



# 3D Printed Battery Adapter for Camera-Mount LED Panel

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<https://learn.adafruit.com/3d-printed-battery-adapter-for-camera-mount-led-panel>

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# Table of Contents

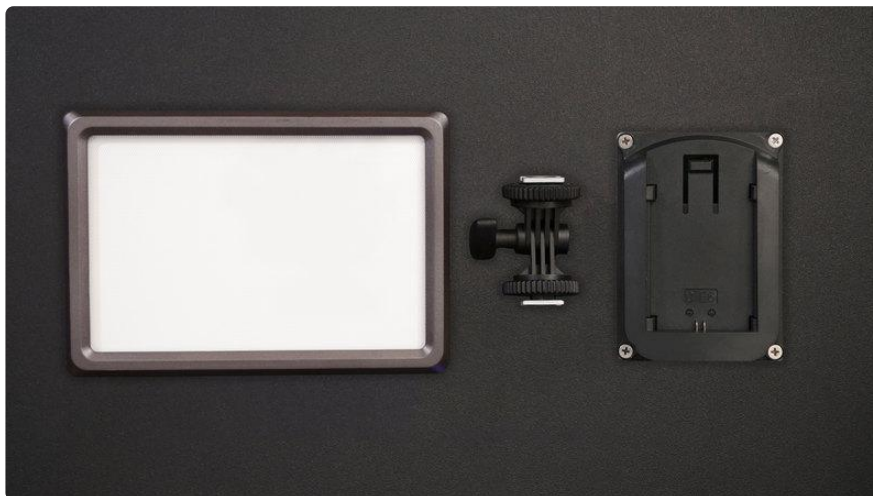
<b>Overview</b>	<b>3</b>
<ul style="list-style-type: none"><li>• <a href="#">Parts List</a></li><li>• <a href="#">Tools &amp; Supplies</a></li></ul>	
<b>Circuit Diagram</b>	<b>4</b>
<ul style="list-style-type: none"><li>• <a href="#">Circuit Diagram</a></li></ul>	
<b>3D Printing</b>	<b>5</b>
<ul style="list-style-type: none"><li>• <a href="#">Printing Settings</a></li><li>• <a href="#">Customize Original Design</a></li><li>• <a href="#">Custom Supports</a></li><li>• <a href="#">Materials</a></li><li>• <a href="#">Tolerances</a></li><li>• <a href="#">Bed Leveling</a></li><li>• <a href="#">Clean up</a></li></ul>	
<b>Assembly</b>	<b>8</b>
<ul style="list-style-type: none"><li>• <a href="#">Remove heat shrink</a></li><li>• <a href="#">Unsolder metal ring contacts</a></li><li>• <a href="#">Clean up wire holes</a></li><li>• <a href="#">Loosen mounting holes</a></li><li>• <a href="#">Bend metal ring</a></li><li>• <a href="#">Run wires through pin cutouts</a></li><li>• <a href="#">Resolder ring to wires</a></li><li>• <a href="#">Recess connections</a></li><li>• <a href="#">Nest connection rings</a></li><li>• <a href="#">Insert screws to adapter</a></li><li>• <a href="#">Mount screws flush to the adapter bottom</a></li><li>• <a href="#">Clean up</a></li><li>• <a href="#">Lights, camera, action!</a></li></ul>	

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## Overview



These LED panels are excellent for photography, video and documenting your next big DIY project. They have a high [Color Rendering Index \(\)](#), which means they can reproduce color more accurately. The panel features a Sony battery mount, but with 3D printing, we can easily convert this to work with any of the camcorder battery holders we have in the shop!



## Parts List

Below is a list of parts used in this project.

- [Camcorder Battery Holder \(\)](#)
- [Camera-Mount LED Panel \(http://adafru.it/2894\)](http://adafru.it/2894)
- [Swivel-Head Pan Tilt \(PTZ\) Shoe Mount Adapter \(http://adafru.it/2464\)](http://adafru.it/2464)

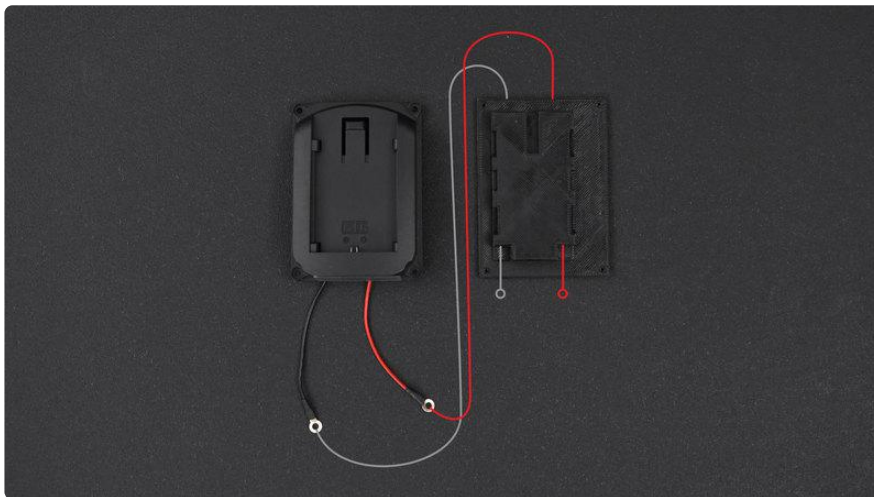
## Tools & Supplies

Here's a list of tools used to get this project completed. If you don't have access to a 3D printer, you can send your parts to [3DHubs.com](https://3dhubs.com) () to have them printed and shipped to you.

- [3D Printer](#) ()
- [Filament](#) () (ABS, PLA, etc.)
- [Screwdriver](#) ()
- [Soldering Iron](#) ()

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## Circuit Diagram



Double check the positive and negative orientation for your battery.

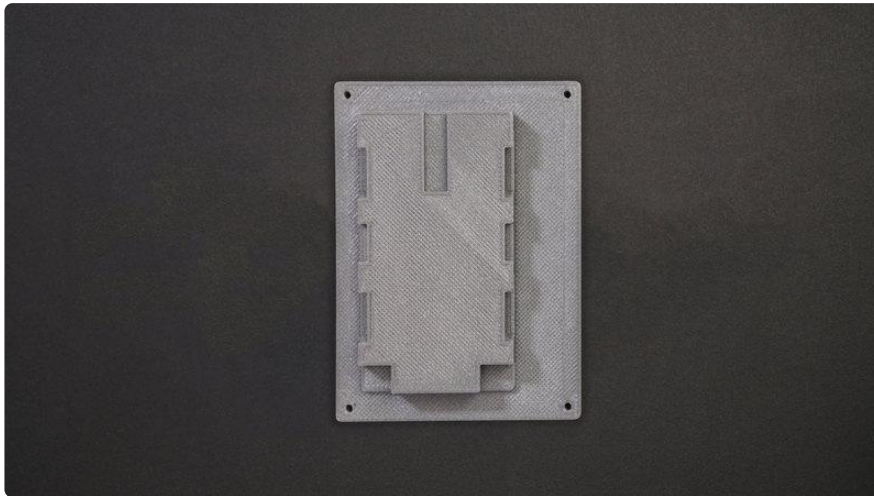
## Circuit Diagram

Sony and Canon batteries have the positive and negative connections swapped.

The negative and positive connections are reversed on Canon batteries, so take note of the arrangement if you are adapting a different battery.

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# 3D Printing



[Download STL](#)

## Printing Settings

Use the settings below for reference. The parts were tested on the Ultimaker 2, Type A Machines Series 1 and the FlashForge Creator Pro. We used Simplify3D to slice the parts using our custom profiles. You can download our profiles for Simplify3D below.

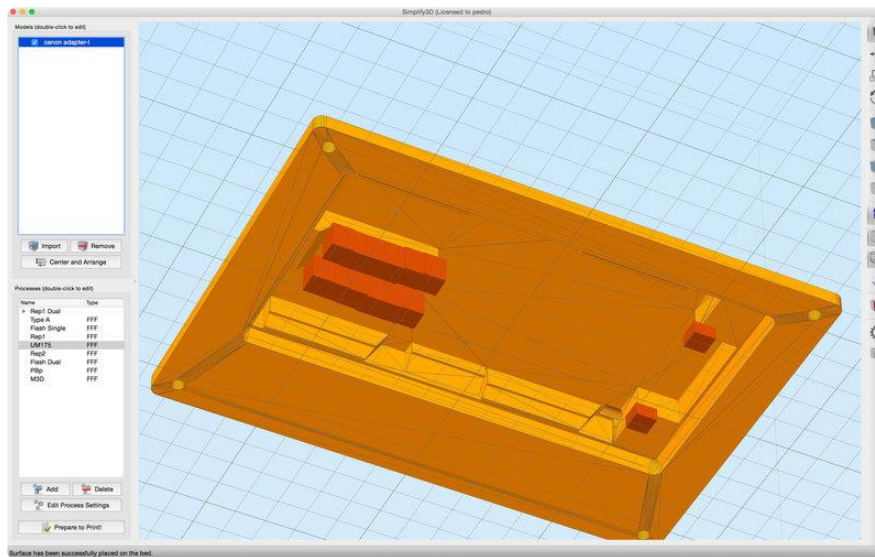
[Printer Profiles](#)

LEDbat.stl	230c Extruder 2mm Retraction 10% infill 2 Shells 60mm/s print speed 90mm/s travel speed custom supprt under the corner openings and middle of center groove	about 2 hours to print
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# Customize Original Design

The parts were designed in Autodesk Fusion 360. The design has been made public, and available to download in different formats if you'd like to use a different CAD software package.

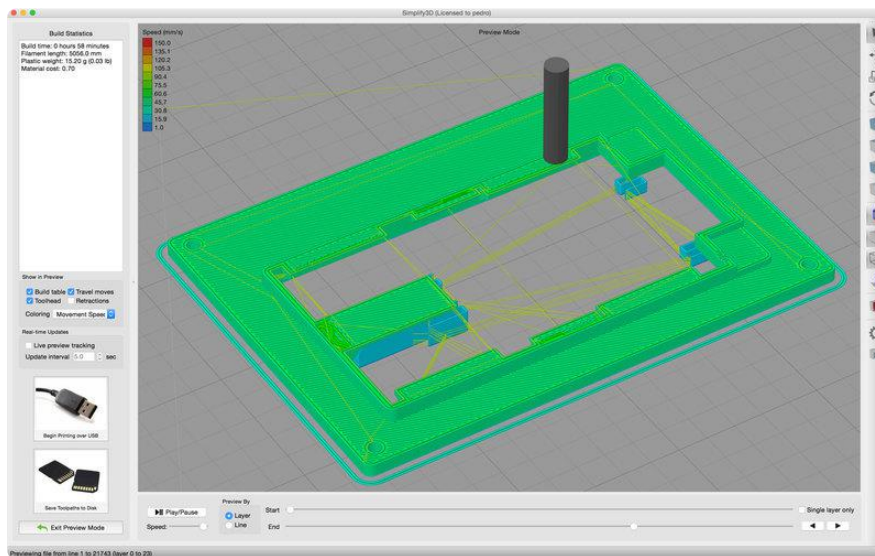
Edit Design



# Custom Supports

We used Simplify 3D to add custom supports under the two corners where the wires exit the adapter. One 4mm pillar to each side.

Add one row of 4mm support pillars to each side of the middle undercut to fully support the center part of the adapter.



## Materials

We recommend using PLA material to reduce warping while printing. Although the parts can be printed in different types of filament, such as ABS, PET and Nylon.

## Tolerances

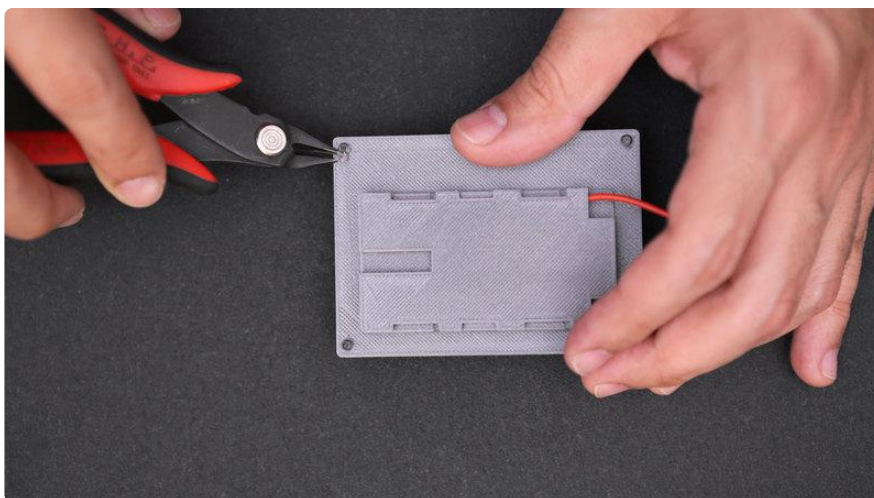
The parts were tested with common printing settings (listed in the table). With a parameter of 2 shells, there's only a few areas where tolerances really matter - the side groove cutouts and the screw holes.

Test fit the part by inserting the part inside the battery slot. Check to see if the groove cutouts tightly slide into place. If the groove cutout is too tight, you can use Simplify 3D's horizontal size compensation option to decrease or increase the size of the groove.

The camcorder battery holder includes six Phillips screws that should fit inside the mounting holes. You can tap the mounting holes with a screw, hobby knife or a screw driver.

## Bed Leveling

Any parts with large surface require a well leveled build plate. If you're using a heated bed, you can minimize warping. Blue tape, build tak, and sticky adhesives can help keep your part flat and adhere to the bed.



## Clean up

If there's any string or artifacts left over from retraction and oozing, clean up the part by trimming them off using a pair of flush snips. Remove any excess material around the screws after mounting so the 3d part lays flat against the back of the LED panel.

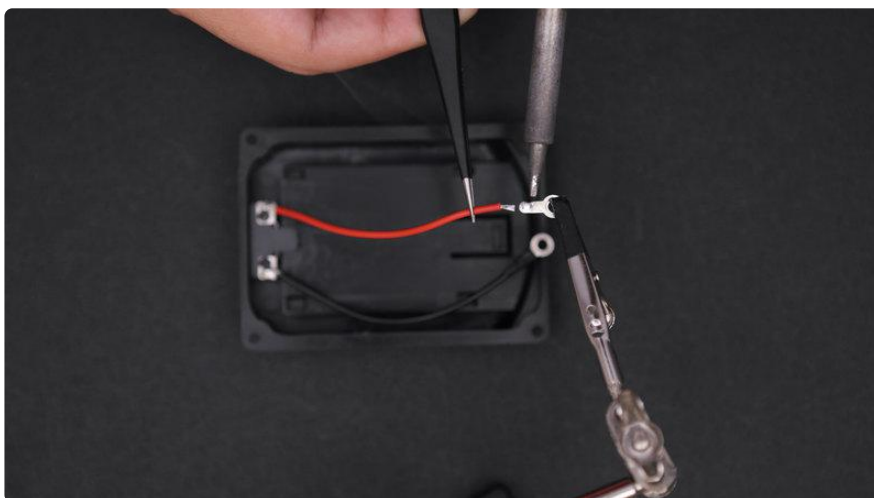
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## Assembly



## Remove heat shrink

To easily pass the wires through the adapter part, we'll need to unsolder the metal ring from the wires. Use a blade or flush cutters to remove the heat shrink to expose the soldered portion.





## Unsolder metal ring contacts

Use a helping third hand to hold the metal rings while you unsolder each from the wire. Set the metal rings aside so you don't lose them!



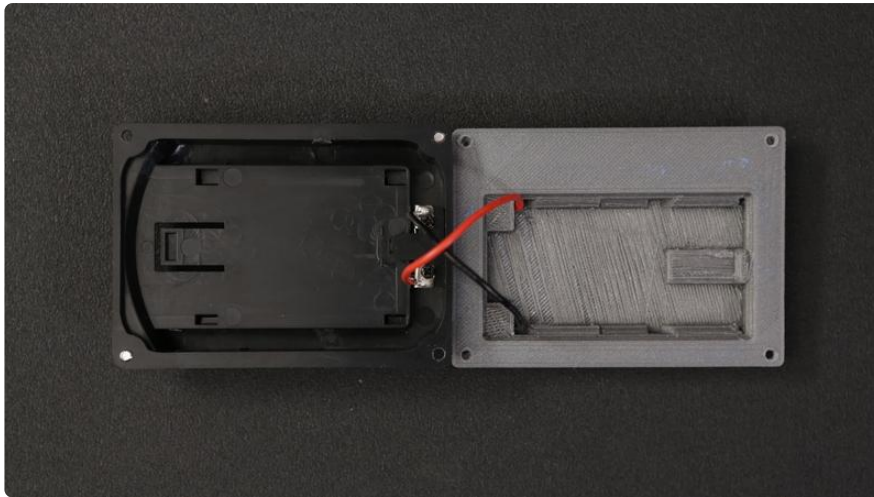
## Clean up wire holes

Go ahead and clean up any strings left over from retraction. You may also need to widen the exit holes a bit so the wires can pass through, you can use tweezers or a screwdriver to help the wire fit through.



## Loosen mounting holes

The mounting hole will be easier to screw through by widening them up a bit with tweezers or a screwdriver.



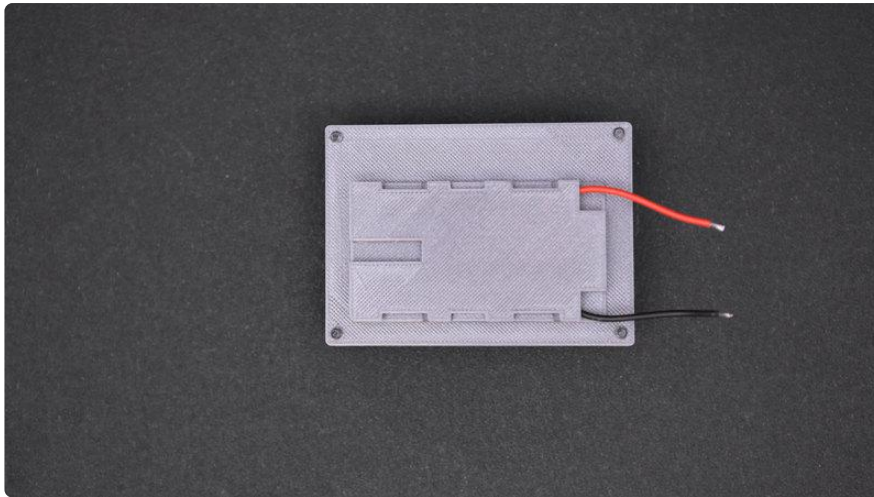
Check desired battery's positive and negative orientation

The negative and positive connections are reversed on Canon batteries, so take note of the arrangement if you are adapting a different battery.



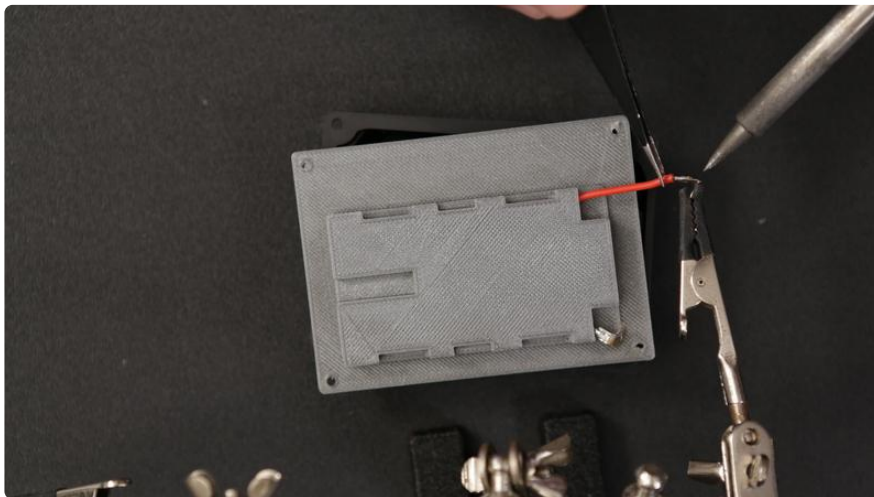
## Bend metal ring

The metal rings will need to be bent so they can make proper contact with the connection pins on the LED panel. Bend the metal rings 90 degrees at the base of the ring like in the picture.



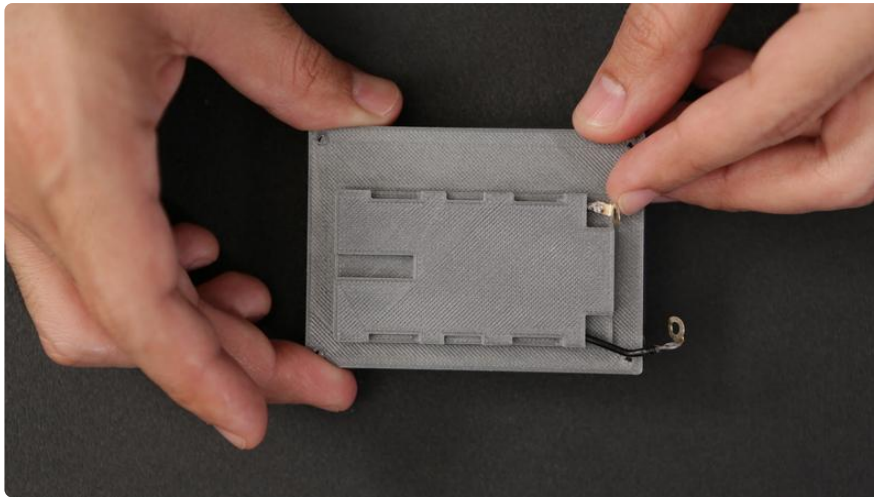
## Run wires through pin cutouts

Pull the wires all the way through the pin cutouts to make it easier to resoldering the rings back on to the wires.



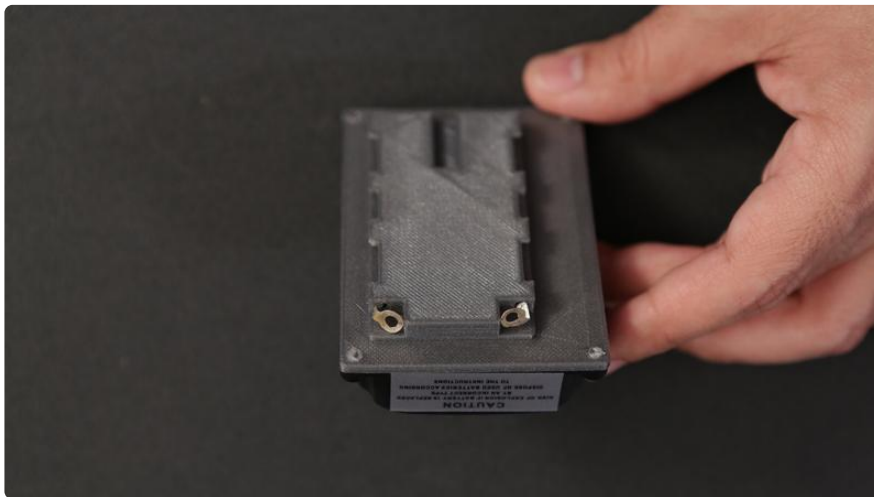
## Resolder ring to wires

Use the helping third hand to hold the bent ring while resoldering them back to each wire. Position the bent corners so they are pointing away from the center.



## Recess connections

After the metal rings are resoldered, push the wires back into the port slots as seen in the picture



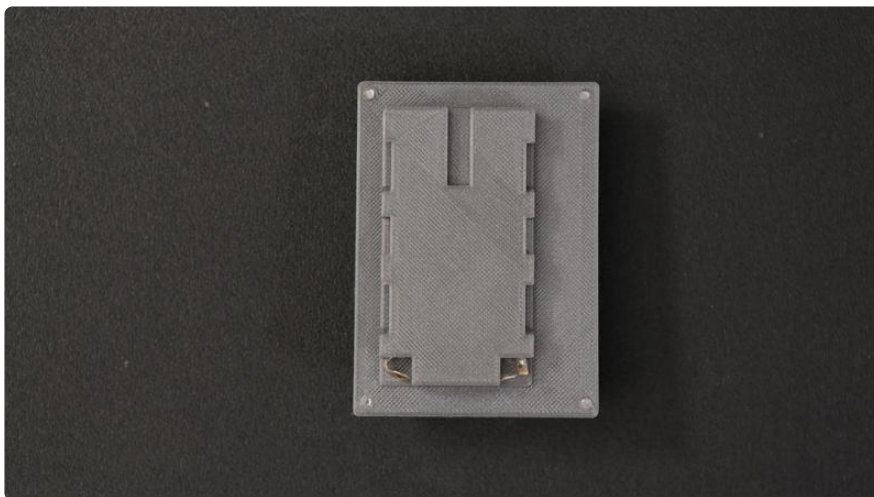
## Nest connection rings

Push the two connections rings inside the part until the metal is held against wall.



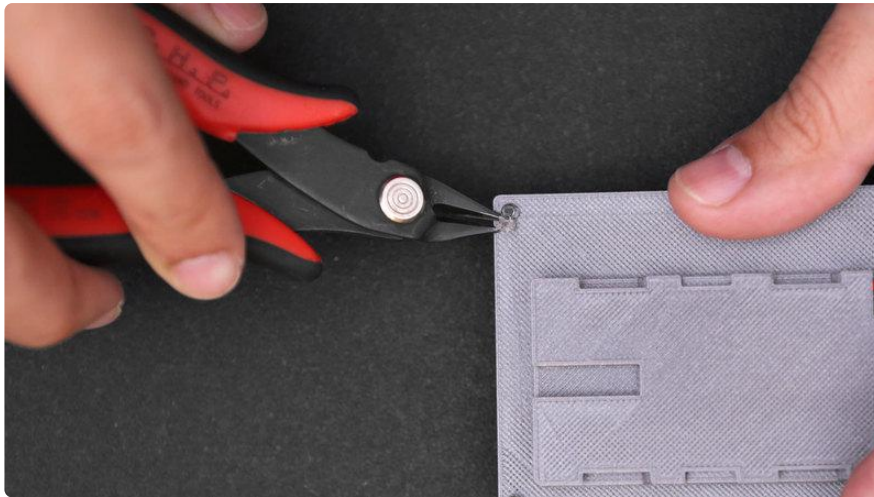
## Insert screws to adapter

Use the included screws that come with the battery holder to fasten the battery holder to the adapter. Alternatively, M3 screws can also be used. You may need to apply force to the screw while mounting.



## Mount screws flush to the adapter bottom

Make sure not to fasten screws the screws all the way through the holes. You'll want the screws to be flush to the back of the adapter piece.



## Clean up

Remove any excess material around the screws after mounting so the 3D printed part lays flat against the back of the LED panel.



## Lights, camera, action!

Add a battery to the holder and slide the adapter portion into the LED battery slot. If the adapter doesn't fit inside the slot, make sure the screws are not protruding all the way through the back of the adapter.