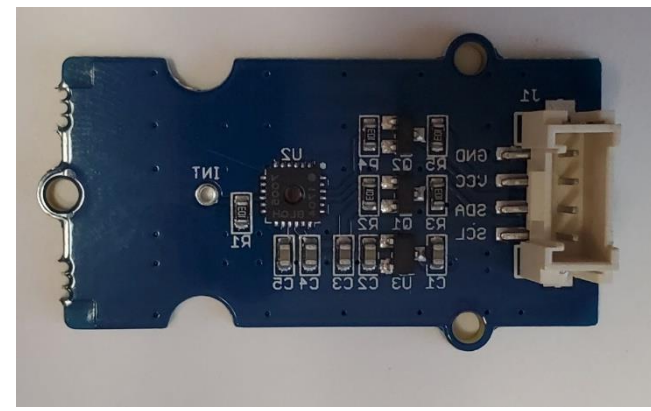
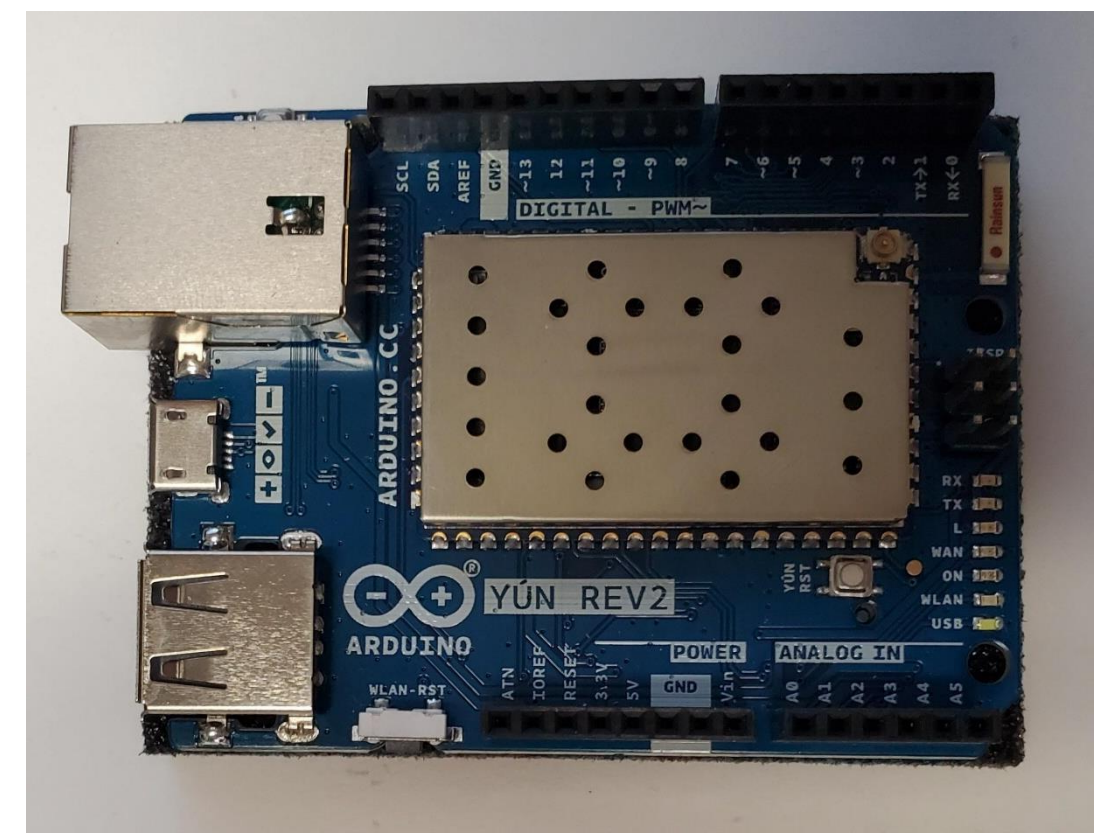


Multifunction Wireless Sensor

Team S8: Jason Brehmer, Tommy Bui, Corben Evens, and Brian Kingsley

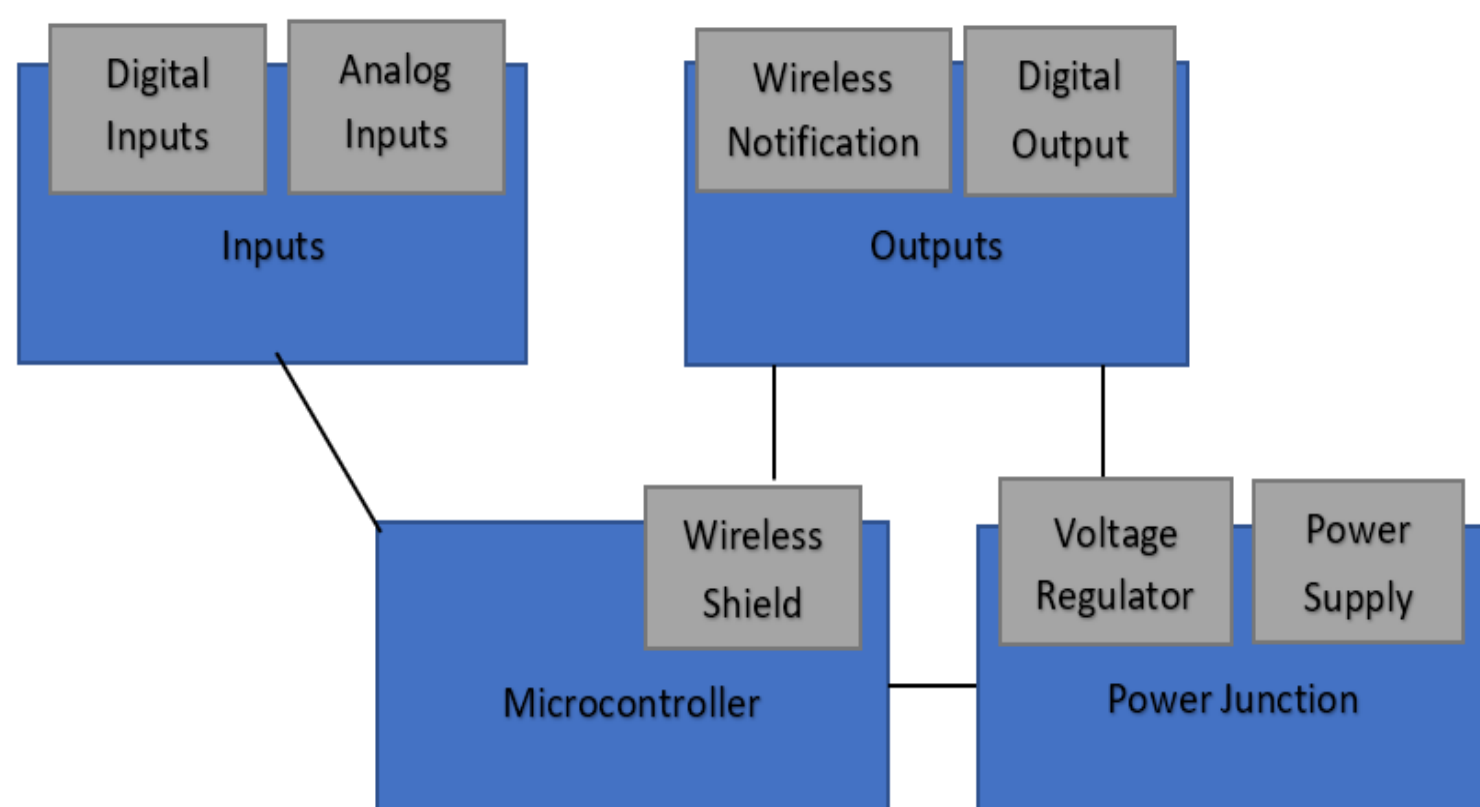


Multifunction Wireless Sensor (Left) and Temperature Sensor and Float Sensor (Above)
Arduino Yun REV2 Microcontroller (Below)



The background of our project started with half of our group members working at local facility performing maintenance. During their time there, the company lost thousands of dollars because they did not have a reliable way to monitor what was going on in different sections of the facility. Many industrial/manufacturing companies need a reliable way to automatically monitor various areas in their facility. Such as but not limited to, temperature, humidity, and water level. The main objective of our project is to have a reliable means to monitor various sensors and relay that information via email and/or alarm system to the appropriate personnel.

The Multifunction Notification System monitors up to temperature, two analog inputs (currently using one for the float sensor), and two digital inputs and once it notices any input listed outside parameters (end user set) will notify via email and set off an alarm on the digital out. The whole system is accessible to modify parameters and priority of inputs over network connection. The whole system is in a water-resistant enclosure, that can be easily opened to access the relays for the outputs and the screw terminals for inputs.



Input:

Temperature sensor: Power consumption 10 mA

Float sensor power consumption 10 mA

One Addition Analog and Two Additional Digital Sensors for expansion.

Output:

Relays: Up to 8 outputs at 10 Amps and up to 220 V AC

Microcontroller (mc):

Arduino Yun REV 2: Built in Wifi shield that consumes 150 mA while transmitting and 50 mA while idling, SD card reader 10 mA, and board itself 50 mA.

Power Junction:

Power supply in 120 V AC → NOYITO AC to DC Precision Buck Power Supply Module to take 120 V AC down 12 V DC at 2 Amp → 1. supplying REV 2 with adequate power and amperage to run → 2. Voltage regulator to supply relays with 5V DC → relays to outputs anywhere 120-240V AC and up to 10 Amp.