

**MOTION CONTROLLER CARD
FOR
THREE-AXES MOVEMENT**

**Project Ilmiah presented in partial fulfillment for the award of the
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ABSTRACT

This report describes the design of the motion controller card for three axes movement. This motion controller card can perform various controlling schemes and provides selectable card address, 24-bit general purpose I/O pin, 24-bit output pin for three-axes movement and 3 analog channels. The controlling processes are performed by software written in Visual Basic 6.0. The motion controller card has been tested on Light Emitting Diode (LED) and Digital-to-Analog Converter (DAC) circuitry.

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CHAPTER 1

INTRODUCTION

1.0 Introduction

Motion control can be defined as the precise control of anything that moves. Motion control on the PC is the new standard for intelligent motion integration. The combination of advanced performance, real-time, embedded CPU-based controllers, PCI bus throughput, and Windows graphical programming make PC-based motion the correct choice for powerful, easy-to-use solutions. Motion control on the PC has moved to interactive graphical interfaces and icon programs on multiprocessor plug-in controller boards, which offload motion tasks from the host PC. These advantages provide seamless integration of motion, vision, data acquisition, and instrument control functions in one system developed using the same software with compatible tools and backed by a uniform worldwide sales and support network. It is mainly used in industrial control, OEM motion application, CNC machine tool control, integrated machine vision, robotics and many more [1]. Motion control is very important to industrial control systems.

Motion control card for Industrial Standard Architecture (ISA) bus requires an interfacing device between the processor and the motion controller ICs. This card is designed to be inserted into an empty slot inside the PC. This interfacing is for data transfer known as parallel interfacing which is faster for data transfer than serial interfacing.