



# (JAGUAR) MULTIPURPOSE ROBOT FOR MILITARY OPERARION

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## ABSTRACT

*JAGUAR MULTIPURPOSE ROBOT FOR MILITARY OPERATIONS is designed to develop android application based a robotic vehicle for remote operation. This is kind of robotic vehicle can be helpful for military operations and for defense use and border security. This robot vehicle is controlled by android application for remote operation is presented. Remote application can be used efficiently for robotic control and communication. The remote recognition circuit has been designed to work independently from the robot's main intelligence. To control and command. It will make it easier while increasing the efficiency and effectiveness of working with device. The proposed topic involves is Bluetooth controllers. Bluetooth controller is a component that is use to control the robot with the help of used with a Bluetooth device interfaced to the control unit for sensing the signals transmitted by any android application.*

## INTRODUCTION

Robotic vehicle have developed a wide variety of applications ranging from military patrolling to industrial inspection, indoor and outdoor application requiring robust maneuverability and more. These inspection robots usually have four and six wheel and often run into problems on rough terrains.

Well we here by developing a robot that is developed to run using a tracked mechanism like a tank to allow its axis on rough terrains. Also, the remote, control robot can be controlled over 100 meters range integrated with wireless transmission.

This RC tank robot provides the following advantages:

- Tracked will system for easy control on all terrains
- Long range RC control

- Use for military patrolling

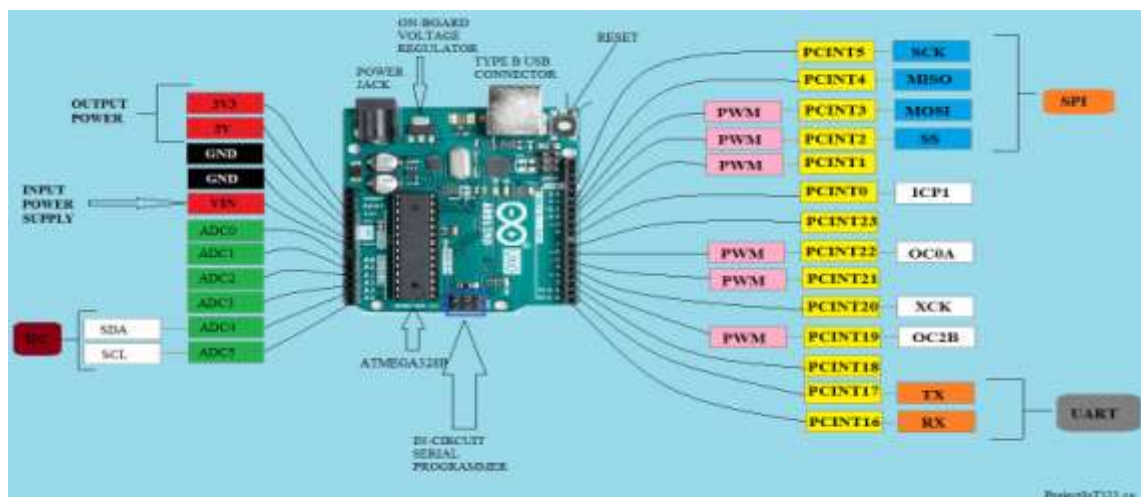
The tank make use of 4 x DC motors in order to drive tracked mechanism. The control commands are transmitted by the user using a Bluetooth transmitter. The commands are received by the on board receiver module of the tank. The tank makes use of an Arduino UNO controller to control the operation.

The Arduino UNO now operates the motors using motor drivers to achieve to desired motion as per the user commands.

## COMPONENTS:

- Arduino UNO
- Motor Driver
- DC Motor
- Bluetooth Module
- Track Wheels and Belt
- Battery

## ARDUINO UNO



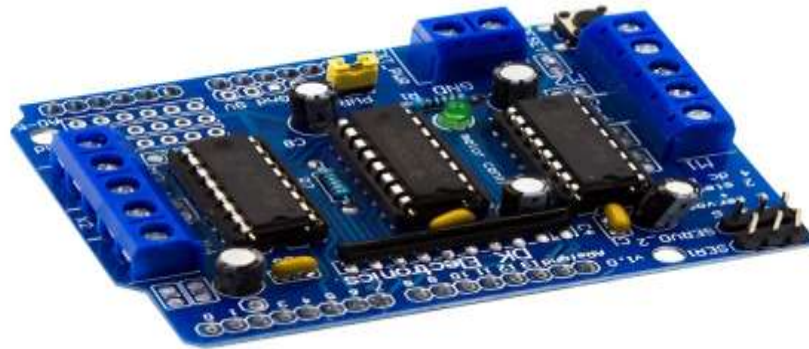
The Arduino is the open-source microcontroller development board based on the ATMEGA328P microcontroller IC designed to provide a simple and cheap platform for digital and embedded systems projects.

The ATMEGA328P microcontroller IC is the heart of the Arduino microcontroller development board. The board is designed around the ATMEGA328 microcontroller IC.

It has 25 pins.

The Arduino UNO microcontroller looks like on the above image.

## MOTOR DRIVER



The L293D is a dual-channel H-bridge motor driver. It can control two DC motors or a stepper motor at one time. It is technically capable of controlling a total of four DC motors.

This is ideal for two and four-wheel robot platform.

The IC has two H-bridges to control the motor.

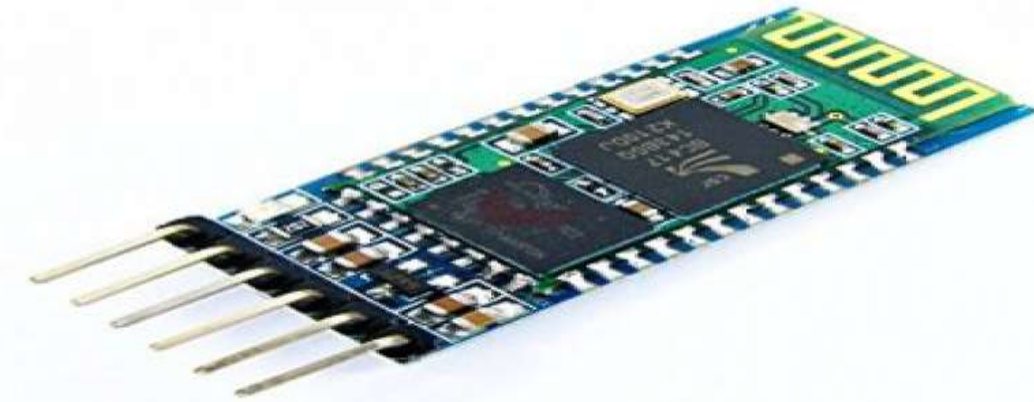
Each delivering up to 0.6A to a motor.

## DC MOTOR



DC Motor – 12volts geared motors are generally a simple DC motor with gearbox attached to it. This can be used in all-terrain robots and a variety of robotic applications. These motors have a 3mm threaded drill hole in the middle of the shaft thus making it simple to connect it to the wheel or any other mechanical assembly. 12V DC geared motors widely use for robotics applications.

## **BLUETOOTH MODULE**



HC-05 Bluetooth Module is an easy- to- use Bluetooth SPP (serial port protocol) module, designed for transparent wireless serial connection setup. HC-05 Bluetooth module provides switching mode between master and slave mode which means it able to use neither nor transmitting data.

## **TRACK WHEELS AND BELT**



Continued rubber tracks specially made for robot, robust maneuverability, stair climbing.



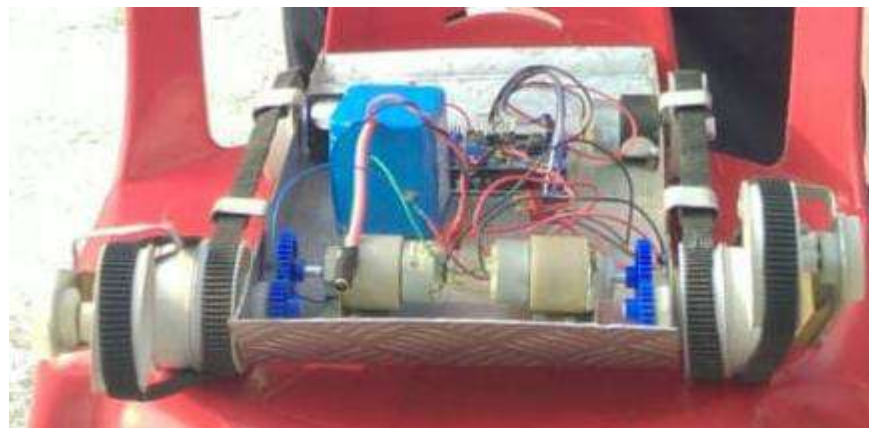
## BATTERY



Lithium- ion battery is the most powerful battery. High energy density, loses actual charging capacity over time. The capacity to convert battery into actual power 85-90%, it is more volatile as compared to lithium polymer, heavier and cheaper. It's long- lasting battery.

## WORKING

This project is developed of existing technologies for better use in military and industrial use to save as many as human lives possible. It rides adventures activities like tracking. There are different types of robots that are employed to perform specialized tasks especially in military applications. In military services, there are some areas in which some of the tasks involve greater risk and danger, and therefore, those tasks must be performed without military personal, solely by the robots. Now a days, with the development of technology, several robots with very special integrated system are particularly employed for such risky jobs to do the work diligently and precisely. This article intended to give relevant information about such military robots and their working capabilities and efficiencies.





## CONCLUSION

Today we find most robot work for people in industries, factories, warehouses, and laboratories. Robot are useful in many ways. It is use in military operation, robust maneuverability, and stair climbing. Therefore, having robot haves business owners to be competitive, because robots can do jobs better and faster than humans can, e.g. robot can built, assemble a car. At robots cannot preform every job. Finally, as technology improves, there will be new ways of using robots that will bring new hope and new possibilities.

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