

A Proposed System for Real-Time Early Warning for Building Fire
Detection Based on Embedded XBee-PRO RF Modules with Data
Accuracy Appropriation.

نظام مقترح للإنذار المبكر في الوقت الفعلي لاكتشاف حريق المباني استنادًا إلى وحدات XBee-
PRO RF مع تخصيص دقة البيانات

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Keyword: Wireless Sensor Networks, Tracking System, Fire Alert Detection System, XBee Module

Abstract–

–In the recent years, and because of the rapid growth of mobile technology, the Wireless Sensor Networks (WSNs) have become very important topics and as one of the most important research areas with the rapidly impact on technology enhancement. These networks such as Zigbee WSN has become one of the most promising technologies for different applications. In the Zigbee WSN, the individual nodes of these networks operate autonomously. The active application of fire detection in the large buildings, describes the application of these wireless networks to detect smoke or fire early by discovering the parameters of fire or smoke to the main server side to take activate the necessary action in the event. This paper present design of fire remotely monitoring and controlling system using Zigbee WSNs for building environment based on embedded higher power XBee–Pro 802.15.4 RF module with Data Accuracy Appropriation (DAA). The parameters of the building environment include, alcohol, gas, petroleum, and any inflammable materials can be detected

using specific sensors and the sensed data are then transferred to the microcontroller. The design of the system depends mainly to initialize the device and receive or send the parameters. This system experimentally proved that can be detected the fire or smoke and early alarm for an event.