

## NeoPixel Strip

A **NeoPixel Strip** is a flexible LED strip that contains **individually addressable RGB LEDs**, controlled by a **single data line** using the **WS2812 or SK6812** protocol. Each LED can be programmed to display different colors and brightness levels.

### Working Principle:

NeoPixels use a **serial communication protocol** where a microcontroller (like Arduino) sends **digital data** to control each LED's color and brightness. The first LED processes the data and passes the remaining signal to the next LED in the strip.

### Key Features:

- **Individually addressable RGB LEDs**
- **Operates on 5V power**
- **Single-wire control using WS2812/SK6812 protocol**
- **Wide color range and smooth animations**

### Common Applications:

- Decorative and ambient lighting
- Wearable electronics
- LED displays and signage
- Interactive projects with Arduino/Raspberry Pi