

ABSTRACT

Wireless communication has become an integral part of modern life, enabling the exchange of information efficiently and wirelessly. In some cases, there is a need to transmit unstructured data, such as text, audio, or image files, over wireless communication channels. Therefore, the purpose of this research is to facilitate data transmission under any conditions and in various types of locations so that it is expected to help transmit data even in areas that are not covered by signals.

By developing a communication system that can efficiently transmit unstructured data over radio waves. So LoRa modulation is chosen which can be used to convert data into the form of signals transmitted through the wireless channel. In the design of this system, hardware and software will be used in accordance with the needs of wireless communication.

System implementation is done by testing data transmission through unstructured formats, namely Photo, Text, PDF and DOC. In this research, testing uses test parameters, namely delay, chunk size testing, distance used, and obstacles that exist when testing is carried out. So the results obtained that the system is successfully used, delay and chunk delivery can affect the success of data transmission, while distance and obstacles do not affect the data transmission process.

Keywords : *Wireless communication, unstructured data transmission, radio waves, LoRa modulation*