DUAL MODE (24*7 AND STANDBY) SENSOR CONTROLLED SECURITY CAMERA FOR IMMEDIATE SECURITY

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ABSTRACT

*This paper presents the improvement in the present security cameras power wastage and memory wastage is removed to a lowest level with immediate security by the means of wireless camera and mobile calling. Two modes are used in this system (i) 24*7 mode as a normal security camera and (ii) 2nd mode is Based on sensors, if sensors are off the camera will be on standby, as soon as soon sensor senses, a call is initiated to the security office, buzzer will start and camera is activated and start transmission and recording of the accident.. It will be best at some places as Bank Locker Rooms as after the bank is closed till next morning there should be no movements, so 24*7 or full time cameras are wasting power and memory by recording same pictures. And as per security aspects we have to watch live footage always, if we leave the footage unattended any accident at that time will be missed or known later (assuming only security camera is there in locker room). By this invention camera will be on standby to save memory and power and wastage of time in attending the footage, if anything happens sensors will surely sense and camera start producing alarms at the receiver with the live footage and a call for immediate security.*

Keywords— Sensor, Camera, Security And Relay Etc.

I INTRODUCTION

Security systems in present days are utilizing buzzers and cameras for electronic surveillance. All the present security systems are working with cameras in single mode i.e. full time (24*7) in on mode [1].-[6]. It reduces the life of security camera because of heating, high maintenance is required as camera is working all the time with the recording apparatus. A lot of memory is wasted recording the same frames.

As per the requirements of high speed security with minimum power and memory at all places the present paper involves the modifications of all such drawbacks present in previous security systems. It includes an additional mode. With its second mode it is best at sensitive places for high speed security with accuracy. For example recording rooms of the offices where important data is stored, Bank Locker Room, Closed houses with all members outside the city, small shops in night after closing etc.

Best at all places having confidential data where the frequency of people is zero for some interval of time. The camera can still be used in mode 1 which can be set by remote in which system will be active for full time and can be used in working hours of banks, shops and offices and after the working hours it can be set to mode 2, where it be at stand by. If nothing happens it will be at standby till the mode is again set to 1. In this way it will save the power and memory for 8 to 10 hours a day. In case of any accident it will notify the security room with call and alarm so that they come to know about incident immediately and can take action. To watch the TV 24*7 is not necessary in this case.

II SYSTEM HARDWARE AND SETUP

Figure 1 shows the setup of the security systems with all the essential components. Two mobile are attached with the microcontroller. One attached with Dual tone multiple frequency (DTMF) encoder is for mode selection. Second is to call in case of accident. Buzzer is used in accident case. Wireless Camera can work in two modes (i) Full time i.e. 24 hours a day (ii) Standby. These modes can be selected using remote or mobile. Many types of sensor are used (i) Infrared sensors (ii) LDR sensors (iii) Motion detection sensors (iv) Fog sensor (v) Temperature sensors. At the receiver end there is an Audio Video receiver to receive camera signals and a TV for the display purpose.
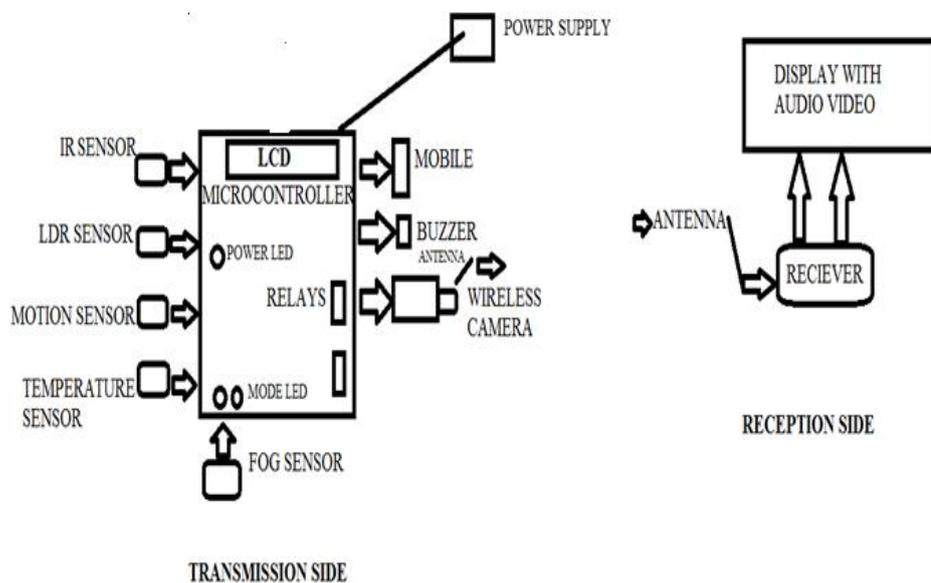

Figure 1. Security System Setup

III WORKING AND APPLICATIONS

This security system can use for many applications. As for its best description, assume a Bank Locker Room. Camera is fitted in the locker room. In the working hours it will operate in mode 1. It will transmit the full footage to the receiver where it will be stored. In mode 1 camera will be activated but buzzer will remain off and

sensors will have no effect on camera control. It will act as a normal security camera. But as soon as the working hours end, the camera will be switched to mode 2 after closing the room. This mode is of main concern, in this mode the camera will be at standby i.e. it will neither record anything nor send anything to the receiver and so there is nothing to store in storage device. First suppose a case of no accident, if there is no accident, the camera and the storage unit will be on standby and in this way there is a huge saving of power and memory. It can be up to 12 hours a working day and 24 hours on a holiday.

Now suppose any accident happens like some unwanted persons come inside. As soon as they enter the room, the sensor senses and sends an input to the microcontroller. Microcontroller sends as input to wireless camera, buzzer and mobile. So camera start transmitting the footage at receiver, buzzer starts to alert and mobile makes a call to security office to informing about accident. In this way immediate security is provided by this invention with minimum power and minimum memory usage. We will use a backup to the device in terms of power as if device connections are cut it will still operate using a lithium battery. And as soon as it comes on battery it again on the camera, on the buzzer and make a call. Relays are used to provide sufficient current to camera as microcontroller cannot provide sufficient current to operate camera.

Some of the other best application are closed houses with members residing outside city or out for a trip. As there is increasing number of thefts there is more risk in leaving home with no security so in such cases this invention will help a lot. If the family is residing outside to use this camera will help them reducing power bills and there is no need to change the memory storage devices again and again as there is nothing to store is no accident happens. The setup is maintained properly if accident happens.

It can also be used in small scale shops where the incidents of thefts are increasing day by day as the news of theft is known next day or later. This invention will provide each class a best security system with minimum memory and minimum power wastage. It will be able to last longer as camera will not be working full day and low maintenance will be required. We can receive calls and footage at many places simultaneously by using multiple receivers. Different modes of transmission can also be used in this for transmission of video signals.

IV FUTURE APPROACH

The future approach of the project is in highly secure places for providing the high security like in Banking, Army confidential rooms, Home locker rooms or any of the security areas where the probability of the people coming is almost zero for few hours in a day.

V CONCLUSION

This paper presents the designing of security systems more user friendly with highly economic in terms of money and power. The modifications done in this can be applied to all for their best uses. It is cost effective as well as low maintenance is required in this system.

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