Wireless Bidirectional Message System: Order from Table and Response from Kitchen in Hotels

Janki Pankajbhai Sevak[1] Sushma Harihar rao Loknadam[2]
[1, 2]Electronics and Communication Engineering Department
[1, 2]Government Engineering College, Bharuch, India

Abstract--- The aim of the development of this research is toward quick and efficient method in hotels to use wireless system which is bidirectional. It uses wireless RF module and Automated touch screen menu. In this paper, a new and innovative kind of Hotel system is shown. Which works on wireless communication. In this system the problem of misallocation of ordered food items is solved by using touch screen menu at table. Not only can this but table status be seen from waiting longue. To achieve that kind of qualitative hotels/restaurants service, paper menu should be replaced by electronic menu.

Keywords: wireless, bidirectional

I. INTRODUCTION

In today's modern world, electronic menu are replacing presently used paper menu methods and doing various tasks in almost all the fields to perform the task in quick, comfortable and easier way. In this research, we have focused on one of the major task, to transform the data from one device to another. By serially, we are using RF transceiver.

To make Hotel/restaurants business successful a better service system is the key factor ease of functioning improves overall quality of service of hotel system and gives a good experience to customer. So customer likes to come in future also at hotel. The no. of customers increases day by day due to well managed hotels system. To achieve that kind of qualitative hotels/restaurants service, paper menu should be replaced by electronic menu.

II. EXISTING METHOD

The basic problem in the food service industry is that Hotels are not realizing efficiencies that would result from better application of technology in their daily operation. The traditional ordering system uses the time consuming pen and paper method where waiters write down the order on either an empty piece of paper or on pre-printed paper.

This order sheet is taken to the different stations such as the cashier, kitchen for the bill to be prepared accordingly .Despite of being proven to stand the test of time; this system has several laws that resulted in inefficiently of the total restaurants services to customers. The first law is the accuracy of orders written on the order sheet especially if the restaurants do not have a pre-printed order sheets available for the waiter to use. Generally, when waiter goes to kitchen after taking order from table then again patrons have to wait for long time when food item is being prepared in kitchen. This creates irritating situation for patrons. During that time waiter gets busy in taking order from other tables. As it is completely manual system, it is possible that when waiter takes food items from kitchen then due to many orders in pending, waiter misallocates food items to patrons. This kind of situation makes patron to feel that proper attention is not given to him/her and feel disappointed.

III. PROPOSED METHOD

This paper contains new kind of hotel/restaurant system in which all the problems arising in existing method will be eliminated. In this system there are main four sections."[1]"transmitter side," [2]"receiver side and "[3]"server room."[4]" waiting longue. When patron enters hotels/restaurants there will be one board which will show table status. So patron comes to know that whether table is free or not. Or if patron has no time to wait for his/ her preferred ac/ non ac area, then patron can choose type of area according to availability of table and this feature saves lot of time for patron.

After getting the table, patron sees electronic touch screen menu and from that patron selects food items. After selection of food items, a list of selected food items is generated and when patron confirms the list of food items then that list is sent to kitchen display unit as well as server room. This creates record at server room. The list of ordered food items will be transmitted with table number. So this will bring transparency in system.

When kitchen staff will receive order then a feedback message is sent to that table display unit that after how much time food items will be served. So patron doesn't have to wait willingly and have idea about the time of being served. So in between that times, patron can does some other work on his/her laptop. This kind of bidirectional system improves quality of service.

When food is ready then it is served to patron. After completing the meal, a bill is generated at table unit and server room also. After the payment is done, patron pushes the button before leaving the table and respective light emitting diode turns on which is on board at the waiting longue. So next patron can enjoy taking meal at that table.

Customer service management that record information from customer like bill and order etc. Another extension is that we also put one push button on each table, when customer is being ready to leave that table, then they push that button and at waiting room, one LED will glow.so, Remaining customer are come to sit on that table.

IV. TECHNICAL WORKING

A. Transmitter side:

In this section we show how that circuit is works. First at waiting longue turned on light emitting diode indicates free table .On the table, First one is power supply.
After that initialization of the graphical LCD.
Connected the 4- wire touch screen.

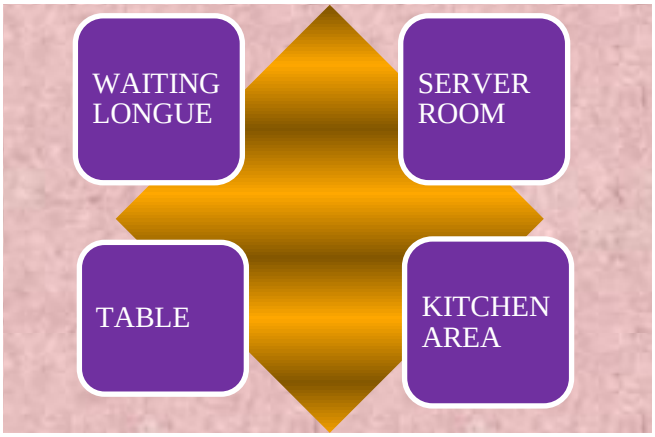

Fig. 1:

That analog data given into the ADC. When conform the order .that data will be stored in controller inter register. In this project we are making one push button on each table so customer will push that button when they leave from that table.

After that we interfaced the GLCD and AVR controller. One LED board in waiting longue when customers will push button on table, the corresponding LED will glow. We will use two tables and two ATMGEA 32 controllers and in kitchen side, one LCD will use which display order selected by the patrons.

So, in transmitter side from where we selected food items is sending to the kitchen area as well as server room. Touch screen also displayed the time where that food items served to the patrons.

B. Receiver side:

When order is sent from the table unit and received at kitchen unit, the buzzer sounds. Due to sound of buzzer kitchen staff come to know about reception of order. Kitchen staff read order from the LCD display and as per the ordered food items send information to the table unit about time that can be taken by kitchen staff for preparation of ordered food items from respective table number. This bidirectionality can be achieved by using RF Transceiver which works not only as transmitter but as receiver also.

In kitchen area we use ATMGEA16 controller, 16*4 LCD, RF transceiver and a buzzer.LCD is 16*4 display devices. At kitchen area is also transceiver is used. By using it a feedback message is transmitted and received at table unit. This bi directionality is achieved by using transceiver. AVR MIC has 16 pin which is working on 5 volt supply and secondly receiver side where display the bill on computer, there we using USB to serial board, and RF module. In transmitter side, on different food items selected that message transmitted to parallel to reception side. So, for serially reception, we are using USB to serial board.

C. Server room:

Server room will also receive order of selected food items from different table units. If more than one table units send food order at the same time then for the ease of operation and data collection parallel to serial conversion will take place and food orders from every table units will be displayed at monitor of computer situated at server room. As the procedure of billing will be completed a push button will be pushed and LED will glow for respective table number on the board situated at waiting longue.

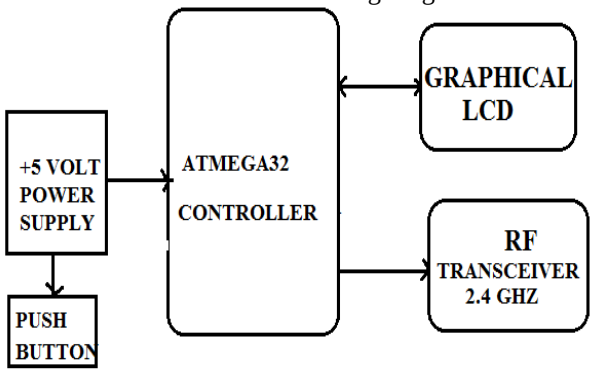

Fig. 2: Transmitter

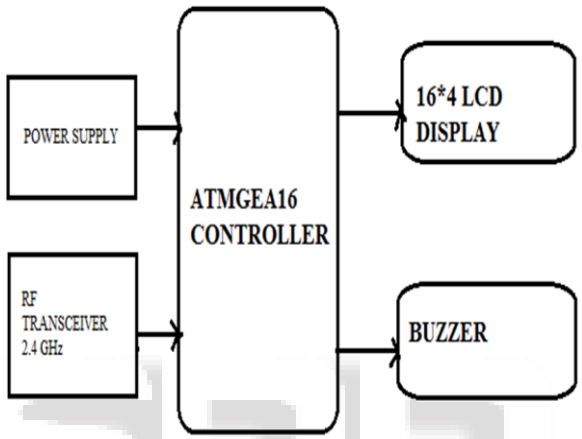

Fig. 3: Kitchen side

V. Conclusion

In this paper, a hotel/restaurant system is shown in which ease of operation is achieved at great level. Due to electronic touch screen menu at table unit, ordering of food items is easier and whole system becomes user friendly. Due to feature of feedback message from kitchen area, patron gets information about time and this improves quality of operation and gives unique experience to patron. By applying this in hotels/restaurants, quality is improved and bring new era of food ordering system.

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Reference

[1] We have taken references from different websites.

[2] www.freepatentsonline.org
[3] www.avrelectronics.com

