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A Microcontroller-Based Chronograph

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A MICROCONTROLLER-BASED CHRONOGRAPH

Senior Project Final Report

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ABSTRACT OF
A MICROCONTROLLER-BASED CHRONOGRAPH

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A microcontroller based chronograph was designed and constructed to provide accurate velocity measurements at a low cost.

An 8052-BASIC microcontroller was selected as the system controller because it is programmed in BASIC and should simplify the programming process. The microcontroller was the first item to be constructed. The I/O capabilities of the controller were expanded by implementing an 8255 port expansion chip.

The sensing circuits were the next items to be designed. The sensing units detect the object while in flight and trigger interrupts in the microcontroller.

Next, the output display was constructed. The microcontroller outputs the calculated velocity through the 8255 chip to the display.

The final task was writing the program for the 8052-BASIC chip. This was done in BASIC using PROCOMM communication software.

Once construction was completed the chronograph was tested and necessary adjustments made. The chronograph proved to be effective but an 8196 controller would have been better suited for this particular application due to higher resolution in the real time clock.

LIST OF FIGURES