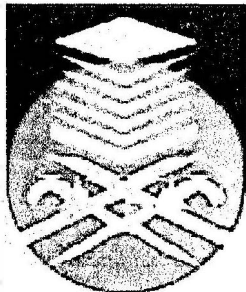# PERFORMANCE EVALUATION OF WIRELESS SMOKE DETECTOR USING RF MODULE

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ABSTRACT

Nowadays, the new about building on fire does not quiet on the mass media, whether on newspapers, radio or television. It is very detrimental to our country with so many live were dying. So, to reduce these case, I would like to introduce this smoke sensor detector to every home. With this alarm detector, it can give us early warning about starting burning fire. With this alarm detector, we also have a time to saving our lives and some very important documents. So, it is very useful to us.

This project presents the performance of wireless smoke sensor detector. The basic idea of the wireless sensor is to alert and early warning about starting burning fire. The hardware modules include the PIC microcontroller, smoke sensor, low battery, smoke sensor, RF module. The software component includes the program and code implemented via the PIC microcontroller. The smoke detector unit functions properly and in the manner it was originally planned and designed. There is a problem has occurred during the experimental session. The problem was interference from various external noise sources such as computers, phones, power sources and others since the smoke detector unit would beep alternately. However, this problem had no affect on the functionality of the smoke detector unit itself.

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CHAPTER 1

INTRODUCTION

Every year in the United States, over 400,000 residential fires result in 4,000 fatalities and 20,000 injuries. Over 50% of those fatalities occur in homes without smoke detectors. The significance of smoke detectors is evident, and the statistics substantiate the need for the most advanced smoke detectors possible.

1.1   OVERVIEW

A smoke detector or smoke alarm is a device that detects smoke and issues an alarm to alarm nearby people that there is a potential fire. Smoke alarms are self contained devices that incorporate a means of detecting a fire (smoke detector) and giving a warning (alarm). They are about the size of a hand and are normally fitted to the ceiling. They can detect fires in their early stages and give you those precious minutes to enable you and your family to leave your house in safety. The term wireless is normally used to refer to any type of electrical or electronic operation which is accomplished without the use of a "hard wired" connection. Wireless communication is the transfer of information over a distance without the use of electrical conductors or "wires". The term "wireless" has become a generic and all-encompassing word used to describe communications in which electromagnetic waves or RF (rather than some form of wire) to carry a signal over part or the entire communication path. Smoke detector is a device that detects smoke and issues an alarm. Smoke detectors alert people within hearing range, some also interface with a security system or notify emergency services [1]. Smoke is a visible suspension of carbon or other particles in the air which emitted from a burning substance [2]. The