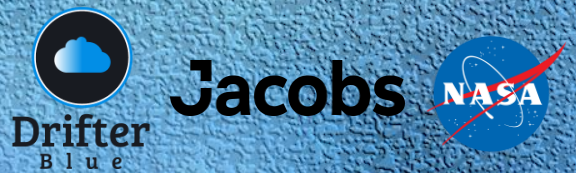# E1.03 Drifter Blue

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Project Overview

Drifter Blue is the continuation of a previous Senior Design group's efforts, the mini-Drifter. The objective is to develop a flotation device that can sustain harsh weather environment, accurately send, and record data through a microcontroller. Additionally, it should have the ability to self-sustain over long periods of time and maintain cost efficiency while also allowing for future improvement through various modulation.

Business Need

Sponsored by Jacobs Technology, the Drifter Communications Project is designed to assist the Earth Science and Remote Sensing (ESRS) unit of NASA with tracking localized climate change within the region.

Requirements

Remote Data Access: Data must be downloaded to a device (phone/tablet/laptop) through short- and long-range networks

Time of Operation: The device must be continually operational for a 6-month to 1-year time frame
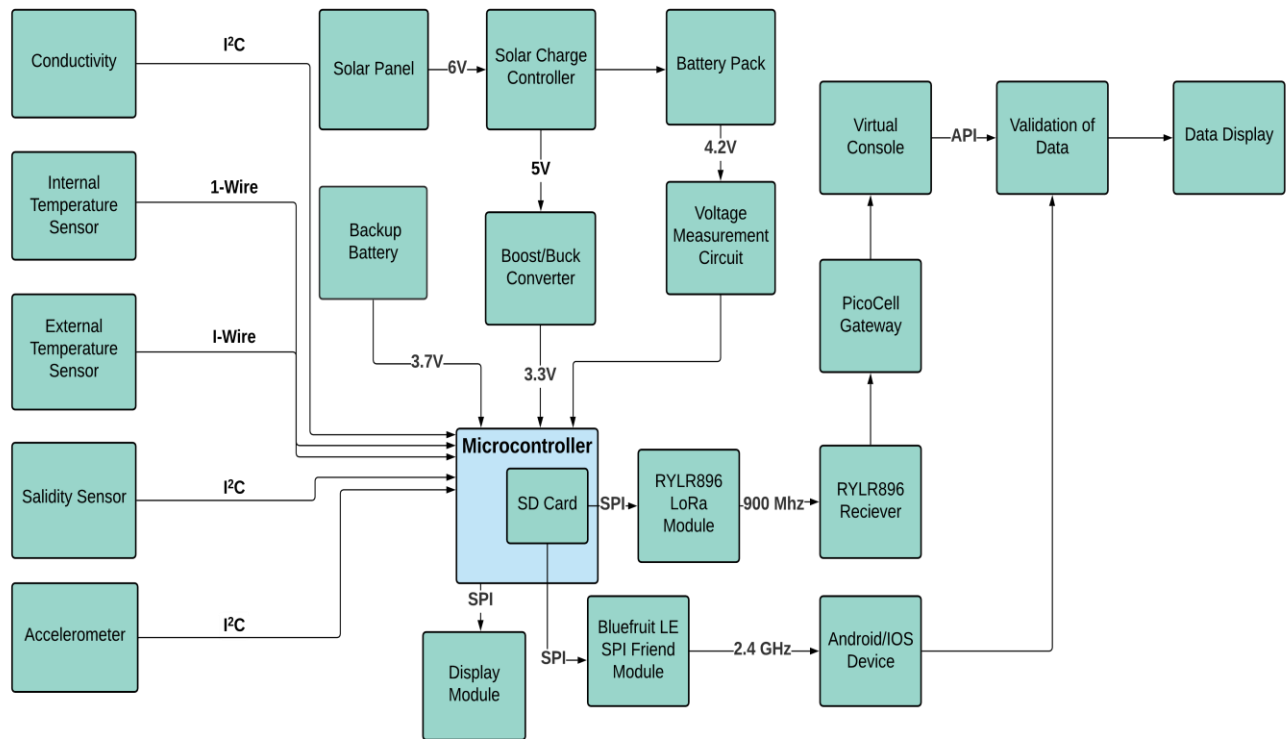
Testing: Must complete at least 2 weeks of testing in water of each mode to ensure product functionality

Replicability: Device components must have the ability to be replicated by high school students

Accurate Data: Data from the device should convey accurate values from the sensors

Durability: The device must remain serviceable in its surrounding environment during the useful life without damage or unexpected maintenance

Design

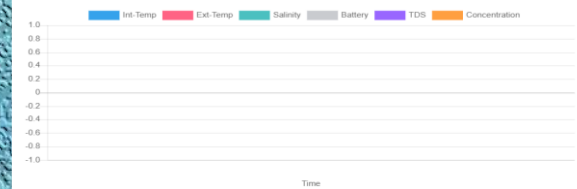| Power Mode	Mini-Drifter	Drifter Blue
Sleep	11.6 mW	13.25 mW
Sensing	1.68.33 mW	334.98 mW
Active	N/A	196.06 mW

Next Semester Actions

- Full integration of system
- Unit Testing and analysis
- 4-week deployment testing in water
- Fully documented User Manual

Data Visualization

User Interface

- E-Ink Display
- Reset Button
- Web Application
- Smart Device Application (BlueFruit Connect)

Results to Date

- Designed long and short-range communication modules
- Power budget drawn
- Parts Ordered