Final Year Project (2002-2003)

Telephone Controlled Home Wireless System

Project Code : QL5-02
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Nowadays, cell phones are very popular. In some countries, it is very common for all members in a family to have his or her own cell phones. Home telephones now play a less important role. But, in fact, the role of the home telephone is not yet over in Hong Kong because there are no time limits and the charge is low.

In my project I am focusing on a telephone controlled home wireless system. This system can be used to control all the electrical devices in the home.

After connecting the system to the home telephone, the user will be able to hear instructions after dialing their home telephone number, just like when using an answering machine. Instructions will prompt the user to key in the password for security reasons. Then instructions will prompt the user to press 1 to do certain task, 2 to do another task, and so on. After the user presses the key, the system will control one of the electronic devices in the home, such as turn on the light, air-conditioner, or computer.

The aim of this project was to build a telephone controlled home wireless systems, the objective being to allow people to remotely control the electronic devices in their home when they are away.

After the user dials their home telephone number, and presses keys on the keypad of the telephone they are holding, the home telephone will tell the system to do corresponding remote actions. The actions include: leave voice message, listen to the recorded voice message, control 2 local relay of the system, control 2 wireless controlled relay, and change password.

The Deliver Product
Telephone Controlled Home Wireless System

Hardware Block Diagram

User Interface

1. Listen message
2. Local relay 1 on
3. Local relay 1 off
4. Local relay 1 on
5. Local relay 1 off
6. Remote relay 1 on/off
7. Remote relay 1 on/off
8. Password change

Leave message

Press any key

Dialing in, the device hook off

Welcome message

Key 1

User press key

Key 2

Key in 6 digit password

Password correct

Password incorrect

Key 1: Listen message
Key 2: Local relay 1 on
Key 3: Local relay 1 off
Key 4: Local relay 1 on
Key 5: Local relay 1 off
Key 6: Remote relay 1 on/off
Key 7: Remote relay 1 on/off
Key 8: password change

Back until press key other than 1-8

End, the device hook on

Telephone line

Ringing detection

DTMF decoder

Voice recorder

Micro-processor

RF transmitting port

Devic

Devic
Schematic and Results

Telephone Controlled Home Wireless System

Schematic

PCB Circuit