Design and Implementation Hi-Tech Agricultural Solar Fence Security with Soil Humidity Based Automatic Irrigation System and Voice Alert on PIR Live Human Detection

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ABSTRACT_ *Irrigation system in India has given a high priority in economic development. Many new concepts are being developed to allow agricultural automation to flourish and deliver its full potential. To take full advantage of these technologies, we should not just consider the implication of developing a new single technology but should look at the wider issues for complete development of a system. Implementation of Hi-tech Agricultural Solar Fence Security with soil Humidity Based Automatic irrigation system and voice alert on PIR live Human Detection is been implemented in this project for safe and secure agriculture irrigation. The project irrigation control using BCM2836 is designed to tackle the problems of agricultural sector regarding irrigation system with available water resources. Prolonged periods of dry climatic conditions due to fluctuation in annual precipitation, may appreciably reduce the yield of the cultivation. The expenses in establishing many of these crops and their relative intolerance to drought make an effective irrigation system a necessity for profitable enterprises. In this project we are using BCM2836, Moisture sensors, AC submersible pump, relay driver. A submersible motor will get switched ON /OFF depending on the soil moisture condition and status of motor can be displayed on 16X2 LCD. This motor will be operated using RF communication. Whenever the dry condition is detected then the motor goes to on condition. Level Sensor is used to indicate the level of water. If water level is LOW or HIGH it will give the buzzer indication. Here we are utilizing solar energy to charge the battery*
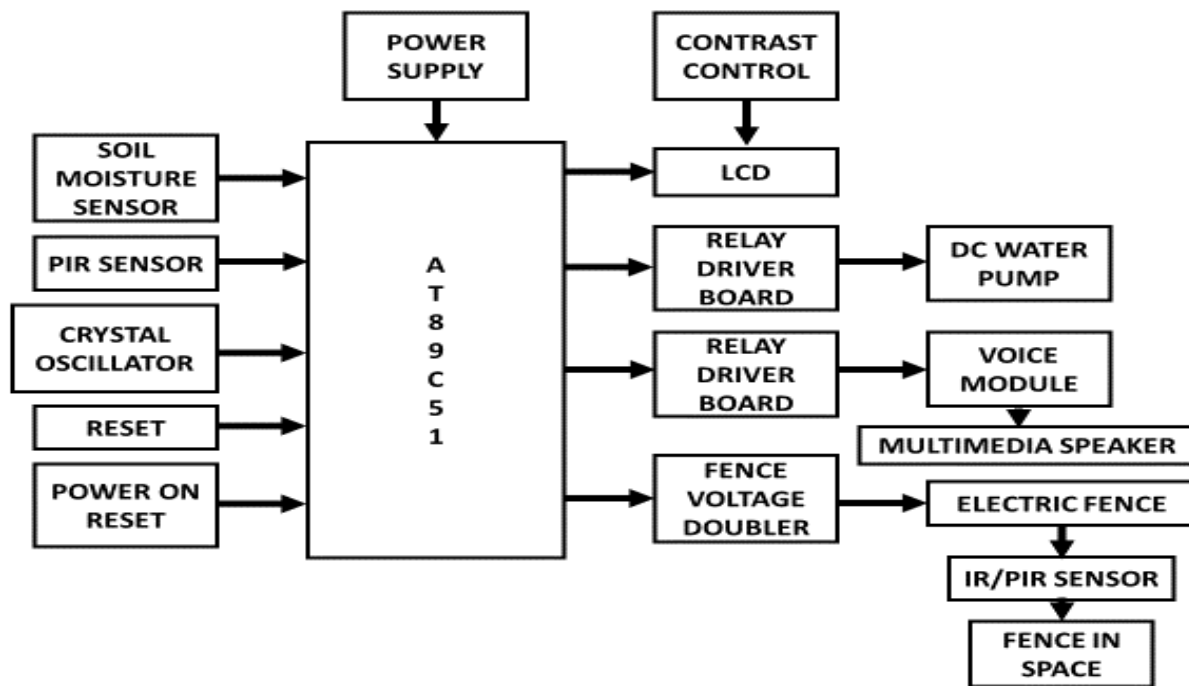
1.BLOCK DIAGRAM AND DECRIPTION

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Fig1:BLOCK DIAGRAM

The project irrigation control designed 8051 to tackle the problems of agricultural sector regarding irrigation system with available water resources. Prolonged periods of dry climatic conditions due to fluctuation in annual precipitation, may appreciably reduce the yield of the cultivation. The expenses in establishing many of these crops and their relative intolerance to drought make an effective irrigation system a necessity for profitable enterprises.

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2.COMPOENTS DESCRIPTION
2.1 PIR SENSOR:

In a PIR-based motion detector (usually called a PID, for Passive Infrared Detector), the PIR sensor is typically mounted on a printed circuit board

required to interpret the signals from the pyroelectric sensor chip. The complete assembly is contained within a housing mounted in a location where the sensor can view the area to be monitored. Infrared energy is able to reach the pyroelectric sensor through the window because the plastic used is transparent to infrared radiation (but only translucent to visible light). This plastic sheet also prevents the intrusion of dust and/or insects from obscuring the sensor's field of view, and in the case of insects, from generating false

containing the necessary electronics alarms.

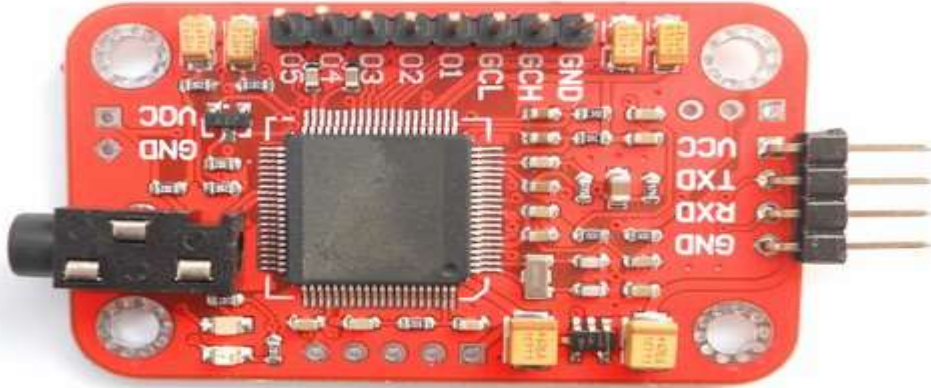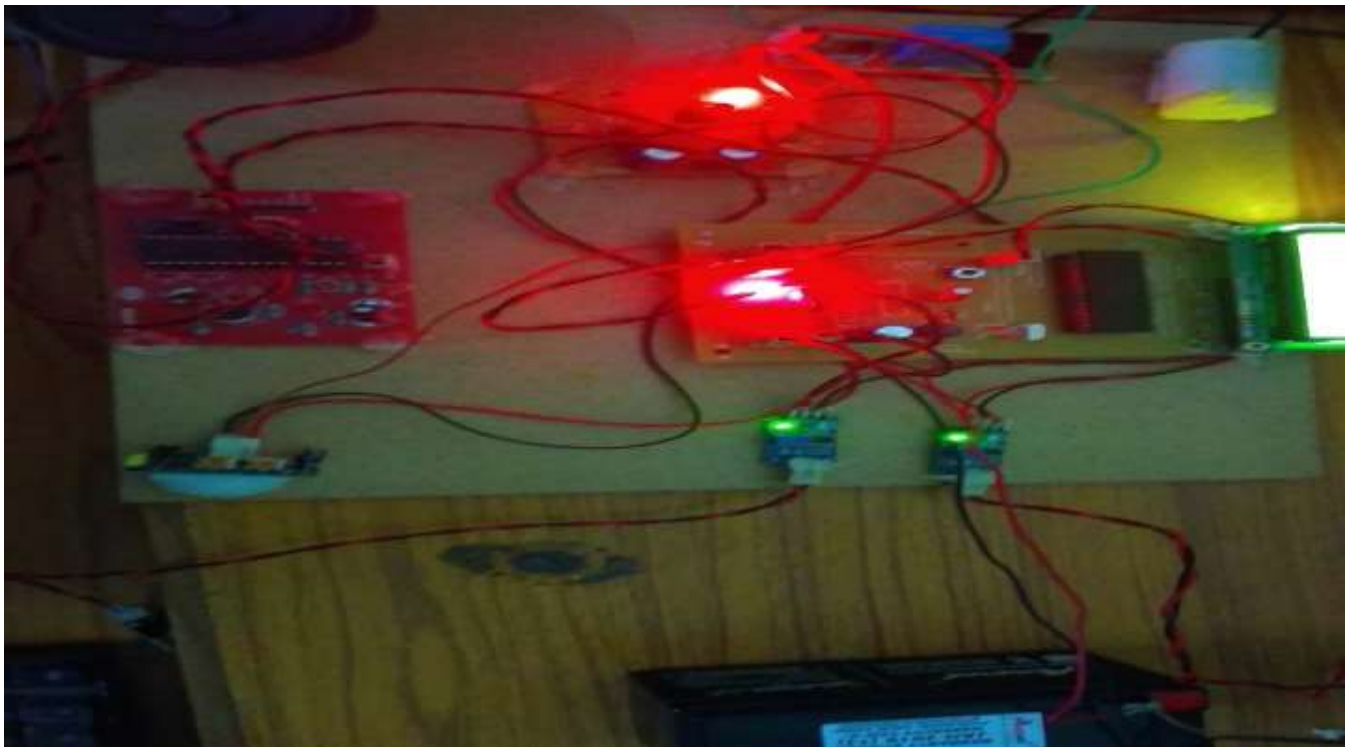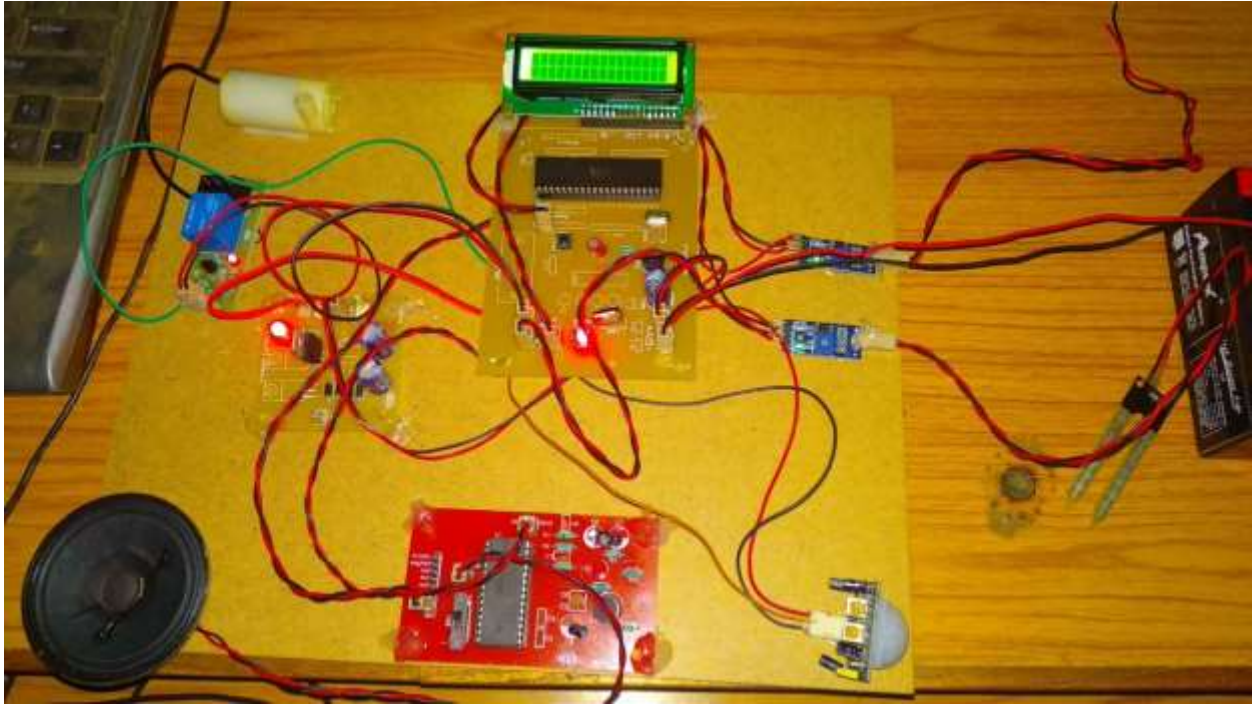**Fig 2: PIR SENSOR**

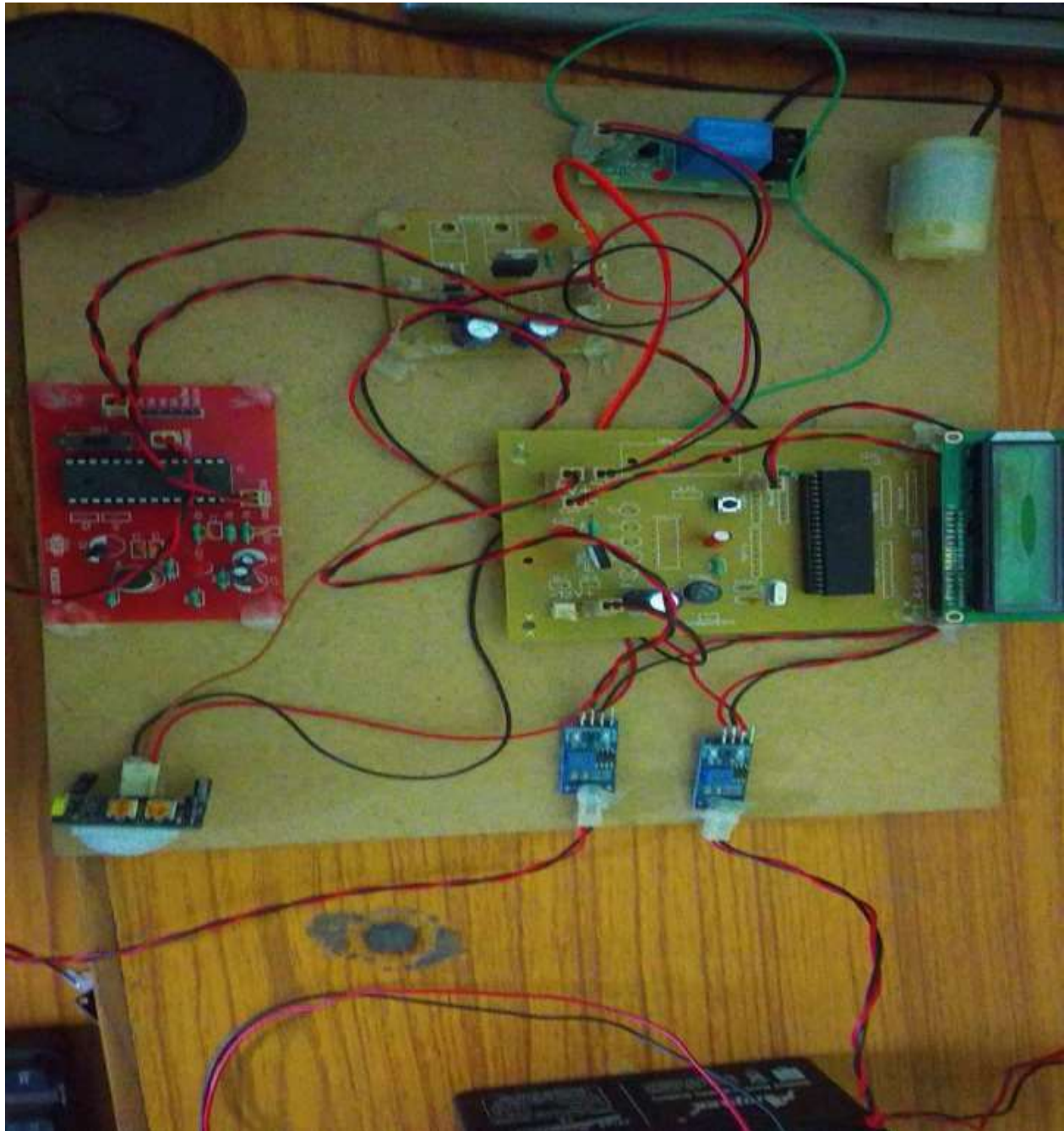### 2.2 Voice Recognition Module:

FIG 3:VOICE REORGANIZATION MODULE

PARAMETERS:

a. Voltage: 4.5-5.5V
b. Current: <40mA
c. Digital Interface: 5V TTL level UART interface
d. Analog Interface: 3.5mm mono-channel microphone connector + microphone pin interface
e. Size: 30mm x 47.5mm
f. This module can store 15 pieces of voice instruction. Those 15 pieces are divided into 3 groups, with 5 in

3.RESULTS AND DISCUSSIONS

one group. First we should record the voice instructions group by group. After that, we should import one group by serial command before it could recognize the 5 voice instructions within that group. If we need to implement instructions in other groups, we should import the group first. This module is speaker independent. If your friend speaks the voice instruction instead of you, it may not identify the instruction.

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4.CONCLUSION

This project presents a high sensitive sensor based automotive device control. The tracking controller based on the closed loop algorithm is designed and implemented with 8051 in embedded system domain. The proposed system can control devices automatically. Thus, the power can be saved. Experimental work has been carried

out carefully. The proposed method is verified to be highly beneficial for all the electrical appliances.

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