DFC-0001

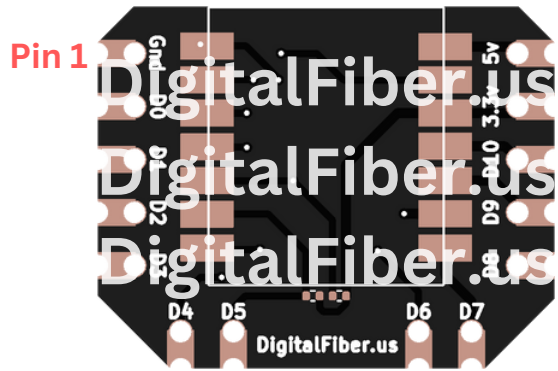## Xiao ESP32 MCU

- Compatible with Xiao Family MCUs
- I2C, UART, SPI
- 5v USB-C for power
- Programmable in Arduino IDE
- On board I2C pull ups

Pin 1

This board supports any of Seeed Studio's Xiao ESP32 modules, compact yet powerful prototyping boards with built-in wireless connectivity, low-power operation, and a large, active community. By integrating them with this sewable breakout, you gain easier access to their advanced features, making it simpler to bring your creative projects to life

Board Pin#	Xiao Module Pin#
1	GND
2	D0
3	D1
4	D2
5	D3
6	D4
7	D5

Board Pin#	Xiao Module Pin#
8	D6
9	D7
10	D8
11	D9
12	D10
13	3.3v
14	5v

DFC-0002

MPU6050 IMU

- 6-axis Accelerometer & Gyroscope
- I2C compatible
- Extremely small footprint
- Compatible with Arduino libraries

Pin 1

The MPU6050 is an inertial measurement unit (IMU) combining a 3-axis accelerometer and a 3-axis gyroscope. It enables real-time motion tracking and gesture sensing, making it well-suited for applications like wearable devices, robotics, and interactive controllers that respond to how they're moved or tilted.

Board Pin#	Funciton
1	3.3v
2	SCL
4	SDA
7	GND

WS2812 Addressable LED

- 24 bit RGB
- Compatible with FastLED and Neopixel
- Extremely small footprint
- 2020 package

Pin 1
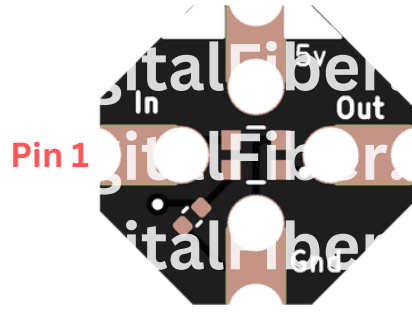
The WS2812 is a widely used RGB LED, easily chained together and supported by a vast ecosystem of hardware and software. Popular libraries like FastLED and extensive controller options make it a versatile and reliable choice for a range of projects.

Board Pin#	Funciton
1	Data In
2	GND
4	Data Out
7	5v

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Basic LED

- 5mmx10mm footprint
- Single Color LED
- 6030Package

This single-color LED is a simple, reliable light-emitting diode that produces a steady, uniform glow in a single hue.

Board Pin#	Funciton
1	Data In
2	GND

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DFC-0005

LED Matrix Controller

- Control up to 144 LEDs
- Power with coin cell battery
- Built in STM32F4 MCU
- 2 exposed I2C controllers

Pin 1
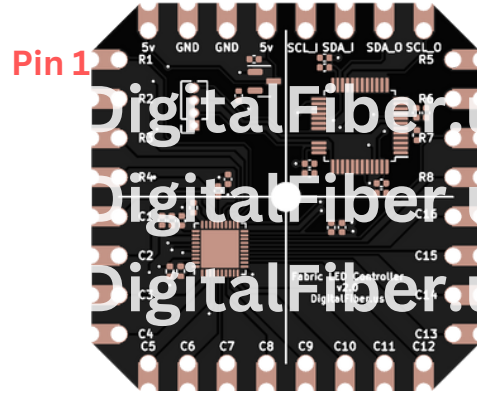
This board is designed to control LED matrix circuits with 12 anode (+) pins and 12 cathode (-) pins. It features two exposed I2C connections, enabling daisy-chaining for large-scale LED displays. The device can operate as an I2C slave, responding to pixel data commands, or use its I2C interface to read sensors and control its connected LEDs.

**KEY: A1 = ANODE 1, C1 = Cathode 1, A2 = ANODE 2...**

Board Pin#	Func	Board Pin#	Func	Board Pin#	Func	Board Pin#	Func
1	A7	9	C3	17	C11	25	SCL1
2	A8	10	C4	18	C12	26	SDA1
3	A9	11	C5	19	A1	27	SCL2
4	A10	12	C6	20	A2	28	SDA2
5	A11	13	C7	21	A3	29	5V
6	A12	14	C8	22	A4	30	GND
7	C1	15	C9	23	A5	31	GND
8	C2	16	C10	24	A6	32	5V

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DFC-0006

Capacitive touch sensor

- 8 Touch input detection pins
- 3.3-5v compatible

Pin 1
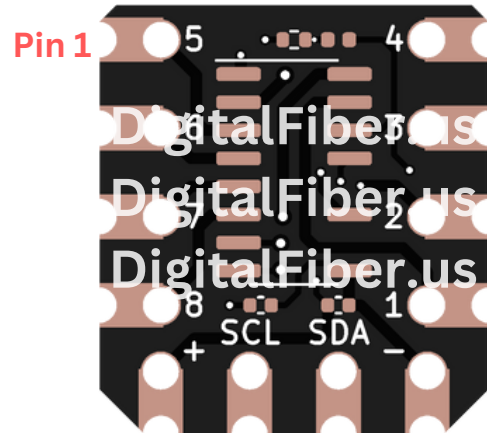
This board detects capacitive touch in textiles, enabling interaction through embroidered designs. Any 2D shape can be embroidered into fabric to create a touch-sensitive pad, which connects to this sensor. Touch inputs are then read by an external MCU via I2C.

Board Pin#	Func	Board Pin#	Func
1	T5	7	SDA
2	T6	8	GND
3	T7	9	T1
4	T8	10	T2
5	3.3-5v	11	T3
6	SCL	12	T4

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DFC-0007

Analog to Digital Converter

- 8 Inputs (Dual 4 Channel)
- 3.3-5v compatible

Pin 1

This board features two 4-channel ADCs, ideal for applications like textile force sensing and strain sensing. It provides precise analog-to-digital conversion for integrating various sensor inputs into your designs.
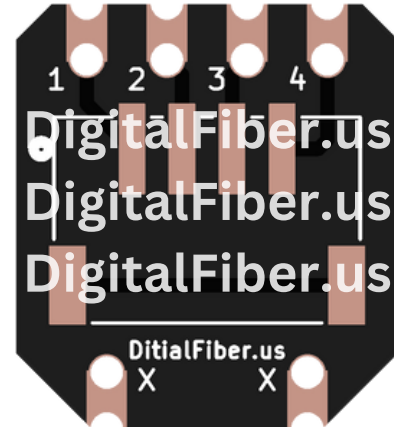
KEY: A = ADC_A   B = ADC_B

Board Pin#	Func	Board Pin#	Func
1	A2	7	B4
2	A1	8	B3
3	SDA	9	B2
4	SCL	10	B1
5	GND	11	A4
6	3.3-5v	12	A3

DFC-0008

Generic 4-Pin Connector

- 2.54mm (0.1in) spacing
- Breadboard jumper compatible
- S4B-XH-SM4-TB

This board provides an interface between conductive traces and jumper cables

USB-C to textile power

- Adds 5v power to textiles
- USB-C

Pin 1

This board is for seamlessly adding 5v power to e-textile designs. It serves as an interface between a USB-C cable and a textile.

Board Pin#	Func
1	Gnd
2	5v

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