ABSTRACT

The title of the project is “Express Bus Telemetry System”. Nowadays, the express bus accident caused by excess of speed limit increase drastically and this is due to poor monitoring by the traffic police and the Road Transport Department. Although there are a lot of speed traps in Malaysia, but speed traps seems like not sufficient to curb the unprofessional attitude of the bus drivers.

The Express Bus Telemetry system is a project mainly to reduce the accident cause by express bus due to over speed especially in highways and to monitor the speed of an express bus. This project consist of both hardware and software components. The hardware components consist of speed detector, converter, 433MHz FM RF transmitter and receiver module. The software components consist of both microbasic microcontroller programming and visual basic programming.

The speed detector will automatic detect speed of the bus once the engine of the bus is started. The speed is calculated by a PIC16F84A microcontroller inside the peed detector and the microbasic version 5.0.0.0 is the programming language used in this part. Once the speed is calculated by the PIC16F84A, the signal will be sent to the transmitter module. The 433MHz, FM transmitter module inside the bus is responsible for transmitting the signals to the 433MHz, FM receiver module which is placed inside one of the base stations nearby.

The receiver module is connected to another PIC16F84A microcontroller. This microcontroller acts as a converter where it will convert the serial data received into parallel data. The output of PIC16F84A microcontroller is connected to a computer inside the base station and all data will be stored inside the computer. Visual basic 6.0 is he programming language used for GUIs. The program created will read the speed data with the corresponding time. A graph of speed with respect to time can be plotted.

The speed of the bus at that particular base station which has received the data sent by the transmitter can be monitored based on the graph.

This report consists of the introduction of this project, literature review where the design methodology and a few general principles will be explained, hardware design of the speed detector, transmitter and receiver module, as well as the converter, software development for speed detector, converter as well as the graphical user interfaces. Besides, this report also consists of all the testing progress with results, results analysis, conclusion, and with all the references which have been made