LED fix in 10000mAh Mi Power Bank 2S

What to do if Xiaomi Mi Power Bank 2S suddenly...

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INTRODUCTION

What to do if Xiaomi Mi Power Bank 2S suddenly does not charge phone nor itself and the only indication is a faint battery level and LED flickering? This may be answer.
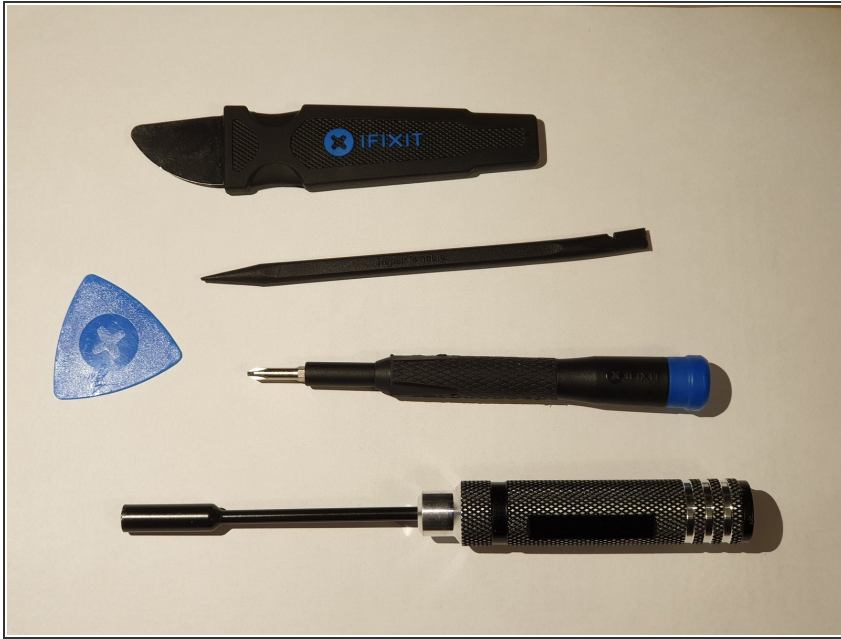
A kid complained about his USB power bank refusing to charge his phone nor itself. Upon connecting the cable and pressing the button the power bank responded with a faint random battery level LED flickering. There wasn't any rattling inside nor noticeable physical damage. I wondered If the battery was too discharged. The only option left was disassembling the unit to see what happened.
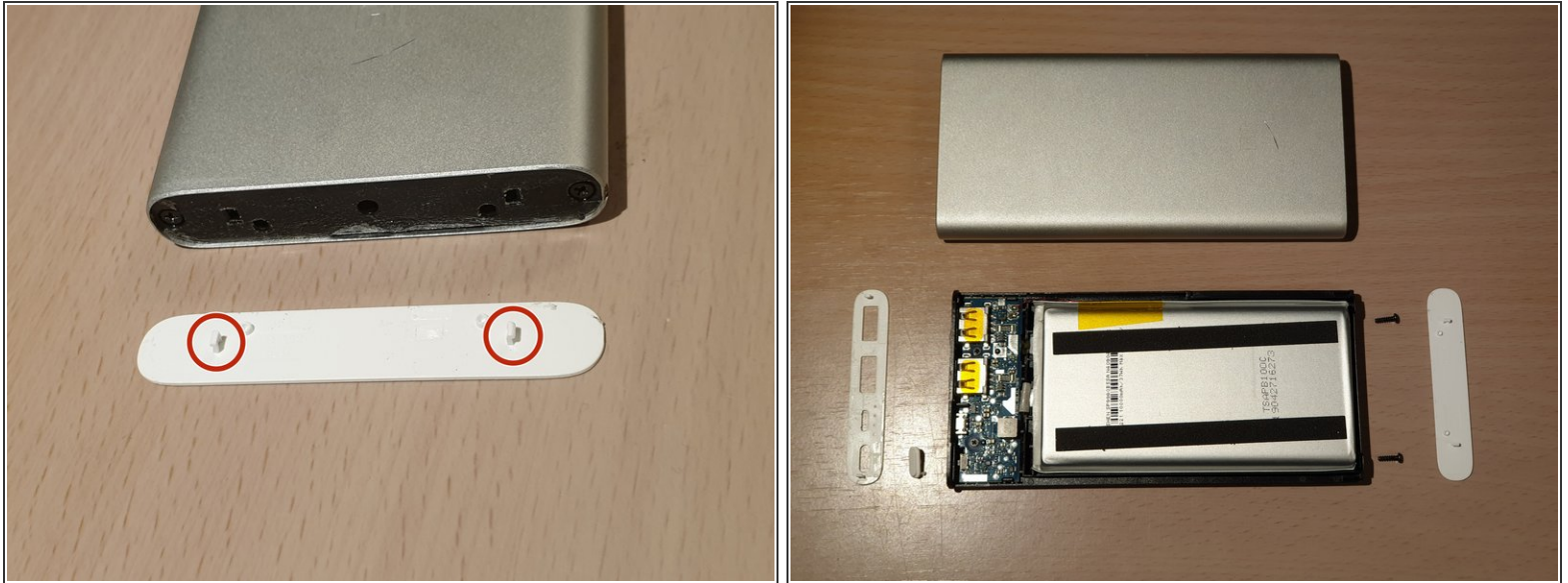
🔧 TOOLS:

- Essential Electronics Toolkit (1)
- TS100 Mini Soldering Iron (1)
- 60/40 Leaded Solder (1)
- Paste Flux (1)

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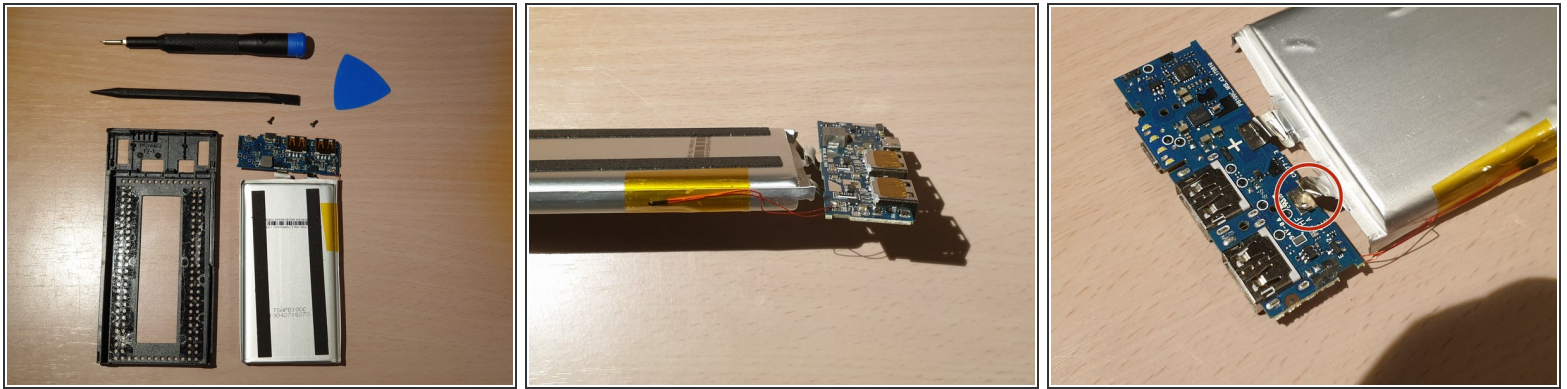
Step 1 — Tools used in disassembly

- Mi power bank disassembling required a semi-soft and flat prying tool for back plate removal and Phillips #0 and Phillips #000 size screwdrivers. You can use a metal spudger to slide in the internal frame if needed. iFixit Essential Electronics Toolkit includes all of the essential tools.

- The nut driver in the photo isn't usually required. I used it to press the bent aluminium case corner back into shape when the internals were pulled out.

Step 2 — Disassembling

- The top and bottom covers are fastened with double sided tape. Insert prying tool near the middle of the bottom cover where the model name is shown. Slide it around cover to loosen the tape.

- (i) The bottom cover has two small pins at the back side near each end. Carefully press one of them with the prying tool towards the center to free that side. Repeat the same action for the other side and then remove the cover.

- Remove the two screws at each corner with the Philips #0 screwdriver.

- Turn power bank with sockets to bottom direction. Slide and pull the internal frame out. If the internal frame is stuck, press several times in the middle of the case and along the case length. Jimmy knife or metal spudger can be used carefully to free the front side plate from outer case.

- (i) My device had a slightly bent corner at the top side near the button as result of dropping damage. The bent metal prevented the removal of the internal frame. In order to free it for removal, it was necessary to remove the taped cover and button (it has the same pins as the bottom cover, be careful) The bent metal was restored by pressing it down.

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Page 4 of 7

Step 3 — Separate components from frame

- The charge controller circuit board is fastened to the frame with two small screws and two pins at the sides. Remove the screws with the Philips #000 screwdriver. Carefully press fixing pins to release the board.

- Battery is glued to frame with weak glue. Use prying tool or spudger to loosen the battery from the frame.

- ⚠ Pay attention to temperature sensor which is attached to one battery side with kapton tape. Don't tear it off on battery removal.
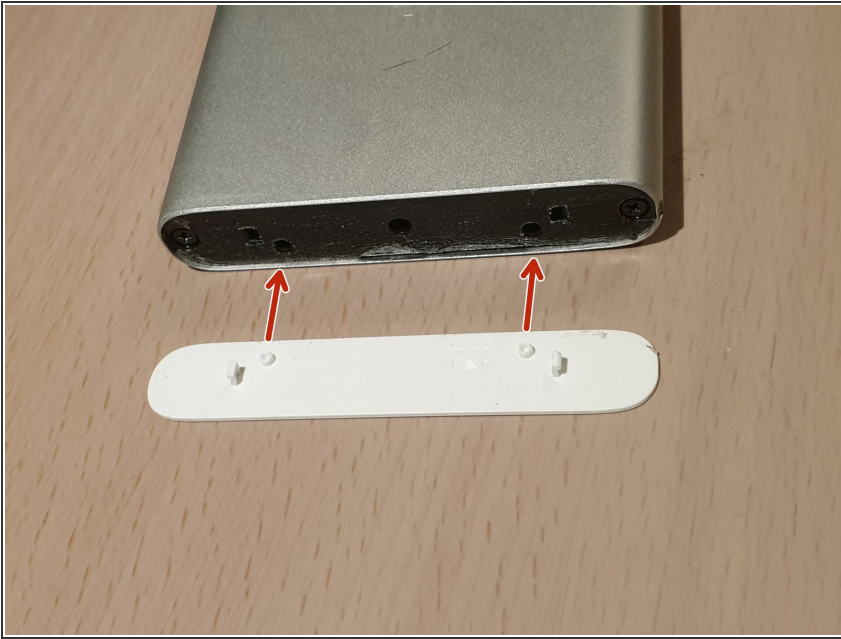
- ⓘ After component removal from the frame, the failure cause became clear. The negative battery terminal was torn off of the controller board. It may have gotten stressed on assembly and tore later on impact from dropping onto pavement or other hard surface. The battery was measured at 4.1V (nearly full).

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Step 4 — Fix teared battery terminal

- Remove the bent battery terminal metal piece from the controller board battery pad. If removal of the bent piece is not possible, then flatten the bend. Drop a solder blob over the pad.

- Put solder on end of battery terminal strip. Keep temperature between 250..270C degrees.

⚠ Lithium batteries degrade in heat. Put solder on battery terminal strip fast as possible.

ⓘ Bend battery terminal strip with tweezers in slight "U" shape. It will put less stress on on strip while bouncing around.

- Solder battery terminal to controller board pad.

ⓘ Soldering the bent / torn battery terminal solved the flickering LED issue. The power bank now can charge a phone and itself.

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Step 5 — Assembling

- Assemble power bank back in reverse order. Install controller plate and battery back in frame.

- ⚠ For the battery installation, try to place it in a position where the terminal strips are not stressed. It may prevent damage requiring disassembly should an accidental drop occur.

- Insert the assembled internal frame into the outer case. Screw it back down with the two #0 screws. Set the cover back into place.

- ⚠ The back cover has only one possible orientation. There are two protrusions at the back side while the outer case bottom has two holes to receive them. See the photo.

Xiaomi Mi Power Bank 2S appeared easy for basic repairs. Glued parts are easy to remove and they stick back just fine. Internals are fixed by screws. Other Mi USB power banks from 2 line (2c, 2i) are built in same way.

Described USB power bank have good charging capacity and is easy for everyday use. Keep in mind that design is not rugged and battery terminals inside are thin metal strips. Try to avoid dropping it on hard surfaces. Kid admitted that he droped his power bank several times - hard to hide dents at outer case corners :)