

Kuvempu University



**A PROJECT REPORT  
ON  
“MICROCONTROLLER BASED REMOTE CONTROL  
VEHICLE WITH VIDEO FEEDBACK”**

**Submitted in partial fulfillment of the requirements for the award of Degree in  
BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND INSTRUMENTATION**

**Under The Guidance of**

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## **ABSTRACT**

With the rapid development of automatic control techniques a central question is how the division of labor between the human operator and the automaton should be optimally distributed. In this connection, the present study focused on an intelligent, semi-autonomous, interface for a camera operator of a simulated Unmanned Ground Vehicle (UGV). This interface used inherent system knowledge concerning UGV motion in order to assist a camera operator in tracking an object moving through the landscape. This landscape was detected by the video camera attached to the UGV-platform and presented to the operator on a monitor display. The semi-automated system compensated for the translations of the UGV relative to the earth. This compensation was accompanied by the appropriate joystick movements ensuring tactile feedback of these system interventions. The operator had to superimpose camera movements over these system actions required to track the motion of a target (some explosives) relative to the terrain. Consequently, the operator remained in the loop; he still had total control of the camera-motion system.

In this project, a technique for remote control operation of any vehicle is developed using a PIC- microcontroller. Dual tone multiple frequency (DTMF) method is used to relay the control commands, along with FM transmitter and receiver for communication and video camera for video feedback, which facilitates remote vehicular operations.