Power Line Communication

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ABSTRACT

In this paper, we give a study of the power-line communication (PLC) technique.Birth of this technology is from world war second happened in US. In which utilization of this technology carried out. They developed this technology to secure confidential data from the enemies,During that time, noise was simply added to a voice signal to prevent enemies from listening to the conversations. Noise was added by playing a record of noise in synch with the voice signal and when the voice signal reached the receiver, the noise signal was subtracted out, leaving the original voice signal. In this technique we can transmit data over 230V,50Hz-60Hz frequency, we can control our electronic home equipments by using half duplex communication technique. Along with power transmission system is useful for data transmission as well as for controlling over home appliances. The system will add in effect to reduce extra wiring. In our project the main aim is to secure communication and free of cost communication.

Keyword: - *PLC Modem.*

1. INTRODUCTION

Power line modem is useful to receive and send serial data over 230V,50Hz-60Hz Ac power line it has high noise emmunity. This modem is capable to transmit 9600 baud rate due to compact size of PLC modem it can be attached to both sides i.e. sender and receiver by using 5*2 matrix keyboard we can create any data and then transmit to controller. Controller sends data over Ac power line and receiver side controller receive the data and displays on 16*2 LCD display.

2. LITERATURE SURVEY

In practice many wired communication system need a separate wire,its impact goes on the cost of communication .The project is based on cost savingand secure communication, project data can transmit over AC power line therefore the cost of communication will reduce and data can transmit through single wirepower line communication reduces wiring.PLC system is use for controlling electrical &electronics home equipment.PLC also used for transferring the internet data.

3. EXISTING SYSTEM

As we know there are several different ways are used for power transfer and data transfer system. Now a days different lines are used for different purposes ,as like for power transfer a different way is used while internet will also communicated and handled by comparatively different way.Which was add disadvantage in increasing much more wiring, a quite complicated and costly communication system. Also control over this system will also becomes a quite sensitive and difficult.All this drawbacks of existing system will overcome in proposed power line communication system.

4. PROPOSED SYSTEM

In our proposed system, we proposed model of Power-Line Communication system by using this system we can able to transfer power as well data, internet through a only single AC power line.Which will add in advantage of to reduce wiring and cost of communication. In this system we can transmit data from key-Pad to controller. after this controller send the data through power line to receiver side in this case power line will be used as a communication media. This will also add an most important effect that any type of data will be perfectly secured by using this system.

5. SYSTEM ARCHITECTURE

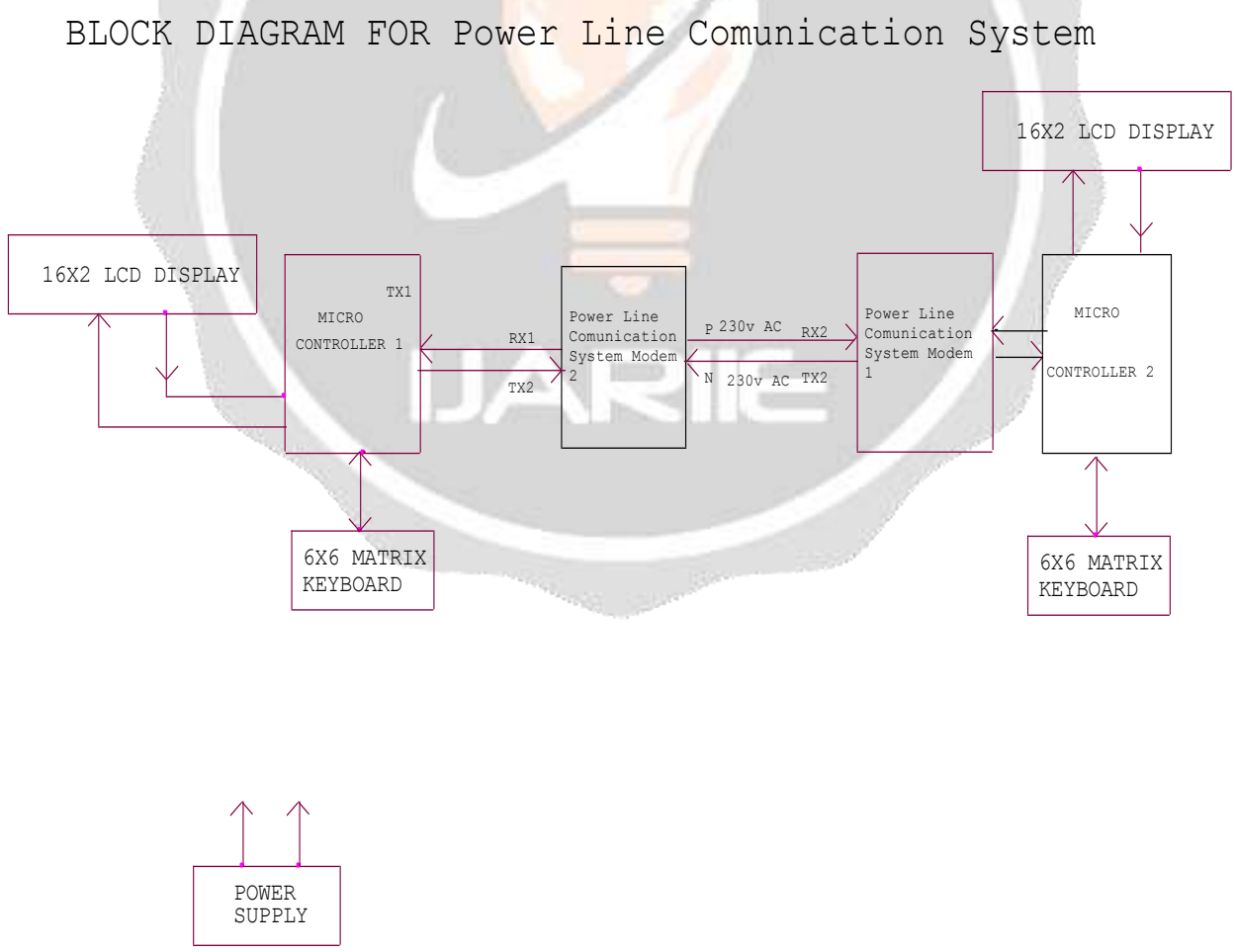

Fig.5.1. Block Diagram

The following different blocks in the system are:-
1 Microcontroller: In this project we have used two microcontroller 8952 .microcontroller is the heart of the project this is control all the function of project .which will encrypt and decrypt the data.
2. LCD 16X2 display: LCD is used at transmitter and receiver side, this is used to display encrypted and decrypted message and it has 1/16 duty cycle it is working on +5V and also on +3V.
3. LM 7805: This is a 3 terminal device used for generating +5V regulated power supply this device can be used with external component to obtain variable current and voltage.
4. Power supply: It is used to supply the power to microcontroller, LCD display, keypad.
5 Keypad: it is used to type message for transmission, in this project 5x2 matrix keypad used.

6. SYSTEM REQUIREMENT SPECIFICATION

6.1 SOFTWARE REQUIREMENTS:

- PCB Designing software Protel
- Programing software C51/SPJ System
- Keil Software (For writing Code)

6.2 HARDWARE REQUIREMENTS

- Controller IC 89C51/52.
- PLC Modem.
- LCD 16X2 display.
- Step down Transformer (230volt input/12-0-12V output@1A)
- x6 matrix Keybord.
- Dioed, transistor, crystal, resistor.

7. TECHNICAL SPECIFICATIONS

7.1 ADVANTAGES .

1. Message will be secure.
2. Do not required for extra communication.
3. Even if the message received by intruder it is impossible to read without algorithm.
4. Transfer data without paying extra cost.

7.2 APPLICATIONS

1. Home automation.
2. Internet acess and Home Networking.
3. PLC used for Transmitting radio program.
4. Army stations.
5. This system will be used effectively in rural areas where wire-less communication system fails to work.

8. CONCLUSION

In this paper by introduction the concept of exchange the data over AC main power line.In this we know about advantages, disadvantages ,applications of power line communication. We all hope that this paper gives a better understanding of topic in concise the quick way to the Rader in the PLC. we will continue to do this work and improve it in the future and always try to give our best effort to society.

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10. REFERENCE

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