



Summary

Design a miniature battery powered mobile device charger. Since the average smart phone charger has a 5V at 2A output, the design should be similar. The design should have a supplied micro-USB input cable to charge the battery and a USB-A female output as to adapt to any device charger cable. Future iterations may adapt USB-C (input and output) and a “fast-charge” controller for fast battery and device charging. The design should also include a latching momentary switch for usability. One button press turns the device on, while a long press turns the device off.

Design Specifications

Input: 3.7V Lithium-Polymer battery with at least 2200mAh capacity

Output: 5V at 2A

DC boost converter: Texas Instruments TPS61230

Max physical constraints: 50mm x 50mm x 12mm

Target market price: ~\$20

Target Cost: ~\$10

