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Bike Tracker

I chose to make a bike tracker for my project because I regularly forget where I have locked my bike. This product is for anyone who has left their bike in one of the many bike lots on campus and has the added features to gather data on how the bike ride is going.

Overview

This is a compact bike tracker that provides real time location and velocity data. The device uses TickTag, a tiny GPS logger module developed by Trichi which is low cost, tiny form factor and low power density. In addition to the module, the device will include an accelerometer and heart rate monitor. The device will be secured on the handles and data can be retrieved from the bike using the USB-C communication port.

Specifications

- Accelerometer rated for +/-4g
- Location data at $10m^2$ accuracy
- GPS data stored on 128kB EEPROM chip (in module)
- GPS TickTag LiPo battery powered (in module)
- USB-C communication for data collection from GPS
- I2C Communication between Heart Rate Monitor and microcontroller
- RTC for date/time + speed calculations
- On board power conversion for heart rate monitor and microcontroller ports
- Button for push to start accelerometer data collection
- ~8 hour battery life for a full day of activities