



EFIX F8 GNSS

USER GUIDE



Survey & Engineering | June 2023

Stronger signal, easy to fix

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Preface

Copyright

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Trademarks

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Safety Warnings

The Global Navigation Satellite System (GNSS) comprises several distinct satellite constellations, each of which is under the jurisdiction of a specific government entity. These entities bear the sole responsibility for ensuring the accuracy of their respective systems and for maintaining the integrity of their satellite networks.

Do not rely solely on the device for critical navigation decisions. The GNSS signals may be affected by atmospheric conditions, satellite availability, signal blockage, etc.

Be aware of the limitations of GNSS accuracy. It provides positioning information with a certain level of accuracy, but errors (including manual error) and deviations can occur.

Avoid prolonged exposure to strong magnetic fields, as they may interfere with the operation of the device and affect its accuracy.

Do not dismantle or modify the device. Any unauthorized modification may result in malfunction or damage and void the warranty.

Follow all instructions provided in the user manual for proper handling, charging, and maintenance.

1 Introduction

The F8 GNSS receiver removes barriers to portability without sacrificing performance. Featuring full GNSS technology, it offers best-in-class GNSS signal tracking even in a harsh environment, enabling GNSS surveying beyond usual constraints. The F8 GNSS incorporates the latest innovations such as an inertial module (IMU) providing automatic pole-tilt compensation in a very compact design.

1.1 Safety Information

1.1.1 Warnings and Cautions

An absence of specific alerts does not mean that there are no safety risks involved.

A Warning or Caution information is intended to minimize the risk of personal injury and/or damage to the equipment.



WARNING - A Warning alerts you to a potential misused or wrong setting of the equipment.



CAUTION - A Caution alerts you to a possible risk of serious injury to your person and/or damage to the equipment.

1.2 Regulations and Safety

The receivers contain a built-in wireless modem for signal communication through Bluetooth® wireless technology or through external communication datalink. Regulations regarding the use of the wireless modem vary greatly from country to country. In some countries, the unit can be used without obtaining an end-user license. However, in some countries, the administrative permissions are required. For license information, consult your local dealer. Bluetooth® operates in license-free bands.

Before operating a F8 GNSS receiver, determine if authorization or a license to operate the unit is required in your country. It is the responsibility of the end-user to obtain an operator's permit or license for the receiver for the location or country of use.

1.2.1 Use and Care

This receiver is designed to withstand the rough environment that typically occurs in the field. However, the receiver is high-precision electronic equipment and should be treated with reasonable care.



CAUTION - Operating or storing the receiver outside the specified temperature range will cause irreversible damage.

1.3 Technical Support

If you have a problem and cannot find the information you need in this manual or EFIX website (www.efix-geo.com), contact your local EFIX dealer from which you purchased the receiver(s).

If you need to contact EFIX technical support, please contact us by email (support@efix-geo.com) or Skype ([support@efix-geo.com](https://www.skype.com/join/support@efix-geo.com)).

1.4 Disclaimer

Before using the receiver, please make sure that you have read and understood this User Guide, as well as the safety information. EFIX holds no responsibility for the wrong operation by users and for the losses incurred by the wrong understanding about this User Guide. However, EFIX reserves the rights to update and optimize the contents in this guide regularly. Please contact your local EFIX dealer for new information.

1.5 Your Comments

Your feedback about this user guide will help us to improve it in future revision. Please email your comments to support@efix-geo.com.

2 Getting Started with F8

2.1 About the Receiver

The new F8 GNSS receiver offers integrated IMU-RTK technology to provide a robust and accurate GNSS positioning in any circumstances. Unlike the standard MEMS based GNSS receivers, the F8 GNSS IMU-RTK combines state-of-the-art GNSS RTK engine, calibration-free professional IMU sensor and advanced GNSS tracking capabilities. Survey projects are achieved with high productivity and reliability pushing the boundaries of conventional GNSS RTK survey.

The receiver can be used as the part of an RTK GNSS system with EFIX eField software. Moreover, user can download the GNSS data that recorded in the internal memory of receiver to a computer.

To configure the receiver for performing a wide variety of functions, you can use the web interface by connecting the receiver with PC or smartphone through Wi-Fi.


2.2 Parts of the Receiver

The operating control is located on the front panel. The main camera is located on the rear panel. The bottom camera, serial ports and connectors are located on the bottom of the unit.

2.2.1 Front Panel

The following figure shows a front view of the receiver. The front panel contains one Power LED Button.





Name	Description
<p data-bbox="284 779 526 857">Power LED Button (Red-Green-Orange)</p> 	<ul style="list-style-type: none"> <li data-bbox="592 331 1345 454">● Works as a Power button: Press and hold this button for 3 seconds to turn on or turn off the receiver. <li data-bbox="592 472 1329 734">● Works as an indicator light: <ul style="list-style-type: none"> <li data-bbox="651 517 1329 734">● Power indicator light: Shutdown, charging flash rules: During the charging process (including connecting to a power bank), the orange light is always on, and the green light is always on when fully charged; Boot up, Charging flash rules: Charging alternates between green and orange. <li data-bbox="651 846 1345 1059">● Battery-powered: when the battery level is low (less than 10%), the red light flashes once every 5 seconds, and continues to flash for 2 seconds. When the red light is flashing, the green light is off. <li data-bbox="651 1081 1313 1249">● RTK working process: The red light is always on when turned on, and the orange light flashes at 1Hz when receiving differential data; after being fixed, the green light flashes at 1Hz; <li data-bbox="651 1272 1305 1485">● Firmware upgrade: During the upgrade, the red and green lights flash alternately at a frequency of 1Hz. After the upgrade is successful, all lights are on for 1 second and then restarted.

2.2.2 Front Camera and Bottom Camera

The following two figures show the rear view and bottom view of the receiver:





Name	Description
<p>Front Camera</p> 	<ul style="list-style-type: none"> ● Used for vision survey and vision stakeout image acquisition.
<p>Bottom Camera</p> 	<ul style="list-style-type: none"> ● Used for vision stakeout image acquisition.

2.2.3 Receiver Ports

The following figure shows a bottom view of the receiver.

The bottom panel contains USB communication and power in port, TNC radio antenna connector, 5/8-11 threaded insert and Bottom Camera.



Port	Name	Description
	USB Type-C port	<ul style="list-style-type: none"> This port is a USB Type-C connector that supports USB communications. Users can use USB Type-C Cable supplied with the system to download the logged data to a computer.
	Radio antenna connector	<ul style="list-style-type: none"> Connect a radio antenna to internal radio of the receiver. And this connector is not used if you are using an external radio.

2.3 Batteries and Power

2.3.1 Built-in batteries

The receiver has two built-in 4900 mAh rechargeable Lithium-ion batteries.

2.3.2 Charging the Battery

The rechargeable Lithium-ion battery is supplied partially charged. Charge the battery completely before using it for the first time. Charge via USB Type-C port.



WARNING – Charge and use the rechargeable Lithium-ion battery only in strict accordance with the instructions. Charging or using the battery in unauthorized equipment can cause an explosion or fire and can result in personal injury and/or equipment damage.

To prevent injury or damage:

- Do not charge or use the battery if it appears to be damaged or leaking.
- Charge the Lithium-ion battery only in a EFIX product that is specified to charge it. Be sure to follow all instructions that are provided with the battery charger.
- Discontinue charging a battery that gives off extreme heat or a burning odor.
- Use the battery only in EFIX equipment that is specified to use it.
- Use the battery only for its intended use and according to the instructions in the product documentation.

2.3.3 Battery Safe



WARNING – Do not damage the rechargeable Lithium-ion battery. A damaged battery can cause an explosion or fire and can result in personal injury and/or property damage.

To prevent injury or damage:

- Do not expose the battery to fire, high temperature, or direct sunlight.
- Do not immerse the battery in water.
- Do not drop or puncture the battery.

2.3.4 External Power Supply

Provide the external power to the receiver by the USB Type-C Cable + Power Adapter.



The Power Adapter is connecting with AC power of 100-240V, the output port of the Power Adapter connects with the USB Type-C Cable.



2.4 Product Basic Supply Accessories

2.4.1 Rover Kit Basic Supply

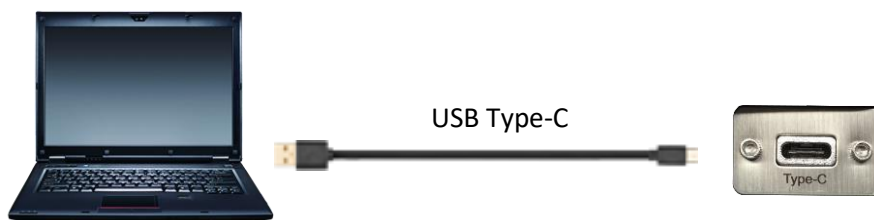
Item	Picture
F8 GNSS Receiver	
UHF Bar Antenna (410-470 MHz)	
eField USB Type-C	
Tribrach adaptor	
2M Range Pole w/bag	
Auxiliary H.I. Tool	

Power Adapter.	
Transport Hard Case	

2.5 Connecting to an Office Computer

The receiver can be connected to an office computer via a eField USB Type-C. Before you connect to the office computer, ensure that the receiver is powered on.

The following figure shows how to connect to the computer for serial data transfer or settings:

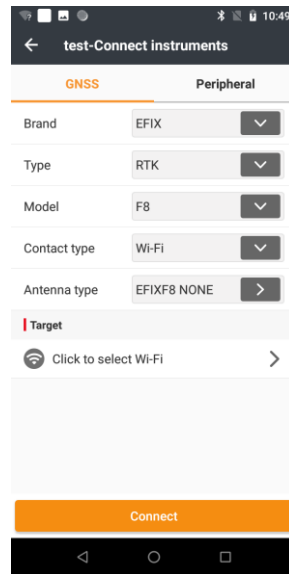


2.6 Connecting to a Controller

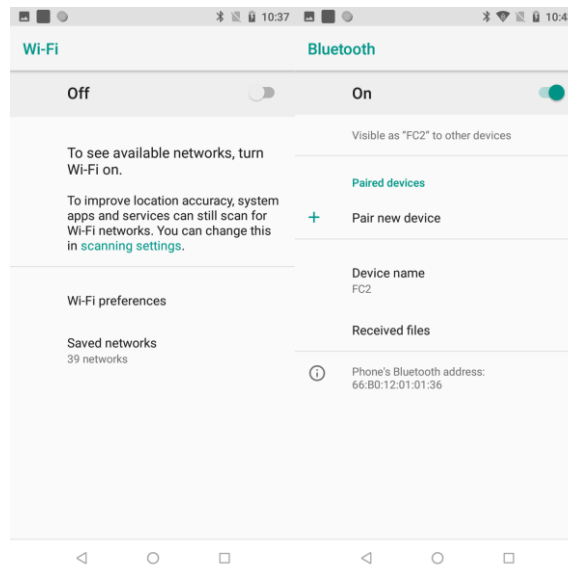
2.6.1 Connecting via Wi-Fi with eField Software

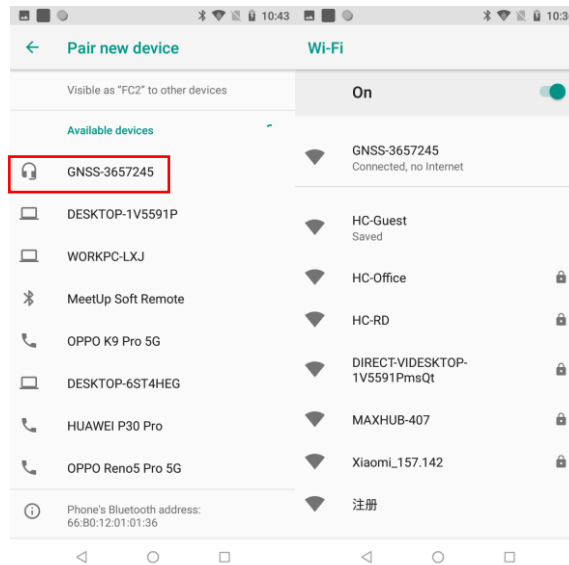
Turn on the controller → run eField → go to **Config** main menu → tap **Connect**.

In the *Connect* screen, select **EFIX** for the *Brand* field, **F8** for *Device Type* field, **WIFI** for *Connection Type* field.

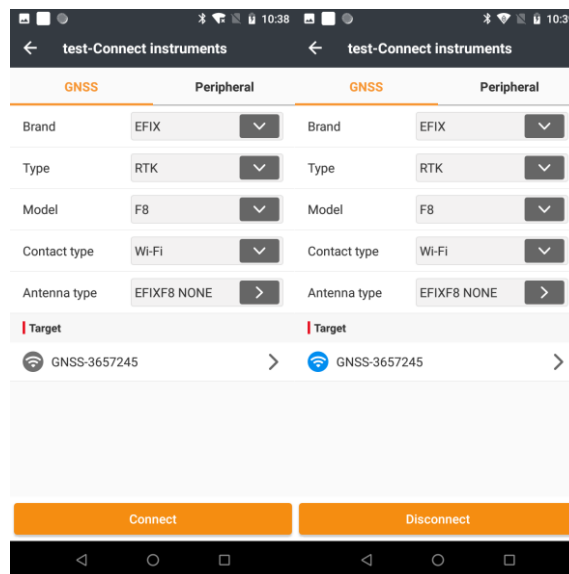


Tap the Click to select WI-FI to select the hot spot → Switch on the WiFi module by the top switch → Tap Pair new device → select the target device in the list → Tap back button → select the target device in the WIFI target list → Tap the **Connect** button to build the connection.





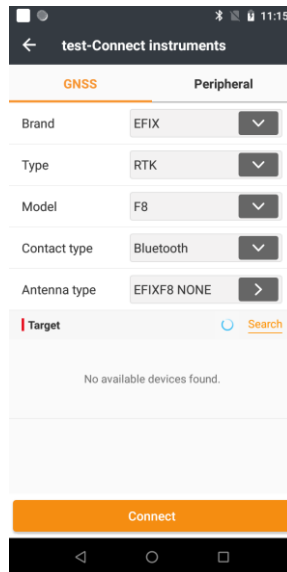
Tip – Tap **Connect** to link to the hot spot. If the first-time connection to this hot spot, user may type in the password. The Wi-Fi key of the receiver is **12345678** by default.



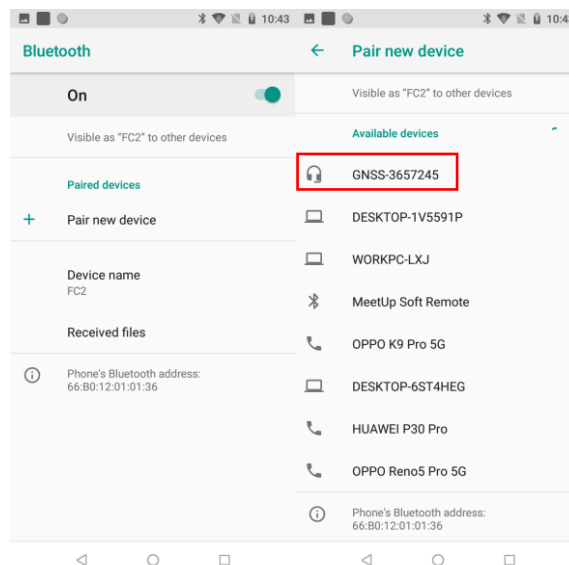
2.6.2 Connecting via Bluetooth with eField Software

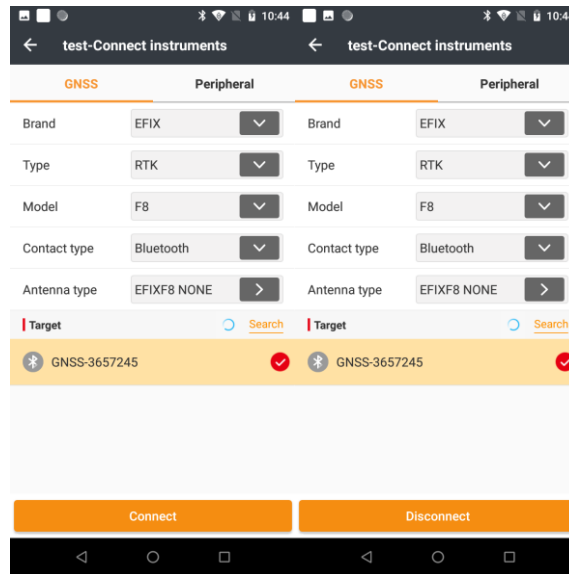
Turn on the controller → run eField → go to **Config** main menu → tap **Connect**.

In the *Connect* screen, select EFIX for the **Brand** field, **F8** for *Device Type* field, **Bluetooth** for *Connection Type* field.



Tap the **Search** to search Bluetooth device around → Switch on the Bluetooth module by the top switch → Tap Pair new device → select the target device in the list → Tap back button → select the target device in the Bluetooth target list → Tap the **Connect** button to build the connection.





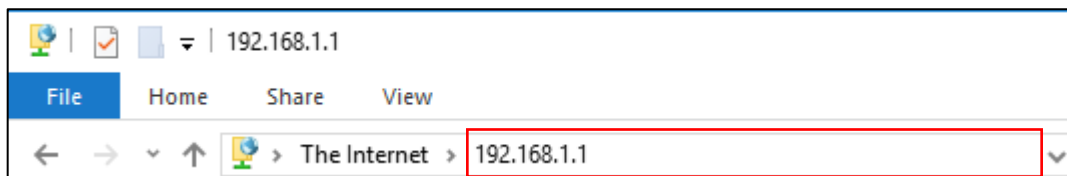
2.7 Downloading Logged Data

Data logging involves the collection of GNSS measurement data over a period at a static point or points, and subsequent post-processing of the information to accurately compute baseline information. Data logging using receivers requires access to suitable GNSS post-processing software such as the eOffice Software.

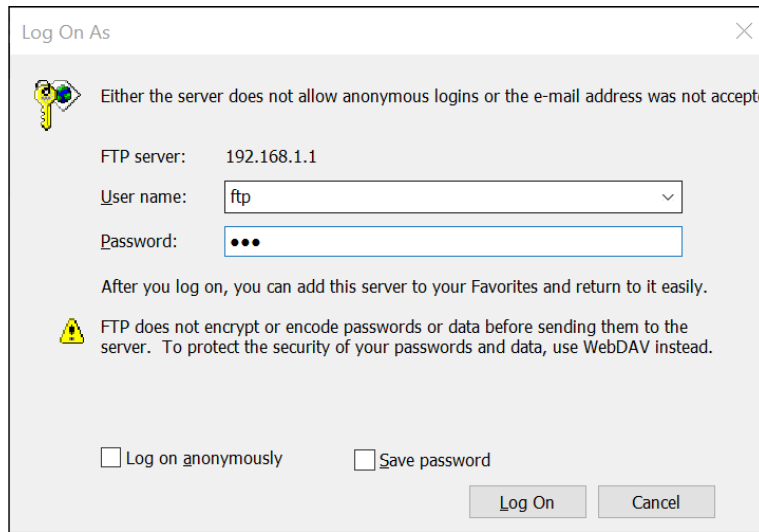
2.7.1 FTP Download

The procedures of downloading logged data through FTP are as follows:

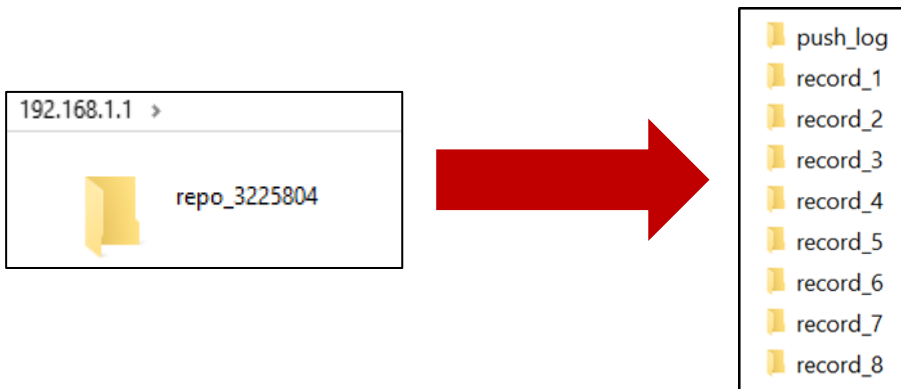
- (1) Switch on the receiver, search its Wi-Fi in the computer and connect.
- (2) After the successful connection, open the file manager in the computer and input “ftp:\\192.168.1.1” in the address box.



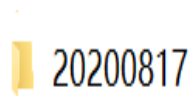
- (3) Input user name and password, the default user name and password are “ftp”.



(4) Double click the folder “repo_receiver SN” (take 3225804 as example), you will see 9 folders. The “push_log” folder is used to save the log files, and the other 8 folders represent different logging sessions and are used for store static data.



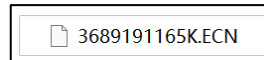
(5) Double click the folder that you have configured to store the static data, you will see the folder(s) created by the F8 system automatically and named by the date which is decide by GPS time when you start to log data.



(6) Select the destination folder and double click it, two folders named as different data format (ecn and rinex) will be displayed.



(7) Select the data format that you configured to save the static data, you will find the static raw data.



Notes: For ecn files, the name of the file is represented as XXXXXDDNN, where XXXXX is the SN of the receiver, DDD is day of year, and NN is the recording session.



WARNING – The static data will be saved in the first logging session, the “record_1” folder, by default. Old files will be deleted if the storage space is full. If you configure not to auto delete old files when the memory is low, the receiver will stop data logging.

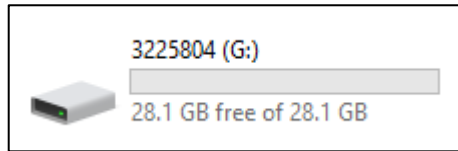
2.7.2 Web Server Download

The procedures of downloading logged data through web server refer to 5.4.4 Data Download Submenu.

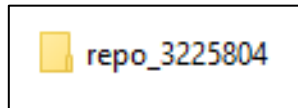
2.7.3 USB Download

The procedures of downloading logged data in the receiver are as follows:

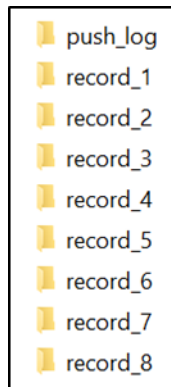
(1) Switch on the receiver and connect it with a computer by eField Type-C. After the successful connection, a removable disk named as the Serial Number (SN) of the receiver will appear on the computer.



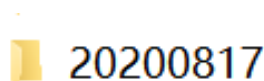
(2) Double click the removable disk and you will see the folder named as “repo”.



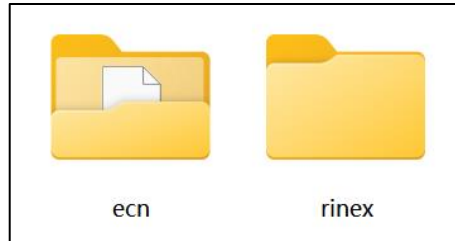
(3) Double click this folder, you will see 9 folders. The “push_log” folder is used to save the log files, and the other 8 folders represent different logging session and are used for store static data.



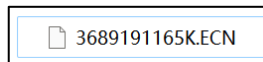
(4) Double click the folder that you have configured to store the static data, you will see the folder(s) created by the F8 system automatically and named by the date which is decide by GPS time when you start to log data.



(5) Select the destination folder and double click it, and then two folders named as different data format (ecn and rinex) will be displayed.



(6) Select the data format that you have configured to save the static data, you will find the static raw data.



Tip – For ecn files, the name of the file is represented as XXXXXDDDNN, where XXXXXX is the SN of the receiver, DDD is day of year, and NN is the recording session.



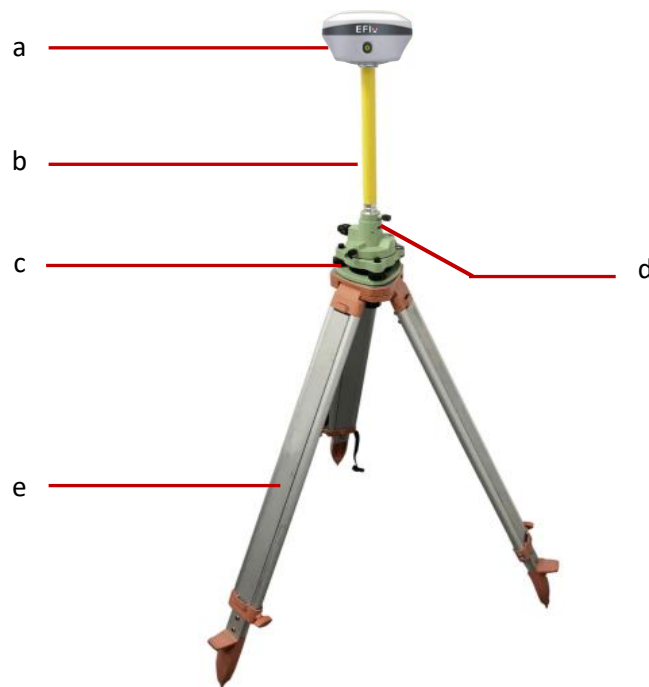
WARNING – The static data will be saved in the first logging session, the “record_1” folder, by default. Old files will be deleted if the storage space is full. If you configure not to auto delete old files when the memory is low, the receiver will stop data logging.

3 Equipment Setup and Operation

3.1 Post-processing Base Station Setup

For good performance, the following base station setup guidelines are recommended:

Components:



No.	Name
a	F8 GNSS receiver
b	Extension pole (30 cm)
c	Tribrach adaptor
d	Tribrach w/ Opti
e	Aluminum tripod

Steps:

- (1) Put tripod in the target position, center and level it roughly.
- (2) Place and lock the tribrach in the tripod.

- (3) Screw the receiver onto the tribrach.
- (4) Center and level the receiver more precisely.
- (5) Connect the receiver to external battery by using USB Type-C cable if necessary.
- (6) Turn on the receiver by pressing the power button for 3 s.
- (7) Measure the antenna height by using H.I. tape and auxiliary H.I. tool.
- (8) Press the function button to select Data to start recording static raw.

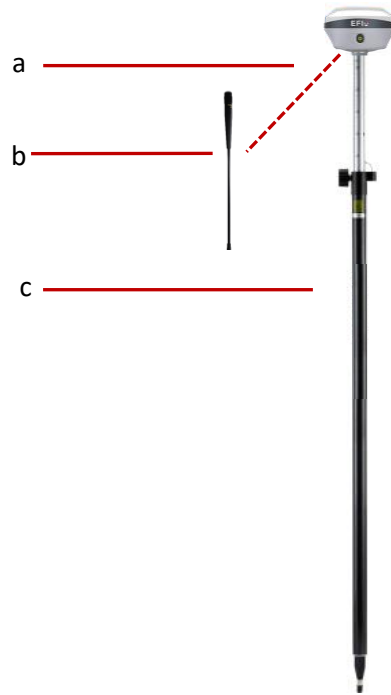
If work with a data controller:

- (9) Switch on the data controller and connect it to the receiver.
- (10) Use software to configure the receiver as static mode.

3.2 Real-Time Rover Station Setup

For good performance, the following rover station setup guidelines are recommended:

Components




No.	Name
a	F8 GNSS receiver
b	UHF whip antenna
c	2M range pole w/bag

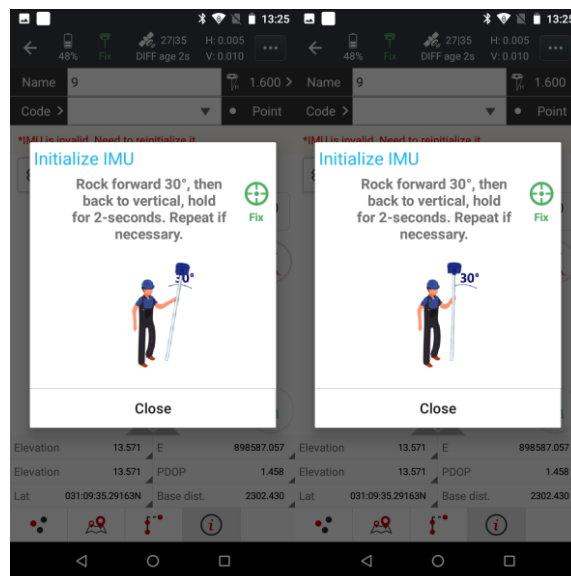
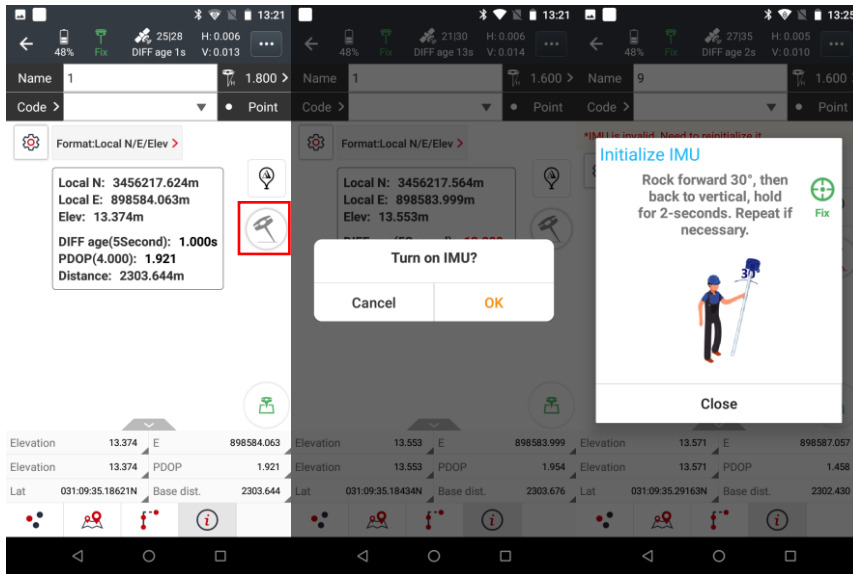
Steps:


- (1) Connect the UHF whip antenna to the receiver.
- (2) Screw the receiver onto the pole.
- (3) Turn on the receiver by pressing the power button for 3 s.
- (4) Switch on the data controller and connect it to the receiver.
- (5) Use software to configure the receiver as rover mode.
- (6) Center and level the receiver more precisely.
- (7) Use software to start survey.

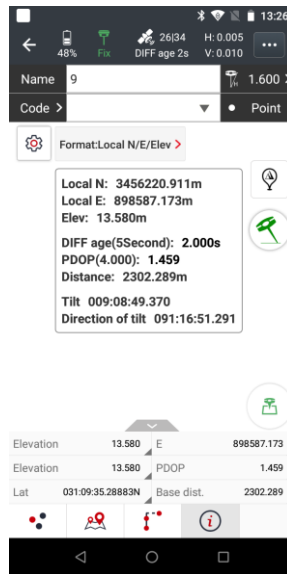
3.3 Working with the Tilt Compensation


3.3.1 Operation Steps


- (1) Open eField-> Tap PT Survey-> Tap  to activate tilt measurement.
- (2) Shake around according to the procedures in the interface to do initialization.

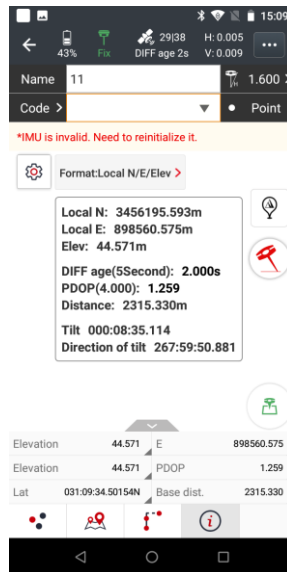



- (3) This icon  will appear when the initialization is successful.



(4) Enter the Name and Antenna, then tap  point will be collected and store to Points automatically.

(5) When this icon  appears, the text will show “*IMU is invalid. Need to reinitialize it.” at the top of interface.



(6) Tap  to close tilt compensation.

3.3.2 Notes of using tilt measurement

1. At the beginning of initialization, the pole height of the instrument should be the same as that antenna height in the software.

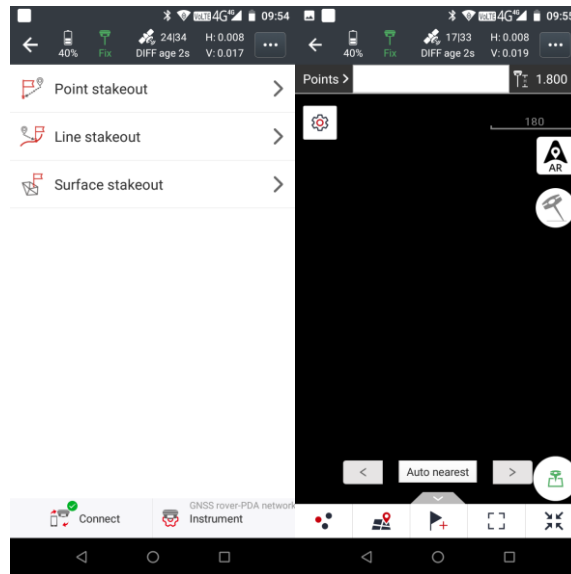
2. In the process of tilt measurement, if the controller shows that “Tilt is not available, please measure in alignment” (red), please shake RTK slightly from left to right or back to front until the reminder disappears.
3. The controller will prompt “Tilt is not available, please measure in alignment” when the receiver is stationary over 30 seconds or the pole hit the ground toughly.
4. The pole cannot be shaken when point is collected.
5. The receiver cannot be moved in a circle in one direction for more than 360 degrees. if the receiver has been rotated 360 degrees, it must be rotated in the opposite direction to recover again.
6. Initialization is required:
 - when the RTK is turned on every time;
 - when IMU module is turned on every time;
 - when receiver drops at working;
 - when the pole is tilted more than 65 degree;
 - when the receiver is stationary more than 10 minutes;
 - when the RTK rotates too fast on the matching pole (2 rounds per second);
 - when the pole hit the ground toughly.

3.4 Working with the Vision Camera

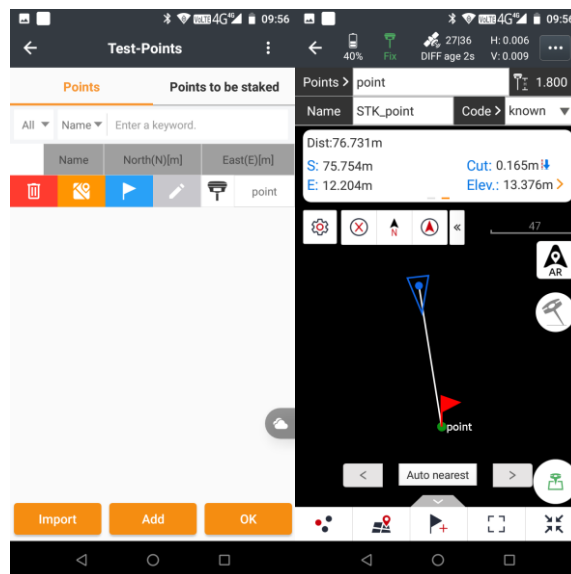
3.4.1 Operation Steps

3.4.1.1 Vision Stakeout

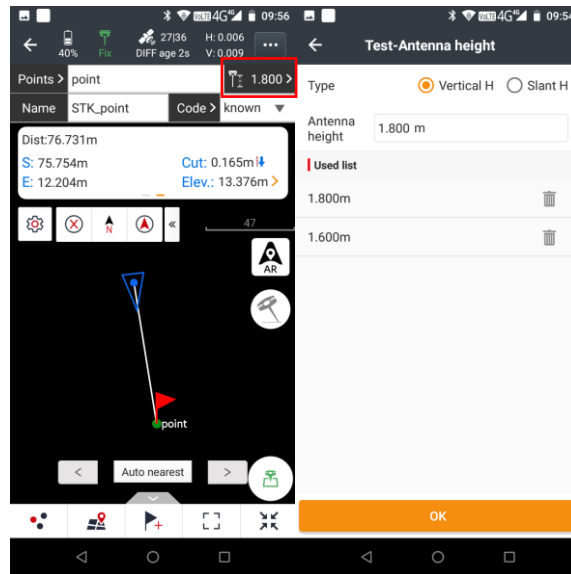
- (1) Open eField-> Tap Stakeout-> Tap Point stakeout (Here take point stakeout as an example, currently also supports Line stakeout, Cad stakeout)



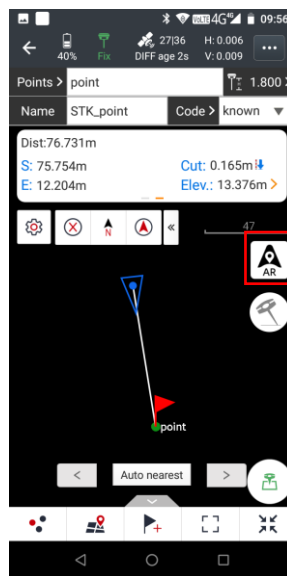
(2) Tap points, select a stakeout point, slide right and tap stakeout




(3) Check whether the height of the antenna is consistent with the height of the 2M Range Pole w/ Bag

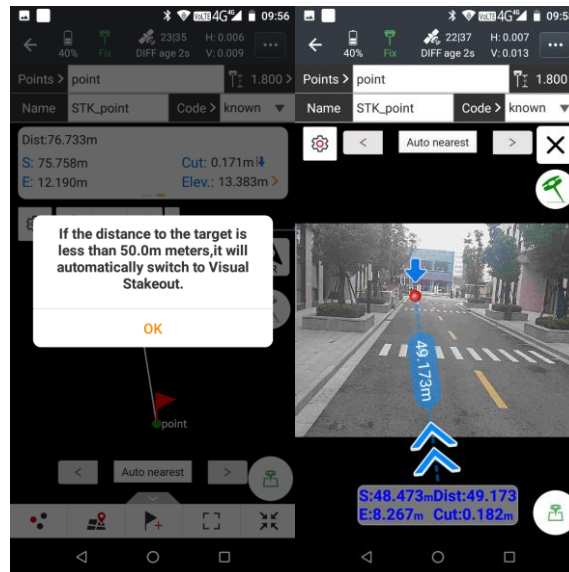


(4) Tap AR, the software will prompt you to activate tilt measurement



(5) This icon  will appear when the initialization is successful.

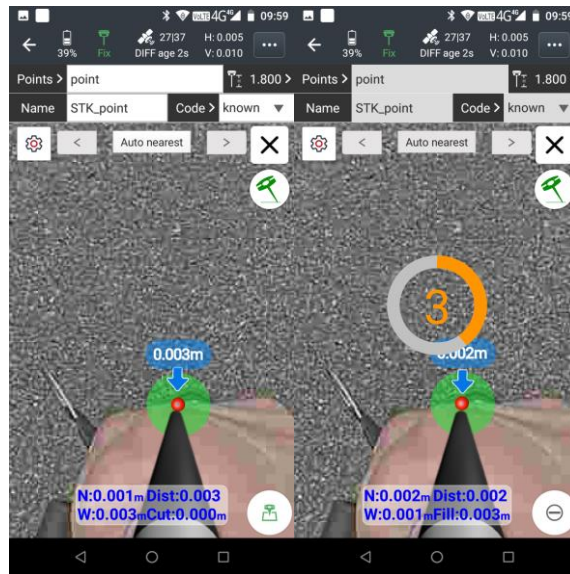
(6) If the distance to the target is less than 50.0m meters, it will automatically switch to Vision Stakeout. (with Front Camera)



- (7) If the distance to the target is less than 10.0m meters, it will automatically switch to Vision Stakeout. (with Front Camera)
- (8) If the distance to the target is less than 10.0m meters, it will automatically switch to Vision Stakeout. (with Bottom Camera)



- (9) After we are within 1cm from the target point, we can click the measurement icon to collect

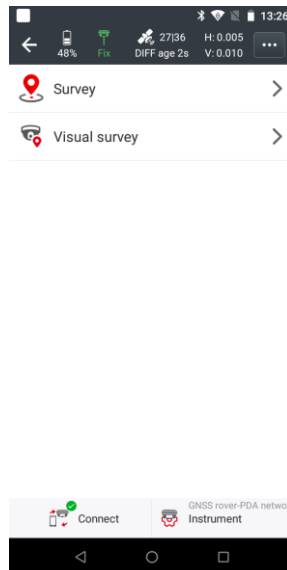


Note:

When the stakeout target point has a height, it is necessary to input the height of the target point as 0 or the actual height

3.4.1.2 Vision Survey

(1) Open eField-> Tap Survey-> Tap Vision Survey

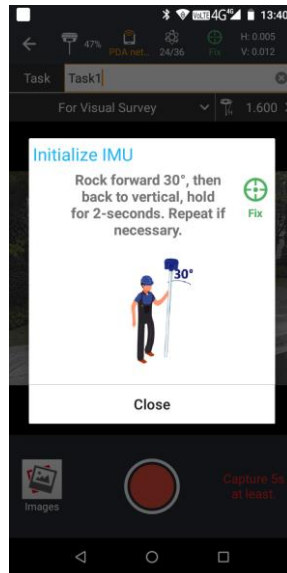


(2) Click the red dot, the software will prompt you to activate tilt measurement.

Note:

modify the height of the antenna to be the same as the height of the 2M Range Pole w/ Bag before initialization.

At present, the non-inductive inertial navigation is used, and the initialization can be completed by simply shaking it or walking around; after the initialization is completed, try to walk about 5m so Initialization remains stable.)



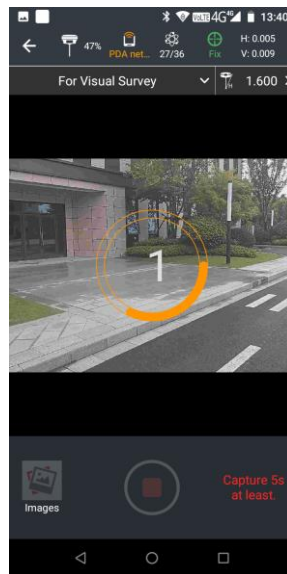
(3) After the initialization is successful, you can see the image captured by the front camera of the receiver on the screen of the controller.



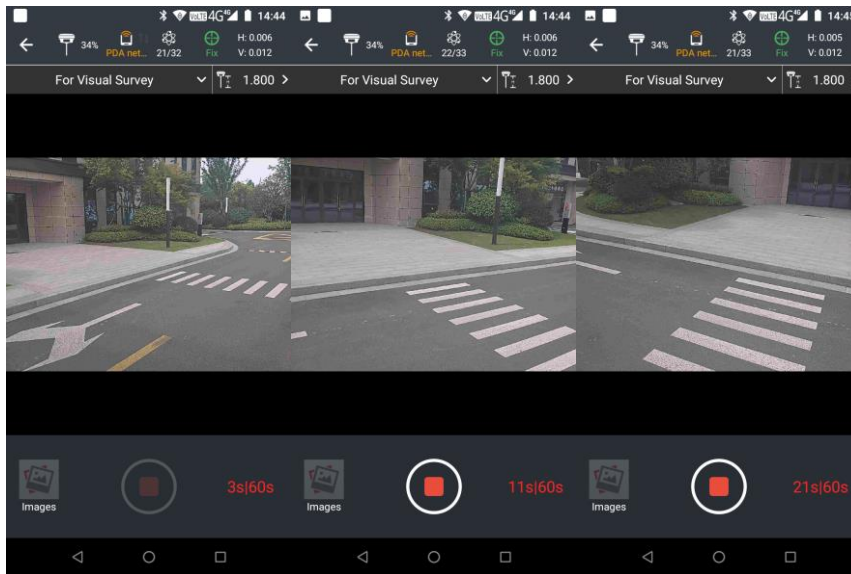
(4) Enter task name.



- (5) Aim the camera of the receiver at the target to be tested, click the video recording icon, and there will be three seconds of preparation time.

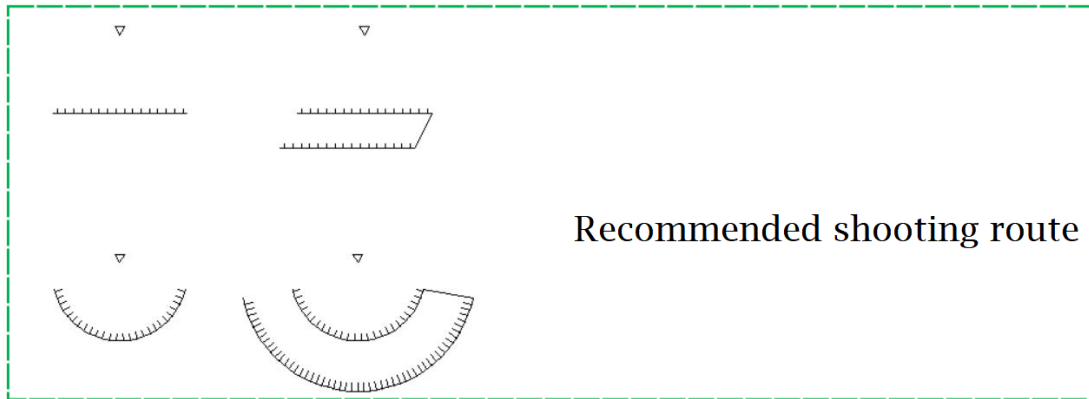


- (6) In three seconds, the video recording will begin. While circling around the target point, capture footage of the object being tested.

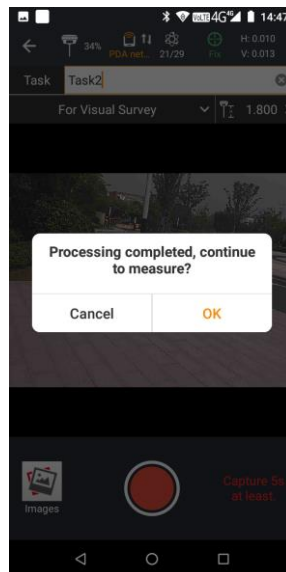


(Note:

Maintain a constant speed while filming, and the video must not be less than 5 seconds long. The horizontal (walking direction) distance must be greater than 4 meters, and the vertical (target direction) distance must be greater than 2 meters. It is best to ensure that the vertical distance is within 15 meters.)



(7) After finishing the shooting, click on the icon to end the recording and confirm the data processing. The software will automatically process the data.



(Note:

local calculation is slower, with approximately 1 minute of calculation time for every 10 seconds of data, and about 5 minutes for every 60 seconds of data.)

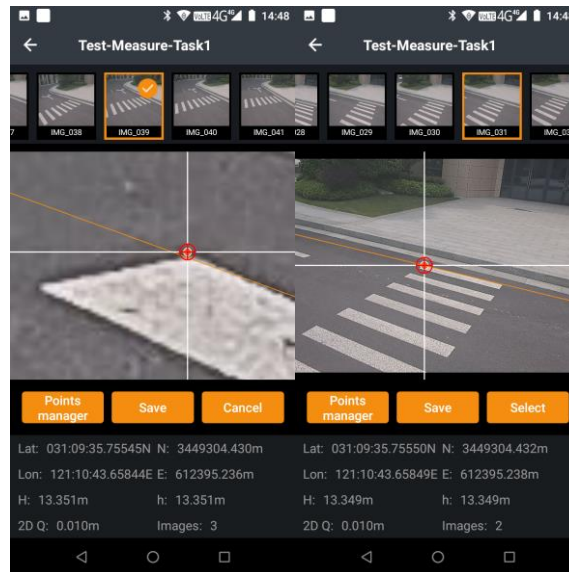
- (8) After the calculation is completed, select the photo where the target point is located, zoom in/out the photo, and capture the corresponding point (preferably the image facing the target being tested).



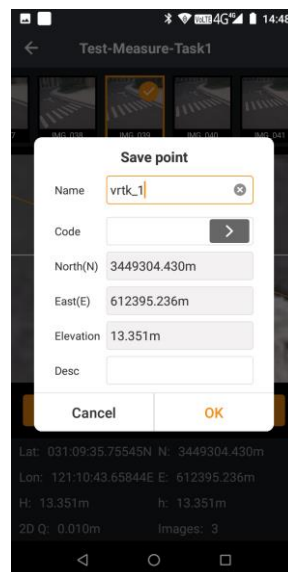
- (9) After moving the target point to the arrow and clicking 'Select', the latitude, longitude, and plane coordinates of the point will be displayed below. The 2D quality represents the accuracy of the target point calculation.

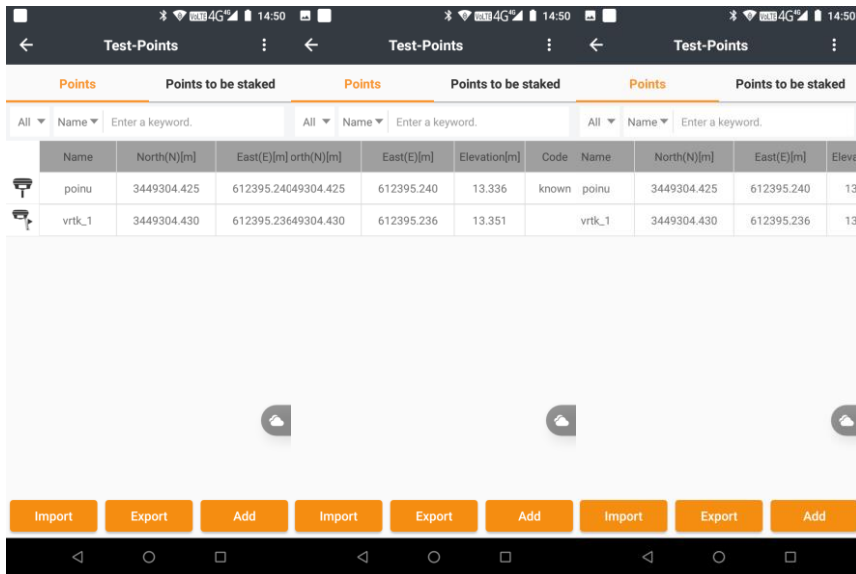


Capturing the same location on multiple photos will improve the accuracy of the target point, and the 2D value will gradually decrease.

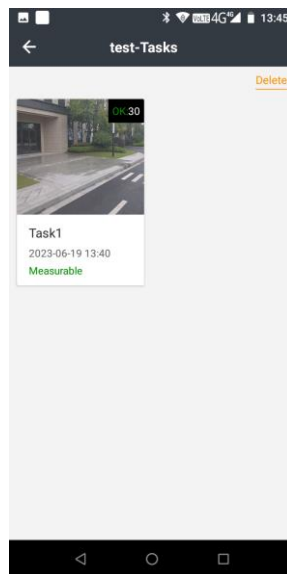


(10) When the accuracy meets the requirements, click 'Save' and enter a name for the point to save the target point in the point management system. After saving, you can click on the point library to enter the point management to view the coordinates that were just saved. If other points are needed, continue to select and save the data.



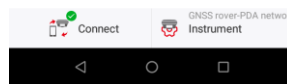
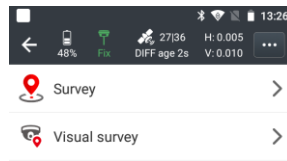


(11) Post-calculation can also be performed, and the image library can be opened in the office for post-calculation.



3.4.1.3 3D Modeling

(1) Open eField-> Tap Survey-> Tap Vision Survey



(2) Click for vision survey and change to for 3D modeling



(3) Click the red dot, the software will prompt you to activate tilt measurement

(Note:

modify the height of the antenna to be the same as the height of the 2M Range Pole w/ Bag before initialization.

At present, the non-inductive inertial navigation is used, and the initialization can be completed by simply shaking it or walking around; after the initialization is completed, try to walk about 5m so Initialization remains stable.)

(4) After the initialization is successful, you can see the image captured by the front camera of the receiver on the screen of the controller

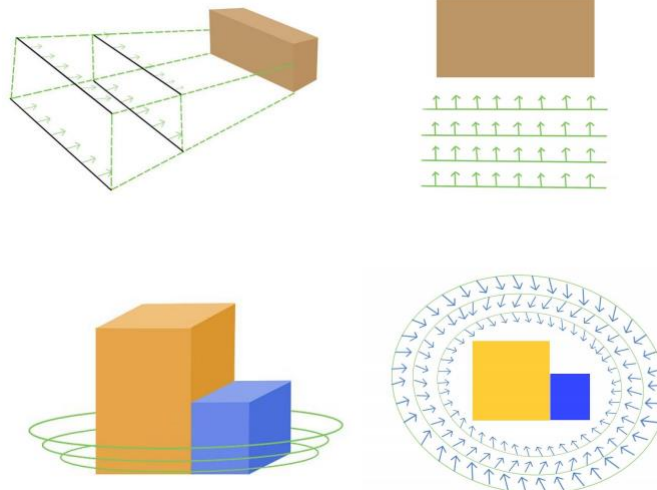
- (5) Enter task name
- (6) Aim the camera of the receiver at the target to be tested, click the video recording icon, and there will be three seconds of preparation time
- (7) The video recording will start in three seconds, while moving around the target point to shoot the object being measured. The shooting duration should not be less than five seconds. (**Note: The maximum observation time is 60 minutes**)
- (8) After the shooting is over, click the icon to end the recording to complete the recording

Note:

Please maintain a steady speed while filming, with a minimum video length of 5 seconds. The route of travel may follow the example, and it is recommended to film from various heights, angles, and distances to capture the test target.

If the target is single-sided, it is recommended to take a direct shot. If the target is a building panorama, it is recommended to take a panoramic shot, with the camera angled at a certain degree (30° - 45°) from the target.

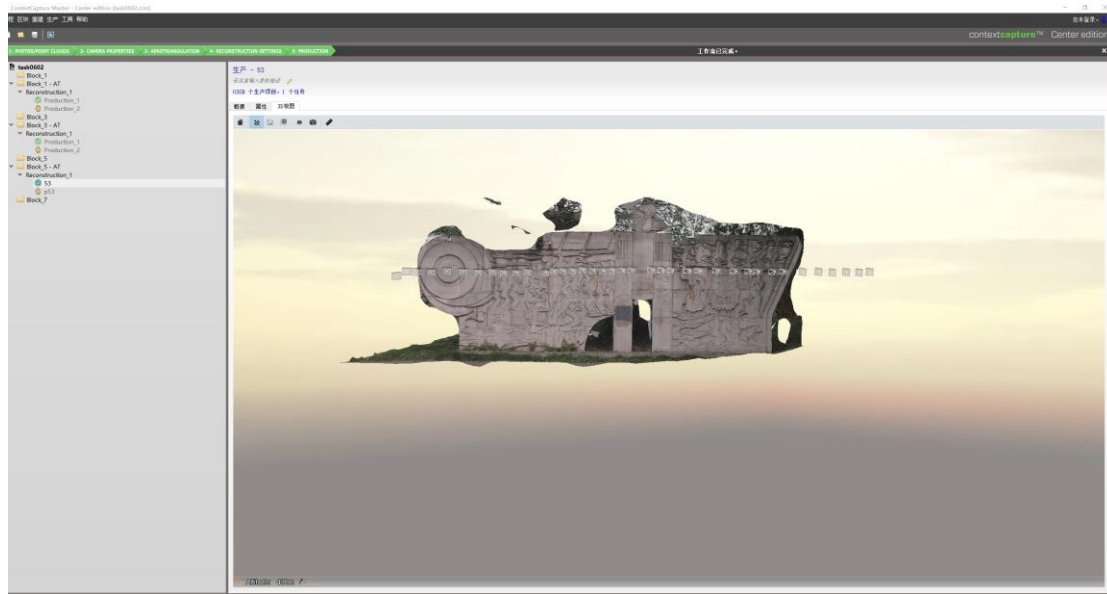
See the diagram below for reference:



- (9) Data export: Open the "File" section in the controller to find the captured image data in the following file path: "Efield\EF_Projects\ProjectFolder\ImageTask\Task Folder".

The "images" folder under the current folder contains the captured photos, while the "camera.txt" file is the camera parameter file. When exporting data, both of these data files need to be copied and pasted onto the computer.

(10) Use third-party modeling software for model building.



3.4.2 Notes of using Vision Camera

1. At the beginning of initialization, the pole height of the instrument should be the same as that antenna height in the software.
2. In the process of tilt measurement, if the controller shows that “Tilt is not available, please measure in alignment” (red), please shake RTK slightly from left to right or back to front until the reminder disappears.
3. The controller will prompt “Tilt is not available, please measure in alignment” when the receiver is stationary over 30 seconds or the pole hit the ground toughly.
4. The pole cannot be shaken when point is collected.
5. The receiver cannot be moved in a circle in one direction for more than 360 degrees. if the receiver has been rotated 360 degrees, it must be rotated in the opposite direction to recover again.
6. Initialization is required:
 - when the RTK is turned on every time;
 - when IMU module is turned on every time;
 - when receiver drops at working;
 - when the pole is tilted more than 65 degree;
 - when the receiver is stationary more than 10 minutes;
 - when the RTK rotates too fast on the matching pole (2 rounds per second);
 - when the pole hit the ground toughly.
7. Ensure stable fixed solutions by walking and filming in open areas using Vision RTK.
8. Try to capture Visually rich textures and lines by adjusting filming angles and distances to enhance the field of view.
9. Avoid filming dynamic objects that create reflective glare, such as glass surfaces, water reflections, moving objects, cars, or pedestrians.
10. Film under good lighting conditions as much as possible and avoid filming in low light, strong light, or backlights.
11. Increase the line of sight between the target points and the filming route as much as possible while avoiding obstructions in the middle.

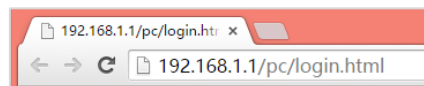
4 Configuring Through a Web Browser

Supported browsers:

- Google Chrome
- Microsoft Internet Explorer® version 10, or higher

To connect to the receiver through a web browser:

1. Turn on the Wi-Fi of the receiver.
2. Search the wireless network named as GNSS-XXXXXXX (the SN of your receiver) on your computer, and then establish the connection.
3. After the successful connection between your computer and the receiver, enter the IP address (192.168.1.1) of the receiver into the address bar of the web browser on your computer:



4. The web browser prompts you to enter a login account and password:

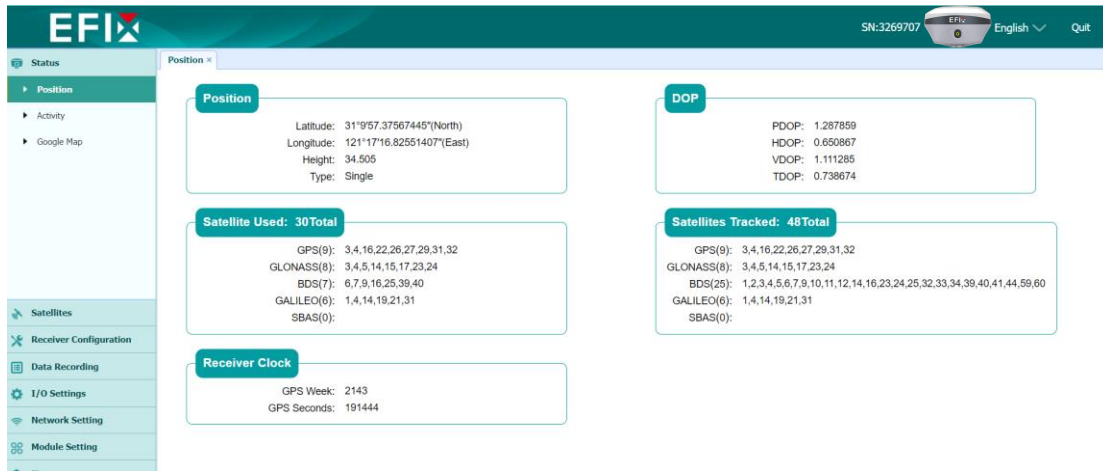


The default login account for the receiver is:

- Login Account: admin
- Password: password

Note – Tick **remember me** option, and then the browser will remember the Login Account and Password you entered.

5. Once you log in, the web page appears as follows:

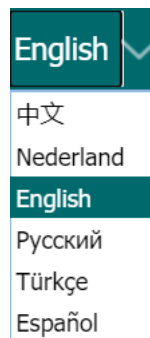


This web page shows the configuration menus on the left of the browser window, and the setting on the right. Each configuration menu contains the related Submenus to configure the receiver and monitor receiver performance.

This chapter describes each configuration menu.

To view the web page in another language, select the corresponding language name from the dropdown list on the upper right corner of the web page.

Currently, six languages are available:



4.1 Status Menu

This menu provides a quick link to review the receiver's position information, satellites tracked, runtime, current data log status, current outputs, available memory, and more.

4.1.1 Position Submenu

This page shows the relevant position information about the receiver's position solution which including the position, DOP values, satellites used and tracked, and the receiver clock information.

The screenshot shows the 'Position' submenu with the following data:

Category	Value
Position	Latitude: 31°9'57.34872476"(North) Longitude: 121°17'16.92238566"(East) Height: 38.955 Type: Single
DOP	PDOP: 1.328485 HDOP: 0.641613 VDOP: 1.163274 TDOP: 0.877797
Satellite Used: 28 Total	GPS(7): 2,5,6,13,15,29,30 GLONASS(5): 1,2,17,23,24 BDS(11): 1,3,6,8,13,19,29,35,38,39,59 GALILEO(5): 7,13,19,26,33 SBAS(0):
Satellites Tracked: 39 Total	GPS(8): 2,5,6,7,13,15,29,30 GLONASS(5): 1,2,17,23,24 BDS(21): 1,2,3,4,5,6,8,9,10,13,16,19,20,22,29,30,35,38,39,59,60 GALILEO(5): 7,13,19,26,33 SBAS(0):
Receiver Clock	GPS Week: 2118 GPS Seconds: 283368

4.1.2 Activity Submenu

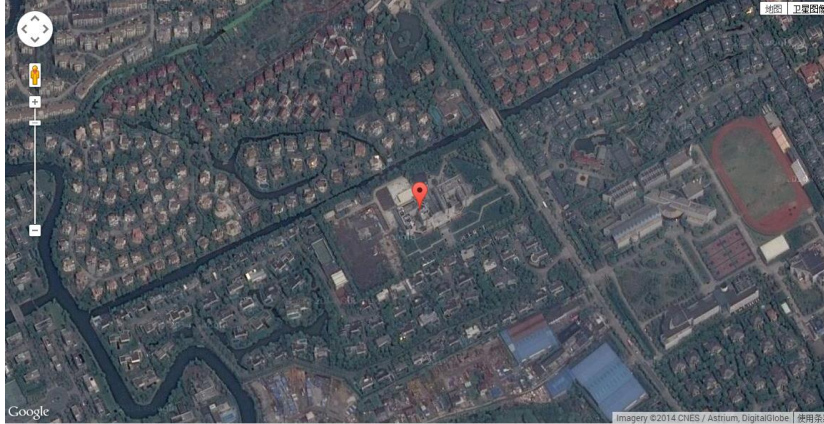
Lists several important items to help you understand how the receiver is being used and its current operating condition. Items include the identities of currently tracked satellites, internal and external storage usage rate, how long the receiver has been operational, state of the internal battery, power source state. With this information, it is easy to tell exactly what functions the receiver is performing:

The screenshot shows the 'Activity' submenu with the following data:

Category	Value
Satellites Track: 39 Total	GPS(8): 2,5,6,7,13,15,29,30 GLONASS(5): 1,2,17,23,24 BDS(21): 1,2,3,4,5,6,8,9,10,13,16,19,20,22,29,30,35,38,39,59,60 GALILEO(5): 7,13,19,26,33 SBAS(0):
Activity Status	Current Time: 2020-08-12 06:43:06 (UTC) Operation Duration: 00-00-00 00:32:45 Internal Storage: <input type="text" value="2.59%"/> 175MB/6750MB External Storage: <input type="text" value="0%"/> Disconnected External Power: Connected Battery: <input type="text" value="82%"/>

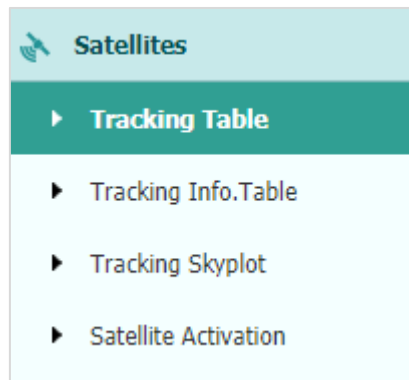
4.1.3 Google Map Submenu

Tap this submenu to show the location of the receiver on Google map.



4.2 Satellites Menu

Use the Satellites menu to view satellite tracking details and enable/disable GPS, GLONASS, BDS and Galileo constellations. These menus include tabular and graphical displays to provide all required information on satellite tracking status.



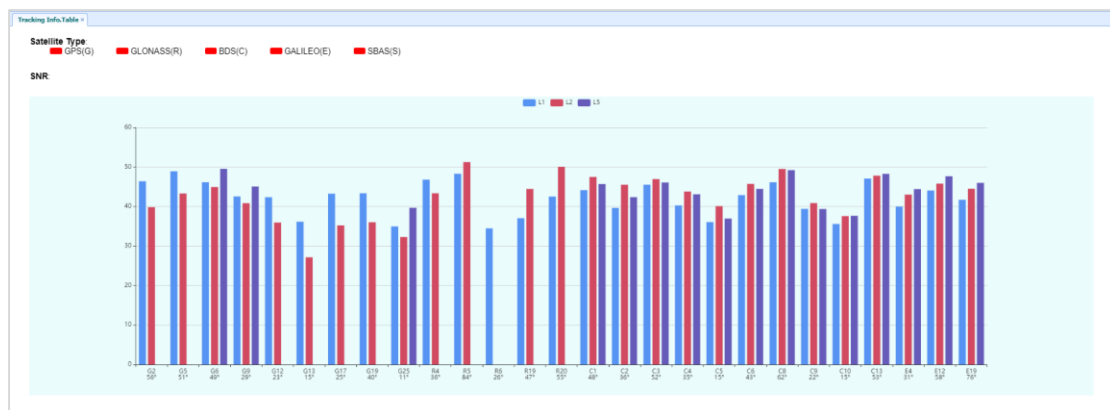
4.2.1 Tracking Table Submenu

Provides the status of satellites tracked in general, such as the satellite ID, satellite type, attitude angle, azimuth angle, L1 SNR, L2 SNR, L5 SNR and enable/disable status of each one.

SV	Type	Elevation Angle	Azimuth Angle	L1 SNR	L2 SNR	L5 SNR	Enabled
2	GPS	53	332	45.660	36.420	0.000	Yes
5	GPS	47	258	48.280	34.340	0.000	Yes
6	GPS	51	59	46.480	39.220	47.300	Yes
9	GPS	32	55	42.130	33.920	44.300	Yes
12	GPS	25	265	44.080	34.830	0.000	Yes
17	GPS	30	148	44.390	33.470	0.000	Yes
19	GPS	45	147	44.230	34.510	0.000	Yes
25	GPS	10	303	37.660	31.190	39.240	Yes
4	GLONASS	42	28	46.520	47.890	0.000	Yes
5	GLONASS	81	230	47.930	51.230	0.000	Yes
19	GLONASS	51	99	35.050	46.220	0.000	Yes
20	GLONASS	50	349	40.390	50.220	0.000	Yes
1	BDS	48	146	42.080	42.740	43.530	Yes
2	BDS	36	236	37.350	40.800	40.080	No
3	BDS	52	200	43.130	42.120	44.200	Yes
4	BDS	35	122	37.550	38.470	40.850	Yes
5	BDS	15	256	33.570	35.130	34.650	No
6	BDS	40	179	38.970	38.900	41.820	Yes
7	BDS	11	195	31.840	31.010	35.650	No
8	BDS	61	15	44.190	44.860	46.650	Yes
9	BDS	20	191	36.140	35.200	36.780	Yes
10	BDS	17	217	33.330	34.840	35.540	No
13	BDS	52	331	44.300	42.940	45.260	Yes
4	GALILEO	26	203	37.790	40.350	34.420	Yes
12	GALILEO	54	335	41.650	43.420	39.840	No
19	GALILEO	73	132	39.940	42.290	39.230	Yes
26	GALILEO	10	113	33.220	33.960	31.130	No

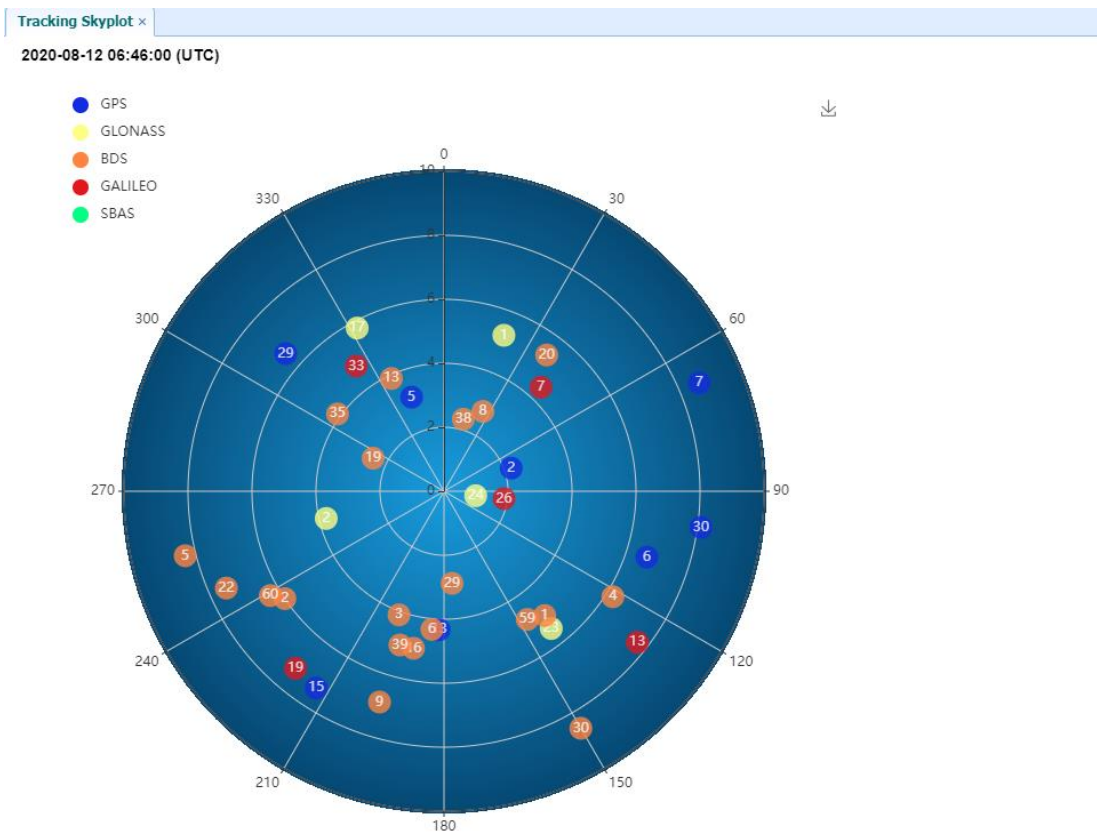
4.2.2 Tracking Info. Table Submenu

The following figure is an example of satellite track diagram page. Users can determine the satellite types and the corresponding SNR of L-band carriers to be displayed in any combination.



4.2.3 Tracking Skyplot Submenu

The following figure is an example of Skyplot page.



4.2.4 Satellite Activation Submenu

Use this menu to enable or disable satellites.

Satellite Activation x

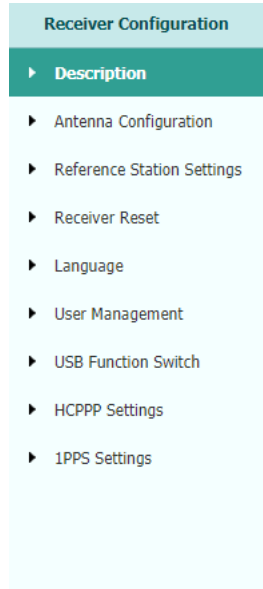
GPS | GLONASS | BDS | GALILEO | SBAS

Select All | Unselect All | Confirm | Enable All | Disable All

Satellite Id	Enable	Satellite Id	Enable
1	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>
3	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>
5	<input checked="" type="checkbox"/>	6	<input checked="" type="checkbox"/>
7	<input checked="" type="checkbox"/>	8	<input checked="" type="checkbox"/>
9	<input checked="" type="checkbox"/>	10	<input checked="" type="checkbox"/>
11	<input checked="" type="checkbox"/>	12	<input checked="" type="checkbox"/>
13	<input checked="" type="checkbox"/>	14	<input checked="" type="checkbox"/>
15	<input checked="" type="checkbox"/>	16	<input checked="" type="checkbox"/>
17	<input checked="" type="checkbox"/>	18	<input checked="" type="checkbox"/>
19	<input checked="" type="checkbox"/>	20	<input checked="" type="checkbox"/>
21	<input checked="" type="checkbox"/>	22	<input checked="" type="checkbox"/>
23	<input checked="" type="checkbox"/>	24	<input checked="" type="checkbox"/>
25	<input checked="" type="checkbox"/>	26	<input checked="" type="checkbox"/>
27	<input checked="" type="checkbox"/>	28	<input checked="" type="checkbox"/>
29	<input checked="" type="checkbox"/>	30	<input checked="" type="checkbox"/>
31	<input checked="" type="checkbox"/>	32	<input checked="" type="checkbox"/>

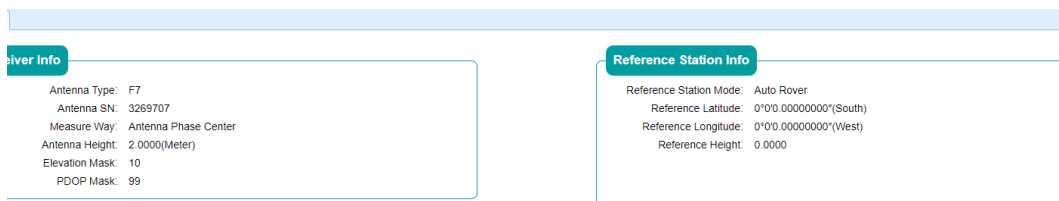
4.3 Receiver Configuration Menu

Use this menu to configure settings such as the antenna type and height, elevation mask and PDOP setting, the reference station coordinates, receiver resetting and web interface language:



4.3.1 Description

This submenu shows the receiver information and reference station information, including antenna related information, elevation mask angle, reference station work mode and position, etc.



4.3.2 Antenna Configuration Submenu

Use this screen to configure all the items related to the GNSS antenna. You must enter the correct values for all antenna-related fields, because the choices you make affect the accuracy for logged data and broadcast correction data significantly:

4.3.3 Reference Station Settings Submenu

Use this screen to configure settings such as the station coordinates and the broadcast station identifiers. You must enter accurate information in these fields, as this data affects the accuracy of logged data files and broadcast correction data significantly:

For **Reference Station Mode**:

There are three modes available:

- a) **Auto Rover**: The receiver will serve as a rover after this mode is enabled, and then receive correction data through the working mode set last time.

4.3.4 Receiver Reset Submenu

Use this screen to completely or partially reset the receiver:

The screenshot shows the 'Receiver Reset' submenu with four options, each with a 'Confirm' button:

- Reboot Receiver: Confirm
- Return to Factory Defaults: Confirm
- Clear Satellite Data: Confirm
- Turn Off Receiver: Confirm

4.3.5 Languages Submenu

Use this screen to select the web interface language:

The screenshot shows the 'Language' submenu with a dropdown menu and a 'Confirm' button. The dropdown menu is open, showing the following options:

- English (selected)
- 中文
- Nederland
- Русский
- Türkçe
- Español

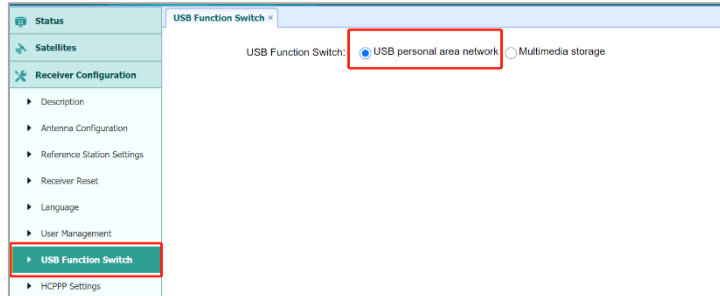
4.3.6 User Management Submenu

The screenshot shows the 'User Management' submenu with a table of users and a toolbar with icons for Add, Save, Delete, and Modify Anti-theft password.

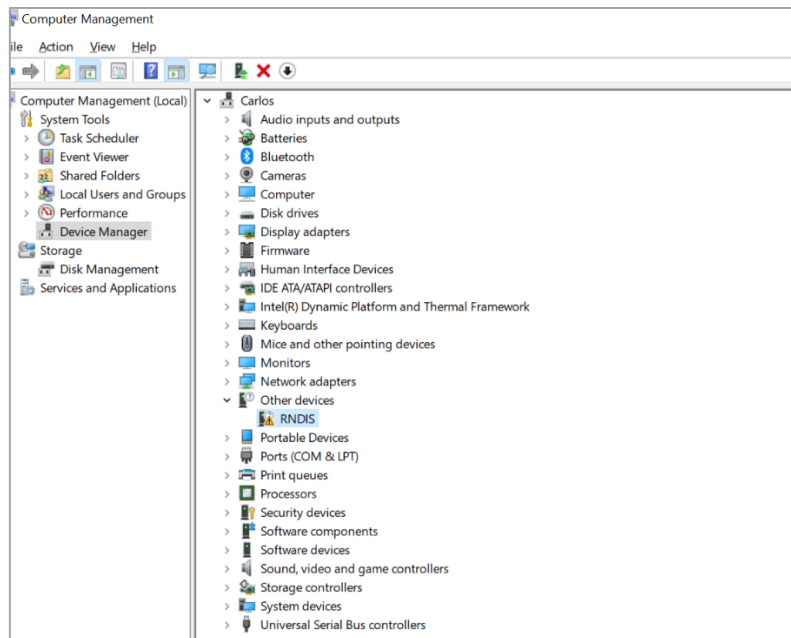
ID	User Name	Password
1	<input type="text" value="admin"/>	<input type="password" value="....."/>
2	<input type="text" value="admin1"/>	<input type="password" value="....."/>
3	<input type="text" value="admin2"/>	<input type="password" value="....."/>

4.3.7 USB Function Switch

Use this screen to set F8 work as APIS base.



1. Connect F8 to PC by USB cable, it will shown in device manager as unknown device:
RNDIS



2. Install the driver for F8 RNDIS
 - a) Right click RNDIS, and select update driver, and choose Browse my computer for driver software.

← Update Drivers - RNDIS

How do you want to search for drivers?

→ Search automatically for updated driver software
 Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.

→ Browse my computer for driver software
 Locate and install driver software manually.

Cancel

b) Select Let me pick from a list of available drivers on my computer, and click next

← Update Drivers - RNDIS

Browse for drivers on your computer

Search for drivers in this location:

E:\320 OS\HCE320\线刷\QFIL tools\QFIL tools\Qualcomm_usb_driver

Browse...

Include subfolders

→ Let me pick from a list of available drivers on my computer
 This list will show available drivers compatible with the device, and all drivers in the same category as the device.

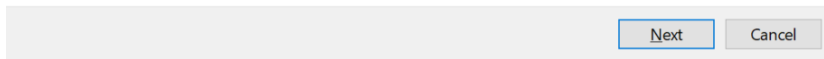
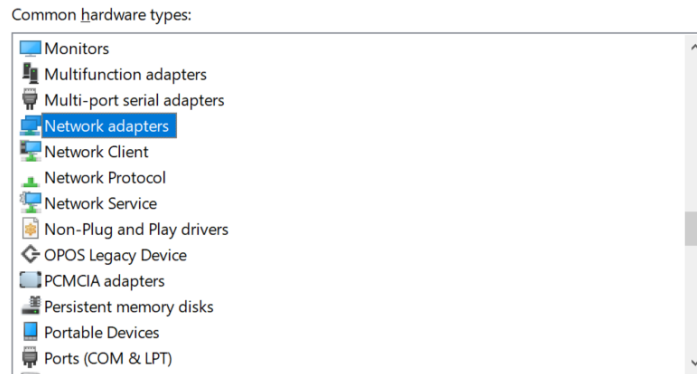
Next

Cancel

c) Then there will appear a hardware type list. In the list, select Network adapters.

← Update Drivers - RNDIS

Select your device's type from the list below.

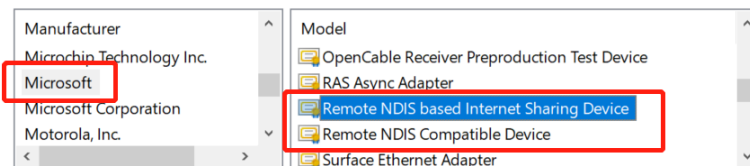


- d) Then find Microsoft in the Manufacturer list, and select Remote NDIS based Internet Sharing Device in the model list.

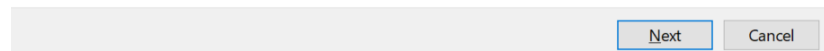
← Update Drivers - RNDIS

Select the device driver you want to install for this hardware.

Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.



This driver is digitally signed. [Tell me why driver signing is important](#) Have Disk...



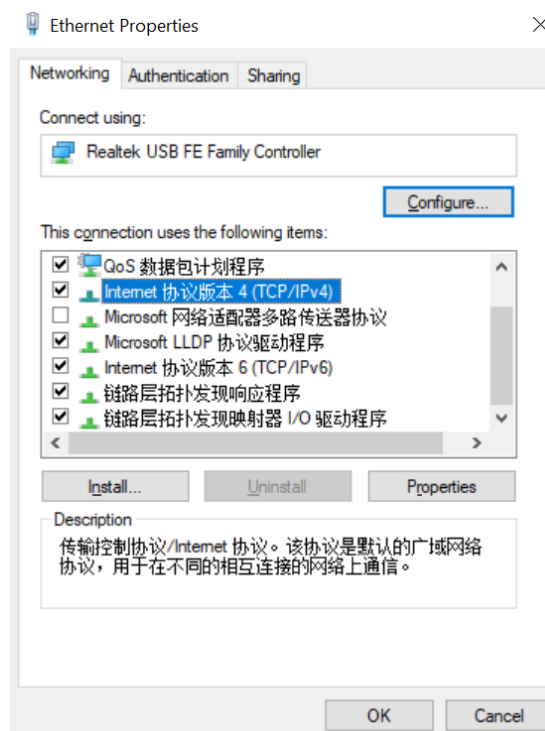
- 3. Config IP for F8.
 - a) After installing the driver, there will show another Ethernet connection in Network connections.

Ethernet

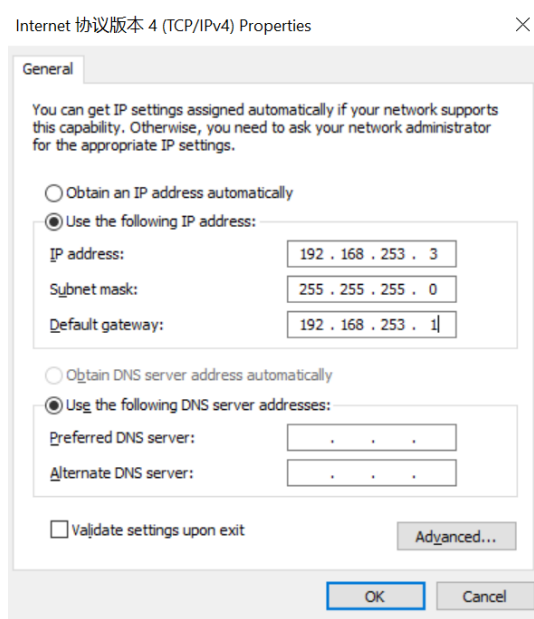
Unidentified network
No Internet

Network
Connected

- b) Go to properties, and double click IPV4 to change the IP address.



- c) Change the IP address, Subnet mask and Default gateway as following:

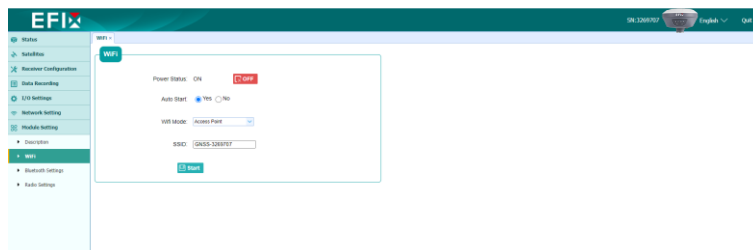


4. Login into F8 webpage in Chrome by inputting: 192.168.253.1, keep same as the default gateway.

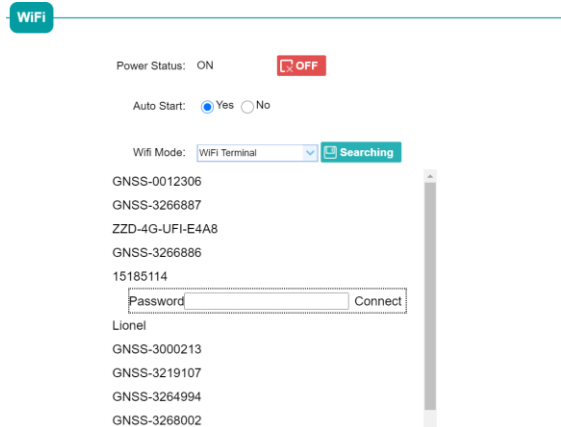


5. Config F8 to connect Wifi and work as APIS base.

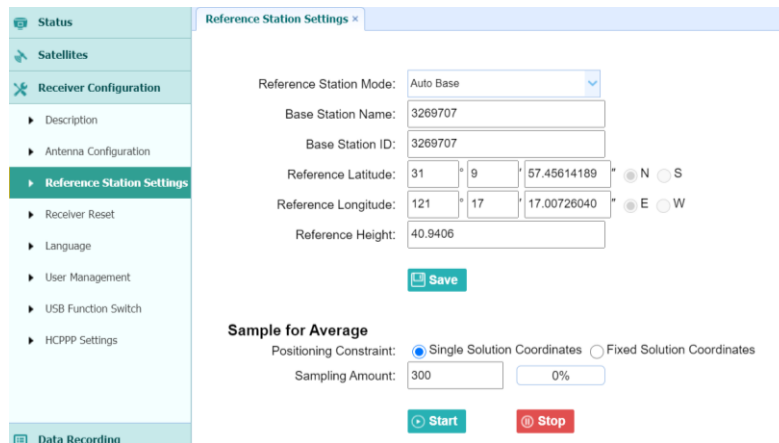
a) Go to Module Setting -> WiFi, change WiFi mode to WiFi Terminal.



b) Click Start to searching the wifi and connect.



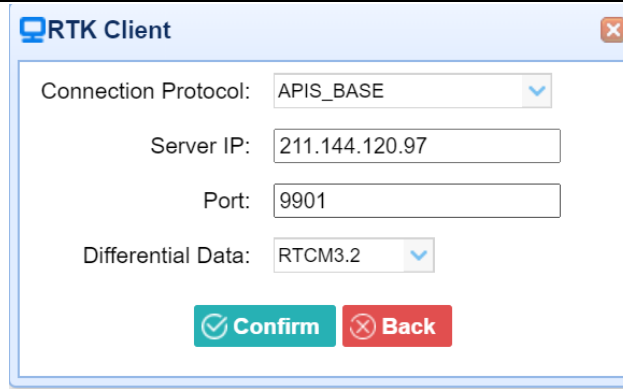
- c) Go to Receiver Configuration -> Reference Station Settings. Set F8 as auto base, and get the base station.



- d) Go to I/O settings, in RTK Client, config it.

Type	Description	Output	Connection St	Modify
RTK Client	211.144.120.97:96	---	Unconnected	Connect Disconnect
2	TCP/UDP_Client1/NTRIP S: 211.144.120.97:96	Differential Data:RTCM3.2	Logged In	Connect Disconnect
3	TCP/UDP_Client2/NTRIP S: 192.168.3.18:9900	---	Unconnected	Connect Disconnect
4	TCP/UDP_Client3/NTRIP S: 192.168.3.18:9900	---	Unconnected	Connect Disconnect
5	TCP/UDP_Client4/NTRIP S: 192.168.3.18:9900	---	Unconnected	Connect Disconnect
6	TCP/UDP_Client5/NTRIP S: 192.168.3.18:9900	---	Unconnected	Connect Disconnect
7	TCP/UDP_Client6/NTRIP S: 192.168.3.18:9900	---	Unconnected	Connect Disconnect

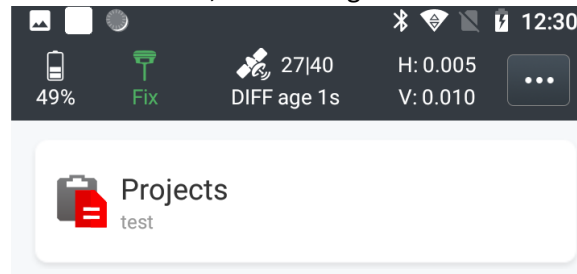
- e) Connect Connect and config it as APIS base, use local APIS address. Then click Confirm to set.



- f) After send correction data to APIS server successfully, the RTK Client option will become green background.

Type	Description	Output	Connection St	Modify
1	RTK Client	211.144.120.97:9901	Logged In	Connect Disconnect
2	TCP/UDP_Client1/NTRIP S	211.144.120.97:9901	Unconnected	Connect Disconnect
3	TCP/UDP_Client2/NTRIP S	192.168.3.18:9901	Unconnected	Connect Disconnect
4	TCP/UDP_Client3/NTRIP S	192.168.3.18:9902	Unconnected	Connect Disconnect
5	TCP/UDP_Client4/NTRIP S	192.168.3.18:9903	Unconnected	Connect Disconnect
6	TCP/UDP_Client5/NTRIP S	192.168.3.18:9904	Unconnected	Connect Disconnect

- g) Then set rover as APIS rover, and it will get fix solution.

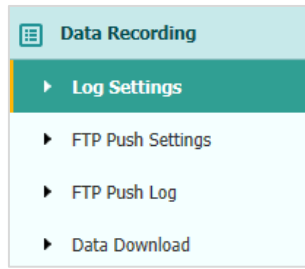


4.3.8 HCPPP Settings

Reserved for HCPPP.

4.4 Data Recording Menu

Use the Data Logging menu to set up the receiver to log static GNSS data and to view the logging settings. You can configure settings such as observable rate, recording rate, continuous logging limit, and whether to auto delete old files when memory is low. This menu also provides the controls for the FTP push feature:



4.4.1 Log Settings Submenu

Here shows the data logging status, including internal and external storage usage and data logging status of each session. Also, users can configure the data logging settings for each session, including recording name, store location, storage limit, store formats, start time, etc.

Log Settings x

Store Info			
	Position	Total Storage	Storage Available
1	Internal Storage	6750MB	6576MB
2	External Storage	0MB	0MB

Attention: Total assigned storage size should be less than 6GB. It will stop recording when the storage is full.

Record Info							Clear All
Recording Number	File Name	Activated	Log Status	Setting Parameter	Switch	Clear Data	
1	record1	Yes	Recording	Modify Detail	ON OFF	Clear	

To edit the settings of each session, click the **Modify** button to the right of the required session, and then the *Recording Edit* screen appears:

Recording Edit
✕

Auto Record: Yes No

Sample Interval: 1Hz ▼

Elevation Mask: 15 (°)

Duration Time: 60 (Minute)

Site Name: 3689191base

Antenna Height: 0.0000

Measure Way: Vertical Height ▼

Storage Format: ECN ▼

RINEX Version: 3.0x ▼

Compress Rinex Data: Yes No

Advanced

✔ Save
✕ Back

Click advanced to see more settings.

Start Date: Yes No

Apply Time: Yes No

Integral Point Store: Yes No

Circulating Memory: Yes No

the data overwritten first file after storage space is full

Repeat Observations: Yes No

Turn on to record a single observation. Turn off to record repeated observations.

Store Location: Internal Storage ▼

Assigned Storage: 6000 (MB)

Observer: EFIX

Observe Agency: EFIX

FTP Push:

Close

1:ftp server 1

2:ftp server 2



3:ftp server 3

✔ Save
✕ Back

In this screen, you can configure all the data logging parameters, and determine whether the recording files will be affected by the FTP Push. The parameters are mainly as follows:

- **Auto Record:** on or off.
- **Sample Interval:** Select the observable rate from the dropdown list.
- **Elevation Mask:** Enter the elevation mask.
- **Duration Time:** Set the duration of data logging.
- **Site Name:** Enter the name of the site.
- **Antenna Height:** the measured height value.
- **Measure way:** Antenna Phase Center, Vertical Height, Slant Height
- **Storage Format:** Select the format of the data store.
- **RINEX Version:** OFF, 3.02, 2.11
- **Start Date:** Select **Yes** or **No** option to determine whether to auto record start date.
- **Apply Time:** Select **Yes** or **No** option to determine whether to auto record apply time.

- **Integral Point Store:** Select **Yes** or **No** option to determine whether to allow receiver to save data every hour.
- **Circulating Memory:** Select **Yes** or **No** option to determine whether to auto delete old files if the storage space is full.
- **Repeat Observations:** Select **Yes** or **No** option to determine whether to turn on to record a single observation.
- **Store Location:** Internal Storage, External Storage.
- **Assigned Storage:** The assigned memory size of current thread(for example, Record 1) is 10000MB
- **Observer:** Enter the name of observer.
- **Observer Agency:** Enter the name of observer agency.
- **FTP Push:** Decide whether to push the stored files to the FTP server of your choice.

Tap  button to save the settings and back to the *Log Settings* screen. Also, users can click  to abandon the changed settings and back to *Log Settings* screen.

Note – To modify data logging parameters, make sure the data logging session is switched off.

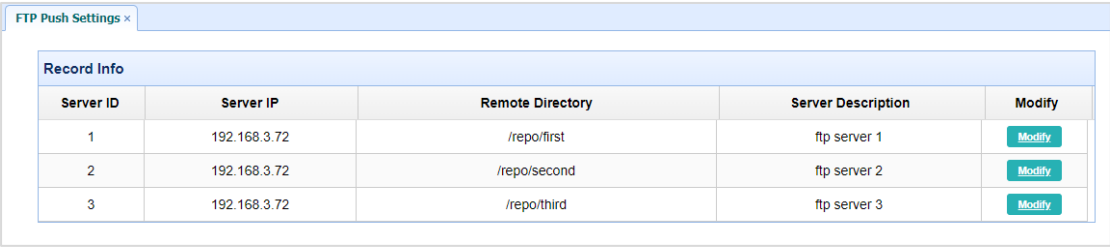
To switch on or off **ANY** data logging session, tap the **ON** or **OFF** button on the right of the required session.




To delete the recorded files of **ANY** data logging session, tap the **Clear** button on the right of the required session.

To delete the recorded files of **ALL** data logging sessions, tap the **Clear ALL Accounts** button.

4.4.2 FTP Push Settings Submenu

Use this screen to configure the receiver to push stored files to the FTP server of your choice. Only files that are configured to use FTP push are transmitted.



Record Info				
Server ID	Server IP	Remote Directory	Server Description	Modify
1	192.168.3.72	/repo/first	ftp server 1	
2	192.168.3.72	/repo/second	ftp server 2	
3	192.168.3.72	/repo/third	ftp server 3	

Tap **Modify** button on the right of the required FTP server and the *FTP Push Settings* screen appears:

4.4.3 FTP Push Log Submenu

Shows the related information about the recorded files that be pushed. And users can tap **Clear Ftp Send Log** button in the upper right corner to clear the log of FTP Push operations.

Server ID	Push File	File Size	Push Time	Push Successful Or Not

4.4.4 Data Download Submenu

In this submenu, users can download the data files that recorded in the internal storage through the internal FTP site.

1. Click this submenu, and then the log on dialogue box will prompt you to enter a user name and password:

Sign in

ftp://192.168.1.1

Your connection to this site is not private

Username

Password

The default logon account for the internal FTP site is:

- User name: ftp
 - Password: ftp
2. Click the directory named as “repo” to view and download the files currently stored on the receiver:

Index of /

	Name	Size	Date Modified
System Volume Information/			8/9/19, 10:28:00 PM
repo_3225804/			7/16/19, 1:17:00 PM

3. To find the file need to be downloaded, click the name of data logging session → the date of file that be recorded → the format of the file → the name of the target file.

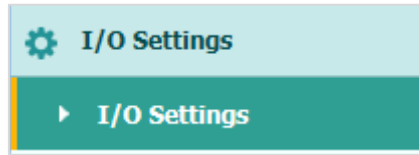
Index of /repo_3225804/

[\[parent directory\]](#)

	Name	Size	Date Modified
push_log/			7/16/19, 1:17:00 PM
record_1/			8/15/19, 10:22:00 AM
record_2/			7/16/19, 1:17:00 PM
record_3/			7/16/19, 1:17:00 PM
record_4/			7/16/19, 1:17:00 PM
record_5/			7/16/19, 1:17:00 PM
record_6/			7/16/19, 1:17:00 PM
record_7/			7/16/19, 1:17:00 PM
record_8/			7/16/19, 1:17:00 PM

4. To download a file, left-click the name of the target file → download the file according to the prompts.

4.5 IO Settings Menu



Use the IO Settings menu to set up all receiver outputs and inputs. The receiver can output CMR, RTCM, Raw data, Ephemeris data, GPGGA, GPGSV, on TCP/IP, UDP, serial port, or Bluetooth ports.

4.5.1 IO Settings Submenu

The following figure shows an example of the screen that appears when you select this submenu. (serial port setting is reserved menu)

	Type	Description	Output	Connection Status	Modify
1	RTK Client	211.144.118.5:2102	---	Unconnected	Connect Disconnecting Detail
2	TCP/UDP_Client1/NTRIP Server1	192.168.3.18:9900	---	Unconnected	Connect Disconnecting Detail
3	TCP/UDP_Client2/NTRIP Server2	192.168.3.18:9901	---	Unconnected	Connect Disconnecting Detail
4	TCP/UDP_Client3/NTRIP Server3	192.168.3.18:9902	---	Unconnected	Connect Disconnecting Detail
5	TCP/UDP_Client4/NTRIP Server4	192.168.3.18:9903	---	Unconnected	Connect Disconnecting Detail
6	TCP/UDP_Client5/NTRIP Server5	192.168.3.18:9904	---	Unconnected	Connect Disconnecting Detail
7	TCP/UDP_Client6/NTRIP Server6	192.168.3.18:9905	---	Unconnected	Connect Disconnecting Detail
8	TCP Server/NTRIP Caster1	9901	---	Closed	Connect Disconnecting Detail
9	TCP Server/NTRIP Caster2	9902	---	Closed	Connect Disconnecting Detail
10	TCP Server/NTRIP Caster3	9903	---	Closed	Connect Disconnecting Detail
11	TCP Server/NTRIP Caster4	9904	---	Closed	Connect Disconnecting Detail
12	Serial Port	115200	---	---	Settings
13	Bluetooth	GNSS-3225804	GPGGA:5s,	---	Settings
14	Radio	456.0500MHz	---	---	Settings

In this submenu, users can configure 6 types of input and output settings.

1. RTK Client

After configuring the settings of RTK client, users can log on CORS or APIS. Tap the **Connect** button to the right → the *IO Settings* screen will appear → choose one of the connection protocols among the NTRIP, APIS_BASE, APIS_ROVER and TCP → configure the related parameters → click [Confirm](#) to log on CORS or APIS.

- Connection Protocol: NTRIP

RTK Client

Connection Protocol: NTRIP

Server IP: 211.144.118.5

Port: 2102

Mount Point: test Get

User Name: test

Password: test

- Connection Protocol: APIS_BASE

RTK Client

Connection Protocol: APIS_BASE

Server IP: 111.111.111.1

Port: 9901

Differential Data: OFF

- Connection Protocol: APIS_ROVER

RTK Client

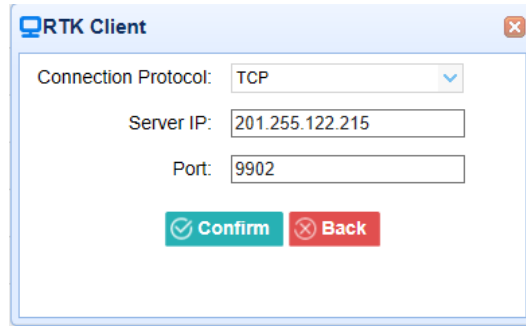
Connection Protocol: APIS_ROVER

Server IP: 210.14.66.58

Port: 9902

Base ID: 1019923

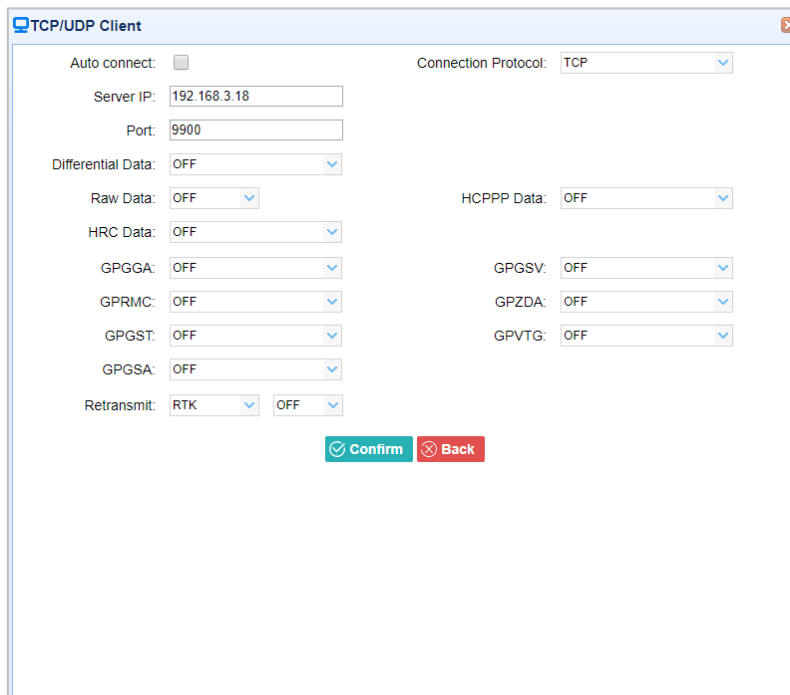
- Connection Protocol: TCP



2. TCP/UDP_Client/NTRIP Server

Tap the **Connect** button on the right of required TCP/UDP Client → the *IO Settings* screen will appear → select the connection protocol from TCP, UDP, NTRIP1.0 and NTRIP2.0 → enter the IP and Port of the target server → configure messages that you want to output to the target server → click to save and complete the connection.

- Connection Protocol: TCP



- Connection Protocol: UDP

The screenshot shows the 'TCP/UDP Client' configuration window. The 'Connection Protocol' dropdown is set to 'UDP'. The 'Server IP' is '192.168.3.18' and the 'Port' is '9900'. All other data options (Differential Data, Raw Data, HRC Data, GPGGA, GPRMC, GPGST, GPGSA, Retransmit, HCPPP Data, GPGSV, GPZDA, GPVTG) are set to 'OFF'. The 'Auto connect' checkbox is unchecked. At the bottom, there are 'Confirm' and 'Back' buttons.

➤ Connection Protocol: NTRIP1.0


The screenshot shows the 'TCP/UDP Client' configuration window. The 'Connection Protocol' dropdown is set to 'NTRIP1.0'. The 'Server IP' is '192.168.3.18' and the 'Port' is '9900'. A 'Password' field is present with masked characters. The 'Mount Point' field is empty. All other data options (Differential Data, Raw Data, HRC Data, GPGGA, GPRMC, GPGST, GPGSA, Retransmit, HCPPP Data, GPGSV, GPZDA, GPVTG) are set to 'OFF'. The 'Auto connect' checkbox is unchecked. At the bottom, there are 'Confirm' and 'Back' buttons.

➤ Connection Protocol: NTRIP2.0

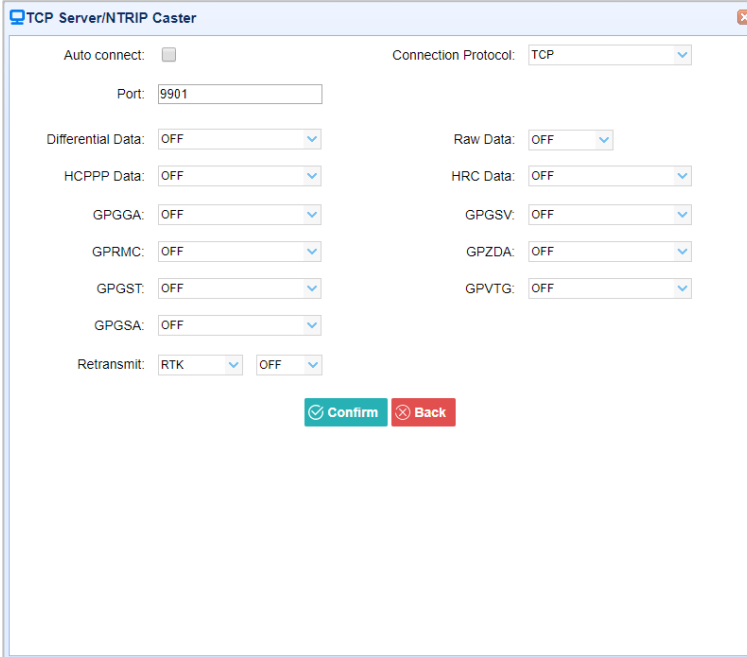
TCP/UDP Client

Auto connect: <input type="checkbox"/>	Connection Protocol: NTRIP2.0
Server IP: 192.168.3.18	User Name: link_a
Password:	Port: 9900
Mount Point:	Differential Data: OFF
Raw Data: OFF	HCPPP Data: OFF
HRC Data: OFF	GPGSV: OFF
GPGGA: OFF	GPZDA: OFF
GPRMC: OFF	GPVTG: OFF
GPGST: OFF	
GPGSA: OFF	
Retransmit: RTK OFF	

3. TCP Server/NTRIP Caster

Tap the **Connect** button to the right of required TCP Server/NTRIP Caster → the **IO Settings** screen will appear → select one of the connection protocols between NTRIP and TCP → configure the other related parameters → click  to save the settings and open the server.

➤ Connection Protocol: TCP



The screenshot shows the 'TCP Server/NTRIP Caster' configuration window. The 'Connection Protocol' is set to 'TCP'. The 'Auto connect' checkbox is unchecked. The 'Port' is set to '9901'. The following settings are all set to 'OFF': Differential Data, HCPPP Data, GPGGA, GPRMC, GPGST, GPGSA, Raw Data, HRC Data, GPGSV, GPZDA, and GPVTG. The 'Retransmit' setting is set to 'RTK' and 'OFF'. At the bottom, there are 'Confirm' and 'Back' buttons.

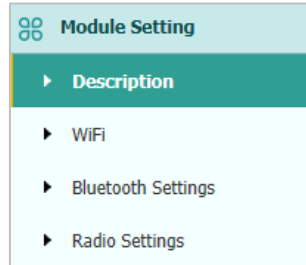
➤ Connection Protocol: NTRIP

4. Bluetooth

Tap the **Settings** button to the right of Bluetooth → the *Bluetooth Set* screen will appear → configure the messages that you want to transmit through Bluetooth → click to save the settings and start to transmit.

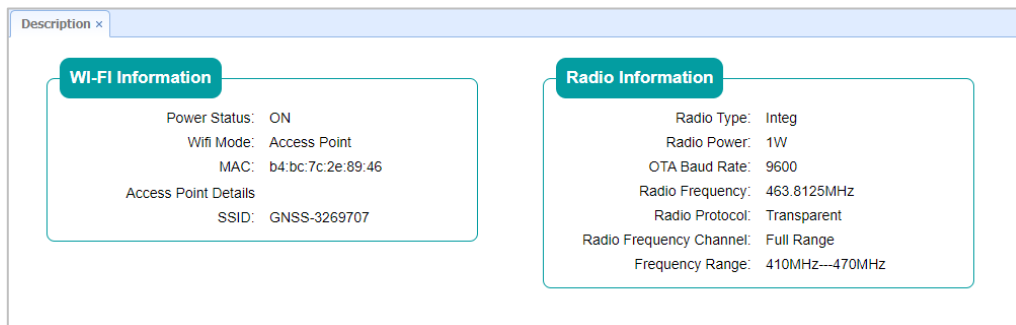
4.6 Module Setting Menu

Use this menu to check module information, configure WiFi, bluetooth, radio related settings.



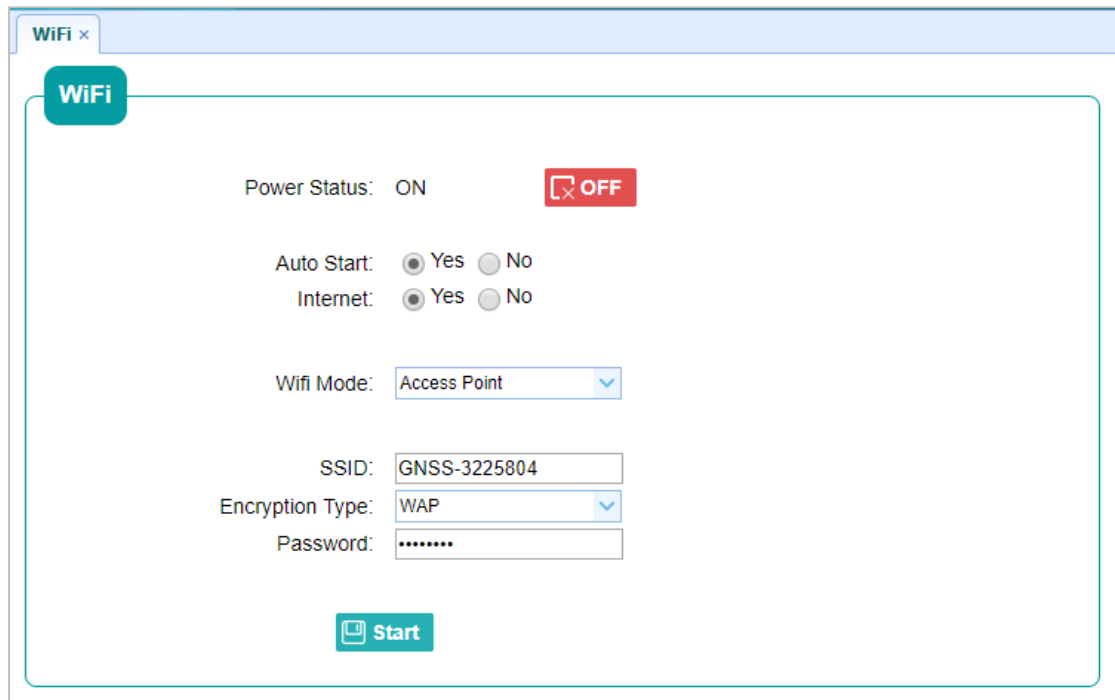
4.6.1 Description Submenu

Use this submenu to check the information of WiFi module, bluetooth module and radio module.



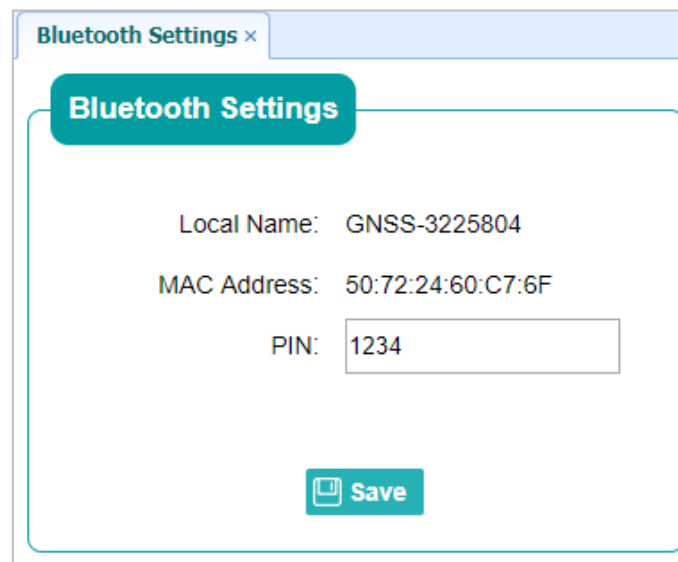
4.6.2 WiFi Submenu

Use this submenu to turn on/off WiFi function and modify password.



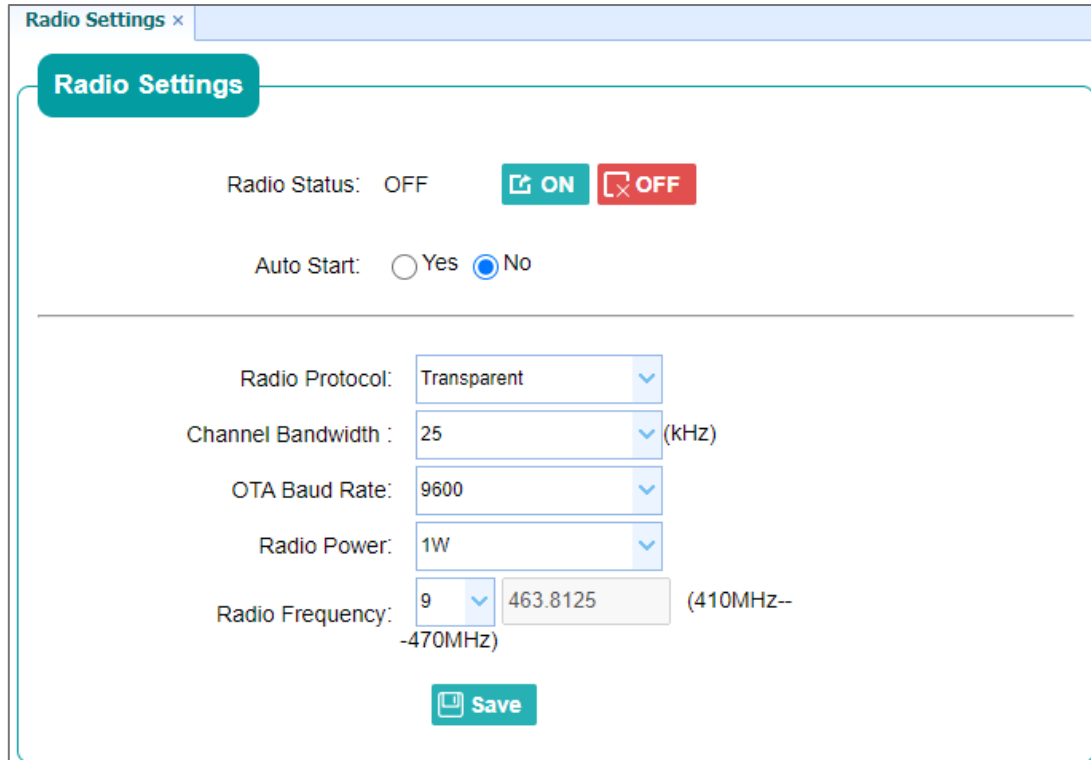
4.6.3 Bluetooth Settings Submenu

Use this submenu to turn on/off bluetooth function and modify PIN number.



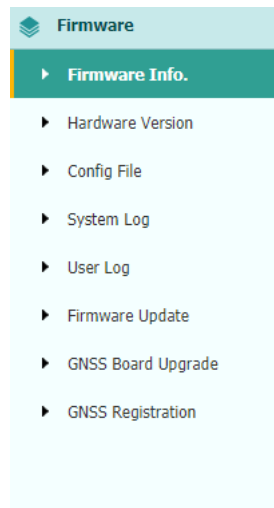
4.6.4 Radio Settings Submenu

Use this submenu to turn on/off radio function and configure radio parameters.



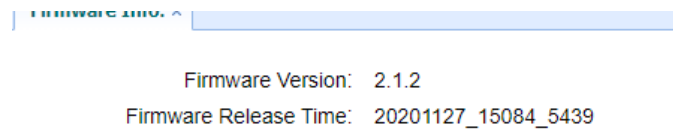
4.7 Firmware Menu

Use this menu to check the current firmware information, download the system log, update the receiver firmware, download or update the configuration file and register the receiver, and more:



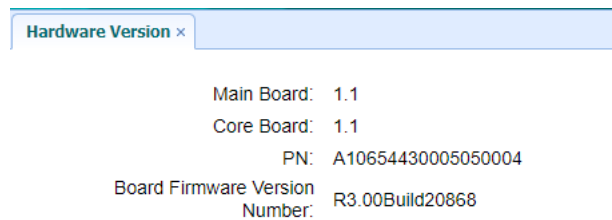
4.7.1 Firmware Info Submenu

Use this submenu to check the current firmware information. The following figure shows an example of the firmware information.



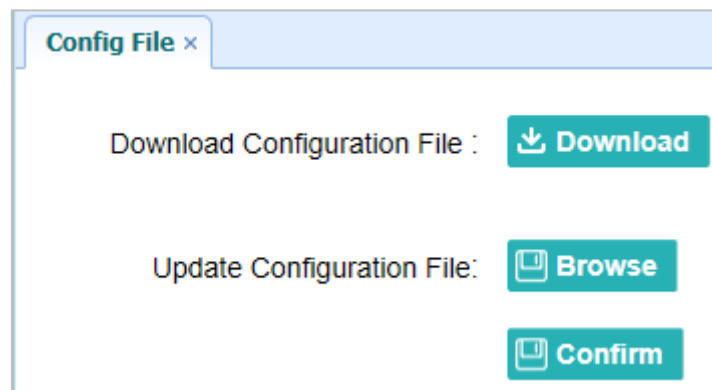
4.7.2 Hardware Version Submenu

Use this submenu to check the hardware information, including main board version and core board version:



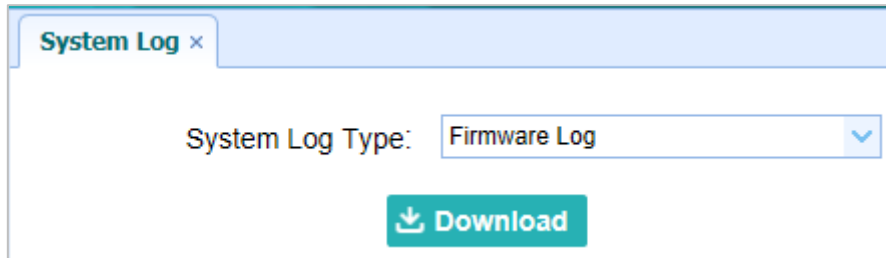
4.7.3 Config File Submenu

Use this submenu to update Configuration File.



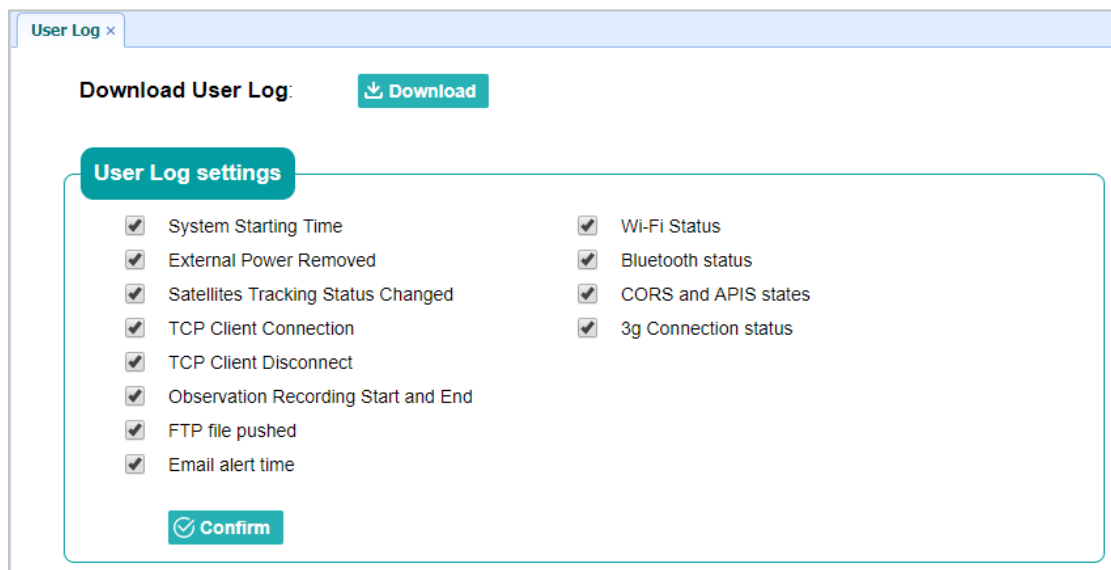
4.7.4 System Log Download Submenu

Use this submenu to download the system log of the receiver.



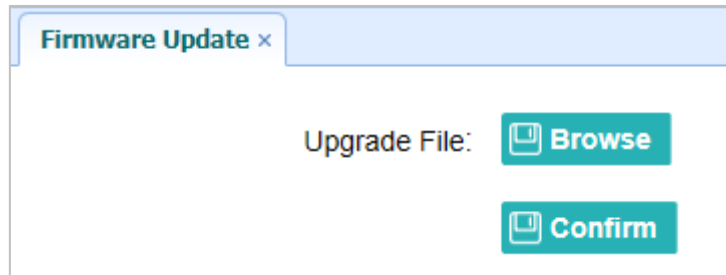
4.7.5 User Log Submenu

Use this submenu to download the user log. Tap **Download** to download current user log; Tick items that you want to see on the user log and tap confirm button to confirm selected user log.



4.7.6 Firmware Update Submenu

Use this submenu to load new firmware to the receiver across the network. Tap the **Browse** button to locate the upgrade file → tap **Confirm** button to confirm the selected upgrading file and start upgrading.

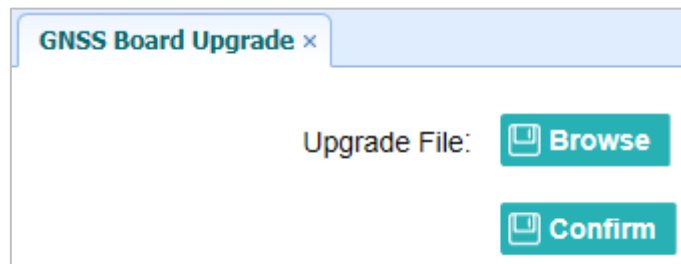


Notes

- It may take about 3 or 4 minutes to complete the firmware upgrading. Do not touch the power button or unplug the power until the upgrading process finishes, or damage will be caused to the receiver.
- The receiver will restart after the firmware upgrading is done, so users need to reconnect the receiver with your computer via Wi-Fi, and then log-in the receiver through a web browser to continue the configuration.

4.7.7 GNSS Board Upgrade Submenu

Use this submenu to upgrade GNSS Board. Use this submenu to load new board to the receiver across the network. Tap the **Browse** button to locate the upgrade file → tap **Confirm** button to confirm the selected upgrading file and start upgrading.



4.7.8 GNSS Registration Submenu

Use this submenu to register the receiver. Paste or enter the registration code to the *Registration Code* field → tap **Registration** button to complete the registration.

GNSS Registration ×

Serial Number:	<input type="text" value="3269707"/>
Registration Limit:	<input type="text" value="2020-10-31"/>
Registration Code:	<input type="text" value="cHvbNNdWUMR"/>

 Registration

EFIX Geomatics

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Tel: +86 15021007664

Email: sales@efix-geo.com | support@efix-geo.com

Skype: [support@efix-geo.com](https://www.skype.com/people/support@efix-geo.com)

Website: www.efix-geo.com