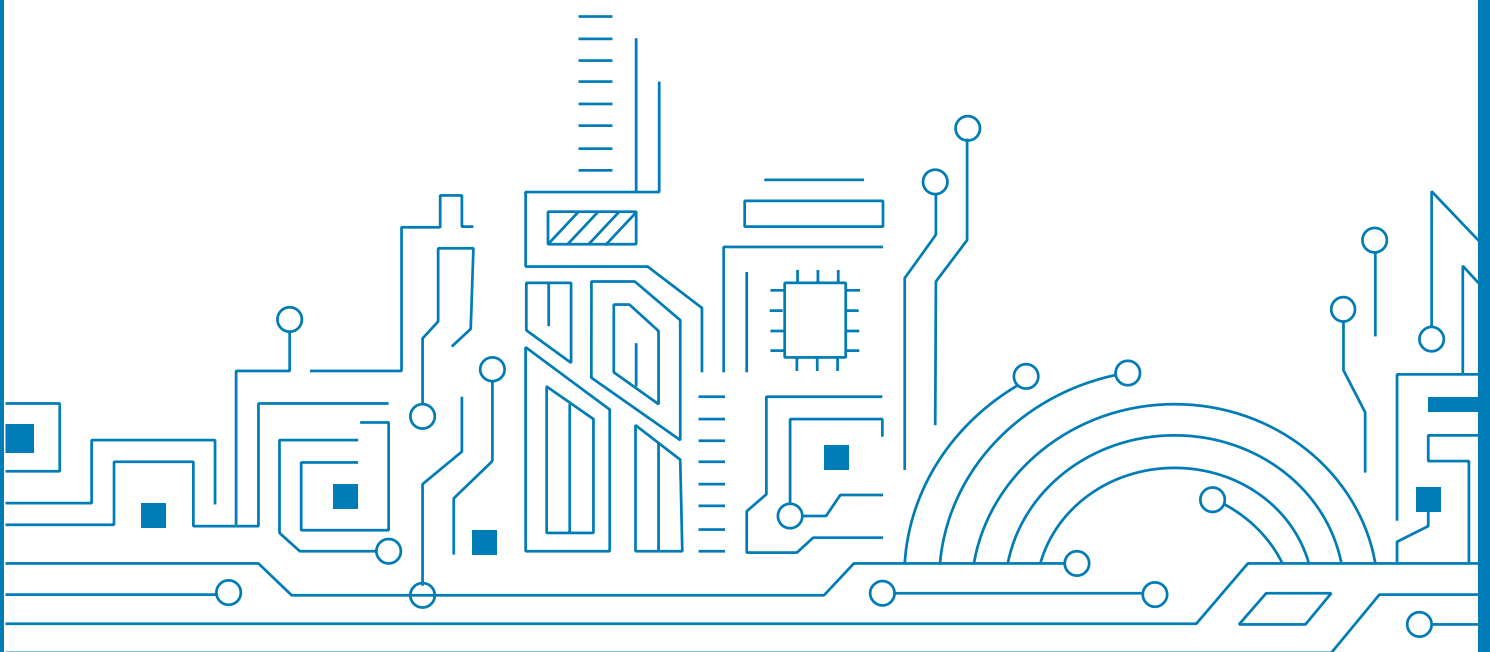


# TAU1312 RTK Rover

## Quick Start

V0.1



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# 1 CONDITIONS

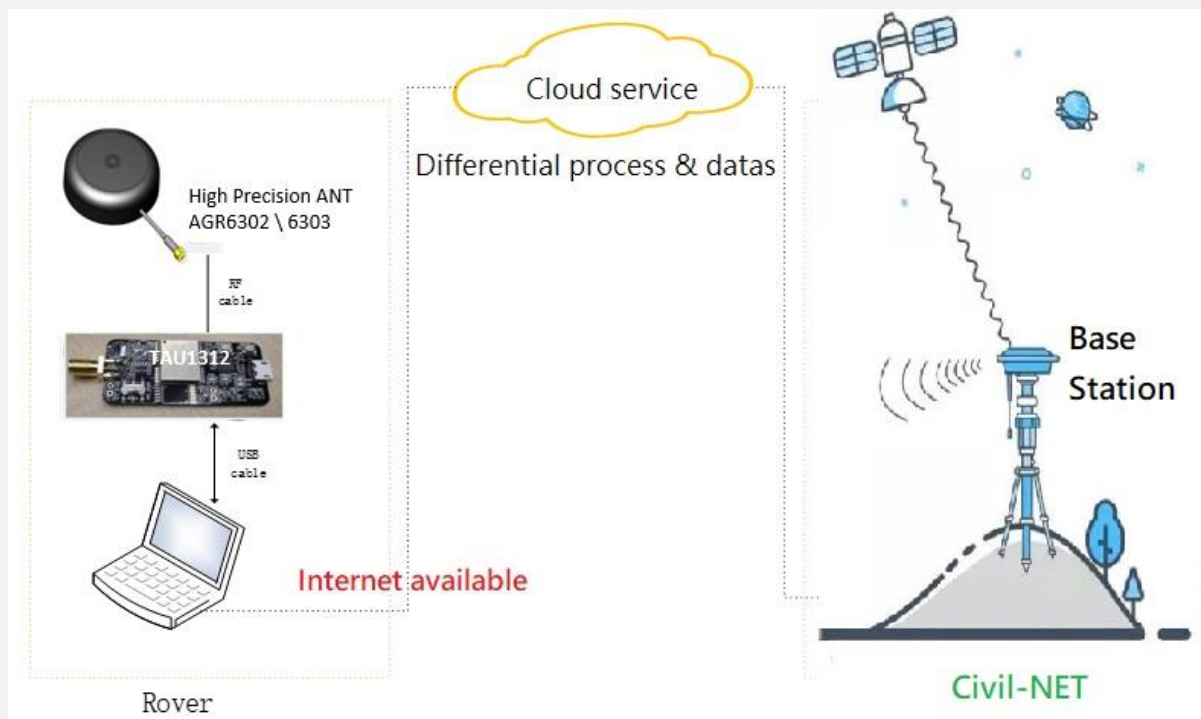
The RTK base station service is to collect the observation data of satellite and transmit correction data with RTCM format by Network to any RTK rover of GNSS receiver. Our Allystar RTK solution of GNSS modules can support to receive the latest RTCM V3.3 version.

Besides, the RTK base station service would be limited the available data in local station of country, only. Therefore you should get the setting account & password of base station from local telecommunication or land measurement of agency in your country, and it couldn't be using in oversea field testing.

For this example, the Civil-NET of RTK base service is only available testing in mainland Taiwan at present.

And please prepare 4 stuff as below reference then try to setup the field testing environment.

- TAU1312 EVK\* 1
- High precision GNSS antenna(ARG6302\ARG6303) \* 1
- Micro USB cable\* 1
- Laptop computer\* 1



## 2 APPLY FOR ACCOUNT

We had applied the RTK base station service of account & password with Civil NET Lab. company in Taiwan, they provide us with the NTRIP account & password as below example diagram.

Besides, our RTK GNSS module can support to receive the RTCM of base station setting by NTRIP & MQTT two ways. There will be detail setting description as below topic.

Account	Password	IP	Port	Reference	Format	Satellite
Example~ NET123ally	Example ~ 12345678	60.249.51.150	2101	VPOS	RTCM3, MSM4	All GNSS svstme
				VRS3.2	RTCM3, MSM4	All GNSS svstme
				VRS3.1	RTCM 3.1	GPS+GLONASS
				PRS01	RTCM 2.3	GPS+GLONASS
				PRS02	RTCM 3.0	GPS+GLONASS
				PRS03	RTCM 3.0(5Hz)	GPS+GLONASS
				FKP01	RTCM 2.3	GPS+GLONASS
				FKP3.1	RTCM 3.1	GPS+GLONASS
				CMR01	CMR	GPS+GLONASS
				CMR02	CMR+	GPS+GLONASS
DGPS	RTCM 2.3	GPS L1				

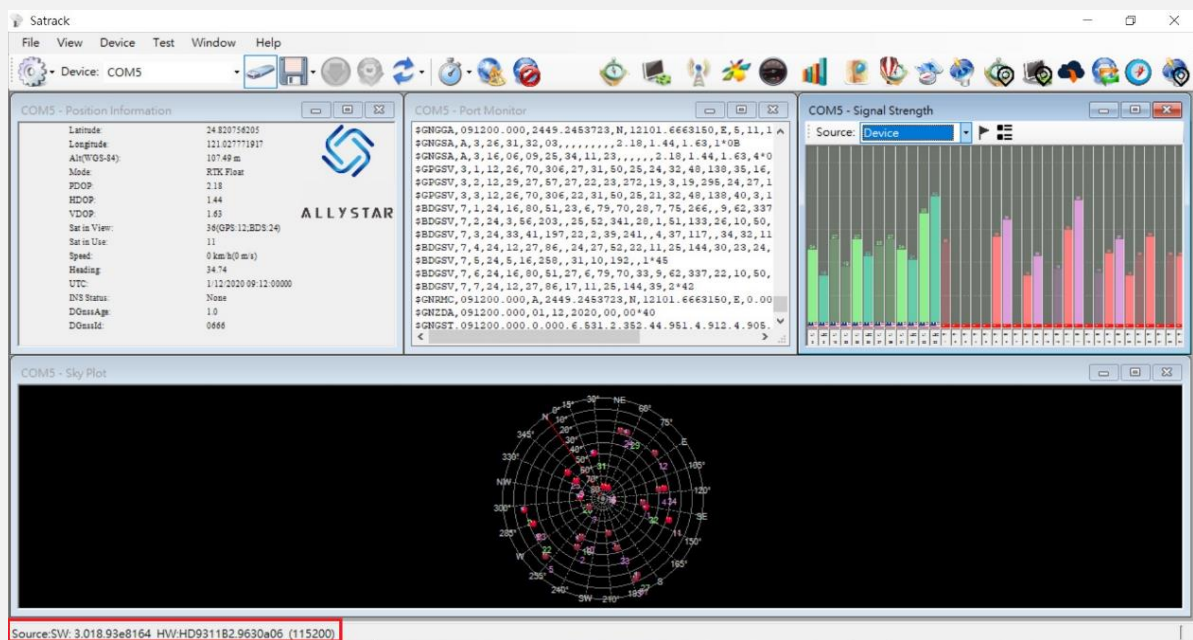
**Note:** Above information just introduce and describe for example, not real correct data.

## 3 CONNECTION CONFIGURATION

### 3.1 Connect to a NTRIP account

#### 1. Check firmware version

Please make sure you have got known the product model and the firmware version you are using before you use Allystar high precision positioning differential service. Allystar Satrack tool can help you get these product and firmware info as below red mark.



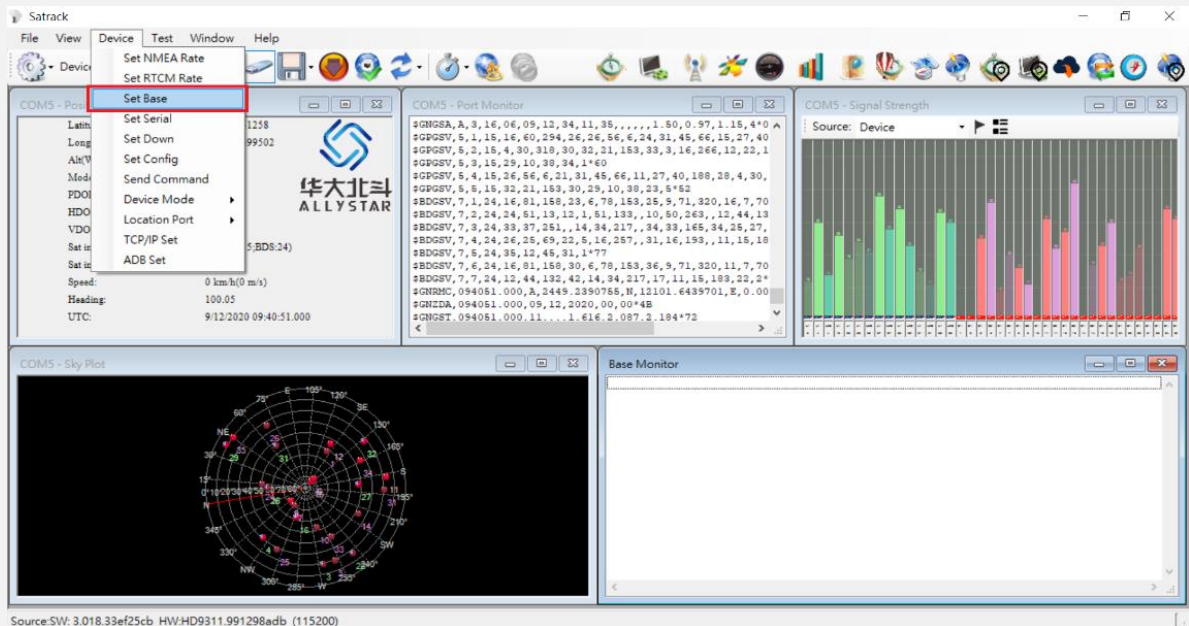
The screenshot shows the Satrack software interface with the following panels:

- COM5 - Position Information:** Displays location data such as Latitude (24.820756205), Longitude (121.027771917), Altitude (107.49 m), and various DOP values.
- COM5 - Port Monitor:** Shows a list of received data packets, including GNSS coordinates and RTCM correction data.
- COM5 - Signal Strength:** A bar chart showing the signal strength for various satellite channels.
- COM5 - Sky Plot:** A circular plot showing the positions of satellites in the sky.

A red box at the bottom of the interface highlights the source and hardware information: `Source: SW: 3.018.93e8164 HW: HD931182.9630a06 (115200)`.

## 2. Set Base info

Go to menu **Device > Set Base** to do the Base setting.



The Base setting of 3 ways description:

- NTRIP & MQTT: Both are network communication setting of internet, you can use one of them to set. For our example is using NTRIP account & password.
  - Board: It is using the RTK simulator device send the RTCM information by serial com port.
- Please enter the NTRIP account & password as same as “topic 2 APPLY FOR ACCOUNT” information into below red mark.

Base Set

NTRIP  
  Board  
  MQTT

**Ntrip Settings**

Address:

Port:

Username:

Password:

Mountpoint:

**Board Settings**

ComPort:

Baud:

**X/Y/Z-ECEF**

X:

Y:

Z:

Latitude:

Longitude:

Altitude:

**Ntrip Location Settings**

Latitude:

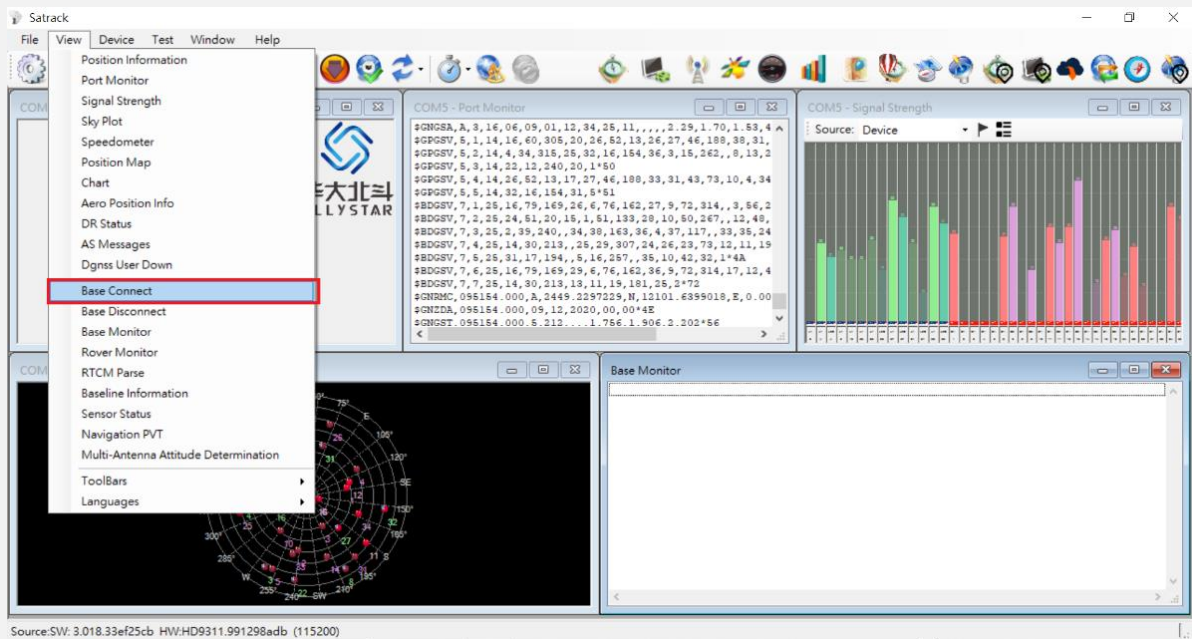
Longitude:

Altitude:

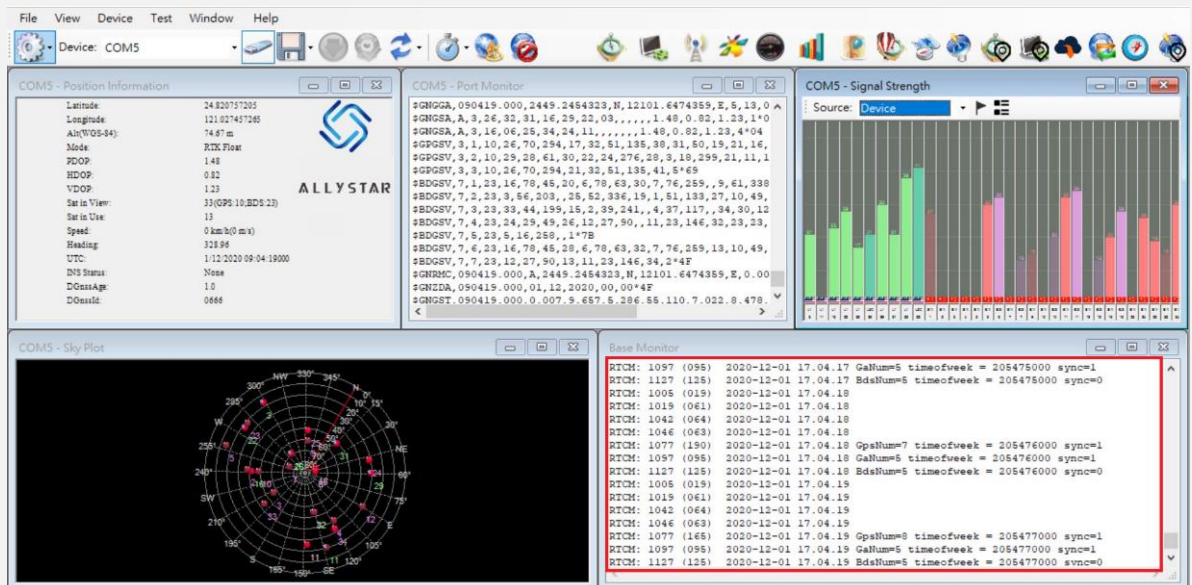
Log Save  
  Data Save  
  Base File Save

### 3. Connect to Base

Go to menu **View > Base Connect** to connect to the Base you set. If the connection works, the differential service will be active.

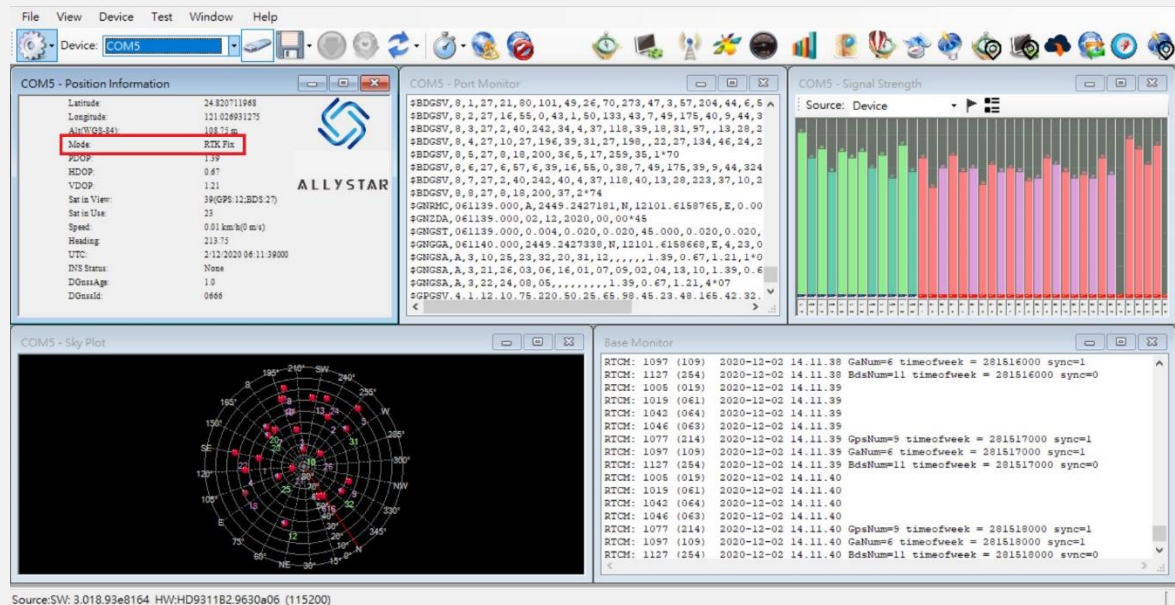


You also can go to menu **View > Base Monitor** to the Allystar module whether it receive the RTCM message. If you can see the RTCM message as below red mark of diagram, it means the base station is connection and RTCM functional.



#### 4. Running & Checking RTK status

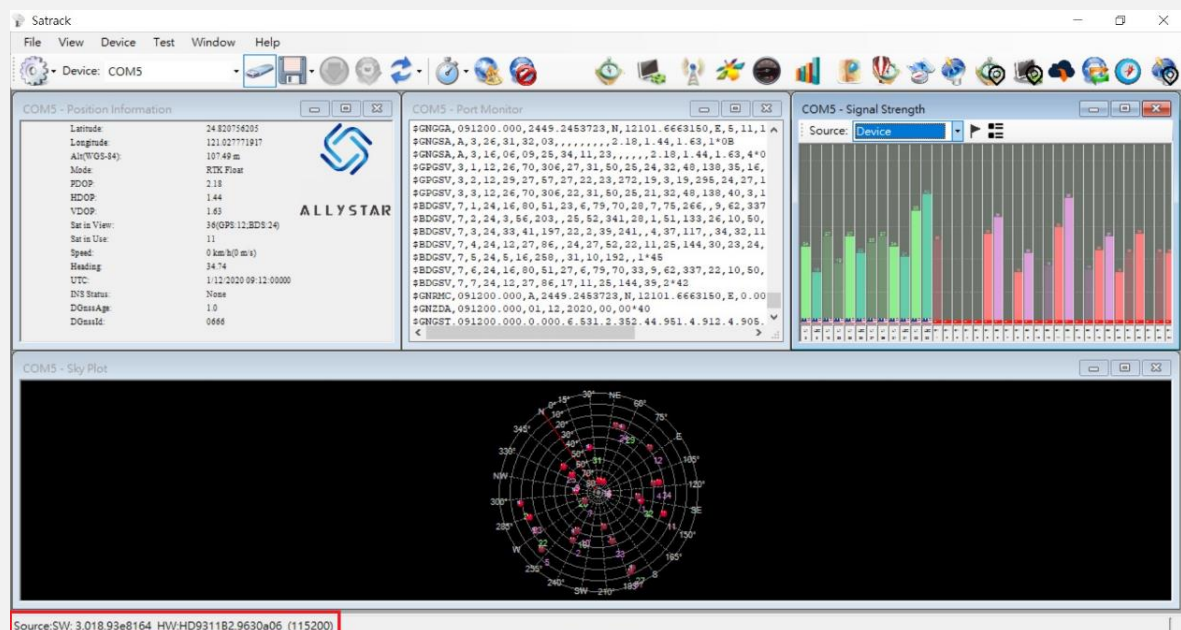
Go to Check out the fixing mode of status after a while time by Satrack utility, you will see the mode display “RTK Fix” in Position information as below diagram. It means our TAU1312 module of RTK Rover tested successful and RTK functional.



### 3.2 Connect to a MQTT account

#### 1. Check firmware version

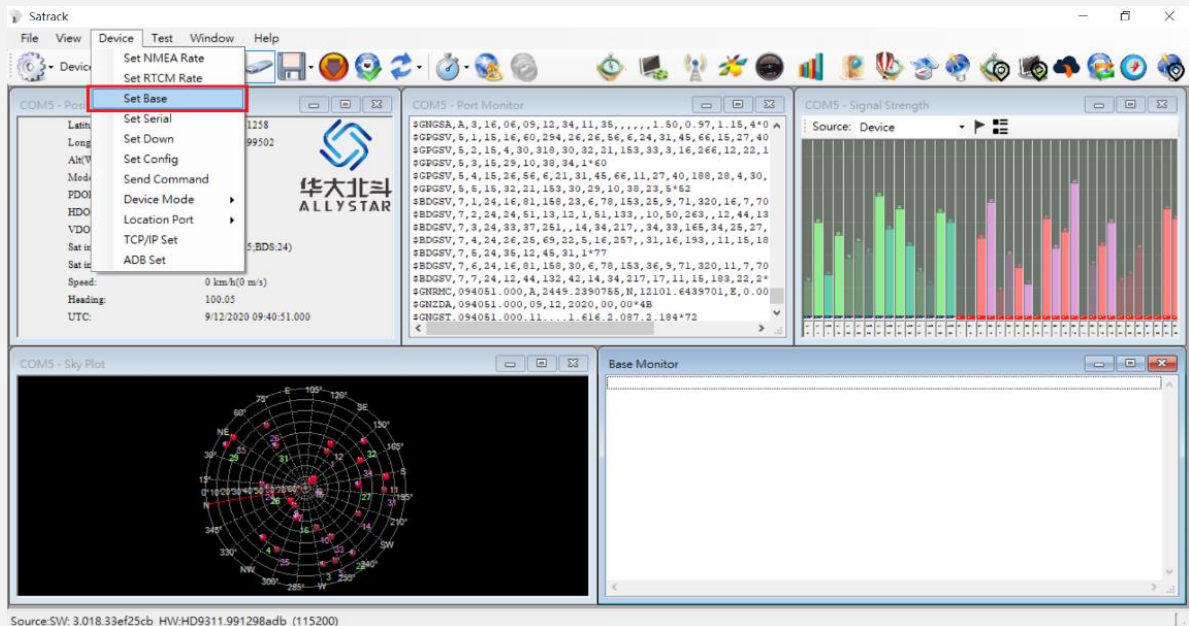
Please make sure you have got known the product model and the firmware version you are using before you use Allystar high precision positioning differential service. Allystar Satrack tool can help you get these product and firmware info.



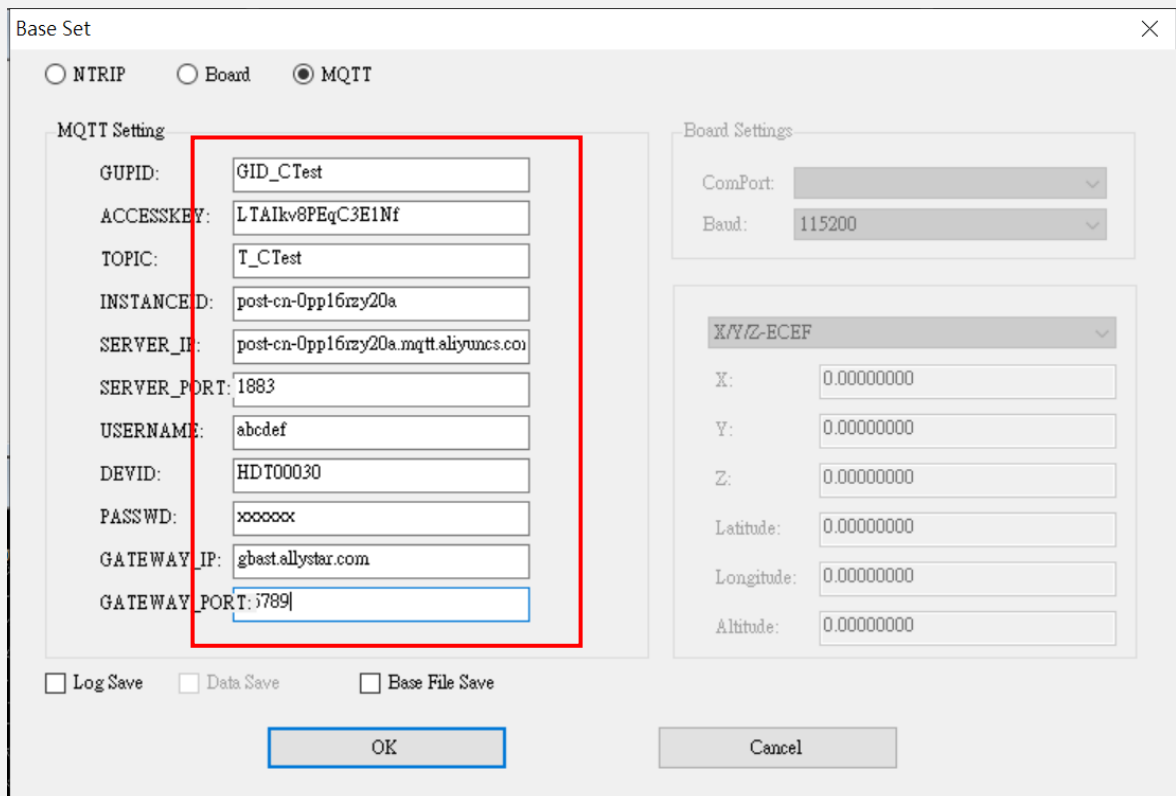


## 2. Set Base info

Go to menu **Device > Set Base** to do the Base setting.

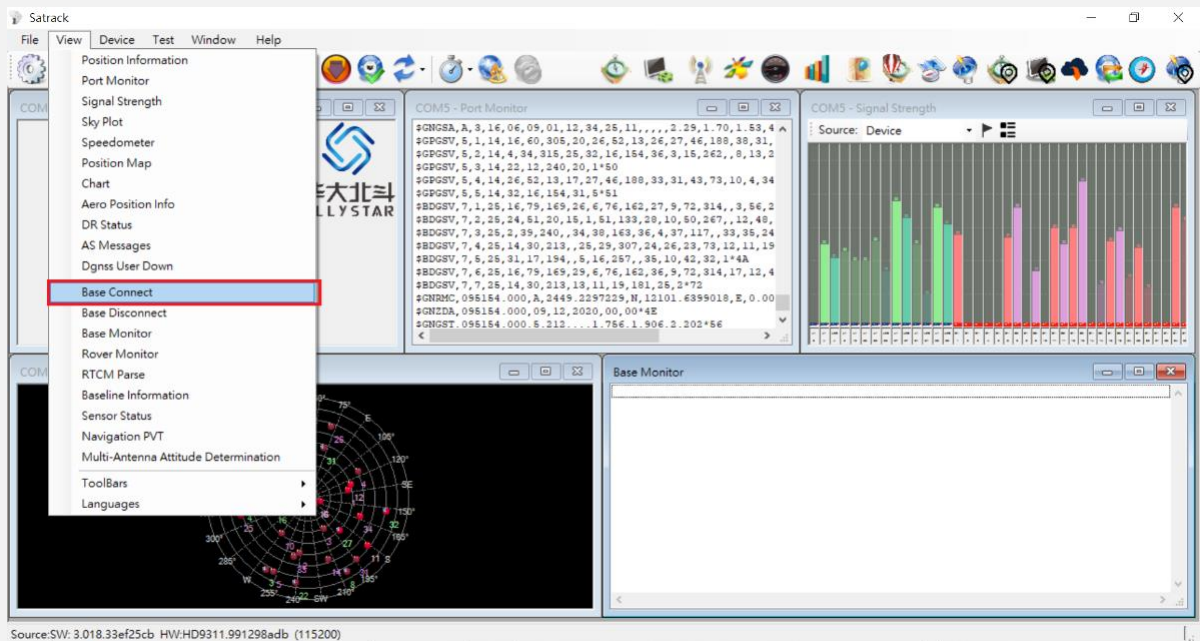


Choose the Base setting of MQTT and fill information account, which includes Username, DEVID, password, base server address and port as below red mark.

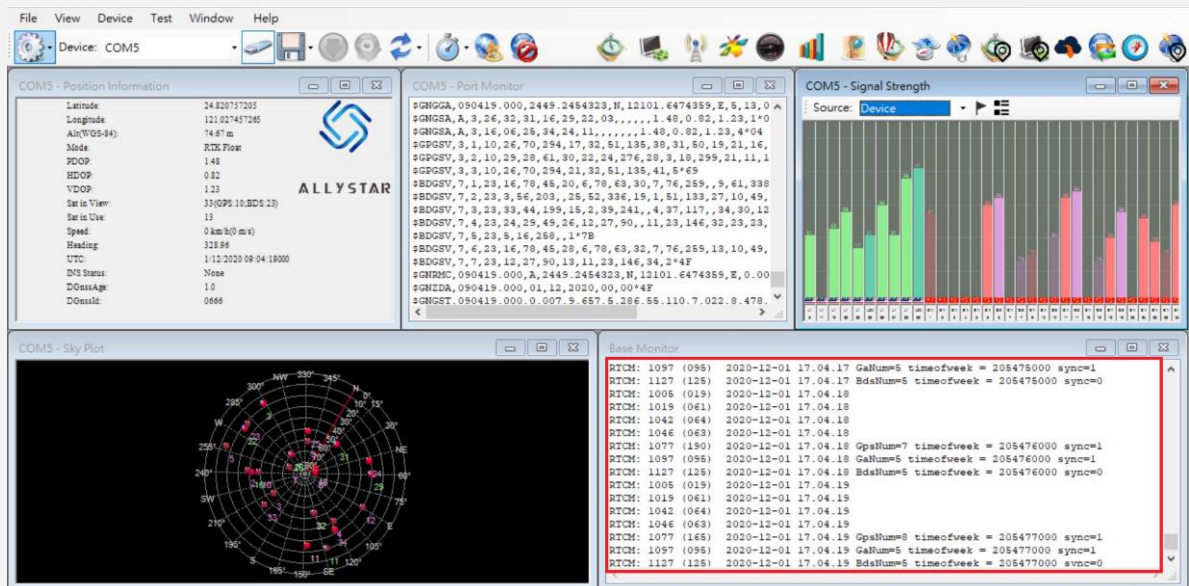


### 3. Connect to Base

Go to menu **View > Base Connect** to connect to the Base you set. If the connection works, the differential service will be active.

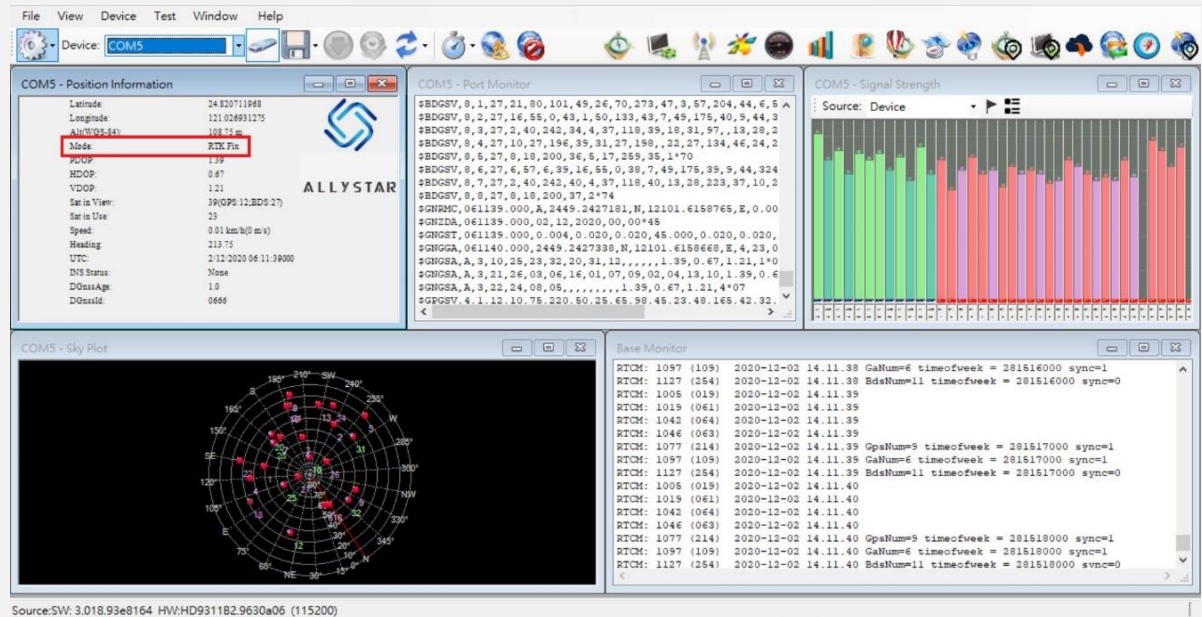


You also can go to menu **View > Base Monitor** to the Allystar module whether it receive the RTCM message. If you can see the RTCM message as below red mark of diagram, it means the base station is connection and RTCM functional.



#### 4. Running & Checking RTK status

Go to Check out the fixing mode of status after a while time by Satrack utility, you will see the mode display **“RTK Fix”** in Position information as below diagram. It means our TAU1312 module of RTK Rover tested successful and RTK functional.



The screenshot displays the ALLYSTAR software interface with the following components:

- COM5 - Position Information:** Shows the mode as **RTK Fix** (highlighted in red). Other data includes Latitude (24.820711948), Longitude (121.024891275), Altitude (108.75 m), HDOP (1.39), and various sensor readings.
- COM5 - Port Monitor:** Displays a stream of RTK data including satellite IDs (e.g., \$BDGSV, \$GNRMC, \$GNGST) and their coordinates.
- COM5 - Signal Strength:** A bar chart showing signal strength for various satellites, with colors ranging from green to red.
- COM5 - Sky Plot:** A circular plot showing the sky view with satellite positions and signal strength indicators.
- Base Monitor:** A log window showing RTCM messages and synchronization status, such as:
 

```

RTCM: 1097 (109) 2020-12-02 14.11.38 GaNum=6 timeofweek = 281516000 sync=1
RTCM: 1127 (254) 2020-12-02 14.11.38 BdsNum=11 timeofweek = 281516000 sync=0
            
```

Source: SW: 3.018.93e8164 HW: HD931182.9630a06 (115200)

## 4 REVISION HISTORY

Revision	Date	Author	Status / Comments
V0.1	2020-12	Hill Lee	Draft



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