

ABSTRACT

Solar panels are an alternative producer of electric energy that has been widely used. Starting from household lighting, street lighting and water pumps, even solar panels have begun to be installed on electric vehicles as power producers. All these things can only be done during the day with the help of sunlight to get a great power, in the dark state of the solar panels can not be utilized as power producers. Through the Visible Light Communication system at night solar panels can be utilized as media receiver data for means of communicating. Visible Light Communication is a optical wireless technology using a visible light spectrum (380-780nm), which works with visible light sources as a transmitter signal, air as a transmission medium and Photo-Detector as a signal receiver component.

The modulated street lighting LED is used as the sender's medium. Solar panels that work as a photo-detector will receive a light signal containing data through the LED light to be converted into an electrical signal. This electrical signal will be converted to character data with 8 bit format.

Based on the results of the experiment at a distance of 50 cm with the data sending speed of 9600 bps, bit error rate is 0 of 10000 characters received. While at the data sending speed of 38400 bps at a distance of 50 cm the correct data received is 728 from 10000 the character data received. This is due to the characteristics of solar panels as power producers, therefore solar panels have a low level of accuracy in signal changes when used as a photo-detector. So the higher the data sending speed, the resulting error is getting bigger.

Keywords: Solar Panels, Visible Light Communication, Media Receiver Data, Photo-detector