Grove Indoor Environment Kit for Intel® Edison

Release date： 2015/10/12

Version： 1.0

Wiki:

http://www.seeedstudio.com/wiki/Grove_Indoor_Environment_Kit_for_Edison

Bazaar: http://www.seeedstudio.com/depot/Grove-Indoor-Environment-Kit-for-Intel-Edison-p-2427.html

Document Revision History

Revision	Date	Author	Description
1.0	Oct 12, 2015	Loovee	Create file

Contents

Disclaimer

For physical injuries and possessions loss caused by those reasons which are not related to product quality, such as operating without following manual guide, natural disasters or force majeure, we take no responsibility for that.

Under the supervision of Seeed Technology Inc., this manual has been compiled and published which covered the latest product description and specification. The content of this manual is subject to change without notice.

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1. Introduction

Grove Indoor Environment Kit for Edison makes it easy to create complete indoor environment applications with Intel Edison and Arduino Breakout Board. With the Base Shield V2, developer can plug up to 11 different Grove sensors & actuators quickly. We provide cool demo code which will be constantly updated, and it will be very easy to operate these sensors & actuators without any programming experience.

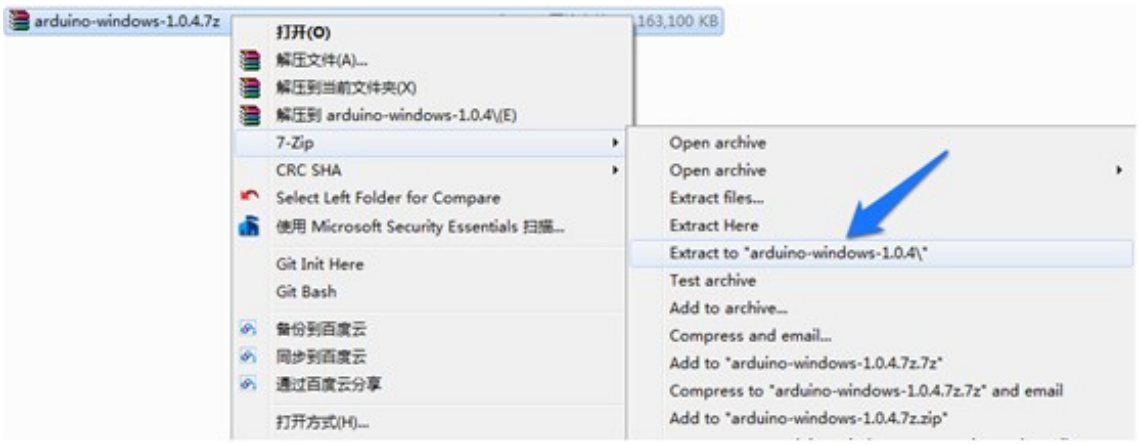
2. What's included in the kit?

- Base Shield V2 x1
- Grove - Tempture&Humidity Sensor (High-Accuracy &Mini) x1
- Grove - Moisture sensor x1
- Grove - Light Sensor x1
- Grove - UV Sensor x1
- Grove - PIR Motion Sensor x1
- Grove - Encoder x1
- Grove - Button x1
- Grove - LCD RGB Backlight x1
- Grove - Relay x1
- Grove - Servo x1
- Grove - Buzzer x1
- 9V to Barrel Jack Adapter x1
- 26AWG Grove Cable x10
- USB Cable x1

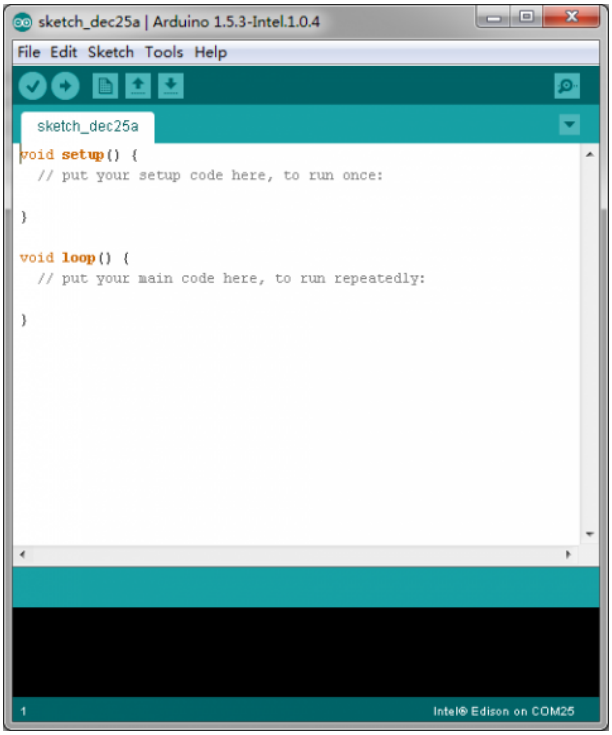
3. Installing Edison Arduino IDE

Refer to Intel Edison offical site: Edison Getting Started Guide

1. Download the Edison Arduino IDE.(Note: Select your OS.)
2. Navigate to the folder where you downloaded the .zip Edison Arduino IDE
3. Right click on the .7z file,highlight “7-zip”, and select “Extract to “arduino-…”



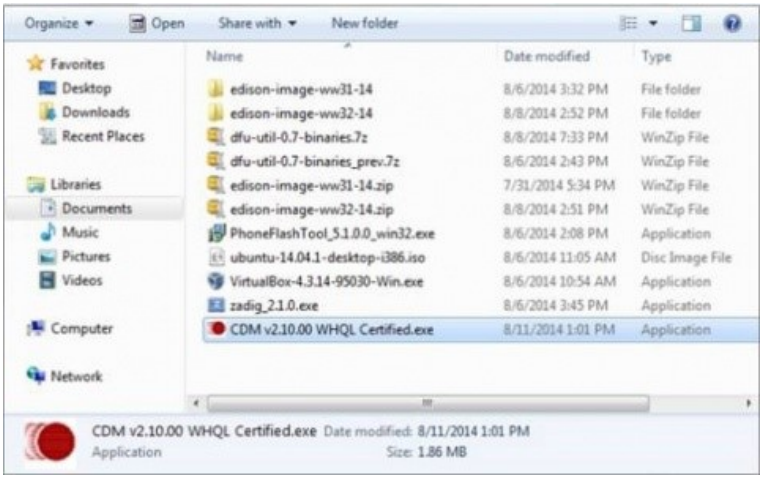
4. Click through the folder that was created until you see the IDE “arduino.exe” file.Double-click this file and this window should open.



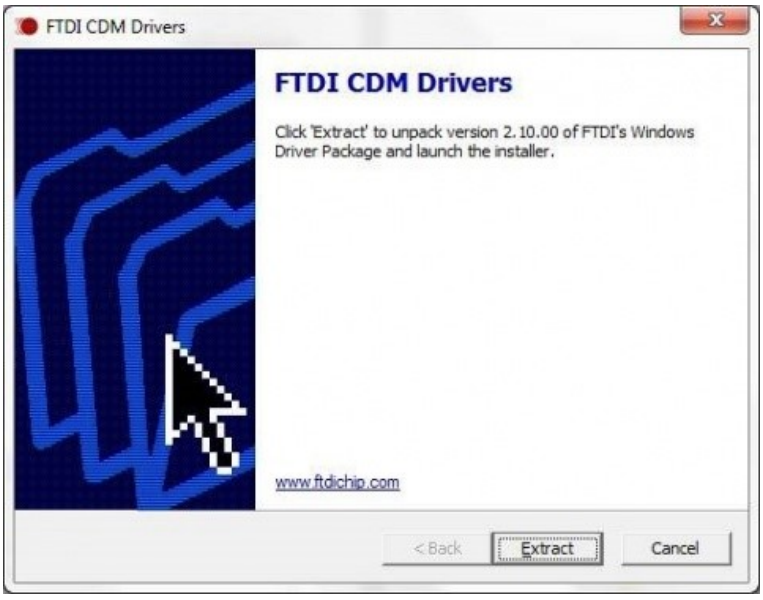
4. Install required drivers

1. Download FTDI drivers

2. Right-click the .exe file you downloaded, which should be called “CDM…” and select “Run as administrator”.



3. Click “Extract”.



4. Click “Next”.

5. Click “Finish” when you see this screen.

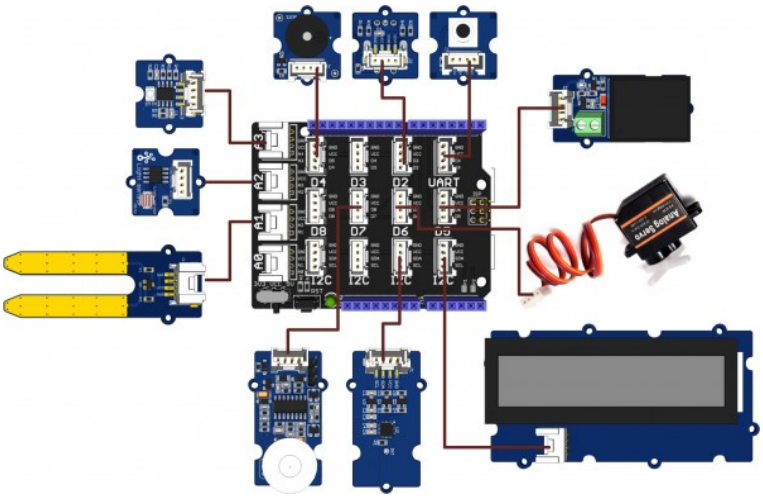
6. Download Intel Edison Drivers to install the required RNDIS, CDC, and DFU drivers.

7. Double-click the .exe file to begin the install.

5. Hardware connection

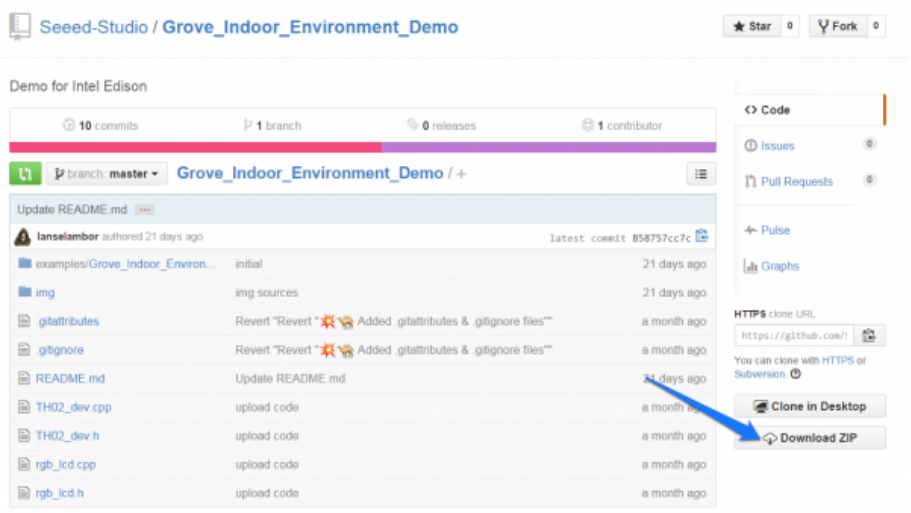
Using 26AWG Grove Cable making the following connections:

Grove Modules	Connected to
Temperature&Humidity Sensor	I2C
Moisture Sensor	A1
Light Sensor	A2
UV Sensor	A3
PIR Motion Sensor	D7
Encoder	D2
Button	UART(D1)
LCD RGB Backlight	I2C
Relay	D5
Servo	D6
Buzzer	D4

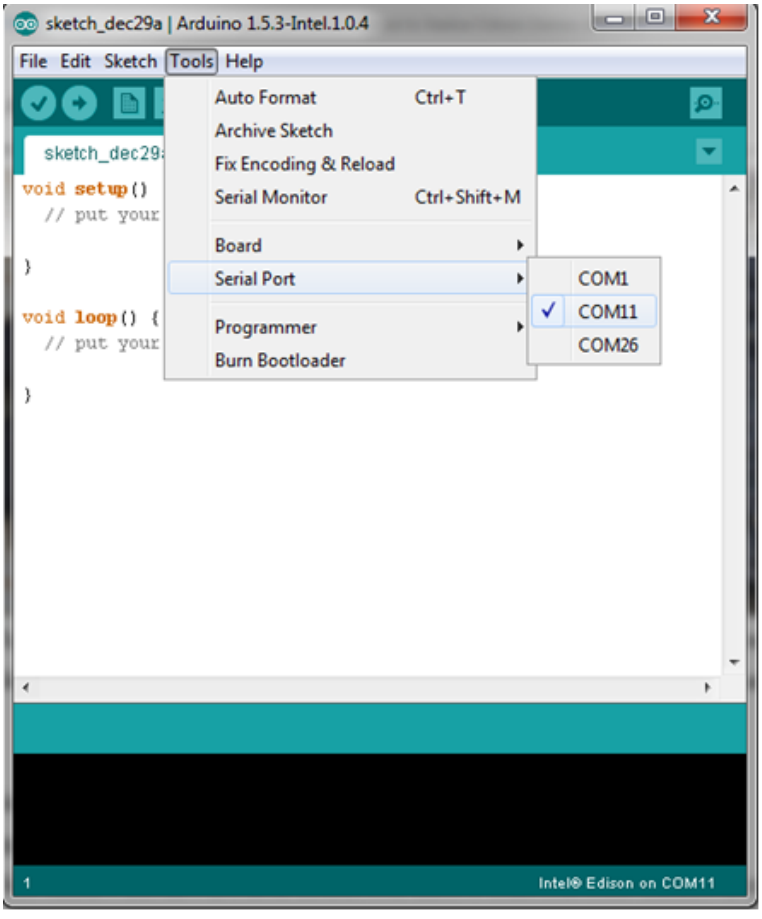

A3
A2
A1
A0
D1
D3
D2
UART
D8
D7
D6
I2C
I2C
I2C
Analog Servo

6. Running Example

1. Open the web site: Grove_Indoor_Environment_Demo to download the whole project.



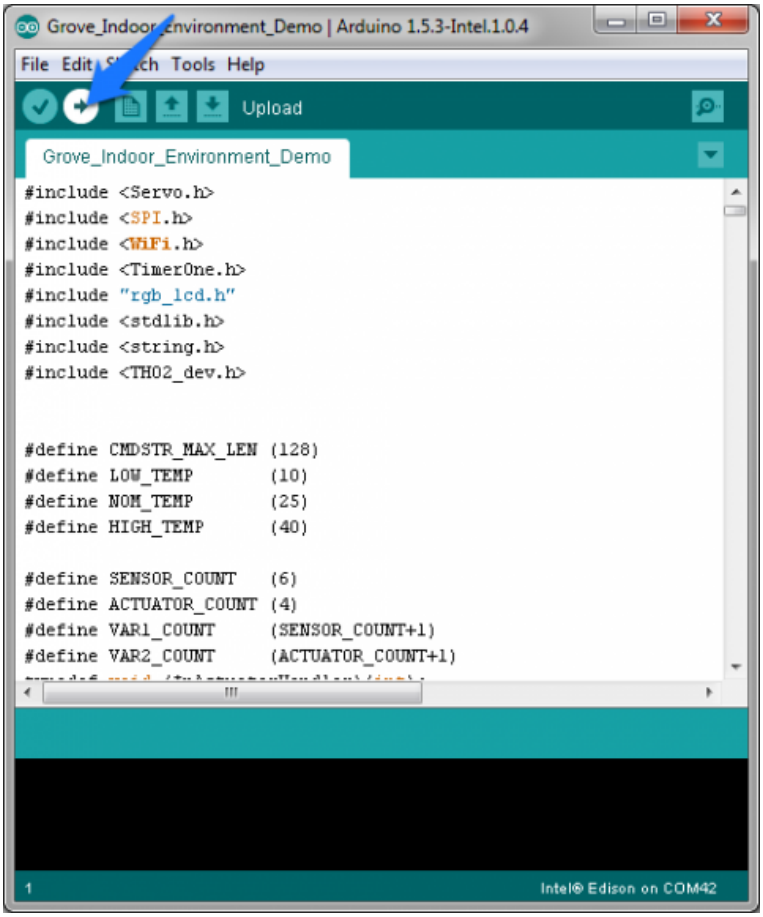
2. Click **Tools > Serial Port** and select the Com # that the Intel Edison is connected to



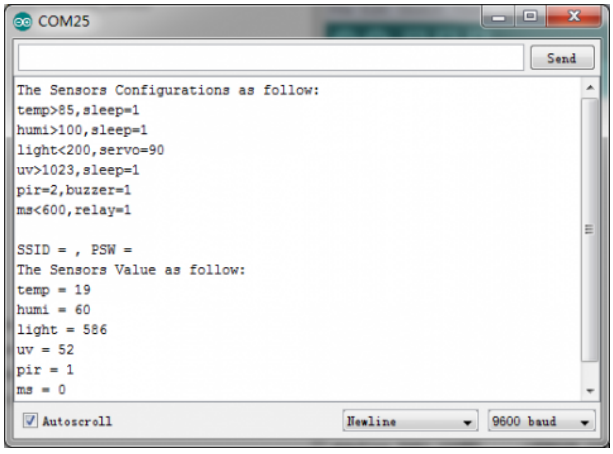
3. Click Sketch>Import Library…>Add Library and import the library downloaded at **step 1**

4. Click File>Examples > Grove_Indoor_Environment_Demo and select the demo

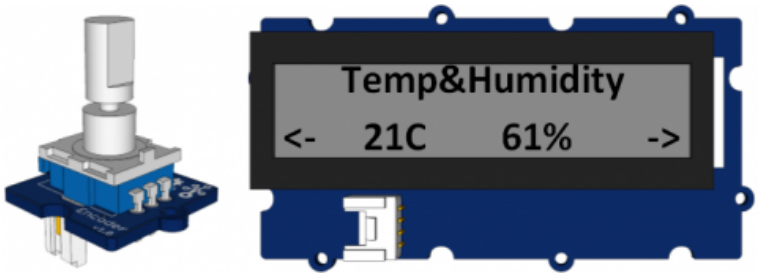
Click upload icon



4. Open **Serial Monitor**, it will print the sensors' information:



Rotate the Encoder to check the sensor value on the LCD.



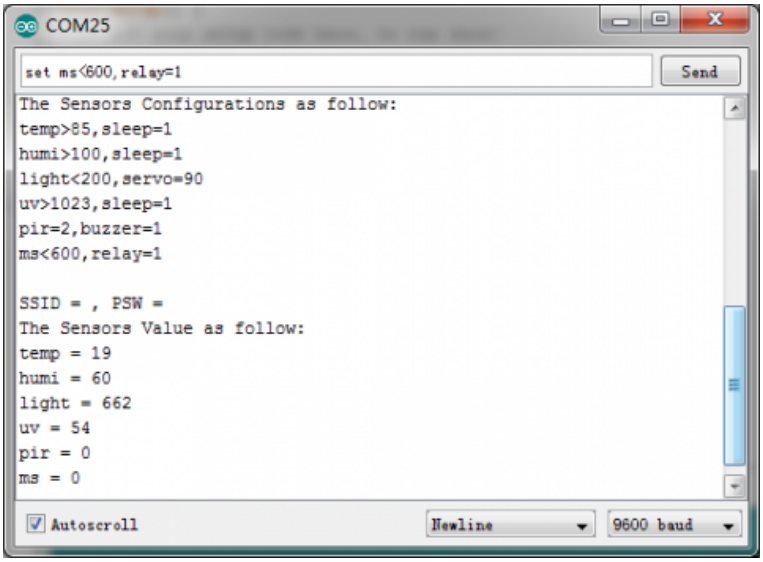
7. In the **“Send TextBox”**, you can enter the following command to operate the sensors and actuators:

set [sensor][condition:>, < or =][threshold],[actuator]=[action]

Example	Description
set temp>40, relay=1	if temperature is higher than 40℃, the relay opens.
set temp>40, sleep=1	if temperature is >40℃, nothing to do.
set humi>60, buzzer=1	if humidity is >60%, the buzzer beeps.
set light>600, servo=90	if light intensity is >600, the servo truns 90°.
set uv>80, relay=0	if UV intensity is >80, the relay closes.
set pir=1, buzzer=1	if people detected, the buzzer beeps.
set ms>40, relay=1	if moisture is >40, the relay opens.
set ssid=name, psw=password	set the wifi SSID and Password.you can open a web browser, and go to the IP address displayed on the Serial Monitor or LCD. The default port is 88. he default port is 88. Such as: 192.168.1.101:88

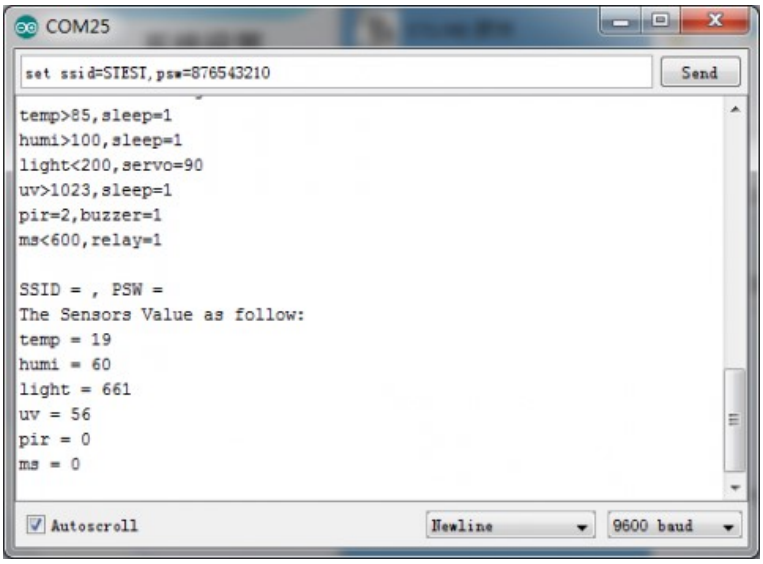
Note:

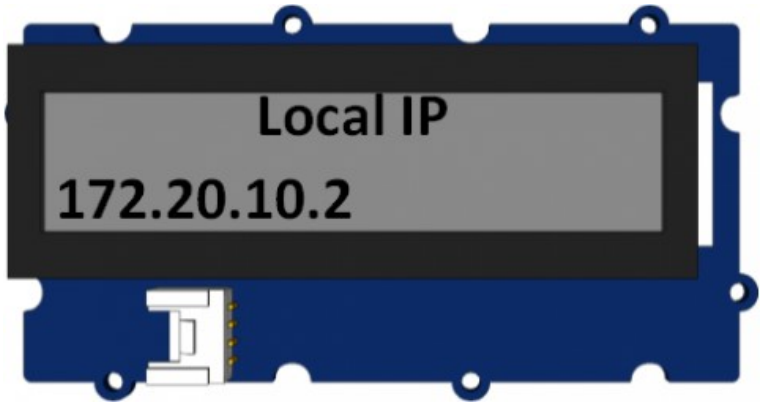
- The command should be ended with ‘/n’, so **“NewLine”** (in the Serial Monitor) should be selected.
- A actuator can only be controlled by a sensor. If A sensor wants to control a actuator(has be controlled by B sensor), B sensor should be set sleep.



8. WiFi connection. open the Serial Monitor, and set your ssid and password(as below). Check the local IP on the LCD or Serial Monitor. On a device connected on the same network, open a web browser, and go to the IP address above, you can see the sensor value.

Note: When visiting the web server, a port number(88)should be added,such as: 172.20.10.2:88.





Grove Indoor Environment Kit for Edison

temp = 19

humi = 43

light = 685

uv = 55

pir = 0

ms = 0

7. Resource

- Grove Indoor Environment Kit Source Code
- Edison Getting Started Guide
- Intel Edison Software & Documentation