# Cell Phone Operated Devices with Voice Acknowledgement (Technical Home)

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**ABSTRACT:**

There is a circuit by which home appliances can be operated like lights and water pump from your office or any other remote place. It helps to turn off the appliance with cellphone. Cell phone works as the remote control for home appliances. The system also gives you voice acknowledgement of the appliance status.

The technology used here is embedded system with mobile technology [1] which is future of today's modern electronics. The circuit comprises microcontroller AT89C51, DTMF decoder MT8870, voice recording/playback device APR9600 and a few discrete components. Microcontroller is used here for centralized operation and digital processing. [2]

The APR9600 device offers true single-chip voice recording, non-volatile storage, and playback capability for 40 to 60 seconds. Port pins are configured to receive the decoded DTMF signal from DTMF receiver MT8870. The DTMF decoder is used for decoding the mobile signal. It gets DTMF tone from the mobile headset's speaker pins and decodes it into 4-bit digital signal.

This device is very useful to operate any electronic equipment from miles away as in rural areas , agriculture, home, factories etc.[3] Future scope of this technology is we can use video facility in our circuit. It is useful for security purpose.

**Keyword:** Cell phone operated device control, technical home, embedded system mobile technology, microcontroller centralized operation with mobile, device automation with AT89S51.

**Introduction:**

This circuit operate home appliances like lights and water pump from your office or any other remote place. So if we forgot to switch off the lights or other appliances while going out, it helps to turn off the appliance with your cell phone. Cell phone works as the remote control for home appliances. Desired appliance can be controlled by pressing the corresponding key. The system also gives voice acknowledgement of the appliance status.

Device can prove to be great boon to blind /less educated persons due to its capability for remote control through speech commands. Through mobile it will be possible for them to operate any device remotely and also it will give them a reply back through voice. It will save their effort and time. Senior citizens or physically handicapped people find it difficult to do work by their own.

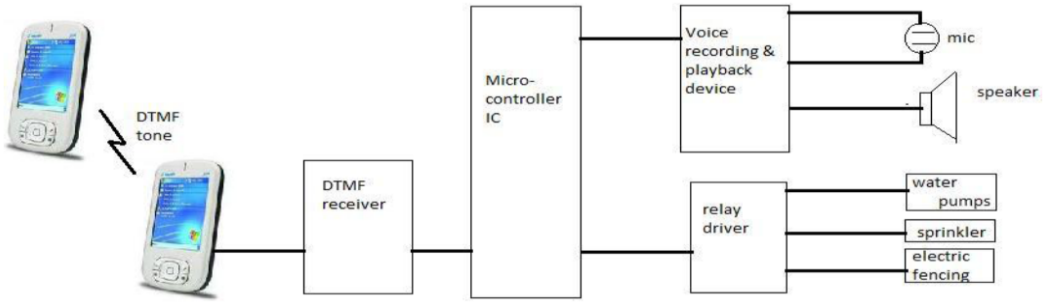
It can also be used in Office Automation, Home Automation and Industrial automation also.

Microcontroller features and embedded technology reduce the time consumption and increase the quality of operating the devices. [4]

**Experimental Section/ Materials and methods:**

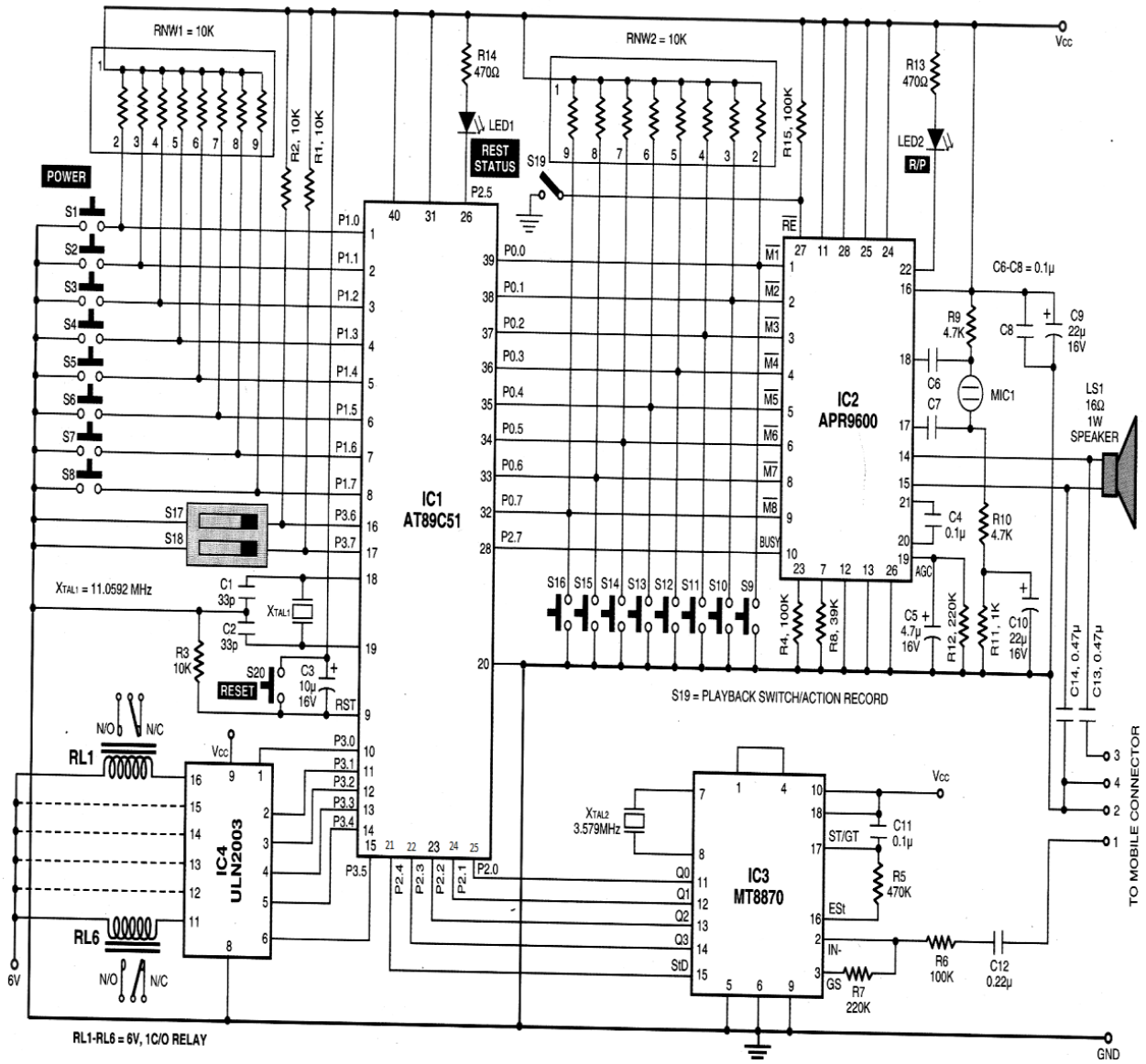
Components used in our circuit is Microcontroller AT89S51, DTMF Receiver MT8870, APR9600 Voice Recording and Playback IC, ULN 2003 Relay Driver, 7805 V Regulator IC, Diode 1N4007, LED, Capacitor, Resistor, Switch, Relay, Crystal Oscillator, Mobile Phone Headset Connector, Speaker and Mic.

Block Diagram of circuit is as follows:




**Block Diagram of Mobile Based Device Remote Control with Voice Acknowledgment.**

Circuit Diagram is as follows:



First I've drawn the PCB Layout in the software Dip trace. For checking logical circuit we can make our circuit on proteus. The program for the microcontroller is written using BASCOM microcontroller programming software and make hex file with the help of keil. This hex file is now loaded into the Microcontroller AT89S51. Microcontroller ports are initialized to make all the devices 'off' initially. For completing the hardware circuitry, laminates are applied over the PCB followed by patterning (etchning), Subtractive processes, additive processes, lamination, drilling, exposed conductor plating and coating, *p*rotection and packaging. The components are now embedded over it with soldering.

**RESULTS AND DISCUSSION:**

The study of Cell Phone Operated Devices with voice acknowledgement is operating successfully. The device can developed can sense dtmf signals, tells the operator the status of the remote device and futher the operator can change the status of device via dtmf signals generated by cell phone.

Video Calling: In future we can add video facility to our circuit. It will be an advanced way like video conferencing. Along with the reply as a voice we will get the visual status of condition of the devices. Also if anybody is misusing our device we can immediately make it off. Means for security purpose also we can use it. It will be applicable in home, offices, industry, and our vehicle parking system, agriculture also. Alarm Facility: Alerts user on occurrence of any abnormal conditions like power failure, parameters exceeding prescribed limits, Voice Operated System: A system is developed for remote monitoring and control of devices using mobile through spoken command. Use of Robots: In this the static circuitry will be replaced by the Robots which will be controlled through commands given remotely by mobile. This will be major step in automation and will have tremendous future scope of development and applications.

**CONCLUSION:**

The cell phone-based device control with voice acknowledgement is an excellent device to operate any electronic equipment from miles away as the mobile technology is becoming advanced day by day; it is used for much other application as device control. As mobile service is used by everyone these days, this system will be very much useful in rural areas as well the device control can be applied in every field like agriculture, home, factories etc. The use of mobile communication in device control has been thoroughly justified and the previous drawbacks and problems have been overcome.

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