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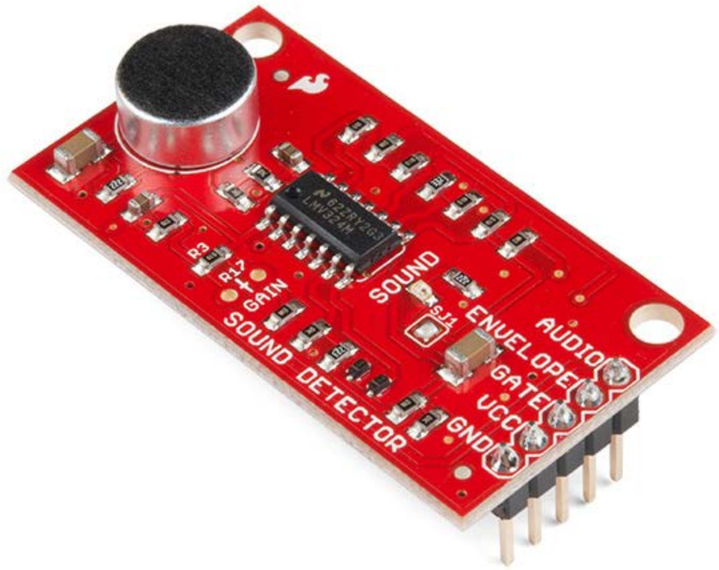
HOW TO USE A

Sound Detector

Sparkfun



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WHAT IT IS?

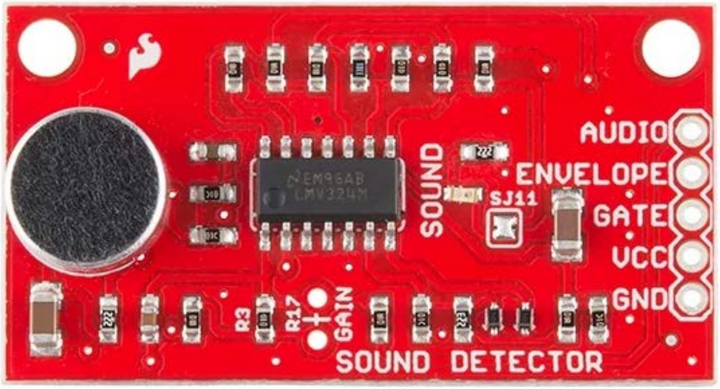
The SparkFun Sound Detector is a microphone-based sensor that detects the presence and level of sound in the environment.

It's NOT a sound recorder—it only measures sound intensity (volume) and provides a corresponding signal.

Commonly used in noise-activated projects, audio-triggered events, and sound-reactive lights.

MORE INFO:

https://learn.sparkfun.com/tutorials/sound-detector-hookup-guide#reso



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HOW IT WORKS?

There are three connections on the board:

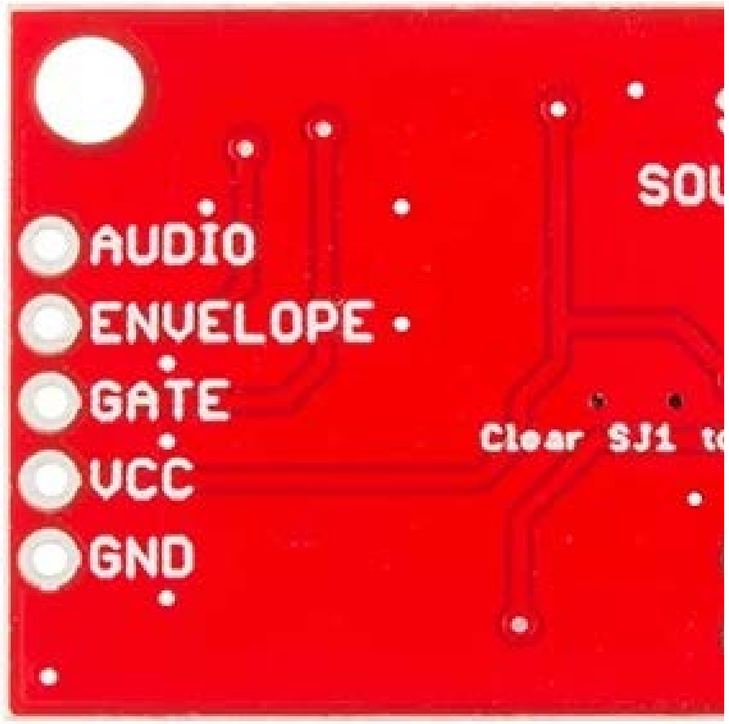
Audio - This is the raw audio from the microphone.

Envelope - This is a ANALOG value representing the volume of the ambient sound.

This analog signal allow us to monitor sound amplitude.

Gate - This is a DIGITAL value that indicates whether the sound level is above or below a certain threshold.

In other words, it works like an on/off switch to detect sound vs. no sound.



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ENVELOPE

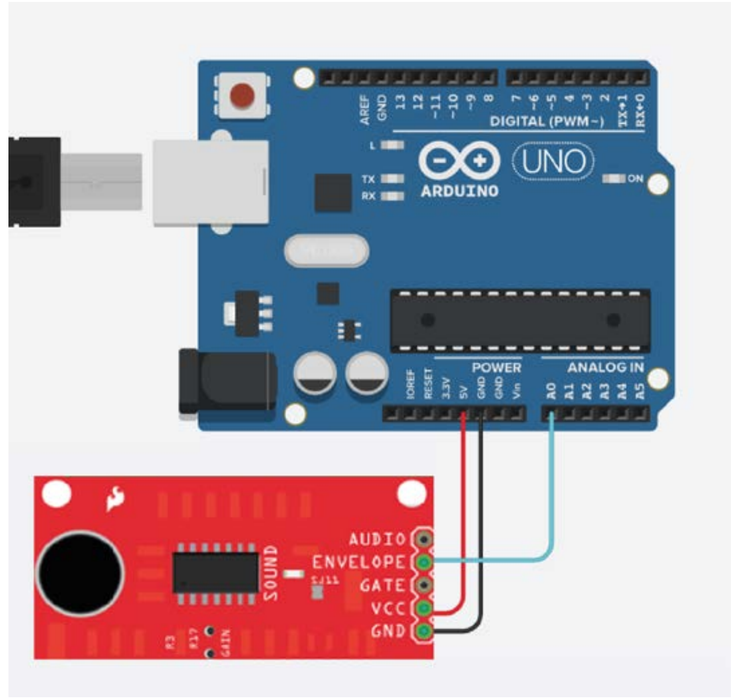
Envelope | Arduino IDE 2.3.6

Select Board

Envelope.ino

```
/*
SparkFun Sound Detector
ENVELOPE MODE
Detecting sound amplitude and printing in Serial Monitor

Hardware:
Arduino UNO
Sparkfun Sound Detector

*/

#define envelopePin A0 //analog pin

void setup() {
  Serial.begin( 9600 );
  pinMode( envelopePin, INPUT );
}

void loop() {
  Serial.println( analogRead( envelopePin ) );
}
```

Ln 1, Col 1 × No board selected



INSTRUCTIONS:

Build this code, upload it to your Arduino Board, and open the Serial Monitor. What data do you see printed?

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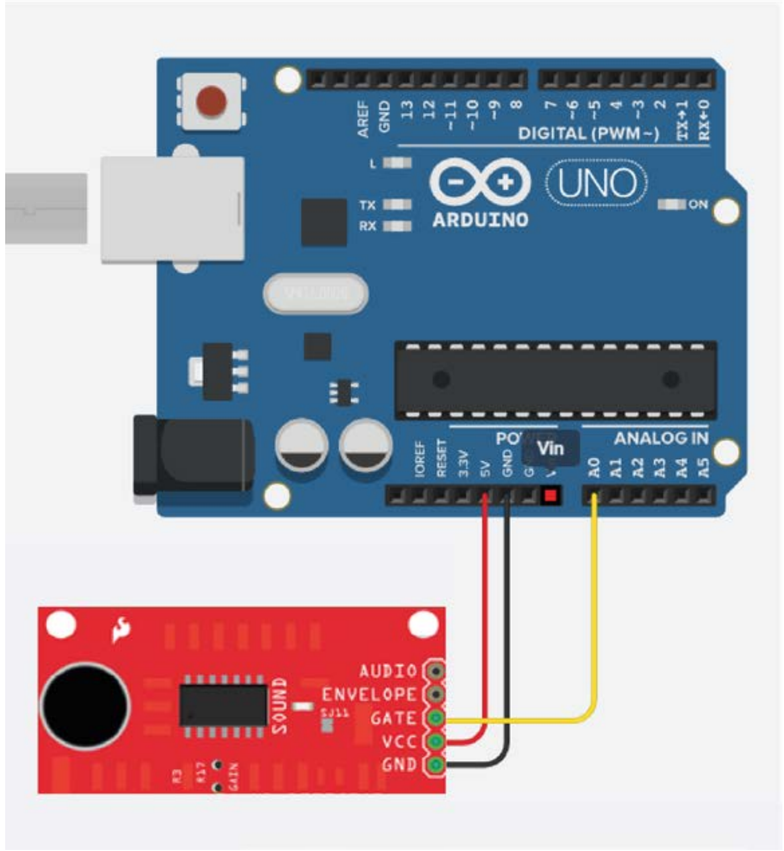
GATE

Gate | Arduino IDE 2.3.6

Select Board

Gate.ino

```
/*
SparkFun Sound Detector
GATE MODE
Detecting sound presence

Hardware:
Arduino UNO
Sparkfun Sound Detector

*/

#define gatePin 2 //digital pin

void setup() {
  Serial.begin( 9600 );
  pinMode( gatePin, INPUT );
}

void loop() {
  Serial.println( analogRead( gatePin ) );
}
```



INSTRUCTIONS:

- Look carefully at this new code, It is very similar to the previous one, but key elements have changed.
- Re-wire your Sound Detector – this time, connect the Gate pin instead of the Envelope pin.
- What do you observe now in the Serial Monitor?

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CHALLENGE:

1. Modify your code and add an LED to monitor sound detection

2. Upload a video (aprox 10 seconds) showing your achievements.

VIDEO UPLOAD

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OTHER TUTORIALS

https://learn.sparkfun.com/tutorials/sound-detector-hookup-guide#reso

https://learn.sparkfun.com/tutorials/sik-experiment-guide-for-the-arduino-101genuino-101-board/experiment-15-using-the-sound-detector-board

https://maker.pro/arduino/projects/sound-detector

https://wiki.cci.arts.ac.uk/books/how-to-guides/page/using-a-sparkfun-sound-detector