

## ABSTRACT

The Harmonica is one musical instrument that can produce audio. Audio produced by harmonica can be recorded so that it can be heard later. Sometimes large audio files are annoying, especially if the file will be sent electronically, course file capacity is a problem. Therefore it is necessary to compress audio files to reduce the capacity of the file but with the same quality. Compressive sensing is a new technique in a signal acquisition where the signal acquisition and compression process is carried out simultaneously. In this study, the design and implementation of harmonica audio file compression using Compressive Sensing will be carried out. Audio files are recorded using a software fl stduio 12. Audio files recorded using the .wav format are then acquired using the Discrete Wavelet Transform method and reconstructed using the Iteratively Reweight Least Squares method.

The results of this research obtained a value of best SNR is 21.8494 dB. Audio quality assessment based on MOS, 2 x Compression produces the best quality output audio.

*keyword: Compressive Sensing, Discrete Wavelet Transform, Interatively Reweighted Least Squares .*