VIDEO GAME PLAYER USING AVR MICROCONTROLLER

This report is presented in partial of fulfillment for the award of the
Bachelor of Electrical Engineering (Hons)
UNIVERSITI TEKNOLOGI MARA
MALAYSIA

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ACKNOWLEDGEMENT

In the most Name of Allah SWT
Most Gracious Most Merciful

First and foremost, all praise to Allah for entire incredible gift endowed upon me and for giving me the health and strength to complete this final project. As UiTM student, I found that this final project gave me a lot of experiences and skills which I believe it is important to me to gain my knowledge for my future.

Here, I would like to take this opportunity to express my sincere gratitude to my project supervisor, Prof Madya Mohd Uzir bin Kamaluddin for his superior guidance, support, valuable consultation and supervision through this study. I would also like to thank all my friends for their cooperation and suggestion in completing this.

Last but not least, I am grateful to my family, especially my parents for their continuous support, faith and prayer that enable me to succeed. Also to all parties that help me either directly or indirectly toward the completion of this final project.

ABSTRACT

This work describes the design of this video game player. This video game player is a combination of hardware and software design. The main objective of this project is to develop a low cost and portable video game player. This project consists of hardware and software parts.

Hardware involves a digital-to-analog converter to generate the NTSC video signal, a microcontroller ATMEGA8535, microcontroller hardware timers to maintain this signal timing.The components that are being used are ATMEGA8535 as the controller, Joystick as the input and Television as the display. Television monitors is one of the cheapest graphics devices that can be bought which include audio amplifiers and speakers. In this project, the game designed is PINGPONG. The video signal is calculated in real-time by the microprocessor as the electron beam sweeps over the screen.

This work was focused on the software generation. The software was coded in C, and much of the code length accounts for video signal generation. The software design controls the look and feel of the game on the screen.

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INTRODUCTION

1.1 Introduction

PONG, a video game that simulates a game of Ping-Pong between two players, has a long and pervasive history, and is said to be the first video game ever created. This game puts two players head-to-head on a PONG "table" using their home television.

This video game player is a dual player mode, two-dimensional PONG unit. This unit sends a black and white NTSC video signal to a television and includes two separate control units for each player. The unit itself features simple ball movement sounds during game play. The control pads include a linear position slider and a knob to control y- and x-axis movements of the PONG paddle, as well as an LED scoring and winning indicator.

In the game the players try to score points by getting a bouncing ball past their opponent while preventing their opponent from doing the same to them. Once player collects a pre-set number of points, that player is declared the winner of the game.

However, the existing video game players are expensive. Make it available only at some places. The objectives of this project are to build a low cost and portable video game player. By concentrating on the software part, the cost of the hardware is being reduced. It is also a user friendly video game player as it does not requires many steps and rules. This video game player also can be played by all different range of ages, from young to old.