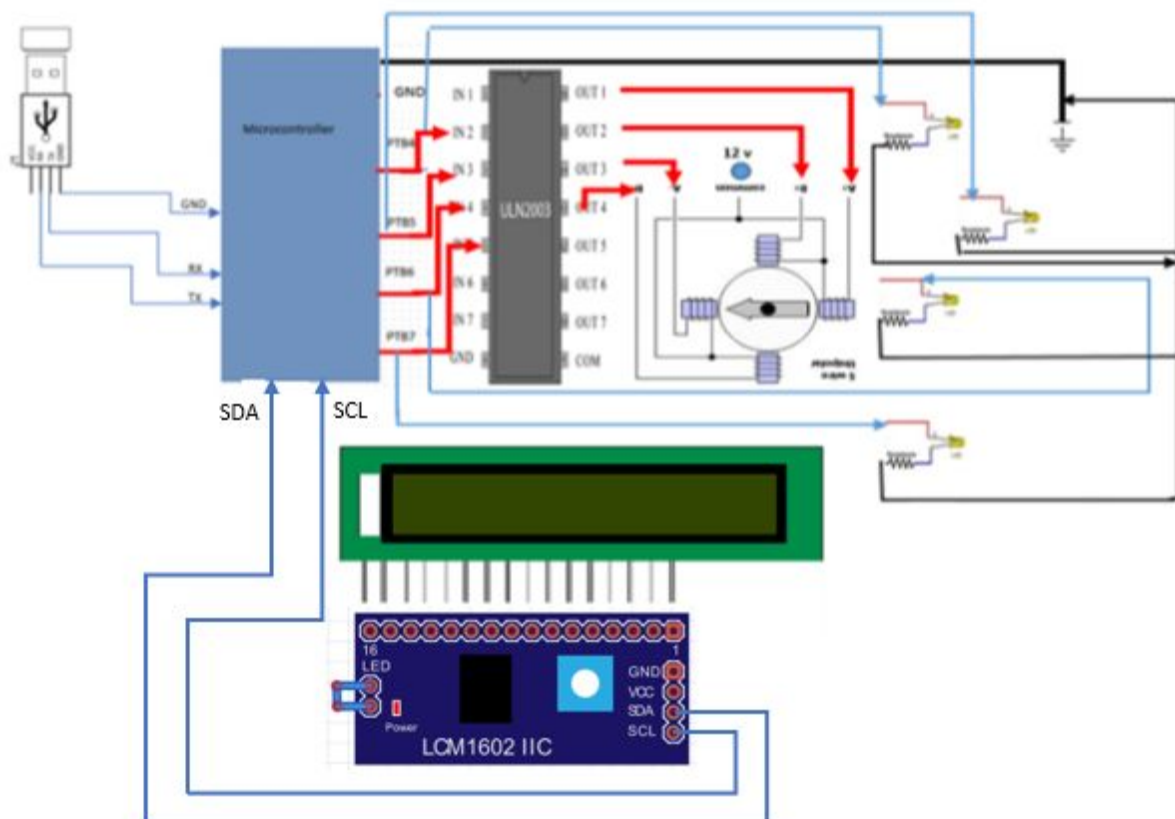
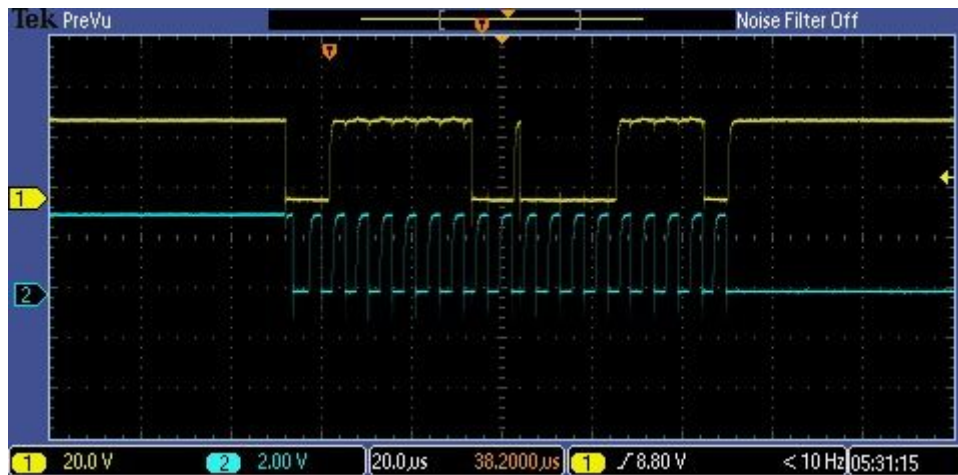


Career: ITE



Circuit built for this practice

For this practice we used the same hardware that we used for practice 5, but adding the IIC module.



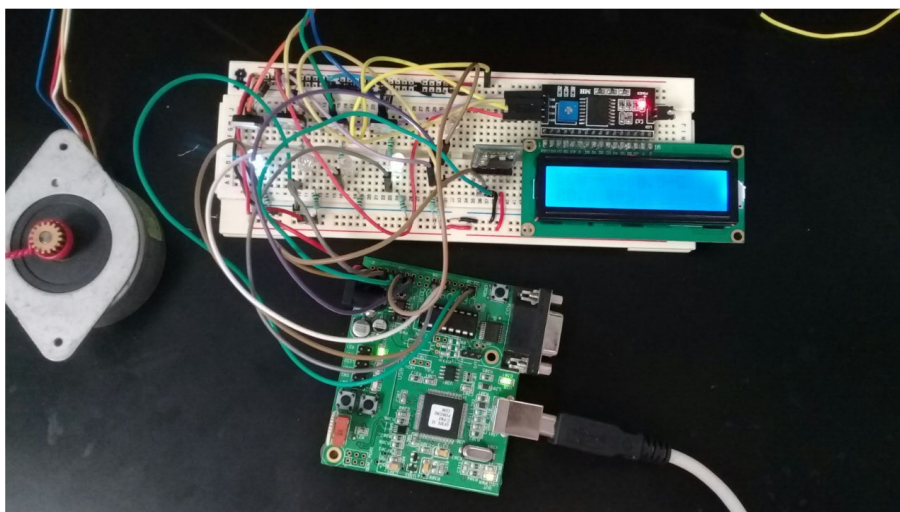
Screenshot of the start condition: Start, Address, Acknowledge.



Screenshot of the stop condition.



Oscilloscope measuring baud rate 97.08 Kbps.



Picture of the circuit built.



Messages of the LCD.

Decisions taken:

Although we pretended to use interruptions for IIC this practice, we had to decide do it by polling with the corresponding flag during the testing.

Problems met during the development of the Project:

The first and most significant problem we had was initializing the LCD.

We used the oscilloscope to measure the bits and frequency, and we noticed the SDA was sending the corresponding bits. But we noticed the baudrate was 159 KHz, and then we changed it but could never be precise to 100Kbps, the closest we reached was 97 Kbps. But after that, the LCD was not working yet, and the main reason was because we were not executing the IIC protocol as it should. After analyzing the instructions, we could fix it by maintaining the enable bit one more instruction.

The second problem was an electronic issue. When everything was working perfectly we connected the motor with its corresponding power and the current across the LCD was unstable, so we decided to probe the sequence only with LED's.

Team Conclusion:

For this practice the most difficult task we had was making the IIC module work, because it didn't have a manual that could help us make it work more easily, instead we had to find the datasheet of the integrated circuit inside the module, look for arduino examples on the internet and talk with the professor to overcome those problems. We found out that it is really necessary to understand how IIC worked with the registers the microcontroller had because that was one of our principal problems. We had to get support from other teams because we couldn't really understand how it worked but at the end we did it.