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Implementation of Wireless Remote Monitoring System with Stable Data Collection and Transmission Quality

K.Shobha
M.Tech Student,
Department of ECE,
Nagole Institute of Technology & Science.

B.Hemavathi
Guide,
Department of ECE,
Nagole Institute of Technology & Science.

K.Srinivasa Reddy
Associate Professor & HOD,
Department of ECE,
Nagole Institute of Technology & Science.

Abstract:

Remote monitoring is applicable in a wide range of industries like the oil and gas industry pharmaceutical, food and beverage, electricity transmission and distribution, rail networks. Depending on the geography and the regulations involved in a particular industry segment, there has already been an investment in this area. In achieving these standards, remote monitoring plays a vital role enabling organizations to achieve the aforementioned benefits.

Remote sensing is the acquisition of information about an object or phenomenon, without making physical contact with the object. There are two main types of remote sensing: passive remote sensing and active remote sensing. Passive sensors detect natural radiation that is emitted or reflected by the object or surrounding areas. Reflected sunlight is the most common source of radiation measured by passive sensors. Examples of passive remote sensors include film photography, infrared, charge-coupled devices, and radiometers. Active collection, on the other hand, emits energy in order to scan objects and areas whereupon a sensor then detects and measures the radiation that is reflected or backscattered from the target. RADAR and LiDAR are examples of active remote sensing where the time delay between emission and return is measured, establishing the location, height, speeds and direction of an object.

In this project we are building an intelligent monitoring system based on Remote Sensor technology. This intelligent system can be used for monitoring and create a more efficient security system. The system consists of various sensors that will be implanted in the places like cars, homes and safe. The intelligent system can switch the power automatically from AC to DC in case of any kind of electric malfunctioning. Thus, using this project we can offer an efficient and powerful way of security to the people.

Keywords:

Remote Monitoring, Wireless, Radar, Lidar, Remote sensing, GSM.

INTRODUCTION:

Thousands of robbery cases are registered every year. The existing vehicle alarm systems are of no match to the well-equipped thieves. In the India, there are already many transportation companies and vehicle manufacturers that employ Global Positioning System (GPS) based location and tracking system combined with conventional cellular communication for stolen vehicle recovery as well as for constant monitoring of vehicle fleet management. However there are situation where the GPS system cannot perform well such as at underpasses and indoor parking. Most cars and houses are still using the conventional alarm system which is easily handled by car thief. One major problem in those alarms is tuning and adjustment. Consequently, the public lose interest in the alarms since they could be falsely triggered. Another weak point is that, it has limited capability to interact with its owner. In addition, the conventional alarm systems did not provide any means in Assisting the recovery of stolen vehicle or stolen house.

With the increasing improvement of living standards, People put higher security requirements for theirs important places and personal items, such as home, office, car, etc. Currently, the type of monitoring system that used for security protection is a lot, but most are based on wired network, and monitoring information is difficult to promptly notify the user. To this end, the research group completed a wireless remote monitoring system designation and implementation through the combination of sensor technology and the GSM mobile communication technology. The system sends monitoring information is not dependent on the wired telephone system, but with a reliable, mature GSM mobile network.

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The monitoring information is sent to the user's mobile phone orresidentialsecurity control center in an intuitive form of short message, and gain time for the user to avoid possible property damage. This system can effectively prevent human damage by switching AC-DC power supply automatically. It can still work in the absence of market power this function can improve the reliability of the system. Moreover, the system also has a key function of the alarm.When at risk of emergency situations, such as the car was robbed, users can easily send text messages to friends and relatives for help by using the one key alarm function, and the relatives and friends can take appropriate measures to rescue after receiving the alarm message.

WORKING PRINCIPLE:

One can find latest technological innovations being employed to protect not only houses but also offices, buildings, and warehouses etc. Nobody likes to be robbed of his precious possessions and hence opting for a secure system makes sense. Also the fact that, crime rate has kept increasing further emphasizes the need of upgrading the home security. With changing times, even petty thieves have acquired new skills to rob your belongings.

Most of the urban cities and metros are witnessing increased rate of crimes and that requires for installation of a safe and secure system to protect your valuables, family and home.In this project we have developed a wireless remote monitoring system designation and implementation through the combination of sensor technology and the GSM mobile communication technology. The system sends monitoring information is not dependent on the wired telephone system, but with a reliable, mature GSM mobile network.

The monitoring information is sent to the user's mobile phone or residential security control center in an intuitive form of short message, and gain time for the user to avoid possible property damage. This system can effectively prevent human damage by switching AC-DC power supply automatically. It can still work in the absence of main power this function can improve the reliability of the system. Moreover, the system also has a key function of the alarm. When at risk of emergency situations, such as the car was robbed, users can easily send text messages to friends and relatives for help by using the one key alarm function, and the relatives and friends can take appropriate measures to rescue after receiving the alarm message.

ADVANTAGES:

•Lot easy and cheap as compared to the Wired Home Security.
•Have a capacity to integrate a lot of sensors on a same wireless medium.
•Efficient monitoring system.
•More Reliable than that as compared to the wired Home Security.

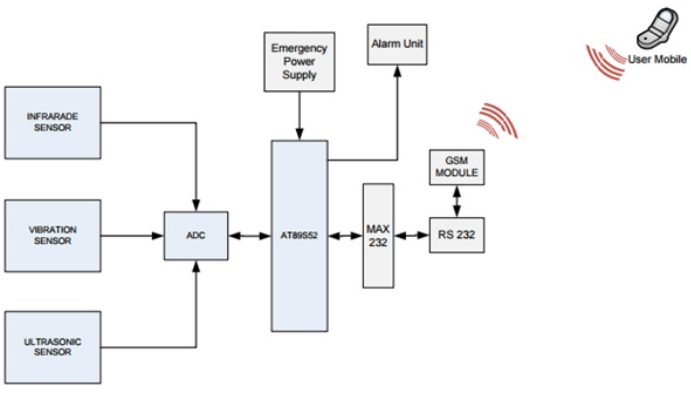
DISADVANTAGES:

•The Installation charge is very high.

APPLICATIONS:

•Home Security
•Car Security
•Industrial Security
•Building Security

Block Diagram:



Conclusion:

Through the practical networking operation, the function of the system, such as GSM remote arming and disarming, field remote arming and disarming, on-site emergency alarm, remote control, GSM remote alarm, remote monitoring (GSM deployment of state by a mobile phone for live sound signal remote monitoring), AC/DC power supply automatic switching, and so on, is running normally, The system can realize the effective monitoring for remote target, and has broad market prospects.

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References:

[1] Bin Zhu, Manxiang Cao, Jianqu Zhu & Yong Tan, Realization of Intelligence Monitoring System Based on Remote Sensor Technology, 2nd International Conference onConsumer Electronics, Communications and Networks (CECNet),2012

[2] Wang Ping, Wang Zheng. Design and Implementation of Open Computer Lab Monitoring and Management System [J]. Computer and Modernization ,2007,11:125-128.

[3] Tan Jiyuan, Wu Chengdong. Research of Abnormal Target Detection Algorithm in Intelligent Surveillance System [J]. Electrical and Mechanical Engineering, 2009,26 (3) :12-15.

[4] Jing Li, Yong Xu. Remote Monitoring Systems Based on Embedded Database [C]. Third International Conference on Genetic and Evolutionary Computing.2009 :381-384.

[5] Lv Junyan, Xu Shiguo, Li Yijie. Application Research of Embedded Database SQLite [C]. International Forum on Information Technology and Applications. 2009: 539 - 543.

[6] Feng Yu, Ge Wancheng. Based on ZigBee wireless sensor network applications built on the end application [J]. Radio technology in the information, 2006 (9): 56 ~ 60.

[7] Liu Jing, Zhao Wangda. ZigBee technology-based fire alarm system design [J]. Microcontroller and Embedded Systems, 2007 (1) :56-60.

[8] Zhang Xin, Qiao Xiaojun, Liu En. Portable dew-point temperature and humidity and other high-precision measurement instrument.Instrument Technique and Sensor, 2006 (3) :9-11.

[9] Zhang Hong, Zhang Jie. Wireless sensor network technology based on coal mine safety monitoring system [J]. Microcontroller and embedded Systems, 2009

[10] Shouqian Yu Weihai Chen Li Li, and Jianglei Qin, “Development of ARM-based Embedded System for Robot Applications,” 2006 ICEMT,2006, pp.101-105.