CELL PHONE OPERATED LAND ROVER

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A Project Report
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ABSTRACT

Robotics is the science and technology of robots, and their design, manufacture, and application. Fascinated by NASA's project which involved in controlling an unmanned robot in planet mars, a simple version is attempted.

This project mainly involves in controlling the rover with the help of a cell phone. The signaling used for communication between user and the rover is "DTMF". Both the user as well as the rover should be equipped with a cell phone each since the cell phone has a built in DTMF encoder. The rover is programmed to perform in accordance with the command given through the cell phone. Hence it can be controlled from any place provided the cell phone network is present, both at the transmitting and the receiving ends.

The microcontroller used for controlling the rover is PIC18F8J11.Additional features like IR were used primarily to detect obstacles and to avoid collisions. A camera is placed at the top of the rover in order to survey a particular area. The rover, when in auto mode can operate without any signal being given out by the user. An additional feature of FM circuitry is provided as a stand by for cell phone where in, DTMF tones are generated and are transmitted using FM channel.

The rover was put to test in varying conditions and its performance especially in collision avoidance were better outdoors than indoors. Adopting few techniques to reduce power consumption could improve the range of the rover.