Muscle BioAmp Blip

Upside Down Labs

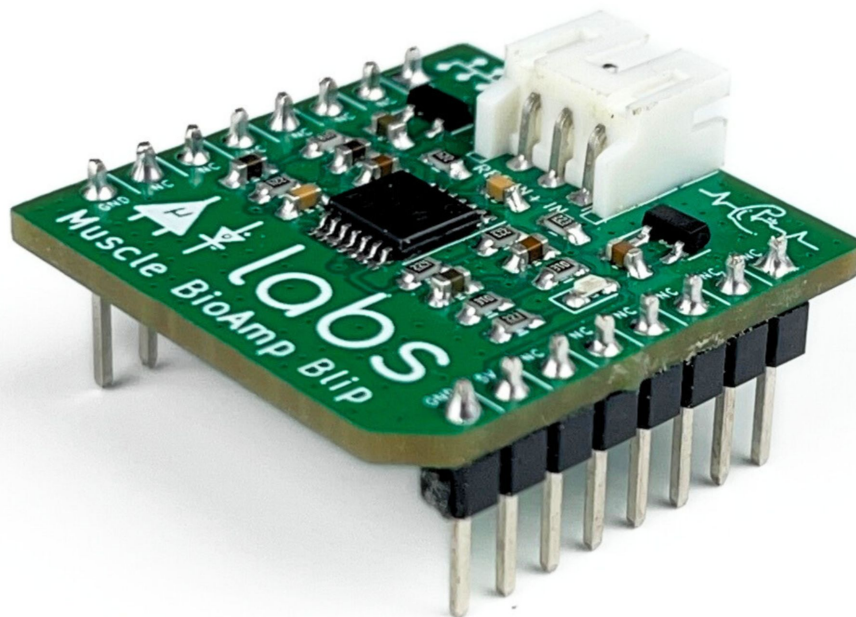**Apr 12, 2024**

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A mikroBUS™ compatible ElectroMyography (EMG) sensor for precise recording of muscle signals.

CONTENTS

OVERVIEW

Muscle BioAmp Blip is single channel mikroBUS™ compatible ElectroMyography (EMG) sensor for precise muscle signal recording. It allows you to add the EMG functionality to your projects at ease. You can either connect it to any mikroBUS port or even a breadboard to get started.

FEATURES & SPECIFICATIONS

Minimum Input Voltage	5 V
Input Impedance	10^12 ohm
Fixed Gain	x2420
Bandpass filter	72 – 720 Hz
Compatible Hardware	Any development board with an ADC (Arduino UNO & Nano, Espressif ESP32, Adafruit QtPy, STM32 Blue Pill, BeagleBone Black, Raspberry Pi Pico, to name just a few)
BioPotentials	EMG (Electromyography)
No. of channels	1
Electrodes	3 (Positive, Negative, and Reference)
Dimensions	2.54 x 2.86 cm
Open Source	Hardware + Software

HARDWARE

Images below shows a quick overview of the hardware design.
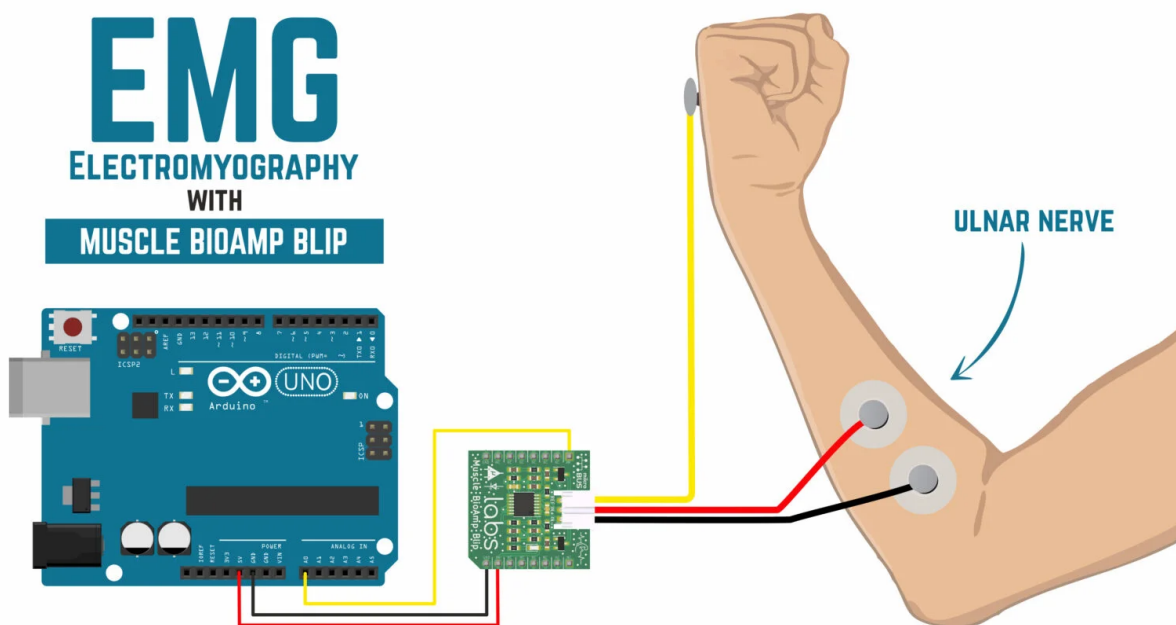
PCB Front

PCB Back

CONNECTING WITH ARDUINO

To get started, you can pair Muscle BioAmp Blip with any development board with an ADC (Arduino UNO & Nano, Espressif ESP32, Adafruit QtPy, STM32 Blue Pill, BeagleBone Black, Raspberry Pi Pico, to name just a few) or any standalone ADC of your choice.

To measure the EMG signals, connect BioAmp Cable v3 with your muscle sensor as shown in the image below:

SOME PROJECT IDEAS