

Wearable Power Bank

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Project Objective

Build a wearable power bank capable of providing emergency power to a phone that is comfortable and stylish enough to wear every day.

Design Metrics

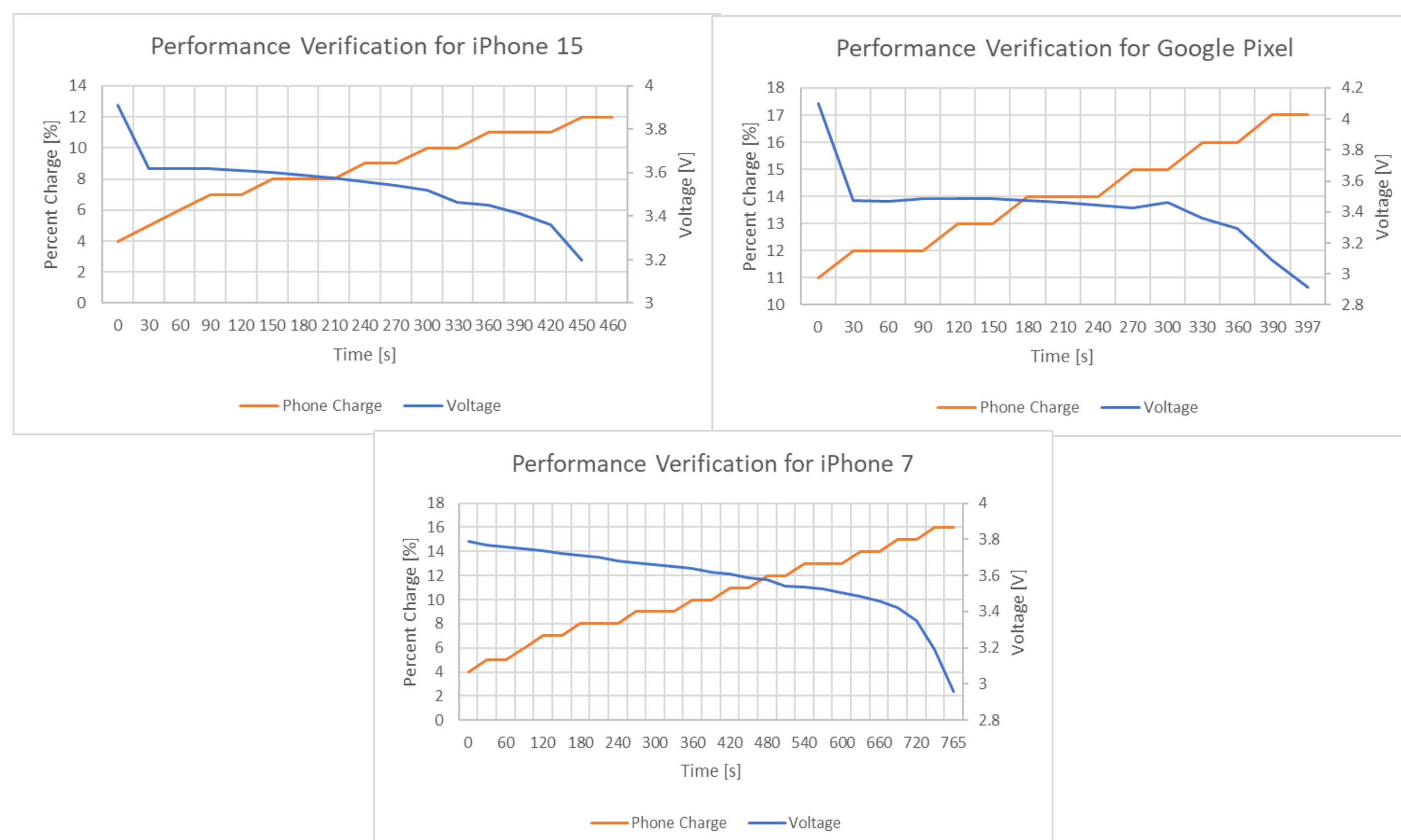
- Contains a **300+ mAh** battery
- Waterproof up to **IPX-5** standards
- Charges a phone in less than **25 minutes**
- Weighs less than **100 g**
- Includes a **6+ inch** charging cable
- Compatible with **apple bands**
- Aesthetically pleasing design
- Shows battery state
- Storable charging cord
- Wearable while charging
- Safe to wear
- Lightweight and comfortable to wear

Electronics

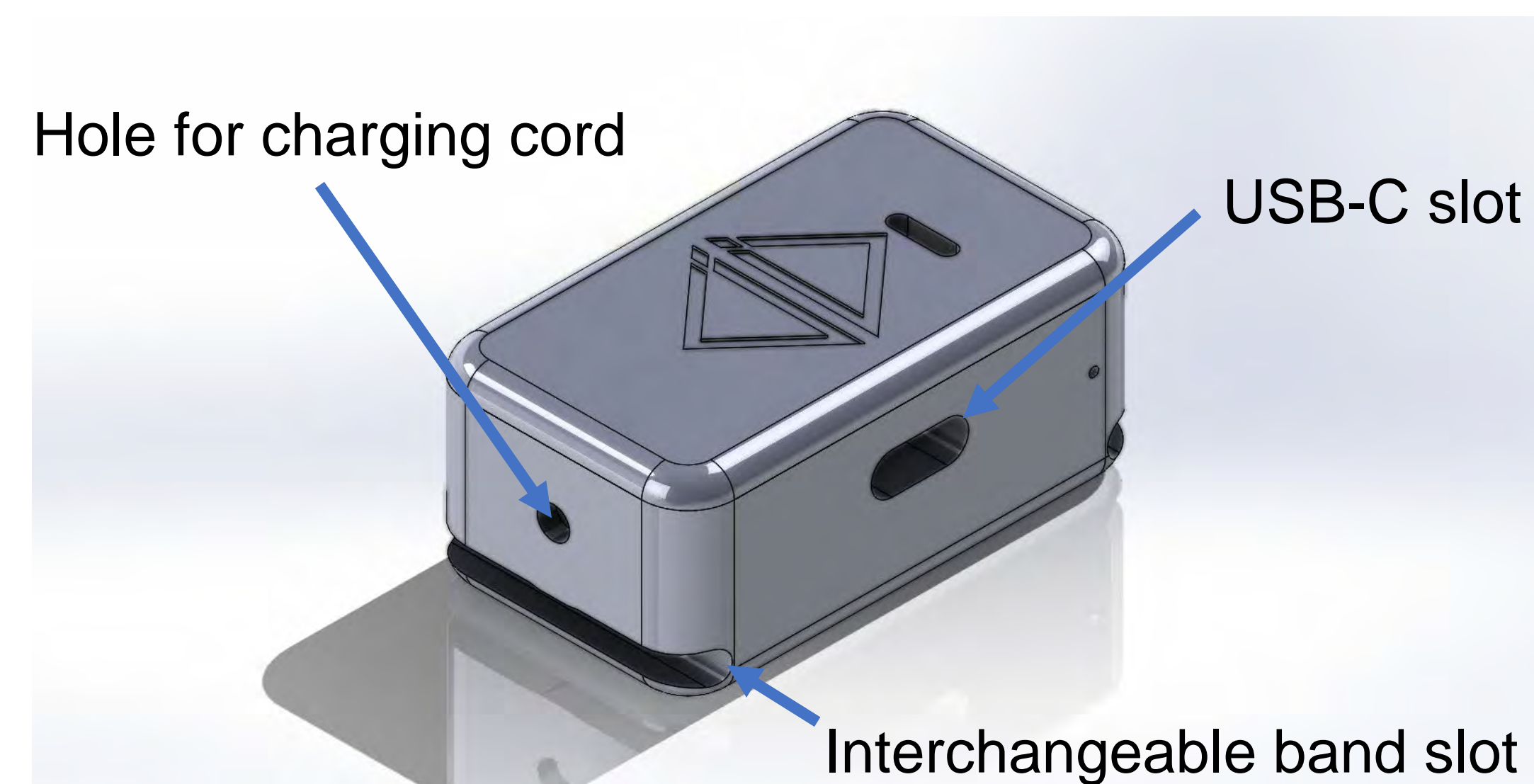
iPhone 15 charging: 1.47A @ 5V, $t(\Delta 5\%) = 4:00$.

Pixel (Google) charging 1.42A @ 5V, $t(\Delta 5\%) = 5:30$.

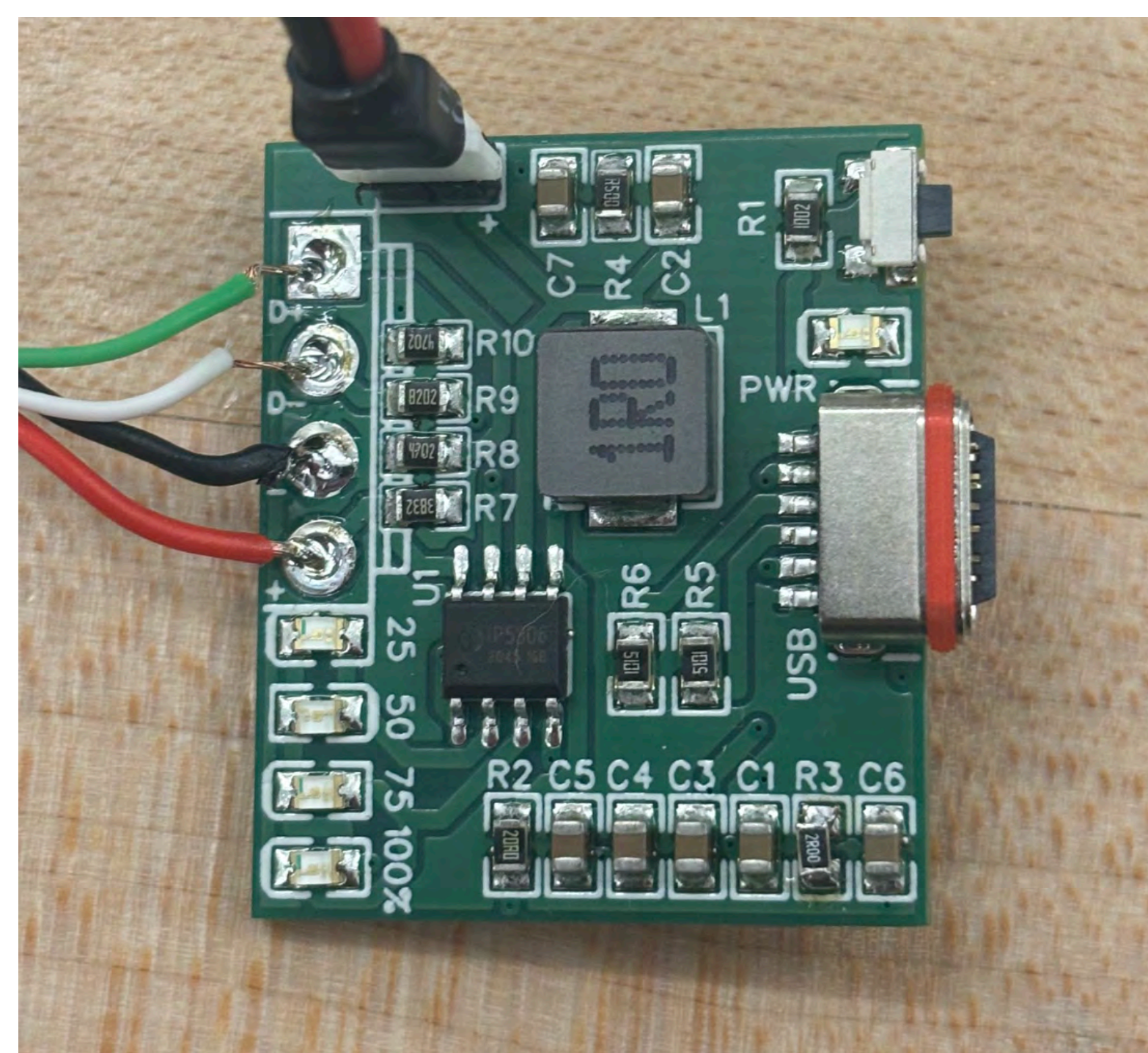
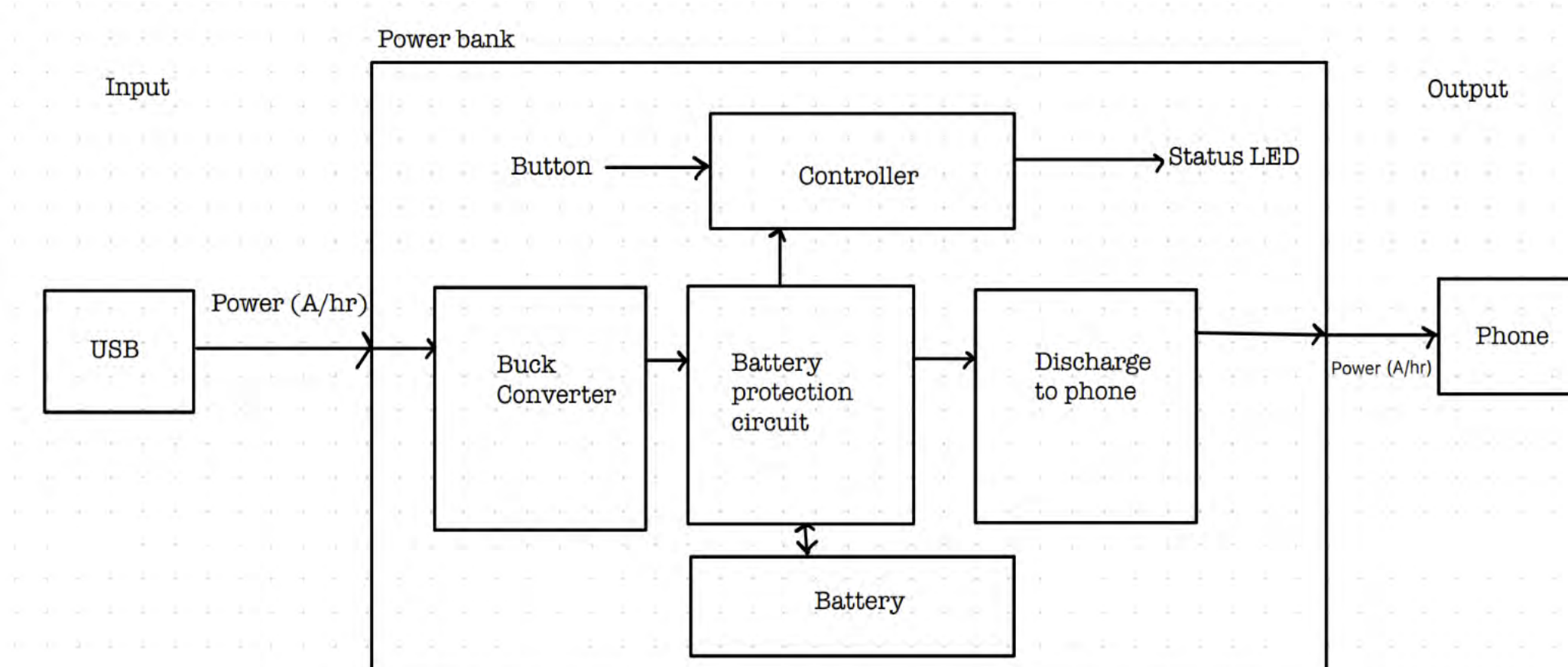
iPhone 7 charging: $t(\Delta 5\%) = 4:30$.



Housing



Printed Circuit Board



Achieved Metrics

- Contains a **380 mAh** battery
- Waterproof to at least **IPX-5** standards
- Charges a variety of phones in less than **10 minutes**
- Weighs **40 g**
- Includes a **4 inch** charging cable
- Compatible with **apple bands**
- Aesthetically pleasing
- Shows three battery state on the display
- Storable charging cord
- Wearable while charging
- Safe to wear
- Lightweight and comfortable to wear

Conclusion

We designed a light weight, waterproof housing for the electronics that is compatible with apple bands. We designed a PCB to charge an internal battery and later discharge the battery to a phone.

User Feedback

- Aesthetically pleasing
- Comfortability
- Ease of use

