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Secrecy Accessing System Based on Mobile Jammer Using Pre-Schedule Time Duration

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ABSTRACT:

Mobile jammer is used to prevent mobile phones from receiving or transmitting signals with the base stations. Mobile jammers effectively disable mobile phones within the defined regulated zones without causing any interference to other communication means.

Mobile jammers can be used in practically any location, but are used in places where a phone call would be particularly disruptive like Temples, Libraries, Hospitals, Cinema halls, schools & colleges etc.

As with other radio jamming, mobile jammers block mobile phone use by sending out radio waves along the same frequencies that mobile phones use. This causes enough interference with the communication between mobile phones and communicating towers to render the phones unusable. Upon activating mobile jammers, all mobile phones will indicate "NO NETWORK".

Incoming calls are blocked as if the mobile phone were off. When the mobile jammers are turned off, all mobile phones will automatically re-establish communications and provide full service. The activation and deactivation time schedules can be programmed with microcontroller. Real time clock chip DS1307 is used to set the schedule.

Mobile Jammer:

A portable cell phone jammer featured by universal and handheld design, could blocking worldwide cell phone networks within 0.5-10 meters, including GSM900MHz, GSM1800MHz, GSM850MHz/CDMA800MHz and also 3G networks (UMTS / W-CDMA).

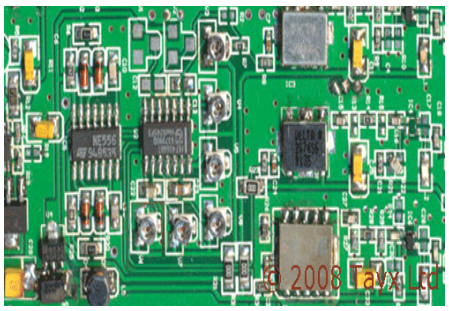

Figure1: Mobile jammer circuit

Figure2: Mobile jammer

A mobile phone jammer is an instrument used to prevent cellular phones from receiving signals from or transmitting signals to base stations. When used, the jammer effectively disables cellular phones. These devices can be used in practically any location, but are found primarily in places where a phone call would be particularly disruptive because silence is expected.

Jamming Techniques:

There are several ways to jam an RF device. The three most common techniques can be categorized as follows:

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1. Spoofing:

In this kind of jamming, the device forces the mobile to turn off itself. This type is very difficult to be implemented since the jamming device first detects any mobile phone in a specific area, then the device sends the signal to disable the mobile phone. Some types of this technique can detect if a nearby mobile phone is there and sends a message to tell the user to switch the phone to the silent mode (Intelligent Beacon Disablers).

2. Shielding Attacks:

This is known as TEMPEST or EMF shielding. This kind requires closing an area in a faraday cage so that any device inside this cage can not transmit or receive RF signal from outside of the cage. This area can be as large as buildings, for example.

3. Denial of Service :

This technique is referred to DOS. In this technique, the device transmits a noise signal at the same operating frequency of the mobile phone in order to decrease the signal-to-noise ratio (SNR) of the mobile under its minimum value. This kind of jamming technique is the simplest one since the device is always on. Our device is of this type.

Cooperative jamming:

When used, the jammer effectively disables cellular phones. These devices can be used in practically any location, but are found primarily in places where a phone call would be particularly disruptive because silence is expected.

BLOCK DIAGRAM:

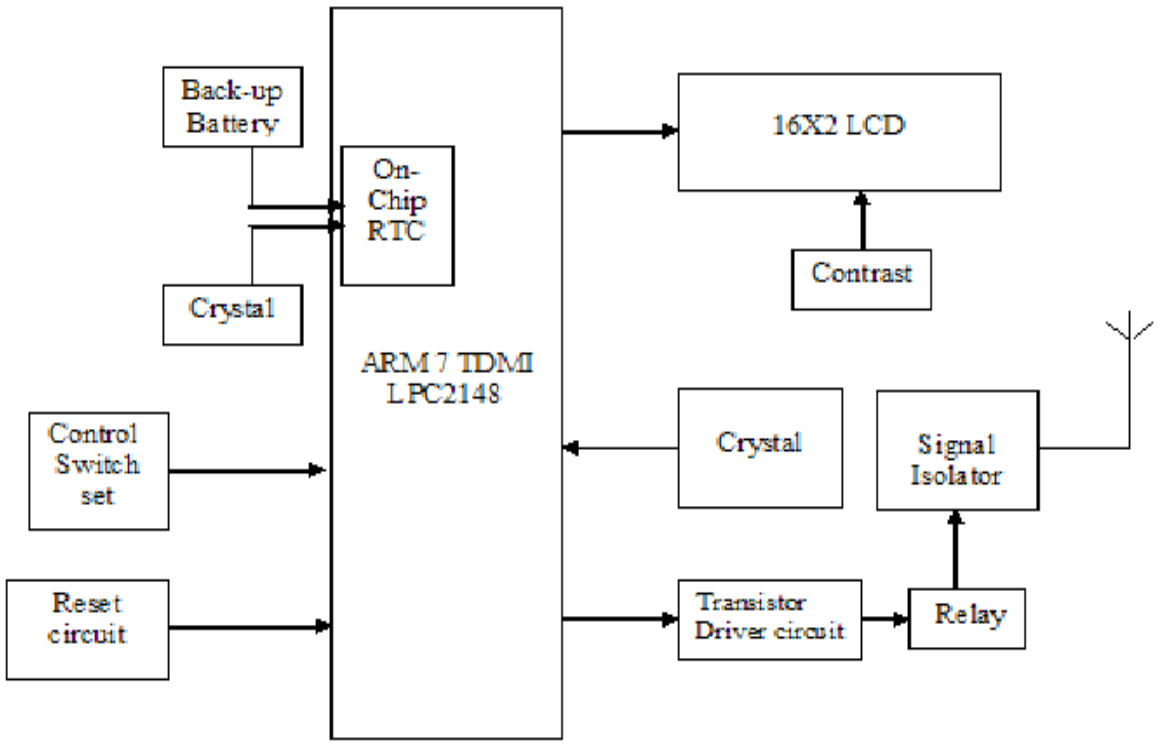

Figure3: Block diagram

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LPC2148 controller:

The LPC2148 are based on a 16/32 bit ARM7TDMI-S™ CPU with real-time emulation and embedded trace support, together with 128/512 kilobytes of embedded high speed flash memory. A 128-bit wide memory interface and unique accelerator architecture enable 32-bit code execution at maximum clock rate. For critical code size applications, the alternative 16-bit Thumb Mode reduces code by more than 30% with minimal performance penalty.

With their compact 64 pin package, low power consumption, various 32-bit timers, 4- channel 10-bit ADC, USB PORT,PWM channels and 46 GPIO lines with up to 9 external interrupt pins these microcontrollers are particularly suitable for industrial control, medical systems, access control and point-of-sale. With a wide range of serial communications interfaces, they are also very well suited for communication gateways, protocol converters and embedded soft modems as well as many other general-purpose applications.

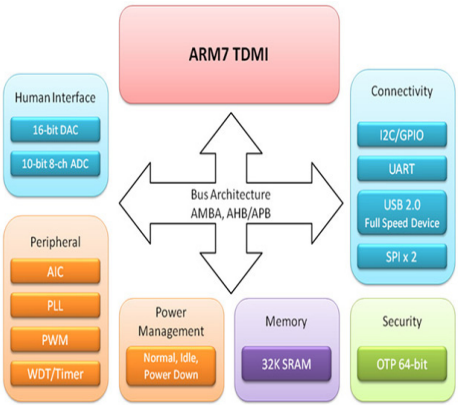

Figure4: Architecture

ARM PROCESSOR:

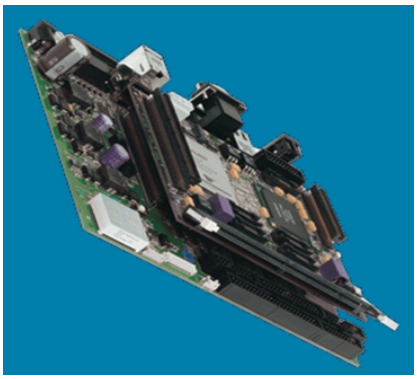

Figure5: ARM7 board

Key features:

• 16-bit/32-bit ARM7TDMI-S microcontroller in a tiny LQFP64 package.

• 8 kB to 40 kB of on-chip static RAM and 32 kB to 512 kB of on-chip flash memory.

•128-bit wide interface/accelerator enables high-speed 60 MHz operation.

• In-System Programming/In-Application Programming (ISP/IAP) via on-chip boot loader

•Software. Single flash sector or full chip erase in 400 ms and programming of

•256 bytes in 1 ms.

• EmbeddedICE RT and Embedded Trace interfaces offer real-time debugging with the

•On-chip RealMonitor software and high-speed tracing of instruction execution.

• USB 2.0 Full-speed compliant device controller with 2 kB of endpoint RAM.

•In addition, the LPC2146/48 provides 8 kB of on-chip RAM accessible to USB by DMA.

•One or two (LPC2141/42 vs. LPC2144/46/48) 10-bit ADCs provide a total of 6/14

•analog inputs, with conversion times as low as 2.44 µs per channel.

• Single 10-bit DAC provides variable analog output (LPC2142/44/46/48 only).

•Two 32-bit timers/external event counters (with four capture and four compare

•Channels each), PWM unit (six outputs) and watchdog.

•Low power Real-Time Clock (RTC) with independent power and 32 kHz clock input

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• Multiple serial interfaces including two UARTs (16C550), two Fast I2C-bus (400 kbit/s),

• SPI and SSP with buffering and variable data length capabilities.

• Vectored Interrupt Controller (VIC) with configurable priorities and vector addresses.

• Up to 45 of 5 V tolerant fast general purpose I/O pins in a tiny LQFP64 package.

• Up to 21 external interrupt pins available.

• 60 MHz maximum CPU clock available from programmable on-chip PLL with settling

• Time of 100 µs.

• On-chip integrated oscillator operates with an external crystal from 1 MHz to 25 MHz.

• Power saving modes include Idle and Power-down.

• Individual enable/disable of peripheral functions as well as peripheral clock scaling for

• Additional power optimization.

• Processor wake-up from Power-down mode via external interrupt or BOD.

• Single power supply chip with POR and BOD circuits:

• CPU operating voltage range of 3.0 V to 3.6 V (3.3 V ± 10 %) with 5 V tolerant I/

Real Time clock :

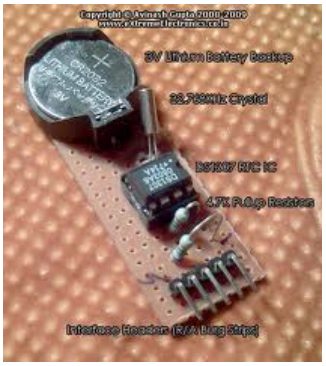

Figure6: RTC

RTC:

A real time clock is basically just like a watch - it runs on a battery and keeps time even when there is a power is removed. Using an RTC, you can keep track of long timelines.

• The RTC which is used is DS1307. It's low cost, easy to solder, and can run for years on a very small coin cell.

• The RTC used here is DS1307.

• It is an 8 pin IC.

• Crystal frequency for RTC is 32.6KHz.

• The communication between ARM and RTC is done using I2C bus.

Relays :

A relay is used to isolate one electrical circuit from another. It allows a low current control circuit to make or break an electrically isolated high current circuit path. The basic relay consists of a coil and a set of contacts. The most common relay coil is a length of magnet wire wrapped around a metal core. When voltage is applied to the coil, current passes through the wire and creates a magnetic field. This magnetic field pulls the contacts together and holds them there until the current flow in the coil has stopped. The diagram below shows the parts of a simple relay.

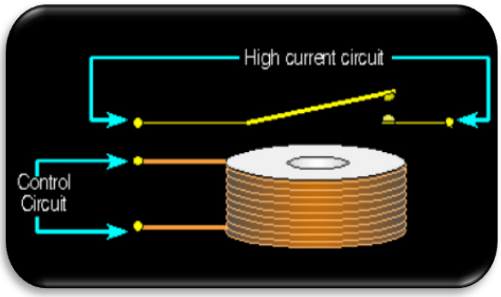

Figure 7: Relay

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LCD :

LCD stands for Liquid Crystal Display. LCD is finding wide spread use replacing LEDs (seven segment LEDs or other multi segment LEDs) because of the following reasons:

1.The declining prices of LCDs.

2.The ability to display numbers, characters and graphics. This is in contrast to LEDs, which are limited to numbers and a few characters.

3.Incorporation of a refreshing controller into the LCD, thereby relieving the CPU of the task of refreshing the LCD. In contrast, the LED must be refreshed by the CPU to keep displaying the data.

4.Ease of programming for characters and graphics. These components are "specialized" for being used with the microcontrollers, which means that they cannot be activated by standard IC circuits. They are used for writing different messages on a miniature LCD.

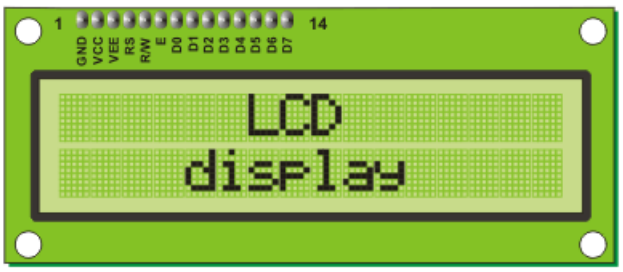

Figure8: LCD

HARD WARE OUTPUT :

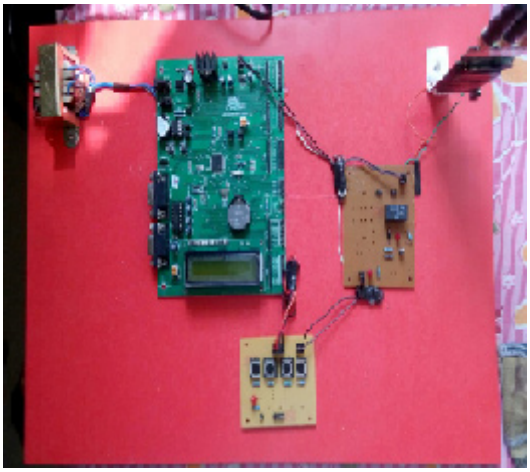

Figure9: Hardware kit

Figure10: Output in mobile

SIMULATION RESULT:

Code is written in Xilinx ISE and executed in FPGA –Spartan 3E for simulation result of mobile jammer for GSM,CDMA,3G networks with pre-schedule time duration using on-chip RTC DS1307.

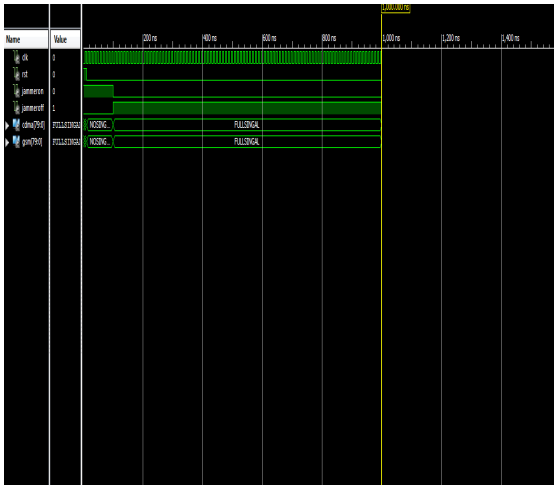

Figure11: Simulation snap shot

From the above result we can say that clock signal and reset signal is given when jammer is on all the networks indicate no signal when it is turned off all the networks re-establishes the full signal strength.

Conclusion:

Mobile jammer is successfully completed using ARM 7 and RTC. With the help of this we can de-activate all the mobile phones in that location by giving time scheduling and the simulation results are also carried out.

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Future scope:

The future scope is not only giving the time scheduling to the jammer using RTC but we can also send message through a mobile phone to the jammer. In this project a GSM modem can be included to operate the jammer by an SMS. We can jam a signal by sending a message to activate the jammer remotely and an acknowledgement will be sent back.

Applications:

- Defense Applications
- Libraries
- Temples
- Colleges
- Seminar halls and conference rooms
- Security for VIPs during their visit to public places

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Working As An Assistant Professor In Ece Department At Stanley College Of Engineering And Technology For Women, Hyderabad Till Date. She Worked As Asst.Prof In Vidya Jyothi Engineering And Tech. And Pursued M.Tech (Embedded Systems), Affiliated College by JNTUH. She is having nine years of teaching experience. Her areas of research interests are embedded systems, VLSI, embedded and real time systems, digital signal processing and architectures, Microprocessor & Micro controller, data communication systems.