ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com
International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 3, Special Issue 18, March 2016

Mobile Phone Blast Prevention

(EMBEDDED SYSTEM)

S Susindhar[1], Vijaya Ragavan M[2]

Mailam Engineering college
Mailam-Tindivanam-604 304

susindhars@gmail.com

Abstract - **Now a days the number of mobile users is going on increasing rapidly but the awareness regarding the danger of using the mobile is not well known , to create a public awareness and to prevent the damage, this paper is produced .we are designing a project regarding the mobile blast prevention which is done using embedded system with using a microprosser 80c51.**

Keyword – input source, bug detector, micro controller 80c51.

1.Introduction

In this generation the expectations on the smart phone is going on increasing ,But these phones are treated as the play things ,however if treated too rash that may leads to dangerous act, the explodes and electrocution due to many reasons such as cheap components and aged components…..

To reduce the blast and save the humans from upcoming danger this paper is created and project is going for the last two months another 15 days is required to complete our project , as soon as we complete our project it will definitely saves 80% of people who misuses their smart phone

2.Present method

The world of smart phones is not focusing on this problem they simply updates the kernel versions from 5.1 to 5.2 and goes on, the Smartphone designers simple works for day and night to make the mobile flexible and very slim one this compact mobile may leads to blast during charging

This smartphone developers works on design which ever give them money , so they don't think on the public safety.

3.Reason for Blast

Some of the major reason for blast are

- Over charging
- Attending a call while mobile on charging
- Using a old battery which is damaged already
- Playing game or surfing over internet while charging
- Whenever a mobile is charging the motherboard undergo some suppressions In this time if u attend a call it leads to high pressure in the motherboard and so the mobile blast occurs

Fig1. Using a mobile while charging

All Rights Reserved © 2016 IJARTET

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com
International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 3, Special Issue 18, March 2016

Fig2.Overnight charging

4.Recent isuues

- At 26 Jan 2016 a couple died due to mobile blast in addition to LPG leak,
- Soon after the above incident at 5 Feb 2016 a 9 years old kid lost his eyes due to mobile blast.

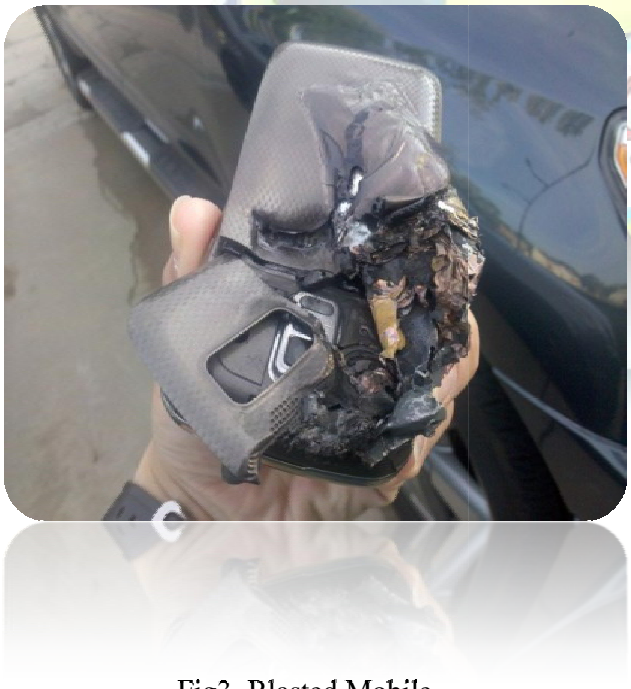

Fig3. Blasted Mobile

5.Charger leads to blast

- A branded charger will have coil wound capacitor which damages itself at fault conditions.
- In an local brand charger for cost reduction purpose the use electronic capacitor which do withstand high working pressure

6. Battery- the reason for blast

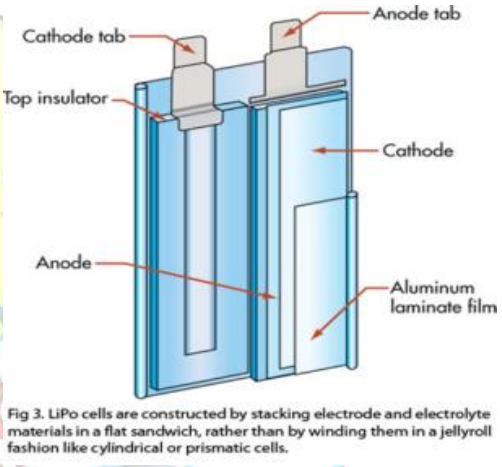

Fig 3. LiPo cells are constructed by stacking electrode and electrolyte materials in a flat sandwich, rather than by winding them in a jellyroll fashion like cylindrical or prismatic cells.

Fig4.Mobile Battery

- Over charging will leads to heating of battery
- This heat reduces the separator in between anode and cathode
- This leads to sudden contact of anode and cathode that leads to blast

7.Blast reduced by

- Stop full night charging of mobile
- Don't attend calls while mobile phone on charging
- Use generic products of the brand which your mobile phone belongs
- Dispose of the damaged batteries in correct manner ,please don't try to reuse them.

All Rights Reserved © 2016 IJARTET

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com
International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 3, Special Issue 18, March 2016

6. Our Project

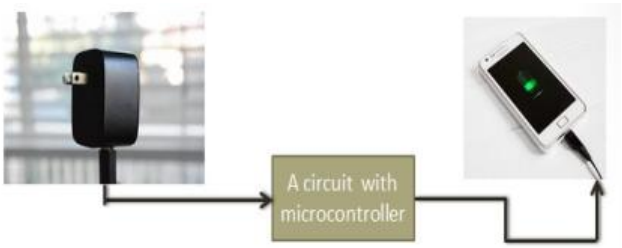

Fig5.Block diagram of our project

- Stops charging when call arrives to your mobile
- Auto cut off when charge is full using smart technology
- Options to select the time for charging
- If there any fault in auto cut off technology the charging will auto stops after 2 hours from the time of mo bile plugged in.

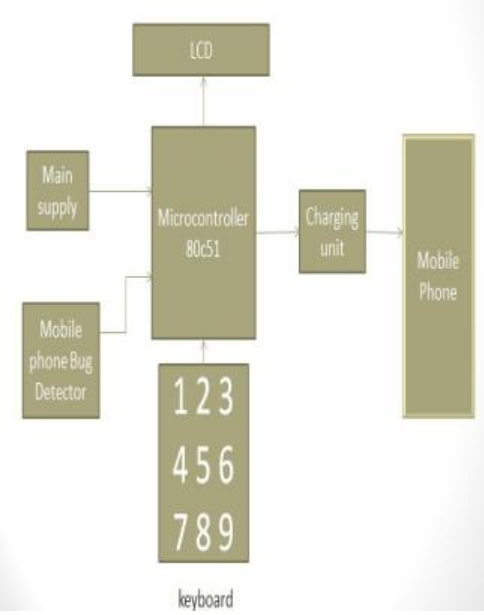

Fig6.Block diagram

7.Working

Here the mobile is connected to this circuit, this circuit includes a mobile phone buck detector this helps to detect the incoming and out going calls from and to the mobile, when it detects the signal it sends +5v supply to the microcontroller. In this time the microcontroller stops the charging circuit by using a relay ,here timer can be set auto mode charging facility is available ,this stops the mobile from over charging and fault currents can be eliminated.

8.Lcd Display

Fig7.16x2LCD Display

Here lcd display is used to display the status of the circuit whether the charging is held or not , this displays the predefined coding which is dumped already in microcontroller 8051. by using this display we can check the working status of the circuit so that it is easy to use the project.

9.Bug detector

All Rights Reserved © 2016 IJARTET

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com
International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 3, Special Issue 18, March 2016

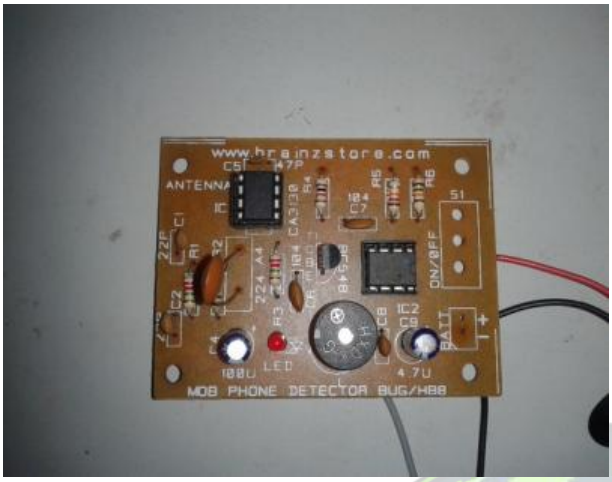

Fig8.MobilePhone Detector

A bug detector is used to detect the incoming and outgoing calls from and to the mobile, when there is a call this detector it sends 5v supply to the controller , so that the controller diagnose this rise and it stops the charging unit to the mobile.

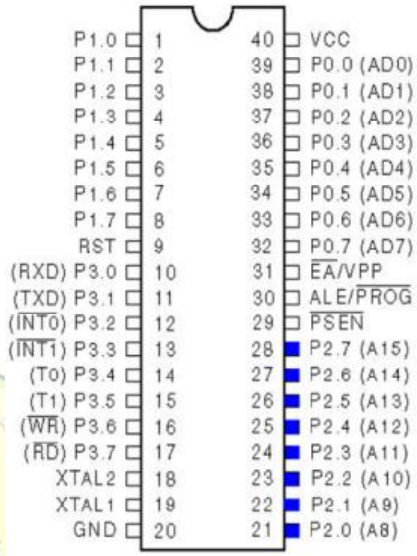

Fig9.Pin configuration of 8051

The embedded software tool used here is Keil µVersion

10. Microcontroller

- 8051 is made by Intel.
- It is one of the most widely used microcontrollers in the world.
- A stand alone, high performance, single chip computer for control applications.
- CMOS technology- Low Power ,High speed
- Single Power supply – 5 v
- Data memory – 128 bytes
- Programmable memory – 4096 bytes
- Software Flag – 128 user defined
- Addressable – 64 K byte
- Bi-directional I/O lines – 32
- High speed – Serial I / O

All Rights Reserved © 2016 IJARTET

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com
International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 3, Special Issue 18, March 2016

11.Relay

Generally relay is a switching device , there are three terminals in a relay middle one is common terminal and the either sides will have normally closed and normally open terminal are present.

The relay used here is 12v relay so we need to give 12v power to the relay. when input 5v is given the relay is on .The conduction occurs between common terminal and normally open terminal.

The relay acts soon after it receives the input from the controller.

12.Amount Of Radiation From Mobile

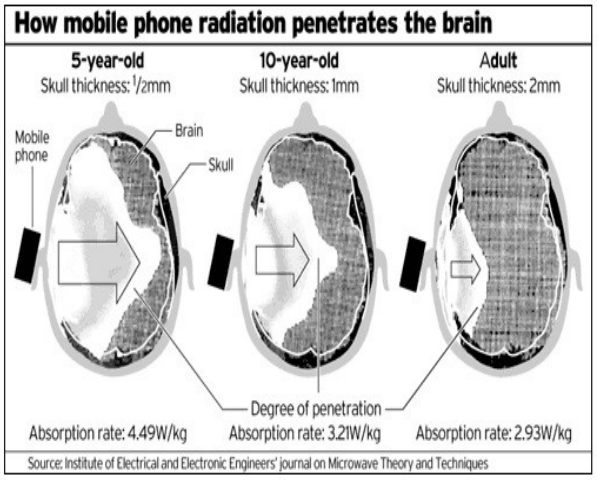

Fig10.Mobile Phone Radiation

This above diagram displays the amount of damages that is caused due to usage of the mobile phone of the various age group.

You can check your mobiles radiation by pressing *#07# .the amount our radiation will differ for every mobile make and model, In India the acceptable limit is 1.6w/kg. the mobile having the saturation absorption rate above the predefined limit are banned to sale in India.

This code does not work on phones that are not purchased in India or the phones which is bought before December 2014.

13.Radiations Leads to

- Usage of mobile phones for longer time leads to many illness and it may also leads to cancer
- The rate of death from brain cancer among handheld phone users was higher than the rate of brain cancer death among those who used non-handheld phones that were away from their head.

14.Effects of Radiation Reduced by

- Use of Air Tube Headset with an air tube.
- Keep your phone as far away from your body as possible.
- Limit Cell Phone calls to two minutes.
- Avoid placing cell phone on ear while call is Connecting.

All Rights Reserved © 2016 IJARTET

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com
International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 3, Special Issue 18, March 2016

Fig11.Air tube Headset

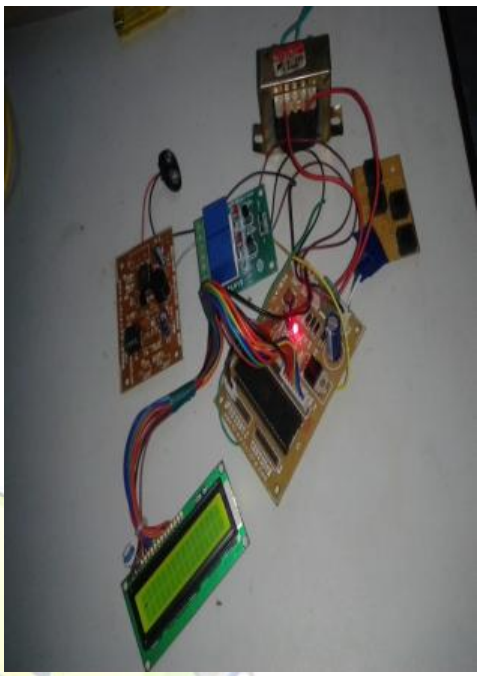

Fig12.Completed project

This is the simple circuit of my project which saves many lives from mobile blast and mobile electrocution .Creating awareness is not only the solution it may not reach all the people and some people may not follow this ,so on using this circuit all the problems will be reduced .

15.Complete circuit

16.Conclusion

By using this circuit we can prevent most of the blast and electocution

The cost of this project is rs.600

But when this project is comes to existence as product the cost will be reduced upto rs.300 , As this is in low cost so the project can be reach al the people.

All Rights Reserved © 2016 IJARTET

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com
International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 3, Special Issue 18, March 2016

Reference

1. Times Of India Why do cell phones explode and how to prevent it.- Mar 16, 2014.
2. India Today- Mobile phone blast disfigures youth- February 7, 2015
3. Indian Express- Cell Phone Blast Kills Couple- January 2016

Authors

S.Susindhar1,UGScholar,
Mailam Engineering College,
Mailam Tindivanam,
E-mail:susindhars@gmail.com,
M.VijayaRagavan2, AssistProfessor,
MailamEngineering College,
Mailam Tindivanam,
E-mail:mrvijay.ragavan@gmail.com

All Rights Reserved © 2016 IJARTET