RGB LED

Overview

In this lesson, you will learn how to use a RGB (Red Green Blue) LED with an Arduino. You will use the analogWrite function of Arduino to control the color of the LED.

Specification

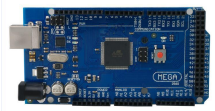
RGB led:
Emitting Light Color: Blue, Red, Green
Size(Approx): 5 x 35mm/ 0.2" x 1.37" (D * L)
Forward Voltage: 3.0-3.4V
Luminous Intensity: 12000-14000mcd

Pin definition

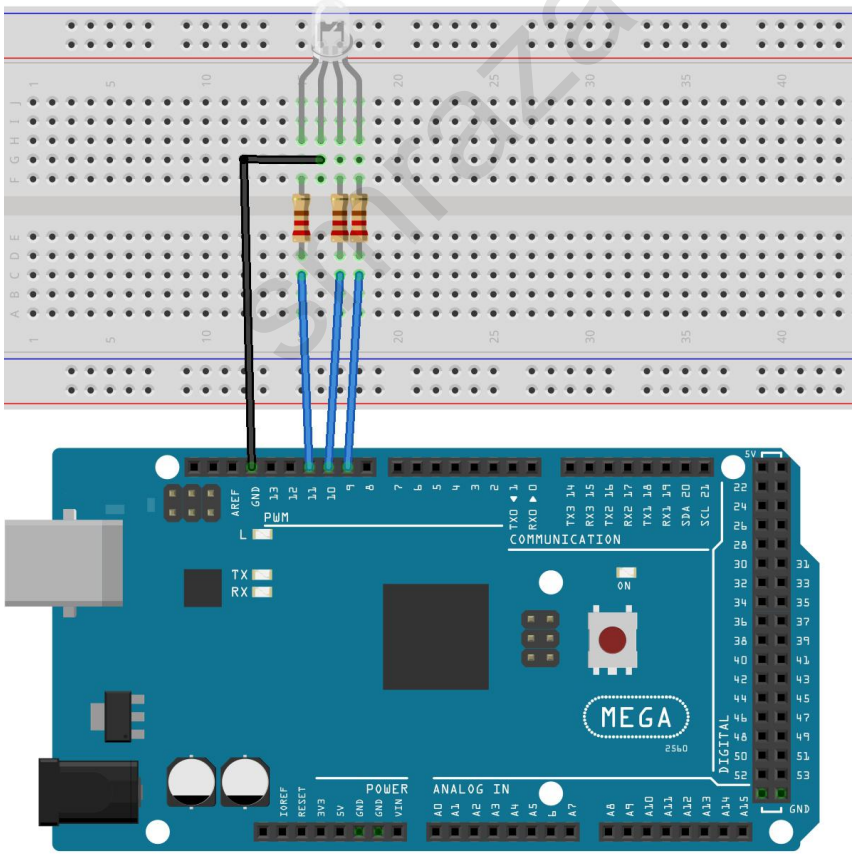
It is the definition of RGB LED pin :

RGB LED	Arduino
R	->D11
GND	->GND
G	->D10
B	->D9

Hardware required

Material diagram	Material name	Number
	RGB LED	1
	220Ω/330Ω resistor	3
	USB Cable	1
	MEGA 2560	1
	Breadboard	1
	Jumper wires	Several

Connection diagram



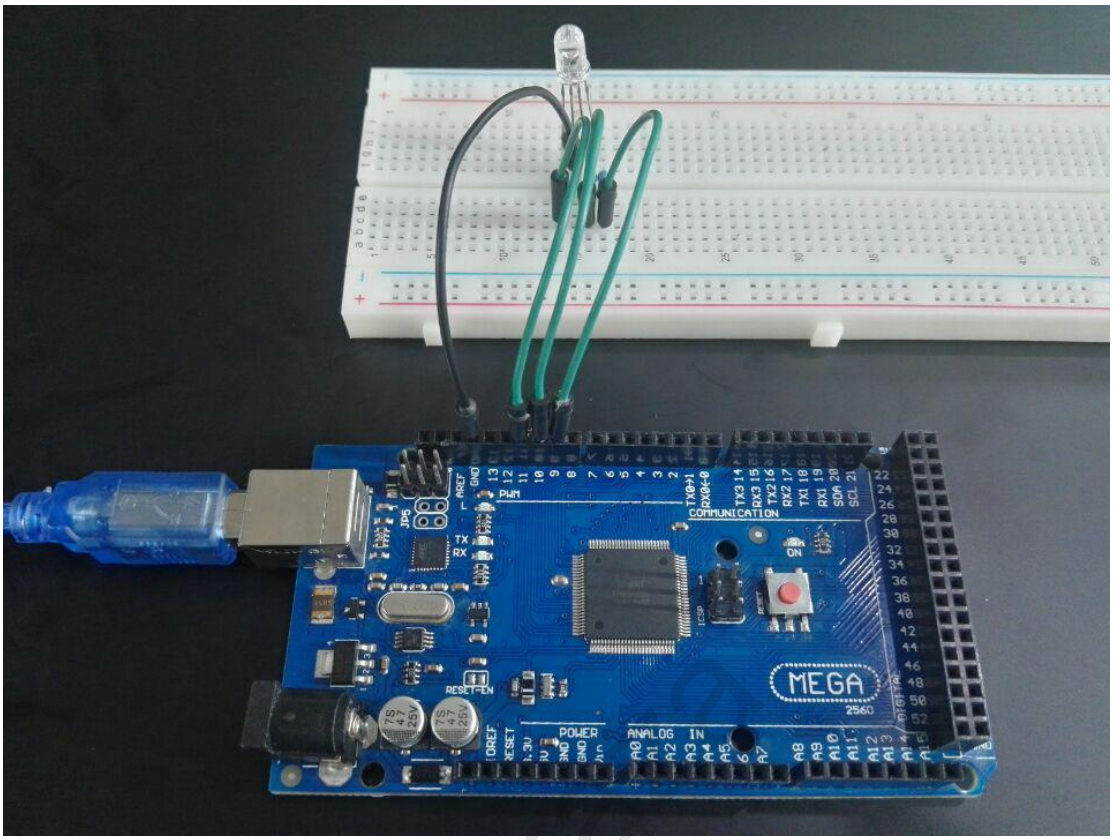
Note: The longest pin of the RGB LED is connected to the GND.

Sample code

Note: sample code under the **Sample code** folder

```
int redPin = 11;
int greenPin = 10;
int bluePin = 9;

//uncomment this line if using a Common Anode LED
//#define COMMON_ANODE


void setup()
{
    pinMode(redPin, OUTPUT);
    pinMode(greenPin, OUTPUT);
    pinMode(bluePin, OUTPUT);
}

void loop()
{
    setColor(255, 0, 0); // red
    delay(1000);
    setColor(0, 255, 0); // green
    delay(1000);
    setColor(0, 0, 255); // blue
    delay(1000);
    setColor(255, 255, 0); // yellow
    delay(1000);
    setColor(80, 0, 80); // purple
    delay(1000);
    setColor(0, 255, 255); // aqua
    delay(1000);
}


void setColor(int red, int green, int blue) // This is the function that we build.
{
    #ifdef COMMON_ANODE
    red = 255 - red;
    green = 255 - green;
    blue = 255 - blue;
    #endif
    analogWrite(redPin, red);
    analogWrite(greenPin, green);
    analogWrite(bluePin, blue);
}
```

Example picture



Language reference

Tips：click on the following name to jump to the web page.
If you fail to open, use the Adobe reader to open this document.
analogWrite()
#define

Application effect

When the program is uploaded, you will see the LED loop emit 7 different colors of light.

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