

Bluetooth Controlled Electronics Home Appliances

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Abstract- Bluetooth Controlled Electronic Home Appliances is a straightforward undertaking, where we can control distinctive electrical machines and electronic gadgets utilizing an Android gadget with the assistance of Bluetooth Technology.

Working traditional divider switches is hard for physically crippled or senior individuals. This task gives the answer for this issue by incorporating all the electrical apparatuses to a control unit that can be worked by an Android application on a gadget (Android PDA or Tablet).

The proposed framework controls the electrical burdens dependent on the information transmitted by the Android gadget. An Android application ought to be introduced in client's versatile or tablet to control the electrical burdens. Remote innovation utilized in this task is Bluetooth. It can likewise be called as "Bluetooth Controlled Electronic Appliances" or "Android based Home Automation System" or "Remote Secret key Operated Electronic Home Appliances Control System".

SPECIFICATIONS OF THE PROJECT

The proposed framework controls the electrical burdens dependent on the information transmitted by the Android gadget. An Android application ought to be introduced in client's versatile or tablet to control the electrical burdens. Remote innovation utilized in this undertaking is Bluetooth. It can likewise be called as "Bluetooth Controlled Electronic Appliances" or "Android based Automation System" or "Remote Password Operated Electronic Home Appliances Control

INTRODUCTION

Literature Review

Wireless Technologies are ending up increasingly famous around the globe and the shoppers value this remote way of life which gives them remember of the outstanding "link turmoil" that will in general

develop under their work area. Presently with the installed Bluetooth innovation, advanced gadgets structure a system wherein the machines and gadgets can speak with one another.

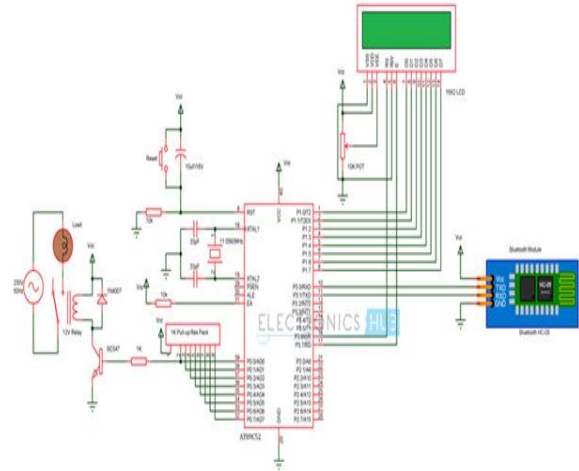
Today, home mechanization is one of the real utilizations of Bluetooth innovation. Working over unlicensed, all inclusive accessible recurrence of 2.4GHz, it can interface computerized gadgets inside a scope of 10m to 100m at the speed of up to 3Mbps contingent upon the Bluetooth gadget class. With this capacity of Bluetooth; we propose a home computerization framework dependent on Bluetooth innovation. There are not many issues included when structuring a home computerization framework. The framework ought to be adaptable with the goal that new gadgets can without much of a stretch be incorporated into it. It ought to give an easy to understand interface on the host side, with the goal that the gadgets can be effectively setup, checked and controlled. This interface ought to likewise give some analytic administrations so that if there is any issue with the framework, it very well may be found. Also the general framework ought to be quick enough to understand the genuine intensity of remote innovation. At last the framework should be financially savvy so as to legitimize its application in home robotization. In the proposed framework, a Bluetooth module is interfaced to AT mega 328/P Microcontroller. This Bluetooth Module gets the directions from the Android application that is introduced on the Android gadget, utilizing remote correspondence (Bluetooth Technology). The program which is kept in touch with the ATmega 328/P microcontroller speaks with Bluetooth module sequentially to get the directions. Microcontroller switches the electrical loads consequently dependent on the directions got from the Bluetooth

SYSTEM OVERVIEW

This design consists of a microcontroller, 16 alphanumeric LCDs, 4 channel relay modules, lamps and a Bluetooth demonstration module. The ATmega 328 / P microcontroller is used here, it is an 8-bit microcontroller and requires a supply voltage of 5 VDC. Use the 7805 power circuit to provide 5 VDC to the microcontroller. We can use a 9V DC battery or a 12V, 1A adapter to power the circuit. In addition, for the above circuit, it is necessary to connect the reset circuit and the crystal circuit of the controller to work properly. You can bypass these connections (power supply regulator, crystalline circuit and reset circuit) if you use a PIC development board.

In the previous circuit, the LCD display is used to indicate the status of electrical charges and also used to display data received from Bluetooth (optional function). Here, the LCD display interfaces with the PORT1 of the microcontroller in 8 - bit mode, e. the data pins on the LCD display are connected to PORT1. The three control pins of the LCD, eg RS, RW and EN are connected respectively to pins P3.6, GND and P3.7. In addition, the 10KΩ POT is connected to the contrast adjustment of the LCD display to control the contrast of the display.

The TX and RX pins of the Bluetooth module are connected to the RXD and TXD pins (P3.0 and P3.1) of the microcontroller. The VCC pin (pin 40) is connected to + 5V and the pin ND (pin 20) is grounded. The microcontroller communicates with the Bluetooth module using serial communication (UART protocol). Use a baud rate of 9600 to communicate with Bluetooth



HARDWARE DESIGN AND SELECTION CRITERIA OF HARDWARE

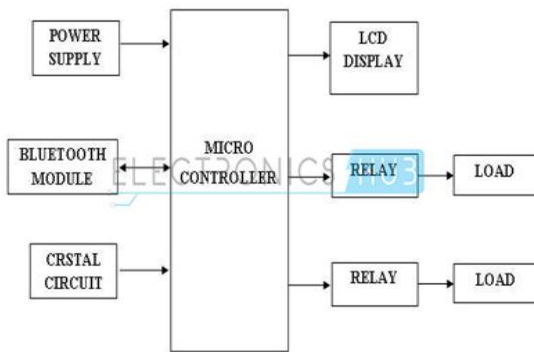
Hardware Requirements:

- AT mega 328/P Microcontroller
- PIC Development Board •
- RS232 Programmer (Programming Board)
- Programming Cable •
- 16 × 2 LCD Display •
- 10KΩ Potentiometer •
- Bluetooth Module (HC – 05) •
- 2 – Channel Relay Module •
- Loads (like Light Bulb, Fan, etc.) •
- Power Supply •
- Connecting wires
- If PIC Development Board isn't available, then you might need the following
- 10µF Electrolytic Capacitor •
- 2 x 10KΩ Resistors (1/4 Watt) •
- 2 x 33pF Ceramic Disc Capacitors •
- 0592 MHz Quartz Crystal •
- Push Button •
- 1KΩ x 8 Resistor Pack •

If Relay Module isn't available, then you can build the 1 – channel relay circuit (for 1 load) using the following •

- 5V or 12V Relay •
- BC547 NPN Transistor •
- 1N4007 PN Junction Diode •
- 1 KΩ Resistor (1/4 Watt)

BLOCK DIAGRAM



CIRCUIT DIAGRAM

Software Design & Specification Criteria of Software

Requirements:

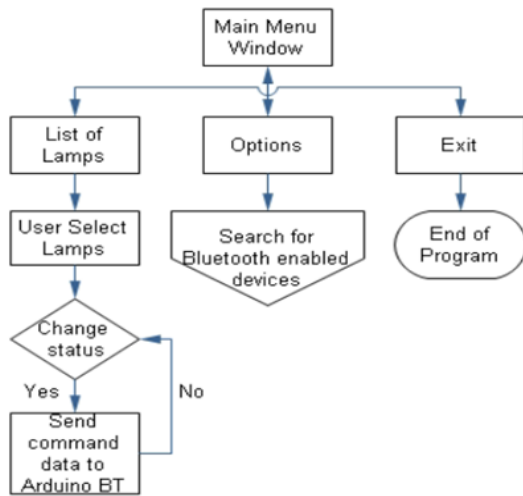
- Arduous CC IDE •
- Willard Software •
- Proteus (for Circuit Diagram and Simulation) •
- Android Application installed on Android Device

Algorithm:

- Initialize the LCD and UART protocol.
- Now read the data from Bluetooth module.
- Display the received data on LCD.
- Compare the received string with predefined strings and accordingly switch the electrical loads.
- Display the status of electrical loads on LCD.

Flowchart

Upon the execution of the program, it first checks if Bluetooth is already enabled on the phone. If Bluetooth is enabled, the device and service discovery process will run. The software will check if there are already predefined devices stored in the phone's memory.



CONCLUSION

In this record, we present the plan and execution of an adaptable, ease remote home mechanization arrangement. The framework is ensured for access by any client or aggressor. Clients are relied upon to get the matching secret word for the PIC card and the cell phone to get to the apparatuses. This includes assurance against unapproved clients. This framework can be utilized as a proving ground for all

gadgets that require on-off exchanging applications with no Internet association.

The total usefulness of the home mechanization framework has been tried and the remote correspondence between the cell phone and the PIC card has been restricted to under 50 meters in a solid structure and the most extreme interim of 100 meters has been connected in an open range.

As of now, Symbian OS cell phones just help Python contents. For future work, we suggest that you build up the GUI application with the goal that the telephone is written in Java, so it tends to be bolstered by most as of now accessible cell phones.

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