ABSTRACT

Internet of Things (IoT) is a network that connects various objects that have an identifier identity and IP address, so that they can communicate with each other and exchange information about himself and his environments. The objects in IoT can use or generate services and work together to achieve a common goal, one of which is the home security system.

The need for security is very important thing in human life. Hence, various kinds of development in the field of technology are designed to provide security, even protecting assets. With increasing crime of theft in the house, we need a system that can be applied to monitoring as home security.

Smart Home Security System is a system that can monitor the house so the house can be safe and provide good comfort of home owners during or when traveling away. If there is movement in the house when the system is active, then the Smart Home Security System users will be notified via the application on the smartphone.

Test results obtained maximum range of nRF24l01 is 80 meters. Distance range nRF24l01 has an effect on the performance of the system where the further the range, the performance of the system decreases. The average system delay value is 0.0516 seconds, while the average system throughput value is 8.5 KBytes/sec and 194 KBytes/sec for image transmission. Node sensors use two AA Alkaline batteries and can work optimally for up to 23 months or 1.9 years. The availability of the system is 99.7852% and the reliability system is 99.7857% with 3 loss of transmission.

Keywords: Smart Home, Security, Wireless, PIR Motion Sensor, Raspberry Pi, Arduino