ABSTRACT

Technology is very important role in today's life. One of the technologies that is widely used is communication technology. Visible Light Communication (VLC) is a wireless communication that is currently being developed, due to its various advantages, namely it has high speed and is more efficient in energy use.

In this final project, analysis of distance and angle changes on VLC performance is carried out, using several distance and angle values. The distances used are 10 cm, 25 cm, 100cm and angles 0°, 15°, and 45°. This research uses one lamp Light Emitting Diode (LED) Red Green Blue (RGB), and uses Color Shift Keying (CSK) modulation. This research was conducted under LOS channel conditions.

From the results of experiments that have been carried out, the farther the transmission distance, the more the number of error. Likewise with the angle, the greater the transmission angle, the more the number of error obtained. The best detection results are at the closest distance of 10 cm and the smallest angle is 0°. Humidity with 73 data and ΔH 4.311685, temperature 65 data is correct with ΔT 1.532277, and HIC 82 data is correct with ΔHIC 0.392871 . And for the best angle humidity 46 data is correct with ΔH 6.444158, temperature 43 data is correct with ΔT 6.628515, and HIC 59 data is correct with ΔHIC4,0885149.

Keywords: Visible Light Communication, Light Emitting Diode, Color Shift Keying (CSK)