ABSTRACT

Calibration is an activity to determine the conventional truth of the value of the appointment of a measuring instrument by comparing traceable standards to national and international standards for measurement and / or international units and certified reference materials. The purpose of this study is to develop a system of efficient and practical centrifuge calibrators by sending the calibration results directly via bluetooth to a PC. The main series of centrifuge calibrators are Arduino modules, laser sensors and Bluetooth.

The high low signal is obtained from the reflection of the laser beam aimed at the reflector point on the centrifuge plate, processed in the Arduino module and displayed on the LCD, the calibration results can be directly seen in the Delphi program. The design of this module is also equipped with a Bluetooth transmitter to send data to a PC.

This module can be used in medical equipment calibration laboratories. Based on the results of testing and data collection on the 8 Tube centrifuge with a Lutron Tachometer ratio, the error value was 0.0136%. After planning, experimenting, making modules, testing modules, and collecting data, it can be concluded that the tool "centrifuge calibrator equipped with PC-based data processors" can be used and according to planning because the fault tolerance does not exceed 10%.

Keywords: Tachometer, RPM, 5MW Laser Sensor