WIRELESS INFORMATION ON ROAD TRAFFIC CONGESTION AT INTERSECTION

This Project Report is presented in partial fulfillment for the award of
the Bachelor of Electrical Engineering (Hons.) by
UNIVERSITI TEKNOLOGI MARA

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ACKNOWLEDGEMENT

In the name of ALLAH the Most Gracious and Most Merciful

Firstly, in the name of ALLAH S.W.T., the Author would like to take this opportunity to express his special thanks and appreciation to his Final Year Degree Project Supervisor Associate Professor Aisah Binti Mohamed for her guidance, support, concerned and shared some ideas in helping me to complete this project successfully.

The Author would also like to express his deepest thanks to all engineers at GI-MPU PIMO Department of Agilent Technologies (M) Sdn. Bhd., Bayan Lepas, Penang, for their provision and cooperation in using test and measurement equipments during execution of analysis for this project.

Finally, a very deepest appreciation to the Author's family members including father, mother and younger brother for their love, support and motivation and unforgettable to all fellowship members and beneficial friends that provided Author with their knowledge and help.

ABSTRACT

Road traffic congestion had been a major problem in the worldwide especially to the road users. This problem usually occurred at the intersection, roundabout or straight road. Intersection is an area that assigned by two or more crossing roads. Dissent movement that occurred at intersection area always causing travel delay and engender accident between vehicles.

The Wireless Information on Road Traffic Congestion at Intersection is developed to provide road traffic congestion information at intersection that enable road users to avoid from entering the congestion area. Currently, television and radio broadcast only provide information on road traffic congestion for certain period of time and it shows that the present system is impractical because road users unable to get information on road traffic condition for totally 24 hours of time. Therefore, this newly system had been developed that has the ability to provide information on road traffic condition especially during congestion period. The main components that had been used in this project including PIC16F84A microcontroller, Just Another Language (JAL) PIC compiler, IC-Prog PIC programmer, wireless transmitter and receiver, Parallel Port interfacing and Graphical User Interface developed using Microsoft® Visual Basic 6.0 software. This system is suitable to be applied at the traffic light junction or road intersection.

KEYWORDS

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CHAPTER 1

INTRODUCTION

1.1 Literature Review

One major problem encountered by road users is the road traffic congestion. Traffic load is highly dependent on parameters such as time, day, season, weather and unpredictable situations such as accidents, special events or construction activities. If these parameters are not taken into account, the traffic will create delays. It is usually happened whether at intersection, roundabout or along a straight road.

Road intersection can be described as a node inside one road system and at this area all roads come across together for the necessity of road users to change to other road. Dissent movement that usually appeared at intersection had caused major problem especially when it is concerned with the road safety and service. Although the application of traffic light at intersection able to reduce congestion, however, it is not the perfect solution since the increasing of population had enlarged the amount of traffic congestion, especially during morning and evening commute period.

Traffic congestion usually results when:
- The road system is unable to accommodate traffic at an adequate speed,
- There are conflicts among the different types of traffic (cars, trucks, buses, cyclists or pedestrians), and
- Traffic controls are used improperly or are not co-ordinated to optimise throughput along a corridor.