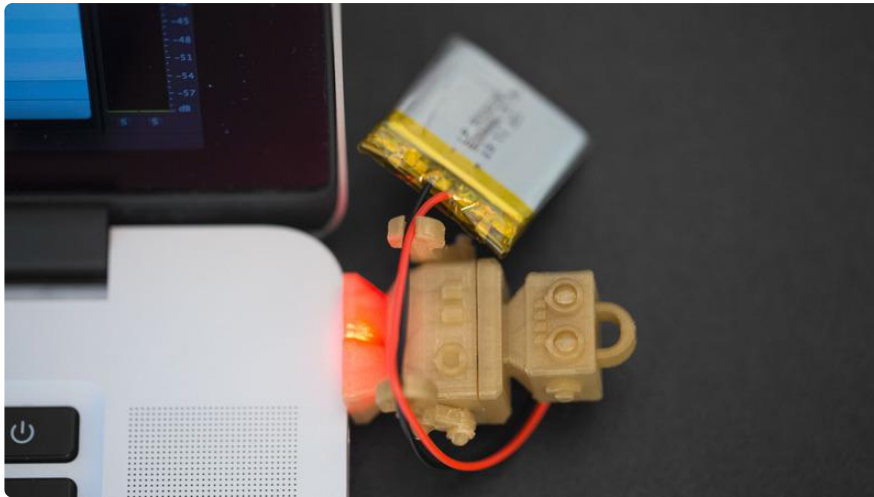
Connect the Micro Lipo USB charger to the female JST Port. Make sure the orientation matches the photo above.



The Micro Lipo USB charger should be inserted to the lipobot-body.stl part with the gold plated usb port facing the orientation of the robot. Slide into place and apply a bit of force to the lipobot-head.stl part so it clicks into the lipobot-body.stl part. It may be a bit hard, but the tolerances will loosen a bit over a couple of uses.



Loosen the holes on the two arms and the body with an x-acto knife. Test fit the pins into the holes by turning them until they can fit all the way through the holes. Insert the pins through the arm parts and into the body. Press the two pins all the way through, you should be able to freely rotate them.



Plug in a lithium polymer battery and watch it charge! The little grabbers on the arms can optionally hold onto the JST cable.



Add a split ring to the top hoop for a keychain, lanyard or necklace. Print it, wear it, use it!