

ABSTRACT

Given the current rate of technological advancement, the human need for information is essential. The information obtained is very influential on the situations, conditions and ways of everyday human life that require the delivery of information more quickly, precisely and accurately. At present, LED running text is widely used by the public because the required power consumption is not too large and it saves electricity consumption, however, the public who are familiar with running text still use computers to control and input information when there is a lack of computers and synchronization equipment. Therefore, the authors conducted research using the Matrix P5 RGB LED Panel which can display not only one color but 3 colors namely red (red), green (green) and blue (blue) where the author uses NodeMCU V3 ESP8266 which on the chip uses IPv4, TCP/IP and HTTP protocols so that they are easily accessed via the internet to communicate using Wifi. In making this tool also requires a current sensor, voltage sensor and Arduino nano. This research focuses on calculating the amount of power consumption in running text in the LED scenario that is fully lit (full), LED displays static (silent) and dynamic (running) characters. From the large power consumption results obtained, dynamic or running panel conditions have lower power consumption than static ones. On the two voltage sensors, the average error value is 1.58% and 1.34%, while the average error value obtained from the ACS712 current sensor is 1.66%. For the average value of the power obtained when the LED lights are all red, it is 1.916 W, green is 2.25 W and blue is 2.42 W. In static red, it is 1.807 W, green is 1.629 W and blue is 1.693 W. In dynamic red, it is 1.777 W, green 1.606 W and blue 1.683 W.

Keywords: Power Consumption Monitoring, P5 RGB LED Running Text Panel, Current Sensor, Voltage Sensor.