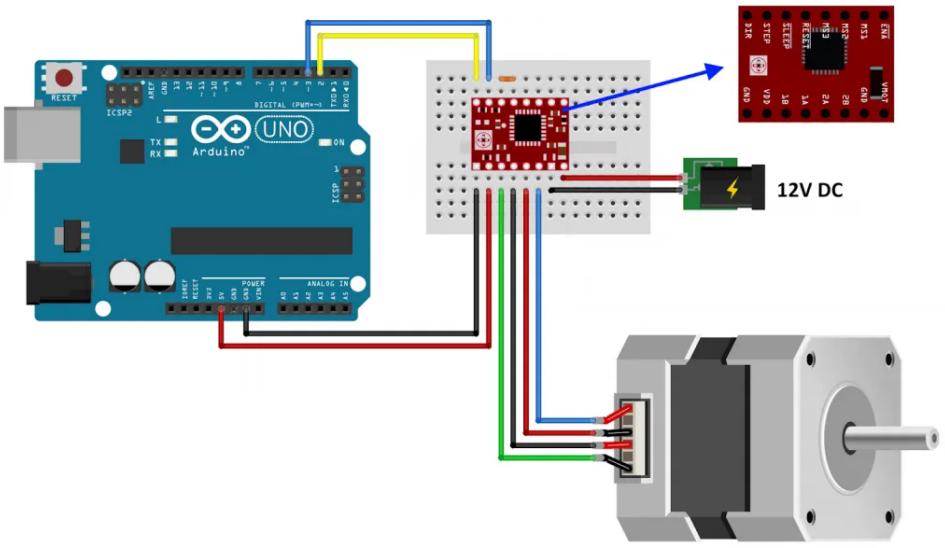
Report

SESSION 1 *(12/12/22)*

Vahan Komaryan

I have seen which stepper motors to use to make the movement of the mirrors. We wanted to use a small simple stepper motor that we had (the 28BYJ-48) but it is actually not slow and precise enough. Indeed, to have a good effect, the laser must move at a very high speed and the Nema 17 can allow us to go at this speed especially since they are very precise because they have a minimum rotation of 1.8 ° (200 steps). These motors are powered in 12V and need a driver to power them. This driver is connected in 5V to the arduino which can control the stepper motors.

This is the Nema 17 assembly diagram :



I was able to use the course code to test these motors. I realized that the motor was not turning, it was "vibrating", so I measured the impedance between each of the pastes of the motor and I concluded that they were not connected in the right direction which solved my problem.

And now, motors are running well, very fast and precisely.

I ended up by starting to code some functions to facilitate the use of the motors. These functions will allow you to use the engines with as few lines as possible. Indeed, the code to set the motor in motion is already a bit long and it will be used many times. That's why reducing it to a single function taking in parameter the number of steps of the revolution, the speed of revolution or the direction of the revolution seems to be essential.

Benjamin Choiselat

I have chosen the laser that we're going to use for the project, the arduino KY-008 Laser module, powered in 5V, perfect for an arduino project. I then wrote a simple code to try it out. I also learned how to separate frequencies using the MSGEQ7, a seven band graphic equalizer. By keeping only the frequencies below 160Hz, we should be able to separate the bass from the other sounds, to then make the laser react to that.