

LAB 15-A

INTERFACING A DC MOTOR TO STM32

OBJECTIVES:

- To interface a DC motor to STM32.
- To write a program to control the speed and direction of DC motor rotation by the user.

REFERENCE:

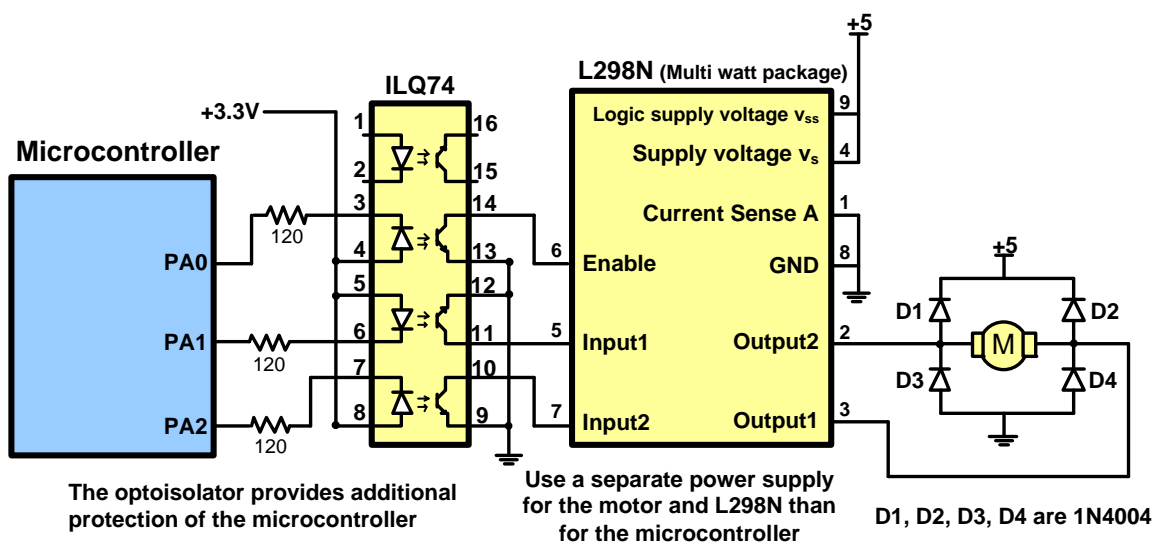
- Mazidi & Naimi “The STM32F103 Arm Microcontroller and Embedded Systems,” Chapter 15.

MATERIAL:

- Keil IDE or any other STM32 IDE
- Blue pill or any other STM32F10x trainer board
- ST-Link V2
- DC motor module
- L298N module

ACTIVITY 1

Connect the DC motor to your Trainer board as shown in the following figure. Write and run a program to rotate the DC motor clockwise continuously.



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ACTIVITY 2

After making sure that Activity 1 works, connect two switches to one of the ports and write and run the following program:

Use the SW1 and SW2 to choose the speed of rotation, as shown in the following table.

SW2	SW1	Duty Cycle
0	0	50%
0	1	65%
1	0	80%
1	1	100%

ACTIVITY 3

Connect a switch to a pin on one of the PORTs. Use this SW for the purpose of choosing clockwise (CW) or counter clockwise (CCW) direction. Write and run a program to rotate the motor as follows:

SW=0 for CW.

SW=1 for CCW.