

IMPLEMENTATION OF THE INTERNET OF THINGS (IOT) CONCEPT ON AUDIO BIOHARMONIC SYSTEM (ABH) AS A FOOD CROP STIMULATOR

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ABSTRACT

The purpose of this research is to design an Internet of Things (IoT) based Audio Bio Harmonic (ABH), measure the sound intensity level produced by Audio Bio Harmonic (ABH) that has been made, and test the peak frequency validation produced by Audio Bio Harmonic (ABH). which has been made.. This research uses garengpung sound sources with frequency variations of 3000 Hz, 3500 Hz, 4000 Hz, 4500 Hz and 5000 Hz. The design steps for this tool are (1) Create a C language program using the Arduino IDE then upload it to Wemos D1 R2; (2) Assembling Wemos D1 R2, DFPlayer Mini, and Speakers; (3) Measuring the intensity level of the sound produced; (4) Validating the sound produced using SpectraPLUS and Matlab.. The Internet of Things (IoT) based Audio Bio Harmonic (ABH) design has been successfully created with the advantage of being accessible via a smartphones. The results of measuring the maximum sound intensity level at each successive frequency, ie 100 dB, 90.3 dB, 88 dB, 83.9 dB, and 83.1 dB. The results of the validation test showed that there was a deviation between the sound source used and that measured on SpectraPLUS, ie $(3.04 \pm 0.02)103$ Hz, $(3.52 \pm 0.01)103$ Hz, $(4.01 \pm 0.02)103$ Hz, $(4.58 \pm 0.03)103$ Hz, and $(5.05 \pm 0.03)103$ Hz, and the results on Matlab, ie (3.05 ± 0.02) 103 Hz, (3.52 ± 0.01) 103 Hz, (4.02 ± 0.02) 103 Hz, (4.58 ± 0.03) 103 Hz, and (5.04 ± 0.03) 103 Hz.

Kata Kunci: *Audio Bio Harmonic, Internet of Things, Frequency.*