

Smart Electronic Notice Board Using WI-FI

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Abstract- Notice boards are commonly used in variety of institutions which we come across in a daily basis. In the present generation the advertisement notice boards are being managed manually. This process is difficult to involve in order to put a notice on the notice board. This wastes a lot of things like paper, printer ink, manpower and also brings the loss of time. In this paper we have proposed a system through wireless transmit notices on a notice board using Wi-Fi. Wi-Fi can pass information for about 100 meter distance. Wi-Fi data rate has 1 or 2 Mbps. It accesses numerous points and supports network interfaces. It also makes the system compatible with more than one wireless technology. This paper describes the Wi-Fi based LCD display.

Key words- WI-FI interface, ARM cortex, LCD

I Introduction

In past years, the WI-FI transceiver system has been used from many areas in terms of mobile phones, personal computers, laptops, etc. to be commonly used by the rich to something so it can be majorly used. It already exists in many area networks. This is amazing when we look at the fact that our country is a developing one with almost half our population living below the poverty line. This continuously growing popularity of the WI-FI Connection has been used to the growth of the country's area network infrastructure has developed much more. The LCD used as to 20*4 the information are to be displayed. It specifies the characters and to display it whenever type to show the text in to the user language. All major urban areas are currently covered by both WI-FI network providers, and soon every single corner of the people has used in mobiles in a very poor villages to call away. The method to need for constant communication with family and friends, coupled with the relatively cheap method of sending short text messages to them, has information a WI-FI revolution in the country. In fact, rarely will a user use his cell phone to make a phone call, preferring to

anything and everything. All mobile phones have been available in WI-FI network. Then WI-FI network has been used to provide wide area network allows as to communicate with the information into text message through LCD display to move the notice board. Information can pass through for a specific service provide as chatting and to transmit and receive the information. News/traffic reports, and downloading of ring tones for their phones. These services all themselves with one or more network ranges providers will give them a special code number that can receive and monitor the information that their notice board send to them. This many-to-one network of information transmission has become quite popular and many a business has entered into this model with mixed results. However, as of this writing, the vast majority of businesses that revolve around the WI-FI system have been targeted to consumers. This paper aims to propose industrial applications that will utilize the distinct advantages of the WI-FI. This system over other possible technologies in the industrial process.

II. Problem of analysis

Early days to display any information, circulars, daily events are to be displayed in LCD with help of GSM and Zig-Bee. It is useful to display in early days but nowadays this is a difficult process because GSM has been used large distance area but if anywhere the tower problem is occurred it total damage the output display. It has to cover the smaller area and it manufactures small market hesitant to release in the world. The Zig-Bee has been used to send the information it only passing through the small coverage area to be transmit and receive the output. Zig-Bee is used mainly in the concentrators, data collectors, repeaters, and meters installed in the urban distribution. So using Wi-Fi to display the information passing very fast and large coverage distance to be accessed so to saving our time due to it act a transmit and receive the information at a time.

III. Overview of design

The LCD Display System is used at the colleges and schools for displaying day-to-day information continuously or at regular intervals during the working hours. Being WI-FI transceiver system, it offers flexibility to display flash news or announcements faster than the programmable system. WI-FI-based display system can also be used at other public places like schools, hospitals, railway stations, gardens etc. without affecting the surrounding environment. The LCD display system mainly consists of a WI-FI transceiver and a display toolkit which can be programmed from an ARM cortex. , It consists of the main purpose is to convey the information through the LCD. It can serve as the information passing in as an electronic notice board and display the important notices instantaneously this avoiding the latency. Being wireless, the WI-FI based LCD display is easy to expand and allows the user to add more and more display units at anytime and at any location in the campus depending on the requirement of the institute.

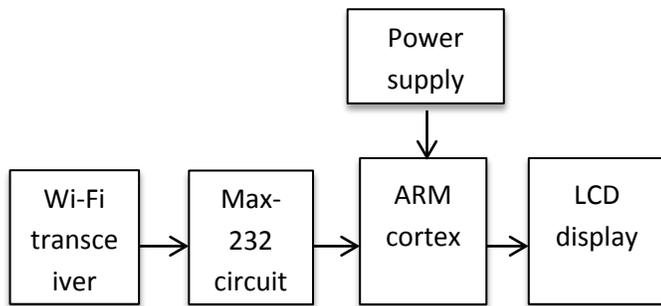


Figure 1 . Design overview of WI-FI Transceiver based LCD scrolling information display system.

IV. Proposed Work

This will be a moving message display, which can be used as the digital notice board, and also a Wi-Fi transceiver, which is the latest technology used for communication between the mobile and the embedded devices. System will work like when the user wants to display or update the notice board, which is very useful to display the circulars, daily events, schedules are to be displayed. Then the WI-FI connected ARM cortex to the display system will receive the LCD in notice board

system, the ATMEGA-328 chip has been inside the system is programmed in such a way that when the coding is written in embedded system Language receives any message it will read the message form serial port through WI-FI transceiver, if the message is typing in any personal computer then it will be start displaying the information in the display system. The messages are displayed on the LCD display. This system is to reduce the time wastage and update with any time is to very easily. The serial WI-FI has been used it can be transmit a information from serial port communication. it means to display the information from to bit by bit to receive the notice board then stores it, messages and then displays it in the LCD module. To used in ARM cortex it can be implement in RISC process. it can be implement to less instruction seta can be manipulate the data so this is a high level transmission of data.

Background Study-This application has been used in **any** information has to been send notification using paperless to a group of students in campus requirements and class cancellation, Test announcement and class postponements without moving information Through paper. The advantages of the work includes that the information could be received very fast and it reduces the number of non-notified students. This presents a new way of online communications through personal computer to notice board to helps students and lecturers to be always aware of appointments no matter where they are. Among the advantages of the system include reduced time lag problem.

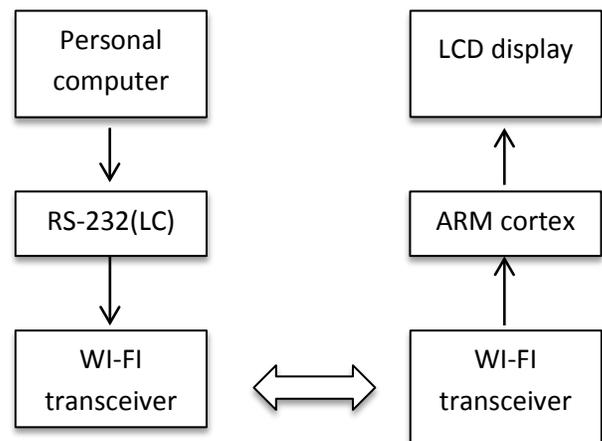


Fig 2:Block Diagram For WI-FI Transceiver using LCD display

A. Description Of Block Diagram-

1. Personal computer: Personal computer is an important part of a circuit. It is mainly used to all purposes. Because it has been used to all works are to be implemented. The main blocks include central processing unit is the heart of the computer, control unit has used. The arithmetic and logical unit has been used. Memory unit also used as a storage memory central processing unit.

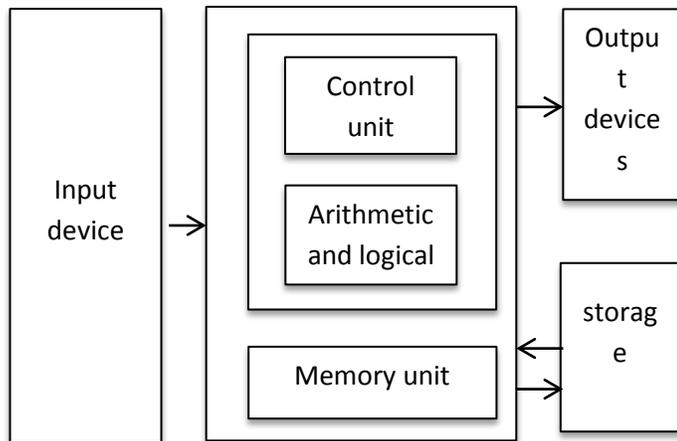


Figure 4. Block Diagram of Power Supply

The processor and other devices get power supply from the vcc pins, 5 volts to give the connection. The arm cortex can be connected to the personal computer and wi-fi router. The personal computer has been used as to any information to be send and receive by using WI-FI transceiver. Then it can be personal computer used as to allow all information as to displayed.

2. ARM CORTEX-ATMEGA(328)

Levels has been 32 bit processor it has been implemented in 4 I/O pins as to connected. Vital role of ARM Processor in „Remote notice board using WI-FI with information passing: The arm processor inside the system is programmed in such a way that when the the system receives any information, the verify for the system key, if the key number is correct then it will start displaying the messages on the LCD display system. LCD is connected to ARM processor as 32 bit data mode, before displaying anything on the LCD, initialization has to be done ,so ARM processor will control the LCD initialization and select the data register and command register according to the purpose .Memory is connected to arm processor using two pins,

it is communicating with the processor through WI-FI communication.

3. WI-FI transceiver:

WI-FI transceiver is used to implement this method. It has been implemented to transmit and receive the information at a time. Then it can transmit the information has been very fasting the range. The WI-FI has been to use as to information passing and send is large distances. The WI-FI coverage distance has been used to area has up to 100 meter available. information passing and send is large distances. The WI-FI coverage distance has been used to area has up to 100 meter available.

Wi-Fi Transceiver -PC Interfacing

WI-FI is used to receive message from the authorized user. This WI-FI transceiver requires a IP address from a wireless carrier in order to operate. This IP address is the common to using the receiving section. PCs use AT commands to control modems. Although Wi-Fi is interfaced with PC through ARM cortex using a embedded-c coding program, it means the information is ready for use. After this, various the commands depending on the used transceiver instruction set are send to modem and responses are received. This process is very useful in testing wi-fi transceiver. Coding has been written in embedded -c are to implemented to transceiver and responds received from information through LCD display box showing sending and receiving the information is to send through wi-fi is the specified for our WI-FI Transceiver. Finally to save the program and to compile to verify the coding into arm cortex the name, icon, comm port, and correct port settings are used.

Features Of LCD Display

ARM cortex based scrolling message display has the following features:

1. The message to be displayed is stored in chip (ATMEGA-328) and the message length to be displayed is limited only by free memory space of the chip.
2. The number of characters to be displayed at depends upon the LCD range (20*4).
3. The running speed of the message can be increased or decreased by pressing switches. Here, the circuit is designed for displaying English words on a20 characters and 4 rows LCD display. LCD monitor do not Flicker

and every specific aspects in an image displaying in each pixel element.

Applications

- To display the Room Rents, Available rooms and to AC or NON-AC rooms details in hotels
- It is used to colleges to display the placement news, circulars, daily events, schedules etc.....
- Used in hotels to display the food items and menu offers etc....
- By using railway stations scheduling time to be displayed and platforms the service offered by the railways
- To display the nursing homes using the staff attendance availability of the doctors, list of the specialized doctors and no of patients etc

Future Enhancement

- A commercial model can be able to display more than one information at a time.
- In our system we are transmit and receive a messages via WI-FI network and displaying on a LCD by utilizing the Wi-Fi network. The same principle can be applied to control electrical appliances at a distant location.
- Robots can be controlled in a similar fashion by sending the commands to the robots. This can be used for spy robots at distant locations, utilized by the military to monitor movement of enemy troops.

Conclusion

By Using the concept of this technology in the field of wireless communication we can make our communication more efficient and faster, with greater efficiency we can display the messages and with less errors and better efficiency. Time can be consumed & to paper wastage is reduced This method can be used very efficiently in establishments like High-tech restaurants where in give the order and offer discounts can be displayed at all branches in same time, in colleges the

students and staffs can be informed simultaneously the information no time. It can be set up at public transport places like railways, bus station, and airport and also at road side for traffic control and in emergency situations like hospitals temples, etc.... it is cost is low and very easily to handling method. It is fully involved in using of papers in displaying of notices is avoided and the information can be updated by the every second.

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