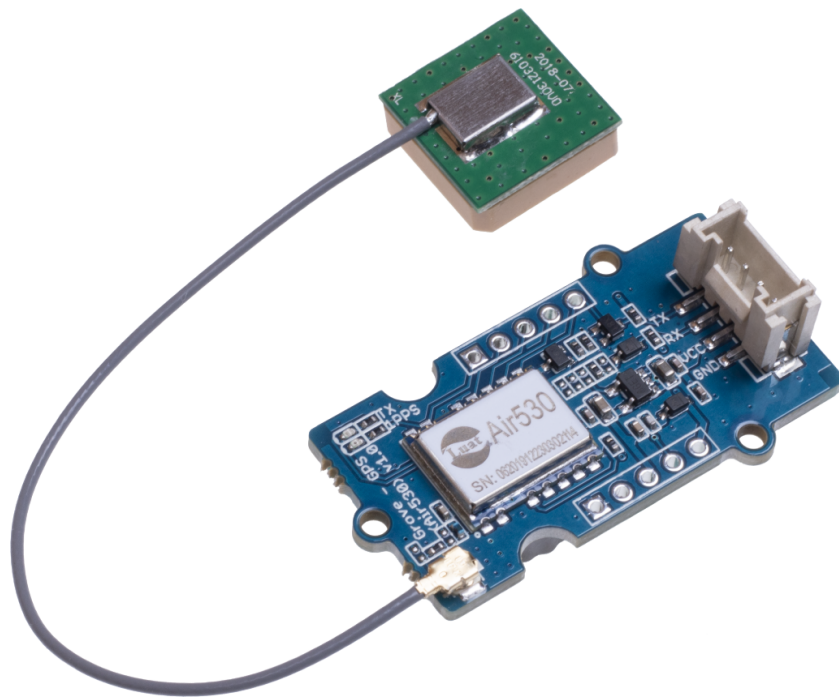


Grove - GPS (Air530)



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.

[Get One Now !\[\]\(99f58673407353e96a019fbca558fd72_img.jpg\)](#)

[<https://www.seeedstudio.com/Grove-GPS-Air530-p-4584.html>]



Tip

We've released the [Seeed 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

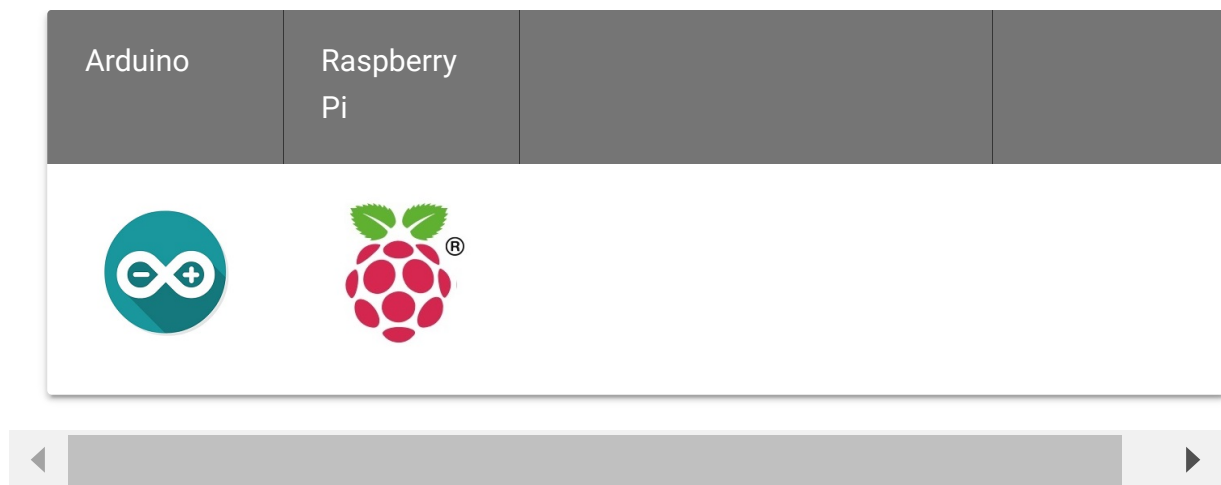
More details about Grove modules please refer to [Grove System](#)

[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



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/) [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

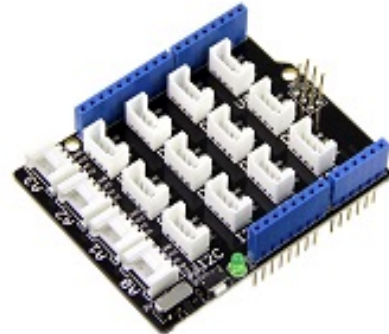
- **Step 1.** Prepare the below stuffs:

Seeeduino V4.2

[Get One Now](https://www.seeedstudio.com/Seeeduino-V4.2-p-2517.html)

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

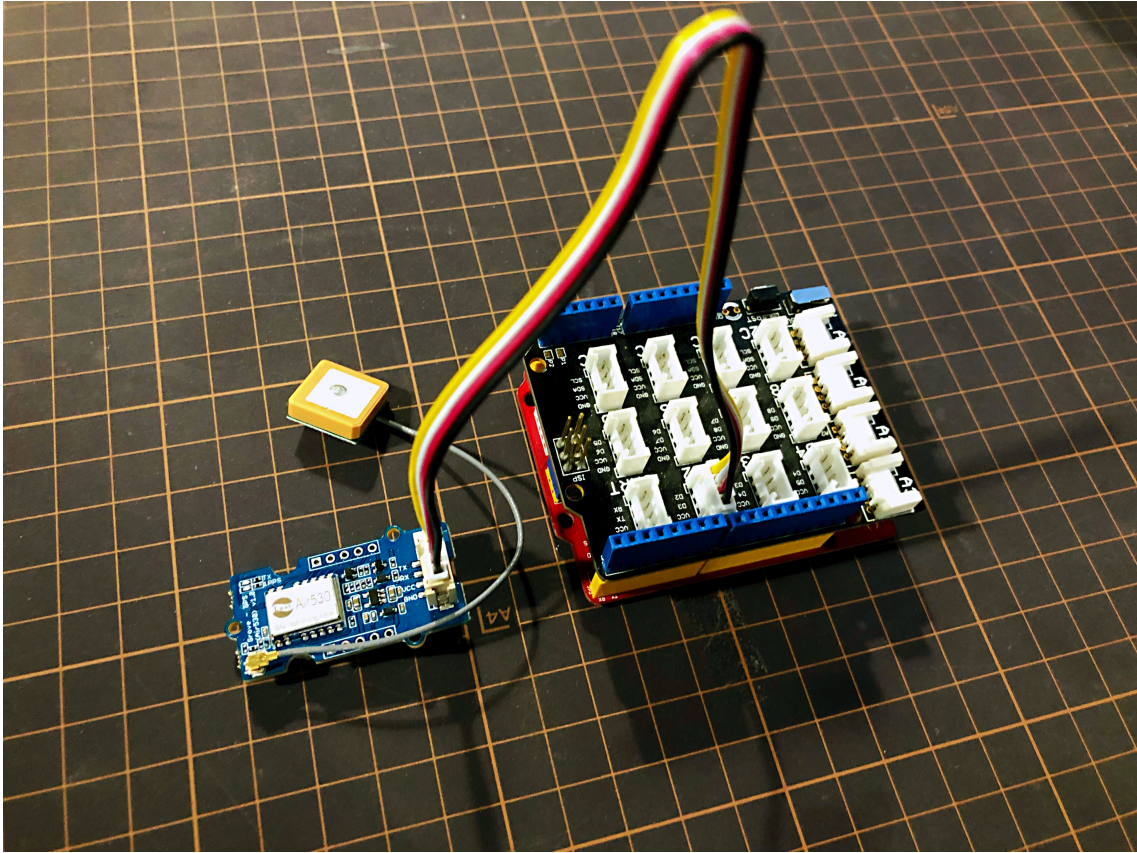
Base Shield

[Get One Now](https://www.seeedstudio.com/Base-Shield-V2-p-1378.html)

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

- **Step 2.** Connect Grove - GPS to port **D2** of Grove-Base Shield.
- **Step 3.** Plug Grove - Base Shield into Seeeduino.

- **Step 4.** Connect Seeduino to PC via a USB cable.

**Note**

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

Seeduino	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](https://www.u-blox.com/en/product/u-center-windows) [https://www.u-blox.com/en/product/u-center-windows] 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](https://wiki.seeedstudio.com/Upload_Code/) [https://wiki.seeedstudio.com/Upload_Code/].

```
1  #include <SoftwareSerial.h>
2  SoftwareSerial SoftSerial(2, 3);
3  unsigned char buffer[64];           // buffer array
4  int count=0;                       // counter for buffer
5  void setup()
6  {
7      SoftSerial.begin(9600);        // the SoftSerial
8      Serial.begin(9600);           // the Serial
9  }
10
11 void loop()
12 {
13     if (SoftSerial.available())     // if data is available
14     {
15         while(SoftSerial.available()) // read all available data,
16         {
17             buffer[count++]=SoftSerial.read(); // write to buffer
18             if(count == 64)break;
19         }
20         Serial.write(buffer, count); // if data is available to write
21         clearBufferArray();         // clear buffer
22         count = 0;                 // set counter to 0
23     }
24     if (Serial.available())         // if data is available to read
25     SoftSerial.write(Serial.read()); // write it to u-center
26 }
```

```
27
28
29 void clearBufferArray() // function
30 {
31     for (int i=0; i<count;i++)
32     {
33         buffer[i]=NULL;
34     } // clear all index of array w
35 }
```

- **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:

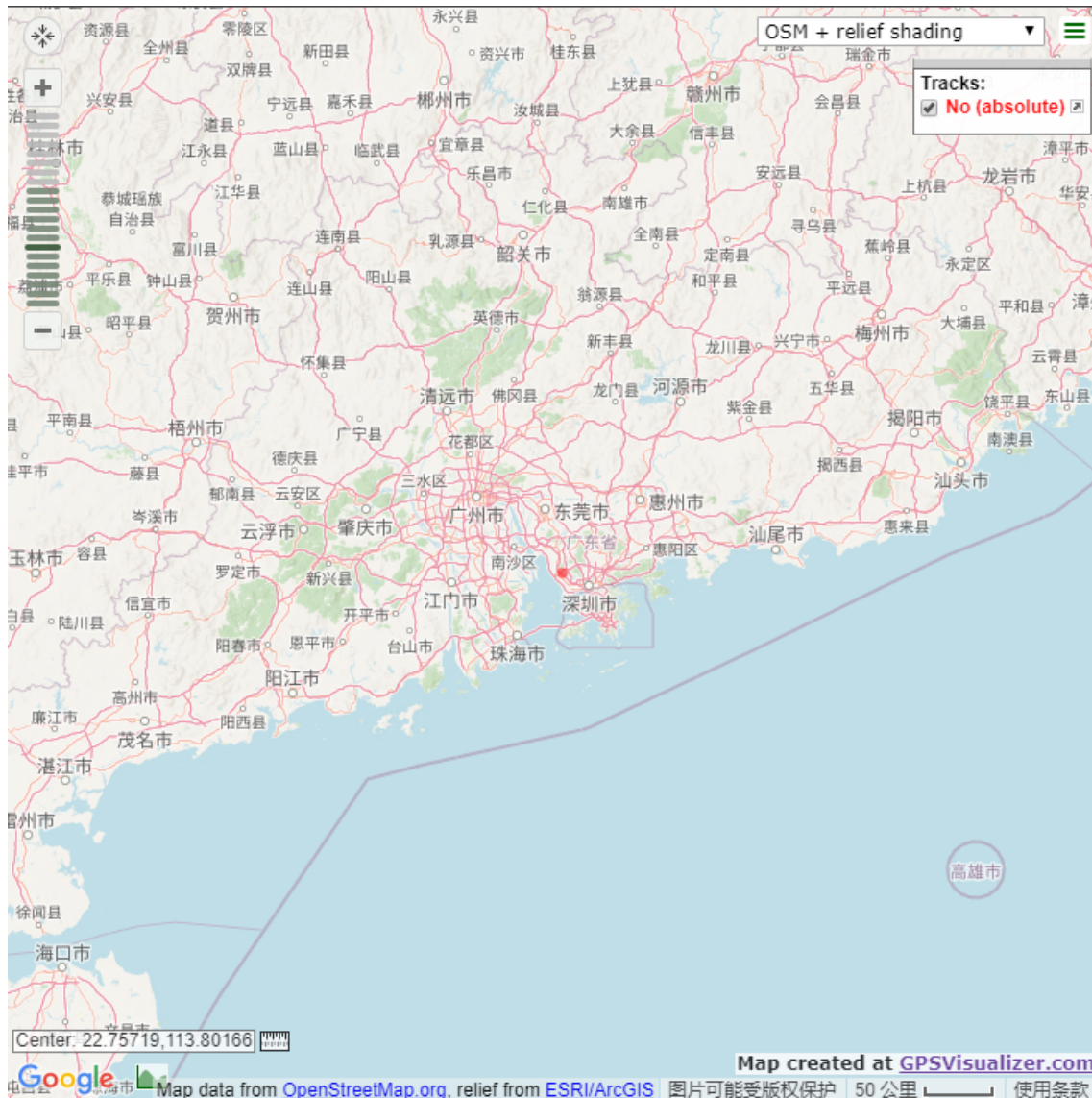
```

COM142
GPGSV, 2, 2, 07, 16, 18, 089, 38, 19, , , 32, 28, 1, 30443*7
GGLL, 235.2027, N, 1135643608E, 03811.0, A, A*D
GPRMC, 031812.00, A, 2235.25981, N, 11356.43589, E, 0.003, 051011, , , A*7C
GPVTG, , T, , M, 0.003, N, 0.005, K, A*25
GPGGA, 031812.00, 2235.25981, N, 11356.43589, E, 1.05, 2.41, 92.2, M, -2.8, M, , *7B
GPGSA, A, 3, 28, 16, 03, 07, 08, , , , , , 3.07, 2.41, 1.90*08
GPGSV, 2, 1, 07, 03, 13, 050, 25, 07, 68, 303, 43, 08, 39, 322, 47, 11, 79, 125, 22*7A
GPGSV, 2, 2, 07, 16, 18, 089, 38, 19, , , 32, 28, 1, 30443*7
GPLL, 225.2581, N, 1356.3589, , 03112.00A, A*6
GPRMC, 031813.00, A, 2235.25948, N, 11356.43574, E, 0.028, 051011, , , A*73
GPVTG, , T, , M, 0.028, N, 0.051, K, A*2D
GPGGA, 031813.00, 2235.25948, N, 11356.43574, E, 1.05, 2.41, 92.3, M, -2.8, M, , *7C
GPGSA, A, 3, 28, 16, 03, 07, 08, , , , , , 3.07, 2.41, 1.90*08
GPGSV, 2, 1, 07, 03, 13, 050, 25, 07, 68, 303, 43, 08, 39, 322, 47, 11, 79, 125, 23*7B
GPGSV, 2, 2, 07, 16, 18, 089, 37, 19, , , 33, 28, 11304, 4*77SCPGL, 223.2594, N, 1156.4574, E, 03181.00, AA*64
GPRMC, 031814.00, A, 2235.25916, N, 11356.43562, E, 0.022, 051011, , , A*72
GPVTG, , T, , M, 0.022, N, 0.041, K, A*26
GPGGA, 031814.00, 2235.25916, N, 11356.43562, E, 1.05, 2.41, 92.4, M, -2.8, M, , *70
GPGSA, A, 3, 28, 16, 03, 07, 08, , , , , , 3.07, 2.41, 1.90*08
GPGSV, 2, 1, 07, 03, 13, 050, 25, 07, 68, 303, 43, 08, 39, 322, 47, 11, 79, 125, 22*7A
GPGSV, 2, 2, 07, 16, 18, 089, 37, 19, , , 33, 28, 11304, 3*77SCPGL, 223.2591, N, 1156.4562, 03184.00, , A*6
GPRMC, 031815.00, A, 2235.25884, N, 11356.43551, E, 0.028, 051011, , , A*73
GPVTG, , T, , M, 0.028, N, 0.052, K, A*2E
9600 baud

```

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](http://www.gpsvisualizer.com/) [http://www.gpsvisualizer.com/], and the location (Red spot) would be shown on the map as following:



Attention

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

Schematic Online Viewer



Resources

- **[ZIP]** [GPS Schematic\(PDF\)](https://files.seeedstudio.com/wiki/Grove-GPS_Air_530/Grove-GPS_Air530_v1.0_.zip)
[https://files.seeedstudio.com/wiki/Grove-GPS_Air_530/Grove-GPS_Air530_v1.0_.zip]
- **[PDF]** [Air 530 User Booklet](https://files.seeedstudio.com/wiki/Grove-GPS_Air_530/Air530_GPS_User_Booklet.V1.7.pdf)
[https://files.seeedstudio.com/wiki/Grove-GPS_Air_530/Air530_GPS_User_Booklet.V1.7.pdf]

Projects

Project of GPS/GPRS Tracker: In this new project we will present our GPS Tracker connected using the GPRS technique and MQTT protocol.



Tech Support

Please submit any technical 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]