

**Dr. MAHALINGAM COLLEGE OF ENGINEERING AND TECHNOLOGY,
POLLACHI -642 003**

(An Autonomous Institution Affiliated to Anna University, Chennai - 600 025)

ELECTRONICS AND COMMUNICATION ENGINEERING

**PORTABLE SELF-ASSESSMENT AUDIOMETER
USING RASPBERRY PI**

ABSTRACT

People with hearing impairments often face irreversible damage. To determine the extent of hearing loss across different frequencies in each ear, a hearing screening test is used. However, traditional audiometers require an audiologist to conduct the test, which can be time-consuming and expensive for the individual. This study aims to create a new portable audiometer for self-assessment of hearing. The portable audiometer consists of a computer, Raspberry Pi 3 B+, patient response button, and headphones. Sound signals are delivered to the patient through the headphones, and the patient responds using the left mouse button.

Based on the patient's responses, an automatic audiogram is generated, showing the relationship between frequency and intensity, which indicates the volume of sound pressure. The results, including the audiogram and raw data, are saved in CSV files named with the time and date of the test. The efficient Hughson Westlake procedure, which is less time-consuming, is implemented in Python, a popular open-source programming language, to obtain the audiogram. Using Python helps reduce software development costs.

BATCH 08

ADHIL.M - 727622BEC114

PRANESH .S - 727622BEC018

NAVEEN.S - 727622BEC110

SIGNATURE OF THE SUPERVISOR

Mr.A.Shafeek M.E., AP(SS)/ECE

Department of ECE

Dr. Mahalingam College of

Engineering and Technology
Pollachi- 642 003.