CHITTAGONG UNIVERSITY OF ENGINEERING AND TECHNOLOGY

MICROPROCESSOR AND MICROCONTROLLER SESSIONAL

ETE 320

Design and Implementation of Digital Ammeter with PIC Microcontroller

Submitted By:
Md.Shalha Mucha Bhuyan

ID No:
1808016

Submitted To:
Md. Farhad Hossain

Lecturer:
Department of ETE

November 13, 2022

1 Introduction

- The advanced circuit of the ammeter has numerous applications in electronic, electrical and power electronic works. Current estimation is likewise utilized in microcontroller based projects for overcurrent assurance in circuits. Notwithstanding this application, it very well may be utilized as a computerized ammeter circuit to quantify current in electronic tests.
- Microcontrollers or any microcomputer framework can not peruse current straightforwardly. They just sense voltage. Microcontrollers rationale high and low is likewise founded on the voltage level. Consequently, microcontrollers don't detect current straightforwardly.
- For that reason we want to find current into voltage structure. The Shunt resistor is utilized to change over current into voltage structure. At the point when current goes through the shunt resistor, voltage shows up across shunt resistor.This voltage can be effectively estimated with the assistance of simple to advanced converter channel of PIC16F877A microcontroller.[1]

2 Methodology

The project will be implemented using the microcontroller PIC16F877A IC.

3 Required Components

- Arduino Uno
- PIC 16F877A microcontroller
- 9V battery (Quantity:2)
- Diode (1N4733A)
- Capacitor (22 PF) Resistor
- Bread Board
- Male to male wire (Quantity:30)
- Male to female wire (Quantity:10)
- Battery connector (Quantity:2)

4 Software Component

- Arduino IDE

5 Action Performed

- **Action 1:** Play
- **Action 2:** Pause
- **Action 3:** Display on LCD

6 Timeline

Week	Activities
1st week	Project Selection
2nd-3rd week	Project Proposal
4th-5th week	Model Manufacturing
6th week	Update or Change Functionality
7th week	Final Presentation

7 Conclusions

- The digital ammeter shows the examining in digits most times on a LED or LCD screen. This makes taking assessments essentially more exact
- The high level meter can evaluate voltage better considering their higher resistance of 1 M or 10 M .We effectively executed the venture anyway numerous enhancements should be possible to the task. https://www.overleaf.com/project/637112ff3e942e34b480ae21
- We effectively executed the venture anyway numerous enhancements should be possible to the task
- The scope of the ammeter we planned is 0A to 1A. The scope of the ammeter can be expanded by differing the shunt obstruction unequivocally