

DECIBEL LEVEL INDICATOR AND ADJUSTER

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ABSTRACT

The project aims to implement a circuit design to measure noise level and adjust using PIC microcontroller. The system mainly contains of four major circuits such as noise level measuring circuit, alarm circuit, LCD circuit and mobile sniffer. The detecting system consists of a microphone attached with the noise level measuring circuit and which is operated as sound sensor. Whenever there is a noise detected, it will give a signal to the microcontroller. PIC 16F877 microcontroller has selected to achieve the functioning since it has an inbuilt analog-to-digital converter which converts the incoming voltage to its corresponding noise in decibels. The programming was done in such a way to show the measured noise values in LCD with the respective notations such as BD, VD, and HL which indicates bed room, veranda and hall noise levels respectively. The alarm circuit is used to buzz when the noise level exceeds the prefixed limits in each of the rooms. The mobile sniffer is a circuit used to detect incoming calls of mobile phones. In this project it detects mobile calls in a place where a FM radio is on, when it detects calls, the controller will turn off the radio and help to avoiding miss calls, it will turn on the FM radio once after the call ends.

Furthermore the proposed project was validated through some tests and analysis to meet the objectives. The results depicted that the system is effectively built and successfully satisfied the objectives. This system can be implemented in such noisy places where announcements are important, for example, in airport passenger waiting area, the noise level will be higher than the normal level since the aircraft arriving or departing. Moreover this design can be improved using text message instead of using buzzer for indication when the user is not around.

Key words: Noise measuring circuit, Analog to digital converter, PIC 16F877, LCD, Mobile Sniffer, Buzzer.