



Li-Ion battery bank with lightning charger



Mupshot

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Summary

Lithium Ion power bank with three charge options

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Correction 8/16/2022. original case was mislabeled and I published a release candidate rather than the actual case final design. apologies. the hatch version was used for fitting and refining the power button operation. if you have CASE.Main.hatchRC1, discard and download the new case.

a modification to <https://www.thingiverse.com/thing:3620024>.

I wanted to create a gift for an apple-head friend, and knowing that most designs and retail battery banks don't use a lightning charger, I found a PCB that had three inputs, one of which is a lightning port.

ABS or ASA recommended for the main body and the port adapter.

TPU suggested for the power button.

Use identical batteries in terms of health and capacity. As this was a gift, I used new batteries from the 18650 store. <https://www>.

18650battery.com/collections/deal-of-the-day/products/eve-29v-18650-battery Higher capacity is more important than discharge rating in this application. discharge required is 3amps, so even if you only use one cell, these are plenty.

the PCB is generic and I found them under several suppliers. the one I used is https://www.amazon.com/dp/B07M836ZV3?ref=ppx_yo2ov_dt_b_product_details&th=1

If able, secure the board to the adapter using M1.5 3mm screws or a nonconductive epoxy under the screw holes. the PCB should slide in easily if you align the lightning cable first and rotate the board towards the front

connect the batteries in parallel, negative to B- positive to B+ seems obvious, but I have to mention it. you will toast the board if you get them backwards.

insert the batteries and adapter piece into the shell before inserting the window cutout. once assembled insert the power button to align with the guard on the adapter so that the button extends under the rail. this is only held in by geometry. the button is conical with the narrower end facing outward. if printed in TPU it should slide in with little force. depending on the dimensional accuracy of your printer, you may find you need to sand down the inner surface of the power button opening. do it carefully, the button relies on only a very slight clearance to prevent it from falling out on its own, but can be extracted if you pull on it.

Model files



portadapterrc1.stl



windowinsert.stl



powerbuttonrc1anotchextended.stl



casemain.stl

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