

ABSTRACT

Visible Light Communication (VLC) is a communication system technology that enables transmission process using visible light. VLC provides efficiency in wireless communication system because it offers new and unused bandwidth in wireless communication as well as good development potential. Use of visible light in wireless communication can be a solution to energy savings and radio-frequency limitations problem in the development of wireless communication.

In this final project, an access point as VLC communication device will be designed by utilizing visible light transmission. Designed communication device are half-duplex communication with an access point as a transmitter in each section. The transmitted data is text-based data processed by VLC Half-Duplex Communication software installed on PC in FIT Optical Communication System Laboratory.

The access point is tested by sending text to terminal equipment done in Optical Communication System Laboratory room (G9). The result obtained from data transmission speed test is 40 bits per second, maximum range distance is 270cm, optimum range distance is 100cm, and maximum transmitted character is 7 character (56bit).

Keywords: Visible Light Communication, Access Point, LED, Data Transmission.