ABSTRACT

Hypoxia is a condition of lack of oxygen supply in the body to carry out normal organ functions. SpO2 or saturation in the blood is one of the five main vital signs that must be monitored to determine the patient's health. The purpose of this study is to facilitate the process of monitoring the patient. The contribution of this study is that the tool can be used in a hospital to monitor the signal and SpO2 value of patients who are in the treatment room which is located in a different room from the nurse station so that the patient's vital condition can be known, especially the signal and SpO2 value in order to prevent the risk of sudden death. The design of this tool uses a finger sensor that is connected to the SpO2 circuit. Data processing is carried out by Arduino then the results of the data processing will be displayed on the TFT and sent to a PC wirelessly via HC-12. The results showed that the largest SpO2 error value was 0.72% and the lowest error value was 0.00%. The maximum distance from sending using HC-12 is 175 meters in LOS conditions and as far as 50 meters in NLOS conditions with a correlation value of 1 or all data sent properly. The results of these tests indicate that this module can monitor SpO2 values accurately and can be sent remotely. This research can be implemented in remote monitoring of human vital signs.

Keywords: SpO2, Finger Sensor, Wireless, HC-12