

## ABSTRACT

Ultrasonic cleaner is a device used to clean contaminants from post-surgical instruments, by immersing an instrument into a liquid-filled container and given an ultrasound wave. The ultrasonic cleaner designed in this thesis has 3 operating menu options, namely the cleaning menu, sterilization menu, and the cleaning menu continues with sterilization. Ultrasonic cleaner made in this paper uses ATmega8535 microcontroller as a base. The cleaning menu uses 2 frequency options, 28kHz frequency with 96.8% accuracy and 40kHz frequency with 98% accuracy. Cleaning duration can be selected from at least 5 minutes or every multiple of 5 minutes to a maximum of 60 minutes. The sterilizing menu uses a chemical method, which is heating the instrument using glutaraldehyde for 30 minutes at a temperature of 50-60 ° C with 96% accuracy, following the standard specified in the decree of the Minister of Health number: 1204 / MENKES / SK / X / 20114. Stages of the cleaning and sterilization process run automatically starting with the stages of cleaning liquid / sterilizing until it ends with emptying the liquid again. As a temperature sensor used LM35. Operating options and temperature display can be observed on the LCD.

**Keywords :** Ultrasonic Cleaner, Frequency 28kHz and 40kHz, Chemical Sterilization, ATmega8535 Microcontroller, LM35 Temperature Sensor