Microcontroller and Zigbee based wireless chat/communication system with Touch screen keyboard

The main aim of this project is to design a system which is capable of establishing wireless two way communication between two devices. This system can be designed in multi-languages depending on user requirement. This system makes use of Zigbee for establishing wireless communication. Operating the system is through gentle touch.

The modules in the project are: Zigbee for establishing wireless communication, Touch screen to input the data. GLCD to display the character set on its screen and two Microcontrollers to perform the required task.

ZigBee is a wireless technology developed as an open global standard to address the unique needs of low-cost, low-power, wireless sensor networks. Zigbee is the set of specs built around the IEEE 802.15.4 wireless protocol. As Zigbee is the upcoming technology in wireless field, we had tried to demonstrate its way of functionality and various aspects like kinds, advantages and disadvantages using a small application of controlling the any kind of electronic devices and machines. The Zigbee technology is broadly adopted for bulk and fast data transmission over a dedicated channel**.**

Touch screens have greater importance than any other technologies due its user-friendly nature. Touch screen based devices can be easily reachable to the common man due to its simpler operation, and at the same time it challenges the designers of the device.

This project consists of Zigbee based system that transmits the wireless signals according to the input given by the user using touch screen. At the receiver the information will be displayed on GLCD and vice versa. The controlling of the task is done by Microcontrollers in the project which is programmed using Embedded C language.

The main objectives of the project are:

1. Wireless and secure data transmission.
2. Usage of touch screen.

This project provides us with the learning's on the following aspects:

1. Interfacing touch screen sensor with Microcontroller.
2. Characteristics of touch screen sensor.
3. Graphical LCD User Interface design.
4. Zigbee technology.
5. Embedded C programming.
6. PCB designing.

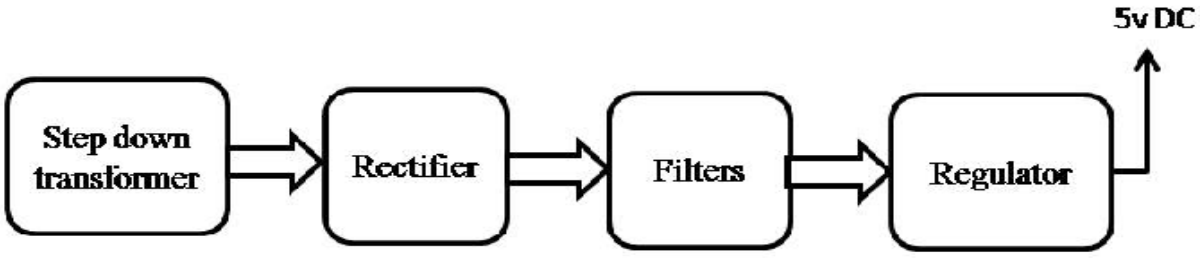
The major building blocks of this project are:

1. Regulated Power Supply.
2. Microcontrollers.
3. Graphical LCD's with drivers.
4. Touch Screen sensors with Drivers.
5. Zigbee modules.
6. LED Indicators.
7. Crystal oscillator.
8. Reset.
9. Buzzers with drivers.

Software's used:

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Micro controller.
3. Express SCH for Circuit design.
4. Proteus for hardware simulation.

Regulated Power Supply:



Block diagram:

Device 1:

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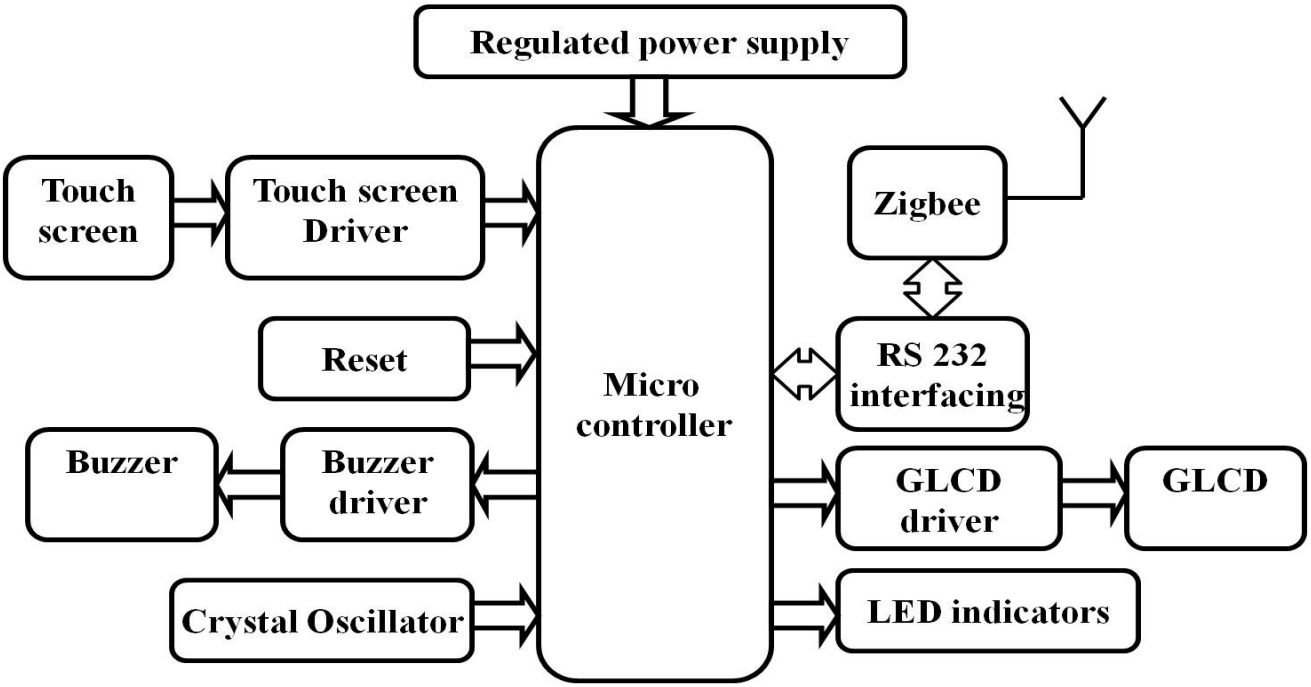

Device 2:

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