

When using the 128x128 color LCD that uses the ST7735 driver board, you will need to initialize it before using it. First you will need to do a hardware reset. This involves using the reset pin on the LCD. It should be used as a regular digital pin on the arduino. In the sample code below, when it says “setResetPin”, you will need to use SetBit() to set it to a 1 or 0.

After doing the hardware reset, you will need to send the initialization commands to the lcd. When sending a value to the LCD with SPI, you will need to set the CS pin to 0 before using SPI\_SEND(). There are 2 possible values you can send to the LCD. Commands and Data. You will use the A0 pin to pick which one you are sending. If A0 is set to 0 before doing SPI\_SEND(), you are sending a command. If A0 is a 1 before using SPI\_SEND(), you are sending data. Keep this in mind when looking at the sample initialization function below.

A sample initialization function has been given below. You will need to figure out what the values are for the commands sent. To do this, you should look at the data sheet for the ST7735. If you go to page 77, you will see a table with all the commands you can send, and their value. The “D/C” column tells if it is a command or data, D7-D0 tells you the value you need to send with SPI and the “Function” column gives a brief description. For example, if you find the row for SWRESET, you will see it is just a software reset command and the value is 0x01.

```
Void HardwareReset(){
    setResetPinToLow;
    _delay_ms(200);
    setResetPinToHigh;
    _delay_ms(200);
}
```

```
Void ST7735_init(){
    HardwareReset();
    Send_Command(SWRESET);
    _delay_ms(150);
    Send_Command(SLP0UT);
    _delay_ms(200);
    Send_Command(COLMOD);
    Send_Data(0x06) //for 18 bit color mode. You can pick any color mode you want
    _delay_ms(10);
    Send_Command(DISPON);
    _delay_ms(200);
}
```

After initializing the LCD, you will use 3 important commands and data that needs to be passed to them. These commands are CASET, RASET and RAMWR. Find the sections that talk about these commands in detail to learn how to use them

If you are using an LCD that uses a different ST77 board, the idea will be the same but you will need to look at the datasheet specific to that board to get the command values.

<https://www.displayfuture.com/Display/datasheet/controller/ST7735.pdf>