

ABSTRACT

Chest Vibrator is a chest therapy tool that is used to help bronchitis patients reduce the accumulation of secretions / sputum in the lungs. The purpose of this research is to design a Chest Vibrator device that focuses on the treatment of bronchitis and utilizes one of the techniques of chest physiotherapy that is vibration using a 12V DC motor and media therapy using a paddle. The research contribution is that the system can provide therapeutic treatment to the chest in accordance with the frequency and time set in the driver circuit using IC NE 555 which is used to drive a 12V DC motor with 3 frequency selections, 30, 40, and 50 Hz and use 3 timer selections ie 3-5 minutes which will be displayed on the LCD in a counter down. Data processing is performed by Arduino as data processing and controlling the work of the timer. The making of this module uses a pre-experimental method and the type of one group post test design research is that the researcher only sees the results without measuring the previous situation and there is no control group. Data retrieval is done by comparing the value of the settings on the module with the measurement results on the oscilloscope. Obtained the results of frequency data retrieval with a minimum error value of $\pm 0.008\%$ and a maximum error value of $\pm 0.02\%$. This module can help as a support for the treatment of bronchitis with an age range of 12-45 years.

Keywords: Bronchitis, Frequency, Vibration, DC Motor