WS2812B Patterns

# Materials

* AmebaD [AMB21 / AMB22 / AMB23 / BW16] x1
* WS2812B LED Strip / Ring / Stick / Board x1

# Example

**Introduction**

In this example, we will be using the AmebaD board to control the WS2812B RGB LED, using the SPI peripheral to create the waveform necessary for the LEDs.

WS2812B\_Patterns allows you to create different light patterns with many different colors.

**Procedure**

Firstly, connect the WS2812B to the Ameba board as shown in the following diagrams.

**AMB21/AMB22 Wiring Diagram:**

**Graphical user interface

Description automatically generated**

**AMB23 Wiring Diagram:**

**Graphical user interface, application

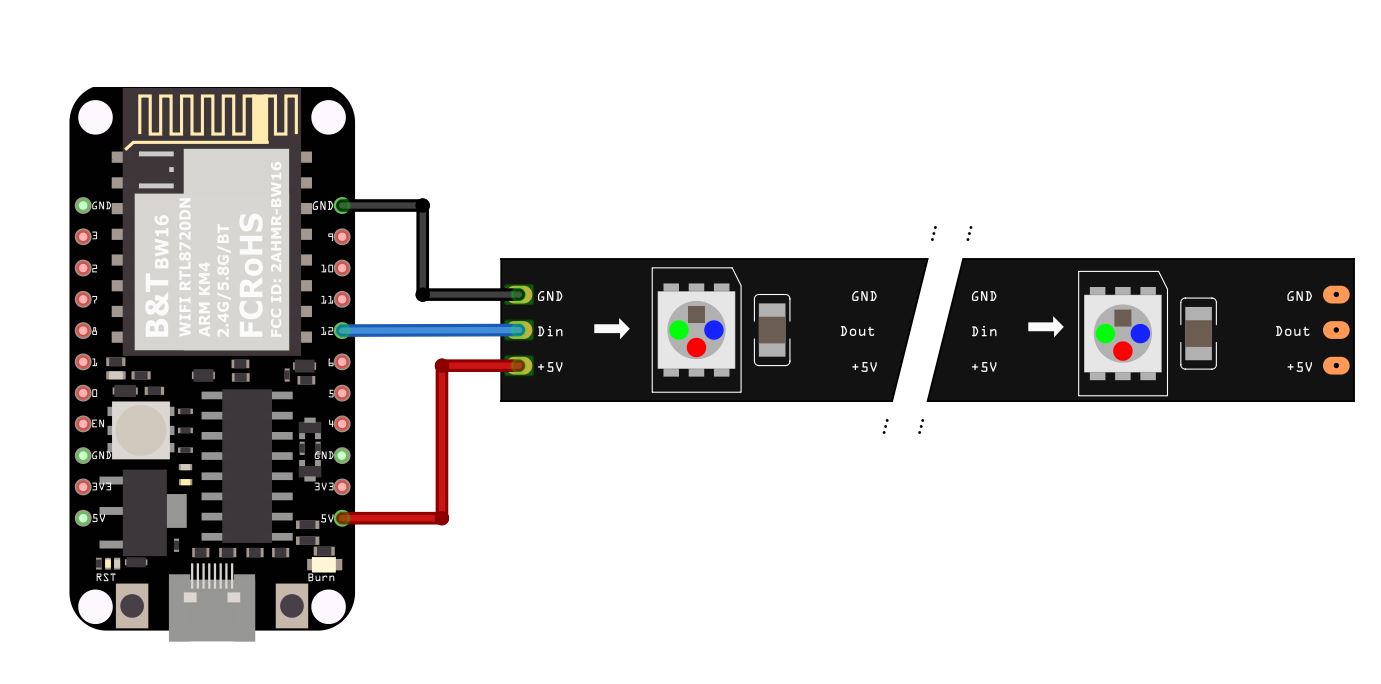
Description automatically generated**

**BW16 Wiring Diagram:**

**A screenshot of a computer

Description automatically generated with medium confidence**

**BW16-TypeC Wiring Diagram:**

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To create different light patterns with many different colors, use **WS2812B\_Patterns**.

Open the example in “File” → “Example” → “AmebaWS2812B” → “WS2812B\_Patterns”

Graphical user interface, application

Description automatically generated

In the sample code, modify **NUM\_OF\_LEDS** to be the number of LEDs that you have connected.

Graphical user interface, application

Description automatically generated

Next compile and upload to Ameba, then press the reset button. You will see the WS2812B displaying a color wipe, theater chase, rainbow, and theater chase rainbow light patterns in loop.

Graphical user interface

Description automatically generated

A picture containing text, electronics, control panel

Description automatically generated

Graphical user interface

Description automatically generated

A picture containing electronics, camera

Description automatically generated

# Code Reference

[1] WS2812B Datasheet:

<https://cdn-shop.adafruit.com/datasheets/WS2812B.pdf>