

MESSENGER DEVELOPMENT WITHOUT INTERNET USING ZIGBEE

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ABSTRACT

There are many ways to provide transmit data that is being communicated. Here the data can be monitored by using ZigBee communication device. In existing system the communication is by using internet, Bluetooth and through gsm. Bluetooth technology is having some drawbacks because in this if we want to communicate others we need to enter security password and by this only one to one communication is possible. Remaining are paid resources, by using our technology we can transfer the information free of cost in a limited distance. This is implemented with strong algorithm and effective data transmission. This is worked on mesh analysis where one to many communication takes place. The transferred data is generated through keypad and it will be encrypted and sent to destination through zigbee module. The messages will be passed to all the other slave modules.

Keywords: Arm7 Board, 8051 Boards, Zigbee Module, 16x2 Lcd, Keypad.

I. INTRODUCTION

Wireless communication turning into the most sustainable characteristic in our community, the importance of embedded structures has reached a whole new level. Engineers were noted more and extra embedded systems have commenced to appear that are included with ZigBee technological systems to shape applications that rather gain the users. This system technologies propagate a low cost, low information rate and energy intake wireless information transmission system. They also promote records protection which has emerge as a number one concern for existing conversation structures. No count how properly-included a machine, hackers usually seem to discover a manner around it somehow which spreads feelings of panic and fear among people. This technology come into motion as they are a PAN technology based on the IEEE 802.15.4 standard that have the capability to broaden a mesh community among present nodes. An man or woman node has a short range however in a mesh this range is extended and accelerated, permitting a much large place to be covered. Due to this motive, ZigBee primarily based messengers are being evolved that don't require using Internet for their operation.. The ZigBee verbal exchange tool allows messages to be transmitted and obtained wireless between authorities and controlling workplaces.

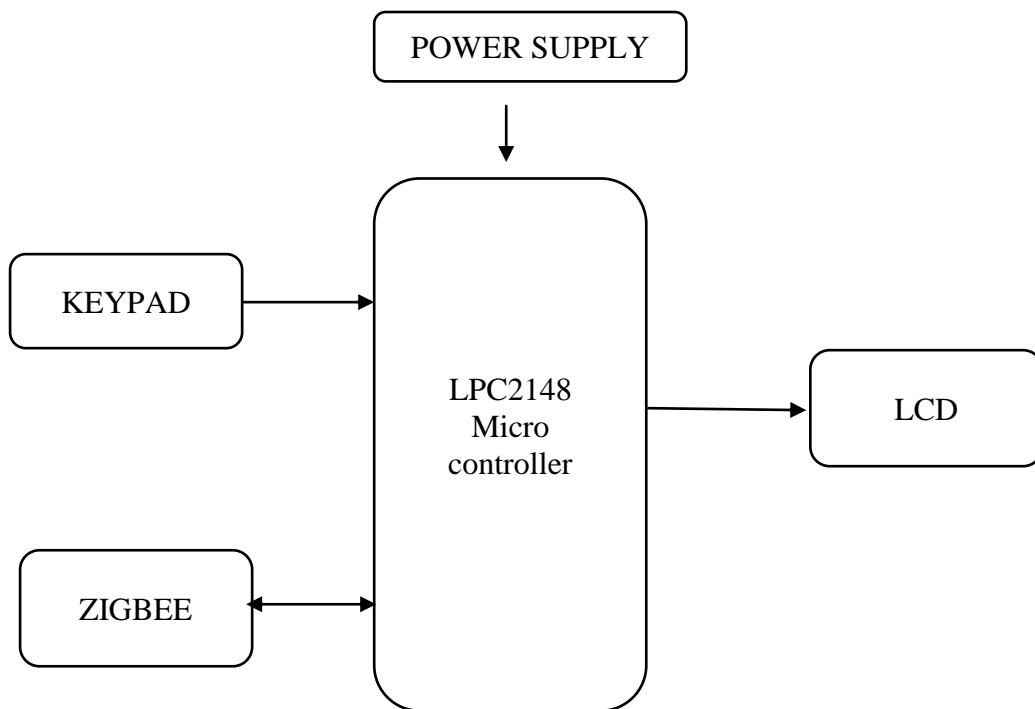
II. EXISTING SYSTEM

Communication plays a major role in every place. The previous system uses Bluetooth network for communication where it can communicate for only one limited connection and need to pair with passwords. Bluetooth was the one to one communication. We can share the information with one module/person only.

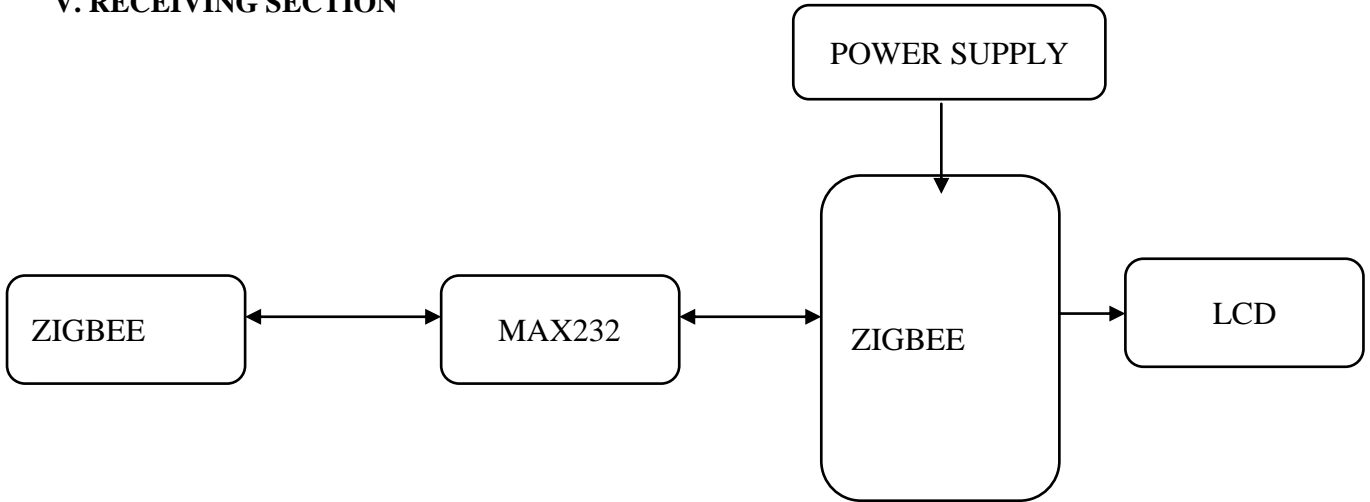
III. PROPOSE SYSTEM

In order to overcome from the existing system we are providing a standard communication with multiple connections. By using the ZigBee we can connect the no.of modules. Keypad is used to type the text along with ZigBee which is a wireless communication devices are interfaced with LPC2148 microcontroller. Communication is done through wireless at limited distances. And all the process will be carried out by the microcontroller. This is one to many communication with more securable data encryption.

IV. TRANSMITTING SECTION



V. RECEIVING SECTION



VI. HARDWARE REQUIREMENTS

LPC2148 Microcontroller

The ARM7 (advanced RISC gadget) processors board primarily based complete on a 16/32-bit ARM7 its method of sixteen/32-bit ARM7 TDMI-S microcontroller, 8 computer reminiscence unit to forty pc reminiscence unit of on-chip static RAM and 32 laptop memory unit to 512computer reminiscence unit on-chip flash memory; 128-bit In- gadget Programming (ISP). 32-bit timers/out of doors occasion counters, PWM pulse width modulation unit (six outputs) and watchdog, Low electricity of actual-Time Clock (RTC), a couple of serial interfaces which has 2 UARTs , fast I2C-bus (400kbit/. There are sixty 4 pins of ARM7 processor and a couple of ports (port0, port1) forty five pins are enter/output.

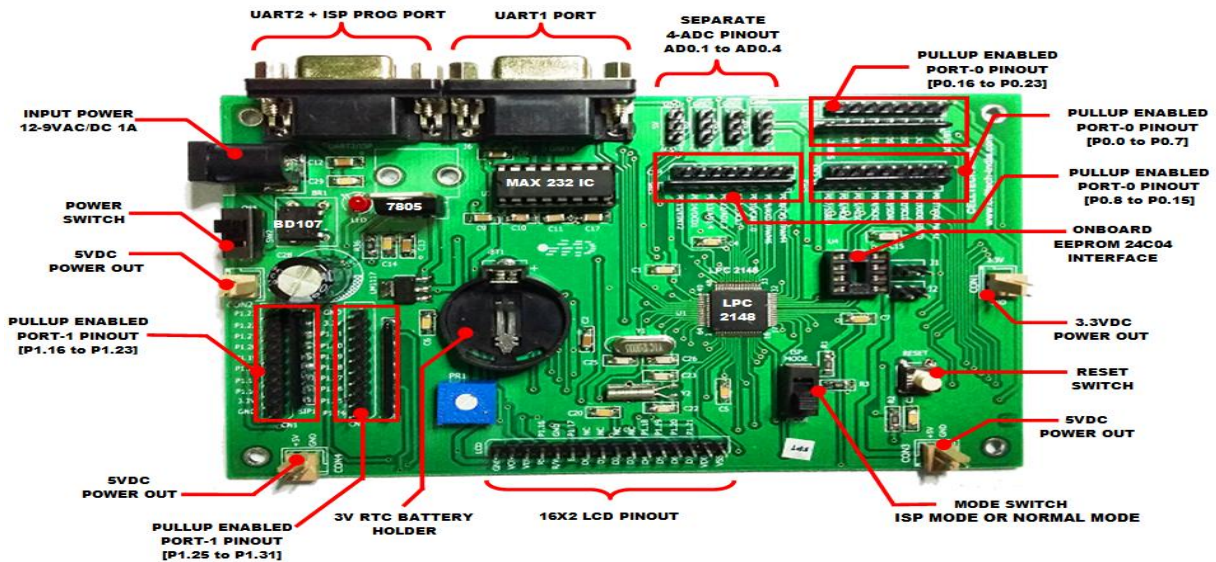


Fig:-LPC2148 board

8051 Microcontroller

It's a hard ward architecture controller having two 16-bit timers and 6 interrupts. Here two way communication takes place through Zigbee technology by using serial communication. In this 8051 family we are using

AT89S52 microcontroller. It's a CISC architecture having 40 pins. In that we have one UART port to communicate serially.

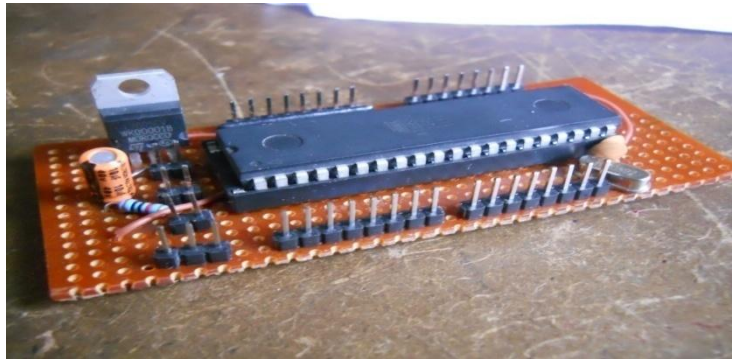


Fig: 8051 board

ZIGBEE

Zigbee is widely used communication protocol in the defense and safety system. Because its so secure to send the information from one to many at a time more securely. And we no need to be bare the charge.

It's the sort of fashionable for embedded software and has been ratified in past due 2004 underneath IEEE 802.15.4 Wireless Networking Standards. ZigBee is an established set of specs for wi-fi private area networking (WPAN), i.E., virtual radio connections between computers and associated gadgets.

The ZigBee Alliance has been installation as “an affiliation of organizations operating together to allow high security, encryption data monitoring and manipulate products based on an open worldwide standard”.

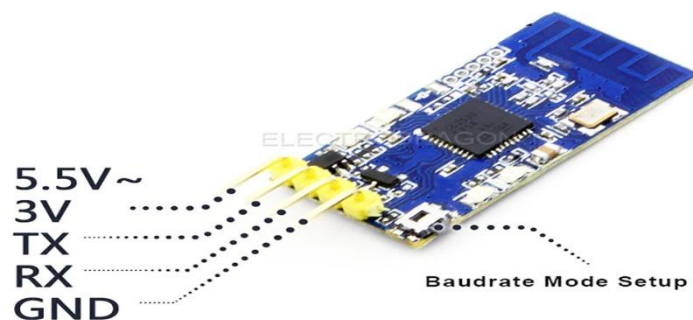


Fig: ZIGBEE Module.

In our system we are having zigbee modules to the both ends transmitter and receiver sections. Here transmitter is sends the information which will reach to the all systems and which is connected through this communication protocol.

LCD (Liquid Crystal Display)

LCD stands for liquid crystal displays. Digital display is finding wide unfold use substitution LEDs (seven phase LEDs or different multi-phase LEDs) thank to the subsequent reasons:

1. The declining costs of LCDs.

2. The power to show numbers, characters and graphics. This is overcome the disadvantages of LEDS, that area unit restricted to numbers and a couple of characters.

3. controller into the digital display, thereby relieving the processor of the task of refreshing the digital display.

In distinction, the crystal rectifier should be reinvigorated by the processor to stay displaying the info.

4. Simple programming for characters and graphics.

These parts area unit “specialized” for being employed with the microcontrollers,



Figure: Liquid crystal display

A model represented here is for its low value and nice potentialities most often utilized in follow. It show the messages in 2 lines with sixteen characters every. It displays all the alphabets, Greek letters, and punctuation marks, mathematical symbols etc. additionally; it's attainable to show symbols that user makes informed its own .Automatic shifting message on show (shift left and right), look of the pointer, backlight etc. area unit thought of as helpful characteristics.

Keypad

A keypad is a hard and fast of buttons organized in a block which commonly undergo digits and other symbols but now not an entire set of alphabetical letters.Keypads are discovered on many alphanumeric keyboards and on other devices which encompass calculators, combination locks and phones which require in massive element numeric enter.The keypad is worked based on rows and colomns. If one both row and colomn get shorten then the relavent character will be displayed.

Types of Keypad

1. Numeric keypad
2. Telephony keypad
3. Gaming keypad
4. Matrix keypad 646249

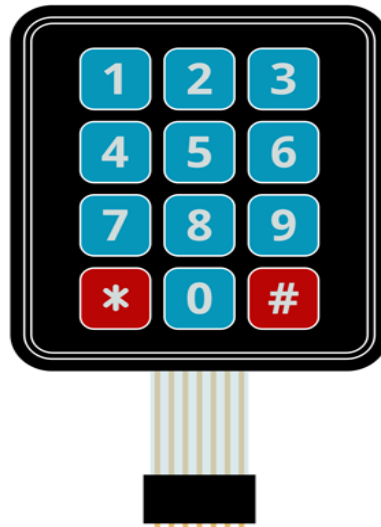


Fig: Keypad

In our system, we used alphanumeric keypad which supports numbers and alphabets. Which helps to type the message for communication purpose.

VII. SOFTWARE DESIGN

In proposed system we used below tools for programming and simulation purpose,

- 1.Keil4 Vision
- 2.Flash Magic

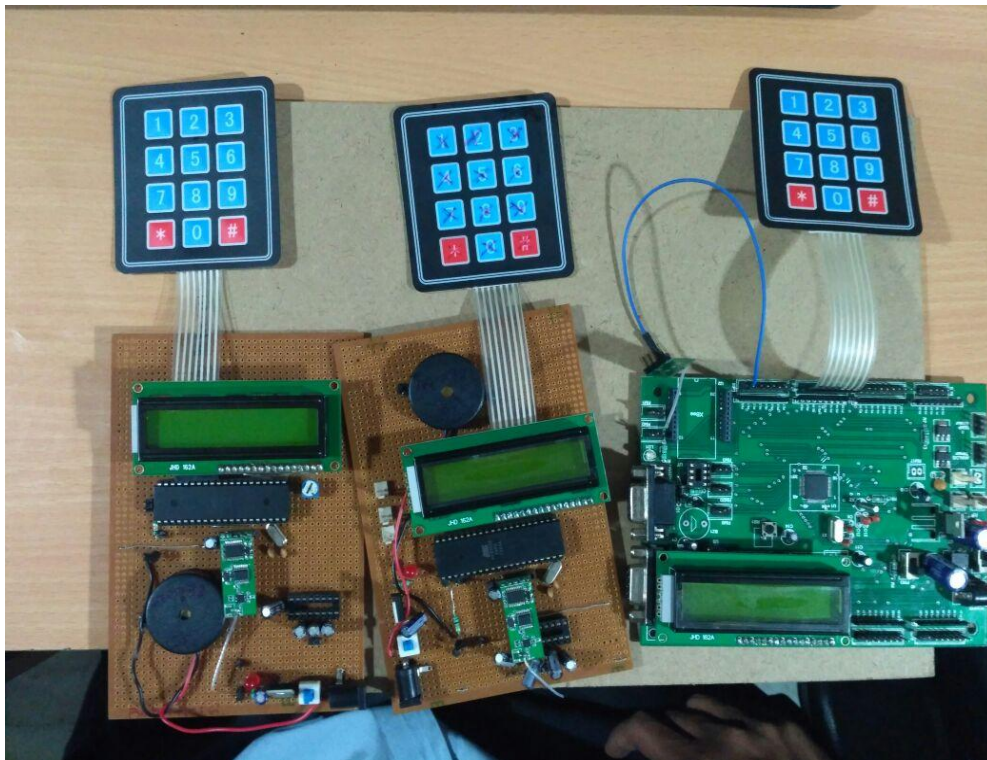
The Keil4 mVision is an IDE which is used for software programming. In this IDE,we have to select the controller which we need to program .This tool is implemented by c language. We can debug the program, can error check and used to create an HEX file in this software. By the use of hex report we have a tendency to products the code into microcontroller and carry out utility. Flash magic is used to dump the program in the controller.

VIII. WORKING PROCEDURE

In this prototype, we have the both transmitter and receiver sections to communicate wirelessly. In one section we have ZigBee, keypad and LCD interfaced with the microcontroller. Here we are using the alphanumeric keypad for entering the data, that data will transmits through the ZigBee-module and that particular data will display on the LCD. In the other section we have the 8051 microcontroller embedded with keypad and lcd. Whenever the data was received that will be display on the personal computer. If we want give the reply for that particular message we can type the message in our system and that data will transmits through ZigBee. At the other end the ZigBee-receiver will receives the message and display on the LCD. The zigbee will acts as a transmitter and receiver. This is most secured way of communication.

IX. RESULT

The project “**Messenger development without internet using ZigBee technology**” was successfully implemented and tested on the hardware. By using the ZigBee technology we can share information one to many system without any internet and message balance that was successfully implemented in our project. This project is very full for sharing the data for a small distance.



X. CONCLUSION

With our machine, we can share information one to many system without any internet and message balance that was successfully implemented in our project. This is the most secured way of communication. Data is encrypted while transmitting. So it's a safe way of interaction through wireless.




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