

Starter Kit: SainSmart LCD2004+SainSmart UNO

Features :

The starter kit includes:

- **The SainSmart Uno for Arduino:** It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. For more information for this item, visit this site:

<http://www.sainsmart.com/sainsmart-uno-atmega328p-pu-atmega8u2-microcontroller-for-arduino.html>

- **SainSmart LCD2004:** 5 volt, based on the popular HD44780. White characters on blue background, with back light. 4 rows, 20 characters per row. For more information for this item, visit this site:

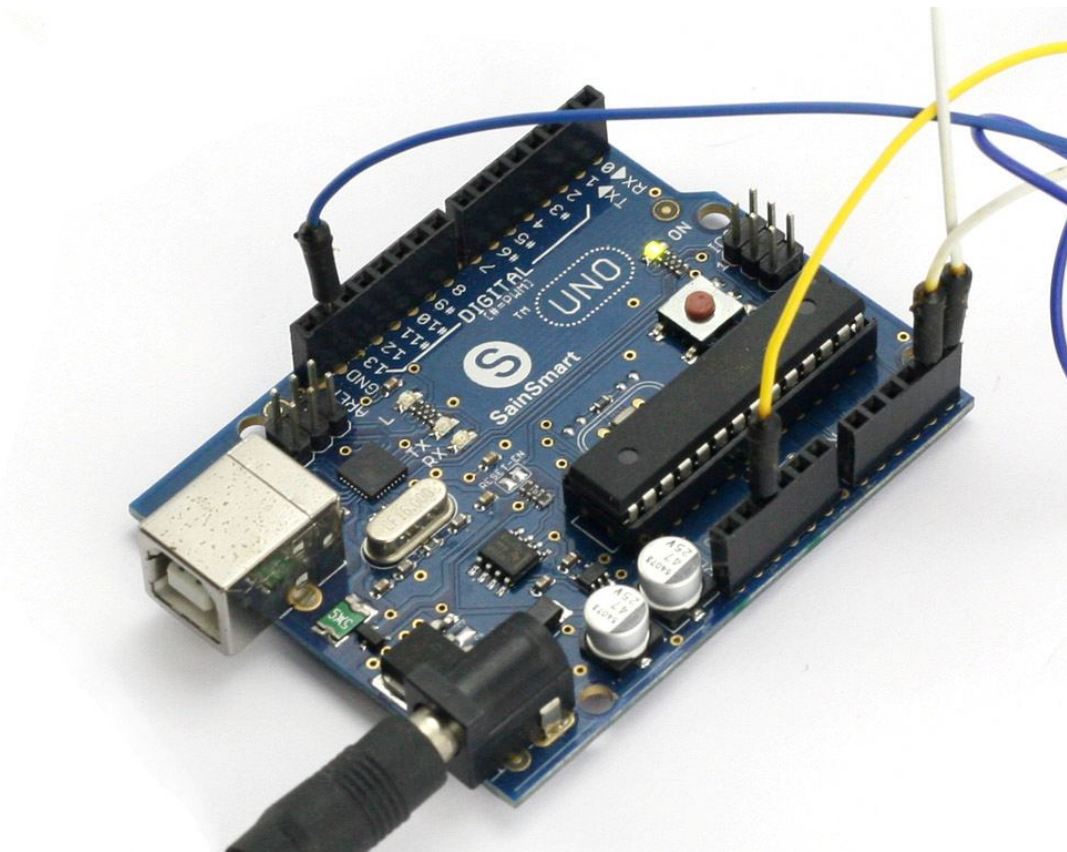
<http://www.sainsmart.com/module/lcd-module/sainsmart-iic-i2c-twi-serial-2004-20x4-lcd-module-shield-for-arduino-uno-mega-r3.html>

Things Needed: Jumper cables, USB cable and the kit

User Manual:

First of all

we will have 4 cables to connect. We have GND, VCC, SDA(A4), SCL(A5) on the UNO. See the following figure:



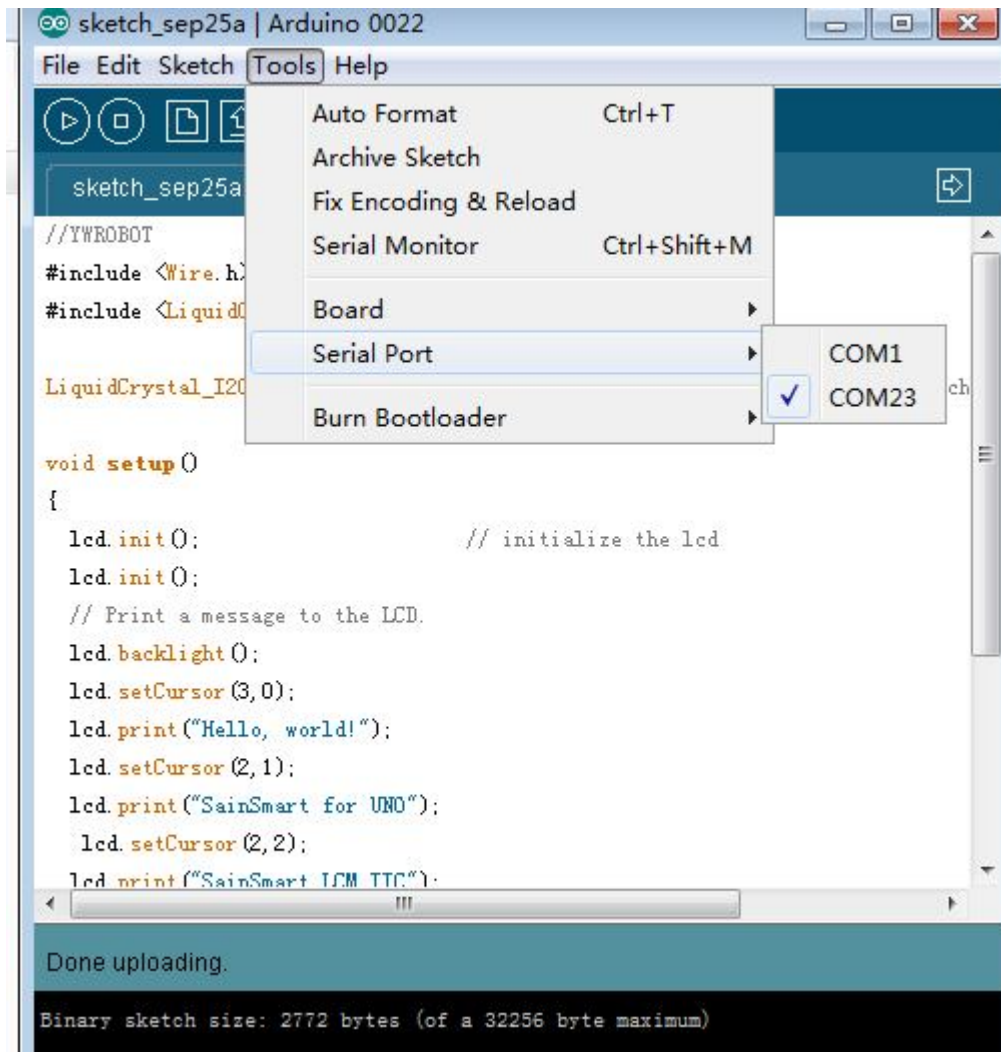
We also have the same four buckled ports on the back of LCD shield. See the following figure:



one end of the cable goes to GND, VCC, SDA, SCL, and the other end goes to the corresponding GND, VCC, SDA, SCL on the LCD module.

Then connect it to your computer using a USB cable as you normally would.

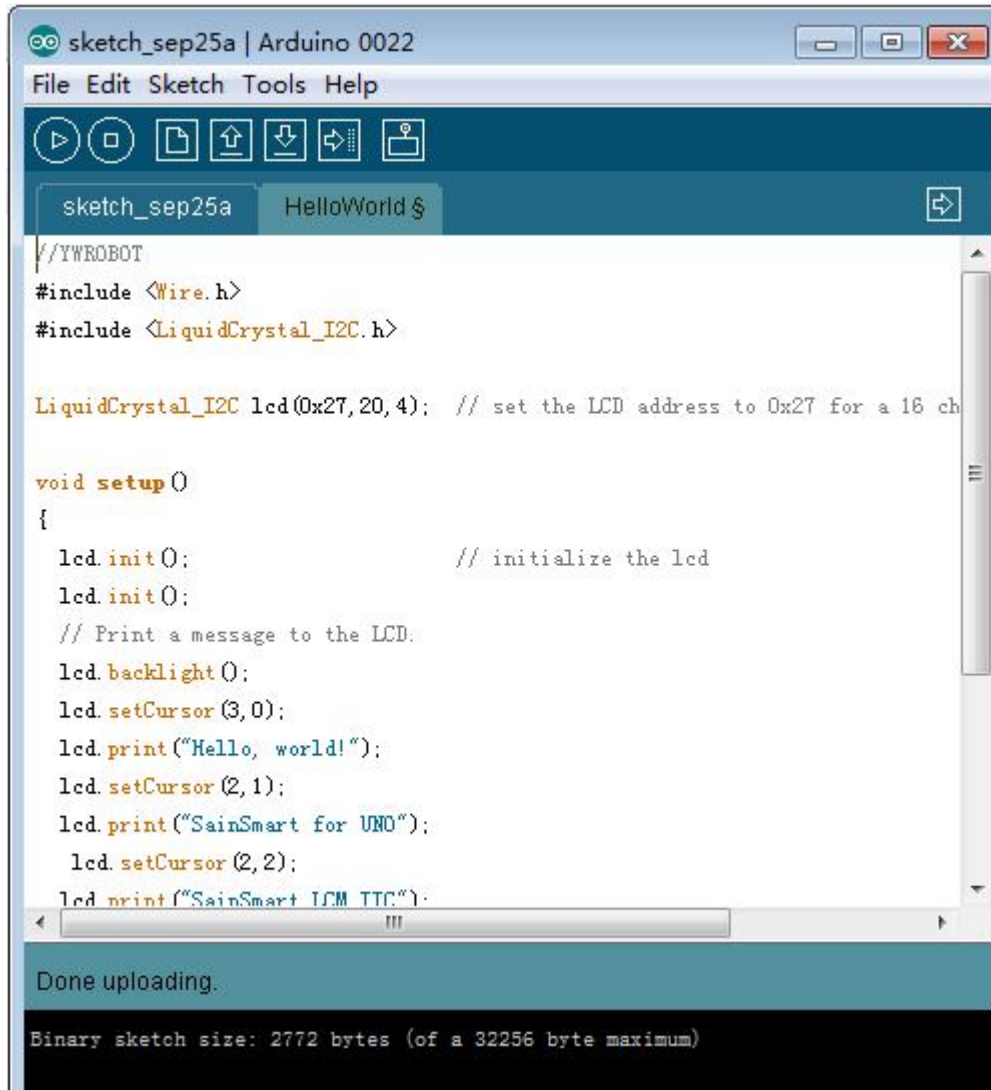
Next, set up your development environment is to go to the arduino website: www.arduino.cc and click up a software link and download the arduino software depending on what your platform it is. When finish the download, open the software and this application will pop up like this:



then download the document "LiquidCrystal_I2C.rar" provided by Sainsmart , unzip it and put it under the "libraries" file. The path will be like this:

arduino-0022 ▶ libraries ▶ LiquidCrystal_I2C ▶ examples ▶ HelloWorld ▶

Here we have "HelloWorld", click it and it will show like this:



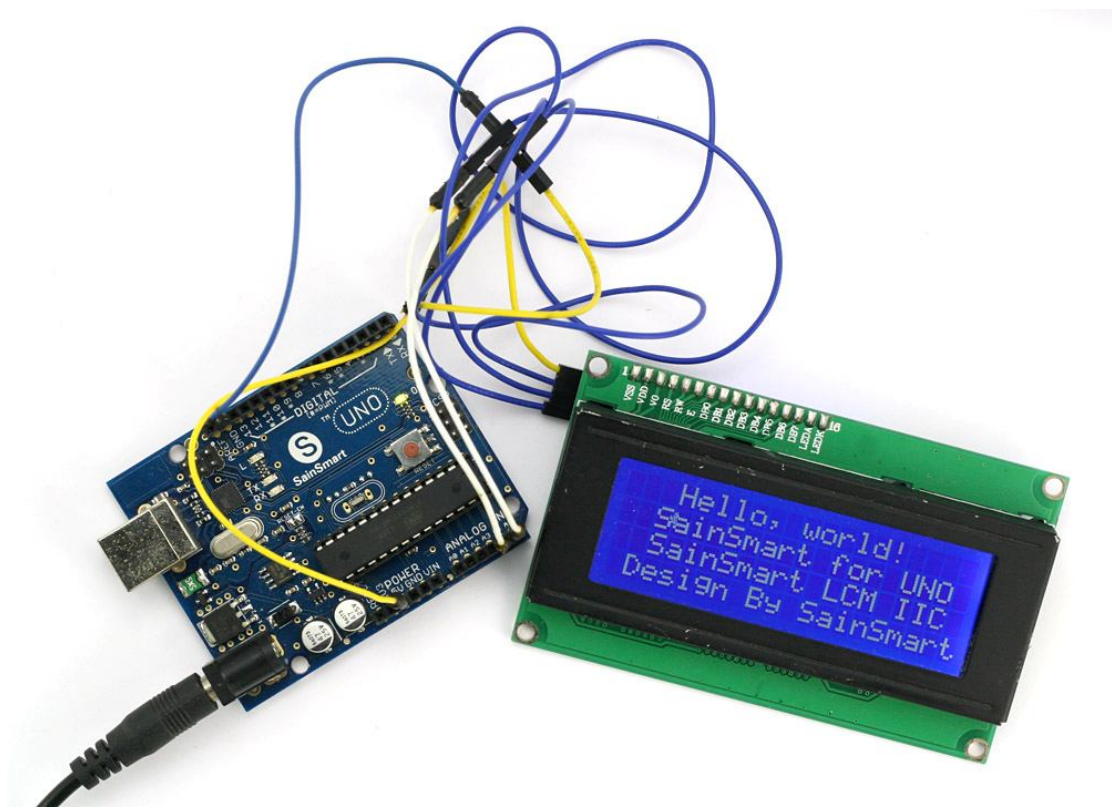
```
sketch_sep25a | Arduino 0022
File Edit Sketch Tools Help
sketch_sep25a HelloWorld $
//YWRBOT
#include <Wire.h>
#include <LiquidCrystal_I2C.h>

LiquidCrystal_I2C lcd(0x27, 20, 4); // set the LCD address to 0x27 for a 16 ch

void setup()
{
  lcd.init(); // initialize the lcd
  lcd.init();
  // Print a message to the LCD:
  lcd.backlight();
  lcd.setCursor(3, 0);
  lcd.print("Hello, world!");
  lcd.setCursor(2, 1);
  lcd.print("SainSmart for UNO");
  lcd.setCursor(2, 2);
  lcd.print("SainSmart ICM TTC");
}

Done uploading.
Binary sketch size: 2772 bytes (of a 32256 byte maximum)
```

next click up the “upload”, then you will have the software in the sainsamrt UNO and the LCD will be on with the words showing.



Hello, world!
SainSmart for UNO
SainSmart LCM IIC
Design By SainSmart