

## **ABSTRACT**

*SpO<sub>2</sub> (oxymetry) is a device that measures the amount of oxygen in the blood. This device comprises of a combination of red and IR led lights that are programmed by the driver to read SpO<sub>2</sub> at a specific frequency. The goal of this research was to find the astable frequency setting values for red and IR led drivers that were best for measuring SpO<sub>2</sub> levels. This can be accomplished by combining the sensor driver's input frequency and the SPO<sub>2</sub> result. The Arduino Mega serves as a data processor for the driver frequency output controller, reading SpO<sub>2</sub> from the sensor and displaying it on the OLED LCD panel. The frequency value of the sensor driver was successfully modified in this investigation from 400 Hz to 600 Hz, 800 Hz, 1000 Hz, 1200 Hz, and 1400 Hz. The SpO<sub>2</sub> measurement results vary depending on the frequency output. Based on the findings of the various tests, it was discovered that the value of two tails was 0.05, especially at a frequency of 1200 Hz with an average error value of 0.10 percent. Based on the measurements, it can be concluded that using the astable driver frequency to read the SpO<sub>2</sub> sensor works best at a value of 1200.*

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**Keywords :** *SpO<sub>2</sub>, frequency, Infrared, Red Led*