

LAB 13

INTERFACING A SENSOR TO THE STM32F103

OBJECTIVES:

- To use STM32F103 ADC
- To interface an LM35 (or LM34) temperature sensor to STM32F10x.

REFERENCES:

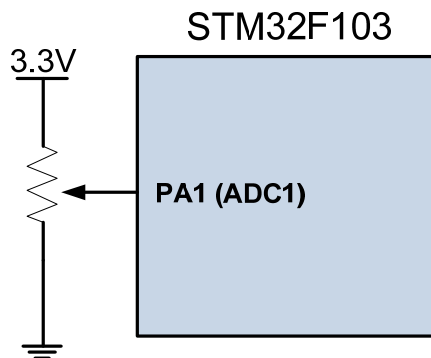
- Mazidi & Naimi “The STM32F103 Arm Microcontroller and Embedded Systems,” Chapter 13.

MATERIALS:

- Keil IDE or any other STM32 IDE
- Blue pill or any other STM32F10x trainer board
- ST-Link V2
- LM35 (or LM34)
- 10K POT

ACTIVITY 1

Connect the 10K POT as shown below. Then write a program to display the data on the LCD or send it to a PC screen through the serial port. The value must be converted to ASCII in order to be displayed on the LCD. As you change the potentiometer, the output should change, indicating the value of the analog input.



ACTIVITY 2

In place of a potentiometer, use the LM35 (or LM34) sensor and set up the circuit shown in the book. Then write a program to display the temperature on the LCD (or PC monitor) continuously. Heat up or cool down the sensor and observe the temperature.