



Home Security

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Section 1: Introduction

- Normal and infrared cameras detect movement depending on the amount of light available
- Smoke sensor is integrated to alert the user for any potential fire risks
- Interface through a website with which the user can interact



Section 2: Problem Description

- Homeowners face a myriad of threats that go unnoticed before it is too late.
- Home security systems break the bank and are not scalable to a homeowner's need.
- Users are not given the option to prevent possible disasters beyond the help of authorities.

Section 3: Proposed Solution

- A cheap system consisting of a camera, a siren, and a motion sensor can go a long way in securing your home.
- A website allows the user to monitor their home whenever they please and get notified of any unwanted guests or scare them off using an annoying siren.
- Wi-Fi compatibility allows the system to be scaled and get data from any type of sensor the user desires (i.e. smoke, temperature, humidity).

Section 4: Demonstrated Features

- 1) Smoke detection that alerts the user when smoke is detected.
- 2) Multiplexes video from two cameras (on different spectrum) based on light detection.
- 3) Infrared movement detection in entrances to the house.
- 4) Hosts the live video feed on a website.
- 5) Users can interact with the entire system through their website.
- 6) Saves up to > 24 hours of video to a solid-state drive.
- 7) Notifies the user when movement is detected.

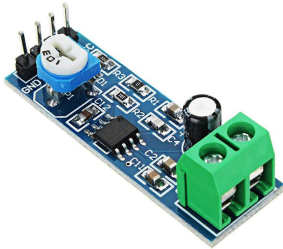
Section 5: Available Technologies

Technology Piece	Estimated Cost (USD)
Circuit Board	\$50
Solid State Drive	\$40
Siren/Speaker	\$11
Camera	\$9
Photoresistor / Speaker Amplifier	\$8

Note: Circuit Board Estimated Cost at \$50



Solid State Drive
(Crucial CT500P2SSD8)



Speaker Amplifier
(LM386 Module)



ESP Compatible Camera
(OV2640 Camera)



LDR-Photoresistor
(02-LDR1)



Audio Speaker
(9 Ohm Speaker)

Section 6: Engineering Content

- WiFi Module
- Wired sensors
- Camera
- Website
- Data Storage
- Wireless sensor + ESP32 dev board

Section 7: Conclusions

Our design is useful to the consumer in three primary areas.

- Area 1: Cheap Cost
 - Appeals to wider range of consumers
- Area 2: Scalability
 - Adaptable to the user's specific needs
- Area 3: Ease of Use
 - Benefits less technological savvy users