

RTK-M200

***Simple steps to quickly complete LOCOSYS RTK software settings
(Base Station and Rover Station)***



*Version 1.1
2021.6.4*

About LOCOSYS

LOCOSYS Technology Inc. established in 2005, a company that provide services the scope of which spans from both hardware and software in Global Navigation Satellite System (GNSS), Wireless Communication, Embedded System to Avionics, Automotive and Consumers electronics.

LOCOSYS Technology Came from a well-known research organization of information industry, LOCOSYS sustains a strong R&D in Software, Hardware and system integration. Through its self own (International Automotive Task Force, IATF) IATF16949 : 2016 / ISO 9001 : 2015 certified production lines in Taiwan.

LOCOSYS is a qualified supplier to tier 1 & tier 2 manufacture in Automotive industry (design house, EMS, OEM, ODM) and be the 2017 best partner of 'Automotive Dead Reckoning' in Global automotive industry and provides solutions and services to various market segments. Stay in α -level qualified module designer and supplier in the international market, deal the partnership with more than 20 Well-known distributors overseas, to provide our customers a complete OEM and ODM services.

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For any technical support or others, please leave a message on below website.

We will contact you directly.

<https://www.locosystech.com/en/page/Contact-Us/contact-info.html>

Contents

ABOUT LOCOSYS	2
CONTENTS	3
BEFORE SETTING UP THE BASE STATION	4
CHAPTER 1. HOW TO SET UP RTK-M200 AS BASE STATION.....	6
CHAPTER 2. HOW TO SET UP ROVER STATION	17

Before setting up the Base station

This action here is to use the RTK-1010 EVK we provide in the RTK-M200 package to connect software “**GPSFox-V0.99v9_RTK_only.exe**”, and check **LLA** (Latitude, Longitude and Altitude value) data.

Step 1: Choice the software “**GPSFox-V0.99v9_RTK_only.exe**”⁽¹⁾ and click it. Then follow up the procedures below. Choice the right COM Port and select the Baud rate with 115200.

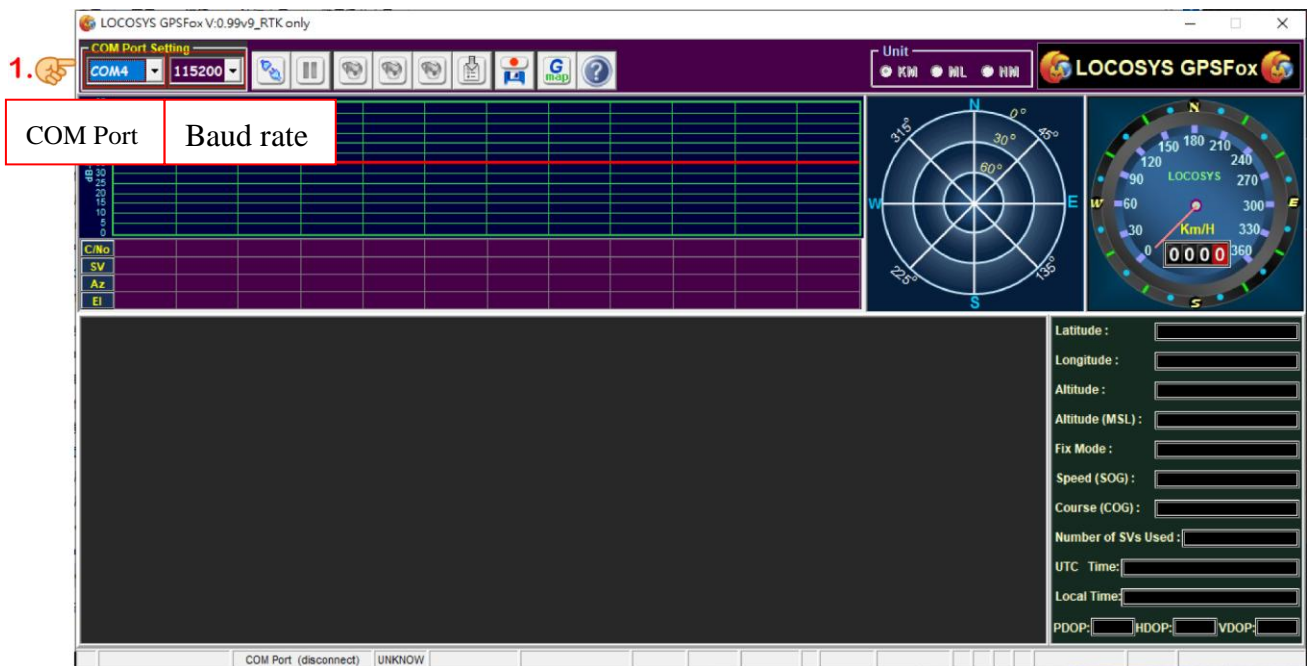


Figure 1: Open “**GPSFox-V0.99v9_RTK_only.exe**”

Note1: Please kindly check with our sales representative about the newest GPSFox version.

Step 2: Click “**Connect**” button. Wait for it stable (Have to receive over 13 Satellites and those satellites C/No have to over 35 dB-Hz) and then get LLA data⁽²⁾ (Latitude, Longitude and Altitude value).

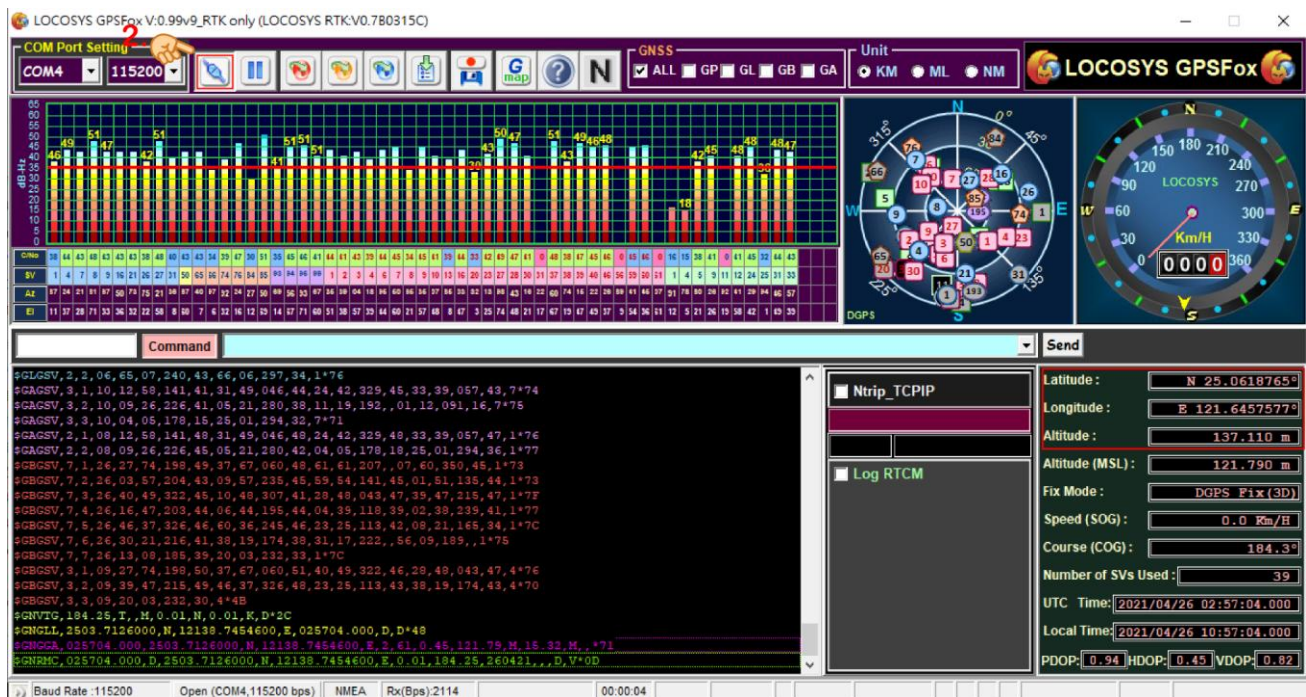


Figure 2: Connect with your RTK-1010 EVK and get LLA data (Latitude, Longitude and Altitude value)

Note:

- 2.1 You can use other base station to receive RTK frequency to get RTK Fix. It can acquire accurate LLA data.
- 2.2 If you can't get RTK Fix, can substitute by DGPS. Please notice if you use DGPS to receive the LLA data the Rover will have fixed offset.

Chapter1. How to Set up RTK-M200 as Base Station

Step 1: Upside down the RTK-M200, and screw counterclockwise to release the RTK-M200 upper cover.

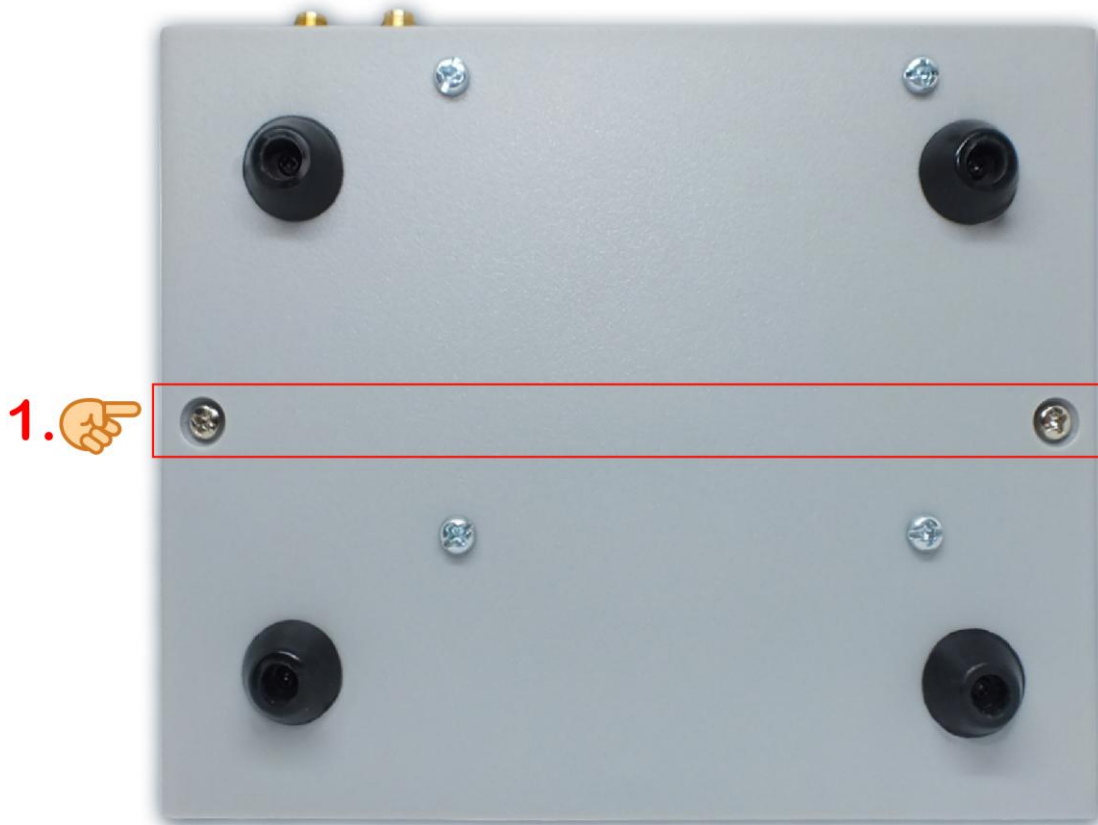


Figure 3: Screw counterclockwise to release the RTK-M200 upper cover

Step 2: Push the metal shield of SIM card slot to let it open (like red arrow pointed as below picture), and put Nano-SIM card inside, then put the metal shield of the slot on and pull out the metal shield to let it tight (like blue arrow pointed as below picture). Put back the RTK-M200 upper cover and lock on the two screws to finish the SIM card installation.

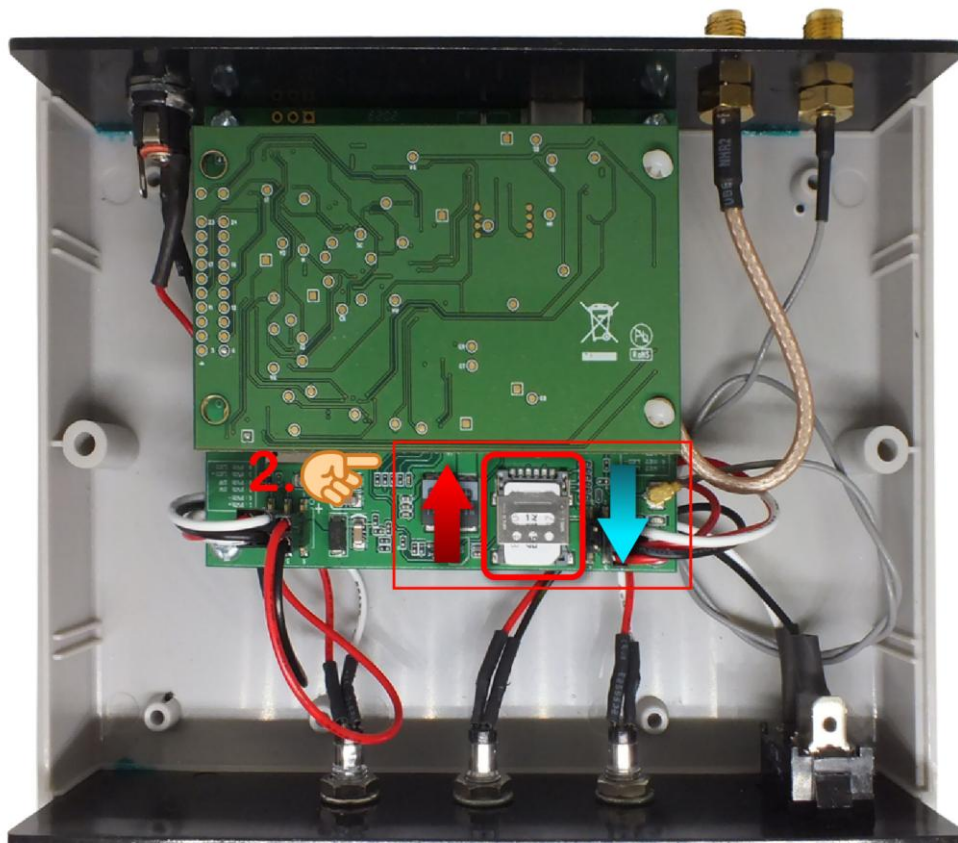


Figure 4: Put your Nano-SIM card inside the RTK-M200

Step 3: Please turn on your RTK-M200 and connect to your computer with the USB Type-C cable.

Move your mouse cursor to “**Start Menu**”, right-click on your mouse, and select the “**Device Manager**”.

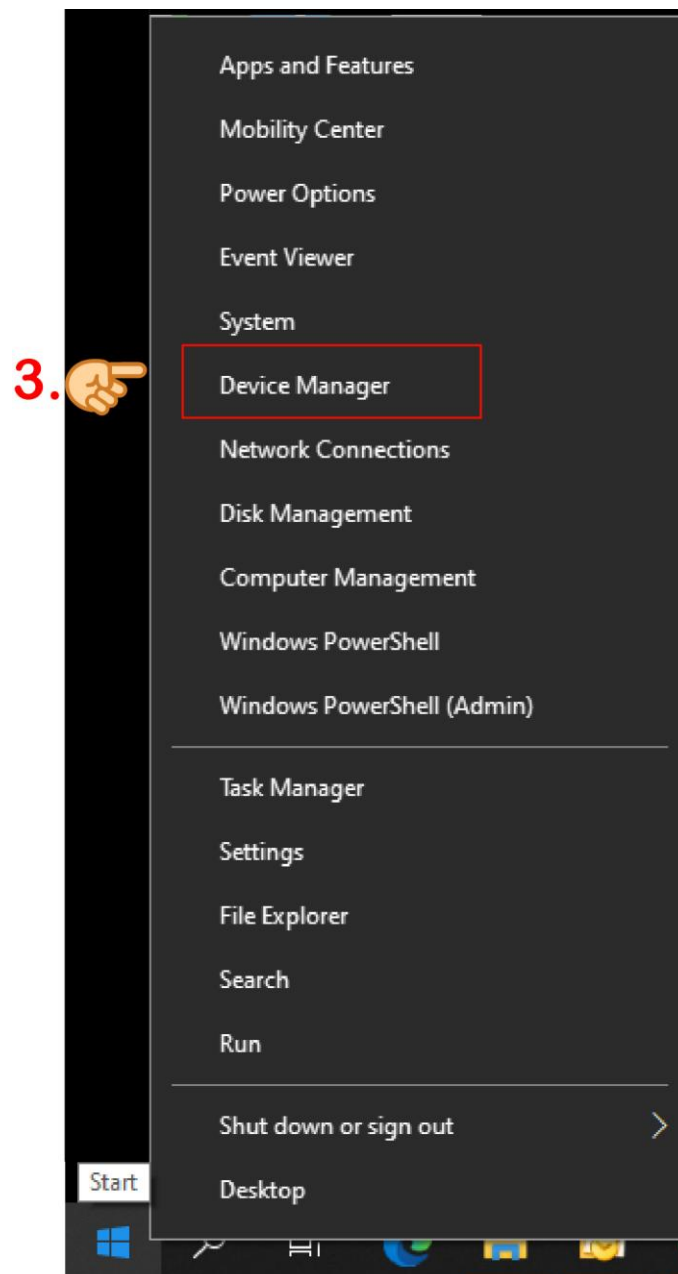


Figure 5: Open the “**Device Manager**” to check the device

Step 4: Please confirm the “ADB Interface” show on the **Universal Serial Bus devices** in the **Device Manager**.

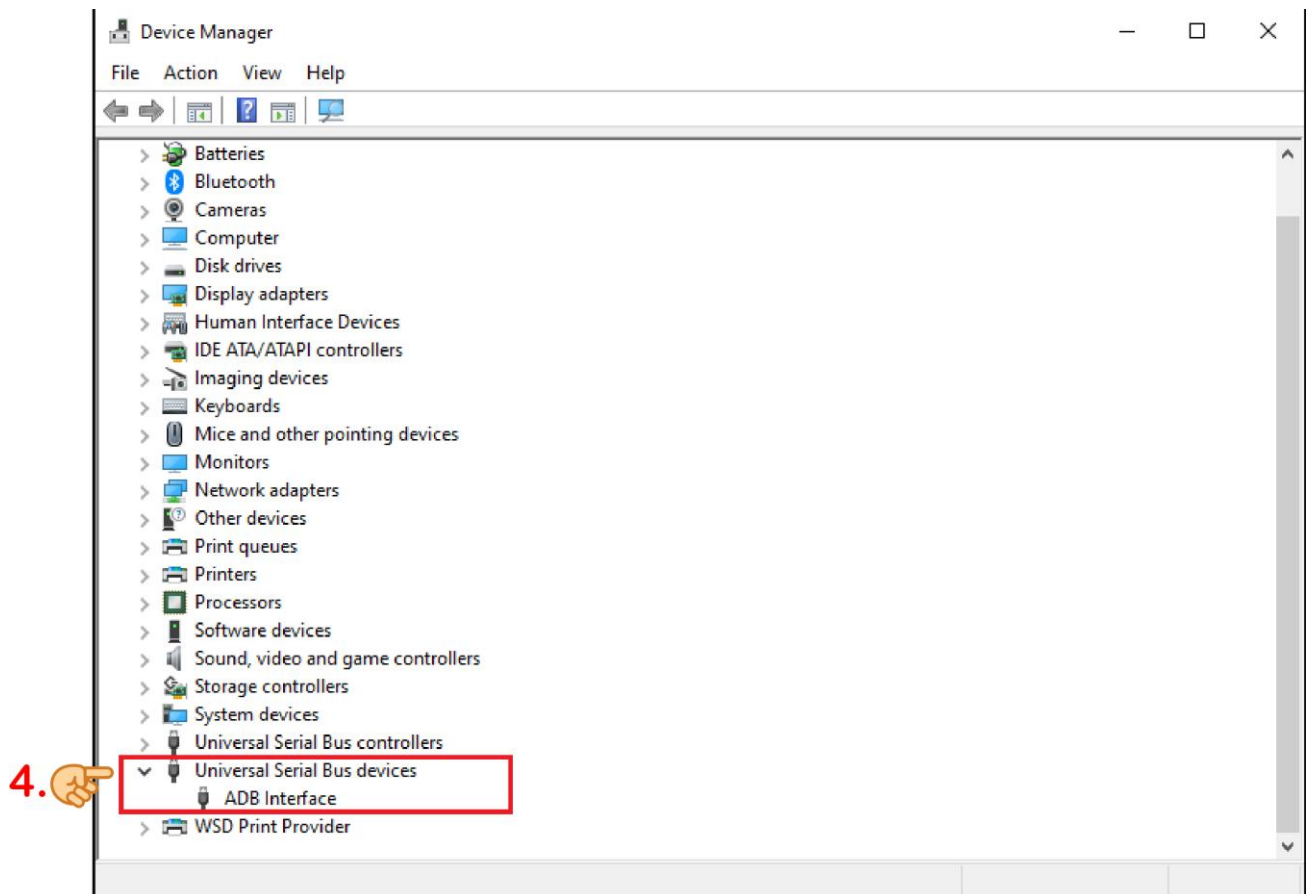


Figure 6: To check the device is connecting with your computer successfully

Step 5: Double-click the “**ntripset.exe**” to set up the RTK-M200 as Base Station.

(Path: RTK-M200 User Guide\RTK-M200)

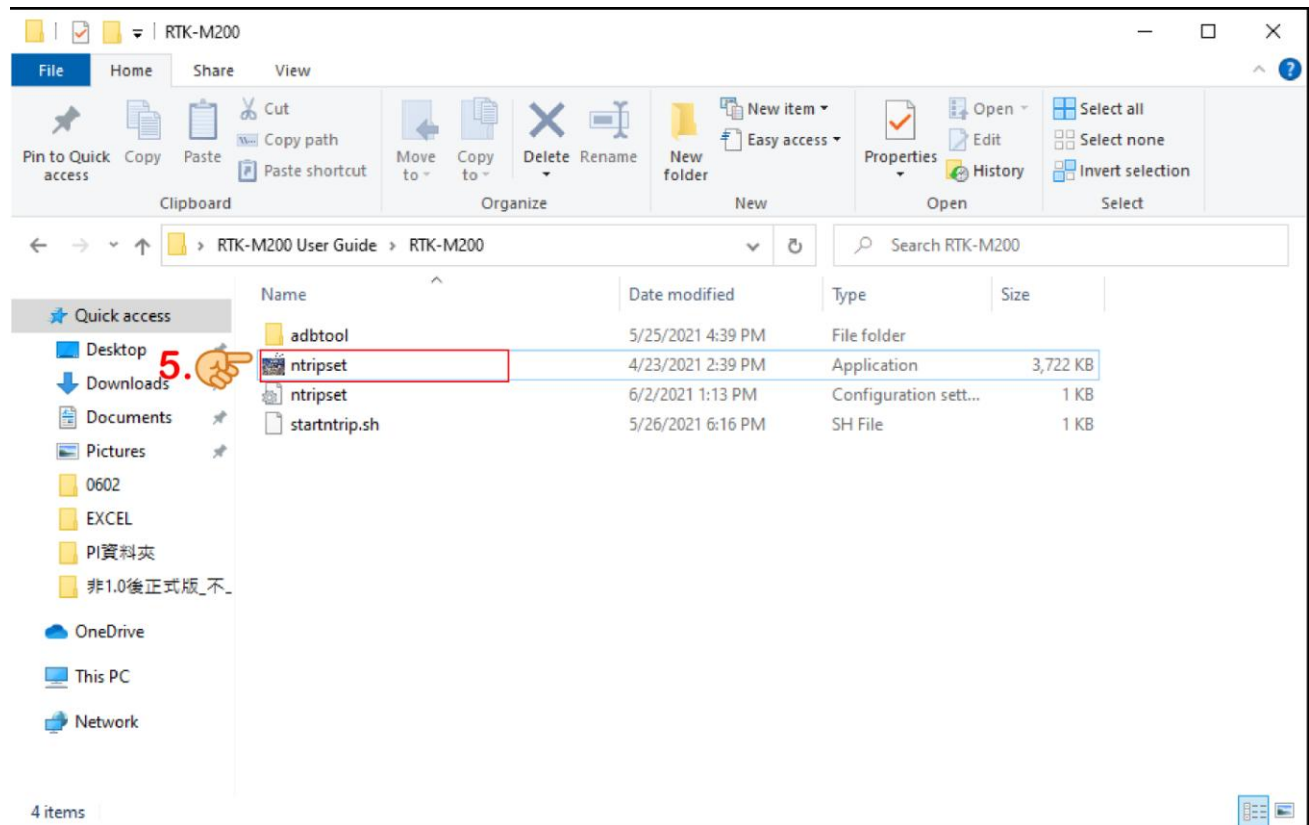


Figure 7: Open the “**ntripset.exe**” to set up your RTK-M200

Step 6: Click the “**Device**” in the toolbar, select the “**Connect**” to connect with your RTK-M200.

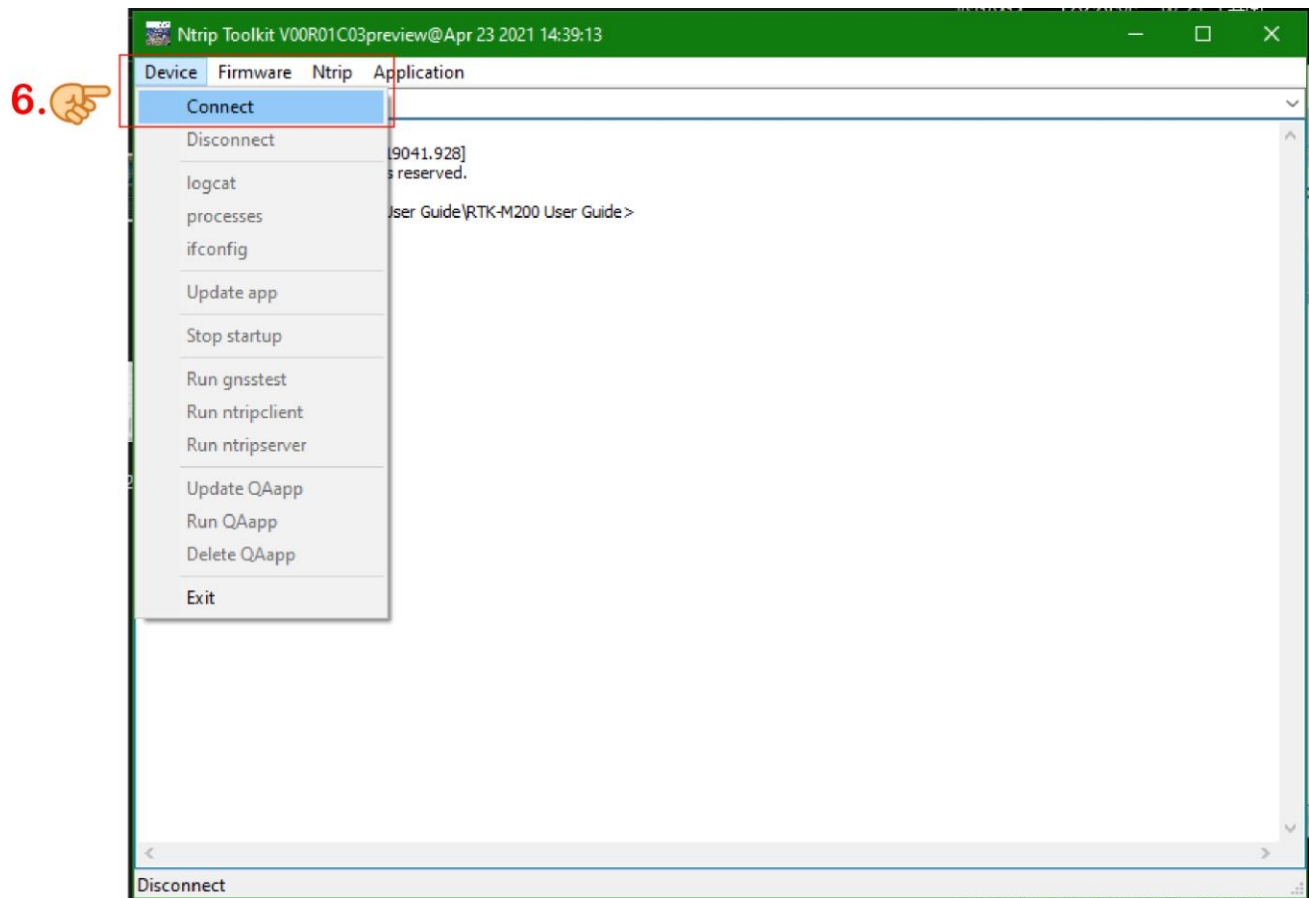
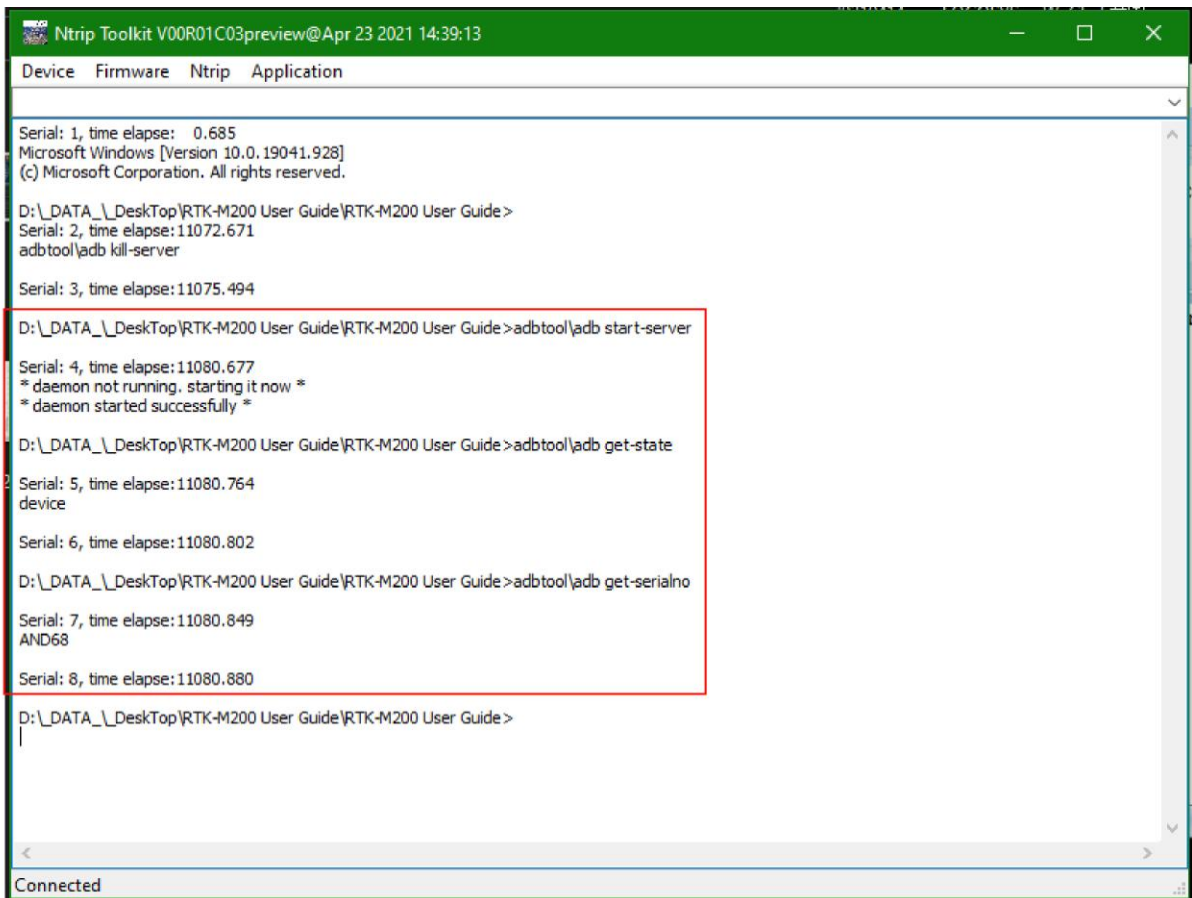


Figure 8: ntripset.exe –Connect the RTK-M200 with your computer

Step 7: Click “**Connect**” then software will run automatically. The three commands: “adb start-server”, “adb get-state” and “adb get-serialno” will show up. When they show up, please continue your operating.

7. 



```

Ntrip Toolkit V00R01C03preview@Apr 23 2021 14:39:13
Device Firmware Ntrip Application

Serial: 1, time elapse: 0.685
Microsoft Windows [Version 10.0.19041.928]
(c) Microsoft Corporation. All rights reserved.

D:\_DATA_\_DeskTop\RTK-M200 User Guide\RTK-M200 User Guide>
Serial: 2, time elapse: 11072.671
adbtool\adb kill-server

Serial: 3, time elapse: 11075.494
D:\_DATA_\_DeskTop\RTK-M200 User Guide\RTK-M200 User Guide>adbtool\adb start-server
Serial: 4, time elapse: 11080.677
* daemon not running. starting it now *
* daemon started successfully *
D:\_DATA_\_DeskTop\RTK-M200 User Guide\RTK-M200 User Guide>adbtool\adb get-state
Serial: 5, time elapse: 11080.764
device
Serial: 6, time elapse: 11080.802
D:\_DATA_\_DeskTop\RTK-M200 User Guide\RTK-M200 User Guide>adbtool\adb get-serialno
Serial: 7, time elapse: 11080.849
AND68
Serial: 8, time elapse: 11080.880
D:\_DATA_\_DeskTop\RTK-M200 User Guide\RTK-M200 User Guide>

```

Connected

Figure 9: ntripset.exe –Please check if those three commands are showed on the window

Step 8: Click the “**Ntrip**” on the toolbar, and select the “**Base**” to set your RTK-M200 as a base station. The window of “NTRIP Server Options” will then pop up. Please follow up the below steps for setting up correct value on NTRIP Server Options.

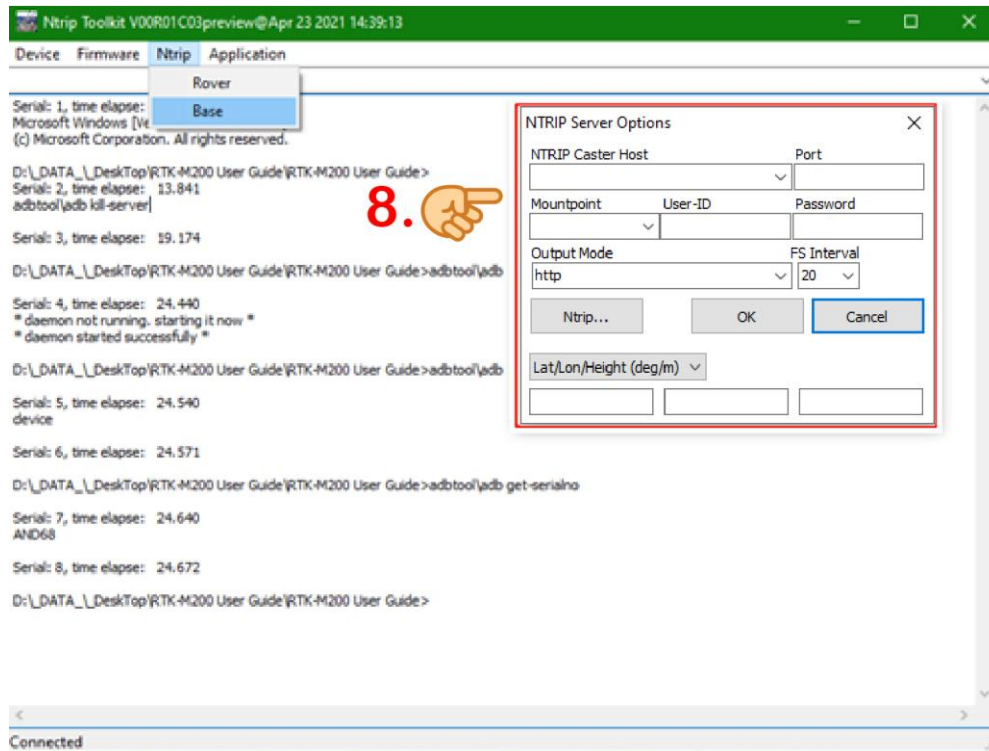


Figure 10: ntripset.exe –Set up your RTK-M200 as a base station

Step 9: NTRIP Caster Host⁽¹⁾ : Set this IP 59.124.229.94

Step 10: Port⁽¹⁾: Port 2101 provide by LOCOSYS.

Step 11: Mount point : LOCOSYS will provide dedicated Mount point to our customer after shipment.

Step 12: User-ID⁽¹⁾ : Provide by LOCOSYS.

Password⁽¹⁾ : Provide by LOCOSYS.

Step 13: Lat/Lon/Height (deg/m) or X/Y/Z-ECEF (m):

Lat= Latitude, Lon= Longitude, Height= Altitude

Please enter the above three location value of the base station. (The Location Value can be gotten from Step 2.)

The screenshot shows the 'NTRIP Server Options' dialog box. Red boxes and numbered callouts (9-13) highlight the following fields:

- 9.** NTRIP Caster Host: 59.124.229.94
- 10.** Port: 2101
- 11.** Mountpoint: M4671-LSTLAB
- 12.** User-ID: suid00
- 12.** Password: (masked with dots)
- 13.** Lat/Lon/Height (deg/m): 25.06186550, 121.64574778, 136.969

Other visible fields include Output Mode (http) and FS Interval (20). Buttons at the bottom include 'Ntrip...', 'OK', and 'Cancel'.

Figure 11: ntripset –follow the step to set up your base station

When the above info of NTRIP Server Options is completed, please click “**OK**”. The below window of **ntripset** (Figure 12) will then pop up. Please click “**OK**” to close it. It will make the RTK-M200 reboot then the **RTCM status LED** and **4G status LED** will be off right away, as shown in the below. After the RTK-M200 works for 1 or 2 minutes around, its **4G status LED** shows “Fast Flash” and its **RTCM status LED** keep staying on all the time. The set up of the base station complete⁽²⁾ and start to communicate with NTrip caster, as shown in (Figure 13).

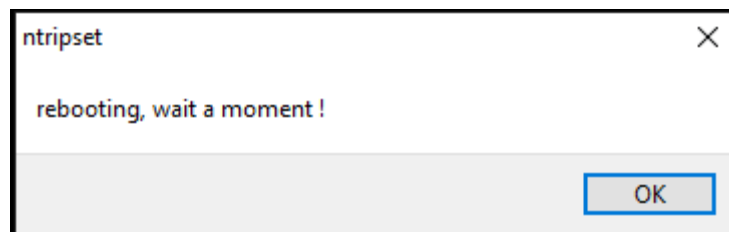


Figure 12: ntripset –Click “**OK**” to finish the re-set



	Light Signal		
	Red (power)	Orange (RTCM)	Green (4G)
Power on/4G not ready	✓	x	x
Power on/4G ready	✓	x	⊙
Connect with NTrip caster	✓	✓	⊙

(✓=Light on, x=Light off, ⊙=Flashing)

Figure 13: RTK-M200 Working Status and Light Signal Instructions

Note:

1. If customer can set up Caster by himself, they can decide which IP, Mount point ID, Port and user account they want.
2. The data you set will store in RTK-M200, it will not reset after the power off.

After the set up of RTK-M200 is ready, please go back to the main operating screen of **ntripset** window. Please click the “**Device**” option, select and click the “**Disconnect**” option (Figure 14), and close the “**ntripset.exe**”. Then please remove the USB Type-C cable from the computer. RTK-M200 can work by itself.

If the **RTCM status LED** and **4G status LED** does not in the right status (follow the Figure13), please follow all steps of chapter1 again.

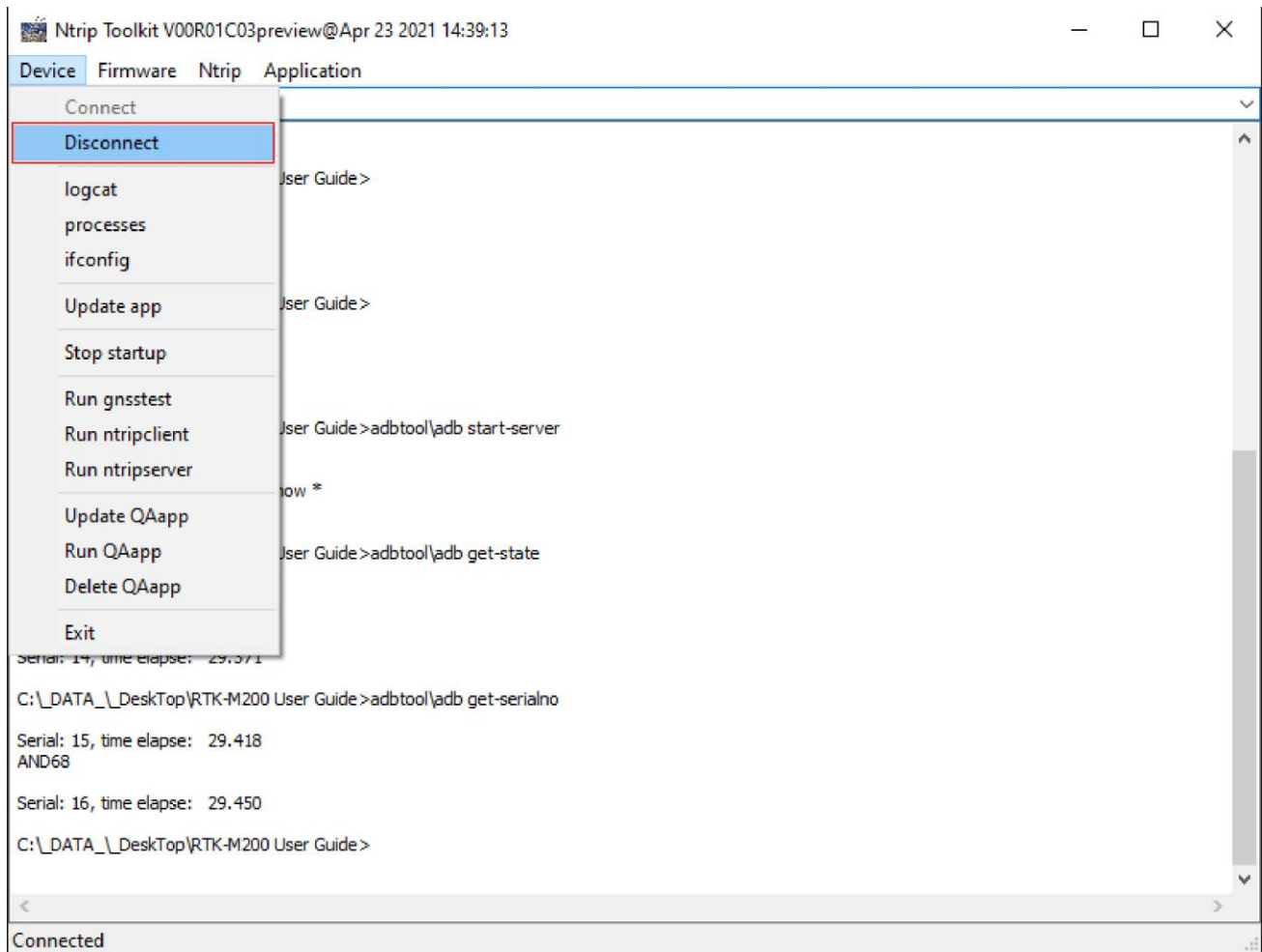


Figure 14: ntripset – click the “**Disconnect**”

Chapter2. How to Set up Rover Station

Step 1: Please let your RTK-1010 EVK connect to your computer with Mini USB cable and double-click the “**rtknavi.exe**” software.

(Path: RTK-M200 User Guide\RTK-1010 EVK)

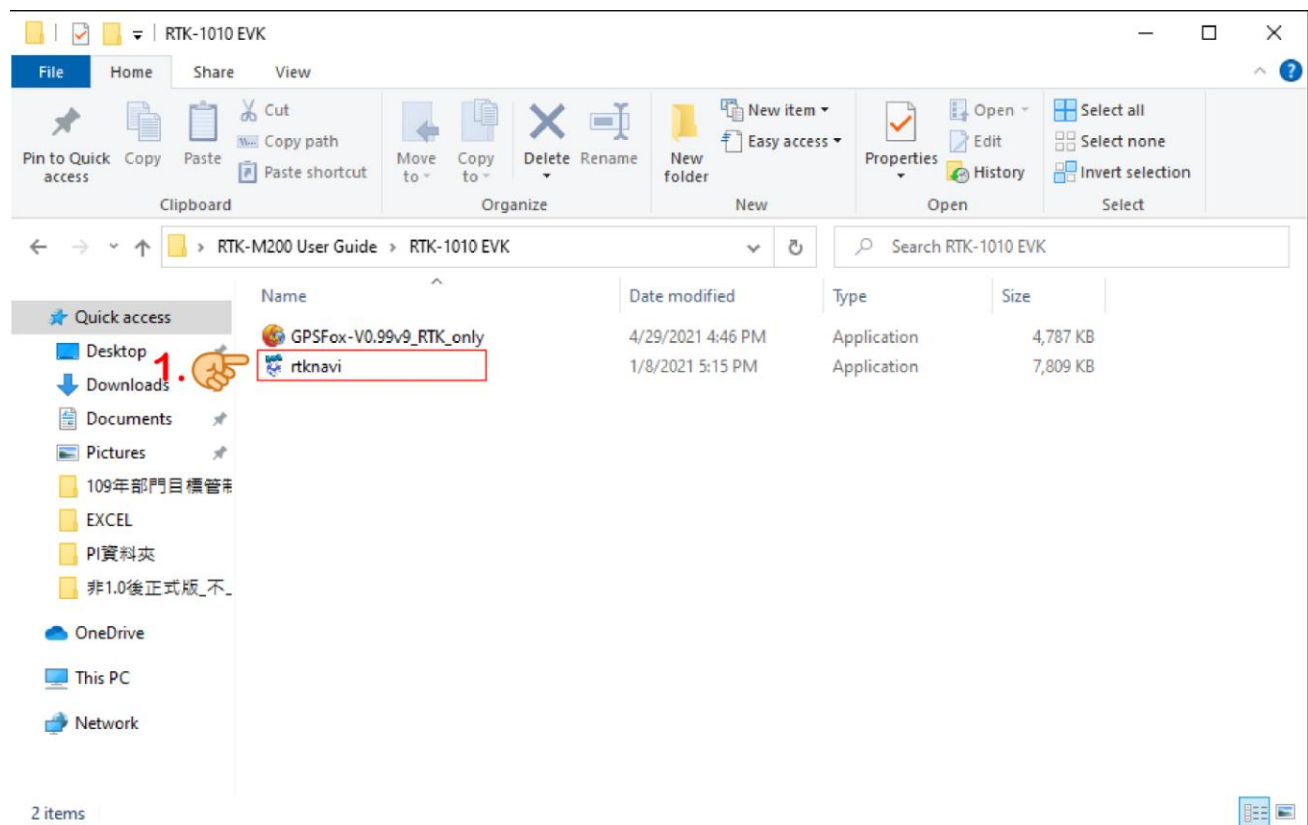


Figure 15: Open “**rtknavi.exe**” software

Step 2: Please use your mouse to adjust the windows to fit your control. Click the “**Options**” menu of the bottom toolbar.

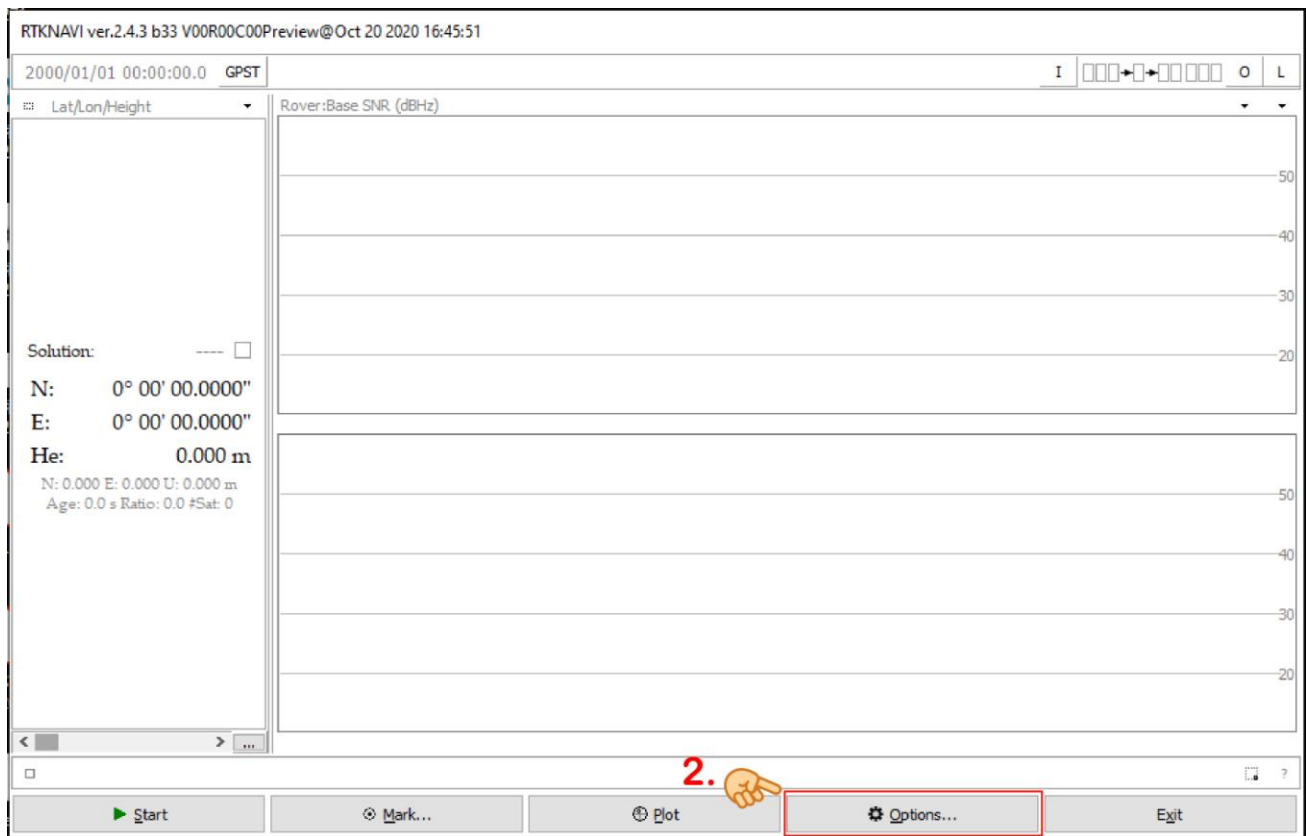


Figure 16: rtknavi.exe –Click the “**Options**” button

Step 3: The Options window will then pop up. For Setting 1 Tab, please tick (☒) the six satellite systems: GPS, GLO, Galileo, QZSS, SBAS and BeiDou. Then please click “**OK**”, to close the window.

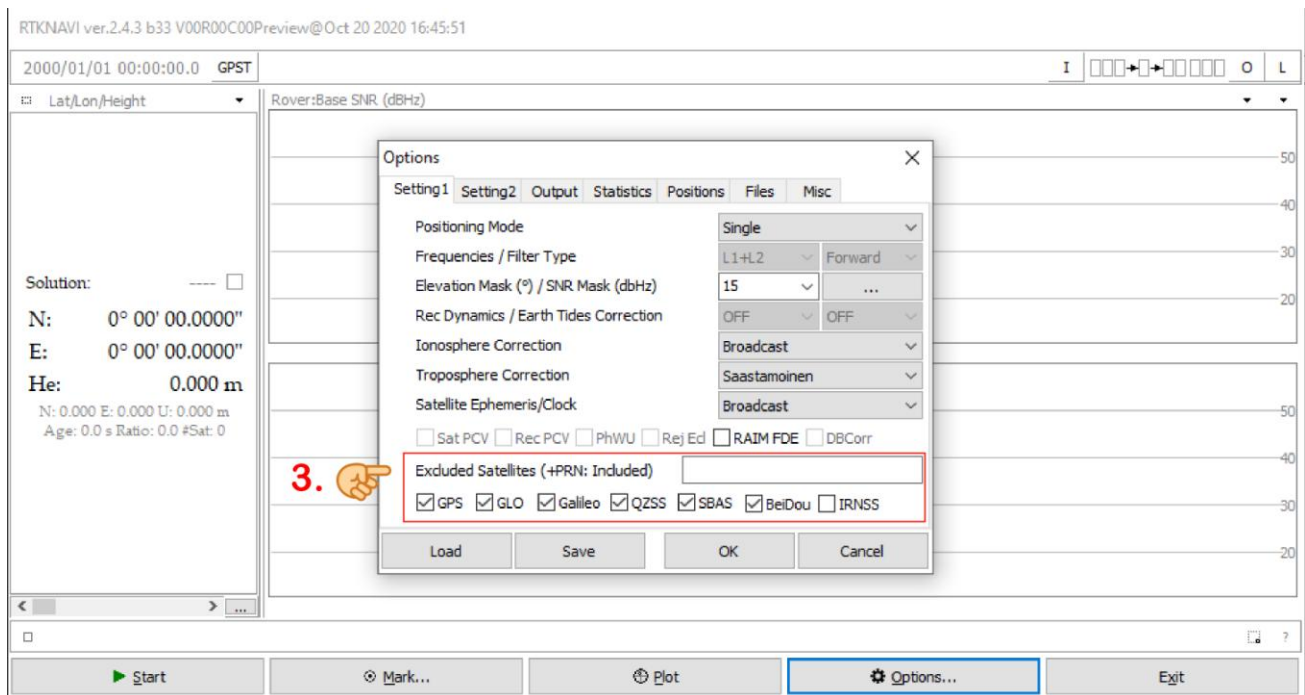


Figure 17: rtknavi.exe –Tick the six satellites systems

Step 4: Click “**I**”, the “Input Streams” window will pop up.

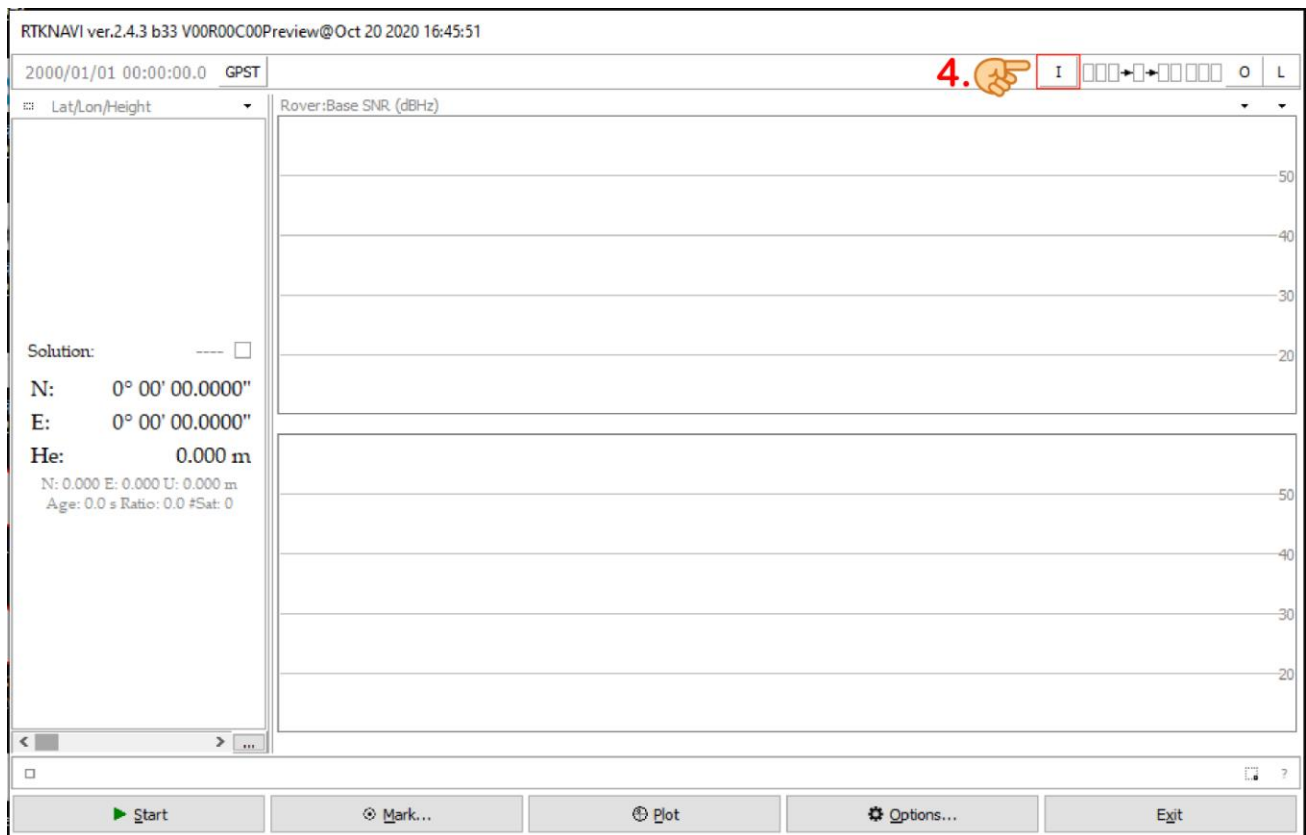


Figure 18: rtknavi.exe –Click “**I**”

Step 5: Please tick (☑) (2) **Base Station** only in **Input Stream** items, choice **NTRIP Client** in **Type** item, and choice **RTCM3** in **Format** item.

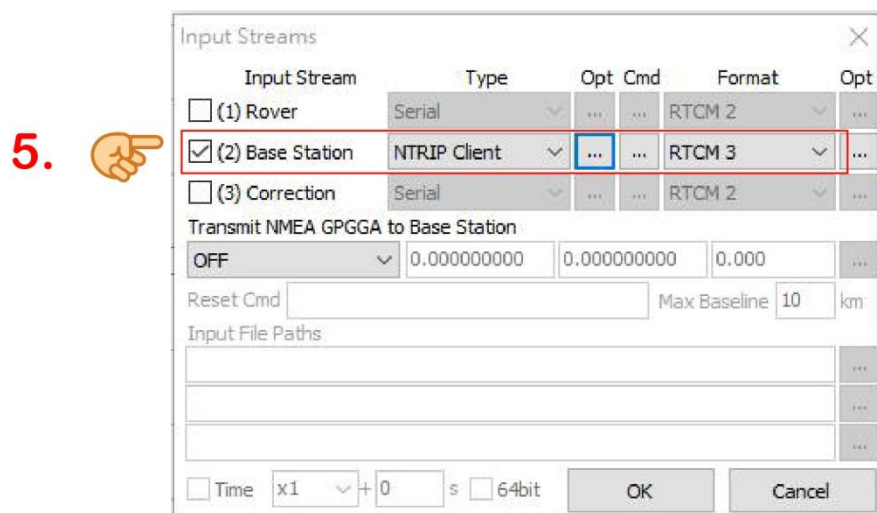


Figure 19: rtknavi.exe – Choice **NTRIP Client** in Type and choice **RTCM3** in Format

Step 6: Please click the “**Opt**”.

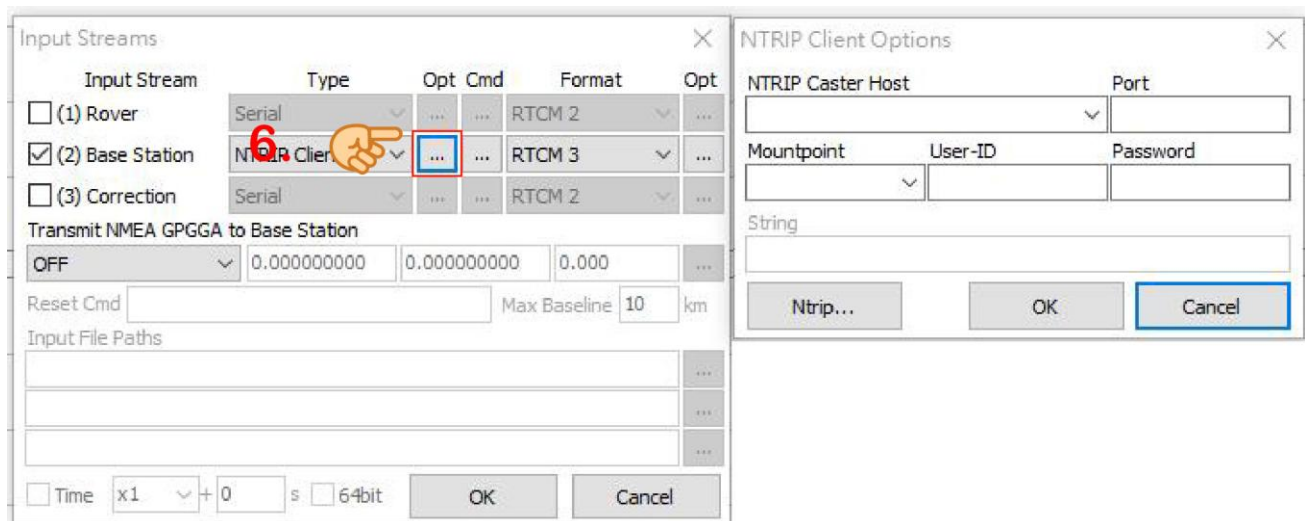


Figure 20: rtknavi.exe –Click “**Opt**”

Step 7: Please follow the below note to enter the NTRIP Caster Host IP, Port, Mount point, User-ID and Password. (Data has to be the same as you set up on “**ntripset.exe**”)

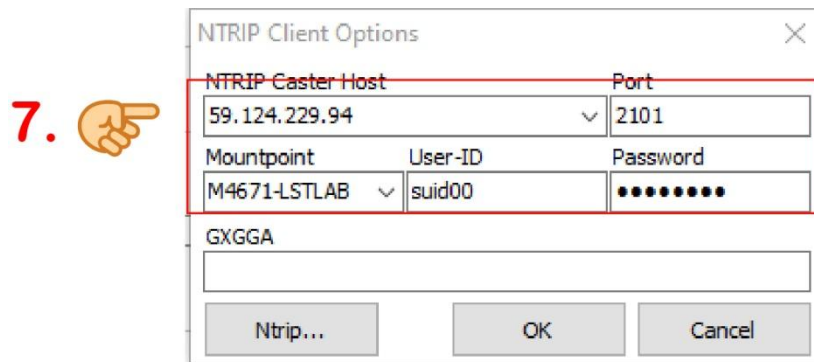


Figure 21: rtknavi – input data in **NTRIP Caster Host**, **Port** and **Mount point**

Note:

- (1) Please input IP 59.124.229.94 in “**NTRIP Caster Host**” IP address.
- (2) “**Port**” set 2101 which provide by LOCOSYS.
- (3) **Mount Point ID:** LOCOSYS will provide dedicated Mount point to our customer after shipment.
- (4) User ID and Password provide by LOCOSYS.
- (5) Step 1 to 4 is finished and then clicked the “**OK**” to finish the set up.

Step 8: Click “**L**” button.

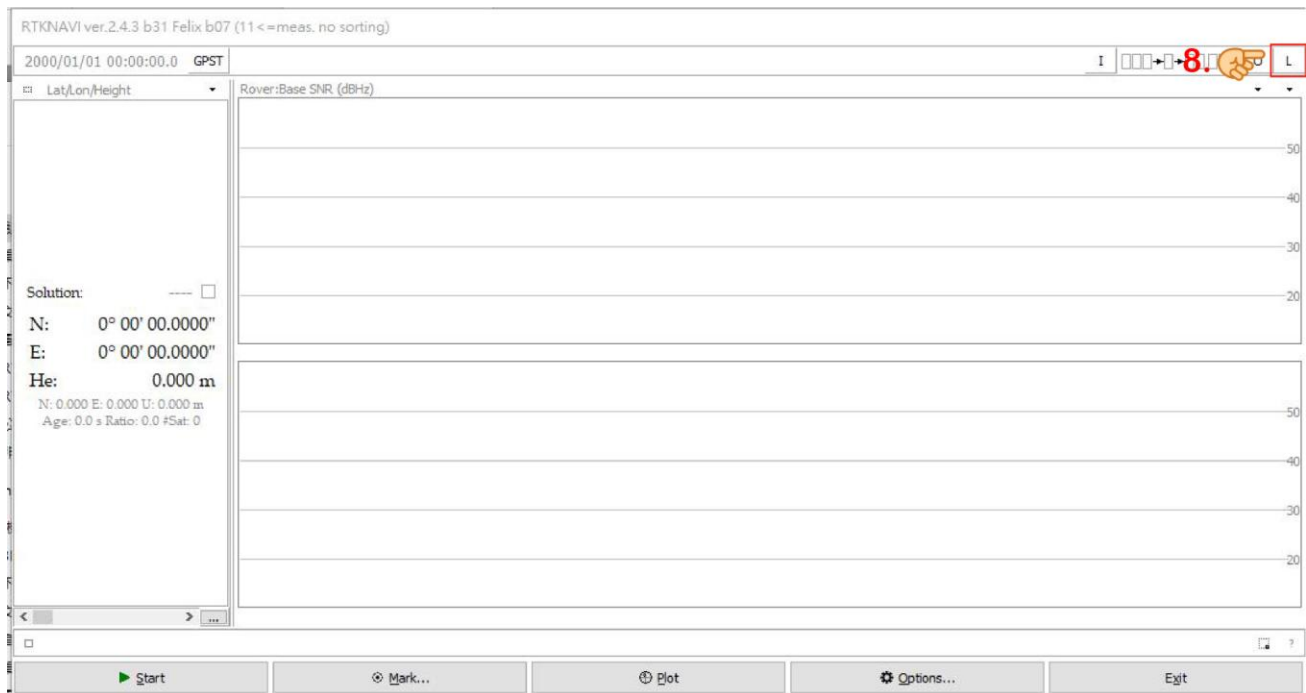


Figure 22: rtknavi – “**L**” button

Step 9: Please tick (☒) (7) **Base Station** in **Log Stream** items, choice **TCP Server** in **Type** items and click the “**Opt**”. The **TCP Server Options** window will pop up.

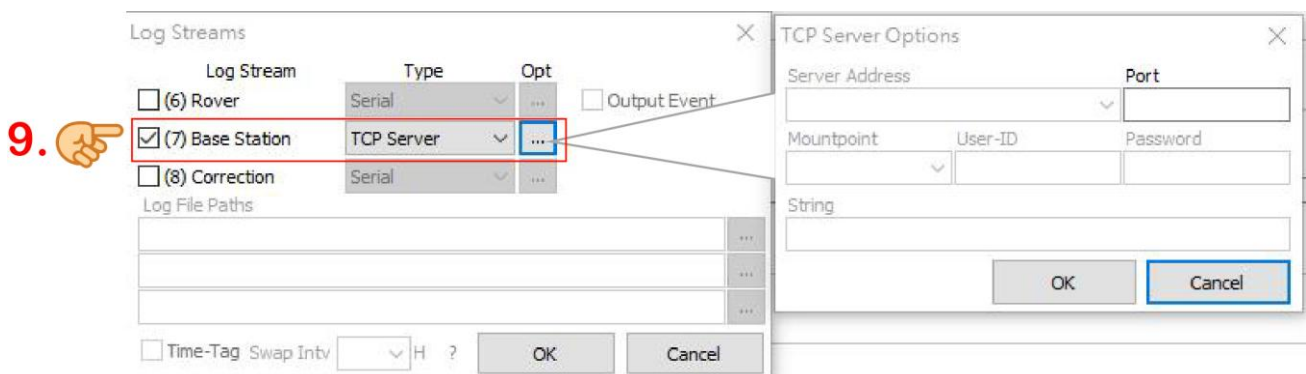


Figure 23: rtknavi.exe - Selecting option (7) and choice **TCP Server** in Type and click “**Opt**”

Step 10: Input 16800 into **Port** and click “**OK**”. 16800 is compulsory value because this is corresponding to GPSFox-V0.99v9_RTK_only.exe.

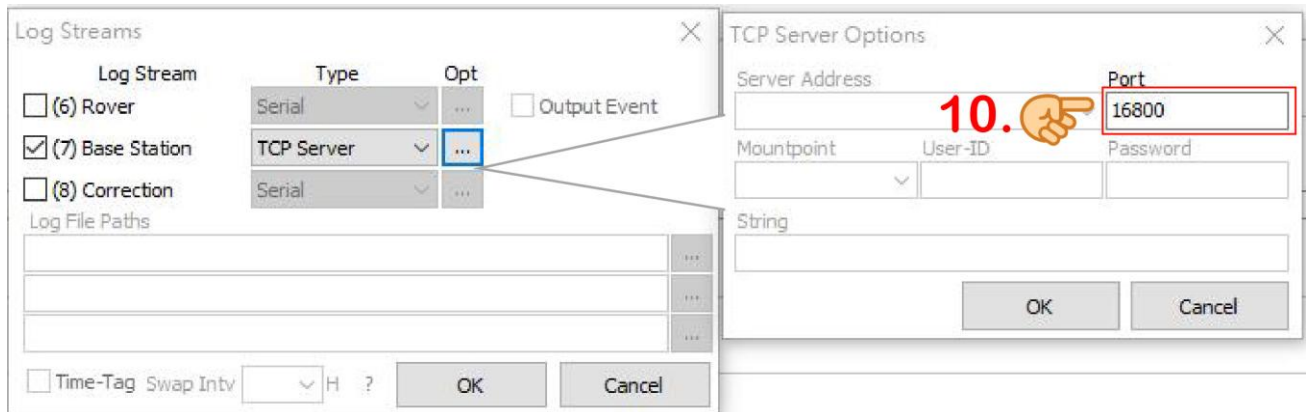


Figure 24: rtknavi.exe - Input **16800** into Port

Step 11: After the set up for above **I** and **L** part is finished, please click “**Start**”.



Figure 25: rtknavi.exe – “**Start**” button.

Step 12: View “Green light” show up near the ‘I’ button and begin to flash. It means Base station received RTCM data from “Caster”.

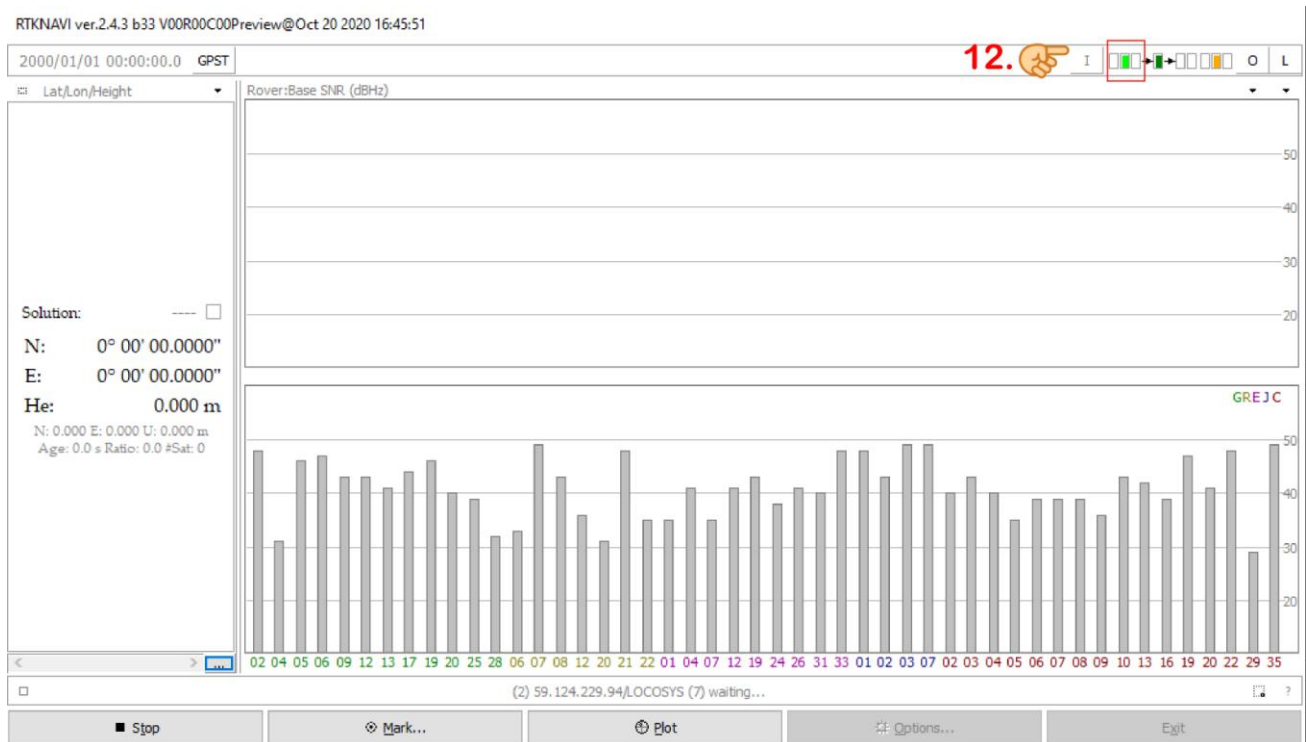


Figure 26: rtknavi.exe – Base station received RTCM data from “Caster”
(Have to receive over 13 Satellites and those satellites C/No have to over 35 dB-Hz)

Step 13: Double-click “**GPSFox-V0.99v9_RTK_only.exe**” in RTK-1010 EVK folder.

(Path: RTK_M200_User_Guide\RTK-1010_EVK).

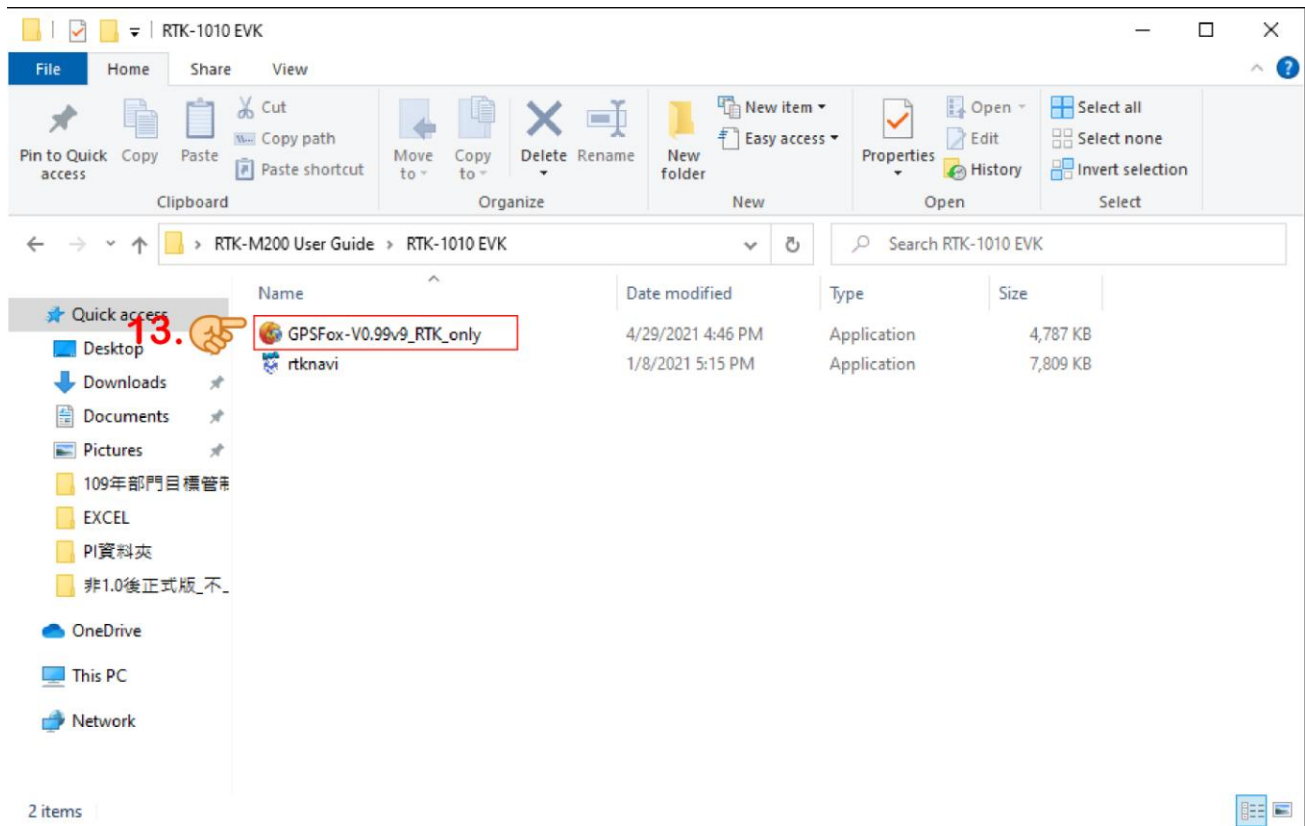


Figure 27: Click “**GPSFox-V0.99v9_RTK only.exe**”

Step 14~15: Choice the RTK-1010 EVK COM Port and select the baud rate with 115200. Click the “**Connect**” button and wait for it stable (Have to receive over 13 Satellites and those satellites C/No have to over 35 dB-Hz) then click “**Ntrip_TCPIP**” and it will show RTK (fix)

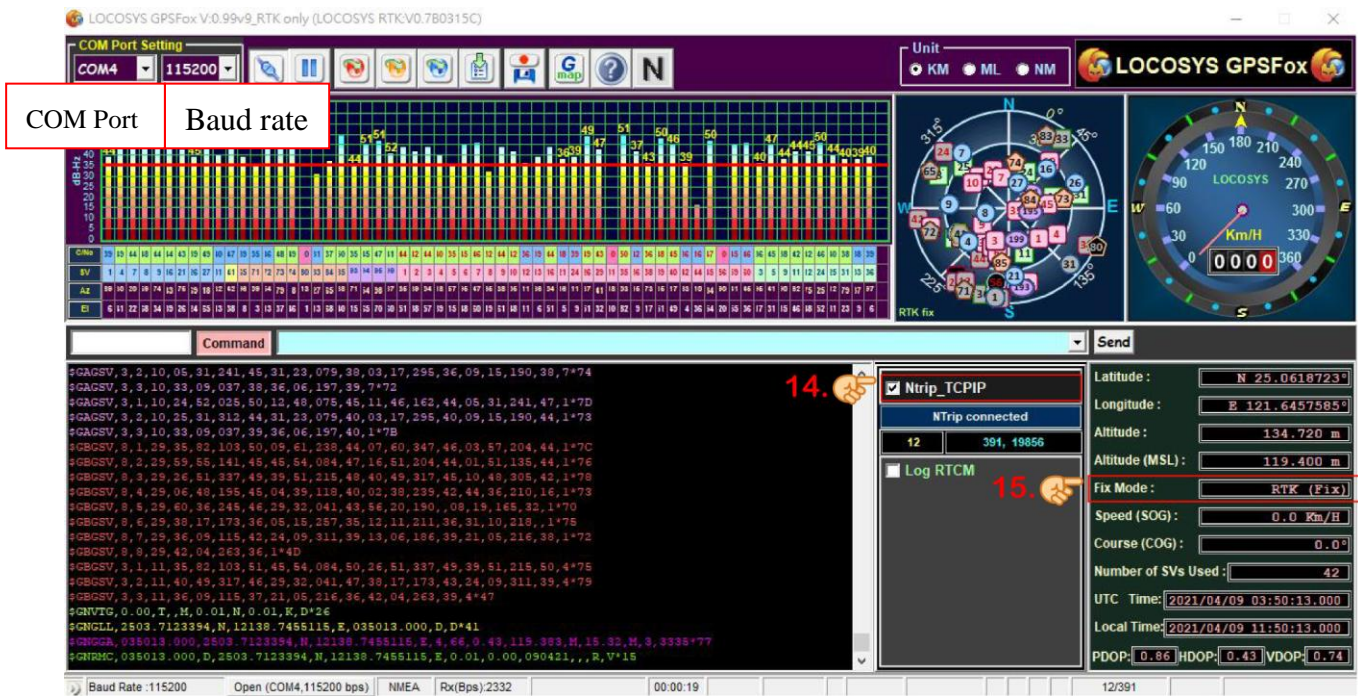


Figure 28: Click “**Ntrip_TCPIP**”

Step 16: Both side show “**Green light**” begin to flash which means “**Rover** ” is online and connect with “**Caster**”.

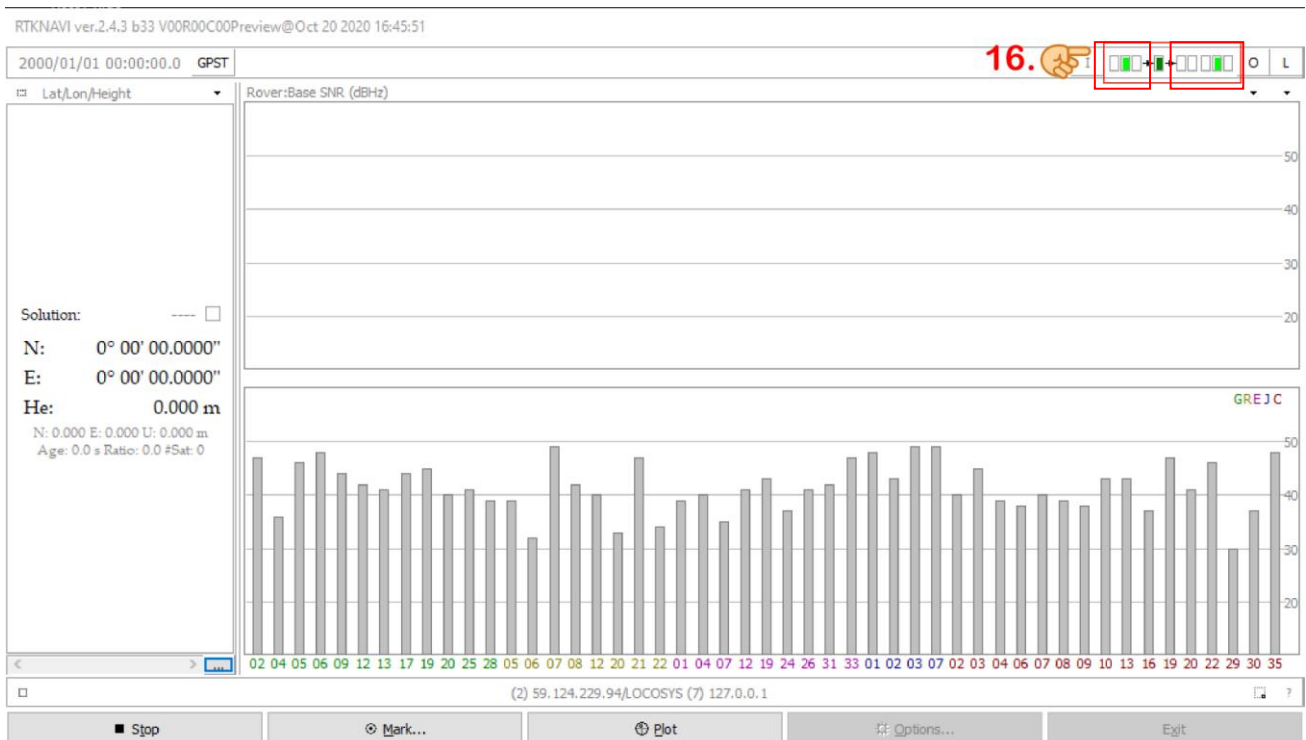


Figure 29: Rover is online

(Have to receive over 13 Satellites and those satellites C/No have to over 35 dB-Hz)

End of above