XC3920 User Guide

Lilypad Plus Quick Start

Getting started

Use a Micro USB cable (WC7723) to connect the Lilypad Plus to your computer. You should already have the Arduino IDE installed but if you don't, you can download from https://www.arduino.cc/en/Main/Software

This board uses an ATMEGA 32u4, which behaves similar to the Leonardo.

Specifications

Processor	ATMEGA 32u4 • 8 bit • 1KB EEPROM • USB 2.0 Device module • 16MHz
IO	8 external digital IO • Integrated USB controller
Operating Voltage	2.7V – 5V
Additional Features	*See below*

Features

There's a few included extras on this board which makes it a great way to try out many things at once.

Connected Pin	*Feature*
Pin 17	10 x RGB LED lights*
Pin 5	Buzzer
Pin A4	Microphone
Pin 4 & Pin 19	Two separate Buttons (*pulled low*)
Pin A0	Temperature sensor
Pin A5	Light Sensor
Pin 21	Toggle switch
I2C	Accelerometer

To use the RGB LED Lights, you must install the "*Adafruit Neopixel*" library from the ***Library manger***, which can be found in the **`Tools`** menu.

Accelerometer

Code sample on next page for all devices other than the Accelerometer.

For an accelerometer example code, check out the **`File > Examples > Adafruit Circuit Playground > accel_mouse`** example, and make sure the switch is set to (**`+`**)!

Code sample

This code uses *Adafruit Neopixel* library, version 1.3.2 or later.

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Upload the following code and open the ***Serial Monitor*** with baud `9600`

- Change the board under Tools > Board to **`LilyPad Arduino`** **USB**
- Change the port to be the port of your connected Lilypad Board.

```
#include <Adafruit_NeoPixel.h>
#define LIGHT_SENSOR A5
#define TEMP_SENSOR A0
#define TOGGLE_SWITCH 21
#define BUTTON_A 4
#define BUTTON_B 19
#define BUZZER 5
//10 leds on pin 17
Adafruit_NeoPixel leds(10, 17, NEO_GRB + NEO_KHZ800);
int counter = 0;
void setup()
{
  Serial.begin(9600);
  leds.begin();
  leds.show();
  leds.setBrightness(50);
  pinMode(BUZZER, OUTPUT);
  pinMode(BUTTON_A, INPUT_PULLUP);
  pinMode(BUTTON_B, INPUT_PULLUP);
  pinMode(LIGHT_SENSOR, INPUT);
  pinMode(TEMP_SENSOR, INPUT);
  pinMode(TOGGLE_SWITCH, INPUT);
}
void loop()
{
  //for each colour of the rainbow ( Look at the original Neopixel example)
  for (long first = 0; first < 5 * 65536; first += 256)
  {
    //set every pixel to be a portion of the rainbow
    for (int i = 0; i < leds.numPixels(); i++)
      leds.setPixelColor(i, leds.gamma32(leds.ColorHSV(first + (i * 6553L))));
    leds.show(); // Update leds with new contents
    if (counter > 10) {
      Serial.print("Temperature Reading: ");
      Serial.println(analogRead(TEMP_SENSOR));
      Serial.print("Light Reading:");
      Serial.println(analogRead(LIGHT_SENSOR));
      Serial.print("Button Status: ");
      Serial.print(digitalRead(BUTTON_B) ? "[B] " : "");
      Serial.print(digitalRead(BUTTON_A) ? "[A] " : "");
      Serial.print("Switch: [");
      Serial.print(digitalRead(TOGGLE_SWITCH) ? "HIGH" : "LOW");
      Serial.println("]");
      Serial.println("-----------------------------------");
      counter = 0;

    } else {
      counter++;
    }
    delay(10);
  }
  for (int i = 0; i < 10; i++) {
    tone(BUZZER, 200 + (40 * i));
    delay(100);
  }
  noTone(BUZZER);
}
```