ABSTRACT

Nebulizer is a device used for inhalation or respiratory therapy by inhaling liquid medicine in the form of small particles or aerosols (fog). The working principle of the nebulizer is to convert the medicinal liquid in the form of a liquid, converted into vapor granules by ultrasonic vibrations on a piezoelectric tranducer and inhaled through the cat's nose. In this study, the nebulizer has 2 modes of use, which can be controlled by pressing the push button in setting the desired nebulizer time and can also be controlled via a smartphone through the MQTT Dashboard application. In operation, the countdown time will be displayed on the 16x2 I2C LCD and the MQTT Dashboard application, and when the nenbulizer process is complete it will automatically stop and the buzzer will sound. The results of this study found that testing the nebulizer in the offline state resulted in a total delay difference of 1,500.33 s, an average delay difference of 30.0066 s, while in the online state the total delay difference was 339.63 s, an average delay difference of 6.7926 s. Testing the timer on the piezoelectric produces a total delay difference of 7 s, an average delay difference of 1.4 s. For testing the energy consumption of the nebulizer, the nebulizer will be displayed on the LCD 16x2 I2C and the MQTT Dashboard application. For testing the energy consumption of the nebulizer produces an average power (w) for 15 minutes of 0.000785 KWh, while in portable nebulizer manufacturers consume energy for 15 minutes of 0.000548 KWh.

Keywords: *Cat Flu, Nebulizer, Internet of Things (IoT), NodeMCU ESP 8266, MQTT Protocol.*