

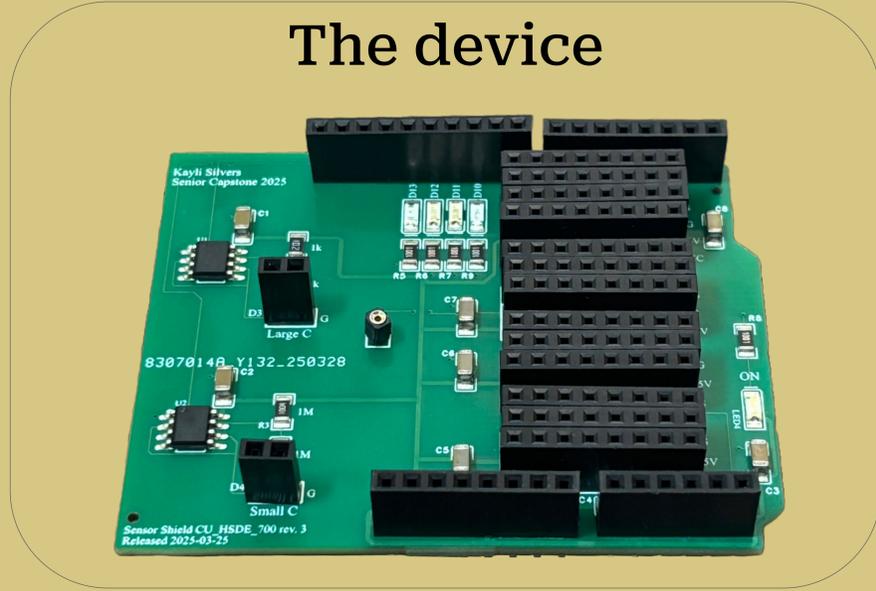
An instrument shield for an Arduino that streamlines and optimizes data acquisition

Data Acquisition Shield

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LONE SPARK
LABS



The device

Key Applications

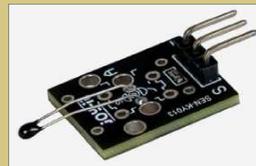
- **High Performance Strip Chart Recorder**
Stores data taken into an array to perform statistical analysis. Reduces noise in data taken using nPLC averaging.
- **Signal Analyzer**
Takes any input signal and calculates the average & peak-to-peak values, then plots them along with the signal.
- **RMS Calculation**
Calculate the RMS value for a buffer with stored averages recorded over a specific integration time.
- **Capacitance Meter**
Can measure capacitance between 0.1 nanofarads to 100 microfarads.
- **Precision Scope**
Displays data as fast as it can be taken

Acknowledgements

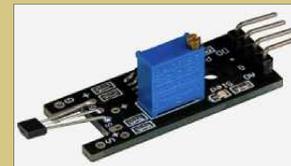
Thank you to Eric Bogatin, Marco Nicotra, Debbie Yeh, and Jordan Griffin for working with me and supporting my individual project.

Implementation

6 Sensors



KY-013 Analog Temp



KY-024 Linear Hall



KY-039 Heartbeat



KY-026 Flame

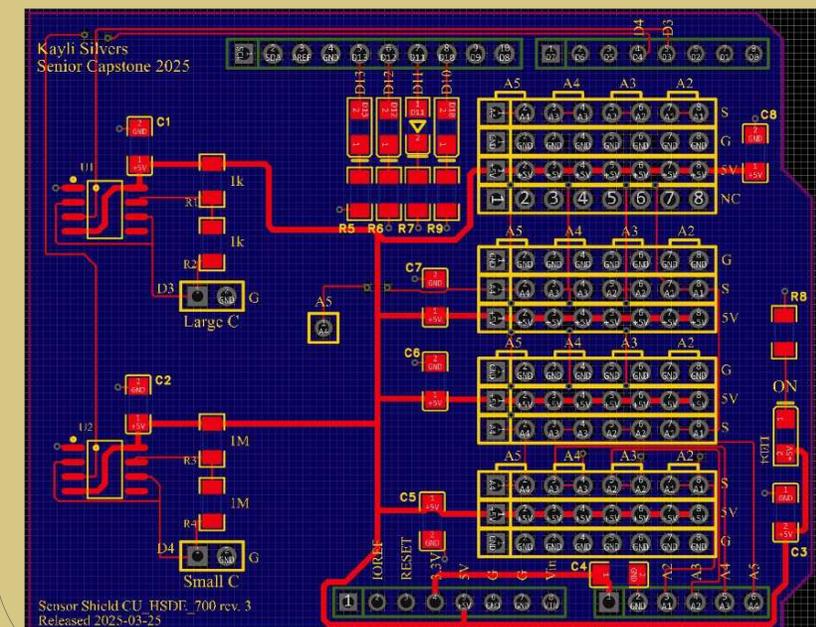
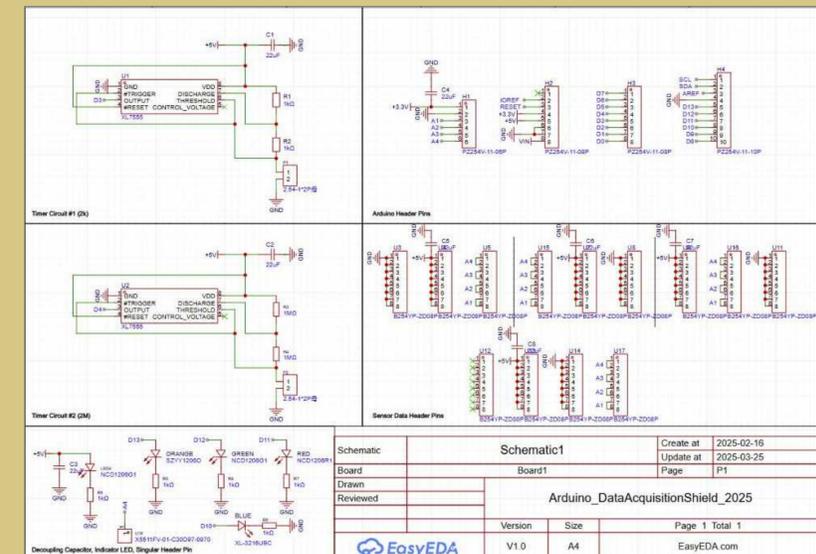


KY-036 Touch



KY-037 Big Sound

Shield Design



Sponsored by Eric Bogatin