

RESTAURANT ORDER SYSTEM

BASED ON ETHERNET

ABSTRACT

PROJECT NUMBER:eZ2984

OVERVIEW

This project provides a low-cost, convenient and easy to use system for the manager of small restaurant. Figure 1 shows the architecture of system.

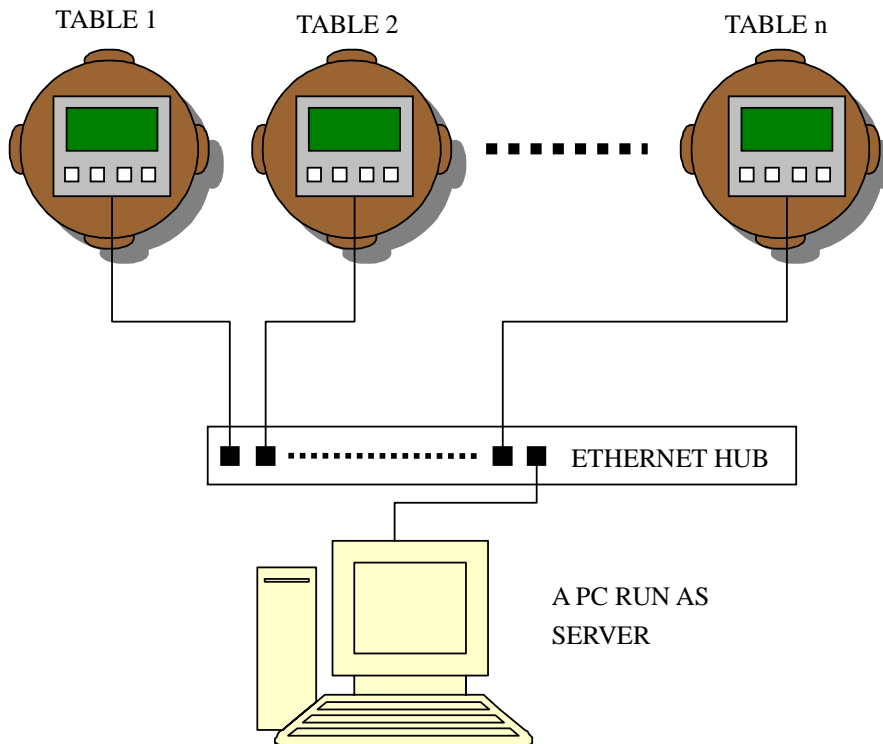


Figure 1. system architecture

Each table of restaurant has a client machine which is powered by eZ80 Acclaim MCU. The client will load menu list from server, and customer could order his lovely food or drink by using this client machine. He could also do other things if he like, such as deleting his un-served order, view the status of his order and call the waiter to check out. On server side, manager has a privilege to look the status of every table. He could know that if the table is using or not, orders of customer and total price of

his served order via server application. The menu is stored in a text file and manager can edit it if server application is not running.

HARDWARE BLOCK DIAGRAM

Figure 2 is hardware structure of client machine.

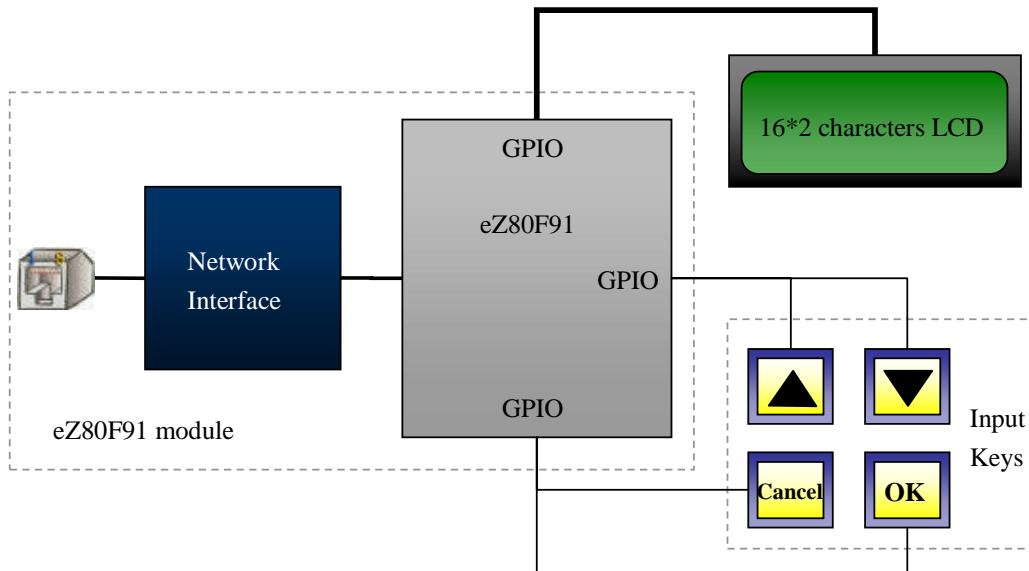


Figure 2. Block diagram of hardware

Thanks to the well designed eZ80F91 module, I only need to add a power IC, a JTAG interface, a 16*2 characters LCD and some keys in order to implement a friendly user interface. I control LCD via GPIO of MCU, for I have no time to understand the operation of eZ80's data bus, GPIO is easier than it. Input keys are also connected to GPIO, the eZ80F91 read them in inquire mode. I think interrupt mode is more convenient, however, it can't co-operate with CMX TCP/IP functions. I don't know why. I do care nothing about network interface because it is pre-implement in contest module, and an evaluation version of CMX network functions is provided.

HOW TO OPERATION

Here is a simple discussion about operation, see my documentation for a detailed version.

1. Set IP address of the PC which will run server application to default server address of client machine.
2. Create a text file named menu.txt in the same folder where the server application executable file is placed. This file defines the menu contents.
3. Run server application on PC.
4. Turn on client machine and operate. I think the machine is easy to use because I pay many attentions to the design of user interface.

PHOTOGRAPH

Figure 3 and 4 is a photograph of client machine, and Figure 5 is the server application's interface just after startup.

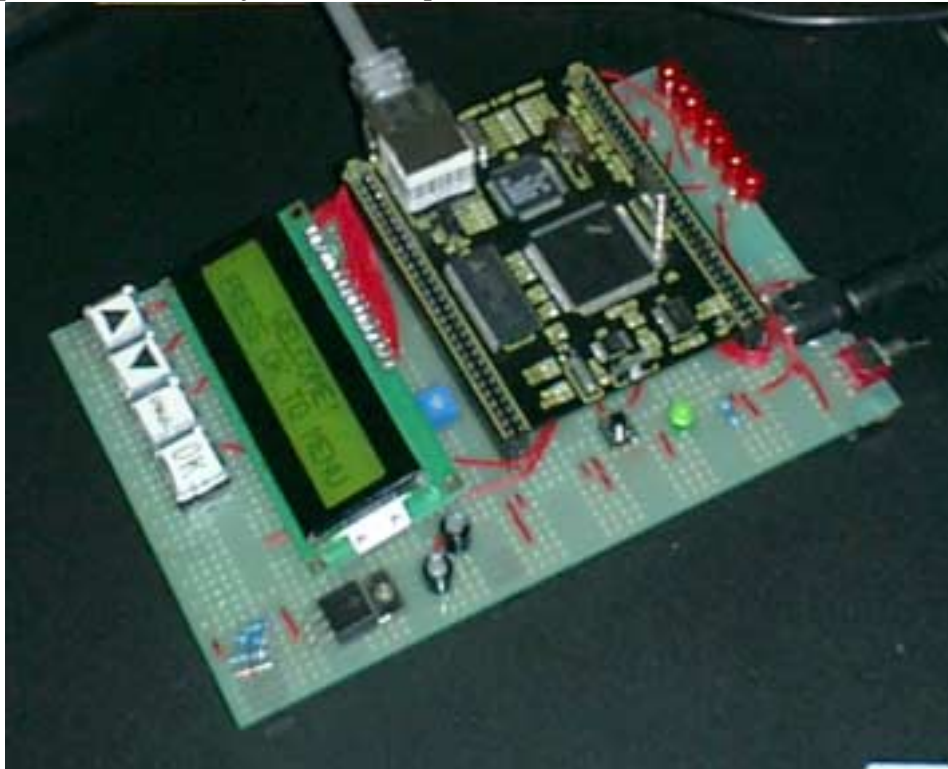


Figure 3. Client machine

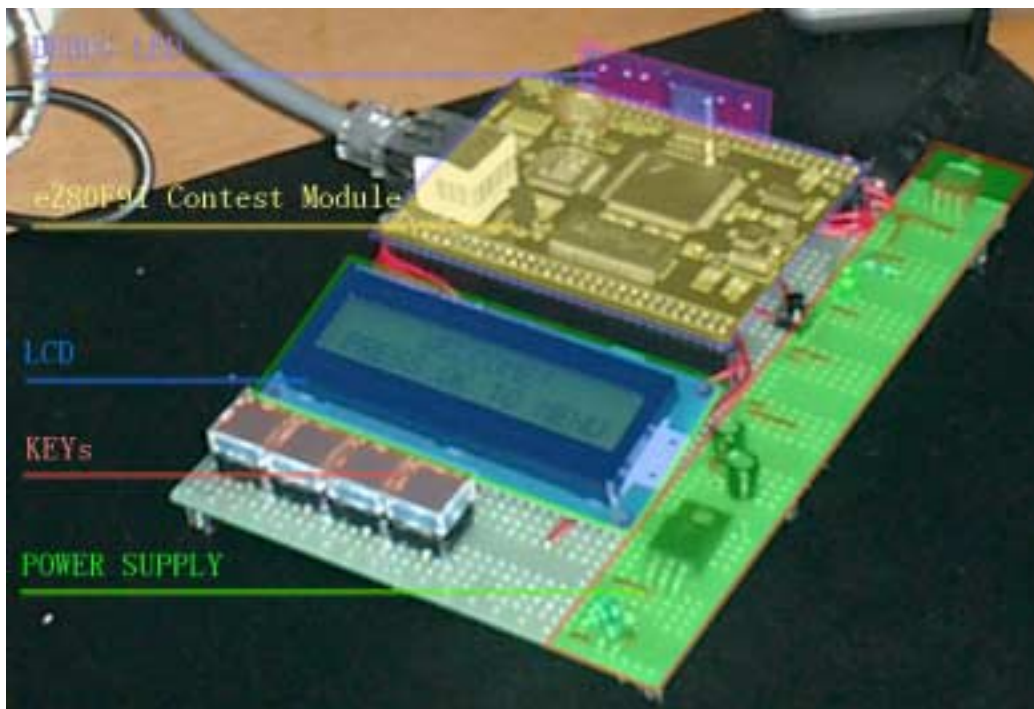


Figure 4. Components of client machine

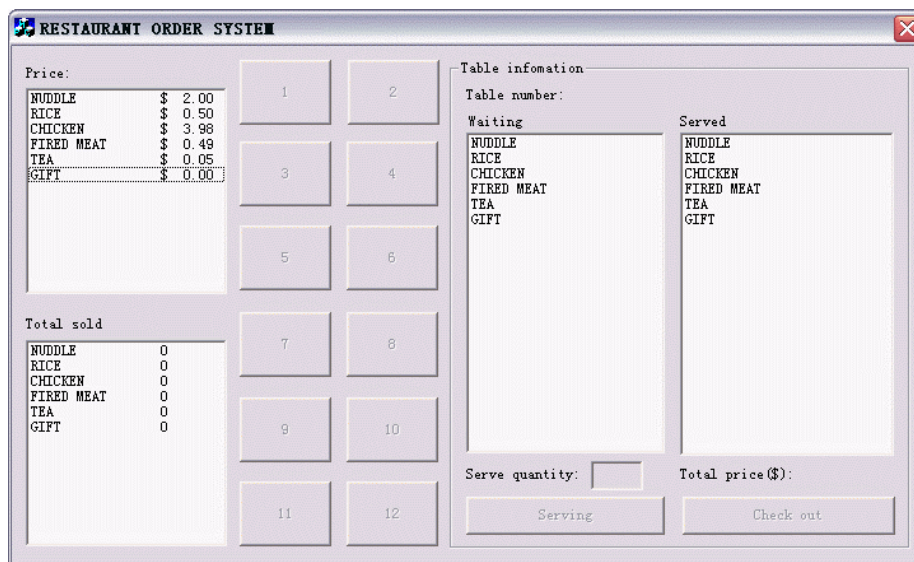


Figure 5. User interface of server application

FLOWCHART OF FUNCTION MAIN()

Figure 6 is flowchart of main() function in client machine. There are two loops in the function, the outer one is used to restart program to serve next customer, and the inner one implement key-scan, handle user's input or receive packet, and output text on LCD.

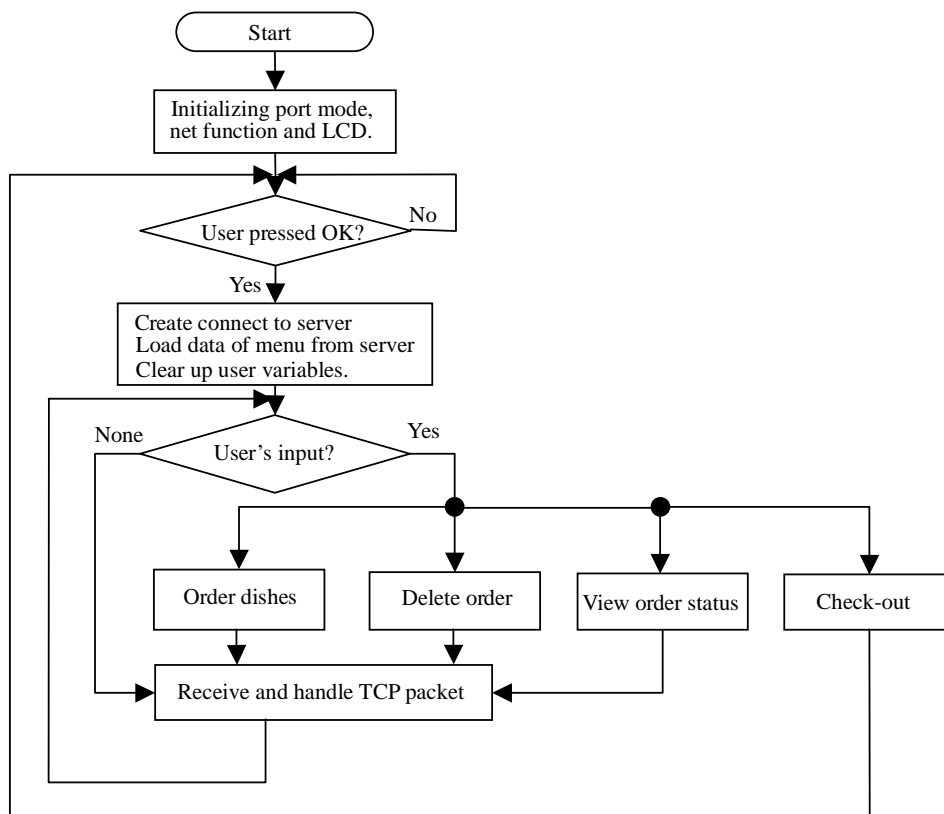


Figure 6. Flowchart of main() function

SCHEMATIC

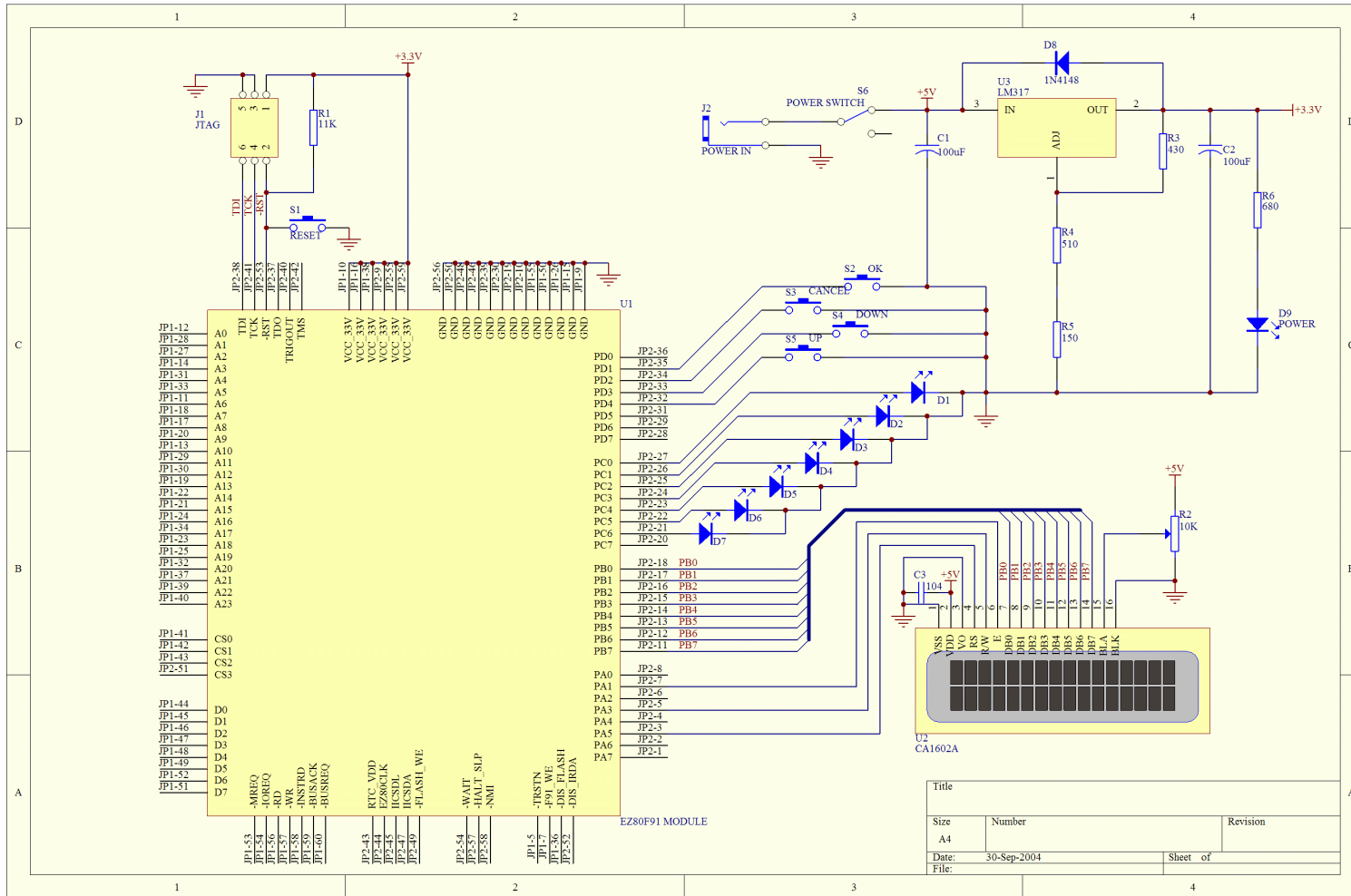


Figure 7. Schematic of client machine