

Introduction

Loss or theft of suitcase during travel is a common occurrence. It has recently happened to my dad also. This got me thinking. Also I have heard of jeweller suitcases that have alarms and also shocks a potential thief. A similar device can be implemented using an e-field sensor. This is much simpler than wiring the suitcase in any other way.

Suitcase



Main.jpg



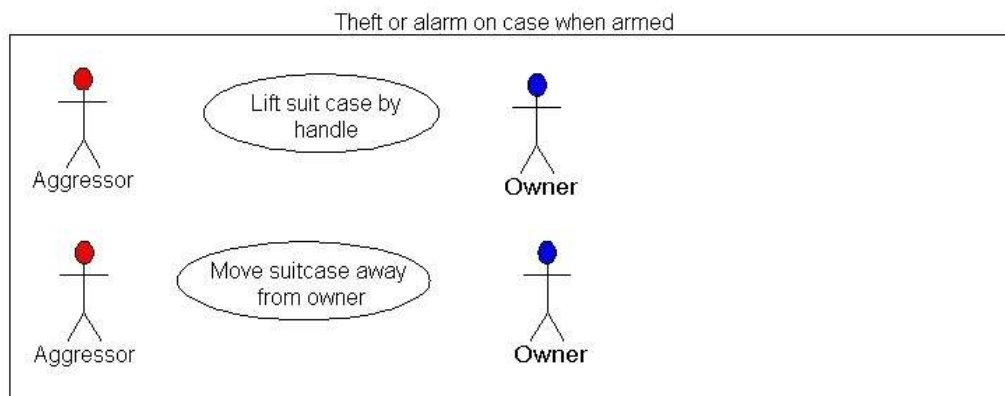
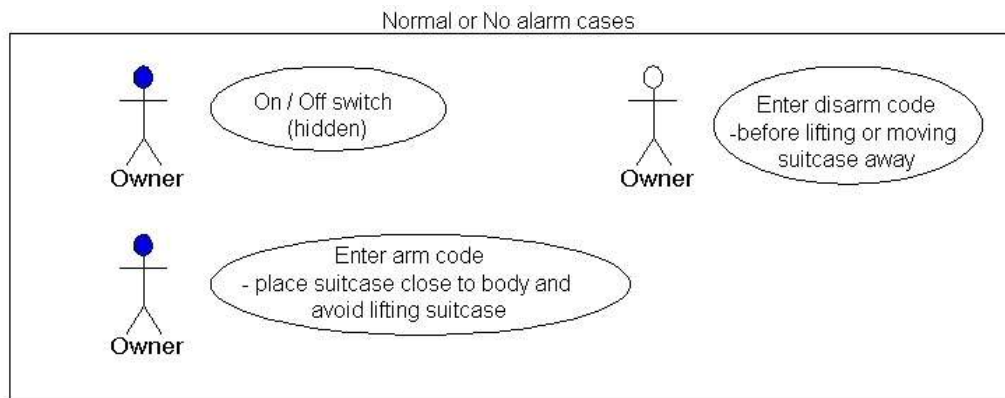
Wiring.jpg

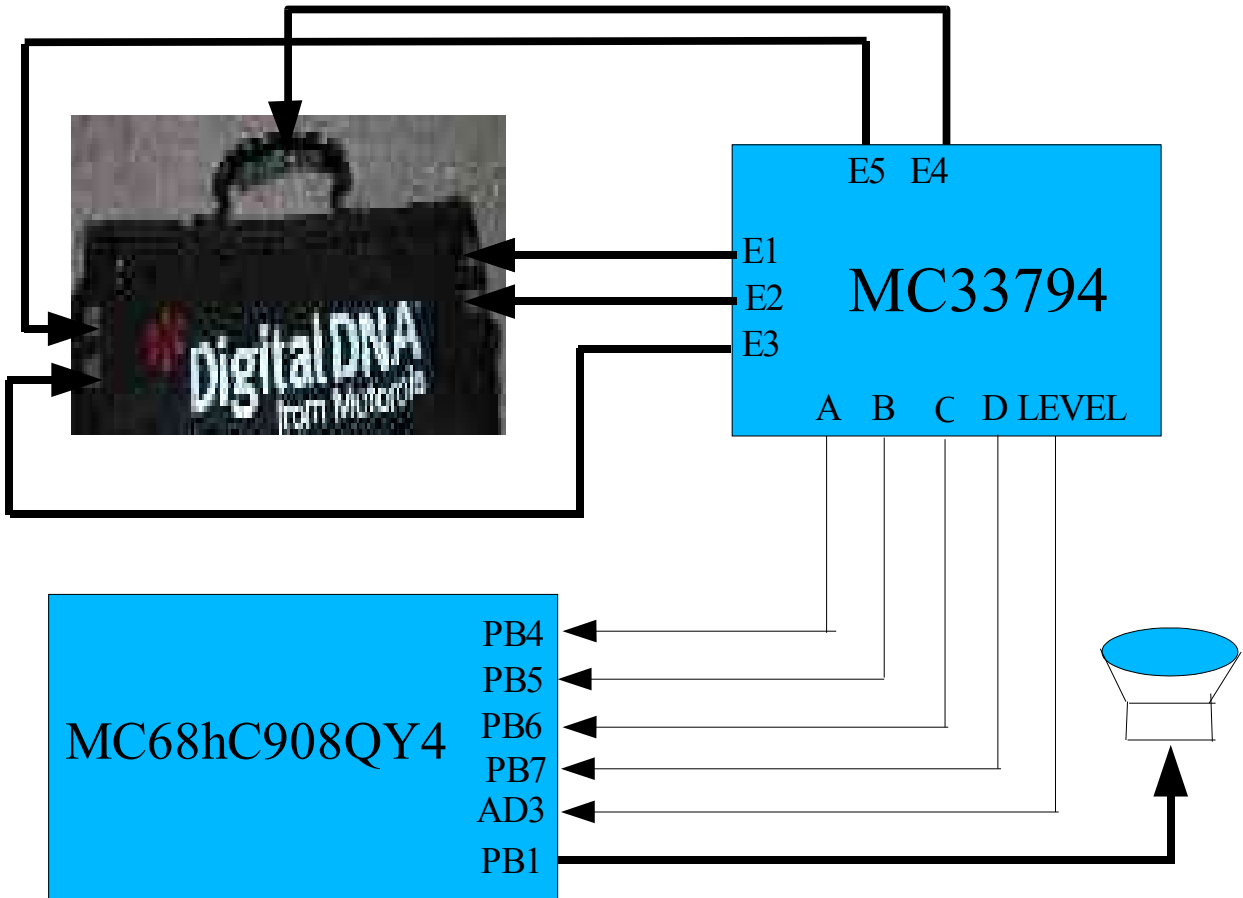
The 'main.jpg' picture above shows a suitcase wired with e-field sensor. If you look hard you can see a metal foil under the handle with a sensor connection. This is used to sense somebody carrying away the suitcase without disarming the alarm. Also visible are 4 metal foil tabs, 2 on the left and 2 on the right. These are used as key pads to enter the arm/disarm codes. They are also wired to three e-field electrodes which is used instead of mechanical keys. The 4'th tab is not used at present.

The 'wiring' picture shows the device wiring and the proximity electrode. This electrode is used to sense the suitcase moving away from you, for e.g. Consider these scenarios,

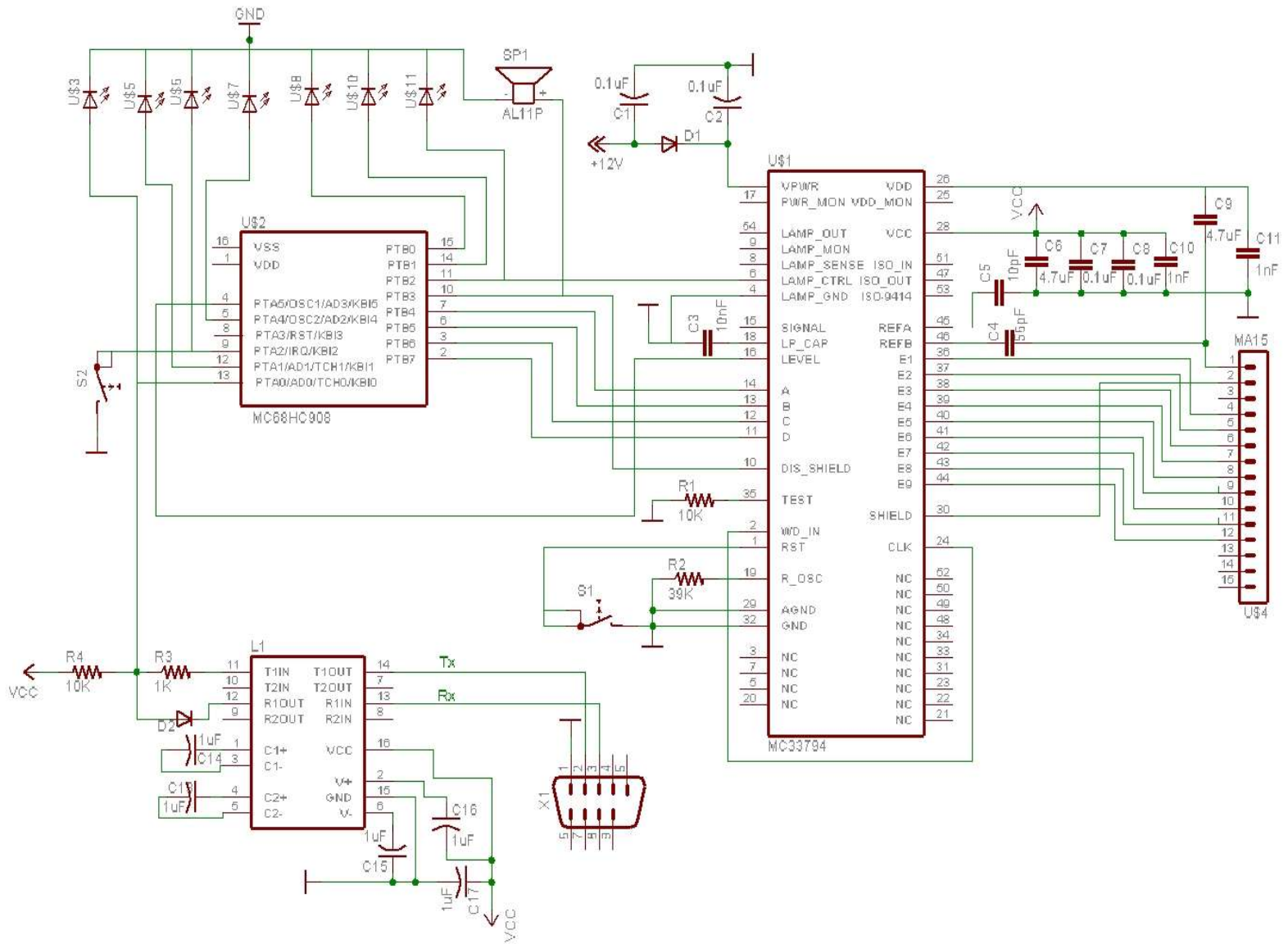
- a) You move your legs away from the suitcase (proximity electrode) when you are seated and immersed in a newspaper
- b) The suitcase is moved away from your body while you are sleeping in a train berth or on the plane.

In this unit the alarm is just a buzzer. We do not send 40KV(yet) to the case. In actual suitcases the electrodes may be hidden under the skin and will still work.





BLOCK DIAGRAM



Schema.jpg

Conclusion

The e-field suitcase alarm is a very useful device. The motorola e-field sensor makes this design much simpler and cost effective.