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Automatic Velocity Adjustment System for a Paintball Marker

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Automatic Velocity Adjustment System for a Paintball Marker

Final Project Report

October 28, 2007

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Submitted to:

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ABSTRACT

This report examines the use, implementation, and benefits of a dynamic velocity control system for paintball markers over the static velocity adjustment methods that are standard throughout the paintball industry. The purpose of this report is to demonstrate the implementation of a dynamic velocity control system for paintball markers and present the findings of creating such a system. The methods used to create this dynamic velocity control system will be to utilize standard off-the-shelf electronics parts and development kits, coupled with the C programming language to develop this project. The speed of the paintballs will be detected by the use of infrared light-emitting diodes and photo-diodes mounted to the barrel of the marker. The data processing and system control will be accomplished with the 8051 development kit from Silicon Labs. The servo control and power supply will be constructed as a circuit. The velocity of the paintball marker will be controlled by a servo which will restrict the air supply to the paintball in the marker's breech. The scope of this report will only involve developing a dynamic velocity control system for Tippmann X7 paintball markers. This document will cover the research and development that has been completed to date and outline the remaining development necessary to complete the project.

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