

INDUSTRIAL PRODUCT DATASHEET

LED Driver Board for Seeed Studio XIAO

LED Driver Board for Seeed Studio XIAO with wide 5V/3A and 12V/2A LED compatibility, smart control via WLED and Home Assistant, Grove ecosystem support, and comprehensive protection for home lighting, education, gaming,...

SKU

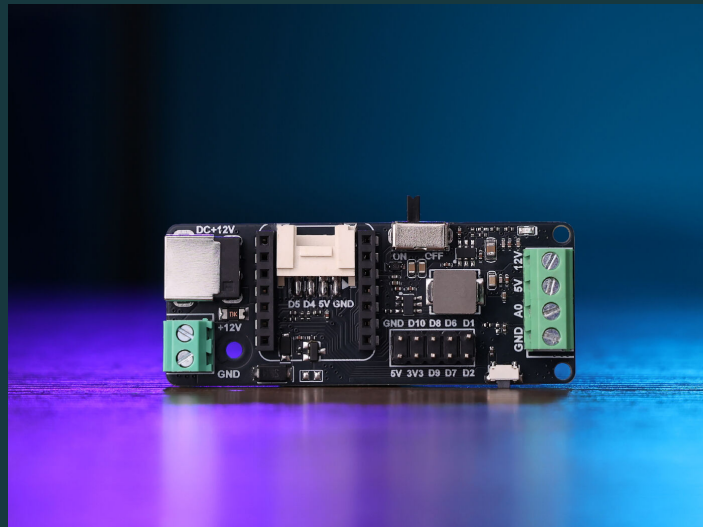
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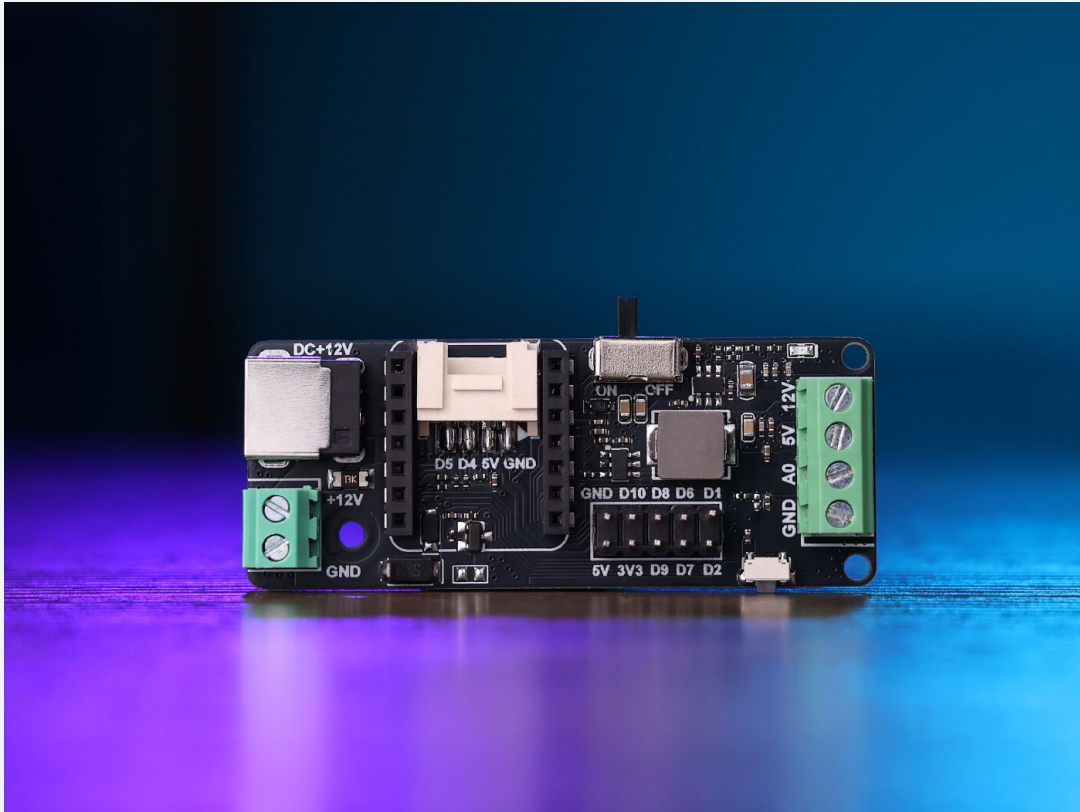
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PRICE

\$5.90(Excl. VAT)



Overview



The LED Driver Board for Seeed Studio XIAO is a compact, space-efficient expansion board that drives both 5V/3A and 12V/2A single-color and addressable RGB LED strips, including NeoPixel WS2811, WS2812(B), WS2813, WS2815, SK6812, and other 1-wire protocol LEDs. Designed for Seeed Studio XIAO boards, it enables smart control via WLED app and Home Assistant/ESPHome when paired with XIAO ESP32 Series, and features a plug-and-play Grove interface compatible with 400+ Seeed Studio modules, flexible 12V/2A DC power input via a 5.5mm x 2.1mm barrel jack, and integrated overcurrent, overvoltage, overtemperature, and short-circuit protection.

Key Features

Note:

This expansion board is currently not directly compatible with the XIAO nRF54L15 series because Arduino is not supported.

However, the hardware interface is fully compatible, and developers can manually adapt the software if needed.

Official software support from Seeed Studio is under development — stay tuned for updates!

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- **Wide LED Compatibility**

Versatile driver supporting both 5V/3A and 12V/2A LED strips with built-in power regulation. Compatible with single-color and addressable RGB LEDs including NeoPixel WS2811, WS2812(B), WS2813, WS2815, SK6812, and other 1-wire protocol LEDs, providing extensive lighting options.

- **XIAO-Compatibility for Smart Control**

Designed for all **Seeed Studio XIAO boards**. When paired with XIAO ESP32 Series (ESP32-C3/S3/C6), unlock smart features through

1. **WLED** app support - Control colors, effects, brightness, and create custom animations (**XIAO ESP32C3** is highly recommended)
2. **Home Assistant** integration via ESPHome - Enable remote control, automation, and smart home scenarios

- **Grove Ecosystem Compatibility**

The onboard plug-and-play Grove interface is compatible with over 400 Seeed Studio modules, including infrared sensors, temperature sensors, accelerometers and more, allowing you to easily enhance lighting interactivity with the environment and motion for smarter, personalized effects.

- **Flexible Power Input**

Supports 12V/2A power via standard DC adapter (EU/US plugs) or direct DC wiring, featuring a universal 5.5mm x 2.1mm DC Barrel Jack connector. Suitable for both temporary and permanent installations.□

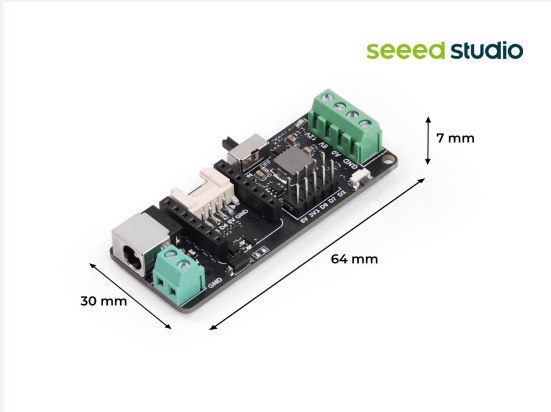
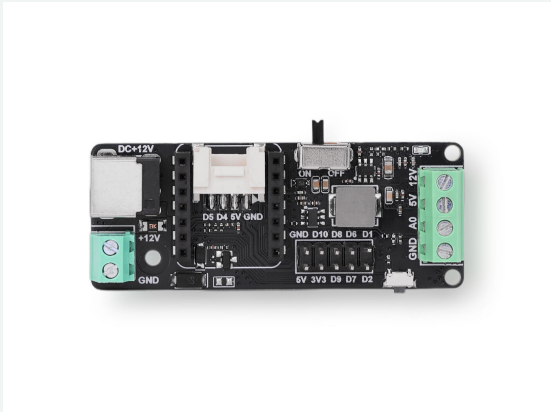
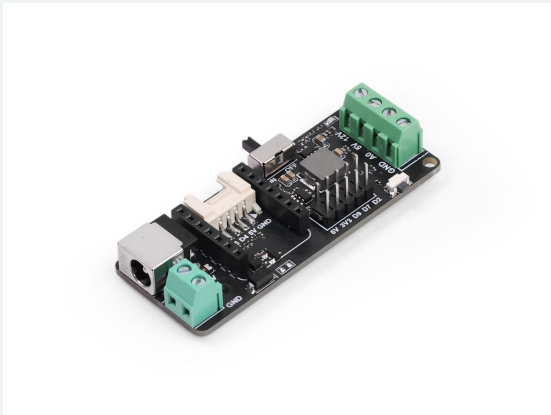
- **Compact Form Factor**

Space-efficient design allows for discreet installation near LED strips or in tight spaces, ideal for various lighting applications while maintaining full functionality.

- **Comprehensive Protection**

Integrated safety features including overcurrent, overvoltage, overtemperature, and short-circuit protection, ensuring reliable operation and component longevity.

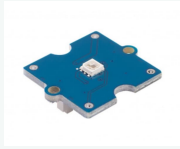
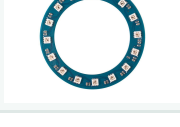
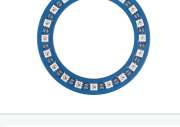
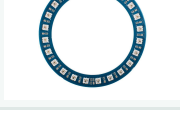
Product Gallery

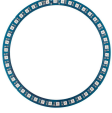


Specification

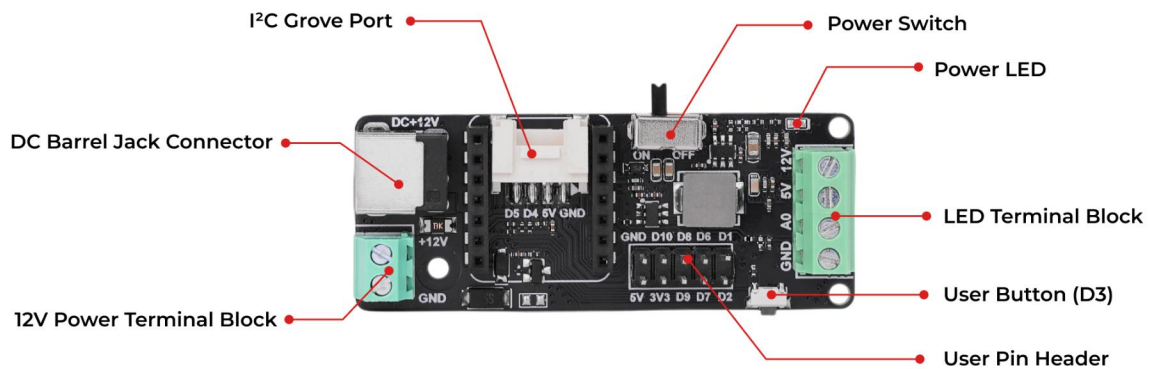
Item	Detail
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Supported LED models	• Single-color LEDs, • Addressable RGB LEDs (WS2811,WS2812,WS2812B, WS2813,WS2815...) • Other 1-wire protocol LEDs
LED Connector	4 Pin 3.81mm Screw Terminal Block Connector : • 12V • 5V • A0 • GND
Power Input	• PowerAdapter, 12V/2A/24W, European Standard Plug, DC Output • PowerAdapter, 12V/2A/24W, American Standard Plug, DC Output • Other DC 12V Power Adapter with 5.5mm x 2.1mm x 10±0.3mm Plug • DC 12V Wire
LED Power Support	DC 12V / DC 5V
Operating Current	12V/2A, 5V/3A
Onboard	Power Switch x1 Grove I ² C Connector x1 User Button (D3) x1 Power LED x1
User Pin Header	SPI x1, Uart x1, Digital x2
Dimensions	63mm x 30mm x14.4mm (With a Seeed Studio XIAO)

Product	Name	Operating Voltage	Connect via
	Grove - RGB LED (WS2813 Mini)	5V	Grove
	Grove - RGB LED Stick (10-WS2813 Mini)	5V	Grove
	Grove - RGB LED Stick (15-WS2813 Mini)	5V	Grove
	Grove - RGB LED Stick (20-WS2813 Mini)	5V	Grove
	Grove - RGB LED Ring (16-WS2813 Mini)	5V	Grove
	Grove - RGB LED Ring (20-WS2813 Mini)	5V	Grove
	Grove - RGB LED Ring (24-WS2813 Mini)	5V	Grove

	Grove - Ultimate RGB LED Ring	5V	Grove
	Grove - WS2813B RGB LED Flexi-Strip 30 LED/m - 1m	5V	Screw Terminal
	Grove - WS2813B RGB LED Flexi-Strip 60 LED/m - 1m	5V	Screw Terminal
	Grove - WS2813 RGB LED Strip Waterproof - 30 LED/m - 1m	5V	Grove
	Grove - WS2813 RGB LED Strip Waterproof - 60 LED/m - 1m	5V	Grove

Hardware Overview



Applications

- **Home Lighting & Decoration:** RGB strip lights, wall lights, festive decorations
- **Educational & Science Experiments:** Coding & Microcontroller Education, LED light design, Physical Data Visualization
- **Gaming & Interactive Installations:** PC case lighting, Around screens LED eddects, Interactive LED floor or wall
- **DIY Projects & Fun Uses:** LED name boards, LED clocks, DJ disco lights, RGB mood lighting

Part List

LED Driver Board for Seeed Studio XIAO	x1
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Compliance & Logistics

HSCODE	8531909000
USHSCODE	8531903000
UPC	
EUHSCODE	8543709099
COO	CHINA

Resource Links

- <https://www.seeedstudio.com/LED-Driver-Board-for-Seeed-Studio-XIAO-p-6451.html>
- [LED_Driver_Board_for_Seed_Studio_XIAO_SCH_PDF](#)
- [3D Enclosure available on Printables](#)

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