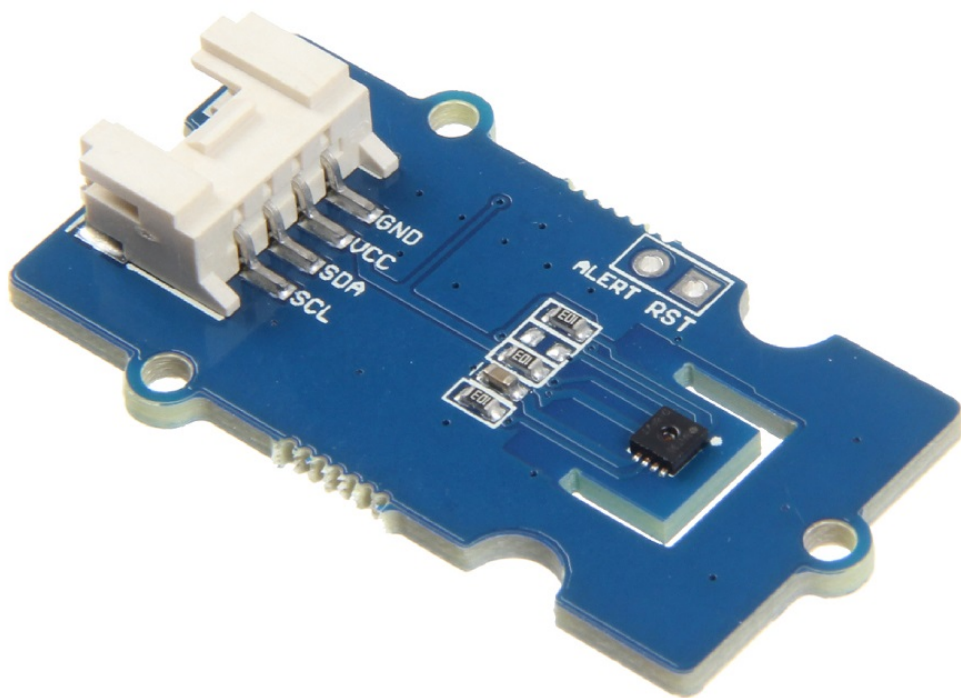


Grove - I2C High Accuracy Temp&Humi Sensor(SHT35)



Grove - I2C High Accuracy Temp&Humi Sensor(SHT35) is based on SHT3x-DIS, which is the next generation of Sensirion's temperature and humidity sensors. It builds on a new CMOSens® sensor chip that is at the heart of Sensirion's new humidity and temperature platform. The SHT3x-DIS has increased intelligence, reliability and

improved accuracy specifications compared to its predecessor. Its functionality includes enhanced signal processing, two distinctive and user selectable I2C addresses and communication speeds of up to 1 MHz.

Snips Voice Interaction Base Kit Demo



Get One Now 

[<https://www.seeedstudio.com/Grove-I2C-High-Accuracy-Temp%26Humi-Sensor%28SHT35%29-p-3182.html>]

Features

- High accuracy of $\pm 1.5\%RH$ and $\pm 0.1\text{ }^{\circ}C$
- Fully calibrated, linearized, and temperature compensated digital output
- I2C Interface with communication speeds up to 1MHz and two user selectable addresses
- Very fast start-up and measurement time

Specification

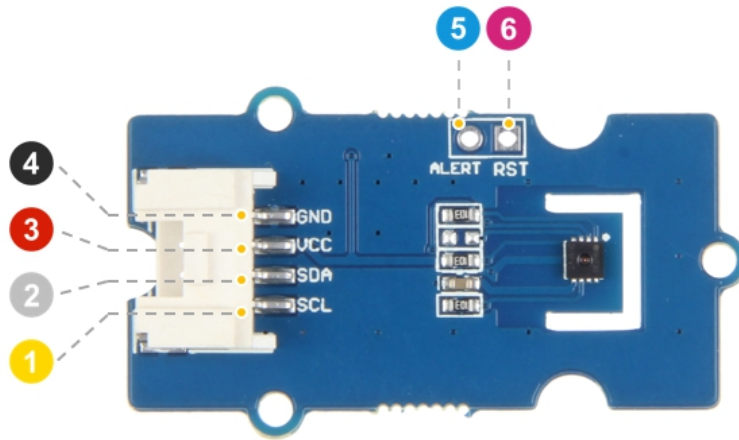
Item	Value
Operating Voltage	3.3V / 5V
Specified Temperature Range	-40°C to +125°C
Temperature Resolution	0.01°C
Temperature Accuracy Tolerance	$\pm 0.1\text{ }^{\circ}C$
Specified Humidity Range	0%RH to +100%RH
Humidity Resolution	0.01%RH
Humidity Accuracy Tolerance	$\pm 1.5\%RH$
Interface	I ² C
I ² C Address	0x45(default) / 0x44(optional)

Applications

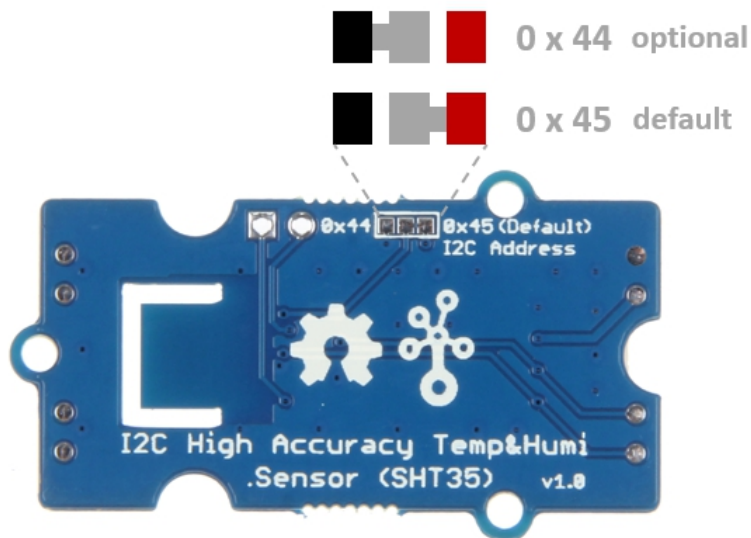
- Industrial Freezers and Refrigerators
- Food Processing
- Personal Computers and Servers
- PC Peripherals
- Consumer Electronics
- Handheld/Portable Devices

Hardware Overview

Pin Out



- ④ GND: connect this module to the system GND
- ③ VCC: you can use 5V or 3.3V for this module
- ② SDA: I²C serial data
- ① SCL: I²C serial clock
- ⑤ ALERT: reserved interrupt pin for customer use
- ⑥ RST: connect to the reset pin

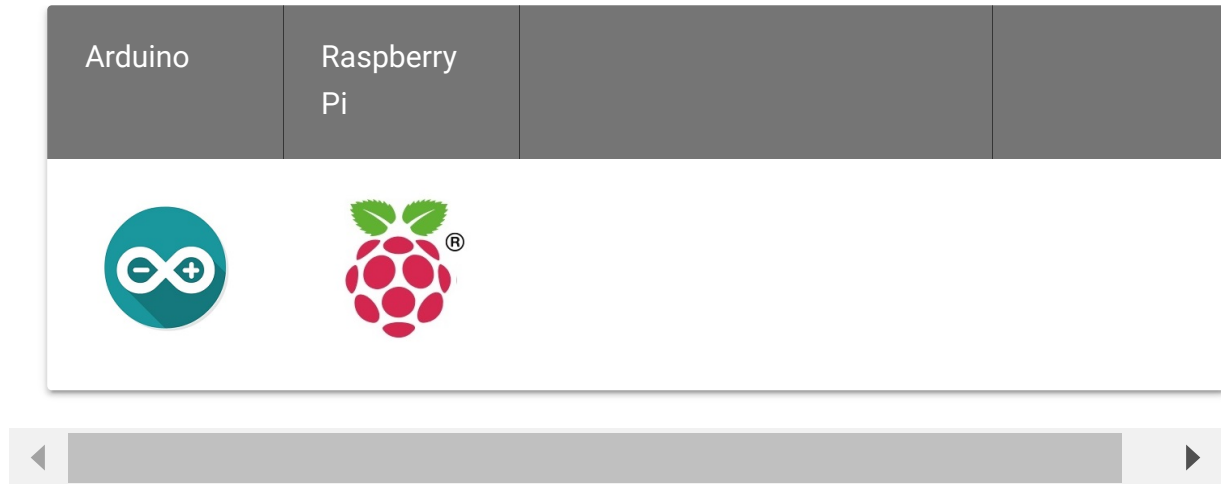


Schemaitc

Power

This module is based on **SHT35**, the input voltage of this chip range from 2.15v-5.5v, so you can use both 3.3v and 5v pin of Arduino to supply for this module.

Platforms Supported



Caution

The platforms mentioned above as supported is/are an indication of the module's software or theoretical compatibility. We only provide software library or code examples for Arduino platform in most cases. It is not possible to provide software library / demo code for all possible MCU platforms. Hence, users have to write their own software library.

Getting Started

Play With Arduino

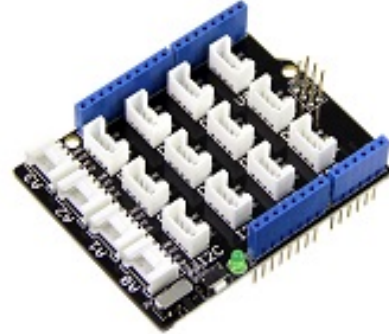
Hardware

Materials required

Seeeduino V4.2



Base Shield



[Get One Now](#)

[<https://www.seeedstudio.com/Seeeduino-V4.2-p-2517.html>]

[Get One Now](#)

[<https://www.seeedstudio.com/Base-Shield-V2-p-1378.html>]

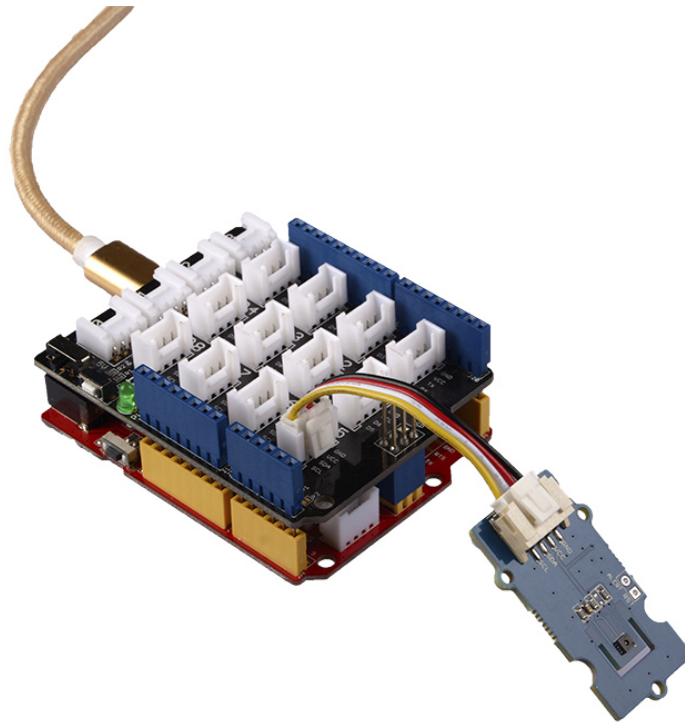


Note

1 Please plug the USB cable gently, otherwise you may damage the port. Please use the USB cable with 4 wires inside, the 2 wires cable can't transfer data. If you are not sure about the wire you have, you can click [here](https://www.seeedstudio.com/Micro-USB-Cable-48cm-p-1475.html) [<https://www.seeedstudio.com/Micro-USB-Cable-48cm-p-1475.html>] to buy

2 Each Grove module comes with a Grove cable when you buy. In case you lose the Grove cable, you can click [here](https://www.seeedstudio.com/Grove-Universal-4-Pin-Buckled-20cm-Cable-%285-PCs-pack%29-p-936.html) [<https://www.seeedstudio.com/Grove-Universal-4-Pin-Buckled-20cm-Cable-%285-PCs-pack%29-p-936.html>] to buy.

- **Step 1.** Connect the Grove - I2C High Accuracy Temp&Humi Sensor(SHT35) to port **I²C** of Grove-Base Shield.
- **Step 2.** Plug Grove - Base Shield into Seeeduino.
- **Step 3.** Connect Seeeduino to PC via a USB cable.

**Note**

If we don't have Grove Base Shield, We also can directly connect this module to Seeeduino as below.

Seeeduino	Grove Cable	Grove - I2C High Accuracy Temp&Humi Sensor(SHT35)
GND	Black	GND
5V or 3.3V	Red	VCC
SDA	White	SDA
SCL	Yellow	SCL

Software

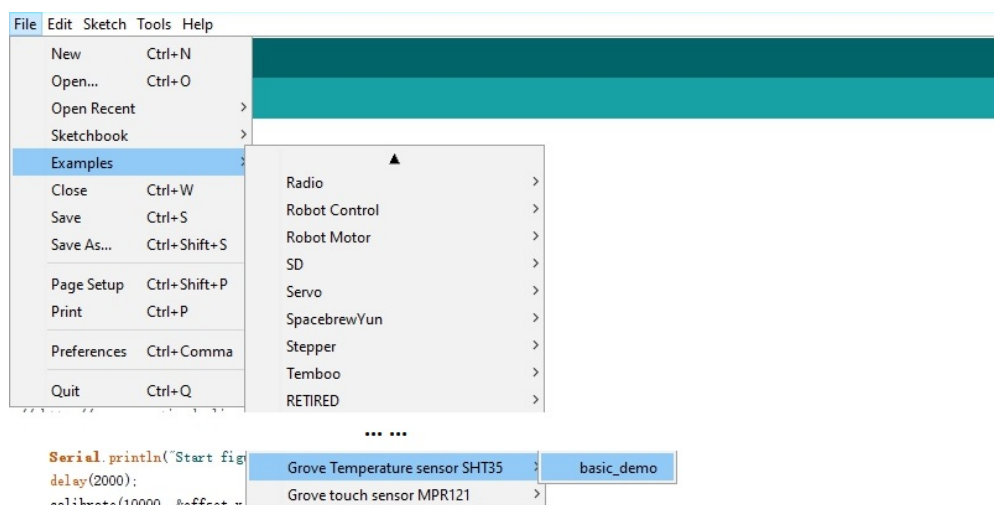


Attention

If this is the first time you work with Arduino, we strongly recommend you to see [Getting Started with Arduino](https://wiki.seeedstudio.com/Getting_Started_with_Arduino/) [https://wiki.seeedstudio.com/Getting_Started_with_Arduino/] before the start.

- **Step 1.** Download the [Grove-SHT35 Sensor](https://github.com/Seeed-Studio/Seeed_SHT35) [https://github.com/Seeed-Studio/Seeed_SHT35] Library from Github.
- **Step 2.** Refer to [How to install library](https://wiki.seeedstudio.com/How_to_install_Arduino_Library) [https://wiki.seeedstudio.com/How_to_install_Arduino_Library] to install library for Arduino.
- **Step 3.** Restart the Arduino IDE. Open the example, you can open it in the following three ways:

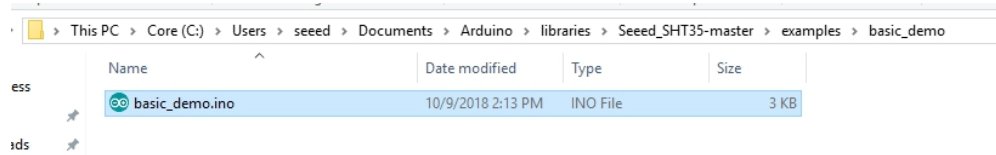
- Open it directly in the Arduino IDE via the path: **File** → **Examples** → **Grove Temperature sensor SHT35** → **basic_demo**.




- Open it in your computer by click the **basic_demo.ino** which you can find in the folder

XXXX\Arduino\libraries\Seeed_SHT35-

master\examples\basic_demo, XXXX is the location you installed the Arduino IDE.



- c. Or, you can just click the icon  in upper right corner of the code block to copy the following code into a new sketch in the Arduino IDE.

```

1  #include "Seeed_SHT35.h"
2
3
4  /*SAMd core*/
5  #ifdef ARDUINO_SAMD_VARIANT_COMPLIANCE
6      #define SDAPIN  20
7      #define SCLPIN  21
8      #define RSTPIN  7
9      #define SERIAL SerialUSB
10 #else
11     #define SDAPIN  A4
12     #define SCLPIN  A5
13     #define RSTPIN  2
14     #define SERIAL Serial
15 #endif
16
17 SHT35 sensor(SCLPIN);
18
19
20 void setup()
21 {
22     SERIAL.begin(115200);
23     delay(10);
24     SERIAL.println("serial start!!");
25     if(sensor.init())
26     {
27         SERIAL.println("sensor init failed!!!");

```

```
28     }
29     delay(1000);
30 }
31
32
33 void loop()
34 {
35     u16 value=0;
36     u8 data[6]={0};
37     float temp,hum;
38     if(NO_ERROR!=sensor.read_meas_data_single_shot(HIGH_I
39     {
40         SERIAL.println("read temp failed!!");
41         SERIAL.println(" ");
42         SERIAL.println(" ");
43         SERIAL.println(" ");
44     }
45     else
46     {
47         SERIAL.println("result=====>");
48         SERIAL.print("temperature =");
49         SERIAL.println(temp);
50
51         SERIAL.print("humidity =");
52         SERIAL.println(hum);
53
54         SERIAL.println(" ");
55         SERIAL.println(" ");
56         SERIAL.println(" ");
57     }
58     delay(1000);
59 }
```

**Attention**

The library file may be updated. This code may not be applicable to the updated library file, so we recommend that you use the first two methods.

- **Step 4.** Upload the demo. If you do not know how to upload the code, please check [How to upload code](https://wiki.seeedstudio.com/Upload_Code/) [https://wiki.seeedstudio.com/Upload_Code/].
- **Step 5.** Open the **Serial Monitor** of Arduino IDE by click **Tool->Serial Monitor**. Or tap the **Ctrl + Shift + M** key at the same time. Set the baud rate to **115200**.

**Success**


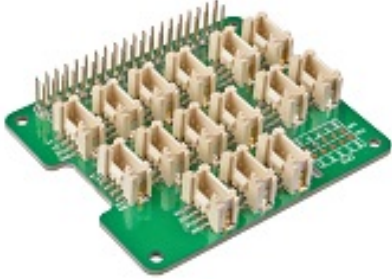
If every thing goes well, when you open the Serial Monitor , it may show as below:

```
1  serial start!!
2  =>
3  temperature =24.10
4  humidity =51.09
5
6
7  result=====>
8  temperature =24.10
9  humidity =50.96
10
11
12 result=====>
13 temperature =24.10
14 humidity =51.04
15
16
17 result=====>
18 temperature =24.11
19 humidity =51.09
```

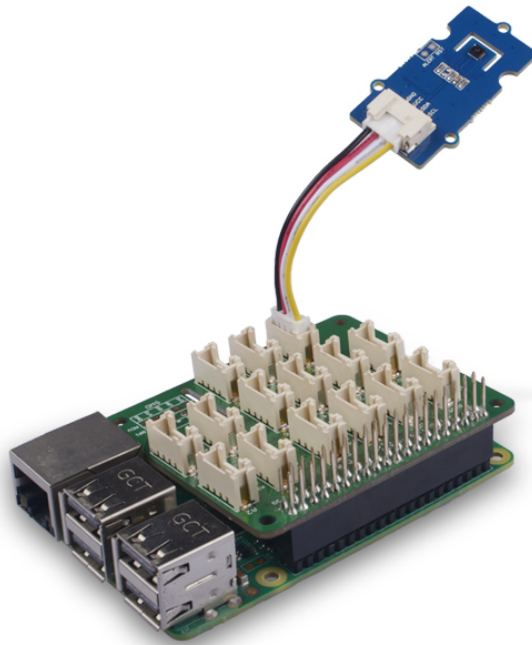
Play With Raspberry Pi (With Grove Base Hat for Raspberry Pi)

Hardware

- **Step 1.** Things used in this project:

Raspberry pi	Grove Base Hat for RasPi
	
<p>Get ONE Now [https://www.seeedstudio.com/Raspberry-Pi-3-Model-B-p-2625.html]</p>	<p>Get ONE Now [https://www.seeedstudio.com/Grove-Base-Hat-for-Raspberry-Pi-p-3186.html]</p>

- **Step 2.** Plug the Grove Base Hat into Raspberry.
- **Step 3.** Connect the Grove - I2C High Accuracy Temp&Humi Sensor(SHT35) to **I²C** port of the Base Hat.
- **Step 4.** Connect the Raspberry Pi to PC through USB cable.



Software

- **Step 1.** Follow [Setting Software](https://wiki.seeedstudio.com/Grove_Base_Hat_for_Raspberry_Pi/#installation) [https://wiki.seeedstudio.com/Grove_Base_Hat_for_Raspberry_Pi/#installation] to configure the development environment.
- **Step 2.** Download the source file by cloning the grove.py library.

```
1 cd ~  
2 git clone https://github.com/Seeed-Studio/grove.py
```

- **Step 3.** Excute below commands to run the code.

```
1 cd grove.py/grove  
2 python grove_I2C_High_Accuracy_tem_hum_SHT35_sensor.py
```

Following is the
grove_I2C_High_Accuracy_tem_hum_SHT35_sensor.py code.

```
1  import time
2  from grove.i2c import Bus
3
4  def CRC(data):
5      crc = 0xff
6      for s in data:
7          crc ^= s
8          for i in range(8):
9              if crc & 0x80:
10                 crc <<= 1
11                 crc ^= 0x131
12             else:
13                 crc <<= 1
14         return crc
15
16 class GroveTemperatureHumiditySensorSHT3x(object):
17
18     def __init__(self, address=0x45, bus=None):
19         self.address = address
20
21         # I2C bus
22         self.bus = Bus(bus)
23
24     def read(self):
25         # high repeatability, clock stretching disabled
26         self.bus.write_i2c_block_data(self.address, 0x24,
27
28         # measurement duration < 16 ms
29         time.sleep(0.016)
30
31         # read 6 bytes back
32         # Temp MSB, Temp LSB, Temp CRC, Humidity MSB, Humidity LSB
33         data = self.bus.read_i2c_block_data(0x45, 0x00, 6)
34         temperature = data[0] * 256 + data[1]
35         celsius = -45 + (175 * temperature / 65535.0)
36         humidity = 100 * (data[3] * 256 + data[4]) / 65535.0
37         if data[2] != CRC(data[:2]):
```

```

38         raise RuntimeError("temperature CRC mismatch
39     if data[5] != CRC(data[3:5]):
40         raise RuntimeError("humidity CRC mismatch")
41     return celsius, humidity
42
43
44 def main():
45     sensor = GroveTemperatureHumiditySensorSHT3x()
46     while True:
47         temperature, humidity = sensor.read()
48
49         print('Temperature in Celsius is {:.2f} C'.format
50         print('Relative Humidity is {:.2f} %'.format(hum
51
52         time.sleep(1)
53
54 if __name__ == "__main__":
55     main()

```



Success

If everything goes well, you will be able to see the following result

```

1 pi@raspberrypi:~/grove.py/grove $ python grove_I2C_High_Accuracy_tem_hum_SHT35_sensor.py
2 Temperature in Celsius is 20.47 C
3 Relative Humidity is 40.28 %
4 Temperature in Celsius is 20.47 C
5 Relative Humidity is 40.47 %
6 Temperature in Celsius is 20.47 C
7 Relative Humidity is 40.70 %
8 Temperature in Celsius is 20.43 C
9 Relative Humidity is 40.70 %
10 Temperature in Celsius is 20.41 C
11 Relative Humidity is 40.60 %
12 ^CTraceback (most recent call last):
13   File "grove_I2C_High_Accuracy_tem_hum_SHT35_sensor.py"
14     main()
15   File "grove_I2C_High_Accuracy_tem_hum_SHT35_sensor.py"
16     time.sleep(1)

```


17 KeyboardInterrupt

You can quit this program by simply press `Ctrl + C`.

Schematic Online Viewer



Resources

- **[Zip]** [Grove - I2C High Accuracy Temp&Humi Sensor\(SHT35\) Eagle Files](https://files.seeedstudio.com/wiki/Grove-I2C_High_Accuracy_Temp-Humi_Sensor-SHT35/res/Grove%20-%20I2C%20High%20Accuracy%20Temp%26Humi%20Sensor%20(SHT35).zip) [https://files.seeedstudio.com/wiki/Grove-I2C_High_Accuracy_Temp-Humi_Sensor-SHT35/res/Grove%20-%20I2C%20High%20Accuracy%20Temp%26Humi%20Sensor%20(SHT35).zip]
- **[Zip]** [Seeed SHT35 Library](https://github.com/Seeed-Studio/Seeed_SHT35/archive/master.zip) [https://github.com/Seeed-Studio/Seeed_SHT35/archive/master.zip]
- **[PDF]** [Datasheet SHT3x-DIS](https://files.seeedstudio.com/wiki/Grove-I2C_High_Accuracy_Temp-Humi_Sensor-SHT35/res/Datasheet%20SHT3x-DIS.pdf) [https://files.seeedstudio.com/wiki/Grove-I2C_High_Accuracy_Temp-Humi_Sensor-SHT35/res/Datasheet%20SHT3x-DIS.pdf]

Projects

Transportation data visualization with Google Map: We use the Wio LTE cat.1 to monitor transportation GPS and other info. For cold chain, we can monitor the GPS location together with temperature and humidity. For the bicycling, we can monitor the GPS location together with the hear rate.

404 Not Found

openresty

Tech Support

Please do not hesitate to submit the issue into our [forum](https://forum.seeedstudio.com/)

[<https://forum.seeedstudio.com/>]



[https://www.seeedstudio.com/act-4.html?utm_source=wiki&utm_medium=wikibanner&utm_campaign=newproducts]