Battery powered esp e-paper/e-ink display

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VIEW IN BROWSER

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Summary

Uses the Waveshare 7.5" ePaper with ESP8266 driver board.

0.94 hrs	2 pcs	0.20 mm	0.40 mm	PET	16 g	Prusa MINI / MINI+

Hobby & Makers > Electronics

Tags: display battery esp8266 esp waveshare eink epaper homeautomation waveshare75inch

To close the two halves, push a piece of filament through the holes on top. The small slot in the top middle is for gripping to a nail.

1. Desolder the pins on the bottom of the ESP8266 driver board to make it thinner. (Tip to make this easier: lift up and remove the plastic between the pins with a screwdriver first)
2. Hook up a Li-Ion charger module and battery to Vin and GND. To get battery readout, connect A0 and Vin with a 100k resistor. (Then calibrate the adc readout with a multimeter)
3. To enable deep sleep, short D0(GPIO16) to RST.

4. The display is a tight fit, to make sure it works the first time, lower the extrusion multiplier or slice at 100.5% size.
5. The charger module is held in place with strong double sided tape (eg. Tesa 4965)

The driver board has NO PROTECTION DIODE between Vin and Vusb!!! Always disconnect the battery before plugging in usb on the driver board!

It's using 24mA when idle, ~70mA when refreshing and 1.4mA when in deepsleep. With hourly refresh I get about two months of runtime.

This is what I used:

- 2x https://www.berrybase.de/strom/batterien-akkus/industrieakkus/lp-785060-lithium-polymer/lipo-akku-3-7v-2500mah-mit-2-pin-jst-stecker
- https://www.berrybase.de/strom/batterien-akkus/ladegeraete/ladeplatine-f-252-r-3-7v-liion/lipo-akkus-mit-ausgang-usb-type-c-buchse-l-246-tpads-1000ma
- https://www.berrybase.de/sensoren-module/displays/epaper-displays/7.5-800-215-480-epaper-display-hat-f-252-r-raspberry-pi-v2
- https://www.welectron.com/Waveshare-14138-e-Paper-ESP8266-Driver-Board_1

Model files

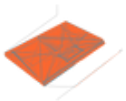
epapercase-front.stl

epapercase-inlay.stl

Print files

epapercase-front_02mm_petg_mini_57m.gcode

PET 0.40 mm 0.20 mm 0.94 hrs 16 g Prusa MINI / MINI+



epapercase-inlay_02mm_petg_mini_1h42m.gcode

PET | 0.40 mm | 0.20 mm | 1.70 hrs | 30 g | Prusa MINI / MINI+

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