ABSTRACT

Security system is an integrated security system, which automatically gives information on the state or condition that can be applied to housing complexes or agencies which need them.

In principle, this security system uses two sensors that will alert you when there is a fire or theft. The sensor used is an infrared sensor and smoke sensor, so if there is theft or fire, the sensor will detect and transmit information in the microcontroller. Microcontroller serves as the central control. Microcontroller used is the type ATMEGA 8535. For the process of sending and receiving information used media YS FST3 RF transmitter and YS CSZ3 RF receiver. Both couples RF module serves to sending and receiving data through the air medium. This data will be sent to a security guard or security officer in charge of securing the area, so that action can be done immediately.

The result of design, testing and analysis shows that infrared sensors can detect the condition at the open door, and this sensor works better when the condition without light space. Smoke sensor can work well in detecting a change in clean air and smoky conditions. Overall system can work well up to a maximum distance of 45m when LOS conditions (without obstructions) and 20m when the NLOS conditions. In the process of sending information to a distance of 2m there is an average delay of 66.666us.

Key words: *Microcontroller, security system, housing, sensors, RF Module.*