

Prathibha L. Reddy, A microcontroller based audiometer, M. Tech. Thesis, Department of Electrical Engineering, Indian Institute of Technology Bombay, 2001.

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**Abstract** - An audiometer is an electroacoustic instrument for quantifying hearing impairment. Using it, the test tones of different frequency and level are presented and hearing thresholds are determined on the basis of patient's response. The objective of this project is to develop a portable audiometer, which can be used in mobile clinics and even in rural areas. A microcontroller based pure tone diagnostic audiometer is developed which operates over full frequency range (250 Hz to 8 KHz) and acoustic output level of 0 to 100 dB HL. It can also generate warble tone having  $\pm 10\%$  frequency deviation, and amplitude modulated tone with  $\pm 5$  dB modulation. It has provision for tone decay test and SISI test. The instrument provides broadband/ narrow-band masking noise, with level selection. Facility of air and bone conduction is provided. All the controls are through a 4 x 4 membrane keypad and indicators are using 16 characters x 2 lines LCD display. The instrument is menu driven with option of manual and automated audiometry, and it carries out a self test of the output levels.