

**SMART MANUFACTURING BASED ON EMBEDDED SYSTEM FOR THE
FESTO MODULAR PRODUCTION SYSTEM STATIONS**

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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The purpose of this thesis work is to apply an embedded system in FESTO Modular Production System stations. Additionally, the handling station is integrated with machine vision to recognize workpiece and color. The processing station processes the workpiece fed by the handling station, drills and checks resulting workpiece. The handling station handles the workpiece feeding and sorting system by using Mitsubishi Movemaster RV-M1. Serial protocol is used to communicate between the microcontroller and the computer. The hub is created as the interface between microcontroller and station. The user runs a program using a computer/laptop to control the station through microcontroller. The result of applying embedded system for the FESTO Modular Production System stations is achieved as a fully running system.

Keywords: Modular Production System, Microcontroller, Processing Station, Handling Station.



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DEDICATION

I dedicate this thesis to God, my parents, my sisters, and all of my friends.



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