Smart Restaurant System

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Abstract— This projects aims to design and develop a wireless food ordering system in the restaurant. The restaurant system is ideal for all catering environments being a canteen, a fast-food, fine dining, a cafeteria or any other food-service. The project application will become an important tool for restaurants. It can improve the management aspect by utilizing PC to coordinate food ordering. It increases efficiency for restaurants and caterers. It saves time, reduces human errors and also provides higher quality customer services. It includes Zigbee technology for communication between user and PC. It also contains PIC-Controller, LCD module, RS 232 wireless Interface (serial Port).Thus, it can be concluded that this system is an attractive solution for the Hospitality industry.

Key words: SRS, Smart Restaurant System

I. INTRODUCTION

This restaurant system is ideal for all catering environments being a pizzeria, a fast-food, fine dining, a cafeteria or any other food-service.

The restaurant system can be installed on any computer running Microsoft Windows. You do not need any special expensive hardware to run the system. It can even run on an any Pentium computer.

This projects aims to design and develop a wireless food ordering system in the restaurant. The project application will become an important tool for restaurants to improve the management aspect by utilizing PC to coordinate food ordering. It can be concluded that this system is an attractive solution for the Hospitality industry. A micro controller based wireless restaurant order taking/ transmission system. It's required MCU, LCD module, RF data Modem ETC.

II. SYSTEM DESIGN AT CUSTOMER SIDE

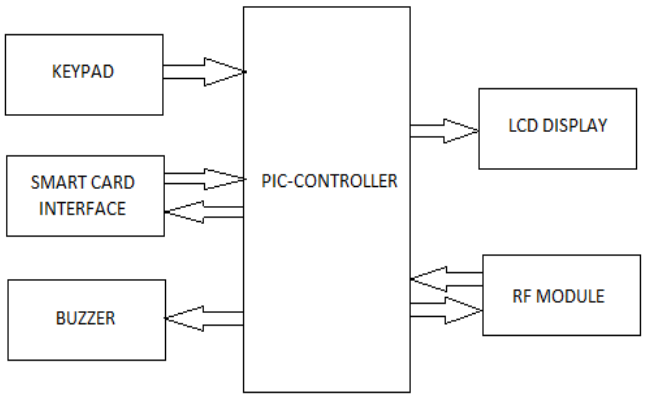

Fig. 1: System Design at Customer Side

A. Description

It will show the working of system at customer side. First customer should insert a card controller read the card. Display the update of card and then customer will select the order and through RF transrecevier order send to chief PC.

III. SYSTEM DESIGN AT CHEF SIDE

Fig. 2: System Design at Chef Side

A. Description

The transmitted signal from the customer side will be receive at chef side through RF module. Received information is transfer to computer using USB interface. Chef will prepare the ordered items and after preparing the items, chef send acknowledge to customer through the RF module.

IV. COMPONENTS APPLIED

A. PIC-Controller

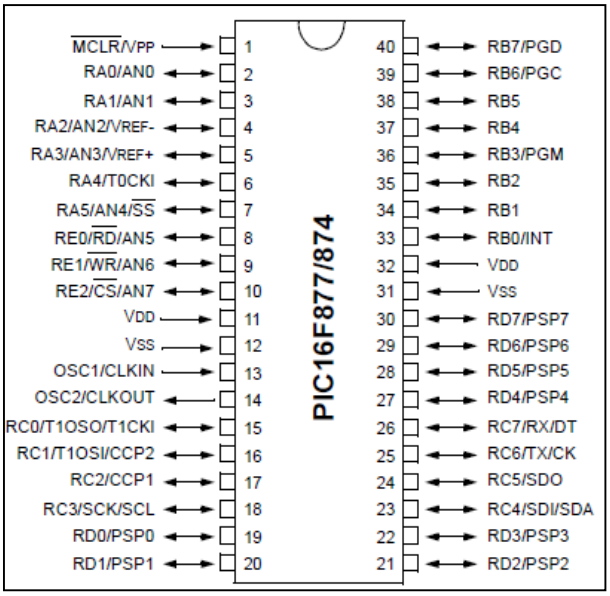

Fig. 3: Components

This is the CPU (central processing unit) of our project. We are going to use a microcontroller of PIC family. The various functions of microcontroller are like Reading the data input from switches, sending order information to PC. Receiving order acknowledgment via RF modem, Controlled the buzzer and display the all information of various function on 16 x 2 LCD Display.

B. RF Trans-Receiver Modem

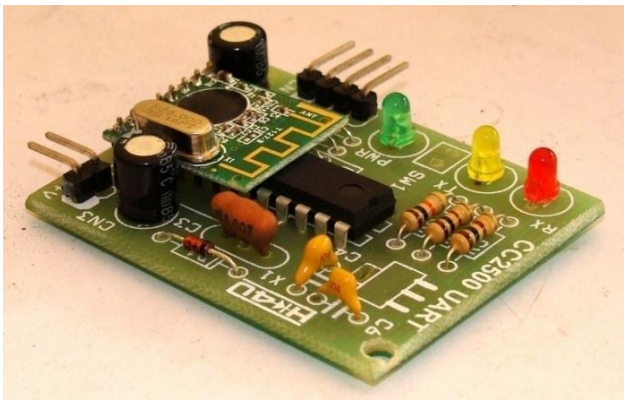

Fig. 4: RF Trans-Receiver Modem

Transmitter System connected wireless with Server PC using CC2500 RF Trans receiver. CC2500 UART RF data modem working at 2.4 GHz frequency in half duplex mode with automatic switching of receive/transmit mode with LED indication. Receives and Transmits serial data of adjustable baud rate of 9600/4800/2400/1200 bps at 5V or 3V level for direct interfacing to microcontrollers. [2]

C. 16 x 2 LCD Display

Fig. 5: 16 x 2 LCD Display

The dot-matrix liquid crystal display controller and driver LSI displays alphanumeric, characters, and symbols. It can be configured to drive a dot-matrix liquid crystal display under the control of a 4 or 8-bit microprocessor. Since all the functions such as display RAM, character generator, and liquid crystal driver, required for driving a dot-matrix liquid crystal display are internally provided on one chip, a minimal system can be interfaced with this controller/driver. A single HD44780U can display up to two 8-character lines (16 x 2).[1]

D. USB Interfacing

RF Tran-receiver connect with PC via USB Port. Trans- receiver doesn't support direct USB interface, so Serial to USB converter required. Enable two-way serial communication from USB to Trans-receiver required 3or 5V levels. Typical application includes interfacing Trans- receiver directly to USB port. The driver on PC provides Virtual Serial Port which is similar to RS232 port on PC so any existing computer port based software can connect easily.

E. LM7805 (3 Terminal Voltage Regulater)

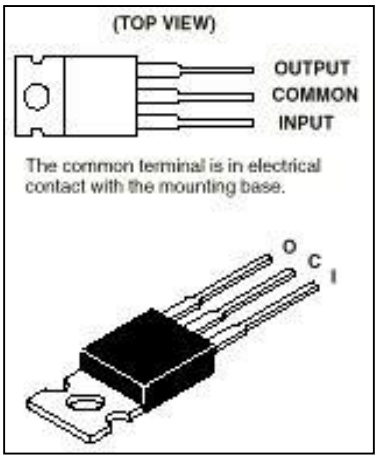

Fig. 6: LM7805

This is used to make the stable voltage of +5V for circuits. The LM7805 is three terminal positive regulators are available in the TO-220 - package and with several fixed output voltages, making them useful in a wide range of applications. Each type employs internal current limiting, thermal shut down and safe operating area protection, making it essentially indestructible. If adequate heat sinking is provided, they can deliver over 1A output current. Although designed primarily as fixed voltage regulators, More information please refer Data sheet 0f LM7805

F. Smart Card

Fig. 7: Smart Card

The smart card is one of the latest additions to the world of information technology. Similar in size to today's plastic payment card, the smart card has a microprocessor or memory chip embedded in it that, when coupled with a reader, has the processing power to serve many different applications. As an access-control device, smart cards make personal and business data available only to the appropriate users. Another application provides users with the ability to make a purchase or exchange value. Smart cards provide data portability, security and convenience.

V. CONCLUSION

The project will build a wireless ordering system, which would transmit order through the keypad, attached to the Pic-controller, which in turn helps drive the load attached, so that the correct working of the system can be verified. This wireless ordering system will be used, which reduces the human error and also increases the efficiency of restaurant system

REFERENCES

[1] International Journal of Computer Trends and Technology (IJCTT) – volume 11 number 5 – May 2014
[2] International Journal of Science, Engineering and Technology Research (IJSETR) volume 2, Issue 10, October 2013
[3] "Design and implementation of ordering system for restaurant" International Journal of Engineering Research and Technology (IJERT),volume 1,issue 10, December 2012
[4] International Journal of Emerging Technology and Advanced Engineering Website: www.ijetae.com (ISSN 2250-2459, ISO 9001:2008 Certified Journal, Volume 5, Issue 1, January 2015)
[5] International Journal of Advanced Technology in Engineering and Science Vol.No.3,Issue 08 August 2015

[6] MuditRatana, AnandVardhanBhalla‖ Comparative study of various touchscreen technology International Journal of Computer Applications (0975 – 8887) Volume 6– No.8, September 2010
[7] "Implementation of Smart Restaurant with E-Menu card" International Journal of Computer Applications (0975 – 8887) Volume 119 – No.21, June 2015
[8] M. Firdouse Ali Khan and V. Swapna, "Design And Implementation Of Ordering System For Restaurants" in International Journal of Engineering Research & Technology (IJERT) in 2012
[9] Asan, N. Badariah, "Zigbee-Based Smart Ordering System (S.O.S)" International Journal of Computer Trends and Technology (IJCTT) – volume 11 number 5 – May 2014
[10] Kiran Kumar reddy, B.Naresh"Intelligent E-Restaurant using android OS" international journal of scientific engineering and technology 2014