## ABSTRACT

Visible Light Communication (VLC) is communication with visible light to transmit an information which can be audio. Audio signal requires a medium to travel from place to place. for vacuum environment, audio signal cannot be sent directly, it require wave that can travel with vacuum environment. VLC is very potential because visible light can travel through a vacuum environment. VLC has a lot of modulation technique that can be applied. Every technique have own characteristics.

This research evaluate performance from several modulation technique namely On Off Keying (OOK) and Pulse Position Modulation (PPM) with simulation send audio signal. There are three scenarios that will be test. First, change distance betweeen transmitter and receiver and observe Signal to Noise Ratio (SNR) and Bit Error Rate (BER). Second, change the angle from either side. Third, change sampling frequency from audio that we used.

From this simulation we obtained that for distance changes, OOK modulation is better than the other modulation technique with optimum distance is 21,2 meter and sampling frequency audio is 8 KHz. 4-PPM is better than the other modulation for angle changes with SNR drop is 22 dB. Decrease sampling frequency audio can improve performance of modulation. In terms of power efficiency, 4-PPM modulation is superior to other modulation techniques and the sampling frequency does not affect the power efficiency of each modulation technique.

Keywords: Visible Light Communication, OOK, PPM, BER, SNR