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ABSTRACT

Wireless Sensor Networks: Security in A/D converters

Wireless communication is becoming more popular as the medium of data transfer in recent times. The main concern with wireless data transfer is the level of security required to ensure that both passive and active attacks on the network are prevented. At present, data is sent digitally because it is more flexible, cheaper, and accessible. Unfortunately this makes it easier to duplicate, which also leads to a less secure network. There are several algorithms designed to encrypt data and protect data transmission against outside threats, and each has its advantages and disadvantages. The purpose of this project is to integrate security into a pre-existing A-to-D converter in an effort to make wireless communication much more secure. In addition to the added security, the original analog signal must not be significantly altered. The work that has been completed has been all theoretical and it is simulated using *Simulink* in Matlab. Thus far the A-to-D converter has been built and the implementation of security is still being explored. By the conclusion of the project, there will be four different forms of security that will be employed into the converter, however, the testing effectiveness of the security and comparing the systems against each other will be left for further research.