

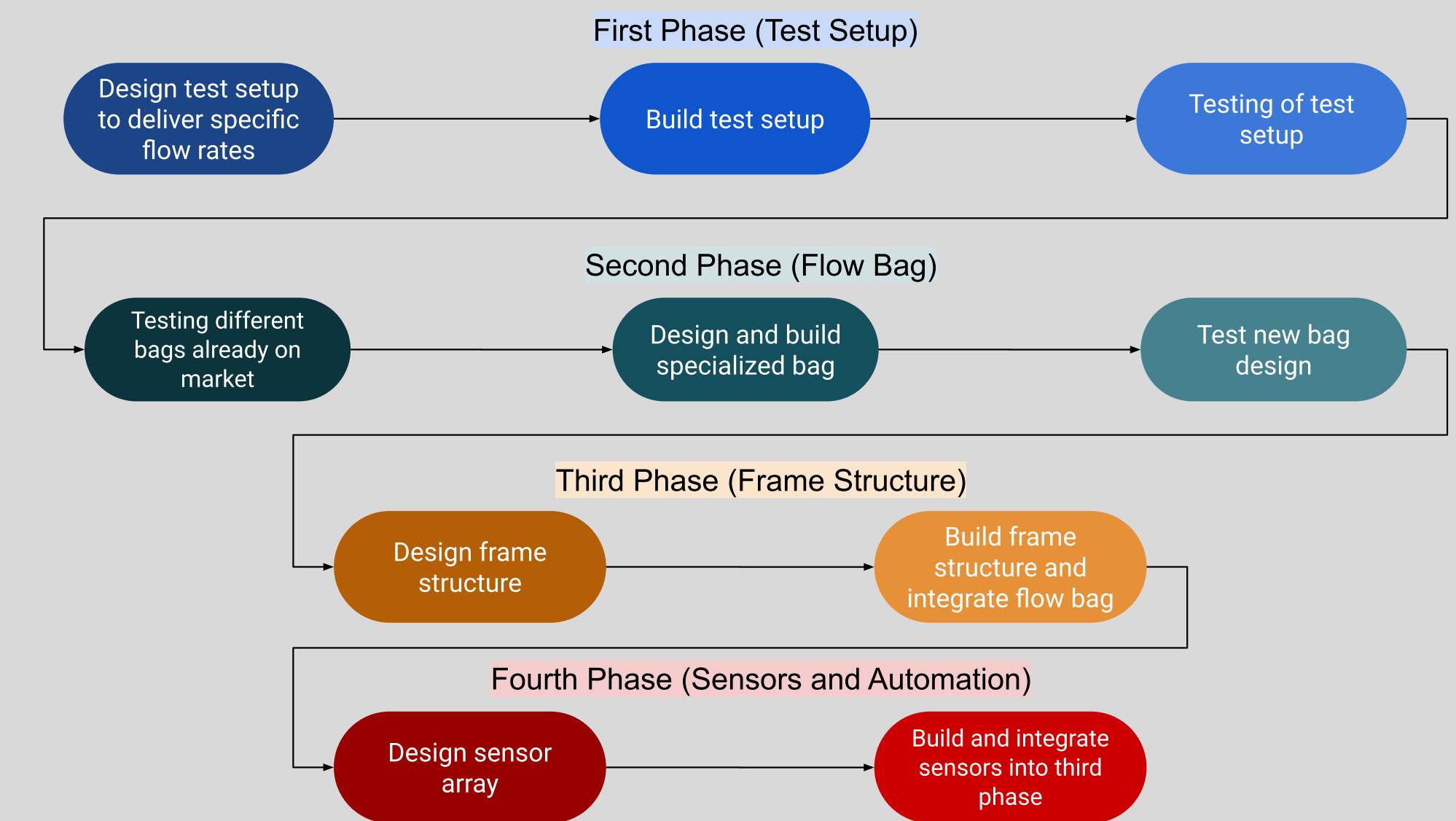
Problem

As HVAC energy and industry standards become more stringent, the accuracy of measuring low air flow (below 50cfm) air-exchange will become increasingly important to reduce the carbon footprint of building energy use.

Design Solution

- Simple, reusable, low cost, low flow measurement device
- Based on tested volume capture method
- Easy to use (as simple as roll bag and press against vent)
- Extends over 2 feet beyond user's reach for ceiling vents
- Improved accuracy compared to currently available equipment on the market
- With automatic flow calculation to mitigate human error

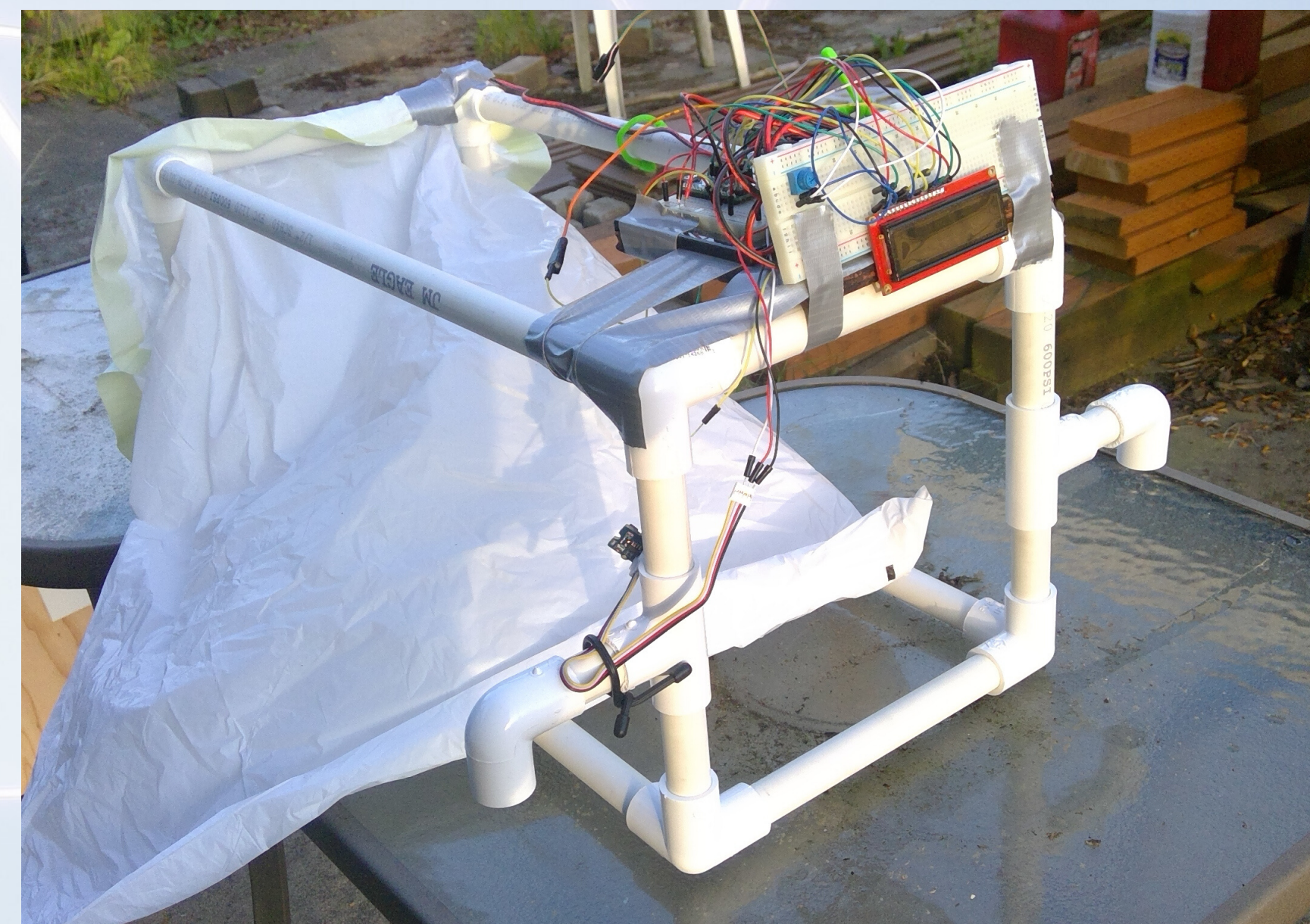
Product Roadmap



Calibrated test rig



Current Design

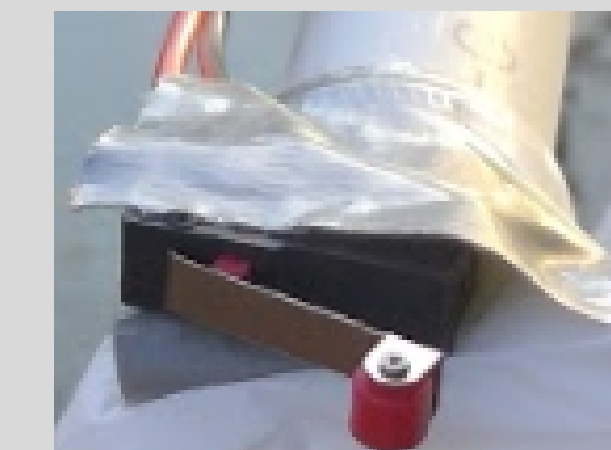


Tech Specs

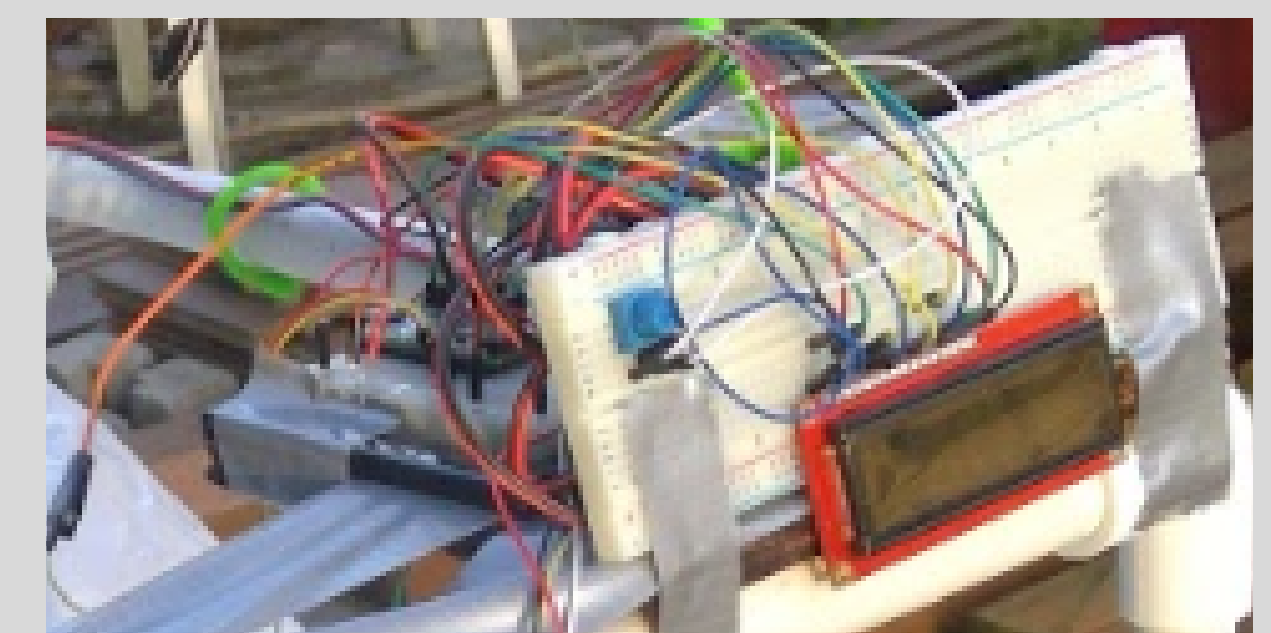
Infrared Sensor



Limit Switch

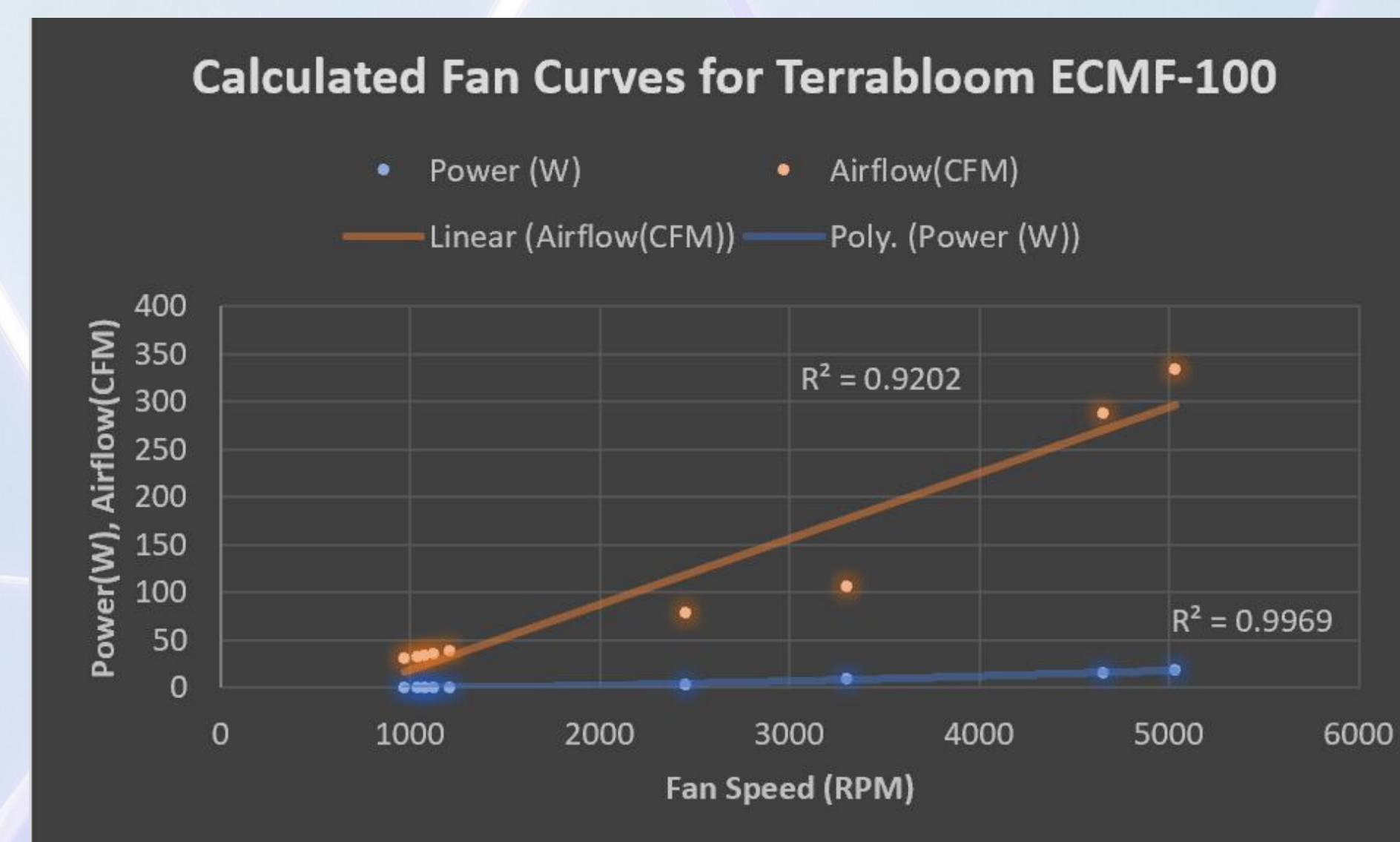


Arduino Micro w/LCD screen



Data/Analysis

- Due to Covid-19, we were unable to do any field testing nor could we compare to measurements using equipment traditionally used by industry professionals
- The test rig was calibrated by monitoring electrical properties of the fan with a multimeter and developing fan curves using the fan affinity laws.



Acknowledgements

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Special Thanks to Troy Dunmire