

## **Effect of frets to sound frequency of Sundatang**

### **Abstract**

Sundatang is a traditional musical instrument in Sabah, Malaysia, which is needs to be upgraded. The purpose of this study was to formulate equations that explaining the effect of frets to its sound frequency. Sound of sundatang was recorded using a microphone which was connected to ADC Harmonie system. In this study, it was found that the fundamental frequency of sound of the 1st string shifted to higher frequency when fretted at higher fret number. There are two equations formulated in this study which can be used to calculate the fundamental frequency of sound at each fret of sundatang, named Fundamental Frequency (FF) equation and Gradient Harmonic Frequency (GHF) equation. Where, the maximum average difference obtained between recorded and calculated frequency is 4.53 Hz. In addition, also formulated an equation that can be used to explain the correlation of the fundamental frequency and the length of the fretted of 1st string which is named as Correlation of Fundamental Frequency with Length of Fretted String (CFFLFS) equation. The formulated equations in this study can be used to develop a standard musical notation of sundatang.