

Project Name

envwi sense

(Environmental Wireless Sensor)

Summary and Function

envwi sense will monitor temperature and humidity. It will consist of at least two slave nodes that will communicate with a master node. The master node will retrieve temperature and humidity sensor values from each slave node.

Inputs & Outputs

The inputs to the system will be the readings from the sensors. The output will be the sensor readings in a human readable format.

Specifications

- The temperature sensor will measure from 0°C to 38°C, with an accuracy of $\pm 3^\circ\text{C}$.
- The humidity sensor will measure relative humidity from 15% to 85% at a temperature of 20°C, with an accuracy of $\pm 8\%$ relative humidity.
- The limits listed above will be tested by placing the designed slave node in the Advanced Manufacturing Center's controlled environment. The humidity and temperature will then be varied to verify the range and accuracy of the designed sensor circuits. The outputs from the designed slave node will be compared to the data logged by the controlled environment control system.
- One slave node will use unconditioned sensors and perform analog signal processing to allow for microcontroller readings.
- The master node will be capable of communicating with at least two slave nodes and displaying the data on a user interface.
- The system will be capable of updating sensor data in under ten seconds with a two slave node system.

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