

Design and development of remote communication system for mines detector robot

Abstract

This paper describes the design and development of remote communication system for mines detector robot. This project uses a PIC18F4580 microcontroller to control the robot movements and functions. A metal detector will be attached to the robot. The robot will have two operating modes; automatic and manual mode. In automatic mode, the robot will move according to a predefined track. When the robot is moving, the system produces feedbacks given by the sensors on the robot to the remote computer about the surroundings and when potential land mines are detected. In manual mode, the robot will be fully controlled by the remote computer for decision making process. All the controls and monitoring of data are displayed in a graphical user interface (GUI). The wireless module proposed is the XBee RF modules. The XBee modules were found to perform with optimum data transfer reliability at the range equals to 25% of its maximum communication range.

Keywords — Mine detector, remote communication system, XBee modules, graphical user interface (GUI).