ABSTRACT

On the measurement, accuracy of measurement results is a priority, as in the measurement of the length of an irregular object expertise needed to achieve the most accurate results. These inaccuracies are influenced by the limitations of the human eye in the reading the data is called Parallax error. With recent technique electronics and mikrokontroler , have been made a device that could calculate how long the things we measured and is equipped with a liquid crystal display (LCD) . Concept that used is to change a potential difference along the arm of device constantly to be treated in mikrokontroler be change distance are shown in LCD . Arm have made of material that has resistance values that continue to increase the value of any change in the distance the arm device.. Concept used is concept prisoners sliding (precision potentiometer) . So if the resistors drained of electric current then will happen different voltage along arm that will become a reference for change distance in the result display .

Based on those problems , at this final project, designed a measuring instrument to measure the length with the LCD at the results . The software that used is kind of mikrokontroler architecture, CodeVision AVR (Alf and Vegard Risc or Advance Virtual RISC) and using AVR mikrokontroler ATmega8 for conversion into result in LCD . Another software that used is Altium Designer to make a electric route circuits that updated to PCB (Printed Circuit Board) .

From the results of measurements that have been made can be said that this long gauge has worked well with the level of accuracy of the comparison of 99.2383085 % with a ruler and 99.113453714 % with a caliper.

Keyword : Precision Potentiometer, voltage difference, AVR microcontroller ATmega8, CodeVision AVR