Abstract

Data Security is important in communication system. A communication system is reliable as long as it provides high level of security. Some security vulnerabilities may be discovered through the interception of wireless data communication. Intercept and modify data that occur in application system could harm the entire system performance. The Monitoring System is one of application form to implement communication and data exchange over wireless technology. Advanced Encryption Standard (AES) to enscrypt sensitive data could reduce potential data interception. AES-128 Algorithm is sufficiently secure against exhaustive search, using a key sizes of 128 bits. The implementation of the AES-128 on real time monitoring system at this application can protect data form, data source, data transmission until data is archived at database system. Performance Monitoring System is based on embdedded system microcontroller ATMega32 with 7.372800 MHz external crystal resonator that effectively does data encryption with an average time 2.153592 mS.

**Index Terms**

Computer Science  
Security

**Keywords**

Key word: Embedded system, Microcontroller, Monitoring System, AES 128.