

Introduction

We have implemented a motor velocity control system with a SBC (using the Raspberry Pi2), and a FPGA (using an Altera development board). In this project we want to implement a control system that can control two motors, as shown in Figure 1.

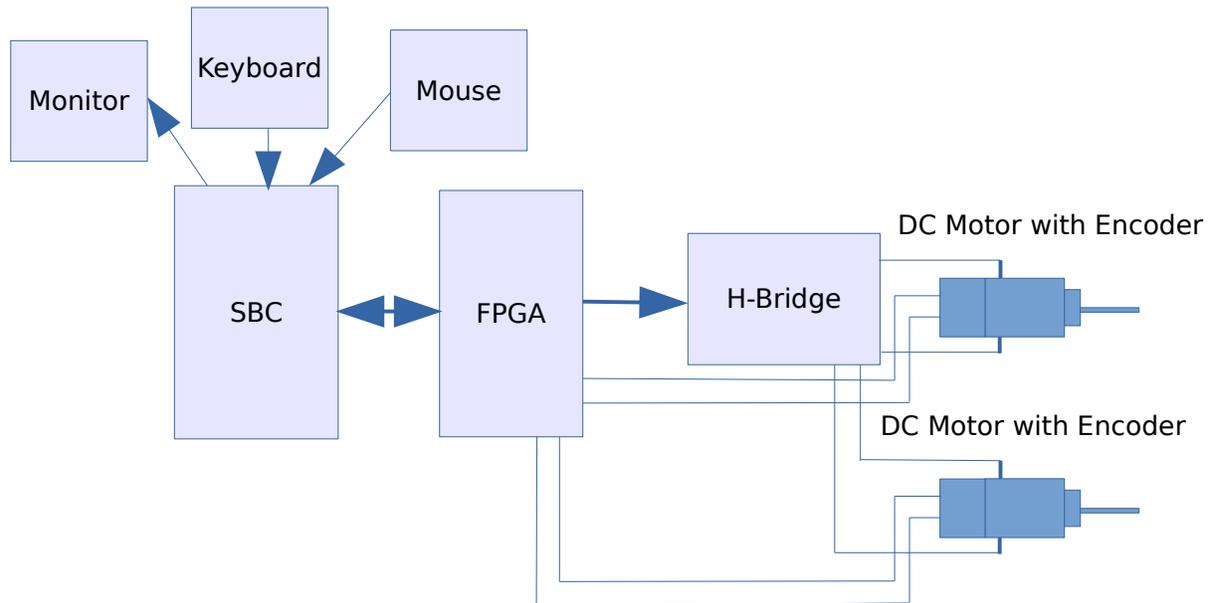


Figure 1. Block diagram of the motor velocity control system.

Hardware requirements

The hardware requirements for this second projects are the same: we will be using the Raspberry Pi 2 and the Altera DE0 (or DE0 Nano), shown in Figure 2.



Figure 2. The Raspberry Pi 2 B, and Altera DE0 development boards.

The objective is to implement a control system (using a proportional controller) on the the Rpi 2, that will allow a user to input two different velocities for each of the motors, and be able to control their velocity.

Deliverables

Each design team should deliver the following items by October 30:

- A working prototype that would allow a user to set a velocity on each of the motors, through the SBC.

- A 1-5 page electronic report containing the following topics:

- a) Front matter: title, names of the team participants, date.

- b) Body matter: introduction, description of the system, summary.

- d) Back matter: references.

Note: The report should contain the wiring of the system, and the listings of all the code that is required for the SBC and the FPGA boards in an appendix.