

ABSTRACT

At this time, the transmission media consists of various types, some use cables to those that do not use cables. One example of transmission media that does not use cables is using visible light media. The use of visible light transmission media using LEDs as we know that many latest technologies use LEDs. Not only as a lamp but also as a medium for transmitting or sending information.

In this final project, a control system for data transfer from sensors has been realized using Visible Light Communication (VLC) as a transmission medium. The components of this tool use a sensor as a motor for controlling the Smart Home. LEDs as data transmitters that function to convert electricity to light and photodiodes as data receivers that function to convert light to electricity. The LED sends binary data to the transmitter and will be received by the photodiode on the receiver. The data received by the photodiode will be sent again via the NRF01 Module so that control can be done using a laptop.

From the results of the tests that have been carried out, it shows that the system is 100% successful in receiving the data information sent by the LED as expected. Also, each sensor has the following accuracy, the motion sensor has an accuracy of 100%, the rain detection sensor has an accuracy of 83%, the temperature sensor has an accuracy of 96%, and the light sensor has an accuracy of 96%.

Keywords: *Visible Light Communication, Smart Home.*