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Simplifying Technology
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Thank you for purchasing the EVs-1 XIAO compatible VOC Sensor Shield. The EVs-1 is a versatile and compact PCB designed for seamless integration with the XIAO microcontroller and compatibility with other Arduino boards. This board interfaces the XIAO microcontrollers with three sensors: the SHT-40 for high-precision temperature and humidity measurements, the SGP40 for reliable VOC air quality monitoring, and the ICP-10111 for accurate barometric pressure readings.

The Arduino sketches available in github allow you to quickly read data from the sensors, see the results using the Arduino Serial Monitor and on an OLED display (if attached).

Pin header connectors are supplied but not soldered in case you want to use different connectors for your application.

Arduino IDE (2.3.3) getting started:

The attached Arduino IDE code was tested on a XIAO ESP32C3.

Initial configuration for the Arduino IDE

Add to File Preferences → Additional Boards Manager URLs:
https://raw.githubusercontent.com/espressif/arduino-esp32/gh-pages/package_esp32_index.json

In Library Manager:

search for and install “Adafruit SHT4x Library”
search and install: “Adafruit SGP40Sensor”
search and install: “Adafruit_ICM20X”
search and install: “DFRobot_ICP10111”
search and install: “Oliver U8g2 Library”

Start a new sketch and replace the startup sketch outline with EVs-1_OLED_VOC_0_91.ino or EVs-1_OLED_VOC_0_96.ino (depending on your OLED display), select the XIAO_ESP32C3 (or the board you are using), attach your XIAO with the VOC Shield properly attached, select Upload in Arduino IDE.

The code should compile correctly, upload and run. Monitor the data using the Serial Monitor. If you have a display attached, you should also see that displaying data.

Note: VOC will initially read “0” but it will start to display actual values after a few minutes.

Example serial monitor reading:

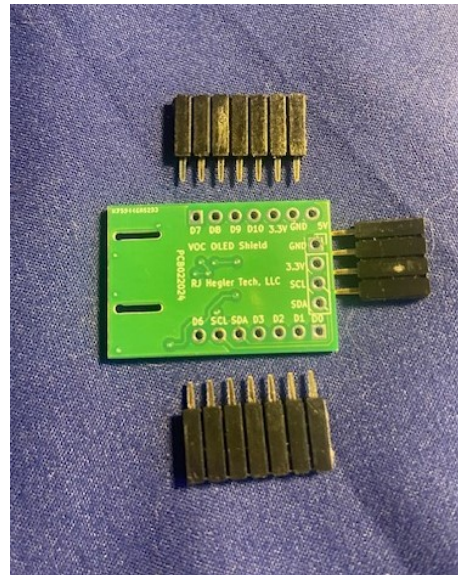
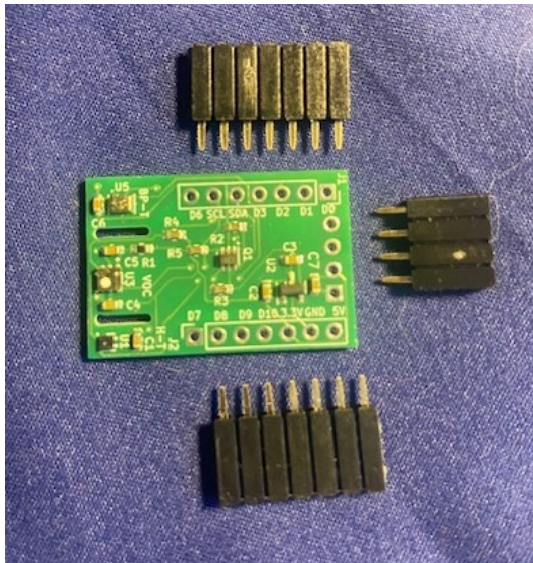
Temperature: 75.94 °F, Humidity: 42.19 %
RAW Index: 30447
Voc Index: 64
Read air pressure:32778Pa

28.97HG
Read temperature:25.28°C
Read altitude:268.12m

Example reading for a 0.96" OLED display:

EVs-1
75.94 °F, RH: 42.19 %
VOC = 64
28.97inHg

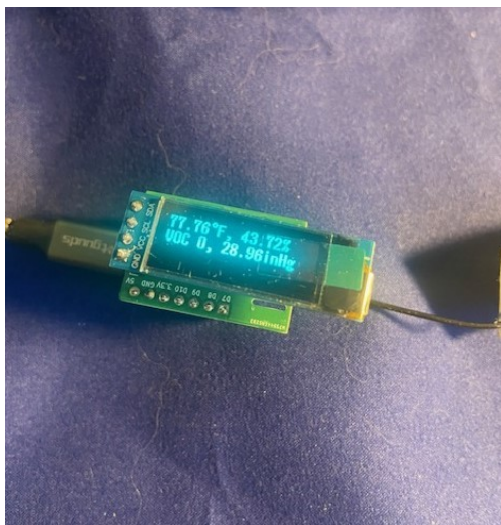
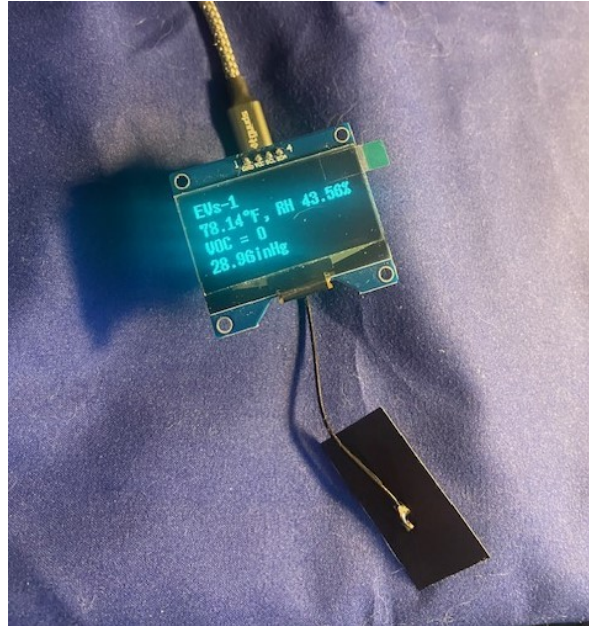
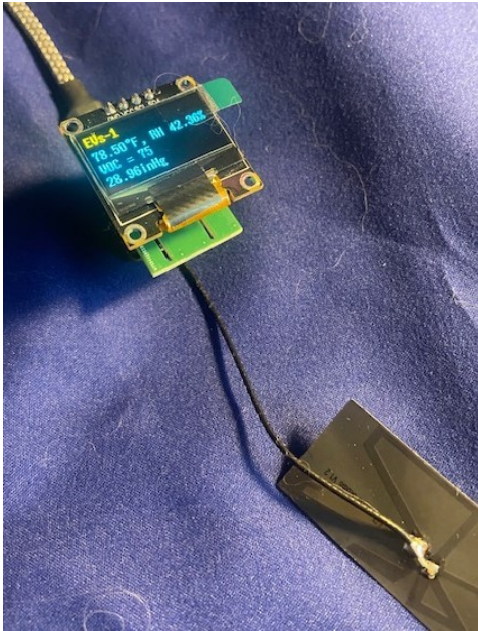
EVs-1 VOC OLED as delivered:



EVs-1 VOC LED showing proper orientation and connector placement:



EVs-1 VOC LED showing various optional displays (0.96", 1.54" and 0.91"):



More Information:

Sensirion Sensor Arduino Code Snippets: <https://github.com/Sensirion/arduino-snippets>