Flower Cutting Robot for Greenhouse

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Abstract- *In this Paper We Have Designed A Flower or Fruit Cutting Robot Which Can Run Through Keypad which can be operated by user. As Source and have the faculty to evade The obstacles, Here we used PIC16F877A Controller Board. In this system NRF24L01 RF Module transmitter will be operated by user for cutting the Flower or Fruit in the greenhouse with the help of scissor or Gripper of a Robot. The whole system will be operated by PIC Controller and A Motor Driver Circuit to drive the wheels of the Robot. Here we utilize Simplified Version of Embedded C Language as the Programming Language for the operation of PIC Controller Board.*

Keywords- PIC16F877A controller, NRF24L01 RF Module, LCD 16X2, L293D Motor Driver IC ,Gripper,DC Geared Motor

I. INTRODUCTION

In Subsisting System we propose to make a Flower or Fruit cutting Robot for Greenhouse, using Wireless RF Module. In order to solve long-existing problems in traditional systems, such as high maintenance cost, low robustness and mobility, etc. The introduction of smart NRF24L01 RF Module has remarkable meaning in the design of robot for greenhouse systems, as it could simplify the design and also extends the function. In this system NRF24L01 RF Module transmitter will be operated by user for cutting the flower or Fruit in the greenhouse with the help of scissor as an End effector of a Robot. The whole system will be operated by PIC Controller.

II. LITERATURE REVIEW

1)Presently, human labor plays major role in the cutting the flowers and fruits in the agriculture field. For some crucial plants such as vegetarian and flowers plants, which need proper size and shape of flowers or fruits so there came an idea in mind about minimizing human efforts and providing that the plant quantities and qualities are controlled with proper management by the collected data and information from the fields.

2)This will provide enormous foundation for future growth and future development of their plants in the green house. However, with the increasing size in farming areas, this type of manual practice is increases time and cost of the labor.

III. CONSTRUCTION

In this System we make a Flower or Fruit cutting Robot for Greenhouse or Pollyhouse, using NRF24L01 RF Module and NRF24L01 RF Module transmitter will be operated by user for cutting the flower or Fruit in the greenhouse with the help of scissor as an End effector of a Robot. The whole system will be operated by PIC Controller.

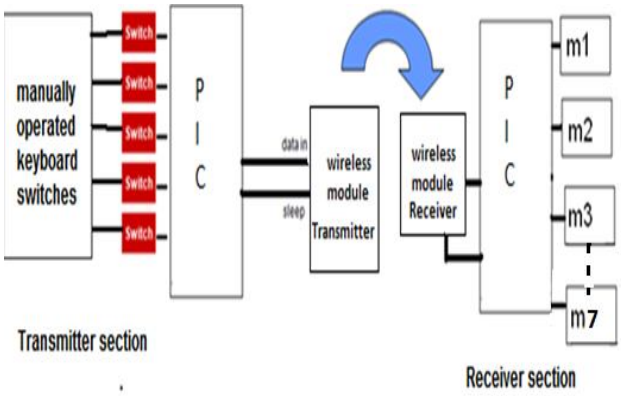


fig (A)

IV. BLOCK DIAGRAM

1) Transmitter section:

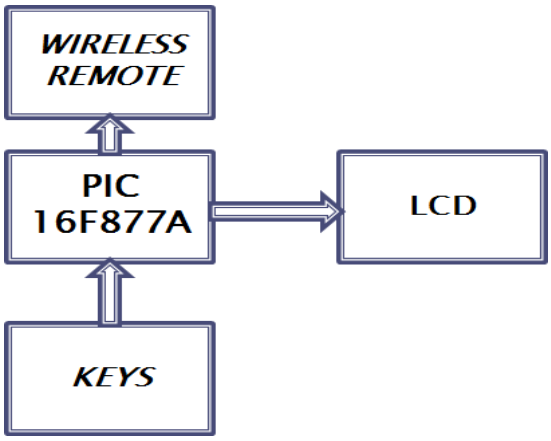
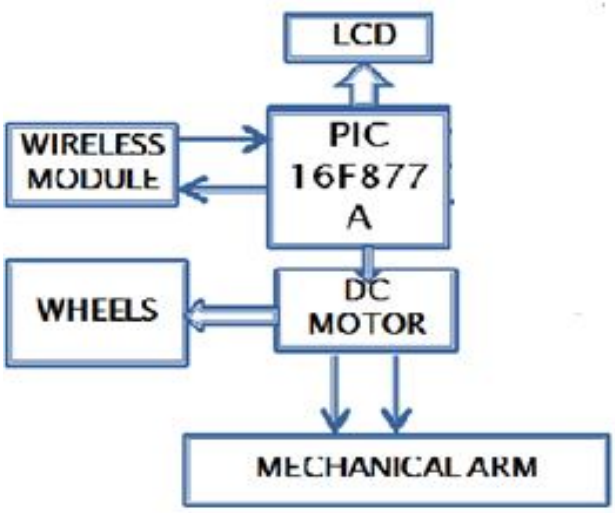


fig (B)

2) Receiver section:



fig(C)

V. WORKING

At the side of transmitter user will send the command to the robot buggy with help of remote through the NRF24L01 RF Module.

As shown in fig (B) NRF24L01 RF MODULE will be operated by user for cutting the flowers in the greenhouse with the help of buggy like structure. Buggy is mechanical structure which will move in the Forward and backward direction on the soil of the greenhouse

Microcontroller we are using PIC CONTROLLER LPC 2148 as microcontroller. We select this microcontroller because of availability of I/O pins is more and sufficient memory for programming purpose

Motor We are used brushless DC motor. Buggy moving is done by the four motors. On the top of the buggy, scissor is connected for cutting purpose. This scissor will move only in angle of 45 degree with the help of one motor. And one motor is used for movement of the scissor and one for clockwise and anticlockwise operation. Therefore total seven motors are required for this unit Motors cannot be connected to the controller directly so that relay drivers are used. An L293D Motor driver IC is used for seven motors connection to the controller.

3) Final Structure of Robot:

Fig(D)

VI. CONCLUSION

In this project we have focus on the design and implementation of wireless robot using NRF24L01 RF Module and PIC Controller that can cut the Flower or Fruit with the help of Remote.

VII. FUTURE IMPROVEMENT

- By modifying this circuit we can achieve operation of whole system on solar.
- We can reduce size and weight of Flower or Fruit cutting Robot.
- To make machine portable and easy to transport we can make use of
- Small engine and wheel.
- By using camera we can make this system automatic.

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