ELECTRONIC MENU CARD FOR RESTAURANTS

KUSUMA SHALINI[1,] N. SUKUMAR[2]

[1] Kusuma Shalini, Dept Of Ece, Pathfinder Engineering College, Thimmapur, Hanamkonda mandal, Warangal Dist, Telangana, India

[2] Guide Details, N. Sukumar, M.Tech, HOD, Pathfinder Engineering College, Thimmapur, Hanamkonda Mandal, Warangal Dist, Telangana, India

Abstract: The project mainly aims in designing completely automated menu system in restaurants with the help of touch screen sensor, speech recognition module and LCD to provide a user friendly environment. There is no need of a person to take the order from the customer's table. The menu will be displayed automatically on the customer's table and we can directly order the menu with the help of either touch screen sensor or speech recognition module. The user can also request the order even through speech commands using speech recognition module. Touch screens provide fast access to all types of digital media, with no text-bound interface getting in the way. Using a touch interface it can effectively increase operator accuracy, reduce training time, and improve overall operational efficiencies. Transmission of data is through Zig-bee which is a wireless technology developed as an open global standard to address the unique needs of low-cost, low-power, wireless sensor networks.

Key words: Micro Controller ,RFID Reader, LPC2148 Board, Pc, GPRS Modem, Zigbee Wireless Network.

INTRODUCTION

This project involves developing a prototype for customer self-ordering system in restaurants. Ordering is a process of the customers specifying what they want, so that the order can be recorded by using a note form, or computer system and many others, followed by passing it to the relevant department for processing and finally the delivery of services or products to the customers based on the order. Self-ordering system is very successful when applied in different restaurants in many countries and it is proven to benefit most of the investors. This system cuts down the manpower for taking the order from the customer.

I. The Hardware System

Micro controller: This section forms the control unit of the whole project. This section basically consists of a Microcontroller with its associated circuitry like Crystal with capacitors, Reset circuitry, Pull up resistors (if needed) and so on. The Microcontroller forms the heart of the project because it controls the devices being interfaced and communicates with the devices according to the program being written.

ARM7TDMI: ARM is the abbreviation of Advanced RISC Machines, it is the name of a class of processors, and is the name of a kind technology too. The RISC instruction set, and related decode mechanism are much simpler than those of Complex Instruction Set Computer (CISC) designs.

Liquid-crystal display (**LCD**) is a flat panel display, electronic visual display that uses the light modulation properties of liquid crystals. Liquid crystals do not emit light directly. LCDs are available to display arbitrary images or fixed images which can be displayed or hidden, such as preset words, digits, and 7-segment displays as in a digital clock. They use the same basic technology, except that arbitrary images are made up of a large number of small pixels, while other displays have larger elements.
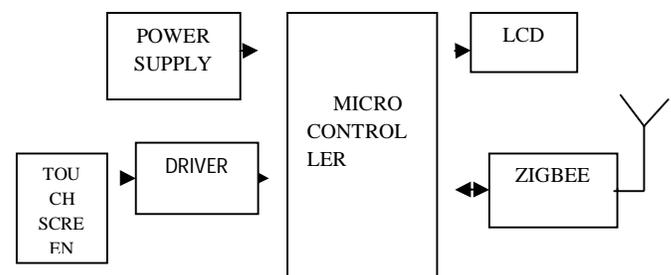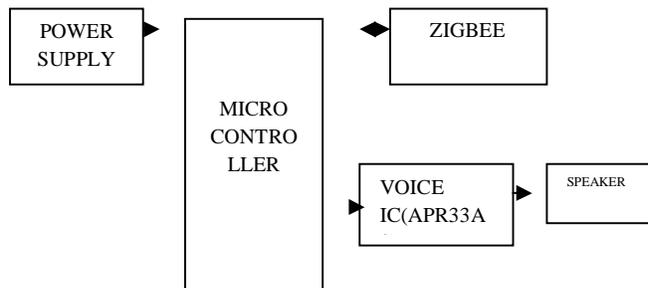
I. Design of Proposed Hardware System

Fig.1.Block diagram

the openHAN standards.

TOUCH PAD :- A **touchpad** (or **trackpad**) is a pointing device featuring a tactile sensor, a specialized surface that can translate the motion and position of a user's fingers to a relative position on screen. They are a common feature of laptop computers

IV.Board Hardware Resources Features

ZigBee

ZigBee is a specification for a suite of high level communication protocols using small, low-power digital radios based on the IEEE 802.15.4-2003 standard for Low-Rate Wireless Personal Area Networks (LR-WPANs), such as wireless light switches with lamps, electrical meters with in-home-displays, consumer electronics equipment via short-range radio needing low rates of data transfer. The technology defined by the ZigBee specification is intended to be simpler and less expensive than other WPANs, such as Bluetooth. ZigBee is targeted at radio-frequency (RF) applications that require a low data rate, long battery life, and secure networking. ZigBee is a low-cost, low-power, wireless mesh networking standard. First, the low cost allows the technology to be widely deployed in wireless control and monitoring applications. Second, the low power-usage allows longer life with smaller batteries. Third, the mesh networking provides high reliability and more extensive range.It is not capable of powerline networking though other elements of the OpenHAN standards suite promoted by openAMI and zdeal with communications co-extant with AC power outlets. In other words, ZigBee is intended not to support powerline networking but to interface with it at least for smart meeting and smart appliances purposes. Utilities, e.g. Penn Energy, have declared the intent to require them to interoperate again via controllable digital consumer devices", IEEE

and also used as a substitute for a computer mouse where desk space is scarce. Touch pads vary in size but are rarely made larger than 40 square centimetres. They can also be found on personal digital assistants (PDAs) and some portable media players, such as the iPod using the click wheel. Stand-alone Track pads are also manufactured for wireless function. Touchpads operate in one of several ways, including capacitive sensing and conductance sensing. The most common technology used as of 2010 entails sensing the capacitive virtual ground effect of a finger, or the capacitance between sensors. Capacitance-based touch pads will not sense the tip of a pencil or other similar implement. Gloved fingers may also be problematic.

Conclusion

Integrating features of all the hardware components used have been developed in it. Presence of every module has been reasoned out and placed carefully, thus contributing to the best working of the unit. Secondly, using highly advanced IC's with the help of growing technology, the project has been successfully implemented. Thus the project has been successfully designed and tested.

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