

Data Analysis Sheet For Determining The Position Pixel / Dot On Panel LED P10

Hilmi¹, W Susanty¹

¹: Information System, Computer Science Faculty, Bandar Lampung University

1. Introduction

1.1 Background

Traffic congestion is a major problem in the transportation system. Based Data Transport Statistics 2013 & 2014 are sourced from Statistics Indonesia (BPS Catalog: 8301007) cite an increase in the number of vehicles is high at 10.39 per cent per year on all types of vehicles. Coupled with the specific transportation community awareness so that adds a level of congestion becomes worse. Signs and traffic lights play an important role in regulating the traffic lane so that the public transport can be wise in using the road, especially in the port city of Lampung.

2. Basic Theory

Overview of was used as a comparison between researchers has been done and that will be designed by the researcher. Review of the literature obtained is

2.1 Literature

review of the literature was obtained from several journal entitled:

2.1.1 *Smart Traffic Control System Using Image Processing* ISSN 2278-6856 *International Journal of Emerging Trends & Technology in Computer Science (IJETTCS) Volume 3, Issue 1 January - February 2014* Vismay Pandit, Jinesh Doshi, Dhruv Mehta, Ashay Mhatre and Abhilash Janardhan, Mumbai University. This journal discusses electronic sensors to detect vehicles, and produce a signal. The system aims to control traffic lights with image processing. This system detects the vehicle through the image A camera will be installed in addition to the traffic lights. It will capture a sequence of images. Set the empty road image as reference images, photos taken in sequence matching using image matching.

2.1.2 *Implementation of fuzzy logic algorithms for traffic management systems using microcontroller* ISSN 1410 - 8607, *Volume 15 No. 2, October 2014*. Written by Heri Prasetyo and Utis Sutisna, from the Department of Electrical Engineering College of Engineering Wiworotomo Purwokerto. This journal discusses: simulation of an automatic control system that can adjust the traffic light based on the level of the arrival of vehicles where the system settings are not constant but follows the arrival rate of vehicles. The method used to set the length of time it is a fuzzy logic algorithm with fuzzy reasoning Mamdani method using Matlab software.

2.1.3 *The design of microcontroller-based smart traffic light* ISSN: 1693-752X. Vol.16 No.2. August 2014 Written by ALFITH, ITP faculty of Electrical Engineering Department. This journal discuss of detection traffic density affecting the green light to use object infrared sensor, detecting the presence of specific signal from cars specialties such as ambulance or the fire department or the police or the car something that will automatically change traffic lights red be green by using X Bee wireless module Pro and GPS, as well as traffic lights stay lit even though the supply of PLN extinguished with use spare battery.

2.1.4 *Smart Traffic Light Junction Management Using Wireless Sensor Networks* E-ISSN: 2224-2864. Volume 13, 2014. Written by Mario Collotta, Tullio Giuffre and Giovanni Pau of the Kore University of Enna. This journal discusses about the state of the art and the architecture for the IEEE 802.15.4 network monitor vehicles running near traffic lights architecture is characterized with an innovative algorithm to determine the time of the green and the phase sequence traffic lights, based on the measured values. The main objective of this work is to reduce the average waiting time.

3. Analysis Of Results And Discussion

3.1 Arduino to LED Wiring

Wiring is a way of connecting arduino led panel to a or more. While the LED panel has three types of colors: *single color* (one color), *dual color* (two colors), and *RGB/full color* (full color). Each type of LED panels have *wiring*. different To led *single* use hub12color,dual color LED using hub8. Meanwhile, RGB led / full color using hub75. What distinguishes all three are in the delivery hub color data that is sent. The panel is a panel led *RGB / Full* color,which means we use to process wiring Arduino hub75 to LED panel. but we did not get a hub75 module for arduino. Then we take a reference from Adafruit. Adafruit is led fairly large company and provide some example to connect arduino project with led. Scheme the wiring is as shown below.

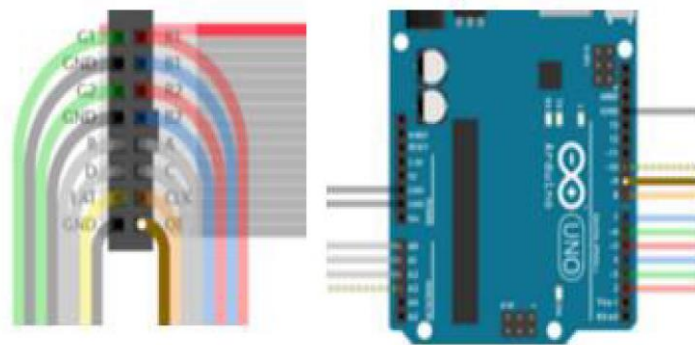


Figure 1 Wiring Arduino to Led Panel Full Color

The connect it way is to use jumper cables male to male already described above.

3.2 Jumper Cables

As named jumper cables used to connect two different devices without the need soldering it in the sense that is port able. Kanel jumpers have some kind. In this study used a jumper cable to *wiring* of *microcontroller* jumper cable to the 16 pins are connected directly to the LED.

3.3 Ribbon Cable 16 pin

Ribbon cable 16 pin is a data cable which serves to send a signal frequency of a *microcontroller* into a panel or LED. In the figure below:

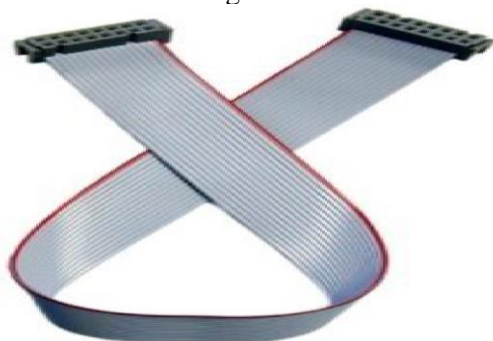


Figure 2 Discussion Of Cable Ribbon Cable 16 Pin

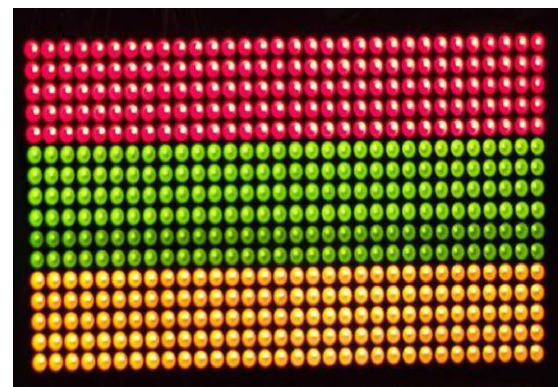


Figure 3 LED p10 32x16

Following explanation of the header of the cable rebon 16 pin

3.4 Trial Panel LED p10

Panel Led P10 is a panel Led RGB *type* DIP, as the name of the main color in this panel are red, blue, and green. In the colors are values that serve to instruct the panel Led, as follows: testing is done using coding and transmitted using arduino and forwarded to the LED panel:

Here LED lit is 3 color composed of red, green and yellow

```
// Project 3 - Traffic Lights  
int ledDelay= 5000; // delay between changes in
```

```

int redPin= 10;
int yellowPin = 9;
int greenPin = 8;
void setup()
{pinMode(redPin, OUTPUT);
pinMode(yellowPin, OUTPUT);
pinMode(greenPin, OUTPUT);
}
Void loop()
{digitalWrite(redPin, HIGH); // turn the red light on
delay(ledDelay); // wait 5 seconds
digitalWrite(yellowPin, HIGH); // turn yellow on
delay(2000); // wait 2 seconds
digitalWrite(greenPin, HIGH); // turn green on
digitalWrite(redPin, LOW); // turn ed off
digitalWrite(yellowPin, LOW); // turn yellow off
delay(ledDelay); // wait ledDelaymilliseconds
digitalWrite(yellowPin, HIGH); // turn yellow on
digitalWrite(greenPin, LOW); // turn green off
delay(2000); // wait 2 seconds
digitalWrite(yellowPin, LOW); //turn yellow off
// now our loop
repeats}

```

Logic program was as following
turn on a red light, wait 5 seconds
turn on the yellow light, wait 2 seconds
on the light green, red and yellow lights turn off and wait for 5 seconds
the yellow light turn on, turn off the green light , wait 2 seconds.
yellow lights turn off, and the program back to the beginning of the function

4. Conclusions And Recommendations

4.1 Conclusions

From some analysis and experiments that have been done better use of existing controllers and software that has been provided that the authors came to the conclusion:

- a. Characteristics can know the devices both hardware and software
- b. There is no official document from the manufacturer Led explaining determine the position of the LED pixel. So to be able to locate the required pixel of a panel of repeated trial (*Try and error*).

4.2 Recommendations

This study is merely the base and not at the stage to be expected that the device can be used traffic lights and operated real. And may be a promising business opportunity. The advice can be conveyed for further research are:

- a. This research is basic so it needs to in develop to the business world is quite promising.
- b. This study as a reference for future research.

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