ABSTRACT

Along with the development of multimedia and internet technology one can easily publish the work in digital form (audio, video, image, etc.) they have. In this case they need for protection in the form of patenting copyright to the work owned. Watermarking is one way to patent a work in digital form by adding or inserting additional information to the work without significantly altering the quality of the perspective of the work. Patenting using watermarking aims to avoid piracy and spreading illegally.

This research will be investigated an audio file and will design an audio watermarking scheme which has been through a process where the embedding and extraction process is done by DCT (Discrete Cosine Transfom) – QIM (Quantization Index Modulation) hybrid method based on DWT (Discrete Wavelet Transform) – Cepstrum - SMM (Statistical Mean Manipulation). The insertion of the watermark bit is performed on the audio host using the QIM and SMM method.

The result of this research shows that the insertion of the watermark bit is performed on the audio host using the QIM and SMM produce good watermarking audio resistance on LPF attack, BPF, noise, resampling, TSM, speed change, pitch shifting, equalizer, echo, kompresi mp3, kompresi AAC, kompresi mp4, kompresi AC3, dan delay. The optimum parameter is also able to improve the quality of watermarking audio by having an average value of SNR of 24.26, the average value of ODG is -3.85 and the average value of BER is 0.06.

Key Word : *Audio Watermarking, Discrete Cosine Transform, Statistical Mean Manipulation, Quantization Index Modulation, Discrete Wavelet Transform,Cepstrum.*