

## ***ABSTRACT***

*The development of technology is increasing along with the high needs of humans. The internet is one of the fastest growing technologies. With the progress of the internet, the Internet of Things (IoT) is growing rapidly. In the IoT system, human productivity will require digital tools that are able to process digital data such as sensors to present it, security and human comfort. Not all data transmission systems must be sent via an internet network that can be accessed without but sometimes the follow-up the data sent must be immediate and fast. Long range (LoRa) as a data transmission technology that has a fairly wide communication range that can reach 2 km - 5 km and the use of low power consumption. This can be used as an alternative for sending data in a narrow and medium scope and requires quick follow-up regarding the information received. Therefore, in this final project the author analyzes and makes a tool "LoRa-Based Fire and Danger Monitoring and Warning System with RFID Control" using Arduino and LoRa. With this tool, it is hoped that it can prevent larger fires or burglaries that can cause huge losses. In testing the tool, it shows the influence between Spreading Factor (SF) and Time on Air (TOA). A higher SF results in a high TOA at a wide bandwidth. As at 125 kHz bandwidth, the longest TOA at 1048 ms was generated at SF 12 and the fastest TOA at 46 ms using SF 7. At SF 7 with 250 kHz bandwidth, the fastest TOA value was measured at only 24 ms.*

***Keywords:*** *LoRa(Long range) Communication, Arduino, Humidity and air temperature sensors, Light sensor, LCD With I2C.*