ABSTRACT

Premature babies are babies with birth age less than 38 weeks and have a higher risk of death compared to babies born at term. This is because they have difficulty adapting to life outside the womb due to the immaturity of their organ systems. Premature babies require continuous monitoring by nurses because the condition of newborns is not yet stable from temperature and humidity factors. The monitoring system in a baby incubator requires appropriate humidity and a quiet room. The purpose of this research is to develop a humidity and noise monitoring system quickly and practically. Research and manufacture of this module uses several ESP32 (Enhanced Smart Power) modules which are assembled into a central system unit where data from several ESP32 (Enhanched Smart Power) which have functioned as clients will be collected and received at one central point (Enhanched Smart Power) ESP32 which has functioned as a server by utilizing the wifi network as data transmission, and the data that has been collected on the server will be displayed on the TFT Nextion (Thin Film Transistor) display. The results of measuring humidity using 2 baby incubators, the highest value is 10.5%. The results of the noise measurement using an audio generator, the highest value is 25.692%. The results show that the tool is still there is an error in each measurement. The results of this study can be developed in the future with sensors that have higher accuracy values.

Keywords: Baby Incubator, Humidity, Noise, Wireless, ESP32, LCD Nextion.