

Smart Garden

Team GrEEen

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Problem Statement

Many plant owners face the problem of how to care for their plants when they are too busy to constantly monitor these plants. To monitor these plants, moisture, temperature, and light exposure are key factors that need to be detected. However, it can prove difficult to monitor each of these aspects of the plant's life constantly.

Problem Solution

Our proposed solution provides an all-in-one device that will have three different sensors to monitor the moisture level, temperature level, and light exposure of the plants that are growing. The device will also send these plant owners updates on their plants using Wi-Fi through a mobile application on their phones. Through the mobile application, the plant owners will have an easier way to track how their plants are doing. The notification system in the mobile application will help to ensure you never forget about a plant.

How It Works

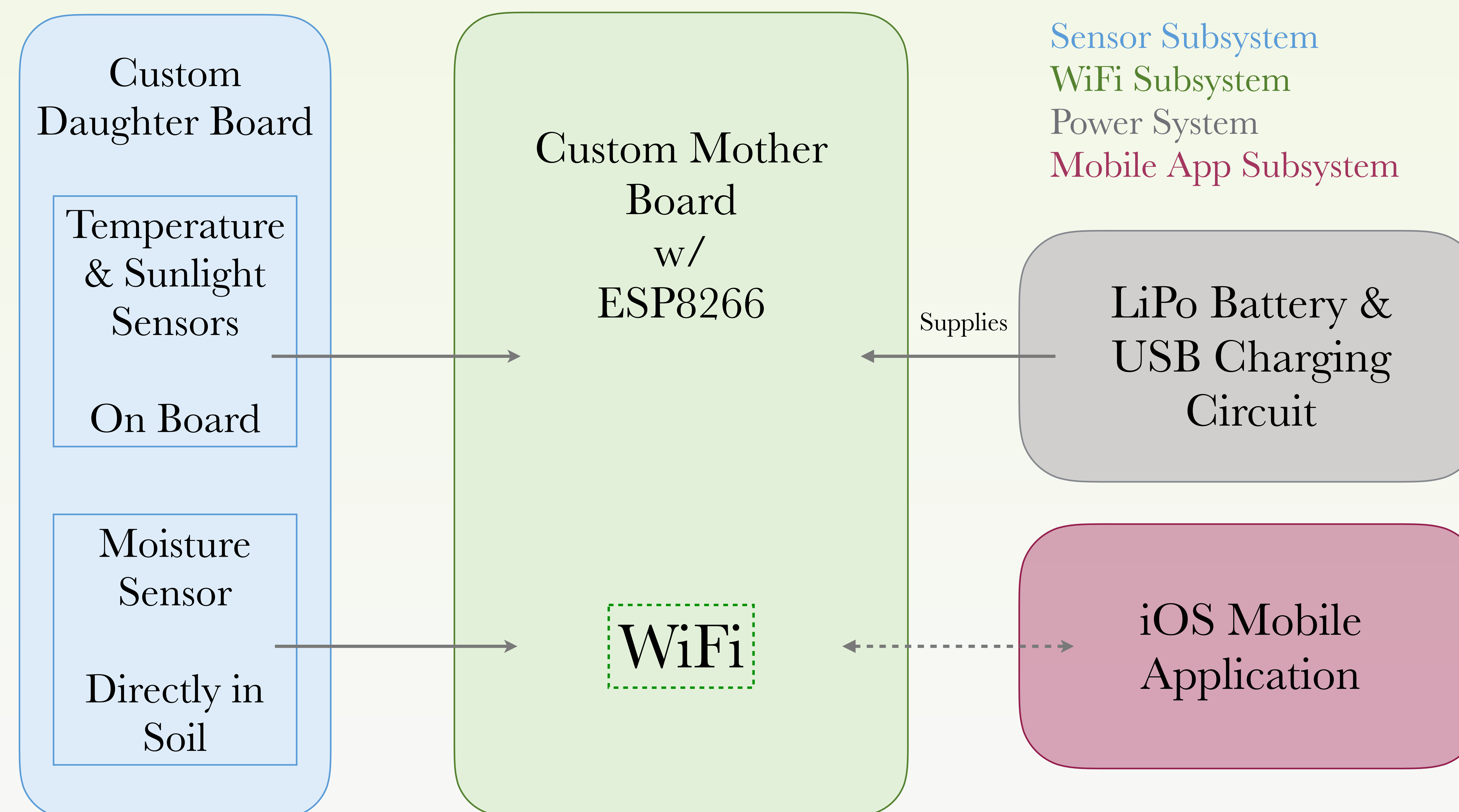
Features

- Monitors plant temperature, moisture, and sunlight levels
- Transmits sensor values via WiFi using the MQTT protocol
- iOS Mobile Application notifies user at critical moisture levels
- iOS Mobile Application displays sensor values for each sensor
- Powered by rechargeable single cell LiPo battery

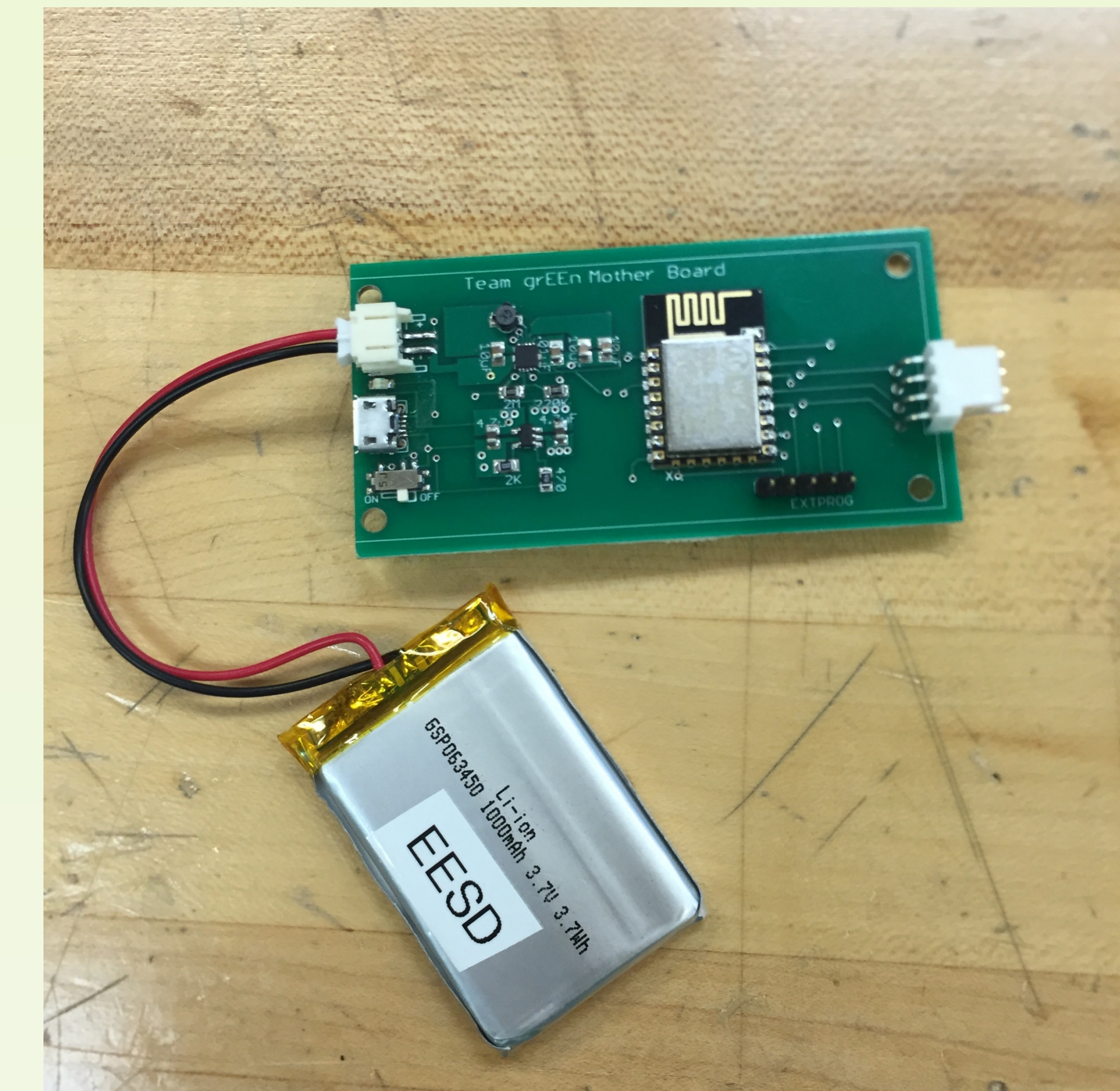
System Components

- Mother Board
 - Responsible for battery charging and WiFi connectivity
- Daughter Board
 - Houses the three sensors and communicates sensor values to the Mother Board
- iOS Mobile Application
 - Provides a user-interface for the system and receives sensor value updates

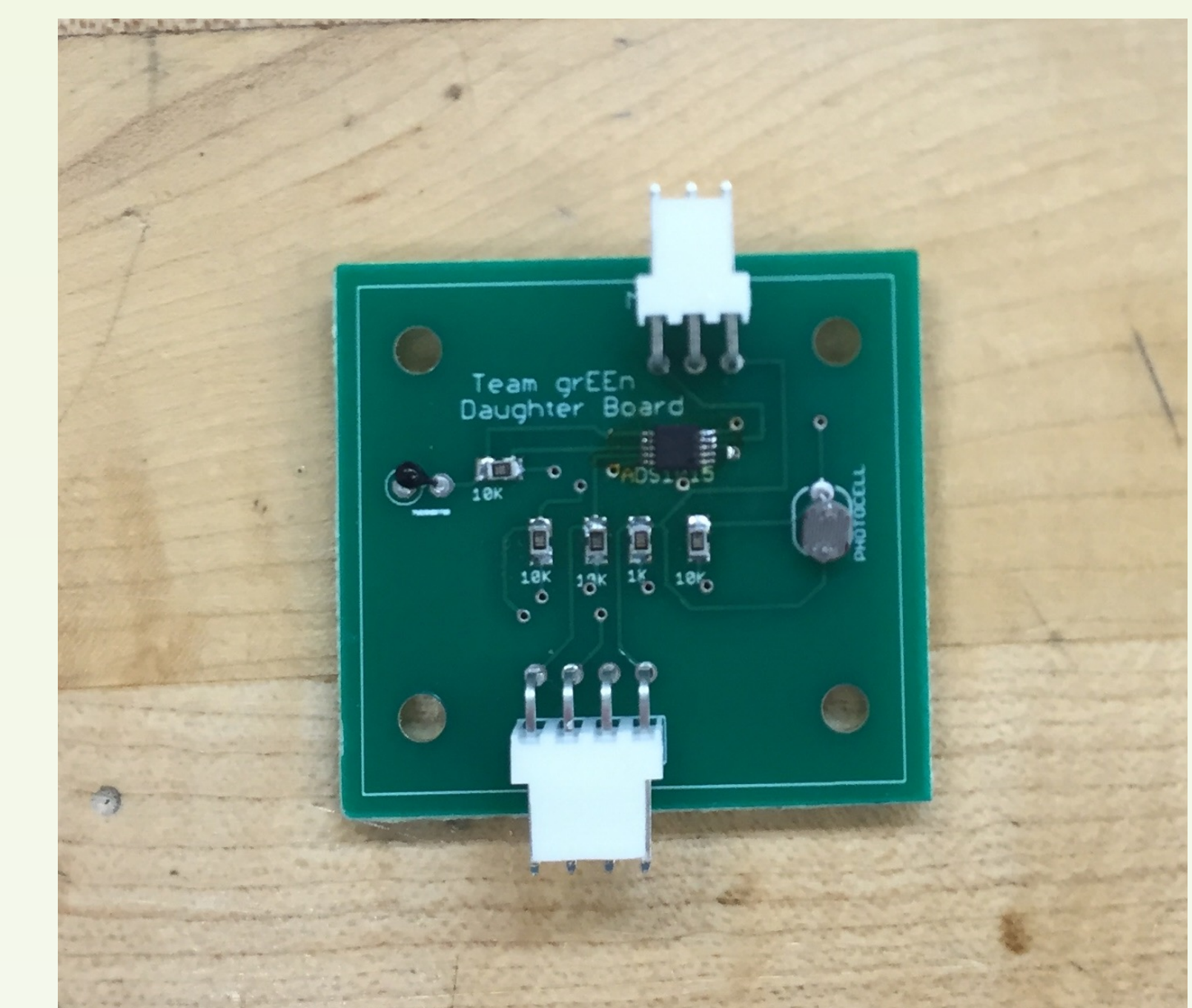
Subsystems



Board Designs



Mother Board



Daughter Board (sensor board)

For More Information

Visit <http://seniordesign.ce.nd.edu/2016/DesignTeams/green/index.html> to learn more about the Smart Garden.



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