

Neosegment Digit

Neosegment Digit is a modern take on the seven-segment display.

Neosegment Digit is a modular, open source RGB Seven Segment Display that simplifies displaying numeric information. Capable of showing digits and other symbols in any color without additional circuitry, it is a big upgrade from regular seven segment displays. Makers of all skill levels can use Neosegment in their project without soldering.

Neosegment communicates with microprocessors via a single data pin, is compatible with Arduino, Raspberry Pi, ESP8266, ESP32 and other architectures. Makers can chain any number of Neosegments together to create compelling and highly visible displays.



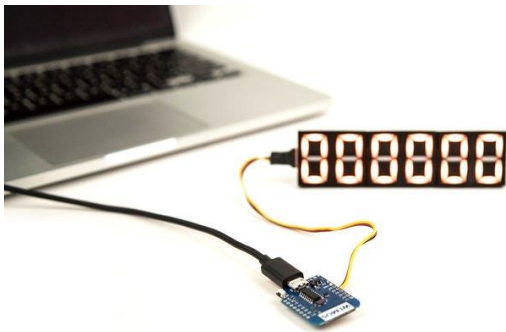
Examples of use cases where Neosegment can excel:

- Clocks and Timers
- Temperature indicators
- Internet-connected social media counters (YouTube subscribers, Twitter followers, Facebook likes and more)
- Numeric information that needs distinction



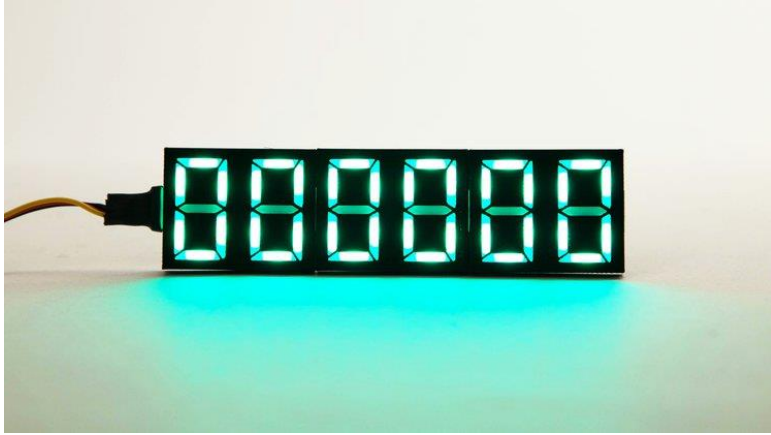
Who Needs It and Why?

Arduino enthusiasts, Raspberry Pi enthusiasts that are interested in IoT signage can use Neosegments to create displays that instantly show numbers from the internet or other data source. Because each segment of Neosegment is addressable and can take on any color, complex animations and visual effects become a possibility!



Features & Specifications

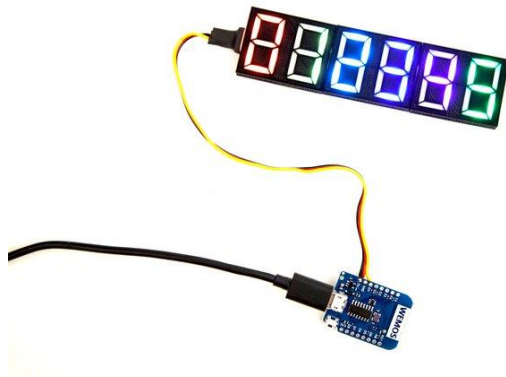
- **Compatibility** Arduino, Raspberry Pi, ESP8266, ESP32 or any chipset that supports WS2812B LEDs
- **Dimensions** 30x40x5mm
- **Materials** 3D printed plastic parts with diffusing sheet
- **Colors** RGB LEDs
- **LEDs inside** WS2812B (aka "Neopixels") in 5050 SMD packaging
- **Power Consumption** 60ma per segment max. For 2 full digits with all LEDs lit up in white, theoretical max consumption is $60 * 14 = 840\text{ma}$. If any single color is used instead of white, max power consumption is $20 * 14 = 280\text{ma}$.
- **Connectivity** 3 pin connector



Comparisons

Nothing on the market comes close to what Neosegment offers. Check out the table below to know why:

	Addressable segments	Colors	Mounting method	Open Source
Neosegment Digit	Yes	Any color	2 screws, no PCB required	Yes
Regular 7 Segment Display	No	One color	Custom PCB required	No
Regular RGB 7 Segment Display	No	Any color	Custom PCB required	No
RGBDigit	Yes	Any color	Custom PCB required	No



Manufacturing Plan

I've spent a lot of time designing Neosegment platform in a way that minimizes the risks for the initial backers.

Initially the shell and the insert of the Neosegment Digits will be 3D printed and that is what the backers of this campaign will get. This way I am in full control of the production and can confidently ship a few hundred units within 6 weeks after the campaign closes.

The circuit board will be professionally assembled by a PCBA service.



Risks & Challenges

The biggest risk is that PCBs would not be assembled in time by the PCB fab. My backup plan is to solder the LEDs myself if that is the case. I have access to reflow ovens and have stencils ready to be used. Printing plastic parts is well thought out and there are many backup options if anything goes wrong with my 3D printer.