

PC BASED VOICE CONTROLLED VEHICLE VIA RF SIGNAL

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ABSTRACT

The project is to build a PC based voice controlled vehicle via RF signal. The prototype involves the microphone, PC, interface circuit, RF wireless module. The RF transmitter is connected to the PC via suitable interface circuit and the receiver is embedded in the vehicle. The voice of the user is sent to the PC via microphone and will be transmitted through the transmitter which is connected to the PC. The vehicle should be able to move as instructed by the user. The project uses 3 commands – 'FORWARD', 'BACK' and 'STOP'. Suitable GUI is used to identify the direction of the vehicle.

The PIC is programmed using mikroC programming language. The project is built using GHUI, transmitter circuit and receiver circuit. A simple GUI is developed with the help of VB6.0 programming language. The GUI helps the user to identify the direction (forward, back or stop) of the vehicle. Microsoft Speech Recognition Engine was used for the effective detection of the user commands. This software compares the commands with the phonetics and thus processes it effectively. While the transmitter circuit is connected to the computer through an RS232 cable, the receiver is fixed on the car. The commands are given through the microphone to the computer. It passes through RS232 cable and reaches dual driver/receiver MAX232. The RS232 converts the RS232 signal to Transistor-Transistor Logic Signal (TTL) which in turn is transferred to the preprogrammed PIC. The PIC understands the command that has been spoken by the user and is passed to the encoder PT2262. It is then transmitted by the RF transmitter. It is picked up by the RF receiver and passes to the decoder PT2272. It decodes and passes the data to PIC or the receiver circuit. The preprogrammed PIC understands the command and gives the signal to the appropriate pins which turn on the relays that are responsible for the rotation of motors and the car moves as instructed.

The validity of the project is confirmed with complete design implemented and vehicle has been tested by various users. It is observed that this is a speaker independent voice recognition system as the vehicle moves according to the commands spoken by various users.

Keywords: GUI, PICV, mikroC, Visual Basic, Microsoft Speech Recognition Engine, RS232, MAX232, TTL, PT2262, PT2272, RF wireless module, Forward, Back, Stop.