Ignition Timing Computer

Team Flux Capacitors

Calvin Nelson

Ryan Kachline

**Executive Summary**

Our project was to create an Ignition timing delay box.

**Problem Statement**

We created an Automobile Ignition Timing delay box for automobiles with Variable Reluctor Ignition Triggers, and HEI 7 pin signal interpreters. The device functions by taking in a reference signal, which is set to have a negative edge at a specific point in relation to every spark event. It takes this reference signal, and creates an output signal, that has a programmable pulse width, that has a negative edge at the desired shifted spark event. Figure 1 below gives a visual representation of the problem.

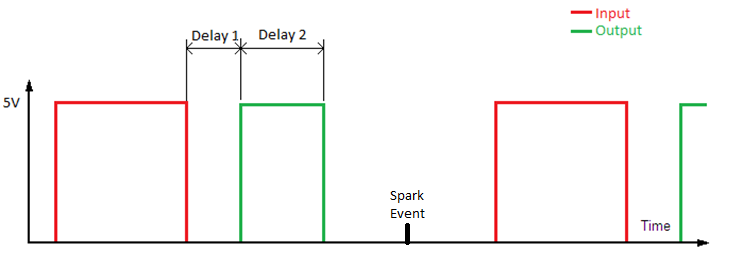


Figure 1: A visual representation of the how our device functions

**Proposed Solution**

We accomplished this by using an ATMEGA328P microcontroller, using the Arduino coding environment. We determined that the amount of time it took the processor to calculate delays was not an issue for creating an accurate delay, because the speed of the processor is so much faster than the operating period of an automobile engine. Therefore we did not require an FPGA, or a device that provided more accurate timing.

Our coding algorithm followed the following model:

1.

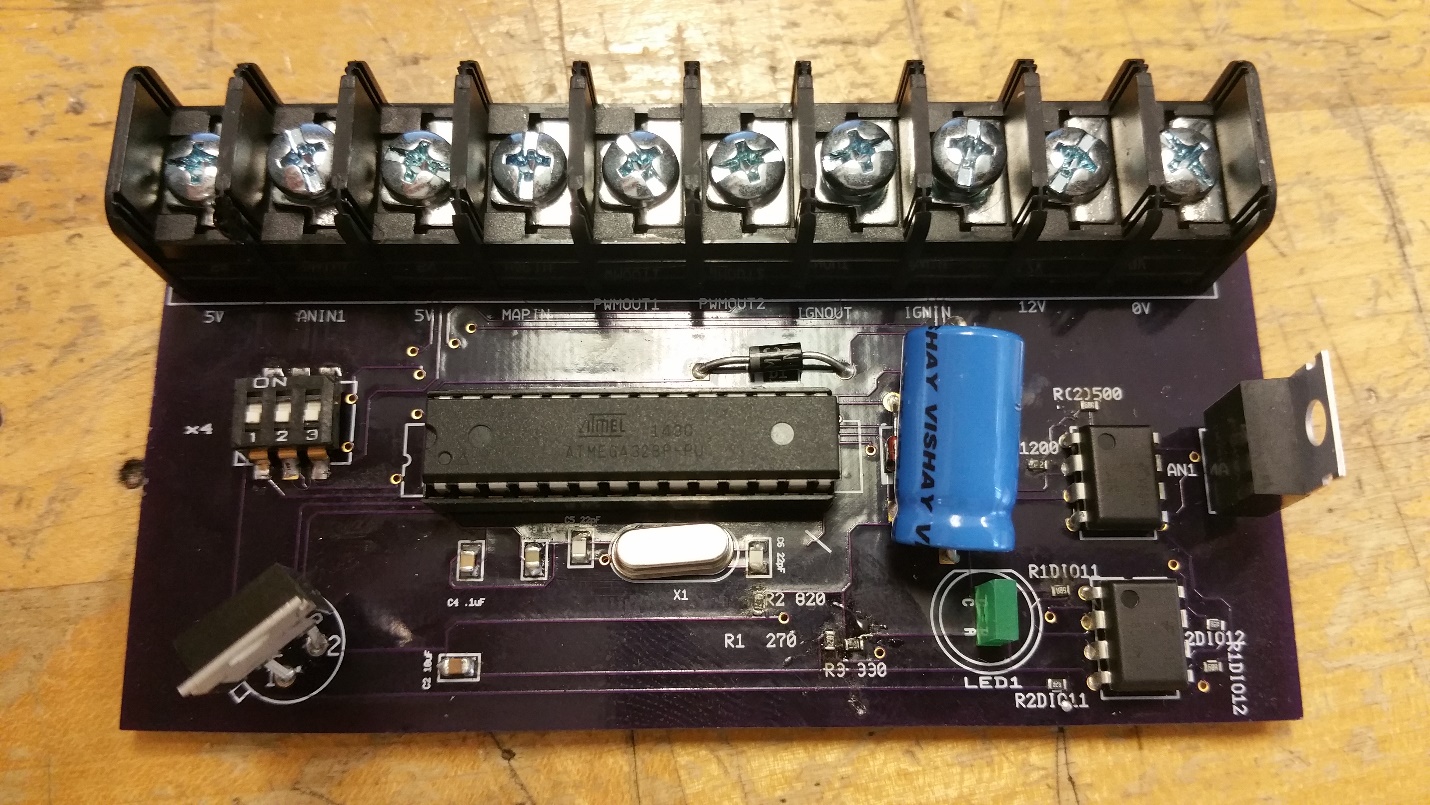
2.

3.

**Implementation Details**

Code

PCB



**Conclusion/Results**

**Appendices**