ABSTRACT

Technological developments have shown a significant enhancement, especially for the communication sector. This is proven by the many communication media both wireless and wired. But the use of radio frequency as a data transmission medium can adversely affect the performance of medical devices in hospitals and also for the health of patients. The use of visible light as a data transmission medium can be an alternative way because in addition to being efficient, visible light waves are also included in green communication in terms of utilizing renewable energy as a transmission medium and not adversely affecting human health.

The focus of this final project is to design a receiver as a signal receiver for infrared and visible light communication. The lamp in the monitoring room that transmits light contains information on the baby's room temperature and baby's body temperature to light to voltage sensor receiver to be monitored as a downlink communication on this system. While in the baby's room, information in the form of baby's room temperature and baby's body temperature transmitted by infrared LEDs is uplink communication.

In this study the receiver can receive data up to 3 meters for downlink communication. While the uplink communication receiver can receive data up to 5.4 meters, but the implementation of the uplink communication room is only realized at 2.5 meters.

Keywords: *Light to voltage sensor, Green Communication, Receiver.*