

Apisit Soontornpalin 2010: Adaptive Auditory Warning System. Master of Engineering (Electrical Engineering), Major Field: Electrical Engineering, Department of Electrical Engineering. Thesis Advisor: Assistant Professor Patamaporn Sripadungtham, Ph.D. 81 pages.

An adaptive auditory warning system was developed in this research to automatically adjust a siren's volume according to the detected background noise. The main components of this system were divided into 3 parts, first was the input which converted audio signals from the environment by converting analog signal into digital signal, the second part used Field-Programmable Gate Array (FPGA) to analyze digital signal data and control systems. The third part was the output part, which created pulse using Pulse Width Modulation (PWM) technique to control the siren level of a siren bell. The adaptive auditory warning system was able to detect background noise between 0-120 dB. Siren sound generated from the system was increased from the detected background noise by 10 dB. The system could detect the background noise within 2 metre radius.

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