

ABSTRACT

One way to know a direction of navigation is by using compass. By detecting the earth polar, compass can show the navigation direction. Compass is very useful for them who need the information about a position of something or a place of destination. Based on its function, it will be very helpful for blinds in searching information of a direction. In spite of, they need a compass with information that can be accessed besides using their sight sense. Sound is one of the information they can access. Therefore, digital compass with sound output is made.

Digital compass that will be used is CMPS03. It has two magnet sensors type Phillips KMZ51. And for the calculation and controlling, AVR ATMEGA 8535 microcontroller is used. The information from digital compass is showed in two different outputs. The first output is texts, displayed on an LCD, and the other is sound output from a speaker. The sound is recorded before in an IC, ISD 25120, that is able to record and storage sounds for a long time.

System experiments are done start from power supply experiment, the CMPS03 experiment, ISD experiment, and the whole experiment of digital compass with sound output. Based on the experiment result, error percentage about 0.51% is occurred. That error is occurred because of the compass resolution equals 1.4° caused by the usage of 8 bits output setting and also the CMPS03 sensitiveness of magnetic field from another device.