

A Performance Test of a 3–axis Accelerometer and Modal Analysis

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SUMMARY

In the paper, MEMS based 3-axis accelerometer and a monitoring program for detecting ambient vibration were developed. And data acquisition device with 24bit ADC (Analog to Digital Converter) was used for the purpose of improving performance of the accelerometer. Accelerometer which was developed in this study and commercial accelerometer were set up in the building so data was analyzed during one week. This data was accumulated at frequency of 100Hz and this paper focused on detecting ambient vibration of the building. And data trend and various statistics of the 3-axis accelerometer were compared. FFT (Fast Fourier Transform) analysis was performed using data from accelerometer and frequency related to mode shape was extracted using a modal analysis program.