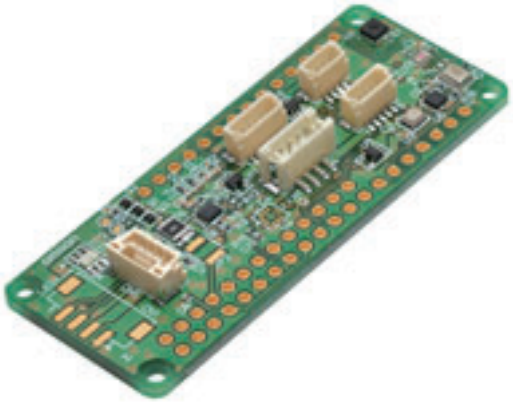
OMRON

Sensor Evaluation Board

2JCIE-EV01-AR1

User's Manual

Sensor Evaluation Board



A294-E1-02

Safety Precautions

Be sure to read the data sheet, and use only if you agree to the contents.

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1. Overview

This manual explains how to use the Arduino (*1) compatible OMRON Sensor Evaluation Board (2JCIE-EV01-AR1), including special notes and other information. This Sensor Evaluation Board provides 6 sensing functions (temperature, humidity, barometric pressure, illumination, sound, acceleration). This manual explains how to acquire these sensing data.

To connect a sensor other than the 6 types of sensors provided on the Sensor Evaluation Board, check GitHub. For details on the provided sensor types, connector layout, and other specifications, see the data sheet for this product.

2. Items required

- ☐ Sensor Evaluation Board (2JCIE-EV01-AR1) x1
- ☐ Arduino (*1) x1
- ☐ USB cable (to connect Arduino to your PC) x1
- ☐ PC with Arduino IDE (*2) installed x1

(*1) Usable Arduino types
- ✓ Arduino MKR Vidor 4000
- ✓ Arduino MKR WiFi 1010
- ✓ Arduino MKR ZERO

(This manual assumes that Arduino MKR WiFi 1010 is used)

(*2)
Arduino IDE can be downloaded for free from the official Arduino website.

3. Sensor board setup

3-1 Checking Sensor Evaluation Board Components

Make sure the following components are included with the Sensor Evaluation Board.

- ☐ Sensor Evaluation Board x1
- ☐ Pin Headers x2

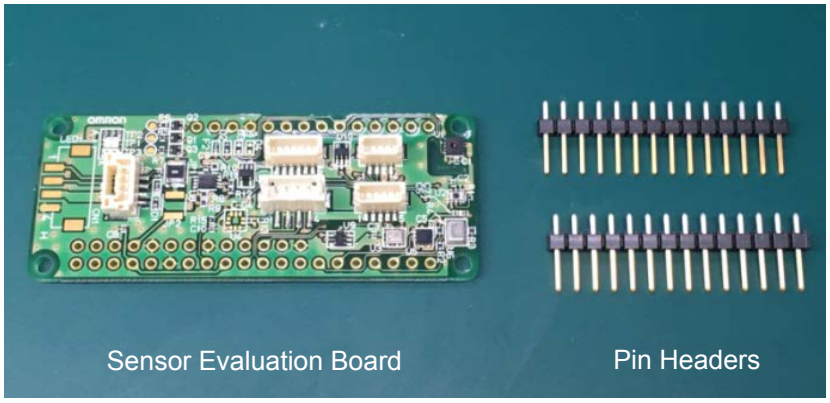
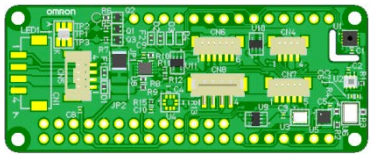


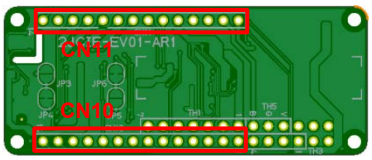
Fig. 1 Sensor Evaluation Board Components

3-2 Soldering

1) From the back of the Sensor Evaluation Board, insert the provided pin header into the through-holes (CN10, CN11). We recommend that you use a breadboard to keep the pin header from shifting out of position.



Sensor Evaluation Board / front



Sensor Evaluation Board / back

Fig. 2 Appearance of Sensor Evaluation Board

Note: This side with the printed OMRON logo is the front side. If soldering fails and you need to purchase a pin header, purchase a pin header with 14 pins at a pitch of 2.54 mm. Recommended pin Header: SAMTEC / TSW-114-07-L-S

2) Solder all pins from the front side of the Sensor Evaluation Board to secure them. (28 pins)

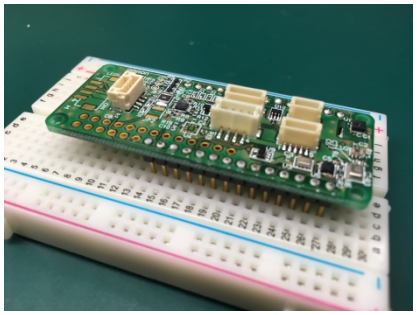


Fig. 3 Pin Header Soldering

Note: Take care not to burn yourself when soldering. Take care not to inhale smoke when soldering. The pin header bends easily. Take care not to bend the pin header.

3-3 Connecting the Sensor Evaluation Board to Arduino

Insert the pin header on the Sensor Evaluation Board into the Arduino pin socket. The Sensor Evaluation Board is on top and Arduino is on the bottom.

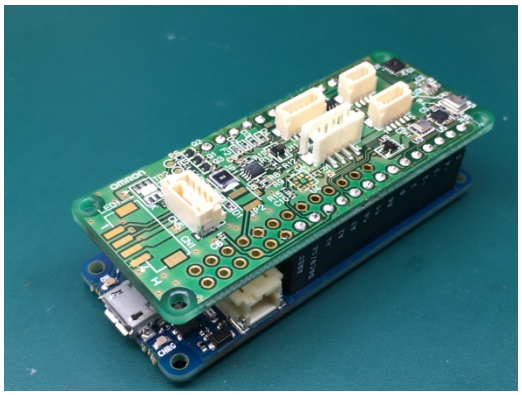


Fig. 4 Connecting to Arduino

Note:
The temperature sensor on the Sensor Evaluation Board may output a high value due to heat from the Arduino unit. To eliminate this effect, either connect with a cable to separate the two, or use an externally connected temperature/humidity sensor.

3-4 Connecting Arduino to your PC

Connect the USB port on Arduino to a USB port on your PC with a USB (A -micro B) cable.

4. Downloading the Sample Program

Access GitHub at the URL below, download the zip file, and save it in any folder.

GitHub URL
https://github.com/omron-devhub/2jcieev01-arduino

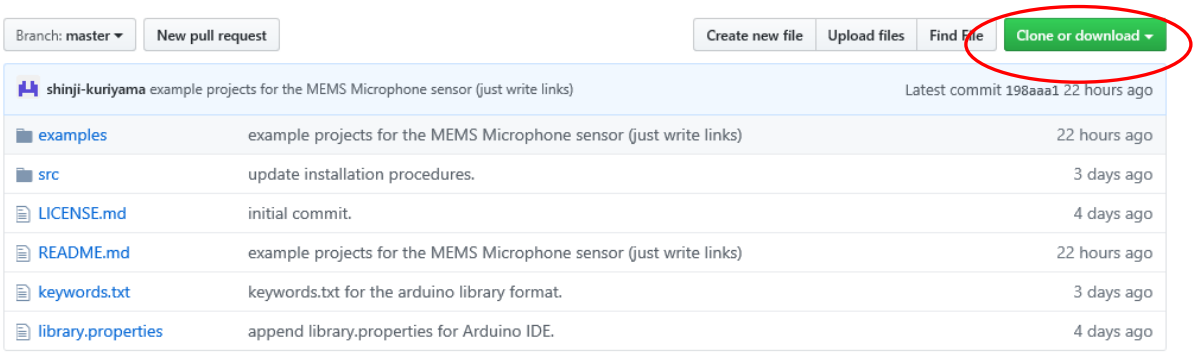


Fig. 5 Downloading the Zip File

Note:
In some cases it may take time to download the file.
The sample source code is only for testing purposes. OMRON does not guarantee its operation.
OMRON does not assume responsibility to make changes to the sample source code or correct mistakes or defects in the sample source code for any reason.
We cannot accept any inquiries regarding the sample source code.

5. Running the Sample Program on Arduino IDE

5-1 Installing the Zip Library on Arduino IDE

Click [Sketch] >> [Include Library] >> [Add .ZIP Library...].
Select the zip file you saved in 4-1 in "Select a zip file or a folder containing the library you'd like to add", and click [Open].

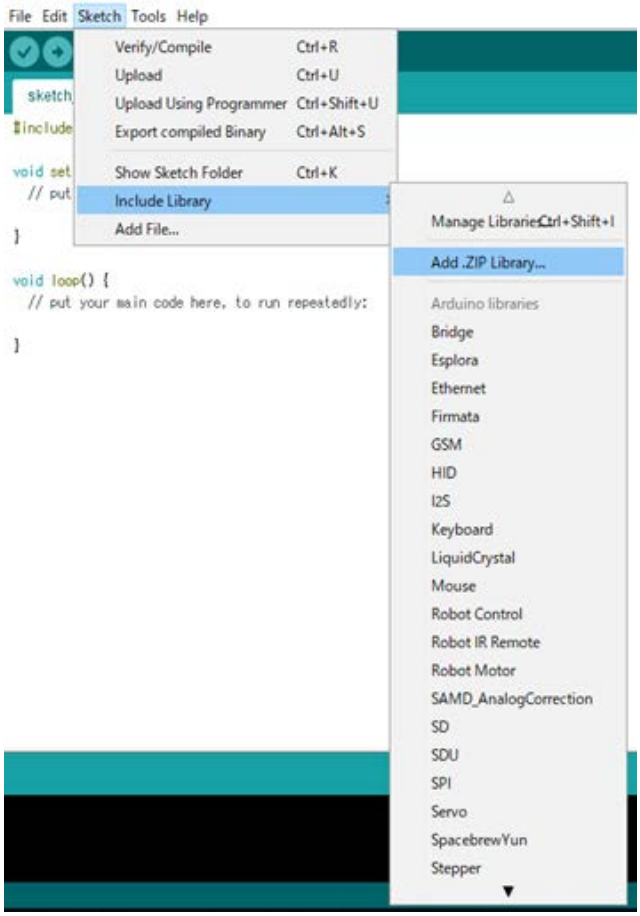


Fig. 6 Including the Library

5-2 Reading Sketch

Click [File] >> [Examples] >> [2JCIE-EV01], and select the sensing data you want to acquire.

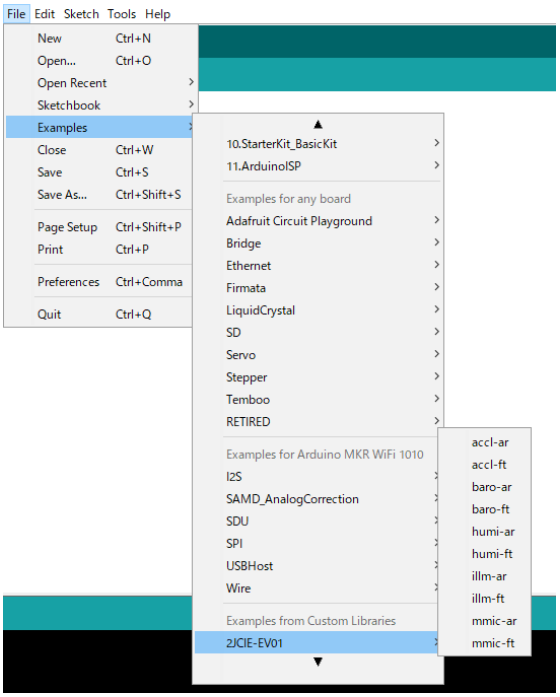


Fig. 7 Reading Sketch

Acceleration sensor sample	accl-ar
Barometric pressure sensor sample	baro-ar
Temperature/humidity sensor sample	humi-ar
Illumination sensor sample	illm-ar

Table 1. Sample Code List

For Microphone, click [Example for Arduino MKR WiFi 1010] >> [I2S] >> [InputSerialPlotter].

5-3 Arduino Board Settings in Arduino-IDE

Click [Tools] >> [Board:...] >> [Arduino MKR WiFi 1010].
If you cannot find "Arduino MKR WiFi 1010", open "Board Manager..." and install it.

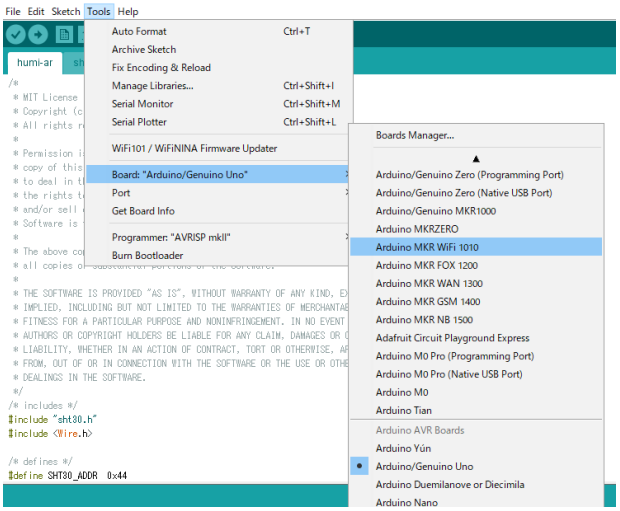


Fig. 8 Specifying Arduino Board

5-4 COM Port Settings in Arduino-IDE

Specify the COM number in [Tools] >> [Port:...] >>.
You can check the COM number in Windows Device Manager.

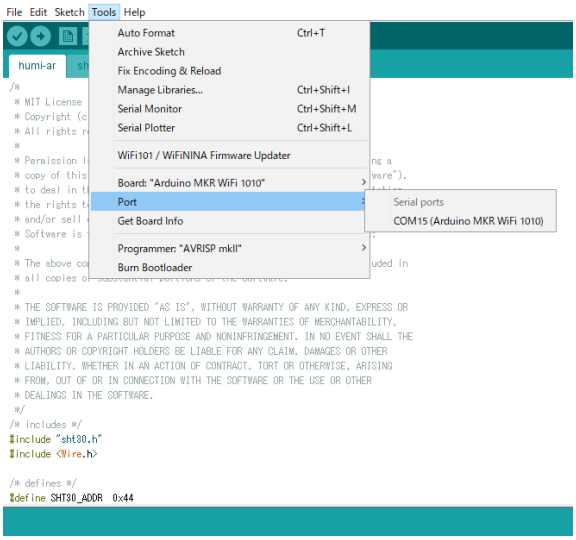


Fig. 9 Specifying the Serial Port

5-5 Writing to the Microcomputer Board

Compile (verify) the program, and if there are no errors, click  to write to the Arduino microcomputer board.

Fig. 10 Writing to the Microcomputer Board

5-6 Serial Monitor

Click [Tools] >> [Serial Monitor], and select the sensing data.

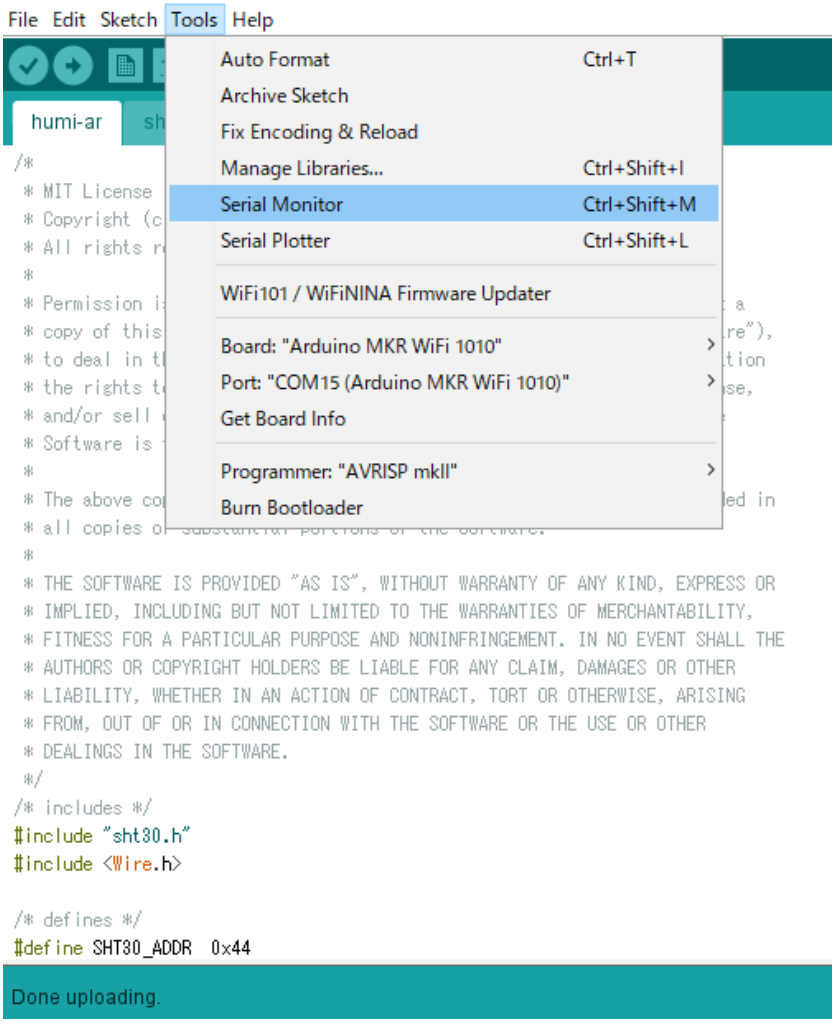


Fig. 11 Serial Monitor

6. Removing the Sensor Evaluation Board

To remove the Sensor Evaluation Board from Arduino, turn off the power to the Sensor Evaluation Board, grasp the sides of the board without touching the USB port, connector, or other mounted components, and slowly remove the board.

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