

REMOTE CAR STARTER USING RADIO FREQUENCY (RF)

by

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APPROVAL AND DECLARATION SHEET

This project report titled Remote Car Starter Using Radio Frequency was prepared and submitted by Mohammad Sabry Bin Alias (Matrix Number: 031080583) and has been found satisfactory in terms of scope, quality and presentation as partial fulfillment of the requirement for the Bachelor of Engineering (Computer & Communication Engineering) in University Malaysia Perlis (UniMAP).

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SISTEM KAWALAN PENGHIDUP ENJIN KERETA MENGGUNAKAN RADIO FREKUENSI

ABSTRAK

Pada masa kini, kebanyakan alat kawalan menggunakan kaedah inframerah untuk mengawal sesuatu aplikasi. Tetapi ia cuma boleh mengawal satu aplikasi pada suatu masa tertentu. Maka, alat kawalan pintar perlu direka bagi memenuhi kehendak pengguna masa kini. Proposal ini membincangkan mengenai rekabentuk dan pelaksanaan terhadap sistem kawalan penghidup enjin kereta, dimana sistem ini membolehkan pengguna menghidupkan kereta mereka dari rumah, pejabat, sekolah dan lain lain. Tujuan utama projek ini adalah untuk menetapkan keadaan suhu kereta yang sesuai sebelum kereta dipandu. Ini akan memastikan kereta berada di dalam keadaan yang baik untuk sepanjang masa. Radio frekuensi digunakan sebagai alat perhubungan diantara penerima dan pemancar, dimana ia mempunyai nilai frekuensi yang tertentu untuk tujuan keselamatan. Maka untuk projek ini, modul RF yang berfrekuensi 315 MHz digunakan dimana ia mengandungi bahagian pemancar dan penerima. Apabila alamat adalah seragam diantara modul pemancar dan penerima, data daripada “*encoder*” boleh dipancarkan dari pemancar ke “*decoder*” pada litar penerima, dimana ia akan disambungkan kepada keluaran untuk litar penerima. Dalam kes ini, ia akan disambungkan kepada enjin kereta dan alat penyaman udara di dalam kereta. Kebaikkan radio frekuensi digunakan sebagai alat perhubungan adalah kerana ia dapat memancar data dari jarak jauh serta dapat mengawal lebih dari satu penggunaan pada suatu masa tertentu. Diantara faedah-faedah terhadap penggunaan sistem pengawalan ini adalah seperti menghidupkan dan mematikan enjin kereta dari jarak jauh, memasuki ke dalam kereta tanpa merasakan bahang kepanasan semasa keadaan terik dan juga dapat menjaga keadaan kereta dengan sempurna kerana adalah lebih baik jika dapat memanaskan enjin kereta dengan sempurna sebelum memandunya.

REMOTE CAR STARTER USING RADIO FREQUENCY

ABSTRACT

Nowadays, most of the remote control is a controlling device using infrared transmission method. Unfortunately, it can only control a device one at the time. This proposal discusses about the design and implementation of a “Remote Car Starter Using Radio Frequency”, where this device will allow user to start his/her car from house, office, school etc. The main goal for this project is to set up a good temperature in the car before we start to drive it. This will ensure that the car will be in a good condition for all time being. Radio frequency is been used as a communication path between the receiver and transmitter, where it has its own frequency value in terms of security purpose. Therefore, RF module at 315 MHz is used which it consists a receiver and transmitter path. Once the address is synchronize between the receiver and transmitter module, then the data from encoder can be transmitted by the transmitter to the decoder at the receiver path, where it will be connected to the output of the receiver circuit. In this case, it will connect to the engine starter and also to the air conditioner button inside a car. The benefits of using a radio frequency as a communication path are because it can transmit the data from a distance and with few barriers along with it. Also, it can control more than one output device at a time, where this save a bit of time for the user. The benefits of having a “remote car starter” are for start and stop the car’s engine from distance, to enter a car where it is not hot during sunny days and also to take care of the car, because it is always better to let the car warm up properly before driving it.