

Forest fire Detector using Lora Module

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Abstract: This paper shows the design and execution of an innovative system, titled as "Forest-fire Detector using LORA Module," aimed to reduce wildfire.

Keywords: wildfire

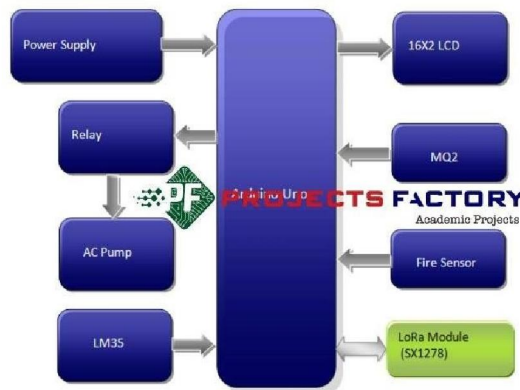
I. INTRODUCTION

Approximately 30% of the world's land area is covered by forests, approximately 4 billion hectares. Because forests are dense, invisible fires can spread over large areas, quickly destroying entire ecosystems and endangering wildlife. This fire causes further destruction of the environment. In recent years, forest fires have occurred frequently due to drought. Recently, fires have increased in the world. These fires in forests, agricultural lands and industry are the result of natural or man-made disasters.

II. LITERATURE SURVEY

In the developing world, environmental protection is very important. Many natural and man-made disasters occur around the world. Forest fires are one of the major environmental disasters. When a fire breaks out in a deep forest, it burns and destroys everything and spreads to every part of the forest. The peak of drought in forested areas causes fire to spread on hot days and destroy trees and grass. To protect the habitat of plants and animals in the forest, such forest fire disasters should be suppressed.

TRANSMITTER



Sensors

MQ5 gas sensor

- High sensitivity and fast response speed make measurements as fast as possible. The sensitivity of the sensor



Flame Sensor

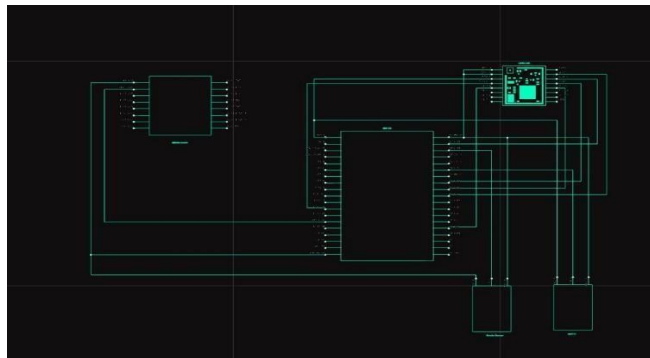
- Flame detectors use ultraviolet (UV) or infrared (IR) technology to detect flames. This means you can warn of a flare-up within a second.
- Flame detectors use ultraviolet (UV) or infrared (IR) technology to detect flames. This means we can alert you to a relapse within a second.



III. METHODOLOGY

Working Principle of LORA Module

A forest fire monitoring method using a LoRa based wireless network is an Internet of Things system that aims to detect and prevent forest fires. The system consists of sensor nodes located throughout the forest that monitor various environmental conditions such as humidity, temperature, wind speed, and direction. Smoke alarms detect fires by measuring tiny particles in the air using a variety of technologies. If it detects particles above a



IV. RESULT

The proposed forest fire detection system using wireless sensor network and machine learning was found to be an effective forest fire detection method that provides more accurate results.

V. CONCLUSION

This research study proposes a unique strategy to address these issues using long range communication technology (LoRa) for forest fire detection.

VI. FUTURE SCOPE

The proposed system detects forest fires at minimum stages with the help of cameras installed on towers.

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