FIRE MONITORING SYSTEM

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ABSTRACT

Nowadays, fire monitoring system is widely applied in industry area to alert people whenever accident is happening in certain places or buildings for safety purpose. This introduces safety awareness to people in working area and reduces the risk to minimum level.

This project is implemented to design and build a security system that provides security against fire happening in the factory. The electronic circuit design for the fire monitoring system was separate into four parts, which are Main board, Relay board, Speech IC board, and RF receiver with PT2272 decoder board. All of them are related to each other and carry out important functions to the system. The model of factory is illustrated with construction of acrylic. The main system is placed on top of the model.

Once fire is detected in the factory, the microcontroller will activate the system and the fire alarm will ring to alert the people in the factory. At the same time, water will start sprinkling and factory will be shut down. The detection is done by smoke detector with the aid of microcontroller. Then there is a 30 seconds countdown until the next step is taken once alarm is triggered. If reset switch is not pressed within the period, then the microcontroller will dial the preset number and a voice message will be sent accordingly. To ensure that the system is able to make phone calls, telephone line is connected firstly to the landline. Speech IC (ISD 2590) is used to playback the voice message which is initialized by the microcontroller. User will be able to hear the voice message through phone when call is received.

In addition, the system will dial the number up to 3 times if no one picks up the phone within 120 seconds. After the three attempts for calling are done, alarm in the guard room will ring and system will dial the second preset number which is directed to fire department. If the call reaches the user, he or she is required to press the feedback switch. It plays the role of sending feedback to microcontroller by verifying user has picked up the phone or not. This is done to notify the microcontroller whenever the phone is picked up. However, alarm in the guard room will ring if reset switch is not pressed and system will dial the second preset number which is directed to fire department.

Lastly, the aim for this project was fully achieved. The fire monitoring system was able to dial the preset number and deliver a voice message to the respective user that has been called.