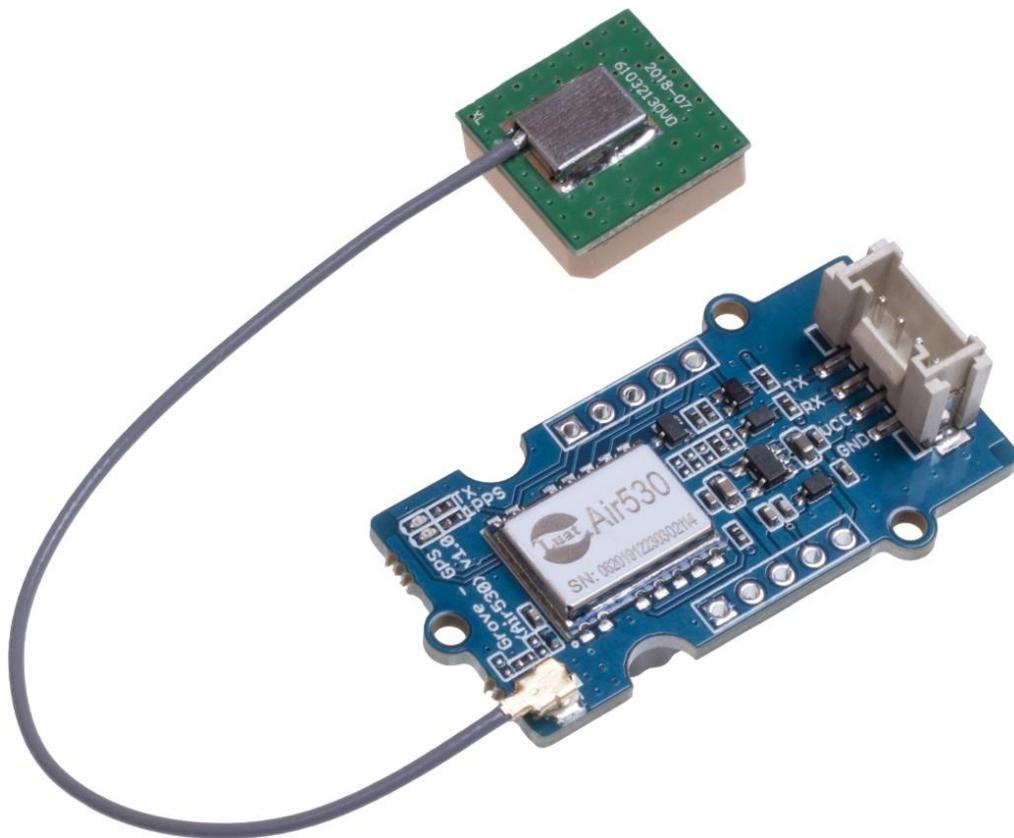


Grove - GPS (Air530)



Confused of your GPS not working well in urbans or outsides under only one or few statelite module? Then you should not miss our new Grove-GPS (Air530). It's a high-performance, highly integrated multi-mode statelite positioning and navigation module. It supports GPS / Beidou / Glonass / Galileo / QZSS / SBAS, which makes it suitable for GNSS positioning applications such as car navigation, smart wear and drone.

TIP

We've released the [Seed GPS Modules Selection Guide] (<https://wiki.seeedstudio.com/GPS-Modules-Selection-Guide/>), it will help you choose the GPS Module that best suits your needs.

Features

- ◆ Cost-effective
- ◆ Highly integrated Multi-mode statelite positioning and navigation
- ◆ Compact size for easy deployment
- ◆ Tiny volume and low power consumption



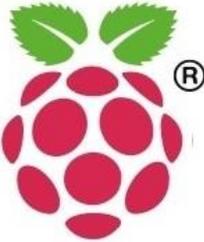
TIP

More details about Grove modules please refer to [Grove System] (https://wiki.seeedstudio.com/Grove_System/)

Specifications

Parameter	Value
Supply voltage	3.3V/5V
Working current	up to 60mA
Time of warm start	4s
Time of cold boot	30s

Platforms Supported

Arduino	Raspberry Pi
	

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

NOTE

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

Play With Arduino

This sample simply reads from the GPS by using software serial and sends it back on the serial port.

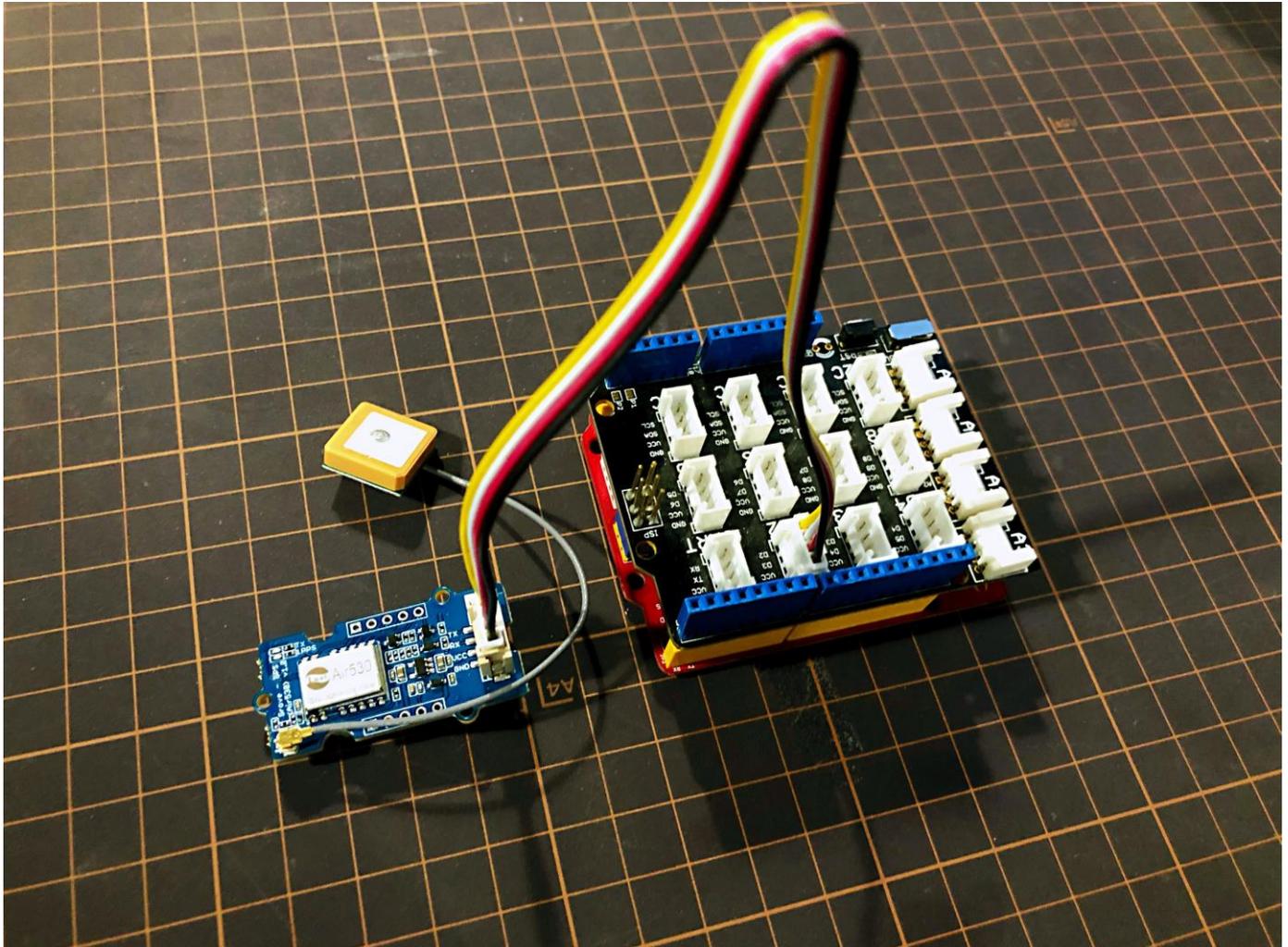
Hardware

- ◆ **Step 1.** Prepare the below stuffs:

Seeeduino V4.2	Base Shield	Grove - GPS (Air530)
		
Get One Now	Get One Now	Get One Now

- ◆ **Step 2.** Connect Grove - GPS to port **D2** of Grove-Base Shield.
- ◆ **Step 3.** Plug Grove - Base Shield into Seeeduino.
- ◆ **Step 4.** Connect Seeeduino to PC via a USB cable.

[Grab your reader's attention with a great quote from the document or use this space to emphasize a key point. To place this text box anywhere on the page, just drag it.]



i NOTE

If we don't have Grove Base Shield, We also can directly connect Grove - GPS to Seeedunoas below.

Seeeduino	Grove - GPS
5V	Red
GND	Black
D3	White
D2	Yellow

Software

NOTE

Please note that the u-center software is for windows only.

- **Step 1.** Install [u-center](#) software.
- **Step 2.** Copy the code into Arduino IDE and upload. If you do not know how to upload the code, please check [how to upload code](#).

```
#include <SoftwareSerial.h>
SoftwareSerial SoftSerial(2, 3);
unsigned char buffer[64];           // buffer array for data receive
over serial port
int count=0;                       // counter for buffer array
void setup()
{
    SoftSerial.begin(9600);        // the SoftSerial baud rate
    Serial.begin(9600);           // the Serial port of Arduino baud
rate.
}

void loop()
{
    if (SoftSerial.available())    // if date is coming from
software serial port ==> data is coming from SoftSerial shield
    {
```

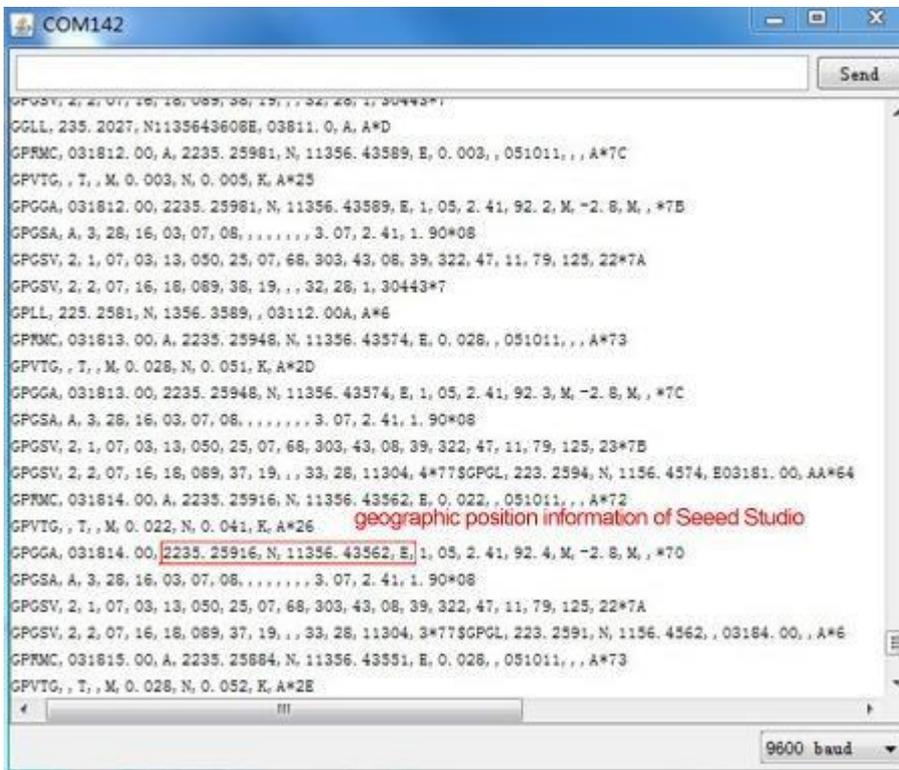
```

        while(SoftSerial.available())           // reading data into char
array
    {
        buffer[count++]=SoftSerial.read();     // writing data into array
        if(count == 64)break;
    }
    Serial.write(buffer,count);                // if no data transmission
ends, write buffer to hardware serial port
    clearBufferArray();                       // call clearBufferArray
function to clear the stored data from the array
    count = 0;                                // set counter of while
Loop to zero
    }
    if (Serial.available())                    // if data is available on
hardware serial port ==> data is coming from PC or notebook
    SoftSerial.write(Serial.read());          // write it to the SoftSerial
shield
}

void clearBufferArray()                       // function to clear buffer array
{
    for (int i=0; i<count;i++)
    {
        buffer[i]=NULL;
    }                                           // clear all index of array with command NULL
}

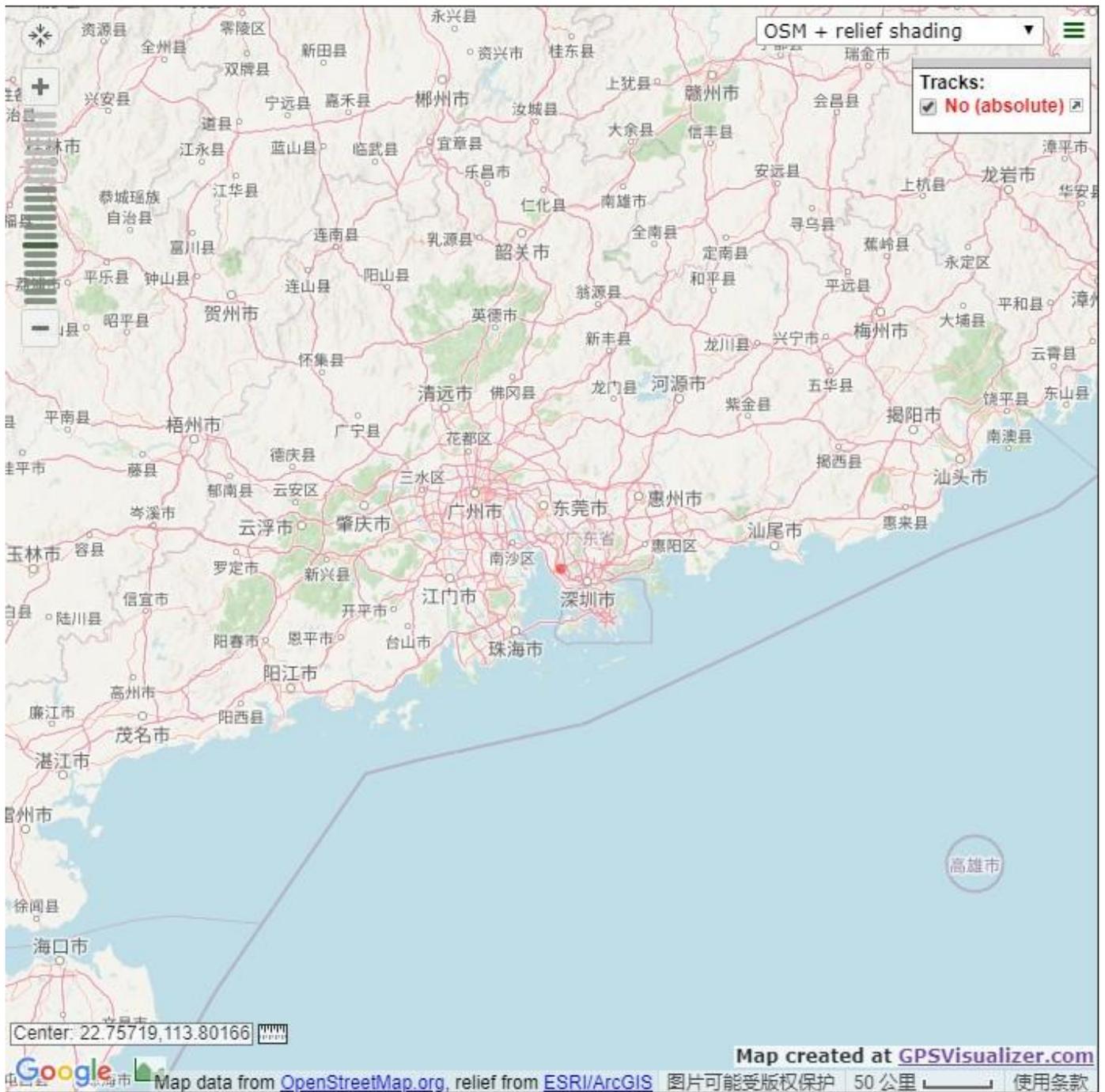
```

- ◆ **Step 3.** Open U-center.
- ◆ **Step 4.** Click Receiver -> Port and select the COM port that the Arduino is using.
- ◆ **Step 5.** Click Receiver -> Baudrate and make sure 9600 is selected.
- ◆ **Step 6.** Click View -> Text Console and you should get a window that will stream NMEA data.
- ◆ **Step 7.** Open the serial monitor, You can see as show below:



We also can view data in Google Earth:

- ◆ **Step 1.** Click File -> Database Export -> Google Earth KML
- ◆ **Step 2.** This should launch Google Earth with the history that was captured by u-center.
- ◆ **Step 3.** Alternatively, data can be recorded by pressing the red circle on the toolbar which will then ask where you want to save the record.
- ◆ **Step 4.** When we have captured enough data, click the black square to stop recording.
- ◆ **Step 5.** We can then convert the .ubx file generated to KML by using uploading the ubx file to [GPSVisualizer](#), and the location (Red spot) would be shown on the map as following:



(i) NOTE

Tests would rather be taken outdoors to avoid location inaccuracy caused by bad signal transmission.

Schematic Online Viewer

The screenshot displays the Schematic Online Viewer interface. At the top, there are navigation tabs for 'SCH', 'PCB', and '3D', along with icons for search, refresh, download, and share. The main content area is divided into two sections. The top section shows a schematic diagram of a GPS module circuit, featuring a central microcontroller (likely the GPS module) connected to various components like resistors, capacitors, and a power supply. The bottom section shows a detailed schematic diagram of the same circuit, with components labeled and connected to a power supply. Both sections include a 'Seed Studio' logo and a table with columns for 'Name', 'Value', and 'Units'. The table in the top section is empty, while the table in the bottom section contains data for various components. In the bottom left corner, there is a logo for 'ALTIUM 365'.

Resources

- [\[ZIP\] GPS Schematic\(PDF\)](#)
- [\[PDF\] Air 530 User Booklet](#)