ABSTRACT

Hearing aids are one of the technologies that have developed in the medical world to help people with hearing loss, where hearing is needed to obtain information from various media, including electronic media such as gadgets. Emarketers inform that in Indonesia smartphone use grows 37.1% every year, it is possible that people with hearing loss are also included in it. The purpose of this study is to help people with hearing loss use the device to obtain information in the form of calls or voice and video partners. In this research, a Bluetooth-based hearing aid is made, namely the Bluetooth XY-BT MINI module as a wireless link between the device and the device. The device will send data and be translated by the Bluetooth module into an electrical signal, then this signal will be amplified on the TDA2822M IC before being output to the speaker in the form of sound. The test was carried out 4 times on the amplifier system and 1 time on the Bluetooth system. The results of these tests, obtained a sound intensity gain value of (26.02 dB - 45.67 dB) with a voltage source of 3.7V and (36.46 dB - 49.31 dB) with a 9V source in the frequency range (200Hz - 4000Hz) .). According to ISO 1964 (Acceptable audiometric hearing level) and ANSI 1969 (Standard Reference Threshold Sound-Pressure Levels for Audiometers) the level of deafness based on the increase in the hearing threshold, this tool can be categorized for people with mild and moderate hearing loss, by looking at the maximum value that can be done by hearing loss. device. of 49.31dB. The device can also be well connected to the device using a Bluetooth connection, with a distance of 1-10 meters to work optimally. The sound intensity is also greater than an ordinary Bluetooth connection, this can be seen from the voltage value before and after entering the amplifier circuit with a gain value (2.61 – 8.46) in the frequency range (200Hz – 4000Hz). There is still one problem, namely the presence of noise that interferes with the quality of the sound to be heard.

Keywords: Bluetooth, gadget, wireless, amplifier