

Agricultural Robot

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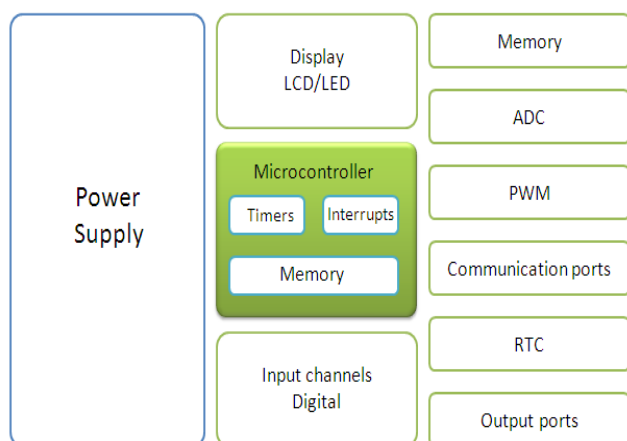
Abstract— An agricultural robot or agribot is a robot deployed for agricultural purposes. The main area of application of robots in agriculture is at the harvesting stage. Fruit picking robots and digging, ploughing and seeding robots are designed to replace human labor. The agricultural industry is behind other complementary industries in using robots because the sort of jobs involved in agriculture are not straightforward, and many repetitive tasks are not require to do.

Index Terms—Agricultural Robot, Harvesting, Digging

I. INTRODUCTION

A Robot can be all these-and more. Of course a robot is a machine, but a very special one. It is also an independent begin. For centuries the idea of the robot has included our power to think, create and control-the skills we believe make us a unique among the creatures of the Earth.The proposed Agricultural Robot is the system or machine consist the transmitter cuircuit.the transmitter circuit transmits the commands require to operate the robot.the receiver circuit receives these commands through the 8051 and moves the robot according to the received commands. A metal detector is interfaced to the controller in the receiver side.thus whenever any operation have to do the robot is ready to perform

Figures



Block Diagram

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HARDWERE COMPONENT

- . 8051 Microcontroller unit
- LCD Display
- Robot.
- . DC Motors
- . ADC
- . L293D IC
- . MAXX232
- Rs232 Cable.

SOFTWARE COMPONENTS

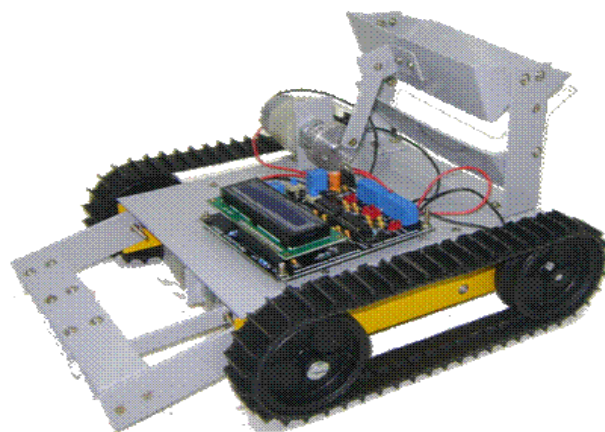
- Keil Software
- Flash magic.

The transmitter and receiver section consist of 8051 microcontroller IC.it is 40 Pin IC.LCD display,L293D,MAXX23 and robot.the 4 bit binary input is applied to the detector through the AD0,AD1,AD2,AD3 this pins are connected to ground in transmitter circuit.the 4 bit data is transmitted to 8051 transmitter and LCD parallel.this is transmitted to receiver seerially.input is given to the encoder through button..

The four data pins D0-D3 are connected to the port P2.0-P2.3.the decoded data is appied to the microcontroller which controls the movement of robot.and all the commands or operations performing by robot is displays on LCD screen.thus the robot will degging, ploughing, seeding, fruit picking and harvesting.

L293D is a motor driving IC.this is used to drive the motor.L293D has h-bridge internally.

AGRICULTURAL ROBOT



II. WORKING

This robot mainly consist of 8051 microcontroller, LCD display, Two L293D ICS, 4 DC motors, and MAXX23 .

- Initially burn the code into the microcontroller using flash magic.
- Now switch on the power supply for circuit.
- Now send the command 1 using transmitter.

- This transmits to receiver.
 - At the receiver side receiver receive these commands and moves the robot according to the commands.
 - The following commands moves the robot in specific direction and operation as
 - Forward
 - Backward
 - Right
 - Left
 - Teeth up and down
 - Hopper close and open
- While robot is moving it performs digging ,ploughing, seeding and harvesting operations on farming land.

III. ADVANTAGES AND DISADVANTAGES

Advantages

- 1- It is one of the latest and sophisticated system
- 2- It control whole system automatically.
- 3- It is reliable and requires less maintenance.
- 4- It is Affordable .
- 5--The system working is simple and easy to use.

Disadvantages

- 1-Need power supply all time.
- 2-The Hopper is automatically open –close while seeding until it not received stop command manually.

IV. APPLICATION

- The system or robot can be mainly use in agricultural field.
- It is used in home gardening.
- It is used in sports ground
- It is used in fruit gardens.

V. CONCLUSION

This project entitled “ AGRICULTURAL ROBOT “ has been using discrete electronics component around advance microcontroller 8051 the system is operated by 4 DC motors and corresponding output are obtained means performing agri.operations. the above parameters are sensed and automated by the ultimate application of 8051 microcontroller.it gives very precise and accurate results .it also provide flexibility in terms of programming.

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