Alarm Emergency in Virtual Small City

Mohanad Ali Meteab Al-Obaidi ✉

Computer Science Department, College of Science
Al-Mustansiriyah University, IRAQ

ABSTRACT

In this paper a control AT89C51 microcontroller system was proposed to used in the design of alarm emergency in virtual small city. The proposed system includes personal computer (PC), monitoring, control circuit which has a microcontroller. When the accident accrued, the system sends alarm from any anywhere compromised with a number of the street to the emergency office and emergency alarms bureau official received by the monitoring that appear on the map and this point sends warning.

Keywords: Microcontroller, AT89C51, Mikro C, Flash EEPROM.

الخلاصة

النظام المقترح هو تصميم نظام طوارىء حاسوبي لمدينة افتراضية صغيرة باستخدام معالج مايكروي نوع AT89C51. هذا النظام يتكون من حاسوب شخصي وشاشة مراقبة ودائرة الكترونية خارجية تضم عدد من المكونات الاكترونية الاخرى ترتبط عبر الشبكة (network).
عند وقوع اي حادثة (حريق، تصادم) يتم تشغيل مفتاح الطوارىء قرب منطقة الحادث ليرسل تنبيها عبر الشبكة الى نظام المراقبة المركزي في مكتب الطوارىء لتظهر اشارة صوتية تنبيهية وخارطة المدينة ورقم الشارع مع رقم المنزل من خلال شاشة المراقبة.

INTRODUCTION

Technologies are being used in our daily lives like space surveillance and control of industry, agriculture, irrigation and hospitals, life has become difficult without technology and computers, they become the most important achievements. The microcontroller within the use of computers. A microcontroller is PC$_S$ on a single integrated circuit consist of a processor core, programmable I/O peripherals and memory [1]. Microcontrollers are used in general purpose applications for automatically controlled devices, such as implanTable medical devices, automobile engine control systems, remote controls, office equipment, power tools [2]. Dongre K., N. and Kamdi R., P. have proposed system using AT89C51 microcontroller, a vehicle meets with an accident the vibration sensor will detect the signal and send alarm message through the GSM wireless [3]. Guo H., T., designed alarm system based on the public telephone network using microcontroller AT89C5 [4]. A microcontroller 8051 is a small and low-cost computer built for the purpose of dealing with specific tasks, such as displaying information in a microwave light-emitting diode (LED) or receiving information from a television's remote control. Microcontrollers are mainly used in products that require a level of control to be exerted by the user. Microcontroller 89C51 consists of three capacitors, one resistor, one crystal as well as 5v power supply in operating, control processing unit (CPU), and I/O ports microcontroller 89C51 is provided with memory not only RAM but also ROM, parallel and serial port (Universal Asynchronous Receiver/Transmitter), etc. which all are in one single chip with Flash EPROM in microcontroller 89C51 chip so the main difference between 89C51 and the other microcontroller in flash memory while older 8051 has no memory as shown in Figure 1 [5, 6, 7].
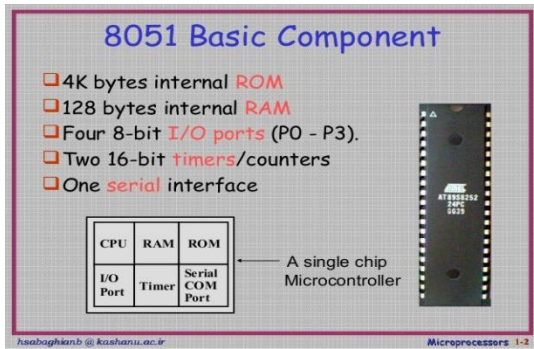
Figure 1: Microcontroller 8051 Basic Component [8].

The feature of designing on microcontroller can be low cost and flash electrically erasable programmable read-only memory (Flash EEPROM) is loaded with programs contain the instructions that will be compiled by the microcontroller and it can be used for many times. The other feature is more less power usage.

Microcontrollers are commonly built using a technology renowned as complementary metal oxide semiconductor (CMOS). This technology is uses less power   than other techniques [9].

SYSTEM IMPLEMENTATION

Alarm emergency system consists of KIT circuit, Microcontroller AT89C51, diode, relay, resistors, transistor, LED$_S$,   battery (12 v.) and programmed using V.B 6.0 for monitoring the system on the PC as shown in architecture system in Figure 2.
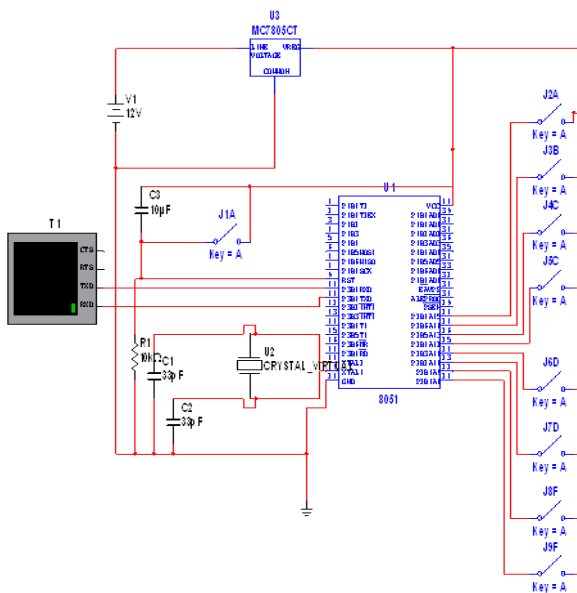

Figure 2: Architecture system.

At the first the Microcontroller AT8c51 must program the in Mikro C language it needs a device called a burner/programmer which a hardware device with special software to read the content of the hex file stored on the computer to transmit it to the microcontroller to be burned using USB cable.

The circuit connects with USB port of computer; the computer supplies the circuit with power. All the LEDs will turn on, so the LED needs 4.5v it supply by battery or a power converter and due to the minimum amount of ampere that made us used transistor and resistor (0.5 Ω) to light it up.

PROPOSED SYSTEM TASKS

Our proposed system consists of four switches (i.e. 1, 2, 3, and 4), these switches on the off mode in general and they are connected with electric circuit which is connected to the PC for monitoring by USB cable data in emergency office Figures 3 and 4 illustrated the framework of this system and real components of circuit.
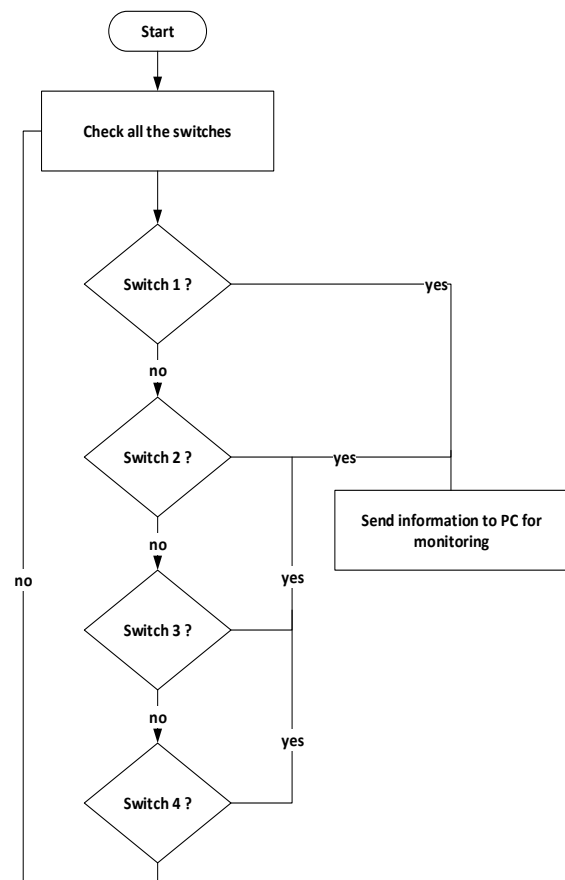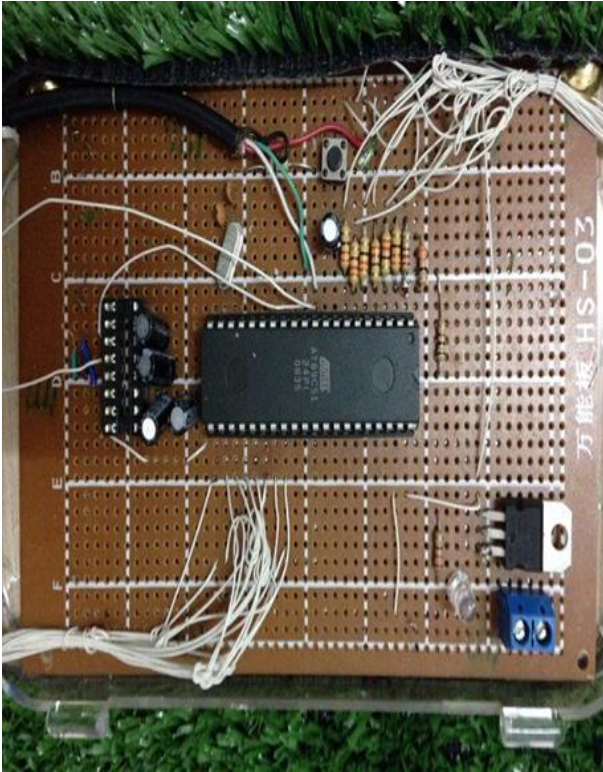

Figure 3: The task of the proposed System.

Figure 4: Real component of circuit.

From Figures 5 and 6 show if any alarm received, for example from switch 1, it means switch 1 in on mode when any person pressed on it, the PC-monitoring which received these information caused a voice alarm and display the number of street and house.

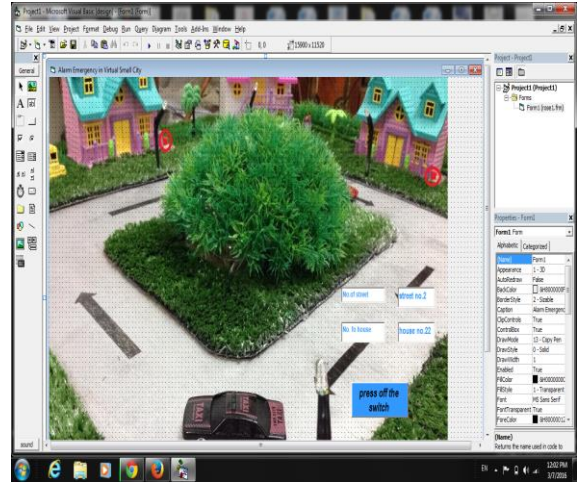

Figure 5: Distributed the switch beside the house.

Figure 6: Monitoring in office emergency.

RESULTS

Our proposed system is easy to use in any scientific and life applications. The understanding of this system will be a new approach of robots techniques. This paper provides the designer good idea about microcontroller AT89C51 that has the advantages of low cost, portability and small size circuit.

CONCLUSIONS

Alarm emergency system is very efficiency to transmit an information form any place that needed.

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