

Case Study on iCHeSTT - Multisensor

Objective of the Project: -

This Project involves development of intelligent Multisensor. The development was primarily carried out keeping in mind protection of ATMs from theft attempts.

iCHeSTT is a compact Intelligent security Sensor with 5 sensing elements in one enclosure.

iCHeSTT stands for.....

1. Chest Door Sensor
2. Heat Sensor
3. Shake/Vibration Sensor
4. Tilt Sensor
5. Tamper Sensing

Basic Function

A) ATM Chest door open sensor:-

Photo electric/Light sensor is used for sensing LUX level and according to it will trigger. LUX level in normal scenario is 0Lux and when door opening of ATM machine LUX level is increases up to 16Lux to 22Lux.

B) Heat/Thermal sensor:-

This sensor is used for measuring inside temperature of ATM machine. When atmospheric or ATM body temperature is goes up to 60°C then it will trigger.

C) Shake /Vibration sensor:-

Piezo sensor is used for sensing vibration. Alert generated at following condition,

- a. 3 medium strokes in 30 seconds .
- b. 5 medium strokes in 120 seconds.
- c. 1 large intensity stroke.
- d. Continuous vibration for 3 seconds.

D) Tilt Sensor:-

This special sensor is used for ATM machine security. In case of ATM machine is remove from its place or tilt ATM machine that time

Tilt sensor is activated i.e. iCHeSTT sensor is generate signal.

- a. Sensitivity: - Tilt more than 30 degrees.

E) Tamper Sensor:- A tamper Switch operates if someone tries to open the sensor cover

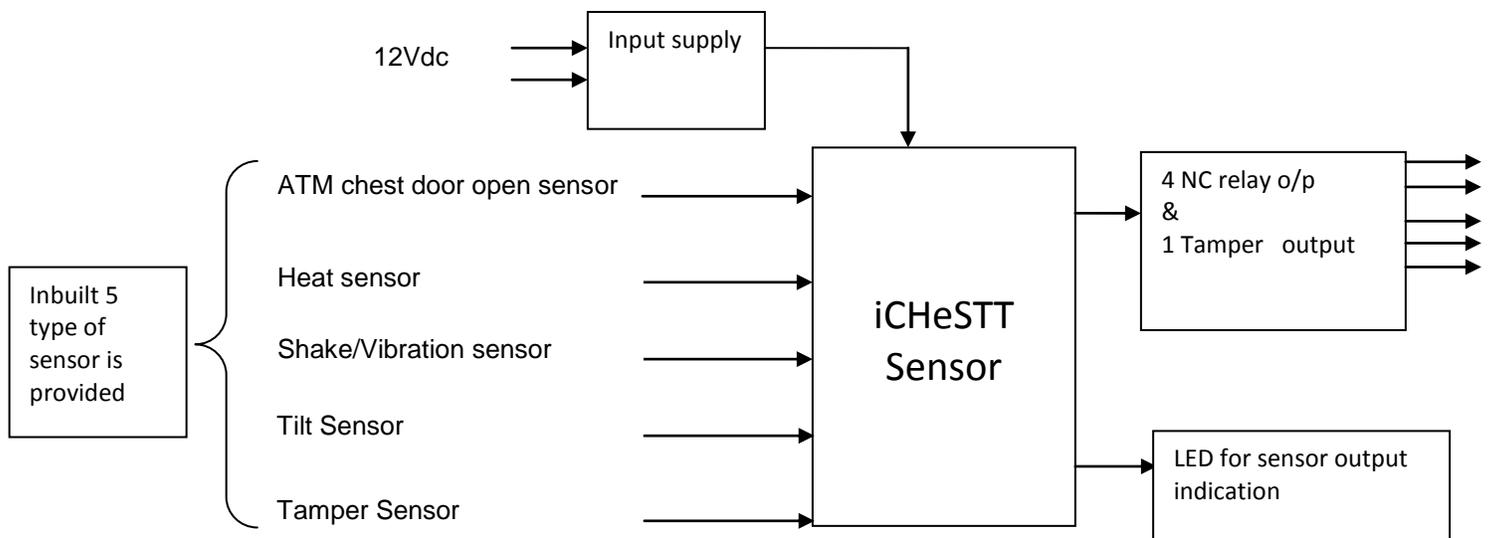
Output :

4 NC relay o/p is provide for sensor output according to type of input triggering respective relay output will activated. For tamper one extra PFC and NC type output also available in the sensor. 3 LED used for sensor triggering/sensing indication.

Customer: - Various Banks and ATM Cos.

General Overview: -

Reference Block Diagram:-



Challenges : ATM has very limited space for mounting. Plastic enclosure was designed and mould was made for this purpose. Fitting the electronic circuit in such small space was also a challenge which was overcome by using four layer PCB.