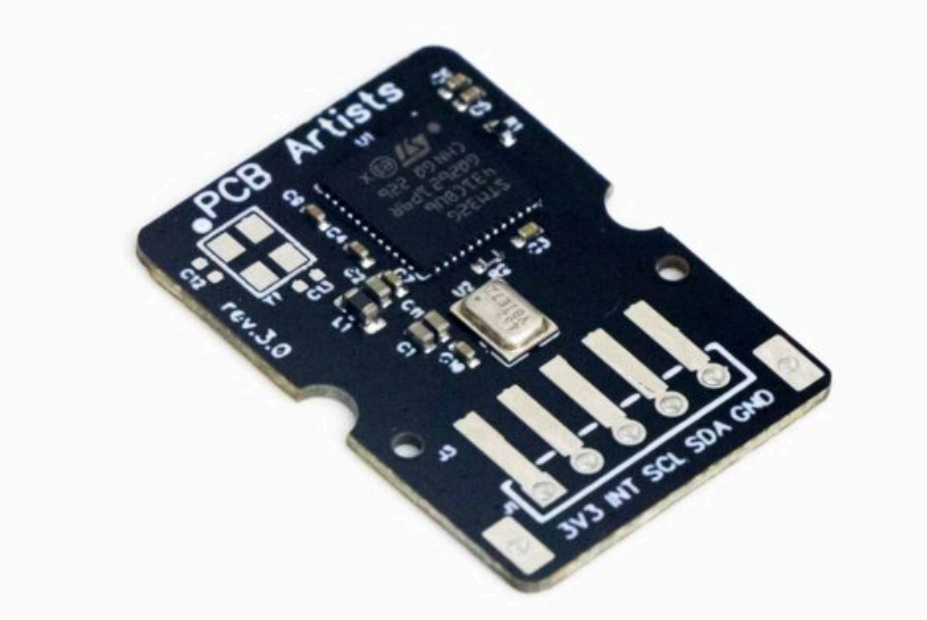
Product Documentation

I2C DECIBEL METER MODULE INTERFACING GUIDE

The PCB Artists decibel meter module is a **low power, tiny, and accurate sound level meter module** that **reads sound pressure level in dB SPL**. You can connect the sensor to your Arduino, ESP32, Raspberry Pi or similar hardware. This guide aims to make the task of decibel meter module interfacing easy for you.



PCB Artists I2C Sound Level Meter Module

Module Pinout and Pin Descriptions

The sound level meter module has 5 pins.
The INT (interrupt) pin is optional and may be left open if unused in your application.

- **3V3**
  (Power supply input pin)
  Source clean 3.3V regulated power supply to this pin. The module typically consumes 5mA at 3.3V.
- **INT**
  (Open-drain interrupt pin, active low)
  The interrupt function is disabled by default. If enabled, INT pin goes low when an interrupt is pending.
- **SCL**
  (Open-drain I2C SCL pin)
  Standard I2C bus SCL line, recommended pull-up is at least 10K.
- **SDA**
  (Open-drain I2C SDA pin)
  Standard I2C bus SDA line, recommended pull-up is at least 10K
- **GND**
  (Ground pin)
  Module ground, should be connected directly to the ground of system power source or battery if possible.

Module Connector Options

The sound level meter module can be configured to have 3 types of connectors.

- **JST-XH (vertical)**
  If your application needs to have the decibel sensor module glued to an enclosure where the wires must be secured reliably, this option works best.
- **JST-XH (horizontal)**
  If your application needs the module to be stuck to an enclosure but has limited room above the module, use this connector configuration.
- **0.1" header**
  This is best suited for **prototyping on breadboards** and initial evaluation.

Decibel meter module interfacing with Raspberry Pi

The standard 40-pin Raspberry Pi GPIO header contains a 3.3V power output, ground, SCL and SDA. These 4 pins are all you need to use to connect the sound level meter module to a Raspberry Pi.

Here are details on decibel meter module interfacing with Raspberry Pi and sample code that you can use to test the sensor.

Frequently Asked Questions (FAQs)

— Can I connect the sound sensor module with long wires?

In general, it is recommended to keep the I2C wires **as short as possible**. If the I2C cable length is longer than 30 cm, use **high quality cables** that are tied together. Pull-up resistance used should be **4.7K or lower** and I2C clock speed should be reduced to **less than 10kHz for long wires**.

+ How can I get accurate decibel readings with low noise?

+ Can I power the module separately instead of using the host PCB (Arduino, etc)?

+ Can I use the decibel sensor with 1.8V systems?

+ How can I use multiple sound sensor modules on one I2C bus?

Have Something to Say?

Feel free to ask away via the **Live Chat**, drop us a message using the **Quick Contact** form in the sidebar, or leave a **comment** below.

Change Log

- **5 May 2023**
  – Initial release

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